



Tower Engineering Solutions

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Structural Analysis Report

Existing 109 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT40876-T

Customer Site Name: CT389/New Canaan C C

Carrier Name: AT&T

Carrier Site ID / Name: 10091783 - CT2282

Site Location: 95 Country Club Road

New Canaan, Connecticut

Fairfield County

Latitude: 41.172860

Longitude: -73.496333

Analysis Result:

Max Structural Usage: 74.5% [Pass]

Max Foundation Usage: 24.0% [Pass]

Report Prepared by: Matthew Baker



12/23/16

Introduction

The purpose of this report is to summarize the analysis results on the 109 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	EEI Job #15040, Drawing #GS56879, Date 09/06/07
Foundation Drawing	EEI Job #15040, Drawing #1504D-110.0, Date 09/06/07
Geotechnical Report	Jaworski Geotech, Inc. Project #04193G
Modification Drawings	Allpro Consulting Job #11-5047, Date 09/15/11

Analysis Criteria

The feasibility 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 $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ 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 / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.239$, $S_1 = 0.068$

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	106.0	3	S20045A1 - TMA	Flush Mounted inside existing 18" Concealment Shroud	(6) 1 5/8"	T-Mobile
2		3	Andrew - RR65-19-XXDP - Panel			
3	99.0	3	S20045A1 - TMA	Flush Mounted inside existing 18" Concealment Shroud	(6) 1 5/8"	
4		3	Andrew - RR65-19-XXDP - Panel			
-	89.0	3	Powerwave - P65-16-XLH-RR - Panel	Flush Mounted inside existing 30" Concealment Shroud	(6) 7/8"	AT&T
-		3	CCI - DTMAPB7819VG12A - TMA			

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
5	89.0	3	CCI - HPA-65R-BUU-H6 - Panel	Flush Mounted inside existing 30" Concealment Shroud	(12) 7/8"	AT&T
6		6	CCI - DTMAPB7819VG12A - TMA			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	49.4%	74.5%	60.6%
Pass/Fail	Pass	Pass	Pass

*The pole shaft usage shown in this analysis is for the portion of the tower below 81.0'. Complete information on the concealment mast was not available at the time this analysis was performed, so the structural capacity of the concealment mast could not be analyzed. Since the wind loading on this section does not change as a result of the proposed loading, the concealment mast is assumed to be adequate to support the proposed loading. It is recommended that original drawings of the concealment mast showing complete geometry be obtained for use in any future analyses.

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	315.7	5.4	15.5

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.7758 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

The existing concealment shrouds at the 89' elevation are currently damaged. This analysis considers that these concealment shrouds are replaced with new, fully intact shrouds of the same size at that elevation. The analysis results are void if the concealment shrouds are not replaced.

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 49.37% at 0.0ft

Structure: CT40876-T-SBA
Site Name: CT389/New Canaan C C
Height: 109.00 (ft)
Base Elev: 0.000 (ft)

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

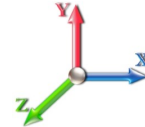
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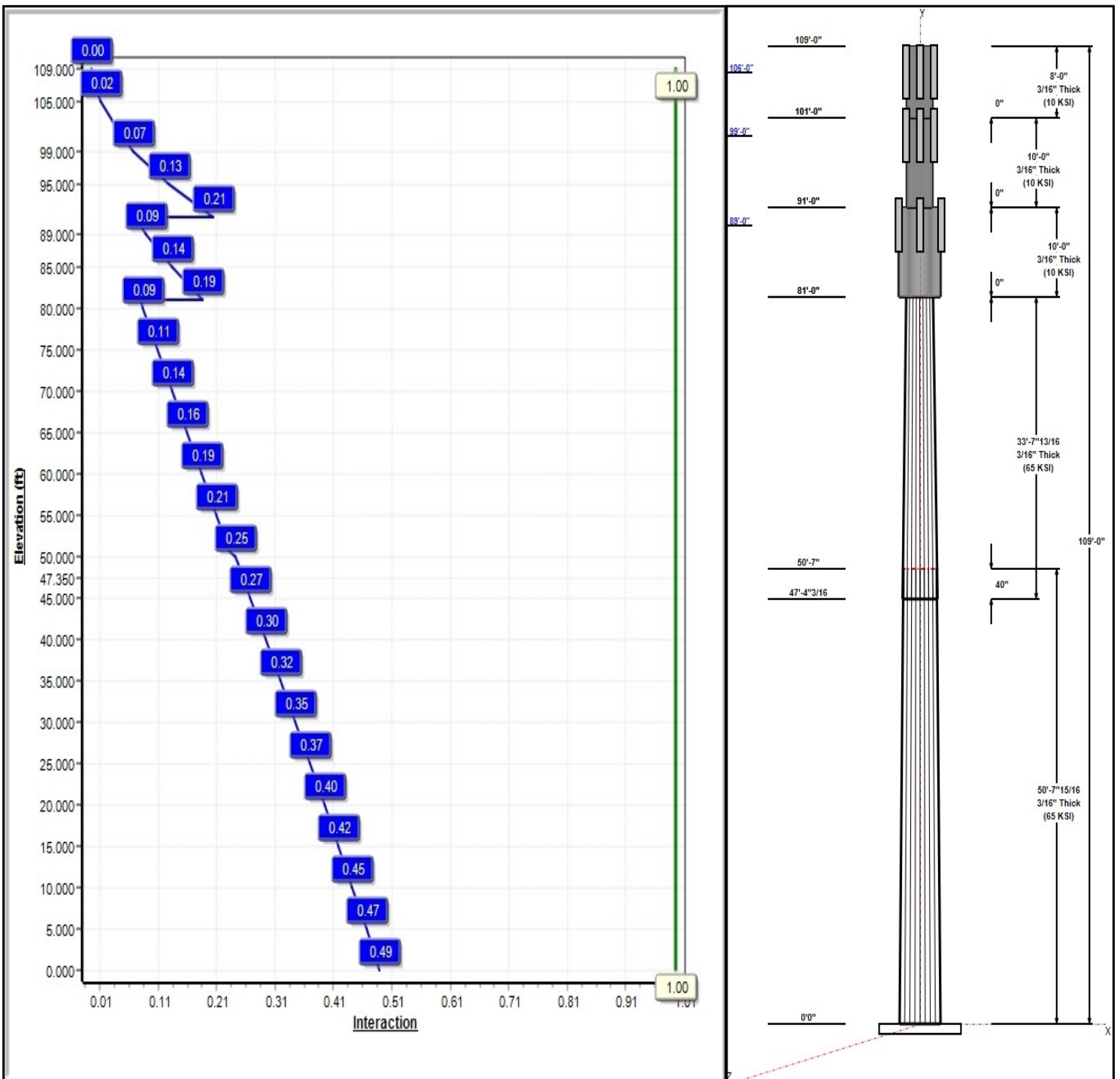
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 31

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Structure: CT40876-T-SBA

Type: Custom
Site Name: CT389/New Canaan C C
Height: 109.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.14660

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	50.66	21.57	29.00	0.188		0.14660	65
2	33.65	17.50	22.43	0.188	Slip	0.14660	65
3	10.00	30.00	30.00	0.188	Butt	0.00000	10
4	10.00	18.00	18.00	0.188	Butt	0.00000	10
5	8.00	18.00	18.00	0.188	Butt	0.00000	10

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
106.00	106.00	3	S20045A1	T-Mobile
106.00	106.00	3	RR65-19-XXDP	T-Mobile
99.00	99.00	3	S20045A1	T-Mobile
99.00	99.00	3	RR65-19-XXDP	T-Mobile
89.00	89.00	3	HPA-65R-BUU-H6	AT&T
89.00	89.00	6	DTMABP7819VG12A	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	106.00	Inside	1 5/8" Coax	T-Mobile
0.00	99.00	Inside	1 5/8" Coax	T-Mobile
0.00	89.00	Inside	7/8" Coax	AT&T

Anchor Bolts

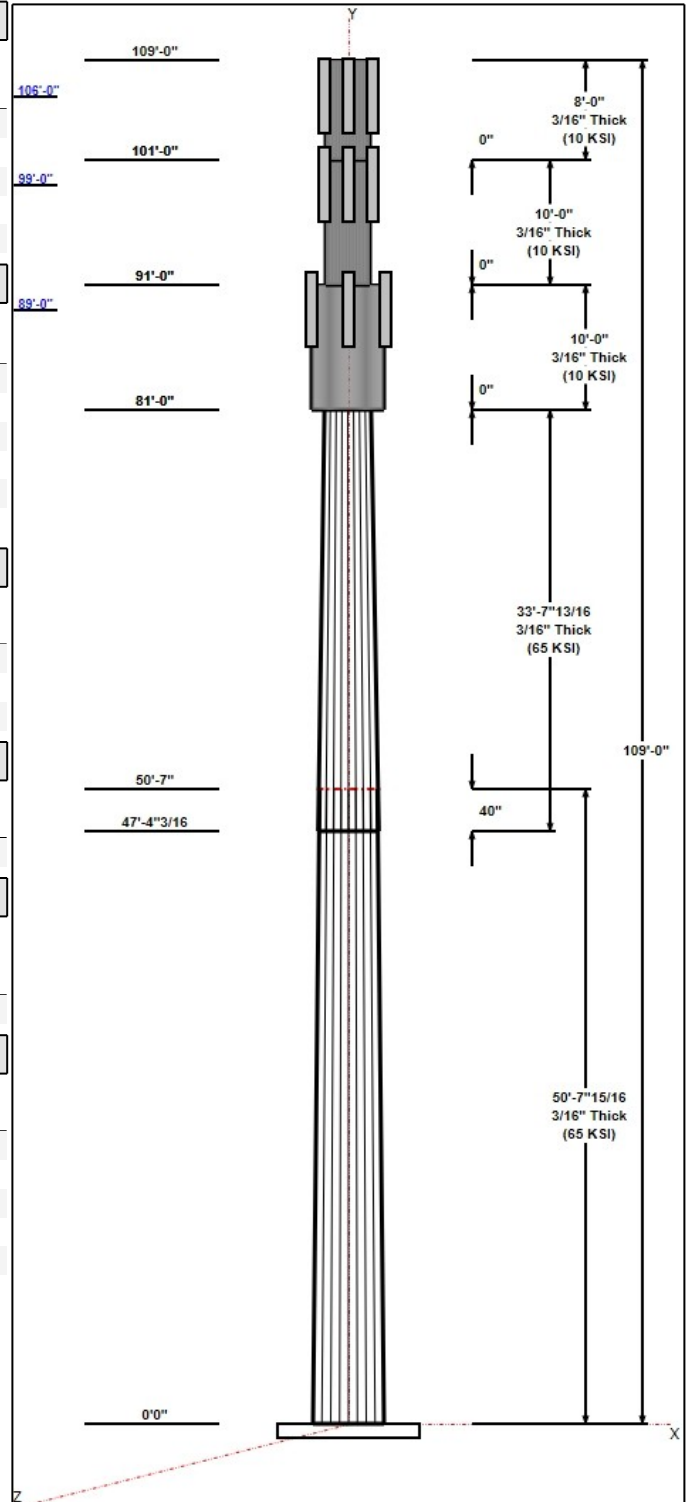
Qty	Specifications	Grade (ksi)	Arrangement
4	1.75" #18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	36.0	50.0	Clipped

Reactions

Load Case	Moment	Shear	Axial
1.2D + 1.6W 93 mph Wind	315.7	5.4	8.9
0.9D + 1.6W 93 mph Wind	312.3	5.4	6.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	199.5	2.7	15.5
1.2D + 1.0E	23.2	0.3	8.9
0.9D + 1.0E	22.8	0.3	6.7
1.0D + 1.0W 60 mph Wind	81.5	1.4	7.4



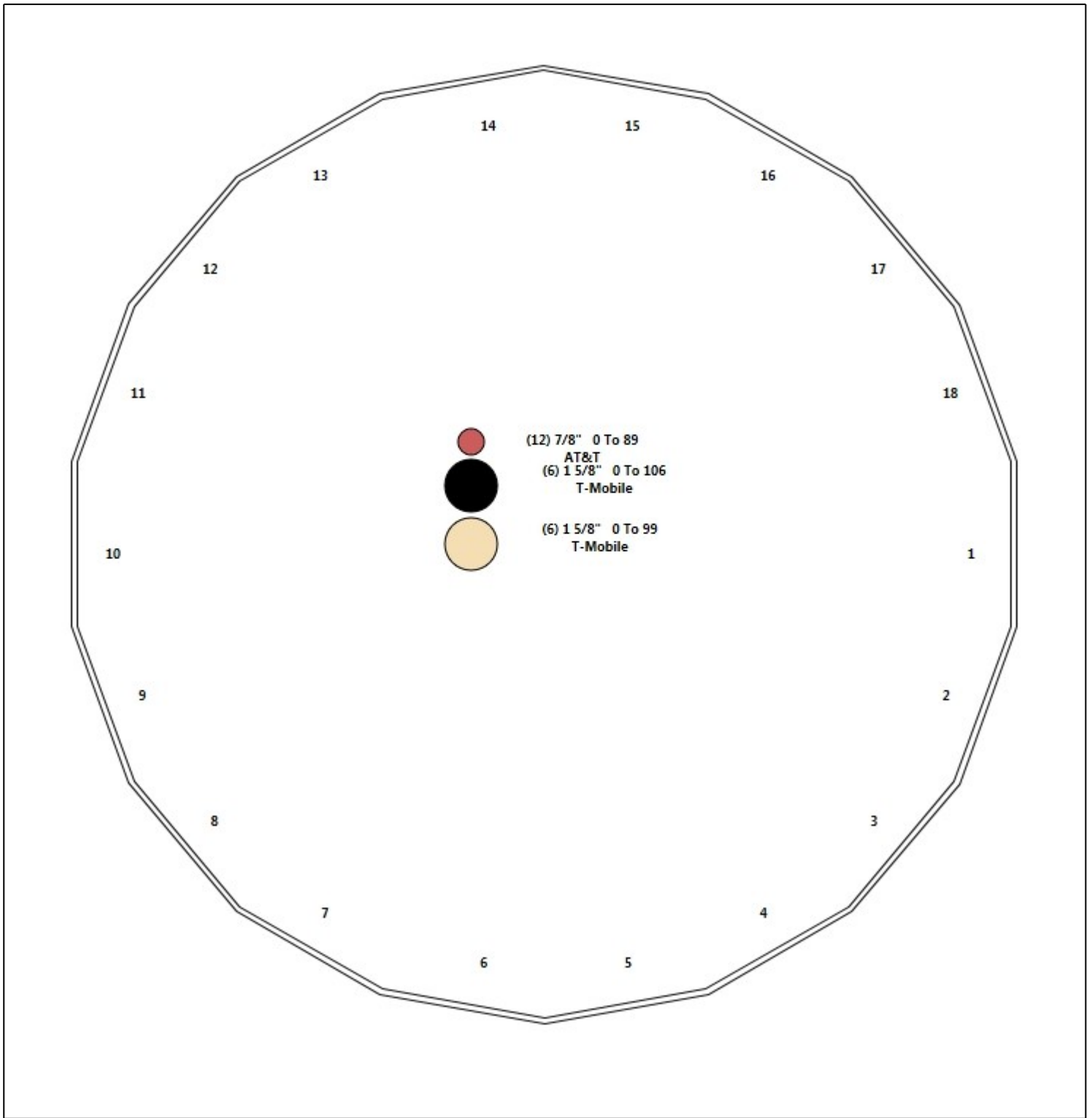
Structure: CT40876-T-SBA - Coax Line Placement

Type: Monopole
Site Name: CT389/New Canaan C C
Height: 109.00 (ft)

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Shaft Properties

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	50.660	0.1875	65		0.00	2,575
2	18	33.650	0.1875	65	Slip	39.72	1,348
3	R	10.000	0.1875	10	Flange	0.00	598
4	R	10.000	0.1875	10	Flange	0.00	357
5	R	8.000	0.1875	10	Flange	0.00	286
Total Shaft Weight:							5,163

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	29.00	0.00	17.15	1798.41	25.86	154.67	21.57	50.66	12.73	735.37	18.88	115.0	0.146605
2	22.43	47.35	13.24	827.73	19.69	119.64	17.50	81.00	10.30	390.14	15.05	93.33	0.146605
3	30.00	81.00	17.56	1952.49	0.00	160.00	30.00	91.00	17.56	1952.49	0.00	160.0	0.000000
4	18.00	91.00	10.49	416.46	0.00	96.00	18.00	101.00	10.49	416.46	0.00	96.00	0.000000
5	18.00	101.0	10.49	416.46	0.00	96.00	18.00	109.00	10.49	416.46	0.00	96.00	0.000000

Load Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	106.00	S20045A1	3	11.00	0.00	0.00	29.23	0.000	0.00	0.00	0.00
2	106.00	RR65-19-XXDP	3	16.00	0.00	0.00	135.14	7.079	0.00	0.00	0.00
3	99.00	S20045A1	3	11.00	0.00	0.00	29.11	0.000	0.00	0.00	0.00
4	99.00	RR65-19-XXDP	3	16.00	0.00	0.00	134.11	7.071	0.00	0.00	0.00
5	89.00	HPA-65R-BUU-H6	3	51.00	0.00	0.00	284.53	10.953	0.00	0.00	0.00
6	89.00	DTMABP7819VG12A	6	19.20	0.00	0.00	43.42	0.000	0.00	0.00	0.00
Totals:			21	430.20			2,096.90				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	106.00	(6) 1 5/8" Coax	0.00	Inside
0.00	99.00	(6) 1 5/8" Coax	0.00	Inside
0.00	89.00	(12) 7/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.1875	29.000	17.146	1798.4	25.86	154.67	71.0	122.1	0.0
5.00		0.1875	28.267	16.710	1664.6	25.17	150.76	71.8	116.0	288.0
10.00		0.1875	27.534	16.274	1537.6	24.48	146.85	72.6	110.0	280.6
15.00		0.1875	26.801	15.838	1417.3	23.79	142.94	73.4	104.2	273.2
20.00		0.1875	26.068	15.402	1303.3	23.10	139.03	74.2	98.5	265.8
25.00		0.1875	25.335	14.965	1195.7	22.41	135.12	75.0	93.0	258.3
30.00		0.1875	24.602	14.529	1094.2	21.73	131.21	75.8	87.6	250.9
35.00		0.1875	23.869	14.093	998.5	21.04	127.30	76.7	82.4	243.5
40.00		0.1875	23.136	13.657	908.7	20.35	123.39	77.5	77.4	236.1
45.00		0.1875	22.403	13.220	824.3	19.66	119.48	78.3	72.5	228.6
47.35	Bot - Section 2	0.1875	22.058	13.015	786.6	19.33	117.64	78.7	70.2	104.9
50.00		0.1875	21.670	12.784	745.4	18.97	115.57	79.1	67.8	234.7
50.66	Top - Section 1	0.1875	21.948	12.950	774.7	19.23	117.06	0.0	0.0	57.8
55.00		0.1875	21.312	12.571	708.7	18.63	113.66	79.5	65.5	188.4
60.00		0.1875	20.579	12.135	637.5	17.94	109.75	80.3	61.0	210.2
65.00		0.1875	19.846	11.699	571.2	17.25	105.84	81.1	56.7	202.8
70.00		0.1875	19.113	11.262	509.6	16.56	101.93	81.9	52.5	195.3
75.00		0.1875	18.380	10.826	452.7	15.87	98.02	82.5	48.5	187.9
80.00		0.1875	17.647	10.390	400.1	15.18	94.12	82.5	44.7	180.5
81.00	Top - Section 2	0.1875	17.500	10.303	390.1	15.05	93.33	82.5	43.9	35.2
81.00	Bot - Section 3	0.1875	30.000	17.561	1952.5	15.05	93.33	10.0	130.2	
85.00		0.1875	30.000	17.561	1952.5	0.00	160.00	10.0	130.2	239.0
89.00		0.1875	30.000	17.561	1952.5	0.00	160.00	10.0	130.2	239.0
90.00		0.1875	30.000	17.561	1952.5	0.00	160.00	10.0	130.2	59.8
91.00	Top - Section 3	0.1875	30.000	17.561	1952.5	0.00	160.00	10.0	130.2	59.8
91.00	Bot - Section 4	0.1875	18.000	10.492	416.5	0.00	160.00	10.0	46.3	
95.00		0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	142.8
99.00		0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	142.8
100.00		0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	35.7
101.00	Top - Section 4	0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	35.7
101.00	Bot - Section 5	0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	
105.00		0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	142.8
106.00		0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	35.7
109.00		0.1875	18.000	10.492	416.5	0.00	96.00	10.0	46.3	107.1
										5162.8

Wind Loading - Shaft

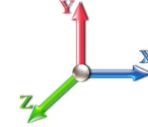
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 31

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	17.879	19.67	210.41	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	205.09	0.650	0.000	5.00	12.115	7.87	247.8	0.0	345.6
10.00		1.00	0.85	17.879	19.67	199.77	0.650	0.000	5.00	11.805	7.67	241.4	0.0	336.7
15.00		1.00	0.85	17.879	19.67	194.45	0.650	0.000	5.00	11.494	7.47	235.1	0.0	327.8
20.00		1.00	0.90	18.971	20.87	194.82	0.650	0.000	5.00	11.184	7.27	242.7	0.0	318.9
25.00		1.00	0.95	19.883	21.87	193.84	0.650	0.000	5.00	10.874	7.07	247.3	0.0	310.0
30.00		1.00	0.98	20.661	22.73	191.88	0.650	0.000	5.00	10.564	6.87	249.7	0.0	301.1
35.00		1.00	1.01	21.343	23.48	189.21	0.650	0.000	5.00	10.254	6.66	250.4	0.0	292.2
40.00		1.00	1.04	21.951	24.15	185.99	0.650	0.000	5.00	9.944	6.46	249.7	0.0	283.3
45.00		1.00	1.07	22.502	24.75	182.35	0.650	0.000	5.00	9.634	6.26	248.0	0.0	274.4
47.35 Bot - Section 2		1.00	1.08	22.745	25.02	180.51	0.650	0.000	2.35	4.421	2.87	115.0	0.0	125.9
50.00		1.00	1.09	23.007	25.31	178.35	0.650	0.000	2.65	4.987	3.24	131.3	0.0	281.6
50.66 Top - Section 1		1.00	1.10	23.070	25.38	177.80	0.650	0.000	0.66	1.228	0.80	32.4	0.0	69.4
55.00		1.00	1.12	23.473	25.82	177.17	0.650	0.000	4.34	7.943	5.16	213.3	0.0	226.1
60.00		1.00	1.14	23.907	26.30	172.65	0.650	0.000	5.00	8.862	5.76	242.4	0.0	252.2
65.00		1.00	1.16	24.313	26.74	167.91	0.650	0.000	5.00	8.552	5.56	237.9	0.0	243.3
70.00		1.00	1.17	24.696	27.17	162.97	0.650	0.000	5.00	8.242	5.36	232.8	0.0	234.4
75.00		1.00	1.19	25.057	27.56	157.87	0.650	0.000	5.00	7.931	5.16	227.4	0.0	225.5
80.00		1.00	1.21	25.400	27.94	152.60	0.650	0.000	5.00	7.621	4.95	221.5	0.0	216.6
81.00 Top - Section 2		1.00	1.21	25.466	28.01	151.53	0.650	0.000	1.00	1.487	0.97	43.3	0.0	42.2
85.00		1.00	1.22	25.726	28.30	157.13	0.600	0.000	4.00	10.000	6.00	271.7	0.0	286.8
89.00 Appurtenance(s)		1.00	1.23	25.976	28.57	158.37	0.600	0.000	4.00	10.000	6.00	274.3	0.0	286.8
90.00		1.00	1.24	26.037	28.64	158.68	0.600	0.000	1.00	2.500	1.50	68.7	0.0	71.7
91.00 Top - Section 3		1.00	1.24	26.098	28.71	158.98	0.600	0.000	1.00	2.500	1.50	68.9	0.0	71.7
95.00		1.00	1.25	26.336	28.97	156.09	0.600	0.000	4.00	6.000	3.60	166.9	0.0	171.4
99.00 Appurtenance(s)		1.00	1.26	26.565	29.22	156.77	0.600	0.000	4.00	6.000	3.60	168.3	0.0	171.4
100.00		1.00	1.27	26.621	29.28	156.94	0.600	0.000	1.00	1.500	0.90	42.2	0.0	42.8
101.00 Top - Section 4		1.00	1.27	26.677	29.35	157.10	0.600	0.000	1.00	1.500	0.90	42.3	0.0	42.8
105.00		1.00	1.28	26.896	29.59	157.75	0.600	0.000	4.00	6.000	3.60	170.4	0.0	171.4
106.00 Appurtenance(s)		1.00	1.28	26.950	29.65	157.90	0.600	0.000	1.00	1.500	0.90	42.7	0.0	42.8
109.00		1.00	1.29	27.109	29.82	158.37	0.600	0.000	3.00	4.500	2.70	128.8	0.0	128.5
Totals:								109.00			5,354.5	6,195.4		

Discrete Appurtenance Forces

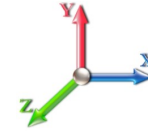
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 31

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	106.00	S20045A1	3	26.950	29.645	0.00	1.00	0.00	39.60	0.000	0.000	0.00	0.00	0.00
2	106.00	RR65-19-XXDP	3	26.950	29.645	0.00	1.00	0.00	57.60	0.000	0.000	0.00	0.00	0.00
3	99.00	S20045A1	3	26.565	29.222	0.00	1.00	0.00	39.60	0.000	0.000	0.00	0.00	0.00
4	99.00	RR65-19-XXDP	3	26.565	29.222	0.00	1.00	0.00	57.60	0.000	0.000	0.00	0.00	0.00
5	89.00	HPA-65R-BUU-H6	3	25.976	28.574	0.00	1.00	0.00	183.60	0.000	0.000	0.00	0.00	0.00
6	89.00	DTMABP7819VG12A	6	25.976	28.574	0.00	1.00	0.00	138.24	0.000	0.000	0.00	0.00	0.00
Totals:									516.24			0.00		

Total Applied Force Summary

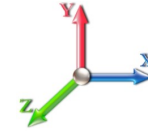
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 31

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		247.79	457.94	0.00	0.00
10.00		241.45	449.03	0.00	0.00
15.00		235.10	440.13	0.00	0.00
20.00		242.72	431.22	0.00	0.00
25.00		247.34	422.31	0.00	0.00
30.00		249.69	413.41	0.00	0.00
35.00		250.36	404.50	0.00	0.00
40.00		249.71	395.60	0.00	0.00
45.00		247.99	386.69	0.00	0.00
47.35		115.02	178.67	0.00	0.00
50.00		131.25	341.12	0.00	0.00
50.66		32.42	84.18	0.00	0.00
55.00		213.31	323.63	0.00	0.00
60.00		242.37	364.53	0.00	0.00
65.00		237.86	355.62	0.00	0.00
70.00		232.84	346.71	0.00	0.00
75.00		227.36	337.81	0.00	0.00
80.00		221.45	328.90	0.00	0.00
81.00		43.32	64.71	0.00	0.00
85.00		271.67	376.69	0.00	0.00
89.00	(9) attachments	274.31	698.53	0.00	0.00
90.00		68.74	86.68	0.00	0.00
91.00		68.90	86.68	0.00	0.00
95.00		166.86	231.28	0.00	0.00
99.00	(6) attachments	168.32	328.48	0.00	0.00
100.00		42.17	50.33	0.00	0.00
101.00		42.26	50.33	0.00	0.00
105.00		170.42	201.33	0.00	0.00
106.00	(6) attachments	42.69	147.53	0.00	0.00
109.00		128.82	128.53	0.00	0.00
	Totals:	5,354.51	8,913.10	0.00	0.00

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

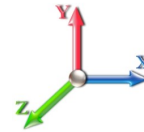


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Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 31

Dead Load Factor 1.20
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-8.90	-5.37	0.00	-315.69	0.00	315.69	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.494
5.00	-8.42	-5.16	0.00	-288.82	0.00	288.82	1079.72	539.86	1247.24	624.55	0.13	-0.239	0.000	0.470
10.00	-7.96	-4.95	0.00	-263.03	0.00	263.03	1063.41	531.71	1196.12	598.95	0.51	-0.475	0.000	0.447
15.00	-7.50	-4.74	0.00	-238.29	0.00	238.29	1046.46	523.23	1145.29	573.49	1.13	-0.707	0.000	0.423
20.00	-7.05	-4.52	0.00	-214.61	0.00	214.61	1028.88	514.44	1094.81	548.22	1.99	-0.934	0.000	0.398
25.00	-6.62	-4.29	0.00	-192.02	0.00	192.02	1010.66	505.33	1044.74	523.15	3.09	-1.156	0.000	0.374
30.00	-6.20	-4.05	0.00	-170.59	0.00	170.59	991.80	495.90	995.14	498.31	4.41	-1.372	0.000	0.349
35.00	-5.79	-3.81	0.00	-150.33	0.00	150.33	972.31	486.15	946.07	473.74	5.96	-1.580	0.000	0.323
40.00	-5.38	-3.57	0.00	-131.28	0.00	131.28	952.17	476.09	897.58	449.45	7.73	-1.781	0.000	0.298
45.00	-5.00	-3.32	0.00	-113.44	0.00	113.44	931.41	465.70	849.73	425.49	9.69	-1.972	0.000	0.272
47.35	-4.82	-3.21	0.00	-105.64	0.00	105.64	921.43	460.71	827.47	414.35	10.69	-2.061	0.000	0.260
50.00	-4.48	-3.07	0.00	-97.14	0.00	97.14	910.00	455.00	802.58	401.88	11.86	-2.158	0.000	0.247
50.66	-4.39	-3.04	0.00	-95.12	0.00	95.12	918.20	459.10	820.39	410.80	12.16	-2.183	0.000	0.236
55.00	-4.07	-2.82	0.00	-81.93	0.00	81.93	899.32	449.66	779.82	390.49	14.21	-2.331	0.000	0.214
60.00	-3.71	-2.58	0.00	-67.81	0.00	67.81	876.96	438.48	733.82	367.45	16.74	-2.482	0.000	0.189
65.00	-3.36	-2.33	0.00	-54.94	0.00	54.94	853.97	426.99	688.66	344.84	19.41	-2.619	0.000	0.163
70.00	-3.02	-2.09	0.00	-43.29	0.00	43.29	830.35	415.17	644.40	322.68	22.22	-2.741	0.000	0.138
75.00	-2.69	-1.85	0.00	-32.86	0.00	32.86	804.33	402.17	599.80	300.34	25.14	-2.847	0.000	0.113
80.00	-2.37	-1.61	0.00	-23.62	0.00	23.62	771.92	385.96	552.20	276.51	28.17	-2.936	0.000	0.089
81.00	-2.31	-1.57	0.00	-22.01	0.00	22.01	765.44	382.72	542.91	271.86	28.79	-2.952	0.000	0.084
81.00	-2.31	-1.57	0.00	-22.01	0.00	22.01	158.05	79.02	194.98	124.99	28.79	-2.952	0.000	0.191
85.00	-1.95	-1.28	0.00	-15.74	0.00	15.74	158.05	79.02	194.98	124.99	31.29	-3.007	0.000	0.139
89.00	-1.26	-0.97	0.00	-10.63	0.00	10.63	158.05	79.02	194.98	124.99	33.81	-3.015	0.000	0.093
90.00	-1.18	-0.89	0.00	-9.67	0.00	9.67	158.05	79.02	194.98	124.99	34.44	-3.016	0.000	0.085
91.00	-1.10	-0.82	0.00	-8.77	0.00	8.77	158.05	79.02	194.98	124.99	35.07	-3.018	0.000	0.077
91.00	-1.10	-0.82	0.00	-8.77	0.00	8.77	94.43	47.22	69.31	44.62	35.07	-3.018	0.000	0.209
95.00	-0.87	-0.64	0.00	-5.49	0.00	5.49	94.43	47.22	69.31	44.62	37.60	-3.022	0.000	0.133
99.00	-0.55	-0.46	0.00	-2.93	0.00	2.93	94.43	47.22	69.31	44.62	40.14	-3.033	0.000	0.072
100.00	-0.51	-0.41	0.00	-2.47	0.00	2.47	94.43	47.22	69.31	44.62	40.77	-3.035	0.000	0.061
101.00	-0.46	-0.37	0.00	-2.06	0.00	2.06	94.43	47.22	69.31	44.62	41.41	-3.037	0.000	0.051
101.00	-0.46	-0.37	0.00	-2.06	0.00	2.06	94.43	47.22	69.31	44.62	41.41	-3.037	0.000	0.051
105.00	-0.27	-0.19	0.00	-0.59	0.00	0.59	94.43	47.22	69.31	44.62	43.95	-3.040	0.000	0.016
106.00	-0.12	-0.14	0.00	-0.41	0.00	0.41	94.43	47.22	69.31	44.62	44.59	-3.041	0.000	0.010
109.00	0.00	-0.13	0.00	0.00	0.00	0.00	94.43	47.22	69.31	44.62	46.50	-3.041	0.000	0.000

Wind Loading - Shaft

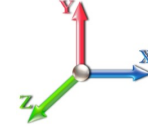
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 31

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	17.879	19.67	210.41	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	205.09	0.650	0.000	5.00	12.115	7.87	247.8	0.0	259.2
10.00		1.00	0.85	17.879	19.67	199.77	0.650	0.000	5.00	11.805	7.67	241.4	0.0	252.5
15.00		1.00	0.85	17.879	19.67	194.45	0.650	0.000	5.00	11.494	7.47	235.1	0.0	245.9
20.00		1.00	0.90	18.971	20.87	194.82	0.650	0.000	5.00	11.184	7.27	242.7	0.0	239.2
25.00		1.00	0.95	19.883	21.87	193.84	0.650	0.000	5.00	10.874	7.07	247.3	0.0	232.5
30.00		1.00	0.98	20.661	22.73	191.88	0.650	0.000	5.00	10.564	6.87	249.7	0.0	225.8
35.00		1.00	1.01	21.343	23.48	189.21	0.650	0.000	5.00	10.254	6.66	250.4	0.0	219.1
40.00		1.00	1.04	21.951	24.15	185.99	0.650	0.000	5.00	9.944	6.46	249.7	0.0	212.5
45.00		1.00	1.07	22.502	24.75	182.35	0.650	0.000	5.00	9.634	6.26	248.0	0.0	205.8
47.35	Bot - Section 2	1.00	1.08	22.745	25.02	180.51	0.650	0.000	2.35	4.421	2.87	115.0	0.0	94.4
50.00		1.00	1.09	23.007	25.31	178.35	0.650	0.000	2.65	4.987	3.24	131.3	0.0	211.2
50.66	Top - Section 1	1.00	1.10	23.070	25.38	177.80	0.650	0.000	0.66	1.228	0.80	32.4	0.0	52.0
55.00		1.00	1.12	23.473	25.82	177.17	0.650	0.000	4.34	7.943	5.16	213.3	0.0	169.6
60.00		1.00	1.14	23.907	26.30	172.65	0.650	0.000	5.00	8.862	5.76	242.4	0.0	189.2
65.00		1.00	1.16	24.313	26.74	167.91	0.650	0.000	5.00	8.552	5.56	237.9	0.0	182.5
70.00		1.00	1.17	24.696	27.17	162.97	0.650	0.000	5.00	8.242	5.36	232.8	0.0	175.8
75.00		1.00	1.19	25.057	27.56	157.87	0.650	0.000	5.00	7.931	5.16	227.4	0.0	169.1
80.00		1.00	1.21	25.400	27.94	152.60	0.650	0.000	5.00	7.621	4.95	221.5	0.0	162.4
81.00	Top - Section 2	1.00	1.21	25.466	28.01	151.53	0.650	0.000	1.00	1.487	0.97	43.3	0.0	31.7
85.00		1.00	1.22	25.726	28.30	151.13	0.600	0.000	4.00	10.000	6.00	271.7	0.0	215.1
89.00	Appurtenance(s)	1.00	1.23	25.976	28.57	151.37	0.600	0.000	4.00	10.000	6.00	274.3	0.0	215.1
90.00		1.00	1.24	26.037	28.64	151.68	0.600	0.000	1.00	2.500	1.50	68.7	0.0	53.8
91.00	Top - Section 3	1.00	1.24	26.098	28.71	151.98	0.600	0.000	1.00	2.500	1.50	68.9	0.0	53.8
95.00		1.00	1.25	26.336	28.97	151.09	0.600	0.000	4.00	6.000	3.60	166.9	0.0	128.5
99.00	Appurtenance(s)	1.00	1.26	26.565	29.22	151.77	0.600	0.000	4.00	6.000	3.60	168.3	0.0	128.5
100.00		1.00	1.27	26.621	29.28	151.94	0.600	0.000	1.00	1.500	0.90	42.2	0.0	32.1
101.00	Top - Section 4	1.00	1.27	26.677	29.35	151.10	0.600	0.000	1.00	1.500	0.90	42.3	0.0	32.1
105.00		1.00	1.28	26.896	29.59	151.75	0.600	0.000	4.00	6.000	3.60	170.4	0.0	128.5
106.00	Appurtenance(s)	1.00	1.28	26.950	29.65	151.90	0.600	0.000	1.00	1.500	0.90	42.7	0.0	32.1
109.00		1.00	1.29	27.109	29.82	151.37	0.600	0.000	3.00	4.500	2.70	128.8	0.0	96.4
Totals:								109.00				5,354.5		4,646.5

Discrete Appurtenance Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

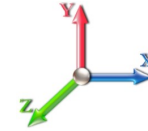


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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 31

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	106.00	S20045A1	3	26.950	29.645	0.00	1.00	0.00	29.70	0.000	0.000	0.00	0.00	0.00
2	106.00	RR65-19-XXDP	3	26.950	29.645	0.00	1.00	0.00	43.20	0.000	0.000	0.00	0.00	0.00
3	99.00	S20045A1	3	26.565	29.222	0.00	1.00	0.00	29.70	0.000	0.000	0.00	0.00	0.00
4	99.00	RR65-19-XXDP	3	26.565	29.222	0.00	1.00	0.00	43.20	0.000	0.000	0.00	0.00	0.00
5	89.00	HPA-65R-BUU-H6	3	25.976	28.574	0.00	1.00	0.00	137.70	0.000	0.000	0.00	0.00	0.00
6	89.00	DTMABP7819VG12A	6	25.976	28.574	0.00	1.00	0.00	103.68	0.000	0.000	0.00	0.00	0.00
Totals:									387.18			0.00		

Total Applied Force Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

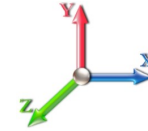


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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 31

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		247.79	343.45	0.00	0.00
10.00		241.45	336.78	0.00	0.00
15.00		235.10	330.10	0.00	0.00
20.00		242.72	323.42	0.00	0.00
25.00		247.34	316.74	0.00	0.00
30.00		249.69	310.06	0.00	0.00
35.00		250.36	303.38	0.00	0.00
40.00		249.71	296.70	0.00	0.00
45.00		247.99	290.02	0.00	0.00
47.35		115.02	134.00	0.00	0.00
50.00		131.25	255.84	0.00	0.00
50.66		32.42	63.13	0.00	0.00
55.00		213.31	242.72	0.00	0.00
60.00		242.37	273.40	0.00	0.00
65.00		237.86	266.72	0.00	0.00
70.00		232.84	260.04	0.00	0.00
75.00		227.36	253.36	0.00	0.00
80.00		221.45	246.68	0.00	0.00
81.00		43.32	48.53	0.00	0.00
85.00		271.67	282.51	0.00	0.00
89.00	(9) attachments	274.31	523.89	0.00	0.00
90.00		68.74	65.01	0.00	0.00
91.00		68.90	65.01	0.00	0.00
95.00		166.86	173.46	0.00	0.00
99.00	(6) attachments	168.32	246.36	0.00	0.00
100.00		42.17	37.75	0.00	0.00
101.00		42.26	37.75	0.00	0.00
105.00		170.42	151.00	0.00	0.00
106.00	(6) attachments	42.69	110.65	0.00	0.00
109.00		128.82	96.40	0.00	0.00
	Totals:	5,354.51	6,684.83	0.00	0.00

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

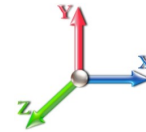


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Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 31

Dead Load Factor 0.90
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-6.67	-5.37	0.00	-312.34	0.00	312.34	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.487
5.00	-6.31	-5.15	0.00	-285.50	0.00	285.50	1079.72	539.86	1247.24	624.55	0.13	-0.236	0.000	0.463
10.00	-5.95	-4.93	0.00	-259.77	0.00	259.77	1063.41	531.71	1196.12	598.95	0.50	-0.469	0.000	0.439
15.00	-5.61	-4.71	0.00	-235.14	0.00	235.14	1046.46	523.23	1145.29	573.49	1.11	-0.698	0.000	0.415
20.00	-5.27	-4.48	0.00	-211.59	0.00	211.59	1028.88	514.44	1094.81	548.22	1.97	-0.923	0.000	0.391
25.00	-4.94	-4.25	0.00	-189.18	0.00	189.18	1010.66	505.33	1044.74	523.15	3.05	-1.141	0.000	0.367
30.00	-4.62	-4.01	0.00	-167.94	0.00	167.94	991.80	495.90	995.14	498.31	4.36	-1.354	0.000	0.342
35.00	-4.31	-3.77	0.00	-147.90	0.00	147.90	972.31	486.15	946.07	473.74	5.89	-1.559	0.000	0.317
40.00	-4.01	-3.52	0.00	-129.07	0.00	129.07	952.17	476.09	897.58	449.45	7.63	-1.756	0.000	0.291
45.00	-3.72	-3.27	0.00	-111.46	0.00	111.46	931.41	465.70	849.73	425.49	9.57	-1.945	0.000	0.266
47.35	-3.59	-3.16	0.00	-103.77	0.00	103.77	921.43	460.71	827.47	414.35	10.55	-2.032	0.000	0.254
50.00	-3.33	-3.02	0.00	-95.40	0.00	95.40	910.00	455.00	802.58	401.88	11.70	-2.127	0.000	0.241
50.66	-3.27	-2.99	0.00	-93.40	0.00	93.40	918.20	459.10	820.39	410.80	12.00	-2.151	0.000	0.231
55.00	-3.03	-2.78	0.00	-80.41	0.00	80.41	899.32	449.66	779.82	390.49	14.02	-2.297	0.000	0.209
60.00	-2.76	-2.53	0.00	-66.53	0.00	66.53	876.96	438.48	733.82	367.45	16.51	-2.444	0.000	0.184
65.00	-2.50	-2.29	0.00	-53.87	0.00	53.87	853.97	426.99	688.66	344.84	19.14	-2.579	0.000	0.159
70.00	-2.24	-2.05	0.00	-42.44	0.00	42.44	830.35	415.17	644.40	322.68	21.90	-2.699	0.000	0.134
75.00	-2.00	-1.81	0.00	-32.20	0.00	32.20	804.33	402.17	599.80	300.34	24.79	-2.803	0.000	0.110
80.00	-1.76	-1.58	0.00	-23.15	0.00	23.15	771.92	385.96	552.20	276.51	27.77	-2.890	0.000	0.086
81.00	-1.71	-1.53	0.00	-21.57	0.00	21.57	765.44	382.72	542.91	271.86	28.38	-2.906	0.000	0.082
81.00	-1.71	-1.53	0.00	-21.57	0.00	21.57	158.05	79.02	194.98	124.99	28.38	-2.906	0.000	0.184
85.00	-1.44	-1.25	0.00	-15.43	0.00	15.43	158.05	79.02	194.98	124.99	30.83	-2.960	0.000	0.133
89.00	-0.94	-0.95	0.00	-10.43	0.00	10.43	158.05	79.02	194.98	124.99	33.32	-2.967	0.000	0.090
90.00	-0.87	-0.88	0.00	-9.49	0.00	9.49	158.05	79.02	194.98	124.99	33.94	-2.969	0.000	0.082
91.00	-0.81	-0.80	0.00	-8.61	0.00	8.61	158.05	79.02	194.98	124.99	34.56	-2.970	0.000	0.074
91.00	-0.81	-0.80	0.00	-8.61	0.00	8.61	94.43	47.22	69.31	44.62	34.56	-2.970	0.000	0.202
95.00	-0.65	-0.63	0.00	-5.39	0.00	5.39	94.43	47.22	69.31	44.62	37.05	-2.974	0.000	0.128
99.00	-0.41	-0.45	0.00	-2.88	0.00	2.88	94.43	47.22	69.31	44.62	39.54	-2.985	0.000	0.069
100.00	-0.38	-0.40	0.00	-2.43	0.00	2.43	94.43	47.22	69.31	44.62	40.17	-2.987	0.000	0.058
101.00	-0.34	-0.36	0.00	-2.02	0.00	2.02	94.43	47.22	69.31	44.62	40.80	-2.989	0.000	0.049
101.00	-0.34	-0.36	0.00	-2.02	0.00	2.02	94.43	47.22	69.31	44.62	40.80	-2.989	0.000	0.049
105.00	-0.20	-0.18	0.00	-0.58	0.00	0.58	94.43	47.22	69.31	44.62	43.30	-2.992	0.000	0.015
106.00	-0.09	-0.13	0.00	-0.40	0.00	0.40	94.43	47.22	69.31	44.62	43.93	-2.993	0.000	0.010
109.00	0.00	-0.13	0.00	0.00	0.00	0.00	94.43	47.22	69.31	44.62	45.81	-2.993	0.000	0.000

Wind Loading - Shaft

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 31

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	13.150	15.78	89.7	227.2	572.8
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	12.914	15.50	88.1	238.2	574.9
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	12.650	15.18	86.3	242.2	570.0
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	12.373	14.85	89.6	243.1	562.0
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	12.090	14.51	91.7	242.3	552.3
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	11.802	14.16	93.0	240.2	541.3
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	11.511	13.81	93.7	237.3	529.5
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	11.218	13.46	94.0	233.7	517.0
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	10.923	13.11	93.8	229.6	504.0
47.35 Bot - Section 2		1.00	1.08	6.574	7.23	0.00	1.200	1.555	2.35	5.030	6.04	43.6	107.0	232.8
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.65	5.677	6.81	49.8	121.2	402.8
50.66 Top - Section 1		1.00	1.10	6.669	7.34	0.00	1.200	1.566	0.66	1.401	1.68	12.3	30.1	99.5
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	4.34	9.085	10.90	81.4	194.4	420.5
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	10.189	12.23	92.9	218.8	471.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	9.889	11.87	91.7	213.3	456.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	9.589	11.51	90.4	207.7	442.1
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	9.288	11.15	88.8	201.8	427.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	8.987	10.78	87.1	195.8	412.4
81.00 Top - Section 2		1.00	1.21	7.361	8.10	0.00	1.200	1.641	1.00	1.761	2.11	17.1	38.9	81.2
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	4.00	11.099	13.32	108.9	255.0	541.9
89.00 Appurtenance(s)		1.00	1.23	7.508	8.26	0.00	1.200	1.656	4.00	11.104	13.33	110.1	256.3	543.1
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	1.00	2.776	3.33	27.6	64.1	135.8
91.00 Top - Section 3		1.00	1.24	7.544	8.30	0.00	1.200	1.660	1.00	2.777	3.33	27.6	64.2	135.9
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	4.00	7.112	8.53	71.5	160.2	331.6
99.00 Appurtenance(s)		1.00	1.26	7.679	8.45	0.00	1.200	1.674	4.00	7.116	8.54	72.1	161.0	332.3
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.00	1.779	2.14	18.1	40.3	83.1
101.00 Top - Section 4		1.00	1.27	7.711	8.48	0.00	1.200	1.678	1.00	1.780	2.14	18.1	40.3	83.2
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	4.00	7.123	8.55	73.1	162.0	333.4
106.00 Appurtenance(s)		1.00	1.28	7.790	8.57	0.00	1.200	1.686	1.00	1.781	2.14	18.3	40.5	83.4
109.00		1.00	1.29	7.836	8.62	0.00	1.200	1.690	3.00	5.345	6.41	55.3	122.0	250.5
Totals:								109.00			2,075.8	11,224.2		

Discrete Appurtenance Forces

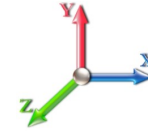
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 31

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	106.00	S20045A1	3	7.790	8.569	0.00	1.00	0.00	78.09	0.000	0.000	0.00	0.00	0.00
2	106.00	RR65-19-XXDP	3	7.790	8.569	0.00	1.00	21.24	415.03	0.000	0.000	181.99	0.00	0.00
3	99.00	S20045A1	3	7.679	8.447	0.00	1.00	0.00	77.72	0.000	0.000	0.00	0.00	0.00
4	99.00	RR65-19-XXDP	3	7.679	8.447	0.00	1.00	21.21	411.93	0.000	0.000	179.17	0.00	0.00
5	89.00	HPA-65R-BUU-H6	3	7.508	8.259	0.00	1.00	32.86	884.19	0.000	0.000	271.39	0.00	0.00
6	89.00	DTMABP7819VG12A	6	7.508	8.259	0.00	1.00	0.00	239.77	0.000	0.000	0.00	0.00	0.00
Totals:									2,106.74			632.55		

Total Applied Force Summary

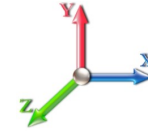
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 31

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		89.70	685.14	0.00	0.00
10.00		88.10	687.21	0.00	0.00
15.00		86.29	682.32	0.00	0.00
20.00		89.56	674.35	0.00	0.00
25.00		91.72	664.59	0.00	0.00
30.00		93.04	653.63	0.00	0.00
35.00		93.74	641.80	0.00	0.00
40.00		93.95	629.32	0.00	0.00
45.00		93.78	616.32	0.00	0.00
47.35		43.65	285.62	0.00	0.00
50.00		49.84	462.35	0.00	0.00
50.66		12.33	114.29	0.00	0.00
55.00		81.37	517.98	0.00	0.00
60.00		92.94	583.28	0.00	0.00
65.00		91.74	568.96	0.00	0.00
70.00		90.35	554.41	0.00	0.00
75.00		88.80	539.65	0.00	0.00
80.00		87.09	524.70	0.00	0.00
81.00		17.11	103.63	0.00	0.00
85.00		108.95	631.71	0.00	0.00
89.00	(9) attachments	381.45	1756.90	0.00	0.00
90.00		27.58	150.82	0.00	0.00
91.00		27.65	150.90	0.00	0.00
95.00		71.46	391.53	0.00	0.00
99.00	(6) attachments	251.30	881.90	0.00	0.00
100.00		18.07	90.62	0.00	0.00
101.00		18.11	90.66	0.00	0.00
105.00		73.09	363.33	0.00	0.00
106.00	(6) attachments	200.30	584.00	0.00	0.00
109.00		55.29	250.52	0.00	0.00
	Totals:	2,708.35	15,532.45	0.00	0.00

Calculated Forces

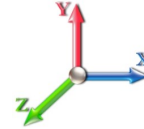
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 18
	Struct Class: II	



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

Iterations 31

Dead Load Factor 1.20
Wind Load Factor 1.00



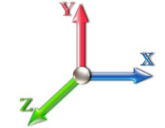
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-15.53	-2.73	0.00	-199.47	0.00	199.47	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.321
5.00	-14.84	-2.68	0.00	-185.83	0.00	185.83	1079.72	539.86	1247.24	624.55	0.08	-0.152	0.000	0.311
10.00	-14.14	-2.62	0.00	-172.44	0.00	172.44	1063.41	531.71	1196.12	598.95	0.32	-0.305	0.000	0.301
15.00	-13.45	-2.57	0.00	-159.32	0.00	159.32	1046.46	523.23	1145.29	573.49	0.72	-0.459	0.000	0.291
20.00	-12.77	-2.51	0.00	-146.47	0.00	146.47	1028.88	514.44	1094.81	548.22	1.29	-0.612	0.000	0.280
25.00	-12.10	-2.44	0.00	-133.93	0.00	133.93	1010.66	505.33	1044.74	523.15	2.01	-0.765	0.000	0.268
30.00	-11.45	-2.37	0.00	-121.73	0.00	121.73	991.80	495.90	995.14	498.31	2.89	-0.917	0.000	0.256
35.00	-10.80	-2.29	0.00	-109.88	0.00	109.88	972.31	486.15	946.07	473.74	3.94	-1.068	0.000	0.243
40.00	-10.17	-2.21	0.00	-98.43	0.00	98.43	952.17	476.09	897.58	449.45	5.13	-1.216	0.000	0.230
45.00	-9.55	-2.12	0.00	-87.37	0.00	87.37	931.41	465.70	849.73	425.49	6.49	-1.362	0.000	0.216
47.35	-9.26	-2.08	0.00	-82.39	0.00	82.39	921.43	460.71	827.47	414.35	7.17	-1.431	0.000	0.209
50.00	-8.80	-2.03	0.00	-76.87	0.00	76.87	910.00	455.00	802.58	401.88	7.99	-1.507	0.000	0.201
50.66	-8.68	-2.02	0.00	-75.53	0.00	75.53	918.20	459.10	820.39	410.80	8.20	-1.526	0.000	0.193
55.00	-8.16	-1.95	0.00	-66.75	0.00	66.75	899.32	449.66	779.82	390.49	9.64	-1.646	0.000	0.180
60.00	-7.58	-1.85	0.00	-57.02	0.00	57.02	876.96	438.48	733.82	367.45	11.43	-1.770	0.000	0.164
65.00	-7.01	-1.75	0.00	-47.77	0.00	47.77	853.97	426.99	688.66	344.84	13.35	-1.887	0.000	0.147
70.00	-6.46	-1.66	0.00	-38.99	0.00	38.99	830.35	415.17	644.40	322.68	15.38	-1.995	0.000	0.129
75.00	-5.92	-1.56	0.00	-30.71	0.00	30.71	804.33	402.17	599.80	300.34	17.53	-2.092	0.000	0.110
80.00	-5.39	-1.46	0.00	-22.92	0.00	22.92	771.92	385.96	552.20	276.51	19.76	-2.176	0.000	0.090
81.00	-5.29	-1.44	0.00	-21.46	0.00	21.46	765.44	382.72	542.91	271.86	20.22	-2.192	0.000	0.086
81.00	-5.29	-1.44	0.00	-21.46	0.00	21.46	158.05	79.02	194.98	124.99	20.22	-2.192	0.000	0.205
85.00	-4.66	-1.31	0.00	-15.70	0.00	15.70	158.05	79.02	194.98	124.99	22.08	-2.246	0.000	0.155
89.00	-2.92	-0.86	0.00	-10.47	0.00	10.47	158.05	79.02	194.98	124.99	23.97	-2.254	0.000	0.102
90.00	-2.77	-0.82	0.00	-9.61	0.00	9.61	158.05	79.02	194.98	124.99	24.44	-2.255	0.000	0.095
91.00	-2.62	-0.79	0.00	-8.79	0.00	8.79	158.05	79.02	194.98	124.99	24.91	-2.257	0.000	0.087
91.00	-2.62	-0.79	0.00	-8.79	0.00	8.79	94.43	47.22	69.31	44.62	24.91	-2.257	0.000	0.225
95.00	-2.23	-0.70	0.00	-5.62	0.00	5.62	94.43	47.22	69.31	44.62	26.80	-2.261	0.000	0.150
99.00	-1.36	-0.42	0.00	-2.80	0.00	2.80	94.43	47.22	69.31	44.62	28.70	-2.272	0.000	0.077
100.00	-1.27	-0.40	0.00	-2.38	0.00	2.38	94.43	47.22	69.31	44.62	29.18	-2.274	0.000	0.067
101.00	-1.18	-0.38	0.00	-1.99	0.00	1.99	94.43	47.22	69.31	44.62	29.65	-2.276	0.000	0.057
101.00	-1.18	-0.38	0.00	-1.99	0.00	1.99	94.43	47.22	69.31	44.62	29.65	-2.276	0.000	0.057
105.00	-0.82	-0.29	0.00	-0.48	0.00	0.48	94.43	47.22	69.31	44.62	31.56	-2.279	0.000	0.020
106.00	-0.25	-0.07	0.00	-0.20	0.00	0.20	94.43	47.22	69.31	44.62	32.04	-2.279	0.000	0.007
109.00	0.00	-0.06	0.00	0.00	0.00	0.00	94.43	47.22	69.31	44.62	33.47	-2.280	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 28
Gust Response Factor	1.10			Sds	0.25	Ss 0.24
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.11	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.50	SA	0.05	Seismic Importance Factor 1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		288.02	0.00	0.04	0.02	7.70	
10.00		280.59	0.02	0.06	0.04	10.31	
15.00		273.17	0.04	0.07	0.04	11.16	
20.00		265.75	0.06	0.07	0.04	11.40	
25.00		258.33	0.10	0.07	0.04	11.48	
30.00		250.91	0.14	0.07	0.03	11.51	
35.00		243.48	0.19	0.06	0.02	11.32	
40.00		236.06	0.25	0.05	0.02	10.60	
45.00		228.64	0.32	0.04	0.01	8.96	
47.35	Bot - Section 2	104.90	0.36	0.03	0.01	3.62	
50.00		234.66	0.40	0.02	0.01	6.46	
50.66	Top - Section 1	57.79	0.41	0.02	0.01	1.47	
55.00		188.45	0.48	-0.01	0.01	1.80	
60.00		210.17	0.57	-0.04	0.01	-2.44	
65.00		202.75	0.67	-0.08	0.02	-6.07	
70.00		195.33	0.78	-0.11	0.05	-7.75	
75.00		187.91	0.89	-0.12	0.09	-7.07	
80.00		180.48	1.02	-0.10	0.14	-4.11	
81.00	Top - Section 2	35.21	1.04	-0.10	0.15	-0.64	
85.00		239.02	1.15	-0.04	0.22	1.21	
89.00	Appurtenance(s)	507.22	1.26	0.07	0.30	18.58	
90.00		59.76	1.29	0.10	0.33	2.74	
91.00	Top - Section 3	59.76	1.32	0.15	0.35	3.32	
95.00		142.81	1.44	0.35	0.47	14.24	
99.00	Appurtenance(s)	223.81	1.56	0.66	0.62	34.10	
100.00		35.70	1.59	0.75	0.66	5.96	
101.00	Top - Section 4	35.70	1.62	0.85	0.70	6.50	
105.00		142.81	1.75	1.34	0.90	35.39	
106.00	Appurtenance(s)	116.70	1.79	1.48	0.96	31.00	
109.00		107.11	1.89	1.98	1.14	34.55	
Totals:		5,593.0				267.3	Total Wind: 5,354.5

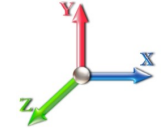
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E								Iterations 28
Gust Response Factor	1.10					Sds 0.25	Ss 0.24	
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1 0.11			S1 0.07	
Wind Load Factor	0.00	Structure Frequency	0.50	SA 0.05	Seismic Importance Factor	1.00		

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-8.91	-0.30	0.00	-23.17	0.00	23.17	1095.40	547.70	1298.60	650.26	0.00	0.00	0.00	0.044
5.00	-8.46	-0.29	0.00	-21.69	0.00	21.69	1079.72	539.86	1247.24	624.55	0.01	-0.02	0.043	
10.00	-8.01	-0.28	0.00	-20.24	0.00	20.24	1063.41	531.71	1196.12	598.95	0.04	-0.04	0.041	
15.00	-7.57	-0.27	0.00	-18.82	0.00	18.82	1046.46	523.23	1145.29	573.49	0.08	-0.05	0.040	
20.00	-7.13	-0.26	0.00	-17.45	0.00	17.45	1028.88	514.44	1094.81	548.22	0.15	-0.07	0.039	
25.00	-6.71	-0.25	0.00	-16.13	0.00	16.13	1010.66	505.33	1044.74	523.15	0.24	-0.09	0.037	
30.00	-6.30	-0.24	0.00	-14.86	0.00	14.86	991.80	495.90	995.14	498.31	0.34	-0.11	0.036	
35.00	-5.89	-0.23	0.00	-13.64	0.00	13.64	972.31	486.15	946.07	473.74	0.46	-0.13	0.035	
40.00	-5.50	-0.22	0.00	-12.47	0.00	12.47	952.17	476.09	897.58	449.45	0.61	-0.15	0.034	
45.00	-5.11	-0.22	0.00	-11.35	0.00	11.35	931.41	465.70	849.73	425.49	0.77	-0.16	0.032	
47.35	-4.93	-0.21	0.00	-10.84	0.00	10.84	921.43	460.71	827.47	414.35	0.85	-0.17	0.032	
50.00	-4.59	-0.21	0.00	-10.28	0.00	10.28	910.00	455.00	802.58	401.88	0.95	-0.18	0.031	
50.66	-4.51	-0.20	0.00	-10.14	0.00	10.14	918.20	459.10	820.39	410.80	0.98	-0.19	0.030	
55.00	-4.18	-0.20	0.00	-9.26	0.00	9.26	899.32	449.66	779.82	390.49	1.15	-0.20	0.028	
60.00	-3.82	-0.20	0.00	-8.25	0.00	8.25	876.96	438.48	733.82	367.45	1.38	-0.22	0.027	
65.00	-3.46	-0.20	0.00	-7.24	0.00	7.24	853.97	426.99	688.66	344.84	1.62	-0.24	0.025	
70.00	-3.12	-0.20	0.00	-6.23	0.00	6.23	830.35	415.17	644.40	322.68	1.87	-0.25	0.023	
75.00	-2.78	-0.20	0.00	-5.22	0.00	5.22	804.33	402.17	599.80	300.34	2.15	-0.27	0.021	
80.00	-2.45	-0.20	0.00	-4.22	0.00	4.22	771.92	385.96	552.20	276.51	2.44	-0.28	0.018	
81.00	-2.39	-0.20	0.00	-4.02	0.00	4.02	765.44	382.72	542.91	271.86	2.50	-0.29	0.018	
81.00	-2.39	-0.20	0.00	-4.02	0.00	4.02	158.05	79.02	194.98	124.99	2.50	-0.29	0.047	
85.00	-2.01	-0.20	0.00	-3.22	0.00	3.22	158.05	79.02	194.98	124.99	2.74	-0.30	0.038	
89.00	-1.31	-0.17	0.00	-2.44	0.00	2.44	158.05	79.02	194.98	124.99	2.99	-0.30	0.028	
90.00	-1.22	-0.17	0.00	-2.26	0.00	2.26	158.05	79.02	194.98	124.99	3.06	-0.30	0.026	
91.00	-1.14	-0.17	0.00	-2.09	0.00	2.09	158.05	79.02	194.98	124.99	3.12	-0.30	0.024	
91.00	-1.14	-0.17	0.00	-2.09	0.00	2.09	94.43	47.22	69.31	44.62	3.12	-0.30	0.059	
95.00	-0.91	-0.15	0.00	-1.42	0.00	1.42	94.43	47.22	69.31	44.62	3.37	-0.30	0.041	
99.00	-0.58	-0.12	0.00	-0.81	0.00	0.81	94.43	47.22	69.31	44.62	3.63	-0.30	0.024	
100.00	-0.53	-0.11	0.00	-0.70	0.00	0.70	94.43	47.22	69.31	44.62	3.69	-0.31	0.021	
101.00	-0.48	-0.10	0.00	-0.59	0.00	0.59	94.43	47.22	69.31	44.62	3.76	-0.31	0.018	
101.00	-0.48	-0.10	0.00	-0.59	0.00	0.59	94.43	47.22	69.31	44.62	3.76	-0.31	0.018	
105.00	-0.28	-0.07	0.00	-0.17	0.00	0.17	94.43	47.22	69.31	44.62	4.01	-0.31	0.007	
106.00	-0.13	-0.04	0.00	-0.11	0.00	0.11	94.43	47.22	69.31	44.62	4.08	-0.31	0.004	
109.00	0.00	-0.03	0.00	0.00	0.00	0.00	94.43	47.22	69.31	44.62	4.27	-0.31	0.000	

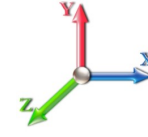
Seismic Segment Forces (Factored)

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations 27
Gust Response Factor	1.10			Sds	0.25	Ss 0.24
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.11	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.50	SA	0.05	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		288.02	0.00	0.04	0.02	7.70	
10.00		280.59	0.02	0.06	0.04	10.31	
15.00		273.17	0.04	0.07	0.04	11.16	
20.00		265.75	0.06	0.07	0.04	11.40	
25.00		258.33	0.10	0.07	0.04	11.48	
30.00		250.91	0.14	0.07	0.03	11.51	
35.00		243.48	0.19	0.06	0.02	11.32	
40.00		236.06	0.25	0.05	0.02	10.60	
45.00		228.64	0.32	0.04	0.01	8.96	
47.35	Bot - Section 2	104.90	0.36	0.03	0.01	3.62	
50.00		234.66	0.40	0.02	0.01	6.46	
50.66	Top - Section 1	57.79	0.41	0.02	0.01	1.47	
55.00		188.45	0.48	-0.01	0.01	1.80	
60.00		210.17	0.57	-0.04	0.01	-2.44	
65.00		202.75	0.67	-0.08	0.02	-6.07	
70.00		195.33	0.78	-0.11	0.05	-7.75	
75.00		187.91	0.89	-0.12	0.09	-7.07	
80.00		180.48	1.02	-0.10	0.14	-4.11	
81.00	Top - Section 2	35.21	1.04	-0.10	0.15	-0.64	
85.00		239.02	1.15	-0.04	0.22	1.21	
89.00	Appurtenance(s)	507.22	1.26	0.07	0.30	18.58	
90.00		59.76	1.29	0.10	0.33	2.74	
91.00	Top - Section 3	59.76	1.32	0.15	0.35	3.32	
95.00		142.81	1.44	0.35	0.47	14.24	
99.00	Appurtenance(s)	223.81	1.56	0.66	0.62	34.10	
100.00		35.70	1.59	0.75	0.66	5.96	
101.00	Top - Section 4	35.70	1.62	0.85	0.70	6.50	
105.00		142.81	1.75	1.34	0.90	35.39	
106.00	Appurtenance(s)	116.70	1.79	1.48	0.96	31.00	
109.00		107.11	1.89	1.98	1.14	34.55	
Totals:		5,593.0				267.3	Total Wind: 5,354.5

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

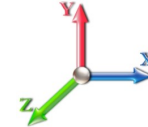
Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E										Iterations 27
Gust Response Factor	1.10						Sds	0.25		Ss 0.24
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.11					S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.50	SA	0.05	Seismic Importance Factor	1.00			



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-6.68	-0.30	0.00	-22.82	0.00	22.82	1095.40	547.70	1298.60	650.26	0.00	0.00	0.00	0.041
5.00	-6.34	-0.29	0.00	-21.35	0.00	21.35	1079.72	539.86	1247.24	624.55	0.01	-0.02	0.040	
10.00	-6.00	-0.28	0.00	-19.90	0.00	19.90	1063.41	531.71	1196.12	598.95	0.04	-0.04	0.039	
15.00	-5.67	-0.27	0.00	-18.50	0.00	18.50	1046.46	523.23	1145.29	573.49	0.08	-0.05	0.038	
20.00	-5.35	-0.26	0.00	-17.14	0.00	17.14	1028.88	514.44	1094.81	548.22	0.15	-0.07	0.036	
25.00	-5.03	-0.25	0.00	-15.84	0.00	15.84	1010.66	505.33	1044.74	523.15	0.23	-0.09	0.035	
30.00	-4.72	-0.24	0.00	-14.58	0.00	14.58	991.80	495.90	995.14	498.31	0.33	-0.11	0.034	
35.00	-4.42	-0.23	0.00	-13.38	0.00	13.38	972.31	486.15	946.07	473.74	0.46	-0.13	0.033	
40.00	-4.12	-0.22	0.00	-12.24	0.00	12.24	952.17	476.09	897.58	449.45	0.60	-0.14	0.032	
45.00	-3.83	-0.21	0.00	-11.14	0.00	11.14	931.41	465.70	849.73	425.49	0.76	-0.16	0.030	
47.35	-3.70	-0.21	0.00	-10.64	0.00	10.64	921.43	460.71	827.47	414.35	0.84	-0.17	0.030	
50.00	-3.44	-0.20	0.00	-10.09	0.00	10.09	910.00	455.00	802.58	401.88	0.94	-0.18	0.029	
50.66	-3.38	-0.20	0.00	-9.96	0.00	9.96	918.20	459.10	820.39	410.80	0.96	-0.18	0.028	
55.00	-3.14	-0.20	0.00	-9.10	0.00	9.10	899.32	449.66	779.82	390.49	1.13	-0.20	0.027	
60.00	-2.86	-0.20	0.00	-8.11	0.00	8.11	876.96	438.48	733.82	367.45	1.35	-0.22	0.025	
65.00	-2.60	-0.20	0.00	-7.12	0.00	7.12	853.97	426.99	688.66	344.84	1.59	-0.23	0.024	
70.00	-2.34	-0.20	0.00	-6.13	0.00	6.13	830.35	415.17	644.40	322.68	1.84	-0.25	0.022	
75.00	-2.08	-0.20	0.00	-5.15	0.00	5.15	804.33	402.17	599.80	300.34	2.11	-0.27	0.020	
80.00	-1.84	-0.20	0.00	-4.16	0.00	4.16	771.92	385.96	552.20	276.51	2.40	-0.28	0.017	
81.00	-1.79	-0.20	0.00	-3.97	0.00	3.97	765.44	382.72	542.91	271.86	2.46	-0.28	0.017	
81.00	-1.79	-0.20	0.00	-3.97	0.00	3.97	158.05	79.02	194.98	124.99	2.46	-0.28	0.043	
85.00	-1.51	-0.19	0.00	-3.18	0.00	3.18	158.05	79.02	194.98	124.99	2.70	-0.29	0.035	
89.00	-0.98	-0.17	0.00	-2.41	0.00	2.41	158.05	79.02	194.98	124.99	2.94	-0.29	0.026	
90.00	-0.92	-0.17	0.00	-2.24	0.00	2.24	158.05	79.02	194.98	124.99	3.00	-0.30	0.024	
91.00	-0.85	-0.17	0.00	-2.07	0.00	2.07	158.05	79.02	194.98	124.99	3.07	-0.30	0.022	
91.00	-0.85	-0.17	0.00	-2.07	0.00	2.07	94.43	47.22	69.31	44.62	3.07	-0.30	0.055	
95.00	-0.68	-0.15	0.00	-1.41	0.00	1.41	94.43	47.22	69.31	44.62	3.31	-0.30	0.039	
99.00	-0.43	-0.12	0.00	-0.81	0.00	0.81	94.43	47.22	69.31	44.62	3.56	-0.30	0.023	
100.00	-0.40	-0.11	0.00	-0.69	0.00	0.69	94.43	47.22	69.31	44.62	3.63	-0.30	0.020	
101.00	-0.36	-0.10	0.00	-0.58	0.00	0.58	94.43	47.22	69.31	44.62	3.69	-0.30	0.017	
101.00	-0.36	-0.10	0.00	-0.58	0.00	0.58	94.43	47.22	69.31	44.62	3.69	-0.30	0.017	
105.00	-0.21	-0.07	0.00	-0.17	0.00	0.17	94.43	47.22	69.31	44.62	3.94	-0.30	0.006	
106.00	-0.10	-0.03	0.00	-0.10	0.00	0.10	94.43	47.22	69.31	44.62	4.01	-0.30	0.003	
109.00	0.00	-0.03	0.00	0.00	0.00	0.00	94.43	47.22	69.31	44.62	4.20	-0.30	0.000	

Wind Loading - Shaft

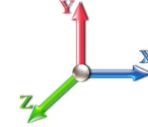
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 29

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	135.75	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	132.31	0.650	0.000	5.00	12.115	7.87	64.5	0.0	288.0
10.00		1.00	0.85	7.442	8.19	128.88	0.650	0.000	5.00	11.805	7.67	62.8	0.0	280.6
15.00		1.00	0.85	7.442	8.19	125.45	0.650	0.000	5.00	11.494	7.47	61.2	0.0	273.2
20.00		1.00	0.90	7.896	8.69	125.69	0.650	0.000	5.00	11.184	7.27	63.1	0.0	265.8
25.00		1.00	0.95	8.276	9.10	125.06	0.650	0.000	5.00	10.874	7.07	64.3	0.0	258.3
30.00		1.00	0.98	8.600	9.46	123.79	0.650	0.000	5.00	10.564	6.87	65.0	0.0	250.9
35.00		1.00	1.01	8.883	9.77	122.07	0.650	0.000	5.00	10.254	6.66	65.1	0.0	243.5
40.00		1.00	1.04	9.137	10.05	120.00	0.650	0.000	5.00	9.944	6.46	65.0	0.0	236.1
45.00		1.00	1.07	9.366	10.30	117.64	0.650	0.000	5.00	9.634	6.26	64.5	0.0	228.6
47.35 Bot - Section 2		1.00	1.08	9.467	10.41	116.46	0.650	0.000	2.35	4.421	2.87	29.9	0.0	104.9
50.00		1.00	1.09	9.576	10.53	115.06	0.650	0.000	2.65	4.987	3.24	34.1	0.0	234.7
50.66 Top - Section 1		1.00	1.10	9.603	10.56	114.71	0.650	0.000	0.66	1.228	0.80	8.4	0.0	57.8
55.00		1.00	1.12	9.770	10.75	114.30	0.650	0.000	4.34	7.943	5.16	55.5	0.0	188.4
60.00		1.00	1.14	9.951	10.95	111.39	0.650	0.000	5.00	8.862	5.76	63.1	0.0	210.2
65.00		1.00	1.16	10.120	11.13	108.33	0.650	0.000	5.00	8.552	5.56	61.9	0.0	202.8
70.00		1.00	1.17	10.279	11.31	105.14	0.650	0.000	5.00	8.242	5.36	60.6	0.0	195.3
75.00		1.00	1.19	10.430	11.47	101.85	0.650	0.000	5.00	7.931	5.16	59.1	0.0	187.9
80.00		1.00	1.21	10.572	11.63	98.45	0.650	0.000	5.00	7.621	4.95	57.6	0.0	180.5
81.00 Top - Section 2		1.00	1.21	10.600	11.66	97.76	0.650	0.000	1.00	1.487	0.97	11.3	0.0	35.2
85.00		1.00	1.22	10.708	11.78	165.89	0.600	0.000	4.00	10.000	6.00	70.7	0.0	239.0
89.00 Appurtenance(s)		1.00	1.23	10.812	11.89	166.69	0.600	0.000	4.00	10.000	6.00	71.4	0.0	239.0
90.00		1.00	1.24	10.838	11.92	166.89	0.600	0.000	1.00	2.500	1.50	17.9	0.0	59.8
91.00 Top - Section 3		1.00	1.24	10.863	11.95	167.08	0.600	0.000	1.00	2.500	1.50	17.9	0.0	59.8
95.00		1.00	1.25	10.962	12.06	100.70	0.600	0.000	4.00	6.000	3.60	43.4	0.0	142.8
99.00 Appurtenance(s)		1.00	1.26	11.057	12.16	101.14	0.600	0.000	4.00	6.000	3.60	43.8	0.0	142.8
100.00		1.00	1.27	11.081	12.19	101.25	0.600	0.000	1.00	1.500	0.90	11.0	0.0	35.7
101.00 Top - Section 4		1.00	1.27	11.104	12.21	101.36	0.600	0.000	1.00	1.500	0.90	11.0	0.0	35.7
105.00		1.00	1.28	11.195	12.31	101.77	0.600	0.000	4.00	6.000	3.60	44.3	0.0	142.8
106.00 Appurtenance(s)		1.00	1.28	11.218	12.34	101.87	0.600	0.000	1.00	1.500	0.90	11.1	0.0	35.7
109.00		1.00	1.29	11.284	12.41	102.17	0.600	0.000	3.00	4.500	2.70	33.5	0.0	107.1
Totals:								109.00				1,393.0		5,162.8

Discrete Appurtenance Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

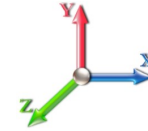


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 29

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	106.00	S20045A1	3	11.218	12.339	0.00	1.00	0.00	33.00	0.000	0.000	0.00	0.00	0.00
2	106.00	RR65-19-XXDP	3	11.218	12.339	0.00	1.00	0.00	48.00	0.000	0.000	0.00	0.00	0.00
3	99.00	S20045A1	3	11.057	12.163	0.00	1.00	0.00	33.00	0.000	0.000	0.00	0.00	0.00
4	99.00	RR65-19-XXDP	3	11.057	12.163	0.00	1.00	0.00	48.00	0.000	0.000	0.00	0.00	0.00
5	89.00	HPA-65R-BUU-H6	3	10.812	11.893	0.00	1.00	0.00	153.00	0.000	0.000	0.00	0.00	0.00
6	89.00	DTMABP7819VG12A	6	10.812	11.893	0.00	1.00	0.00	115.20	0.000	0.000	0.00	0.00	0.00
Totals:									430.20			0.00		

Total Applied Force Summary

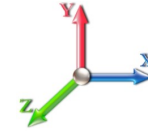
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 29

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		64.46	381.62	0.00	0.00
10.00		62.81	374.19	0.00	0.00
15.00		61.16	366.77	0.00	0.00
20.00		63.14	359.35	0.00	0.00
25.00		64.35	351.93	0.00	0.00
30.00		64.96	344.51	0.00	0.00
35.00		65.13	337.08	0.00	0.00
40.00		64.96	329.66	0.00	0.00
45.00		64.51	322.24	0.00	0.00
47.35		29.92	148.89	0.00	0.00
50.00		34.15	284.26	0.00	0.00
50.66		8.43	70.15	0.00	0.00
55.00		55.49	269.69	0.00	0.00
60.00		63.05	303.77	0.00	0.00
65.00		61.88	296.35	0.00	0.00
70.00		60.57	288.93	0.00	0.00
75.00		59.15	281.51	0.00	0.00
80.00		57.61	274.08	0.00	0.00
81.00		11.27	53.93	0.00	0.00
85.00		70.67	313.90	0.00	0.00
89.00	(9) attachments	71.36	582.10	0.00	0.00
90.00		17.88	72.24	0.00	0.00
91.00		17.92	72.24	0.00	0.00
95.00		43.41	192.73	0.00	0.00
99.00	(6) attachments	43.79	273.73	0.00	0.00
100.00		10.97	41.94	0.00	0.00
101.00		10.99	41.94	0.00	0.00
105.00		44.33	167.77	0.00	0.00
106.00	(6) attachments	11.11	122.94	0.00	0.00
109.00		33.51	107.11	0.00	0.00
	Totals:	1,392.95	7,427.59	0.00	0.00

Calculated Forces

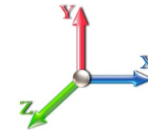
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 29

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	-7.43	-1.40	0.00	-81.51	0.00	81.51	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.132
5.00	-7.04	-1.34	0.00	-74.53	0.00	74.53	1079.72	539.86	1247.24	624.55	0.03	-0.062	0.000	0.126
10.00	-6.67	-1.28	0.00	-67.84	0.00	67.84	1063.41	531.71	1196.12	598.95	0.13	-0.123	0.000	0.120
15.00	-6.30	-1.23	0.00	-61.42	0.00	61.42	1046.46	523.23	1145.29	573.49	0.29	-0.182	0.000	0.113
20.00	-5.94	-1.17	0.00	-55.29	0.00	55.29	1028.88	514.44	1094.81	548.22	0.51	-0.241	0.000	0.107
25.00	-5.59	-1.11	0.00	-49.45	0.00	49.45	1010.66	505.33	1044.74	523.15	0.80	-0.298	0.000	0.100
30.00	-5.24	-1.05	0.00	-43.91	0.00	43.91	991.80	495.90	995.14	498.31	1.14	-0.354	0.000	0.093
35.00	-4.90	-0.98	0.00	-38.67	0.00	38.67	972.31	486.15	946.07	473.74	1.54	-0.407	0.000	0.087
40.00	-4.57	-0.92	0.00	-33.76	0.00	33.76	952.17	476.09	897.58	449.45	1.99	-0.459	0.000	0.080
45.00	-4.25	-0.86	0.00	-29.16	0.00	29.16	931.41	465.70	849.73	425.49	2.50	-0.508	0.000	0.073
47.35	-4.10	-0.83	0.00	-27.15	0.00	27.15	921.43	460.71	827.47	414.35	2.76	-0.531	0.000	0.070
50.00	-3.82	-0.79	0.00	-24.96	0.00	24.96	910.00	455.00	802.58	401.88	3.06	-0.556	0.000	0.066
50.66	-3.75	-0.78	0.00	-24.44	0.00	24.44	918.20	459.10	820.39	410.80	3.13	-0.562	0.000	0.064
55.00	-3.48	-0.73	0.00	-21.05	0.00	21.05	899.32	449.66	779.82	390.49	3.66	-0.600	0.000	0.058
60.00	-3.18	-0.66	0.00	-17.41	0.00	17.41	876.96	438.48	733.82	367.45	4.31	-0.639	0.000	0.051
65.00	-2.88	-0.60	0.00	-14.10	0.00	14.10	853.97	426.99	688.66	344.84	5.00	-0.674	0.000	0.044
70.00	-2.59	-0.54	0.00	-11.11	0.00	11.11	830.35	415.17	644.40	322.68	5.72	-0.705	0.000	0.038
75.00	-2.31	-0.47	0.00	-8.43	0.00	8.43	804.33	402.17	599.80	300.34	6.48	-0.733	0.000	0.031
80.00	-2.04	-0.41	0.00	-6.06	0.00	6.06	771.92	385.96	552.20	276.51	7.26	-0.756	0.000	0.025
81.00	-1.98	-0.40	0.00	-5.65	0.00	5.65	765.44	382.72	542.91	271.86	7.42	-0.760	0.000	0.023
81.00	-1.98	-0.40	0.00	-5.65	0.00	5.65	158.05	79.02	194.98	124.99	7.42	-0.760	0.000	0.058
85.00	-1.67	-0.33	0.00	-4.04	0.00	4.04	158.05	79.02	194.98	124.99	8.06	-0.774	0.000	0.043
89.00	-1.09	-0.25	0.00	-2.73	0.00	2.73	158.05	79.02	194.98	124.99	8.71	-0.776	0.000	0.029
90.00	-1.02	-0.23	0.00	-2.48	0.00	2.48	158.05	79.02	194.98	124.99	8.87	-0.776	0.000	0.026
91.00	-0.95	-0.21	0.00	-2.25	0.00	2.25	158.05	79.02	194.98	124.99	9.03	-0.777	0.000	0.024
91.00	-0.95	-0.21	0.00	-2.25	0.00	2.25	94.43	47.22	69.31	44.62	9.03	-0.777	0.000	0.061
95.00	-0.75	-0.16	0.00	-1.41	0.00	1.41	94.43	47.22	69.31	44.62	9.69	-0.778	0.000	0.040
99.00	-0.48	-0.12	0.00	-0.75	0.00	0.75	94.43	47.22	69.31	44.62	10.34	-0.781	0.000	0.022
100.00	-0.44	-0.11	0.00	-0.63	0.00	0.63	94.43	47.22	69.31	44.62	10.50	-0.781	0.000	0.019
101.00	-0.40	-0.09	0.00	-0.53	0.00	0.53	94.43	47.22	69.31	44.62	10.67	-0.781	0.000	0.016
101.00	-0.40	-0.09	0.00	-0.53	0.00	0.53	94.43	47.22	69.31	44.62	10.67	-0.781	0.000	0.016
105.00	-0.23	-0.05	0.00	-0.15	0.00	0.15	94.43	47.22	69.31	44.62	11.32	-0.782	0.000	0.006
106.00	-0.11	-0.03	0.00	-0.10	0.00	0.10	94.43	47.22	69.31	44.62	11.48	-0.782	0.000	0.003
109.00	0.00	-0.03	0.00	0.00	0.00	0.00	94.43	47.22	69.31	44.62	11.98	-0.783	0.000	0.000

Final Analysis Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	5.4	0.00	8.90	0.00	0.00	315.69
0.9D + 1.6W 93 mph Wind	5.4	0.00	6.67	0.00	0.00	312.34
1.2D + 1.0Di + 1.0Wi 50 mph Wind	2.7	0.00	15.53	0.00	0.00	199.47
1.2D + 1.0E	0.3	0.00	8.91	0.00	0.00	23.17
0.9D + 1.0E	0.3	0.00	6.68	0.00	0.00	22.82
1.0D + 1.0W 60 mph Wind	1.4	0.00	7.43	0.00	0.00	81.51

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 93 mph Wind	-8.90	-5.37	0.00	-315.69	0.00	-315.69	1095.40	547.70	1298.60	650.26	0.00	0.494
0.9D + 1.6W 93 mph Wind	-6.67	-5.37	0.00	-312.34	0.00	-312.34	1095.40	547.70	1298.60	650.26	0.00	0.487
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-15.53	-2.73	0.00	-199.47	0.00	-199.47	1095.40	547.70	1298.60	650.26	0.00	0.321
1.2D + 1.0E	-1.14	-0.17	0.00	-2.09	0.00	-2.09	158.05	79.02	194.98	124.99	91.00	0.059
0.9D + 1.0E	-0.85	-0.17	0.00	-2.07	0.00	-2.07	158.05	79.02	194.98	124.99	91.00	0.055
1.0D + 1.0W 60 mph Wind	-7.43	-1.40	0.00	-81.51	0.00	-81.51	1095.40	547.70	1298.60	650.26	0.00	0.132

Base Plate Summary

Structure: CT40876-T-SB	Code: EIA/TIA-222-G	12/23/2016
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 35.50
Moment (kip-ft): 272.00	Width (in): 36.00	Number Bolts: 4.00
Axial (kip): 5.90	Style: Clipped	Bolt Type: 1.75" #18J
Shear (kip): 4.70	Polygon Sides: 4.00	Bolt Diameter (in): 1.75
Analysis	Clip Length (in): 6.00	Yield (ksi): 75.00
Moment (kip-ft): 315.69	Effective Len (in): 17.21	Ultimate (ksi): 100.00
Axial (kip): 15.53	Moment (kip-in): 359.43	Arrangement: Radial
Shear (kip): 5.37	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): -1.88661806164581	Start Angle (deg): 45.00
Moment Design %: 116.06	Stress Ratio: 0.61	Compression
		Force (kip): 110.59
		Allowable (kip): 152.00
		Ratio: 0.75
		Tension
		Force (kip): 102.83
		Allowable (kip): 152.00
		Ratio: 0.69

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	1577.3	>	Design Factored Moment (kips-ft):	383	Usage	0.24	OK!
Factor of Safety of Passive Soil Resistance against Moment:	4.12	OK!					

Check the capacities of Reinforcing Concrete:

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

Reinforcing Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.31	Usage	
Calculated Moment Capacity (Mn, Kips-Ft):	1705.0	>	Design Factored Moment (Mu, K-Ft):	335.1	0.20 OK!
Calculated Shear Capacity (Kips):	562.8	>	Design Factored Shear (Kips):	52.7	0.09 OK!
Calculated Tension Capacity (Tn, Kips):	767.9	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	4974	>	Design Factored Axial Load (Pu Kips):	8.9	0.00 OK!
Moment & Axial Strength Combination:	0.20	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.005		Reinforcement Ratio is too small		

