



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

April 25, 2022

Kristina Cottone
Real Estate Project Manager
Smartlink
85 Rangeway Road, Building 3, Suite 102
North Billerica, MA 01862
kristina.cottone@smartlinkgroup.com

RE: **EM-AT&T-060-220304** – AT&T notice of intent to modify an existing telecommunications facility located at 331 Killingworth Road (a/k/a Route 80), Guilford, Connecticut.

Dear Ms. Cottone:

The Connecticut Siting Council (Council) is in receipt of your correspondence of April 14, 2022 submitted in response to the Council's March 22, 2022 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

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

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/CMW/emr



Tower Engineering Solutions

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

Structural Analysis Report

Existing 152 ft Rohn Self Supporting Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT13065-A

Customer Site Name: Guilford

Carrier Name: AT&T (App#: 156290-3)

Carrier Site ID / Name: CTL05641 / Guilford-Killingworth Road Site

Location: 331 Killingworth Road (Rt 80)

Guilford, Connecticut

New Haven County

Latitude: 41.353164

Longitude: -72.688252

Analysis Result:

Max Structural Usage: 97.0% [Pass]

Max Foundation Usage: 71.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: +2.3%



Report Prepared By: Mohammed Al Rubaye



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Introduction

The purpose of this report is to summarize the analysis results on the 152 ft Rohn Self Supporting Tower to support the proposed antennas and transmission lines in addition to those currently installed.

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

Sources of Information

Tower Drawings	Rohn, Dwg # C851129, dated 8/6/1985
Foundation Drawing	FDH, Project # 09-03151E N1, dated 6/10/2009
Geotechnical Report	FDH, Project # 09-03151EG1, dated 5/5/2009
Mount Analysis	Maser Consulting Connecticut Project #: 21777792A, dated 08/06/2021
Modification Drawings	All-Points Technology Corp., Job # CT2001D1, dated 4/28/05 FDH, Project # 09-03151E S2, dated 9/4/09 FDH, Project # 11-10199E S2, dated 4/19/12 FDH, Project # 12-04638E S3, dated 2/6/13 FDH, Project # 15BEQG1400, dated 2/27/15 FDH, Project # 14664X1400, dated 5/29/14
Pending Modification	TES Pending Job # 121728. Dated 01/26/2022

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 130.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 101.0$ mph (3-Sec. Gust)
Basic Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft

This structural analysis is based upon the tower being classified as 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
1	157.0	1	Phillips Dodge 201-7 Omni	Leg	(1) 7/8"	TCI Cablevision
-	149.0	3	Powerwave Allgon 7770 - Panel	(3) Sector Frames	(12) 1 5/8" (1) 1/2" Fiber & (2) 3/4" DC in (1) 3" Innerduct	AT&T
-		6	HPA-65R-BU6AA - Panel			
-		3	Kathrein 800 10965 - Panel			
-		6	Powerwave LGP21401 TMA			
-		6	Powerwave 7020.00 RET			
-		3	Powerwave 7070			
-		3	Ericsson Radio 4449 B5/B12			
-		3	Ericsson RRUS 4415 B30			
-		3	Ericsson RRUS 8843 B2 B66A			
-		2	Raycap DC6-48-60-18-8F			
-		1	Raycap DC6-48-60-0-8C			
16	139.0	3	Alcatel Lucent 1900 MHz	(3) Sector Frames	(4) 1-1/4" Fiber	Sprint
17		3	Alcatel Lucent 800 MHz			
18		3	Alcatel Lucent TD-RRH8x20-25			
19		3	Alcatel Lucent 800 MHz Filters			
20		4	RFS ACU-A20-N RET			
21	138.0	3	RFS APXVSP18-C-A20 - Panel	(3) V-Frames VFA12-HD	(12) 1 5/8" (1) 1 5/8" Hybrid	Verizon
22		3	RFS APXVTM14-C-I20 - Panel			
23	128.0	6	Commscope - NHH-65B-R2B - Panel	(3) V-Frames VFA12-HD	(12) 1 5/8" (1) 1 5/8" Hybrid	Verizon
24		3	Samsung - MT6407-77A - Panel			
25		2	Andrew - LNX-6513DS-A1M_0 - Panel			
26		1	Andrew - LNX-6514DS-A1M - Panel			
27		3	Samsung - RF4440d-13A RRU			
28		3	Samsung - RF4439d-25A RRU			
29	1	Commscope - FE-16148-OVP-B12				
31	83.5	1	DB26 GPS	Leg	(1) 1/2"	Sprint

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
2	149.0	3	Powerwave - 7770 - Panel	(3) Sector Frames w/ Mods	(12) 1 5/8" (1) 3" Conduit (Housing (1) 1/2" Fiber & (2) 3/4" DC) (1) 1/2" Fiber (2) 3/4" DC	AT&T
3		3	CCI - HPA-65R-BU6AA - Panel			
4		3	Kathrein - 800-10965 - Panel			
5		3	CCI - OPA65R-BU6DA - Panel			
6		6	Powerwave - LGP21401 TMA			
7		6	Powerwave - LGP21901 Diplexer			
8		6	Powerwave - 7020.00 RET			
9		3	Powerwave - 7070 RET			
10		3	Ericsson - 4449 B5/B12 RRU			
11		3	Ericsson - 4415 B30 RRU			
12		3	Ericsson - RRUS 8843 B2 B66A RRU			
13		3	Ericsson - RRUS-4478 B14 RRU			
14		2	Raycap - DC6-48-60-18-8F ("Squid") - OVP			
15		1	Raycap - DC6-48-60-18-8C-EV - 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:

Tower Component	Legs	Diagonals	Horizontals	Anchor Bolts
Max. Usage:	97.0%	94.8%	23.7%	95.0%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	216.6	186.6	23.5

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.2603 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222-G-2 Standard after the following pending modification is successfully completed.

- Pending modification design drawing by **TES** Job # 121728

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.

Structure: CT13065-A-SBA

Site Name: Guilford	Code: TIA-222-G	4/12/2022
Type: Self Support	Base Shape: Triangle	Basic WS: 101.00
Height: 152.00 (ft)	Base Width: 20.78	Basic Ice WS: 50.00
Base Elev: 0.00 (ft)	Top Width: 6.52	Operational WS: 60.00



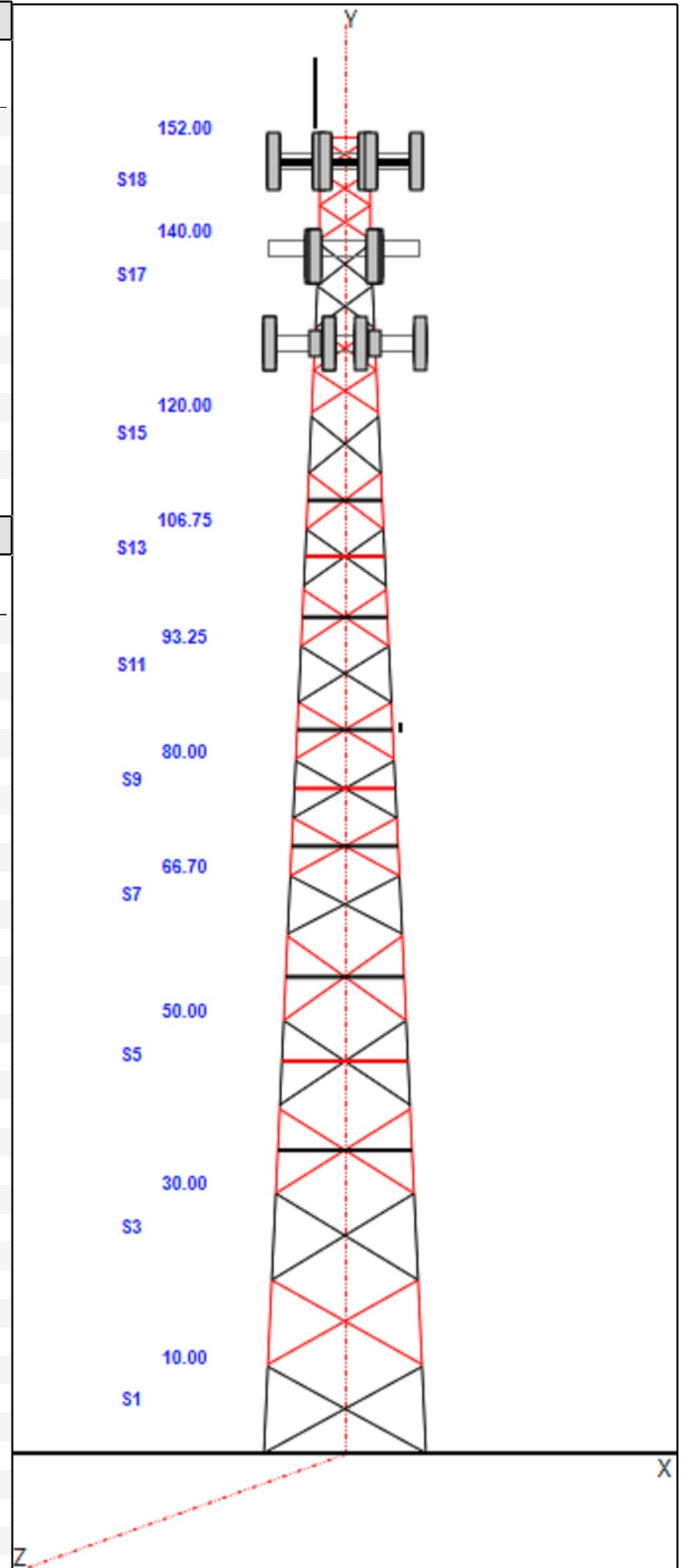
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Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-2	MOD 5"PST+6"PX1/2P	SAE 3.5X3.5X0.25	
3	MOD 4"PX+5"PX1/2P	SAE 3X3X0.375	
4	PX 4" DIA PIPE	SAE 3X3X0.375	
5-6	PX 4" DIA PIPE	SAE 3X3X0.25	
7	MOD 3"PX+4"PX1/2P	SAE 2.5X2.5X0.25	
8	PX 3" DIA PIPE	SAE 2.5X2.5X0.25	
9	PX 3" DIA PIPE	SAE 2.5X2.5X0.1875	
10	MOD 2.5"PX+3"PX1/2P	SAE 2X2X0.375	
11	MOD 2.5"PX+3.5"PX1/2	SAE 2X2X0.375	
12	PX 2-1/2" DIA PIPE	SAE 2X2X0.375	
13-15	PX 2-1/2" DIA PIPE	MOD 2L2x2x1/8_Specia	
16	PST 2-1/2" DIA PIPE	SAE 1.75X1.75X0.25	
17	PST 2-1/2" DIA PIPE	SAE 1.75X1.75X0.125	
18	PST 2" DIA PIPE	SAE 1.5X1.5X0.125	SAE 2x2x0.125

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.00	157.00	1	Phillips Dodge 201-7 Omni
149.00	149.00	3	7770
149.00	149.00	3	HPA-65R-BU6AA
149.00	149.00	3	800-10965
149.00	149.00	3	OPA65R-BU6DA
149.00	149.00	6	LGP21401
149.00	149.00	6	LGP21901
149.00	149.00	6	7020.00 RET
149.00	149.00	3	7070
149.00	149.00	3	4449 B5/B12
149.00	149.00	3	4415 B30
149.00	149.00	3	RRUS 8843 B2 B66A
149.00	149.00	3	RRUS-4478 B14
149.00	149.00	2	DC6-48-60-18-8F ("Squid")
149.00	149.00	1	DC6-48-60-18-8C-EV
149.00	149.00	1	(3) SFS-H (V-Braces)
149.00	149.00	1	(3) 12.5' - 2" Horizontal Pipe
149.00	149.00	3	Sector Frames
139.00	139.00	1	(3) Sector Frames
139.00	139.00	3	1900MHz RRH
139.00	139.00	3	800 MHz RRH
139.00	139.00	3	TD-RRH8x20-25
139.00	139.00	3	ALU 800MHz External Notch Filt
139.00	139.00	4	ACU-A20-N
138.00	138.00	3	APXVSP18-C-A20
138.00	138.00	3	APXVTM14-C-I20
128.00	128.00	1	(3) VFA12-HD
128.00	128.00	6	NHH-65B-R2B
128.00	128.00	3	MT6407-77A
128.00	128.00	2	LNx-6513DS-A1M_0
128.00	128.00	1	LNx-6514DS-A1M
128.00	128.00	3	RF4440d-13A
128.00	128.00	3	RF4439d-25A
128.00	128.00	1	FE-16148-OVP-B12
83.50	83.50	1	DB26 GPS



Structure: CT13065-A-SBA

Site Name: Guilford	Code: TIA-222-G	4/12/2022
Type: Self Support	Base Shape: Triangle	Basic WS: 101.00
Height: 152.00 (ft)	Base Width: 20.78	Basic Ice WS: 50.00
Base Elev: 0.00 (ft)	Top Width: 6.52	Operational WS: 60.00



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83.50 83.50 1 Pipe Mount

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	152.00	1	Climbing Ladder
8.00	150.00	1	7/8" Coax
0.00	149.00	1	W/G Ladder
10.00	149.00	12	1 5/8" Coax
10.00	149.00	1	1/2" Fiber
10.00	149.00	1	1/2" Fiber
10.00	149.00	1	3" Innerduct
10.00	149.00	2	3/4" DC
10.00	149.00	2	3/4" DC
0.00	140.00	1	W/G Ladder
8.00	139.00	4	1-1/4" Fiber
8.00	128.00	12	1 5/8" Coax
8.00	128.00	1	1 5/8" Hybrid
0.00	120.00	1	Empty W/G Ladder
8.00	83.50	1	1/2" Coax

Base Reactions

Leg	Overturning
Max Uplift: -186.56 (kips)	Moment: 3669.48 (ft-kips)
Max Down: 216.60 (kips)	Total Down: 38.13 (kips)
Max Shear: 23.50 (kips)	Total Shear: 38.91 (kips)

Structure: CT13065-A-SBA

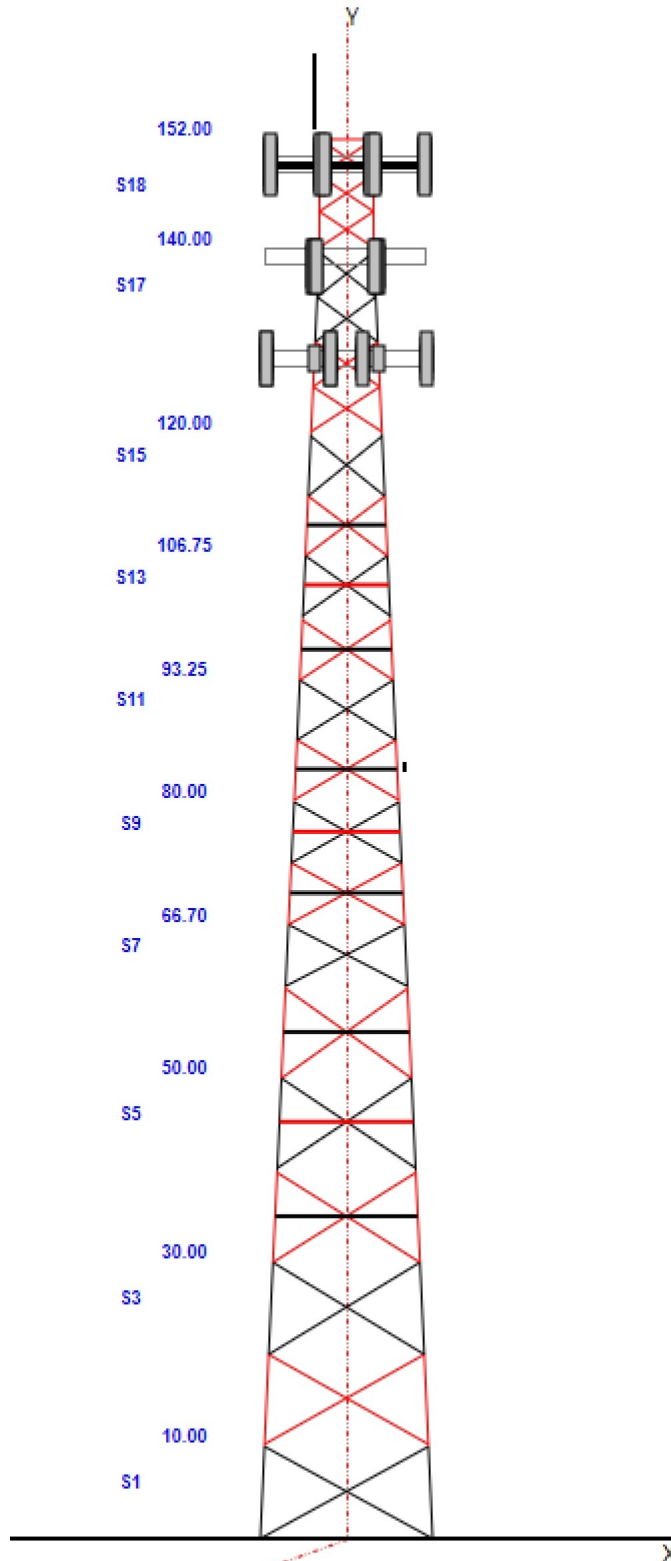
Site Name: Guilford
Type: Self Support
Height: 152.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: Triangle
Base Width: 20.78
Top Width: 6.52

Code: TIA-222-G
Basic WS: 101.00
Basic Ice WS: 50.00
Operational WS: 60.00

4/12/2022

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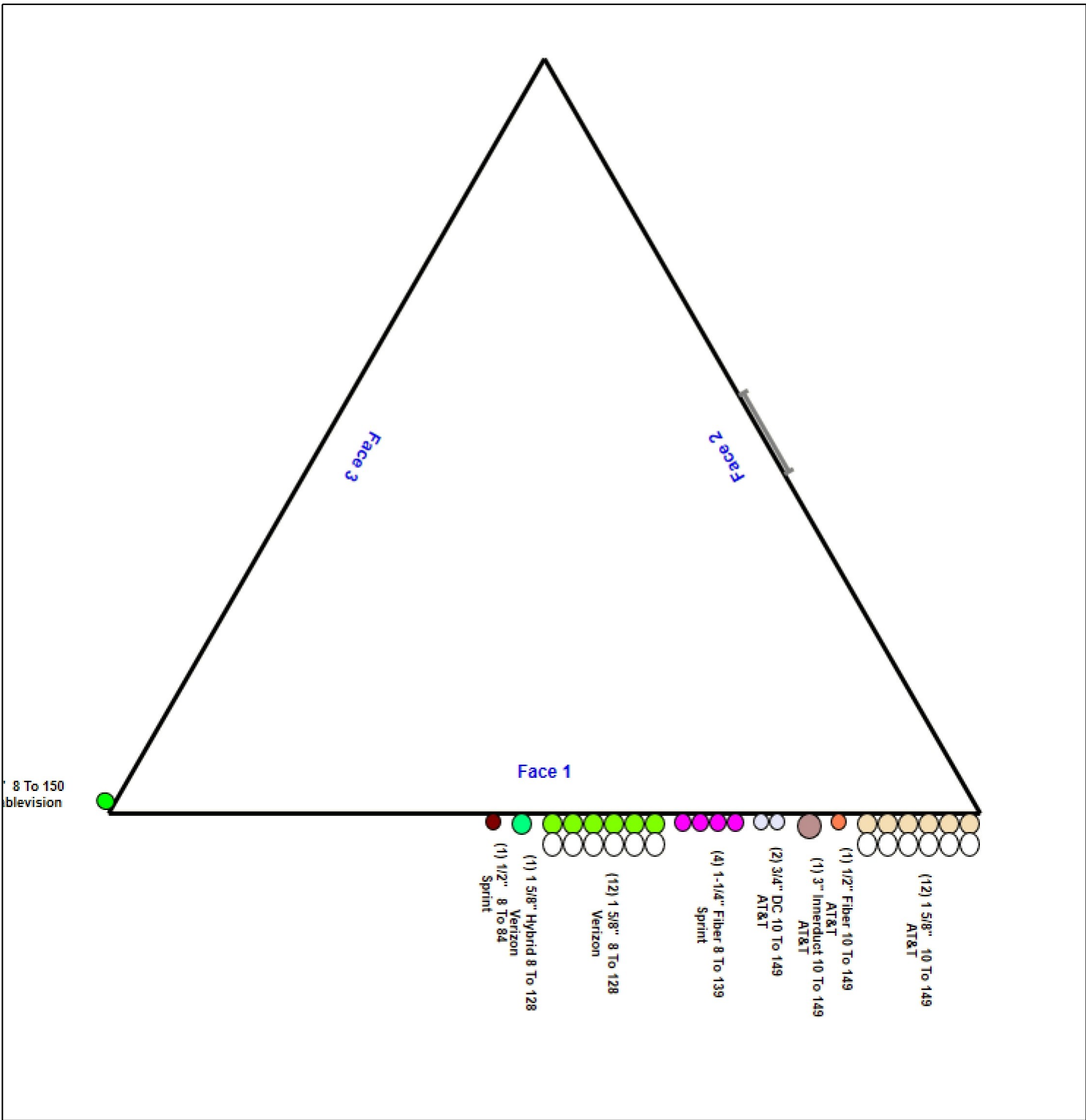
Structure: CT13065-A-SBA - Coax Line Placement

Type: Self Support
Site Name: Guilford
Height: 152.00 (ft)

4/12/2022



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Loading Summary

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
150.00	Phillips Dodge 201-7 Omni	1	4.00	1.070	74.90	3.845	99.600	1.300	1.300	1.00	1.00	7.000
149.00	7770	3	35.00	5.500	169.73	6.562	55.000	11.000	5.000	0.80	0.73	0.000
149.00	HPA-65R-BU6AA	3	51.00	9.660	298.33	11.022	72.000	14.800	9.000	0.80	0.85	0.000
149.00	800-10965	3	108.60	13.810	405.83	15.386	78.700	20.000	6.900	0.80	0.71	0.000
149.00	OPA65R-BU6DA	3	79.40	12.710	373.15	14.170	71.200	20.700	7.700	0.80	0.72	0.000
149.00	LGP21401	6	14.10	1.290	39.03	2.123	14.400	9.200	2.600	0.80	0.67	0.000
149.00	LGP21901	6	5.50	0.230	13.17	0.597	4.000	6.000	3.000	0.80	0.67	0.000
149.00	7020.00 RET	6	2.20	0.400	12.41	0.883	4.900	8.300	2.400	0.80	0.67	0.000
149.00	7070	3	5.50	0.150	10.69	0.538	8.300	1.800	0.000	0.80	0.67	0.000
149.00	4449 B5/B12	3	71.00	1.970	124.24	2.516	17.900	13.200	9.400	0.80	0.67	0.000
149.00	4415 B30	3	44.10	1.860	91.41	2.431	13.500	16.500	4.800	0.80	0.67	0.000
149.00	RRUS 8843 B2 B66A	3	72.00	1.640	118.72	2.135	14.900	13.200	10.900	0.80	0.67	0.000
149.00	RRUS-4478 B14	3	59.90	1.840	106.77	2.365	16.500	13.400	7.700	0.80	0.67	0.000
149.00	DC6-48-60-18-8F ("Squid")	2	31.80	0.920	93.46	1.357	24.000	11.000	11.000	0.80	1.00	0.000
149.00	DC6-48-60-18-8C-EV	1	16.00	4.780	139.40	5.662	31.400	18.300	10.200	1.00	1.00	0.000
149.00	(3) SFS-H (V-Braces)	1	197.00	6.300	471.30	12.879	0.000	0.000	0.000	0.75	1.00	0.000
149.00	(3) 12.5' - 2" Horizontal Pipe	1	137.25	5.938	271.03	13.378	0.000	0.000	0.000	0.75	1.00	0.000
149.00	Sector Frames	3	350.00	14.000	622.91	21.018	0.000	0.000	0.000	0.75	0.75	0.000
139.00	(3) Sector Frames	1	1470.0	52.000	3500.86	105.88	0.000	0.000	0.000	0.75	1.00	0.000
139.00	1900MHz RRH	3	44.00	3.800	152.02	5.176	23.000	13.000	17.000	0.80	0.67	0.000
139.00	800 MHz RRH	3	53.00	2.490	126.19	3.622	19.700	13.000	10.800	0.80	0.67	0.000
139.00	TD-RRH8x20-25	3	70.00	4.050	179.07	4.854	26.100	18.600	6.700	0.80	0.67	0.000
139.00	ALU 800MHz External Notch Filt	3	8.80	0.780	26.26	1.420	10.000	8.000	3.000	0.80	0.67	0.000
139.00	ACU-A20-N	4	1.00	0.140	5.25	0.434	4.000	2.000	3.500	0.80	0.67	0.000
138.00	APXVSPP18-C-A20	3	57.00	8.020	228.04	10.784	72.000	11.800	7.000	0.80	0.83	0.000
138.00	APXVTM14-C-I20	3	56.20	6.340	214.59	7.441	56.300	12.600	6.300	0.80	0.77	0.000
128.00	(3) VFA12-HD	1	2322.0	50.700	4550.34	113.25	0.000	0.000	0.000	0.75	1.00	0.000
128.00	NHH-65B-R2B	6	43.70	8.080	240.98	9.347	72.000	11.900	7.100	0.80	0.83	0.000
128.00	MT6407-77A	3	79.40	4.690	196.34	5.619	35.100	16.100	5.500	0.80	0.70	0.000
128.00	LNx-6513DS-A1M_0	2	30.40	5.830	163.52	7.904	54.700	11.900	7.100	0.80	0.83	0.000
128.00	LNx-6514DS-A1M	1	33.10	8.090	204.65	10.835	72.000	11.900	7.100	0.80	0.80	0.000
128.00	RF4440d-13A	3	70.30	1.870	138.09	2.432	15.000	15.000	8.100	0.80	0.67	0.000
128.00	RF4439d-25A	3	84.40	1.870	159.25	2.432	15.000	15.000	10.000	0.80	0.67	0.000
128.00	FE-16148-OVP-B12	1	21.90	2.010	74.19	2.568	16.600	14.600	8.500	1.00	1.00	0.000
83.50	DB26 GPS	1	10.00	1.000	37.65	1.671	12.000	9.000	6.000	1.00	1.00	0.000
83.50	Pipe Mount	1	45.00	2.000	80.55	3.317	0.000	0.000	0.000	1.00	1.00	0.000
Totals:		99	8,976.45		22,998.17						Number of Appurtenances :	36

Loading Summary

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	152.00	Climbing Ladder	1	2.00	6.90	100.00	2	Individual NR		N	1.00	1.00	
8.00	150.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	1.00	1.00	
0.00	149.00	W/G Ladder	1	2.00	6.00	100.00	1	Individual NR		N	1.00	1.00	
10.00	149.00	1 5/8" Coax	12	1.98	1.04	50.00	1	Block		N	0.50	1.00	
10.00	149.00	1/2" Fiber	1	0.50	0.16	100.00	1	Individual NR		N	1.00	1.00	
10.00	149.00	1/2" Fiber	1	0.50	0.16	100.00	1	Individual NR		N	1.00	1.00	0
10.00	149.00	3" Innerduct	1	3.00	0.25	100.00	1	Individual NR		N	1.00	1.00	
10.00	149.00	3/4" DC	2	0.75	0.40	100.00	1	Individual IR		N	1.00	1.00	
10.00	149.00	3/4" DC	2	0.75	0.40	100.00	1	Individual IR		N	1.00	1.00	0
0.00	140.00	W/G Ladder	1	2.00	6.00	100.00	1	Individual NR		N	1.00	1.00	
8.00	139.00	1-1/4" Fiber	4	1.25	0.95	100.00	1	Individual IR		N	1.00	1.00	
8.00	128.00	1 5/8" Coax	12	1.98	1.04	50.00	1	Block		N	0.50	1.00	
8.00	128.00	1 5/8" Hybrid	1	2.00	1.10	100.00	1	Individual NR		N	1.00	1.00	
0.00	120.00	Empty W/G Ladder	1	2.00	6.00	100.00	3	Individual NR		N	1.00	1.00	
8.00	83.50	1/2" Coax	1	0.65	0.16	100.00	1	Individual NR		N	1.00	1.00	

Section Forces

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W Normal Wind	1.2D + 1.6W 101 mph Wind at Normal To Face
Wind Load Factor: 1.60	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

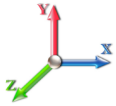
Sect Seq	Wind Height (ft)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	5.0	15.54	12.899	10.01	0.00	0.11	2.92	1.00	1.00	0.00	18.02	10.52	0.00	2,306.9	0.0	1113.32	236.85	1,350.17
2	15.0	15.54	12.303	10.01	0.00	0.11	2.91	1.00	1.00	0.00	17.43	43.77	0.00	2,613.6	0.0	1073.03	799.76	1,872.79
3	25.0	15.54	10.180	8.14	0.00	0.10	2.97	1.00	1.00	0.00	14.67	43.77	0.00	2,663.6	0.0	921.29	799.76	1,721.04
4	35.0	16.25	14.003	7.51	0.00	0.12	2.88	1.00	1.00	0.00	18.24	43.77	0.00	2,464.9	0.0	1159.07	836.47	1,995.55
5	45.0	17.46	12.625	7.51	0.00	0.12	2.88	1.00	1.00	0.00	16.81	43.77	0.00	2,054.0	0.0	1149.34	898.75	2,048.09
6	55.0	18.49	12.008	7.51	0.00	0.13	2.86	1.00	1.00	0.00	16.16	43.77	0.00	2,014.0	0.0	1163.97	951.78	2,115.75
7	63.4	19.25	6.441	5.03	0.00	0.12	2.90	1.00	1.00	0.00	9.20	29.32	0.00	1,344.6	0.0	698.53	663.97	1,362.50
8	70.0	19.81	9.039	3.92	0.00	0.14	2.81	1.00	1.00	0.00	11.26	29.32	0.00	1,295.4	0.0	853.53	683.32	1,536.85
9	76.7	20.34	8.631	3.86	0.00	0.14	2.80	1.00	1.00	0.00	10.82	28.89	0.00	1,149.7	0.0	837.02	690.79	1,527.81
10	83.4	20.83	6.572	3.58	0.00	0.12	2.88	1.00	1.00	0.00	8.59	29.37	0.00	1,371.9	0.0	702.11	719.95	1,422.06
11	90.0	21.29	4.327	4.34	0.00	0.11	2.92	1.00	1.00	0.00	6.76	28.10	0.00	1,209.2	0.0	570.49	704.79	1,275.28
12	96.6	21.72	6.412	3.24	0.00	0.13	2.85	1.00	1.00	0.00	8.25	29.18	0.00	1,262.9	0.0	694.89	746.90	1,441.80
13	103.4	22.15	2.125	10.79	0.00	0.18	2.65	1.00	1.00	0.00	8.38	29.18	0.00	1,040.1	0.0	669.56	761.45	1,431.01
14	110.0	22.54	1.591	10.32	0.00	0.19	2.64	1.00	1.00	0.00	7.57	28.10	0.00	1,000.4	0.0	612.99	746.38	1,359.37
15	116.6	22.92	0.000	10.10	0.00	0.16	2.72	1.00	1.00	0.00	5.82	29.18	0.00	901.6	0.0	493.39	788.15	1,281.53
16	125.0	23.38	5.350	4.80	0.00	0.12	2.88	1.00	1.00	0.00	8.06	38.83	0.00	1,146.4	0.0	737.38	1051.18	1,788.56
17	135.0	23.90	4.872	4.80	0.00	0.13	2.84	1.00	1.00	0.00	7.59	27.49	0.00	814.2	0.0	699.79	753.15	1,452.94
18	146.0	24.44	6.622	4.75	0.00	0.14	2.81	1.00	1.00	0.00	9.31	20.46	0.00	700.2	0.0	868.78	574.73	1,443.51
													27,353.5	0.0			28,426.63	

Section Forces

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/12/2022

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Load Case: 1.2D + 1.6W 60° Wind

1.2D + 1.6W 101 mph Wind at 60° From Face

Wind Load Factor: 1.60

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00

Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	5.0	15.54	12.899	10.01	0.00	0.11	2.92	0.80	1.00	0.00	15.44	10.52	0.00	2,306.9	0.0	953.96	236.85	1,190.81
2	15.0	15.54	12.303	10.01	0.00	0.11	2.91	0.80	1.00	0.00	14.97	43.77	0.00	2,613.6	0.0	921.56	799.76	1,721.32
3	25.0	15.54	10.180	8.14	0.00	0.10	2.97	0.80	1.00	0.00	12.64	43.77	0.00	2,663.6	0.0	793.45	799.76	1,593.20
4	35.0	16.25	14.003	7.51	0.00	0.12	2.88	0.80	1.00	0.00	15.43	43.77	0.00	2,464.9	0.0	981.06	836.47	1,817.53
5	45.0	17.46	12.625	7.51	0.00	0.12	2.88	0.80	1.00	0.00	14.29	43.77	0.00	2,054.0	0.0	976.72	898.75	1,875.46
6	55.0	18.49	12.008	7.51	0.00	0.13	2.86	0.80	1.00	0.00	13.76	43.77	0.00	2,014.0	0.0	991.00	951.78	1,942.78
7	63.4	19.25	6.441	5.03	0.00	0.12	2.90	0.80	1.00	0.00	7.91	29.32	0.00	1,344.6	0.0	600.73	663.97	1,264.71
8	70.0	19.81	9.039	3.92	0.00	0.14	2.81	0.80	1.00	0.00	9.45	29.32	0.00	1,295.4	0.0	716.46	683.32	1,399.78
9	76.7	20.34	8.631	3.86	0.00	0.14	2.80	0.80	1.00	0.00	9.09	28.89	0.00	1,149.7	0.0	703.45	690.79	1,394.25
10	83.4	20.83	6.572	3.58	0.00	0.12	2.88	0.80	1.00	0.00	7.28	29.37	0.00	1,371.9	0.0	594.73	719.95	1,314.68
11	90.0	21.29	4.327	4.34	0.00	0.11	2.92	0.80	1.00	0.00	5.89	28.10	0.00	1,209.2	0.0	497.42	704.79	1,202.22
12	96.6	21.72	6.412	3.24	0.00	0.13	2.85	0.80	1.00	0.00	6.96	29.18	0.00	1,262.9	0.0	586.81	746.90	1,333.71
13	103.4	22.15	2.125	10.79	0.00	0.18	2.65	0.80	1.00	0.00	7.95	29.18	0.00	1,040.1	0.0	635.58	761.45	1,397.04
14	110.0	22.54	1.591	10.32	0.00	0.19	2.64	0.80	1.00	0.00	7.26	28.10	0.00	1,000.4	0.0	587.23	746.38	1,333.61
15	116.6	22.92	0.000	10.10	0.00	0.16	2.72	0.80	1.00	0.00	5.82	29.18	0.00	901.6	0.0	493.39	788.15	1,281.53
16	125.0	23.38	5.350	4.80	0.00	0.12	2.88	0.80	1.00	0.00	6.99	38.83	0.00	1,146.4	0.0	639.53	1051.18	1,690.71
17	135.0	23.90	4.872	4.80	0.00	0.13	2.84	0.80	1.00	0.00	6.61	27.49	0.00	814.2	0.0	609.93	753.15	1,363.08
18	146.0	24.44	6.622	4.75	0.00	0.14	2.81	0.80	1.00	0.00	7.99	20.46	0.00	700.2	0.0	745.24	574.73	1,319.97
													27,353.5	0.0			26,436.39	

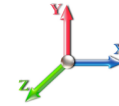
Section Forces

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/12/2022



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Load Case: 1.2D + 1.6W 90° Wind

1.2D + 1.6W 101 mph Wind at 90° From Face

Wind Load Factor: 1.60

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00

Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	5.0	15.54	12.899	10.01	0.00	0.11	2.92	0.85	1.00	0.00	16.09	10.52	0.00	2,306.9	0.0	993.80	236.85	1,230.65
2	15.0	15.54	12.303	10.01	0.00	0.11	2.91	0.85	1.00	0.00	15.59	43.77	0.00	2,613.6	0.0	959.43	799.76	1,759.19
3	25.0	15.54	10.180	8.14	0.00	0.10	2.97	0.85	1.00	0.00	13.15	43.77	0.00	2,663.6	0.0	825.41	799.76	1,625.16
4	35.0	16.25	14.003	7.51	0.00	0.12	2.88	0.85	1.00	0.00	16.13	43.77	0.00	2,464.9	0.0	1025.56	836.47	1,862.04
5	45.0	17.46	12.625	7.51	0.00	0.12	2.88	0.85	1.00	0.00	14.92	43.77	0.00	2,054.0	0.0	1019.87	898.75	1,918.62
6	55.0	18.49	12.008	7.51	0.00	0.13	2.86	0.85	1.00	0.00	14.36	43.77	0.00	2,014.0	0.0	1034.24	951.78	1,986.02
7	63.4	19.25	6.441	5.03	0.00	0.12	2.90	0.85	1.00	0.00	8.24	29.32	0.00	1,344.6	0.0	625.18	663.97	1,289.16
8	70.0	19.81	9.039	3.92	0.00	0.14	2.81	0.85	1.00	0.00	9.90	29.32	0.00	1,295.4	0.0	750.73	683.32	1,434.05
9	76.7	20.34	8.631	3.86	0.00	0.14	2.80	0.85	1.00	0.00	9.52	28.89	0.00	1,149.7	0.0	736.85	690.79	1,427.64
10	83.4	20.83	6.572	3.58	0.00	0.12	2.88	0.85	1.00	0.00	7.61	29.37	0.00	1,371.9	0.0	621.58	719.95	1,341.53
11	90.0	21.29	4.327	4.34	0.00	0.11	2.92	0.85	1.00	0.00	6.11	28.10	0.00	1,209.2	0.0	515.69	704.79	1,220.48
12	96.6	21.72	6.412	3.24	0.00	0.13	2.85	0.85	1.00	0.00	7.28	29.18	0.00	1,262.9	0.0	613.83	746.90	1,360.73
13	103.4	22.15	2.125	10.79	0.00	0.18	2.65	0.85	1.00	0.00	8.06	29.18	0.00	1,040.1	0.0	644.08	761.45	1,405.53
14	110.0	22.54	1.591	10.32	0.00	0.19	2.64	0.85	1.00	0.00	7.34	28.10	0.00	1,000.4	0.0	593.67	746.38	1,340.05
15	116.6	22.92	0.000	10.10	0.00	0.16	2.72	0.85	1.00	0.00	5.82	29.18	0.00	901.6	0.0	493.39	788.15	1,281.53
16	125.0	23.38	5.350	4.80	0.00	0.12	2.88	0.85	1.00	0.00	7.26	38.83	0.00	1,146.4	0.0	664.00	1051.18	1,715.18
17	135.0	23.90	4.872	4.80	0.00	0.13	2.84	0.85	1.00	0.00	6.86	27.49	0.00	814.2	0.0	632.39	753.15	1,385.54
18	146.0	24.44	6.622	4.75	0.00	0.14	2.81	0.85	1.00	0.00	8.32	20.46	0.00	700.2	0.0	776.12	574.73	1,350.85
														27,353.5	0.0			26,933.95

Section Forces

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 10



Load Case: 0.9D + 1.6W Normal Wind	0.9D + 1.6W 101 mph Wind at Normal To Face
Wind Load Factor: 1.60	Wind Importance Factor: 1.00
Dead Load Factor: 0.90	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

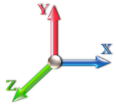
Sect Seq	Wind Height (ft)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	5.0	15.54	12.899	10.01	0.00	0.11	2.92	1.00	1.00	0.00	18.02	10.52	0.00	1,730.2	0.0	1113.32	236.85	1,350.17
2	15.0	15.54	12.303	10.01	0.00	0.11	2.91	1.00	1.00	0.00	17.43	43.77	0.00	1,960.2	0.0	1073.03	799.76	1,872.79
3	25.0	15.54	10.180	8.14	0.00	0.10	2.97	1.00	1.00	0.00	14.67	43.77	0.00	1,997.7	0.0	921.29	799.76	1,721.04
4	35.0	16.25	14.003	7.51	0.00	0.12	2.88	1.00	1.00	0.00	18.24	43.77	0.00	1,848.7	0.0	1159.07	836.47	1,995.55
5	45.0	17.46	12.625	7.51	0.00	0.12	2.88	1.00	1.00	0.00	16.81	43.77	0.00	1,540.5	0.0	1149.34	898.75	2,048.09
6	55.0	18.49	12.008	7.51	0.00	0.13	2.86	1.00	1.00	0.00	16.16	43.77	0.00	1,510.5	0.0	1163.97	951.78	2,115.75
7	63.4	19.25	6.441	5.03	0.00	0.12	2.90	1.00	1.00	0.00	9.20	29.32	0.00	1,008.4	0.0	698.53	663.97	1,362.50
8	70.0	19.81	9.039	3.92	0.00	0.14	2.81	1.00	1.00	0.00	11.26	29.32	0.00	971.5	0.0	853.53	683.32	1,536.85
9	76.7	20.34	8.631	3.86	0.00	0.14	2.80	1.00	1.00	0.00	10.82	28.89	0.00	862.3	0.0	837.02	690.79	1,527.81
10	83.4	20.83	6.572	3.58	0.00	0.12	2.88	1.00	1.00	0.00	8.59	29.37	0.00	1,028.9	0.0	702.11	719.95	1,422.06
11	90.0	21.29	4.327	4.34	0.00	0.11	2.92	1.00	1.00	0.00	6.76	28.10	0.00	906.9	0.0	570.49	704.79	1,275.28
12	96.6	21.72	6.412	3.24	0.00	0.13	2.85	1.00	1.00	0.00	8.25	29.18	0.00	947.1	0.0	694.89	746.90	1,441.80
13	103.4	22.15	2.125	10.79	0.00	0.18	2.65	1.00	1.00	0.00	8.38	29.18	0.00	780.1	0.0	669.56	761.45	1,431.01
14	110.0	22.54	1.591	10.32	0.00	0.19	2.64	1.00	1.00	0.00	7.57	28.10	0.00	750.3	0.0	612.99	746.38	1,359.37
15	116.6	22.92	0.000	10.10	0.00	0.16	2.72	1.00	1.00	0.00	5.82	29.18	0.00	676.2	0.0	493.39	788.15	1,281.53
16	125.0	23.38	5.350	4.80	0.00	0.12	2.88	1.00	1.00	0.00	8.06	38.83	0.00	859.8	0.0	737.38	1051.18	1,788.56
17	135.0	23.90	4.872	4.80	0.00	0.13	2.84	1.00	1.00	0.00	7.59	27.49	0.00	610.7	0.0	699.79	753.15	1,452.94
18	146.0	24.44	6.622	4.75	0.00	0.14	2.81	1.00	1.00	0.00	9.31	20.46	0.00	525.1	0.0	868.78	574.73	1,443.51
													20,515.1	0.0			28,426.63	

Section Forces

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/12/2022

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Load Case: 0.9D + 1.6W 60° Wind

0.9D + 1.6W 101 mph Wind at 60° From Face

Wind Load Factor: 1.60

Wind Importance Factor: 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00

Ice Importance Factor: 1.00

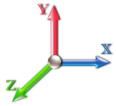
Sect Seq	Wind Height (ft)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	5.0	15.54	12.899	10.01	0.00	0.11	2.92	0.80	1.00	0.00	15.44	10.52	0.00	1,730.2	0.0	953.96	236.85	1,190.81
2	15.0	15.54	12.303	10.01	0.00	0.11	2.91	0.80	1.00	0.00	14.97	43.77	0.00	1,960.2	0.0	921.56	799.76	1,721.32
3	25.0	15.54	10.180	8.14	0.00	0.10	2.97	0.80	1.00	0.00	12.64	43.77	0.00	1,997.7	0.0	793.45	799.76	1,593.20
4	35.0	16.25	14.003	7.51	0.00	0.12	2.88	0.80	1.00	0.00	15.43	43.77	0.00	1,848.7	0.0	981.06	836.47	1,817.53
5	45.0	17.46	12.625	7.51	0.00	0.12	2.88	0.80	1.00	0.00	14.29	43.77	0.00	1,540.5	0.0	976.72	898.75	1,875.46
6	55.0	18.49	12.008	7.51	0.00	0.13	2.86	0.80	1.00	0.00	13.76	43.77	0.00	1,510.5	0.0	991.00	951.78	1,942.78
7	63.4	19.25	6.441	5.03	0.00	0.12	2.90	0.80	1.00	0.00	7.91	29.32	0.00	1,008.4	0.0	600.73	663.97	1,264.71
8	70.0	19.81	9.039	3.92	0.00	0.14	2.81	0.80	1.00	0.00	9.45	29.32	0.00	971.5	0.0	716.46	683.32	1,399.78
9	76.7	20.34	8.631	3.86	0.00	0.14	2.80	0.80	1.00	0.00	9.09	28.89	0.00	862.3	0.0	703.45	690.79	1,394.25
10	83.4	20.83	6.572	3.58	0.00	0.12	2.88	0.80	1.00	0.00	7.28	29.37	0.00	1,028.9	0.0	594.73	719.95	1,314.68
11	90.0	21.29	4.327	4.34	0.00	0.11	2.92	0.80	1.00	0.00	5.89	28.10	0.00	906.9	0.0	497.42	704.79	1,202.22
12	96.6	21.72	6.412	3.24	0.00	0.13	2.85	0.80	1.00	0.00	6.96	29.18	0.00	947.1	0.0	586.81	746.90	1,333.71
13	103.4	22.15	2.125	10.79	0.00	0.18	2.65	0.80	1.00	0.00	7.95	29.18	0.00	780.1	0.0	635.58	761.45	1,397.04
14	110.0	22.54	1.591	10.32	0.00	0.19	2.64	0.80	1.00	0.00	7.26	28.10	0.00	750.3	0.0	587.23	746.38	1,333.61
15	116.6	22.92	0.000	10.10	0.00	0.16	2.72	0.80	1.00	0.00	5.82	29.18	0.00	676.2	0.0	493.39	788.15	1,281.53
16	125.0	23.38	5.350	4.80	0.00	0.12	2.88	0.80	1.00	0.00	6.99	38.83	0.00	859.8	0.0	639.53	1051.18	1,690.71
17	135.0	23.90	4.872	4.80	0.00	0.13	2.84	0.80	1.00	0.00	6.61	27.49	0.00	610.7	0.0	609.93	753.15	1,363.08
18	146.0	24.44	6.622	4.75	0.00	0.14	2.81	0.80	1.00	0.00	7.99	20.46	0.00	525.1	0.0	745.24	574.73	1,319.97
													20,515.1	0.0	26,436.39			

Section Forces

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 0.9D + 1.6W 90° Wind

0.9D + 1.6W 101 mph Wind at 90° From Face

Wind Load Factor: 1.60

Wind Importance Factor: 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00

Ice Importance Factor: 1.00

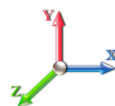
Sect Seq	Wind Height (ft)	Total Flat Area (psf) (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	
											Linear Area (sqft)	Linear Area (sqft)						
1	5.0	15.54	12.899	10.01	0.00	0.11	2.92	0.85	1.00	0.00	16.09	10.52	0.00	1,730.2	0.0	993.80	236.85	1,230.65
2	15.0	15.54	12.303	10.01	0.00	0.11	2.91	0.85	1.00	0.00	15.59	43.77	0.00	1,960.2	0.0	959.43	799.76	1,759.19
3	25.0	15.54	10.180	8.14	0.00	0.10	2.97	0.85	1.00	0.00	13.15	43.77	0.00	1,997.7	0.0	825.41	799.76	1,625.16
4	35.0	16.25	14.003	7.51	0.00	0.12	2.88	0.85	1.00	0.00	16.13	43.77	0.00	1,848.7	0.0	1025.56	836.47	1,862.04
5	45.0	17.46	12.625	7.51	0.00	0.12	2.88	0.85	1.00	0.00	14.92	43.77	0.00	1,540.5	0.0	1019.87	898.75	1,918.62
6	55.0	18.49	12.008	7.51	0.00	0.13	2.86	0.85	1.00	0.00	14.36	43.77	0.00	1,510.5	0.0	1034.24	951.78	1,986.02
7	63.4	19.25	6.441	5.03	0.00	0.12	2.90	0.85	1.00	0.00	8.24	29.32	0.00	1,008.4	0.0	625.18	663.97	1,289.16
8	70.0	19.81	9.039	3.92	0.00	0.14	2.81	0.85	1.00	0.00	9.90	29.32	0.00	971.5	0.0	750.73	683.32	1,434.05
9	76.7	20.34	8.631	3.86	0.00	0.14	2.80	0.85	1.00	0.00	9.52	28.89	0.00	862.3	0.0	736.85	690.79	1,427.64
10	83.4	20.83	6.572	3.58	0.00	0.12	2.88	0.85	1.00	0.00	7.61	29.37	0.00	1,028.9	0.0	621.58	719.95	1,341.53
11	90.0	21.29	4.327	4.34	0.00	0.11	2.92	0.85	1.00	0.00	6.11	28.10	0.00	906.9	0.0	515.69	704.79	1,220.48
12	96.6	21.72	6.412	3.24	0.00	0.13	2.85	0.85	1.00	0.00	7.28	29.18	0.00	947.1	0.0	613.83	746.90	1,360.73
13	103.4	22.15	2.125	10.79	0.00	0.18	2.65	0.85	1.00	0.00	8.06	29.18	0.00	780.1	0.0	644.08	761.45	1,405.53
14	110.0	22.54	1.591	10.32	0.00	0.19	2.64	0.85	1.00	0.00	7.34	28.10	0.00	750.3	0.0	593.67	746.38	1,340.05
15	116.6	22.92	0.000	10.10	0.00	0.16	2.72	0.85	1.00	0.00	5.82	29.18	0.00	676.2	0.0	493.39	788.15	1,281.53
16	125.0	23.38	5.350	4.80	0.00	0.12	2.88	0.85	1.00	0.00	7.26	38.83	0.00	859.8	0.0	664.00	1051.18	1,715.18
17	135.0	23.90	4.872	4.80	0.00	0.13	2.84	0.85	1.00	0.00	6.86	27.49	0.00	610.7	0.0	632.39	753.15	1,385.54
18	146.0	24.44	6.622	4.75	0.00	0.14	2.81	0.85	1.00	0.00	8.32	20.46	0.00	525.1	0.0	776.12	574.73	1,350.85
													20,515.1	0.0			26,933.95	

Section Forces

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind

1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face

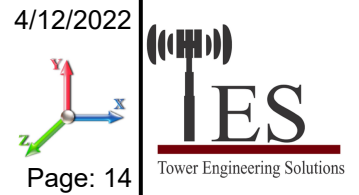
Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 1.00

Wind Importance Factor: 1.00
Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Area		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice Area		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	5.0	3.81	12.899	23.52	13.51	0.17	2.69	1.00	1.00	1.24	26.31	20.13	1.24	4,019.1	1712.2	228.82	77.33	306.15
2	15.0	3.81	12.303	24.61	14.61	0.18	2.65	1.00	1.00	1.39	26.38	68.73	13.86	5,560.1	2946.5	226.15	240.09	466.24
3	25.0	3.81	10.180	23.13	14.99	0.18	2.68	1.00	1.00	1.46	23.38	69.82	14.59	5,544.3	2880.7	202.63	245.90	448.53
4	35.0	3.98	14.003	22.51	14.99	0.20	2.58	1.00	1.00	1.51	26.95	70.57	15.09	5,843.3	3378.4	235.45	258.80	494.25
5	45.0	4.28	12.625	22.42	14.91	0.21	2.57	1.00	1.00	1.55	25.54	71.14	15.47	5,399.6	3345.6	238.60	280.84	519.44
6	55.0	4.53	12.008	22.29	14.78	0.22	2.54	1.00	1.00	1.58	24.88	71.61	15.79	5,371.7	3357.8	243.56	299.33	542.89
7	63.4	4.72	6.441	17.07	12.03	0.23	2.49	1.00	1.00	1.60	16.36	48.21	10.73	3,475.9	2131.3	163.14	209.04	372.18
8	70.0	4.86	9.039	15.73	11.82	0.26	2.41	1.00	1.00	1.62	18.28	48.37	10.84	3,722.6	2427.2	181.67	214.42	396.09
9	76.7	4.98	8.631	15.36	11.50	0.27	2.38	1.00	1.00	1.63	17.69	47.79	10.77	3,532.6	2382.9	178.51	217.06	395.57
10	83.4	5.10	6.572	14.89	11.31	0.25	2.44	1.00	1.00	1.65	15.28	48.84	10.22	3,575.7	2203.8	161.85	225.45	387.30
11	90.0	5.22	4.327	15.28	10.94	0.25	2.45	1.00	1.00	1.66	13.26	46.97	8.98	3,107.7	1898.5	143.73	218.26	361.99
12	96.6	5.32	6.412	14.08	10.84	0.27	2.39	1.00	1.00	1.67	14.70	48.90	9.39	3,440.9	2178.0	159.10	230.91	390.01
13	103.4	5.43	2.125	21.36	10.57	0.32	2.23	1.00	1.00	1.68	15.18	49.01	9.46	3,471.9	2431.7	156.44	232.48	388.92
14	110.0	5.52	1.591	20.51	10.19	0.34	2.20	1.00	1.00	1.69	14.23	47.30	9.16	3,309.1	2308.6	147.07	227.68	374.74
15	116.6	5.62	0.000	20.20	10.09	0.32	2.25	1.00	1.00	1.70	12.30	49.22	9.57	3,025.1	2123.5	132.18	242.32	374.50
16	125.0	5.73	5.350	21.27	16.47	0.31	2.27	1.00	1.00	1.71	18.16	65.27	13.71	3,802.5	2656.1	200.72	324.96	525.67
17	135.0	5.86	4.872	20.46	15.66	0.33	2.21	1.00	1.00	1.73	17.36	51.27	11.51	3,049.0	2234.8	190.95	259.00	449.94
18	146.0	5.99	6.622	26.87	22.12	0.40	2.07	1.00	1.00	1.74	23.69	35.88	10.73	2,958.7	2258.5	249.59	184.06	433.64
72,209.6															44856.2		7,628.09	

Section Forces

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 1.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Area		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice Area		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	5.0	3.81	12.899	23.52	13.51	0.17	2.69	0.80	1.00	1.24	23.73	20.13	1.24	4,019.1	1712.2	206.38	77.33	283.72
2	15.0	3.81	12.303	24.61	14.61	0.18	2.65	0.80	1.00	1.39	23.92	68.73	13.86	5,560.1	2946.5	205.05	240.09	445.14
3	25.0	3.81	10.180	23.13	14.99	0.18	2.68	0.80	1.00	1.46	21.35	69.82	14.59	5,544.3	2880.7	184.98	245.90	430.88
4	35.0	3.98	14.003	22.51	14.99	0.20	2.58	0.80	1.00	1.51	24.15	70.57	15.09	5,843.3	3378.4	210.98	258.80	469.78
5	45.0	4.28	12.625	22.42	14.91	0.21	2.57	0.80	1.00	1.55	23.01	71.14	15.47	5,399.6	3345.6	215.01	280.84	495.85
6	55.0	4.53	12.008	22.29	14.78	0.22	2.54	0.80	1.00	1.58	22.48	71.61	15.79	5,371.7	3357.8	220.06	299.33	519.38
7	63.4	4.72	6.441	17.07	12.03	0.23	2.49	0.80	1.00	1.60	15.07	48.21	10.73	3,475.9	2131.3	150.30	209.04	359.34
8	70.0	4.86	9.039	15.73	11.82	0.26	2.41	0.80	1.00	1.62	16.47	48.37	10.84	3,722.6	2427.2	163.71	214.42	378.13
9	76.7	4.98	8.631	15.36	11.50	0.27	2.38	0.80	1.00	1.63	15.97	47.79	10.77	3,532.6	2382.9	161.09	217.06	378.15
10	83.4	5.10	6.572	14.89	11.31	0.25	2.44	0.80	1.00	1.65	13.96	48.84	10.22	3,575.7	2203.8	147.93	225.45	373.38
11	90.0	5.22	4.327	15.28	10.94	0.25	2.45	0.80	1.00	1.66	12.39	46.97	8.98	3,107.7	1898.5	134.35	218.26	352.61
12	96.6	5.32	6.412	14.08	10.84	0.27	2.39	0.80	1.00	1.67	13.42	48.90	9.39	3,440.9	2178.0	145.22	230.91	376.14
13	103.4	5.43	2.125	21.36	10.57	0.32	2.23	0.80	1.00	1.68	14.75	49.01	9.46	3,471.9	2431.7	152.06	232.48	384.54
14	110.0	5.52	1.591	20.51	10.19	0.34	2.20	0.80	1.00	1.69	13.91	47.30	9.16	3,309.1	2308.6	143.78	227.68	371.45
15	116.6	5.62	0.000	20.20	10.09	0.32	2.25	0.80	1.00	1.70	12.30	49.22	9.57	3,025.1	2123.5	132.18	242.32	374.50
16	125.0	5.73	5.350	21.27	16.47	0.31	2.27	0.80	1.00	1.71	17.09	65.27	13.71	3,802.5	2656.1	188.89	324.96	513.85
17	135.0	5.86	4.872	20.46	15.66	0.33	2.21	0.80	1.00	1.73	16.38	51.27	11.51	3,049.0	2234.8	180.22	259.00	439.22
18	146.0	5.99	6.622	26.87	22.12	0.40	2.07	0.80	1.00	1.74	22.36	35.88	10.73	2,958.7	2258.5	235.63	184.06	419.69
															72,209.6	44856.2	7,365.77	

Section Forces

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.20	
Ice Dead Load Factor: 1.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	5.0	3.81	12.899	23.52	13.51	0.17	2.69	0.85	1.00	1.24	24.38	20.13	1.24	4,019.1	1712.2	211.99	77.33	289.33
2	15.0	3.81	12.303	24.61	14.61	0.18	2.65	0.85	1.00	1.39	24.53	68.73	13.86	5,560.1	2946.5	210.32	240.09	450.42
3	25.0	3.81	10.180	23.13	14.99	0.18	2.68	0.85	1.00	1.46	21.86	69.82	14.59	5,544.3	2880.7	189.39	245.90	435.29
4	35.0	3.98	14.003	22.51	14.99	0.20	2.58	0.85	1.00	1.51	24.85	70.57	15.09	5,843.3	3378.4	217.10	258.80	475.90
5	45.0	4.28	12.625	22.42	14.91	0.21	2.57	0.85	1.00	1.55	23.65	71.14	15.47	5,399.6	3345.6	220.91	280.84	501.75
6	55.0	4.53	12.008	22.29	14.78	0.22	2.54	0.85	1.00	1.58	23.08	71.61	15.79	5,371.7	3357.8	225.93	299.33	525.26
7	63.4	4.72	6.441	17.07	12.03	0.23	2.49	0.85	1.00	1.60	15.40	48.21	10.73	3,475.9	2131.3	153.51	209.04	362.55
8	70.0	4.86	9.039	15.73	11.82	0.26	2.41	0.85	1.00	1.62	16.93	48.37	10.84	3,722.6	2427.2	168.20	214.42	382.62
9	76.7	4.98	8.631	15.36	11.50	0.27	2.38	0.85	1.00	1.63	16.40	47.79	10.77	3,532.6	2382.9	165.45	217.06	382.51
10	83.4	5.10	6.572	14.89	11.31	0.25	2.44	0.85	1.00	1.65	14.29	48.84	10.22	3,575.7	2203.8	151.41	225.45	376.86
11	90.0	5.22	4.327	15.28	10.94	0.25	2.45	0.85	1.00	1.66	12.61	46.97	8.98	3,107.7	1898.5	136.69	218.26	354.96
12	96.6	5.32	6.412	14.08	10.84	0.27	2.39	0.85	1.00	1.67	13.74	48.90	9.39	3,440.9	2178.0	148.69	230.91	379.60
13	103.4	5.43	2.125	21.36	10.57	0.32	2.23	0.85	1.00	1.68	14.86	49.01	9.46	3,471.9	2431.7	153.15	232.48	385.63
14	110.0	5.52	1.591	20.51	10.19	0.34	2.20	0.85	1.00	1.69	13.99	47.30	9.16	3,309.1	2308.6	144.60	227.68	372.28
15	116.6	5.62	0.000	20.20	10.09	0.32	2.25	0.85	1.00	1.70	12.30	49.22	9.57	3,025.1	2123.5	132.18	242.32	374.50
16	125.0	5.73	5.350	21.27	16.47	0.31	2.27	0.85	1.00	1.71	17.36	65.27	13.71	3,802.5	2656.1	191.85	324.96	516.80
17	135.0	5.86	4.872	20.46	15.66	0.33	2.21	0.85	1.00	1.73	16.62	51.27	11.51	3,049.0	2234.8	182.90	259.00	441.90
18	146.0	5.99	6.622	26.87	22.12	0.40	2.07	0.85	1.00	1.74	22.69	35.88	10.73	2,958.7	2258.5	239.12	184.06	423.18
														72,209.6	44856.2			7,431.35

Section Forces

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 16



Load Case: 1.0D + 1.0W Normal Wind	1.0D + 1.0W 60 mph Wind at Normal To Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.00	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

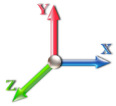
Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	5.0	5.48	12.899	10.01	0.00	0.11	2.92	1.00	1.00	0.00	18.55	10.52	0.00	1,922.4	0.0	252.74	52.24	304.98
2	15.0	5.48	12.303	10.01	0.00	0.11	2.91	1.00	1.00	0.00	17.96	43.77	0.00	2,178.0	0.0	243.78	176.40	420.18
3	25.0	5.48	10.180	8.14	0.00	0.10	2.97	1.00	1.00	0.00	14.77	43.77	0.00	2,219.7	0.0	204.60	176.40	381.00
4	35.0	5.74	14.003	7.51	0.00	0.12	2.88	1.00	1.00	0.00	18.25	43.77	0.00	2,054.1	0.0	255.87	184.50	440.37
5	45.0	6.16	12.625	7.51	0.00	0.12	2.88	1.00	1.00	0.00	16.87	43.77	0.00	1,711.7	0.0	254.41	198.23	452.64
6	55.0	6.53	12.008	7.51	0.00	0.13	2.86	1.00	1.00	0.00	16.26	43.77	0.00	1,678.3	0.0	258.26	209.93	468.19
7	63.4	6.79	6.441	5.03	0.00	0.12	2.90	1.00	1.00	0.00	9.29	29.32	0.00	1,120.5	0.0	155.47	146.45	301.92
8	70.0	6.99	9.039	3.92	0.00	0.14	2.81	1.00	1.00	0.00	11.26	29.32	0.00	1,079.5	0.0	188.26	150.72	338.98
9	76.7	7.18	8.631	3.86	0.00	0.14	2.80	1.00	1.00	0.00	10.82	28.89	0.00	958.1	0.0	184.62	152.37	336.98
10	83.4	7.35	6.572	3.58	0.00	0.12	2.88	1.00	1.00	0.00	8.59	29.37	0.00	1,143.3	0.0	154.86	158.80	313.66
11	90.0	7.51	4.327	4.34	0.00	0.11	2.92	1.00	1.00	0.00	6.78	28.10	0.00	1,007.6	0.0	126.23	155.45	281.69
12	96.6	7.67	6.412	3.24	0.00	0.13	2.85	1.00	1.00	0.00	8.25	29.18	0.00	1,052.4	0.0	153.27	164.74	318.01
13	103.4	7.82	2.125	10.79	0.00	0.18	2.65	1.00	1.00	0.00	8.38	29.18	0.00	866.8	0.0	147.73	167.95	315.68
14	110.0	7.96	1.591	10.32	0.00	0.19	2.64	1.00	1.00	0.00	7.59	28.10	0.00	833.7	0.0	135.41	164.63	300.03
15	116.6	8.09	0.000	10.10	0.00	0.16	2.72	1.00	1.00	0.00	5.84	29.18	0.00	751.3	0.0	109.20	173.84	283.04
16	125.0	8.25	5.350	4.80	0.00	0.12	2.88	1.00	1.00	0.00	8.06	38.83	0.00	955.3	0.0	162.64	231.86	394.50
17	135.0	8.43	4.872	4.80	0.00	0.13	2.84	1.00	1.00	0.00	7.59	27.49	0.00	678.5	0.0	154.35	166.12	320.47
18	146.0	8.63	6.622	4.75	0.00	0.14	2.81	1.00	1.00	0.00	9.31	20.46	0.00	583.5	0.0	191.62	126.77	318.39
														22,794.6	0.0			6,290.72

Section Forces

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/12/2022

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Load Case: 1.0D + 1.0W 60° Wind

1.0D + 1.0W 60 mph Wind at 60° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.00

Ice Dead Load Factor: 0.00

Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Area		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice Area		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat (sqft)	Round (sqft)								Linear (sqft)	Area (sqft)					
1	5.0	5.48	12.899	10.01	0.00	0.11	2.92	0.80	1.00	0.00	15.97	10.52	0.00	1,922.4	0.0	217.59	52.24	269.83
2	15.0	5.48	12.303	10.01	0.00	0.11	2.91	0.80	1.00	0.00	15.49	43.77	0.00	2,178.0	0.0	210.38	176.40	386.78
3	25.0	5.48	10.180	8.14	0.00	0.10	2.97	0.80	1.00	0.00	12.74	43.77	0.00	2,219.7	0.0	176.40	176.40	352.80
4	35.0	5.74	14.003	7.51	0.00	0.12	2.88	0.80	1.00	0.00	15.45	43.77	0.00	2,054.1	0.0	216.60	184.50	401.10
5	45.0	6.16	12.625	7.51	0.00	0.12	2.88	0.80	1.00	0.00	14.35	43.77	0.00	1,711.7	0.0	216.34	198.23	414.57
6	55.0	6.53	12.008	7.51	0.00	0.13	2.86	0.80	1.00	0.00	13.85	43.77	0.00	1,678.3	0.0	220.10	209.93	430.03
7	63.4	6.79	6.441	5.03	0.00	0.12	2.90	0.80	1.00	0.00	8.00	29.32	0.00	1,120.5	0.0	133.90	146.45	280.35
8	70.0	6.99	9.039	3.92	0.00	0.14	2.81	0.80	1.00	0.00	9.45	29.32	0.00	1,079.5	0.0	158.03	150.72	308.75
9	76.7	7.18	8.631	3.86	0.00	0.14	2.80	0.80	1.00	0.00	9.09	28.89	0.00	958.1	0.0	155.16	152.37	307.52
10	83.4	7.35	6.572	3.58	0.00	0.12	2.88	0.80	1.00	0.00	7.28	29.37	0.00	1,143.3	0.0	131.18	158.80	289.98
11	90.0	7.51	4.327	4.34	0.00	0.11	2.92	0.80	1.00	0.00	5.91	28.10	0.00	1,007.6	0.0	110.12	155.45	265.57
12	96.6	7.67	6.412	3.24	0.00	0.13	2.85	0.80	1.00	0.00	6.96	29.18	0.00	1,052.4	0.0	129.43	164.74	294.17
13	103.4	7.82	2.125	10.79	0.00	0.18	2.65	0.80	1.00	0.00	7.95	29.18	0.00	866.8	0.0	140.23	167.95	308.19
14	110.0	7.96	1.591	10.32	0.00	0.19	2.64	0.80	1.00	0.00	7.27	28.10	0.00	833.7	0.0	129.72	164.63	294.35
15	116.6	8.09	0.000	10.10	0.00	0.16	2.72	0.80	1.00	0.00	5.84	29.18	0.00	751.3	0.0	109.20	173.84	283.04
16	125.0	8.25	5.350	4.80	0.00	0.12	2.88	0.80	1.00	0.00	6.99	38.83	0.00	955.3	0.0	141.06	231.86	372.91
17	135.0	8.43	4.872	4.80	0.00	0.13	2.84	0.80	1.00	0.00	6.61	27.49	0.00	678.5	0.0	134.53	166.12	300.65
18	146.0	8.63	6.622	4.75	0.00	0.14	2.81	0.80	1.00	0.00	7.99	20.46	0.00	583.5	0.0	164.37	126.77	291.14
22,794.6															0.0	5,851.74		

Section Forces

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 18



Load Case: 1.0D + 1.0W 90° Wind	1.0D + 1.0W 60 mph Wind at 90° From Face
Wind Load Factor: 1.00	Wind Importance Factor: 1.00
Dead Load Factor: 1.00	
Ice Dead Load Factor: 0.00	Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
												Linear Area (sqft)	Linear Area (sqft)					
1	5.0	5.48	12.899	10.01	0.00	0.11	2.92	0.85	1.00	0.00	16.62	10.52	0.00	1,922.4	0.0	226.38	52.24	278.62
2	15.0	5.48	12.303	10.01	0.00	0.11	2.91	0.85	1.00	0.00	16.11	43.77	0.00	2,178.0	0.0	218.73	176.40	395.13
3	25.0	5.48	10.180	8.14	0.00	0.10	2.97	0.85	1.00	0.00	13.25	43.77	0.00	2,219.7	0.0	183.45	176.40	359.85
4	35.0	5.74	14.003	7.51	0.00	0.12	2.88	0.85	1.00	0.00	16.15	43.77	0.00	2,054.1	0.0	226.42	184.50	410.92
5	45.0	6.16	12.625	7.51	0.00	0.12	2.88	0.85	1.00	0.00	14.98	43.77	0.00	1,711.7	0.0	225.85	198.23	424.09
6	55.0	6.53	12.008	7.51	0.00	0.13	2.86	0.85	1.00	0.00	14.45	43.77	0.00	1,678.3	0.0	229.64	209.93	439.57
7	63.4	6.79	6.441	5.03	0.00	0.12	2.90	0.85	1.00	0.00	8.32	29.32	0.00	1,120.5	0.0	139.30	146.45	285.75
8	70.0	6.99	9.039	3.92	0.00	0.14	2.81	0.85	1.00	0.00	9.90	29.32	0.00	1,079.5	0.0	165.59	150.72	316.30
9	76.7	7.18	8.631	3.86	0.00	0.14	2.80	0.85	1.00	0.00	9.52	28.89	0.00	958.1	0.0	162.52	152.37	314.89
10	83.4	7.35	6.572	3.58	0.00	0.12	2.88	0.85	1.00	0.00	7.61	29.37	0.00	1,143.3	0.0	137.10	158.80	295.90
11	90.0	7.51	4.327	4.34	0.00	0.11	2.92	0.85	1.00	0.00	6.13	28.10	0.00	1,007.6	0.0	114.15	155.45	269.60
12	96.6	7.67	6.412	3.24	0.00	0.13	2.85	0.85	1.00	0.00	7.28	29.18	0.00	1,052.4	0.0	135.39	164.74	300.13
13	103.4	7.82	2.125	10.79	0.00	0.18	2.65	0.85	1.00	0.00	8.06	29.18	0.00	866.8	0.0	142.11	167.95	310.06
14	110.0	7.96	1.591	10.32	0.00	0.19	2.64	0.85	1.00	0.00	7.35	28.10	0.00	833.7	0.0	131.14	164.63	295.77
15	116.6	8.09	0.000	10.10	0.00	0.16	2.72	0.85	1.00	0.00	5.84	29.18	0.00	751.3	0.0	109.20	173.84	283.04
16	125.0	8.25	5.350	4.80	0.00	0.12	2.88	0.85	1.00	0.00	7.26	38.83	0.00	955.3	0.0	146.46	231.86	378.31
17	135.0	8.43	4.872	4.80	0.00	0.13	2.84	0.85	1.00	0.00	6.86	27.49	0.00	678.5	0.0	139.48	166.12	305.60
18	146.0	8.63	6.622	4.75	0.00	0.14	2.81	0.85	1.00	0.00	8.32	20.46	0.00	583.5	0.0	171.19	126.77	297.95
														22,794.6	0.0	5,961.48		

Force/Stress Compression Summary

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II
Topography: 1

4/12/2022

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LEG MEMBERS

Sect	Top Elev	Member	Force		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls	
			(kips)				X	Y	Z					KL/R
1	10	MOD - 5"PST+6"PX1/2P	-210.16	1.2D + 1.6W	Normal Wind	10.02	100	100	100	68.10	50.00	272.55	77.1	Member X
2	20	MOD - 5"PST+6"PX1/2P	-197.36	1.2D + 1.6W	Normal Wind	9.77	100	100	100	66.40	50.00	277.15	71.2	Member X
3	30	MOD - 4"PX+5"PX1/2P	-184.80	1.2D + 1.6W	Normal Wind	10.02	100	100	100	76.37	50.00	219.25	84.3	Member X
4	40	PX - 4" DIA PIPE	-170.16	1.2D + 1.6W	Normal Wind	9.77	50	50	50	39.60	50.00	176.95	96.2	Member X
5	50	PX - 4" DIA PIPE	-156.46	1.2D + 1.6W	Normal Wind	9.77	50	50	50	39.59	50.00	176.96	88.4	Member X
6	60	PX - 4" DIA PIPE	-142.13	1.2D + 1.6W	Normal Wind	9.77	50	50	50	39.59	50.00	176.96	80.3	Member X
7	66.7	MOD - 3"PX+4"PX1/2P	-130.33	1.2D + 1.6W	Normal Wind	6.71	100	100	100	71.98	50.00	160.76	81.1	Member X
8	73.4	PX - 3" DIA PIPE	-120.29	1.2D + 1.6W	Normal Wind	6.71	50	50	50	35.33	50.00	124.05	97.0	Member X
9	80	PX - 3" DIA PIPE	-110.64	1.2D + 1.6W	Normal Wind	6.61	50	50	50	34.80	50.00	124.38	89.0	Member X
10	86.75	MOD - 2.5"PX+3"PX1/2P	-100.64	1.2D + 1.6W	Normal Wind	6.51	50	50	50	39.86	50.00	150.70	66.8	Member X
11	93.25	MOD - 2.5"PX+3.5"PX1/2P	-91.58	1.2D + 1.6W	Normal Wind	6.51	100	100	100	85.72	50.00	107.59	85.1	Member X
12	100	PX - 2-1/2" DIA PIPE	-80.99	1.2D + 1.6W	Normal Wind	6.51	50	50	50	42.28	50.00	88.84	91.2	Member X
13	106.7	PX - 2-1/2" DIA PIPE	-70.46	1.2D + 1.6W	Normal Wind	6.51	50	50	50	42.28	50.00	88.85	79.3	Member X
14	113.2	PX - 2-1/2" DIA PIPE	-60.44	1.2D + 1.6W	Normal Wind	6.51	50	50	50	42.28	50.00	88.85	68.0	Member X
15	120	PX - 2-1/2" DIA PIPE	-48.85	1.2D + 1.6W	Normal Wind	6.51	100	100	100	84.56	50.00	60.03	81.4	Member X
16	130	PST - 2-1/2" DIA PIPE	-39.30	1.2D + 1.6W	Normal Wind	4.88	100	100	100	61.88	50.00	57.96	67.8	Member X
17	140	PST - 2-1/2" DIA PIPE	-21.70	1.2D + 1.6W	Normal Wind	4.88	100	100	100	61.88	50.00	57.96	37.4	Member X
18	152	PST - 2" DIA PIPE	-9.46	1.2D + 1.6W	Normal Wind	0.25	100	100	100	3.81	50.00	48.10	19.7	Member X

Splices

Sect	Top Elev	Load Case	Top Splice				Bottom Splice					
			Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	10	1.2D + 1.6W Normal Wind	203.78	0.00	0.0			1.2D + 1.6W Normal Wind	217.20	0.00		
2	20	1.2D + 1.6W Normal Wind	190.82	0.00	0.0			1.2D + 1.6W Normal Wind	203.78	0.00		
3	30	1.2D + 1.6W Normal Wind	177.74	0.00	0.0			1.2D + 1.6W Normal Wind	190.82	0.00	1 A325-X	4
4	40	1.2D + 1.6W Normal Wind	164.23	0.00	0.0			1.2D + 1.6W Normal Wind	177.74	0.00		
5	50	1.2D + 1.6W Normal Wind	149.25	0.00	0.0			1.2D + 1.6W Normal Wind	164.23	0.00	7/8 A325	4
6	60	1.2D + 1.6W Normal Wind	135.79	0.00	0.0			1.2D + 1.6W Normal Wind	149.25	0.00		
7	66.7	1.2D + 1.6W Normal Wind	125.05	0.00	0.0			1.2D + 1.6W Normal Wind	135.79	0.00	/8 A325-X	4
8	73.4	1.2D + 1.6W Normal Wind	115.40	0.00	0.0			1.2D + 1.6W Normal Wind	125.05	0.00		
9	80	1.2D + 1.6W Normal Wind	105.61	0.00	0.0			1.2D + 1.6W Normal Wind	115.40	0.00		
10	86.75	1.2D + 1.6W Normal Wind	95.90	0.00	0.0			1.2D + 1.6W Normal Wind	105.61	0.00	/4 A325-X	4
11	93.25	1.2D + 1.6W Normal Wind	86.47	0.00	0.0			1.2D + 1.6W Normal Wind	95.90	0.00		
12	100	1.2D + 1.6W Normal Wind	76.30	0.00	0.0			1.2D + 1.6W Normal Wind	86.47	0.00		
13	106.7	1.2D + 1.6W Normal Wind	65.21	0.00	0.0			1.2D + 1.6W Normal Wind	76.30	0.00	/8 A325-X	4
14	113.2	1.2D + 1.6W Normal Wind	54.92	0.00	0.0			1.2D + 1.6W Normal Wind	65.21	0.00		
15	120	1.2D + 1.6W Normal Wind	43.90	0.00	0.0			1.2D + 1.6W Normal Wind	54.92	0.00		
16	130	1.2D + 1.6W Normal Wind	26.07	0.00	0.0			1.2D + 1.6W Normal Wind	43.90	0.00	/8 A325-X	4
17	140	1.2D + 1.6W Normal Wind	9.72	0.00	0.0			1.2D + 1.6W Normal Wind	26.07	0.00		
18	152	1.2D + 1.0Di + 1.0Wi 60° Wind	0.25	0.00	0.0			1.2D + 1.6W Normal Wind	9.72	0.00	/8 A325-X	4

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %	Fy (ksi)	Mem Cap (kips)	Shear Bear			Use %	Controls
									Num Bolts	Num Holes	Cap (kips)		
1	10							0.00	0	0			
2	20							0.00	0	0			
3	30							0.00	0	0			
4	40							0.00	0	0			
5	50							0.00	0	0			

Force/Stress Compression Summary

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



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HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
						X	Y	Z									
6	60									0.00	0	0					
7	66.7									0.00	0	0					
8	73.4									0.00	0	0					
9	80									0.00	0	0					
10	86.7									0.00	0	0					
11	93.2									0.00	0	0					
12	100									0.00	0	0					
13	106.									0.00	0	0					
14	113.									0.00	0	0					
15	120									0.00	0	0					
16	130									0.00	0	0					
17	140									0.00	0	0					
18	152	SAE - 2x2x0.125	-0.66	0.9D + 1.6W Normal Wind	6.52	100	100	100	196.58	36.00	2.81	10	10	972.00	696.0	24	Member Z

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
						X	Y	Z									
1	10	SAE - 3.5X3.5X0.25	-7.73	1.2D + 1.6W 90° Wind	22.61	49	49	49	191.59	50.00	10.40	1	1	15.19	11.6	74	Member Z
2	20	SAE - 3.5X3.5X0.25	-7.47	0.9D + 1.6W 90° Wind	21.59	49	49	49	182.93	50.00	11.41	1	1	15.19	11.6	65	Member Z
3	30	SAE - 3X3X0.375	-7.27	0.9D + 1.6W 90° Wind	20.81	49	49	49	208.49	36.00	10.97	1	1	15.19	26.1	66	Member Z
4	40	SAE - 3X3X0.375	-7.67	1.2D + 1.6W 90° Wind	19.79	49	49	49	198.27	36.00	12.13	1	1	15.19	26.1	63	Member Z
5	50	SAE - 3X3X0.25	-7.08	1.2D + 1.6W 90° Wind	18.89	49	49	49	187.63	36.00	9.24	1	1	15.19	17.4	77	Member Z
6	60	SAE - 3X3X0.25	-7.29	1.2D + 1.6W 90° Wind	18.06	49	49	49	179.41	36.00	10.11	1	1	15.19	14.7	72	Member Z
7	66.7	SAE - 2.5X2.5X0.25	-6.18	1.2D + 1.6W 90° Wind	15.83	49	49	49	189.62	36.00	7.48	1	1	9.72	13.9	83	Member Z
8	73.4	SAE - 2.5X2.5X0.25	-6.00	1.2D + 1.6W 90° Wind	15.21	49	49	49	182.11	36.00	8.11	1	1	9.72	13.9	74	Member Z
9	80	SAE - 2.5X2.5X0.1875	-5.79	1.2D + 1.6W 90° Wind	14.54	49	49	49	172.67	36.00	6.83	1	1	9.72	6.20	93	Bolt Bear
10	86.7	SAE - 2X2X0.375	-5.53	1.2D + 1.6W 90° Wind	13.86	49	49	49	209.54	36.00	7.00	1	1	9.72	20.8	79	Member Z
11	93.2	SAE - 2X2X0.375	-5.31	1.2D + 1.6W 90° Wind	13.28	49	49	49	200.74	36.00	7.62	1	1	9.72	20.8	70	Member Z
12	100	SAE - 2X2X0.375	-5.78	1.2D + 1.6W 90° Wind	12.71	49	49	49	192.07	36.00	8.33	1	1	9.72	20.8	69	Member Z
13	106.	MOD - 2L2x2x1/8_Speci	5.29	1.2D + 1.6W 90° Wind	12.10	49	49	49	117.93	36.00	15.28	1	1	9.72		54	Bolt Shear
14	113.	MOD - 2L2x2x1/8_Speci	5.12	1.2D + 1.6W 90° Wind	11.56	49	49	49	113.99	36.00	16.03	1	1	9.72		53	Bolt Shear
15	120	MOD - 2L2x2x1/8_Speci	5.48	1.2D + 1.6W 90° Wind	11.03	49	49	49	110.13	36.00	16.78	1	1	9.72		56	Bolt Shear
16	130	SAE - 1.75X1.75X0.25	-4.71	1.2D + 1.6W 90° Wind	9.62	50	50	50	169.25	36.00	6.39	1	1	9.72	13.9	74	Member Z
17	140	SAE - 1.75X1.75X0.125	-3.73	1.2D + 1.6W 90° Wind	8.39	50	50	50	145.10	36.00	4.51	1	1	9.72	4.13	90	Bolt Bear
18	152	SAE - 1.5X1.5X0.125	-2.32	1.2D + 1.6W 90° Wind	7.63	50	50	50	154.74	36.00	3.40	1	1	9.72	4.13	68	Member Z

Force/Stress Tension Summary

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

4/12/2022

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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	10	MOD - 5"PST+6"PX1/2P	181.31	0.9D + 1.6W 60° Wind	50	382.59	47.4	Member
2	20	MOD - 5"PST+6"PX1/2P	176.60	0.9D + 1.6W 60° Wind	50	382.59	46.2	Member
3	30	MOD - 4"PX+5"PX1/2P	159.46	0.9D + 1.6W 60° Wind	50	335.85	47.5	Member
4	40	PX - 4" DIA PIPE	147.49	0.9D + 1.6W 60° Wind	50	198.45	74.3	Member
5	50	PX - 4" DIA PIPE	142.64	0.9D + 1.6W 60° Wind	50	198.45	71.9	Member
6	60	PX - 4" DIA PIPE	123.40	0.9D + 1.6W 60° Wind	50	198.45	62.2	Member
7	66.7	MOD - 3"PX+4"PX1/2P	113.07	0.9D + 1.6W 60° Wind	50	234.80	48.2	Member
8	73.4	PX - 3" DIA PIPE	104.37	0.9D + 1.6W 60° Wind	50	135.90	76.8	Member
9	80	PX - 3" DIA PIPE	95.83	0.9D + 1.6W 60° Wind	50	135.90	70.5	Member
10	86.75	MOD - 2.5"PX+3"PX1/2P	92.08	0.9D + 1.6W 60° Wind	50	169.27	54.4	Member
11	93.25	MOD - 2.5"PX+3.5"PX1/2P	78.76	0.9D + 1.6W 60° Wind	50	184.12	42.8	Member
12	100	PX - 2-1/2" DIA PIPE	69.35	0.9D + 1.6W 60° Wind	50	101.25	68.5	Member
13	106.75	PX - 2-1/2" DIA PIPE	65.25	0.9D + 1.6W 60° Wind	50	101.25	64.4	Member
14	113.25	PX - 2-1/2" DIA PIPE	50.43	0.9D + 1.6W 60° Wind	50	101.25	49.8	Member
15	120	PX - 2-1/2" DIA PIPE	39.81	0.9D + 1.6W 60° Wind	50	101.25	39.3	Member
16	130	PST - 2-1/2" DIA PIPE	35.23	0.9D + 1.6W 60° Wind	50	76.68	46.0	Member
17	140	PST - 2-1/2" DIA PIPE	16.53	0.9D + 1.6W 60° Wind	50	76.68	21.6	Member
18	152	PST - 2" DIA PIPE	6.69	0.9D + 1.6W 60° Wind	50	48.15	13.9	Member

Splices

Sect	Top Elev	Top Splice					Bottom Splice						
		Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	10	0.9D + 1.6W 60° Wind	175.19	0.00	0.0			0.9D + 1.6W 60° Wind	187.7	0.00			
2	20	0.9D + 1.6W 60° Wind	164.33	0.00	0.0			0.9D + 1.6W 60° Wind	175.1	0.00			
3	30	0.9D + 1.6W 60° Wind	152.82	0.00	0.0			0.9D + 1.6W 60° Wind	164.3	212.04	77.5	1 A325-X	4
4	40	0.9D + 1.6W 60° Wind	142.37	0.00	0.0			0.9D + 1.6W 60° Wind	152.8	0.00			
5	50	0.9D + 1.6W 60° Wind	129.38	0.00	0.0			0.9D + 1.6W 60° Wind	142.3	166.24	85.6	7/8 A325	4
6	60	0.9D + 1.6W 60° Wind	117.77	0.00	0.0			0.9D + 1.6W 60° Wind	129.3	0.00			
7	66.7	0.9D + 1.6W 60° Wind	108.02	0.00	0.0			0.9D + 1.6W 60° Wind	117.7	166.24	70.8	7/8 A325-X	4
8	73.4	0.9D + 1.6W 60° Wind	99.58	0.00	0.0			0.9D + 1.6W 60° Wind	108.0	0.00			
9	80	0.9D + 1.6W 60° Wind	90.89	0.00	0.0			0.9D + 1.6W 60° Wind	99.58	0.00			
10	86.75	0.9D + 1.6W 60° Wind	82.55	0.00	0.0			0.9D + 1.6W 60° Wind	90.89	120.40	75.5	3/4 A325-X	4
11	93.25	0.9D + 1.6W 60° Wind	73.79	0.00	0.0			0.9D + 1.6W 60° Wind	82.55	0.00			
12	100	0.9D + 1.6W 60° Wind	65.12	0.00	0.0			0.9D + 1.6W 60° Wind	73.79	0.00			
13	106.75	0.9D + 1.6W 60° Wind	54.75	0.00	0.0			0.9D + 1.6W 60° Wind	65.12	82.84	78.6	5/8 A325-X	4
14	113.25	0.9D + 1.6W 60° Wind	45.03	0.00	0.0			0.9D + 1.6W 60° Wind	54.75	0.00			
15	120	0.9D + 1.6W 60° Wind	35.14	0.00	0.0			0.9D + 1.6W 60° Wind	45.03	0.00			
16	130	0.9D + 1.6W 60° Wind	18.28	0.00	0.0			0.9D + 1.6W 60° Wind	35.14	82.84	42.4	5/8 A325-X	4
17	140	0.9D + 1.6W 60° Wind	6.79	0.00	0.0			0.9D + 1.6W 60° Wind	18.28	0.00			
18	152		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	6.79	82.84	8.2	5/8 A325-X	4

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	10	-			50	0.00	0	0					
2	20	-			50	0.00	0	0					
3	30	-			36	0.00	0	0					
4	40	-			36	0.00	0	0					
5	50	-			36	0.00	0	0					
6	60	-			36	0.00	0	0					

Force/Stress Tension Summary

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II
Topography: 1

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HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
7	66.7	-			36	0.00	0	0					
8	73.4	-			36	0.00	0	0					
9	80	-			36	0.00	0	0					
10	86.75	-			36	0.00	0	0					
11	93.25	-			36	0.00	0	0					
12	100	-			36	0.00	0	0					
13	106.75	-			36	0.00	0	0					
14	113.25	-			36	0.00	0	0					
15	120	-			36	0.00	0	0					
16	130	-			36	0.00	0	0					
17	140	-			36	0.00	0	0					
18	152	SAE - 2x2x0.125	0.74	1.2D + 1.6W 60° Wind	36	-318.96	100	100	972.00	696.00	287.78	0.2	Member

DIAGONAL MEMBERS

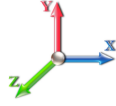
Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	10	SAE - 3.5X3.5X0.25	7.47	0.9D + 1.6W 90° Wind	50	54.94	1	1	15.19	11.69	23.91	63.9	Bolt Bear
2	20	SAE - 3.5X3.5X0.25	7.38	0.9D + 1.6W 90° Wind	50	54.94	1	1	15.19	11.69	23.91	63.2	Bolt Bear
3	30	SAE - 3X3X0.375	7.24	0.9D + 1.6W 90° Wind	36	59.66	1	1	15.19	26.10	23.39	47.7	Bolt Shear
4	40	SAE - 3X3X0.375	7.23	0.9D + 1.6W 90° Wind	36	59.66	1	1	15.19	26.10	23.39	47.6	Bolt Shear
5	50	SAE - 3X3X0.25	7.06	1.2D + 1.6W 90° Wind	36	40.86	1	1	15.19	17.40	15.59	46.5	Bolt Shear
6	60	SAE - 3X3X0.25	6.94	0.9D + 1.6W 90° Wind	36	40.86	1	1	15.19	14.79	14.58	47.6	Blck Shear
7	66.7	SAE - 2.5X2.5X0.25	6.26	1.2D + 1.6W 90° Wind	36	33.73	1	1	9.72	13.92	14.91	64.4	Bolt Shear
8	73.4	SAE - 2.5X2.5X0.25	5.74	1.2D + 1.6W 90° Wind	36	33.73	1	1	9.72	13.92	14.91	59.0	Bolt Shear
9	80	SAE - 2.5X2.5X0.1875	5.77	1.2D + 1.6W 90° Wind	36	25.60	1	1	9.72	6.20	9.79	93.1	Bolt Bear
10	86.75	SAE - 2X2X0.375	5.43	1.2D + 1.6W 90° Wind	36	36.72	1	1	9.72	20.88	18.29	55.9	Bolt Shear
11	93.25	SAE - 2X2X0.375	5.32	1.2D + 1.6W 90° Wind	36	36.72	1	1	9.72	20.88	18.29	54.7	Bolt Shear
12	100	SAE - 2X2X0.375	5.54	1.2D + 1.6W 90° Wind	36	36.72	1	1	9.72	20.88	18.29	57.0	Bolt Shear
13	106.75	MOD - 2L2x2x1/8_Special	5.29	1.2D + 1.6W 90° Wind	36	31.78	1	1	9.72			54.4	Bolt Shear
14	113.25	MOD - 2L2x2x1/8_Special	5.10	1.2D + 1.6W 90° Wind	36	31.78	1	1	9.72			52.5	Bolt Shear
15	120	MOD - 2L2x2x1/8_Special	5.29	1.2D + 1.6W 90° Wind	36	31.78	1	1	9.72			54.5	Bolt Shear
16	130	SAE - 1.75X1.75X0.25	4.83	1.2D + 1.6W 90° Wind	36	21.33	1	1	9.72	13.92	10.83	49.7	Bolt Shear
17	140	SAE - 1.75X1.75X0.125	3.61	0.9D + 1.6W 90° Wind	36	11.15	1	1	9.72	4.13	3.81	94.8	Blck Shear
18	152	SAE - 1.5X1.5X0.125	2.27	0.9D + 1.6W 90° Wind	36	9.20	1	1	9.72	4.13	3.81	59.7	Blck Shear

Support Forces Summary

Structure: CT13065-A-SBA
Site Name: Guilford
Height: 152.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
<hr/>					
1.2D + 1.6W Normal Wind	1	0.02	216.60	-23.50	
	1a	7.88	-89.22	-7.72	
	1b	-7.90	-89.26	-7.70	
<hr/>					
1.2D + 1.6W 60° Wind	1	-2.57	110.88	-11.53	
	1a	-11.28	110.90	3.53	
	1b	-18.13	-183.66	-10.45	
<hr/>					
1.2D + 1.6W 90° Wind	1	-3.01	12.70	-0.69	
	1a	-17.84	184.40	8.54	
	1b	-16.57	-158.98	-7.84	
<hr/>					
0.9D + 1.6W Normal Wind	1	0.02	213.15	-23.30	
	1a	8.05	-92.27	-7.82	
	1b	-8.07	-92.30	-7.80	
<hr/>					
0.9D + 1.6W 60° Wind	1	-2.57	107.58	-11.33	
	1a	-11.11	107.58	3.42	
	1b	-18.30	-186.56	-10.55	
<hr/>					
0.9D + 1.6W 90° Wind	1	-3.01	9.52	-0.49	
	1a	-17.67	180.99	8.44	
	1b	-16.75	-161.92	-7.94	
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1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	84.56	-6.63	
	1a	1.59	4.83	-1.71	
	1b	-1.59	4.76	-1.71	
<hr/>					
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.66	57.49	-3.60	
	1a	-3.45	57.51	1.22	
	1b	-4.36	-20.85	-2.52	
<hr/>					
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.77	31.38	-0.72	
	1a	-5.16	76.83	2.53	
	1b	-3.92	-14.06	-1.82	
<hr/>					
1.0D + 1.0W Normal Wind	1	0.00	55.52	-5.69	
	1a	1.30	-11.86	-1.46	
	1b	-1.30	-11.89	-1.45	
<hr/>					
1.0D + 1.0W 60° Wind	1	-0.56	32.22	-3.05	
	1a	-2.93	32.25	1.03	
	1b	-3.57	-32.70	-2.06	
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1.0D + 1.0W 90° Wind	1	-0.67	10.58	-0.66	
	1a	-4.38	48.47	2.14	
	1b	-3.23	-27.28	-1.48	
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Max Reactions

Leg	Overturning
Max Uplift: -186.56 (kips)	Moment: 3669.48 (ft-kips)
Max Down: 216.60 (kips)	Total Down: 38.13 (kips)
Max Shear: 23.50 (kips)	Total Shear: 38.91 (kips)

Analysis Summary

Structure: CT13065-A-SBA	Code: TIA-222-G	4/12/2022
Site Name: Guilford	Exposure: B	
Height: 152.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
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Max Reactions

	Leg	Overturning
Max Uplift:	-186.56 (kips)	Moment: 3669.48 (ft-kips)
Max Down:	216.60 (kips)	Total Down: 38.13 (kips)
Max Shear:	23.50 (kips)	Total Shear: 38.91 (kips)

Anchor Bolts

Bolt Size (in.): 1.00	Number Bolts: 4
Yield Strength (Ksi): 92.00	Tensile Strength (Ksi): 120.00
Detail Type: B	

Interaction Ratio: 0.95

Max Usages

Max Leg: 97.0% (1.2D + 1.6W Normal Wind - Sect 8)
 Max Diag: 94.8% (0.9D + 1.6W 90° Wind - Sect 17)
 Max Horiz: 23.7% (0.9D + 1.6W Normal Wind - Sect 18)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.6W 101 mph Wind at 60° From Face	80.25	0.3103	0.0519	0.5579
	130.00	0.9109	0.1350	0.9259
	139.75	1.0665	0.1608	1.1560
	148.08	1.2025	0.1606	0.9489
0.9D + 1.6W 101 mph Wind at 90° From Face	80.25	0.3132	0.0326	0.5998
	130.00	0.9177	-0.1576	0.9208
	139.75	1.0747	-0.1876	1.1340
	148.08	1.2112	-0.1900	0.9408
0.9D + 1.6W 101 mph Wind at Normal To Face	80.25	0.3207	0.0463	0.5733
	130.00	0.9371	0.1207	0.9494
	139.75	1.0965	0.1432	1.1876
	148.08	1.2358	0.1439	1.0147
1.0D + 1.0W 60 mph Wind at 60° From Face	80.25	0.0685	0.0072	0.1230
	130.00	0.2010	0.0168	0.2050
	139.75	0.2353	-0.0209	0.2568
	148.08	0.2654	0.0198	0.2084
1.0D + 1.0W 60 mph Wind at 90° From Face	80.25	0.0692	0.0053	0.1318
	130.00	0.2027	-0.0258	0.2039
	139.75	0.2374	-0.0315	0.2519
	148.08	0.2675	-0.0312	0.2096
1.0D + 1.0W 60 mph Wind at Normal To Face	80.25	0.0708	0.0069	0.1270
	130.00	0.2068	0.0164	0.2088
	139.75	0.2420	0.0205	0.2603
	148.08	0.2727	0.0195	0.2220

1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	80.25	0.0819	0.0110	0.1483
	130.00	0.2417	0.0277	0.2438
	139.75	0.2819	0.0334	0.3022
	148.08	0.3172	0.0328	0.2478

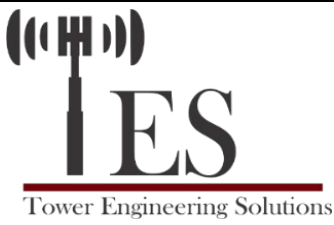
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	80.25	0.0817	0.0076	0.1585
	130.00	0.2424	-0.0409	0.2413
	139.75	0.2828	-0.0489	0.2949
	148.08	0.3181	-0.0498	0.2489

1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	80.25	0.0847	0.0107	0.1511
	130.00	0.2447	0.0276	0.2432
	139.75	0.2858	0.0333	0.2980
	148.08	0.3214	0.0329	0.2741

1.2D + 1.6W 101 mph Wind at 60° From Face	80.25	0.3109	0.0523	0.5590
	130.00	0.9129	0.1360	0.9286
	139.75	1.0688	0.1621	1.1598
	148.08	1.2053	0.1618	0.9511

1.2D + 1.6W 101 mph Wind at 90° From Face	80.25	0.3138	0.0328	0.6009
	130.00	0.9198	-0.1588	0.9232
	139.75	1.0772	-0.1889	1.1368
	148.08	1.2139	-0.1913	0.9440

1.2D + 1.6W 101 mph Wind at Normal To Face	80.25	0.3213	0.0465	0.5745
	130.00	0.9391	0.1216	0.9518
	139.75	1.0989	0.1442	1.1905
	148.08	1.2385	0.1449	1.0165



Self Supporting Tower Footing Design

Date

4/12/2022

Customer Name:	SBA Communications Corp	TIA Standard:	TIA-222-G
Site Name:		Structure Height (Ft.):	152
Site Number:	CT13065-A-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	127622	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Self Supporting Tower

Analysis or Design?

Analysis

Base Reactions (Factored):

Axial Load (Kips):	216.6	Shear Force (Kips):	23.5
Uplift Force (Kips):	186.6	Moment (Kips-ft):	0.0

Allowable overstress %: 5.0%

Foundation Geometries:

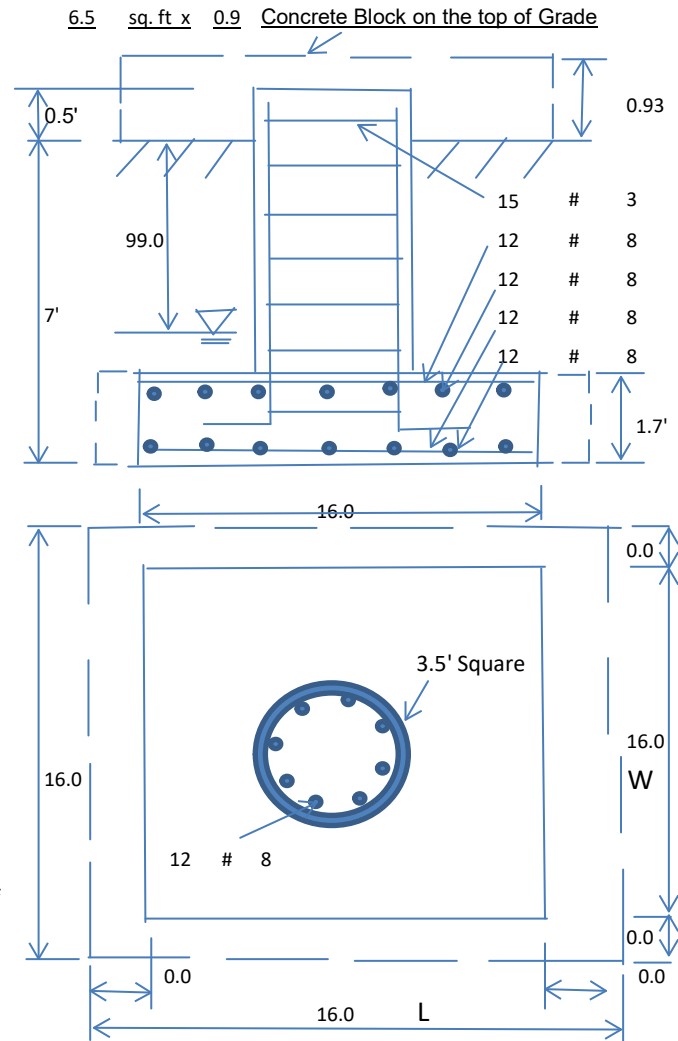
Pad Base w/ toe or in Rock-Yes/No ?	No	Mods required -Yes/No ?:	Yes
Diameter of Pier (ft.):	Square 3.500	Depth of Base BG (ft.):	7.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	1.70
Length of Pad (ft.):	16	Width of Pad (ft.):	16
Add Concrete Width & Length (ft.)	6.5	Add Concrete Thick. (ft)	0.926
Final Length of pad (ft)	16.0	Final width of pad (ft):	16.0

Consider ties in concrete shear strength ?:

Yes

Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	3	
Qty. of Vertical Rebars:	12	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):	12	Qty. of Rebar in Pad (W):	12	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	12	Qty. of Rebar in Pad (W):	12	



Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf	
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad: 30

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75
Compression Strength Reduction Factor:	0.75

Total Dry Soil Volume (cu. Ft.):	1860.47	Total Dry Soil Weight (Kips):	223.26
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	223.26	Weight from the Concrete Block at Top (K):	4.95
Total Dry Concrete Volume (cu. Ft.):	539.25	Total Dry Concrete Weight (Kips):	80.89
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	80.89	Total Vertical Load on Base (Kips):	520.75

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1161.91	<	Allowable Factored Soil Bearing (psf):	7500	0.15	OK!
Calculated Foundation Allowable Axail Capacity (Kips):	1920.0	>	Design Factored Axial Load (Kips):	236	0.12	OK!
Calculated Foundation Uplift Capacity (Kips):	263.49	>	Design Factored Uplift Load (Kips):	187	0.71	OK!

Load/
Capacity
Ratio

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

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.11		
Calculated Moment Capacity (Mn,Kips-Ft):	577.3	> Design Factored Moment (Mu, Kips-Ft)	136.3	0.24	OK!
Calculated Shear Capacity (Kips):	168.3	> Design Factored Shear (Kips):	23.5	0.14	OK!
Calculated Tension Capacity (Tn, Kips):	511.9	> Design Factored Tension (Tu Kips):	186.6	0.36	OK!
Calculated Compression Capacity (Pn, Kips):	2326.5	> Design Factored Axial Load (Pu Kips):	216.6	0.09	OK!
Moment & Axial Strength Combination:	0.24	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.005				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Dir. Kips);	266.6	> One-Way Factored Shear (L-Dir Kips):	68.5	0.26	OK!
One-Way Design Shear Capacity (W-Dir. Kips):	266.6	> One-Way Factored Shear (W-Dir Kips)	68.5	0.26	OK!
Two-Way Design Shear Capacity (Kips):	560.9	> Two-Way Factored Shear (Kips):	196.0	0.35	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0029	Lower Steel Pad Reinf. Ratio (W-Direc	0.0029		OK!
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	696.2	> Moment at Bottom (L-Direct. K-Ft):	269.4	0.39	OK!
Lower Steel Pad Moment Capacity (W-Dir. Kips-ft):	696.2	> Moment at Bottom (W-Dir. Kips-Ft):	269.4	0.39	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0029	Upper Steel Reinf. Ratio (W-Direct.):	0.0029		OK!
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	696.2	> Moment at the top (L-Dir Kips-Ft):	211.8	0.30	OK!
Upper Steel Pad Moment Capacity (W-Dir. Kips-ft):	696.2	> Moment at the top (W-Dir Kips-Ft):	211.8	0.30	OK!