



Tower Engineering Solutions

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

Structural Analysis Report

Existing 159 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT12219-A

Customer Site Name: New Hartford 2, CT

Carrier Name: Verizon (App#: 146253, V3)

Carrier Site ID / Name: 468081 / New Hartford East CT

Site Location: 170 S. East Road

New Hartford, Connecticut

Litchfield County

Latitude: 41.817258

Longitude: -72.970947

Analysis Result:

Max Structural Usage: 56.4% [Pass]

Max Foundation Usage: 60.0% [Pass]

Additional Usage Caused by Mount Modification: +1.9%



Report Prepared By : Delu Zhou



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Introduction

The purpose of this report is to summarize the analysis results on the 159 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 Project #15635-P01, dated 10/07/08
Foundation Drawing	EEI Project #15635-P01, dated 10/16/08
Geotechnical Report	Clarence Welti Associates Geotechnical Report for Proposed Sprint Site CT33XC271, dated 01/08/04
Modification Drawings	N/A
Mount Analysis	Maser Consulting, MA, Project # 10068126, dated 03/21/2021

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. 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:	40 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.18, S_1 = 0.065$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	162.0	6	Swedcom - SCE-6014 - Panel	Low Profile Platform	(12) 1 5/8"	Verizon
-		6	Antel - BXA-70063/6CF - Panel			
-		3	Antel - BXA-185060/12CF - Panel			
7	150.0	3	RFS APX16DWV-16DWVS-E-A20	(3) Modified T-Arms	(1) 1 5/8" Fiber (12) 1 5/8"	T-Mobile
8		3	RFS APXVAARR24_43-U-NA20- Panel			
9		3	Ericsson KRY 112 144/1 TMA			
10		3	Ericsson KRY 112 489/2 TMA			
11		3	Ericsson Radio 4449 B71 + B12- RRU			
12	130.0	6	Powerwave 7770.00A - Panel	(3) T-Frame w/ (6) Reforce Kit PRK-SFS-L (3) 2" Std Pipe	(24) 1 5/8" (2) 3" Conduit*	AT&T
13		24	Powerwave LGP21401			
14		3	Ericsson 4478 B71 RRU			
15		3	Ericsson 4449 B5/B12 RRU			
16		3	Ericsson 8843 B2/B66A RRU			
17		1	Raycap DC6-48-60-18-8F			
18		3	Commscope ABT-DF-DMADBH Bias-T			
19	129.0	6	Cci DMP65R-BU8DA - Panel			
20		1	Raycap DC6-48-60-0-8C-EV			
21		1	Raycap DC6-48-60-18-8C-EV			

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	162.0	6	Commscope NHH-65C-R2B Panel	Low Profile Platform w/ Support Rail & Pipes Kicker Kit	(11) 1 5/8" (1) 1 5/8" Hybrid (1) 1"	Verizon
2		3	Samsung MT6407-77A Panel			
3		3	Commscope TD-850B-LTE78-43			
4		3	Samsung RFV01U-D2A			
5		3	Samsung RFV01U-D1A			
6		1	RFS DB-C1-12C-24AB-0Z OVP			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	56.4%	42.0%	28.7%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3490.7	29.3	100.1

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.0222 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 TIA-222 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 structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. 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 ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. 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.
5. 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.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 56.37% at 97.9ft

Structure: CT12219-A-SBA
Site Name: New Hartford 2, CT
Height: 159.00 (ft)
Base Elev: 0.000 (ft)

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

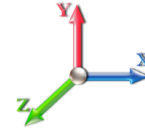
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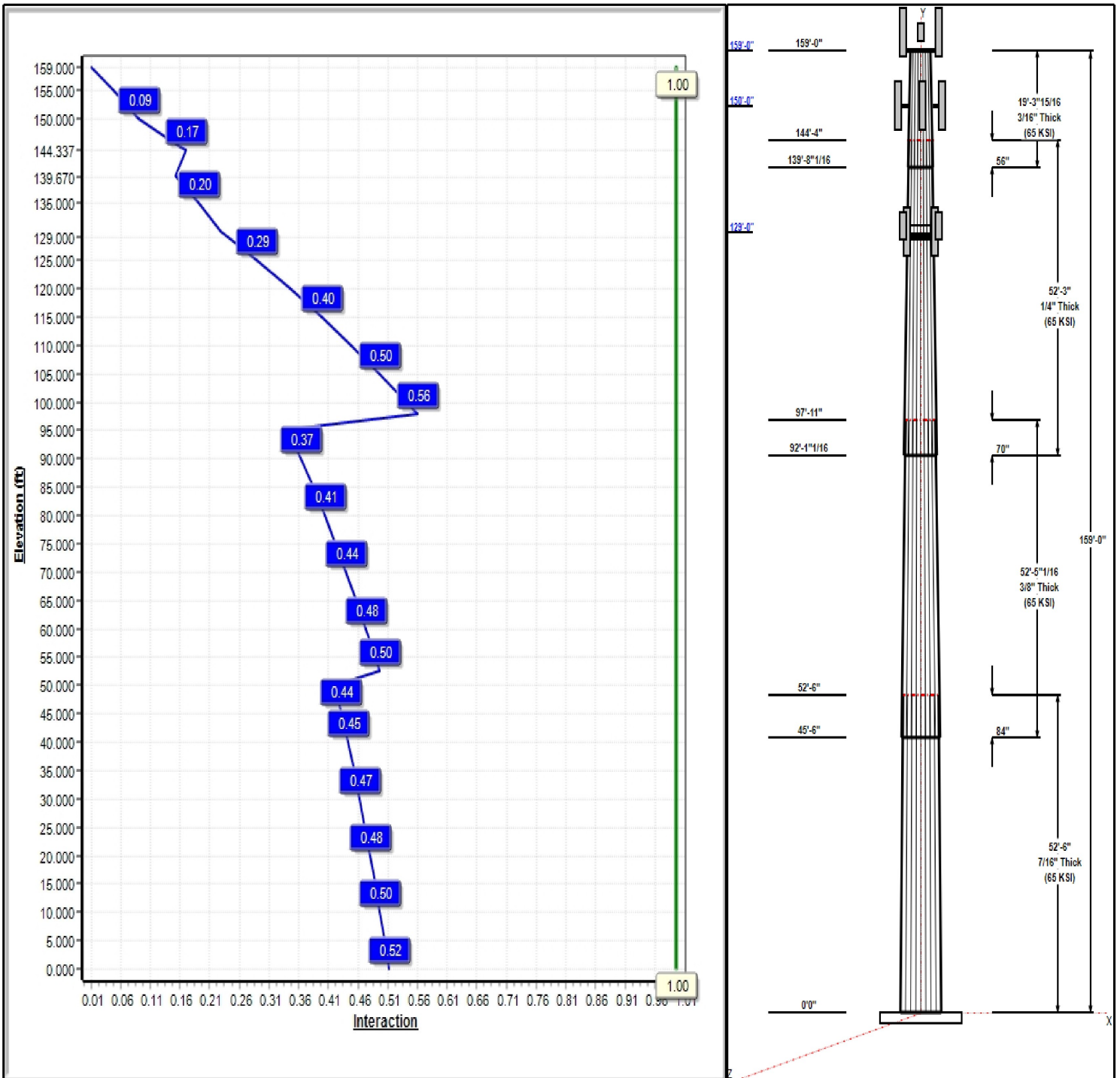
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 22

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Structure: CT12219-A-SBA

Type: Tapered
Site Name: New Hartford 2, CT
Height: 159.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20833

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.50	49.56	60.50	0.438		0.20833	65
2	52.42	40.85	51.77	0.375	Slip	0.20833	65
3	52.25	31.68	42.57	0.250	Slip	0.20833	65
4	19.33	29.00	33.03	0.188	Slip	0.20833	65

Discrete Appurtenances

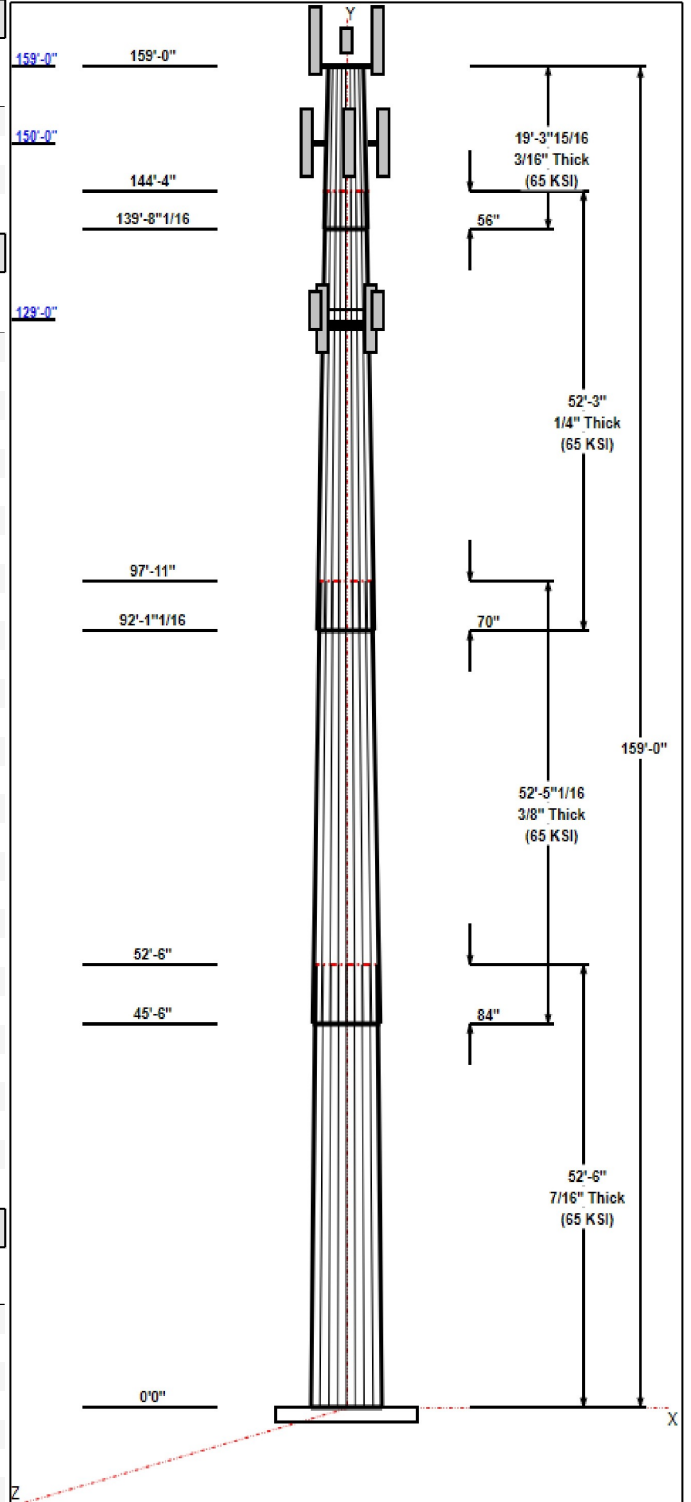
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
159.00	159.00	1	Low Profile Platform	Verizon
159.00	159.00	1	Support Rail w/ Pipes	Verizon
159.00	159.00	1	Kicker Kit	Verizon
159.00	162.00	6	NHH-65C-R2B	Verizon
159.00	162.00	3	MT6407-77A	Verizon
159.00	162.00	3	TD-850B-LTE78-43	Verizon
159.00	162.00	3	RFV01U-D2A	Verizon
159.00	162.00	3	RFV01U-D1A	Verizon
159.00	162.00	1	DB-C1-12C-24AB-0Z	Verizon
150.00	150.00	3	4449 B5/B12	T-Mobile
150.00	150.00	1	MS-HR35	T-Mobile
150.00	150.00	1	(3) T-Arm Kit	T-Mobile
150.00	150.00	1	MS-H1436 (Heavy Collar	T-Mobile
150.00	150.00	3	APX16DWV-16DWV-S-E-	T-Mobile
150.00	150.00	3	APXVAARR24_43-U-NA20	T-Mobile
150.00	150.00	3	KRY 112 144/1	T-Mobile
150.00	150.00	3	KRY 112 489/2	T-Mobile
150.00	150.00	3	T-Arm	T-Mobile
130.00	130.00	3	T-Frame	AT&T
130.00	130.00	6	Powerwave 7770.00A	AT&T
130.00	130.00	24	Powerwave LGP21401	AT&T
130.00	130.00	1	Raycap DC6-48-60-18-8F	AT&T
130.00	130.00	3	Commscope	AT&T
130.00	130.00	3	Ericsson 4478 B71 RRU	AT&T
130.00	130.00	3	Ericsson 4449 B5/B12	AT&T
130.00	130.00	3	Ericsson 8843 B2/B66A	AT&T
130.00	130.00	1	(6) Reinforce Kit	AT&T
129.00	129.00	6	DMP65R-BU8DA	AT&T
129.00	129.00	1	Raycap	AT&T
129.00	129.00	1	Raycap	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	159.00	Inside	1 5/8" Coax	Verizon
0.00	159.00	Inside	1 5/8" Hybrid	Verizon
0.00	159.00	Inside	1" Coax	Verizon
0.00	150.00	Inside	1 5/8" Coax	T-Mobile
0.00	150.00	Inside	1 5/8" Fiber	T-Mobile
0.00	130.00	Inside	1 5/8" Coax	AT&T
0.00	130.00	Outside	3" Conduit	AT&T

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Radial



Structure: CT12219-A-SBA

Type: Tapered
Site Name: New Hartford 2, CT
Height: 159.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.20833

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Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	74.0	50.0	Round

Reactions

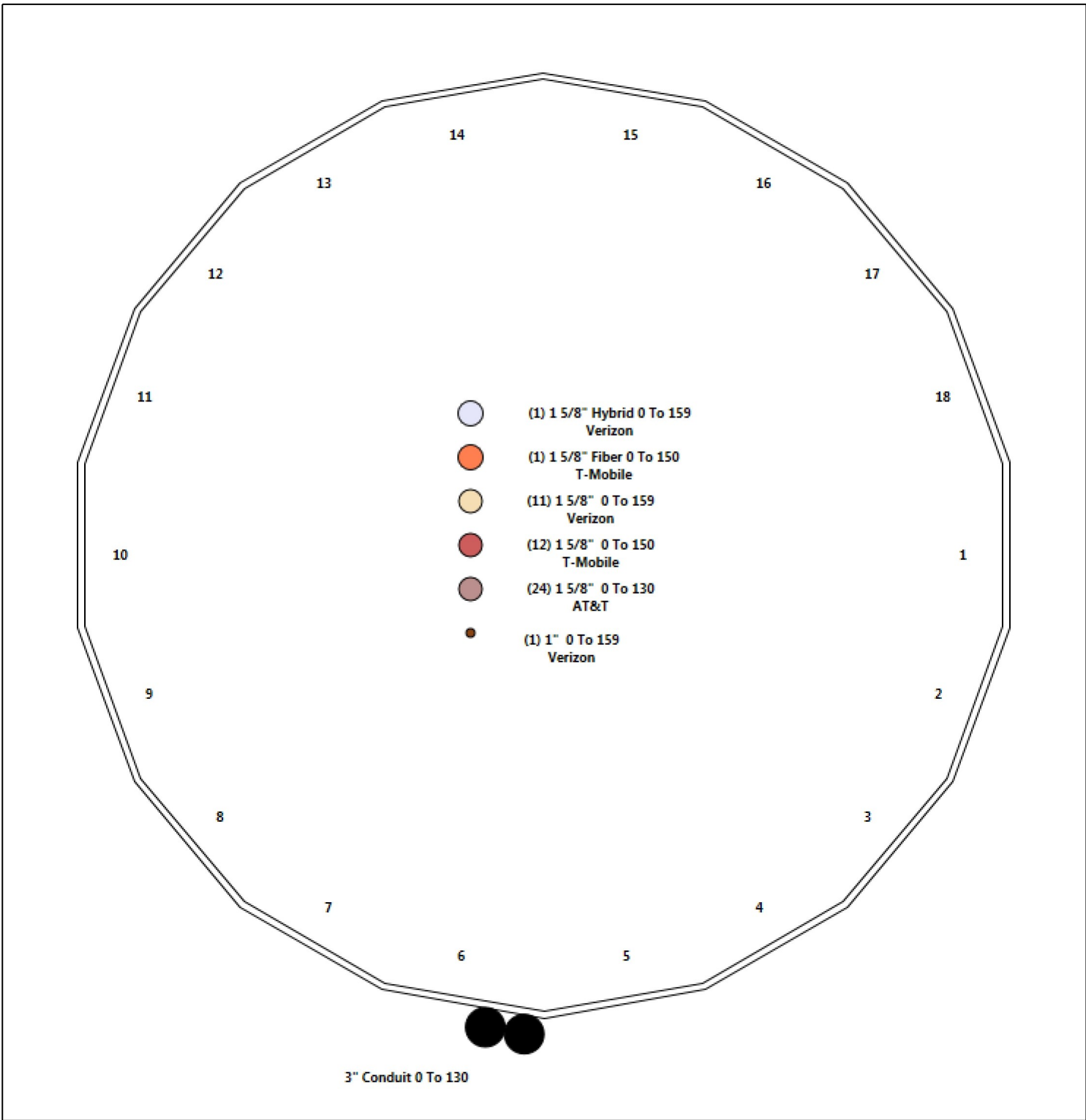
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3490.7	29.3	57.6
0.9D + 1.6W 93 mph Wind	3457.6	29.3	43.2
1.2D + 1.0Di + 1.0Wi 40 mph Wind	739.2	6.1	100.1
1.2D + 1.0E	306.2	2.4	57.7
0.9D + 1.0E	303.1	2.4	43.2
1.0D + 1.0W 60 mph Wind	902.8	7.6	48.0

Structure: CT12219-A-SBA - Coax Line Placement

Type: Monopole
Site Name: New Hartford 2, CT
Height: 159.00 (ft)

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Shaft Properties

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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	52.500	0.4375	65		0.00	13,543
2	18	52.420	0.3750	65	Slip	84.00	9,752
3	18	52.250	0.2500	65	Slip	70.00	5,202
4	18	19.330	0.1875	65	Slip	56.00	1,207
Total Shaft Weight:							29,703

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	60.50	0.00	83.40	38013.04	22.97	138.29	49.56	52.50	68.21	20798.4	18.56	113.2	0.208333
2	51.77	45.50	61.17	20415.47	22.93	138.06	40.85	97.92	48.17	9970.94	17.80	108.9	0.208333
3	42.57	92.09	33.58	7595.84	28.61	170.26	31.68	144.34	24.94	3112.52	20.93	126.7	0.208333
4	33.03	139.6	19.54	2662.80	29.65	176.14	29.00	159.00	17.15	1798.41	25.86	154.6	0.208333

Load Summary

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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	159.00	Low Profile Platform	1	1600.00	40.20	1.00	3472.44	85.363	1.00	0.00	0.00
2	159.00	Support Rail w/ Pipes	1	430.00	8.75	1.00	1114.38	20.219	1.00	0.00	0.00
3	159.00	Kicker Kit	1	146.00	5.33	1.00	419.38	12.815	1.00	0.00	0.00
4	159.00	NHH-65C-R2B	6	51.60	11.39	0.78	426.11	13.632	0.78	0.00	3.00
5	159.00	MT6407-77A	3	79.40	4.69	0.70	251.44	5.981	0.70	0.00	3.00
6	159.00	TD-850B-LTE78-43	3	52.90	1.16	0.67	98.32	2.246	0.67	0.00	3.00
7	159.00	RFV01U-D2A	3	70.30	1.88	0.67	135.52	2.619	0.67	0.00	3.00
8	159.00	RFV01U-D1A	3	84.40	1.88	0.67	153.14	2.619	0.67	0.00	3.00
9	159.00	DB-C1-12C-24AB-OZ	1	32.00	4.06	1.00	184.79	5.162	1.00	0.00	3.00
10	150.00	4449 B5/B12	3	71.00	1.97	0.67	142.17	2.700	0.67	0.00	0.00
11	150.00	MS-HR35	1	430.00	8.75	1.00	1110.40	20.152	1.00	0.00	0.00
12	150.00	(3) T-Arm Kit	1	500.00	16.50	1.00	1291.16	38.001	1.00	0.00	0.00
13	150.00	MS-H1436 (Heavy Collar Mount)	1	136.70	2.25	1.00	391.18	5.391	1.00	0.00	0.00
14	150.00	APX16DWV-16DWV-S-E-A20	3	40.70	6.46	0.62	237.43	7.978	0.62	0.00	0.00
15	150.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	709.08	22.805	0.70	0.00	0.00
16	150.00	KRY 112 144/1	3	11.00	0.41	0.70	25.38	1.044	0.70	0.00	0.00
17	150.00	KRY 112 489/2	3	15.40	0.65	0.82	38.89	1.466	0.82	0.00	0.00
18	150.00	T-Arm	3	500.00	15.60	0.75	965.39	33.750	0.75	0.00	0.00
19	130.00	T-Frame	3	550.00	17.60	0.75	1054.66	37.786	0.75	0.00	0.00
20	130.00	Powerwave 7770.00A	6	27.00	5.54	0.72	177.23	8.346	0.72	0.00	0.00
21	130.00	Powerwave LGP21401	24	17.50	1.29	0.50	58.29	2.388	0.50	0.00	0.00
22	130.00	Raycap DC6-48-60-18-8F	1	32.80	0.92	1.00	116.62	1.496	1.00	0.00	0.00
23	130.00	Commscope ABT-DF-DMADBH	3	1.14	0.05	0.67	4.18	0.303	0.67	0.00	0.00
24	130.00	Ericsson 4478 B71 RRU	3	60.00	1.65	0.67	115.05	2.331	0.67	0.00	0.00
25	130.00	Ericsson 4449 B5/B12 RRU	3	71.00	1.97	0.67	141.16	2.689	0.67	0.00	0.00
26	130.00	Ericsson 8843 B2/B66A RRU	3	75.00	1.65	0.67	194.86	2.778	0.67	0.00	0.00
27	130.00	(6) Reinforce Kit [PRK-SFS-L]	1	230.00	9.70	1.00	652.08	23.050	1.00	0.00	0.00
28	129.00	DMP65R-BU8DA	6	95.70	17.87	0.83	612.27	20.296	0.83	0.00	0.00
29	129.00	Raycap DC6-48-60-0-8C-EV	1	26.20	4.78	1.00	292.31	5.941	1.00	0.00	0.00
30	129.00	Raycap DC6-48-60-18-8C-EV	1	26.20	4.78	1.00	292.31	5.941	1.00	0.00	0.00
Totals:			98	10,486.42			30,829.58				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	159.00	(11) 1 5/8" Coax	0.00	Inside
0.00	159.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	159.00	(1) 1" Coax	0.00	Inside
0.00	150.00	(12) 1 5/8" Coax	0.00	Inside
0.00	150.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	130.00	(24) 1 5/8" Coax	0.00	Inside
0.00	130.00	(2) 3" Conduit	6.00	Outside

Shaft Section Properties

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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		0.4375	60.500	83.401	38013.0	22.97	138.29	74.4	1237.	0.0
5.00		0.4375	59.458	81.955	36069.4	22.55	135.90	74.9	1194.	1406.7
10.00		0.4375	58.417	80.508	34193.1	22.13	133.52	75.4	1152.	1382.1
15.00		0.4375	57.375	79.062	32383.0	21.71	131.14	75.9	1111.	1357.5
20.00		0.4375	56.333	77.616	30638.0	21.29	128.76	76.4	1071.	1332.8
25.00		0.4375	55.292	76.169	28956.8	20.87	126.38	76.8	1031.	1308.2
30.00		0.4375	54.250	74.723	27338.3	20.45	124.00	77.3	992.6	1283.6
35.00		0.4375	53.208	73.276	25781.3	20.03	121.62	77.8	954.3	1259.0
40.00		0.4375	52.167	71.830	24284.5	19.61	119.24	78.3	916.9	1234.4
45.00		0.4375	51.125	70.383	22846.8	19.19	116.86	78.8	880.2	1209.8
45.50	Bot - Section 2	0.4375	51.021	70.239	22706.2	19.15	116.62	78.9	876.6	119.6
50.00		0.4375	50.083	68.937	21467.0	18.77	114.48	79.3	844.2	1993.7
52.50	Top - Section 1	0.3750	50.313	59.436	18726.5	22.25	134.17	0.0	0.0	1091.6
55.00		0.3750	49.792	58.816	18146.6	22.00	132.78	75.5	717.8	503.0
60.00		0.3750	48.750	57.576	17023.1	21.51	130.00	76.1	687.8	990.1
65.00		0.3750	47.708	56.336	15946.9	21.02	127.22	76.7	658.4	969.0
70.00		0.3750	46.667	55.097	14917.1	20.53	124.44	77.3	629.6	948.0
75.00		0.3750	45.625	53.857	13932.6	20.04	121.67	77.8	601.5	926.9
80.00		0.3750	44.583	52.617	12992.4	19.55	118.89	78.4	574.0	905.8
85.00		0.3750	43.542	51.377	12095.4	19.06	116.11	79.0	547.1	884.7
90.00		0.3750	42.500	50.137	11240.8	18.57	113.33	79.6	520.9	863.6
92.09	Bot - Section 3	0.3750	42.065	49.620	10896.3	18.37	112.17	79.8	510.2	354.2
95.00		0.3750	41.458	48.898	10427.3	18.08	110.56	80.1	495.4	818.8
97.92	Top - Section 2	0.2500	41.350	32.612	6960.0	27.75	165.40	0.0	0.0	808.7
100.00		0.2500	40.917	32.268	6742.2	27.45	163.67	69.1	324.5	229.6
105.00		0.2500	39.875	31.441	6237.2	26.71	159.50	70.0	308.1	542.0
110.00		0.2500	38.833	30.615	5758.2	25.98	155.33	70.8	292.1	527.9
115.00		0.2500	37.792	29.788	5304.3	25.24	151.17	71.7	276.4	513.8
120.00		0.2500	36.750	28.962	4874.9	24.51	147.00	72.6	261.3	499.8
125.00		0.2500	35.708	28.135	4469.3	23.77	142.83	73.4	246.5	485.7
129.00		0.2500	34.875	27.474	4161.5	23.19	139.50	74.1	235.0	378.5
130.00		0.2500	34.667	27.309	4086.9	23.04	138.67	74.3	232.2	93.2
135.00		0.2500	33.625	26.482	3726.9	22.31	134.50	75.2	218.3	457.6
139.67	Bot - Section 4	0.2500	32.652	25.710	3410.4	21.62	130.61	76.0	205.7	414.7
140.00		0.2500	32.583	25.656	3388.7	21.57	130.33	76.0	204.8	50.8
144.34	Top - Section 3	0.1875	32.055	18.964	2433.2	28.73	170.96	0.0	0.0	657.1
145.00		0.1875	31.917	18.882	2401.7	28.60	170.22	67.8	148.2	42.7
150.00		0.1875	30.875	18.262	2172.9	27.62	164.67	68.9	138.6	316.0
155.00		0.1875	29.833	17.642	1959.0	26.64	159.11	70.1	129.3	305.4
159.00		0.1875	29.000	17.146	1798.4	25.86	154.67	71.0	122.1	236.8

29703.3

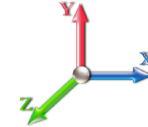
Wind Loading - Shaft

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 8
	Struct Class: II	



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 22

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	0.70	14.724	16.20	398.34	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	391.48	0.650	0.000	5.00	25.377	16.49	427.5	0.0	1688.0
10.00		1.00	0.70	14.724	16.20	384.62	0.650 *	0.000	5.00	24.936	16.22	420.4	0.0	1658.5
15.00		1.00	0.70	14.724	16.20	377.77	0.654 *	0.000	5.00	24.495	16.02	415.2	0.0	1628.9
20.00		1.00	0.70	14.724	16.20	370.91	0.658 *	0.000	5.00	24.055	15.82	410.0	0.0	1599.4
25.00		1.00	0.70	14.724	16.20	364.05	0.661 *	0.000	5.00	23.614	15.62	404.8	0.0	1569.9
30.00		1.00	0.70	14.736	16.21	357.34	0.665 *	0.000	5.00	23.173	15.42	399.9	0.0	1540.4
35.00		1.00	0.73	15.400	16.94	350.63	0.669 *	0.000	5.00	22.733	15.22	412.5	0.0	1510.8
40.00		1.00	0.76	15.999	17.60	344.03	0.674 *	0.000	5.00	22.292	15.02	422.9	0.0	1481.3
45.00		1.00	0.79	16.546	18.20	337.54	0.678 *	0.000	5.00	21.851	14.82	431.5	0.0	1451.8
45.50 Bot - Section 2		1.00	0.79	16.599	18.26	331.14	0.681 *	0.000	0.50	2.161	1.47	43.0	0.0	143.6
50.00		1.00	0.81	17.052	18.76	324.83	0.683 *	0.000	4.50	19.535	13.34	400.4	0.0	2392.5
52.50 Top - Section 1		1.00	0.82	17.292	19.02	318.62	0.686 *	0.000	2.50	10.699	7.34	223.4	0.0	1309.9
55.00		1.00	0.83	17.523	19.28	312.51	0.688 *	0.000	2.50	10.588	7.26	223.8	0.0	603.6
60.00		1.00	0.85	17.964	19.76	306.50	0.689 *	0.000	5.00	20.846	14.36	454.0	0.0	1188.2
65.00		1.00	0.87	18.380	20.22	300.59	0.694 *	0.000	5.00	20.405	14.16	458.0	0.0	1162.9
70.00		1.00	0.89	18.773	20.65	294.78	0.699 *	0.000	5.00	19.965	13.96	461.2	0.0	1137.5
75.00		1.00	0.91	19.147	21.06	289.07	0.705 *	0.000	5.00	19.524	13.76	463.6	0.0	1112.2
80.00		1.00	0.93	19.503	21.45	283.46	0.710 *	0.000	5.00	19.083	13.56	465.4	0.0	1086.9
85.00		1.00	0.94	19.844	21.83	277.95	0.716 *	0.000	5.00	18.643	13.36	466.5	0.0	1061.6
90.00		1.00	0.96	20.170	22.19	272.54	0.723 *	0.000	5.00	18.202	13.16	467.1	0.0	1036.3
92.09 Bot - Section 3		1.00	0.97	20.303	22.33	267.23	0.728 *	0.000	2.09	7.466	5.43	194.1	0.0	425.0
95.00		1.00	0.97	20.484	22.53	262.02	0.731 *	0.000	2.91	10.419	7.61	274.5	0.0	982.5
97.92 Top - Section 2		1.00	0.98	20.662	22.73	256.91	0.735 *	0.000	2.92	10.292	7.56	275.1	0.0	970.4
100.00		1.00	0.99	20.787	22.87	251.90	0.738 *	0.000	2.08	7.240	5.32	194.7	0.0	275.5
105.00		1.00	1.00	21.079	23.19	247.00	0.740 *	0.000	5.00	17.091	12.65	469.4	0.0	650.4
110.00		1.00	1.02	21.361	23.50	242.20	0.748 *	0.000	5.00	16.651	12.45	468.1	0.0	633.5
115.00		1.00	1.03	21.634	23.80	237.50	0.756 *	0.000	5.00	16.210	12.25	466.4	0.0	616.6
120.00		1.00	1.04	21.898	24.09	232.90	0.764 *	0.000	5.00	15.769	12.05	464.4	0.0	599.7
125.00		1.00	1.05	22.155	24.37	228.40	0.773 *	0.000	5.00	15.328	11.85	462.0	0.0	582.9
129.00 Appurtenance(s)		1.00	1.06	22.356	24.59	224.00	0.781 *	0.000	4.00	11.945	9.34	367.3	0.0	454.1
130.00 Appurtenance(s)		1.00	1.07	22.405	24.65	220.00	0.786 *	0.000	1.00	2.942	2.31	91.2	0.0	111.8
135.00		1.00	1.08	22.648	24.91	216.00	0.650	0.000	5.00	14.447	9.39	374.3	0.0	549.1
139.67 Bot - Section 4		1.00	1.09	22.869	25.16	212.00	0.650	0.000	4.67	13.095	8.51	342.6	0.0	497.6
140.00		1.00	1.09	22.884	25.17	208.00	0.650	0.000	0.33	0.921	0.60	24.1	0.0	60.9
144.34 Top - Section 3		1.00	1.10	23.085	25.39	204.00	0.650	0.000	4.34	11.929	7.75	315.0	0.0	788.5
145.00		1.00	1.10	23.115	25.43	200.00	0.650	0.000	0.66	1.795	1.17	47.5	0.0	51.3
150.00 Appurtenance(s)		1.00	1.11	23.340	25.67	196.00	0.650	0.000	5.00	13.283	8.63	354.7	0.0	379.2
155.00		1.00	1.12	23.560	25.92	192.00	0.650	0.000	5.00	12.843	8.35	346.1	0.0	366.5
159.00 Appurtenance(s)		1.00	1.13	23.732	26.10	188.00	0.650	0.000	4.00	9.957	6.47	270.3	0.0	284.1
Totals:									159.00			13,672.8		35,644.0

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	159.00	NHH-65C-R2B	6	23.859	26.245	0.78	1.00	53.31	371.52	0.000	3.000	2238.37	0.00	6715.11	
2	159.00	Low Profile Platform	1	23.732	26.105	1.00	1.00	40.20	1920.00	0.000	0.000	1679.07	0.00	0.00	
3	159.00	Support Rail w/ Pipes	1	23.732	26.105	0.75	0.75	6.56	516.00	0.000	0.000	274.10	0.00	0.00	
4	159.00	Kicker Kit	1	23.732	26.105	0.75	0.75	4.00	175.20	0.000	0.000	166.97	0.00	0.00	
5	159.00	DB-C1-12C-24AB-0Z	1	23.859	26.245	1.00	1.00	4.06	38.40	0.000	3.000	170.49	0.00	511.46	
6	159.00	MT6407-77A	3	23.859	26.245	0.70	1.00	9.85	285.84	0.000	3.000	413.57	0.00	1240.72	
7	159.00	TD-850B-LTE78-43	3	23.859	26.245	0.67	1.00	2.33	190.44	0.000	3.000	97.91	0.00	293.72	
8	159.00	RFV01U-D2A	3	23.859	26.245	0.67	1.00	3.78	253.08	0.000	3.000	158.68	0.00	476.03	
9	159.00	RFV01U-D1A	3	23.859	26.245	0.67	1.00	3.78	303.84	0.000	3.000	158.68	0.00	476.03	
10	150.00	MS-H1436 (Heavy Collar	1	23.340	25.674	0.75	0.75	1.69	164.04	0.000	0.000	69.32	0.00	0.00	
11	150.00	(3) T-Arm Kit	1	23.340	25.674	0.75	0.75	12.38	600.00	0.000	0.000	508.34	0.00	0.00	
12	150.00	MS-HR35	1	23.340	25.674	0.75	0.75	6.56	516.00	0.000	0.000	269.58	0.00	0.00	
13	150.00	4449 B5/B12	3	23.340	25.674	0.54	0.80	3.17	255.60	0.000	0.000	130.13	0.00	0.00	
14	150.00	KRY 112 489/2	3	23.340	25.674	0.66	0.80	1.28	55.44	0.000	0.000	52.55	0.00	0.00	
15	150.00	KRY 112 144/1	3	23.340	25.674	0.56	0.80	0.69	39.60	0.000	0.000	28.29	0.00	0.00	
16	150.00	APXVAARR24_43-U-NA2	3	23.340	25.674	0.56	0.80	34.00	460.80	0.000	0.000	1396.79	0.00	0.00	
17	150.00	APX16DWV-16DWV-S-E-	3	23.340	25.674	0.50	0.80	9.61	146.52	0.000	0.000	394.86	0.00	0.00	
18	150.00	T-Arm	3	23.340	25.674	0.56	0.75	26.32	1800.00	0.000	0.000	1081.39	0.00	0.00	
19	130.00	T-Frame	3	22.405	24.645	0.56	0.75	29.70	1980.00	0.000	0.000	1171.15	0.00	0.00	
20	130.00	Powerwave 7770.00A	6	22.405	24.645	0.58	0.80	19.15	194.40	0.000	0.000	754.99	0.00	0.00	
21	130.00	Powerwave LGP21401	24	22.405	24.645	0.40	0.80	12.38	504.00	0.000	0.000	488.33	0.00	0.00	
22	130.00	Raycap DC6-48-60-18-8F	1	22.405	24.645	1.00	1.00	0.92	39.36	0.000	0.000	36.28	0.00	0.00	
23	130.00	Commscope	3	22.405	24.645	0.54	0.80	0.08	4.10	0.000	0.000	3.17	0.00	0.00	
24	130.00	Ericsson 4478 B71 RRU	3	22.405	24.645	0.54	0.80	2.65	216.00	0.000	0.000	104.62	0.00	0.00	
25	130.00	Ericsson 4449 B5/B12	3	22.405	24.645	0.54	0.80	3.17	255.60	0.000	0.000	124.91	0.00	0.00	
26	130.00	Ericsson 8843 B2/B66A	3	22.405	24.645	0.54	0.80	2.65	270.00	0.000	0.000	104.62	0.00	0.00	
27	130.00	(6) Reinforce Kit	1	22.405	24.645	0.75	0.75	7.27	276.00	0.000	0.000	286.87	0.00	0.00	
28	129.00	DMP65R-BU8DA	6	22.356	24.591	0.66	0.80	71.19	689.04	0.000	0.000	2801.18	0.00	0.00	
29	129.00	Raycap	1	22.356	24.591	1.00	1.00	4.78	31.44	0.000	0.000	188.07	0.00	0.00	
30	129.00	Raycap	1	22.356	24.591	1.00	1.00	4.78	31.44	0.000	0.000	188.07	0.00	0.00	
Totals:									12,583.70						15,541.36

Total Applied Force Summary

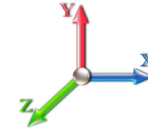
Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 22

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		427.46	2019.81	0.00	0.00
10.00		420.35	1990.28	0.00	0.00
15.00		415.16	1960.75	0.00	0.00
20.00		409.96	1931.22	0.00	0.00
25.00		404.77	1901.69	0.00	0.00
30.00		399.91	1872.15	0.00	0.00
35.00		412.48	1842.62	0.00	0.00
40.00		422.87	1813.09	0.00	0.00
45.00		431.50	1783.56	0.00	0.00
45.50		42.96	176.73	0.00	0.00
50.00		400.39	2691.08	0.00	0.00
52.50		223.44	1475.85	0.00	0.00
55.00		223.75	769.48	0.00	0.00
60.00		454.02	1519.97	0.00	0.00
65.00		458.03	1494.66	0.00	0.00
70.00		461.21	1469.35	0.00	0.00
75.00		463.63	1444.03	0.00	0.00
80.00		465.38	1418.72	0.00	0.00
85.00		466.50	1393.41	0.00	0.00
90.00		467.07	1368.10	0.00	0.00
92.09		194.08	563.47	0.00	0.00
95.00		274.54	1175.88	0.00	0.00
97.92		275.09	1164.20	0.00	0.00
100.00		194.71	413.55	0.00	0.00
105.00		469.35	982.16	0.00	0.00
110.00		468.09	965.29	0.00	0.00
115.00		466.44	948.41	0.00	0.00
120.00		464.42	931.54	0.00	0.00
125.00		462.05	914.66	0.00	0.00
129.00	(8) attachments	3544.63	1471.50	0.00	0.00
130.00	(47) attachments	3166.19	3917.67	0.00	0.00
135.00		374.31	711.83	0.00	0.00
139.67		342.60	649.61	0.00	0.00
140.00		24.12	71.65	0.00	0.00
144.34		315.03	929.68	0.00	0.00
145.00		47.48	72.84	0.00	0.00
150.00	(21) attachments	4285.93	4579.90	0.00	0.00
155.00		346.14	447.77	0.00	0.00
159.00	(22) attachments	5628.15	4403.42	0.00	9713.08
	Totals:	29,214.17	57,651.58	0.00	9,713.08

Linear Appurtenance Segment Forces (Factored)

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 22

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	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.099	0.000	14.724	0.00	19.32
10.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.100	1.001	14.724	0.00	19.32
15.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.102	1.006	14.724	0.00	19.32
20.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.104	1.012	14.724	0.00	19.32
25.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.106	1.018	14.724	0.00	19.32
30.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.108	1.024	14.736	0.00	19.32
35.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.110	1.030	15.400	0.00	19.32
40.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.112	1.036	15.999	0.00	19.32
45.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.114	1.043	16.546	0.00	19.32
45.50	3" Conduit	Yes	0.50	0.000	6.00	0.25	0.00	0.116	1.047	16.599	0.00	1.93
50.00	3" Conduit	Yes	4.50	0.000	6.00	2.25	0.00	0.117	1.051	17.052	0.00	17.39
52.50	3" Conduit	Yes	2.50	0.000	6.00	1.25	0.00	0.119	1.056	17.292	0.00	9.66
55.00	3" Conduit	Yes	2.50	0.000	6.00	1.25	0.00	0.118	1.054	17.523	0.00	9.66
60.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.120	1.060	17.964	0.00	19.32
65.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.123	1.068	18.380	0.00	19.32
70.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.125	1.076	18.773	0.00	19.32
75.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.128	1.084	19.147	0.00	19.32
80.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.131	1.093	19.503	0.00	19.32
85.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.134	1.102	19.844	0.00	19.32
90.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.137	1.112	20.170	0.00	19.32
92.09	3" Conduit	Yes	2.09	0.000	6.00	1.04	0.00	0.140	1.119	20.303	0.00	8.06
95.00	3" Conduit	Yes	2.91	0.000	6.00	1.46	0.00	0.141	1.124	20.484	0.00	11.26
97.92	3" Conduit	Yes	2.92	0.000	6.00	1.46	0.00	0.144	1.131	20.662	0.00	11.28
100.00	3" Conduit	Yes	2.08	0.000	6.00	1.04	0.00	0.144	1.131	20.787	0.00	8.04
105.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.146	1.139	21.079	0.00	19.32
110.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.150	1.150	21.361	0.00	19.32
115.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.154	1.163	21.634	0.00	19.32
120.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.159	1.176	21.898	0.00	19.32
125.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.163	1.189	22.155	0.00	19.32
129.00	3" Conduit	Yes	4.00	0.000	6.00	2.00	0.00	0.167	1.202	22.356	0.00	15.46
130.00	3" Conduit	Yes	1.00	0.000	6.00	0.50	0.00	0.170	1.210	22.405	0.00	3.86
Totals:											0.0	502.3

Calculated Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 93 mph Wind	Iterations 22
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	-57.62	-29.28	0.00	-3490.7	0.00	3490.70	5583.09	2791.54	13786.8	6903.66	0.00	0.000	0.000	0.516
5.00	-55.53	-28.97	0.00	-3344.3	0.00	3344.31	5522.68	2761.34	13399.4	6709.67	0.07	-0.128	0.000	0.509
10.00	-53.48	-28.67	0.00	-3199.4	0.00	3199.44	5460.99	2730.49	13014.1	6516.76	0.27	-0.257	0.000	0.501
15.00	-51.46	-28.36	0.00	-3056.1	0.00	3056.11	5398.01	2699.00	12631.2	6325.01	0.61	-0.387	0.000	0.493
20.00	-49.47	-28.05	0.00	-2914.3	0.00	2914.31	5333.74	2666.87	12250.7	6134.50	1.09	-0.518	0.000	0.484
25.00	-47.50	-27.73	0.00	-2774.0	0.00	2774.08	5268.20	2634.10	11872.9	5945.31	1.70	-0.650	0.000	0.476
30.00	-45.57	-27.42	0.00	-2635.4	0.00	2635.41	5201.36	2600.68	11497.9	5757.54	2.45	-0.783	0.000	0.467
35.00	-43.67	-27.08	0.00	-2498.3	0.00	2498.34	5133.24	2566.62	11125.9	5571.26	3.35	-0.917	0.000	0.457
40.00	-41.81	-26.72	0.00	-2362.9	0.00	2362.95	5063.83	2531.92	10757.1	5386.55	4.38	-1.051	0.000	0.447
45.00	-40.00	-26.31	0.00	-2229.3	0.00	2229.34	4993.14	2496.57	10391.5	5203.50	5.55	-1.185	0.000	0.437
45.50	-39.79	-26.31	0.00	-2216.1	0.00	2216.18	4986.00	2493.00	10355.1	5185.29	5.68	-1.199	0.000	0.435
50.00	-37.07	-25.91	0.00	-2097.8	0.00	2097.80	4921.16	2460.58	10029.4	5022.20	6.87	-1.321	0.000	0.425
52.50	-35.56	-25.69	0.00	-2033.0	0.00	2033.02	4024.48	2012.24	8260.88	4136.58	7.58	-1.389	0.000	0.500
55.00	-34.75	-25.52	0.00	-1968.7	0.00	1968.79	3997.76	1998.88	8119.79	4065.93	8.32	-1.458	0.000	0.493
60.00	-33.18	-25.11	0.00	-1841.2	0.00	1841.20	3943.34	1971.67	7839.16	3925.41	9.93	-1.607	0.000	0.478
65.00	-31.64	-24.69	0.00	-1715.6	0.00	1715.65	3887.63	1943.82	7560.73	3785.98	11.69	-1.756	0.000	0.461
70.00	-30.12	-24.26	0.00	-1592.2	0.00	1592.20	3830.65	1915.32	7284.66	3647.74	13.61	-1.903	0.000	0.445
75.00	-28.63	-23.82	0.00	-1470.9	0.00	1470.91	3772.37	1886.19	7011.11	3510.77	15.68	-2.049	0.000	0.427
80.00	-27.17	-23.37	0.00	-1351.8	0.00	1351.82	3712.81	1856.40	6740.26	3375.14	17.91	-2.193	0.000	0.408
85.00	-25.74	-22.91	0.00	-1234.9	0.00	1234.97	3651.96	1825.98	6472.27	3240.95	20.28	-2.335	0.000	0.388
90.00	-24.36	-22.43	0.00	-1120.4	0.00	1120.42	3589.83	1794.92	6207.31	3108.27	22.80	-2.473	0.000	0.367
92.09	-23.78	-22.24	0.00	-1073.6	0.00	1073.62	3563.52	1781.76	6097.66	3053.36	23.89	-2.531	0.000	0.358
95.00	-22.58	-21.94	0.00	-1008.8	0.00	1008.84	3526.41	1763.21	5945.54	2977.19	25.46	-2.611	0.000	0.345
97.92	-21.41	-21.64	0.00	-944.77	0.00	944.77	2018.06	1009.03	3414.14	1709.61	27.08	-2.688	0.000	0.564
100.00	-20.96	-21.47	0.00	-899.76	0.00	899.76	2007.23	1003.61	3359.78	1682.39	28.27	-2.743	0.000	0.546
105.00	-19.94	-21.01	0.00	-792.42	0.00	792.42	1980.26	990.13	3229.23	1617.01	31.24	-2.922	0.000	0.501
110.00	-18.94	-20.55	0.00	-687.37	0.00	687.37	1952.01	976.01	3098.96	1551.78	34.39	-3.090	0.000	0.453
115.00	-17.97	-20.08	0.00	-584.64	0.00	584.64	1922.48	961.24	2969.14	1486.78	37.71	-3.247	0.000	0.403
120.00	-17.02	-19.60	0.00	-484.26	0.00	484.26	1891.66	945.83	2839.95	1422.08	41.19	-3.391	0.000	0.350
125.00	-16.10	-19.11	0.00	-386.27	0.00	386.27	1859.56	929.78	2711.53	1357.78	44.81	-3.518	0.000	0.294
129.00	-14.84	-15.50	0.00	-309.82	0.00	309.82	1832.95	916.47	2609.48	1306.68	47.79	-3.606	0.000	0.245
130.00	-11.11	-12.10	0.00	-294.32	0.00	294.32	1826.17	913.08	2584.07	1293.95	48.55	-3.627	0.000	0.234
135.00	-10.41	-11.70	0.00	-233.82	0.00	233.82	1791.49	895.74	2457.72	1230.69	52.40	-3.719	0.000	0.196
139.67	-9.78	-11.32	0.00	-179.20	0.00	179.20	1757.94	878.97	2340.87	1172.18	56.07	-3.793	0.000	0.159
140.00	-9.70	-11.30	0.00	-175.46	0.00	175.46	1755.53	877.76	2332.66	1168.06	56.33	-3.797	0.000	0.156
144.34	-8.79	-10.92	0.00	-126.48	0.00	126.48	1153.87	576.93	1513.89	758.07	59.81	-3.852	0.000	0.175
145.00	-8.71	-10.88	0.00	-119.23	0.00	119.23	1151.46	575.73	1504.14	753.19	60.34	-3.860	0.000	0.166
150.00	-4.43	-6.29	0.00	-64.85	0.00	64.85	1132.60	566.30	1430.64	716.38	64.42	-3.914	0.000	0.095
155.00	-4.00	-5.92	0.00	-33.39	0.00	33.39	1112.45	556.22	1357.20	679.61	68.53	-3.947	0.000	0.053
159.00	0.00	-5.63	0.00	-9.71	0.00	9.71	1095.40	547.70	1298.60	650.26	71.84	-3.959	0.000	0.015

Wind Loading - Shaft

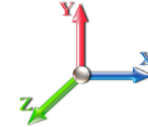
Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 22

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	0.70	14.724	16.20	398.34	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	391.48	0.650	0.000	5.00	25.377	16.49	427.5	0.0	1266.0
10.00		1.00	0.70	14.724	16.20	384.62	0.650 *	0.000	5.00	24.936	16.22	420.4	0.0	1243.9
15.00		1.00	0.70	14.724	16.20	377.77	0.654 *	0.000	5.00	24.495	16.02	415.2	0.0	1221.7
20.00		1.00	0.70	14.724	16.20	370.91	0.658 *	0.000	5.00	24.055	15.82	410.0	0.0	1199.6
25.00		1.00	0.70	14.724	16.20	364.05	0.661 *	0.000	5.00	23.614	15.62	404.8	0.0	1177.4
30.00		1.00	0.70	14.736	16.21	357.34	0.665 *	0.000	5.00	23.173	15.42	399.9	0.0	1155.3
35.00		1.00	0.73	15.400	16.94	350.62	0.669 *	0.000	5.00	22.733	15.22	412.5	0.0	1133.1
40.00		1.00	0.76	15.999	17.60	343.91	0.674 *	0.000	5.00	22.292	15.02	422.9	0.0	1111.0
45.00		1.00	0.79	16.546	18.20	337.20	0.678 *	0.000	5.00	21.851	14.82	431.5	0.0	1088.8
45.50 Bot - Section 2		1.00	0.79	16.599	18.26	330.50	0.681 *	0.000	0.50	2.161	1.47	43.0	0.0	107.7
50.00		1.00	0.81	17.052	18.76	323.80	0.683 *	0.000	4.50	19.535	13.34	400.4	0.0	1794.3
52.50 Top - Section 1		1.00	0.82	17.292	19.02	317.10	0.686 *	0.000	2.50	10.699	7.34	223.4	0.0	982.5
55.00		1.00	0.83	17.523	19.28	310.40	0.685 *	0.000	2.50	10.588	7.26	223.8	0.0	452.7
60.00		1.00	0.85	17.964	19.76	303.70	0.689 *	0.000	5.00	20.846	14.36	454.0	0.0	891.1
65.00		1.00	0.87	18.380	20.22	297.00	0.694 *	0.000	5.00	20.405	14.16	458.0	0.0	872.1
70.00		1.00	0.89	18.773	20.65	290.30	0.699 *	0.000	5.00	19.965	13.96	461.2	0.0	853.2
75.00		1.00	0.91	19.147	21.06	283.60	0.705 *	0.000	5.00	19.524	13.76	463.6	0.0	834.2
80.00		1.00	0.93	19.503	21.45	276.90	0.710 *	0.000	5.00	19.083	13.56	465.4	0.0	815.2
85.00		1.00	0.94	19.844	21.83	270.20	0.716 *	0.000	5.00	18.643	13.36	466.5	0.0	796.2
90.00		1.00	0.96	20.170	22.19	263.50	0.723 *	0.000	5.00	18.202	13.16	467.1	0.0	777.2
92.09 Bot - Section 3		1.00	0.97	20.303	22.33	256.80	0.728 *	0.000	2.09	7.466	5.43	194.1	0.0	318.7
95.00		1.00	0.97	20.484	22.53	250.10	0.731 *	0.000	2.91	10.419	7.61	274.5	0.0	736.9
97.92 Top - Section 2		1.00	0.98	20.662	22.73	243.40	0.735 *	0.000	2.92	10.292	7.56	275.1	0.0	727.8
100.00		1.00	0.99	20.787	22.87	236.70	0.735 *	0.000	2.08	7.240	5.32	194.7	0.0	206.6
105.00		1.00	1.00	21.079	23.19	230.00	0.740 *	0.000	5.00	17.091	12.65	469.4	0.0	487.8
110.00		1.00	1.02	21.361	23.50	223.30	0.748 *	0.000	5.00	16.651	12.45	468.1	0.0	475.1
115.00		1.00	1.03	21.634	23.80	216.60	0.756 *	0.000	5.00	16.210	12.25	466.4	0.0	462.5
120.00		1.00	1.04	21.898	24.09	210.00	0.764 *	0.000	5.00	15.769	12.05	464.4	0.0	449.8
125.00		1.00	1.05	22.155	24.37	203.30	0.773 *	0.000	5.00	15.328	11.85	462.0	0.0	437.1
129.00 Appurtenance(s)		1.00	1.06	22.356	24.59	196.60	0.781 *	0.000	4.00	11.945	9.34	367.3	0.0	340.6
130.00 Appurtenance(s)		1.00	1.07	22.405	24.65	190.00	0.786 *	0.000	1.00	2.942	2.31	91.2	0.0	83.9
135.00		1.00	1.08	22.648	24.91	183.30	0.650	0.000	5.00	14.447	9.39	374.3	0.0	411.8
139.67 Bot - Section 4		1.00	1.09	22.869	25.16	176.60	0.650	0.000	4.67	13.095	8.51	342.6	0.0	373.2
140.00		1.00	1.09	22.884	25.17	170.00	0.650	0.000	0.33	0.921	0.60	24.1	0.0	45.7
144.34 Top - Section 3		1.00	1.10	23.085	25.39	163.30	0.650	0.000	4.34	11.929	7.75	315.0	0.0	591.4
145.00		1.00	1.10	23.115	25.43	156.60	0.650	0.000	0.66	1.795	1.17	47.5	0.0	38.4
150.00 Appurtenance(s)		1.00	1.11	23.340	25.67	150.00	0.650	0.000	5.00	13.283	8.63	354.7	0.0	284.4
155.00		1.00	1.12	23.560	25.92	143.30	0.650	0.000	5.00	12.843	8.35	346.1	0.0	274.9
159.00 Appurtenance(s)		1.00	1.13	23.732	26.10	136.60	0.650	0.000	4.00	9.957	6.47	270.3	0.0	213.1
Totals:									159.00			13,672.8	26,733.0	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	159.00	NHH-65C-R2B	6	23.859	26.245	0.78	1.00	53.31	278.64	0.000	3.000	2238.37	0.00	6715.11	
2	159.00	Low Profile Platform	1	23.732	26.105	1.00	1.00	40.20	1440.00	0.000	0.000	1679.07	0.00	0.00	
3	159.00	Support Rail w/ Pipes	1	23.732	26.105	0.75	0.75	6.56	387.00	0.000	0.000	274.10	0.00	0.00	
4	159.00	Kicker Kit	1	23.732	26.105	0.75	0.75	4.00	131.40	0.000	0.000	166.97	0.00	0.00	
5	159.00	DB-C1-12C-24AB-0Z	1	23.859	26.245	1.00	1.00	4.06	28.80	0.000	3.000	170.49	0.00	511.46	
6	159.00	MT6407-77A	3	23.859	26.245	0.70	1.00	9.85	214.38	0.000	3.000	413.57	0.00	1240.72	
7	159.00	TD-850B-LTE78-43	3	23.859	26.245	0.67	1.00	2.33	142.83	0.000	3.000	97.91	0.00	293.72	
8	159.00	RFV01U-D2A	3	23.859	26.245	0.67	1.00	3.78	189.81	0.000	3.000	158.68	0.00	476.03	
9	159.00	RFV01U-D1A	3	23.859	26.245	0.67	1.00	3.78	227.88	0.000	3.000	158.68	0.00	476.03	
10	150.00	MS-H1436 (Heavy Collar	1	23.340	25.674	0.75	0.75	1.69	123.03	0.000	0.000	69.32	0.00	0.00	
11	150.00	(3) T-Arm Kit	1	23.340	25.674	0.75	0.75	12.38	450.00	0.000	0.000	508.34	0.00	0.00	
12	150.00	MS-HR35	1	23.340	25.674	0.75	0.75	6.56	387.00	0.000	0.000	269.58	0.00	0.00	
13	150.00	4449 B5/B12	3	23.340	25.674	0.54	0.80	3.17	191.70	0.000	0.000	130.13	0.00	0.00	
14	150.00	KRY 112 489/2	3	23.340	25.674	0.66	0.80	1.28	41.58	0.000	0.000	52.55	0.00	0.00	
15	150.00	KRY 112 144/1	3	23.340	25.674	0.56	0.80	0.69	29.70	0.000	0.000	28.29	0.00	0.00	
16	150.00	APXVAARR24_43-U-NA2	3	23.340	25.674	0.56	0.80	34.00	345.60	0.000	0.000	1396.79	0.00	0.00	
17	150.00	APX16DWV-16DWV-S-E-	3	23.340	25.674	0.50	0.80	9.61	109.89	0.000	0.000	394.86	0.00	0.00	
18	150.00	T-Arm	3	23.340	25.674	0.56	0.75	26.32	1350.00	0.000	0.000	1081.39	0.00	0.00	
19	130.00	T-Frame	3	22.405	24.645	0.56	0.75	29.70	1485.00	0.000	0.000	1171.15	0.00	0.00	
20	130.00	Powerwave 7770.00A	6	22.405	24.645	0.58	0.80	19.15	145.80	0.000	0.000	754.99	0.00	0.00	
21	130.00	Powerwave LGP21401	24	22.405	24.645	0.40	0.80	12.38	378.00	0.000	0.000	488.33	0.00	0.00	
22	130.00	Raycap DC6-48-60-18-8F	1	22.405	24.645	1.00	1.00	0.92	29.52	0.000	0.000	36.28	0.00	0.00	
23	130.00	Commscope	3	22.405	24.645	0.54	0.80	0.08	3.08	0.000	0.000	3.17	0.00	0.00	
24	130.00	Ericsson 4478 B71 RRU	3	22.405	24.645	0.54	0.80	2.65	162.00	0.000	0.000	104.62	0.00	0.00	
25	130.00	Ericsson 4449 B5/B12	3	22.405	24.645	0.54	0.80	3.17	191.70	0.000	0.000	124.91	0.00	0.00	
26	130.00	Ericsson 8843 B2/B66A	3	22.405	24.645	0.54	0.80	2.65	202.50	0.000	0.000	104.62	0.00	0.00	
27	130.00	(6) Reinforce Kit	1	22.405	24.645	0.75	0.75	7.27	207.00	0.000	0.000	286.87	0.00	0.00	
28	129.00	DMP65R-BU8DA	6	22.356	24.591	0.66	0.80	71.19	516.78	0.000	0.000	2801.18	0.00	0.00	
29	129.00	Raycap	1	22.356	24.591	1.00	1.00	4.78	23.58	0.000	0.000	188.07	0.00	0.00	
30	129.00	Raycap	1	22.356	24.591	1.00	1.00	4.78	23.58	0.000	0.000	188.07	0.00	0.00	
Totals:									9,437.78						15,541.36

Total Applied Force Summary

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 22

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		427.46	1514.86	0.00	0.00
10.00		420.35	1492.71	0.00	0.00
15.00		415.16	1470.56	0.00	0.00
20.00		409.96	1448.41	0.00	0.00
25.00		404.77	1426.26	0.00	0.00
30.00		399.91	1404.12	0.00	0.00
35.00		412.48	1381.97	0.00	0.00
40.00		422.87	1359.82	0.00	0.00
45.00		431.50	1337.67	0.00	0.00
45.50		42.96	132.55	0.00	0.00
50.00		400.39	2018.31	0.00	0.00
52.50		223.44	1106.88	0.00	0.00
55.00		223.75	577.11	0.00	0.00
60.00		454.02	1139.98	0.00	0.00
65.00		458.03	1120.99	0.00	0.00
70.00		461.21	1102.01	0.00	0.00
75.00		463.63	1083.03	0.00	0.00
80.00		465.38	1064.04	0.00	0.00
85.00		466.50	1045.06	0.00	0.00
90.00		467.07	1026.07	0.00	0.00
92.09		194.08	422.60	0.00	0.00
95.00		274.54	881.91	0.00	0.00
97.92		275.09	873.15	0.00	0.00
100.00		194.71	310.16	0.00	0.00
105.00		469.35	736.62	0.00	0.00
110.00		468.09	723.97	0.00	0.00
115.00		466.44	711.31	0.00	0.00
120.00		464.42	698.65	0.00	0.00
125.00		462.05	686.00	0.00	0.00
129.00	(8) attachments	3544.63	1103.63	0.00	0.00
130.00	(47) attachments	3166.19	2938.25	0.00	0.00
135.00		374.31	533.88	0.00	0.00
139.67		342.60	487.21	0.00	0.00
140.00		24.12	53.74	0.00	0.00
144.34		315.03	697.26	0.00	0.00
145.00		47.48	54.63	0.00	0.00
150.00	(21) attachments	4285.93	3434.93	0.00	0.00
155.00		346.14	335.82	0.00	0.00
159.00	(22) attachments	5628.15	3302.57	0.00	9713.08
	Totals:	29,214.17	43,238.68	0.00	9,713.08

Linear Appurtenance Segment Forces (Factored)

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 22

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	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.099	0.000	14.724	0.00	14.49
10.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.100	1.001	14.724	0.00	14.49
15.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.102	1.006	14.724	0.00	14.49
20.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.104	1.012	14.724	0.00	14.49
25.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.106	1.018	14.724	0.00	14.49
30.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.108	1.024	14.736	0.00	14.49
35.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.110	1.030	15.400	0.00	14.49
40.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.112	1.036	15.999	0.00	14.49
45.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.114	1.043	16.546	0.00	14.49
45.50	3" Conduit	Yes	0.50	0.000	6.00	0.25	0.00	0.116	1.047	16.599	0.00	1.45
50.00	3" Conduit	Yes	4.50	0.000	6.00	2.25	0.00	0.117	1.051	17.052	0.00	13.04
52.50	3" Conduit	Yes	2.50	0.000	6.00	1.25	0.00	0.119	1.056	17.292	0.00	7.25
55.00	3" Conduit	Yes	2.50	0.000	6.00	1.25	0.00	0.118	1.054	17.523	0.00	7.25
60.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.120	1.060	17.964	0.00	14.49
65.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.123	1.068	18.380	0.00	14.49
70.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.125	1.076	18.773	0.00	14.49
75.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.128	1.084	19.147	0.00	14.49
80.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.131	1.093	19.503	0.00	14.49
85.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.134	1.102	19.844	0.00	14.49
90.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.137	1.112	20.170	0.00	14.49
92.09	3" Conduit	Yes	2.09	0.000	6.00	1.04	0.00	0.140	1.119	20.303	0.00	6.05
95.00	3" Conduit	Yes	2.91	0.000	6.00	1.46	0.00	0.141	1.124	20.484	0.00	8.44
97.92	3" Conduit	Yes	2.92	0.000	6.00	1.46	0.00	0.144	1.131	20.662	0.00	8.46
100.00	3" Conduit	Yes	2.08	0.000	6.00	1.04	0.00	0.144	1.131	20.787	0.00	6.03
105.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.146	1.139	21.079	0.00	14.49
110.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.150	1.150	21.361	0.00	14.49
115.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.154	1.163	21.634	0.00	14.49
120.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.159	1.176	21.898	0.00	14.49
125.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.163	1.189	22.155	0.00	14.49
129.00	3" Conduit	Yes	4.00	0.000	6.00	2.00	0.00	0.167	1.202	22.356	0.00	11.59
130.00	3" Conduit	Yes	1.00	0.000	6.00	0.50	0.00	0.170	1.210	22.405	0.00	2.90
Totals:											0.0	376.7

Calculated Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

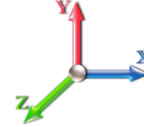


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Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 22

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	-43.21	-29.26	0.00	-3457.5	0.00	3457.58	5583.09	2791.54	13786.8	6903.66	0.00	0.000	0.000	0.509
5.00	-41.63	-28.93	0.00	-3311.2	0.00	3311.27	5522.68	2761.34	13399.4	6709.67	0.07	-0.127	0.000	0.501
10.00	-40.07	-28.59	0.00	-3166.6	0.00	3166.64	5460.99	2730.49	13014.1	6516.76	0.27	-0.254	0.000	0.493
15.00	-38.54	-28.25	0.00	-3023.7	0.00	3023.70	5398.01	2699.00	12631.2	6325.01	0.61	-0.383	0.000	0.485
20.00	-37.03	-27.92	0.00	-2882.4	0.00	2882.43	5333.74	2666.87	12250.7	6134.50	1.08	-0.513	0.000	0.477
25.00	-35.55	-27.58	0.00	-2742.8	0.00	2742.85	5268.20	2634.10	11872.9	5945.31	1.68	-0.643	0.000	0.468
30.00	-34.08	-27.24	0.00	-2604.9	0.00	2604.96	5201.36	2600.68	11497.9	5757.54	2.43	-0.775	0.000	0.459
35.00	-32.65	-26.88	0.00	-2468.7	0.00	2468.76	5133.24	2566.62	11125.9	5571.26	3.31	-0.907	0.000	0.450
40.00	-31.23	-26.51	0.00	-2334.3	0.00	2334.35	5063.83	2531.92	10757.1	5386.55	4.33	-1.039	0.000	0.440
45.00	-29.87	-26.09	0.00	-2201.8	0.00	2201.80	4993.14	2496.57	10391.5	5203.50	5.49	-1.172	0.000	0.429
45.50	-29.71	-26.08	0.00	-2188.7	0.00	2188.76	4986.00	2493.00	10355.1	5185.29	5.62	-1.186	0.000	0.428
50.00	-27.66	-25.68	0.00	-2071.4	0.00	2071.40	4921.16	2460.58	10029.4	5022.20	6.79	-1.306	0.000	0.418
52.50	-26.53	-25.46	0.00	-2007.2	0.00	2007.21	4024.48	2012.24	8260.88	4136.58	7.49	-1.374	0.000	0.492
55.00	-25.91	-25.27	0.00	-1943.5	0.00	1943.55	3997.76	1998.88	8119.79	4065.93	8.23	-1.441	0.000	0.485
60.00	-24.72	-24.85	0.00	-1817.1	0.00	1817.19	3943.34	1971.67	7839.16	3925.41	9.82	-1.588	0.000	0.469
65.00	-23.55	-24.42	0.00	-1692.9	0.00	1692.93	3887.63	1943.82	7560.73	3785.98	11.56	-1.735	0.000	0.453
70.00	-22.40	-23.98	0.00	-1570.8	0.00	1570.82	3830.65	1915.32	7284.66	3647.74	13.46	-1.881	0.000	0.437
75.00	-21.27	-23.54	0.00	-1450.9	0.00	1450.90	3772.37	1886.19	7011.11	3510.77	15.51	-2.025	0.000	0.419
80.00	-20.17	-23.08	0.00	-1333.2	0.00	1333.22	3712.81	1856.40	6740.26	3375.14	17.70	-2.167	0.000	0.401
85.00	-19.09	-22.62	0.00	-1217.8	0.00	1217.81	3651.96	1825.98	6472.27	3240.95	20.05	-2.307	0.000	0.381
90.00	-18.05	-22.14	0.00	-1104.7	0.00	1104.71	3589.83	1794.92	6207.31	3108.27	22.54	-2.443	0.000	0.361
92.09	-17.61	-21.95	0.00	-1058.5	0.00	1058.51	3563.52	1781.76	6097.66	3053.36	23.62	-2.500	0.000	0.352
95.00	-16.71	-21.66	0.00	-994.56	0.00	994.56	3526.41	1763.21	5945.54	2977.19	25.17	-2.578	0.000	0.339
97.92	-15.83	-21.36	0.00	-931.31	0.00	931.31	2018.06	1009.03	3414.14	1709.61	26.77	-2.655	0.000	0.553
100.00	-15.48	-21.19	0.00	-886.88	0.00	886.88	2007.23	1003.61	3359.78	1682.39	27.94	-2.709	0.000	0.535
105.00	-14.71	-20.73	0.00	-780.95	0.00	780.95	1980.26	990.13	3229.23	1617.01	30.87	-2.885	0.000	0.491
110.00	-13.95	-20.26	0.00	-677.32	0.00	677.32	1952.01	976.01	3098.96	1551.78	33.98	-3.051	0.000	0.444
115.00	-13.22	-19.79	0.00	-576.02	0.00	576.02	1922.48	961.24	2969.14	1486.78	37.26	-3.206	0.000	0.395
120.00	-12.50	-19.31	0.00	-477.08	0.00	477.08	1891.66	945.83	2839.95	1422.08	40.70	-3.347	0.000	0.343
125.00	-11.81	-18.83	0.00	-380.51	0.00	380.51	1859.56	929.78	2711.53	1357.78	44.27	-3.472	0.000	0.287
129.00	-10.91	-15.24	0.00	-305.17	0.00	305.17	1832.95	916.47	2609.48	1306.68	47.22	-3.560	0.000	0.240
130.00	-8.16	-11.90	0.00	-289.93	0.00	289.93	1826.17	913.08	2584.07	1293.95	47.97	-3.580	0.000	0.229
135.00	-7.64	-11.51	0.00	-230.41	0.00	230.41	1791.49	895.74	2457.72	1230.69	51.76	-3.671	0.000	0.192
139.67	-7.17	-11.14	0.00	-176.67	0.00	176.67	1757.94	878.97	2340.87	1172.18	55.39	-3.743	0.000	0.155
140.00	-7.11	-11.12	0.00	-173.00	0.00	173.00	1755.53	877.76	2332.66	1168.06	55.65	-3.748	0.000	0.152
144.34	-6.43	-10.76	0.00	-124.80	0.00	124.80	1153.87	576.93	1513.89	758.07	59.08	-3.802	0.000	0.171
145.00	-6.37	-10.71	0.00	-117.66	0.00	117.66	1151.46	575.73	1504.14	753.19	59.61	-3.810	0.000	0.162
150.00	-3.23	-6.21	0.00	-64.11	0.00	64.11	1132.60	566.30	1430.64	716.38	63.63	-3.863	0.000	0.092
155.00	-2.91	-5.84	0.00	-33.07	0.00	33.07	1112.45	556.22	1357.20	679.61	67.69	-3.895	0.000	0.051
159.00	0.00	-5.63	0.00	-9.71	0.00	9.71	1095.40	547.70	1298.60	650.26	70.96	-3.908	0.000	0.015

Wind Loading - Shaft

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



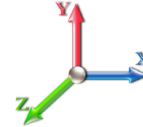
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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 22

Dead Load Factor 1.20

Wind Load Factor 1.00



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	0.70	2.724	3.00	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	2.724	3.00	0.00	1.200	1.656	5.00	26.757	32.11	96.2	634.0	2322.0
10.00		1.00	0.70	2.724	3.00	0.00	1.201 *	1.775	5.00	26.415	31.72	95.0	669.2	2327.7
15.00		1.00	0.70	2.724	3.00	0.00	1.207 *	1.848	5.00	26.036	31.44	94.2	685.7	2314.6
20.00		1.00	0.70	2.724	3.00	0.00	1.214 *	1.902	5.00	25.640	31.13	93.3	693.9	2293.3
25.00		1.00	0.70	2.724	3.00	0.00	1.221 *	1.945	5.00	25.235	30.82	92.3	697.4	2267.2
30.00		1.00	0.70	2.726	3.00	0.00	1.228 *	1.981	5.00	24.824	30.49	91.4	697.7	2238.1
35.00		1.00	0.73	2.849	3.13	0.00	1.236 *	2.012	5.00	24.409	30.17	94.5	695.8	2206.6
40.00		1.00	0.76	2.960	3.26	0.00	1.244 *	2.039	5.00	23.991	29.84	97.1	692.2	2173.5
45.00		1.00	0.79	3.061	3.37	0.00	1.252 *	2.063	5.00	23.570	29.51	99.4	687.2	2139.0
45.50 Bot - Section 2		1.00	0.79	3.071	3.38	0.00	1.256 *	2.065	0.50	2.333	2.93	9.9	68.7	212.2
50.00		1.00	0.81	3.155	3.47	0.00	1.261 *	2.085	4.50	21.099	26.60	92.3	621.9	3014.3
52.50 Top - Section 1		1.00	0.82	3.199	3.52	0.00	1.267 *	2.095	2.50	11.571	14.66	51.6	343.8	1653.8
55.00		1.00	0.83	3.242	3.57	0.00	1.265 *	2.105	2.50	11.465	14.50	51.7	342.1	945.6
60.00		1.00	0.85	3.323	3.66	0.00	1.272 *	2.123	5.00	22.616	28.76	105.1	676.5	1864.6
65.00		1.00	0.87	3.400	3.74	0.00	1.281 *	2.140	5.00	22.189	28.43	106.3	668.2	1831.0
70.00		1.00	0.89	3.473	3.82	0.00	1.291 *	2.156	5.00	21.762	28.09	107.3	659.3	1796.8
75.00		1.00	0.91	3.542	3.90	0.00	1.301 *	2.171	5.00	21.333	27.75	108.1	649.8	1762.1
80.00		1.00	0.93	3.608	3.97	0.00	1.312 *	2.185	5.00	20.904	27.42	108.8	640.0	1726.9
85.00		1.00	0.94	3.671	4.04	0.00	1.323 *	2.198	5.00	20.475	27.08	109.4	629.7	1691.3
90.00		1.00	0.96	3.731	4.10	0.00	1.334 *	2.211	5.00	20.044	26.75	109.8	619.1	1655.3
92.09 Bot - Section 3		1.00	0.97	3.756	4.13	0.00	1.343 *	2.216	2.09	8.237	11.06	45.7	256.5	681.4
95.00		1.00	0.97	3.789	4.17	0.00	1.349 *	2.223	2.91	11.498	15.51	64.7	358.4	1340.9
97.92 Top - Section 2		1.00	0.98	3.822	4.20	0.00	1.357 *	2.230	2.92	11.377	15.44	64.9	355.4	1325.8
100.00		1.00	0.99	3.845	4.23	0.00	1.357 *	2.234	2.08	8.014	10.88	46.0	251.2	526.7
105.00		1.00	1.00	3.899	4.29	0.00	1.367 *	2.245	5.00	18.962	25.91	111.2	592.2	1242.6
110.00		1.00	1.02	3.952	4.35	0.00	1.381 *	2.256	5.00	18.530	25.58	111.2	580.4	1213.9
115.00		1.00	1.03	4.002	4.40	0.00	1.395 *	2.266	5.00	18.098	25.25	111.2	568.3	1184.9
120.00		1.00	1.04	4.051	4.46	0.00	1.411 *	2.276	5.00	17.665	24.92	111.1	556.0	1155.8
125.00		1.00	1.05	4.099	4.51	0.00	1.427 *	2.285	5.00	17.232	24.59	110.9	543.5	1126.4
129.00 Appurtenance(s)		1.00	1.06	4.136	4.55	0.00	1.443 *	2.292	4.00	13.473	19.44	88.4	426.7	880.8
130.00 Appurtenance(s)		1.00	1.07	4.145	4.56	0.00	1.452 *	2.294	1.00	3.325	4.83	22.0	106.2	218.0
135.00		1.00	1.08	4.190	4.61	0.00	1.200	2.303	5.00	16.366	19.64	90.5	517.9	1067.0
139.67 Bot - Section 4		1.00	1.09	4.231	4.65	0.00	1.200	2.310	4.67	14.894	17.87	83.2	472.3	970.0
140.00		1.00	1.09	4.233	4.66	0.00	1.200	2.311	0.33	1.048	1.26	5.9	33.7	94.6
144.34 Top - Section 3		1.00	1.10	4.270	4.70	0.00	1.200	2.318	4.34	13.604	16.32	76.7	432.6	1221.2
145.00		1.00	1.10	4.276	4.70	0.00	1.200	2.319	0.66	2.052	2.46	11.6	65.9	117.2
150.00 Appurtenance(s)		1.00	1.11	4.318	4.75	0.00	1.200	2.327	5.00	15.223	18.27	86.8	483.6	862.8
155.00		1.00	1.12	4.358	4.79	0.00	1.200	2.335	5.00	14.788	17.75	85.1	470.1	836.6
159.00 Appurtenance(s)		1.00	1.13	4.390	4.83	0.00	1.200	2.341	4.00	11.517	13.82	66.7	367.3	651.4
Totals:								159.00			3,207.4	55,154.0		

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	159.00	NHH-65C-R2B	6	4.414	4.855	0.78	1.00	63.80	2618.59	0.000	3.000	309.74	0.00	929.22	
2	159.00	Low Profile Platform	1	4.390	4.829	1.00	1.00	85.36	3892.44	0.000	0.000	412.24	0.00	0.00	
3	159.00	Support Rail w/ Pipes	1	4.390	4.829	0.75	0.75	15.16	1630.38	0.000	0.000	73.23	0.00	0.00	
4	159.00	Kicker Kit	1	4.390	4.829	0.75	0.75	9.61	384.58	0.000	0.000	46.42	0.00	0.00	
5	159.00	DB-C1-12C-24AB-0Z	1	4.414	4.855	1.00	1.00	5.16	162.59	0.000	3.000	25.06	0.00	75.19	
6	159.00	MT6407-77A	3	4.414	4.855	0.70	1.00	12.56	801.95	0.000	3.000	60.98	0.00	182.94	
7	159.00	TD-850B-LTE78-43	3	4.414	4.855	0.67	1.00	4.51	329.09	0.000	3.000	21.92	0.00	65.75	
8	159.00	RFV01U-D2A	3	4.414	4.855	0.67	1.00	5.26	413.95	0.000	3.000	25.56	0.00	76.68	
9	159.00	RFV01U-D1A	3	4.414	4.855	0.67	1.00	5.26	404.47	0.000	3.000	25.56	0.00	76.68	
10	150.00	MS-H1436 (Heavy Collar	1	4.318	4.749	0.75	0.75	4.04	358.42	0.000	0.000	19.20	0.00	0.00	
11	150.00	(3) T-Arm Kit	1	4.318	4.749	0.75	0.75	28.50	1241.16	0.000	0.000	135.36	0.00	0.00	
12	150.00	MS-HR35	1	4.318	4.749	0.75	0.75	15.11	1626.40	0.000	0.000	71.78	0.00	0.00	
13	150.00	4449 B5/B12	3	4.318	4.749	0.54	0.80	4.34	428.32	0.000	0.000	20.62	0.00	0.00	
14	150.00	KRY 112 489/2	3	4.318	4.749	0.66	0.80	2.89	110.92	0.000	0.000	13.70	0.00	0.00	
15	150.00	KRY 112 144/1	3	4.318	4.749	0.56	0.80	1.75	73.42	0.000	0.000	8.33	0.00	0.00	
16	150.00	APXVAARR24_43-U-NA2	3	4.318	4.749	0.56	0.80	38.31	2204.04	0.000	0.000	181.96	0.00	0.00	
17	150.00	APX16DWV-16DWV-S-E-	3	4.318	4.749	0.50	0.80	11.87	736.71	0.000	0.000	56.38	0.00	0.00	
18	150.00	T-Arm	3	4.318	4.749	0.56	0.75	56.95	3436.17	0.000	0.000	270.50	0.00	0.00	
19	130.00	T-Frame	3	4.145	4.559	0.56	0.75	63.76	3703.97	0.000	0.000	290.72	0.00	0.00	
20	130.00	Powerwave 7770.00A	6	4.145	4.559	0.58	0.80	28.84	899.58	0.000	0.000	131.50	0.00	0.00	
21	130.00	Powerwave LGP21401	24	4.145	4.559	0.40	0.80	22.93	1394.05	0.000	0.000	104.54	0.00	0.00	
22	130.00	Raycap DC6-48-60-18-8F	1	4.145	4.559	1.00	1.00	1.50	106.48	0.000	0.000	6.82	0.00	0.00	
23	130.00	Commscope	3	4.145	4.559	0.54	0.80	0.49	11.24	0.000	0.000	2.22	0.00	0.00	
24	130.00	Ericsson 4478 B71 RRU	3	4.145	4.559	0.54	0.80	3.75	354.76	0.000	0.000	17.09	0.00	0.00	
25	130.00	Ericsson 4449 B5/B12	3	4.145	4.559	0.54	0.80	4.32	425.29	0.000	0.000	19.72	0.00	0.00	
26	130.00	Ericsson 8843 B2/B66A	3	4.145	4.559	0.54	0.80	4.47	629.59	0.000	0.000	20.37	0.00	0.00	
27	130.00	(6) Reinforce Kit	1	4.145	4.559	0.75	0.75	17.29	597.08	0.000	0.000	78.82	0.00	0.00	
28	129.00	DMP65R-BU8DA	6	4.136	4.549	0.66	0.80	80.86	3788.45	0.000	0.000	367.85	0.00	0.00	
29	129.00	Raycap	1	4.136	4.549	1.00	1.00	5.94	277.95	0.000	0.000	27.03	0.00	0.00	
30	129.00	Raycap	1	4.136	4.549	1.00	1.00	5.94	277.95	0.000	0.000	27.03	0.00	0.00	
Totals:									33,319.98						2,872.24

Total Applied Force Summary

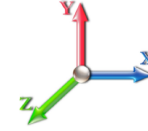
Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 22

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		96.20	2716.70	0.00	0.00
10.00		95.05	2727.65	0.00	0.00
15.00		94.19	2717.92	0.00	0.00
20.00		93.27	2699.11	0.00	0.00
25.00		92.33	2675.06	0.00	0.00
30.00		91.44	2647.56	0.00	0.00
35.00		94.54	2617.59	0.00	0.00
40.00		97.14	2585.74	0.00	0.00
45.00		99.35	2552.42	0.00	0.00
45.50		9.90	253.57	0.00	0.00
50.00		92.30	3387.38	0.00	0.00
52.50		51.59	1861.27	0.00	0.00
55.00		51.72	1153.37	0.00	0.00
60.00		105.14	2281.02	0.00	0.00
65.00		106.31	2248.24	0.00	0.00
70.00		107.31	2214.83	0.00	0.00
75.00		108.13	2180.85	0.00	0.00
80.00		108.81	2146.37	0.00	0.00
85.00		109.36	2111.45	0.00	0.00
90.00		109.79	2076.12	0.00	0.00
92.09		45.70	857.15	0.00	0.00
95.00		64.67	1586.42	0.00	0.00
97.92		64.91	1572.06	0.00	0.00
100.00		46.01	702.22	0.00	0.00
105.00		111.15	1665.07	0.00	0.00
110.00		111.20	1636.91	0.00	0.00
115.00		111.16	1608.49	0.00	0.00
120.00		111.05	1579.81	0.00	0.00
125.00		110.88	1550.90	0.00	0.00
129.00	(8) attachments	510.33	5565.09	0.00	0.00
130.00	(47) attachments	693.80	8425.03	0.00	0.00
135.00		90.51	1229.74	0.00	0.00
139.67		83.17	1121.93	0.00	0.00
140.00		5.86	105.33	0.00	0.00
144.34		76.69	1362.30	0.00	0.00
145.00		11.58	138.78	0.00	0.00
150.00	(21) attachments	864.60	11241.11	0.00	0.00
155.00		85.08	917.87	0.00	0.00
159.00	(22) attachments	1067.45	11354.48	0.00	1406.46
	Totals:	6,079.68	100,074.93	0.00	1,406.46

Linear Appurtenance Segment Forces (Factored)

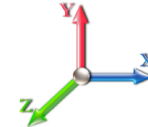
Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00

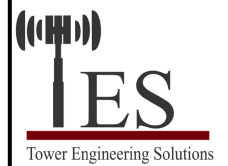


Iterations 22

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	3" Conduit	Yes	5.00	0.000	6.00	3.88	0.00	0.099	0.000	2.724	0.00	82.23
10.00	3" Conduit	Yes	5.00	0.000	6.00	3.98	0.00	0.100	1.001	2.724	0.00	87.49
15.00	3" Conduit	Yes	5.00	0.000	6.00	4.04	0.00	0.102	1.006	2.724	0.00	90.83
20.00	3" Conduit	Yes	5.00	0.000	6.00	4.09	0.00	0.104	1.012	2.724	0.00	93.32
25.00	3" Conduit	Yes	5.00	0.000	6.00	4.12	0.00	0.106	1.018	2.724	0.00	95.33
30.00	3" Conduit	Yes	5.00	0.000	6.00	4.15	0.00	0.108	1.024	2.726	0.00	97.03
35.00	3" Conduit	Yes	5.00	0.000	6.00	4.18	0.00	0.110	1.030	2.849	0.00	98.50
40.00	3" Conduit	Yes	5.00	0.000	6.00	4.20	0.00	0.112	1.036	2.960	0.00	99.80
45.00	3" Conduit	Yes	5.00	0.000	6.00	4.22	0.00	0.114	1.043	3.061	0.00	100.97
45.50	3" Conduit	Yes	0.50	0.000	6.00	0.42	0.00	0.116	1.047	3.071	0.00	10.11
50.00	3" Conduit	Yes	4.50	0.000	6.00	3.81	0.00	0.117	1.051	3.155	0.00	91.83
52.50	3" Conduit	Yes	2.50	0.000	6.00	2.12	0.00	0.119	1.056	3.199	0.00	51.26
55.00	3" Conduit	Yes	2.50	0.000	6.00	2.13	0.00	0.118	1.054	3.242	0.00	51.50
60.00	3" Conduit	Yes	5.00	0.000	6.00	4.27	0.00	0.120	1.060	3.323	0.00	103.91
65.00	3" Conduit	Yes	5.00	0.000	6.00	4.28	0.00	0.123	1.068	3.400	0.00	104.75
70.00	3" Conduit	Yes	5.00	0.000	6.00	4.30	0.00	0.125	1.076	3.473	0.00	105.54
75.00	3" Conduit	Yes	5.00	0.000	6.00	4.31	0.00	0.128	1.084	3.542	0.00	106.29
80.00	3" Conduit	Yes	5.00	0.000	6.00	4.32	0.00	0.131	1.093	3.608	0.00	106.99
85.00	3" Conduit	Yes	5.00	0.000	6.00	4.33	0.00	0.134	1.102	3.671	0.00	107.65
90.00	3" Conduit	Yes	5.00	0.000	6.00	4.34	0.00	0.137	1.112	3.731	0.00	108.29
92.09	3" Conduit	Yes	2.09	0.000	6.00	1.81	0.00	0.140	1.119	3.756	0.00	45.30
95.00	3" Conduit	Yes	2.91	0.000	6.00	2.54	0.00	0.141	1.124	3.789	0.00	63.45
97.92	3" Conduit	Yes	2.92	0.000	6.00	2.55	0.00	0.144	1.131	3.822	0.00	63.79
100.00	3" Conduit	Yes	2.08	0.000	6.00	1.81	0.00	0.144	1.131	3.845	0.00	45.54
105.00	3" Conduit	Yes	5.00	0.000	6.00	4.37	0.00	0.146	1.139	3.899	0.00	110.02
110.00	3" Conduit	Yes	5.00	0.000	6.00	4.38	0.00	0.150	1.150	3.952	0.00	110.56
115.00	3" Conduit	Yes	5.00	0.000	6.00	4.39	0.00	0.154	1.163	4.002	0.00	111.07
120.00	3" Conduit	Yes	5.00	0.000	6.00	4.40	0.00	0.159	1.176	4.051	0.00	111.56
125.00	3" Conduit	Yes	5.00	0.000	6.00	4.40	0.00	0.163	1.189	4.099	0.00	112.04
129.00	3" Conduit	Yes	4.00	0.000	6.00	3.53	0.00	0.167	1.202	4.136	0.00	89.93
130.00	3" Conduit	Yes	1.00	0.000	6.00	0.88	0.00	0.170	1.210	4.145	0.00	22.50
Totals:											0.0	2,679.4

Calculated Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

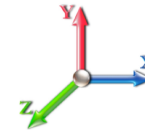


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 22

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	-100.0	-6.10	0.00	-739.23	0.00	739.23	5583.09	2791.54	13786.8	6903.66	0.00	0.000	0.000	0.125
5.00	-97.35	-6.05	0.00	-708.71	0.00	708.71	5522.68	2761.34	13399.4	6709.67	0.01	-0.027	0.000	0.123
10.00	-94.62	-6.00	0.00	-678.45	0.00	678.45	5460.99	2730.49	13014.1	6516.76	0.06	-0.054	0.000	0.121
15.00	-91.90	-5.95	0.00	-648.44	0.00	648.44	5398.01	2699.00	12631.2	6325.01	0.13	-0.082	0.000	0.120
20.00	-89.20	-5.89	0.00	-618.70	0.00	618.70	5333.74	2666.87	12250.7	6134.50	0.23	-0.110	0.000	0.118
25.00	-86.52	-5.84	0.00	-589.23	0.00	589.23	5268.20	2634.10	11872.9	5945.31	0.36	-0.138	0.000	0.116
30.00	-83.87	-5.78	0.00	-560.04	0.00	560.04	5201.36	2600.68	11497.9	5757.54	0.52	-0.166	0.000	0.113
35.00	-81.25	-5.72	0.00	-531.13	0.00	531.13	5133.24	2566.62	11125.9	5571.26	0.71	-0.195	0.000	0.111
40.00	-78.66	-5.65	0.00	-502.54	0.00	502.54	5063.83	2531.92	10757.1	5386.55	0.93	-0.223	0.000	0.109
45.00	-76.11	-5.56	0.00	-474.28	0.00	474.28	4993.14	2496.57	10391.5	5203.50	1.18	-0.252	0.000	0.106
45.50	-75.86	-5.57	0.00	-471.50	0.00	471.50	4986.00	2493.00	10355.1	5185.29	1.20	-0.255	0.000	0.106
50.00	-72.47	-5.49	0.00	-446.43	0.00	446.43	4921.16	2460.58	10029.4	5022.20	1.46	-0.280	0.000	0.104
52.50	-70.61	-5.45	0.00	-432.71	0.00	432.71	4024.48	2012.24	8260.88	4136.58	1.61	-0.295	0.000	0.122
55.00	-69.45	-5.42	0.00	-419.10	0.00	419.10	3997.76	1998.88	8119.79	4065.93	1.77	-0.310	0.000	0.120
60.00	-67.17	-5.33	0.00	-392.02	0.00	392.02	3943.34	1971.67	7839.16	3925.41	2.11	-0.341	0.000	0.117
65.00	-64.92	-5.25	0.00	-365.35	0.00	365.35	3887.63	1943.82	7560.73	3785.98	2.48	-0.373	0.000	0.113
70.00	-62.70	-5.16	0.00	-339.10	0.00	339.10	3830.65	1915.32	7284.66	3647.74	2.89	-0.404	0.000	0.109
75.00	-60.52	-5.07	0.00	-313.29	0.00	313.29	3772.37	1886.19	7011.11	3510.77	3.33	-0.436	0.000	0.105
80.00	-58.37	-4.98	0.00	-287.94	0.00	287.94	3712.81	1856.40	6740.26	3375.14	3.80	-0.466	0.000	0.101
85.00	-56.26	-4.88	0.00	-263.06	0.00	263.06	3651.96	1825.98	6472.27	3240.95	4.31	-0.496	0.000	0.097
90.00	-54.18	-4.77	0.00	-238.67	0.00	238.67	3589.83	1794.92	6207.31	3108.27	4.84	-0.526	0.000	0.092
92.09	-53.32	-4.73	0.00	-228.72	0.00	228.72	3563.52	1781.76	6097.66	3053.36	5.08	-0.538	0.000	0.090
95.00	-51.73	-4.66	0.00	-214.94	0.00	214.94	3526.41	1763.21	5945.54	2977.19	5.41	-0.555	0.000	0.087
97.92	-50.16	-4.60	0.00	-201.32	0.00	201.32	2018.06	1009.03	3414.14	1709.61	5.76	-0.572	0.000	0.143
100.00	-49.46	-4.57	0.00	-191.76	0.00	191.76	2007.23	1003.61	3359.78	1682.39	6.01	-0.583	0.000	0.139
105.00	-47.79	-4.47	0.00	-168.94	0.00	168.94	1980.26	990.13	3229.23	1617.01	6.64	-0.621	0.000	0.129
110.00	-46.15	-4.37	0.00	-146.60	0.00	146.60	1952.01	976.01	3098.96	1551.78	7.31	-0.657	0.000	0.118
115.00	-44.54	-4.26	0.00	-124.77	0.00	124.77	1922.48	961.24	2969.14	1486.78	8.02	-0.691	0.000	0.107
120.00	-42.96	-4.15	0.00	-103.47	0.00	103.47	1891.66	945.83	2839.95	1422.08	8.76	-0.722	0.000	0.095
125.00	-41.41	-4.04	0.00	-82.71	0.00	82.71	1859.56	929.78	2711.53	1357.78	9.53	-0.749	0.000	0.083
129.00	-35.85	-3.46	0.00	-66.56	0.00	66.56	1832.95	916.47	2609.48	1306.68	10.16	-0.768	0.000	0.071
130.00	-27.44	-2.66	0.00	-63.09	0.00	63.09	1826.17	913.08	2584.07	1293.95	10.33	-0.772	0.000	0.064
135.00	-26.21	-2.56	0.00	-49.80	0.00	49.80	1791.49	895.74	2457.72	1230.69	11.14	-0.792	0.000	0.055
139.67	-25.09	-2.47	0.00	-37.84	0.00	37.84	1757.94	878.97	2340.87	1172.18	11.93	-0.807	0.000	0.047
140.00	-24.98	-2.46	0.00	-37.02	0.00	37.02	1755.53	877.76	2332.66	1168.06	11.98	-0.808	0.000	0.046
144.34	-23.62	-2.37	0.00	-26.35	0.00	26.35	1153.87	576.93	1513.89	758.07	12.72	-0.820	0.000	0.055
145.00	-23.48	-2.36	0.00	-24.78	0.00	24.78	1151.46	575.73	1504.14	753.19	12.84	-0.822	0.000	0.053
150.00	-12.25	-1.33	0.00	-13.00	0.00	13.00	1132.60	566.30	1430.64	716.38	13.70	-0.833	0.000	0.029
155.00	-11.34	-1.23	0.00	-6.34	0.00	6.34	1112.45	556.22	1357.20	679.61	14.58	-0.839	0.000	0.020
159.00	0.00	-1.07	0.00	-1.41	0.00	1.41	1095.40	547.70	1298.60	650.26	15.29	-0.841	0.000	0.002

Seismic Segment Forces (Factored)

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 20
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.37	SA 0.04
				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		1406.6	0.00	0.03	0.02	23.36	
10.00		1382.0	0.01	0.05	0.03	34.11	
15.00		1357.4	0.02	0.06	0.04	39.21	
20.00		1332.8	0.03	0.07	0.04	41.50	
25.00		1308.2	0.05	0.07	0.04	42.45	
30.00		1283.6	0.07	0.07	0.04	42.83	
35.00		1259.0	0.09	0.07	0.04	43.03	
40.00		1234.4	0.12	0.07	0.03	43.15	
45.00		1209.8	0.15	0.07	0.03	43.10	
45.50	Bot - Section 2	119.63	0.15	0.07	0.03	4.27	
50.00		1993.7	0.19	0.06	0.02	71.67	
52.50	Top - Section 1	1091.6	0.21	0.06	0.02	39.16	
55.00		502.98	0.23	0.06	0.02	17.89	
60.00		990.14	0.27	0.05	0.02	33.66	
65.00		969.05	0.32	0.04	0.01	29.72	
70.00		947.96	0.37	0.03	0.01	23.76	
75.00		926.86	0.42	0.01	0.01	15.70	
80.00		905.77	0.48	-0.01	0.01	5.93	
85.00		884.67	0.54	-0.03	0.01	-4.53	
90.00		863.58	0.61	-0.05	0.02	-14.19	
92.09	Bot - Section 3	354.16	0.63	-0.07	0.02	-7.31	
95.00		818.79	0.67	-0.08	0.03	-21.01	
97.92	Top - Section 2	808.69	0.72	-0.09	0.03	-23.88	
100.00		229.60	0.75	-0.10	0.04	-7.23	
105.00		541.97	0.82	-0.12	0.06	-17.93	
110.00		527.91	0.90	-0.12	0.09	-15.93	
115.00		513.85	0.99	-0.11	0.13	-11.66	
120.00		499.78	1.08	-0.08	0.17	-5.32	
125.00		485.72	1.17	-0.02	0.23	2.89	
129.00	Appurtenance(s)	1005.0	1.24	0.05	0.29	22.61	
130.00	Appurtenance(s)	3209.4	1.26	0.07	0.30	86.94	
135.00		457.59	1.36	0.22	0.39	24.16	
139.67	Bot - Section 4	414.69	1.46	0.40	0.49	33.59	
140.00		50.76	1.47	0.42	0.50	4.22	
144.34	Top - Section 3	657.12	1.56	0.65	0.61	74.45	
145.00		42.71	1.57	0.69	0.63	5.05	
150.00	Appurtenance(s)	3680.9	1.68	1.06	0.79	581.96	
155.00		305.44	1.80	1.52	0.97	61.97	
159.00	Appurtenance(s)	3615.3	1.89	1.98	1.14	876.00	
Totals:		40,189.7				2,239.4	Total Wind: 29,214.2

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

Calculated Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 20
Gust Response Factor 1.10					Sds 0.19					Ss 0.18
Dead Load Factor 1.20			Seismic Load Factor 1.00			Sd1 0.10			S1 0.07	
Wind Load Factor 0.00		Structure Frequency (f1) 0.37		SA 0.04		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	-57.65	-2.37	0.00	-306.17	0.00	306.17	5583.09	2791.54	13786.8	6903.66	0.00	0.00	0.00	0.055
5.00	-55.63	-2.36	0.00	-294.31	0.00	294.31	5522.68	2761.34	13399.4	6709.67	0.01	-0.01	0.054	
10.00	-53.64	-2.34	0.00	-282.51	0.00	282.51	5460.99	2730.49	13014.1	6516.76	0.02	-0.02	0.053	
15.00	-51.68	-2.31	0.00	-270.83	0.00	270.83	5398.01	2699.00	12631.2	6325.01	0.05	-0.03	0.052	
20.00	-49.75	-2.27	0.00	-259.29	0.00	259.29	5333.74	2666.87	12250.7	6134.50	0.10	-0.05	0.052	
25.00	-47.85	-2.24	0.00	-247.92	0.00	247.92	5268.20	2634.10	11872.9	5945.31	0.15	-0.06	0.051	
30.00	-45.97	-2.20	0.00	-236.73	0.00	236.73	5201.36	2600.68	11497.9	5757.54	0.22	-0.07	0.050	
35.00	-44.13	-2.17	0.00	-225.71	0.00	225.71	5133.24	2566.62	11125.9	5571.26	0.30	-0.08	0.049	
40.00	-42.32	-2.13	0.00	-214.87	0.00	214.87	5063.83	2531.92	10757.1	5386.55	0.39	-0.09	0.048	
45.00	-40.53	-2.09	0.00	-204.21	0.00	204.21	4993.14	2496.57	10391.5	5203.50	0.49	-0.11	0.047	
45.50	-40.36	-2.09	0.00	-203.17	0.00	203.17	4986.00	2493.00	10355.1	5185.29	0.50	-0.11	0.047	
50.00	-37.66	-2.02	0.00	-193.76	0.00	193.76	4921.16	2460.58	10029.4	5022.20	0.61	-0.12	0.046	
52.50	-36.19	-1.98	0.00	-188.72	0.00	188.72	4024.48	2012.24	8260.88	4136.58	0.67	-0.12	0.055	
55.00	-35.42	-1.97	0.00	-183.77	0.00	183.77	3997.76	1998.88	8119.79	4065.93	0.74	-0.13	0.054	
60.00	-33.90	-1.94	0.00	-173.93	0.00	173.93	3943.34	1971.67	7839.16	3925.41	0.89	-0.15	0.053	
65.00	-32.40	-1.91	0.00	-164.24	0.00	164.24	3887.63	1943.82	7560.73	3785.98	1.05	-0.16	0.052	
70.00	-30.93	-1.89	0.00	-154.68	0.00	154.68	3830.65	1915.32	7284.66	3647.74	1.22	-0.17	0.050	
75.00	-29.49	-1.88	0.00	-145.22	0.00	145.22	3772.37	1886.19	7011.11	3510.77	1.41	-0.19	0.049	
80.00	-28.07	-1.88	0.00	-135.83	0.00	135.83	3712.81	1856.40	6740.26	3375.14	1.61	-0.20	0.048	
85.00	-26.68	-1.88	0.00	-126.45	0.00	126.45	3651.96	1825.98	6472.27	3240.95	1.83	-0.22	0.046	
90.00	-25.31	-1.88	0.00	-117.07	0.00	117.07	3589.83	1794.92	6207.31	3108.27	2.07	-0.23	0.045	
92.09	-24.74	-1.88	0.00	-113.15	0.00	113.15	3563.52	1781.76	6097.66	3053.36	2.17	-0.24	0.044	
95.00	-23.57	-1.88	0.00	-107.69	0.00	107.69	3526.41	1763.21	5945.54	2977.19	2.32	-0.25	0.043	
97.92	-22.40	-1.87	0.00	-102.21	0.00	102.21	2018.06	1009.03	3414.14	1709.61	2.47	-0.25	0.071	
100.00	-21.99	-1.88	0.00	-98.31	0.00	98.31	2007.23	1003.61	3359.78	1682.39	2.58	-0.26	0.069	
105.00	-21.01	-1.88	0.00	-88.93	0.00	88.93	1980.26	990.13	3229.23	1617.01	2.86	-0.28	0.066	
110.00	-20.04	-1.88	0.00	-79.54	0.00	79.54	1952.01	976.01	3098.96	1551.78	3.17	-0.30	0.062	
115.00	-19.09	-1.88	0.00	-70.13	0.00	70.13	1922.48	961.24	2969.14	1486.78	3.49	-0.32	0.057	
120.00	-18.16	-1.88	0.00	-60.73	0.00	60.73	1891.66	945.83	2839.95	1422.08	3.83	-0.33	0.052	
125.00	-17.24	-1.88	0.00	-51.32	0.00	51.32	1859.56	929.78	2711.53	1357.78	4.19	-0.35	0.047	
129.00	-15.77	-1.85	0.00	-43.81	0.00	43.81	1832.95	916.47	2609.48	1306.68	4.49	-0.36	0.042	
130.00	-11.86	-1.74	0.00	-41.96	0.00	41.96	1826.17	913.08	2584.07	1293.95	4.57	-0.37	0.039	
135.00	-11.14	-1.71	0.00	-33.27	0.00	33.27	1791.49	895.74	2457.72	1230.69	4.96	-0.38	0.033	
139.67	-10.49	-1.67	0.00	-25.28	0.00	25.28	1757.94	878.97	2340.87	1172.18	5.33	-0.39	0.028	
140.00	-10.42	-1.67	0.00	-24.72	0.00	24.72	1755.53	877.76	2332.66	1168.06	5.36	-0.39	0.027	
144.34	-9.49	-1.59	0.00	-17.48	0.00	17.48	1153.87	576.93	1513.89	758.07	5.72	-0.40	0.031	
145.00	-9.42	-1.59	0.00	-16.42	0.00	16.42	1151.46	575.73	1504.14	753.19	5.77	-0.40	0.030	
150.00	-4.84	-0.97	0.00	-8.49	0.00	8.49	1132.60	566.30	1430.64	716.38	6.20	-0.41	0.016	
155.00	-4.40	-0.91	0.00	-3.63	0.00	3.63	1112.45	556.22	1357.20	679.61	6.62	-0.41	0.009	
159.00	0.00	-0.88	0.00	0.00	0.00	0.00	1095.40	547.70	1298.60	650.26	6.97	-0.41	0.000	

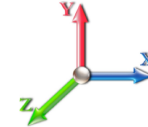
Seismic Segment Forces (Factored)

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 20
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.37	SA 0.04
				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		1406.6	0.00	0.03	0.02	23.36	
10.00		1382.0	0.01	0.05	0.03	34.11	
15.00		1357.4	0.02	0.06	0.04	39.21	
20.00		1332.8	0.03	0.07	0.04	41.50	
25.00		1308.2	0.05	0.07	0.04	42.45	
30.00		1283.6	0.07	0.07	0.04	42.83	
35.00		1259.0	0.09	0.07	0.04	43.03	
40.00		1234.4	0.12	0.07	0.03	43.15	
45.00		1209.8	0.15	0.07	0.03	43.10	
45.50	Bot - Section 2	119.63	0.15	0.07	0.03	4.27	
50.00		1993.7	0.19	0.06	0.02	71.67	
52.50	Top - Section 1	1091.6	0.21	0.06	0.02	39.16	
55.00		502.98	0.23	0.06	0.02	17.89	
60.00		990.14	0.27	0.05	0.02	33.66	
65.00		969.05	0.32	0.04	0.01	29.72	
70.00		947.96	0.37	0.03	0.01	23.76	
75.00		926.86	0.42	0.01	0.01	15.70	
80.00		905.77	0.48	-0.01	0.01	5.93	
85.00		884.67	0.54	-0.03	0.01	-4.53	
90.00		863.58	0.61	-0.05	0.02	-14.19	
92.09	Bot - Section 3	354.16	0.63	-0.07	0.02	-7.31	
95.00		818.79	0.67	-0.08	0.03	-21.01	
97.92	Top - Section 2	808.69	0.72	-0.09	0.03	-23.88	
100.00		229.60	0.75	-0.10	0.04	-7.23	
105.00		541.97	0.82	-0.12	0.06	-17.93	
110.00		527.91	0.90	-0.12	0.09	-15.93	
115.00		513.85	0.99	-0.11	0.13	-11.66	
120.00		499.78	1.08	-0.08	0.17	-5.32	
125.00		485.72	1.17	-0.02	0.23	2.89	
129.00	Appurtenance(s)	1005.0	1.24	0.05	0.29	22.61	
130.00	Appurtenance(s)	3209.4	1.26	0.07	0.30	86.94	
135.00		457.59	1.36	0.22	0.39	24.16	
139.67	Bot - Section 4	414.69	1.46	0.40	0.49	33.59	
140.00		50.76	1.47	0.42	0.50	4.22	
144.34	Top - Section 3	657.12	1.56	0.65	0.61	74.45	
145.00		42.71	1.57	0.69	0.63	5.05	
150.00	Appurtenance(s)	3680.9	1.68	1.06	0.79	581.96	
155.00		305.44	1.80	1.52	0.97	61.97	
159.00	Appurtenance(s)	3615.3	1.89	1.98	1.14	876.00	
Totals:		40,189.7				2,239.4	Total Wind: 29,214.2

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

Calculated Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 20
Gust Response Factor 1.10					Sds 0.19					Ss 0.18
Dead Load Factor 0.90			Seismic Load Factor 1.00			Sd1 0.10			S1 0.07	
Wind Load Factor 0.00		Structure Frequency (f1) 0.37		SA 0.04		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	-43.24	-2.37	0.00	-303.05	0.00	303.05	5583.09	2791.54	13786.8	6903.66	0.00	0.00	0.00	0.052
5.00	-41.72	-2.36	0.00	-291.20	0.00	291.20	5522.68	2761.34	13399.4	6709.67	0.01	-0.01	0.051	
10.00	-40.23	-2.33	0.00	-279.42	0.00	279.42	5460.99	2730.49	13014.1	6516.76	0.02	-0.02	0.050	
15.00	-38.76	-2.30	0.00	-267.77	0.00	267.77	5398.01	2699.00	12631.2	6325.01	0.05	-0.03	0.050	
20.00	-37.31	-2.26	0.00	-256.28	0.00	256.28	5333.74	2666.87	12250.7	6134.50	0.09	-0.05	0.049	
25.00	-35.88	-2.23	0.00	-244.97	0.00	244.97	5268.20	2634.10	11872.9	5945.31	0.15	-0.06	0.048	
30.00	-34.48	-2.19	0.00	-233.84	0.00	233.84	5201.36	2600.68	11497.9	5757.54	0.21	-0.07	0.047	
35.00	-33.10	-2.15	0.00	-222.90	0.00	222.90	5133.24	2566.62	11125.9	5571.26	0.29	-0.08	0.046	
40.00	-31.74	-2.11	0.00	-212.15	0.00	212.15	5063.83	2531.92	10757.1	5386.55	0.38	-0.09	0.046	
45.00	-30.40	-2.07	0.00	-201.59	0.00	201.59	4993.14	2496.57	10391.5	5203.50	0.49	-0.10	0.045	
45.50	-30.27	-2.07	0.00	-200.55	0.00	200.55	4986.00	2493.00	10355.1	5185.29	0.50	-0.11	0.045	
50.00	-28.25	-2.00	0.00	-191.24	0.00	191.24	4921.16	2460.58	10029.4	5022.20	0.60	-0.12	0.044	
52.50	-27.14	-1.96	0.00	-186.25	0.00	186.25	4024.48	2012.24	8260.88	4136.58	0.67	-0.12	0.052	
55.00	-26.56	-1.94	0.00	-181.35	0.00	181.35	3997.76	1998.88	8119.79	4065.93	0.73	-0.13	0.051	
60.00	-25.42	-1.91	0.00	-171.62	0.00	171.62	3943.34	1971.67	7839.16	3925.41	0.88	-0.14	0.050	
65.00	-24.30	-1.89	0.00	-162.05	0.00	162.05	3887.63	1943.82	7560.73	3785.98	1.03	-0.16	0.049	
70.00	-23.20	-1.87	0.00	-152.61	0.00	152.61	3830.65	1915.32	7284.66	3647.74	1.21	-0.17	0.048	
75.00	-22.12	-1.85	0.00	-143.28	0.00	143.28	3772.37	1886.19	7011.11	3510.77	1.39	-0.19	0.047	
80.00	-21.05	-1.85	0.00	-134.01	0.00	134.01	3712.81	1856.40	6740.26	3375.14	1.59	-0.20	0.045	
85.00	-20.01	-1.85	0.00	-124.77	0.00	124.77	3651.96	1825.98	6472.27	3240.95	1.81	-0.21	0.044	
90.00	-18.98	-1.85	0.00	-115.52	0.00	115.52	3589.83	1794.92	6207.31	3108.27	2.04	-0.23	0.042	
92.09	-18.56	-1.85	0.00	-111.66	0.00	111.66	3563.52	1781.76	6097.66	3053.36	2.14	-0.23	0.042	
95.00	-17.67	-1.85	0.00	-106.27	0.00	106.27	3526.41	1763.21	5945.54	2977.19	2.29	-0.24	0.041	
97.92	-16.80	-1.85	0.00	-100.87	0.00	100.87	2018.06	1009.03	3414.14	1709.61	2.44	-0.25	0.067	
100.00	-16.49	-1.85	0.00	-97.03	0.00	97.03	2007.23	1003.61	3359.78	1682.39	2.55	-0.26	0.066	
105.00	-15.75	-1.85	0.00	-87.78	0.00	87.78	1980.26	990.13	3229.23	1617.01	2.83	-0.28	0.062	
110.00	-15.03	-1.85	0.00	-78.53	0.00	78.53	1952.01	976.01	3098.96	1551.78	3.13	-0.29	0.058	
115.00	-14.32	-1.85	0.00	-69.26	0.00	69.26	1922.48	961.24	2969.14	1486.78	3.45	-0.31	0.054	
120.00	-13.62	-1.85	0.00	-60.00	0.00	60.00	1891.66	945.83	2839.95	1422.08	3.78	-0.33	0.049	
125.00	-12.93	-1.85	0.00	-50.73	0.00	50.73	1859.56	929.78	2711.53	1357.78	4.14	-0.35	0.044	
129.00	-11.83	-1.82	0.00	-43.33	0.00	43.33	1832.95	916.47	2609.48	1306.68	4.43	-0.36	0.040	
130.00	-8.89	-1.72	0.00	-41.51	0.00	41.51	1826.17	913.08	2584.07	1293.95	4.51	-0.36	0.037	
135.00	-8.36	-1.69	0.00	-32.92	0.00	32.92	1791.49	895.74	2457.72	1230.69	4.90	-0.37	0.031	
139.67	-7.87	-1.66	0.00	-25.01	0.00	25.01	1757.94	878.97	2340.87	1172.18	5.27	-0.38	0.026	
140.00	-7.81	-1.65	0.00	-24.47	0.00	24.47	1755.53	877.76	2332.66	1168.06	5.29	-0.39	0.025	
144.34	-7.12	-1.57	0.00	-17.30	0.00	17.30	1153.87	576.93	1513.89	758.07	5.65	-0.39	0.029	
145.00	-7.06	-1.57	0.00	-16.26	0.00	16.26	1151.46	575.73	1504.14	753.19	5.70	-0.39	0.028	
150.00	-3.63	-0.96	0.00	-8.41	0.00	8.41	1132.60	566.30	1430.64	716.38	6.12	-0.40	0.015	
155.00	-3.30	-0.90	0.00	-3.60	0.00	3.60	1112.45	556.22	1357.20	679.61	6.54	-0.41	0.008	
159.00	0.00	-0.88	0.00	0.00	0.00	0.00	1095.40	547.70	1298.60	650.26	6.88	-0.41	0.000	

Wind Loading - Shaft

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



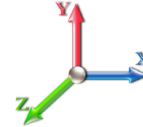
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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 21

Dead Load Factor 1.00

Wind Load Factor 1.00



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	0.70	6.129	6.74	256.99	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	252.57	0.650	0.000	5.00	25.377	16.49	111.2	0.0	1406.7
10.00		1.00	0.70	6.129	6.74	248.14	0.650 *	0.000	5.00	24.936	16.22	109.4	0.0	1382.1
15.00		1.00	0.70	6.129	6.74	243.72	0.654 *	0.000	5.00	24.495	16.02	108.0	0.0	1357.5
20.00		1.00	0.70	6.129	6.74	239.29	0.658 *	0.000	5.00	24.055	15.82	106.6	0.0	1332.8
25.00		1.00	0.70	6.129	6.74	234.87	0.661 *	0.000	5.00	23.614	15.62	105.3	0.0	1308.2
30.00		1.00	0.70	6.134	6.75	230.54	0.665 *	0.000	5.00	23.173	15.42	104.0	0.0	1283.6
35.00		1.00	0.73	6.410	7.05	231.15	0.669 *	0.000	5.00	22.733	15.22	107.3	0.0	1259.0
40.00		1.00	0.76	6.659	7.33	230.99	0.674 *	0.000	5.00	22.292	15.02	110.0	0.0	1234.4
45.00		1.00	0.79	6.887	7.58	230.22	0.678 *	0.000	5.00	21.851	14.82	112.3	0.0	1209.8
45.50 Bot - Section 2		1.00	0.79	6.909	7.60	230.11	0.681 *	0.000	0.50	2.161	1.47	11.2	0.0	119.6
50.00		1.00	0.81	7.098	7.81	228.95	0.683 *	0.000	4.50	19.535	13.34	104.2	0.0	1993.7
52.50 Top - Section 1		1.00	0.82	7.197	7.92	228.15	0.686 *	0.000	2.50	10.699	7.34	58.1	0.0	1091.6
55.00		1.00	0.83	7.294	8.02	230.73	0.685 *	0.000	2.50	10.588	7.26	58.2	0.0	503.0
60.00		1.00	0.85	7.477	8.22	228.73	0.689 *	0.000	5.00	20.846	14.36	118.1	0.0	990.1
65.00		1.00	0.87	7.650	8.42	226.42	0.694 *	0.000	5.00	20.405	14.16	119.2	0.0	969.0
70.00		1.00	0.89	7.814	8.60	223.83	0.699 *	0.000	5.00	19.965	13.96	120.0	0.0	948.0
75.00		1.00	0.91	7.969	8.77	221.01	0.705 *	0.000	5.00	19.524	13.76	120.6	0.0	926.9
80.00		1.00	0.93	8.118	8.93	217.96	0.710 *	0.000	5.00	19.083	13.56	121.1	0.0	905.8
85.00		1.00	0.94	8.260	9.09	214.72	0.716 *	0.000	5.00	18.643	13.36	121.4	0.0	884.7
90.00		1.00	0.96	8.396	9.24	211.30	0.723 *	0.000	5.00	18.202	13.16	121.5	0.0	863.6
92.09 Bot - Section 3		1.00	0.97	8.451	9.30	209.82	0.728 *	0.000	2.09	7.466	5.43	50.5	0.0	354.2
95.00		1.00	0.97	8.526	9.38	207.72	0.731 *	0.000	2.91	10.419	7.61	71.4	0.0	818.8
97.92 Top - Section 2		1.00	0.98	8.600	9.46	205.56	0.735 *	0.000	2.92	10.292	7.56	71.6	0.0	808.7
100.00		1.00	0.99	8.652	9.52	206.51	0.735 *	0.000	2.08	7.240	5.32	50.7	0.0	229.6
105.00		1.00	1.00	8.774	9.65	202.66	0.740 *	0.000	5.00	17.091	12.65	122.1	0.0	542.0
110.00		1.00	1.02	8.891	9.78	198.69	0.748 *	0.000	5.00	16.651	12.45	121.8	0.0	527.9
115.00		1.00	1.03	9.005	9.91	194.59	0.756 *	0.000	5.00	16.210	12.25	121.3	0.0	513.8
120.00		1.00	1.04	9.115	10.03	190.38	0.764 *	0.000	5.00	15.769	12.05	120.8	0.0	499.8
125.00		1.00	1.05	9.222	10.14	186.06	0.773 *	0.000	5.00	15.328	11.85	120.2	0.0	485.7
129.00 Appurtenance(s)		1.00	1.06	9.305	10.24	182.54	0.781 *	0.000	4.00	11.945	9.34	95.6	0.0	378.5
130.00 Appurtenance(s)		1.00	1.07	9.326	10.26	181.65	0.786 *	0.000	1.00	2.942	2.31	23.7	0.0	93.2
135.00		1.00	1.08	9.427	10.37	177.15	0.650	0.000	5.00	14.447	9.39	97.4	0.0	457.6
139.67 Bot - Section 4		1.00	1.09	9.519	10.47	172.86	0.650	0.000	4.67	13.095	8.51	89.1	0.0	414.7
140.00		1.00	1.09	9.525	10.48	172.55	0.650	0.000	0.33	0.921	0.60	6.3	0.0	50.8
144.34 Top - Section 3		1.00	1.10	9.609	10.57	168.50	0.650	0.000	4.34	11.929	7.75	82.0	0.0	657.1
145.00		1.00	1.10	9.621	10.58	169.87	0.650	0.000	0.66	1.795	1.17	12.4	0.0	42.7
150.00 Appurtenance(s)		1.00	1.11	9.715	10.69	165.12	0.650	0.000	5.00	13.283	8.63	92.3	0.0	316.0
155.00		1.00	1.12	9.806	10.79	160.30	0.650	0.000	5.00	12.843	8.35	90.0	0.0	305.4
159.00 Appurtenance(s)		1.00	1.13	9.878	10.87	156.39	0.650	0.000	4.00	9.957	6.47	70.3	0.0	236.8
Totals:									159.00			3,556.9		29,703.3

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	159.00	NHH-65C-R2B	6	9.931	10.924	0.78	1.00	53.31	309.60	0.000	3.000	582.30	0.00	1746.91	
2	159.00	Low Profile Platform	1	9.878	10.866	1.00	1.00	40.20	1600.00	0.000	0.000	436.80	0.00	0.00	
3	159.00	Support Rail w/ Pipes	1	9.878	10.866	0.75	0.75	6.56	430.00	0.000	0.000	71.31	0.00	0.00	
4	159.00	Kicker Kit	1	9.878	10.866	0.75	0.75	4.00	146.00	0.000	0.000	43.44	0.00	0.00	
5	159.00	DB-C1-12C-24AB-0Z	1	9.931	10.924	1.00	1.00	4.06	32.00	0.000	3.000	44.35	0.00	133.05	
6	159.00	MT6407-77A	3	9.931	10.924	0.70	1.00	9.85	238.20	0.000	3.000	107.59	0.00	322.77	
7	159.00	TD-850B-LTE78-43	3	9.931	10.924	0.67	1.00	2.33	158.70	0.000	3.000	25.47	0.00	76.41	
8	159.00	RFV01U-D2A	3	9.931	10.924	0.67	1.00	3.78	210.90	0.000	3.000	41.28	0.00	123.84	
9	159.00	RFV01U-D1A	3	9.931	10.924	0.67	1.00	3.78	253.20	0.000	3.000	41.28	0.00	123.84	
10	150.00	MS-H1436 (Heavy Collar	1	9.715	10.686	0.75	0.75	1.69	136.70	0.000	0.000	18.03	0.00	0.00	
11	150.00	(3) T-Arm Kit	1	9.715	10.686	0.75	0.75	12.38	500.00	0.000	0.000	132.24	0.00	0.00	
12	150.00	MS-HR35	1	9.715	10.686	0.75	0.75	6.56	430.00	0.000	0.000	70.13	0.00	0.00	
13	150.00	4449 B5/B12	3	9.715	10.686	0.54	0.80	3.17	213.00	0.000	0.000	33.85	0.00	0.00	
14	150.00	KRY 112 489/2	3	9.715	10.686	0.66	0.80	1.28	46.20	0.000	0.000	13.67	0.00	0.00	
15	150.00	KRY 112 144/1	3	9.715	10.686	0.56	0.80	0.69	33.00	0.000	0.000	7.36	0.00	0.00	
16	150.00	APXVAARR24_43-U-NA2	3	9.715	10.686	0.56	0.80	34.00	384.00	0.000	0.000	363.37	0.00	0.00	
17	150.00	APX16DWW-16DWW-S-E-	3	9.715	10.686	0.50	0.80	9.61	122.10	0.000	0.000	102.72	0.00	0.00	
18	150.00	T-Arm	3	9.715	10.686	0.56	0.75	26.32	1500.00	0.000	0.000	281.32	0.00	0.00	
19	130.00	T-Frame	3	9.326	10.258	0.56	0.75	29.70	1650.00	0.000	0.000	304.67	0.00	0.00	
20	130.00	Powerwave 7770.00A	6	9.326	10.258	0.58	0.80	19.15	162.00	0.000	0.000	196.41	0.00	0.00	
21	130.00	Powerwave LGP21401	24	9.326	10.258	0.40	0.80	12.38	420.00	0.000	0.000	127.04	0.00	0.00	
22	130.00	Raycap DC6-48-60-18-8F	1	9.326	10.258	1.00	1.00	0.92	32.80	0.000	0.000	9.44	0.00	0.00	
23	130.00	Commscope	3	9.326	10.258	0.54	0.80	0.08	3.42	0.000	0.000	0.82	0.00	0.00	
24	130.00	Ericsson 4478 B71 RRU	3	9.326	10.258	0.54	0.80	2.65	180.00	0.000	0.000	27.22	0.00	0.00	
25	130.00	Ericsson 4449 B5/B12	3	9.326	10.258	0.54	0.80	3.17	213.00	0.000	0.000	32.50	0.00	0.00	
26	130.00	Ericsson 8843 B2/B66A	3	9.326	10.258	0.54	0.80	2.65	225.00	0.000	0.000	27.22	0.00	0.00	
27	130.00	(6) Reinforce Kit	1	9.326	10.258	0.75	0.75	7.27	230.00	0.000	0.000	74.63	0.00	0.00	
28	129.00	DMP65R-BU8DA	6	9.305	10.236	0.66	0.80	71.19	574.20	0.000	0.000	728.72	0.00	0.00	
29	129.00	Raycap	1	9.305	10.236	1.00	1.00	4.78	26.20	0.000	0.000	48.93	0.00	0.00	
30	129.00	Raycap	1	9.305	10.236	1.00	1.00	4.78	26.20	0.000	0.000	48.93	0.00	0.00	
Totals:									10,486.42						4,043.02

Total Applied Force Summary

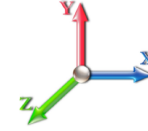
Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 21

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		111.20	1683.18	0.00	0.00
10.00		109.35	1658.57	0.00	0.00
15.00		108.00	1633.96	0.00	0.00
20.00		106.65	1609.35	0.00	0.00
25.00		105.30	1584.74	0.00	0.00
30.00		104.03	1560.13	0.00	0.00
35.00		107.30	1535.52	0.00	0.00
40.00		110.01	1510.91	0.00	0.00
45.00		112.25	1486.30	0.00	0.00
45.50		11.18	147.28	0.00	0.00
50.00		104.16	2242.56	0.00	0.00
52.50		58.13	1229.87	0.00	0.00
55.00		58.21	641.23	0.00	0.00
60.00		118.11	1266.64	0.00	0.00
65.00		119.15	1245.55	0.00	0.00
70.00		119.98	1224.46	0.00	0.00
75.00		120.61	1203.36	0.00	0.00
80.00		121.07	1182.27	0.00	0.00
85.00		121.36	1161.17	0.00	0.00
90.00		121.51	1140.08	0.00	0.00
92.09		50.49	469.56	0.00	0.00
95.00		71.42	979.90	0.00	0.00
97.92		71.56	970.16	0.00	0.00
100.00		50.65	344.63	0.00	0.00
105.00		122.10	818.47	0.00	0.00
110.00		121.77	804.41	0.00	0.00
115.00		121.34	790.35	0.00	0.00
120.00		120.82	776.28	0.00	0.00
125.00		120.20	762.22	0.00	0.00
129.00	(8) attachments	922.12	1226.25	0.00	0.00
130.00	(47) attachments	823.67	3264.73	0.00	0.00
135.00		97.37	593.19	0.00	0.00
139.67		89.13	541.34	0.00	0.00
140.00		6.27	59.71	0.00	0.00
144.34		81.95	774.73	0.00	0.00
145.00		12.35	60.70	0.00	0.00
150.00	(21) attachments	1114.97	3816.59	0.00	0.00
155.00		90.05	373.14	0.00	0.00
159.00	(22) attachments	1464.14	3669.52	0.00	2526.82
	Totals:	7,599.94	48,042.98	0.00	2,526.82

Linear Appurtenance Segment Forces (Factored)

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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 21

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	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.099	0.000	6.129	0.00	16.10
10.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.100	1.001	6.129	0.00	16.10
15.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.102	1.006	6.129	0.00	16.10
20.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.104	1.012	6.129	0.00	16.10
25.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.106	1.018	6.129	0.00	16.10
30.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.108	1.024	6.134	0.00	16.10
35.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.110	1.030	6.410	0.00	16.10
40.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.112	1.036	6.659	0.00	16.10
45.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.114	1.043	6.887	0.00	16.10
45.50	3" Conduit	Yes	0.50	0.000	6.00	0.25	0.00	0.116	1.047	6.909	0.00	1.61
50.00	3" Conduit	Yes	4.50	0.000	6.00	2.25	0.00	0.117	1.051	7.098	0.00	14.49
52.50	3" Conduit	Yes	2.50	0.000	6.00	1.25	0.00	0.119	1.056	7.197	0.00	8.05
55.00	3" Conduit	Yes	2.50	0.000	6.00	1.25	0.00	0.118	1.054	7.294	0.00	8.05
60.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.120	1.060	7.477	0.00	16.10
65.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.123	1.068	7.650	0.00	16.10
70.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.125	1.076	7.814	0.00	16.10
75.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.128	1.084	7.969	0.00	16.10
80.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.131	1.093	8.118	0.00	16.10
85.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.134	1.102	8.260	0.00	16.10
90.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.137	1.112	8.396	0.00	16.10
92.09	3" Conduit	Yes	2.09	0.000	6.00	1.04	0.00	0.140	1.119	8.451	0.00	6.72
95.00	3" Conduit	Yes	2.91	0.000	6.00	1.46	0.00	0.141	1.124	8.526	0.00	9.38
97.92	3" Conduit	Yes	2.92	0.000	6.00	1.46	0.00	0.144	1.131	8.600	0.00	9.40
100.00	3" Conduit	Yes	2.08	0.000	6.00	1.04	0.00	0.144	1.131	8.652	0.00	6.70
105.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.146	1.139	8.774	0.00	16.10
110.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.150	1.150	8.891	0.00	16.10
115.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.154	1.163	9.005	0.00	16.10
120.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.159	1.176	9.115	0.00	16.10
125.00	3" Conduit	Yes	5.00	0.000	6.00	2.50	0.00	0.163	1.189	9.222	0.00	16.10
129.00	3" Conduit	Yes	4.00	0.000	6.00	2.00	0.00	0.167	1.202	9.305	0.00	12.88
130.00	3" Conduit	Yes	1.00	0.000	6.00	0.50	0.00	0.170	1.210	9.326	0.00	3.22
Totals:											0.0	418.6

Calculated Forces

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

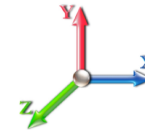


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 21

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.04	-7.61	0.00	-902.83	0.00	902.83	5583.09	2791.54	13786.8	6903.66	0.00	0.000	0.000	0.139
5.00	-46.35	-7.53	0.00	-864.76	0.00	864.76	5522.68	2761.34	13399.4	6709.67	0.02	-0.033	0.000	0.137
10.00	-44.69	-7.44	0.00	-827.12	0.00	827.12	5460.99	2730.49	13014.1	6516.76	0.07	-0.066	0.000	0.135
15.00	-43.05	-7.36	0.00	-789.91	0.00	789.91	5398.01	2699.00	12631.2	6325.01	0.16	-0.100	0.000	0.133
20.00	-41.44	-7.27	0.00	-753.11	0.00	753.11	5333.74	2666.87	12250.7	6134.50	0.28	-0.134	0.000	0.131
25.00	-39.85	-7.19	0.00	-716.75	0.00	716.75	5268.20	2634.10	11872.9	5945.31	0.44	-0.168	0.000	0.128
30.00	-38.29	-7.10	0.00	-680.81	0.00	680.81	5201.36	2600.68	11497.9	5757.54	0.63	-0.202	0.000	0.126
35.00	-36.75	-7.01	0.00	-645.30	0.00	645.30	5133.24	2566.62	11125.9	5571.26	0.86	-0.237	0.000	0.123
40.00	-35.23	-6.92	0.00	-610.25	0.00	610.25	5063.83	2531.92	10757.1	5386.55	1.13	-0.272	0.000	0.120
45.00	-33.74	-6.81	0.00	-575.67	0.00	575.67	4993.14	2496.57	10391.5	5203.50	1.43	-0.306	0.000	0.117
45.50	-33.59	-6.81	0.00	-572.27	0.00	572.27	4986.00	2493.00	10355.1	5185.29	1.47	-0.310	0.000	0.117
50.00	-31.35	-6.70	0.00	-541.65	0.00	541.65	4921.16	2460.58	10029.4	5022.20	1.77	-0.341	0.000	0.114
52.50	-30.12	-6.65	0.00	-524.90	0.00	524.90	4024.48	2012.24	8260.88	4136.58	1.96	-0.359	0.000	0.134
55.00	-29.47	-6.60	0.00	-508.28	0.00	508.28	3997.76	1998.88	8119.79	4065.93	2.15	-0.377	0.000	0.132
60.00	-28.20	-6.49	0.00	-475.30	0.00	475.30	3943.34	1971.67	7839.16	3925.41	2.57	-0.415	0.000	0.128
65.00	-26.96	-6.38	0.00	-442.85	0.00	442.85	3887.63	1943.82	7560.73	3785.98	3.02	-0.454	0.000	0.124
70.00	-25.73	-6.27	0.00	-410.96	0.00	410.96	3830.65	1915.32	7284.66	3647.74	3.52	-0.492	0.000	0.119
75.00	-24.52	-6.15	0.00	-379.63	0.00	379.63	3772.37	1886.19	7011.11	3510.77	4.05	-0.529	0.000	0.115
80.00	-23.34	-6.03	0.00	-348.88	0.00	348.88	3712.81	1856.40	6740.26	3375.14	4.63	-0.566	0.000	0.110
85.00	-22.17	-5.91	0.00	-318.71	0.00	318.71	3651.96	1825.98	6472.27	3240.95	5.24	-0.603	0.000	0.104
90.00	-21.03	-5.79	0.00	-289.14	0.00	289.14	3589.83	1794.92	6207.31	3108.27	5.89	-0.639	0.000	0.099
92.09	-20.56	-5.74	0.00	-277.06	0.00	277.06	3563.52	1781.76	6097.66	3053.36	6.17	-0.654	0.000	0.097
95.00	-19.58	-5.66	0.00	-260.34	0.00	260.34	3526.41	1763.21	5945.54	2977.19	6.58	-0.674	0.000	0.093
97.92	-18.61	-5.59	0.00	-243.80	0.00	243.80	2018.06	1009.03	3414.14	1709.61	7.00	-0.694	0.000	0.152
100.00	-18.26	-5.54	0.00	-232.18	0.00	232.18	2007.23	1003.61	3359.78	1682.39	7.30	-0.708	0.000	0.147
105.00	-17.44	-5.42	0.00	-204.47	0.00	204.47	1980.26	990.13	3229.23	1617.01	8.07	-0.754	0.000	0.135
110.00	-16.63	-5.30	0.00	-177.36	0.00	177.36	1952.01	976.01	3098.96	1551.78	8.88	-0.798	0.000	0.123
115.00	-15.84	-5.18	0.00	-150.85	0.00	150.85	1922.48	961.24	2969.14	1486.78	9.74	-0.839	0.000	0.110
120.00	-15.07	-5.06	0.00	-124.95	0.00	124.95	1891.66	945.83	2839.95	1422.08	10.64	-0.875	0.000	0.096
125.00	-14.30	-4.93	0.00	-99.67	0.00	99.67	1859.56	929.78	2711.53	1357.78	11.58	-0.908	0.000	0.081
129.00	-13.09	-3.99	0.00	-79.94	0.00	79.94	1832.95	916.47	2609.48	1306.68	12.35	-0.931	0.000	0.068
130.00	-9.84	-3.12	0.00	-75.94	0.00	75.94	1826.17	913.08	2584.07	1293.95	12.54	-0.936	0.000	0.064
135.00	-9.25	-3.02	0.00	-60.35	0.00	60.35	1791.49	895.74	2457.72	1230.69	13.54	-0.960	0.000	0.054
139.67	-8.71	-2.92	0.00	-46.27	0.00	46.27	1757.94	878.97	2340.87	1172.18	14.49	-0.979	0.000	0.044
140.00	-8.65	-2.91	0.00	-45.30	0.00	45.30	1755.53	877.76	2332.66	1168.06	14.55	-0.980	0.000	0.044
144.34	-7.87	-2.82	0.00	-32.67	0.00	32.67	1153.87	576.93	1513.89	758.07	15.45	-0.995	0.000	0.050
145.00	-7.81	-2.81	0.00	-30.80	0.00	30.80	1151.46	575.73	1504.14	753.19	15.59	-0.997	0.000	0.048
150.00	-4.01	-1.63	0.00	-16.77	0.00	16.77	1132.60	566.30	1430.64	716.38	16.64	-1.011	0.000	0.027
155.00	-3.64	-1.53	0.00	-8.64	0.00	8.64	1112.45	556.22	1357.20	679.61	17.71	-1.019	0.000	0.016
159.00	0.00	-1.46	0.00	-2.53	0.00	2.53	1095.40	547.70	1298.60	650.26	18.56	-1.022	0.000	0.004

Final Analysis Summary

Structure: CT12219-A-SBA	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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	29.3	0.00	57.62	0.00	0.00	3490.70
0.9D + 1.6W 93 mph Wind	29.3	0.00	43.21	0.00	0.00	3457.58
1.2D + 1.0Di + 1.0Wi 40 mph Wind	6.1	0.00	100.07	0.00	0.00	739.23
1.2D + 1.0E	2.4	0.00	57.65	0.00	0.00	306.17
0.9D + 1.0E	2.4	0.00	43.24	0.00	0.00	303.05
1.0D + 1.0W 60 mph Wind	7.6	0.00	48.04	0.00	0.00	902.83

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	-21.41	-21.64	0.00	-944.77	0.00	-944.77	2018.06	1009.0	3414.14	1709.61	97.92	0.564
0.9D + 1.6W 93 mph Wind	-15.83	-21.36	0.00	-931.31	0.00	-931.31	2018.06	1009.0	3414.14	1709.61	97.92	0.553
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-50.16	-4.60	0.00	-201.32	0.00	-201.32	2018.06	1009.0	3414.14	1709.61	97.92	0.143
1.2D + 1.0E	-22.40	-1.87	0.00	-102.21	0.00	-102.21	2018.06	1009.0	3414.14	1709.61	97.92	0.071
0.9D + 1.0E	-16.80	-1.85	0.00	-100.87	0.00	-100.87	2018.06	1009.0	3414.14	1709.61	97.92	0.067
1.0D + 1.0W 60 mph Wind	-18.61	-5.59	0.00	-243.80	0.00	-243.80	2018.06	1009.0	3414.14	1709.61	97.92	0.152

Base Plate Summary

Structure: CT12219-A-SB	Code: EIA/TIA-222-G	6/8/2021
Site Name: New Hartford 2, CT	Exposure: B	
Height: 159.00 (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: 68.00
Moment (kip-ft): 5847.05	Width (in): 74.00	Number Bolts: 24.00
Axial (kip): 49.10	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 51.35	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 3490.70	Effective Len (in): 11.75	Ultimate (ksi): 100.00
Axial (kip): 57.62	Moment (kip-in): 400.64	Arrangement: Radial
Shear (kip): 29.28	Allow Stress (ksi): 67.50	Cluster Dist (in): 0.00
	Applied Stress (ksi): 19.57	Start Angle (deg): 0.00
	Stress Ratio: 0.29	Compression
		Force (kip): 106.84
		Allowable (kip): 260.00
		Ratio: 0.42
		Tension
		Force (kip): 98.50
		Allowable (kip): 260.00
		Ratio: 0.39



Monopole Mat Foundation Design

Date

6/8/2021

Customer Name:	Verizon	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	159
Site Number:	CT12219-A-SBA	Engineer Name:	D. Zhou
Engr. Number:	109879	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	57.6	Shear Force (Kips):	29.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3490.7

Allowable overstress %: 5.0%

Foundation Geometries:

Diameter of Pier (ft.):	7.5	Depth of Base BG (ft.):	5.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft.):	3.00		
Length of Pad (ft.):	29.5	Width of Pad (ft.):	29.5		
Final Length of pad (ft)	29.5	Final width of pad (ft):	29.5		

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	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:	42	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	13	Qty. of Rebar in Pad (W):	13	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

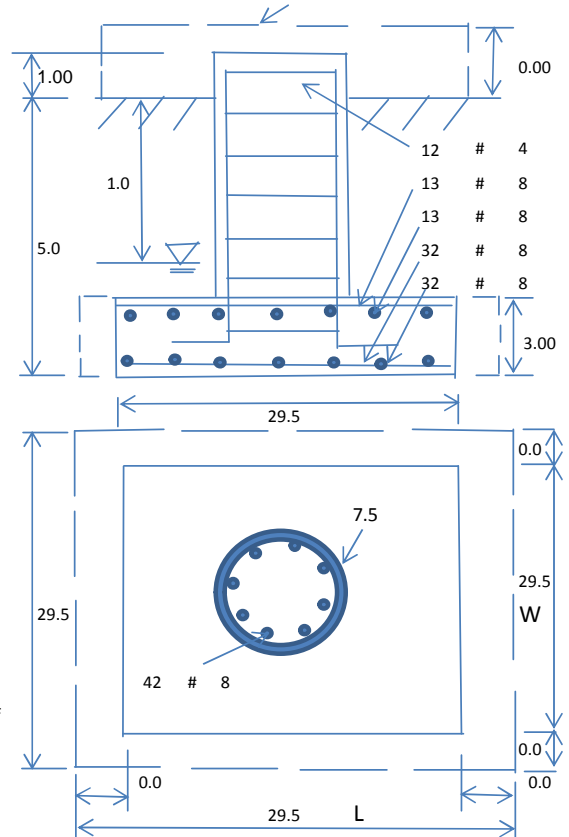
Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf	
Water Table B.G.S. (ft):	1.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	8000	Ultimate Skin Friction:	800	Psf	Angle from Botm of Pad: 25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		Angle from Botm of Pad: 25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00		

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	826.07	Total Dry Soil Weight (Kips):	103.26
Total Buoyant Soil Volume (cu. Ft.):	860.36	Total Buoyant Soil Weight (Kips):	43.02
Total Effective Soil Weight (Kips):	146.28	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	88.36	Total Dry Concrete Weight (Kips):	13.25
Total Buoyant Concrete Volume (cu. Ft.):	2654.93	Total Buoyant Concrete Weight (Kips):	232.57
Total Effective Concrete Weight (Kips):	245.83	Total Vertical Load on Base (Kips):	449.70

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	814	<	Allowable Factored Soil Bearing (psf):	6000	0.14	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	6032.0	>	Design Factored Momont (kips-ft):	3591	0.60	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.68					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

(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):	6074.2	> Design Factored Moment (Mu, Kips-F	3578.6	0.59	OK!
Calculated Shear Capacity (Kips):	891.5	> Design Factored Shear (Kips):	29.3	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	1791.7	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	11188.9	> Design Factored Axial Load (Pu Kips):	57.6	0.01	OK!
Moment & Axial Strength Combination:	0.59	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1091.5	> One-Way Factored Shear (L-D. Kips):	163.6	0.15	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1091.5	> One-Way Factored Shear (W-D., Kips)	163.6	0.15	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1065.7	> One-Way Factored Shear (C-C, Kips):	168.3	0.16	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0022	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0022		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3625.5	> Moment at Bottom (L-Dir. K-Ft):	1003.7	0.28	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3625.5	> Moment at Bottom (W-Dir. K-Ft):	1003.7	0.28	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5105.0	> Moment at Bottom (C-C Dir. K-Ft):	1419.5	0.28	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0009		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	1490.2	> Moment at the top (L-Dir K-Ft):	414.4	0.28	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	1490.2	> Moment at the top (W-Dir K-Ft):	414.4	0.28	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	2103.7	> Moment at the top (C-C Dir. K-Ft):	387.6	0.18	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	1396.3	k-ft.	Max. factored shear stress v_{u_CD} :	2.2	Psi
Max. factored shear stress v_{u_AB} :	9.4	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	9.4	Psi	Check Usage of Punching Shear Capacity:	0.05	OK!