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

Structural Analysis Report

Existing 175 ft. Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT03110-S

Customer Site Name: North Branford

Carrier Name: AT&T

Carrier Site ID / Name: CTL05184

Site Location: 108 Foxon Road

North Branford, Connecticut

New Haven County

Latitude: 41.328208

Longitude: -72.819063

Analysis Result:

Max Structural Usage: 84.2% [Pass]

Max Foundation Usage: 66.7% [Pass]

Report Prepared By : Delu Zhou

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11/4/16

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Introduction

The purpose of this report is to summarize the analysis results on the 175 ft. Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Fred A. Nudd Corporation, Project 7735: #10125-053, original design drawing dated September, 2000
Foundation Drawing	Fred A. Nudd Corporation, Project 7735: #10125-053, original design drawing dated September, 2000
Geotechnical Report	Jaworski Geotech, Inc. Geotechnical Report, dated 06/01/2000
Modification Drawings	Paul J. Ford and Company, Project # 41702-0001, post-modification calculations dated 05/10/2002

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 130.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 101.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4” radial ice concurrent
Operational Wind Speed:	60 mph + 0” Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	175.0	3	RFS APXVTM14-C-120 - Panel	(3) T-Arms w/ work Platform	(4) 1 1/4"	Sprint
2		3	RFS APXVSPP18-C-A20 - Panel			
3		3	ALU 800 MHz RRU			
4		3	ALU 1900MHz RRU			
5		3	ALU TD-RRH8x20-25			
6		3	ALU 800 MHz Filter			
7		4	RFS ACU-A20-N			
8	172.0	3	Argus LLPX310R - Panel	(1) Collar Mount (Andew MTC3335)	(6) 5/16" (2) 1/2"	Clearwire*
9		2	Dragonwave A-ANT-23-G-2-C - Dish			
10		3	Samsung U-RAS Flexible RRH			
-	155.0	3	Powerwave 7770 - Panel	(3) T-Arms w/ work Platform	(9) 1 5/8" (1) 3/8" Fiber (2) 1/2" DC	AT&T
-		3	KMW AM-X-CD-16-65-00T - Panel			
-		6	Powerwave LGP 21401 - TMA			
-		1	Raycap DC6-48-60-18-8F			
-		6	Ericsson RRUS-11			
-	152.0	6	Allgon 7184 - Panel			
20	141.0	3	Ericsson AIR21 B2A/B4P - Panel	(1) Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
21		3	Ericsson AIR21 B2A/B4P - Panel			
22		3	Kathrein KRY 112 144			
23	131.0	3	Kathrein 742 213 - Panel	(3) Pipe Mount	(6) 1 5/8"	Metro PCS
24	75.0	1	GPS	Flush Mount	(1) 1/2"	Sprint

* Clearwire has (6) 1-5/8”, (3) 1/2” coax lines installed outside of the pole shaft in a single row.

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
11	152.0	6	Allgon/ 7184 - Panel	(3) T-Arm w/ work Platform	(9) 1 5/8" (1) 3/8" Fiber (2) 1/2" DC	AT&T
12		3	Powerwave/ 7770 - Panel			
13		3	HPA-65R-BUU-H6 - Panel			
14		6	Powerwave/ LGP 21401			
15		6	Powerwave/ 7020 RET			
16		6	Ericsson/ RRUS-11			
17		3	Ericsson/ RRUS-12			
18		3	Ericsson/ RRUS A2			
19		1	Raycap/ DC6-48-60-18-8F			

The proposed transmission lines are considered running inside of the pole shafts.

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**71.1%**	**61.1%**	**84.2%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4524.9	37.9	52.6

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):

The maximum twist and sway of the antennas under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft.)	Antenna / Dish	Carrier	Twist (deg.)	Sway (deg.)
152.0	Powerwave/ 7770 - Panel	AT&T	0.000	1.115
152.0	HPA-65R-BUU-H6 - Panel	AT&T	0.000	1.115
152.0	Allgon/ 7184 - Panel	AT&T	0.000	1.115

It is recommended that the carriers review the twist and sway values of the antennas.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.

4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.

5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.

6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 71.08% at 18.0ft

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford	**Exposure:**	C	
Height:	175.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

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Dead Load Factor:	1.20	**Iterations:**	24
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 101 mph Wind

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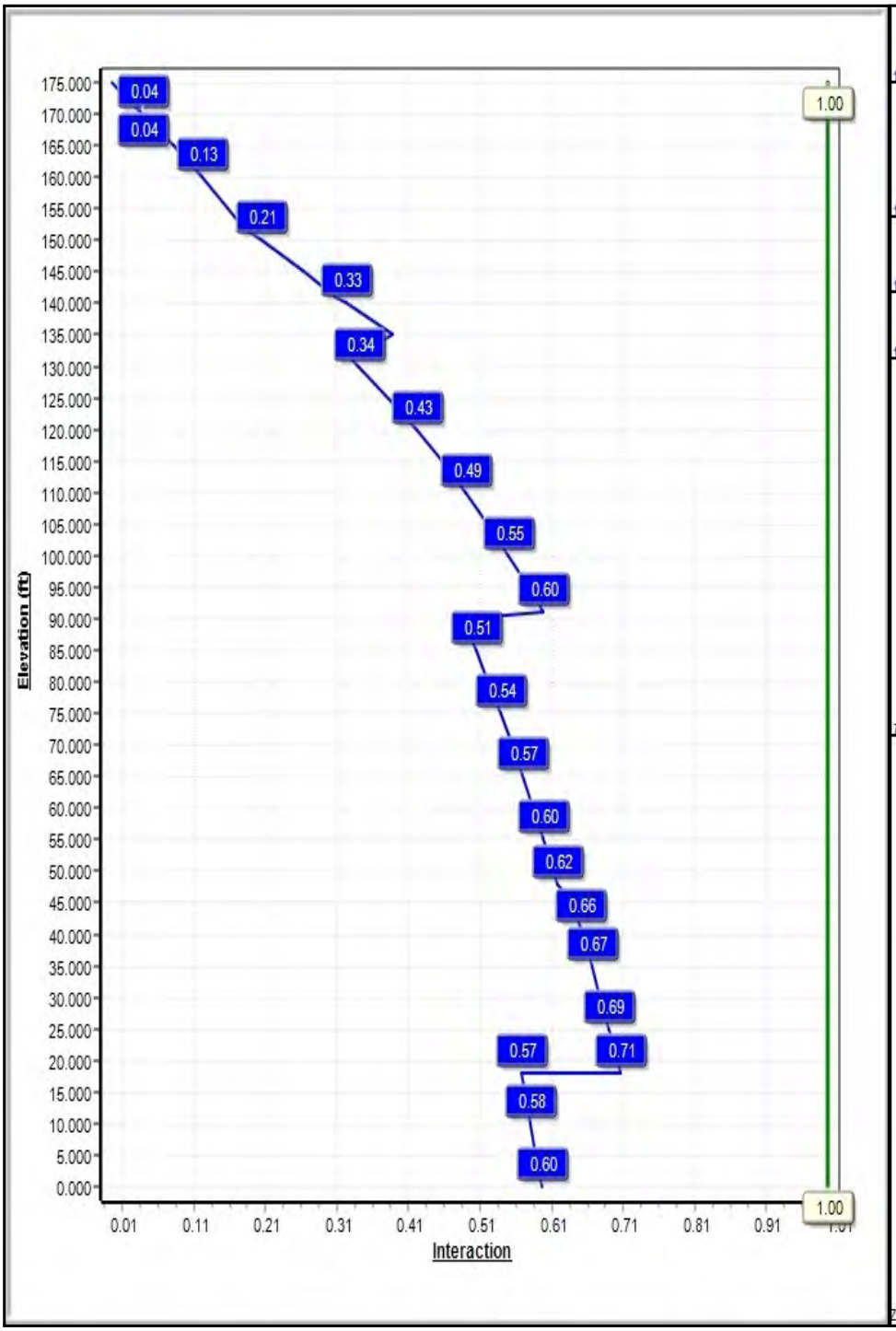

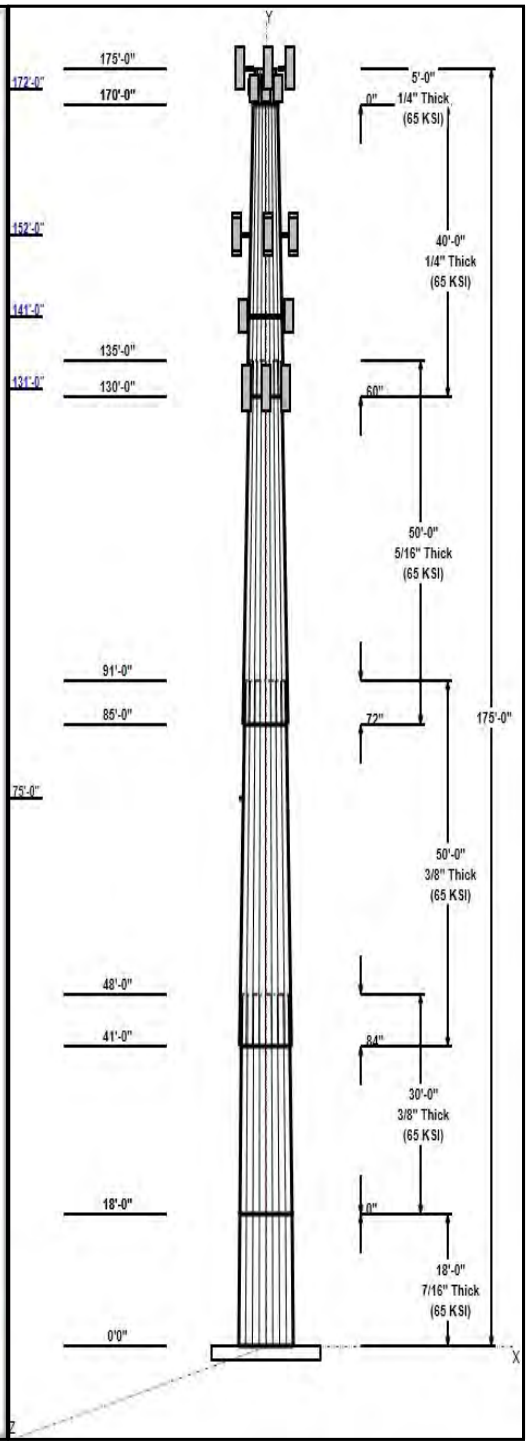

Structure: CT03110-S-SBA

Type:	Tapered	**Base Shape:**	18 Sided	11/4/2016
Site Name:	North Branford	**Taper:**	0.24214	
Height:	175.00 (ft)			
Base Elev:	0.00 (ft)			Page: 2

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Shaft Properties

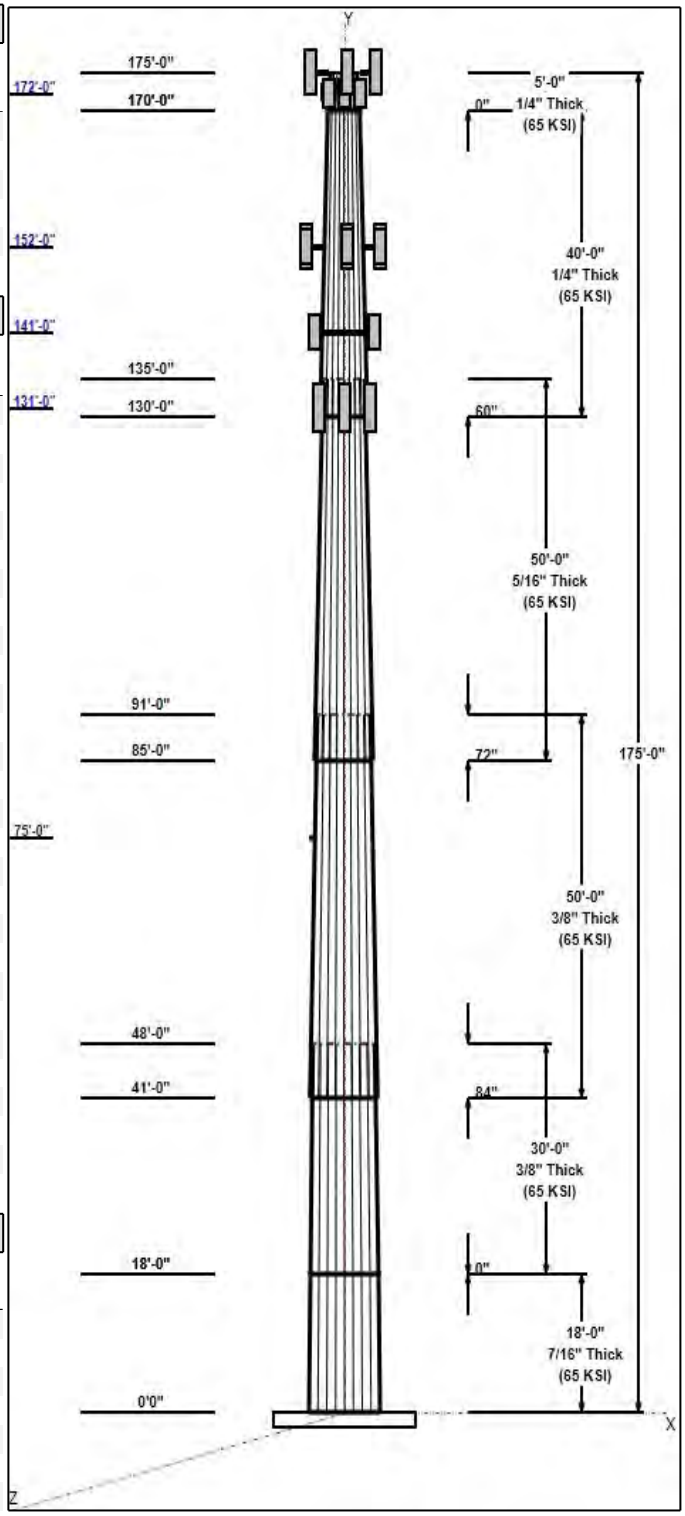
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	18.00	60.14	64.50	0.438		0.24214	65
2	30.00	52.88	60.14	0.375	Butt	0.24214	65
3	50.00	43.22	55.32	0.375	Slip	0.24214	65
4	50.00	33.19	45.29	0.313	Slip	0.24214	65
5	40.00	25.21	34.90	0.250	Slip	0.24214	65
6	5.00	24.00	25.21	0.250	Butt	0.24214	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
175.00	175.00	3	APXVTM14-C-120	Sprint
175.00	175.00	3	APXVSPP18-C-A20	Sprint
175.00	175.00	3	ALU 800 MHz RRU	Sprint
175.00	175.00	3	ALU 1900MHz RRU	Sprint
175.00	175.00	3	TD-RRH8x20-25	Sprint
175.00	175.00	3	800 MHz Filter	Sprint
175.00	175.00	4	ACU-A20-N	Sprint
175.00	175.00	3	T-Arm w/ work Platform	Sprint
172.00	172.00	1	Collar Mount (Andrew	Clearwire
172.00	172.00	3	LLPX310R	Clearwire
172.00	172.00	2	A-ANT-23-G-2-C	Clearwire
172.00	172.00	3	U-RAS Flexible RRH	Clearwire
152.00	152.00	3	Powerwave/ 7770	AT&T
152.00	152.00	6	Powerwave/ LGP 21401	AT&T
152.00	152.00	1	Raycap/ DC6-48-60-18-8F	AT&T
152.00	152.00	6	Ericsson/ RRUS-11	AT&T
152.00	152.00	3	HPA-65R-BUU-H6	AT&T
152.00	152.00	3	Ericsson/ RRUS-12	AT&T
152.00	152.00	3	Ericsson/ RRUS A2	AT&T
152.00	152.00	6	Powerwave/ 7020 RET	AT&T
152.00	152.00	6	Allgon/ 7184	AT&T
152.00	152.00	3	T-Arm w/ work Platform	AT&T
141.00	141.00	1	Low Profile Platform	T-Mobile
141.00	141.00	3	AIR21 B2A/B4P	T-Mobile
141.00	141.00	3	KRY 112 144	T-Mobile
141.00	141.00	3	AIR21 B2A/B4P	T-Mobile
131.00	131.00	3	Kathrein 742 213	Metro PCS
75.00	75.00	1	GPS	Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	175.00	Inside	1 1/4" Coax	Sprint
0.00	175.00	Outside	Safety Cable	
0.00	175.00	Outside	Step bolts (ladder)	
0.00	172.00	Outside	1/2" Coax	Clearwire
0.00	172.00	Outside	5/16" Coax	Clearwire
0.00	155.00	Inside	1/2" DC	AT&T
0.00	155.00	Inside	3/8" Fiber	AT&T
0.00	152.00	Inside	1 5/8" Coax	AT&T
0.00	141.00	Inside	1 5/8" Coax	T-Mobile
0.00	141.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	131.00	Inside	1 5/8" Coax	Metro PCS
0.00	75.00	Inside	1/2" Coax	Sprint



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Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	84.5	50.0	Round

Reactions

Load Case	Moment	Shear	Axial
1.2D + 1.6W 101 mph Wind	4524.9	37.9	52.6
0.9D + 1.6W 101 mph Wind	4486.8	37.9	39.4
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1217.6	10.3	80.0
1.0D + 1.0W 60 mph Wind	993.5	8.4	43.9

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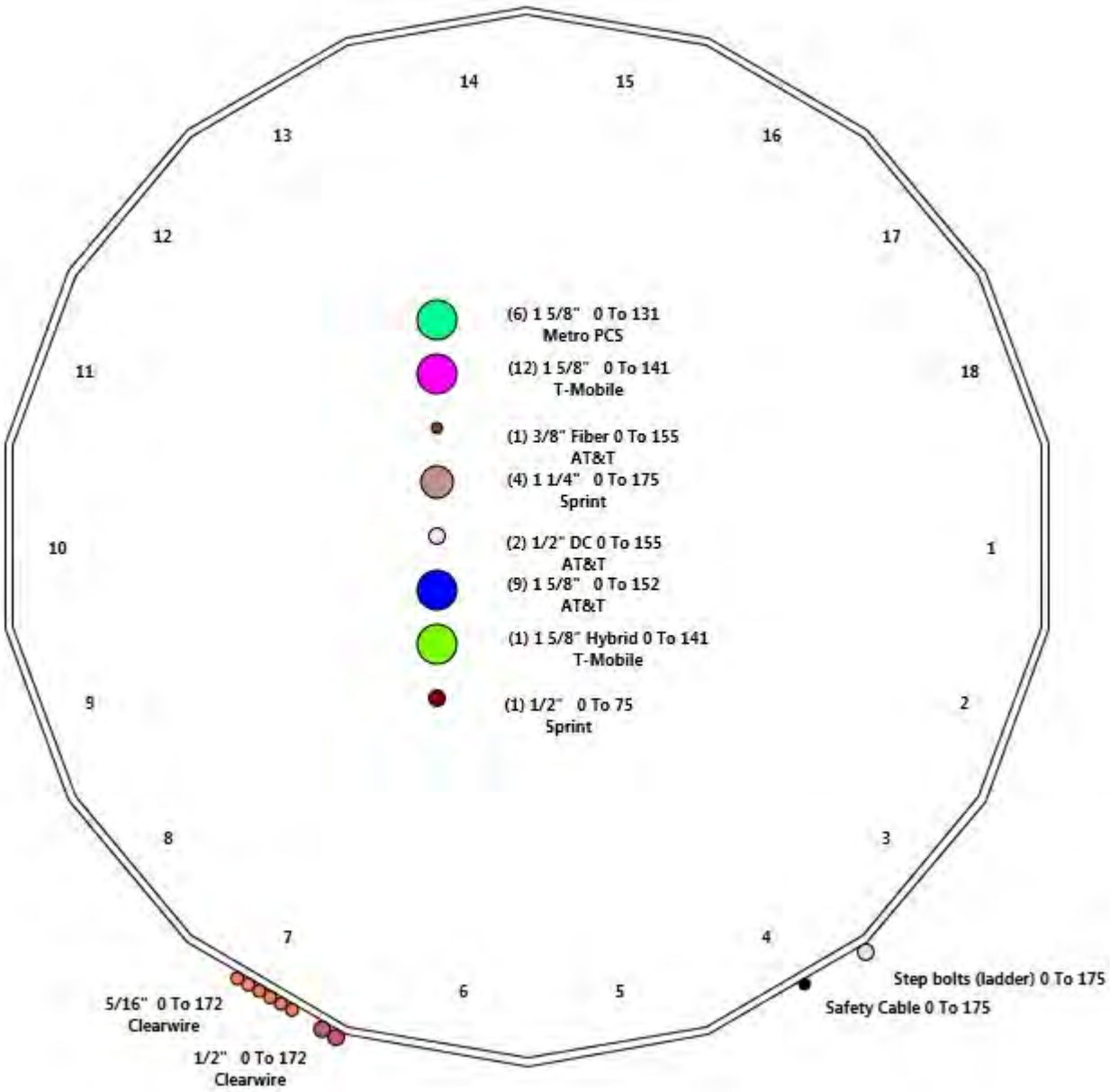
Structure: CT03110-S-SBA - Coax Line Placement

Type: Monopole
Site Name: North Branford
Height: 175.00 (ft)

11/4/2016



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Shaft Properties

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	18.000	0.4375	65		0.00	5,263
2	18	30.000	0.3750	65	Flange	0.00	6,820
3	18	50.000	0.3750	65	Slip	84.00	9,901
4	18	50.000	0.3125	65	Slip	72.00	6,569
5	18	40.000	0.2500	65	Slip	60.00	3,219
6	18	5.000	0.2500	65	Flange	0.00	329
					Total Shaft Weight:		**32,101**

	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	64.50	0.00	88.96	46124.76	24.59	147.43	60.14	18.00	82.90	37336.2	22.83	137.4	0.242143
2	60.14	18.00	71.13	32103.14	26.87	160.38	52.88	48.00	62.49	21762.4	23.45	141.0	0.242143
3	55.32	41.00	65.40	24946.58	24.60	147.53	43.22	91.00	50.99	11822.9	18.91	115.2	0.242143
4	45.29	85.00	44.61	11404.15	24.15	144.94	33.19	135.00	32.60	4451.65	17.31	106.1	0.242143
5	34.90	130.0	27.49	4169.27	23.20	139.59	25.21	170.00	19.81	1559.03	16.37	100.8	0.242143
6	25.21	170.0	19.81	1559.03	16.37	100.84	24.00	175.00	18.84	1343.00	15.52	96.00	0.242143

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Load Summary

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 6

Discrete Appurtenances

				No Ice			Ice				
No.	**Elev (ft)**	**Description**	**Qty**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Hor. Ecc. (ft)**	**Vert Ecc (ft)**
1	175.00	APXVTM14-C-120	3	56.00	6.34	0.79	259.40	9.336	0.80	0.00	0.00
2	175.00	APXVSPP18-C-A20	3	57.00	8.02	0.83	232.54	10.857	0.84	0.00	0.00
3	175.00	ALU 800 MHz RRU	3	53.00	2.49	0.75	128.11	3.651	0.76	0.00	0.00
4	175.00	ALU 1900MHz RRU	3	44.00	3.80	0.75	154.86	5.212	0.76	0.00	0.00
5	175.00	TD-RRH8x20-25	3	70.00	4.05	0.69	182.54	4.877	0.70	0.00	0.00
6	175.00	800 MHz Filter	3	10.00	0.42	0.75	35.39	1.038	0.76	0.00	0.00
7	175.00	ACU-A20-N	4	1.00	0.14	0.67	5.36	0.441	0.68	0.00	0.00
8	175.00	T-Arm w/ work Platform	3	400.00	10.00	0.75	683.57	18.862	0.75	0.00	0.00
9	172.00	Collar Mount (Andrew MTC3335)	1	350.00	5.00	1.00	647.24	8.539	1.00	0.00	0.00
10	172.00	LLPX310R	3	28.60	4.30	0.69	120.15	5.983	0.70	0.00	0.00
11	172.00	A-ANT-23-G-2-C	2	30.90	1.61	1.00	104.84	2.379	1.00	0.00	0.00
12	172.00	U-RAS Flexible RRH	3	33.00	1.82	0.73	75.22	2.808	0.74	0.00	0.00
13	152.00	Powerwave/ 7770	3	35.00	5.50	0.73	170.39	6.567	0.74	0.00	0.00
14	152.00	Powerwave/ LGP 21401	6	14.10	1.29	0.75	39.13	2.127	0.76	0.00	0.00
15	152.00	Raycap/ DC6-48-60-18-8F	1	32.80	1.47	1.00	96.65	2.171	1.00	0.00	0.00
16	152.00	Ericsson/ RRUS-11	6	50.00	2.52	0.62	131.63	3.222	0.63	0.00	0.00
17	152.00	HPA-65R-BUU-H6	3	51.00	9.66	0.85	299.49	11.028	0.86	0.00	0.00
18	152.00	Ericsson/ RRUS-12	3	60.00	2.70	0.67	134.40	3.778	0.68	0.00	0.00
19	152.00	Ericsson/ RRUS A2	3	21.10	1.86	0.67	57.09	2.835	0.68	0.00	0.00
20	152.00	Powerwave/ 7020 RET	6	2.20	0.40	0.62	12.44	0.885	0.63	0.00	0.00
21	152.00	Allgon/ 7184	6	9.70	2.85	0.69	60.68	4.565	0.70	0.00	0.00
22	152.00	T-Arm w/ work Platform	3	400.00	10.00	0.75	679.60	18.738	0.75	0.00	0.00
23	141.00	Low Profile Platform	1	1200.00	25.00	1.00	2240.67	45.813	1.00	0.00	0.00
24	141.00	AIR21 B2A/B4P	3	91.50	6.09	0.86	257.32	7.122	0.87	0.00	0.00
25	141.00	KRY 112 144	3	11.00	0.41	0.70	21.71	0.882	0.71	0.00	0.00
26	141.00	AIR21 B2A/B4P	3	91.50	6.09	0.86	257.32	7.122	0.87	0.00	0.00
27	131.00	Kathrein 742 213	3	22.00	5.12	0.72	133.06	6.395	0.73	0.00	0.00
28	75.00	GPS	1	10.00	1.00	1.00	37.36	1.664	1.00	0.00	0.00
		Totals:	**88**	**6,718.70**			**16,362.91**				

Linear Appurtenances

Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Exposed Width**	**Exposed**
0.00	175.00	(4) 1 1/4" Coax	0.00	Inside
0.00	175.00	(1) Safety Cable	0.00	Outside
0.00	175.00	(1) Step bolts (ladder)	0.00	Outside
0.00	172.00	(2) 1/2" Coax	0.00	Outside
0.00	172.00	(6) 5/16" Coax	0.00	Outside
0.00	155.00	(2) 1/2" DC	0.00	Inside
0.00	155.00	(1) 3/8" Fiber	0.00	Inside
0.00	152.00	(9) 1 5/8" Coax	0.00	Inside
0.00	141.00	(12) 1 5/8" Coax	0.00	Inside
0.00	141.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	131.00	(6) 1 5/8" Coax	0.00	Inside
0.00	75.00	(1) 1/2" Coax	0.00	Inside

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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)

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Shaft Section Properties

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 8

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	64.500	88.956	46124.8	24.59	147.43	72.5	1408.	0.0
5.00		0.4375	63.289	87.274	43558.7	24.10	144.66	73.1	1355.	1499.2
10.00		0.4375	62.079	85.593	41089.7	23.61	141.89	73.6	1303.	1470.6
15.00		0.4375	60.868	83.912	38715.8	23.12	139.13	74.2	1252.	1442.0
18.00	Top - Section 1	0.4375	60.141	82.903	37336.3	22.83	137.47	74.6	1222.	851.5
18.00	Bot - Section 2	0.3750	60.141	71.134	32103.1	26.63	160.38	69.8	1051.	
20.00		0.3750	59.657	70.558	31329.1	26.64	159.09	70.1	1034.	482.1
25.00		0.3750	58.446	69.117	29448.5	26.07	155.86	70.7	992.4	1188.2
30.00		0.3750	57.236	67.676	27644.7	25.50	152.63	71.4	951.3	1163.7
35.00		0.3750	56.025	66.235	25916.2	24.93	149.40	72.1	911.1	1139.2
40.00		0.3750	54.814	64.794	24261.2	24.36	146.17	72.7	871.8	1114.7
41.00	Bot - Section 3	0.3750	54.572	64.506	23938.9	24.25	145.53	72.9	864.0	220.0
45.00		0.3750	53.604	63.353	22678.3	23.79	142.94	73.4	833.3	1752.5
48.00	Top - Section 2	0.3750	53.627	63.381	22708.4	23.81	143.01	0.0	0.0	1293.7
50.00		0.3750	53.143	62.805	22094.5	23.58	141.71	73.7	818.9	429.4
55.00		0.3750	51.932	61.364	20608.3	23.01	138.49	74.3	781.6	1056.3
60.00		0.3750	50.721	59.923	19190.3	22.44	135.26	75.0	745.2	1031.8
65.00		0.3750	49.511	58.482	17838.9	21.87	132.03	75.7	709.7	1007.3
70.00		0.3750	48.300	57.041	16552.4	21.30	128.80	76.3	675.0	982.7
75.00		0.3750	47.089	55.600	15329.4	20.73	125.57	77.0	641.2	958.2
80.00		0.3750	45.879	54.159	14168.1	20.16	122.34	77.7	608.3	933.7
85.00	Bot - Section 4	0.3750	44.668	52.718	13067.0	19.59	119.11	78.4	576.2	909.2
90.00		0.3750	43.457	51.277	12024.5	19.02	115.89	79.0	545.0	1633.5
91.00	Top - Section 3	0.3125	43.840	43.172	10334.4	23.33	140.29	0.0	0.0	321.3
95.00		0.3125	42.871	42.212	9659.8	22.78	137.19	74.6	443.8	581.1
100.00		0.3125	41.661	41.011	8858.6	22.10	133.31	75.4	418.8	708.0
105.00		0.3125	40.450	39.810	8103.0	21.41	129.44	76.2	394.6	687.5
110.00		0.3125	39.239	38.609	7391.6	20.73	125.57	77.0	371.0	667.1
115.00		0.3125	38.029	37.408	6723.2	20.05	121.69	77.8	348.2	646.7
120.00		0.3125	36.818	36.207	6096.3	19.36	117.82	78.6	326.1	626.2
125.00		0.3125	35.607	35.007	5509.6	18.68	113.94	79.4	304.8	605.8
130.00	Bot - Section 5	0.3125	34.396	33.806	4961.8	18.00	110.07	80.2	284.1	585.4
131.00		0.3125	34.154	33.566	4856.8	17.86	109.29	80.4	280.1	207.8
135.00	Top - Section 4	0.2500	33.686	26.530	3747.3	22.35	134.74	0.0	0.0	816.7
140.00		0.2500	32.475	25.570	3354.8	21.49	129.90	76.1	203.5	443.2
141.00		0.2500	32.233	25.377	3279.7	21.32	128.93	76.3	200.4	86.7
145.00		0.2500	31.264	24.609	2990.7	20.64	125.06	77.1	188.4	340.2
150.00		0.2500	30.054	23.648	2653.9	19.79	120.21	78.1	173.9	410.5
152.00		0.2500	29.569	23.264	2526.6	19.44	118.28	78.5	168.3	159.6
155.00		0.2500	28.843	22.688	2343.5	18.93	115.37	79.1	160.0	234.5
160.00		0.2500	27.632	21.727	2058.2	18.08	110.53	80.1	146.7	377.8
165.00		0.2500	26.421	20.766	1797.1	17.22	105.69	81.1	134.0	361.5
170.00	Top - Section 5	0.2500	25.211	19.806	1559.0	16.37	100.84	82.1	121.8	345.1
170.00	Bot - Section 6	0.2500	25.211	19.806	1559.0	16.37	100.84	82.1	121.8	
172.00		0.2500	24.726	19.421	1470.0	16.03	98.91	82.5	117.1	133.5
175.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	195.3
										32101.0

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Wind Loading - Shaft

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 9

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	21.088	23.20	508.23	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	498.69	0.650	0.000	5.00	27.033	17.57	652.2	0.0	1799.0
10.00		1.00	0.85	21.088	23.20	489.15	0.650	0.000	5.00	26.521	17.24	639.8	0.0	1764.7
15.00		1.00	0.85	21.088	23.20	479.61	0.650	0.000	5.00	26.009	16.91	627.4	0.0	1730.4
18.00	Top - Section 1	1.00	0.88	21.884	24.07	482.75	0.650	0.000	3.00	15.360	9.98	384.5	0.0	1021.7
20.00		1.00	0.90	22.375	24.61	484.20	0.650	0.000	2.00	10.137	6.59	259.5	0.0	578.6
25.00		1.00	0.95	23.451	25.80	485.65	0.650	0.000	5.00	24.984	16.24	670.3	0.0	1425.8
30.00		1.00	0.98	24.369	26.81	484.81	0.650	0.000	5.00	24.472	15.91	682.2	0.0	1396.4
35.00		1.00	1.01	25.172	27.69	482.31	0.650	0.000	5.00	23.960	15.57	690.0	0.0	1367.0
40.00		1.00	1.04	25.890	28.48	478.57	0.650	0.000	5.00	23.448	15.24	694.5	0.0	1337.6
41.00	Bot - Section 3	1.00	1.05	26.025	28.63	477.70	0.650	0.000	1.00	4.628	3.01	137.8	0.0	264.0
45.00		1.00	1.07	26.540	29.19	473.84	0.650	0.000	4.00	18.561	12.06	563.6	0.0	2102.9
48.00	Top - Section 2	1.00	1.08	26.903	29.59	470.60	0.650	0.000	3.00	13.706	8.91	421.8	0.0	1552.5
50.00		1.00	1.09	27.135	29.85	475.00	0.650	0.000	2.00	9.035	5.87	280.5	0.0	515.3
55.00		1.00	1.12	27.685	30.45	468.86	0.650	0.000	5.00	22.228	14.45	704.0	0.0	1267.6
60.00		1.00	1.14	28.197	31.02	462.15	0.650	0.000	5.00	21.716	14.12	700.5	0.0	1238.1
65.00		1.00	1.16	28.676	31.54	454.93	0.650	0.000	5.00	21.204	13.78	695.6	0.0	1208.7
70.00		1.00	1.17	29.127	32.04	447.28	0.650	0.000	5.00	20.692	13.45	689.5	0.0	1179.3
75.00	Appurtenance(s)	1.00	1.19	29.553	32.51	439.25	0.650	0.000	5.00	20.179	13.12	682.2	0.0	1149.9
80.00		1.00	1.21	29.958	32.95	430.87	0.650	0.000	5.00	19.667	12.78	674.0	0.0	1120.4
85.00	Bot - Section 4	1.00	1.22	30.342	33.38	422.19	0.650	0.000	5.00	19.155	12.45	664.9	0.0	1091.0
90.00		1.00	1.24	30.710	33.78	413.22	0.650	0.000	5.00	18.907	12.29	664.2	0.0	1960.2
91.00	Top - Section 3	1.00	1.24	30.781	33.86	411.40	0.650	0.000	1.00	3.720	2.42	131.0	0.0	385.6
95.00		1.00	1.25	31.061	34.17	409.98	0.650	0.000	4.00	14.675	9.54	521.5	0.0	697.3
100.00		1.00	1.27	31.399	34.54	400.56	0.650	0.000	5.00	17.883	11.62	642.3	0.0	849.6
105.00		1.00	1.28	31.723	34.89	390.92	0.650	0.000	5.00	17.370	11.29	630.4	0.0	825.0
110.00		1.00	1.29	32.035	35.24	381.08	0.650	0.000	5.00	16.858	10.96	617.8	0.0	800.5
115.00		1.00	1.30	32.336	35.57	371.06	0.650	0.000	5.00	16.346	10.62	604.7	0.0	776.0
120.00		1.00	1.32	32.627	35.89	360.86	0.650	0.000	5.00	15.834	10.29	591.0	0.0	751.5
125.00		1.00	1.33	32.909	36.20	350.49	0.650	0.000	5.00	15.321	9.96	576.8	0.0	727.0
130.00	Bot - Section 5	1.00	1.34	33.182	36.50	339.98	0.650	0.000	5.00	14.809	9.63	562.1	0.0	702.5
131.00	Appurtenance(s)	1.00	1.34	33.235	36.56	337.85	0.650	0.000	1.00	2.943	1.91	111.9	0.0	249.4
135.00	Top - Section 4	1.00	1.35	33.446	36.79	329.31	0.650	0.000	4.00	11.566	7.52	442.5	0.0	980.0
140.00		1.00	1.36	33.703	37.07	323.50	0.650	0.000	5.00	13.996	9.10	539.6	0.0	531.9
141.00	Appurtenance(s)	1.00	1.36	33.754	37.13	321.33	0.650	0.000	1.00	2.738	1.78	105.7	0.0	104.0
145.00		1.00	1.37	33.953	37.35	312.59	0.650	0.000	4.00	10.746	6.98	417.4	0.0	408.2
150.00		1.00	1.38	34.196	37.62	301.56	0.650	0.000	5.00	12.972	8.43	507.5	0.0	492.6
152.00	Appurtenance(s)	1.00	1.38	34.292	37.72	297.11	0.650	0.000	2.00	5.045	3.28	197.9	0.0	191.6
155.00		1.00	1.39	34.433	37.88	290.41	0.650	0.000	3.00	7.414	4.82	292.1	0.0	281.5
160.00		1.00	1.40	34.664	38.13	279.15	0.650	0.000	5.00	11.947	7.77	473.8	0.0	453.4
165.00		1.00	1.41	34.890	38.38	267.79	0.650	0.000	5.00	11.435	7.43	456.4	0.0	433.8
170.00	Top - Section 5	1.00	1.42	35.110	38.62	256.32	0.650	0.000	5.00	10.923	7.10	438.7	0.0	414.2
172.00	Appurtenance(s)	1.00	1.42	35.196	38.72	251.71	0.650	0.000	2.00	4.226	2.75	170.1	0.0	160.2
175.00	Appurtenance(s)	1.00	1.42	35.324	38.86	244.76	0.650	0.000	3.00	6.185	4.02	249.9	0.0	234.4
								Totals:	**175.00**			**21,460.2**		**38,521.2**

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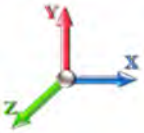
Discrete Appurtenance Forces

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	ALU 1900MHz RRU	3	35.324	38.857	0.75	1.00	8.55	158.40	0.000	0.000	531.56	0.00	0.00
2	175.00	APXVTM14-C-120	3	35.324	38.857	0.79	1.00	15.03	201.60	0.000	0.000	934.17	0.00	0.00
3	175.00	APXVSPP18-C-A20	3	35.324	38.857	0.83	1.00	19.97	205.20	0.000	0.000	1241.54	0.00	0.00
4	175.00	ALU 800 MHz RRU	3	35.324	38.857	0.75	1.00	5.60	190.80	0.000	0.000	348.31	0.00	0.00
5	175.00	T-Arm w/ work Platform	3	35.324	38.857	0.75	1.00	22.50	1440.00	0.000	0.000	1398.85	0.00	0.00
6	175.00	TD-RRH8x20-25	3	35.324	38.857	0.69	1.00	8.38	252.00	0.000	0.000	521.21	0.00	0.00
7	175.00	800 MHz Filter	3	35.324	38.857	0.75	1.00	0.95	36.00	0.000	0.000	58.75	0.00	0.00
8	175.00	ACU-A20-N	4	35.324	38.857	0.67	1.00	0.38	4.80	0.000	0.000	23.33	0.00	0.00
9	172.00	U-RAS Flexible RRH	3	35.196	38.716	0.73	1.00	3.99	118.80	0.000	0.000	246.90	0.00	0.00
10	172.00	A-ANT-23-G-2-C	2	35.196	38.716	1.00	1.00	3.22	74.16	0.000	0.000	199.46	0.00	0.00
11	172.00	LLPX310R	3	35.196	38.716	0.69	1.00	8.90	102.96	0.000	0.000	551.37	0.00	0.00
12	172.00	Collar Mount (Andrew	1	35.196	38.716	1.00	1.00	5.00	420.00	0.000	0.000	309.73	0.00	0.00
13	152.00	T-Arm w/ work Platform	3	34.292	37.721	0.75	1.00	22.50	1440.00	0.000	0.000	1357.96	0.00	0.00
14	152.00	Allgon/ 7184	6	34.292	37.721	0.69	1.00	11.80	69.84	0.000	0.000	712.11	0.00	0.00
15	152.00	Powerwave/ 7020 RET	6	34.292	37.721	0.62	1.00	1.49	15.84	0.000	0.000	89.81	0.00	0.00
16	152.00	Raycap/ DC6-48-60-18-8F	1	34.292	37.721	1.00	1.00	1.47	39.36	0.000	0.000	88.72	0.00	0.00
17	152.00	Powerwave/ 7770	3	34.292	37.721	0.73	1.00	12.04	126.00	0.000	0.000	726.96	0.00	0.00
18	152.00	Powerwave/ LGP 21401	6	34.292	37.721	0.75	1.00	5.80	101.52	0.000	0.000	350.35	0.00	0.00
19	152.00	Ericsson/ RRUS A2	3	34.292	37.721	0.67	1.00	3.74	75.96	0.000	0.000	225.64	0.00	0.00
20	152.00	Ericsson/ RRUS-11	6	34.292	37.721	0.62	1.00	9.37	360.00	0.000	0.000	565.78	0.00	0.00
21	152.00	HPA-65R-BUU-H6	3	34.292	37.721	0.85	1.00	24.63	183.60	0.000	0.000	1486.70	0.00	0.00
22	152.00	Ericsson/ RRUS-12	3	34.292	37.721	0.67	1.00	5.43	216.00	0.000	0.000	327.54	0.00	0.00
23	141.00	AIR21 B2A/B4P	3	33.754	37.129	0.86	1.00	15.71	329.40	0.000	0.000	933.41	0.00	0.00
24	141.00	KRY 112 144	3	33.754	37.129	0.70	1.00	0.86	39.60	0.000	0.000	51.15	0.00	0.00
25	141.00	AIR21 B2A/B4P	3	33.754	37.129	0.86	1.00	15.71	329.40	0.000	0.000	933.41	0.00	0.00
26	141.00	Low Profile Platform	1	33.754	37.129	1.00	1.00	25.00	1440.00	0.000	0.000	1485.17	0.00	0.00
27	131.00	Kathrein 742 213	3	33.235	36.559	0.72	1.00	11.06	79.20	0.000	0.000	646.90	0.00	0.00
28	75.00	GPS	1	29.553	32.509	1.00	1.00	1.00	12.00	0.000	0.000	52.01	0.00	0.00
							Totals:		**8,062.44**			**16,398.81**		

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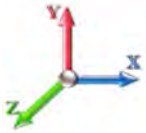
Total Applied Force Summary

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		652.16	2005.85	0.00	0.00
10.00		639.80	1971.53	0.00	0.00
15.00		627.44	1937.20	0.00	0.00
18.00		384.53	1145.85	0.00	0.00
20.00		259.48	661.31	0.00	0.00
25.00		670.28	1632.69	0.00	0.00
30.00		682.23	1603.27	0.00	0.00
35.00		689.98	1573.85	0.00	0.00
40.00		694.48	1544.43	0.00	0.00
41.00		137.79	305.35	0.00	0.00
45.00		563.55	2268.41	0.00	0.00
48.00		421.83	1676.60	0.00	0.00
50.00		280.46	597.99	0.00	0.00
55.00		704.01	1474.39	0.00	0.00
60.00		700.51	1444.97	0.00	0.00
65.00		695.61	1415.55	0.00	0.00
70.00		689.47	1386.13	0.00	0.00
75.00	(1) attachments	734.26	1368.71	0.00	0.00
80.00		674.02	1326.33	0.00	0.00
85.00		664.90	1296.91	0.00	0.00
90.00		664.24	2166.08	0.00	0.00
91.00		130.99	426.74	0.00	0.00
95.00		521.46	862.00	0.00	0.00
100.00		642.34	1055.44	0.00	0.00
105.00		630.38	1030.92	0.00	0.00
110.00		617.81	1006.41	0.00	0.00
115.00		604.67	981.89	0.00	0.00
120.00		590.99	957.37	0.00	0.00
125.00		576.81	932.85	0.00	0.00
130.00		562.15	908.34	0.00	0.00
131.00	(3) attachments	758.78	369.79	0.00	0.00
135.00		442.53	1114.75	0.00	0.00
140.00		539.64	700.29	0.00	0.00
141.00	(10) attachments	3508.86	2276.10	0.00	0.00
145.00		417.41	477.79	0.00	0.00
150.00		507.46	579.58	0.00	0.00
152.00	(40) attachments	6129.50	2854.46	0.00	0.00
155.00		292.06	299.93	0.00	0.00
160.00		473.77	481.92	0.00	0.00
165.00		456.41	462.30	0.00	0.00
170.00		438.71	442.69	0.00	0.00
172.00	(9) attachments	1477.60	887.50	0.00	0.00
175.00	(25) attachments	5307.66	2737.41	0.00	0.00
	Totals:	**37,859.02**	**52,649.89**	**0.00**	**0.00**

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.64
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	6.24
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.92
5.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	2.88
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.64
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	6.24
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.92
10.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	2.88
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.64
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	6.24
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.92
15.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	2.88
18.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	0.98
18.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	3.74
18.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	1.15
18.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	1.73
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	0.66
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	2.50
20.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	0.77
20.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	1.15
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	1.64
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	6.24
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	1.92
25.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	2.88
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	1.64
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	6.24
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	1.92
30.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	2.88
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	1.64
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	6.24
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	1.92
35.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	2.88
40.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	1.64
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	6.24
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	1.92
40.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	2.88
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.33
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	1.25
41.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.38
41.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.58
45.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	1.31
45.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	4.99
45.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	1.54
45.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	2.30
48.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	0.98
48.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	3.74
48.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	1.15

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	1.73
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	0.66
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	2.50
50.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	0.77
50.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	1.15
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	1.64
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	6.24
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	1.92
55.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	2.88
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	1.64
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	6.24
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	1.92
60.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	2.88
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	1.64
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	6.24
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	1.92
65.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	2.88
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	1.64
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	6.24
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	1.92
70.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	2.88
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	1.64
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	6.24
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	1.92
75.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	2.88
80.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	1.64
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	6.24
80.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	1.92
80.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	2.88
85.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	1.64
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	6.24
85.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	1.92
85.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	2.88
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	1.64
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	6.24
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	1.92
90.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	2.88
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.33
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	1.25
91.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.38
91.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.58
95.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	1.31
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	4.99
95.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	1.54
95.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	2.30
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	1.64
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	6.24

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	1.92
100.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	2.88
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	1.64
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	6.24
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	1.92
105.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	2.88
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	1.64
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	6.24
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	1.92
110.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	2.88
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	1.64
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	6.24
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	1.92
115.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	2.88
120.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	1.64
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	6.24
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	1.92
120.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	2.88
125.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	1.64
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	6.24
125.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	1.92
125.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	2.88
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	1.64
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	6.24
130.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	1.92
130.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	2.88
131.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.33
131.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	1.25
131.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.38
131.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.58
135.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	1.31
135.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	4.99
135.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	1.54
135.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	2.30
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	1.64
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	6.24
140.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	1.92
140.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	2.88
141.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.33
141.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	1.25
141.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.38
141.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.58
145.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	1.31
145.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	4.99
145.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	1.54
145.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	2.30
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	1.64

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	6.24
150.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	1.92
150.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	2.88
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	0.66
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	2.50
152.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	0.77
152.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	1.15
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	0.98
155.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	3.74
155.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	1.15
155.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	1.73
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	1.64
160.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	6.24
160.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	1.92
160.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	2.88
165.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	1.64
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	6.24
165.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	1.92
165.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	2.88
170.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	1.64
170.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	6.24
170.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	1.92
170.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	2.88
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	0.66
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	2.50
172.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	0.77
172.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	1.15
175.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	35.324	0.00	0.98
175.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	35.324	0.00	3.74
										Totals:	**0.0**	**440.8**

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Calculated Forces

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 16

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-52.60	-37.92	0.00	-4524.8	0.00	4524.86	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.600
5.00	-50.51	-37.39	0.00	-4335.2	0.00	4335.25	5738.51	2869.25	14833.4	7427.75	0.07	-0.137	0.000	0.593
10.00	-48.45	-36.86	0.00	-4148.3	0.00	4148.31	5672.18	2836.09	14377.6	7199.49	0.29	-0.275	0.000	0.585
15.00	-46.44	-36.31	0.00	-3964.0	0.00	3964.01	5604.11	2802.06	13924.1	6972.40	0.66	-0.416	0.000	0.577
18.00	-45.26	-35.98	0.00	-3855.0	0.00	3855.07	5562.44	2781.22	13653.2	6836.76	0.95	-0.502	0.000	0.572
18.00	-45.26	-35.98	0.00	-3855.0	0.00	3855.07	4468.60	2234.30	10991.3	5503.84	0.95	-0.502	0.000	0.711
20.00	-44.53	-35.80	0.00	-3783.1	0.00	3783.12	4449.40	2224.70	10854.8	5435.51	1.17	-0.560	0.000	0.706
25.00	-42.80	-35.24	0.00	-3604.1	0.00	3604.13	4400.18	2200.09	10514.1	5264.91	1.85	-0.728	0.000	0.695
30.00	-41.10	-34.65	0.00	-3427.9	0.00	3427.94	4349.23	2174.61	10174.3	5094.75	2.70	-0.898	0.000	0.683
35.00	-39.44	-34.06	0.00	-3254.6	0.00	3254.67	4296.53	2148.27	9835.69	4925.16	3.73	-1.069	0.000	0.670
40.00	-37.85	-33.40	0.00	-3084.3	0.00	3084.39	4242.10	2121.05	9498.40	4756.26	4.95	-1.243	0.000	0.658
41.00	-37.49	-33.31	0.00	-3050.9	0.00	3050.99	4231.01	2115.50	9431.14	4722.58	5.21	-1.279	0.000	0.655
45.00	-35.17	-32.77	0.00	-2917.7	0.00	2917.74	4185.94	2092.97	9162.77	4588.20	6.34	-1.421	0.000	0.645
48.00	-33.45	-32.36	0.00	-2819.4	0.00	2819.42	4187.05	2093.52	9169.29	4591.46	7.27	-1.529	0.000	0.622
50.00	-32.79	-32.14	0.00	-2754.6	0.00	2754.69	4164.11	2082.05	9035.54	4524.49	7.93	-1.602	0.000	0.617
55.00	-31.24	-31.48	0.00	-2594.0	0.00	2594.02	4105.54	2052.77	8702.63	4357.78	9.70	-1.774	0.000	0.603
60.00	-29.73	-30.83	0.00	-2436.6	0.00	2436.60	4045.24	2022.62	8371.99	4192.22	11.65	-1.948	0.000	0.589
65.00	-28.25	-30.17	0.00	-2282.4	0.00	2282.47	3983.21	1991.60	8043.90	4027.93	13.78	-2.123	0.000	0.574
70.00	-26.80	-29.51	0.00	-2131.6	0.00	2131.64	3919.43	1959.72	7718.60	3865.04	16.10	-2.299	0.000	0.559
75.00	-25.37	-28.80	0.00	-1984.1	0.00	1984.10	3853.92	1926.96	7396.37	3703.68	18.60	-2.476	0.000	0.543
80.00	-23.99	-28.14	0.00	-1840.1	0.00	1840.12	3786.67	1893.34	7077.46	3543.99	21.29	-2.653	0.000	0.526
85.00	-22.64	-27.48	0.00	-1699.4	0.00	1699.44	3717.69	1858.85	6762.13	3386.09	24.17	-2.831	0.000	0.508
90.00	-20.46	-26.75	0.00	-1562.0	0.00	1562.03	3646.97	1823.48	6450.65	3230.12	27.23	-3.008	0.000	0.489
91.00	-20.00	-26.62	0.00	-1535.2	0.00	1535.29	2873.92	1436.96	5143.64	2575.64	27.86	-3.045	0.000	0.603
95.00	-19.09	-26.11	0.00	-1428.7	0.00	1428.79	2834.39	1417.20	4959.20	2483.29	30.47	-3.188	0.000	0.582
100.00	-17.98	-25.48	0.00	-1298.2	0.00	1298.22	2783.42	1391.71	4730.46	2368.74	33.92	-3.388	0.000	0.555
105.00	-16.91	-24.84	0.00	-1170.8	0.00	1170.85	2730.70	1365.35	4503.96	2255.33	37.57	-3.587	0.000	0.526
110.00	-15.86	-24.21	0.00	-1046.6	0.00	1046.65	2676.25	1338.13	4279.98	2143.17	41.43	-3.781	0.000	0.495
115.00	-14.85	-23.59	0.00	-925.58	0.00	925.58	2620.07	1310.03	4058.76	2032.40	45.49	-3.971	0.000	0.461
120.00	-13.86	-22.98	0.00	-807.62	0.00	807.62	2562.14	1281.07	3840.57	1923.14	49.75	-4.154	0.000	0.426
125.00	-12.91	-22.37	0.00	-692.73	0.00	692.73	2502.48	1251.24	3625.68	1815.54	54.19	-4.329	0.000	0.387
130.00	-12.01	-21.76	0.00	-580.87	0.00	580.87	2441.09	1220.54	3414.34	1709.71	58.81	-4.494	0.000	0.345
131.00	-11.67	-20.99	0.00	-559.11	0.00	559.11	2428.60	1214.30	3372.52	1688.77	59.75	-4.527	0.000	0.336
135.00	-10.55	-20.49	0.00	-475.14	0.00	475.14	1793.55	896.77	2465.05	1234.36	63.60	-4.648	0.000	0.391
140.00	-9.87	-19.90	0.00	-372.71	0.00	372.71	1751.71	875.86	2319.73	1161.59	68.53	-4.783	0.000	0.327
141.00	-7.87	-16.23	0.00	-352.80	0.00	352.80	1743.14	871.57	2290.90	1147.15	69.54	-4.814	0.000	0.312
145.00	-7.40	-15.79	0.00	-287.89	0.00	287.89	1708.14	854.07	2176.40	1089.82	73.62	-4.925	0.000	0.269
150.00	-6.85	-15.24	0.00	-208.96	0.00	208.96	1662.84	831.42	2035.30	1019.16	78.84	-5.043	0.000	0.209
152.00	-4.54	-8.89	0.00	-178.48	0.00	178.48	1644.23	822.12	1979.55	991.25	80.96	-5.085	0.000	0.183
155.00	-4.25	-8.57	0.00	-151.83	0.00	151.83	1615.80	807.90	1896.71	949.77	84.17	-5.141	0.000	0.163
160.00	-3.81	-8.06	0.00	-108.96	0.00	108.96	1567.02	783.51	1760.89	881.75	89.59	-5.220	0.000	0.126
165.00	-3.38	-7.57	0.00	-68.65	0.00	68.65	1516.50	758.25	1628.10	815.26	95.08	-5.281	0.000	0.087
170.00	-2.98	-7.09	0.00	-30.80	0.00	30.80	1464.25	732.13	1498.59	750.41	100.63	-5.321	0.000	0.043
170.00	-2.98	-7.09	0.00	-30.80	0.00	30.80	1464.25	732.13	1498.59	750.41	100.63	-5.321	0.000	0.043
172.00	-2.23	-5.54	0.00	-16.62	0.00	16.62	1442.91	721.45	1447.81	724.98	102.86	-5.329	0.000	0.025
175.00	0.00	-5.31	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	106.20	-5.334	0.000	0.000

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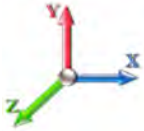
Wind Loading - Shaft

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

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	21.088	23.20	508.23	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	498.69	0.650	0.000	5.00	27.033	17.57	652.2	0.0	1349.3
10.00		1.00	0.85	21.088	23.20	489.15	0.650	0.000	5.00	26.521	17.24	639.8	0.0	1323.5
15.00		1.00	0.85	21.088	23.20	479.61	0.650	0.000	5.00	26.009	16.91	627.4	0.0	1297.8
18.00	Top - Section 1	1.00	0.88	21.884	24.07	482.75	0.650	0.000	3.00	15.360	9.98	384.5	0.0	766.3
20.00		1.00	0.90	22.375	24.61	484.20	0.650	0.000	2.00	10.137	6.59	259.5	0.0	433.9
25.00		1.00	0.95	23.451	25.80	485.65	0.650	0.000	5.00	24.984	16.24	670.3	0.0	1069.4
30.00		1.00	0.98	24.369	26.81	484.81	0.650	0.000	5.00	24.472	15.91	682.2	0.0	1047.3
35.00		1.00	1.01	25.172	27.69	482.31	0.650	0.000	5.00	23.960	15.57	690.0	0.0	1025.3
40.00		1.00	1.04	25.890	28.48	478.57	0.650	0.000	5.00	23.448	15.24	694.5	0.0	1003.2
41.00	Bot - Section 3	1.00	1.05	26.025	28.63	477.70	0.650	0.000	1.00	4.628	3.01	137.8	0.0	198.0
45.00		1.00	1.07	26.540	29.19	473.84	0.650	0.000	4.00	18.561	12.06	563.6	0.0	1577.2
48.00	Top - Section 2	1.00	1.08	26.903	29.59	470.60	0.650	0.000	3.00	13.706	8.91	421.8	0.0	1164.4
50.00		1.00	1.09	27.135	29.85	475.00	0.650	0.000	2.00	9.035	5.87	280.5	0.0	386.4
55.00		1.00	1.12	27.685	30.45	468.86	0.650	0.000	5.00	22.228	14.45	704.0	0.0	950.7
60.00		1.00	1.14	28.197	31.02	462.15	0.650	0.000	5.00	21.716	14.12	700.5	0.0	928.6
65.00		1.00	1.16	28.676	31.54	454.93	0.650	0.000	5.00	21.204	13.78	695.6	0.0	906.5
70.00		1.00	1.17	29.127	32.04	447.28	0.650	0.000	5.00	20.692	13.45	689.5	0.0	884.5
75.00	Appurtenance(s)	1.00	1.19	29.553	32.51	439.25	0.650	0.000	5.00	20.179	13.12	682.2	0.0	862.4
80.00		1.00	1.21	29.958	32.95	430.87	0.650	0.000	5.00	19.667	12.78	674.0	0.0	840.3
85.00	Bot - Section 4	1.00	1.22	30.342	33.38	422.19	0.650	0.000	5.00	19.155	12.45	664.9	0.0	818.3
90.00		1.00	1.24	30.710	33.78	413.22	0.650	0.000	5.00	18.907	12.29	664.2	0.0	1470.2
91.00	Top - Section 3	1.00	1.24	30.781	33.86	411.40	0.650	0.000	1.00	3.720	2.42	131.0	0.0	289.2
95.00		1.00	1.25	31.061	34.17	409.98	0.650	0.000	4.00	14.675	9.54	521.5	0.0	523.0
100.00		1.00	1.27	31.399	34.54	400.56	0.650	0.000	5.00	17.883	11.62	642.3	0.0	637.2
105.00		1.00	1.28	31.723	34.89	390.92	0.650	0.000	5.00	17.370	11.29	630.4	0.0	618.8
110.00		1.00	1.29	32.035	35.24	381.08	0.650	0.000	5.00	16.858	10.96	617.8	0.0	600.4
115.00		1.00	1.30	32.336	35.57	371.06	0.650	0.000	5.00	16.346	10.62	604.7	0.0	582.0
120.00		1.00	1.32	32.627	35.89	360.86	0.650	0.000	5.00	15.834	10.29	591.0	0.0	563.6
125.00		1.00	1.33	32.909	36.20	350.49	0.650	0.000	5.00	15.321	9.96	576.8	0.0	545.2
130.00	Bot - Section 5	1.00	1.34	33.182	36.50	339.98	0.650	0.000	5.00	14.809	9.63	562.1	0.0	526.8
131.00	Appurtenance(s)	1.00	1.34	33.235	36.56	337.85	0.650	0.000	1.00	2.943	1.91	111.9	0.0	187.1
135.00	Top - Section 4	1.00	1.35	33.446	36.79	329.31	0.650	0.000	4.00	11.566	7.52	442.5	0.0	735.0
140.00		1.00	1.36	33.703	37.07	323.50	0.650	0.000	5.00	13.996	9.10	539.6	0.0	398.9
141.00	Appurtenance(s)	1.00	1.36	33.754	37.13	321.33	0.650	0.000	1.00	2.738	1.78	105.7	0.0	78.0
145.00		1.00	1.37	33.953	37.35	312.59	0.650	0.000	4.00	10.746	6.98	417.4	0.0	306.2
150.00		1.00	1.38	34.196	37.62	301.56	0.650	0.000	5.00	12.972	8.43	507.5	0.0	369.5
152.00	Appurtenance(s)	1.00	1.38	34.292	37.72	297.11	0.650	0.000	2.00	5.045	3.28	197.9	0.0	143.7
155.00		1.00	1.39	34.433	37.88	290.41	0.650	0.000	3.00	7.414	4.82	292.1	0.0	211.1
160.00		1.00	1.40	34.664	38.13	279.15	0.650	0.000	5.00	11.947	7.77	473.8	0.0	340.0
165.00		1.00	1.41	34.890	38.38	267.79	0.650	0.000	5.00	11.435	7.43	456.4	0.0	325.3
170.00	Top - Section 5	1.00	1.42	35.110	38.62	256.32	0.650	0.000	5.00	10.923	7.10	438.7	0.0	310.6
172.00	Appurtenance(s)	1.00	1.42	35.196	38.72	251.71	0.650	0.000	2.00	4.226	2.75	170.1	0.0	120.1
175.00	Appurtenance(s)	1.00	1.42	35.324	38.86	244.76	0.650	0.000	3.00	6.185	4.02	249.9	0.0	175.8
								Totals:	**175.00**			**21,460.2**		**28,890.9**

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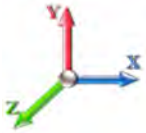
Discrete Appurtenance Forces

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	ALU 1900MHz RRU	3	35.324	38.857	0.75	1.00	8.55	118.80	0.000	0.000	531.56	0.00	0.00
2	175.00	APXVTM14-C-120	3	35.324	38.857	0.79	1.00	15.03	151.20	0.000	0.000	934.17	0.00	0.00
3	175.00	APXVSPP18-C-A20	3	35.324	38.857	0.83	1.00	19.97	153.90	0.000	0.000	1241.54	0.00	0.00
4	175.00	ALU 800 MHz RRU	3	35.324	38.857	0.75	1.00	5.60	143.10	0.000	0.000	348.31	0.00	0.00
5	175.00	T-Arm w/ work Platform	3	35.324	38.857	0.75	1.00	22.50	1080.00	0.000	0.000	1398.85	0.00	0.00
6	175.00	TD-RRH8x20-25	3	35.324	38.857	0.69	1.00	8.38	189.00	0.000	0.000	521.21	0.00	0.00
7	175.00	800 MHz Filter	3	35.324	38.857	0.75	1.00	0.95	27.00	0.000	0.000	58.75	0.00	0.00
8	175.00	ACU-A20-N	4	35.324	38.857	0.67	1.00	0.38	3.60	0.000	0.000	23.33	0.00	0.00
9	172.00	U-RAS Flexible RRH	3	35.196	38.716	0.73	1.00	3.99	89.10	0.000	0.000	246.90	0.00	0.00
10	172.00	A-ANT-23-G-2-C	2	35.196	38.716	1.00	1.00	3.22	55.62	0.000	0.000	199.46	0.00	0.00
11	172.00	LLPX310R	3	35.196	38.716	0.69	1.00	8.90	77.22	0.000	0.000	551.37	0.00	0.00
12	172.00	Collar Mount (Andrew	1	35.196	38.716	1.00	1.00	5.00	315.00	0.000	0.000	309.73	0.00	0.00
13	152.00	T-Arm w/ work Platform	3	34.292	37.721	0.75	1.00	22.50	1080.00	0.000	0.000	1357.96	0.00	0.00
14	152.00	Allgon/ 7184	6	34.292	37.721	0.69	1.00	11.80	52.38	0.000	0.000	712.11	0.00	0.00
15	152.00	Powerwave/ 7020 RET	6	34.292	37.721	0.62	1.00	1.49	11.88	0.000	0.000	89.81	0.00	0.00
16	152.00	Raycap/ DC6-48-60-18-8F	1	34.292	37.721	1.00	1.00	1.47	29.52	0.000	0.000	88.72	0.00	0.00
17	152.00	Powerwave/ 7770	3	34.292	37.721	0.73	1.00	12.04	94.50	0.000	0.000	726.96	0.00	0.00
18	152.00	Powerwave/ LGP 21401	6	34.292	37.721	0.75	1.00	5.80	76.14	0.000	0.000	350.35	0.00	0.00
19	152.00	Ericsson/ RRUS A2	3	34.292	37.721	0.67	1.00	3.74	56.97	0.000	0.000	225.64	0.00	0.00
20	152.00	Ericsson/ RRUS-11	6	34.292	37.721	0.62	1.00	9.37	270.00	0.000	0.000	565.78	0.00	0.00
21	152.00	HPA-65R-BUU-H6	3	34.292	37.721	0.85	1.00	24.63	137.70	0.000	0.000	1486.70	0.00	0.00
22	152.00	Ericsson/ RRUS-12	3	34.292	37.721	0.67	1.00	5.43	162.00	0.000	0.000	327.54	0.00	0.00
23	141.00	AIR21 B2A/B4P	3	33.754	37.129	0.86	1.00	15.71	247.05	0.000	0.000	933.41	0.00	0.00
24	141.00	KRY 112 144	3	33.754	37.129	0.70	1.00	0.86	29.70	0.000	0.000	51.15	0.00	0.00
25	141.00	AIR21 B2A/B4P	3	33.754	37.129	0.86	1.00	15.71	247.05	0.000	0.000	933.41	0.00	0.00
26	141.00	Low Profile Platform	1	33.754	37.129	1.00	1.00	25.00	1080.00	0.000	0.000	1485.17	0.00	0.00
27	131.00	Kathrein 742 213	3	33.235	36.559	0.72	1.00	11.06	59.40	0.000	0.000	646.90	0.00	0.00
28	75.00	GPS	1	29.553	32.509	1.00	1.00	1.00	9.00	0.000	0.000	52.01	0.00	0.00
							Totals:		**6,046.83**			**16,398.81**		

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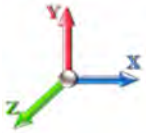
Total Applied Force Summary

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		652.16	1504.39	0.00	0.00
10.00		639.80	1478.65	0.00	0.00
15.00		627.44	1452.90	0.00	0.00
18.00		384.53	859.39	0.00	0.00
20.00		259.48	495.98	0.00	0.00
25.00		670.28	1224.52	0.00	0.00
30.00		682.23	1202.45	0.00	0.00
35.00		689.98	1180.39	0.00	0.00
40.00		694.48	1158.32	0.00	0.00
41.00		137.79	229.02	0.00	0.00
45.00		563.55	1701.31	0.00	0.00
48.00		421.83	1257.45	0.00	0.00
50.00		280.46	448.50	0.00	0.00
55.00		704.01	1105.79	0.00	0.00
60.00		700.51	1083.73	0.00	0.00
65.00		695.61	1061.66	0.00	0.00
70.00		689.47	1039.60	0.00	0.00
75.00	(1) attachments	734.26	1026.53	0.00	0.00
80.00		674.02	994.75	0.00	0.00
85.00		664.90	972.68	0.00	0.00
90.00		664.24	1624.56	0.00	0.00
91.00		130.99	320.06	0.00	0.00
95.00		521.46	646.50	0.00	0.00
100.00		642.34	791.58	0.00	0.00
105.00		630.38	773.19	0.00	0.00
110.00		617.81	754.80	0.00	0.00
115.00		604.67	736.42	0.00	0.00
120.00		590.99	718.03	0.00	0.00
125.00		576.81	699.64	0.00	0.00
130.00		562.15	681.25	0.00	0.00
131.00	(3) attachments	758.78	277.34	0.00	0.00
135.00		442.53	836.06	0.00	0.00
140.00		539.64	525.22	0.00	0.00
141.00	(10) attachments	3508.86	1707.08	0.00	0.00
145.00		417.41	358.34	0.00	0.00
150.00		507.46	434.69	0.00	0.00
152.00	(40) attachments	6129.50	2140.85	0.00	0.00
155.00		292.06	224.95	0.00	0.00
160.00		473.77	361.44	0.00	0.00
165.00		456.41	346.73	0.00	0.00
170.00		438.71	332.02	0.00	0.00
172.00	(9) attachments	1477.60	665.63	0.00	0.00
175.00	(25) attachments	5307.66	2053.06	0.00	0.00
	Totals:	**37,859.02**	**39,487.42**	**0.00**	**0.00**

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.23
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	4.68
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.44
5.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	2.16
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.23
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	4.68
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.44
10.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	2.16
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.23
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	4.68
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	1.44
15.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.088	0.00	2.16
18.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	0.74
18.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	2.81
18.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	0.86
18.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	21.884	0.00	1.30
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	0.49
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	1.87
20.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	0.58
20.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	22.375	0.00	0.86
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	1.23
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	4.68
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	1.44
25.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.451	0.00	2.16
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	1.23
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	4.68
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	1.44
30.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.369	0.00	2.16
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	1.23
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	4.68
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	1.44
35.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.172	0.00	2.16
40.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	1.23
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	4.68
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	1.44
40.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	25.890	0.00	2.16
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.25
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.94
41.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.29
41.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.025	0.00	0.43
45.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	0.98
45.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	3.74
45.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	1.15
45.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.540	0.00	1.73
48.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	0.74
48.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	2.81
48.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	0.86

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	26.903	0.00	1.30
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	0.49
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	1.87
50.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	0.58
50.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	27.135	0.00	0.86
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	1.23
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	4.68
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	1.44
55.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.685	0.00	2.16
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	1.23
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	4.68
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	1.44
60.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.197	0.00	2.16
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	1.23
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	4.68
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	1.44
65.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.676	0.00	2.16
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	1.23
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	4.68
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	1.44
70.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.127	0.00	2.16
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	1.23
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	4.68
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	1.44
75.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.553	0.00	2.16
80.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	1.23
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	4.68
80.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	1.44
80.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.958	0.00	2.16
85.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	1.23
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	4.68
85.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	1.44
85.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.342	0.00	2.16
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	1.23
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	4.68
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	1.44
90.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.710	0.00	2.16
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.25
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.94
91.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.29
91.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.781	0.00	0.43
95.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	0.98
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	3.74
95.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	1.15
95.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.061	0.00	1.73
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	1.23
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	4.68

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	1.44
100.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.399	0.00	2.16
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	1.23
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	4.68
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	1.44
105.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.723	0.00	2.16
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	1.23
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	4.68
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	1.44
110.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.035	0.00	2.16
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	1.23
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	4.68
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	1.44
115.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.336	0.00	2.16
120.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	1.23
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	4.68
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	1.44
120.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.627	0.00	2.16
125.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	1.23
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	4.68
125.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	1.44
125.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	32.909	0.00	2.16
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	1.23
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	4.68
130.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	1.44
130.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.182	0.00	2.16
131.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.25
131.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.94
131.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.29
131.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.235	0.00	0.43
135.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	0.98
135.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	3.74
135.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	1.15
135.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.446	0.00	1.73
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	1.23
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	4.68
140.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	1.44
140.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	33.703	0.00	2.16
141.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.25
141.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.94
141.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.29
141.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	33.754	0.00	0.43
145.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	0.98
145.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	3.74
145.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	1.15
145.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	33.953	0.00	1.73
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	1.23

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	4.68
150.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	1.44
150.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.196	0.00	2.16
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	0.49
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	1.87
152.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	0.58
152.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	34.292	0.00	0.86
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	0.74
155.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	2.81
155.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	0.86
155.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	34.433	0.00	1.30
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	1.23
160.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	4.68
160.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	1.44
160.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.664	0.00	2.16
165.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	1.23
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	4.68
165.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	1.44
165.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	34.890	0.00	2.16
170.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	1.23
170.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	4.68
170.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	1.44
170.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	35.110	0.00	2.16
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	0.49
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	1.87
172.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	0.58
172.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	35.196	0.00	0.86
175.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	35.324	0.00	0.74
175.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	35.324	0.00	2.81
										Totals:	**0.0**	**330.6**

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Calculated Forces

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.44	-37.91	0.00	-4486.8	0.00	4486.83	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.593
5.00	-37.85	-37.34	0.00	-4297.3	0.00	4297.30	5738.51	2869.25	14833.4	7427.75	0.07	-0.135	0.000	0.585
10.00	-36.28	-36.79	0.00	-4110.5	0.00	4110.59	5672.18	2836.09	14377.6	7199.49	0.29	-0.273	0.000	0.578
15.00	-34.76	-36.22	0.00	-3926.6	0.00	3926.66	5604.11	2802.06	13924.1	6972.40	0.65	-0.412	0.000	0.570
18.00	-33.86	-35.87	0.00	-3818.0	0.00	3818.01	5562.44	2781.22	13653.2	6836.76	0.94	-0.497	0.000	0.565
18.00	-33.86	-35.87	0.00	-3818.0	0.00	3818.01	4468.60	2234.30	10991.3	5503.84	0.94	-0.497	0.000	0.702
20.00	-33.30	-35.67	0.00	-3746.2	0.00	3746.28	4449.40	2224.70	10854.8	5435.51	1.16	-0.555	0.000	0.697
25.00	-31.98	-35.08	0.00	-3567.9	0.00	3567.94	4400.18	2200.09	10514.1	5264.91	1.83	-0.721	0.000	0.685
30.00	-30.69	-34.47	0.00	-3392.5	0.00	3392.55	4349.23	2174.61	10174.3	5094.75	2.67	-0.889	0.000	0.673
35.00	-29.42	-33.85	0.00	-3220.2	0.00	3220.20	4296.53	2148.27	9835.69	4925.16	3.70	-1.059	0.000	0.661
40.00	-28.21	-33.18	0.00	-3050.9	0.00	3050.96	4242.10	2121.05	9498.40	4756.26	4.90	-1.231	0.000	0.648
41.00	-27.94	-33.08	0.00	-3017.7	0.00	3017.77	4231.01	2115.50	9431.14	4722.58	5.16	-1.267	0.000	0.646
45.00	-26.18	-32.54	0.00	-2885.4	0.00	2885.45	4185.94	2092.97	9162.77	4588.20	6.28	-1.407	0.000	0.635
48.00	-24.88	-32.12	0.00	-2787.8	0.00	2787.84	4187.05	2093.52	9169.29	4591.46	7.20	-1.514	0.000	0.613
50.00	-24.37	-31.88	0.00	-2723.6	0.00	2723.60	4164.11	2082.05	9035.54	4524.49	7.85	-1.586	0.000	0.608
55.00	-23.20	-31.21	0.00	-2564.2	0.00	2564.21	4105.54	2052.77	8702.63	4357.78	9.61	-1.756	0.000	0.594
60.00	-22.04	-30.54	0.00	-2408.1	0.00	2408.14	4045.24	2022.62	8371.99	4192.22	11.54	-1.928	0.000	0.580
65.00	-20.92	-29.88	0.00	-2255.4	0.00	2255.42	3983.21	1991.60	8043.90	4027.93	13.65	-2.101	0.000	0.565
70.00	-19.82	-29.21	0.00	-2106.0	0.00	2106.05	3919.43	1959.72	7718.60	3865.04	15.94	-2.275	0.000	0.550
75.00	-18.73	-28.49	0.00	-1960.0	0.00	1960.01	3853.92	1926.96	7396.37	3703.68	18.42	-2.449	0.000	0.534
80.00	-17.68	-27.83	0.00	-1817.5	0.00	1817.57	3786.67	1893.34	7077.46	3543.99	21.08	-2.625	0.000	0.518
85.00	-16.66	-27.17	0.00	-1678.4	0.00	1678.44	3717.69	1858.85	6762.13	3386.09	23.92	-2.800	0.000	0.500
90.00	-15.02	-26.45	0.00	-1542.6	0.00	1542.61	3646.97	1823.48	6450.65	3230.12	26.95	-2.975	0.000	0.482
91.00	-14.67	-26.32	0.00	-1516.1	0.00	1516.17	2873.92	1436.96	5143.64	2575.64	27.57	-3.012	0.000	0.594
95.00	-13.98	-25.81	0.00	-1410.8	0.00	1410.87	2834.39	1417.20	4959.20	2483.29	30.16	-3.152	0.000	0.573
100.00	-13.13	-25.17	0.00	-1281.8	0.00	1281.82	2783.42	1391.71	4730.46	2368.74	33.56	-3.351	0.000	0.546
105.00	-12.32	-24.54	0.00	-1155.9	0.00	1155.98	2730.70	1365.35	4503.96	2255.33	37.18	-3.546	0.000	0.517
110.00	-11.52	-23.91	0.00	-1033.3	0.00	1033.30	2676.25	1338.13	4279.98	2143.17	40.99	-3.739	0.000	0.487
115.00	-10.76	-23.29	0.00	-913.76	0.00	913.76	2620.07	1310.03	4058.76	2032.40	45.01	-3.926	0.000	0.454
120.00	-10.01	-22.68	0.00	-797.30	0.00	797.30	2562.14	1281.07	3840.57	1923.14	49.22	-4.107	0.000	0.419
125.00	-9.29	-22.08	0.00	-683.89	0.00	683.89	2502.48	1251.24	3625.68	1815.54	53.61	-4.280	0.000	0.381
130.00	-8.62	-21.49	0.00	-573.48	0.00	573.48	2441.09	1220.54	3414.34	1709.71	58.18	-4.442	0.000	0.339
131.00	-8.37	-20.72	0.00	-551.99	0.00	551.99	2428.60	1214.30	3372.52	1688.77	59.11	-4.474	0.000	0.331
135.00	-7.53	-20.23	0.00	-469.12	0.00	469.12	1793.55	896.77	2465.05	1234.36	62.91	-4.594	0.000	0.385
140.00	-7.02	-19.66	0.00	-367.98	0.00	367.98	1751.71	875.86	2319.73	1161.59	67.79	-4.728	0.000	0.321
141.00	-5.59	-16.03	0.00	-348.32	0.00	348.32	1743.14	871.57	2290.90	1147.15	68.78	-4.758	0.000	0.307
145.00	-5.24	-15.59	0.00	-284.21	0.00	284.21	1708.14	854.07	2176.40	1089.82	72.81	-4.868	0.000	0.264
150.00	-4.83	-15.05	0.00	-206.26	0.00	206.26	1662.84	831.42	2035.30	1019.16	77.97	-4.985	0.000	0.206
152.00	-3.22	-8.76	0.00	-176.15	0.00	176.15	1644.23	822.12	1979.55	991.25	80.06	-5.026	0.000	0.180
155.00	-3.02	-8.46	0.00	-149.86	0.00	149.86	1615.80	807.90	1896.71	949.77	83.24	-5.081	0.000	0.160
160.00	-2.69	-7.96	0.00	-107.58	0.00	107.58	1567.02	783.51	1760.89	881.75	88.59	-5.159	0.000	0.124
165.00	-2.38	-7.47	0.00	-67.79	0.00	67.79	1516.50	758.25	1628.10	815.26	94.02	-5.219	0.000	0.085
170.00	-2.08	-7.01	0.00	-30.43	0.00	30.43	1464.25	732.13	1498.59	750.41	99.51	-5.258	0.000	0.042
170.00	-2.08	-7.01	0.00	-30.43	0.00	30.43	1464.25	732.13	1498.59	750.41	99.51	-5.258	0.000	0.042
172.00	-1.56	-5.47	0.00	-16.42	0.00	16.42	1442.91	721.45	1447.81	724.98	101.71	-5.267	0.000	0.024
175.00	0.00	-5.31	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	105.02	-5.272	0.000	0.000

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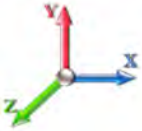
Wind Loading - Shaft

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	28.069	33.68	191.5	502.1	2301.1
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	27.631	33.16	188.5	528.8	2293.5
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	27.164	32.60	185.3	540.6	2271.0
18.00	Top - Section 1	1.00	0.88	5.363	5.90	0.00	1.200	1.412	3.00	16.065	19.28	113.7	326.6	1348.4
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	2.00	10.613	12.74	76.8	218.4	797.0
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	26.200	31.44	198.8	547.5	1973.3
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	25.710	30.85	202.7	546.5	1943.0
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	25.217	30.26	205.3	543.8	1910.8
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	24.722	29.67	207.1	539.7	1877.3
41.00	Bot - Section 3	1.00	1.05	6.378	7.02	0.00	1.200	1.533	1.00	4.884	5.86	41.1	107.7	371.7
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	4.00	19.593	23.51	168.2	433.4	2536.4
48.00	Top - Section 2	1.00	1.08	6.593	7.25	0.00	1.200	1.557	3.00	14.484	17.38	126.1	323.0	1875.5
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.00	9.556	11.47	83.9	214.3	729.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	23.544	28.25	210.9	529.1	1796.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	23.043	27.65	210.2	521.8	1759.9
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	22.542	27.05	209.1	513.9	1722.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	22.039	26.45	207.7	505.6	1684.9
75.00	Appurtenance(s)	1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	21.536	25.84	205.9	496.9	1646.7
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	21.033	25.24	203.8	487.8	1608.2
85.00	Bot - Section 4	1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	20.529	24.63	201.5	478.3	1569.4
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	20.289	24.35	201.6	475.1	2435.3
91.00	Top - Section 3	1.00	1.24	7.544	8.30	0.00	1.200	1.660	1.00	3.997	4.80	39.8	94.6	480.2
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	4.00	15.786	18.94	158.6	372.1	1069.4
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	5.00	19.279	23.13	195.8	454.9	1304.4
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	18.774	22.53	192.7	444.4	1269.4
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	18.268	21.92	189.3	433.7	1234.2
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	17.762	21.31	185.8	422.8	1198.8
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	17.256	20.71	182.1	411.8	1163.2
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	16.749	20.10	178.3	400.5	1127.5
130.00	Bot - Section 5	1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	16.243	19.49	174.4	389.1	1091.6
131.00	Appurtenance(s)	1.00	1.34	8.145	8.96	0.00	1.200	1.722	1.00	3.230	3.88	34.7	78.4	327.9
135.00	Top - Section 4	1.00	1.35	8.197	9.02	0.00	1.200	1.727	4.00	12.717	15.26	137.6	306.4	1286.4
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	15.440	18.53	168.3	371.3	903.1
141.00	Appurtenance(s)	1.00	1.36	8.272	9.10	0.00	1.200	1.734	1.00	3.027	3.63	33.1	73.8	177.8
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	4.00	11.906	14.29	130.8	287.6	695.8
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	14.426	17.31	159.6	347.5	840.1
152.00	Appurtenance(s)	1.00	1.38	8.404	9.24	0.00	1.200	1.748	2.00	5.628	6.75	62.4	137.1	328.6
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	3.00	8.290	9.95	92.3	201.2	482.7
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	5.00	13.411	16.09	150.4	323.2	776.6
165.00		1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	12.903	15.48	145.6	310.9	744.7
170.00	Top - Section 5	1.00	1.42	8.604	9.46	0.00	1.200	1.767	5.00	12.395	14.87	140.8	298.5	712.6
172.00	Appurtenance(s)	1.00	1.42	8.626	9.49	0.00	1.200	1.769	2.00	4.815	5.78	54.8	117.4	277.6
175.00	Appurtenance(s)	1.00	1.42	8.657	9.52	0.00	1.200	1.772	3.00	7.071	8.49	80.8	171.6	405.9
								Totals:	**175.00**			**6,527.7**		**54,350.8**

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Discrete Appurtenance Forces

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	ALU 1900MHz RRU	3	8.657	9.523	0.76	1.00	11.88	397.38	0.000	0.000	113.15	0.00	0.00
2	175.00	APXVTM14-C-120	3	8.657	9.523	0.80	1.00	22.41	811.79	0.000	0.000	213.38	0.00	0.00
3	175.00	APXVSPP18-C-A20	3	8.657	9.523	0.84	1.00	27.36	583.31	0.000	0.000	260.54	0.00	0.00
4	175.00	ALU 800 MHz RRU	3	8.657	9.523	0.76	1.00	8.33	352.83	0.000	0.000	79.28	0.00	0.00
5	175.00	T-Arm w/ work Platform	3	8.657	9.523	0.75	1.00	42.44	2050.72	0.000	0.000	404.14	0.00	0.00
6	175.00	TD-RRH8x20-25	3	8.657	9.523	0.70	1.00	10.24	589.63	0.000	0.000	97.53	0.00	0.00
7	175.00	800 MHz Filter	3	8.657	9.523	0.76	1.00	2.37	112.16	0.000	0.000	22.53	0.00	0.00
8	175.00	ACU-A20-N	4	8.657	9.523	0.68	1.00	1.20	17.05	0.000	0.000	11.43	0.00	0.00
9	172.00	U-RAS Flexible RRH	3	8.626	9.488	0.74	1.00	6.23	209.47	0.000	0.000	59.15	0.00	0.00
10	172.00	A-ANT-23-G-2-C	2	8.626	9.488	1.00	1.00	4.76	283.83	0.000	0.000	45.15	0.00	0.00
11	172.00	LLPX310R	3	8.626	9.488	0.70	1.00	12.56	299.90	0.000	0.000	119.21	0.00	0.00
12	172.00	Collar Mount (Andrew	1	8.626	9.488	1.00	1.00	8.54	617.24	0.000	0.000	81.02	0.00	0.00
13	152.00	T-Arm w/ work Platform	3	8.404	9.244	0.75	1.00	42.16	2038.81	0.000	0.000	389.74	0.00	0.00
14	152.00	Allgon/ 7184	6	8.404	9.244	0.70	1.00	19.17	288.73	0.000	0.000	177.25	0.00	0.00
15	152.00	Powerwave/ 7020 RET	6	8.404	9.244	0.63	1.00	3.34	59.89	0.000	0.000	30.92	0.00	0.00
16	152.00	Raycap/ DC6-48-60-18-8F	1	8.404	9.244	1.00	1.00	2.17	86.51	0.000	0.000	20.07	0.00	0.00
17	152.00	Powerwave/ 7770	3	8.404	9.244	0.74	1.00	14.58	532.18	0.000	0.000	134.77	0.00	0.00
18	152.00	Powerwave/ LGP 21401	6	8.404	9.244	0.76	1.00	9.70	209.13	0.000	0.000	89.65	0.00	0.00
19	152.00	Ericsson/ RRUS A2	3	8.404	9.244	0.68	1.00	5.78	153.02	0.000	0.000	53.47	0.00	0.00
20	152.00	Ericsson/ RRUS-11	6	8.404	9.244	0.63	1.00	12.18	849.79	0.000	0.000	112.59	0.00	0.00
21	152.00	HPA-65R-BUU-H6	3	8.404	9.244	0.86	1.00	28.45	929.06	0.000	0.000	263.03	0.00	0.00
22	152.00	Ericsson/ RRUS-12	3	8.404	9.244	0.68	1.00	7.71	375.61	0.000	0.000	71.24	0.00	0.00
23	141.00	AIR21 B2A/B4P	3	8.272	9.099	0.87	1.00	18.59	826.87	0.000	0.000	169.13	0.00	0.00
24	141.00	KRY 112 144	3	8.272	9.099	0.71	1.00	1.88	62.44	0.000	0.000	17.10	0.00	0.00
25	141.00	AIR21 B2A/B4P	3	8.272	9.099	0.87	1.00	18.59	826.87	0.000	0.000	169.13	0.00	0.00
26	141.00	Low Profile Platform	1	8.272	9.099	1.00	1.00	45.81	2180.67	0.000	0.000	416.88	0.00	0.00
27	131.00	Kathrein 742 213	3	8.145	8.960	0.73	1.00	14.00	412.39	0.000	0.000	125.47	0.00	0.00
28	75.00	GPS	1	7.243	7.967	1.00	1.00	1.66	31.36	0.000	0.000	13.26	0.00	0.00
							Totals:		**16,188.65**			**3,760.21**		

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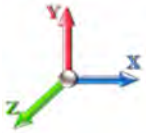
Total Applied Force Summary

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		191.48	2570.60	0.00	0.00
10.00		188.49	2570.26	0.00	0.00
15.00		185.31	2552.49	0.00	0.00
18.00		113.73	1518.60	0.00	0.00
20.00		76.82	910.97	0.00	0.00
25.00		198.76	2261.27	0.00	0.00
30.00		202.68	2233.34	0.00	0.00
35.00		205.35	2203.31	0.00	0.00
40.00		207.06	2171.69	0.00	0.00
41.00		41.11	430.69	0.00	0.00
45.00		168.22	2773.27	0.00	0.00
48.00		126.06	2053.72	0.00	0.00
50.00		83.88	848.66	0.00	0.00
55.00		210.86	2095.79	0.00	0.00
60.00		210.19	2060.38	0.00	0.00
65.00		209.11	2024.35	0.00	0.00
70.00		207.67	1987.77	0.00	0.00
75.00	(1) attachments	219.16	1982.07	0.00	0.00
80.00		203.83	1912.27	0.00	0.00
85.00		201.51	1874.39	0.00	0.00
90.00		201.56	2741.27	0.00	0.00
91.00		39.80	541.42	0.00	0.00
95.00		158.63	1314.89	0.00	0.00
100.00		195.82	1612.18	0.00	0.00
105.00		192.66	1578.02	0.00	0.00
110.00		189.32	1543.62	0.00	0.00
115.00		185.80	1508.99	0.00	0.00
120.00		182.13	1474.15	0.00	0.00
125.00		178.31	1439.10	0.00	0.00
130.00		174.35	1403.87	0.00	0.00
131.00	(3) attachments	160.19	802.74	0.00	0.00
135.00		137.60	1506.79	0.00	0.00
140.00		168.35	1179.31	0.00	0.00
141.00	(10) attachments	805.29	4129.91	0.00	0.00
145.00		130.77	852.05	0.00	0.00
150.00		159.59	1036.08	0.00	0.00
152.00	(40) attachments	1405.16	5929.85	0.00	0.00
155.00		92.34	566.94	0.00	0.00
160.00		150.39	915.31	0.00	0.00
165.00		145.63	883.95	0.00	0.00
170.00		140.78	852.47	0.00	0.00
172.00	(9) attachments	359.34	1744.03	0.00	0.00
175.00	(25) attachments	1282.79	5362.33	0.00	0.00
	Totals:	**10,287.88**	**79,955.19**	**0.00**	**0.00**

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	12.93
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	18.85
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	17.98
5.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	25.54
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	14.46
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	20.46
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	19.83
10.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	27.86
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	15.46
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	21.51
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	21.02
15.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	29.34
18.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	5.363	0.00	9.56
18.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	5.363	0.00	13.21
18.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	5.363	0.00	12.95
18.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	5.363	0.00	18.02
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	6.48
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	8.92
20.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	8.77
20.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	12.18
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	16.83
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	22.95
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	22.65
25.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	31.35
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	17.35
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	23.50
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	23.27
30.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	32.10
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	17.80
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	23.98
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	23.81
35.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	32.76
40.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	18.21
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	24.40
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	24.29
40.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	33.35
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.378	0.00	3.66
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.378	0.00	4.90
41.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.378	0.00	4.88
41.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.378	0.00	6.69
45.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	14.86
45.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	19.83
45.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	19.78
45.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	27.10
48.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	6.593	0.00	11.27
48.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	6.593	0.00	15.00
48.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	6.593	0.00	14.98

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	6.593	0.00	20.50
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	7.56
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	10.06
50.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	10.05
50.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	13.74
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	19.22
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	25.46
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	25.48
55.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	34.79
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	19.51
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	25.76
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	25.81
60.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	35.20
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	19.78
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	26.04
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	26.13
65.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	35.58
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	20.03
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	26.31
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	26.42
70.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	35.94
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	20.27
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	26.56
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	26.70
75.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	36.28
80.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	20.49
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	26.79
80.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	26.97
80.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	36.60
85.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	20.71
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	27.02
85.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	27.22
85.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	36.90
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	20.91
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	27.23
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	27.45
90.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	37.19
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.544	0.00	4.19
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.544	0.00	5.45
91.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.544	0.00	5.50
91.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.544	0.00	7.45
95.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	16.89
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	21.95
95.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	22.15
95.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	29.97
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.695	0.00	21.30
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.695	0.00	27.63

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.695	0.00	27.90
100.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.695	0.00	37.73
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.774	0.00	21.48
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.774	0.00	27.82
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.774	0.00	28.11
105.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.774	0.00	37.98
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.851	0.00	21.65
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.851	0.00	28.00
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.851	0.00	28.31
110.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.851	0.00	38.22
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.925	0.00	21.82
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.925	0.00	28.18
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.925	0.00	28.51
115.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.925	0.00	38.46
120.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.996	0.00	21.98
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.996	0.00	28.34
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.996	0.00	28.69
120.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.996	0.00	38.68
125.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.065	0.00	22.14
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.065	0.00	28.51
125.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.065	0.00	28.88
125.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.065	0.00	38.90
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.132	0.00	22.29
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.132	0.00	28.67
130.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.132	0.00	29.05
130.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.132	0.00	39.11
131.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.145	0.00	4.46
131.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.145	0.00	5.74
131.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.145	0.00	5.82
131.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.145	0.00	7.83
135.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.197	0.00	17.95
135.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.197	0.00	23.05
135.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.197	0.00	23.38
135.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.197	0.00	31.45
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.260	0.00	22.57
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.260	0.00	28.97
140.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.260	0.00	29.39
140.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.260	0.00	39.51
141.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.272	0.00	4.52
141.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.272	0.00	5.80
141.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.272	0.00	5.88
141.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.272	0.00	7.91
145.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.321	0.00	18.17
145.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.321	0.00	23.29
145.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.321	0.00	23.64
145.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.321	0.00	31.76
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.381	0.00	22.85

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.381	0.00	29.25
150.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.381	0.00	29.70
150.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.381	0.00	39.89
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.404	0.00	9.16
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.404	0.00	11.72
152.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.404	0.00	11.90
152.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.404	0.00	15.98
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	13.79
155.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	17.63
155.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	17.91
155.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.439	0.00	24.04
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	23.11
160.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	29.52
160.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	30.00
160.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.495	0.00	40.25
165.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.551	0.00	23.23
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.551	0.00	29.65
165.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.551	0.00	30.14
165.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.551	0.00	40.42
170.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.604	0.00	23.35
170.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.604	0.00	29.78
170.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.604	0.00	30.28
170.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.604	0.00	40.59
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.626	0.00	9.36
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.626	0.00	11.93
172.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.626	0.00	12.14
172.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.626	0.00	16.26
175.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.657	0.00	14.08
175.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.657	0.00	17.94
										Totals:	**0.0**	**3,790.3**

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Calculated Forces

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

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

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-79.95	-10.31	0.00	-1217.5	0.00	1217.58	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.173
5.00	-77.37	-10.17	0.00	-1166.0	0.00	1166.01	5738.51	2869.25	14833.4	7427.75	0.02	-0.037	0.000	0.170
10.00	-74.80	-10.03	0.00	-1115.1	0.00	1115.16	5672.18	2836.09	14377.6	7199.49	0.08	-0.074	0.000	0.168
15.00	-72.24	-9.88	0.00	-1065.0	0.00	1065.02	5604.11	2802.06	13924.1	6972.40	0.18	-0.112	0.000	0.166
18.00	-70.72	-9.78	0.00	-1035.3	0.00	1035.38	5562.44	2781.22	13653.2	6836.76	0.25	-0.135	0.000	0.164
18.00	-70.72	-9.78	0.00	-1035.3	0.00	1035.38	4468.60	2234.30	10991.3	5503.84	0.25	-0.135	0.000	0.204
20.00	-69.80	-9.74	0.00	-1015.8	0.00	1015.82	4449.40	2224.70	10854.8	5435.51	0.31	-0.151	0.000	0.203
25.00	-67.53	-9.59	0.00	-967.10	0.00	967.10	4400.18	2200.09	10514.1	5264.91	0.50	-0.196	0.000	0.199
30.00	-65.29	-9.43	0.00	-919.15	0.00	919.15	4349.23	2174.61	10174.3	5094.75	0.73	-0.241	0.000	0.195
35.00	-63.08	-9.27	0.00	-872.00	0.00	872.00	4296.53	2148.27	9835.69	4925.16	1.00	-0.287	0.000	0.192
40.00	-60.91	-9.08	0.00	-825.66	0.00	825.66	4242.10	2121.05	9498.40	4756.26	1.33	-0.334	0.000	0.188
41.00	-60.48	-9.06	0.00	-816.58	0.00	816.58	4231.01	2115.50	9431.14	4722.58	1.40	-0.343	0.000	0.187
45.00	-57.70	-8.91	0.00	-780.35	0.00	780.35	4185.94	2092.97	9162.77	4588.20	1.70	-0.381	0.000	0.184
48.00	-55.64	-8.79	0.00	-753.63	0.00	753.63	4187.05	2093.52	9169.29	4591.46	1.95	-0.410	0.000	0.177
50.00	-54.79	-8.73	0.00	-736.05	0.00	736.05	4164.11	2082.05	9035.54	4524.49	2.13	-0.430	0.000	0.176
55.00	-52.69	-8.55	0.00	-692.39	0.00	692.39	4105.54	2052.77	8702.63	4357.78	2.60	-0.476	0.000	0.172
60.00	-50.62	-8.36	0.00	-649.65	0.00	649.65	4045.24	2022.62	8371.99	4192.22	3.13	-0.522	0.000	0.167
65.00	-48.59	-8.17	0.00	-607.86	0.00	607.86	3983.21	1991.60	8043.90	4027.93	3.70	-0.569	0.000	0.163
70.00	-46.60	-7.98	0.00	-567.00	0.00	567.00	3919.43	1959.72	7718.60	3865.04	4.32	-0.615	0.000	0.159
75.00	-44.62	-7.78	0.00	-527.10	0.00	527.10	3853.92	1926.96	7396.37	3703.68	4.99	-0.662	0.000	0.154
80.00	-42.70	-7.58	0.00	-488.22	0.00	488.22	3786.67	1893.34	7077.46	3543.99	5.71	-0.710	0.000	0.149
85.00	-40.82	-7.39	0.00	-450.29	0.00	450.29	3717.69	1858.85	6762.13	3386.09	6.48	-0.757	0.000	0.144
90.00	-38.08	-7.17	0.00	-413.33	0.00	413.33	3646.97	1823.48	6450.65	3230.12	7.30	-0.804	0.000	0.138
91.00	-37.54	-7.14	0.00	-406.16	0.00	406.16	2873.92	1436.96	5143.64	2575.64	7.47	-0.813	0.000	0.171
95.00	-36.22	-6.99	0.00	-377.59	0.00	377.59	2834.39	1417.20	4959.20	2483.29	8.16	-0.851	0.000	0.165
100.00	-34.60	-6.80	0.00	-342.64	0.00	342.64	2783.42	1391.71	4730.46	2368.74	9.08	-0.904	0.000	0.157
105.00	-33.02	-6.62	0.00	-308.62	0.00	308.62	2730.70	1365.35	4503.96	2255.33	10.06	-0.956	0.000	0.149
110.00	-31.48	-6.43	0.00	-275.55	0.00	275.55	2676.25	1338.13	4279.98	2143.17	11.09	-1.008	0.000	0.140
115.00	-29.97	-6.24	0.00	-243.41	0.00	243.41	2620.07	1310.03	4058.76	2032.40	12.17	-1.058	0.000	0.131
120.00	-28.49	-6.05	0.00	-212.21	0.00	212.21	2562.14	1281.07	3840.57	1923.14	13.30	-1.106	0.000	0.121
125.00	-27.05	-5.87	0.00	-181.95	0.00	181.95	2502.48	1251.24	3625.68	1815.54	14.49	-1.152	0.000	0.111
130.00	-25.65	-5.68	0.00	-152.61	0.00	152.61	2441.09	1220.54	3414.34	1709.71	15.72	-1.195	0.000	0.100
131.00	-24.85	-5.51	0.00	-146.93	0.00	146.93	2428.60	1214.30	3372.52	1688.77	15.97	-1.204	0.000	0.097
135.00	-23.34	-5.35	0.00	-124.90	0.00	124.90	1793.55	896.77	2465.05	1234.36	16.99	-1.235	0.000	0.114
140.00	-22.16	-5.17	0.00	-98.14	0.00	98.14	1751.71	875.86	2319.73	1161.59	18.31	-1.271	0.000	0.097
141.00	-18.05	-4.28	0.00	-92.98	0.00	92.98	1743.14	871.57	2290.90	1147.15	18.57	-1.279	0.000	0.091
145.00	-17.20	-4.13	0.00	-75.88	0.00	75.88	1708.14	854.07	2176.40	1089.82	19.66	-1.308	0.000	0.080
150.00	-16.17	-3.96	0.00	-55.20	0.00	55.20	1662.84	831.42	2035.30	1019.16	21.05	-1.340	0.000	0.064
152.00	-10.27	-2.42	0.00	-47.29	0.00	47.29	1644.23	822.12	1979.55	991.25	21.61	-1.351	0.000	0.054
155.00	-9.71	-2.31	0.00	-40.04	0.00	40.04	1615.80	807.90	1896.71	949.77	22.46	-1.365	0.000	0.048
160.00	-8.79	-2.14	0.00	-28.48	0.00	28.48	1567.02	783.51	1760.89	881.75	23.90	-1.386	0.000	0.038
165.00	-7.91	-1.98	0.00	-17.77	0.00	17.77	1516.50	758.25	1628.10	815.26	25.37	-1.402	0.000	0.027
170.00	-7.06	-1.82	0.00	-7.88	0.00	7.88	1464.25	732.13	1498.59	750.41	26.84	-1.412	0.000	0.015
170.00	-7.06	-1.82	0.00	-7.88	0.00	7.88	1464.25	732.13	1498.59	750.41	26.84	-1.412	0.000	0.015
172.00	-5.33	-1.41	0.00	-4.24	0.00	4.24	1442.91	721.45	1447.81	724.98	27.43	-1.415	0.000	0.010
175.00	0.00	-1.28	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	28.32	-1.416	0.000	0.000

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Wind Loading - Shaft

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	301.92	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	296.25	0.650	0.000	5.00	27.033	17.57	143.8	0.0	1499.2
10.00		1.00	0.85	7.442	8.19	290.58	0.650	0.000	5.00	26.521	17.24	141.1	0.0	1470.6
15.00		1.00	0.85	7.442	8.19	284.92	0.650	0.000	5.00	26.009	16.91	138.4	0.0	1442.0
18.00	Top - Section 1	1.00	0.88	7.723	8.50	286.78	0.650	0.000	3.00	15.360	9.98	84.8	0.0	851.5
20.00		1.00	0.90	7.896	8.69	287.64	0.650	0.000	2.00	10.137	6.59	57.2	0.0	482.1
25.00		1.00	0.95	8.276	9.10	288.50	0.650	0.000	5.00	24.984	16.24	147.8	0.0	1188.2
30.00		1.00	0.98	8.600	9.46	288.00	0.650	0.000	5.00	24.472	15.91	150.5	0.0	1163.7
35.00		1.00	1.01	8.883	9.77	286.52	0.650	0.000	5.00	23.960	15.57	152.2	0.0	1139.2
40.00		1.00	1.04	9.137	10.05	284.30	0.650	0.000	5.00	23.448	15.24	153.2	0.0	1114.7
41.00	Bot - Section 3	1.00	1.05	9.184	10.10	283.78	0.650	0.000	1.00	4.628	3.01	30.4	0.0	220.0
45.00		1.00	1.07	9.366	10.30	281.49	0.650	0.000	4.00	18.561	12.06	124.3	0.0	1752.5
48.00	Top - Section 2	1.00	1.08	9.494	10.44	279.57	0.650	0.000	3.00	13.706	8.91	93.0	0.0	1293.7
50.00		1.00	1.09	9.576	10.53	282.18	0.650	0.000	2.00	9.035	5.87	61.9	0.0	429.4
55.00		1.00	1.12	9.770	10.75	278.53	0.650	0.000	5.00	22.228	14.45	155.3	0.0	1056.3
60.00		1.00	1.14	9.951	10.95	274.54	0.650	0.000	5.00	21.716	14.12	154.5	0.0	1031.8
65.00		1.00	1.16	10.120	11.13	270.26	0.650	0.000	5.00	21.204	13.78	153.4	0.0	1007.3
70.00		1.00	1.17	10.279	11.31	265.71	0.650	0.000	5.00	20.692	13.45	152.1	0.0	982.7
75.00	Appurtenance(s)	1.00	1.19	10.430	11.47	260.94	0.650	0.000	5.00	20.179	13.12	150.5	0.0	958.2
80.00		1.00	1.21	10.572	11.63	255.96	0.650	0.000	5.00	19.667	12.78	148.7	0.0	933.7
85.00	Bot - Section 4	1.00	1.22	10.708	11.78	250.80	0.650	0.000	5.00	19.155	12.45	146.7	0.0	909.2
90.00		1.00	1.24	10.838	11.92	245.48	0.650	0.000	5.00	18.907	12.29	146.5	0.0	1633.5
91.00	Top - Section 3	1.00	1.24	10.863	11.95	244.40	0.650	0.000	1.00	3.720	2.42	28.9	0.0	321.3
95.00		1.00	1.25	10.962	12.06	243.55	0.650	0.000	4.00	14.675	9.54	115.0	0.0	581.1
100.00		1.00	1.27	11.081	12.19	237.96	0.650	0.000	5.00	17.883	11.62	141.7	0.0	708.0
105.00		1.00	1.28	11.195	12.31	232.23	0.650	0.000	5.00	17.370	11.29	139.0	0.0	687.5
110.00		1.00	1.29	11.305	12.44	226.39	0.650	0.000	5.00	16.858	10.96	136.3	0.0	667.1
115.00		1.00	1.30	11.412	12.55	220.43	0.650	0.000	5.00	16.346	10.62	133.4	0.0	646.7
120.00		1.00	1.32	11.514	12.67	214.37	0.650	0.000	5.00	15.834	10.29	130.4	0.0	626.2
125.00		1.00	1.33	11.614	12.78	208.21	0.650	0.000	5.00	15.321	9.96	127.2	0.0	605.8
130.00	Bot - Section 5	1.00	1.34	11.710	12.88	201.97	0.650	0.000	5.00	14.809	9.63	124.0	0.0	585.4
131.00	Appurtenance(s)	1.00	1.34	11.729	12.90	200.71	0.650	0.000	1.00	2.943	1.91	24.7	0.0	207.8
135.00	Top - Section 4	1.00	1.35	11.803	12.98	195.63	0.650	0.000	4.00	11.566	7.52	97.6	0.0	816.7
140.00		1.00	1.36	11.894	13.08	192.18	0.650	0.000	5.00	13.996	9.10	119.0	0.0	443.2
141.00	Appurtenance(s)	1.00	1.36	11.912	13.10	190.89	0.650	0.000	1.00	2.738	1.78	23.3	0.0	86.7
145.00		1.00	1.37	11.982	13.18	185.70	0.650	0.000	4.00	10.746	6.98	92.1	0.0	340.2
150.00		1.00	1.38	12.068	13.27	179.14	0.650	0.000	5.00	12.972	8.43	111.9	0.0	410.5
152.00	Appurtenance(s)	1.00	1.38	12.102	13.31	176.50	0.650	0.000	2.00	5.045	3.28	43.7	0.0	159.6
155.00		1.00	1.39	12.152	13.37	172.52	0.650	0.000	3.00	7.414	4.82	64.4	0.0	234.5
160.00		1.00	1.40	12.233	13.46	165.83	0.650	0.000	5.00	11.947	7.77	104.5	0.0	377.8
165.00		1.00	1.41	12.313	13.54	159.08	0.650	0.000	5.00	11.435	7.43	100.7	0.0	361.5
170.00	Top - Section 5	1.00	1.42	12.390	13.63	152.27	0.650	0.000	5.00	10.923	7.10	96.8	0.0	345.1
172.00	Appurtenance(s)	1.00	1.42	12.421	13.66	149.53	0.650	0.000	2.00	4.226	2.75	37.5	0.0	133.5
175.00	Appurtenance(s)	1.00	1.42	12.466	13.71	145.40	0.650	0.000	3.00	6.185	4.02	55.1	0.0	195.3
								Totals:	**175.00**			**4,733.4**		**32,101.0**

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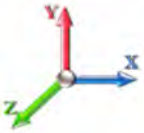
Discrete Appurtenance Forces

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 34

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	ALU 1900MHz RRU	3	12.466	13.713	0.75	1.00	8.55	132.00	0.000	0.000	117.24	0.00	0.00
2	175.00	APXVTM14-C-120	3	12.466	13.713	0.79	1.00	15.03	168.00	0.000	0.000	206.05	0.00	0.00
3	175.00	APXVSPP18-C-A20	3	12.466	13.713	0.83	1.00	19.97	171.00	0.000	0.000	273.84	0.00	0.00
4	175.00	ALU 800 MHz RRU	3	12.466	13.713	0.75	1.00	5.60	159.00	0.000	0.000	76.83	0.00	0.00
5	175.00	T-Arm w/ work Platform	3	12.466	13.713	0.75	1.00	22.50	1200.00	0.000	0.000	308.54	0.00	0.00
6	175.00	TD-RRH8x20-25	3	12.466	13.713	0.69	1.00	8.38	210.00	0.000	0.000	114.96	0.00	0.00
7	175.00	800 MHz Filter	3	12.466	13.713	0.75	1.00	0.95	30.00	0.000	0.000	12.96	0.00	0.00
8	175.00	ACU-A20-N	4	12.466	13.713	0.67	1.00	0.38	4.00	0.000	0.000	5.15	0.00	0.00
9	172.00	U-RAS Flexible RRH	3	12.421	13.663	0.73	1.00	3.99	99.00	0.000	0.000	54.46	0.00	0.00
10	172.00	A-ANT-23-G-2-C	2	12.421	13.663	1.00	1.00	3.22	61.80	0.000	0.000	43.99	0.00	0.00
11	172.00	LLPX310R	3	12.421	13.663	0.69	1.00	8.90	85.80	0.000	0.000	121.61	0.00	0.00
12	172.00	Collar Mount (Andrew	1	12.421	13.663	1.00	1.00	5.00	350.00	0.000	0.000	68.32	0.00	0.00
13	152.00	T-Arm w/ work Platform	3	12.102	13.312	0.75	1.00	22.50	1200.00	0.000	0.000	299.52	0.00	0.00
14	152.00	Allgon/ 7184	6	12.102	13.312	0.69	1.00	11.80	58.20	0.000	0.000	157.07	0.00	0.00
15	152.00	Powerwave/ 7020 RET	6	12.102	13.312	0.62	1.00	1.49	13.20	0.000	0.000	19.81	0.00	0.00
16	152.00	Raycap/ DC6-48-60-18-8F	1	12.102	13.312	1.00	1.00	1.47	32.80	0.000	0.000	19.57	0.00	0.00
17	152.00	Powerwave/ 7770	3	12.102	13.312	0.73	1.00	12.04	105.00	0.000	0.000	160.34	0.00	0.00
18	152.00	Powerwave/ LGP 21401	6	12.102	13.312	0.75	1.00	5.80	84.60	0.000	0.000	77.28	0.00	0.00
19	152.00	Ericsson/ RRUS A2	3	12.102	13.312	0.67	1.00	3.74	63.30	0.000	0.000	49.77	0.00	0.00
20	152.00	Ericsson/ RRUS-11	6	12.102	13.312	0.62	1.00	9.37	300.00	0.000	0.000	124.79	0.00	0.00
21	152.00	HPA-65R-BUU-H6	3	12.102	13.312	0.85	1.00	24.63	153.00	0.000	0.000	327.92	0.00	0.00
22	152.00	Ericsson/ RRUS-12	3	12.102	13.312	0.67	1.00	5.43	180.00	0.000	0.000	72.24	0.00	0.00
23	141.00	AIR21 B2A/B4P	3	11.912	13.103	0.86	1.00	15.71	274.50	0.000	0.000	205.88	0.00	0.00
24	141.00	KRY 112 144	3	11.912	13.103	0.70	1.00	0.86	33.00	0.000	0.000	11.28	0.00	0.00
25	141.00	AIR21 B2A/B4P	3	11.912	13.103	0.86	1.00	15.71	274.50	0.000	0.000	205.88	0.00	0.00
26	141.00	Low Profile Platform	1	11.912	13.103	1.00	1.00	25.00	1200.00	0.000	0.000	327.58	0.00	0.00
27	131.00	Kathrein 742 213	3	11.729	12.902	0.72	1.00	11.06	66.00	0.000	0.000	142.68	0.00	0.00
28	75.00	GPS	1	10.430	11.473	1.00	1.00	1.00	10.00	0.000	0.000	11.47	0.00	0.00
							Totals:		**6,718.70**			**3,617.03**		

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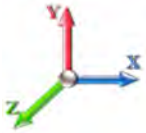
Total Applied Force Summary

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		143.84	1671.54	0.00	0.00
10.00		141.12	1642.94	0.00	0.00
15.00		138.39	1614.34	0.00	0.00
18.00		84.81	954.87	0.00	0.00
20.00		57.23	551.09	0.00	0.00
25.00		147.84	1360.57	0.00	0.00
30.00		150.48	1336.06	0.00	0.00
35.00		152.19	1311.54	0.00	0.00
40.00		153.18	1287.02	0.00	0.00
41.00		30.39	254.46	0.00	0.00
45.00		124.30	1890.34	0.00	0.00
48.00		93.04	1397.16	0.00	0.00
50.00		61.86	498.33	0.00	0.00
55.00		155.28	1228.66	0.00	0.00
60.00		154.51	1204.14	0.00	0.00
65.00		153.43	1179.62	0.00	0.00
70.00		152.07	1155.11	0.00	0.00
75.00	(1) attachments	161.95	1140.59	0.00	0.00
80.00		148.67	1105.27	0.00	0.00
85.00		146.65	1080.76	0.00	0.00
90.00		146.51	1805.07	0.00	0.00
91.00		28.89	355.62	0.00	0.00
95.00		115.02	718.34	0.00	0.00
100.00		141.68	879.53	0.00	0.00
105.00		139.04	859.10	0.00	0.00
110.00		136.27	838.67	0.00	0.00
115.00		133.37	818.24	0.00	0.00
120.00		130.35	797.81	0.00	0.00
125.00		127.23	777.38	0.00	0.00
130.00		123.99	756.95	0.00	0.00
131.00	(3) attachments	167.36	308.16	0.00	0.00
135.00		97.61	928.96	0.00	0.00
140.00		119.03	583.58	0.00	0.00
141.00	(10) attachments	773.94	1896.75	0.00	0.00
145.00		92.07	398.16	0.00	0.00
150.00		111.93	482.99	0.00	0.00
152.00	(40) attachments	1351.96	2378.72	0.00	0.00
155.00		64.42	249.94	0.00	0.00
160.00		104.50	401.60	0.00	0.00
165.00		100.67	385.25	0.00	0.00
170.00		96.76	368.91	0.00	0.00
172.00	(9) attachments	325.91	739.59	0.00	0.00
175.00	(25) attachments	1170.69	2281.18	0.00	0.00
	Totals:	**8,350.44**	**43,874.91**	**0.00**	**0.00**

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	1.37
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	5.20
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	1.60
5.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	2.40
10.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	1.37
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	5.20
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	1.60
10.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	2.40
15.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	1.37
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	5.20
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	1.60
15.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	2.40
18.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.723	0.00	0.82
18.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.723	0.00	3.12
18.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.723	0.00	0.96
18.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.723	0.00	1.44
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	0.55
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	2.08
20.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	0.64
20.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	0.96
25.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	1.37
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	5.20
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	1.60
25.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	2.40
30.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	1.37
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	5.20
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	1.60
30.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	2.40
35.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	1.37
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	5.20
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	1.60
35.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	2.40
40.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	1.37
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	5.20
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	1.60
40.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	2.40
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	9.184	0.00	0.27
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	9.184	0.00	1.04
41.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	9.184	0.00	0.32
41.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	9.184	0.00	0.48
45.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	1.09
45.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	4.16
45.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	1.28
45.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	1.92
48.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	9.494	0.00	0.82
48.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	9.494	0.00	3.12
48.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	9.494	0.00	0.96

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	9.494	0.00	1.44
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	0.55
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	2.08
50.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	0.64
50.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	0.96
55.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	1.37
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	5.20
55.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	1.60
55.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	2.40
60.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	1.37
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	5.20
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	1.60
60.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	2.40
65.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	1.37
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	5.20
65.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	1.60
65.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	2.40
70.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	1.37
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	5.20
70.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	1.60
70.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	2.40
75.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	1.37
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	5.20
75.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	1.60
75.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	2.40
80.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	1.37
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	5.20
80.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	1.60
80.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	2.40
85.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	1.37
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	5.20
85.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	1.60
85.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	2.40
90.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	1.37
90.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	5.20
90.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	1.60
90.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	2.40
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.863	0.00	0.27
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.863	0.00	1.04
91.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.863	0.00	0.32
91.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.863	0.00	0.48
95.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	1.09
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	4.16
95.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	1.28
95.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	1.92
100.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.081	0.00	1.37
100.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.081	0.00	5.20

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
100.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.081	0.00	1.60
100.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.081	0.00	2.40
105.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.195	0.00	1.37
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.195	0.00	5.20
105.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.195	0.00	1.60
105.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.195	0.00	2.40
110.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.305	0.00	1.37
110.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.305	0.00	5.20
110.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.305	0.00	1.60
110.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.305	0.00	2.40
115.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.412	0.00	1.37
115.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.412	0.00	5.20
115.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.412	0.00	1.60
115.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.412	0.00	2.40
120.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.514	0.00	1.37
120.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.514	0.00	5.20
120.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.514	0.00	1.60
120.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.514	0.00	2.40
125.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.614	0.00	1.37
125.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.614	0.00	5.20
125.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.614	0.00	1.60
125.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.614	0.00	2.40
130.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.710	0.00	1.37
130.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.710	0.00	5.20
130.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.710	0.00	1.60
130.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.710	0.00	2.40
131.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.729	0.00	0.27
131.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.729	0.00	1.04
131.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.729	0.00	0.32
131.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.729	0.00	0.48
135.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.803	0.00	1.09
135.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.803	0.00	4.16
135.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.803	0.00	1.28
135.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.803	0.00	1.92
140.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.894	0.00	1.37
140.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.894	0.00	5.20
140.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.894	0.00	1.60
140.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.894	0.00	2.40
141.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.912	0.00	0.27
141.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.912	0.00	1.04
141.00	1/2" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.912	0.00	0.32
141.00	5/16" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.912	0.00	0.48
145.00	Safety Cable	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.982	0.00	1.09
145.00	Step bolts (ladder)	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.982	0.00	4.16
145.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.982	0.00	1.28
145.00	5/16" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.982	0.00	1.92
150.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.068	0.00	1.37

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Linear Appurtenance Segment Forces (Factored)

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
150.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.068	0.00	5.20
150.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.068	0.00	1.60
150.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.068	0.00	2.40
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.102	0.00	0.55
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.102	0.00	2.08
152.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.102	0.00	0.64
152.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.102	0.00	0.96
155.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	0.82
155.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	3.12
155.00	1/2" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	0.96
155.00	5/16" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.152	0.00	1.44
160.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	1.37
160.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	5.20
160.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	1.60
160.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.233	0.00	2.40
165.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.313	0.00	1.37
165.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.313	0.00	5.20
165.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.313	0.00	1.60
165.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.313	0.00	2.40
170.00	Safety Cable	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.390	0.00	1.37
170.00	Step bolts (ladder)	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.390	0.00	5.20
170.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.390	0.00	1.60
170.00	5/16" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	12.390	0.00	2.40
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.421	0.00	0.55
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.421	0.00	2.08
172.00	1/2" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.421	0.00	0.64
172.00	5/16" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.421	0.00	0.96
175.00	Safety Cable	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.466	0.00	0.82
175.00	Step bolts (ladder)	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	12.466	0.00	3.12
										Totals:	**0.0**	**367.4**

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Calculated Forces

Structure:	CT03110-S-SBA	**Code:**	EIA/TIA-222-G	11/4/2016	
Site Name:	North Branford	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 40

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.87	-8.36	0.00	-993.50	0.00	993.50	5803.10	2901.55	15291.3	7657.05	0.00	0.000	0.000	0.137
5.00	-42.20	-8.24	0.00	-951.69	0.00	951.69	5738.51	2869.25	14833.4	7427.75	0.02	-0.030	0.000	0.135
10.00	-40.55	-8.12	0.00	-910.50	0.00	910.50	5672.18	2836.09	14377.6	7199.49	0.06	-0.060	0.000	0.134
15.00	-38.93	-8.00	0.00	-869.90	0.00	869.90	5604.11	2802.06	13924.1	6972.40	0.14	-0.091	0.000	0.132
18.00	-37.98	-7.92	0.00	-845.92	0.00	845.92	5562.44	2781.22	13653.2	6836.76	0.21	-0.110	0.000	0.131
18.00	-37.98	-7.92	0.00	-845.92	0.00	845.92	4468.60	2234.30	10991.3	5503.84	0.21	-0.110	0.000	0.162
20.00	-37.42	-7.88	0.00	-830.08	0.00	830.08	4449.40	2224.70	10854.8	5435.51	0.26	-0.123	0.000	0.161
25.00	-36.06	-7.75	0.00	-790.69	0.00	790.69	4400.18	2200.09	10514.1	5264.91	0.41	-0.160	0.000	0.158
30.00	-34.71	-7.62	0.00	-751.95	0.00	751.95	4349.23	2174.61	10174.3	5094.75	0.59	-0.197	0.000	0.156
35.00	-33.40	-7.48	0.00	-713.86	0.00	713.86	4296.53	2148.27	9835.69	4925.16	0.82	-0.235	0.000	0.153
40.00	-32.11	-7.34	0.00	-676.45	0.00	676.45	4242.10	2121.05	9498.40	4756.26	1.09	-0.273	0.000	0.150
41.00	-31.85	-7.32	0.00	-669.12	0.00	669.12	4231.01	2115.50	9431.14	4722.58	1.14	-0.281	0.000	0.149
45.00	-29.96	-7.20	0.00	-639.85	0.00	639.85	4185.94	2092.97	9162.77	4588.20	1.39	-0.312	0.000	0.147
48.00	-28.56	-7.10	0.00	-618.27	0.00	618.27	4187.05	2093.52	9169.29	4591.46	1.60	-0.336	0.000	0.141
50.00	-28.06	-7.05	0.00	-604.06	0.00	604.06	4164.11	2082.05	9035.54	4524.49	1.74	-0.351	0.000	0.140
55.00	-26.83	-6.91	0.00	-568.79	0.00	568.79	4105.54	2052.77	8702.63	4357.78	2.13	-0.389	0.000	0.137
60.00	-25.62	-6.76	0.00	-534.26	0.00	534.26	4045.24	2022.62	8371.99	4192.22	2.56	-0.427	0.000	0.134
65.00	-24.44	-6.62	0.00	-500.45	0.00	500.45	3983.21	1991.60	8043.90	4027.93	3.02	-0.466	0.000	0.130
70.00	-23.28	-6.47	0.00	-467.37	0.00	467.37	3919.43	1959.72	7718.60	3865.04	3.53	-0.504	0.000	0.127
75.00	-22.14	-6.31	0.00	-435.03	0.00	435.03	3853.92	1926.96	7396.37	3703.68	4.08	-0.543	0.000	0.123
80.00	-21.03	-6.17	0.00	-403.47	0.00	403.47	3786.67	1893.34	7077.46	3543.99	4.67	-0.582	0.000	0.119
85.00	-19.94	-6.02	0.00	-372.64	0.00	372.64	3717.69	1858.85	6762.13	3386.09	5.30	-0.621	0.000	0.115
90.00	-18.14	-5.86	0.00	-342.53	0.00	342.53	3646.97	1823.48	6450.65	3230.12	5.97	-0.660	0.000	0.111
91.00	-17.78	-5.84	0.00	-336.67	0.00	336.67	2873.92	1436.96	5143.64	2575.64	6.11	-0.668	0.000	0.137
95.00	-17.06	-5.72	0.00	-313.32	0.00	313.32	2834.39	1417.20	4959.20	2483.29	6.69	-0.699	0.000	0.132
100.00	-16.18	-5.58	0.00	-284.70	0.00	284.70	2783.42	1391.71	4730.46	2368.74	7.44	-0.743	0.000	0.126
105.00	-15.32	-5.44	0.00	-256.79	0.00	256.79	2730.70	1365.35	4503.96	2255.33	8.24	-0.787	0.000	0.119
110.00	-14.48	-5.31	0.00	-229.57	0.00	229.57	2676.25	1338.13	4279.98	2143.17	9.09	-0.829	0.000	0.113
115.00	-13.66	-5.17	0.00	-203.03	0.00	203.03	2620.07	1310.03	4058.76	2032.40	9.98	-0.871	0.000	0.105
120.00	-12.86	-5.04	0.00	-177.18	0.00	177.18	2562.14	1281.07	3840.57	1923.14	10.92	-0.911	0.000	0.097
125.00	-12.08	-4.91	0.00	-151.99	0.00	151.99	2502.48	1251.24	3625.68	1815.54	11.89	-0.950	0.000	0.089
130.00	-11.32	-4.77	0.00	-127.46	0.00	127.46	2441.09	1220.54	3414.34	1709.71	12.91	-0.986	0.000	0.079
131.00	-11.02	-4.60	0.00	-122.69	0.00	122.69	2428.60	1214.30	3372.52	1688.77	13.11	-0.993	0.000	0.077
135.00	-10.09	-4.49	0.00	-104.28	0.00	104.28	1793.55	896.77	2465.05	1234.36	13.96	-1.019	0.000	0.090
140.00	-9.50	-4.37	0.00	-81.80	0.00	81.80	1751.71	875.86	2319.73	1161.59	15.04	-1.049	0.000	0.076
141.00	-7.62	-3.56	0.00	-77.44	0.00	77.44	1743.14	871.57	2290.90	1147.15	15.26	-1.056	0.000	0.072
145.00	-7.22	-3.47	0.00	-63.19	0.00	63.19	1708.14	854.07	2176.40	1089.82	16.16	-1.080	0.000	0.062
150.00	-6.74	-3.35	0.00	-45.87	0.00	45.87	1662.84	831.42	2035.30	1019.16	17.30	-1.106	0.000	0.049
152.00	-4.39	-1.95	0.00	-39.17	0.00	39.17	1644.23	822.12	1979.55	991.25	17.77	-1.115	0.000	0.042
155.00	-4.14	-1.88	0.00	-33.33	0.00	33.33	1615.80	807.90	1896.71	949.77	18.47	-1.128	0.000	0.038
160.00	-3.74	-1.77	0.00	-23.92	0.00	23.92	1567.02	783.51	1760.89	881.75	19.66	-1.145	0.000	0.030
165.00	-3.36	-1.66	0.00	-15.08	0.00	15.08	1516.50	758.25	1628.10	815.26	20.87	-1.158	0.000	0.021
170.00	-2.99	-1.56	0.00	-6.77	0.00	6.77	1464.25	732.13	1498.59	750.41	22.09	-1.167	0.000	0.011
170.00	-2.99	-1.56	0.00	-6.77	0.00	6.77	1464.25	732.13	1498.59	750.41	22.09	-1.167	0.000	0.011
172.00	-2.26	-1.22	0.00	-3.65	0.00	3.65	1442.91	721.45	1447.81	724.98	22.58	-1.169	0.000	0.007
175.00	0.00	-1.17	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	23.31	-1.170	0.000	0.000

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Final Analysis Summary

Structure:	CT03110-S-SBA		**Code:**	EIA/TIA-222-G	11/4/2016
Site Name:	North Branford		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 101 mph Wind	37.9	0.00	52.60	0.00	0.00	4524.86
0.9D + 1.6W 101 mph Wind	37.9	0.00	39.44	0.00	0.00	4486.83
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.3	0.00	79.95	0.00	0.00	1217.58
1.0D + 1.0W 60 mph Wind	8.4	0.00	43.87	0.00	0.00	993.50

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 101 mph Wind	-45.26	-35.98	0.00	-3855.0	0.00	-3855.0	5562.44	2781.2	13653.2	6836.76	18.00	0.711
0.9D + 1.6W 101 mph Wind	-33.86	-35.87	0.00	-3818.0	0.00	-3818.0	5562.44	2781.2	13653.2	6836.76	18.00	0.702
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-70.72	-9.78	0.00	-1035.3	0.00	-1035.3	5562.44	2781.2	13653.2	6836.76	18.00	0.204
1.0D + 1.0W 60 mph Wind	-37.98	-7.92	0.00	-845.92	0.00	-845.92	5562.44	2781.2	13653.2	6836.76	18.00	0.162

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Monopole Mat Foundation Design

			Date
			11/4/2016
Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	175
Site Number:	CT03110-S-SBA	**Engineer Name:**	D. Zhou
Engr. Number:	27414	**Engineer Login ID:**	

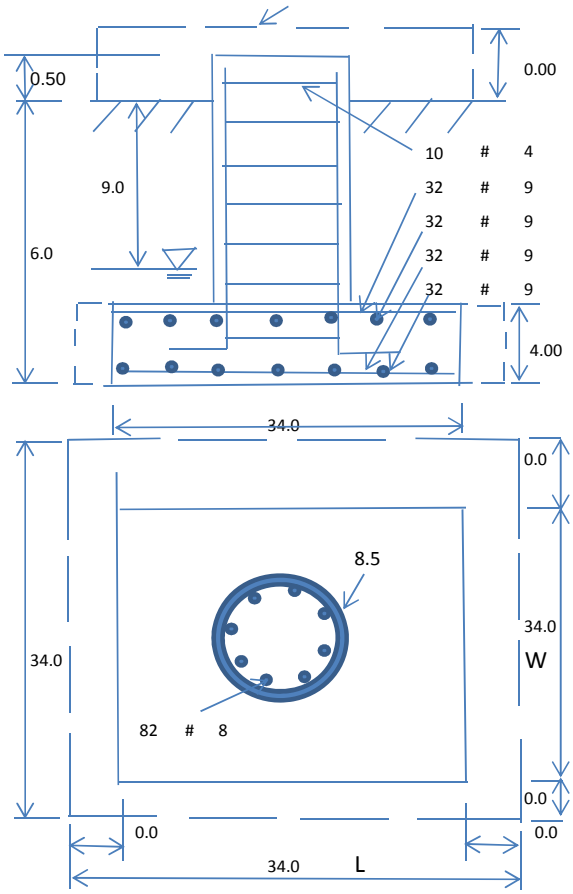
Foundation Info Obtained from:	Drawings/Calculations
Structure Type:	Monopole
Analysis or Design?	Analysis

Base Reactions (Factored):

Axial Load (Kips):	52.6	Shear Force (Kips):	37.9
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4524.9
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.5	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	34	Width of Pad (ft.):	34
Final Length of pad (ft)	34.0	Final width of pad (ft):	34.0
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 #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	82	Tie Spacing (in):	8.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	32	Qty. of Rebar in Pad (W):	32	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	9.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	5000	Ultimate Skin Friction:	175	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	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.):	2198.51	Total Dry Soil Weight (Kips):	263.82
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	263.82	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4765.86	Total Dry Concrete Weight (Kips):	714.88
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	714.88	Total Vertical Load on Base (Kips):	1031.30

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1496	<	Allowable Factored Soil Bearing (psf):	3750	0.40	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	15868.3	>	Design Factored Momont (kips-ft):	4771	0.30	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.33	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):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	12788.7	>	Design Factored Moment (Mu, Kips-Ft	4619.7	0.36	OK!
Calculated Shear Capacity (Kips):	916.1	>	Design Factored Shear (Kips):	37.9	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3498.1	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	10749.2	>	Design Factored Axial Load (Pu Kips):	52.6	0.00	OK!
Moment & Axial Strength Combination:	0.36	OK!	Check Tie Spacing (Design/Required):		0.6667	OK!
Pier Reinforcement Ratio:	0.008	Reinforcement Ratio is satisfied per ACI				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1489.6	>	One-Way Factored Shear (L-D. Kips):	286.1	0.19	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1489.6	>	One-Way Factored Shear (W-D., Kips):	286.1	0.19	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1734.2	>	One-Way Factored Shear (C-C, Kips):	266.4	0.15	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0018		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6266.1	>	Moment at Bottom (L-Direct. K-Ft):	1294.1	0.21	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6266.1	>	Moment at Bottom (W-Direct. K-Ft):	1294.1	0.21	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	8821.3	>	Moment at Bottom (C-C Dir. K-Ft):	1830.2	0.21	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0018		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	6266.1	>	Moment at the top (L-Dir Kips-Ft):	926.1	0.15	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	6266.1	>	Moment at the top (W-Dir Kips-Ft):	926.1	0.15	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8821.3	>	Moment at the top (C-C Direc. K-Ft):	652.7	0.07	OK!