STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

VIA ELECTRONIC MAIL

March 7, 2019

Kri Pelletier
Property Specialist
SBA Communications
134 Flanders Road, Suite 125
Westborough, MA 01581

RE: **EM-SPRINT-137-190205** – Sprint notice of intent to modify an existing telecommunications facility located at 811 Stonington Road, Stonington, Connecticut.

Dear Ms. Pelletier:

The Connecticut Siting Council (Council) is in receipt of your correspondence of March 5, 2019 submitted in response to the Council's February 28, 2019 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/FOC/CW/in/emr

Robidoux, Evan

From: Kri Pelletier <KPelletier@sbasite.com>
Sent: Tuesday, March 05, 2019 11:48 AM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for EM-SPRINT-137-190205-StoningtonRd-Stonington
Attachments: em-sprint-137-190205_incompleteltr_StoningtonRd.pdf; CT01493-S_NorthStonington2CT_SprintNextel_03012019_MF_TES57603_6_Job.pdf; CT01493_Northstonington2Ct_SprintNextel_03012019_MOD_TES57603_1.pdf; CT33XC088-FCD-Rev1-03.07.18.pdf

Good Morning Evan,

We are in receipt of Council's letter of 2/28/19. Attached, please find requested documents.

Please note that the Mt Assessment letter does not refer to 2016 Code.

Thank you,

Kri Pelletier
Prop Spec - Svcs

508.251.0720 x3804 + T
508.366.2610 + F
203.446.7700 + C

From: Robidoux, Evan [mailto:Evan.Robidoux@ct.gov]
Sent: Thursday, February 28, 2019 3:31 PM
To: Kri Pelletier <KPelletier@sbasite.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for EM-SPRINT-137-190205-StoningtonRd-Stonington

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Post-Mod Structural Analysis Report

Existing 150 ft. PIROD Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01493-S

Customer Site Name: North Stonington 2 CT

Carrier Name: Sprint Nextel

Carrier Site ID / Name: CT33XC088 / North Stonington

Site Location: 811 Stonington Road

Stonington, Connecticut

New London County

Latitude: 41.353417

Longitude: -71.887000

3/1/19

Analysis Result:

Max Structural Usage: 98.8% [Pass]

Max Foundation Usage: 98% [Pass]

Report Prepared By : Stacey Hesselbein

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Introduction

The purpose of this report is to summarize the analysis results on the 150 ft PIROD Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawing prepared by PiROD, Drawing #20550-B dated 10/20/99
Foundation Drawing	Foundation Drawing prepared by PiROD, Drawing #20550-B dated 10/20/99
Geotechnical Report	Geotechnical Report prepared by FDH, Project #1207125EG1 dated 8/10/12
Existing Modification	Modification Drawing prepared by FDH, Project #11-04387E S2 dated 8/19/11
Proposed Modification	TES Job # 57603

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} = 140 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 108.0 mph (3-Sec. Gust)
Basic 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 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	SS = 0.159, S1 = 0.058

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	147.0	6	Lucent - DB908H0E-M - Panel	Concealed (24" Canister)	(6) 1 5/8"	Sprint Nextel
4	135.0	3	RFS - APXV18-206516L - Panel	Concealed (24" Canister)	(6) 1 5/8"	T-Mobile
5	125.0	3	KMW - AMXCD1465 - Panel	Concealed (30" Canister)	(12) 7/8"	AT&T
6		3	Andrew - ETW190VS12UB - TMA/TTA			
7		6	CM1007-DBPXBC-xxx - Diplexer			
8	115.0	3	Kathrein - 742 351 - Panel	Concealed (24" Canister)	(6) 7/8" (1) 3/8"	Metro PCS

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	147.0	3	Commscope - DHHTT65B-3XR - Panel	Concealed (28" Canister)	(12) 7/8" (3) 3/8" RET	Sprint Nextel
2		3	RFS - KIT-FD9R6004/1C-DL - Diplexers			
3		3	CCI - DPO-7126Y-0-T1 - Diplexer			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Flanges
Max. Usage:	**98.8%**	**62.4%**	**96.1%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	995.6	11.9	30.0

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 2.1873 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the design ANSI/TIA/EIA 222-G standards under a basic wind speed of 108 mph no ice and 50 mph with 3/4" radial ice after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 57603

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed Sprint Nextel equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-322 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-322. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-322 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carriers equipment. Additionally, the tower cannot go beyond the 6 month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

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 or/and 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.

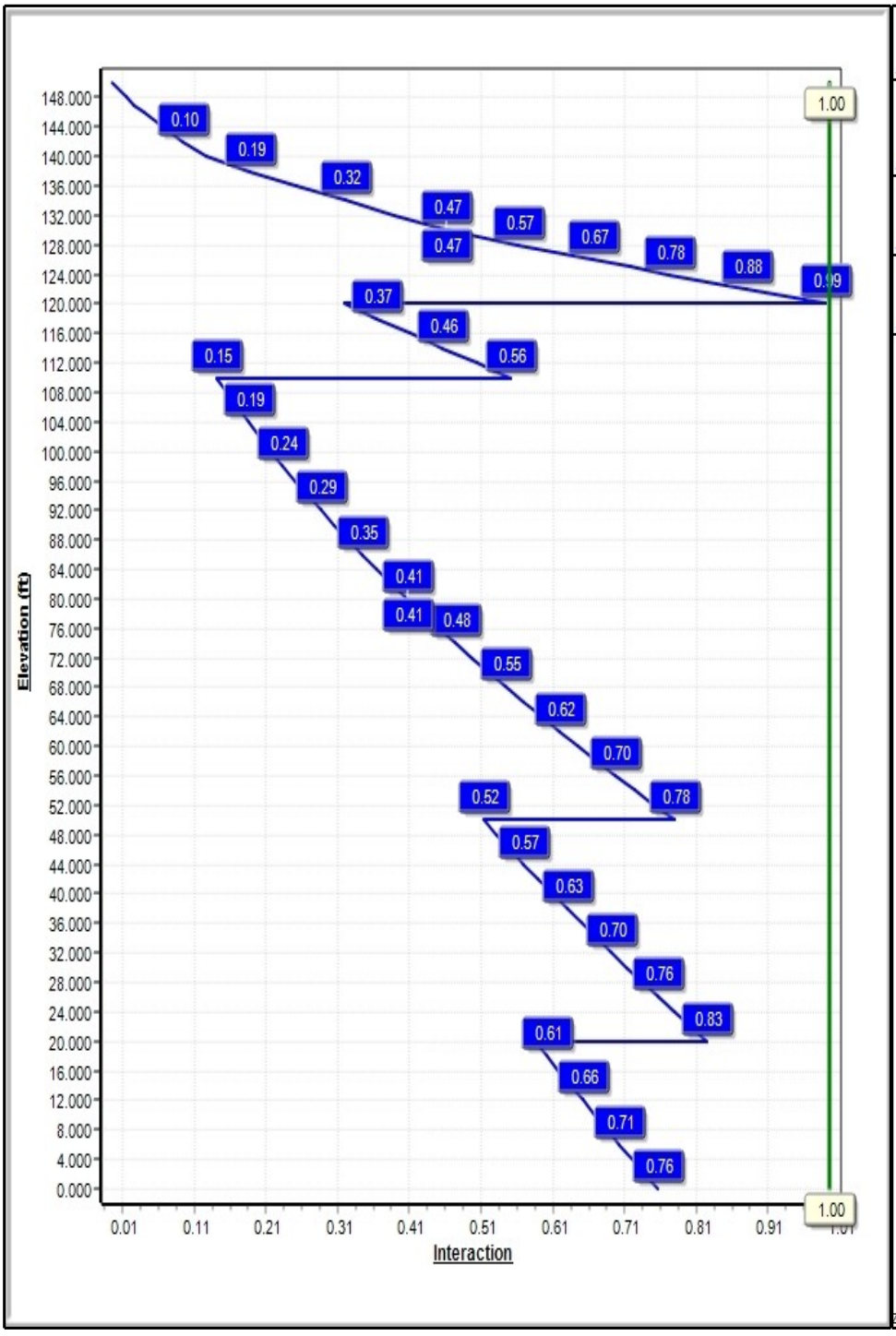
Usage Diagram - Max Ratio 99.43% at 120.0ft

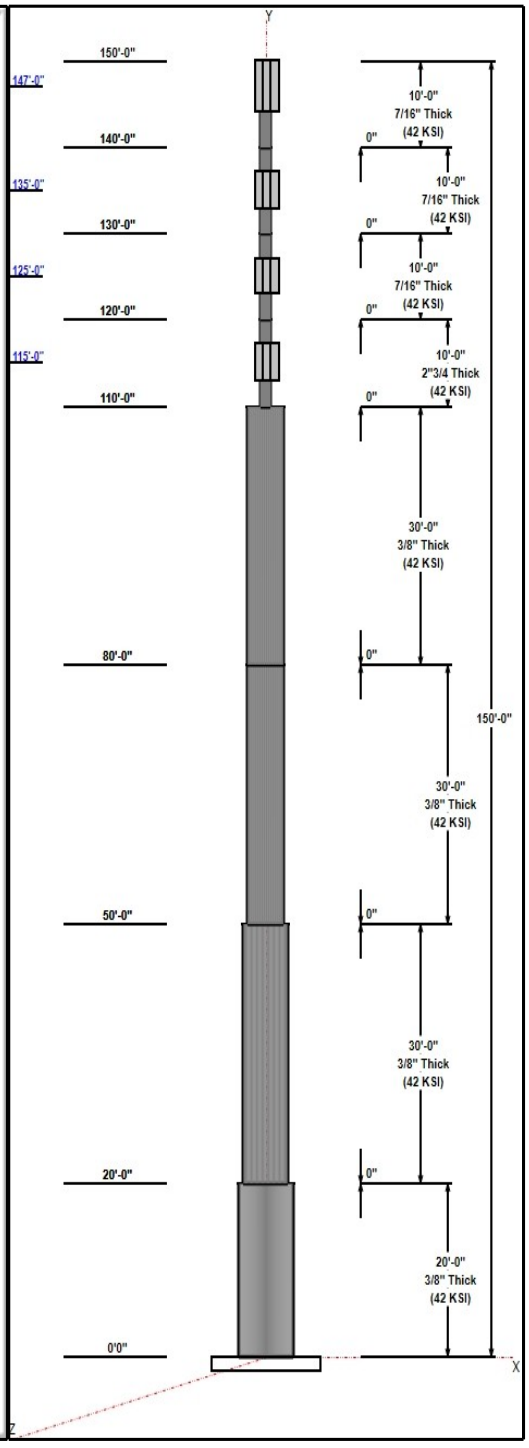
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	39
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 108 mph Wind





Structure: CT01493-S-SBA

Type: Stepped
Site Name: North Stonington 2 CT
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: Round
Taper: 0.00000

3/1/2019

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	20.00	36.00	36.00	0.375		0.00000	42
2	30.00	30.00	30.00	0.375		0.00000	42
3	30.00	24.00	24.00	0.375		0.00000	42
4	30.00	24.00	24.00	0.375		0.00000	42
5	10.00	6.75	6.75	2.745		0.00000	42
6	10.00	6.63	6.63	0.432		0.00000	42
7	10.00	6.63	6.63	0.432		0.00000	42
8	10.00	6.63	6.63	0.432		0.00000	42

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.00	1	34" Canister	
147.00	147.00	3	DHHTT65B-3XR	Sprint Nextel
147.00	147.00	3	KIT-FD9R6004/1C-DL	Sprint Nextel
147.00	147.00	3	DPO-7126Y-0-T1	Sprint Nextel
140.00	140.00	1	34" Canister & 24"	
135.00	135.00	3	APXV18-206516L	T-Mobile
130.00	130.00	1	24" Canister & 30"	
125.00	125.00	3	AMXCD1465	AT&T
125.00	125.00	3	ETW190VS12UB	AT&T
125.00	125.00	6	CM1007-DBPXBC-xxx	AT&T
120.00	120.00	1	30" Canister & 24"	
115.00	115.00	3	742 351	Metro PCS
110.00	110.00	1	24" Canister	

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	147.00	Inside	3/8" RET	Sprint Nextel
0.00	147.00	Inside	7/8" Coax	Sprint Nextel
0.00	135.00	Inside	1 5/8" Coax	T-Mobile
110.00	130.00	Inside	Grout	
0.00	125.00	Inside	7/8" Coax	AT&T
0.00	115.00	Inside	3/8" Fiber	Metro PCS
0.00	115.00	Inside	7/8" Coax	Metro PCS

Anchor Bolts

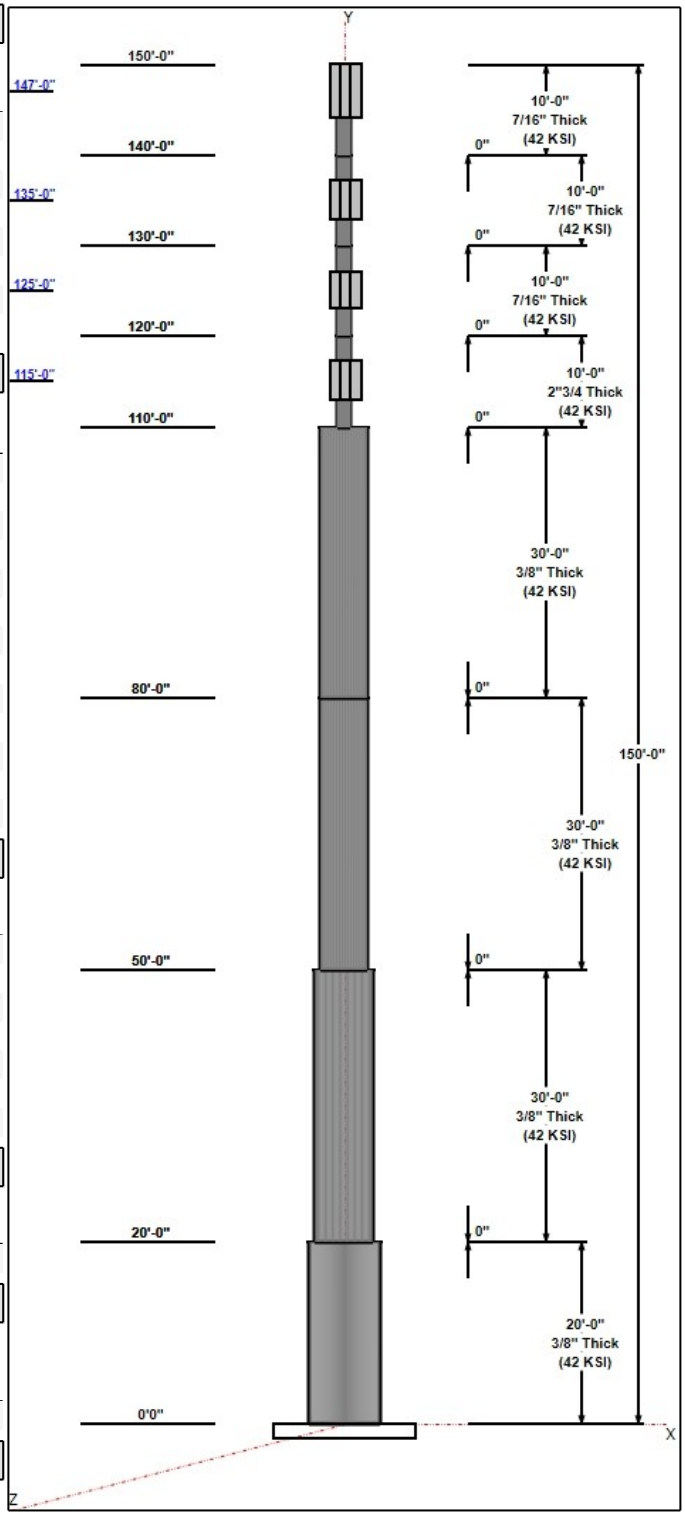
Qty	Specifications	Grade (ksi)	Arrangement
0	2.25" 18J	75.0	0

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
0.0000		60.0	0

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 108 mph Wind	999.5	11.9	22.2
0.9D + 1.6W 108 mph Wind	985.1	11.9	16.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	302.1	3.5	30.7
1.2D + 1.0E	21.2	0.3	22.2



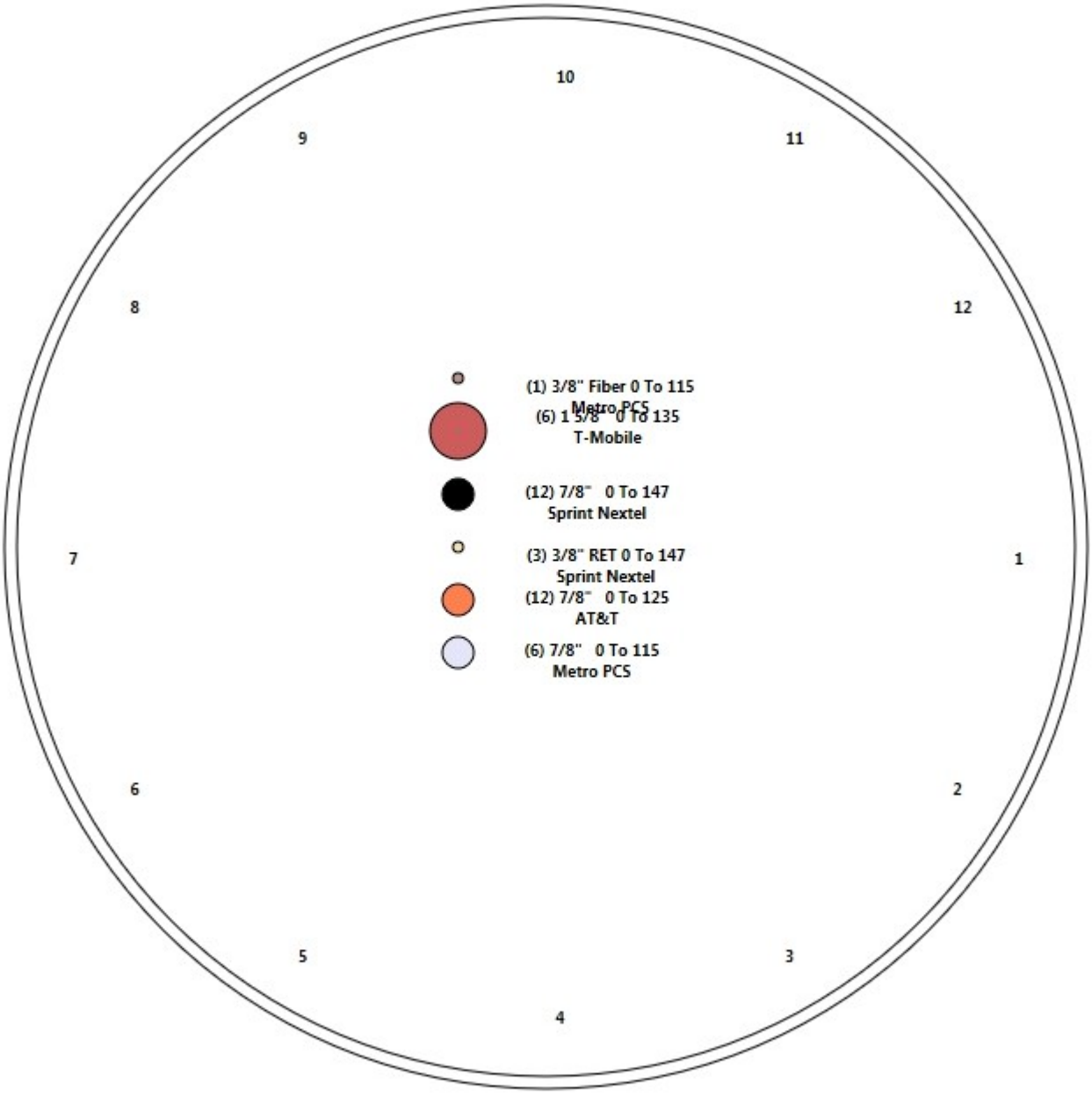
0.9D + 1.0E	20.9	0.3	16.7
1.0D + 1.0W 60 mph Wind	206.9	2.4	18.5

Structure: CT01493-S-SBA - Coax Line Placement

Type: Monopole
Site Name: North Stonington 2 CT
Height: 150.00 (ft)

3/1/2019

Tower Engineering Solutions



Shaft Properties

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 5	

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	R	20.000	0.3750	42		0.00	2,856
2	R	30.000	0.3750	42		0.00	3,563
3	R	30.000	0.3750	42		0.00	2,841
4	R	30.000	0.3750	42		0.00	2,841
5	R	10.000	2.7450	42		0.00	1,175
6	R	10.000	0.4320	42		0.00	286
7	R	10.000	0.4320	42		0.00	286
8	R	10.000	0.4320	42		0.00	286
					Total Shaft Weight:		**14,135**

	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	36.00	0.00	41.97	6663.29	0.00	96.00	36.00	20.00	41.97	6663.29	0.00	96.00	0.000000
2	30.00	20.00	34.90	3831.77	0.00	80.00	30.00	50.00	34.90	3831.77	0.00	80.00	0.000000
3	24.00	50.00	27.83	1943.30	0.00	64.00	24.00	80.00	27.83	1943.30	0.00	64.00	0.000000
4	24.00	80.00	27.83	1943.30	0.00	64.00	24.00	110.00	27.83	1943.30	0.00	64.00	0.000000
5	6.75	110.0	34.54	69.30	0.00	2.46	6.75	120.00	34.54	69.30	0.00	2.46	0.000000
6	6.63	120.0	8.40	40.33	0.00	15.34	6.63	130.00	8.40	40.33	0.00	15.34	0.000000
7	6.63	130.0	8.40	40.33	0.00	15.34	6.63	140.00	8.40	40.33	0.00	15.34	0.000000
8	6.63	140.0	8.40	40.33	0.00	15.34	6.63	150.00	8.40	40.33	0.00	15.34	0.000000

Load Summary

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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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)
1	150.00	34" Canister	1	50.00	6.85	1.00	53.49	7.328	1.00	0.00	0.00
2	147.00	DHHTT65B-3XR	3	45.40	0.00	0.00	246.78	9.384	0.00	0.00	0.00
3	147.00	KIT-FD9R6004/1C-DL	3	3.10	0.00	0.00	11.11	0.000	0.00	0.00	0.00
4	147.00	DPO-7126Y-0-T1	3	12.60	0.00	0.00	30.64	0.000	0.00	0.00	0.00
5	140.00	34" Canister & 24" Canister	1	100.00	11.19	1.00	106.93	11.966	1.00	0.00	0.00
6	135.00	APXV18-206516L	3	18.70	0.00	0.00	87.85	0.000	0.00	0.00	0.00
7	130.00	24" Canister & 30" Canister	1	100.00	10.19	1.00	106.88	10.891	1.00	0.00	0.00
8	125.00	AMXCD1465	3	36.40	0.00	0.00	145.91	0.000	0.00	0.00	0.00
9	125.00	ETW190VS12UB	3	11.00	0.00	0.00	29.17	0.000	0.00	0.00	0.00
10	125.00	CM1007-DBPXBC-xxx	6	6.50	0.00	0.00	18.45	0.000	0.00	0.00	0.00
11	120.00	30" Canister & 24" Canister	1	100.00	10.16	1.00	106.83	10.854	1.00	0.00	0.00
12	115.00	742 351	3	29.80	0.00	0.00	122.60	0.000	0.00	0.00	0.00
13	110.00	24" Canister	1	50.00	4.13	1.00	53.38	4.410	1.00	0.00	0.00
		Totals:	**32**	**910.00**			**2,560.40**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	147.00	(3) 3/8" RET	0.00	Inside
0.00	147.00	(12) 7/8" Coax	0.00	Inside
0.00	135.00	(6) 1 5/8" Coax	0.00	Inside
110.0	130.00	(1) Grout	0.00	Inside
0.00	125.00	(12) 7/8" Coax	0.00	Inside
0.00	115.00	(1) 3/8" Fiber	0.00	Inside
0.00	115.00	(6) 7/8" Coax	0.00	Inside

Shaft Section Properties

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

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Increment Length: **2 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	0.0
2.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
4.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
6.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
8.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
10.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
12.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
14.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
16.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
18.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
20.00	Top - Section 1	0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
20.00	Bot - Section 2	0.3750	30.000	34.901	3831.8	0.00	96.00	41.7	255.5	
22.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
24.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
26.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
28.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
30.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
32.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
34.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
36.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
38.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
40.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
42.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
44.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
46.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
48.00		0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
50.00	Top - Section 2	0.3750	30.000	34.901	3831.8	0.00	80.00	41.7	255.5	237.5
50.00	Bot - Section 3	0.3750	24.000	27.833	1943.3	0.00	80.00	42.0	161.9	
52.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
54.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
56.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
58.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
60.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
62.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
64.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
66.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
68.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
70.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
72.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
74.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
76.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
78.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
80.00	Top - Section 3	0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
80.00	Bot - Section 4	0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	
82.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
84.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
86.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
88.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
90.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
92.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4

Increment Length: **2 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
94.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
96.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
98.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
100.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
102.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
104.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
106.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
108.00		0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
110.00	Top - Section 4	0.3750	24.000	27.833	1943.3	0.00	64.00	42.0	161.9	189.4
110.00	Bot - Section 5	2.7450	6.750	34.538	69.3	0.00	8.74	42.0	20.5	
112.00		2.7450	6.750	34.538	69.3	0.00	2.46	42.0	20.5	235.0
114.00		2.7450	6.750	34.538	69.3	0.00	2.46	42.0	20.5	235.0
115.00		2.7450	6.750	34.538	69.3	0.00	2.46	42.0	20.5	117.5
116.00		2.7450	6.750	34.538	69.3	0.00	2.46	42.0	20.5	117.5
118.00		2.7450	6.750	34.538	69.3	0.00	2.46	42.0	20.5	235.0
120.00	Top - Section 5	2.7450	6.750	34.538	69.3	0.00	2.46	42.0	20.5	235.0
120.00	Bot - Section 6	0.4320	6.625	8.405	40.3	0.00	15.63	42.0	12.2	
122.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
124.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
125.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	28.6
126.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	28.6
128.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
130.00	Top - Section 6	0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
130.00	Bot - Section 7	0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	
132.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
134.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
135.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	28.6
136.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	28.6
138.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
140.00	Top - Section 7	0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
140.00	Bot - Section 8	0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	
142.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
144.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
146.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
147.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	28.6
148.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	28.6
150.00		0.4320	6.625	8.405	40.3	0.00	15.34	42.0	12.2	57.2
										14134.8

Wind Loading - Shaft

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

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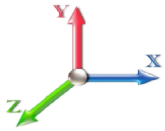
Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 39

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
4.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
6.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
8.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
10.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
12.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
14.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	342.8
16.00		1.00	0.86	24.410	26.85	300.55	0.600	0.000	2.00	6.000	3.60	154.7	0.0	342.8
18.00		1.00	0.88	25.022	27.52	304.30	0.600	0.000	2.00	6.000	3.60	158.5	0.0	342.8
20.00	Top - Section 1	1.00	0.90	25.584	28.14	307.70	0.600	0.000	2.00	6.000	3.60	162.1	0.0	342.8
22.00		1.00	0.92	26.102	28.71	259.00	0.600	0.000	2.00	5.000	3.00	137.8	0.0	285.0
24.00		1.00	0.94	26.585	29.24	261.38	0.600	0.000	2.00	5.000	3.00	140.4	0.0	285.0
26.00		1.00	0.95	27.037	29.74	263.59	0.600	0.000	2.00	5.000	3.00	142.8	0.0	285.0
28.00		1.00	0.97	27.462	30.21	265.66	0.600	0.000	2.00	5.000	3.00	145.0	0.0	285.0
30.00		1.00	0.98	27.863	30.65	267.59	0.600	0.000	2.00	5.000	3.00	147.1	0.0	285.0
32.00		1.00	1.00	28.245	31.07	269.42	0.600	0.000	2.00	5.000	3.00	149.1	0.0	285.0
34.00		1.00	1.01	28.607	31.47	271.14	0.600	0.000	2.00	5.000	3.00	151.0	0.0	285.0
36.00		1.00	1.02	28.954	31.85	272.78	0.600	0.000	2.00	5.000	3.00	152.9	0.0	285.0
38.00		1.00	1.03	29.285	32.21	274.34	0.600	0.000	2.00	5.000	3.00	154.6	0.0	285.0
40.00		1.00	1.04	29.603	32.56	275.82	0.600	0.000	2.00	5.000	3.00	156.3	0.0	285.0
42.00		1.00	1.05	29.909	32.90	277.24	0.600	0.000	2.00	5.000	3.00	157.9	0.0	285.0
44.00		1.00	1.06	30.203	33.22	278.60	0.600	0.000	2.00	5.000	3.00	159.5	0.0	285.0
46.00		1.00	1.07	30.487	33.54	279.91	0.600	0.000	2.00	5.000	3.00	161.0	0.0	285.0
48.00		1.00	1.08	30.761	33.84	281.17	0.600	0.000	2.00	5.000	3.00	162.4	0.0	285.0
50.00	Top - Section 2	1.00	1.09	31.027	34.13	282.38	0.600	0.000	2.00	5.000	3.00	163.8	0.0	285.0
52.00		1.00	1.10	31.284	34.41	226.84	0.600	0.000	2.00	4.000	2.40	132.1	0.0	227.3
54.00		1.00	1.11	31.534	34.69	227.74	0.600	0.000	2.00	4.000	2.40	133.2	0.0	227.3
56.00		1.00	1.12	31.776	34.95	228.61	0.600	0.000	2.00	4.000	2.40	134.2	0.0	227.3
58.00		1.00	1.13	32.012	35.21	229.46	0.600	0.000	2.00	4.000	2.40	135.2	0.0	227.3
60.00		1.00	1.14	32.241	35.47	230.28	0.600	0.000	2.00	4.000	2.40	136.2	0.0	227.3
62.00		1.00	1.14	32.464	35.71	231.07	0.600	0.000	2.00	4.000	2.40	137.1	0.0	227.3
64.00		1.00	1.15	32.682	35.95	231.85	0.600	0.000	2.00	4.000	2.40	138.0	0.0	227.3
66.00		1.00	1.16	32.894	36.18	232.60	0.600	0.000	2.00	4.000	2.40	138.9	0.0	227.3
68.00		1.00	1.17	33.102	36.41	233.33	0.600	0.000	2.00	4.000	2.40	139.8	0.0	227.3
70.00		1.00	1.17	33.305	36.63	234.05	0.600	0.000	2.00	4.000	2.40	140.7	0.0	227.3
72.00		1.00	1.18	33.503	36.85	234.74	0.600	0.000	2.00	4.000	2.40	141.5	0.0	227.3
74.00		1.00	1.19	33.696	37.07	235.42	0.600	0.000	2.00	4.000	2.40	142.3	0.0	227.3
76.00		1.00	1.19	33.886	37.27	236.08	0.600	0.000	2.00	4.000	2.40	143.1	0.0	227.3
78.00		1.00	1.20	34.072	37.48	236.73	0.600	0.000	2.00	4.000	2.40	143.9	0.0	227.3
80.00	Top - Section 3	1.00	1.21	34.254	37.68	237.36	0.600	0.000	2.00	4.000	2.40	144.7	0.0	227.3
82.00		1.00	1.21	34.433	37.88	237.98	0.600	0.000	2.00	4.000	2.40	145.4	0.0	227.3
84.00		1.00	1.22	34.608	38.07	238.58	0.600	0.000	2.00	4.000	2.40	146.2	0.0	227.3
86.00		1.00	1.23	34.780	38.26	239.17	0.600	0.000	2.00	4.000	2.40	146.9	0.0	227.3
88.00		1.00	1.23	34.948	38.44	239.75	0.600	0.000	2.00	4.000	2.40	147.6	0.0	227.3
90.00		1.00	1.24	35.114	38.63	240.32	0.600	0.000	2.00	4.000	2.40	148.3	0.0	227.3
92.00		1.00	1.24	35.277	38.80	240.88	0.600	0.000	2.00	4.000	2.40	149.0	0.0	227.3

Wind Loading - Shaft

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

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94.00		1.00	1.25	35.437	38.98	241.42	0.600	0.000	2.00	4.000	2.40	149.7	0.0	227.3
96.00		1.00	1.25	35.594	39.15	241.96	0.600	0.000	2.00	4.000	2.40	150.4	0.0	227.3
98.00		1.00	1.26	35.749	39.32	242.48	0.600	0.000	2.00	4.000	2.40	151.0	0.0	227.3
100.00		1.00	1.27	35.902	39.49	243.00	0.600	0.000	2.00	4.000	2.40	151.6	0.0	227.3
102.00		1.00	1.27	36.052	39.66	243.51	0.600	0.000	2.00	4.000	2.40	152.3	0.0	227.3
104.00		1.00	1.28	36.199	39.82	244.00	0.600	0.000	2.00	4.000	2.40	152.9	0.0	227.3
106.00		1.00	1.28	36.345	39.98	244.49	0.600	0.000	2.00	4.000	2.40	153.5	0.0	227.3
108.00		1.00	1.29	36.488	40.14	244.98	0.600	0.000	2.00	4.000	2.40	154.1	0.0	227.3
110.00	Top - Section 4	1.00	1.29	36.629	40.29	245.45	0.600	0.000	2.00	4.000	2.40	154.7	0.0	227.3
112.00		1.00	1.30	36.768	40.45	69.16	0.600	0.000	2.00	1.125	0.67	43.7	0.0	282.1
114.00		1.00	1.30	36.906	40.60	69.29	0.600	0.000	2.00	1.125	0.67	43.8	0.0	282.1
115.00	Appurtenance(s)	1.00	1.30	36.974	40.67	69.36	0.600	0.000	1.00	0.563	0.34	22.0	0.0	141.0
116.00		1.00	1.31	37.041	40.75	69.42	0.600	0.000	1.00	0.563	0.34	22.0	0.0	141.0
118.00		1.00	1.31	37.175	40.89	69.54	0.600	0.000	2.00	1.125	0.67	44.2	0.0	282.1
120.00	Top - Section 5	1.00	1.32	37.306	41.04	69.67	0.600	0.000	2.00	1.125	0.67	44.3	0.0	282.1
122.00		1.00	1.32	37.436	41.18	68.50	0.600	0.000	2.00	1.104	0.66	43.7	0.0	68.6
124.00		1.00	1.32	37.565	41.32	68.61	0.600	0.000	2.00	1.104	0.66	43.8	0.0	68.6
125.00	Appurtenance(s)	1.00	1.33	37.628	41.39	68.67	0.600	0.000	1.00	0.552	0.33	21.9	0.0	34.3
126.00		1.00	1.33	37.692	41.46	68.73	0.600	0.000	1.00	0.552	0.33	22.0	0.0	34.3
128.00		1.00	1.33	37.817	41.60	68.84	0.600	0.000	2.00	1.104	0.66	44.1	0.0	68.6
130.00	Top - Section 6	1.00	1.34	37.940	41.73	68.96	0.600	0.000	2.00	1.104	0.66	44.2	0.0	68.6
132.00		1.00	1.34	38.063	41.87	69.07	0.600	0.000	2.00	1.104	0.66	44.4	0.0	68.6
134.00		1.00	1.35	38.183	42.00	69.18	0.600	0.000	2.00	1.104	0.66	44.5	0.0	68.6
135.00	Appurtenance(s)	1.00	1.35	38.243	42.07	69.23	0.600	0.000	1.00	0.552	0.33	22.3	0.0	34.3
136.00		1.00	1.35	38.303	42.13	69.28	0.600	0.000	1.00	0.552	0.33	22.3	0.0	34.3
138.00		1.00	1.35	38.420	42.26	69.39	0.600	0.000	2.00	1.104	0.66	44.8	0.0	68.6
140.00	Top - Section 7	1.00	1.36	38.537	42.39	69.50	0.600	0.000	2.00	1.104	0.66	44.9	0.0	68.6
142.00		1.00	1.36	38.652	42.52	69.60	0.600	0.000	2.00	1.104	0.66	45.1	0.0	68.6
144.00		1.00	1.37	38.766	42.64	69.70	0.600	0.000	2.00	1.104	0.66	45.2	0.0	68.6
146.00		1.00	1.37	38.879	42.77	69.80	0.600	0.000	2.00	1.104	0.66	45.3	0.0	68.6
147.00	Appurtenance(s)	1.00	1.37	38.935	42.83	69.85	0.600	0.000	1.00	0.552	0.33	22.7	0.0	34.3
148.00		1.00	1.37	38.990	42.89	69.90	0.600	0.000	1.00	0.552	0.33	22.7	0.0	34.3
150.00	Appurtenance(s)	1.00	1.38	39.101	43.01	70.00	0.600	0.000	2.00	1.104	0.66	45.6	0.0	68.6
								Totals:	**150.00**			**9,050.8**		**16,961.8**

Discrete Appurtenance Forces

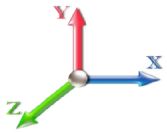
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 39

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	34" Canister	1	39.101	43.011	1.00	1.00	6.85	60.00	0.000	0.000	471.40	0.00	0.00
2	147.00	DPO-7126Y-0-T1	3	38.935	42.828	0.00	1.00	0.00	45.36	0.000	0.000	0.00	0.00	0.00
3	147.00	KIT-FD9R6004/1C-DL	3	38.935	42.828	0.00	1.00	0.00	11.16	0.000	0.000	0.00	0.00	0.00
4	147.00	DHHTT65B-3XR	3	38.935	42.828	0.00	1.00	0.00	163.44	0.000	0.000	0.00	0.00	0.00
5	140.00	34" Canister & 24"	1	38.537	42.391	1.00	1.00	11.19	120.00	0.000	0.000	758.96	0.00	0.00
6	135.00	APXV18-206516L	3	38.243	42.067	0.00	1.00	0.00	67.32	0.000	0.000	0.00	0.00	0.00
7	130.00	24" Canister & 30"	1	37.940	41.734	1.00	1.00	10.19	120.00	0.000	0.000	680.44	0.00	0.00
8	125.00	CM1007-DBPXBC-xxx	6	37.628	41.391	0.00	1.00	0.00	46.80	0.000	0.000	0.00	0.00	0.00
9	125.00	ETW190VS12UB	3	37.628	41.391	0.00	1.00	0.00	39.60	0.000	0.000	0.00	0.00	0.00
10	125.00	AMXCD1465	3	37.628	41.391	0.00	1.00	0.00	131.04	0.000	0.000	0.00	0.00	0.00
11	120.00	30" Canister & 24"	1	37.306	41.037	1.00	1.00	10.16	120.00	0.000	0.000	667.10	0.00	0.00
12	115.00	742 351	3	36.974	40.671	0.00	1.00	0.00	107.28	0.000	0.000	0.00	0.00	0.00
13	110.00	24" Canister	1	36.629	40.292	1.00	1.00	4.13	60.00	0.000	0.000	266.25	0.00	0.00
							Totals:		**1,092.00**			**2,844.15**		

Total Applied Force Summary

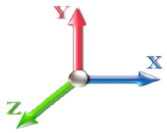
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 39

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
2.00		152.77	395.74	0.00	0.00
4.00		152.77	395.74	0.00	0.00
6.00		152.77	395.74	0.00	0.00
8.00		152.77	395.74	0.00	0.00
10.00		152.77	395.74	0.00	0.00
12.00		152.77	395.74	0.00	0.00
14.00		152.77	395.74	0.00	0.00
16.00		154.66	395.74	0.00	0.00
18.00		158.54	395.74	0.00	0.00
20.00		162.10	395.74	0.00	0.00
22.00		137.82	338.02	0.00	0.00
24.00		140.37	338.02	0.00	0.00
26.00		142.75	338.02	0.00	0.00
28.00		145.00	338.02	0.00	0.00
30.00		147.12	338.02	0.00	0.00
32.00		149.13	338.02	0.00	0.00
34.00		151.05	338.02	0.00	0.00
36.00		152.88	338.02	0.00	0.00
38.00		154.63	338.02	0.00	0.00
40.00		156.30	338.02	0.00	0.00
42.00		157.92	338.02	0.00	0.00
44.00		159.47	338.02	0.00	0.00
46.00		160.97	338.02	0.00	0.00
48.00		162.42	338.02	0.00	0.00
50.00		163.82	338.02	0.00	0.00
52.00		132.14	280.29	0.00	0.00
54.00		133.20	280.29	0.00	0.00
56.00		134.22	280.29	0.00	0.00
58.00		135.22	280.29	0.00	0.00
60.00		136.19	280.29	0.00	0.00
62.00		137.13	280.29	0.00	0.00
64.00		138.05	280.29	0.00	0.00
66.00		138.95	280.29	0.00	0.00
68.00		139.82	280.29	0.00	0.00
70.00		140.68	280.29	0.00	0.00
72.00		141.52	280.29	0.00	0.00
74.00		142.33	280.29	0.00	0.00
76.00		143.14	280.29	0.00	0.00
78.00		143.92	280.29	0.00	0.00
80.00		144.69	280.29	0.00	0.00
82.00		145.44	280.29	0.00	0.00
84.00		146.18	280.29	0.00	0.00
86.00		146.91	280.29	0.00	0.00
88.00		147.62	280.29	0.00	0.00
90.00		148.32	280.29	0.00	0.00
92.00		149.01	280.29	0.00	0.00

Total Applied Force Summary

Structure:	CT01493-S-SBA		**Code:**	EIA/TIA-222-G	3/1/2019
Site Name:	North Stonington 2 CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

94.00		149.69	280.29	0.00	0.00
96.00		150.35	280.29	0.00	0.00
98.00		151.00	280.29	0.00	0.00
100.00		151.65	280.29	0.00	0.00
102.00		152.28	280.29	0.00	0.00
104.00		152.91	280.29	0.00	0.00
106.00		153.52	280.29	0.00	0.00
108.00		154.13	280.29	0.00	0.00
110.00	(1) attachments	420.97	340.29	0.00	0.00
112.00		43.68	400.21	0.00	0.00
114.00		43.84	400.21	0.00	0.00
115.00	(3) attachments	21.96	307.39	0.00	0.00
116.00		22.00	196.29	0.00	0.00
118.00		44.16	392.58	0.00	0.00
120.00	(1) attachments	711.42	512.58	0.00	0.00
122.00		43.65	179.16	0.00	0.00
124.00		43.80	179.16	0.00	0.00
125.00	(12) attachments	21.94	307.02	0.00	0.00
126.00		21.97	82.09	0.00	0.00
128.00		44.09	164.18	0.00	0.00
130.00	(1) attachments	724.68	284.18	0.00	0.00
132.00		44.38	99.02	0.00	0.00
134.00		44.52	99.02	0.00	0.00
135.00	(3) attachments	22.30	116.83	0.00	0.00
136.00		22.33	42.02	0.00	0.00
138.00		44.80	84.05	0.00	0.00
140.00	(1) attachments	803.90	204.05	0.00	0.00
142.00		45.07	84.05	0.00	0.00
144.00		45.20	84.05	0.00	0.00
146.00		45.33	84.05	0.00	0.00
147.00	(9) attachments	22.70	261.98	0.00	0.00
148.00		22.73	34.32	0.00	0.00
150.00	(1) attachments	516.99	128.64	0.00	0.00
	Totals:	**11,894.98**	**22,223.60**	**0.00**	**0.00**

Calculated Forces

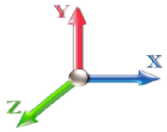
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 108 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 39

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	-22.21	-11.91	0.00	-999.54	0.00	999.54	1490.10	745.05	2187.51	1339.68	0.00	0.000	0.000	0.761
2.00	-21.80	-11.79	0.00	-975.72	0.00	975.72	1490.10	745.05	2187.51	1339.68	0.02	-0.084	0.000	0.743
4.00	-21.39	-11.67	0.00	-952.14	0.00	952.14	1490.10	745.05	2187.51	1339.68	0.07	-0.167	0.000	0.725
6.00	-20.98	-11.54	0.00	-928.81	0.00	928.81	1490.10	745.05	2187.51	1339.68	0.16	-0.247	0.000	0.708
8.00	-20.57	-11.41	0.00	-905.73	0.00	905.73	1490.10	745.05	2187.51	1339.68	0.28	-0.325	0.000	0.690
10.00	-20.16	-11.29	0.00	-882.90	0.00	882.90	1490.10	745.05	2187.51	1339.68	0.43	-0.402	0.000	0.673
12.00	-19.75	-11.16	0.00	-860.33	0.00	860.33	1490.10	745.05	2187.51	1339.68	0.62	-0.476	0.000	0.656
14.00	-19.34	-11.02	0.00	-838.02	0.00	838.02	1490.10	745.05	2187.51	1339.68	0.83	-0.549	0.000	0.639
16.00	-18.93	-10.89	0.00	-815.97	0.00	815.97	1490.10	745.05	2187.51	1339.68	1.08	-0.619	0.000	0.622
18.00	-18.53	-10.75	0.00	-794.19	0.00	794.19	1490.10	745.05	2187.51	1339.68	1.35	-0.688	0.000	0.605
20.00	-18.12	-10.60	0.00	-772.70	0.00	772.70	1490.10	745.05	2187.51	1339.68	1.65	-0.755	0.000	0.589
20.00	-18.12	-10.60	0.00	-772.70	0.00	772.70	1311.06	655.53	1597.15	948.43	1.65	-0.755	0.000	0.829
22.00	-17.77	-10.49	0.00	-751.50	0.00	751.50	1311.06	655.53	1597.15	948.43	1.98	-0.820	0.000	0.806
24.00	-17.41	-10.37	0.00	-730.53	0.00	730.53	1311.06	655.53	1597.15	948.43	2.35	-0.930	0.000	0.784
26.00	-17.06	-10.26	0.00	-709.79	0.00	709.79	1311.06	655.53	1597.15	948.43	2.76	-1.037	0.000	0.762
28.00	-16.71	-10.13	0.00	-689.28	0.00	689.28	1311.06	655.53	1597.15	948.43	3.22	-1.141	0.000	0.740
30.00	-16.35	-10.01	0.00	-669.01	0.00	669.01	1311.06	655.53	1597.15	948.43	3.72	-1.242	0.000	0.718
32.00	-16.00	-9.88	0.00	-648.99	0.00	648.99	1311.06	655.53	1597.15	948.43	4.26	-1.340	0.000	0.697
34.00	-15.65	-9.74	0.00	-629.24	0.00	629.24	1311.06	655.53	1597.15	948.43	4.84	-1.434	0.000	0.676
36.00	-15.30	-9.61	0.00	-609.75	0.00	609.75	1311.06	655.53	1597.15	948.43	5.46	-1.526	0.000	0.655
38.00	-14.96	-9.47	0.00	-590.53	0.00	590.53	1311.06	655.53	1597.15	948.43	6.12	-1.616	0.000	0.634
40.00	-14.61	-9.32	0.00	-571.60	0.00	571.60	1311.06	655.53	1597.15	948.43	6.82	-1.702	0.000	0.614
42.00	-14.26	-9.17	0.00	-552.96	0.00	552.96	1311.06	655.53	1597.15	948.43	7.55	-1.785	0.000	0.594
44.00	-13.92	-9.02	0.00	-534.61	0.00	534.61	1311.06	655.53	1597.15	948.43	8.31	-1.866	0.000	0.574
46.00	-13.57	-8.87	0.00	-516.56	0.00	516.56	1311.06	655.53	1597.15	948.43	9.11	-1.944	0.000	0.555
48.00	-13.23	-8.71	0.00	-498.82	0.00	498.82	1311.06	655.53	1597.15	948.43	9.94	-2.020	0.000	0.536
50.00	-12.89	-8.55	0.00	-481.40	0.00	481.40	1311.06	655.53	1597.15	948.43	10.80	-2.092	0.000	0.518
50.00	-12.89	-8.55	0.00	-481.40	0.00	481.40	1052.07	526.04	1018.84	624.04	10.80	-2.092	0.000	0.784
52.00	-12.60	-8.43	0.00	-464.29	0.00	464.29	1052.07	526.04	1018.84	624.04	11.69	-2.163	0.000	0.756
54.00	-12.30	-8.32	0.00	-447.43	0.00	447.43	1052.07	526.04	1018.84	624.04	12.63	-2.296	0.000	0.729
56.00	-12.01	-8.20	0.00	-430.79	0.00	430.79	1052.07	526.04	1018.84	624.04	13.62	-2.425	0.000	0.702
58.00	-11.72	-8.08	0.00	-414.40	0.00	414.40	1052.07	526.04	1018.84	624.04	14.66	-2.548	0.000	0.675
60.00	-11.43	-7.95	0.00	-398.25	0.00	398.25	1052.07	526.04	1018.84	624.04	15.75	-2.667	0.000	0.649
62.00	-11.14	-7.82	0.00	-382.35	0.00	382.35	1052.07	526.04	1018.84	624.04	16.89	-2.782	0.000	0.624
64.00	-10.85	-7.69	0.00	-366.71	0.00	366.71	1052.07	526.04	1018.84	624.04	18.08	-2.891	0.000	0.598
66.00	-10.57	-7.56	0.00	-351.33	0.00	351.33	1052.07	526.04	1018.84	624.04	19.31	-2.996	0.000	0.573
68.00	-10.28	-7.42	0.00	-336.22	0.00	336.22	1052.07	526.04	1018.84	624.04	20.59	-3.097	0.000	0.549
70.00	-10.00	-7.28	0.00	-321.38	0.00	321.38	1052.07	526.04	1018.84	624.04	21.91	-3.193	0.000	0.525
72.00	-9.71	-7.14	0.00	-306.82	0.00	306.82	1052.07	526.04	1018.84	624.04	23.26	-3.285	0.000	0.501
74.00	-9.43	-6.99	0.00	-292.54	0.00	292.54	1052.07	526.04	1018.84	624.04	24.66	-3.373	0.000	0.478
76.00	-9.15	-6.85	0.00	-278.56	0.00	278.56	1052.07	526.04	1018.84	624.04	26.09	-3.457	0.000	0.455
78.00	-8.87	-6.70	0.00	-264.86	0.00	264.86	1052.07	526.04	1018.84	624.04	27.55	-3.536	0.000	0.433
80.00	-8.59	-6.55	0.00	-251.47	0.00	251.47	1052.07	526.04	1018.84	624.04	29.05	-3.612	0.000	0.411
80.00	-8.59	-6.55	0.00	-251.47	0.00	251.47	1052.07	526.04	1018.84	624.04	29.05	-3.612	0.000	0.411
82.00	-8.31	-6.39	0.00	-238.37	0.00	238.37	1052.07	526.04	1018.84	624.04	30.58	-3.683	0.000	0.390
84.00	-8.04	-6.24	0.00	-225.59	0.00	225.59	1052.07	526.04	1018.84	624.04	32.13	-3.751	0.000	0.369
86.00	-7.76	-6.08	0.00	-213.11	0.00	213.11	1052.07	526.04	1018.84	624.04	33.72	-3.816	0.000	0.349
88.00	-7.48	-5.92	0.00	-200.94	0.00	200.94	1052.07	526.04	1018.84	624.04	35.33	-3.876	0.000	0.329

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

90.00	-7.21	-5.76	0.00	-189.09	0.00	189.09	1052.07	526.04	1018.84	624.04	36.96	-3.933	0.000	0.310
92.00	-6.93	-5.60	0.00	-177.56	0.00	177.56	1052.07	526.04	1018.84	624.04	38.62	-3.987	0.000	0.291
94.00	-6.66	-5.44	0.00	-166.36	0.00	166.36	1052.07	526.04	1018.84	624.04	40.30	-4.037	0.000	0.273
96.00	-6.39	-5.27	0.00	-155.48	0.00	155.48	1052.07	526.04	1018.84	624.04	42.00	-4.084	0.000	0.255
98.00	-6.12	-5.11	0.00	-144.93	0.00	144.93	1052.07	526.04	1018.84	624.04	43.72	-4.128	0.000	0.238
100.00	-5.84	-4.94	0.00	-134.71	0.00	134.71	1052.07	526.04	1018.84	624.04	45.46	-4.169	0.000	0.222
102.00	-5.57	-4.77	0.00	-124.83	0.00	124.83	1052.07	526.04	1018.84	624.04	47.21	-4.207	0.000	0.205
104.00	-5.30	-4.60	0.00	-115.29	0.00	115.29	1052.07	526.04	1018.84	624.04	48.98	-4.243	0.000	0.190
106.00	-5.03	-4.43	0.00	-106.08	0.00	106.08	1052.07	526.04	1018.84	624.04	50.76	-4.275	0.000	0.175
108.00	-4.76	-4.26	0.00	-97.22	0.00	97.22	1052.07	526.04	1018.84	624.04	52.56	-4.305	0.000	0.160
110.00	-4.45	-3.82	0.00	-88.70	0.00	88.70	1052.07	526.04	1018.84	624.04	54.36	-4.332	0.000	0.146
110.00	-4.45	-3.82	0.00	-88.70	0.00	88.70	1305.53	652.76	129.19	160.41	54.36	-4.332	0.000	0.556
112.00	-4.03	-3.77	0.00	-81.07	0.00	81.07	1305.53	652.76	129.19	160.41	56.18	-4.357	0.000	0.509
114.00	-3.61	-3.72	0.00	-73.54	0.00	73.54	1305.53	652.76	129.19	160.41	58.14	-4.992	0.000	0.461
115.00	-3.29	-3.68	0.00	-69.82	0.00	69.82	1305.53	652.76	129.19	160.41	59.22	-5.286	0.000	0.438
116.00	-3.07	-3.67	0.00	-66.14	0.00	66.14	1305.53	652.76	129.19	160.41	60.35	-5.565	0.000	0.415
118.00	-2.65	-3.60	0.00	-58.81	0.00	58.81	1305.53	652.76	129.19	160.41	62.79	-6.078	0.000	0.369
120.00	-2.20	-2.86	0.00	-51.60	0.00	51.60	1305.53	652.76	129.19	160.41	65.42	-6.531	0.000	0.323
120.00	-2.20	-2.86	0.00	-51.60	0.00	51.60	317.71	158.85	76.59	52.28	65.42	-6.531	0.000	0.994
122.00	-2.00	-2.81	0.00	-45.88	0.00	45.88	317.71	158.85	76.59	52.28	68.24	-6.931	0.000	0.884
124.00	-1.81	-2.76	0.00	-40.26	0.00	40.26	317.71	158.85	76.59	52.28	71.27	-7.539	0.000	0.776
125.00	-1.49	-2.70	0.00	-37.50	0.00	37.50	317.71	158.85	76.59	52.28	72.87	-7.813	0.000	0.722
126.00	-1.40	-2.68	0.00	-34.80	0.00	34.80	317.71	158.85	76.59	52.28	74.53	-8.068	0.000	0.670
128.00	-1.22	-2.62	0.00	-29.44	0.00	29.44	317.71	158.85	76.59	52.28	77.99	-8.522	0.000	0.567
130.00	-1.04	-1.87	0.00	-24.20	0.00	24.20	317.71	158.85	76.59	52.28	81.63	-8.900	0.000	0.466
130.00	-1.04	-1.87	0.00	-24.20	0.00	24.20	317.71	158.85	76.59	52.28	81.63	-8.900	0.000	0.466
132.00	-0.94	-1.81	0.00	-20.47	0.00	20.47	317.71	158.85	76.59	52.28	85.41	-9.215	0.000	0.395
134.00	-0.84	-1.76	0.00	-16.84	0.00	16.84	317.71	158.85	76.59	52.28	89.31	-9.478	0.000	0.325
135.00	-0.73	-1.72	0.00	-15.08	0.00	15.08	317.71	158.85	76.59	52.28	91.30	-9.591	0.000	0.291
136.00	-0.69	-1.69	0.00	-13.37	0.00	13.37	317.71	158.85	76.59	52.28	93.31	-9.691	0.000	0.258
138.00	-0.61	-1.63	0.00	-9.99	0.00	9.99	317.71	158.85	76.59	52.28	97.39	-9.856	0.000	0.193
140.00	-0.55	-0.81	0.00	-6.73	0.00	6.73	317.71	158.85	76.59	52.28	101.52	-9.974	0.000	0.130
140.00	-0.55	-0.81	0.00	-6.73	0.00	6.73	317.71	158.85	76.59	52.28	101.52	-9.974	0.000	0.130
142.00	-0.47	-0.75	0.00	-5.12	0.00	5.12	317.71	158.85	76.59	52.28	105.69	-10.058	0.000	0.099
144.00	-0.39	-0.69	0.00	-3.63	0.00	3.63	317.71	158.85	76.59	52.28	109.90	-10.120	0.000	0.071
146.00	-0.32	-0.63	0.00	-2.25	0.00	2.25	317.71	158.85	76.59	52.28	114.13	-10.161	0.000	0.044
147.00	-0.06	-0.56	0.00	-1.62	0.00	1.62	317.71	158.85	76.59	52.28	116.24	-10.175	0.000	0.031
148.00	-0.04	-0.53	0.00	-1.06	0.00	1.06	317.71	158.85	76.59	52.28	118.37	-10.184	0.000	0.020
150.00	0.00	-0.52	0.00	0.00	0.00	0.00	317.71	158.85	76.59	52.28	122.61	-10.192	0.000	0.000

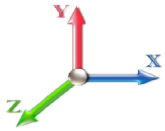
Wind Loading - Shaft

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 39

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
4.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
6.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
8.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
10.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
12.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
14.00		1.00	0.85	24.112	26.52	298.71	0.600	0.000	2.00	6.000	3.60	152.8	0.0	257.1
16.00		1.00	0.86	24.410	26.85	300.55	0.600	0.000	2.00	6.000	3.60	154.7	0.0	257.1
18.00		1.00	0.88	25.022	27.52	304.30	0.600	0.000	2.00	6.000	3.60	158.5	0.0	257.1
20.00	Top - Section 1	1.00	0.90	25.584	28.14	307.70	0.600	0.000	2.00	6.000	3.60	162.1	0.0	257.1
22.00		1.00	0.92	26.102	28.71	259.00	0.600	0.000	2.00	5.000	3.00	137.8	0.0	213.8
24.00		1.00	0.94	26.585	29.24	261.38	0.600	0.000	2.00	5.000	3.00	140.4	0.0	213.8
26.00		1.00	0.95	27.037	29.74	263.59	0.600	0.000	2.00	5.000	3.00	142.8	0.0	213.8
28.00		1.00	0.97	27.462	30.21	265.66	0.600	0.000	2.00	5.000	3.00	145.0	0.0	213.8
30.00		1.00	0.98	27.863	30.65	267.59	0.600	0.000	2.00	5.000	3.00	147.1	0.0	213.8
32.00		1.00	1.00	28.245	31.07	269.42	0.600	0.000	2.00	5.000	3.00	149.1	0.0	213.8
34.00		1.00	1.01	28.607	31.47	271.14	0.600	0.000	2.00	5.000	3.00	151.0	0.0	213.8
36.00		1.00	1.02	28.954	31.85	272.78	0.600	0.000	2.00	5.000	3.00	152.9	0.0	213.8
38.00		1.00	1.03	29.285	32.21	274.34	0.600	0.000	2.00	5.000	3.00	154.6	0.0	213.8
40.00		1.00	1.04	29.603	32.56	275.82	0.600	0.000	2.00	5.000	3.00	156.3	0.0	213.8
42.00		1.00	1.05	29.909	32.90	277.24	0.600	0.000	2.00	5.000	3.00	157.9	0.0	213.8
44.00		1.00	1.06	30.203	33.22	278.60	0.600	0.000	2.00	5.000	3.00	159.5	0.0	213.8
46.00		1.00	1.07	30.487	33.54	279.91	0.600	0.000	2.00	5.000	3.00	161.0	0.0	213.8
48.00		1.00	1.08	30.761	33.84	281.17	0.600	0.000	2.00	5.000	3.00	162.4	0.0	213.8
50.00	Top - Section 2	1.00	1.09	31.027	34.13	282.38	0.600	0.000	2.00	5.000	3.00	163.8	0.0	213.8
52.00		1.00	1.10	31.284	34.41	226.84	0.600	0.000	2.00	4.000	2.40	132.1	0.0	170.5
54.00		1.00	1.11	31.534	34.69	227.74	0.600	0.000	2.00	4.000	2.40	133.2	0.0	170.5
56.00		1.00	1.12	31.776	34.95	228.61	0.600	0.000	2.00	4.000	2.40	134.2	0.0	170.5
58.00		1.00	1.13	32.012	35.21	229.46	0.600	0.000	2.00	4.000	2.40	135.2	0.0	170.5
60.00		1.00	1.14	32.241	35.47	230.28	0.600	0.000	2.00	4.000	2.40	136.2	0.0	170.5
62.00		1.00	1.14	32.464	35.71	231.07	0.600	0.000	2.00	4.000	2.40	137.1	0.0	170.5
64.00		1.00	1.15	32.682	35.95	231.85	0.600	0.000	2.00	4.000	2.40	138.0	0.0	170.5
66.00		1.00	1.16	32.894	36.18	232.60	0.600	0.000	2.00	4.000	2.40	138.9	0.0	170.5
68.00		1.00	1.17	33.102	36.41	233.33	0.600	0.000	2.00	4.000	2.40	139.8	0.0	170.5
70.00		1.00	1.17	33.305	36.63	234.05	0.600	0.000	2.00	4.000	2.40	140.7	0.0	170.5
72.00		1.00	1.18	33.503	36.85	234.74	0.600	0.000	2.00	4.000	2.40	141.5	0.0	170.5
74.00		1.00	1.19	33.696	37.07	235.42	0.600	0.000	2.00	4.000	2.40	142.3	0.0	170.5
76.00		1.00	1.19	33.886	37.27	236.08	0.600	0.000	2.00	4.000	2.40	143.1	0.0	170.5
78.00		1.00	1.20	34.072	37.48	236.73	0.600	0.000	2.00	4.000	2.40	143.9	0.0	170.5
80.00	Top - Section 3	1.00	1.21	34.254	37.68	237.36	0.600	0.000	2.00	4.000	2.40	144.7	0.0	170.5
82.00		1.00	1.21	34.433	37.88	237.98	0.600	0.000	2.00	4.000	2.40	145.4	0.0	170.5
84.00		1.00	1.22	34.608	38.07	238.58	0.600	0.000	2.00	4.000	2.40	146.2	0.0	170.5
86.00		1.00	1.23	34.780	38.26	239.17	0.600	0.000	2.00	4.000	2.40	146.9	0.0	170.5
88.00		1.00	1.23	34.948	38.44	239.75	0.600	0.000	2.00	4.000	2.40	147.6	0.0	170.5
90.00		1.00	1.24	35.114	38.63	240.32	0.600	0.000	2.00	4.000	2.40	148.3	0.0	170.5
92.00		1.00	1.24	35.277	38.80	240.88	0.600	0.000	2.00	4.000	2.40	149.0	0.0	170.5

Wind Loading - Shaft

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

94.00		1.00	1.25	35.437	38.98	241.42	0.600	0.000	2.00	4.000	2.40	149.7	0.0	170.5
96.00		1.00	1.25	35.594	39.15	241.96	0.600	0.000	2.00	4.000	2.40	150.4	0.0	170.5
98.00		1.00	1.26	35.749	39.32	242.48	0.600	0.000	2.00	4.000	2.40	151.0	0.0	170.5
100.00		1.00	1.27	35.902	39.49	243.00	0.600	0.000	2.00	4.000	2.40	151.6	0.0	170.5
102.00		1.00	1.27	36.052	39.66	243.51	0.600	0.000	2.00	4.000	2.40	152.3	0.0	170.5
104.00		1.00	1.28	36.199	39.82	244.00	0.600	0.000	2.00	4.000	2.40	152.9	0.0	170.5
106.00		1.00	1.28	36.345	39.98	244.49	0.600	0.000	2.00	4.000	2.40	153.5	0.0	170.5
108.00		1.00	1.29	36.488	40.14	244.98	0.600	0.000	2.00	4.000	2.40	154.1	0.0	170.5
110.00	Top - Section 4	1.00	1.29	36.629	40.29	245.45	0.600	0.000	2.00	4.000	2.40	154.7	0.0	170.5
112.00		1.00	1.30	36.768	40.45	69.16	0.600	0.000	2.00	1.125	0.67	43.7	0.0	211.5
114.00		1.00	1.30	36.906	40.60	69.29	0.600	0.000	2.00	1.125	0.67	43.8	0.0	211.5
115.00	Appurtenance(s)	1.00	1.30	36.974	40.67	69.36	0.600	0.000	1.00	0.563	0.34	22.0	0.0	105.8
116.00		1.00	1.31	37.041	40.75	69.42	0.600	0.000	1.00	0.563	0.34	22.0	0.0	105.8
118.00		1.00	1.31	37.175	40.89	69.54	0.600	0.000	2.00	1.125	0.67	44.2	0.0	211.5
120.00	Top - Section 5	1.00	1.32	37.306	41.04	69.67	0.600	0.000	2.00	1.125	0.67	44.3	0.0	211.5
122.00		1.00	1.32	37.436	41.18	68.50	0.600	0.000	2.00	1.104	0.66	43.7	0.0	51.5
124.00		1.00	1.32	37.565	41.32	68.61	0.600	0.000	2.00	1.104	0.66	43.8	0.0	51.5
125.00	Appurtenance(s)	1.00	1.33	37.628	41.39	68.67	0.600	0.000	1.00	0.552	0.33	21.9	0.0	25.7
126.00		1.00	1.33	37.692	41.46	68.73	0.600	0.000	1.00	0.552	0.33	22.0	0.0	25.7
128.00		1.00	1.33	37.817	41.60	68.84	0.600	0.000	2.00	1.104	0.66	44.1	0.0	51.5
130.00	Top - Section 6	1.00	1.34	37.940	41.73	68.96	0.600	0.000	2.00	1.104	0.66	44.2	0.0	51.5
132.00		1.00	1.34	38.063	41.87	69.07	0.600	0.000	2.00	1.104	0.66	44.4	0.0	51.5
134.00		1.00	1.35	38.183	42.00	69.18	0.600	0.000	2.00	1.104	0.66	44.5	0.0	51.5
135.00	Appurtenance(s)	1.00	1.35	38.243	42.07	69.23	0.600	0.000	1.00	0.552	0.33	22.3	0.0	25.7
136.00		1.00	1.35	38.303	42.13	69.28	0.600	0.000	1.00	0.552	0.33	22.3	0.0	25.7
138.00		1.00	1.35	38.420	42.26	69.39	0.600	0.000	2.00	1.104	0.66	44.8	0.0	51.5
140.00	Top - Section 7	1.00	1.36	38.537	42.39	69.50	0.600	0.000	2.00	1.104	0.66	44.9	0.0	51.5
142.00		1.00	1.36	38.652	42.52	69.60	0.600	0.000	2.00	1.104	0.66	45.1	0.0	51.5
144.00		1.00	1.37	38.766	42.64	69.70	0.600	0.000	2.00	1.104	0.66	45.2	0.0	51.5
146.00		1.00	1.37	38.879	42.77	69.80	0.600	0.000	2.00	1.104	0.66	45.3	0.0	51.5
147.00	Appurtenance(s)	1.00	1.37	38.935	42.83	69.85	0.600	0.000	1.00	0.552	0.33	22.7	0.0	25.7
148.00		1.00	1.37	38.990	42.89	69.90	0.600	0.000	1.00	0.552	0.33	22.7	0.0	25.7
150.00	Appurtenance(s)	1.00	1.38	39.101	43.01	70.00	0.600	0.000	2.00	1.104	0.66	45.6	0.0	51.5
								Totals:	**150.00**			**9,050.8**		**12,721.3**

Discrete Appurtenance Forces

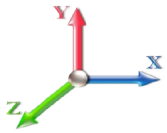
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 39

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	34" Canister	1	39.101	43.011	1.00	1.00	6.85	45.00	0.000	0.000	471.40	0.00	0.00
2	147.00	DPO-7126Y-0-T1	3	38.935	42.828	0.00	1.00	0.00	34.02	0.000	0.000	0.00	0.00	0.00
3	147.00	KIT-FD9R6004/1C-DL	3	38.935	42.828	0.00	1.00	0.00	8.37	0.000	0.000	0.00	0.00	0.00
4	147.00	DHHTT65B-3XR	3	38.935	42.828	0.00	1.00	0.00	122.58	0.000	0.000	0.00	0.00	0.00
5	140.00	34" Canister & 24"	1	38.537	42.391	1.00	1.00	11.19	90.00	0.000	0.000	758.96	0.00	0.00
6	135.00	APXV18-206516L	3	38.243	42.067	0.00	1.00	0.00	50.49	0.000	0.000	0.00	0.00	0.00
7	130.00	24" Canister & 30"	1	37.940	41.734	1.00	1.00	10.19	90.00	0.000	0.000	680.44	0.00	0.00
8	125.00	CM1007-DBPXBC-xxx	6	37.628	41.391	0.00	1.00	0.00	35.10	0.000	0.000	0.00	0.00	0.00
9	125.00	ETW190VS12UB	3	37.628	41.391	0.00	1.00	0.00	29.70	0.000	0.000	0.00	0.00	0.00
10	125.00	AMXCD1465	3	37.628	41.391	0.00	1.00	0.00	98.28	0.000	0.000	0.00	0.00	0.00
11	120.00	30" Canister & 24"	1	37.306	41.037	1.00	1.00	10.16	90.00	0.000	0.000	667.10	0.00	0.00
12	115.00	742 351	3	36.974	40.671	0.00	1.00	0.00	80.46	0.000	0.000	0.00	0.00	0.00
13	110.00	24" Canister	1	36.629	40.292	1.00	1.00	4.13	45.00	0.000	0.000	266.25	0.00	0.00
							Totals:		**819.00**			**2,844.15**		

Total Applied Force Summary

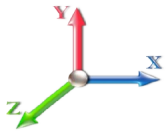
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 39

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
2.00		152.77	296.81	0.00	0.00
4.00		152.77	296.81	0.00	0.00
6.00		152.77	296.81	0.00	0.00
8.00		152.77	296.81	0.00	0.00
10.00		152.77	296.81	0.00	0.00
12.00		152.77	296.81	0.00	0.00
14.00		152.77	296.81	0.00	0.00
16.00		154.66	296.81	0.00	0.00
18.00		158.54	296.81	0.00	0.00
20.00		162.10	296.81	0.00	0.00
22.00		137.82	253.51	0.00	0.00
24.00		140.37	253.51	0.00	0.00
26.00		142.75	253.51	0.00	0.00
28.00		145.00	253.51	0.00	0.00
30.00		147.12	253.51	0.00	0.00
32.00		149.13	253.51	0.00	0.00
34.00		151.05	253.51	0.00	0.00
36.00		152.88	253.51	0.00	0.00
38.00		154.63	253.51	0.00	0.00
40.00		156.30	253.51	0.00	0.00
42.00		157.92	253.51	0.00	0.00
44.00		159.47	253.51	0.00	0.00
46.00		160.97	253.51	0.00	0.00
48.00		162.42	253.51	0.00	0.00
50.00		163.82	253.51	0.00	0.00
52.00		132.14	210.22	0.00	0.00
54.00		133.20	210.22	0.00	0.00
56.00		134.22	210.22	0.00	0.00
58.00		135.22	210.22	0.00	0.00
60.00		136.19	210.22	0.00	0.00
62.00		137.13	210.22	0.00	0.00
64.00		138.05	210.22	0.00	0.00
66.00		138.95	210.22	0.00	0.00
68.00		139.82	210.22	0.00	0.00
70.00		140.68	210.22	0.00	0.00
72.00		141.52	210.22	0.00	0.00
74.00		142.33	210.22	0.00	0.00
76.00		143.14	210.22	0.00	0.00
78.00		143.92	210.22	0.00	0.00
80.00		144.69	210.22	0.00	0.00
82.00		145.44	210.22	0.00	0.00
84.00		146.18	210.22	0.00	0.00
86.00		146.91	210.22	0.00	0.00
88.00		147.62	210.22	0.00	0.00
90.00		148.32	210.22	0.00	0.00
92.00		149.01	210.22	0.00	0.00

Total Applied Force Summary

Structure:	CT01493-S-SBA		**Code:**	EIA/TIA-222-G	3/1/2019
Site Name:	North Stonington 2 CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Tower Engineering Solutions

94.00		149.69	210.22	0.00	0.00
96.00		150.35	210.22	0.00	0.00
98.00		151.00	210.22	0.00	0.00
100.00		151.65	210.22	0.00	0.00
102.00		152.28	210.22	0.00	0.00
104.00		152.91	210.22	0.00	0.00
106.00		153.52	210.22	0.00	0.00
108.00		154.13	210.22	0.00	0.00
110.00	(1) attachments	420.97	255.22	0.00	0.00
112.00		43.68	300.16	0.00	0.00
114.00		43.84	300.16	0.00	0.00
115.00	(3) attachments	21.96	230.54	0.00	0.00
116.00		22.00	147.22	0.00	0.00
118.00		44.16	294.43	0.00	0.00
120.00	(1) attachments	711.42	384.43	0.00	0.00
122.00		43.65	134.37	0.00	0.00
124.00		43.80	134.37	0.00	0.00
125.00	(12) attachments	21.94	230.27	0.00	0.00
126.00		21.97	61.57	0.00	0.00
128.00		44.09	123.14	0.00	0.00
130.00	(1) attachments	724.68	213.14	0.00	0.00
132.00		44.38	74.27	0.00	0.00
134.00		44.52	74.27	0.00	0.00
135.00	(3) attachments	22.30	87.62	0.00	0.00
136.00		22.33	31.52	0.00	0.00
138.00		44.80	63.04	0.00	0.00
140.00	(1) attachments	803.90	153.04	0.00	0.00
142.00		45.07	63.04	0.00	0.00
144.00		45.20	63.04	0.00	0.00
146.00		45.33	63.04	0.00	0.00
147.00	(9) attachments	22.70	196.49	0.00	0.00
148.00		22.73	25.74	0.00	0.00
150.00	(1) attachments	516.99	96.48	0.00	0.00
	Totals:	**11,894.98**	**16,667.70**	**0.00**	**0.00**

Calculated Forces

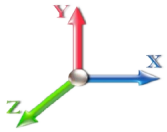
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 108 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 39

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	-16.66	-11.91	0.00	-985.09	0.00	985.09	1490.10	745.05	2187.51	1339.68	0.00	0.000	0.000	0.747
2.00	-16.35	-11.78	0.00	-961.28	0.00	961.28	1490.10	745.05	2187.51	1339.68	0.02	-0.083	0.000	0.729
4.00	-16.03	-11.65	0.00	-937.72	0.00	937.72	1490.10	745.05	2187.51	1339.68	0.07	-0.164	0.000	0.711
6.00	-15.72	-11.51	0.00	-914.43	0.00	914.43	1490.10	745.05	2187.51	1339.68	0.16	-0.243	0.000	0.693
8.00	-15.41	-11.38	0.00	-891.40	0.00	891.40	1490.10	745.05	2187.51	1339.68	0.27	-0.320	0.000	0.676
10.00	-15.10	-11.25	0.00	-868.64	0.00	868.64	1490.10	745.05	2187.51	1339.68	0.43	-0.396	0.000	0.659
12.00	-14.79	-11.11	0.00	-846.15	0.00	846.15	1490.10	745.05	2187.51	1339.68	0.61	-0.469	0.000	0.642
14.00	-14.48	-10.97	0.00	-823.94	0.00	823.94	1490.10	745.05	2187.51	1339.68	0.82	-0.540	0.000	0.625
16.00	-14.17	-10.83	0.00	-801.99	0.00	801.99	1490.10	745.05	2187.51	1339.68	1.06	-0.609	0.000	0.608
18.00	-13.86	-10.68	0.00	-780.33	0.00	780.33	1490.10	745.05	2187.51	1339.68	1.33	-0.677	0.000	0.592
20.00	-13.56	-10.53	0.00	-758.96	0.00	758.96	1490.10	745.05	2187.51	1339.68	1.63	-0.743	0.000	0.576
20.00	-13.56	-10.53	0.00	-758.96	0.00	758.96	1311.06	655.53	1597.15	948.43	1.63	-0.743	0.000	0.811
22.00	-13.29	-10.41	0.00	-737.89	0.00	737.89	1311.06	655.53	1597.15	948.43	1.95	-0.807	0.000	0.788
24.00	-13.02	-10.29	0.00	-717.07	0.00	717.07	1311.06	655.53	1597.15	948.43	2.31	-0.915	0.000	0.766
26.00	-12.75	-10.17	0.00	-696.48	0.00	696.48	1311.06	655.53	1597.15	948.43	2.72	-1.020	0.000	0.744
28.00	-12.48	-10.04	0.00	-676.14	0.00	676.14	1311.06	655.53	1597.15	948.43	3.17	-1.122	0.000	0.723
30.00	-12.22	-9.91	0.00	-656.06	0.00	656.06	1311.06	655.53	1597.15	948.43	3.66	-1.220	0.000	0.701
32.00	-11.95	-9.78	0.00	-636.24	0.00	636.24	1311.06	655.53	1597.15	948.43	4.19	-1.316	0.000	0.680
34.00	-11.68	-9.64	0.00	-616.69	0.00	616.69	1311.06	655.53	1597.15	948.43	4.76	-1.409	0.000	0.659
36.00	-11.42	-9.50	0.00	-597.42	0.00	597.42	1311.06	655.53	1597.15	948.43	5.37	-1.500	0.000	0.639
38.00	-11.16	-9.35	0.00	-578.43	0.00	578.43	1311.06	655.53	1597.15	948.43	6.02	-1.587	0.000	0.619
40.00	-10.89	-9.20	0.00	-559.73	0.00	559.73	1311.06	655.53	1597.15	948.43	6.70	-1.671	0.000	0.599
42.00	-10.63	-9.05	0.00	-541.32	0.00	541.32	1311.06	655.53	1597.15	948.43	7.42	-1.753	0.000	0.579
44.00	-10.37	-8.90	0.00	-523.22	0.00	523.22	1311.06	655.53	1597.15	948.43	8.17	-1.832	0.000	0.560
46.00	-10.11	-8.74	0.00	-505.42	0.00	505.42	1311.06	655.53	1597.15	948.43	8.95	-1.909	0.000	0.541
48.00	-9.85	-8.58	0.00	-487.93	0.00	487.93	1311.06	655.53	1597.15	948.43	9.77	-1.982	0.000	0.522
50.00	-9.60	-8.42	0.00	-470.76	0.00	470.76	1311.06	655.53	1597.15	948.43	10.62	-2.054	0.000	0.504
50.00	-9.60	-8.42	0.00	-470.76	0.00	470.76	1052.07	526.04	1018.84	624.04	10.62	-2.054	0.000	0.764
52.00	-9.38	-8.30	0.00	-453.92	0.00	453.92	1052.07	526.04	1018.84	624.04	11.49	-2.122	0.000	0.737
54.00	-9.15	-8.18	0.00	-437.32	0.00	437.32	1052.07	526.04	1018.84	624.04	12.41	-2.253	0.000	0.710
56.00	-8.93	-8.06	0.00	-420.96	0.00	420.96	1052.07	526.04	1018.84	624.04	13.38	-2.378	0.000	0.683
58.00	-8.71	-7.93	0.00	-404.84	0.00	404.84	1052.07	526.04	1018.84	624.04	14.40	-2.499	0.000	0.657
60.00	-8.49	-7.80	0.00	-388.98	0.00	388.98	1052.07	526.04	1018.84	624.04	15.47	-2.615	0.000	0.632
62.00	-8.27	-7.67	0.00	-373.38	0.00	373.38	1052.07	526.04	1018.84	624.04	16.59	-2.727	0.000	0.606
64.00	-8.06	-7.54	0.00	-358.04	0.00	358.04	1052.07	526.04	1018.84	624.04	17.75	-2.834	0.000	0.582
66.00	-7.84	-7.40	0.00	-342.96	0.00	342.96	1052.07	526.04	1018.84	624.04	18.96	-2.937	0.000	0.557
68.00	-7.63	-7.26	0.00	-328.16	0.00	328.16	1052.07	526.04	1018.84	624.04	20.21	-3.035	0.000	0.533
70.00	-7.41	-7.12	0.00	-313.63	0.00	313.63	1052.07	526.04	1018.84	624.04	21.51	-3.129	0.000	0.510
72.00	-7.20	-6.98	0.00	-299.38	0.00	299.38	1052.07	526.04	1018.84	624.04	22.83	-3.219	0.000	0.487
74.00	-6.99	-6.84	0.00	-285.42	0.00	285.42	1052.07	526.04	1018.84	624.04	24.20	-3.304	0.000	0.464
76.00	-6.78	-6.69	0.00	-271.74	0.00	271.74	1052.07	526.04	1018.84	624.04	25.60	-3.386	0.000	0.442
78.00	-6.57	-6.55	0.00	-258.36	0.00	258.36	1052.07	526.04	1018.84	624.04	27.04	-3.463	0.000	0.420
80.00	-6.36	-6.40	0.00	-245.27	0.00	245.27	1052.07	526.04	1018.84	624.04	28.50	-3.537	0.000	0.399
80.00	-6.36	-6.40	0.00	-245.27	0.00	245.27	1052.07	526.04	1018.84	624.04	28.50	-3.537	0.000	0.399
82.00	-6.15	-6.24	0.00	-232.48	0.00	232.48	1052.07	526.04	1018.84	624.04	30.00	-3.607	0.000	0.379
84.00	-5.94	-6.09	0.00	-219.99	0.00	219.99	1052.07	526.04	1018.84	624.04	31.52	-3.673	0.000	0.358
86.00	-5.74	-5.94	0.00	-207.80	0.00	207.80	1052.07	526.04	1018.84	624.04	33.07	-3.736	0.000	0.339
88.00	-5.53	-5.78	0.00	-195.93	0.00	195.93	1052.07	526.04	1018.84	624.04	34.65	-3.795	0.000	0.319

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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90.00	-5.32	-5.63	0.00	-184.36	0.00	184.36	1052.07	526.04	1018.84	624.04	36.25	-3.851	0.000	0.301
92.00	-5.12	-5.47	0.00	-173.11	0.00	173.11	1052.07	526.04	1018.84	624.04	37.87	-3.903	0.000	0.282
94.00	-4.92	-5.31	0.00	-162.17	0.00	162.17	1052.07	526.04	1018.84	624.04	39.52	-3.952	0.000	0.265
96.00	-4.71	-5.15	0.00	-151.56	0.00	151.56	1052.07	526.04	1018.84	624.04	41.18	-3.998	0.000	0.247
98.00	-4.51	-4.98	0.00	-141.27	0.00	141.27	1052.07	526.04	1018.84	624.04	42.86	-4.041	0.000	0.231
100.00	-4.31	-4.82	0.00	-131.30	0.00	131.30	1052.07	526.04	1018.84	624.04	44.56	-4.081	0.000	0.215
102.00	-4.11	-4.66	0.00	-121.65	0.00	121.65	1052.07	526.04	1018.84	624.04	46.28	-4.118	0.000	0.199
104.00	-3.90	-4.49	0.00	-112.34	0.00	112.34	1052.07	526.04	1018.84	624.04	48.01	-4.152	0.000	0.184
106.00	-3.70	-4.33	0.00	-103.36	0.00	103.36	1052.07	526.04	1018.84	624.04	49.76	-4.184	0.000	0.169
108.00	-3.50	-4.16	0.00	-94.71	0.00	94.71	1052.07	526.04	1018.84	624.04	51.51	-4.213	0.000	0.155
110.00	-3.28	-3.72	0.00	-86.39	0.00	86.39	1052.07	526.04	1018.84	624.04	53.28	-4.239	0.000	0.142
110.00	-3.28	-3.72	0.00	-86.39	0.00	86.39	1305.53	652.76	129.19	160.41	53.28	-4.239	0.000	0.541
112.00	-2.96	-3.67	0.00	-78.95	0.00	78.95	1305.53	652.76	129.19	160.41	55.06	-4.264	0.000	0.494
114.00	-2.64	-3.62	0.00	-71.61	0.00	71.61	1305.53	652.76	129.19	160.41	56.98	-4.882	0.000	0.448
115.00	-2.39	-3.59	0.00	-67.98	0.00	67.98	1305.53	652.76	129.19	160.41	58.03	-5.168	0.000	0.426
116.00	-2.22	-3.57	0.00	-64.39	0.00	64.39	1305.53	652.76	129.19	160.41	59.14	-5.440	0.000	0.403
118.00	-1.91	-3.52	0.00	-57.24	0.00	57.24	1305.53	652.76	129.19	160.41	61.52	-5.939	0.000	0.358
120.00	-1.58	-2.78	0.00	-50.21	0.00	50.21	1305.53	652.76	129.19	160.41	64.10	-6.380	0.000	0.314
120.00	-1.58	-2.78	0.00	-50.21	0.00	50.21	317.71	158.85	76.59	52.28	64.10	-6.380	0.000	0.966
122.00	-1.43	-2.73	0.00	-44.65	0.00	44.65	317.71	158.85	76.59	52.28	66.85	-6.770	0.000	0.859
124.00	-1.28	-2.68	0.00	-39.18	0.00	39.18	317.71	158.85	76.59	52.28	69.80	-7.361	0.000	0.754
125.00	-1.04	-2.64	0.00	-36.50	0.00	36.50	317.71	158.85	76.59	52.28	71.37	-7.628	0.000	0.702
126.00	-0.97	-2.61	0.00	-33.86	0.00	33.86	317.71	158.85	76.59	52.28	72.99	-7.876	0.000	0.651
128.00	-0.84	-2.56	0.00	-28.64	0.00	28.64	317.71	158.85	76.59	52.28	76.37	-8.317	0.000	0.551
130.00	-0.72	-1.81	0.00	-23.53	0.00	23.53	317.71	158.85	76.59	52.28	79.92	-8.685	0.000	0.452
130.00	-0.72	-1.81	0.00	-23.53	0.00	23.53	317.71	158.85	76.59	52.28	79.92	-8.685	0.000	0.452
132.00	-0.65	-1.76	0.00	-19.90	0.00	19.90	317.71	158.85	76.59	52.28	83.61	-8.992	0.000	0.383
134.00	-0.57	-1.71	0.00	-16.38	0.00	16.38	317.71	158.85	76.59	52.28	87.42	-9.248	0.000	0.315
135.00	-0.49	-1.67	0.00	-14.67	0.00	14.67	317.71	158.85	76.59	52.28	89.36	-9.357	0.000	0.282
136.00	-0.46	-1.65	0.00	-13.00	0.00	13.00	317.71	158.85	76.59	52.28	91.32	-9.455	0.000	0.250
138.00	-0.40	-1.59	0.00	-9.71	0.00	9.71	317.71	158.85	76.59	52.28	95.30	-9.615	0.000	0.187
140.00	-0.38	-0.77	0.00	-6.53	0.00	6.53	317.71	158.85	76.59	52.28	99.33	-9.730	0.000	0.126
140.00	-0.38	-0.77	0.00	-6.53	0.00	6.53	317.71	158.85	76.59	52.28	99.33	-9.730	0.000	0.126
142.00	-0.33	-0.72	0.00	-4.98	0.00	4.98	317.71	158.85	76.59	52.28	103.40	-9.811	0.000	0.096
144.00	-0.27	-0.66	0.00	-3.54	0.00	3.54	317.71	158.85	76.59	52.28	107.51	-9.871	0.000	0.069
146.00	-0.22	-0.61	0.00	-2.21	0.00	2.21	317.71	158.85	76.59	52.28	111.63	-9.911	0.000	0.043
147.00	-0.03	-0.55	0.00	-1.60	0.00	1.60	317.71	158.85	76.59	52.28	113.70	-9.925	0.000	0.031
148.00	-0.01	-0.53	0.00	-1.05	0.00	1.05	317.71	158.85	76.59	52.28	115.77	-9.934	0.000	0.020
150.00	0.00	-0.52	0.00	0.00	0.00	0.00	317.71	158.85	76.59	52.28	119.91	-9.942	0.000	0.000

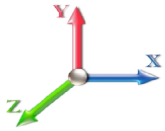
Wind Loading - Shaft

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 37

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	5.168	5.68	0.00	1.200	1.133	2.00	6.378	7.65	43.5	102.8	445.6
4.00		1.00	0.85	5.168	5.68	0.00	1.200	1.215	2.00	6.405	7.69	43.7	110.4	453.2
6.00		1.00	0.85	5.168	5.68	0.00	1.200	1.265	2.00	6.422	7.71	43.8	115.2	457.9
8.00		1.00	0.85	5.168	5.68	0.00	1.200	1.302	2.00	6.434	7.72	43.9	118.7	461.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	2.00	6.444	7.73	44.0	121.4	464.2
12.00		1.00	0.85	5.168	5.68	0.00	1.200	1.356	2.00	6.452	7.74	44.0	123.7	466.5
14.00		1.00	0.85	5.168	5.68	0.00	1.200	1.377	2.00	6.459	7.75	44.1	125.7	468.5
16.00		1.00	0.86	5.232	5.76	0.00	1.200	1.395	2.00	6.465	7.76	44.6	127.5	470.2
18.00		1.00	0.88	5.363	5.90	0.00	1.200	1.412	2.00	6.471	7.76	45.8	129.1	471.8
20.00	Top - Section 1	1.00	0.90	5.483	6.03	0.00	1.200	1.427	2.00	6.476	7.77	46.9	130.5	473.2
22.00		1.00	0.92	5.595	6.15	0.00	1.200	1.440	2.00	5.480	6.58	40.5	110.7	395.7
24.00		1.00	0.94	5.698	6.27	0.00	1.200	1.453	2.00	5.484	6.58	41.2	111.7	396.7
26.00		1.00	0.95	5.795	6.37	0.00	1.200	1.465	2.00	5.488	6.59	42.0	112.6	397.6
28.00		1.00	0.97	5.886	6.47	0.00	1.200	1.476	2.00	5.492	6.59	42.7	113.5	398.5
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	2.00	5.495	6.59	43.3	114.3	399.3
32.00		1.00	1.00	6.054	6.66	0.00	1.200	1.495	2.00	5.498	6.60	43.9	115.1	400.1
34.00		1.00	1.01	6.132	6.74	0.00	1.200	1.504	2.00	5.501	6.60	44.5	115.8	400.8
36.00		1.00	1.02	6.206	6.83	0.00	1.200	1.513	2.00	5.504	6.61	45.1	116.5	401.5
38.00		1.00	1.03	6.277	6.90	0.00	1.200	1.521	2.00	5.507	6.61	45.6	117.2	402.2
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	2.00	5.510	6.61	46.1	117.8	402.8
42.00		1.00	1.05	6.410	7.05	0.00	1.200	1.537	2.00	5.512	6.61	46.6	118.4	403.4
44.00		1.00	1.06	6.474	7.12	0.00	1.200	1.544	2.00	5.515	6.62	47.1	119.0	404.0
46.00		1.00	1.07	6.534	7.19	0.00	1.200	1.551	2.00	5.517	6.62	47.6	119.5	404.6
48.00		1.00	1.08	6.593	7.25	0.00	1.200	1.557	2.00	5.519	6.62	48.0	120.1	405.1
50.00	Top - Section 2	1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.00	5.521	6.63	48.5	120.6	405.6
52.00		1.00	1.10	6.705	7.38	0.00	1.200	1.570	2.00	4.523	5.43	40.0	98.1	325.4
54.00		1.00	1.11	6.759	7.43	0.00	1.200	1.576	2.00	4.525	5.43	40.4	98.5	325.8
56.00		1.00	1.12	6.811	7.49	0.00	1.200	1.581	2.00	4.527	5.43	40.7	98.9	326.2
58.00		1.00	1.13	6.861	7.55	0.00	1.200	1.587	2.00	4.529	5.43	41.0	99.2	326.5
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	2.00	4.531	5.44	41.3	99.6	326.9
62.00		1.00	1.14	6.958	7.65	0.00	1.200	1.598	2.00	4.533	5.44	41.6	99.9	327.2
64.00		1.00	1.15	7.005	7.71	0.00	1.200	1.603	2.00	4.534	5.44	41.9	100.3	327.6
66.00		1.00	1.16	7.050	7.76	0.00	1.200	1.608	2.00	4.536	5.44	42.2	100.6	327.9
68.00		1.00	1.17	7.095	7.80	0.00	1.200	1.612	2.00	4.537	5.44	42.5	100.9	328.2
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	2.00	4.539	5.45	42.8	101.2	328.5
72.00		1.00	1.18	7.181	7.90	0.00	1.200	1.622	2.00	4.541	5.45	43.0	101.5	328.8
74.00		1.00	1.19	7.222	7.94	0.00	1.200	1.626	2.00	4.542	5.45	43.3	101.8	329.1
76.00		1.00	1.19	7.263	7.99	0.00	1.200	1.631	2.00	4.544	5.45	43.6	102.1	329.4
78.00		1.00	1.20	7.303	8.03	0.00	1.200	1.635	2.00	4.545	5.45	43.8	102.4	329.7
80.00	Top - Section 3	1.00	1.21	7.342	8.08	0.00	1.200	1.639	2.00	4.546	5.46	44.1	102.7	330.0
82.00		1.00	1.21	7.380	8.12	0.00	1.200	1.643	2.00	4.548	5.46	44.3	102.9	330.2
84.00		1.00	1.22	7.418	8.16	0.00	1.200	1.647	2.00	4.549	5.46	44.5	103.2	330.5
86.00		1.00	1.23	7.454	8.20	0.00	1.200	1.651	2.00	4.550	5.46	44.8	103.5	330.8
88.00		1.00	1.23	7.491	8.24	0.00	1.200	1.655	2.00	4.552	5.46	45.0	103.7	331.0
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	4.553	5.46	45.2	104.0	331.3
92.00		1.00	1.24	7.561	8.32	0.00	1.200	1.662	2.00	4.554	5.46	45.5	104.2	331.5

Wind Loading - Shaft

Structure: CT01493-S-SBA | **Code:** EIA/TIA-222-G | 3/1/2019
Site Name: North Stonington 2 CT | **Exposure:** C
Height: 150.00 (ft) | **Crest Height:** 0.00
Base Elev: 0.000 (ft) | **Site Class:** B - Competent Rock
Gh: 1.1 | **Topography:** 1 | **Struct Class:** II | Page: 24

Tower Engineering Solutions

94.00		1.00	1.25	7.595	8.35	0.00	1.200	1.666	2.00	4.555	5.47	45.7	104.4	331.7
96.00		1.00	1.25	7.629	8.39	0.00	1.200	1.669	2.00	4.556	5.47	45.9	104.7	332.0
98.00		1.00	1.26	7.662	8.43	0.00	1.200	1.672	2.00	4.557	5.47	46.1	104.9	332.2
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	4.559	5.47	46.3	105.1	332.4
102.00		1.00	1.27	7.727	8.50	0.00	1.200	1.679	2.00	4.560	5.47	46.5	105.4	332.7
104.00		1.00	1.28	7.759	8.53	0.00	1.200	1.682	2.00	4.561	5.47	46.7	105.6	332.9
106.00		1.00	1.28	7.790	8.57	0.00	1.200	1.686	2.00	4.562	5.47	46.9	105.8	333.1
108.00		1.00	1.29	7.821	8.60	0.00	1.200	1.689	2.00	4.563	5.48	47.1	106.0	333.3
110.00	Top - Section 4	1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	4.564	5.48	47.3	106.2	333.5
112.00		1.00	1.30	7.881	8.67	0.00	1.200	1.695	2.00	1.690	2.03	17.6	35.0	317.0
114.00		1.00	1.30	7.910	8.70	0.00	1.200	1.698	2.00	1.691	2.03	17.7	35.1	317.1
115.00	Appurtenance(s)	1.00	1.30	7.925	8.72	0.00	1.200	1.699	1.00	0.846	1.01	8.8	17.5	158.6
116.00		1.00	1.31	7.939	8.73	0.00	1.200	1.701	1.00	0.846	1.02	8.9	17.6	158.6
118.00		1.00	1.31	7.968	8.76	0.00	1.200	1.704	2.00	1.693	2.03	17.8	35.2	317.3
120.00	Top - Section 5	1.00	1.32	7.996	8.80	0.00	1.200	1.707	2.00	1.694	2.03	17.9	35.3	317.3
122.00		1.00	1.32	8.024	8.83	31.71	1.200	1.710	2.00	1.674	2.01	17.7	34.8	103.5
124.00		1.00	1.32	8.051	8.86	31.77	1.200	1.712	2.00	1.675	2.01	17.8	34.9	103.5
125.00	Appurtenance(s)	1.00	1.33	8.065	8.87	31.79	1.200	1.714	1.00	0.838	1.01	8.9	17.5	51.8
126.00		1.00	1.33	8.079	8.89	31.82	1.200	1.715	1.00	0.838	1.01	8.9	17.5	51.8
128.00		1.00	1.33	8.105	8.92	31.87	1.200	1.718	2.00	1.677	2.01	17.9	35.0	103.7
130.00	Top - Section 6	1.00	1.34	8.132	8.95	31.92	1.200	1.720	2.00	1.678	2.01	18.0	35.1	103.7
132.00		1.00	1.34	8.158	8.97	31.98	1.200	1.723	2.00	1.679	2.01	18.1	35.1	103.8
134.00		1.00	1.35	8.184	9.00	0.00	1.200	1.726	2.00	1.679	2.02	18.1	35.2	103.9
135.00	Appurtenance(s)	1.00	1.35	8.197	9.02	0.00	1.200	1.727	1.00	0.840	1.01	9.1	17.6	51.9
136.00		1.00	1.35	8.210	9.03	0.00	1.200	1.728	1.00	0.840	1.01	9.1	17.6	52.0
138.00		1.00	1.35	8.235	9.06	0.00	1.200	1.731	2.00	1.681	2.02	18.3	35.3	104.0
140.00	Top - Section 7	1.00	1.36	8.260	9.09	0.00	1.200	1.733	2.00	1.682	2.02	18.3	35.4	104.0
142.00		1.00	1.36	8.285	9.11	0.00	1.200	1.736	2.00	1.683	2.02	18.4	35.5	104.1
144.00		1.00	1.37	8.309	9.14	0.00	1.200	1.738	2.00	1.684	2.02	18.5	35.5	104.2
146.00		1.00	1.37	8.333	9.17	0.00	1.200	1.741	2.00	1.684	2.02	18.5	35.6	104.2
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	1.00	0.842	1.01	9.3	17.8	52.1
148.00		1.00	1.37	8.357	9.19	0.00	1.200	1.743	1.00	0.843	1.01	9.3	17.8	52.1
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	1.745	2.00	1.686	2.02	18.7	35.7	104.3
								Totals:	**150.00**			**2,798.8**		**23,691.4**

Discrete Appurtenance Forces

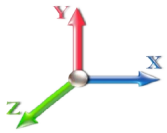
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

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 37

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	34" Canister	1	8.381	9.219	1.00	1.00	7.33	60.00	0.000	0.000	67.56	0.00	0.00
2	147.00	DPO-7126Y-0-T1	3	8.345	9.180	0.00	1.00	0.00	84.18	0.000	0.000	0.00	0.00	0.00
3	147.00	KIT-FD9R6004/1C-DL	3	8.345	9.180	0.00	1.00	0.00	28.29	0.000	0.000	0.00	0.00	0.00
4	147.00	DHHTT65B-3XR	3	8.345	9.180	0.00	1.00	28.15	767.57	0.000	0.000	258.42	0.00	0.00
5	140.00	34" Canister & 24"	1	8.260	9.086	1.00	1.00	11.97	226.93	0.000	0.000	108.72	0.00	0.00
6	135.00	APXV18-206516L	3	8.197	9.016	0.00	1.00	0.00	214.46	0.000	0.000	0.00	0.00	0.00
7	130.00	24" Canister & 30"	1	8.132	8.945	1.00	1.00	10.89	226.88	0.000	0.000	97.42	0.00	0.00
8	125.00	CM1007-DBPXBC-xxx	6	8.065	8.872	0.00	1.00	0.00	98.13	0.000	0.000	0.00	0.00	0.00
9	125.00	ETW190VS12UB	3	8.065	8.872	0.00	1.00	0.00	78.22	0.000	0.000	0.00	0.00	0.00
10	125.00	AMXCD1465	3	8.065	8.872	0.00	1.00	0.00	363.87	0.000	0.000	0.00	0.00	0.00
11	120.00	30" Canister & 24"	1	7.996	8.796	1.00	1.00	10.85	226.83	0.000	0.000	95.46	0.00	0.00
12	115.00	742 351	3	7.925	8.717	0.00	1.00	0.00	303.78	0.000	0.000	0.00	0.00	0.00
13	110.00	24" Canister	1	7.851	8.636	1.00	1.00	4.41	113.38	0.000	0.000	38.08	0.00	0.00
							Totals:		**2,792.51**			**665.66**		

Total Applied Force Summary

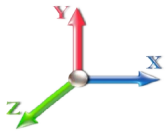
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

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 37

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
2.00		43.51	498.57	0.00	0.00
4.00		43.69	506.19	0.00	0.00
6.00		43.81	510.92	0.00	0.00
8.00		43.89	514.40	0.00	0.00
10.00		43.96	517.17	0.00	0.00
12.00		44.01	519.49	0.00	0.00
14.00		44.06	521.48	0.00	0.00
16.00		44.65	523.23	0.00	0.00
18.00		45.81	524.80	0.00	0.00
20.00		46.87	526.22	0.00	0.00
22.00		40.47	448.67	0.00	0.00
24.00		41.25	449.69	0.00	0.00
26.00		41.98	450.62	0.00	0.00
28.00		42.67	451.50	0.00	0.00
30.00		43.32	452.32	0.00	0.00
32.00		43.94	453.10	0.00	0.00
34.00		44.53	453.83	0.00	0.00
36.00		45.09	454.53	0.00	0.00
38.00		45.63	455.19	0.00	0.00
40.00		46.15	455.82	0.00	0.00
42.00		46.64	456.43	0.00	0.00
44.00		47.12	457.01	0.00	0.00
46.00		47.59	457.56	0.00	0.00
48.00		48.03	458.10	0.00	0.00
50.00		48.47	458.61	0.00	0.00
52.00		40.04	378.37	0.00	0.00
54.00		40.37	378.76	0.00	0.00
56.00		40.70	379.14	0.00	0.00
58.00		41.02	379.51	0.00	0.00
60.00		41.33	379.87	0.00	0.00
62.00		41.63	380.22	0.00	0.00
64.00		41.93	380.56	0.00	0.00
66.00		42.21	380.88	0.00	0.00
68.00		42.49	381.20	0.00	0.00
70.00		42.77	381.52	0.00	0.00
72.00		43.04	381.82	0.00	0.00
74.00		43.30	382.12	0.00	0.00
76.00		43.56	382.40	0.00	0.00
78.00		43.81	382.69	0.00	0.00
80.00		44.06	382.96	0.00	0.00
82.00		44.30	383.23	0.00	0.00
84.00		44.54	383.50	0.00	0.00
86.00		44.77	383.76	0.00	0.00
88.00		45.00	384.01	0.00	0.00
90.00		45.23	384.26	0.00	0.00
92.00		45.45	384.50	0.00	0.00

Total Applied Force Summary

Structure:	CT01493-S-SBA		**Code:**	EIA/TIA-222-G	3/1/2019
Site Name:	North Stonington 2 CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Tower Engineering Solutions

94.00		45.67	384.74	0.00	0.00
96.00		45.88	384.98	0.00	0.00
98.00		46.10	385.21	0.00	0.00
100.00		46.30	385.43	0.00	0.00
102.00		46.51	385.65	0.00	0.00
104.00		46.71	385.87	0.00	0.00
106.00		46.91	386.09	0.00	0.00
108.00		47.10	386.30	0.00	0.00
110.00	(1) attachments	85.38	499.89	0.00	0.00
112.00		17.58	435.19	0.00	0.00
114.00		17.66	435.26	0.00	0.00
115.00	(3) attachments	8.85	521.43	0.00	0.00
116.00		8.87	213.85	0.00	0.00
118.00		17.81	427.77	0.00	0.00
120.00	(1) attachments	113.34	654.67	0.00	0.00
122.00		17.73	213.98	0.00	0.00
124.00		17.80	214.04	0.00	0.00
125.00	(12) attachments	8.92	647.25	0.00	0.00
126.00		8.94	99.57	0.00	0.00
128.00		17.94	199.20	0.00	0.00
130.00	(1) attachments	115.43	426.15	0.00	0.00
132.00		18.08	134.17	0.00	0.00
134.00		18.14	134.24	0.00	0.00
135.00	(3) attachments	9.09	281.59	0.00	0.00
136.00		9.10	59.66	0.00	0.00
138.00		18.27	119.38	0.00	0.00
140.00	(1) attachments	127.06	346.38	0.00	0.00
142.00		18.40	119.51	0.00	0.00
144.00		18.46	119.57	0.00	0.00
146.00		18.53	119.63	0.00	0.00
147.00	(9) attachments	267.70	939.86	0.00	0.00
148.00		9.29	52.14	0.00	0.00
150.00	(1) attachments	86.21	164.33	0.00	0.00
	Totals:	**3,464.44**	**30,653.74**	**0.00**	**0.00**

Calculated Forces

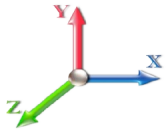
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

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 37

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	-30.65	-3.47	0.00	-302.12	0.00	302.12	1490.10	745.05	2187.51	1339.68	0.00	0.000	0.000	0.246
2.00	-30.15	-3.44	0.00	-295.18	0.00	295.18	1490.10	745.05	2187.51	1339.68	0.01	-0.026	0.000	0.241
4.00	-29.65	-3.41	0.00	-288.30	0.00	288.30	1490.10	745.05	2187.51	1339.68	0.02	-0.050	0.000	0.235
6.00	-29.13	-3.38	0.00	-281.48	0.00	281.48	1490.10	745.05	2187.51	1339.68	0.05	-0.075	0.000	0.230
8.00	-28.62	-3.34	0.00	-274.73	0.00	274.73	1490.10	745.05	2187.51	1339.68	0.08	-0.098	0.000	0.224
10.00	-28.10	-3.31	0.00	-268.04	0.00	268.04	1490.10	745.05	2187.51	1339.68	0.13	-0.122	0.000	0.219
12.00	-27.58	-3.28	0.00	-261.42	0.00	261.42	1490.10	745.05	2187.51	1339.68	0.19	-0.144	0.000	0.214
14.00	-27.06	-3.24	0.00	-254.87	0.00	254.87	1490.10	745.05	2187.51	1339.68	0.25	-0.166	0.000	0.208
16.00	-26.53	-3.20	0.00	-248.38	0.00	248.38	1490.10	745.05	2187.51	1339.68	0.33	-0.188	0.000	0.203
18.00	-26.01	-3.17	0.00	-241.98	0.00	241.98	1490.10	745.05	2187.51	1339.68	0.41	-0.209	0.000	0.198
20.00	-25.48	-3.13	0.00	-235.64	0.00	235.64	1490.10	745.05	2187.51	1339.68	0.50	-0.229	0.000	0.193
20.00	-25.48	-3.13	0.00	-235.64	0.00	235.64	1311.06	655.53	1597.15	948.43	0.50	-0.229	0.000	0.268
22.00	-25.03	-3.10	0.00	-229.39	0.00	229.39	1311.06	655.53	1597.15	948.43	0.60	-0.249	0.000	0.261
24.00	-24.58	-3.07	0.00	-223.20	0.00	223.20	1311.06	655.53	1597.15	948.43	0.71	-0.283	0.000	0.254
26.00	-24.13	-3.04	0.00	-217.07	0.00	217.07	1311.06	655.53	1597.15	948.43	0.84	-0.315	0.000	0.247
28.00	-23.67	-3.00	0.00	-211.00	0.00	211.00	1311.06	655.53	1597.15	948.43	0.98	-0.347	0.000	0.241
30.00	-23.22	-2.97	0.00	-204.99	0.00	204.99	1311.06	655.53	1597.15	948.43	1.13	-0.378	0.000	0.234
32.00	-22.76	-2.93	0.00	-199.05	0.00	199.05	1311.06	655.53	1597.15	948.43	1.29	-0.408	0.000	0.227
34.00	-22.31	-2.90	0.00	-193.19	0.00	193.19	1311.06	655.53	1597.15	948.43	1.47	-0.437	0.000	0.221
36.00	-21.85	-2.86	0.00	-187.39	0.00	187.39	1311.06	655.53	1597.15	948.43	1.66	-0.465	0.000	0.214
38.00	-21.40	-2.82	0.00	-181.67	0.00	181.67	1311.06	655.53	1597.15	948.43	1.86	-0.493	0.000	0.208
40.00	-20.94	-2.78	0.00	-176.03	0.00	176.03	1311.06	655.53	1597.15	948.43	2.07	-0.519	0.000	0.202
42.00	-20.48	-2.74	0.00	-170.47	0.00	170.47	1311.06	655.53	1597.15	948.43	2.30	-0.545	0.000	0.195
44.00	-20.03	-2.69	0.00	-165.00	0.00	165.00	1311.06	655.53	1597.15	948.43	2.53	-0.570	0.000	0.189
46.00	-19.57	-2.65	0.00	-159.61	0.00	159.61	1311.06	655.53	1597.15	948.43	2.77	-0.594	0.000	0.183
48.00	-19.11	-2.61	0.00	-154.31	0.00	154.31	1311.06	655.53	1597.15	948.43	3.03	-0.617	0.000	0.177
50.00	-18.65	-2.56	0.00	-149.10	0.00	149.10	1311.06	655.53	1597.15	948.43	3.29	-0.640	0.000	0.171
50.00	-18.65	-2.56	0.00	-149.10	0.00	149.10	1052.07	526.04	1018.84	624.04	3.29	-0.640	0.000	0.257
52.00	-18.27	-2.52	0.00	-143.98	0.00	143.98	1052.07	526.04	1018.84	624.04	3.56	-0.662	0.000	0.248
54.00	-17.89	-2.49	0.00	-138.93	0.00	138.93	1052.07	526.04	1018.84	624.04	3.85	-0.703	0.000	0.240
56.00	-17.51	-2.46	0.00	-133.95	0.00	133.95	1052.07	526.04	1018.84	624.04	4.15	-0.743	0.000	0.231
58.00	-17.13	-2.42	0.00	-129.03	0.00	129.03	1052.07	526.04	1018.84	624.04	4.47	-0.782	0.000	0.223
60.00	-16.75	-2.39	0.00	-124.18	0.00	124.18	1052.07	526.04	1018.84	624.04	4.81	-0.819	0.000	0.215
62.00	-16.37	-2.35	0.00	-119.41	0.00	119.41	1052.07	526.04	1018.84	624.04	5.16	-0.854	0.000	0.207
64.00	-15.99	-2.31	0.00	-114.71	0.00	114.71	1052.07	526.04	1018.84	624.04	5.52	-0.889	0.000	0.199
66.00	-15.61	-2.27	0.00	-110.08	0.00	110.08	1052.07	526.04	1018.84	624.04	5.90	-0.921	0.000	0.191
68.00	-15.22	-2.23	0.00	-105.53	0.00	105.53	1052.07	526.04	1018.84	624.04	6.30	-0.953	0.000	0.184
70.00	-14.84	-2.19	0.00	-101.07	0.00	101.07	1052.07	526.04	1018.84	624.04	6.70	-0.983	0.000	0.176
72.00	-14.46	-2.15	0.00	-96.69	0.00	96.69	1052.07	526.04	1018.84	624.04	7.12	-1.012	0.000	0.169
74.00	-14.08	-2.11	0.00	-92.39	0.00	92.39	1052.07	526.04	1018.84	624.04	7.55	-1.040	0.000	0.161
76.00	-13.70	-2.06	0.00	-88.18	0.00	88.18	1052.07	526.04	1018.84	624.04	7.99	-1.066	0.000	0.154
78.00	-13.31	-2.02	0.00	-84.06	0.00	84.06	1052.07	526.04	1018.84	624.04	8.44	-1.092	0.000	0.147
80.00	-12.93	-1.97	0.00	-80.03	0.00	80.03	1052.07	526.04	1018.84	624.04	8.90	-1.116	0.000	0.141
80.00	-12.93	-1.97	0.00	-80.03	0.00	80.03	1052.07	526.04	1018.84	624.04	8.90	-1.116	0.000	0.141
82.00	-12.55	-1.92	0.00	-76.09	0.00	76.09	1052.07	526.04	1018.84	624.04	9.38	-1.138	0.000	0.134
84.00	-12.16	-1.87	0.00	-72.25	0.00	72.25	1052.07	526.04	1018.84	624.04	9.86	-1.160	0.000	0.127
86.00	-11.78	-1.83	0.00	-68.50	0.00	68.50	1052.07	526.04	1018.84	624.04	10.35	-1.181	0.000	0.121
88.00	-11.40	-1.78	0.00	-64.84	0.00	64.84	1052.07	526.04	1018.84	624.04	10.85	-1.200	0.000	0.115

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

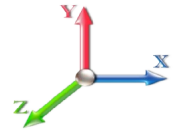
90.00	-11.01	-1.73	0.00	-61.29	0.00	61.29	1052.07	526.04	1018.84	624.04	11.35	-1.219	0.000	0.109
92.00	-10.63	-1.68	0.00	-57.84	0.00	57.84	1052.07	526.04	1018.84	624.04	11.87	-1.236	0.000	0.103
94.00	-10.24	-1.63	0.00	-54.48	0.00	54.48	1052.07	526.04	1018.84	624.04	12.39	-1.253	0.000	0.097
96.00	-9.86	-1.57	0.00	-51.23	0.00	51.23	1052.07	526.04	1018.84	624.04	12.92	-1.268	0.000	0.091
98.00	-9.48	-1.52	0.00	-48.09	0.00	48.09	1052.07	526.04	1018.84	624.04	13.45	-1.283	0.000	0.086
100.00	-9.09	-1.47	0.00	-45.04	0.00	45.04	1052.07	526.04	1018.84	624.04	13.99	-1.296	0.000	0.081
102.00	-8.71	-1.42	0.00	-42.11	0.00	42.11	1052.07	526.04	1018.84	624.04	14.54	-1.309	0.000	0.076
104.00	-8.32	-1.36	0.00	-39.28	0.00	39.28	1052.07	526.04	1018.84	624.04	15.09	-1.321	0.000	0.071
106.00	-7.94	-1.31	0.00	-36.55	0.00	36.55	1052.07	526.04	1018.84	624.04	15.64	-1.332	0.000	0.066
108.00	-7.55	-1.25	0.00	-33.94	0.00	33.94	1052.07	526.04	1018.84	624.04	16.20	-1.342	0.000	0.062
110.00	-7.05	-1.16	0.00	-31.44	0.00	31.44	1052.07	526.04	1018.84	624.04	16.77	-1.352	0.000	0.057
110.00	-7.05	-1.16	0.00	-31.44	0.00	31.44	1305.53	652.76	129.19	160.41	16.77	-1.352	0.000	0.201
112.00	-6.62	-1.14	0.00	-29.12	0.00	29.12	1305.53	652.76	129.19	160.41	17.34	-1.361	0.000	0.187
114.00	-6.18	-1.13	0.00	-26.84	0.00	26.84	1305.53	652.76	129.19	160.41	17.96	-1.591	0.000	0.172
115.00	-5.66	-1.12	0.00	-25.71	0.00	25.71	1305.53	652.76	129.19	160.41	18.30	-1.698	0.000	0.165
116.00	-5.44	-1.12	0.00	-24.59	0.00	24.59	1305.53	652.76	129.19	160.41	18.67	-1.802	0.000	0.157
118.00	-5.01	-1.10	0.00	-22.36	0.00	22.36	1305.53	652.76	129.19	160.41	19.46	-1.994	0.000	0.143
120.00	-4.36	-0.98	0.00	-20.16	0.00	20.16	1305.53	652.76	129.19	160.41	20.33	-2.169	0.000	0.129
120.00	-4.36	-0.98	0.00	-20.16	0.00	20.16	317.71	158.85	76.59	52.28	20.33	-2.169	0.000	0.399
122.00	-4.14	-0.96	0.00	-18.20	0.00	18.20	317.71	158.85	76.59	52.28	21.28	-2.326	0.000	0.361
124.00	-3.92	-0.95	0.00	-16.27	0.00	16.27	317.71	158.85	76.59	52.28	22.30	-2.570	0.000	0.324
125.00	-3.28	-0.92	0.00	-15.32	0.00	15.32	317.71	158.85	76.59	52.28	22.85	-2.681	0.000	0.303
126.00	-3.17	-0.91	0.00	-14.41	0.00	14.41	317.71	158.85	76.59	52.28	23.43	-2.786	0.000	0.286
128.00	-2.97	-0.89	0.00	-12.58	0.00	12.58	317.71	158.85	76.59	52.28	24.63	-2.976	0.000	0.250
130.00	-2.55	-0.76	0.00	-10.79	0.00	10.79	317.71	158.85	76.59	52.28	25.91	-3.141	0.000	0.215
130.00	-2.55	-0.76	0.00	-10.79	0.00	10.79	317.71	158.85	76.59	52.28	25.91	-3.141	0.000	0.215
132.00	-2.42	-0.74	0.00	-9.27	0.00	9.27	317.71	158.85	76.59	52.28	27.26	-3.283	0.000	0.185
134.00	-2.28	-0.72	0.00	-7.78	0.00	7.78	317.71	158.85	76.59	52.28	28.66	-3.403	0.000	0.156
135.00	-2.00	-0.70	0.00	-7.07	0.00	7.07	317.71	158.85	76.59	52.28	29.38	-3.456	0.000	0.141
136.00	-1.94	-0.69	0.00	-6.37	0.00	6.37	317.71	158.85	76.59	52.28	30.11	-3.503	0.000	0.128
138.00	-1.82	-0.66	0.00	-5.00	0.00	5.00	317.71	158.85	76.59	52.28	31.59	-3.583	0.000	0.101
140.00	-1.49	-0.51	0.00	-3.68	0.00	3.68	317.71	158.85	76.59	52.28	33.10	-3.644	0.000	0.075
140.00	-1.49	-0.51	0.00	-3.68	0.00	3.68	317.71	158.85	76.59	52.28	33.10	-3.644	0.000	0.075
142.00	-1.37	-0.49	0.00	-2.65	0.00	2.65	317.71	158.85	76.59	52.28	34.64	-3.689	0.000	0.055
144.00	-1.25	-0.46	0.00	-1.67	0.00	1.67	317.71	158.85	76.59	52.28	36.19	-3.719	0.000	0.036
146.00	-1.13	-0.44	0.00	-0.74	0.00	0.74	317.71	158.85	76.59	52.28	37.75	-3.736	0.000	0.018
147.00	-0.21	-0.11	0.00	-0.30	0.00	0.30	317.71	158.85	76.59	52.28	38.53	-3.740	0.000	0.006
148.00	-0.16	-0.10	0.00	-0.19	0.00	0.19	317.71	158.85	76.59	52.28	39.32	-3.742	0.000	0.004
150.00	0.00	-0.09	0.00	0.00	0.00	0.00	317.71	158.85	76.59	52.28	40.88	-3.743	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E					**Iterations**	32
Gust Response Factor	1.10			**Sds**	0.11	**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.01	**Seismic Importance Factor**	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
2.00		285.63	0.00	0.01	0.01	1.97	
4.00		285.63	0.00	0.03	0.01	3.17	
6.00		285.63	0.00	0.04	0.02	3.98	
8.00		285.63	0.01	0.05	0.03	4.55	
10.00		285.63	0.01	0.05	0.03	4.97	
12.00		285.63	0.01	0.06	0.03	5.28	
14.00		285.63	0.02	0.06	0.04	5.51	
16.00		285.63	0.02	0.06	0.04	5.68	
18.00		285.63	0.03	0.07	0.04	5.81	
20.00	Top - Section 1	285.63	0.03	0.07	0.04	5.91	
22.00		237.52	0.04	0.07	0.04	4.99	
24.00		237.52	0.05	0.07	0.04	5.04	
26.00		237.52	0.06	0.07	0.04	5.10	
28.00		237.52	0.07	0.07	0.04	5.15	
30.00		237.52	0.08	0.07	0.04	5.20	
32.00		237.52	0.09	0.07	0.04	5.25	
34.00		237.52	0.10	0.07	0.04	5.30	
36.00		237.52	0.11	0.07	0.04	5.36	
38.00		237.52	0.12	0.07	0.03	5.41	
40.00		237.52	0.13	0.07	0.03	5.47	
42.00		237.52	0.15	0.07	0.03	5.52	
44.00		237.52	0.16	0.07	0.03	5.57	
46.00		237.52	0.18	0.07	0.03	5.61	
48.00		237.52	0.19	0.06	0.02	5.63	
50.00	Top - Section 2	237.52	0.21	0.06	0.02	5.63	
52.00		189.42	0.23	0.06	0.02	4.47	
54.00		189.42	0.24	0.06	0.02	4.42	
56.00		189.42	0.26	0.05	0.02	4.33	
58.00		189.42	0.28	0.05	0.01	4.19	
60.00		189.42	0.30	0.04	0.01	4.00	
62.00		189.42	0.32	0.04	0.01	3.74	
64.00		189.42	0.34	0.03	0.01	3.41	
66.00		189.42	0.37	0.03	0.01	2.99	
68.00		189.42	0.39	0.02	0.01	2.48	
70.00		189.42	0.41	0.01	0.01	1.89	
72.00		189.42	0.44	0.01	0.01	1.21	
74.00		189.42	0.46	0.00	0.01	0.47	
76.00		189.42	0.49	-0.01	0.01	-0.31	
78.00		189.42	0.51	-0.02	0.01	-1.10	
80.00	Top - Section 3	189.42	0.54	-0.03	0.01	-1.87	
82.00		189.42	0.56	-0.04	0.01	-2.59	
84.00		189.42	0.59	-0.05	0.01	-3.24	
86.00		189.42	0.62	-0.06	0.02	-3.80	
88.00		189.42	0.65	-0.07	0.02	-4.27	
90.00		189.42	0.68	-0.08	0.03	-4.63	

Seismic Segment Forces (Factored)

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

92.00			189.42	0.71	-0.09	0.03	-4.88	
94.00			189.42	0.74	-0.10	0.04	-5.04	
96.00			189.42	0.77	-0.11	0.05	-5.10	
98.00			189.42	0.81	-0.11	0.06	-5.07	
100.00			189.42	0.84	-0.12	0.07	-4.94	
102.00			189.42	0.87	-0.12	0.08	-4.73	
104.00			189.42	0.91	-0.12	0.09	-4.43	
106.00			189.42	0.94	-0.12	0.11	-4.06	
108.00			189.42	0.98	-0.11	0.12	-3.60	
110.00	Top - Section 4		239.42	1.02	-0.11	0.14	-3.87	
112.00			235.05	1.05	-0.09	0.16	-3.03	
114.00			235.05	1.09	-0.07	0.18	-2.16	
115.00	Appurtenance(s)		206.92	1.11	-0.06	0.19	-1.49	
116.00			117.52	1.13	-0.05	0.21	-0.60	
118.00			235.05	1.17	-0.02	0.23	-0.14	
120.00	Top - Section 5		335.05	1.21	0.01	0.26	1.46	
122.00			57.20	1.25	0.06	0.29	0.56	
124.00			57.20	1.29	0.11	0.33	0.89	
125.00	Appurtenance(s)		209.80	1.31	0.14	0.35	3.90	
126.00			28.60	1.33	0.17	0.37	0.62	
128.00			57.20	1.38	0.24	0.41	1.62	
130.00	Top - Section 6		157.20	1.42	0.32	0.45	5.58	
132.00			57.20	1.46	0.42	0.50	2.46	
134.00			57.20	1.51	0.52	0.55	2.92	
135.00	Appurtenance(s)		84.70	1.53	0.58	0.58	4.68	
136.00			28.60	1.55	0.64	0.61	1.70	
138.00			57.20	1.60	0.78	0.67	3.92	
140.00	Top - Section 7		157.20	1.65	0.93	0.73	12.24	
142.00			57.20	1.69	1.10	0.81	5.02	
144.00			57.20	1.74	1.29	0.88	5.61	
146.00			57.20	1.79	1.50	0.96	6.23	
147.00	Appurtenance(s)		211.90	1.82	1.61	1.00	24.27	
148.00			28.60	1.84	1.73	1.05	3.44	
150.00	Appurtenance(s)		107.20	1.89	1.98	1.14	14.16	
		Totals:	**15,044.8**				**191.0**	**Total Wind:** **11,895.0**

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

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 32

Gust Response Factor	1.10			**Sds**	0.11			**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.01			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-22.22	-0.27	0.00	-21.24	0.00	21.24	1490.10	745.05	2187.51	1339.68		0.00	0.00	0.031
2.00	-21.83	-0.26	0.00	-20.71	0.00	20.71	1490.10	745.05	2187.51	1339.68		0.00	0.00	0.030
4.00	-21.43	-0.26	0.00	-20.18	0.00	20.18	1490.10	745.05	2187.51	1339.68		0.00	0.00	0.029
6.00	-21.04	-0.26	0.00	-19.66	0.00	19.66	1490.10	745.05	2187.51	1339.68		0.00	-0.01	0.029
8.00	-20.64	-0.25	0.00	-19.14	0.00	19.14	1490.10	745.05	2187.51	1339.68		0.01	-0.01	0.028
10.00	-20.24	-0.25	0.00	-18.64	0.00	18.64	1490.10	745.05	2187.51	1339.68		0.01	-0.01	0.027
12.00	-19.85	-0.24	0.00	-18.14	0.00	18.14	1490.10	745.05	2187.51	1339.68		0.01	-0.01	0.027
14.00	-19.45	-0.24	0.00	-17.65	0.00	17.65	1490.10	745.05	2187.51	1339.68		0.02	-0.01	0.026
16.00	-19.06	-0.23	0.00	-17.17	0.00	17.17	1490.10	745.05	2187.51	1339.68		0.02	-0.01	0.026
18.00	-18.66	-0.23	0.00	-16.70	0.00	16.70	1490.10	745.05	2187.51	1339.68		0.03	-0.01	0.025
20.00	-18.27	-0.22	0.00	-16.24	0.00	16.24	1490.10	745.05	2187.51	1339.68		0.03	-0.02	0.024
20.00	-18.27	-0.22	0.00	-16.24	0.00	16.24	1311.06	655.53	1597.15	948.43		0.03	-0.02	0.031
22.00	-17.93	-0.22	0.00	-15.80	0.00	15.80	1311.06	655.53	1597.15	948.43		0.04	-0.02	0.030
24.00	-17.59	-0.21	0.00	-15.36	0.00	15.36	1311.06	655.53	1597.15	948.43		0.05	-0.02	0.030
26.00	-17.25	-0.21	0.00	-14.93	0.00	14.93	1311.06	655.53	1597.15	948.43		0.06	-0.02	0.029
28.00	-16.91	-0.21	0.00	-14.51	0.00	14.51	1311.06	655.53	1597.15	948.43		0.07	-0.02	0.028
30.00	-16.58	-0.20	0.00	-14.10	0.00	14.10	1311.06	655.53	1597.15	948.43		0.08	-0.03	0.028
32.00	-16.24	-0.20	0.00	-13.70	0.00	13.70	1311.06	655.53	1597.15	948.43		0.09	-0.03	0.027
34.00	-15.90	-0.19	0.00	-13.31	0.00	13.31	1311.06	655.53	1597.15	948.43		0.10	-0.03	0.026
36.00	-15.56	-0.19	0.00	-12.92	0.00	12.92	1311.06	655.53	1597.15	948.43		0.12	-0.03	0.025
38.00	-15.22	-0.18	0.00	-12.55	0.00	12.55	1311.06	655.53	1597.15	948.43		0.13	-0.03	0.025
40.00	-14.89	-0.18	0.00	-12.19	0.00	12.19	1311.06	655.53	1597.15	948.43		0.14	-0.04	0.024
42.00	-14.55	-0.17	0.00	-11.84	0.00	11.84	1311.06	655.53	1597.15	948.43		0.16	-0.04	0.024
44.00	-14.21	-0.16	0.00	-11.50	0.00	11.50	1311.06	655.53	1597.15	948.43		0.18	-0.04	0.023
46.00	-13.87	-0.16	0.00	-11.17	0.00	11.17	1311.06	655.53	1597.15	948.43		0.19	-0.04	0.022
48.00	-13.53	-0.15	0.00	-10.85	0.00	10.85	1311.06	655.53	1597.15	948.43		0.21	-0.04	0.022
50.00	-13.20	-0.15	0.00	-10.55	0.00	10.55	1311.06	655.53	1597.15	948.43		0.23	-0.04	0.021
50.00	-13.20	-0.15	0.00	-10.55	0.00	10.55	1052.07	526.04	1018.84	624.04		0.23	-0.04	0.029
52.00	-12.92	-0.14	0.00	-10.25	0.00	10.25	1052.07	526.04	1018.84	624.04		0.25	-0.05	0.029
54.00	-12.64	-0.14	0.00	-9.96	0.00	9.96	1052.07	526.04	1018.84	624.04		0.27	-0.05	0.028
56.00	-12.35	-0.14	0.00	-9.68	0.00	9.68	1052.07	526.04	1018.84	624.04		0.29	-0.05	0.027
58.00	-12.07	-0.13	0.00	-9.41	0.00	9.41	1052.07	526.04	1018.84	624.04		0.31	-0.05	0.027
60.00	-11.79	-0.13	0.00	-9.14	0.00	9.14	1052.07	526.04	1018.84	624.04		0.33	-0.06	0.026
62.00	-11.51	-0.13	0.00	-8.89	0.00	8.89	1052.07	526.04	1018.84	624.04		0.36	-0.06	0.025
64.00	-11.23	-0.12	0.00	-8.64	0.00	8.64	1052.07	526.04	1018.84	624.04		0.38	-0.06	0.025
66.00	-10.95	-0.12	0.00	-8.39	0.00	8.39	1052.07	526.04	1018.84	624.04		0.41	-0.06	0.024
68.00	-10.67	-0.12	0.00	-8.15	0.00	8.15	1052.07	526.04	1018.84	624.04		0.44	-0.07	0.023
70.00	-10.39	-0.11	0.00	-7.92	0.00	7.92	1052.07	526.04	1018.84	624.04		0.47	-0.07	0.023
72.00	-10.11	-0.11	0.00	-7.69	0.00	7.69	1052.07	526.04	1018.84	624.04		0.50	-0.07	0.022
74.00	-9.83	-0.11	0.00	-7.46	0.00	7.46	1052.07	526.04	1018.84	624.04		0.53	-0.07	0.021
76.00	-9.55	-0.11	0.00	-7.24	0.00	7.24	1052.07	526.04	1018.84	624.04		0.56	-0.08	0.021
78.00	-9.27	-0.11	0.00	-7.01	0.00	7.01	1052.07	526.04	1018.84	624.04		0.59	-0.08	0.020
80.00	-8.99	-0.11	0.00	-6.78	0.00	6.78	1052.07	526.04	1018.84	624.04		0.62	-0.08	0.019
80.00	-8.99	-0.11	0.00	-6.78	0.00	6.78	1052.07	526.04	1018.84	624.04		0.62	-0.08	0.019
82.00	-8.71	-0.11	0.00	-6.56	0.00	6.56	1052.07	526.04	1018.84	624.04		0.66	-0.08	0.019
84.00	-8.43	-0.11	0.00	-6.33	0.00	6.33	1052.07	526.04	1018.84	624.04		0.69	-0.08	0.018
86.00	-8.15	-0.11	0.00	-6.11	0.00	6.11	1052.07	526.04	1018.84	624.04		0.73	-0.09	0.018

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

88.00	-7.87	-0.11	0.00	-5.88	0.00	5.88	1052.07	526.04	1018.84	624.04	0.77	-0.09	0.017
90.00	-7.59	-0.11	0.00	-5.66	0.00	5.66	1052.07	526.04	1018.84	624.04	0.80	-0.09	0.016
92.00	-7.31	-0.11	0.00	-5.43	0.00	5.43	1052.07	526.04	1018.84	624.04	0.84	-0.09	0.016
94.00	-7.03	-0.11	0.00	-5.21	0.00	5.21	1052.07	526.04	1018.84	624.04	0.88	-0.09	0.015
96.00	-6.75	-0.11	0.00	-4.98	0.00	4.98	1052.07	526.04	1018.84	624.04	0.92	-0.09	0.014
98.00	-6.47	-0.11	0.00	-4.76	0.00	4.76	1052.07	526.04	1018.84	624.04	0.96	-0.10	0.014
100.00	-6.19	-0.11	0.00	-4.54	0.00	4.54	1052.07	526.04	1018.84	624.04	1.00	-0.10	0.013
102.00	-5.91	-0.11	0.00	-4.31	0.00	4.31	1052.07	526.04	1018.84	624.04	1.04	-0.10	0.013
104.00	-5.63	-0.11	0.00	-4.09	0.00	4.09	1052.07	526.04	1018.84	624.04	1.08	-0.10	0.012
106.00	-5.35	-0.11	0.00	-3.87	0.00	3.87	1052.07	526.04	1018.84	624.04	1.12	-0.10	0.011
108.00	-5.07	-0.11	0.00	-3.65	0.00	3.65	1052.07	526.04	1018.84	624.04	1.17	-0.10	0.011
110.00	-4.73	-0.11	0.00	-3.43	0.00	3.43	1052.07	526.04	1018.84	624.04	1.21	-0.10	0.010
110.00	-4.73	-0.11	0.00	-3.43	0.00	3.43	1305.53	652.76	129.19	160.41	1.21	-0.10	0.025
112.00	-4.33	-0.11	0.00	-3.22	0.00	3.22	1305.53	652.76	129.19	160.41	1.25	-0.10	0.023
114.00	-3.93	-0.11	0.00	-3.00	0.00	3.00	1305.53	652.76	129.19	160.41	1.30	-0.13	0.022
115.00	-3.62	-0.11	0.00	-2.89	0.00	2.89	1305.53	652.76	129.19	160.41	1.33	-0.14	0.021
116.00	-3.42	-0.11	0.00	-2.78	0.00	2.78	1305.53	652.76	129.19	160.41	1.36	-0.15	0.020
118.00	-3.03	-0.11	0.00	-2.56	0.00	2.56	1305.53	652.76	129.19	160.41	1.43	-0.17	0.018
120.00	-2.52	-0.11	0.00	-2.33	0.00	2.33	1305.53	652.76	129.19	160.41	1.51	-0.20	0.016
120.00	-2.52	-0.11	0.00	-2.33	0.00	2.33	317.71	158.85	76.59	52.28	1.51	-0.20	0.053
122.00	-2.34	-0.11	0.00	-2.12	0.00	2.12	317.71	158.85	76.59	52.28	1.59	-0.21	0.048
124.00	-2.16	-0.11	0.00	-1.90	0.00	1.90	317.71	158.85	76.59	52.28	1.69	-0.24	0.043
125.00	-1.85	-0.10	0.00	-1.80	0.00	1.80	317.71	158.85	76.59	52.28	1.74	-0.25	0.040
126.00	-1.77	-0.10	0.00	-1.69	0.00	1.69	317.71	158.85	76.59	52.28	1.79	-0.27	0.038
128.00	-1.61	-0.10	0.00	-1.49	0.00	1.49	317.71	158.85	76.59	52.28	1.91	-0.29	0.034
130.00	-1.32	-0.09	0.00	-1.29	0.00	1.29	317.71	158.85	76.59	52.28	2.04	-0.31	0.029
130.00	-1.32	-0.09	0.00	-1.29	0.00	1.29	317.71	158.85	76.59	52.28	2.04	-0.31	0.029
132.00	-1.22	-0.09	0.00	-1.10	0.00	1.10	317.71	158.85	76.59	52.28	2.17	-0.33	0.025
134.00	-1.12	-0.09	0.00	-0.92	0.00	0.92	317.71	158.85	76.59	52.28	2.31	-0.34	0.021
135.00	-1.01	-0.08	0.00	-0.83	0.00	0.83	317.71	158.85	76.59	52.28	2.38	-0.35	0.019
136.00	-0.96	-0.08	0.00	-0.75	0.00	0.75	317.71	158.85	76.59	52.28	2.45	-0.35	0.017
138.00	-0.88	-0.08	0.00	-0.59	0.00	0.59	317.71	158.85	76.59	52.28	2.60	-0.36	0.014
140.00	-0.68	-0.06	0.00	-0.44	0.00	0.44	317.71	158.85	76.59	52.28	2.76	-0.37	0.010
140.00	-0.68	-0.06	0.00	-0.44	0.00	0.44	317.71	158.85	76.59	52.28	2.76	-0.37	0.010
142.00	-0.59	-0.06	0.00	-0.31	0.00	0.31	317.71	158.85	76.59	52.28	2.91	-0.37	0.008
144.00	-0.51	-0.05	0.00	-0.20	0.00	0.20	317.71	158.85	76.59	52.28	3.07	-0.38	0.005
146.00	-0.42	-0.04	0.00	-0.09	0.00	0.09	317.71	158.85	76.59	52.28	3.23	-0.38	0.003
147.00	-0.16	-0.02	0.00	-0.05	0.00	0.05	317.71	158.85	76.59	52.28	3.31	-0.38	0.001
148.00	-0.13	-0.01	0.00	-0.03	0.00	0.03	317.71	158.85	76.59	52.28	3.39	-0.38	0.001
150.00	0.00	-0.01	0.00	0.00	0.00	0.00	317.71	158.85	76.59	52.28	3.55	-0.38	0.000

Seismic Segment Forces (Factored)

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

IES Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	32
Gust Response Factor	1.10			**Sds**	0.11	**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.01	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
2.00		285.63	0.00	0.01	0.01	1.97	
4.00		285.63	0.00	0.03	0.01	3.17	
6.00		285.63	0.00	0.04	0.02	3.98	
8.00		285.63	0.01	0.05	0.03	4.55	
10.00		285.63	0.01	0.05	0.03	4.97	
12.00		285.63	0.01	0.06	0.03	5.28	
14.00		285.63	0.02	0.06	0.04	5.51	
16.00		285.63	0.02	0.06	0.04	5.68	
18.00		285.63	0.03	0.07	0.04	5.81	
20.00	Top - Section 1	285.63	0.03	0.07	0.04	5.91	
22.00		237.52	0.04	0.07	0.04	4.99	
24.00		237.52	0.05	0.07	0.04	5.04	
26.00		237.52	0.06	0.07	0.04	5.10	
28.00		237.52	0.07	0.07	0.04	5.15	
30.00		237.52	0.08	0.07	0.04	5.20	
32.00		237.52	0.09	0.07	0.04	5.25	
34.00		237.52	0.10	0.07	0.04	5.30	
36.00		237.52	0.11	0.07	0.04	5.36	
38.00		237.52	0.12	0.07	0.03	5.41	
40.00		237.52	0.13	0.07	0.03	5.47	
42.00		237.52	0.15	0.07	0.03	5.52	
44.00		237.52	0.16	0.07	0.03	5.57	
46.00		237.52	0.18	0.07	0.03	5.61	
48.00		237.52	0.19	0.06	0.02	5.63	
50.00	Top - Section 2	237.52	0.21	0.06	0.02	5.63	
52.00		189.42	0.23	0.06	0.02	4.47	
54.00		189.42	0.24	0.06	0.02	4.42	
56.00		189.42	0.26	0.05	0.02	4.33	
58.00		189.42	0.28	0.05	0.01	4.19	
60.00		189.42	0.30	0.04	0.01	4.00	
62.00		189.42	0.32	0.04	0.01	3.74	
64.00		189.42	0.34	0.03	0.01	3.41	
66.00		189.42	0.37	0.03	0.01	2.99	
68.00		189.42	0.39	0.02	0.01	2.48	
70.00		189.42	0.41	0.01	0.01	1.89	
72.00		189.42	0.44	0.01	0.01	1.21	
74.00		189.42	0.46	0.00	0.01	0.47	
76.00		189.42	0.49	-0.01	0.01	-0.31	
78.00		189.42	0.51	-0.02	0.01	-1.10	
80.00	Top - Section 3	189.42	0.54	-0.03	0.01	-1.87	
82.00		189.42	0.56	-0.04	0.01	-2.59	
84.00		189.42	0.59	-0.05	0.01	-3.24	
86.00		189.42	0.62	-0.06	0.02	-3.80	
88.00		189.42	0.65	-0.07	0.02	-4.27	
90.00		189.42	0.68	-0.08	0.03	-4.63	

Seismic Segment Forces (Factored)

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

92.00			189.42	0.71	-0.09	0.03	-4.88		
94.00			189.42	0.74	-0.10	0.04	-5.04		
96.00			189.42	0.77	-0.11	0.05	-5.10		
98.00			189.42	0.81	-0.11	0.06	-5.07		
100.00			189.42	0.84	-0.12	0.07	-4.94		
102.00			189.42	0.87	-0.12	0.08	-4.73		
104.00			189.42	0.91	-0.12	0.09	-4.43		
106.00			189.42	0.94	-0.12	0.11	-4.06		
108.00			189.42	0.98	-0.11	0.12	-3.60		
110.00	Top - Section 4		239.42	1.02	-0.11	0.14	-3.87		
112.00			235.05	1.05	-0.09	0.16	-3.03		
114.00			235.05	1.09	-0.07	0.18	-2.16		
115.00	Appurtenance(s)		206.92	1.11	-0.06	0.19	-1.49		
116.00			117.52	1.13	-0.05	0.21	-0.60		
118.00			235.05	1.17	-0.02	0.23	-0.14		
120.00	Top - Section 5		335.05	1.21	0.01	0.26	1.46		
122.00			57.20	1.25	0.06	0.29	0.56		
124.00			57.20	1.29	0.11	0.33	0.89		
125.00	Appurtenance(s)		209.80	1.31	0.14	0.35	3.90		
126.00			28.60	1.33	0.17	0.37	0.62		
128.00			57.20	1.38	0.24	0.41	1.62		
130.00	Top - Section 6		157.20	1.42	0.32	0.45	5.58		
132.00			57.20	1.46	0.42	0.50	2.46		
134.00			57.20	1.51	0.52	0.55	2.92		
135.00	Appurtenance(s)		84.70	1.53	0.58	0.58	4.68		
136.00			28.60	1.55	0.64	0.61	1.70		
138.00			57.20	1.60	0.78	0.67	3.92		
140.00	Top - Section 7		157.20	1.65	0.93	0.73	12.24		
142.00			57.20	1.69	1.10	0.81	5.02		
144.00			57.20	1.74	1.29	0.88	5.61		
146.00			57.20	1.79	1.50	0.96	6.23		
147.00	Appurtenance(s)		211.90	1.82	1.61	1.00	24.27		
148.00			28.60	1.84	1.73	1.05	3.44		
150.00	Appurtenance(s)		107.20	1.89	1.98	1.14	14.16		
		Totals:	**15,044.8**				**191.0**	**Total Wind:**	**11,895.0**

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

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	32
Gust Response Factor	1.10			**Sds**	0.11			**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.34	**SA**	0.01			**Seismic Importance Factor**	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-16.67	-0.27	0.00	-20.91	0.00	20.91	1490.10	745.05	2187.51	1339.68		0.00	0.00	0.027
2.00	-16.37	-0.26	0.00	-20.38	0.00	20.38	1490.10	745.05	2187.51	1339.68		0.00	0.00	0.026
4.00	-16.07	-0.26	0.00	-19.85	0.00	19.85	1490.10	745.05	2187.51	1339.68		0.00	0.00	0.026
6.00	-15.78	-0.26	0.00	-19.33	0.00	19.33	1490.10	745.05	2187.51	1339.68		0.00	-0.01	0.025
8.00	-15.48	-0.25	0.00	-18.82	0.00	18.82	1490.10	745.05	2187.51	1339.68		0.01	-0.01	0.024
10.00	-15.18	-0.25	0.00	-18.31	0.00	18.31	1490.10	745.05	2187.51	1339.68		0.01	-0.01	0.024
12.00	-14.89	-0.24	0.00	-17.81	0.00	17.81	1490.10	745.05	2187.51	1339.68		0.01	-0.01	0.023
14.00	-14.59	-0.24	0.00	-17.32	0.00	17.32	1490.10	745.05	2187.51	1339.68		0.02	-0.01	0.023
16.00	-14.29	-0.23	0.00	-16.85	0.00	16.85	1490.10	745.05	2187.51	1339.68		0.02	-0.01	0.022
18.00	-14.00	-0.23	0.00	-16.38	0.00	16.38	1490.10	745.05	2187.51	1339.68		0.03	-0.01	0.022
20.00	-13.70	-0.22	0.00	-15.93	0.00	15.93	1490.10	745.05	2187.51	1339.68		0.03	-0.02	0.021
20.00	-13.70	-0.22	0.00	-15.93	0.00	15.93	1311.06	655.53	1597.15	948.43		0.03	-0.02	0.027
22.00	-13.45	-0.22	0.00	-15.48	0.00	15.48	1311.06	655.53	1597.15	948.43		0.04	-0.02	0.027
24.00	-13.19	-0.21	0.00	-15.05	0.00	15.05	1311.06	655.53	1597.15	948.43		0.05	-0.02	0.026
26.00	-12.94	-0.21	0.00	-14.62	0.00	14.62	1311.06	655.53	1597.15	948.43		0.06	-0.02	0.025
28.00	-12.69	-0.20	0.00	-14.20	0.00	14.20	1311.06	655.53	1597.15	948.43		0.07	-0.02	0.025
30.00	-12.43	-0.20	0.00	-13.80	0.00	13.80	1311.06	655.53	1597.15	948.43		0.08	-0.03	0.024
32.00	-12.18	-0.19	0.00	-13.40	0.00	13.40	1311.06	655.53	1597.15	948.43		0.09	-0.03	0.023
34.00	-11.92	-0.19	0.00	-13.01	0.00	13.01	1311.06	655.53	1597.15	948.43		0.10	-0.03	0.023
36.00	-11.67	-0.18	0.00	-12.64	0.00	12.64	1311.06	655.53	1597.15	948.43		0.11	-0.03	0.022
38.00	-11.42	-0.18	0.00	-12.27	0.00	12.27	1311.06	655.53	1597.15	948.43		0.13	-0.03	0.022
40.00	-11.16	-0.17	0.00	-11.91	0.00	11.91	1311.06	655.53	1597.15	948.43		0.14	-0.04	0.021
42.00	-10.91	-0.17	0.00	-11.57	0.00	11.57	1311.06	655.53	1597.15	948.43		0.16	-0.04	0.021
44.00	-10.66	-0.16	0.00	-11.23	0.00	11.23	1311.06	655.53	1597.15	948.43		0.17	-0.04	0.020
46.00	-10.40	-0.16	0.00	-10.91	0.00	10.91	1311.06	655.53	1597.15	948.43		0.19	-0.04	0.019
48.00	-10.15	-0.15	0.00	-10.59	0.00	10.59	1311.06	655.53	1597.15	948.43		0.21	-0.04	0.019
50.00	-9.90	-0.15	0.00	-10.29	0.00	10.29	1311.06	655.53	1597.15	948.43		0.22	-0.04	0.018
50.00	-9.90	-0.15	0.00	-10.29	0.00	10.29	1052.07	526.04	1018.84	624.04		0.22	-0.04	0.026
52.00	-9.69	-0.14	0.00	-10.00	0.00	10.00	1052.07	526.04	1018.84	624.04		0.24	-0.04	0.025
54.00	-9.48	-0.14	0.00	-9.72	0.00	9.72	1052.07	526.04	1018.84	624.04		0.26	-0.05	0.025
56.00	-9.27	-0.13	0.00	-9.44	0.00	9.44	1052.07	526.04	1018.84	624.04		0.28	-0.05	0.024
58.00	-9.06	-0.13	0.00	-9.18	0.00	9.18	1052.07	526.04	1018.84	624.04		0.30	-0.05	0.023
60.00	-8.85	-0.13	0.00	-8.92	0.00	8.92	1052.07	526.04	1018.84	624.04		0.33	-0.06	0.023
62.00	-8.64	-0.12	0.00	-8.67	0.00	8.67	1052.07	526.04	1018.84	624.04		0.35	-0.06	0.022
64.00	-8.43	-0.12	0.00	-8.42	0.00	8.42	1052.07	526.04	1018.84	624.04		0.38	-0.06	0.022
66.00	-8.22	-0.12	0.00	-8.19	0.00	8.19	1052.07	526.04	1018.84	624.04		0.40	-0.06	0.021
68.00	-8.00	-0.11	0.00	-7.96	0.00	7.96	1052.07	526.04	1018.84	624.04		0.43	-0.07	0.020
70.00	-7.79	-0.11	0.00	-7.73	0.00	7.73	1052.07	526.04	1018.84	624.04		0.46	-0.07	0.020
72.00	-7.58	-0.11	0.00	-7.51	0.00	7.51	1052.07	526.04	1018.84	624.04		0.49	-0.07	0.019
74.00	-7.37	-0.11	0.00	-7.28	0.00	7.28	1052.07	526.04	1018.84	624.04		0.52	-0.07	0.019
76.00	-7.16	-0.11	0.00	-7.07	0.00	7.07	1052.07	526.04	1018.84	624.04		0.55	-0.07	0.018
78.00	-6.95	-0.11	0.00	-6.85	0.00	6.85	1052.07	526.04	1018.84	624.04		0.58	-0.08	0.018
80.00	-6.74	-0.11	0.00	-6.63	0.00	6.63	1052.07	526.04	1018.84	624.04		0.61	-0.08	0.017
80.00	-6.74	-0.11	0.00	-6.63	0.00	6.63	1052.07	526.04	1018.84	624.04		0.61	-0.08	0.017
82.00	-6.53	-0.11	0.00	-6.41	0.00	6.41	1052.07	526.04	1018.84	624.04		0.65	-0.08	0.016
84.00	-6.32	-0.11	0.00	-6.19	0.00	6.19	1052.07	526.04	1018.84	624.04		0.68	-0.08	0.016
86.00	-6.11	-0.11	0.00	-5.97	0.00	5.97	1052.07	526.04	1018.84	624.04		0.71	-0.08	0.015

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

88.00	-5.90	-0.11	0.00	-5.75	0.00	5.75	1052.07	526.04	1018.84	624.04	0.75	-0.09	0.015
90.00	-5.69	-0.11	0.00	-5.53	0.00	5.53	1052.07	526.04	1018.84	624.04	0.79	-0.09	0.014
92.00	-5.48	-0.11	0.00	-5.31	0.00	5.31	1052.07	526.04	1018.84	624.04	0.82	-0.09	0.014
94.00	-5.27	-0.11	0.00	-5.09	0.00	5.09	1052.07	526.04	1018.84	624.04	0.86	-0.09	0.013
96.00	-5.06	-0.11	0.00	-4.87	0.00	4.87	1052.07	526.04	1018.84	624.04	0.90	-0.09	0.013
98.00	-4.85	-0.11	0.00	-4.66	0.00	4.66	1052.07	526.04	1018.84	624.04	0.94	-0.09	0.012
100.00	-4.64	-0.11	0.00	-4.44	0.00	4.44	1052.07	526.04	1018.84	624.04	0.98	-0.09	0.012
102.00	-4.43	-0.11	0.00	-4.22	0.00	4.22	1052.07	526.04	1018.84	624.04	1.02	-0.10	0.011
104.00	-4.22	-0.11	0.00	-4.01	0.00	4.01	1052.07	526.04	1018.84	624.04	1.06	-0.10	0.010
106.00	-4.01	-0.11	0.00	-3.79	0.00	3.79	1052.07	526.04	1018.84	624.04	1.10	-0.10	0.010
108.00	-3.80	-0.11	0.00	-3.58	0.00	3.58	1052.07	526.04	1018.84	624.04	1.14	-0.10	0.009
110.00	-3.55	-0.11	0.00	-3.36	0.00	3.36	1052.07	526.04	1018.84	624.04	1.18	-0.10	0.009
110.00	-3.55	-0.11	0.00	-3.36	0.00	3.36	1305.53	652.76	129.19	160.41	1.18	-0.10	0.024
112.00	-3.24	-0.11	0.00	-3.15	0.00	3.15	1305.53	652.76	129.19	160.41	1.23	-0.10	0.022
114.00	-2.94	-0.11	0.00	-2.93	0.00	2.93	1305.53	652.76	129.19	160.41	1.27	-0.13	0.021
115.00	-2.71	-0.11	0.00	-2.83	0.00	2.83	1305.53	652.76	129.19	160.41	1.30	-0.14	0.020
116.00	-2.57	-0.11	0.00	-2.72	0.00	2.72	1305.53	652.76	129.19	160.41	1.33	-0.15	0.019
118.00	-2.27	-0.11	0.00	-2.50	0.00	2.50	1305.53	652.76	129.19	160.41	1.40	-0.17	0.017
120.00	-1.89	-0.11	0.00	-2.29	0.00	2.29	1305.53	652.76	129.19	160.41	1.47	-0.19	0.016
120.00	-1.89	-0.11	0.00	-2.29	0.00	2.29	317.71	158.85	76.59	52.28	1.47	-0.19	0.050
122.00	-1.75	-0.11	0.00	-2.08	0.00	2.08	317.71	158.85	76.59	52.28	1.56	-0.21	0.045
124.00	-1.62	-0.10	0.00	-1.86	0.00	1.86	317.71	158.85	76.59	52.28	1.65	-0.24	0.041
125.00	-1.39	-0.10	0.00	-1.76	0.00	1.76	317.71	158.85	76.59	52.28	1.70	-0.25	0.038
126.00	-1.33	-0.10	0.00	-1.66	0.00	1.66	317.71	158.85	76.59	52.28	1.76	-0.26	0.036
128.00	-1.20	-0.10	0.00	-1.46	0.00	1.46	317.71	158.85	76.59	52.28	1.87	-0.28	0.032
130.00	-0.99	-0.09	0.00	-1.26	0.00	1.26	317.71	158.85	76.59	52.28	1.99	-0.30	0.027
130.00	-0.99	-0.09	0.00	-1.26	0.00	1.26	317.71	158.85	76.59	52.28	1.99	-0.30	0.027
132.00	-0.92	-0.09	0.00	-1.08	0.00	1.08	317.71	158.85	76.59	52.28	2.12	-0.32	0.024
134.00	-0.84	-0.09	0.00	-0.90	0.00	0.90	317.71	158.85	76.59	52.28	2.26	-0.33	0.020
135.00	-0.75	-0.08	0.00	-0.82	0.00	0.82	317.71	158.85	76.59	52.28	2.33	-0.34	0.018
136.00	-0.72	-0.08	0.00	-0.74	0.00	0.74	317.71	158.85	76.59	52.28	2.40	-0.34	0.016
138.00	-0.66	-0.07	0.00	-0.58	0.00	0.58	317.71	158.85	76.59	52.28	2.55	-0.35	0.013
140.00	-0.51	-0.06	0.00	-0.43	0.00	0.43	317.71	158.85	76.59	52.28	2.70	-0.36	0.010
140.00	-0.51	-0.06	0.00	-0.43	0.00	0.43	317.71	158.85	76.59	52.28	2.70	-0.36	0.010
142.00	-0.44	-0.06	0.00	-0.31	0.00	0.31	317.71	158.85	76.59	52.28	2.85	-0.37	0.007
144.00	-0.38	-0.05	0.00	-0.19	0.00	0.19	317.71	158.85	76.59	52.28	3.00	-0.37	0.005
146.00	-0.32	-0.04	0.00	-0.09	0.00	0.09	317.71	158.85	76.59	52.28	3.16	-0.37	0.003
147.00	-0.12	-0.02	0.00	-0.05	0.00	0.05	317.71	158.85	76.59	52.28	3.24	-0.37	0.001
148.00	-0.10	-0.01	0.00	-0.03	0.00	0.03	317.71	158.85	76.59	52.28	3.32	-0.37	0.001
150.00	0.00	-0.01	0.00	0.00	0.00	0.00	317.71	158.85	76.59	52.28	3.47	-0.37	0.000

Wind Loading - Shaft

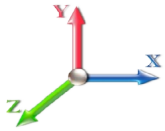
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 36

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
4.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
6.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
8.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
10.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
12.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
14.00		1.00	0.85	7.442	8.19	165.95	0.600	0.000	2.00	6.000	3.60	29.5	0.0	285.6
16.00		1.00	0.86	7.534	8.29	166.97	0.600	0.000	2.00	6.000	3.60	29.8	0.0	285.6
18.00		1.00	0.88	7.723	8.50	169.06	0.600	0.000	2.00	6.000	3.60	30.6	0.0	285.6
20.00	Top - Section 1	1.00	0.90	7.896	8.69	170.94	0.600	0.000	2.00	6.000	3.60	31.3	0.0	285.6
22.00		1.00	0.92	8.056	8.86	143.89	0.600	0.000	2.00	5.000	3.00	26.6	0.0	237.5
24.00		1.00	0.94	8.205	9.03	145.21	0.600	0.000	2.00	5.000	3.00	27.1	0.0	237.5
26.00		1.00	0.95	8.345	9.18	146.44	0.600	0.000	2.00	5.000	3.00	27.5	0.0	237.5
28.00		1.00	0.97	8.476	9.32	147.59	0.600	0.000	2.00	5.000	3.00	28.0	0.0	237.5
30.00		1.00	0.98	8.600	9.46	148.66	0.600	0.000	2.00	5.000	3.00	28.4	0.0	237.5
32.00		1.00	1.00	8.717	9.59	149.68	0.600	0.000	2.00	5.000	3.00	28.8	0.0	237.5
34.00		1.00	1.01	8.829	9.71	150.63	0.600	0.000	2.00	5.000	3.00	29.1	0.0	237.5
36.00		1.00	1.02	8.936	9.83	151.54	0.600	0.000	2.00	5.000	3.00	29.5	0.0	237.5
38.00		1.00	1.03	9.039	9.94	152.41	0.600	0.000	2.00	5.000	3.00	29.8	0.0	237.5
40.00		1.00	1.04	9.137	10.05	153.23	0.600	0.000	2.00	5.000	3.00	30.2	0.0	237.5
42.00		1.00	1.05	9.231	10.15	154.02	0.600	0.000	2.00	5.000	3.00	30.5	0.0	237.5
44.00		1.00	1.06	9.322	10.25	154.78	0.600	0.000	2.00	5.000	3.00	30.8	0.0	237.5
46.00		1.00	1.07	9.410	10.35	155.50	0.600	0.000	2.00	5.000	3.00	31.1	0.0	237.5
48.00		1.00	1.08	9.494	10.44	156.20	0.600	0.000	2.00	5.000	3.00	31.3	0.0	237.5
50.00	Top - Section 2	1.00	1.09	9.576	10.53	156.88	0.600	0.000	2.00	5.000	3.00	31.6	0.0	237.5
52.00		1.00	1.10	9.656	10.62	126.02	0.600	0.000	2.00	4.000	2.40	25.5	0.0	189.4
54.00		1.00	1.11	9.733	10.71	126.52	0.600	0.000	2.00	4.000	2.40	25.7	0.0	189.4
56.00		1.00	1.12	9.807	10.79	127.01	0.600	0.000	2.00	4.000	2.40	25.9	0.0	189.4
58.00		1.00	1.13	9.880	10.87	127.48	0.600	0.000	2.00	4.000	2.40	26.1	0.0	189.4
60.00		1.00	1.14	9.951	10.95	127.93	0.600	0.000	2.00	4.000	2.40	26.3	0.0	189.4
62.00		1.00	1.14	10.020	11.02	128.37	0.600	0.000	2.00	4.000	2.40	26.5	0.0	189.4
64.00		1.00	1.15	10.087	11.10	128.80	0.600	0.000	2.00	4.000	2.40	26.6	0.0	189.4
66.00		1.00	1.16	10.153	11.17	129.22	0.600	0.000	2.00	4.000	2.40	26.8	0.0	189.4
68.00		1.00	1.17	10.217	11.24	129.63	0.600	0.000	2.00	4.000	2.40	27.0	0.0	189.4
70.00		1.00	1.17	10.279	11.31	130.03	0.600	0.000	2.00	4.000	2.40	27.1	0.0	189.4
72.00		1.00	1.18	10.340	11.37	130.41	0.600	0.000	2.00	4.000	2.40	27.3	0.0	189.4
74.00		1.00	1.19	10.400	11.44	130.79	0.600	0.000	2.00	4.000	2.40	27.5	0.0	189.4
76.00		1.00	1.19	10.459	11.50	131.16	0.600	0.000	2.00	4.000	2.40	27.6	0.0	189.4
78.00		1.00	1.20	10.516	11.57	131.51	0.600	0.000	2.00	4.000	2.40	27.8	0.0	189.4
80.00	Top - Section 3	1.00	1.21	10.572	11.63	131.87	0.600	0.000	2.00	4.000	2.40	27.9	0.0	189.4
82.00		1.00	1.21	10.627	11.69	132.21	0.600	0.000	2.00	4.000	2.40	28.1	0.0	189.4
84.00		1.00	1.22	10.681	11.75	132.54	0.600	0.000	2.00	4.000	2.40	28.2	0.0	189.4
86.00		1.00	1.23	10.734	11.81	132.87	0.600	0.000	2.00	4.000	2.40	28.3	0.0	189.4
88.00		1.00	1.23	10.787	11.87	133.20	0.600	0.000	2.00	4.000	2.40	28.5	0.0	189.4
90.00		1.00	1.24	10.838	11.92	133.51	0.600	0.000	2.00	4.000	2.40	28.6	0.0	189.4
92.00		1.00	1.24	10.888	11.98	133.82	0.600	0.000	2.00	4.000	2.40	28.7	0.0	189.4

Wind Loading - Shaft

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

94.00		1.00	1.25	10.937	12.03	134.12	0.600	0.000	2.00	4.000	2.40	28.9	0.0	189.4
96.00		1.00	1.25	10.986	12.08	134.42	0.600	0.000	2.00	4.000	2.40	29.0	0.0	189.4
98.00		1.00	1.26	11.034	12.14	134.71	0.600	0.000	2.00	4.000	2.40	29.1	0.0	189.4
100.00		1.00	1.27	11.081	12.19	135.00	0.600	0.000	2.00	4.000	2.40	29.3	0.0	189.4
102.00		1.00	1.27	11.127	12.24	135.28	0.600	0.000	2.00	4.000	2.40	29.4	0.0	189.4
104.00		1.00	1.28	11.173	12.29	135.56	0.600	0.000	2.00	4.000	2.40	29.5	0.0	189.4
106.00		1.00	1.28	11.218	12.34	135.83	0.600	0.000	2.00	4.000	2.40	29.6	0.0	189.4
108.00		1.00	1.29	11.262	12.39	136.10	0.600	0.000	2.00	4.000	2.40	29.7	0.0	189.4
110.00	Top - Section 4	1.00	1.29	11.305	12.44	136.36	0.600	0.000	2.00	4.000	2.40	29.8	0.0	189.4
112.00		1.00	1.30	11.348	12.48	38.42	0.999	0.000	2.00	1.125	1.12	14.0	0.0	235.0
114.00		1.00	1.30	11.391	12.53	38.50	0.998	0.000	2.00	1.125	1.12	14.1	0.0	235.0
115.00	Appurtenance(s)	1.00	1.30	11.412	12.55	38.53	0.997	0.000	1.00	0.563	0.56	7.0	0.0	117.5
116.00		1.00	1.31	11.432	12.58	38.57	0.996	0.000	1.00	0.563	0.56	7.0	0.0	117.5
118.00		1.00	1.31	11.474	12.62	38.64	0.994	0.000	2.00	1.125	1.12	14.1	0.0	235.0
120.00	Top - Section 5	1.00	1.32	11.514	12.67	38.70	0.992	0.000	2.00	1.125	1.12	14.1	0.0	235.0
122.00		1.00	1.32	11.554	12.71	38.05	1.009	0.000	2.00	1.104	1.11	14.2	0.0	57.2
124.00		1.00	1.32	11.594	12.75	38.12	1.007	0.000	2.00	1.104	1.11	14.2	0.0	57.2
125.00	Appurtenance(s)	1.00	1.33	11.614	12.78	38.15	1.007	0.000	1.00	0.552	0.56	7.1	0.0	28.6
126.00		1.00	1.33	11.633	12.80	38.18	1.006	0.000	1.00	0.552	0.56	7.1	0.0	28.6
128.00		1.00	1.33	11.672	12.84	38.25	1.004	0.000	2.00	1.104	1.11	14.2	0.0	57.2
130.00	Top - Section 6	1.00	1.34	11.710	12.88	38.31	1.002	0.000	2.00	1.104	1.11	14.3	0.0	57.2
132.00		1.00	1.34	11.748	12.92	38.37	1.001	0.000	2.00	1.104	1.11	14.3	0.0	57.2
134.00		1.00	1.35	11.785	12.96	38.43	0.999	0.000	2.00	1.104	1.10	14.3	0.0	57.2
135.00	Appurtenance(s)	1.00	1.35	11.803	12.98	38.46	0.998	0.000	1.00	0.552	0.55	7.2	0.0	28.6
136.00		1.00	1.35	11.822	13.00	38.49	0.998	0.000	1.00	0.552	0.55	7.2	0.0	28.6
138.00		1.00	1.35	11.858	13.04	38.55	0.996	0.000	2.00	1.104	1.10	14.3	0.0	57.2
140.00	Top - Section 7	1.00	1.36	11.894	13.08	38.61	0.995	0.000	2.00	1.104	1.10	14.4	0.0	57.2
142.00		1.00	1.36	11.930	13.12	38.67	0.993	0.000	2.00	1.104	1.10	14.4	0.0	57.2
144.00		1.00	1.37	11.965	13.16	38.72	0.992	0.000	2.00	1.104	1.09	14.4	0.0	57.2
146.00		1.00	1.37	12.000	13.20	38.78	0.990	0.000	2.00	1.104	1.09	14.4	0.0	57.2
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	38.81	0.989	0.000	1.00	0.552	0.55	7.2	0.0	28.6
148.00		1.00	1.37	12.034	13.24	38.84	0.989	0.000	1.00	0.552	0.55	7.2	0.0	28.6
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	38.89	0.987	0.000	2.00	1.104	1.09	14.5	0.0	57.2
								Totals:	**150.00**			**1,859.6**		**14,134.8**

Discrete Appurtenance Forces

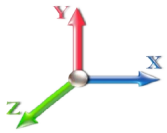
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 36

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	34" Canister	1	12.068	13.275	1.00	1.00	6.85	50.00	0.000	0.000	90.93	0.00	0.00
2	147.00	DPO-7126Y-0-T1	3	12.017	13.219	0.00	1.00	0.00	37.80	0.000	0.000	0.00	0.00	0.00
3	147.00	KIT-FD9R6004/1C-DL	3	12.017	13.219	0.00	1.00	0.00	9.30	0.000	0.000	0.00	0.00	0.00
4	147.00	DHHTT65B-3XR	3	12.017	13.219	0.00	1.00	0.00	136.20	0.000	0.000	0.00	0.00	0.00
5	140.00	34" Canister & 24"	1	11.894	13.084	1.00	1.00	11.19	100.00	0.000	0.000	146.40	0.00	0.00
6	135.00	APXV18-206516L	3	11.803	12.984	0.00	1.00	0.00	56.10	0.000	0.000	0.00	0.00	0.00
7	130.00	24" Canister & 30"	1	11.710	12.881	1.00	1.00	10.19	100.00	0.000	0.000	131.26	0.00	0.00
8	125.00	CM1007-DBPXBC-xxx	6	11.614	12.775	0.00	1.00	0.00	39.00	0.000	0.000	0.00	0.00	0.00
9	125.00	ETW190VS12UB	3	11.614	12.775	0.00	1.00	0.00	33.00	0.000	0.000	0.00	0.00	0.00
10	125.00	AMXCD1465	3	11.614	12.775	0.00	1.00	0.00	109.20	0.000	0.000	0.00	0.00	0.00
11	120.00	30" Canister & 24"	1	11.514	12.666	1.00	1.00	10.16	100.00	0.000	0.000	128.68	0.00	0.00
12	115.00	742 351	3	11.412	12.553	0.00	1.00	0.00	89.40	0.000	0.000	0.00	0.00	0.00
13	110.00	24" Canister	1	11.305	12.436	1.00	1.00	4.13	50.00	0.000	0.000	51.36	0.00	0.00
							Totals:		**910.00**			**548.64**		

Total Applied Force Summary

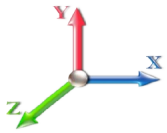
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 36

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
2.00		29.47	329.79	0.00	0.00
4.00		29.47	329.79	0.00	0.00
6.00		29.47	329.79	0.00	0.00
8.00		29.47	329.79	0.00	0.00
10.00		29.47	329.79	0.00	0.00
12.00		29.47	329.79	0.00	0.00
14.00		29.47	329.79	0.00	0.00
16.00		29.83	329.79	0.00	0.00
18.00		30.58	329.79	0.00	0.00
20.00		31.27	329.79	0.00	0.00
22.00		26.59	281.68	0.00	0.00
24.00		27.08	281.68	0.00	0.00
26.00		27.54	281.68	0.00	0.00
28.00		27.97	281.68	0.00	0.00
30.00		28.38	281.68	0.00	0.00
32.00		28.77	281.68	0.00	0.00
34.00		29.14	281.68	0.00	0.00
36.00		29.49	281.68	0.00	0.00
38.00		29.83	281.68	0.00	0.00
40.00		30.15	281.68	0.00	0.00
42.00		30.46	281.68	0.00	0.00
44.00		30.76	281.68	0.00	0.00
46.00		31.05	281.68	0.00	0.00
48.00		31.33	281.68	0.00	0.00
50.00		31.60	281.68	0.00	0.00
52.00		25.49	233.58	0.00	0.00
54.00		25.69	233.58	0.00	0.00
56.00		25.89	233.58	0.00	0.00
58.00		26.08	233.58	0.00	0.00
60.00		26.27	233.58	0.00	0.00
62.00		26.45	233.58	0.00	0.00
64.00		26.63	233.58	0.00	0.00
66.00		26.80	233.58	0.00	0.00
68.00		26.97	233.58	0.00	0.00
70.00		27.14	233.58	0.00	0.00
72.00		27.30	233.58	0.00	0.00
74.00		27.46	233.58	0.00	0.00
76.00		27.61	233.58	0.00	0.00
78.00		27.76	233.58	0.00	0.00
80.00		27.91	233.58	0.00	0.00
82.00		28.06	233.58	0.00	0.00
84.00		28.20	233.58	0.00	0.00
86.00		28.34	233.58	0.00	0.00
88.00		28.48	233.58	0.00	0.00
90.00		28.61	233.58	0.00	0.00
92.00		28.74	233.58	0.00	0.00

Total Applied Force Summary

Structure:	CT01493-S-SBA		**Code:**	EIA/TIA-222-G	3/1/2019
Site Name:	North Stonington 2 CT		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 42

Tower Engineering Solutions

94.00		28.87	233.58	0.00	0.00
96.00		29.00	233.58	0.00	0.00
98.00		29.13	233.58	0.00	0.00
100.00		29.25	233.58	0.00	0.00
102.00		29.38	233.58	0.00	0.00
104.00		29.50	233.58	0.00	0.00
106.00		29.61	233.58	0.00	0.00
108.00		29.73	233.58	0.00	0.00
110.00	(1) attachments	81.21	283.58	0.00	0.00
112.00		14.03	333.51	0.00	0.00
114.00		14.06	333.51	0.00	0.00
115.00	(3) attachments	7.04	256.15	0.00	0.00
116.00		7.04	163.57	0.00	0.00
118.00		14.11	327.15	0.00	0.00
120.00	(1) attachments	142.82	427.15	0.00	0.00
122.00		14.16	149.30	0.00	0.00
124.00		14.19	149.30	0.00	0.00
125.00	(12) attachments	7.10	255.85	0.00	0.00
126.00		7.10	68.41	0.00	0.00
128.00		14.23	136.82	0.00	0.00
130.00	(1) attachments	145.51	236.82	0.00	0.00
132.00		14.28	82.52	0.00	0.00
134.00		14.30	82.52	0.00	0.00
135.00	(3) attachments	7.16	97.36	0.00	0.00
136.00		7.16	35.02	0.00	0.00
138.00		14.35	70.04	0.00	0.00
140.00	(1) attachments	160.77	170.04	0.00	0.00
142.00		14.39	70.04	0.00	0.00
144.00		14.41	70.04	0.00	0.00
146.00		14.43	70.04	0.00	0.00
147.00	(9) attachments	7.22	218.32	0.00	0.00
148.00		7.23	28.60	0.00	0.00
150.00	(1) attachments	105.41	107.20	0.00	0.00
	Totals:	**2,408.19**	**18,519.66**	**0.00**	**0.00**

Calculated Forces

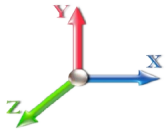
Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 36

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	-18.52	-2.41	0.00	-206.94	0.00	206.94	1490.10	745.05	2187.51	1339.68	0.00	0.000	0.000	0.167
2.00	-18.19	-2.39	0.00	-202.12	0.00	202.12	1490.10	745.05	2187.51	1339.68	0.00	-0.017	0.000	0.163
4.00	-17.86	-2.36	0.00	-197.34	0.00	197.34	1490.10	745.05	2187.51	1339.68	0.01	-0.035	0.000	0.159
6.00	-17.53	-2.34	0.00	-192.62	0.00	192.62	1490.10	745.05	2187.51	1339.68	0.03	-0.051	0.000	0.156
8.00	-17.20	-2.31	0.00	-187.94	0.00	187.94	1490.10	745.05	2187.51	1339.68	0.06	-0.067	0.000	0.152
10.00	-16.87	-2.29	0.00	-183.32	0.00	183.32	1490.10	745.05	2187.51	1339.68	0.09	-0.083	0.000	0.148
12.00	-16.54	-2.26	0.00	-178.75	0.00	178.75	1490.10	745.05	2187.51	1339.68	0.13	-0.099	0.000	0.145
14.00	-16.21	-2.24	0.00	-174.22	0.00	174.22	1490.10	745.05	2187.51	1339.68	0.17	-0.114	0.000	0.141
16.00	-15.88	-2.21	0.00	-169.75	0.00	169.75	1490.10	745.05	2187.51	1339.68	0.22	-0.128	0.000	0.137
18.00	-15.55	-2.18	0.00	-165.33	0.00	165.33	1490.10	745.05	2187.51	1339.68	0.28	-0.143	0.000	0.134
20.00	-15.22	-2.15	0.00	-160.97	0.00	160.97	1490.10	745.05	2187.51	1339.68	0.34	-0.157	0.000	0.130
20.00	-15.22	-2.15	0.00	-160.97	0.00	160.97	1311.06	655.53	1597.15	948.43	0.34	-0.157	0.000	0.181
22.00	-14.93	-2.13	0.00	-156.66	0.00	156.66	1311.06	655.53	1597.15	948.43	0.41	-0.170	0.000	0.177
24.00	-14.65	-2.11	0.00	-152.40	0.00	152.40	1311.06	655.53	1597.15	948.43	0.49	-0.193	0.000	0.172
26.00	-14.37	-2.09	0.00	-148.19	0.00	148.19	1311.06	655.53	1597.15	948.43	0.57	-0.216	0.000	0.167
28.00	-14.09	-2.06	0.00	-144.02	0.00	144.02	1311.06	655.53	1597.15	948.43	0.67	-0.237	0.000	0.163
30.00	-13.80	-2.04	0.00	-139.89	0.00	139.89	1311.06	655.53	1597.15	948.43	0.77	-0.258	0.000	0.158
32.00	-13.52	-2.01	0.00	-135.82	0.00	135.82	1311.06	655.53	1597.15	948.43	0.88	-0.279	0.000	0.154
34.00	-13.24	-1.99	0.00	-131.80	0.00	131.80	1311.06	655.53	1597.15	948.43	1.01	-0.299	0.000	0.149
36.00	-12.96	-1.96	0.00	-127.83	0.00	127.83	1311.06	655.53	1597.15	948.43	1.14	-0.318	0.000	0.145
38.00	-12.68	-1.93	0.00	-123.91	0.00	123.91	1311.06	655.53	1597.15	948.43	1.27	-0.337	0.000	0.140
40.00	-12.39	-1.90	0.00	-120.05	0.00	120.05	1311.06	655.53	1597.15	948.43	1.42	-0.355	0.000	0.136
42.00	-12.11	-1.87	0.00	-116.24	0.00	116.24	1311.06	655.53	1597.15	948.43	1.57	-0.372	0.000	0.132
44.00	-11.83	-1.85	0.00	-112.49	0.00	112.49	1311.06	655.53	1597.15	948.43	1.73	-0.389	0.000	0.128
46.00	-11.55	-1.82	0.00	-108.80	0.00	108.80	1311.06	655.53	1597.15	948.43	1.90	-0.406	0.000	0.124
48.00	-11.27	-1.79	0.00	-105.17	0.00	105.17	1311.06	655.53	1597.15	948.43	2.07	-0.422	0.000	0.119
50.00	-10.98	-1.75	0.00	-101.60	0.00	101.60	1311.06	655.53	1597.15	948.43	2.25	-0.437	0.000	0.116
50.00	-10.98	-1.75	0.00	-101.60	0.00	101.60	1052.07	526.04	1018.84	624.04	2.25	-0.437	0.000	0.173
52.00	-10.75	-1.73	0.00	-98.09	0.00	98.09	1052.07	526.04	1018.84	624.04	2.44	-0.452	0.000	0.167
54.00	-10.52	-1.71	0.00	-94.62	0.00	94.62	1052.07	526.04	1018.84	624.04	2.63	-0.480	0.000	0.162
56.00	-10.28	-1.69	0.00	-91.21	0.00	91.21	1052.07	526.04	1018.84	624.04	2.84	-0.507	0.000	0.156
58.00	-10.05	-1.66	0.00	-87.83	0.00	87.83	1052.07	526.04	1018.84	624.04	3.06	-0.533	0.000	0.150
60.00	-9.81	-1.64	0.00	-84.51	0.00	84.51	1052.07	526.04	1018.84	624.04	3.28	-0.559	0.000	0.145
62.00	-9.58	-1.61	0.00	-81.23	0.00	81.23	1052.07	526.04	1018.84	624.04	3.52	-0.583	0.000	0.139
64.00	-9.35	-1.59	0.00	-78.01	0.00	78.01	1052.07	526.04	1018.84	624.04	3.77	-0.606	0.000	0.134
66.00	-9.11	-1.56	0.00	-74.83	0.00	74.83	1052.07	526.04	1018.84	624.04	4.03	-0.629	0.000	0.129
68.00	-8.88	-1.54	0.00	-71.71	0.00	71.71	1052.07	526.04	1018.84	624.04	4.30	-0.650	0.000	0.123
70.00	-8.64	-1.51	0.00	-68.64	0.00	68.64	1052.07	526.04	1018.84	624.04	4.58	-0.671	0.000	0.118
72.00	-8.41	-1.48	0.00	-65.62	0.00	65.62	1052.07	526.04	1018.84	624.04	4.86	-0.690	0.000	0.113
74.00	-8.18	-1.45	0.00	-62.65	0.00	62.65	1052.07	526.04	1018.84	624.04	5.15	-0.709	0.000	0.108
76.00	-7.94	-1.43	0.00	-59.75	0.00	59.75	1052.07	526.04	1018.84	624.04	5.46	-0.727	0.000	0.103
78.00	-7.71	-1.40	0.00	-56.90	0.00	56.90	1052.07	526.04	1018.84	624.04	5.76	-0.744	0.000	0.099
80.00	-7.48	-1.37	0.00	-54.10	0.00	54.10	1052.07	526.04	1018.84	624.04	6.08	-0.760	0.000	0.094
80.00	-7.48	-1.37	0.00	-54.10	0.00	54.10	1052.07	526.04	1018.84	624.04	6.08	-0.760	0.000	0.094
82.00	-7.24	-1.34	0.00	-51.36	0.00	51.36	1052.07	526.04	1018.84	624.04	6.40	-0.776	0.000	0.089
84.00	-7.01	-1.31	0.00	-48.69	0.00	48.69	1052.07	526.04	1018.84	624.04	6.73	-0.790	0.000	0.085
86.00	-6.77	-1.28	0.00	-46.07	0.00	46.07	1052.07	526.04	1018.84	624.04	7.06	-0.804	0.000	0.080
88.00	-6.54	-1.25	0.00	-43.51	0.00	43.51	1052.07	526.04	1018.84	624.04	7.40	-0.817	0.000	0.076

Calculated Forces

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

90.00	-6.31	-1.22	0.00	-41.01	0.00	41.01	1052.07	526.04	1018.84	624.04	7.75	-0.830	0.000	0.072
92.00	-6.07	-1.19	0.00	-38.57	0.00	38.57	1052.07	526.04	1018.84	624.04	8.10	-0.841	0.000	0.068
94.00	-5.84	-1.16	0.00	-36.20	0.00	36.20	1052.07	526.04	1018.84	624.04	8.45	-0.852	0.000	0.064
96.00	-5.61	-1.12	0.00	-33.88	0.00	33.88	1052.07	526.04	1018.84	624.04	8.81	-0.863	0.000	0.060
98.00	-5.37	-1.09	0.00	-31.63	0.00	31.63	1052.07	526.04	1018.84	624.04	9.18	-0.872	0.000	0.056
100.00	-5.14	-1.06	0.00	-29.45	0.00	29.45	1052.07	526.04	1018.84	624.04	9.54	-0.881	0.000	0.052
102.00	-4.91	-1.03	0.00	-27.33	0.00	27.33	1052.07	526.04	1018.84	624.04	9.91	-0.889	0.000	0.048
104.00	-4.67	-1.00	0.00	-25.27	0.00	25.27	1052.07	526.04	1018.84	624.04	10.29	-0.897	0.000	0.045
106.00	-4.44	-0.96	0.00	-23.28	0.00	23.28	1052.07	526.04	1018.84	624.04	10.66	-0.904	0.000	0.042
108.00	-4.21	-0.93	0.00	-21.35	0.00	21.35	1052.07	526.04	1018.84	624.04	11.04	-0.911	0.000	0.038
110.00	-3.93	-0.85	0.00	-19.49	0.00	19.49	1052.07	526.04	1018.84	624.04	11.43	-0.917	0.000	0.035
110.00	-3.93	-0.85	0.00	-19.49	0.00	19.49	1305.53	652.76	129.19	160.41	11.43	-0.917	0.000	0.124
112.00	-3.59	-0.83	0.00	-17.80	0.00	17.80	1305.53	652.76	129.19	160.41	11.81	-0.922	0.000	0.114
114.00	-3.26	-0.82	0.00	-16.14	0.00	16.14	1305.53	652.76	129.19	160.41	12.23	-1.062	0.000	0.103
115.00	-3.00	-0.81	0.00	-15.32	0.00	15.32	1305.53	652.76	129.19	160.41	12.46	-1.126	0.000	0.098
116.00	-2.84	-0.80	0.00	-14.51	0.00	14.51	1305.53	652.76	129.19	160.41	12.70	-1.187	0.000	0.093
118.00	-2.51	-0.79	0.00	-12.91	0.00	12.91	1305.53	652.76	129.19	160.41	13.22	-1.300	0.000	0.082
120.00	-2.08	-0.64	0.00	-11.34	0.00	11.34	1305.53	652.76	129.19	160.41	13.79	-1.399	0.000	0.072
120.00	-2.08	-0.64	0.00	-11.34	0.00	11.34	317.71	158.85	76.59	52.28	13.79	-1.399	0.000	0.223
122.00	-1.93	-0.62	0.00	-10.07	0.00	10.07	317.71	158.85	76.59	52.28	14.39	-1.487	0.000	0.199
124.00	-1.78	-0.61	0.00	-8.82	0.00	8.82	317.71	158.85	76.59	52.28	15.04	-1.621	0.000	0.174
125.00	-1.53	-0.59	0.00	-8.22	0.00	8.22	317.71	158.85	76.59	52.28	15.39	-1.681	0.000	0.162
126.00	-1.46	-0.59	0.00	-7.62	0.00	7.62	317.71	158.85	76.59	52.28	15.75	-1.737	0.000	0.150
128.00	-1.32	-0.57	0.00	-6.45	0.00	6.45	317.71	158.85	76.59	52.28	16.50	-1.836	0.000	0.128
130.00	-1.09	-0.42	0.00	-5.31	0.00	5.31	317.71	158.85	76.59	52.28	17.28	-1.919	0.000	0.105
130.00	-1.09	-0.42	0.00	-5.31	0.00	5.31	317.71	158.85	76.59	52.28	17.28	-1.919	0.000	0.105
132.00	-1.01	-0.40	0.00	-4.48	0.00	4.48	317.71	158.85	76.59	52.28	18.10	-1.988	0.000	0.089
134.00	-0.92	-0.39	0.00	-3.67	0.00	3.67	317.71	158.85	76.59	52.28	18.95	-2.045	0.000	0.073
135.00	-0.83	-0.38	0.00	-3.29	0.00	3.29	317.71	158.85	76.59	52.28	19.38	-2.070	0.000	0.065
136.00	-0.79	-0.37	0.00	-2.91	0.00	2.91	317.71	158.85	76.59	52.28	19.81	-2.092	0.000	0.058
138.00	-0.72	-0.35	0.00	-2.17	0.00	2.17	317.71	158.85	76.59	52.28	20.70	-2.128	0.000	0.044
140.00	-0.56	-0.18	0.00	-1.47	0.00	1.47	317.71	158.85	76.59	52.28	21.59	-2.153	0.000	0.030
140.00	-0.56	-0.18	0.00	-1.47	0.00	1.47	317.71	158.85	76.59	52.28	21.59	-2.153	0.000	0.030
142.00	-0.49	-0.17	0.00	-1.10	0.00	1.10	317.71	158.85	76.59	52.28	22.50	-2.172	0.000	0.023
144.00	-0.42	-0.15	0.00	-0.77	0.00	0.77	317.71	158.85	76.59	52.28	23.41	-2.185	0.000	0.016
146.00	-0.35	-0.13	0.00	-0.47	0.00	0.47	317.71	158.85	76.59	52.28	24.33	-2.194	0.000	0.010
147.00	-0.13	-0.12	0.00	-0.34	0.00	0.34	317.71	158.85	76.59	52.28	24.79	-2.196	0.000	0.007
148.00	-0.10	-0.11	0.00	-0.22	0.00	0.22	317.71	158.85	76.59	52.28	25.25	-2.198	0.000	0.005
150.00	0.00	-0.11	0.00	0.00	0.00	0.00	317.71	158.85	76.59	52.28	26.17	-2.200	0.000	0.000

Final Analysis Summary

Structure:	CT01493-S-SBA	**Code:**	EIA/TIA-222-G	3/1/2019	
Site Name:	North Stonington 2 CT	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

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 108 mph Wind	11.9	0.00	22.21	0.00	0.00	999.54
0.9D + 1.6W 108 mph Wind	11.9	0.00	16.66	0.00	0.00	985.09
1.2D + 1.0Di + 1.0Wi 50 mph Wind	3.5	0.00	30.65	0.00	0.00	302.12
1.2D + 1.0E	0.3	0.00	22.22	0.00	0.00	21.24
0.9D + 1.0E	0.3	0.00	16.67	0.00	0.00	20.91
1.0D + 1.0W 60 mph Wind	2.4	0.00	18.52	0.00	0.00	206.94

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 108 mph Wind	-2.20	-2.86	0.00	-51.60	0.00	-51.60	1305.53	652.76	129.19	160.41	120.00	0.994
0.9D + 1.6W 108 mph Wind	-1.58	-2.78	0.00	-50.21	0.00	-50.21	1305.53	652.76	129.19	160.41	120.00	0.966
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-4.36	-0.98	0.00	-20.16	0.00	-20.16	1305.53	652.76	129.19	160.41	120.00	0.399
1.2D + 1.0E	-2.52	-0.11	0.00	-2.33	0.00	-2.33	1305.53	652.76	129.19	160.41	120.00	0.053
0.9D + 1.0E	-1.89	-0.11	0.00	-2.29	0.00	-2.29	1305.53	652.76	129.19	160.41	120.00	0.050
1.0D + 1.0W 60 mph Wind	-2.08	-0.64	0.00	-11.34	0.00	-11.34	1305.53	652.76	129.19	160.41	120.00	0.223

Last revised on 11/28/2017

Monopole Mat Foundation Design

			Date
			8/21/2018
Customer Name:	Sprint Nextel	**EIA/TIA Standard:**	EIA-222-G
Site Name:	North Stonington 2 Ct	**Structure Height (Ft.):**	150
Site Number:	CT01493-S-SBA	**Engineer Name:**	S. Hesselbein
Engr. Number:	57603	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

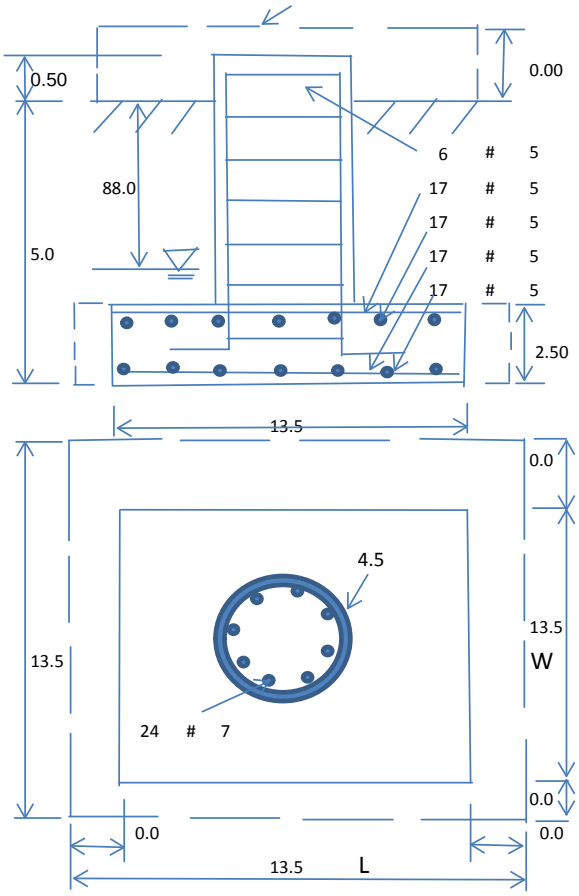
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	21.6	Shear Force (Kips):	11.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	995.6
Allowable overstress %:	0.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	4.5	Depth of Base BG (ft.):	5.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	13.5	Width of Pad (ft.):	13.5
Final Length of pad (ft)	13.5	Final width of pad (ft):	13.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	7	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	24	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	5	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	17	Qty. of Rebar in Pad (W):	17	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	17	Qty. of Rebar in Pad (W):	17	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	135.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	88.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	30000	Ultimate Skin Friction:	225	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	Yes	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	415.86	Total Dry Soil Weight (Kips):	56.14
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	56.14	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	503.34	Total Dry Concrete Weight (Kips):	75.50
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	75.50	Total Vertical Load on Base (Kips):	153.20

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	6134	<	Allowable Factored Soil Bearing (psf): 22500	0.27	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	1022.1	>	Design Factored Momont (kips-ft): 1006	0.98	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.02	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			
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	0.60		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	1475.8	>	Design Factored Moment (Mu, Kips-F	1031.3	0.70	OK!
Calculated Shear Capacity (Kips):	322.1	>	Design Factored Shear (Kips):	11.9	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	777.6	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	3017.7	>	Design Factored Axial Load (Pu Kips):	21.6	0.01	OK!
Moment & Axial Strength Combination:	0.70	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	355.2	>	One-Way Factored Shear (L-D. Kips):	93.3	0.26	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	355.2	>	One-Way Factored Shear (W-D., Kips)	93.3	0.26	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	266.9	>	One-Way Factored Shear (C-C, Kips):	88.5	0.33	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0012	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0012		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	623.8	>	Moment at Bottom (L-Dir. K-Ft):	301.6	0.48	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	623.8	>	Moment at Bottom (W-Dir. K-Ft):	301.6	0.48	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	878.3	>	Moment at Bottom (C-C Dir. K-Ft):	426.5	0.49	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0012	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0012		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	623.8	>	Moment at the top (L-Dir K-Ft):	106.4	0.17	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	623.8	>	Moment at the top (W-Dir K-Ft):	106.4	0.17	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	878.3	>	Moment at the top (C-C Dir. K-Ft):	108.9	0.12	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	398.2	k-ft.	Max. factored shear stress v_{u_CD}:		3.3	Psi
Max. factored shear stress v_{u_AB}:	8.1	Psi	Factored shear Strength ϕv_n:		164.3	Psi
Max. factored shear stress v_u:	8.1	Psi	Check Usage of Punching Shear Capacity:		0.05	OK!

MODIFICATION AND DESIGN DRAWINGS FOR AN EXISTING 150' PIROD MONOPOLE TOWER

PROPOSED CARRIER: SPRINT NEXTEL

SITE: CT01493-S-SBA / NORTH STONINGTON 2 CT

COORDINATES (LATITUDE: 41.353417°, LONGITUDE: -71.887000°)

CONSTRUCTION CLASS

TES HAS DETERMINED THIS AS A CLASS IV CONSTRUCTION PROJECT PER ANSI/ASSE A10.48

COMPLETE FABRICATION DRAWINGS FOR ALL MATERIALS REQUIRED FOR THIS PROJECT ARE AVAILABLE FROM TOWER ENGINEERING SOLUTIONS (TES). PLEASE CONTACT TES FOR MORE INFORMATION.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	1
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	1
A-1	TOWER PROFILE	0
A-2	CANISTER REINFORCEMENT DETAILS	0

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE **TES** PROJECT NO. 56408, DATED 7/20/2018.

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PHONE: (972) 483-0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
57603

CUSTOMER SITE NO:
CT01493-S-SBA

CUSTOMER SITE NAME:
NORTH STONINGTON 2 CT

811 STONINGTON ROAD
STONINGTON, CT 06378

STATE OF CONNECTICUT
HANMING YOU
28931
LICENSED PROFESSIONAL ENGINEER
3/1/19

DRAWN BY: CAH | CHECKED BY: SH/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CAH	01/03/19
1	REV. BUILDING CODE	CAH	03/01/19

SHEET TITLE:

TITLE SHEET

SHEET NUMBER: T-1

REV #: 1

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	LENGTH	SHEET LIST (INSTALLATION)	SHEET LIST (FABRICATE)	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE						
			Following Items are Non-standard Parts						
2	2	ATR78-120	7/8" DIA. THREAD ROD X 10'-0" (F1554 GR 105)	---	A-2	---	---	---	GALVANIZED
1	1	ATR78-132	7/8" DIA. THREAD ROD X 11'-0" (F1554 GR 105)	---	A-2	---	---	---	GALVANIZED
12	13	---	HEAVY HEX NUT, 7/8" DIA. A325	---	A-2	---	---	---	GALVANIZED
12	13	---	FLATWASHER, 7/8" DIA. F436	---	A-2	---	---	---	GALVANIZED
8	8	ATR100-13	1" DIA. ALL THREAD ROD X 1'-1" (F1554 GR 105)	---	A-2	---	---	---	GALVANIZED
32	33	---	HEAVY HEX NUT, 1" DIA. A325	---	A-2	---	---	---	GALVANIZED
32	33	---	FLATWASHER, 1" DIA. F436	---	A-2	---	---	---	GALVANIZED
3	4	PLW-238	PL 1 1/4" X 2 3/8" DIA. A572-50	---	A-2	F-1	1.6	6.4	GALVANIZED
4	4	CPL-1	PL 1 1/4" X 3 13/16" X 0'-11 1/16" A572-50	---	A-2	F-1	11.3	45.2	GALVANIZED
2	2	BRKW-1	ROLLED PLATE WELDMENT A572-50	---	A-2	F-2	13.6	27.2	GALVANIZED
2	2	MBW-1	MOUNTING BRACKET WELDMENT A572-50	---	A-2	F-4	23.5	47	GALVANIZED
1	1	BRKW-2	ROLLED PLATE WELDMENT A572-50	---	A-2	F-3	15.6	15.6	GALVANIZED
6	6	PL-5	PL 5/8" X 7 1/8" X 1'-2 3/4" A572-50	---	A-2	F-6	19.6	117.6	GALVANIZED
15	16	---	BOLT 5/8" X 4" A325	---	A-2	---	---	---	(1) HHN-LKW GALVANIZED
1	1	MBW-2	MOUNTING BRACKET WELDMENT A572-50	---	A-2	F-5	16.25	16.25	GALVANIZED
3	4	---	BOLT 1" X 4 1/2" A325	---	A-2	---	---	---	(1) HHN-LKW GALVANIZED
1	1	---	34" O.D. X 10'-0" SMOOTH ROUND (MULTI-PART SHROUD WITH EXPANSION KITS AND TOP CAP)	---	A-1	---	---	---	
2	2		LANCO /HENRY 287 WHITE ACRYLIC ELASTOMERIC COATING AND SEALER OR EQUIV (GALLON)	---	A-1	---	---	---	PROVIDED BY CONTRACTOR
			ALL APLXXXX, LPXXXX AND RLPXXXX ARE PATENTED PRODUCTS AND CANNOT BE FABRICATED BY THIRD PARTIES. THESE PARTS ARE AVAILABLE FROM: **METROSITE, LLC.** **180 IND PARK BLVD COMMERCE, GA 30529** **OFFICE: (706) 335-7045** **FAX: (706) 335-7056**						
			NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.						
						TOTAL WEIGHT (LBS) =		**275.3**	

Tower Engineering Solutions
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SBA
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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
57603

CUSTOMER SITE NO:
CT01493-S-SBA
CUSTOMER SITE NAME:
NORTH STONINGTON 2 CT
811 STONINGTON ROAD
STONINGTON, CT 06378

DRAWN BY: CAH | CHECKED BY: SH/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CAH	01/03/19

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER:
BOM

REV #:
0

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, 2018 CONNECTICUT STATE BUILDING CODE, AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS. 1
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.

FABRICATION

1. ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION.
2. ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

WELDING

1. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNO. (E70XX UNLESS NOTED OTHERWISE).
2. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5" BEYOND THE PROPOSED FIELD WELD SURFACES.
3. ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND.
4. WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
5. AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

1. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RCSC.
2. FLANGE BOLTS SHALL BE TIGHTENED BY THE AISC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING TABLE SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING.
3. SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
4. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
5. HB HOLLO-BOLT SHALL BE INSTALLED PER ICC ESR-3330 INSTRUCTIONS.

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2015 SECTION 1705 - FOR STEEL CONSTRUCTION & TABLE 1705.3 FOR CONCRETE CONSTRUCTION. 1

POST INSTALLED EPOXY INJECTED ANCHOR BOLTS:

1. CONCRETE MUST BE A MINIMUM OF 28 DAYS OLD.
2. FOLLOW MANUFACTURER'S REQUIREMENTS FOR CURE TIME VS. AMBIENT TEMPERATURE.
3. DRILL HOLE TO REQUIRED DIAMETER AND DEPTH. ALL WATER, DIRT, OIL, DEBRIS, GREASE OR DUST MUST BE REMOVED FROM EACH CORE HOLE. FOLLOW MANUFACTURER'S RECOMMENDATION FOR CORRECT TYPE OF CORE BIT. AVOID DAMAGING EXISTING REINFORCING STEEL OR OTHER EMBEDDED ITEMS. NOTIFY TES ENGINEERING IF VOIDS IN THE CONCRETE, REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED. STOP CORING IMMEDIATELY IF THIS OCCURS.
4. A HOLE ROUGHENING DEVICE FROM EITHER HILTI OR ALLFASTENERS SHALL BE USED WITH ALL HOLES. FOLLOW ALL MANUFACTURER'S RECOMMENDED CORING AND INSTALLATION INSTRUCTIONS.
5. AFTER CORING AND ROUGHENING, FLUSH EACH HOLE WITH RUNNING WATER TO REMOVE ANY SLURRY OR DEBRIS. REMOVE ALL WATER FROM THE HOLE BY MECHANICAL PUMPING.
6. BRUSH EACH HOLE WITH AN APPROPRIATE SIZED NYLON BRUSH AND FLUSH WITH RUNNING WATER A SECOND TIME. REMOVE ALL WATER FROM THE HOLE.
7. AFTER THE SECOND WATER FLUSH BRUSH THE HOLE AGAIN WITH THE APPROPRIATE SIZED NYLON BRUSH.
8. BLOW EACH HOLE WITH COMPRESSED AIR TWO TIMES MINIMUM.
9. CONFIRM THAT EACH HOLE IS PROPERLY ROUGHED AND DRY.
10. NO EPOXY INJECTION SHALL TAKE PLACE IN RAINY CONDITIONS.
11. EPOXY SHOULD BE VISIBLE AT THE TOP OF THE CORE HOLE AFTER INSTALLATION.
12. CONTRACTOR TO SUPPLY ONE PHOTO OF EACH ROUGHED AND CLEANED HOLE IN CLOSEOUT PHOTO PACKAGE.

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING [a,b]

BOLT LENGTH [c]	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 [d]	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS [d]
NOT MORE THAN $4d_b$	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN $4d_b$ BUT NOT MORE THAN $8d_b$	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN $8d_b$ BUT NOT MORE THAN $12d_b$	2/3 TURN	5/6 TURN	1 TURN

[a] NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.

[b] APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

[c] WHEN THE BOLT LENGTH EXCEEDS $12d_b$, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL.

[d] BEVELED WASHER NOT USED.

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004
RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

1. HB12 HOLLO BOLT: 59 FT-LBS
2. HB16 HOLLO BOLT: 140 FT-LBS
3. HB20 HOLLO BOLT: 221 FT-LBS
4. M20 AJAX BOLT: 280 FT-LBS.

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

1. CONTRACTOR'S RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
2. HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPT.
3. CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
4. CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
5. ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASE, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
6. FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
7. CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
8. ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
9. IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING THE PLATES.
10. PLEASE REPORT ANY FIELD ISSUE TO TES @ 972-483-0607.

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PHONE: (972) 483-0607

SBA

5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
57603

CUSTOMER SITE NO:
CT01493-S-SBA
CUSTOMER SITE NAME:
NORTH STONINGTON 2 CT
811 STONINGTON ROAD
STONINGTON, CT 06378

DRAWN BY: CAH | CHECKED BY: SH/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CAH	01/03/19
1	REV. BUILDING CODE	CAH	03/01/19

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER: GN-1
REV #: 1

NOTES:

1. TEMPORARILY RELOCATE ANY EXISTING COAX ATTACHED TO THE MONOPOLE AND ANY OTHER MEMBERS WHERE OBSTRUCTION WITH THE PROPOSED MODIFICATION MAY OCCUR.

SCOPE OF WORK

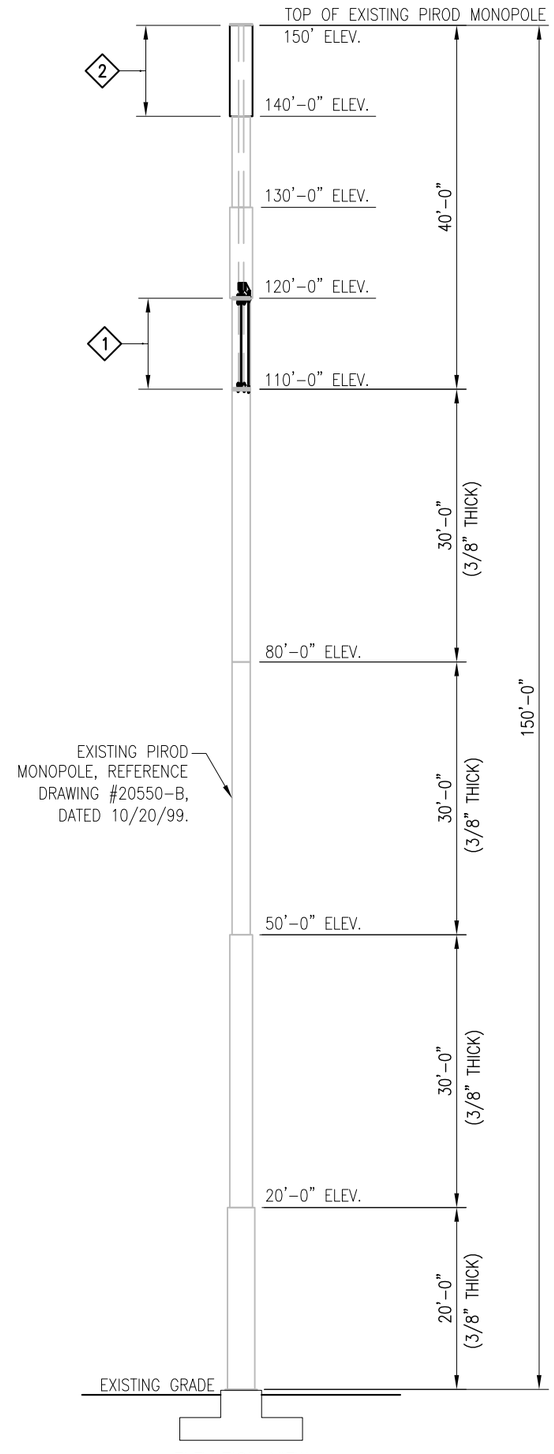
1. REINFORCE EXISTING SPINE FROM 110'–0" ELEV. TO 120'–0" ELEV. SEE SHEET A–2 FOR DETAILS.
2. REPLACE EXISTING (1) 24" O.D. X 10'–0" SMOOTH ROUND CANISTER SHROUDS FROM 140' TO 150' ELEV. WITH NEW (1) 34" O.D. X 10'–0" SMOOTH ROUND, MULTI–PART CANISTER SHROUDS EXPANSION KITS WITH TOP CAP PLATE (TO BE PROVIDED BY OTHERS.) INSTALL NEW SHROUDS PER THE MANUFACTURER'S INSTRUCTIONS. NEW SHROUD COLOR SHOULD MATCH EXISTING POLE COLOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN–UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

PHOTO 1
FOUNDATION

PHOTO 2
TOWER PROFILE

FOUNDATION COATING NOTES:

1. THE COATING MATERIALS SHALL BE LANCO WHITE ACRYLIC ELASTOMERIC COATING AND SEALER, OR HYDRO ARMOR COATING.
2. THE COATING CAN BE PLACED AT LEAST (2) DAYS AFTER THE PLACEMENT OF THE CONCRETE FOR FOUNDATION REINFORCEMENT, AND MINIMUM (4) DAYS FOR NEW FOUNDATION CONSTRUCTION.
3. THE CONCRETE SURFACE SHALL BE CLEAN AND DRY PRIOR TO THE APPLICATION OF THE COATING.
4. THE COATING SHALL BE APPLIED TO ALL THE SURFACES OF THE CONCRETE ABOVE THE GROUND AND 6" BELOW THE GRADE SURFACE IF APPLICABLE.
5. MINIMUM 30 MILS COATING IS REQUIRED.
6. APPLY COLD GALVANIZE AT LEAST 2'–3' ABOVE FOUNDATION.



ELEVATION VIEW
(TOWER W/ PROPOSED MODIFICATIONS)

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PHONE: (972) 483–0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)–487–SITE

TES JOB NO:
57603

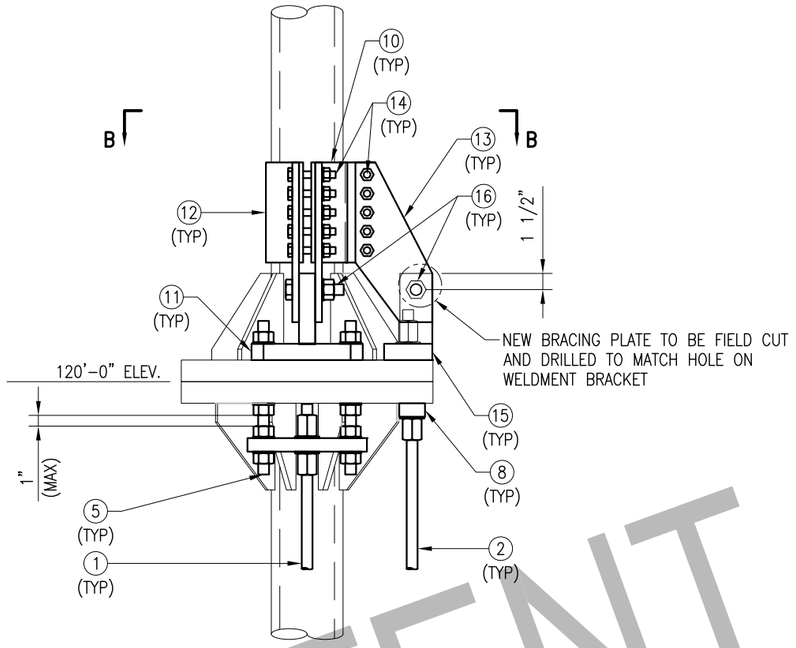
CUSTOMER SITE NO:
CT01493–S–SBA
CUSTOMER SITE NAME:
NORTH STONINGTON 2 CT
811 STONINGTON ROAD
STONINGTON, CT 06378

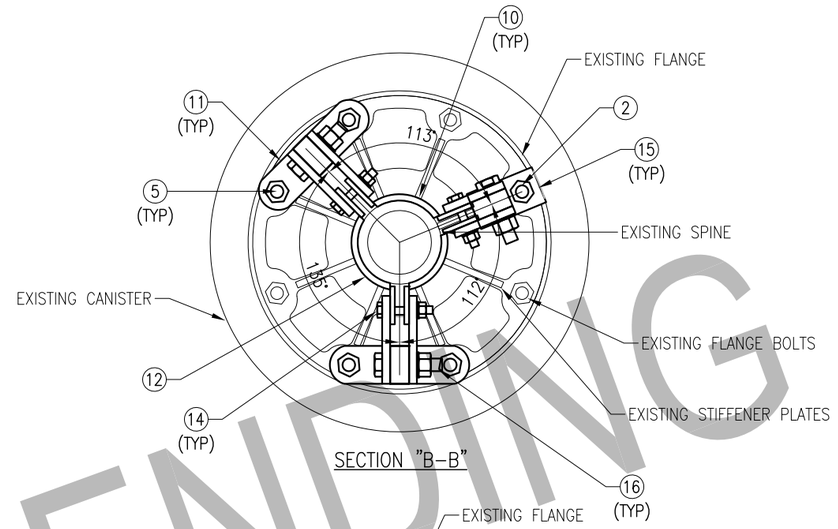
DRAWN BY: CAH | CHECKED BY: SH/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CAH	01/03/19

SHEET TITLE:
TOWER PROFILE

SHEET NUMBER: A–1
REV #: 0





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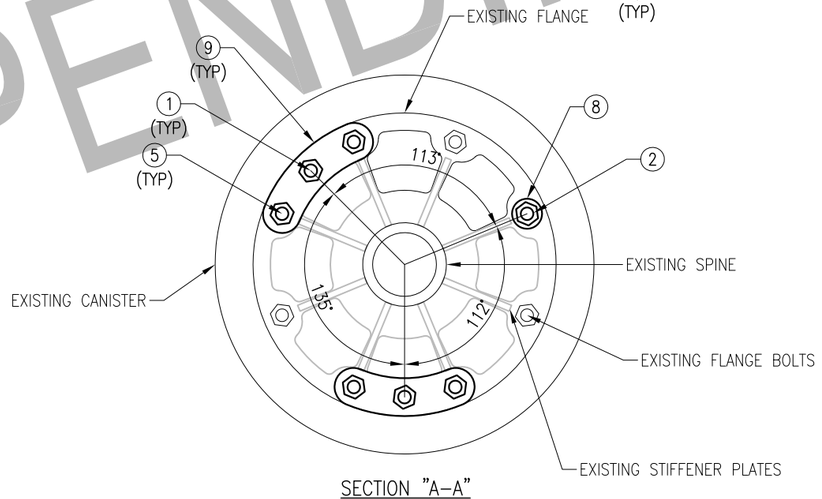

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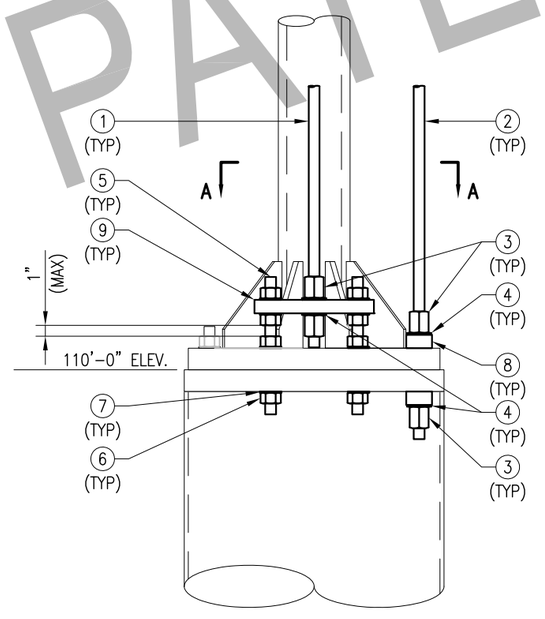


ELEVATION VIEW
(110'-0" TO 120'-0" ELEV.)

ITEM NO.	QTY.	PART NO.	DESCRIPTION
16	3	---	BOLT 1" X 4 1/2" A325
15	1	MBW-2	MOUNTING BRACKET WELDMENT A572-50
14	15	---	BOLT 5/8" X 4" A325
13	6	PL-5	PL 5/8" X 7 1/8" X 1'-2 3/4" A572-50
12	1	BRKW-2	ROLLED PLATE WELDMENT A572-50
11	2	MBW-1	MOUNTING BRACKET WELDMENT A572-50
10	2	BRKW-1	ROLLED PLATE WELDMENT A572-50
9	4	CPL-1	PL 1 1/4" X 3 13/16" X 0'-11 1/16" A572-50
8	3	PLW-238	PL 1 1/4" X 2 3/8" DIA. A572-50
7	32	---	FLATWASHER, 1" DIA. F436
6	32	---	HEAVY HEX NUT, 1" DIA. A325
5	8	ATR100-13	1" DIA. ALL THREAD ROD X 1'-1" (F1554 GR 105)
4	12	---	FLATWASHER, 7/8" DIA. F436
3	12	---	HEAVY HEX NUT, 7/8" DIA. A325
2	1	ATR78-132	7/8" DIA. THREAD ROD X 11'-0" (F1554 GR 105)
1	2	ATR78-120	7/8" DIA. THREAD ROD X 10'-0" (F1554 GR 105)

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PHONE: (972) 483-0607

SBA
5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
57603

CUSTOMER SITE NO:
CT01493-S-SBA
CUSTOMER SITE NAME:
NORTH STONINGTON 2 CT
811 STONINGTON ROAD
STONINGTON, CT 06378

DRAWN BY: CAH | CHECKED BY: SH/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CAH	01/03/19

SHEET TITLE:
CANISTER REINFORCEMENT DETAILS

SHEET NUMBER: A-2
REV #: 0

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.

Sprint®™

SITE NAME: NORTH STONINGTON 2 CT

SITE NUMBER: CT33XC088

AUGMENT ID: CT33XC088Q17.2

SITE ADDRESS: 808 STONINGTON ROAD
STONINGTON, CT 06378

JURISDICTION: TOWN OF STONINGTON

SITE TYPE: EXISTING 150' FLAGPOLE

PROGRAM: DO MACRO UPGRADE EQUIPMENT DEPLOYMENT

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

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847.277.0070
FAX: 847.277.0080
ae@westchesterservices.com

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

PROJECT INFORMATION

SITE INFORMATION:

LATITUDE: (PER SBA RECORD)	41° 21' 12.3" N (41.353417°)
LONGITUDE: (PER SBA RECORD)	71° 53' 13.2" W (71.887°)
GROUND ELEVATION:	46± AMSL (PER 2C DOCUMENT)
STRUCTURE HEIGHT:	150'± AGL (FROM RECORD STRUCTURAL)
STRUCTURE TYPE:	FLAGPOLE
ZONING JURISDICTION:	TOWN OF STONINGTON
ZONING DISTRICT/ OCCUPANCY:	FR (FARM-RESIDENTIAL DISTRICT)

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

PROPERTY OWNER:
NKW LLC
P.O. BOX 275
LEDYARD, CT

TOWER OWNER:
SBA TOWERS, LLC
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

SBA SITE ID: CT01493-S-01
SBA SITE NAME: NORTH STONINGTON 2 CT

SBA CONTACT:
STEPHEN ROTH
SROTH@SBASITE.COM
(617) 794-1405

A&E FIRM:
WESTCHESTER SERVICES, L.L.C.
604 FOX GLEN
BARRINGTON, IL 60010
PHONE: (224) 277-0070

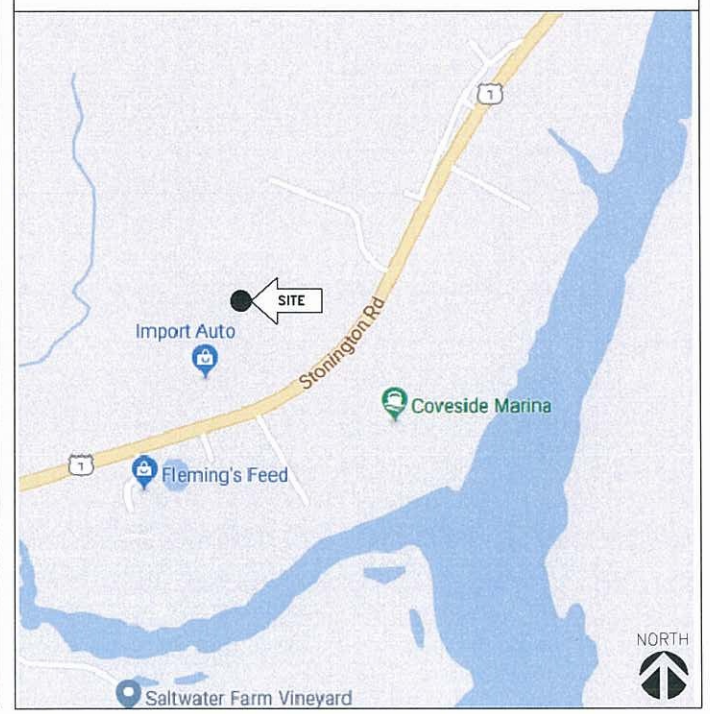
811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR
www.cbyd.com

CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

LOCATION MAP N.T.S.

AREA MAP N.T.S.



SCOPE OF WORK

1. REMOVE EXISTING STEALTH CANISTER AND INSTALL (1) NEW 34"ø STEALTH CANISTER (BY SBA)
2. REMOVE (3) EXISTING SPRINT PANEL ANTENNAS & REPLACE W/(3) NEW SPRINT TRI-BAND PANEL ANTENNAS.
3. INSTALL (3) NEW 2500 MHz RRHS AT GRADE.
4. INSTALL (3) NEW 800 MHZ RRHS AT GRADE.
5. INSTALL (6) NEW DIPLEXERS & (3) NEW COMBINERS AT GRADE.
6. INSTALL (6) NEW DIPLEXERS AT TOWER TOP.
7. REMOVE (6) EXISTING 1-5/8" COAX CABLES.
8. INSTALL (3) NEW 3/8" RET CABLES.
9. INSTALL (12) NEW 7/8" COAX.

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

CODE COMPLIANCE

1. 2018 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.

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	03/07/18	ISSUED FOR CONSTRUCTION	SDB
0	01/19/18	ISSUED FOR CONSTRUCTION	SH

SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

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

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

WESTCHESTER SERVICES LLC
604 FOX GLEN
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ae@westchesterservices.com

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	03/07/18	ISSUED FOR CONSTRUCTION	SDB
0	01/19/18	ISSUED FOR CONSTRUCTION	SH

SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

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

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STATE OF CONNECTICUT JOHN M. ... LICENSED ARCHITECT NO. 10137 3/1/18

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	03/07/18	ISSUED FOR CONSTRUCTION	SDB
0	01/19/18	ISSUED FOR CONSTRUCTION	SH

SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

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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STATE OF CONNECTICUT LICENSED ARCHITECT NO. 10137

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	03/07/18	ISSUED FOR CONSTRUCTION	SDB
0	01/19/18	ISSUED FOR CONSTRUCTION	SH

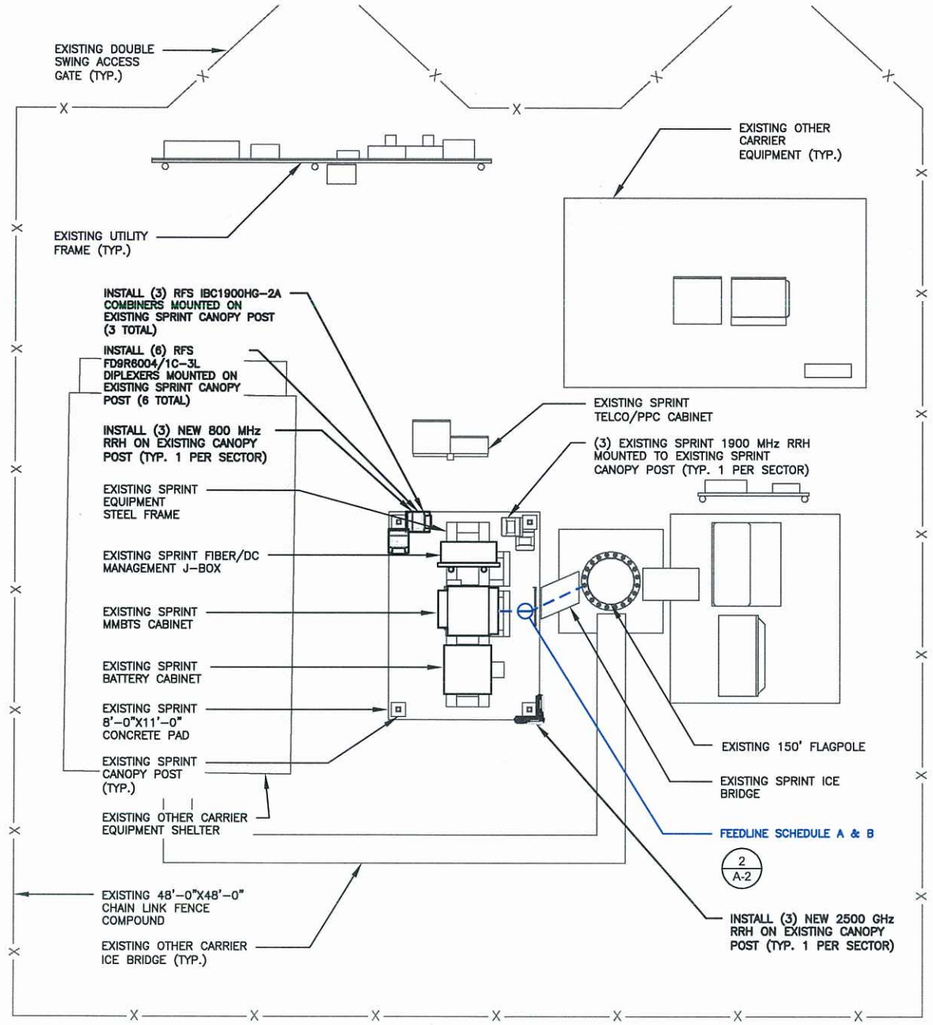
SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
OUTLINE SPECIFICATIONS

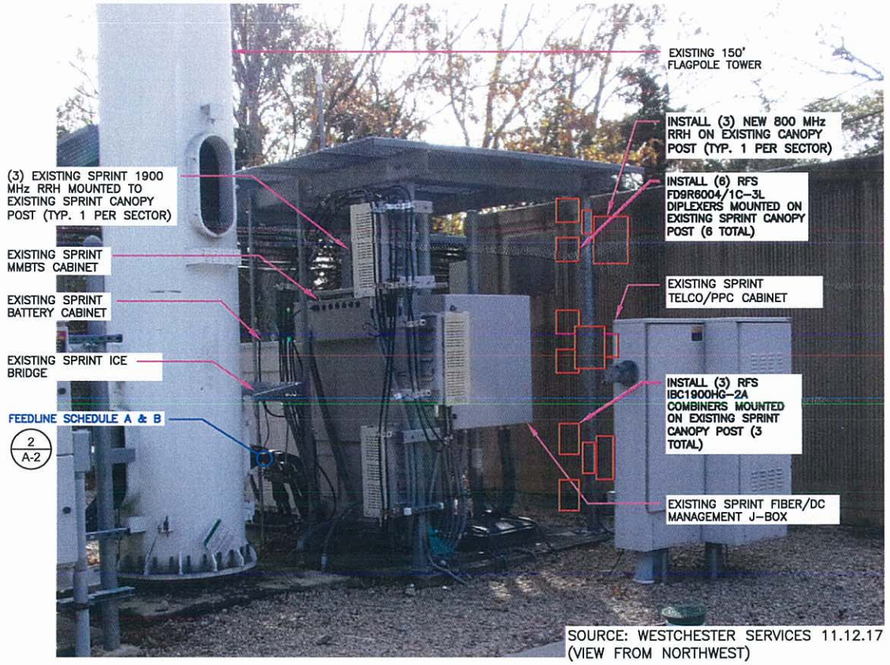
SHEET NUMBER
SP-3



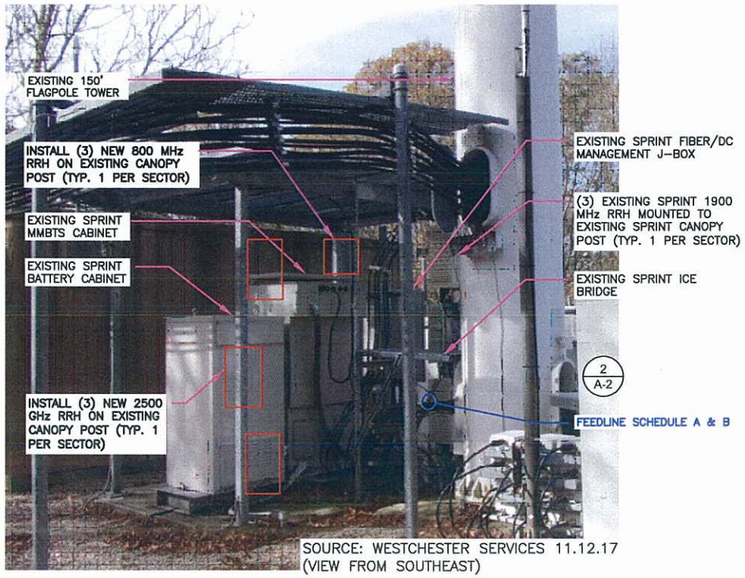
NORTH

COMPOUND PLAN 1/A-1
SCALE: 1/8"=1'-0" (11x17)
1/4"=1'-0" (22x34)

0 1' 2' 4'



SOURCE: WESTCHESTER SERVICES 11.12.17
(VIEW FROM NORTHWEST)



SOURCE: WESTCHESTER SERVICES 11.12.17
(VIEW FROM SOUTHEAST)

EQUIPMENT PLAN PHOTO DETIAL 2/A-1
SCALE: N.T.S.

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

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847.277.0070
FAX : 847.277.0080
ae@westchesterservices.com

STATE OF CONNECTICUT
JOHN M. DAVIS
LICENSED ARCHITECT
NO. 10137

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS

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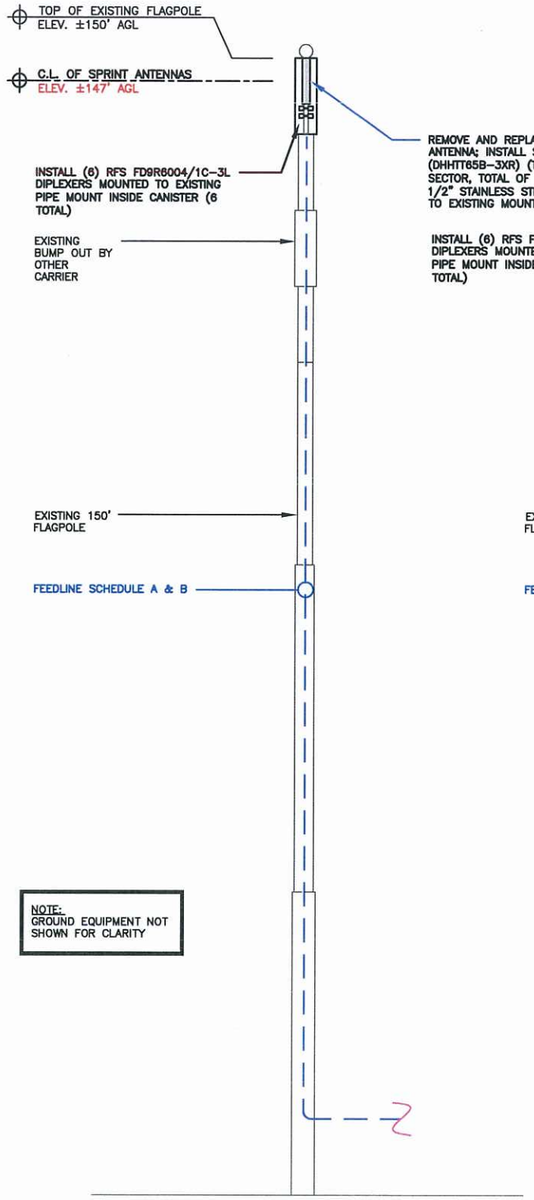
SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1

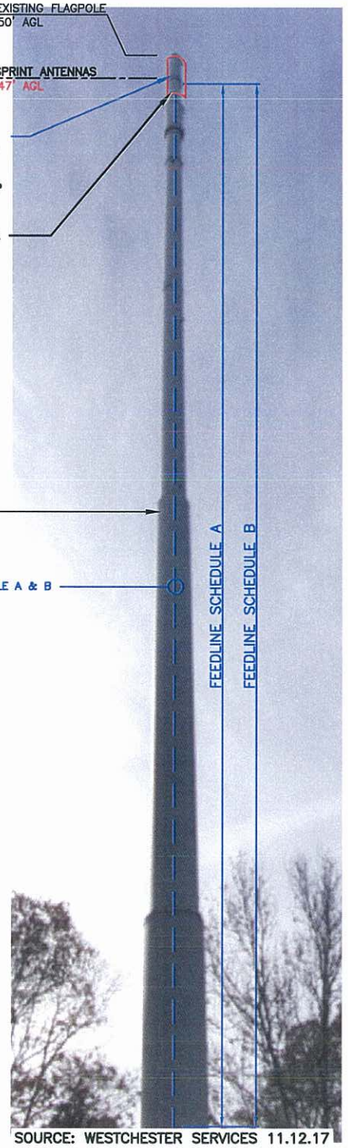


NOTE:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY

NORTH

ELEVATION 1 / A-2
SCALE: 1"=10'-0" (22x34)
1/2"=10'-0" (11x17)

0 5' 10'



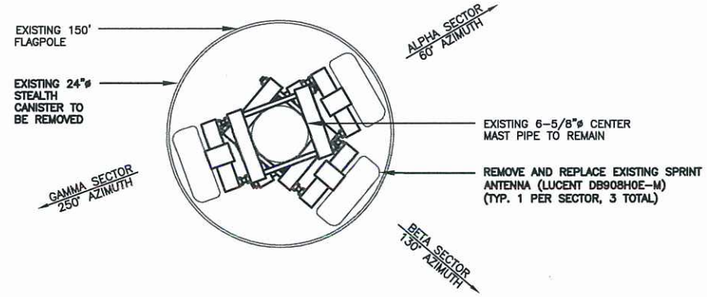
SOURCE: WESTCHESTER SERVICES 11.12.17

FEEDLINES		
FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	(6) EXISTING 1-5/8" COAX CABLES TO BE REMOVED	ROUTED INSIDE TOWER
B	(3) NEW 3/8" RET CABLES TO FOLLOW EXISTING ROUTING (12) NEW 7/8" COAX TO FOLLOW EXISTING ROUTING	ROUTED INSIDE TOWER

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

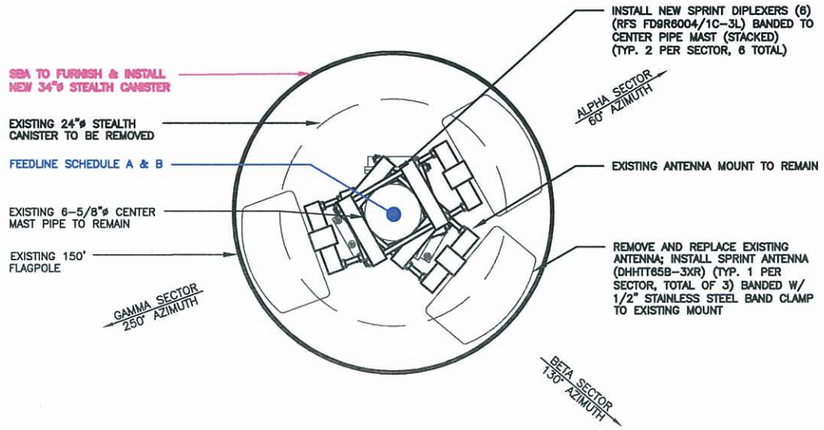
TOWER ELEVATION PHOTO DETAIL 2 / A-2
SCALE: N.T.S.

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.



NORTH

EXISITNG ANTENNA PLAN 3 / A-2
SCALE: N.T.S.



NORTH

PROPOSED ANTENNA PLAN 4 / A-2
SCALE: N.T.S.

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

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

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

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

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847.277.0070
FAX: 847.277.0080
ae@westchesterservices.com

STATE OF CONNECTICUT
JOHN M. BRIGHT
3/7/18
NO. 10137
LICENSED ARCHITECT

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY:	JK
APPROVED BY:	JMB

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
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0	01/19/18	ISSUED FOR CONSTRUCTION	SH

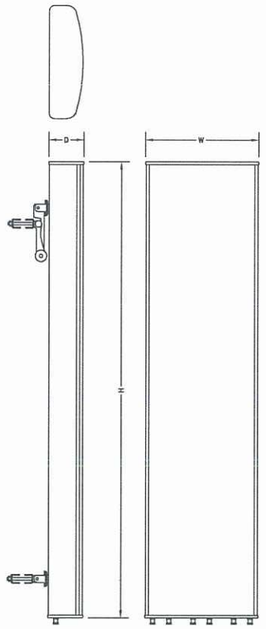
SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
ELEVATION & ANTENNA PLANS

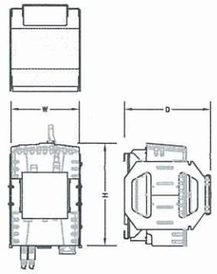
SHEET NUMBER
A-2



ANTENNA SPECIFICATIONS

MANUF.	COMMSCOPE
MODEL #	DHHTT65B-3XR
HEIGHT	72.1"
WIDTH	11.9"
DEPTH	7.1"
WEIGHT	45.4± LBS.

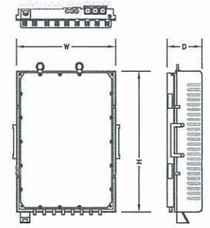
ANTENNA DETAIL 1 / A-3
SCALE: N.T.S.



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

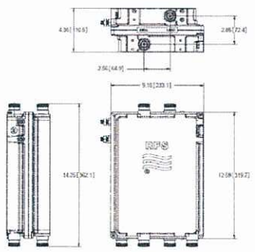
MANUF.	NOKIA (ALU)
MODEL #	TD-RRH8X20-25
HEIGHT	26.1"
WIDTH	18.6"
DEPTH	6.7"
WEIGHT	70± LBS

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

DIPLEXER SPECIFICATIONS

MANUF.	RFS
MODEL #	KIT-FD9R6004/1C-3L
HEIGHT	5.8"
WIDTH	6.5"
DEPTH	1.5"
WEIGHT	2.6± LBS

DIPLEXER DETAIL 4 / A-3
SCALE: N.T.S.



COMBINER SPECIFICATIONS

MANUF.	RFS
MODEL #	IBC1900HG-2A
HEIGHT	12.6"
WIDTH	9.2"
DEPTH	4.35"
WEIGHT	22± LBS

COMBINER DETAIL 5 / A-3
SCALE: N.T.S.

RAN EQUIPMENT LIST
(G.C. SHALL FURNISH AND INSTALL ALL OTHER MATERIALS & EQUIPMENT NOT SUPPLIED BY SPRINT)

DESCRIPTION	# UNITS	QUANTITY	MAKE/MODEL/MATERIAL	PROVIDED BY
ANTENNA	3	3	COMMSCOPE DHHTT65B-3XR	SPRINT
RRU (AT GROUND LEVEL)	3	3	ALCATEL LUCENT RRH TD-RRH8X20-25	SPRINT
RRU (AT GROUND LEVEL)	3	3	ALCATEL-LUCENT RRH-2x50-800 (800 MHz)	SPRINT
RRU (AT GROUND LEVEL)	3	3	ALCATEL-LUCENT RRH-4x45-1900 (1900 MHz)	SPRINT
DIPLEXERS	12	6 (TOWER TOP) 6 (TOWER BOTTOM)	RFS FD9R6004/1C-CL DIPLEXERS	SPRINT
COMBINERS	3	3 (TOWER BOTTOM)	IBC1900HG-2A COMBINERS	SPRINT
COAX	12	12	7/8" COAX CABLE AT ±165'	SPRINT
RET	3	3	3/8" RET CABLE AT ±165'	SPRINT
RF JUMPERS	18	18	RF JUMPER CABLES	SPRINT

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

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

WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847.277.0070
FAX : 847.277.0080
ae@westchesterservices.com

STATE OF CONNECTICUT
JOHN M. BARRETT
3/9/18
NO. 10137
LICENSED ARCHITECT

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS

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0	01/19/18	ISSUED FOR CONSTRUCTION	SH

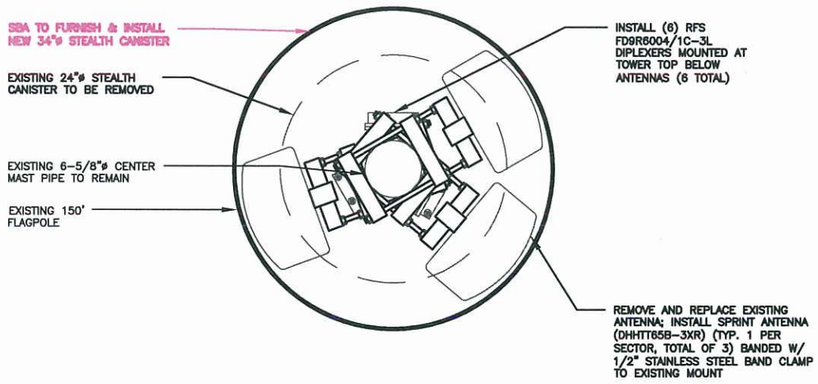
SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
TOWER EQUIPMENT DETAILS

SHEET NUMBER
A-3



ANTENNA CANISTER PLAN DETAIL (1 / S-1)
SCALE: N.T.S.

SPECIAL CONSTRUCTION NOTE:
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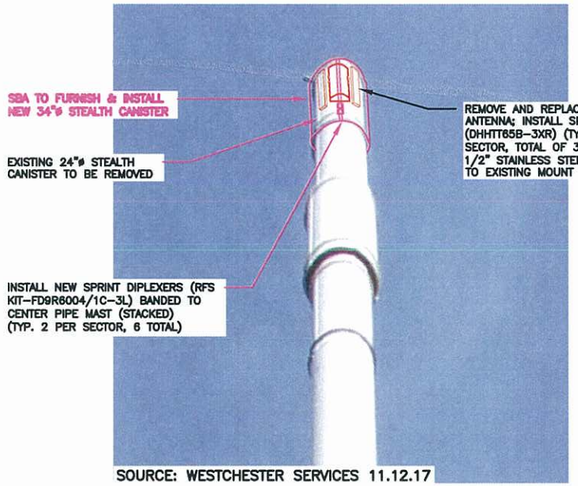
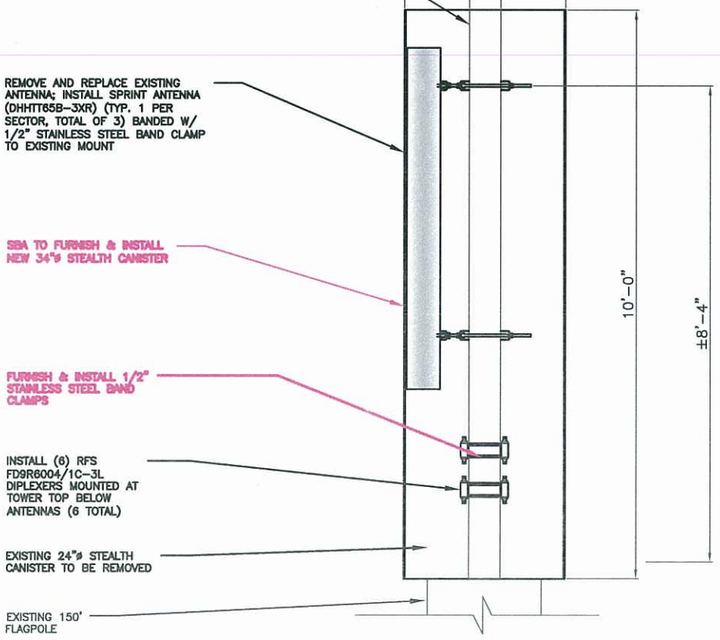
NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

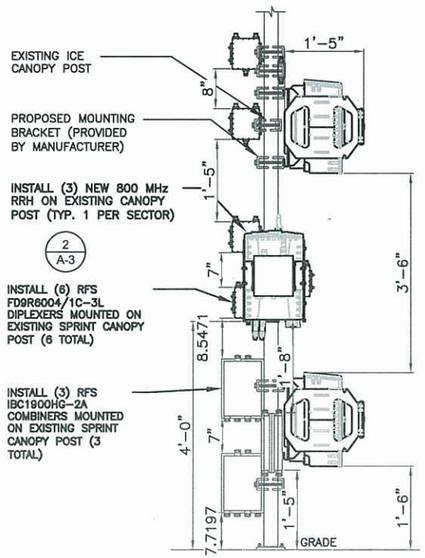


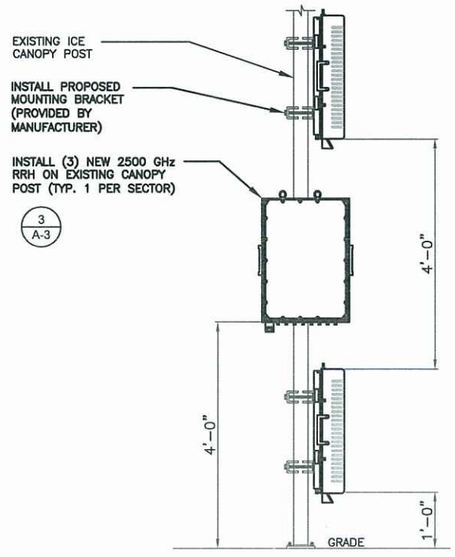
1 / A-3

ANTENNA MOUNT PHOTO DETAIL (3 / S-1)
SCALE: N.T.S.



ANTENNA & DIPLEXER MOUNTING DETAIL (2 / S-1)
SCALE: N.T.S.





RRH, DIPLEXER, & COMBINER MOUNTING DETAIL (4 / S-1)
SCALE: N.T.S.

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

SBA
SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
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WESTCHESTER SERVICES LLC
604 FOX GLEN
BARRINGTON, IL 60010
TELEPHONE: 847.277.0070
FAX : 847.277.0080
ae@westchesterservices.com

STATE OF CONNECTICUT
JOHN M. BRADY
LICENSED ARCHITECT
NO. 10137

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APPROVED BY: JMB

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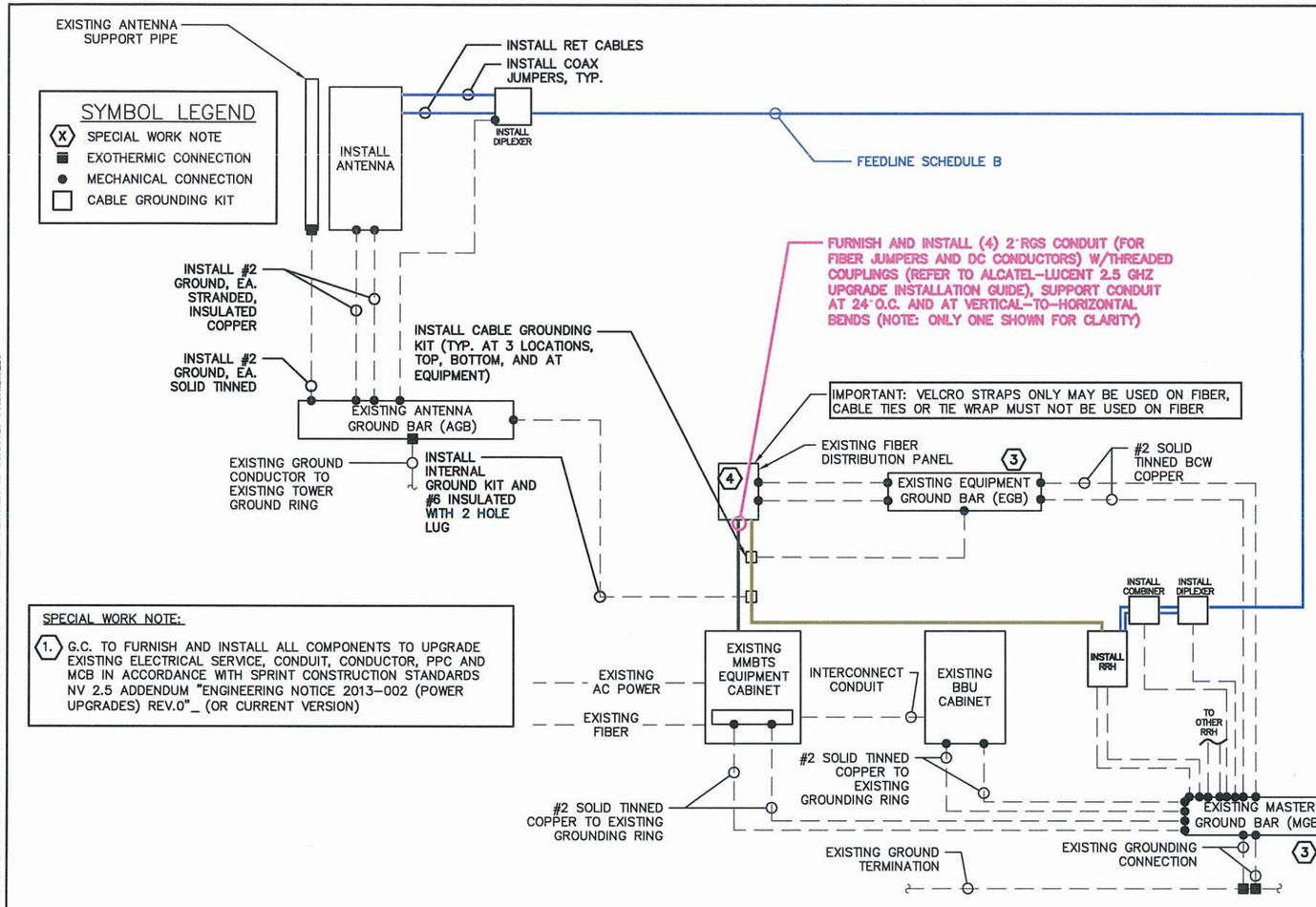
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
ANTENNA & RRH MOUNTING DETAILS

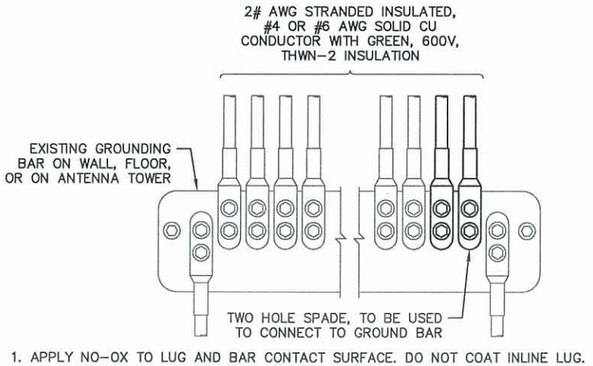
SHEET NUMBER
S-1



SPECIAL WORK NOTE:

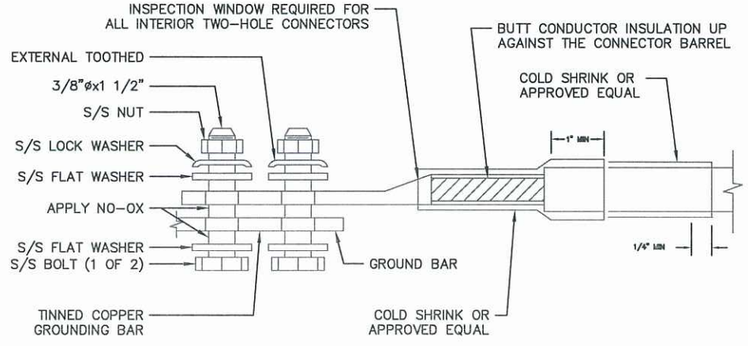
1. G.C. TO FURNISH AND INSTALL ALL COMPONENTS TO UPGRADE EXISTING ELECTRICAL SERVICE, CONDUIT, CONDUCTOR, PPC AND MCB IN ACCORDANCE WITH SPRINT CONSTRUCTION STANDARDS NV 2.5 ADDENDUM "ENGINEERING NOTICE 2013-002 (POWER UPGRADES) REV.0"_ (OR CURRENT VERSION)

TYPICAL POWER AND GROUNDING ONE LINE DIAGRAMS (1 / E-1)
SCALE: N.T.S.



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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STATE OF CONNECTICUT
JOHN M. BAKER
LICENSED ARCHITECT
NO. 10137

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	03/07/18	ISSUED FOR CONSTRUCTION	SDB
0	01/19/18	ISSUED FOR CONSTRUCTION	SH

SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

Augment ID: CT33XC088Q17.2 NOTE: RFDS PROVIDED BY SPRINT DATED 08/15/17. EXCERPTS TAKEN DEPICT RELEVANT RF DESIGN INFORMATION. A&E VENDOR SCOPE OF WORK LIMITED TO DESIGN OF MECHANICAL/STRUCTURAL EQUIPMENT ATTACHMENTS.

RFDS ID: 111254

SprintVision — RF Design Sheet

Site Identification	
Cascade	CT33XC088
SMS Schedule ID	12323226
SMS Schedule Name	DO Macro Upgrade
PID	
RRU OEM	ALU
Switch OEM	Alcatel Lucent
RFDS Issue Date	2017-08-15 00:00:00.0
RFDS Revision Date	2017-10-19 00:00:00.0
RFDS Revision	2

Filter Analysis Complete	YES
RFDS - Issue Date	08/15/2017
Design Status	Complete
Project Description	DO Macro Upgrade - Add 800MHz (30 + 40) and 2500 MHz

Battery Backup Cabinet Model	
Model Number	
Weight (Lbs.)	
Dimensions (In.)	
Manufacturer	

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	978-690-9700
RF Manager	Jonathan Hull
RF Manager Email	Jonathan.B.Hull@Sprint.com
RF Manager Phone	617-233-2920

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

BTS #1 Model	
Model Number	
Weight (Lbs.)	
Dimensions (In.)	
Manufacturer	
Number of BTS #1	

Location Details	
Latitude	41.35306
Longitude	-71.88722
Market	Northern Connecticut
Region	Northeast
City	Stonington
State	CT
Zip Code	CT/06378
County	New London

2500MHz	3
1900MHz	3
800MHz	3

SprintVision — RF Design Sheet

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
Trunk Cable 1 Qty						

Band: 1900	Alpha	Beta	Gamma	Delta	Epsilon	Zeta
Radio Model						
Model Number	N/A	N/A	N/A	N/A	N/A	N/A
Weight (lbs)	N/A	N/A	N/A	N/A	N/A	N/A
Dimensions	N/A	N/A	N/A	N/A	N/A	N/A
Manufacturer	N/A	N/A	N/A	N/A	N/A	N/A
Number of RRUs needed	0	0	0	0	0	0

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

SprintVision — RF Design Sheet

Band: 1900	Alpha		Beta		Gamma		Delta		Epsilon		Zeta	
Antenna1												
Model Number	DHHTT65B-3XR		DHHTT65B-3XR		DHHTT65B-3XR							
Weight (lbs)	48.5		48.5		48.5		N/A		N/A		N/A	
Dimensions	72 x 12 x 7.1		72 x 12 x 7.1		72 x 12 x 7.1		N/A		N/A		N/A	
Manufacturer	CommScope		CommScope		CommScope		N/A		N/A		N/A	
Ant1 Top Jumper Make/Mode/Qty	N/A	0	N/A	0	N/A	0	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	60		130		250		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)	149.9671964		149.9671964		149.9671964		N/A		N/A		N/A	
Antenna 1 Electrical DT	3		3		3		N/A		N/A		N/A	
Antenna 1 Electrical DT 2	N/A		N/A		N/A		N/A		N/A		N/A	
Antenna 1 Electrical DT 3	N/A		N/A		N/A		N/A		N/A		N/A	
Antenna 1 Twist	N/A		N/A		N/A		N/A		N/A		N/A	

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 TO BE 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

RF DATA SHEET (1 / RF-1)
SCALE: N.T.S.

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

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SBA COMMUNICATIONS CORP.
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WESTBOROUGH, MA 01581
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BARRINGTON, IL 60010
TELEPHONE: 847.277.0070
FAX : 847.277.0080
ae@westchesterservices.com

STATE OF CONNECTICUT JOHN M. ... NO. 10137 LICENSED ARCHITECT
3/9/18

"I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF CONNECTICUT"

CHECKED BY: JK

APPROVED BY: JMB

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
1	03/07/18	ISSUED FOR CONSTRUCTION	SDB
0	01/19/18	ISSUED FOR CONSTRUCTION	SH

SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

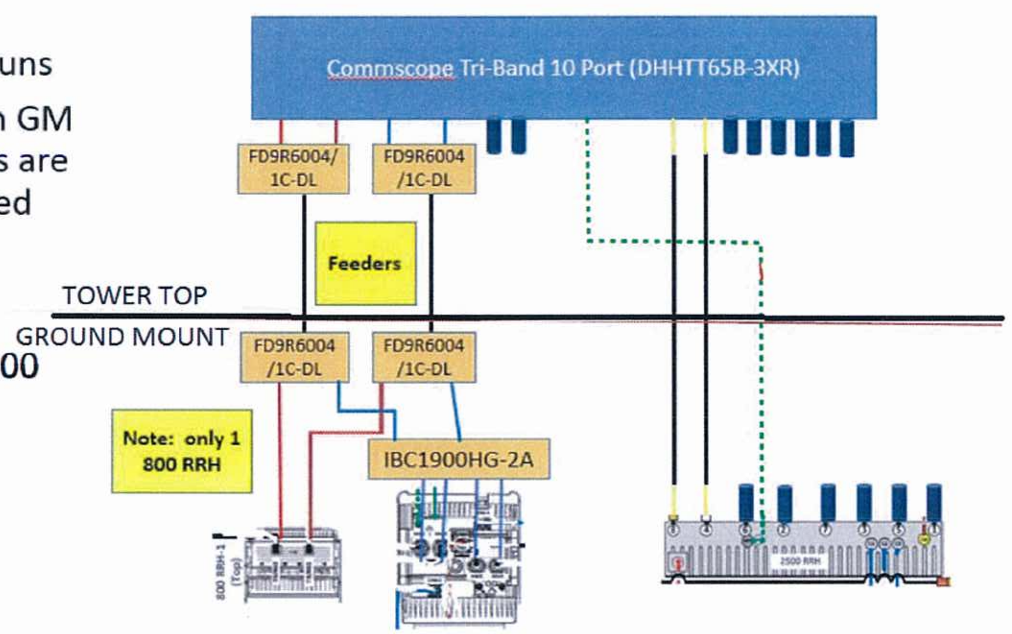
SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
RF DATA SHEET

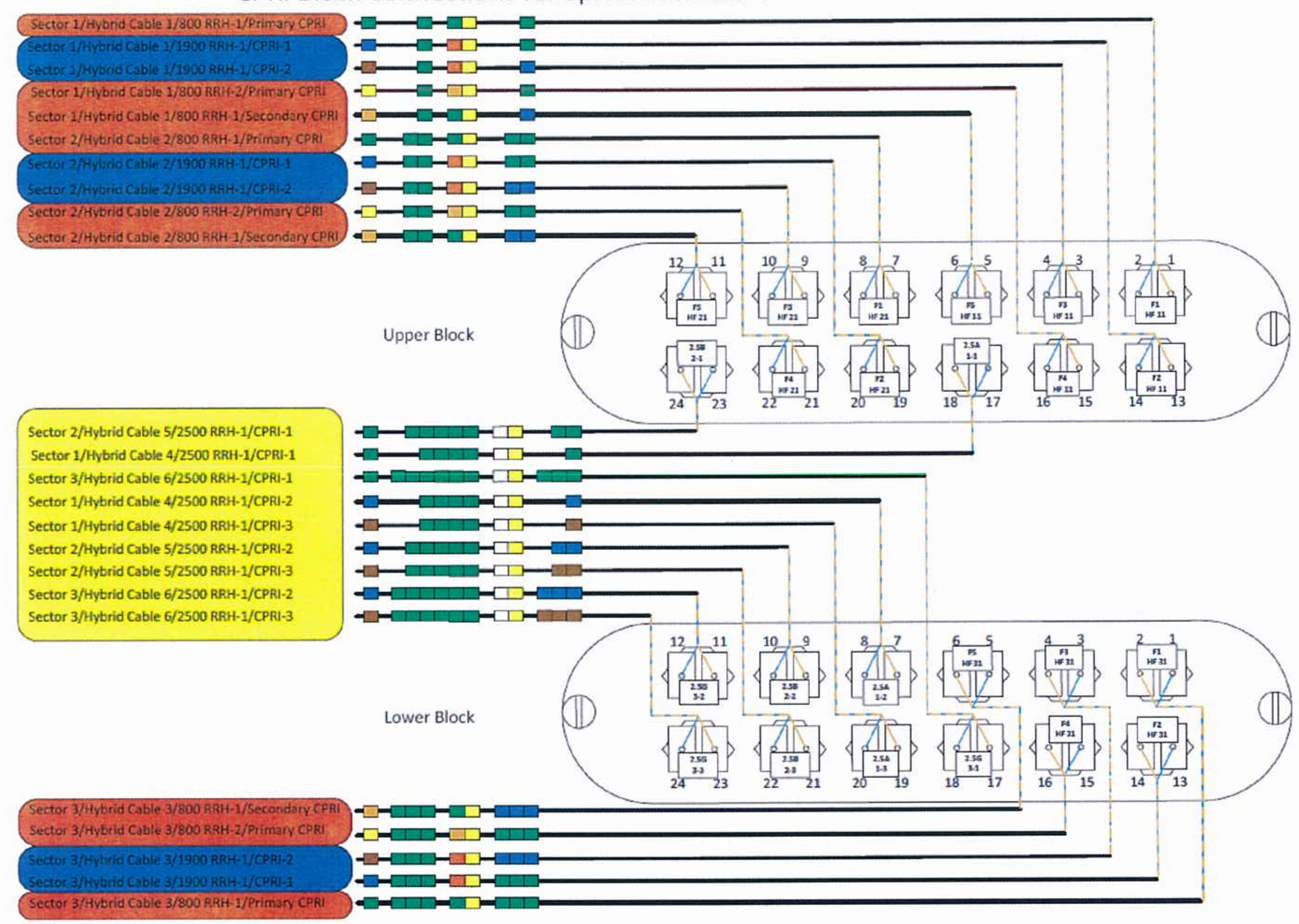
SHEET NUMBER
RF-1

Option Z-12 (All Ground Mount) Plumb. Diag.

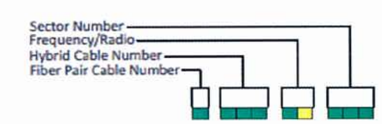
- 12 Total Coax Runs
- 2.5 RRHs are on GM 800/1900 RRH's are Ground Mounted
- RED: 2 x 800
- BLUE: 4 x 1900
- YELLOW: 2 x 2500



CPRI Block Connections for Sprint Scenario 4



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



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

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STATE OF CONNECTICUT · LICENSED ARCHITECT · NO. 10137

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SITE NUMBER:
CT33XC088

SITE NAME:
NORTH STONINGTON 2 CT

SITE ADDRESS:
808 STONINGTON ROAD
STONINGTON, CT 06378

SHEET TITLE
PLUMBING DIAGRAM & RAN WIRING

SHEET NUMBER
RF-2