



Tower Engineering Solutions

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Structural Analysis Report

Existing 159 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13055-A

Customer Site Name: Monroe Turnpike

Carrier Name: Sprint Nextel

Carrier Site ID / Name: CT23XC314 / Monroe Turnpike

Site Location: 1428 Monroe Turnpike

Monroe, Connecticut

Fairfield County

Latitude: 41.376463

Longitude: -73.186541

Analysis Result:

Max Structural Usage: 83.3% [Pass]

Max Foundation Usage: 76.0% [Pass]

Additional Usage Caused by Mount Modification: 1.2%

Report Prepared By: Mariana Franco



Introduction

The purpose of this report is to summarize the analysis results on the 159 ft SABRE 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	Sabre Communications Corporation, Job No. 04-05018, dated May 23, 2003
Foundation Drawing	Sabre Communications Corporation, Job No. 04-05018, Drawing No. 04-05018-F1, dated May 23, 2003
Geotechnical Report	Geotechnical Report by Dr. Clarence Welti, P.E., P.C., dated April 25, 2003
Modification Drawings	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.205g$, $S_1 = 0.065g$

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 ¹	Owner
1	162.0	3	Powerwave 7770 - Panel	Low Profile Platform	(6) 1 5/8" (1) 7/8" (2) 3/4" DC	AT&T
2		3	Powerwave P65-16-XLH-RR - Panel			
3		6	Powerwave LGP21401 - TMA			
4		6	Ericsson RRUS-11 - RRU			
5		1	Raycap DC6-48-60-18-8F			
6		1	Decibel DB404-B - Omni		(1) 1/2" Fiber	Town
-	151.0	3	RFS - APXVSP18-C-A20 - Panel	Low Profile Platform	(4) 1-1/4" Hybrid	Sprint Nextel
-		3	RFS - APXVTM14-C-I20 - Panel			
-		4	RFS - ACU-A20-N - RET			
-		3	Alcatel Lucent - 1900 MHz RRH			
-		3	Alcatel Lucent - 800 MHz RRH			
-		3	Alcatel Lucent - TD-RRH8x20-25 - RRH			
-		3	Alcatel Lucent - 800 MHz Filters			
15	142.5	6	EMS - FR90-16-XXDP - Panel	LP Platform w/ Handrails w/ (3) VSR-MS-B	(24) 1 1/4"	T-Mobile
16		3	RFS - APX16DWV-16DWVS-E-A20 - Panel			
17		3	RFS - APXVAA24_43-U-A20 - Panel			
18		3	RFS - ATMA4P4DBP-1A20 - TMA			
19		3	Andrew - ATSBT-TOP-FM - Bias T			
20	131.0	3	Kathrein 742 213_2110_P45_02.0	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybriflex	Verizon
21		3	Antel BXA-70063/6CF - Panel			
22		3	Antel BXA-171063-12BF - Panel			
23		6	Antel LPA-80063/6CF - Panel			
24		3	Alcatel Lucent RRH2x60-AWS - RRU			
25		6	RFS FD9R6004/2C-3L - Diplexer			
26		1	RFS DB-T1-6Z-8AB-OZ - Distribution Box			
27	110.0	1	Sinclair SCL329-HL - Omni	(1) 4 ft. Standoff	(1) 7/8" ²	Town
28	80.0	1	Sinclair SCL329-HL - Omni	(1) 4 ft. Standoff	(1) 7/8" ²	
-	50.0	1	Decibel 26DB - GPS	(1) 4 ft. Standoff	(1) 1/2" ³	Sprint Nextel

1. Transmission lines installed inside the pole shafts unless otherwise noted.
2. Town has (2) 7/8" coax installed outside the pole shafts in a single row to 110 ft. and 80 ft.
3. Sprint Nextel has (1) 1/2" coax installed outside the pole shafts to 50'

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
7	151.0	3	RFS - APXVSP18-C-A20 - Panel	Low Profile Platform with SitePro HRK-12 Handrail Kit	(4) 1-1/4" Hybrid	Sprint Nextel
8		3	RFS - APXVTM14-C-I20 - Panel			
9		4	RFS - ACU-A20-N - RET			
10		3	Alcatel Lucent - 1900 MHz RRH			
11		3	Alcatel Lucent - 800 MHz RRH			
12		3	Alcatel Lucent - TD-RRH8x20-25 - RRH			
13		3	Alcatel Lucent - 800 MHz Filters			
14	50.0	1	Decibel 26DB - GPS	(1) 4 ft. Standoff	(1) 1/2" ³	

3. Sprint Nextel has (1) 1/2" coax installed outside the pole shafts to 50'

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	76.0%	83.3%	61.3%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	3665.0	31.3	41.5
Analysis Reactions	3917.6	32.8	46.8
Factored Reactions*	4947.8	42.2	56.0
% of Design Reactions	79.2%	77.6%	83.6%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 2.0632 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 75.97% at 0.0ft

Structure: CT13055-A-SBA
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.000 (ft)

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

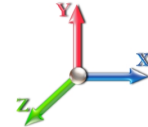
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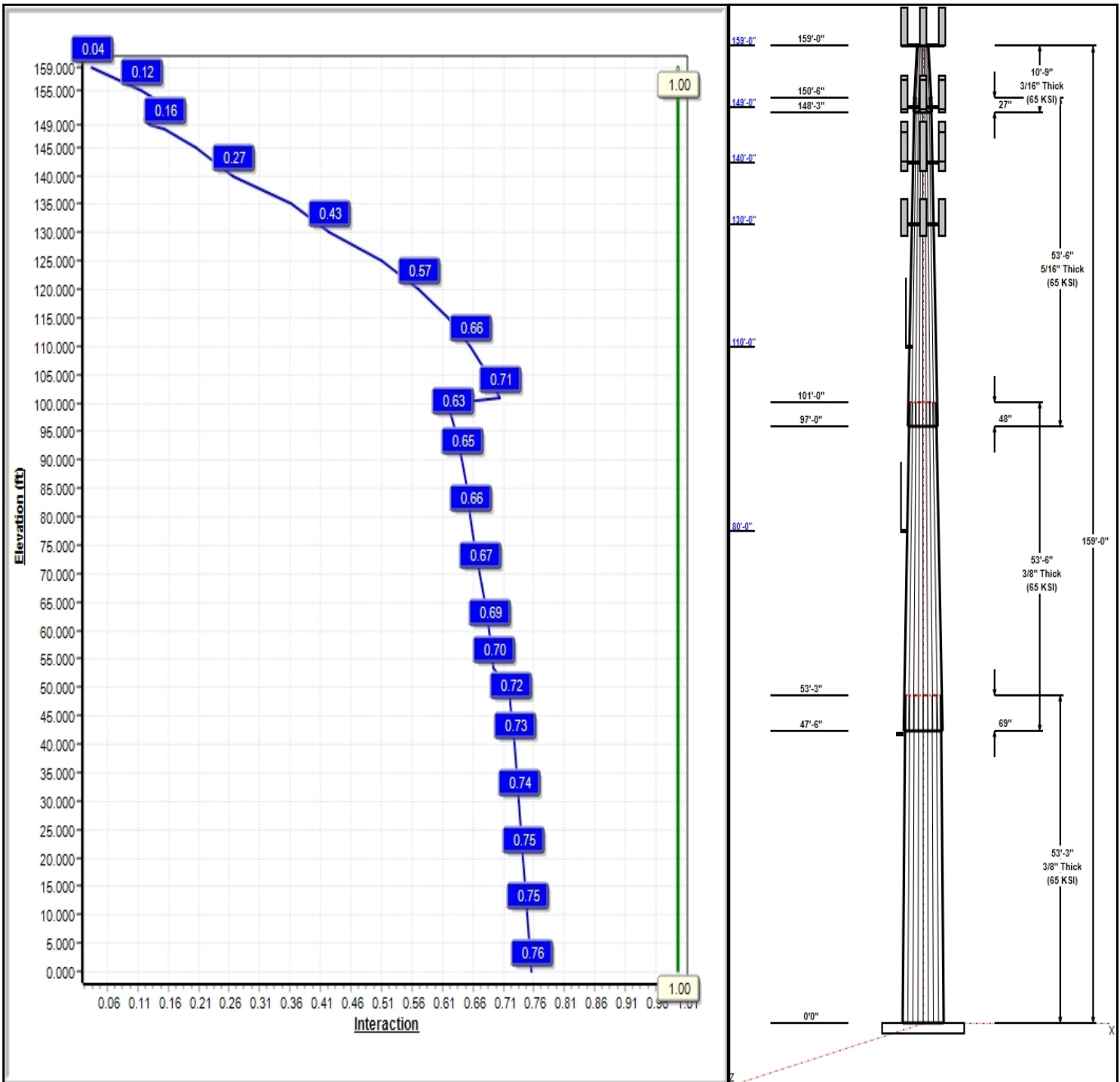
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 25

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Structure: CT13055-A-SBA

Type: Tapered
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.28277

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Shaft Properties

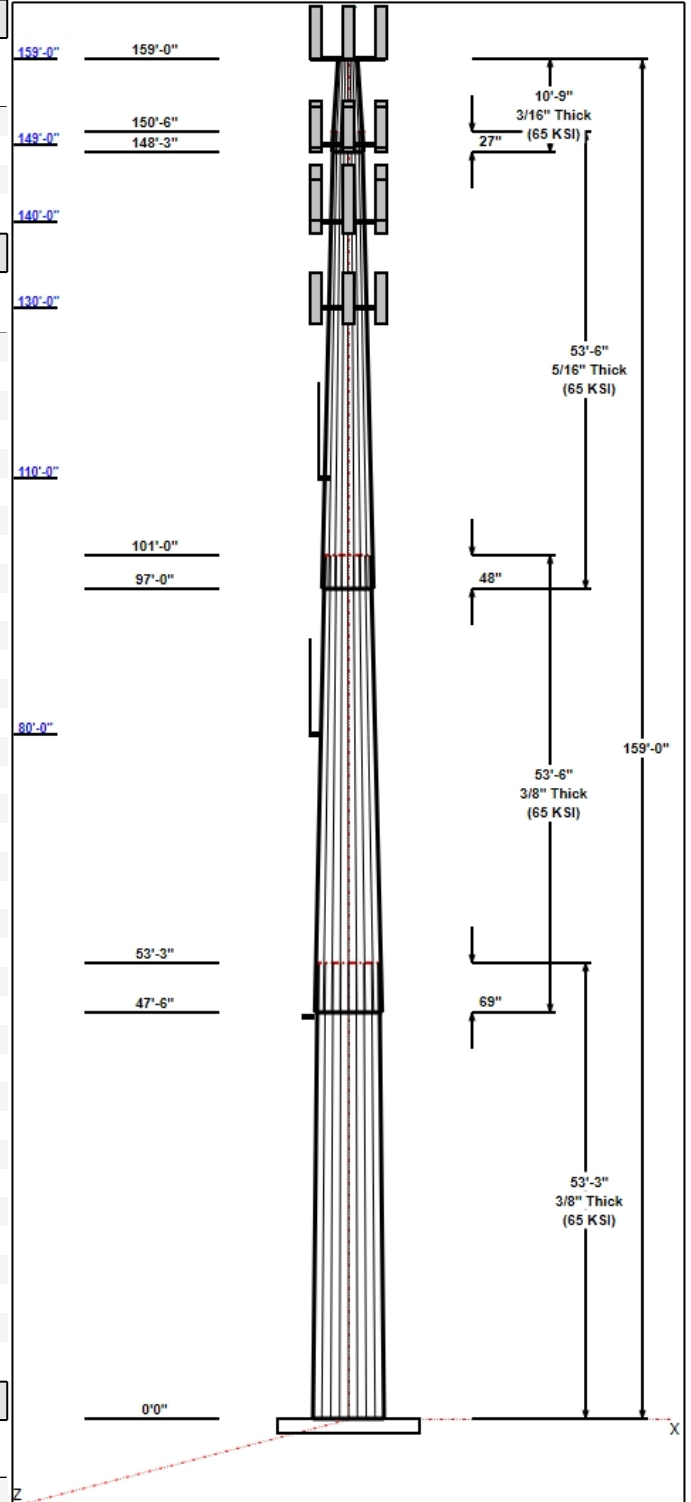
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	43.15	58.21	0.375		0.28277	65
2	53.50	30.40	45.53	0.375	Slip	0.28277	65
3	53.50	17.03	32.16	0.313	Slip	0.28277	65
4	10.75	15.00	18.04	0.188	Slip	0.28277	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
159.00	162.00	3	7770.00	AT&T
159.00	162.00	3	P65-16-XLH-RR	AT&T
159.00	162.00	6	LGP21401	AT&T
159.00	162.00	6	RRUS-11	AT&T
159.00	162.00	1	DC6-48-60-18-8F	AT&T
159.00	159.00	1	Low Profile Platform	AT&T
159.00	162.00	1	DB404-B	Town
149.00	151.00	3	RFS - APXVSPP18-C-A20	Sprint Nextel
149.00	151.00	3	Alcatel Lucent - 1900 MHz	Sprint Nextel
149.00	151.00	3	Alcatel Lucent - 800 MHz	Sprint Nextel
149.00	151.00	3	Alcatel Lucent - 800 MHz	Sprint Nextel
149.00	151.00	4	RFS - ACU-A20-N - RET	Sprint Nextel
149.00	149.00	1	Low Profile Platform	Sprint Nextel
149.00	151.00	3	RFS - APXVTM14-C-I20	Sprint Nextel
149.00	151.00	3	Alcatel Lucent -	Sprint Nextel
149.00	149.00	1	HRK12 (Handrail Kit)	Sprint Nextel
140.00	142.50	6	FR90-16-XXDP	T-Mobile
140.00	142.50	3	APX16DWV-16DWVS-E-A	T-Mobile
140.00	142.50	3	APXVAA24_43-U-A20	T-Mobile
140.00	142.50	3	RFS -	T-Mobile
140.00	142.50	3	Andrew - ATSBT-TOP-FM	T-Mobile
140.00	140.00	1	Low Profile Platform w/	T-Mobile
130.00	131.00	3	BXA-70063/6CF	Verizon
130.00	131.00	6	LPA-80063/6CF	Verizon
130.00	131.00	3	BXA-171063-12BF	Verizon
130.00	131.00	3	RRH2X60-AWS	Verizon
130.00	131.00	6	FD9R6004/2C-3L -	Verizon
130.00	131.00	1	DB-T1-6Z-8AB-0Z - Distri	Verizon
130.00	130.00	1	Low Profile Platform	Verizon
130.00	131.00	3	742 213_2110_P45_02.0	Verizon
110.00	110.00	1	4 ft Standoff	Town
110.00	115.55	1	SCL329-HL	Town
80.00	85.55	1	SCL329-HL	Town
80.00	80.00	1	4 ft Standoff	Town
47.00	50.00	1	Decibel 26DB GPS	Sprint Nextel
47.00	47.00	1	4 ft Standoff	Sprint Nextel

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	159.00	Inside	1 5/8" Coax	AT&T
0.00	159.00	Inside	1/2" Fiber	Town
0.00	159.00	Inside	3/4" DC	AT&T
0.00	159.00	Inside	7/8" Coax	AT&T
0.00	151.00	Inside	1-1/4" Hybrid	Sprint Nextel
0.00	142.50	Inside	1 1/4" Coax	T-Mobile



Structure: CT13055-A-SBA

Type: Tapered
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.28277

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0.00	131.00	Inside	1 5/8" Coax	Verizon
0.00	131.00	Inside	1 5/8" Hybriflex	Verizon
0.00	110.00	Outside	7/8" Coax	Town
0.00	80.00	Outside	7/8" Coax	Town
0.00	50.00	Outside	1/2" Coax	Sprint Nextel

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
14	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	71.0	60.0	Round

Reactions

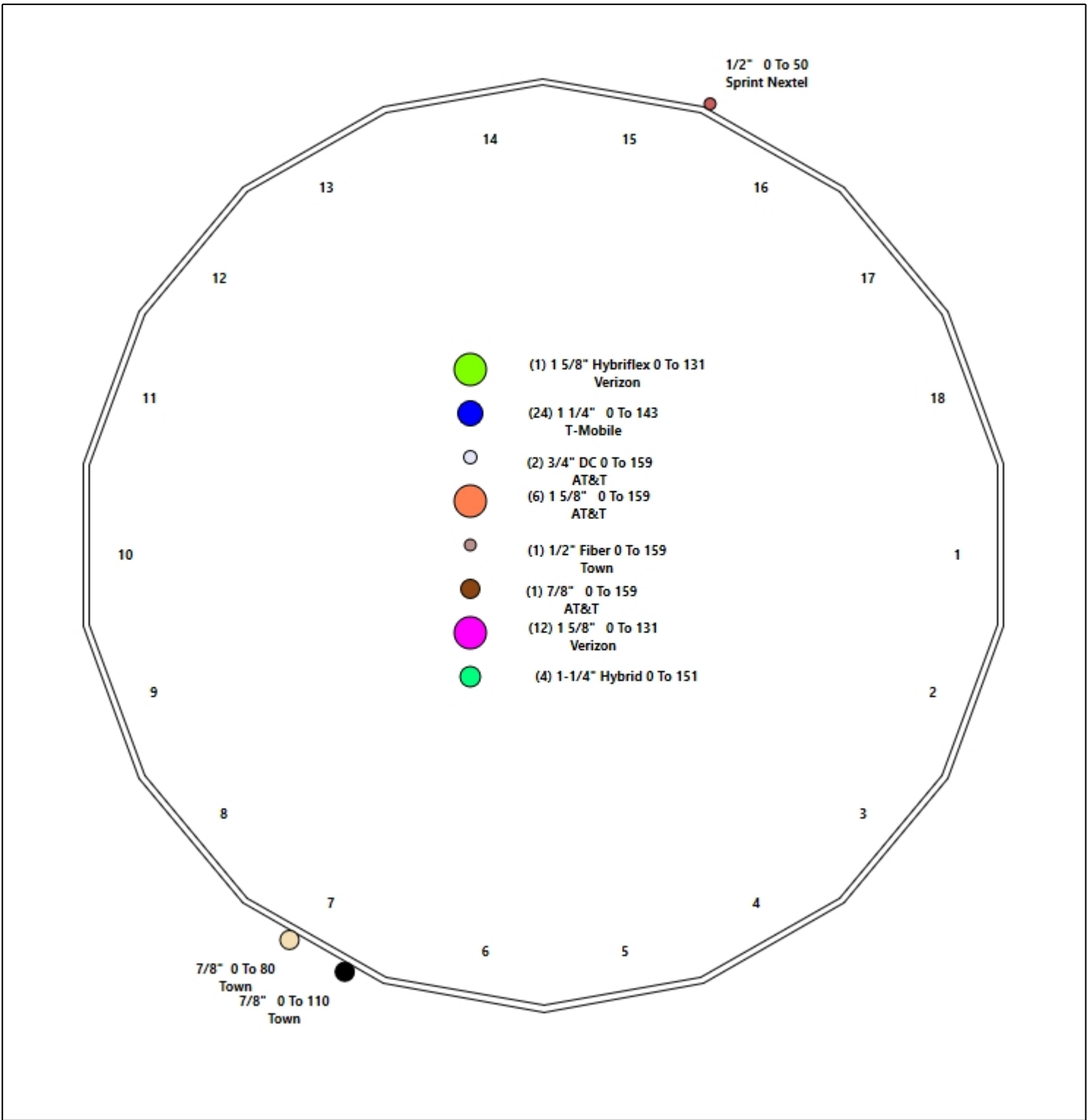
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3917.6	32.8	46.8
0.9D + 1.6W 93 mph Wind	3868.9	32.8	35.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1224.4	10.2	73.6
1.2D + 1.0E	265.3	2.1	46.8
0.9D + 1.0E	261.7	2.1	35.1
1.0D + 1.0W 60 mph Wind	1012.9	8.5	39.0

Structure: CT13055-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Monroe Turnpike
Height: 159.00 (ft)

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Shaft Properties

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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	53.250	0.3750	65		0.00	10,849
2	18	53.500	0.3750	65	Slip	69.00	8,145
3	18	53.500	0.3125	65	Slip	48.00	4,384
4	18	10.750	0.1875	65	Slip	27.00	356
Total Shaft Weight:							23,734

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	58.21	0.00	68.84	29090.28	25.96	155.23	43.15	53.25	50.91	11771.3	18.88	115.0	0.282767
2	45.53	47.50	53.74	13843.68	20.00	121.41	30.40	101.00	35.74	4070.49	12.88	81.07	0.282767
3	32.16	97.00	31.58	4046.51	16.73	102.90	17.03	150.50	16.58	585.32	8.20	54.49	0.282767
4	18.04	148.2	10.62	427.78	15.55	96.21	15.00	159.00	8.81	244.36	12.70	80.00	0.282767

Load Summary

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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	7770.00	3	77.00	5.79	0.77	332.84	7.270	0.80	0.00	3.00
2	159.00	P65-16-XLH-RR	3	102.00	8.53	0.79	367.43	10.417	0.81	0.00	3.00
3	159.00	LGP21401	6	14.10	1.29	0.50	39.25	2.131	0.50	0.00	3.00
4	159.00	RRUS-11	6	51.00	2.52	0.67	123.70	3.157	0.67	0.00	3.00
5	159.00	DC6-48-60-18-8F	1	31.80	0.92	1.00	93.99	1.361	1.00	0.00	3.00
6	159.00	Low Profile Platform	1	1200.00	35.00	1.00	2253.25	64.491	1.00	0.00	0.00
7	159.00	DB404-B	1	14.00	0.00	1.00	14.01	0.000	1.00	0.00	3.00
8	149.00	RFS - APXVSPP18-C-A20	3	106.00	8.42	0.83	373.25	10.288	0.85	0.00	2.00
9	149.00	Alcatel Lucent - 1900 MHz RRH	3	44.00	3.80	0.67	153.09	5.189	0.67	0.00	2.00
10	149.00	Alcatel Lucent - 800 MHz RRH	3	53.00	2.49	0.67	126.91	3.633	0.67	0.00	2.00
11	149.00	Alcatel Lucent - 800 MHz Filters	3	8.80	0.78	0.67	26.43	1.426	0.67	0.00	2.00
12	149.00	RFS - ACU-A20-N - RET	4	1.00	0.14	0.50	5.29	0.436	0.50	0.00	2.00
13	149.00	Low Profile Platform	1	1200.00	35.00	1.00	2246.43	64.300	1.00	0.00	0.00
14	149.00	RFS - APXVTM14-C-I20	3	56.00	6.34	0.78	182.62	7.450	0.81	0.00	2.00
15	149.00	Alcatel Lucent - TD-RRH8x20-25 -	3	70.00	4.05	0.67	167.67	5.463	0.67	0.00	2.00
16	149.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	572.11	13.342	1.00	0.00	0.00
17	140.00	FR90-16-XXDP	6	18.00	4.36	0.68	115.82	5.339	0.68	0.00	2.50
18	140.00	APX16DWV-16DWVS-E-A20	3	40.70	6.61	0.62	156.95	8.773	0.62	0.00	2.50
19	140.00	APXVAA24_43-U-A20	3	101.40	20.24	0.73	526.20	22.152	0.73	0.00	2.50
20	140.00	RFS - ATMA4P4DBP-1A20 - TMA	3	15.85	1.17	0.67	48.04	1.947	0.67	0.00	2.50
21	140.00	Andrew - ATSBT-TOP-FM - Bias T	3	1.80	0.20	0.67	7.60	0.545	0.67	0.00	2.50
22	140.00	Low Profile Platform w/ Handrails	1	1600.00	34.00	1.00	3685.41	63.465	1.00	0.00	0.00
23	130.00	BXA-70063/6CF	3	66.00	7.98	0.75	305.45	9.820	0.78	0.00	1.00
24	130.00	LPA-80063/6CF	6	76.00	10.01	0.95	412.45	11.946	0.95	0.00	1.00
25	130.00	BXA-171063-12BF	3	64.00	5.13	0.88	246.07	6.906	0.90	0.00	1.00
26	130.00	RRH2X60-AWS	3	55.00	3.50	0.67	133.88	4.278	0.67	0.00	1.00
27	130.00	FD9R6004/2C-3L - Diplexer	6	3.10	0.36	0.50	11.01	0.797	0.50	0.00	1.00
28	130.00	DB-T1-6Z-8AB-OZ - Distri box	1	18.90	4.80	0.71	160.23	5.660	0.76	0.00	1.00
29	130.00	Low Profile Platform	1	1200.00	25.00	1.00	2232.25	45.645	1.00	0.00	0.00
30	130.00	742 213_2110_P45_02.0	3	16.50	3.15	0.72	75.47	4.865	0.72	0.00	1.00
31	110.00	4 ft Standoff	1	53.32	3.50	1.00	157.14	11.249	1.00	0.00	0.00
32	110.00	SCL329-HL	1	10.40	2.22	1.00	68.54	6.060	1.00	0.00	5.55
33	80.00	SCL329-HL	1	10.40	2.22	1.00	66.71	5.940	1.00	0.00	5.55
34	80.00	4 ft Standoff	1	53.32	3.50	1.00	153.88	11.006	1.00	0.00	0.00
35	47.00	Decibel 26DB GPS	1	10.00	0.16	1.00	14.94	0.502	1.00	0.00	3.00
36	47.00	4 ft Standoff	1	53.32	3.50	1.00	148.67	10.617	1.00	0.00	0.00
Totals:			96	9,328.53			25,791.73				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	159.00	(6) 1 5/8" Coax	0.00	Inside
0.00	159.00	(1) 1/2" Fiber	0.00	Inside
0.00	159.00	(2) 3/4" DC	0.00	Inside
0.00	159.00	(1) 7/8" Coax	0.00	Inside
0.00	151.00	(4) 1-1/4" Hybrid	0.00	Inside

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		
0.00	142.50	(24) 1 1/4" Coax		0.00							
0.00	131.00	(12) 1 5/8" Coax		0.00							
0.00	131.00	(1) 1 5/8" Hybriflex		0.00							
0.00	110.00	(1) 7/8" Coax		1.11							
0.00	80.00	(1) 7/8" Coax		0.00							
0.00	50.00	(1) 1/2" Coax		0.65							

Shaft Section Properties

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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



Page: 8

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	58.210	68.836	29090.3	25.96	155.23	70.9	984.3	0.0
5.00		0.3750	56.796	67.153	27008.6	25.30	151.46	71.6	936.6	1156.8
10.00		0.3750	55.382	65.470	25028.6	24.63	147.69	72.4	890.1	1128.2
15.00		0.3750	53.968	63.787	23147.9	23.97	143.92	73.2	844.8	1099.6
20.00		0.3750	52.555	62.105	21363.8	23.30	140.15	74.0	800.7	1071.0
25.00		0.3750	51.141	60.422	19673.9	22.64	136.38	74.8	757.7	1042.3
30.00		0.3750	49.727	58.739	18075.5	21.97	132.61	75.6	715.9	1013.7
35.00		0.3750	48.313	57.056	16566.1	21.31	128.84	76.3	675.4	985.1
40.00		0.3750	46.899	55.374	15143.1	20.64	125.06	77.1	636.0	956.4
45.00		0.3750	45.485	53.691	13804.1	19.98	121.29	77.9	597.7	927.8
47.00		0.3750	44.920	53.018	13291.4	19.71	119.79	78.2	582.8	363.1
47.50	Bot - Section 2	0.3750	44.779	52.849	13165.2	19.64	119.41	78.3	579.1	90.1
50.00		0.3750	44.072	52.008	12546.4	19.31	117.52	78.7	560.7	899.6
53.25	Top - Section 1	0.3750	43.903	51.807	12401.4	19.23	117.07	0.0	0.0	1148.1
55.00		0.3750	43.408	51.218	11983.2	19.00	115.75	79.1	543.7	306.7
60.00		0.3750	41.994	49.535	10840.5	18.34	111.98	79.8	508.4	857.1
65.00		0.3750	40.580	47.852	9772.8	17.67	108.21	80.6	474.3	828.5
70.00		0.3750	39.166	46.170	8777.7	17.01	104.44	81.4	441.4	799.8
75.00		0.3750	37.752	44.487	7852.4	16.34	100.67	82.2	409.7	771.2
80.00		0.3750	36.339	42.804	6994.6	15.68	96.90	82.5	379.1	742.6
85.00		0.3750	34.925	41.121	6201.7	15.01	93.13	82.5	349.8	713.9
90.00		0.3750	33.511	39.439	5471.1	14.35	89.36	82.5	321.6	685.3
95.00		0.3750	32.097	37.756	4800.2	13.68	85.59	82.5	294.6	656.7
97.00	Bot - Section 3	0.3750	31.532	37.083	4548.0	13.42	84.08	82.5	284.1	254.7
100.00		0.3750	30.683	36.073	4186.6	13.02	81.82	82.5	268.7	691.5
101.00	Top - Section 2	0.3125	31.026	30.462	3630.5	16.10	99.28	0.0	0.0	226.3
105.00		0.3125	29.894	29.341	3243.9	15.46	95.66	82.5	213.7	407.0
110.00		0.3125	28.481	27.938	2800.7	14.66	91.14	82.5	193.7	487.3
115.00		0.3125	27.067	26.536	2399.8	13.86	86.61	82.5	174.6	463.4
120.00		0.3125	25.653	25.134	2039.1	13.06	82.09	82.5	156.6	439.6
125.00		0.3125	24.239	23.731	1716.5	12.27	77.57	82.5	139.5	415.7
130.00		0.3125	22.825	22.329	1429.8	11.47	73.04	82.5	123.4	391.8
135.00		0.3125	21.411	20.927	1177.0	10.67	68.52	82.5	108.3	368.0
140.00		0.3125	19.998	19.524	955.9	9.87	63.99	82.5	94.1	344.1
145.00		0.3125	18.584	18.122	764.4	9.08	59.47	82.5	81.0	320.3
148.25	Bot - Section 4	0.3125	17.665	17.211	654.7	8.56	56.53	82.5	73.0	195.4
149.00		0.3125	17.453	17.000	631.0	8.44	55.85	82.5	71.2	70.6
150.00		0.3125	17.170	16.720	600.3	8.28	54.94	82.5	68.9	92.8
150.50	Top - Section 3	0.1875	17.404	10.245	383.7	14.96	92.82	0.0	0.0	45.8
155.00		0.1875	16.131	9.488	304.7	13.76	86.03	82.5	37.2	151.1
159.00		0.1875	15.000	8.815	244.4	12.70	80.00	82.5	32.1	124.6

23733.6

Wind Loading - Shaft

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	422.34	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	412.08	0.650	0.000	5.00	24.329	15.81	497.6	0.0	1388.2
10.00		1.00	0.85	17.879	19.67	401.82	0.650	0.000	5.00	23.731	15.43	485.4	0.0	1353.9
15.00		1.00	0.85	17.879	19.67	391.56	0.650	0.000	5.00	23.133	15.04	473.2	0.0	1319.5
20.00		1.00	0.90	18.971	20.87	392.77	0.650	0.000	5.00	22.535	14.65	489.1	0.0	1285.1
25.00		1.00	0.95	19.883	21.87	391.29	0.650	0.000	5.00	21.936	14.26	499.0	0.0	1250.8
30.00		1.00	0.98	20.661	22.73	387.84	0.650	0.000	5.00	21.338	13.87	504.4	0.0	1216.4
35.00		1.00	1.01	21.343	23.48	382.98	0.650	0.000	5.00	20.740	13.48	506.4	0.0	1182.1
40.00		1.00	1.04	21.951	24.15	377.03	0.650	0.000	5.00	20.142	13.09	505.8	0.0	1147.7
45.00		1.00	1.07	22.502	24.75	370.23	0.650	0.000	5.00	19.544	12.70	503.1	0.0	1113.4
47.00	Appurtenance(s)	1.00	1.08	22.709	24.98	367.30	0.650	0.000	2.00	7.650	4.97	198.7	0.0	435.7
47.50	Bot - Section 2	1.00	1.08	22.760	25.04	366.56	0.650	0.000	0.50	1.898	1.23	49.4	0.0	108.1
50.00		1.00	1.09	23.007	25.31	362.72	0.650	0.000	2.50	9.557	6.21	251.5	0.0	1079.5
53.25	Top - Section 1	1.00	1.11	23.314	25.65	357.52	0.650	0.000	3.25	12.200	7.93	325.4	0.0	1377.7
55.00		1.00	1.12	23.473	25.82	360.86	0.650	0.000	1.75	6.465	4.20	173.6	0.0	368.1
60.00		1.00	1.14	23.907	26.30	352.32	0.650	0.000	5.00	18.067	11.74	494.1	0.0	1028.5
65.00		1.00	1.16	24.313	26.74	343.34	0.650	0.000	5.00	17.468	11.35	485.9	0.0	994.2
70.00		1.00	1.17	24.696	27.17	333.97	0.650	0.000	5.00	16.870	10.97	476.6	0.0	959.8
75.00		1.00	1.19	25.057	27.56	324.26	0.650	0.000	5.00	16.272	10.58	466.4	0.0	925.5
80.00	Appurtenance(s)	1.00	1.21	25.400	27.94	314.25	0.650	0.000	5.00	15.674	10.19	455.4	0.0	891.1
85.00		1.00	1.22	25.726	28.30	303.95	0.650	0.000	5.00	15.076	9.80	443.7	0.0	856.7
90.00		1.00	1.24	26.037	28.64	293.41	0.650	0.000	5.00	14.477	9.41	431.2	0.0	822.4
95.00		1.00	1.25	26.336	28.97	282.63	0.650	0.000	5.00	13.879	9.02	418.2	0.0	788.0
97.00	Bot - Section 3	1.00	1.26	26.451	29.10	278.26	0.650	0.000	2.00	5.384	3.50	162.9	0.0	305.6
100.00		1.00	1.27	26.621	29.28	271.65	0.650	0.000	3.00	8.055	5.24	245.3	0.0	829.8
101.00	Top - Section 2	1.00	1.27	26.677	29.35	269.42	0.650	0.000	1.00	2.637	1.71	80.5	0.0	271.6
105.00		1.00	1.28	26.896	29.59	266.03	0.650	0.000	4.00	10.310	6.70	317.2	0.0	488.4
110.00	Appurtenance(s)	1.00	1.29	27.161	29.88	254.69	0.650	0.000	5.00	12.349	8.03	383.7	0.0	584.7
115.00		1.00	1.30	27.416	30.16	243.18	0.650	0.000	5.00	11.751	7.64	368.6	0.0	556.1
120.00		1.00	1.32	27.663	30.43	231.51	0.650	0.000	5.00	11.153	7.25	352.9	0.0	527.5
125.00		1.00	1.33	27.902	30.69	219.69	0.650	0.000	5.00	10.555	6.86	336.9	0.0	498.8
130.00	Appurtenance(s)	1.00	1.34	28.133	30.95	207.74	0.650	0.000	5.00	9.956	6.47	320.4	0.0	470.2
135.00		1.00	1.35	28.358	31.19	195.64	0.650	0.000	5.00	9.358	6.08	303.6	0.0	441.6
140.00	Appurtenance(s)	1.00	1.36	28.576	31.43	183.43	0.650	0.000	5.00	8.760	5.69	286.4	0.0	412.9
145.00		1.00	1.37	28.788	31.67	171.09	0.650	0.000	5.00	8.162	5.31	268.8	0.0	384.3
148.25	Bot - Section 4	1.00	1.37	28.922	31.81	163.01	0.650	0.000	3.25	4.984	3.24	164.9	0.0	234.4
149.00	Appurtenance(s)	1.00	1.38	28.953	31.85	161.14	0.650	0.000	0.75	1.138	0.74	37.7	0.0	84.7
150.00		1.00	1.38	28.994	31.89	158.64	0.650	0.000	1.00	1.497	0.97	49.6	0.0	111.4
150.50	Top - Section 3	1.00	1.38	29.014	31.92	157.39	0.650	0.000	0.50	0.739	0.48	24.5	0.0	55.0
155.00		1.00	1.39	29.195	32.11	149.55	0.650	0.000	4.50	6.385	4.15	213.2	0.0	181.3
159.00	Appurtenance(s)	1.00	1.40	29.352	32.29	139.44	0.650	0.000	4.00	5.269	3.42	176.9	0.0	149.5
Totals:								159.00			13,228.3	28,480.3		

Discrete Appurtenance Forces

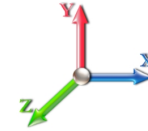
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	159.00	Low Profile Platform	1	29.352	32.287	1.00	1.00	35.00	1440.00	0.000	0.000	1808.06	0.00	0.00
2	159.00	DC6-48-60-18-8F	1	29.467	32.414	1.00	1.00	0.92	38.16	0.000	3.000	47.71	0.00	143.14
3	159.00	RRUS-11	6	29.467	32.414	0.67	1.00	10.13	367.20	0.000	3.000	525.39	0.00	1576.16
4	159.00	LGP21401	6	29.467	32.414	0.50	1.00	3.87	101.52	0.000	3.000	200.71	0.00	602.12
5	159.00	P65-16-XLH-RR	3	29.467	32.414	0.79	1.00	20.19	367.20	0.000	3.000	1047.13	0.00	3141.39
6	159.00	7770.00	3	29.467	32.414	0.77	1.00	13.31	277.20	0.000	3.000	690.05	0.00	2070.16
7	159.00	DB404-B	1	29.467	32.414	1.00	1.00	0.00	16.80	0.000	3.000	0.00	0.00	0.00
8	149.00	Alcatel Lucent - 1900 MHz	3	29.034	31.938	0.50	0.75	5.73	158.40	0.000	2.000	292.73	0.00	585.46
9	149.00	Alcatel Lucent - 800 MHz	3	29.034	31.938	0.50	0.75	3.75	190.80	0.000	2.000	191.81	0.00	383.63
10	149.00	Alcatel Lucent - 800 MHz	3	29.034	31.938	0.50	0.75	1.18	31.68	0.000	2.000	60.09	0.00	120.17
11	149.00	RFS - APXVSPP18-C-A20	3	29.034	31.938	0.62	0.75	15.71	381.60	0.000	2.000	802.55	0.00	1605.11
12	149.00	Alcatel Lucent -	3	29.034	31.938	0.50	0.75	6.11	252.00	0.000	2.000	311.99	0.00	623.97
13	149.00	RFS - ACU-A20-N - RET	4	29.034	31.938	0.38	0.75	0.21	4.80	0.000	2.000	10.73	0.00	21.46
14	149.00	Low Profile Platform	1	28.953	31.848	1.00	1.00	35.00	1440.00	0.000	0.000	1783.50	0.00	0.00
15	149.00	RFS - APXVTM14-C-I20	3	29.034	31.938	0.59	0.75	11.18	201.60	0.000	2.000	571.49	0.00	1142.99
16	149.00	HRK12 (Handrail Kit)	1	28.953	31.848	1.00	1.00	6.75	314.06	0.000	0.000	343.96	0.00	0.00
17	140.00	Low Profile Platform w/	1	28.576	31.433	1.00	1.00	34.00	1920.00	0.000	0.000	1709.97	0.00	0.00
18	140.00	Andrew - ATSBT-TOP-FM	3	28.682	31.551	0.50	0.75	0.30	6.48	0.000	2.500	15.22	0.00	38.05
19	140.00	RFS -	3	28.682	31.551	0.50	0.75	1.76	57.06	0.000	2.500	89.04	0.00	222.59
20	140.00	APX16DWV-16DWVS-E-	3	28.682	31.551	0.46	0.75	9.22	146.52	0.000	2.500	465.48	0.00	1163.70
21	140.00	FR90-16-XXDP	6	28.682	31.551	0.51	0.75	13.34	129.60	0.000	2.500	673.50	0.00	1683.74
22	140.00	APXVAA24_43-U-A20	3	28.682	31.551	0.55	0.75	33.24	365.04	0.000	2.500	1678.20	0.00	4195.49
23	130.00	RRH2X60-AWS	3	28.179	30.997	0.54	0.80	5.63	198.00	0.000	1.000	279.12	0.00	279.12
24	130.00	BXA-70063/6CF	3	28.179	30.997	0.60	0.80	14.33	237.60	0.000	1.000	710.48	0.00	710.48
25	130.00	LPA-80063/6CF	6	28.179	30.997	0.76	0.80	45.50	547.20	0.000	1.000	2256.62	0.00	2256.62
26	130.00	BXA-171063-12BF	3	28.179	30.997	0.70	0.80	10.80	230.40	0.000	1.000	535.50	0.00	535.50
27	130.00	FD9R6004/2C-3L -	6	28.179	30.997	0.40	0.80	0.86	22.32	0.000	1.000	42.85	0.00	42.85
28	130.00	DB-T1-6Z-8AB-0Z - Distri	1	28.179	30.997	0.57	0.80	2.73	22.68	0.000	1.000	135.21	0.00	135.21
29	130.00	Low Profile Platform	1	28.133	30.947	1.00	1.00	25.00	1440.00	0.000	0.000	1237.86	0.00	0.00
30	130.00	742 213_2110_P45_02.0	3	28.179	30.997	0.58	0.80	5.44	59.40	0.000	1.000	269.95	0.00	269.95
31	110.00	SCL329-HL	1	27.444	30.188	1.00	1.00	2.22	12.48	0.000	5.550	107.23	0.00	595.12
32	110.00	4 ft Standoff	1	27.161	29.877	1.00	1.00	3.50	63.98	0.000	0.000	167.31	0.00	0.00
33	80.00	4 ft Standoff	1	25.400	27.940	1.00	1.00	3.50	63.98	0.000	0.000	156.46	0.00	0.00
34	80.00	SCL329-HL	1	25.761	28.337	1.00	1.00	2.22	12.48	0.000	5.550	100.65	0.00	558.63
35	47.00	4 ft Standoff	1	22.709	24.980	1.00	1.00	3.50	63.98	0.000	0.000	139.89	0.00	0.00
36	47.00	Decibel 26DB GPS	1	23.007	25.308	1.00	1.00	0.16	12.00	0.000	3.000	6.48	0.00	19.44

Totals: 11,194.24 19,464.93

Total Applied Force Summary

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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

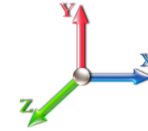


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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

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		497.63	1641.15	0.00	0.00
10.00		485.39	1606.80	0.00	0.00
15.00		473.16	1572.44	0.00	0.00
20.00		489.06	1538.08	0.00	0.00
25.00		498.97	1503.73	0.00	0.00
30.00		504.36	1469.37	0.00	0.00
35.00		506.39	1435.01	0.00	0.00
40.00		505.80	1400.66	0.00	0.00
45.00		503.10	1366.30	0.00	0.00
47.00	(2) attachments	345.11	612.88	0.00	19.44
47.50		49.41	133.37	0.00	0.00
50.00		251.53	1206.00	0.00	0.00
53.25		325.39	1541.50	0.00	0.00
55.00		173.60	456.29	0.00	0.00
60.00		494.11	1280.50	0.00	0.00
65.00		485.87	1246.14	0.00	0.00
70.00		476.61	1211.78	0.00	0.00
75.00		466.44	1177.43	0.00	0.00
80.00	(2) attachments	712.55	1219.54	0.00	558.63
85.00		443.68	1105.60	0.00	0.00
90.00		431.24	1071.24	0.00	0.00
95.00		418.15	1036.88	0.00	0.00
97.00		162.93	405.13	0.00	0.00
100.00		245.33	979.15	0.00	0.00
101.00		80.49	321.34	0.00	0.00
105.00		317.23	687.48	0.00	0.00
110.00	(2) attachments	658.25	910.04	0.00	595.12
115.00		368.56	801.83	0.00	0.00
120.00		352.95	773.20	0.00	0.00
125.00		336.90	744.57	0.00	0.00
130.00	(26) attachments	5788.04	3473.54	0.00	4229.74
135.00		303.59	622.12	0.00	0.00
140.00	(19) attachments	4917.77	3201.89	0.00	7303.58
145.00		268.79	501.04	0.00	0.00
148.25		164.92	279.44	0.00	0.00
149.00	(24) attachments	4406.55	3070.05	0.00	4482.79
150.00		49.64	125.21	0.00	0.00
150.50		24.54	61.92	0.00	0.00
155.00		213.24	225.28	0.00	0.00
159.00	(21) attachments	4495.96	2794.61	0.00	7532.98
Totals:		32,693.23	46,810.52	0.00	24,722.27

Linear Appurtenance Segment Forces (Factored)

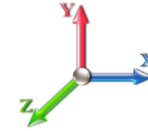
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

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	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.030	0.000	17.879	0.00	3.12
5.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	17.879	0.00	3.12
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	17.879	0.00	0.96
10.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.031	0.000	17.879	0.00	3.12
10.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.031	0.000	17.879	0.00	3.12
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.031	0.000	17.879	0.00	0.96
15.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.032	0.000	17.879	0.00	3.12
15.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.032	0.000	17.879	0.00	3.12
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.032	0.000	17.879	0.00	0.96
20.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	18.971	0.00	3.12
20.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	18.971	0.00	3.12
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	18.971	0.00	0.96
25.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	19.883	0.00	3.12
25.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	19.883	0.00	3.12
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	19.883	0.00	0.96
30.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.034	0.000	20.661	0.00	3.12
30.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	20.661	0.00	3.12
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.034	0.000	20.661	0.00	0.96
35.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.035	0.000	21.343	0.00	3.12
35.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	21.343	0.00	3.12
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.035	0.000	21.343	0.00	0.96
40.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.036	0.000	21.951	0.00	3.12
40.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	21.951	0.00	3.12
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.036	0.000	21.951	0.00	0.96
45.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.038	0.000	22.502	0.00	3.12
45.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.038	0.000	22.502	0.00	3.12
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.038	0.000	22.502	0.00	0.96
47.00	7/8" Coax	Yes	2.00	0.000	1.11	0.19	0.00	0.038	0.000	22.709	0.00	1.25
47.00	7/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.709	0.00	1.25
47.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.038	0.000	22.709	0.00	0.38
47.50	7/8" Coax	Yes	0.50	0.000	1.11	0.05	0.00	0.039	0.000	22.760	0.00	0.31
47.50	7/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.039	0.000	22.760	0.00	0.31
47.50	1/2" Coax	Yes	0.50	0.000	0.65	0.03	0.00	0.039	0.000	22.760	0.00	0.10
50.00	7/8" Coax	Yes	2.50	0.000	1.11	0.23	0.00	0.039	0.000	23.007	0.00	1.56
50.00	7/8" Coax	Yes	2.50	0.000	0.00	0.00	0.00	0.039	0.000	23.007	0.00	1.56
50.00	1/2" Coax	Yes	2.50	0.000	0.65	0.14	0.00	0.039	0.000	23.007	0.00	0.48
53.25	7/8" Coax	Yes	3.25	0.000	1.11	0.30	0.00	0.025	0.000	23.314	0.00	2.03
53.25	7/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.025	0.000	23.314	0.00	2.03
55.00	7/8" Coax	Yes	1.75	0.000	1.11	0.16	0.00	0.025	0.000	23.473	0.00	1.09
55.00	7/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	23.473	0.00	1.09
60.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.026	0.000	23.907	0.00	3.12
60.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	23.907	0.00	3.12
65.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.026	0.000	24.313	0.00	3.12
65.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	24.313	0.00	3.12
70.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.027	0.000	24.696	0.00	3.12
70.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.027	0.000	24.696	0.00	3.12
75.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.028	0.000	25.057	0.00	3.12

Linear Appurtenance Segment Forces (Factored)

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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

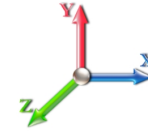


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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

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)
75.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.028	0.000	25.057	0.00	3.12
80.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.030	0.000	25.400	0.00	3.12
80.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	25.400	0.00	3.12
85.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.031	0.000	25.726	0.00	3.12
90.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.032	0.000	26.037	0.00	3.12
95.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	26.336	0.00	3.12
97.00	7/8" Coax	Yes	2.00	0.000	1.11	0.19	0.00	0.034	0.000	26.451	0.00	1.25
100.00	7/8" Coax	Yes	3.00	0.000	1.11	0.28	0.00	0.035	0.000	26.621	0.00	1.87
101.00	7/8" Coax	Yes	1.00	0.000	1.11	0.09	0.00	0.036	0.000	26.677	0.00	0.62
105.00	7/8" Coax	Yes	4.00	0.000	1.11	0.37	0.00	0.036	0.000	26.896	0.00	2.50
110.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.037	0.000	27.161	0.00	3.12
Totals:											0.0	128.2

Calculated Forces

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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

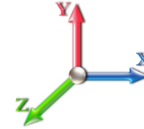


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Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 25

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	-46.76	-32.77	0.00	-3917.5	0.00	3917.55	4390.37	2195.18	10447.7	5231.64	0.00	0.000	0.000	0.760
5.00	-45.01	-32.42	0.00	-3753.7	0.00	3753.70	4330.30	2165.15	10051.2	5033.11	0.10	-0.188	0.000	0.756
10.00	-43.29	-32.08	0.00	-3591.6	0.00	3591.60	4267.86	2133.93	9656.46	4835.41	0.40	-0.381	0.000	0.753
15.00	-41.61	-31.74	0.00	-3431.2	0.00	3431.23	4203.05	2101.52	9263.74	4638.76	0.91	-0.581	0.000	0.750
20.00	-39.97	-31.38	0.00	-3272.5	0.00	3272.55	4135.87	2067.94	8873.53	4443.36	1.63	-0.787	0.000	0.746
25.00	-38.35	-31.00	0.00	-3115.6	0.00	3115.68	4066.33	2033.16	8486.25	4249.43	2.56	-0.999	0.000	0.743
30.00	-36.78	-30.61	0.00	-2960.6	0.00	2960.69	3994.42	1997.21	8102.30	4057.17	3.73	-1.219	0.000	0.739
35.00	-35.23	-30.21	0.00	-2807.6	0.00	2807.65	3920.13	1960.07	7722.12	3866.80	5.13	-1.446	0.000	0.735
40.00	-33.72	-29.81	0.00	-2656.5	0.00	2656.59	3843.48	1921.74	7346.10	3678.51	6.77	-1.680	0.000	0.731
45.00	-32.28	-29.36	0.00	-2507.5	0.00	2507.55	3764.47	1882.23	6974.67	3492.52	8.66	-1.923	0.000	0.727
47.00	-31.65	-29.03	0.00	-2448.8	0.00	2448.82	3732.20	1866.10	6827.48	3418.81	9.48	-2.025	0.000	0.725
47.50	-31.48	-29.02	0.00	-2434.3	0.00	2434.30	3724.07	1862.03	6790.81	3400.45	9.70	-2.051	0.000	0.725
50.00	-30.21	-28.80	0.00	-2361.7	0.00	2361.76	3683.08	1841.54	6608.25	3309.03	10.81	-2.181	0.000	0.722
53.25	-28.62	-28.48	0.00	-2268.1	0.00	2268.16	3673.19	1836.60	6564.80	3287.28	12.35	-2.351	0.000	0.698
55.00	-28.08	-28.37	0.00	-2218.3	0.00	2218.32	3644.05	1822.03	6438.04	3223.81	13.23	-2.446	0.000	0.696
60.00	-26.70	-27.94	0.00	-2076.4	0.00	2076.45	3559.18	1779.59	6079.73	3044.38	15.93	-2.701	0.000	0.690
65.00	-25.35	-27.52	0.00	-1936.7	0.00	1936.73	3471.95	1735.97	5727.45	2867.98	18.90	-2.965	0.000	0.683
70.00	-24.03	-27.09	0.00	-1799.1	0.00	1799.15	3382.35	1691.17	5381.61	2694.80	22.15	-3.236	0.000	0.675
75.00	-22.75	-26.67	0.00	-1663.6	0.00	1663.69	3290.37	1645.19	5042.64	2525.07	25.69	-3.517	0.000	0.666
80.00	-21.45	-25.99	0.00	-1529.7	0.00	1529.79	3180.13	1590.07	4687.51	2347.24	29.52	-3.806	0.000	0.659
85.00	-20.24	-25.58	0.00	-1399.8	0.00	1399.83	3055.11	1527.56	4324.37	2165.40	33.67	-4.104	0.000	0.653
90.00	-19.07	-25.17	0.00	-1271.9	0.00	1271.94	2930.09	1465.05	3975.87	1990.89	38.13	-4.411	0.000	0.646
95.00	-17.97	-24.74	0.00	-1146.0	0.00	1146.08	2805.07	1402.54	3642.00	1823.71	42.91	-4.725	0.000	0.635
97.00	-17.51	-24.60	0.00	-1096.5	0.00	1096.59	2755.06	1377.53	3512.56	1758.89	44.92	-4.858	0.000	0.630
100.00	-16.50	-24.31	0.00	-1022.7	0.00	1022.79	2680.05	1340.03	3322.78	1663.86	48.03	-5.057	0.000	0.621
101.00	-16.12	-24.25	0.00	-998.49	0.00	998.49	2260.99	1130.50	2846.84	1425.54	49.09	-5.126	0.000	0.708
105.00	-15.33	-23.95	0.00	-901.50	0.00	901.50	2179.85	1089.93	2642.58	1323.26	53.50	-5.391	0.000	0.689
110.00	-14.34	-23.30	0.00	-781.14	0.00	781.14	2075.67	1037.84	2394.76	1199.16	59.33	-5.760	0.000	0.659
115.00	-13.43	-22.94	0.00	-664.63	0.00	664.63	1971.49	985.74	2159.14	1081.18	65.56	-6.127	0.000	0.622
120.00	-12.56	-22.58	0.00	-549.93	0.00	549.93	1867.30	933.65	1935.73	969.30	72.16	-6.487	0.000	0.575
125.00	-11.73	-22.23	0.00	-437.03	0.00	437.03	1763.12	881.56	1724.51	863.54	79.13	-6.832	0.000	0.513
130.00	-8.91	-16.11	0.00	-321.66	0.00	321.66	1658.94	829.47	1525.49	763.88	86.44	-7.148	0.000	0.427
135.00	-8.26	-15.76	0.00	-241.13	0.00	241.13	1554.75	777.38	1338.67	670.33	94.06	-7.428	0.000	0.365
140.00	-5.69	-10.49	0.00	-155.01	0.00	155.01	1450.57	725.28	1164.05	582.89	101.95	-7.671	0.000	0.270
145.00	-5.20	-10.17	0.00	-102.56	0.00	102.56	1346.38	673.19	1001.64	501.56	110.07	-7.863	0.000	0.209
148.25	-4.94	-9.97	0.00	-69.51	0.00	69.51	1278.66	639.33	902.61	451.97	115.45	-7.967	0.000	0.158
149.00	-2.51	-5.18	0.00	-57.55	0.00	57.55	1263.04	631.52	880.49	440.90	116.70	-7.989	0.000	0.133
150.00	-2.39	-5.12	0.00	-52.37	0.00	52.37	1242.20	621.10	851.42	426.34	118.37	-8.013	0.000	0.125
150.50	-2.33	-5.09	0.00	-49.81	0.00	49.81	761.18	380.59	536.85	268.82	119.20	-8.026	0.000	0.189
155.00	-2.13	-4.85	0.00	-26.92	0.00	26.92	704.92	352.46	460.03	230.36	126.79	-8.109	0.000	0.120
159.00	0.00	-4.50	0.00	-7.53	0.00	7.53	654.91	327.45	396.72	198.65	133.59	-8.174	0.000	0.038

Wind Loading - Shaft

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	422.34	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	412.08	0.650	0.000	5.00	24.329	15.81	497.6	0.0	1041.2
10.00		1.00	0.85	17.879	19.67	401.82	0.650	0.000	5.00	23.731	15.43	485.4	0.0	1015.4
15.00		1.00	0.85	17.879	19.67	391.56	0.650	0.000	5.00	23.133	15.04	473.2	0.0	989.6
20.00		1.00	0.90	18.971	20.87	392.77	0.650	0.000	5.00	22.535	14.65	489.1	0.0	963.9
25.00		1.00	0.95	19.883	21.87	391.29	0.650	0.000	5.00	21.936	14.26	499.0	0.0	938.1
30.00		1.00	0.98	20.661	22.73	387.84	0.650	0.000	5.00	21.338	13.87	504.4	0.0	912.3
35.00		1.00	1.01	21.343	23.48	382.98	0.650	0.000	5.00	20.740	13.48	506.4	0.0	886.6
40.00		1.00	1.04	21.951	24.15	377.03	0.650	0.000	5.00	20.142	13.09	505.8	0.0	860.8
45.00		1.00	1.07	22.502	24.75	370.23	0.650	0.000	5.00	19.544	12.70	503.1	0.0	835.0
47.00	Appurtenance(s)	1.00	1.08	22.709	24.98	367.30	0.650	0.000	2.00	7.650	4.97	198.7	0.0	326.8
47.50	Bot - Section 2	1.00	1.08	22.760	25.04	366.56	0.650	0.000	0.50	1.898	1.23	49.4	0.0	81.1
50.00		1.00	1.09	23.007	25.31	362.72	0.650	0.000	2.50	9.557	6.21	251.5	0.0	809.6
53.25	Top - Section 1	1.00	1.11	23.314	25.65	357.52	0.650	0.000	3.25	12.200	7.93	325.4	0.0	1033.3
55.00		1.00	1.12	23.473	25.82	360.86	0.650	0.000	1.75	6.465	4.20	173.6	0.0	276.1
60.00		1.00	1.14	23.907	26.30	352.32	0.650	0.000	5.00	18.067	11.74	494.1	0.0	771.4
65.00		1.00	1.16	24.313	26.74	343.34	0.650	0.000	5.00	17.468	11.35	485.9	0.0	745.6
70.00		1.00	1.17	24.696	27.17	333.97	0.650	0.000	5.00	16.870	10.97	476.6	0.0	719.9
75.00		1.00	1.19	25.057	27.56	324.26	0.650	0.000	5.00	16.272	10.58	466.4	0.0	694.1
80.00	Appurtenance(s)	1.00	1.21	25.400	27.94	314.25	0.650	0.000	5.00	15.674	10.19	455.4	0.0	668.3
85.00		1.00	1.22	25.726	28.30	303.95	0.650	0.000	5.00	15.076	9.80	443.7	0.0	642.6
90.00		1.00	1.24	26.037	28.64	293.41	0.650	0.000	5.00	14.477	9.41	431.2	0.0	616.8
95.00		1.00	1.25	26.336	28.97	282.63	0.650	0.000	5.00	13.879	9.02	418.2	0.0	591.0
97.00	Bot - Section 3	1.00	1.26	26.451	29.10	278.26	0.650	0.000	2.00	5.384	3.50	162.9	0.0	229.2
100.00		1.00	1.27	26.621	29.28	271.65	0.650	0.000	3.00	8.055	5.24	245.3	0.0	622.4
101.00	Top - Section 2	1.00	1.27	26.677	29.35	269.42	0.650	0.000	1.00	2.637	1.71	80.5	0.0	203.7
105.00		1.00	1.28	26.896	29.59	266.03	0.650	0.000	4.00	10.310	6.70	317.2	0.0	366.3
110.00	Appurtenance(s)	1.00	1.29	27.161	29.88	254.69	0.650	0.000	5.00	12.349	8.03	383.7	0.0	438.5
115.00		1.00	1.30	27.416	30.16	243.18	0.650	0.000	5.00	11.751	7.64	368.6	0.0	417.1
120.00		1.00	1.32	27.663	30.43	231.51	0.650	0.000	5.00	11.153	7.25	352.9	0.0	395.6
125.00		1.00	1.33	27.902	30.69	219.69	0.650	0.000	5.00	10.555	6.86	336.9	0.0	374.1
130.00	Appurtenance(s)	1.00	1.34	28.133	30.95	207.74	0.650	0.000	5.00	9.956	6.47	320.4	0.0	352.6
135.00		1.00	1.35	28.358	31.19	195.64	0.650	0.000	5.00	9.358	6.08	303.6	0.0	331.2
140.00	Appurtenance(s)	1.00	1.36	28.576	31.43	183.43	0.650	0.000	5.00	8.760	5.69	286.4	0.0	309.7
145.00		1.00	1.37	28.788	31.67	171.09	0.650	0.000	5.00	8.162	5.31	268.8	0.0	288.2
148.25	Bot - Section 4	1.00	1.37	28.922	31.81	163.01	0.650	0.000	3.25	4.984	3.24	164.9	0.0	175.8
149.00	Appurtenance(s)	1.00	1.38	28.953	31.85	161.14	0.650	0.000	0.75	1.138	0.74	37.7	0.0	63.5
150.00		1.00	1.38	28.994	31.89	158.64	0.650	0.000	1.00	1.497	0.97	49.6	0.0	83.5
150.50	Top - Section 3	1.00	1.38	29.014	31.92	157.39	0.650	0.000	0.50	0.739	0.48	24.5	0.0	41.2
155.00		1.00	1.39	29.195	32.11	149.55	0.650	0.000	4.50	6.385	4.15	213.2	0.0	136.0
159.00	Appurtenance(s)	1.00	1.40	29.352	32.29	139.44	0.650	0.000	4.00	5.269	3.42	176.9	0.0	112.1
Totals:								159.00				13,228.3		21,360.2

Discrete Appurtenance Forces

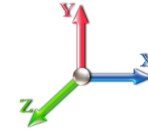
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	159.00	Low Profile Platform	1	29.352	32.287	1.00	1.00	35.00	1080.00	0.000	0.000	1808.06	0.00	0.00	
2	159.00	DC6-48-60-18-8F	1	29.467	32.414	1.00	1.00	0.92	28.62	0.000	3.000	47.71	0.00	143.14	
3	159.00	RRUS-11	6	29.467	32.414	0.67	1.00	10.13	275.40	0.000	3.000	525.39	0.00	1576.16	
4	159.00	LGP21401	6	29.467	32.414	0.50	1.00	3.87	76.14	0.000	3.000	200.71	0.00	602.12	
5	159.00	P65-16-XLH-RR	3	29.467	32.414	0.79	1.00	20.19	275.40	0.000	3.000	1047.13	0.00	3141.39	
6	159.00	7770.00	3	29.467	32.414	0.77	1.00	13.31	207.90	0.000	3.000	690.05	0.00	2070.16	
7	159.00	DB404-B	1	29.467	32.414	1.00	1.00	0.00	12.60	0.000	3.000	0.00	0.00	0.00	
8	149.00	Alcatel Lucent - 1900 MHz	3	29.034	31.938	0.50	0.75	5.73	118.80	0.000	2.000	292.73	0.00	585.46	
9	149.00	Alcatel Lucent - 800 MHz	3	29.034	31.938	0.50	0.75	3.75	143.10	0.000	2.000	191.81	0.00	383.63	
10	149.00	Alcatel Lucent - 800 MHz	3	29.034	31.938	0.50	0.75	1.18	23.76	0.000	2.000	60.09	0.00	120.17	
11	149.00	RFS - APXVSPP18-C-A20	3	29.034	31.938	0.62	0.75	15.71	286.20	0.000	2.000	802.55	0.00	1605.11	
12	149.00	Alcatel Lucent -	3	29.034	31.938	0.50	0.75	6.11	189.00	0.000	2.000	311.99	0.00	623.97	
13	149.00	RFS - ACU-A20-N - RET	4	29.034	31.938	0.38	0.75	0.21	3.60	0.000	2.000	10.73	0.00	21.46	
14	149.00	Low Profile Platform	1	28.953	31.848	1.00	1.00	35.00	1080.00	0.000	0.000	1783.50	0.00	0.00	
15	149.00	RFS - APXVTM14-C-I20	3	29.034	31.938	0.59	0.75	11.18	151.20	0.000	2.000	571.49	0.00	1142.99	
16	149.00	HRK12 (Handrail Kit)	1	28.953	31.848	1.00	1.00	6.75	235.55	0.000	0.000	343.96	0.00	0.00	
17	140.00	Low Profile Platform w/	1	28.576	31.433	1.00	1.00	34.00	1440.00	0.000	0.000	1709.97	0.00	0.00	
18	140.00	Andrew - ATSBT-TOP-FM	3	28.682	31.551	0.50	0.75	0.30	4.86	0.000	2.500	15.22	0.00	38.05	
19	140.00	RFS -	3	28.682	31.551	0.50	0.75	1.76	42.80	0.000	2.500	89.04	0.00	222.59	
20	140.00	APX16DWV-16DWVS-E-	3	28.682	31.551	0.46	0.75	9.22	109.89	0.000	2.500	465.48	0.00	1163.70	
21	140.00	FR90-16-XXDP	6	28.682	31.551	0.51	0.75	13.34	97.20	0.000	2.500	673.50	0.00	1683.74	
22	140.00	APXVAA24_43-U-A20	3	28.682	31.551	0.55	0.75	33.24	273.78	0.000	2.500	1678.20	0.00	4195.49	
23	130.00	RRH2X60-AWS	3	28.179	30.997	0.54	0.80	5.63	148.50	0.000	1.000	279.12	0.00	279.12	
24	130.00	BXA-70063/6CF	3	28.179	30.997	0.60	0.80	14.33	178.20	0.000	1.000	710.48	0.00	710.48	
25	130.00	LPA-80063/6CF	6	28.179	30.997	0.76	0.80	45.50	410.40	0.000	1.000	2256.62	0.00	2256.62	
26	130.00	BXA-171063-12BF	3	28.179	30.997	0.70	0.80	10.80	172.80	0.000	1.000	535.50	0.00	535.50	
27	130.00	FD9R6004/2C-3L -	6	28.179	30.997	0.40	0.80	0.86	16.74	0.000	1.000	42.85	0.00	42.85	
28	130.00	DB-T1-6Z-8AB-0Z - Distri	1	28.179	30.997	0.57	0.80	2.73	17.01	0.000	1.000	135.21	0.00	135.21	
29	130.00	Low Profile Platform	1	28.133	30.947	1.00	1.00	25.00	1080.00	0.000	0.000	1237.86	0.00	0.00	
30	130.00	742 213_2110_P45_02.0	3	28.179	30.997	0.58	0.80	5.44	44.55	0.000	1.000	269.95	0.00	269.95	
31	110.00	SCL329-HL	1	27.444	30.188	1.00	1.00	2.22	9.36	0.000	5.550	107.23	0.00	595.12	
32	110.00	4 ft Standoff	1	27.161	29.877	1.00	1.00	3.50	47.99	0.000	0.000	167.31	0.00	0.00	
33	80.00	4 ft Standoff	1	25.400	27.940	1.00	1.00	3.50	47.99	0.000	0.000	156.46	0.00	0.00	
34	80.00	SCL329-HL	1	25.761	28.337	1.00	1.00	2.22	9.36	0.000	5.550	100.65	0.00	558.63	
35	47.00	4 ft Standoff	1	22.709	24.980	1.00	1.00	3.50	47.99	0.000	0.000	139.89	0.00	0.00	
36	47.00	Decibel 26DB GPS	1	23.007	25.308	1.00	1.00	0.16	9.00	0.000	3.000	6.48	0.00	19.44	
Totals:									8,395.68						19,464.93

Total Applied Force Summary

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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

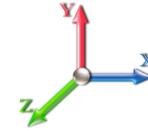


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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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		497.63	1230.86	0.00	0.00
10.00		485.39	1205.10	0.00	0.00
15.00		473.16	1179.33	0.00	0.00
20.00		489.06	1153.56	0.00	0.00
25.00		498.97	1127.80	0.00	0.00
30.00		504.36	1102.03	0.00	0.00
35.00		506.39	1076.26	0.00	0.00
40.00		505.80	1050.49	0.00	0.00
45.00		503.10	1024.73	0.00	0.00
47.00	(2) attachments	345.11	459.66	0.00	19.44
47.50		49.41	100.02	0.00	0.00
50.00		251.53	904.50	0.00	0.00
53.25		325.39	1156.12	0.00	0.00
55.00		173.60	342.22	0.00	0.00
60.00		494.11	960.37	0.00	0.00
65.00		485.87	934.61	0.00	0.00
70.00		476.61	908.84	0.00	0.00
75.00		466.44	883.07	0.00	0.00
80.00	(2) attachments	712.55	914.65	0.00	558.63
85.00		443.68	829.20	0.00	0.00
90.00		431.24	803.43	0.00	0.00
95.00		418.15	777.66	0.00	0.00
97.00		162.93	303.85	0.00	0.00
100.00		245.33	734.36	0.00	0.00
101.00		80.49	241.01	0.00	0.00
105.00		317.23	515.61	0.00	0.00
110.00	(2) attachments	658.25	682.53	0.00	595.12
115.00		368.56	601.37	0.00	0.00
120.00		352.95	579.90	0.00	0.00
125.00		336.90	558.42	0.00	0.00
130.00	(26) attachments	5788.04	2605.15	0.00	4229.74
135.00		303.59	466.59	0.00	0.00
140.00	(19) attachments	4917.77	2401.42	0.00	7303.58
145.00		268.79	375.78	0.00	0.00
148.25		164.92	209.58	0.00	0.00
149.00	(24) attachments	4406.55	2302.54	0.00	4482.79
150.00		49.64	93.91	0.00	0.00
150.50		24.54	46.44	0.00	0.00
155.00		213.24	168.96	0.00	0.00
159.00	(21) attachments	4495.96	2095.96	0.00	7532.98
Totals:		32,693.23	35,107.89	0.00	24,722.27

Linear Appurtenance Segment Forces (Factored)

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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 25

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	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.030	0.000	17.879	0.00	2.34
5.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	17.879	0.00	2.34
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	17.879	0.00	0.72
10.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.031	0.000	17.879	0.00	2.34
10.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.031	0.000	17.879	0.00	2.34
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.031	0.000	17.879	0.00	0.72
15.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.032	0.000	17.879	0.00	2.34
15.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.032	0.000	17.879	0.00	2.34
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.032	0.000	17.879	0.00	0.72
20.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	18.971	0.00	2.34
20.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	18.971	0.00	2.34
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	18.971	0.00	0.72
25.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	19.883	0.00	2.34
25.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	19.883	0.00	2.34
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	19.883	0.00	0.72
30.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.034	0.000	20.661	0.00	2.34
30.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	20.661	0.00	2.34
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.034	0.000	20.661	0.00	0.72
35.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.035	0.000	21.343	0.00	2.34
35.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	21.343	0.00	2.34
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.035	0.000	21.343	0.00	0.72
40.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.036	0.000	21.951	0.00	2.34
40.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	21.951	0.00	2.34
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.036	0.000	21.951	0.00	0.72
45.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.038	0.000	22.502	0.00	2.34
45.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.038	0.000	22.502	0.00	2.34
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.038	0.000	22.502	0.00	0.72
47.00	7/8" Coax	Yes	2.00	0.000	1.11	0.19	0.00	0.038	0.000	22.709	0.00	0.94
47.00	7/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.709	0.00	0.94
47.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.038	0.000	22.709	0.00	0.29
47.50	7/8" Coax	Yes	0.50	0.000	1.11	0.05	0.00	0.039	0.000	22.760	0.00	0.23
47.50	7/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.039	0.000	22.760	0.00	0.23
47.50	1/2" Coax	Yes	0.50	0.000	0.65	0.03	0.00	0.039	0.000	22.760	0.00	0.07
50.00	7/8" Coax	Yes	2.50	0.000	1.11	0.23	0.00	0.039	0.000	23.007	0.00	1.17
50.00	7/8" Coax	Yes	2.50	0.000	0.00	0.00	0.00	0.039	0.000	23.007	0.00	1.17
50.00	1/2" Coax	Yes	2.50	0.000	0.65	0.14	0.00	0.039	0.000	23.007	0.00	0.36
53.25	7/8" Coax	Yes	3.25	0.000	1.11	0.30	0.00	0.025	0.000	23.314	0.00	1.52
53.25	7/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.025	0.000	23.314	0.00	1.52
55.00	7/8" Coax	Yes	1.75	0.000	1.11	0.16	0.00	0.025	0.000	23.473	0.00	0.82
55.00	7/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	23.473	0.00	0.82
60.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.026	0.000	23.907	0.00	2.34
60.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	23.907	0.00	2.34
65.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.026	0.000	24.313	0.00	2.34
65.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	24.313	0.00	2.34
70.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.027	0.000	24.696	0.00	2.34
70.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.027	0.000	24.696	0.00	2.34
75.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.028	0.000	25.057	0.00	2.34

Linear Appurtenance Segment Forces (Factored)

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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

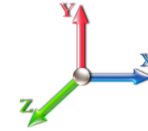


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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

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)
75.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.028	0.000	25.057	0.00	2.34
80.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.030	0.000	25.400	0.00	2.34
80.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	25.400	0.00	2.34
85.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.031	0.000	25.726	0.00	2.34
90.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.032	0.000	26.037	0.00	2.34
95.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	26.336	0.00	2.34
97.00	7/8" Coax	Yes	2.00	0.000	1.11	0.19	0.00	0.034	0.000	26.451	0.00	0.94
100.00	7/8" Coax	Yes	3.00	0.000	1.11	0.28	0.00	0.035	0.000	26.621	0.00	1.40
101.00	7/8" Coax	Yes	1.00	0.000	1.11	0.09	0.00	0.036	0.000	26.677	0.00	0.47
105.00	7/8" Coax	Yes	4.00	0.000	1.11	0.37	0.00	0.036	0.000	26.896	0.00	1.87
110.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.037	0.000	27.161	0.00	2.34
Totals:											0.0	96.1

Calculated Forces

Structure: CT13055-A-SBA
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

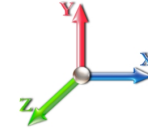
Code: EIA/TIA-222-G 2/28/2018
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II



Page: 20

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

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	-35.05	-32.75	0.00	-3868.9	0.00	3868.90	4390.37	2195.18	10447.7	5231.64	0.00	0.000	0.000	0.748
5.00	-33.72	-32.36	0.00	-3705.1	0.00	3705.15	4330.30	2165.15	10051.2	5033.11	0.10	-0.185	0.000	0.744
10.00	-32.41	-31.98	0.00	-3543.3	0.00	3543.35	4267.86	2133.93	9656.46	4835.41	0.40	-0.376	0.000	0.741
15.00	-31.12	-31.61	0.00	-3383.4	0.00	3383.45	4203.05	2101.52	9263.74	4638.76	0.90	-0.573	0.000	0.737
20.00	-29.86	-31.21	0.00	-3225.4	0.00	3225.42	4135.87	2067.94	8873.53	4443.36	1.61	-0.776	0.000	0.733
25.00	-28.63	-30.80	0.00	-3069.3	0.00	3069.37	4066.33	2033.16	8486.25	4249.43	2.53	-0.986	0.000	0.730
30.00	-27.42	-30.38	0.00	-2915.3	0.00	2915.36	3994.42	1997.21	8102.30	4057.17	3.68	-1.202	0.000	0.726
35.00	-26.24	-29.96	0.00	-2763.4	0.00	2763.46	3920.13	1960.07	7722.12	3866.80	5.06	-1.425	0.000	0.722
40.00	-25.08	-29.52	0.00	-2613.6	0.00	2613.68	3843.48	1921.74	7346.10	3678.51	6.67	-1.656	0.000	0.717
45.00	-23.98	-29.06	0.00	-2466.0	0.00	2466.06	3764.47	1882.23	6974.67	3492.52	8.54	-1.895	0.000	0.713
47.00	-23.50	-28.73	0.00	-2407.9	0.00	2407.92	3732.20	1866.10	6827.48	3418.81	9.35	-1.995	0.000	0.711
47.50	-23.37	-28.70	0.00	-2393.5	0.00	2393.56	3724.07	1862.03	6790.81	3400.45	9.56	-2.021	0.000	0.710
50.00	-22.40	-28.48	0.00	-2321.8	0.00	2321.80	3683.08	1841.54	6608.25	3309.03	10.66	-2.148	0.000	0.708
53.25	-21.19	-28.16	0.00	-2229.2	0.00	2229.25	3673.19	1836.60	6564.80	3287.28	12.18	-2.316	0.000	0.684
55.00	-20.77	-28.03	0.00	-2179.9	0.00	2179.98	3644.05	1822.03	6438.04	3223.81	13.04	-2.409	0.000	0.682
60.00	-19.71	-27.58	0.00	-2039.8	0.00	2039.83	3559.18	1779.59	6079.73	3044.38	15.70	-2.660	0.000	0.676
65.00	-18.68	-27.14	0.00	-1901.9	0.00	1901.92	3471.95	1735.97	5727.45	2867.98	18.62	-2.918	0.000	0.669
70.00	-17.67	-26.70	0.00	-1766.2	0.00	1766.23	3382.35	1691.17	5381.61	2694.80	21.82	-3.185	0.000	0.661
75.00	-16.69	-26.26	0.00	-1632.7	0.00	1632.74	3290.37	1645.19	5042.64	2525.07	25.30	-3.461	0.000	0.652
80.00	-15.69	-25.57	0.00	-1500.8	0.00	1500.87	3180.13	1590.07	4687.51	2347.24	29.08	-3.745	0.000	0.645
85.00	-14.77	-25.15	0.00	-1373.0	0.00	1373.01	3055.11	1527.56	4324.37	2165.40	33.15	-4.037	0.000	0.639
90.00	-13.86	-24.74	0.00	-1247.2	0.00	1247.26	2930.09	1465.05	3975.87	1990.89	37.54	-4.337	0.000	0.631
95.00	-13.03	-24.31	0.00	-1123.5	0.00	1123.58	2805.07	1402.54	3642.00	1823.71	42.24	-4.646	0.000	0.621
97.00	-12.67	-24.16	0.00	-1074.9	0.00	1074.96	2755.06	1377.53	3512.56	1758.89	44.22	-4.776	0.000	0.616
100.00	-11.91	-23.88	0.00	-1002.4	0.00	1002.49	2680.05	1340.03	3322.78	1663.86	47.28	-4.971	0.000	0.607
101.00	-11.60	-23.81	0.00	-978.62	0.00	978.62	2260.99	1130.50	2846.84	1425.54	48.32	-5.038	0.000	0.692
105.00	-10.99	-23.51	0.00	-883.38	0.00	883.38	2179.85	1089.93	2642.58	1323.26	52.65	-5.298	0.000	0.673
110.00	-10.23	-22.85	0.00	-765.25	0.00	765.25	2075.67	1037.84	2394.76	1199.16	58.39	-5.660	0.000	0.644
115.00	-9.53	-22.48	0.00	-650.99	0.00	650.99	1971.49	985.74	2159.14	1081.18	64.50	-6.020	0.000	0.607
120.00	-8.86	-22.12	0.00	-538.57	0.00	538.57	1867.30	933.65	1935.73	969.30	70.99	-6.372	0.000	0.561
125.00	-8.22	-21.77	0.00	-427.95	0.00	427.95	1763.12	881.56	1724.51	863.54	77.83	-6.709	0.000	0.501
130.00	-6.25	-15.75	0.00	-314.85	0.00	314.85	1658.94	829.47	1525.49	763.88	85.01	-7.019	0.000	0.416
135.00	-5.75	-15.41	0.00	-236.12	0.00	236.12	1554.75	777.38	1338.67	670.33	92.50	-7.293	0.000	0.356
140.00	-3.97	-10.24	0.00	-151.75	0.00	151.75	1450.57	725.28	1164.05	582.89	100.25	-7.532	0.000	0.263
145.00	-3.61	-9.93	0.00	-100.55	0.00	100.55	1346.38	673.19	1001.64	501.56	108.22	-7.720	0.000	0.203
148.25	-3.41	-9.75	0.00	-68.26	0.00	68.26	1278.66	639.33	902.61	451.97	113.50	-7.822	0.000	0.154
149.00	-1.73	-5.07	0.00	-56.47	0.00	56.47	1263.04	631.52	880.49	440.90	114.72	-7.843	0.000	0.130
150.00	-1.64	-5.01	0.00	-51.40	0.00	51.40	1242.20	621.10	851.42	426.34	116.36	-7.867	0.000	0.122
150.50	-1.59	-4.98	0.00	-48.90	0.00	48.90	761.18	380.59	536.85	268.82	117.19	-7.879	0.000	0.184
155.00	-1.45	-4.74	0.00	-26.51	0.00	26.51	704.92	352.46	460.03	230.36	124.63	-7.961	0.000	0.117
159.00	0.00	-4.50	0.00	-7.53	0.00	7.53	654.91	327.45	396.72	198.65	131.31	-8.025	0.000	0.038

Wind Loading - Shaft

Structure: CT13055-A-SBA
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G 2/28/2018
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

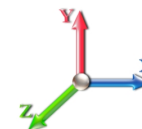
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.364	30.44	173.0	451.6	1839.8
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	24.840	29.81	169.5	472.9	1826.8
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.288	29.15	165.7	480.7	1800.2
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	23.724	28.47	171.7	482.4	1767.6
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.152	27.78	175.6	480.7	1731.5
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	22.576	27.09	178.0	476.6	1693.1
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	21.997	26.40	179.1	470.9	1653.0
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	21.416	25.70	179.4	463.8	1611.6
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	20.833	25.00	178.9	455.8	1569.2
47.00	Appurtenance(s)	1.00	1.08	6.564	7.22	0.00	1.200	1.554	2.00	8.168	9.80	70.8	180.9	616.7
47.50	Bot - Section 2	1.00	1.08	6.579	7.24	0.00	1.200	1.556	0.50	2.027	2.43	17.6	45.1	153.2
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.50	10.208	12.25	89.6	227.1	1306.7
53.25	Top - Section 1	1.00	1.11	6.739	7.41	0.00	1.200	1.574	3.25	13.052	15.66	116.1	291.3	1669.0
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	1.75	6.925	8.31	62.0	155.7	523.8
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	19.394	23.27	176.9	434.7	1463.2
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	18.806	22.57	174.5	424.1	1418.3
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	18.218	21.86	171.7	413.1	1372.9
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	17.629	21.15	168.5	401.6	1327.1
80.00	Appurtenance(s)	1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	17.039	20.45	165.1	389.8	1280.9
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	16.450	19.74	161.5	377.6	1234.4
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	15.859	19.03	157.6	365.2	1187.6
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	15.269	18.32	153.4	352.5	1140.5
97.00	Bot - Section 3	1.00	1.26	7.646	8.41	0.00	1.200	1.671	2.00	5.941	7.13	60.0	138.9	444.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	3.00	8.893	10.67	90.3	207.7	1037.5
101.00	Top - Section 2	1.00	1.27	7.711	8.48	0.00	1.200	1.678	1.00	2.917	3.50	29.7	68.7	340.3
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	4.00	11.433	13.72	117.3	266.4	754.8
110.00	Appurtenance(s)	1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	13.759	16.51	142.6	319.6	904.4
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	13.167	15.80	137.7	306.1	862.2
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	12.575	15.09	132.7	292.3	819.8
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	11.983	14.38	127.6	278.4	777.3
130.00	Appurtenance(s)	1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	11.390	13.67	122.3	264.4	734.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	10.797	12.96	116.8	250.1	691.7
140.00	Appurtenance(s)	1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	10.204	12.25	111.3	235.7	648.7
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	9.611	11.53	105.6	221.2	605.5
148.25	Bot - Section 4	1.00	1.37	8.360	9.20	0.00	1.200	1.743	3.25	5.929	7.11	65.4	137.6	372.1
149.00	Appurtenance(s)	1.00	1.38	8.369	9.21	0.00	1.200	1.744	0.75	1.356	1.63	15.0	32.0	116.8
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	1.00	1.787	2.14	19.8	42.1	153.5
150.50	Top - Section 3	1.00	1.38	8.387	9.23	0.00	1.200	1.746	0.50	0.885	1.06	9.8	20.9	75.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	4.50	7.698	9.24	85.7	176.3	357.6
159.00	Appurtenance(s)	1.00	1.40	8.484	9.33	0.00	1.200	1.755	4.00	6.439	7.73	72.1	147.2	296.7
Totals:									159.00			4,817.8		40,180.6

Discrete Appurtenance Forces

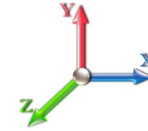
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	159.00	Low Profile Platform	1	8.484	9.333	1.00	1.00	64.49	2193.25	0.000	0.000	601.86	0.00	0.00	
2	159.00	DC6-48-60-18-8F	1	8.518	9.369	1.00	1.00	1.36	82.65	0.000	3.000	12.75	0.00	38.24	
3	159.00	RRUS-11	6	8.518	9.369	0.67	1.00	12.69	707.37	0.000	3.000	118.91	0.00	356.72	
4	159.00	LGP21401	6	8.518	9.369	0.50	1.00	6.39	209.80	0.000	3.000	59.89	0.00	179.66	
5	159.00	P65-16-XLH-RR	3	8.518	9.369	0.81	1.00	25.44	1168.88	0.000	3.000	238.33	0.00	715.00	
6	159.00	7770.00	3	8.518	9.369	0.80	1.00	17.38	277.20	0.000	3.000	162.86	0.00	488.58	
7	159.00	DB404-B	1	8.518	9.369	1.00	1.00	0.00	30.81	0.000	3.000	0.00	0.00	0.00	
8	149.00	Alcatel Lucent - 1900 MHz	3	8.392	9.232	0.50	0.75	7.82	392.07	0.000	2.000	72.22	0.00	144.43	
9	149.00	Alcatel Lucent - 800 MHz	3	8.392	9.232	0.50	0.75	5.48	349.23	0.000	2.000	50.56	0.00	101.12	
10	149.00	Alcatel Lucent - 800 MHz	3	8.392	9.232	0.50	0.75	2.15	69.57	0.000	2.000	19.85	0.00	39.70	
11	149.00	RFS - APXVSPP18-C-A20	3	8.392	9.232	0.64	0.75	19.70	1181.84	0.000	2.000	181.85	0.00	363.70	
12	149.00	Alcatel Lucent -	3	8.392	9.232	0.50	0.75	8.23	479.00	0.000	2.000	76.02	0.00	152.04	
13	149.00	RFS - ACU-A20-N - RET	4	8.392	9.232	0.38	0.75	0.65	16.77	0.000	2.000	6.04	0.00	12.09	
14	149.00	Low Profile Platform	1	8.369	9.206	1.00	1.00	64.30	2186.43	0.000	0.000	591.93	0.00	0.00	
15	149.00	RFS - APXVTM14-C-I20	3	8.392	9.232	0.61	0.75	13.56	473.75	0.000	2.000	125.19	0.00	250.38	
16	149.00	HRK12 (Handrail Kit)	1	8.369	9.206	1.00	1.00	13.34	886.17	0.000	0.000	122.83	0.00	0.00	
17	140.00	Low Profile Platform w/	1	8.260	9.086	1.00	1.00	63.46	3405.41	0.000	0.000	576.63	0.00	0.00	
18	140.00	Andrew - ATSBT-TOP-FM	3	8.291	9.120	0.50	0.75	0.82	18.78	0.000	2.500	7.49	0.00	18.72	
19	140.00	RFS -	3	8.291	9.120	0.50	0.75	2.94	139.37	0.000	2.500	26.77	0.00	66.92	
20	140.00	APX16DWV-16DWVS-E-	3	8.291	9.120	0.46	0.75	12.24	394.78	0.000	2.500	111.61	0.00	279.03	
21	140.00	FR90-16-XXDP	6	8.291	9.120	0.51	0.75	16.34	716.53	0.000	2.500	148.98	0.00	372.45	
22	140.00	APXVAA24_43-U-A20	3	8.291	9.120	0.55	0.75	36.38	1639.44	0.000	2.500	331.82	0.00	829.54	
23	130.00	RRH2X60-AWS	3	8.145	8.960	0.54	0.80	6.88	374.33	0.000	1.000	61.63	0.00	61.63	
24	130.00	BXA-70063/6CF	3	8.145	8.960	0.62	0.80	18.34	981.15	0.000	1.000	164.28	0.00	164.28	
25	130.00	LPA-80063/6CF	6	8.145	8.960	0.76	0.80	54.53	3021.90	0.000	1.000	488.56	0.00	488.56	
26	130.00	BXA-171063-12BF	3	8.145	8.960	0.72	0.80	14.85	842.02	0.000	1.000	133.05	0.00	133.05	
27	130.00	FD9R6004/2C-3L -	6	8.145	8.960	0.40	0.80	1.91	55.99	0.000	1.000	17.14	0.00	17.14	
28	130.00	DB-T1-6Z-8AB-0Z - Distri	1	8.145	8.960	0.61	0.80	3.44	164.01	0.000	1.000	30.83	0.00	30.83	
29	130.00	Low Profile Platform	1	8.132	8.945	1.00	1.00	45.65	2172.25	0.000	0.000	408.30	0.00	0.00	
30	130.00	742 213_2110_P45_02.0	3	8.145	8.960	0.58	0.80	8.41	184.70	0.000	1.000	75.32	0.00	75.32	
31	110.00	SCL329-HL	1	7.933	8.726	1.00	1.00	6.06	53.52	0.000	5.550	52.88	0.00	293.49	
32	110.00	4 ft Standoff	1	7.851	8.636	1.00	1.00	11.25	137.12	0.000	0.000	97.15	0.00	0.00	
33	80.00	4 ft Standoff	1	7.342	8.076	1.00	1.00	11.01	133.87	0.000	0.000	88.89	0.00	0.00	
34	80.00	SCL329-HL	1	7.446	8.191	1.00	1.00	5.94	51.69	0.000	5.550	48.65	0.00	270.02	
35	47.00	4 ft Standoff	1	6.564	7.220	1.00	1.00	10.62	128.66	0.000	0.000	76.66	0.00	0.00	
36	47.00	Decibel 26DB GPS	1	6.650	7.315	1.00	1.00	0.50	15.44	0.000	3.000	3.67	0.00	11.02	
Totals:									25,335.74						5,391.39

Total Applied Force Summary

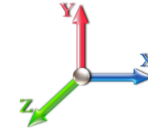
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

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		173.03	2136.08	0.00	0.00
10.00		169.46	2128.27	0.00	0.00
15.00		165.69	2105.03	0.00	0.00
20.00		171.72	2074.96	0.00	0.00
25.00		175.64	2040.92	0.00	0.00
30.00		177.97	2004.23	0.00	0.00
35.00		179.13	1965.65	0.00	0.00
40.00		179.37	1925.63	0.00	0.00
45.00		178.87	1884.45	0.00	0.00
47.00	(2) attachments	151.11	887.05	0.00	11.02
47.50		17.60	184.80	0.00	0.00
50.00		89.61	1464.88	0.00	0.00
53.25		116.11	1861.98	0.00	0.00
55.00		62.02	627.76	0.00	0.00
60.00		176.90	1760.96	0.00	0.00
65.00		174.46	1716.62	0.00	0.00
70.00		171.66	1671.78	0.00	0.00
75.00		168.54	1626.51	0.00	0.00
80.00	(2) attachments	302.67	1766.41	0.00	270.02
85.00		161.46	1507.48	0.00	0.00
90.00		157.55	1460.93	0.00	0.00
95.00		153.42	1414.09	0.00	0.00
97.00		59.96	553.99	0.00	0.00
100.00		90.33	1201.77	0.00	0.00
101.00		29.69	395.04	0.00	0.00
105.00		117.32	973.96	0.00	0.00
110.00	(2) attachments	292.62	1369.15	0.00	293.49
115.00		137.74	1107.91	0.00	0.00
120.00		132.73	1065.54	0.00	0.00
125.00		127.57	1022.99	0.00	0.00
130.00	(26) attachments	1501.38	8776.64	0.00	970.81
135.00		116.82	872.24	0.00	0.00
140.00	(19) attachments	1314.55	7127.23	0.00	1566.66
145.00		105.57	722.27	0.00	0.00
148.25		65.42	417.06	0.00	0.00
149.00	(24) attachments	1261.48	6161.99	0.00	1063.47
150.00		19.77	167.35	0.00	0.00
150.50		9.80	82.84	0.00	0.00
155.00		85.75	401.61	0.00	0.00
159.00	(21) attachments	1266.70	5003.71	0.00	1778.20
	Totals:	10,209.17	73,639.77	0.00	5,953.67

Linear Appurtenance Segment Forces (Factored)

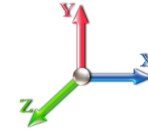
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

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	7/8" Coax	Yes	5.00	0.000	1.11	1.50	0.00	0.030	0.000	5.168	0.00	18.42
5.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	5.168	0.00	18.42
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.31	0.00	0.030	0.000	5.168	0.00	13.70
10.00	7/8" Coax	Yes	5.00	0.000	1.11	1.57	0.00	0.031	0.000	5.168	0.00	20.21
10.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.031	0.000	5.168	0.00	20.21
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.38	0.00	0.031	0.000	5.168	0.00	15.33
15.00	7/8" Coax	Yes	5.00	0.000	1.11	1.62	0.00	0.032	0.000	5.168	0.00	21.36
15.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.032	0.000	5.168	0.00	21.36
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.43	0.00	0.032	0.000	5.168	0.00	16.38
20.00	7/8" Coax	Yes	5.00	0.000	1.11	1.65	0.00	0.033	0.000	5.483	0.00	22.23
20.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	5.483	0.00	22.23
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.46	0.00	0.033	0.000	5.483	0.00	17.18
25.00	7/8" Coax	Yes	5.00	0.000	1.11	1.68	0.00	0.033	0.000	5.747	0.00	22.93
25.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	5.747	0.00	22.93
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.49	0.00	0.033	0.000	5.747	0.00	17.83
30.00	7/8" Coax	Yes	5.00	0.000	1.11	1.70	0.00	0.034	0.000	5.972	0.00	23.53
30.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	5.972	0.00	23.53
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.51	0.00	0.034	0.000	5.972	0.00	18.38
35.00	7/8" Coax	Yes	5.00	0.000	1.11	1.72	0.00	0.035	0.000	6.169	0.00	24.05
35.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	6.169	0.00	24.05
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.53	0.00	0.035	0.000	6.169	0.00	18.86
40.00	7/8" Coax	Yes	5.00	0.000	1.11	1.74	0.00	0.036	0.000	6.345	0.00	24.52
40.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	6.345	0.00	24.52
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.55	0.00	0.036	0.000	6.345	0.00	19.29
45.00	7/8" Coax	Yes	5.00	0.000	1.11	1.75	0.00	0.038	0.000	6.504	0.00	24.94
45.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.038	0.000	6.504	0.00	24.94
45.00	1/2" Coax	Yes	5.00	0.000	0.65	1.56	0.00	0.038	0.000	6.504	0.00	19.67
47.00	7/8" Coax	Yes	2.00	0.000	1.11	0.70	0.00	0.038	0.000	6.564	0.00	10.04
47.00	7/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	6.564	0.00	10.04
47.00	1/2" Coax	Yes	2.00	0.000	0.65	0.63	0.00	0.038	0.000	6.564	0.00	7.93
47.50	7/8" Coax	Yes	0.50	0.000	1.11	0.18	0.00	0.039	0.000	6.579	0.00	2.51
47.50	7/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.039	0.000	6.579	0.00	2.51
47.50	1/2" Coax	Yes	0.50	0.000	0.65	0.16	0.00	0.039	0.000	6.579	0.00	1.99
50.00	7/8" Coax	Yes	2.50	0.000	1.11	0.88	0.00	0.039	0.000	6.650	0.00	12.66
50.00	7/8" Coax	Yes	2.50	0.000	0.00	0.00	0.00	0.039	0.000	6.650	0.00	12.66
50.00	1/2" Coax	Yes	2.50	0.000	0.65	0.79	0.00	0.039	0.000	6.650	0.00	10.01
53.25	7/8" Coax	Yes	3.25	0.000	1.11	1.15	0.00	0.025	0.000	6.739	0.00	16.61
53.25	7/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.025	0.000	6.739	0.00	16.61
55.00	7/8" Coax	Yes	1.75	0.000	1.11	0.62	0.00	0.025	0.000	6.785	0.00	8.98
55.00	7/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	6.785	0.00	8.98
60.00	7/8" Coax	Yes	5.00	0.000	1.11	1.79	0.00	0.026	0.000	6.910	0.00	26.00
60.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	6.910	0.00	26.00
65.00	7/8" Coax	Yes	5.00	0.000	1.11	1.80	0.00	0.026	0.000	7.028	0.00	26.30
65.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	7.028	0.00	26.30
70.00	7/8" Coax	Yes	5.00	0.000	1.11	1.81	0.00	0.027	0.000	7.138	0.00	26.59
70.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.027	0.000	7.138	0.00	26.59
75.00	7/8" Coax	Yes	5.00	0.000	1.11	1.82	0.00	0.028	0.000	7.243	0.00	26.86

Linear Appurtenance Segment Forces (Factored)

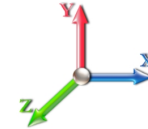
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

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)
75.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.028	0.000	7.243	0.00	26.86
80.00	7/8" Coax	Yes	5.00	0.000	1.11	1.83	0.00	0.030	0.000	7.342	0.00	27.12
80.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	7.342	0.00	27.12
85.00	7/8" Coax	Yes	5.00	0.000	1.11	1.84	0.00	0.031	0.000	7.436	0.00	27.36
90.00	7/8" Coax	Yes	5.00	0.000	1.11	1.84	0.00	0.032	0.000	7.526	0.00	27.59
95.00	7/8" Coax	Yes	5.00	0.000	1.11	1.85	0.00	0.033	0.000	7.612	0.00	27.81
97.00	7/8" Coax	Yes	2.00	0.000	1.11	0.74	0.00	0.034	0.000	7.646	0.00	11.16
100.00	7/8" Coax	Yes	3.00	0.000	1.11	1.12	0.00	0.035	0.000	7.695	0.00	16.81
101.00	7/8" Coax	Yes	1.00	0.000	1.11	0.37	0.00	0.036	0.000	7.711	0.00	5.61
105.00	7/8" Coax	Yes	4.00	0.000	1.11	1.49	0.00	0.036	0.000	7.774	0.00	22.58
110.00	7/8" Coax	Yes	5.00	0.000	1.11	1.87	0.00	0.037	0.000	7.851	0.00	28.42
Totals:											0.0	1,115.6

Calculated Forces

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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

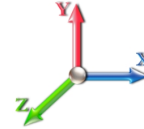


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

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	-73.63	-10.25	0.00	-1224.4	0.00	1224.43	4390.37	2195.18	10447.7	5231.64	0.00	0.000	0.000	0.251
5.00	-71.49	-10.15	0.00	-1173.2	0.00	1173.20	4330.30	2165.15	10051.2	5033.11	0.03	-0.059	0.000	0.250
10.00	-69.35	-10.05	0.00	-1122.4	0.00	1122.46	4267.86	2133.93	9656.46	4835.41	0.13	-0.119	0.000	0.248
15.00	-67.23	-9.95	0.00	-1072.2	0.00	1072.22	4203.05	2101.52	9263.74	4638.76	0.28	-0.181	0.000	0.247
20.00	-65.15	-9.85	0.00	-1022.4	0.00	1022.46	4135.87	2067.94	8873.53	4443.36	0.51	-0.246	0.000	0.246
25.00	-63.10	-9.74	0.00	-973.22	0.00	973.22	4066.33	2033.16	8486.25	4249.43	0.80	-0.312	0.000	0.245
30.00	-61.08	-9.62	0.00	-924.54	0.00	924.54	3994.42	1997.21	8102.30	4057.17	1.17	-0.381	0.000	0.243
35.00	-59.11	-9.50	0.00	-876.44	0.00	876.44	3920.13	1960.07	7722.12	3866.80	1.60	-0.452	0.000	0.242
40.00	-57.17	-9.38	0.00	-828.94	0.00	828.94	3843.48	1921.74	7346.10	3678.51	2.11	-0.525	0.000	0.240
45.00	-55.28	-9.23	0.00	-782.04	0.00	782.04	3764.47	1882.23	6974.67	3492.52	2.70	-0.601	0.000	0.239
47.00	-54.39	-9.09	0.00	-763.56	0.00	763.56	3732.20	1866.10	6827.48	3418.81	2.96	-0.632	0.000	0.238
47.50	-54.20	-9.10	0.00	-759.02	0.00	759.02	3724.07	1862.03	6790.81	3400.45	3.03	-0.641	0.000	0.238
50.00	-52.73	-9.03	0.00	-736.28	0.00	736.28	3683.08	1841.54	6608.25	3309.03	3.38	-0.681	0.000	0.237
53.25	-50.86	-8.93	0.00	-706.93	0.00	706.93	3673.19	1836.60	6564.80	3287.28	3.86	-0.734	0.000	0.229
55.00	-50.23	-8.91	0.00	-691.30	0.00	691.30	3644.05	1822.03	6438.04	3223.81	4.13	-0.764	0.000	0.228
60.00	-48.46	-8.77	0.00	-646.76	0.00	646.76	3559.18	1779.59	6079.73	3044.38	4.98	-0.843	0.000	0.226
65.00	-46.73	-8.64	0.00	-602.89	0.00	602.89	3471.95	1735.97	5727.45	2867.98	5.90	-0.925	0.000	0.224
70.00	-45.05	-8.51	0.00	-559.69	0.00	559.69	3382.35	1691.17	5381.61	2694.80	6.92	-1.010	0.000	0.221
75.00	-43.41	-8.38	0.00	-517.14	0.00	517.14	3290.37	1645.19	5042.64	2525.07	8.02	-1.097	0.000	0.218
80.00	-41.64	-8.11	0.00	-474.98	0.00	474.98	3180.13	1590.07	4687.51	2347.24	9.22	-1.187	0.000	0.215
85.00	-40.12	-7.98	0.00	-434.45	0.00	434.45	3055.11	1527.56	4324.37	2165.40	10.51	-1.279	0.000	0.214
90.00	-38.65	-7.85	0.00	-394.56	0.00	394.56	2930.09	1465.05	3975.87	1990.89	11.90	-1.374	0.000	0.211
95.00	-37.24	-7.71	0.00	-355.31	0.00	355.31	2805.07	1402.54	3642.00	1823.71	13.39	-1.472	0.000	0.208
97.00	-36.68	-7.67	0.00	-339.89	0.00	339.89	2755.06	1377.53	3512.56	1758.89	14.02	-1.513	0.000	0.207
100.00	-35.47	-7.57	0.00	-316.89	0.00	316.89	2680.05	1340.03	3322.78	1663.86	14.99	-1.575	0.000	0.204
101.00	-35.07	-7.56	0.00	-309.32	0.00	309.32	2260.99	1130.50	2846.84	1425.54	15.32	-1.596	0.000	0.233
105.00	-34.09	-7.47	0.00	-279.08	0.00	279.08	2179.85	1089.93	2642.58	1323.26	16.70	-1.678	0.000	0.227
110.00	-32.71	-7.21	0.00	-241.41	0.00	241.41	2075.67	1037.84	2394.76	1199.16	18.52	-1.793	0.000	0.217
115.00	-31.60	-7.09	0.00	-205.39	0.00	205.39	1971.49	985.74	2159.14	1081.18	20.45	-1.906	0.000	0.206
120.00	-30.52	-6.98	0.00	-169.92	0.00	169.92	1867.30	933.65	1935.73	969.30	22.51	-2.017	0.000	0.192
125.00	-29.49	-6.87	0.00	-135.00	0.00	135.00	1763.12	881.56	1724.51	863.54	24.68	-2.124	0.000	0.173
130.00	-20.77	-5.07	0.00	-99.67	0.00	99.67	1658.94	829.47	1525.49	763.88	26.96	-2.221	0.000	0.143
135.00	-19.90	-4.95	0.00	-74.31	0.00	74.31	1554.75	777.38	1338.67	670.33	29.33	-2.308	0.000	0.124
140.00	-12.83	-3.36	0.00	-48.01	0.00	48.01	1450.57	725.28	1164.05	582.89	31.79	-2.383	0.000	0.091
145.00	-12.11	-3.23	0.00	-31.22	0.00	31.22	1346.38	673.19	1001.64	501.56	34.32	-2.442	0.000	0.071
148.25	-11.69	-3.15	0.00	-20.72	0.00	20.72	1278.66	639.33	902.61	451.97	35.99	-2.473	0.000	0.055
149.00	-5.59	-1.63	0.00	-17.29	0.00	17.29	1263.04	631.52	880.49	440.90	36.38	-2.479	0.000	0.044
150.00	-5.42	-1.60	0.00	-15.66	0.00	15.66	1242.20	621.10	851.42	426.34	36.90	-2.487	0.000	0.041
150.50	-5.34	-1.59	0.00	-14.86	0.00	14.86	761.18	380.59	536.85	268.82	37.16	-2.490	0.000	0.062
155.00	-4.94	-1.49	0.00	-7.72	0.00	7.72	704.92	352.46	460.03	230.36	39.52	-2.515	0.000	0.041
159.00	0.00	-1.27	0.00	-1.78	0.00	1.78	654.91	327.45	396.72	198.65	41.64	-2.533	0.000	0.009

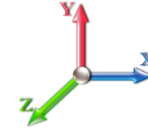
Seismic Segment Forces (Factored)

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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 23
Gust Response Factor	1.10			Sds	0.22
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.35	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		1156.8	0.00	0.03	0.02	24.95	
10.00		1128.2	0.01	0.05	0.03	35.23	
15.00		1099.5	0.02	0.06	0.04	39.65	
20.00		1070.9	0.03	0.07	0.04	41.33	
25.00		1042.3	0.05	0.07	0.04	41.74	
30.00		1013.7	0.07	0.07	0.04	41.64	
35.00		985.07	0.09	0.07	0.04	41.40	
40.00		956.43	0.12	0.07	0.03	41.11	
45.00		927.80	0.15	0.07	0.03	40.68	
47.00	Appurtenance(s)	426.43	0.17	0.07	0.03	18.80	
47.50	Bot - Section 2	90.06	0.17	0.07	0.03	3.98	
50.00		899.61	0.19	0.06	0.02	39.86	
53.25	Top - Section 1	1148.0	0.21	0.06	0.02	50.71	
55.00		306.75	0.23	0.06	0.02	13.46	
60.00		857.10	0.27	0.05	0.02	35.88	
65.00		828.47	0.32	0.04	0.01	31.01	
70.00		799.84	0.37	0.03	0.01	23.79	
75.00		771.21	0.42	0.01	0.01	14.14	
80.00	Appurtenance(s)	806.30	0.48	-0.01	0.01	2.99	
85.00		713.95	0.54	-0.03	0.01	-8.82	
90.00		685.32	0.61	-0.05	0.02	-18.65	
95.00		656.69	0.67	-0.08	0.03	-25.29	
97.00	Bot - Section 3	254.66	0.70	-0.09	0.03	-10.62	
100.00		691.53	0.75	-0.10	0.04	-31.04	
101.00	Top - Section 2	226.31	0.76	-0.10	0.04	-10.30	
105.00		406.99	0.82	-0.12	0.06	-18.67	
110.00	Appurtenance(s)	550.99	0.90	-0.12	0.09	-22.86	
115.00		463.41	0.99	-0.11	0.13	-14.78	
120.00		439.55	1.08	-0.08	0.17	-7.57	
125.00		415.69	1.17	-0.02	0.23	1.02	
130.00	Appurtenance(s)	2689.8	1.26	0.07	0.30	73.11	
135.00		367.97	1.36	0.22	0.39	20.97	
140.00	Appurtenance(s)	2531.3	1.47	0.42	0.50	232.78	
145.00		320.26	1.57	0.69	0.63	42.35	
148.25	Bot - Section 4	195.37	1.64	0.92	0.73	31.51	
149.00	Appurtenance(s)	2549.7	1.66	0.98	0.75	429.16	
150.00		92.81	1.68	1.06	0.79	16.51	
150.50	Top - Section 3	45.83	1.69	1.10	0.80	8.38	
155.00		151.08	1.80	1.52	0.97	34.61	
159.00	Appurtenance(s)	2297.9	1.89	1.98	1.14	629.90	
Totals:		33,062.1				1,934.0	Total Wind: 32,693.2

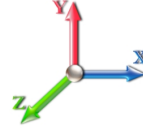
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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 + 1.0E										Iterations 23
Gust Response Factor 1.10							Sds 0.22			Ss 0.20
Dead Load Factor 1.20	Seismic Load Factor 1.00						Sd1 0.10			S1 0.07
Wind Load Factor 0.00	Structure Frequency 0.35						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	-46.81	-2.11	0.00	-265.26	0.00	265.26	4390.37	2195.18	10447.7	5231.64	0.00	0.00	0.00	0.061
5.00	-45.17	-2.09	0.00	-254.73	0.00	254.73	4330.30	2165.15	10051.2	5033.11	0.01	-0.01	0.061	
10.00	-43.56	-2.07	0.00	-244.27	0.00	244.27	4267.86	2133.93	9656.46	4835.41	0.03	-0.03	0.061	
15.00	-41.99	-2.04	0.00	-233.93	0.00	233.93	4203.05	2101.52	9263.74	4638.76	0.06	-0.04	0.060	
20.00	-40.45	-2.00	0.00	-223.75	0.00	223.75	4135.87	2067.94	8873.53	4443.36	0.11	-0.05	0.060	
25.00	-38.95	-1.97	0.00	-213.73	0.00	213.73	4066.33	2033.16	8486.25	4249.43	0.17	-0.07	0.060	
30.00	-37.48	-1.94	0.00	-203.88	0.00	203.88	3994.42	1997.21	8102.30	4057.17	0.25	-0.08	0.060	
35.00	-36.04	-1.90	0.00	-194.20	0.00	194.20	3920.13	1960.07	7722.12	3866.80	0.35	-0.10	0.059	
40.00	-34.64	-1.87	0.00	-184.68	0.00	184.68	3843.48	1921.74	7346.10	3678.51	0.46	-0.12	0.059	
45.00	-33.27	-1.83	0.00	-175.33	0.00	175.33	3764.47	1882.23	6974.67	3492.52	0.59	-0.13	0.059	
47.00	-32.66	-1.82	0.00	-171.66	0.00	171.66	3732.20	1866.10	6827.48	3418.81	0.65	-0.14	0.059	
47.50	-32.53	-1.81	0.00	-170.76	0.00	170.76	3724.07	1862.03	6790.81	3400.45	0.66	-0.14	0.059	
50.00	-31.32	-1.78	0.00	-166.22	0.00	166.22	3683.08	1841.54	6608.25	3309.03	0.74	-0.15	0.059	
53.25	-29.78	-1.73	0.00	-160.45	0.00	160.45	3673.19	1836.60	6564.80	3287.28	0.85	-0.16	0.057	
55.00	-29.32	-1.72	0.00	-157.42	0.00	157.42	3644.05	1822.03	6438.04	3223.81	0.91	-0.17	0.057	
60.00	-28.04	-1.69	0.00	-148.83	0.00	148.83	3559.18	1779.59	6079.73	3044.38	1.09	-0.19	0.057	
65.00	-26.79	-1.66	0.00	-140.39	0.00	140.39	3471.95	1735.97	5727.45	2867.98	1.30	-0.21	0.057	
70.00	-25.58	-1.64	0.00	-132.08	0.00	132.08	3382.35	1691.17	5381.61	2694.80	1.52	-0.23	0.057	
75.00	-24.40	-1.63	0.00	-123.87	0.00	123.87	3290.37	1645.19	5042.64	2525.07	1.77	-0.25	0.056	
80.00	-23.18	-1.63	0.00	-115.71	0.00	115.71	3180.13	1590.07	4687.51	2347.24	2.04	-0.27	0.057	
85.00	-22.08	-1.64	0.00	-107.55	0.00	107.55	3055.11	1527.56	4324.37	2165.40	2.34	-0.29	0.057	
90.00	-21.01	-1.64	0.00	-99.36	0.00	99.36	2930.09	1465.05	3975.87	1990.89	2.65	-0.31	0.057	
95.00	-19.97	-1.64	0.00	-91.17	0.00	91.17	2805.07	1402.54	3642.00	1823.71	3.00	-0.34	0.057	
97.00	-19.56	-1.64	0.00	-87.89	0.00	87.89	2755.06	1377.53	3512.56	1758.89	3.14	-0.35	0.057	
100.00	-18.58	-1.64	0.00	-82.96	0.00	82.96	2680.05	1340.03	3322.78	1663.86	3.37	-0.37	0.057	
101.00	-18.26	-1.64	0.00	-81.32	0.00	81.32	2260.99	1130.50	2846.84	1425.54	3.44	-0.37	0.065	
105.00	-17.57	-1.65	0.00	-74.75	0.00	74.75	2179.85	1089.93	2642.58	1323.26	3.76	-0.39	0.065	
110.00	-16.66	-1.65	0.00	-66.53	0.00	66.53	2075.67	1037.84	2394.76	1199.16	4.19	-0.42	0.064	
115.00	-15.86	-1.65	0.00	-58.29	0.00	58.29	1971.49	985.74	2159.14	1081.18	4.65	-0.46	0.062	
120.00	-15.09	-1.65	0.00	-50.03	0.00	50.03	1867.30	933.65	1935.73	969.30	5.15	-0.49	0.060	
125.00	-14.34	-1.65	0.00	-41.77	0.00	41.77	1763.12	881.56	1724.51	863.54	5.68	-0.52	0.057	
130.00	-10.87	-1.55	0.00	-33.50	0.00	33.50	1658.94	829.47	1525.49	763.88	6.24	-0.55	0.050	
135.00	-10.24	-1.53	0.00	-25.73	0.00	25.73	1554.75	777.38	1338.67	670.33	6.83	-0.58	0.045	
140.00	-7.04	-1.27	0.00	-18.08	0.00	18.08	1450.57	725.28	1164.05	582.89	7.46	-0.61	0.036	
145.00	-6.54	-1.22	0.00	-11.74	0.00	11.74	1346.38	673.19	1001.64	501.56	8.11	-0.63	0.028	
148.25	-6.26	-1.19	0.00	-7.76	0.00	7.76	1278.66	639.33	902.61	451.97	8.54	-0.64	0.022	
149.00	-3.20	-0.73	0.00	-6.87	0.00	6.87	1263.04	631.52	880.49	440.90	8.64	-0.64	0.018	
150.00	-3.07	-0.71	0.00	-6.15	0.00	6.15	1242.20	621.10	851.42	426.34	8.78	-0.65	0.017	
150.50	-3.01	-0.70	0.00	-5.79	0.00	5.79	761.18	380.59	536.85	268.82	8.84	-0.65	0.026	
155.00	-2.79	-0.66	0.00	-2.65	0.00	2.65	704.92	352.46	460.03	230.36	9.46	-0.66	0.015	
159.00	0.00	-0.63	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	10.01	-0.66	0.000	

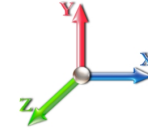
Seismic Segment Forces (Factored)

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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 23
Gust Response Factor	1.10	Sds	0.22	Ss 0.20
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.35	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		1156.8	0.00	0.03	0.02	24.95	
10.00		1128.2	0.01	0.05	0.03	35.23	
15.00		1099.5	0.02	0.06	0.04	39.65	
20.00		1070.9	0.03	0.07	0.04	41.33	
25.00		1042.3	0.05	0.07	0.04	41.74	
30.00		1013.7	0.07	0.07	0.04	41.64	
35.00		985.07	0.09	0.07	0.04	41.40	
40.00		956.43	0.12	0.07	0.03	41.11	
45.00		927.80	0.15	0.07	0.03	40.68	
47.00	Appurtenance(s)	426.43	0.17	0.07	0.03	18.80	
47.50	Bot - Section 2	90.06	0.17	0.07	0.03	3.98	
50.00		899.61	0.19	0.06	0.02	39.86	
53.25	Top - Section 1	1148.0	0.21	0.06	0.02	50.71	
55.00		306.75	0.23	0.06	0.02	13.46	
60.00		857.10	0.27	0.05	0.02	35.88	
65.00		828.47	0.32	0.04	0.01	31.01	
70.00		799.84	0.37	0.03	0.01	23.79	
75.00		771.21	0.42	0.01	0.01	14.14	
80.00	Appurtenance(s)	806.30	0.48	-0.01	0.01	2.99	
85.00		713.95	0.54	-0.03	0.01	-8.82	
90.00		685.32	0.61	-0.05	0.02	-18.65	
95.00		656.69	0.67	-0.08	0.03	-25.29	
97.00	Bot - Section 3	254.66	0.70	-0.09	0.03	-10.62	
100.00		691.53	0.75	-0.10	0.04	-31.04	
101.00	Top - Section 2	226.31	0.76	-0.10	0.04	-10.30	
105.00		406.99	0.82	-0.12	0.06	-18.67	
110.00	Appurtenance(s)	550.99	0.90	-0.12	0.09	-22.86	
115.00		463.41	0.99	-0.11	0.13	-14.78	
120.00		439.55	1.08	-0.08	0.17	-7.57	
125.00		415.69	1.17	-0.02	0.23	1.02	
130.00	Appurtenance(s)	2689.8	1.26	0.07	0.30	73.11	
135.00		367.97	1.36	0.22	0.39	20.97	
140.00	Appurtenance(s)	2531.3	1.47	0.42	0.50	232.78	
145.00		320.26	1.57	0.69	0.63	42.35	
148.25	Bot - Section 4	195.37	1.64	0.92	0.73	31.51	
149.00	Appurtenance(s)	2549.7	1.66	0.98	0.75	429.16	
150.00		92.81	1.68	1.06	0.79	16.51	
150.50	Top - Section 3	45.83	1.69	1.10	0.80	8.38	
155.00		151.08	1.80	1.52	0.97	34.61	
159.00	Appurtenance(s)	2297.9	1.89	1.98	1.14	629.90	
Totals:		33,062.1				1,934.0	Total Wind: 32,693.2

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

Calculated Forces

Structure: CT13055-A-SBA **Code:** EIA/TIA-222-G 2/28/2018
Site Name: Monroe Turnpike **Exposure:** C
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 Page: 30

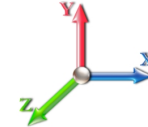


Load Case: 0.9D + 1.0E

Iterations 23

Gust Response Factor 1.10

Sds 0.22



Ss 0.20

Dead Load Factor 0.90 Seismic Load Factor 1.00

Sd1 0.10

S1 0.07

Wind Load Factor 0.00 Structure Frequency 0.35 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	-35.11	-2.11	0.00	-261.72	0.00	261.72	4390.37	2195.18	10447.7	5231.64	0.00	0.00	0.00	0.058
5.00	-33.88	-2.09	0.00	-251.19	0.00	251.19	4330.30	2165.15	10051.2	5033.11	0.01	-0.01	0.058	
10.00	-32.67	-2.06	0.00	-240.74	0.00	240.74	4267.86	2133.93	9656.46	4835.41	0.03	-0.03	0.057	
15.00	-31.49	-2.03	0.00	-230.44	0.00	230.44	4203.05	2101.52	9263.74	4638.76	0.06	-0.04	0.057	
20.00	-30.34	-1.99	0.00	-220.31	0.00	220.31	4135.87	2067.94	8873.53	4443.36	0.11	-0.05	0.057	
25.00	-29.21	-1.96	0.00	-210.34	0.00	210.34	4066.33	2033.16	8486.25	4249.43	0.17	-0.07	0.057	
30.00	-28.11	-1.92	0.00	-200.56	0.00	200.56	3994.42	1997.21	8102.30	4057.17	0.25	-0.08	0.056	
35.00	-27.03	-1.89	0.00	-190.95	0.00	190.95	3920.13	1960.07	7722.12	3866.80	0.34	-0.10	0.056	
40.00	-25.98	-1.85	0.00	-181.52	0.00	181.52	3843.48	1921.74	7346.10	3678.51	0.45	-0.11	0.056	
45.00	-24.95	-1.81	0.00	-172.27	0.00	172.27	3764.47	1882.23	6974.67	3492.52	0.58	-0.13	0.056	
47.00	-24.49	-1.79	0.00	-168.65	0.00	168.65	3732.20	1866.10	6827.48	3418.81	0.64	-0.14	0.056	
47.50	-24.39	-1.79	0.00	-167.75	0.00	167.75	3724.07	1862.03	6790.81	3400.45	0.65	-0.14	0.056	
50.00	-23.49	-1.75	0.00	-163.27	0.00	163.27	3683.08	1841.54	6608.25	3309.03	0.73	-0.15	0.056	
53.25	-22.33	-1.70	0.00	-157.56	0.00	157.56	3673.19	1836.60	6564.80	3287.28	0.83	-0.16	0.054	
55.00	-21.99	-1.69	0.00	-154.58	0.00	154.58	3644.05	1822.03	6438.04	3223.81	0.89	-0.17	0.054	
60.00	-21.03	-1.66	0.00	-146.11	0.00	146.11	3559.18	1779.59	6079.73	3044.38	1.08	-0.18	0.054	
65.00	-20.09	-1.64	0.00	-137.79	0.00	137.79	3471.95	1735.97	5727.45	2867.98	1.28	-0.20	0.054	
70.00	-19.18	-1.61	0.00	-129.62	0.00	129.62	3382.35	1691.17	5381.61	2694.80	1.50	-0.22	0.054	
75.00	-18.30	-1.60	0.00	-121.55	0.00	121.55	3290.37	1645.19	5042.64	2525.07	1.74	-0.24	0.054	
80.00	-17.39	-1.60	0.00	-113.53	0.00	113.53	3180.13	1590.07	4687.51	2347.24	2.01	-0.26	0.054	
85.00	-16.56	-1.61	0.00	-105.51	0.00	105.51	3055.11	1527.56	4324.37	2165.40	2.30	-0.29	0.054	
90.00	-15.75	-1.61	0.00	-97.48	0.00	97.48	2930.09	1465.05	3975.87	1990.89	2.61	-0.31	0.054	
95.00	-14.97	-1.61	0.00	-89.44	0.00	89.44	2805.07	1402.54	3642.00	1823.71	2.95	-0.33	0.054	
97.00	-14.67	-1.61	0.00	-86.23	0.00	86.23	2755.06	1377.53	3512.56	1758.89	3.09	-0.34	0.054	
100.00	-13.94	-1.61	0.00	-81.40	0.00	81.40	2680.05	1340.03	3322.78	1663.86	3.31	-0.36	0.054	
101.00	-13.69	-1.61	0.00	-79.79	0.00	79.79	2260.99	1130.50	2846.84	1425.54	3.39	-0.37	0.062	
105.00	-13.18	-1.61	0.00	-73.35	0.00	73.35	2179.85	1089.93	2642.58	1323.26	3.70	-0.39	0.061	
110.00	-12.49	-1.61	0.00	-65.29	0.00	65.29	2075.67	1037.84	2394.76	1199.16	4.12	-0.42	0.060	
115.00	-11.89	-1.62	0.00	-57.22	0.00	57.22	1971.49	985.74	2159.14	1081.18	4.58	-0.45	0.059	
120.00	-11.31	-1.62	0.00	-49.13	0.00	49.13	1867.30	933.65	1935.73	969.30	5.06	-0.48	0.057	
125.00	-10.75	-1.62	0.00	-41.04	0.00	41.04	1763.12	881.56	1724.51	863.54	5.58	-0.51	0.054	
130.00	-8.15	-1.53	0.00	-32.96	0.00	32.96	1658.94	829.47	1525.49	763.88	6.13	-0.54	0.048	
135.00	-7.68	-1.50	0.00	-25.33	0.00	25.33	1554.75	777.38	1338.67	670.33	6.72	-0.57	0.043	
140.00	-5.28	-1.25	0.00	-17.81	0.00	17.81	1450.57	725.28	1164.05	582.89	7.33	-0.60	0.034	
145.00	-4.90	-1.20	0.00	-11.57	0.00	11.57	1346.38	673.19	1001.64	501.56	7.97	-0.62	0.027	
148.25	-4.70	-1.17	0.00	-7.66	0.00	7.66	1278.66	639.33	902.61	451.97	8.39	-0.63	0.021	
149.00	-2.40	-0.72	0.00	-6.78	0.00	6.78	1263.04	631.52	880.49	440.90	8.49	-0.63	0.017	
150.00	-2.30	-0.70	0.00	-6.07	0.00	6.07	1242.20	621.10	851.42	426.34	8.62	-0.64	0.016	
150.50	-2.26	-0.69	0.00	-5.72	0.00	5.72	761.18	380.59	536.85	268.82	8.69	-0.64	0.024	
155.00	-2.09	-0.65	0.00	-2.61	0.00	2.61	704.92	352.46	460.03	230.36	9.30	-0.65	0.014	
159.00	0.00	-0.63	0.00	0.00	0.00	0.00	654.91	327.45	396.72	198.65	9.84	-0.65	0.000	

Wind Loading - Shaft

Structure: CT13055-A-SBA
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G 2/28/2018
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
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 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	272.47	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	265.86	0.650	0.000	5.00	24.329	15.81	129.5	0.0	1156.8
10.00		1.00	0.85	7.442	8.19	259.24	0.650	0.000	5.00	23.731	15.43	126.3	0.0	1128.2
15.00		1.00	0.85	7.442	8.19	252.62	0.650	0.000	5.00	23.133	15.04	123.1	0.0	1099.6
20.00		1.00	0.90	7.896	8.69	253.40	0.650	0.000	5.00	22.535	14.65	127.2	0.0	1071.0
25.00		1.00	0.95	8.276	9.10	252.44	0.650	0.000	5.00	21.936	14.26	129.8	0.0	1042.3
30.00		1.00	0.98	8.600	9.46	250.22	0.650	0.000	5.00	21.338	13.87	131.2	0.0	1013.7
35.00		1.00	1.01	8.883	9.77	247.08	0.650	0.000	5.00	20.740	13.48	131.7	0.0	985.1
40.00		1.00	1.04	9.137	10.05	243.25	0.650	0.000	5.00	20.142	13.09	131.6	0.0	956.4
45.00		1.00	1.07	9.366	10.30	238.86	0.650	0.000	5.00	19.544	12.70	130.9	0.0	927.8
47.00	Appurtenance(s)	1.00	1.08	9.452	10.40	236.97	0.650	0.000	2.00	7.650	4.97	51.7	0.0	363.1
47.50	Bot - Section 2	1.00	1.08	9.473	10.42	236.49	0.650	0.000	0.50	1.898	1.23	12.9	0.0	90.1
50.00		1.00	1.09	9.576	10.53	234.01	0.650	0.000	2.50	9.557	6.21	65.4	0.0	899.6
53.25	Top - Section 1	1.00	1.11	9.704	10.67	230.66	0.650	0.000	3.25	12.200	7.93	84.6	0.0	1148.1
55.00		1.00	1.12	9.770	10.75	232.81	0.650	0.000	1.75	6.465	4.20	45.2	0.0	306.7
60.00		1.00	1.14	9.951	10.95	227.30	0.650	0.000	5.00	18.067	11.74	128.5	0.0	857.1
65.00		1.00	1.16	10.120	11.13	221.51	0.650	0.000	5.00	17.468	11.35	126.4	0.0	828.5
70.00		1.00	1.17	10.279	11.31	215.47	0.650	0.000	5.00	16.870	10.97	124.0	0.0	799.8
75.00		1.00	1.19	10.430	11.47	209.20	0.650	0.000	5.00	16.272	10.58	121.3	0.0	771.2
80.00	Appurtenance(s)	1.00	1.21	10.572	11.63	202.74	0.650	0.000	5.00	15.674	10.19	118.5	0.0	742.6
85.00		1.00	1.22	10.708	11.78	196.10	0.650	0.000	5.00	15.076	9.80	115.4	0.0	713.9
90.00		1.00	1.24	10.838	11.92	189.30	0.650	0.000	5.00	14.477	9.41	112.2	0.0	685.3
95.00		1.00	1.25	10.962	12.06	182.34	0.650	0.000	5.00	13.879	9.02	108.8	0.0	656.7
97.00	Bot - Section 3	1.00	1.26	11.010	12.11	179.52	0.650	0.000	2.00	5.384	3.50	42.4	0.0	254.7
100.00		1.00	1.27	11.081	12.19	175.26	0.650	0.000	3.00	8.055	5.24	63.8	0.0	691.5
101.00	Top - Section 2	1.00	1.27	11.104	12.21	173.82	0.650	0.000	1.00	2.637	1.71	20.9	0.0	226.3
105.00		1.00	1.28	11.195	12.31	171.63	0.650	0.000	4.00	10.310	6.70	82.5	0.0	407.0
110.00	Appurtenance(s)	1.00	1.29	11.305	12.44	164.31	0.650	0.000	5.00	12.349	8.03	99.8	0.0	487.3
115.00		1.00	1.30	11.412	12.55	156.89	0.650	0.000	5.00	11.751	7.64	95.9	0.0	463.4
120.00		1.00	1.32	11.514	12.67	149.36	0.650	0.000	5.00	11.153	7.25	91.8	0.0	439.6
125.00		1.00	1.33	11.614	12.78	141.74	0.650	0.000	5.00	10.555	6.86	87.6	0.0	415.7
130.00	Appurtenance(s)	1.00	1.34	11.710	12.88	134.02	0.650	0.000	5.00	9.956	6.47	83.4	0.0	391.8
135.00		1.00	1.35	11.803	12.98	126.22	0.650	0.000	5.00	9.358	6.08	79.0	0.0	368.0
140.00	Appurtenance(s)	1.00	1.36	11.894	13.08	118.34	0.650	0.000	5.00	8.760	5.69	74.5	0.0	344.1
145.00		1.00	1.37	11.982	13.18	110.38	0.650	0.000	5.00	8.162	5.31	69.9	0.0	320.3
148.25	Bot - Section 4	1.00	1.37	12.038	13.24	105.17	0.650	0.000	3.25	4.984	3.24	42.9	0.0	195.4
149.00	Appurtenance(s)	1.00	1.38	12.051	13.26	103.96	0.650	0.000	0.75	1.138	0.74	9.8	0.0	70.6
150.00		1.00	1.38	12.068	13.27	102.35	0.650	0.000	1.00	1.497	0.97	12.9	0.0	92.8
150.50	Top - Section 3	1.00	1.38	12.077	13.28	101.54	0.650	0.000	0.50	0.739	0.48	6.4	0.0	45.8
155.00		1.00	1.39	12.152	13.37	96.49	0.650	0.000	4.50	6.385	4.15	55.5	0.0	151.1
159.00	Appurtenance(s)	1.00	1.40	12.217	13.44	89.96	0.650	0.000	4.00	5.269	3.42	46.0	0.0	124.6
Totals:									159.00			3,441.3		23,733.6

Discrete Appurtenance Forces

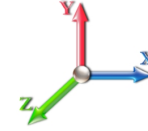
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	159.00	Low Profile Platform	1	12.217	13.439	1.00	1.00	35.00	1200.00	0.000	0.000	470.36	0.00	0.00	
2	159.00	DC6-48-60-18-8F	1	12.265	13.492	1.00	1.00	0.92	31.80	0.000	3.000	12.41	0.00	37.24	
3	159.00	RRUS-11	6	12.265	13.492	0.67	1.00	10.13	306.00	0.000	3.000	136.68	0.00	410.03	
4	159.00	LGP21401	6	12.265	13.492	0.50	1.00	3.87	84.60	0.000	3.000	52.21	0.00	156.64	
5	159.00	P65-16-XLH-RR	3	12.265	13.492	0.79	1.00	20.19	306.00	0.000	3.000	272.41	0.00	817.22	
6	159.00	7770.00	3	12.265	13.492	0.77	1.00	13.31	231.00	0.000	3.000	179.51	0.00	538.54	
7	159.00	DB404-B	1	12.265	13.492	1.00	1.00	0.00	14.00	0.000	3.000	0.00	0.00	0.00	
8	149.00	Alcatel Lucent - 1900 MHz	3	12.085	13.294	0.50	0.75	5.73	132.00	0.000	2.000	76.15	0.00	152.30	
9	149.00	Alcatel Lucent - 800 MHz	3	12.085	13.294	0.50	0.75	3.75	159.00	0.000	2.000	49.90	0.00	99.80	
10	149.00	Alcatel Lucent - 800 MHz	3	12.085	13.294	0.50	0.75	1.18	26.40	0.000	2.000	15.63	0.00	31.26	
11	149.00	RFS - APXVSPP18-C-A20	3	12.085	13.294	0.62	0.75	15.71	318.00	0.000	2.000	208.78	0.00	417.56	
12	149.00	Alcatel Lucent -	3	12.085	13.294	0.50	0.75	6.11	210.00	0.000	2.000	81.16	0.00	162.32	
13	149.00	RFS - ACU-A20-N - RET	4	12.085	13.294	0.38	0.75	0.21	4.00	0.000	2.000	2.79	0.00	5.58	
14	149.00	Low Profile Platform	1	12.051	13.256	1.00	1.00	35.00	1200.00	0.000	0.000	463.97	0.00	0.00	
15	149.00	RFS - APXVTM14-C-I20	3	12.085	13.294	0.59	0.75	11.18	168.00	0.000	2.000	148.67	0.00	297.34	
16	149.00	HRK12 (Handrail Kit)	1	12.051	13.256	1.00	1.00	6.75	261.72	0.000	0.000	89.48	0.00	0.00	
17	140.00	Low Profile Platform w/	1	11.894	13.084	1.00	1.00	34.00	1600.00	0.000	0.000	444.84	0.00	0.00	
18	140.00	Andrew - ATSBT-TOP-FM	3	11.939	13.132	0.50	0.75	0.30	5.40	0.000	2.500	3.96	0.00	9.90	
19	140.00	RFS -	3	11.939	13.132	0.50	0.75	1.76	47.55	0.000	2.500	23.16	0.00	57.91	
20	140.00	APX16DWV-16DWVS-E-	3	11.939	13.132	0.46	0.75	9.22	122.10	0.000	2.500	121.09	0.00	302.73	
21	140.00	FR90-16-XXDP	6	11.939	13.132	0.51	0.75	13.34	108.00	0.000	2.500	175.21	0.00	438.02	
22	140.00	APXVAA24_43-U-A20	3	11.939	13.132	0.55	0.75	33.24	304.20	0.000	2.500	436.58	0.00	1091.44	
23	130.00	RRH2X60-AWS	3	11.729	12.902	0.54	0.80	5.63	165.00	0.000	1.000	72.61	0.00	72.61	
24	130.00	BXA-70063/6CF	3	11.729	12.902	0.60	0.80	14.33	198.00	0.000	1.000	184.83	0.00	184.83	
25	130.00	LPA-80063/6CF	6	11.729	12.902	0.76	0.80	45.50	456.00	0.000	1.000	587.05	0.00	587.05	
26	130.00	BXA-171063-12BF	3	11.729	12.902	0.70	0.80	10.80	192.00	0.000	1.000	139.31	0.00	139.31	
27	130.00	FD9R6004/2C-3L -	6	11.729	12.902	0.40	0.80	0.86	18.60	0.000	1.000	11.15	0.00	11.15	
28	130.00	DB-T1-6Z-8AB-0Z - Distri	1	11.729	12.902	0.57	0.80	2.73	18.90	0.000	1.000	35.18	0.00	35.18	
29	130.00	Low Profile Platform	1	11.710	12.881	1.00	1.00	25.00	1200.00	0.000	0.000	322.03	0.00	0.00	
30	130.00	742 213_2110_P45_02.0	3	11.729	12.902	0.58	0.80	5.44	49.50	0.000	1.000	70.23	0.00	70.23	
31	110.00	SCL329-HL	1	11.423	12.565	1.00	1.00	2.22	10.40	0.000	5.550	27.90	0.00	154.82	
32	110.00	4 ft Standoff	1	11.305	12.436	1.00	1.00	3.50	53.32	0.000	0.000	43.53	0.00	0.00	
33	80.00	4 ft Standoff	1	10.572	11.629	1.00	1.00	3.50	53.32	0.000	0.000	40.70	0.00	0.00	
34	80.00	SCL329-HL	1	10.723	11.795	1.00	1.00	2.22	10.40	0.000	5.550	26.18	0.00	145.32	
35	47.00	4 ft Standoff	1	9.452	10.398	1.00	1.00	3.50	53.32	0.000	0.000	36.39	0.00	0.00	
36	47.00	Decibel 26DB GPS	1	9.576	10.534	1.00	1.00	0.16	10.00	0.000	3.000	1.69	0.00	5.06	
Totals:									9,328.53						5,063.72

Total Applied Force Summary

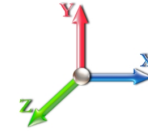
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		129.46	1367.63	0.00	0.00
10.00		126.27	1339.00	0.00	0.00
15.00		123.09	1310.37	0.00	0.00
20.00		127.23	1281.74	0.00	0.00
25.00		129.81	1253.11	0.00	0.00
30.00		131.21	1224.48	0.00	0.00
35.00		131.73	1195.85	0.00	0.00
40.00		131.58	1167.21	0.00	0.00
45.00		130.88	1138.58	0.00	0.00
47.00	(2) attachments	89.78	510.74	0.00	5.06
47.50		12.85	111.14	0.00	0.00
50.00		65.43	1005.00	0.00	0.00
53.25		84.65	1284.58	0.00	0.00
55.00		45.16	380.24	0.00	0.00
60.00		128.54	1067.08	0.00	0.00
65.00		126.40	1038.45	0.00	0.00
70.00		123.99	1009.82	0.00	0.00
75.00		121.34	981.19	0.00	0.00
80.00	(2) attachments	185.37	1016.28	0.00	145.32
85.00		115.42	921.33	0.00	0.00
90.00		112.18	892.70	0.00	0.00
95.00		108.78	864.07	0.00	0.00
97.00		42.38	337.61	0.00	0.00
100.00		63.82	815.96	0.00	0.00
101.00		20.94	267.79	0.00	0.00
105.00		82.53	572.90	0.00	0.00
110.00	(2) attachments	171.24	758.37	0.00	154.82
115.00		95.88	668.19	0.00	0.00
120.00		91.82	644.33	0.00	0.00
125.00		87.64	620.47	0.00	0.00
130.00	(26) attachments	1505.73	2894.61	0.00	1100.35
135.00		78.98	518.43	0.00	0.00
140.00	(19) attachments	1279.34	2668.25	0.00	1899.99
145.00		69.92	417.54	0.00	0.00
148.25		42.90	232.87	0.00	0.00
149.00	(24) attachments	1146.35	2558.38	0.00	1166.18
150.00		12.91	104.34	0.00	0.00
150.50		6.38	51.60	0.00	0.00
155.00		55.47	187.73	0.00	0.00
159.00	(21) attachments	1169.60	2328.84	0.00	1959.67
Totals:		8,505.00	39,008.77	0.00	6,431.39

Linear Appurtenance Segment Forces (Factored)

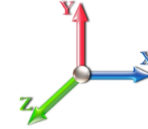
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.030	0.000	7.442	0.00	2.60
5.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	7.442	0.00	2.60
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.442	0.00	0.80
10.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.031	0.000	7.442	0.00	2.60
10.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.031	0.000	7.442	0.00	2.60
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.031	0.000	7.442	0.00	0.80
15.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.032	0.000	7.442	0.00	2.60
15.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.032	0.000	7.442	0.00	2.60
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.032	0.000	7.442	0.00	0.80
20.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	7.896	0.00	2.60
20.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	7.896	0.00	2.60
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	7.896	0.00	0.80
25.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	8.276	0.00	2.60
25.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.033	0.000	8.276	0.00	2.60
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.033	0.000	8.276	0.00	0.80
30.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.034	0.000	8.600	0.00	2.60
30.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.034	0.000	8.600	0.00	2.60
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.034	0.000	8.600	0.00	0.80
35.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.035	0.000	8.883	0.00	2.60
35.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.035	0.000	8.883	0.00	2.60
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.035	0.000	8.883	0.00	0.80
40.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.036	0.000	9.137	0.00	2.60
40.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.036	0.000	9.137	0.00	2.60
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.036	0.000	9.137	0.00	0.80
45.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.038	0.000	9.366	0.00	2.60
45.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.038	0.000	9.366	0.00	2.60
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.038	0.000	9.366	0.00	0.80
47.00	7/8" Coax	Yes	2.00	0.000	1.11	0.19	0.00	0.038	0.000	9.452	0.00	1.04
47.00	7/8" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	9.452	0.00	1.04
47.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.038	0.000	9.452	0.00	0.32
47.50	7/8" Coax	Yes	0.50	0.000	1.11	0.05	0.00	0.039	0.000	9.473	0.00	0.26
47.50	7/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.039	0.000	9.473	0.00	0.26
47.50	1/2" Coax	Yes	0.50	0.000	0.65	0.03	0.00	0.039	0.000	9.473	0.00	0.08
50.00	7/8" Coax	Yes	2.50	0.000	1.11	0.23	0.00	0.039	0.000	9.576	0.00	1.30
50.00	7/8" Coax	Yes	2.50	0.000	0.00	0.00	0.00	0.039	0.000	9.576	0.00	1.30
50.00	1/2" Coax	Yes	2.50	0.000	0.65	0.14	0.00	0.039	0.000	9.576	0.00	0.40
53.25	7/8" Coax	Yes	3.25	0.000	1.11	0.30	0.00	0.025	0.000	9.704	0.00	1.69
53.25	7/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.025	0.000	9.704	0.00	1.69
55.00	7/8" Coax	Yes	1.75	0.000	1.11	0.16	0.00	0.025	0.000	9.770	0.00	0.91
55.00	7/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.025	0.000	9.770	0.00	0.91
60.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.026	0.000	9.951	0.00	2.60
60.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	9.951	0.00	2.60
65.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.026	0.000	10.120	0.00	2.60
65.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.026	0.000	10.120	0.00	2.60
70.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.027	0.000	10.279	0.00	2.60
70.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.027	0.000	10.279	0.00	2.60
75.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.028	0.000	10.430	0.00	2.60

Linear Appurtenance Segment Forces (Factored)

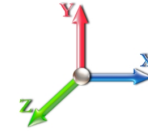
Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
Height: 159.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
75.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.028	0.000	10.430	0.00	2.60
80.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.030	0.000	10.572	0.00	2.60
80.00	7/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.030	0.000	10.572	0.00	2.60
85.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.031	0.000	10.708	0.00	2.60
90.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.032	0.000	10.838	0.00	2.60
95.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.033	0.000	10.962	0.00	2.60
97.00	7/8" Coax	Yes	2.00	0.000	1.11	0.19	0.00	0.034	0.000	11.010	0.00	1.04
100.00	7/8" Coax	Yes	3.00	0.000	1.11	0.28	0.00	0.035	0.000	11.081	0.00	1.56
101.00	7/8" Coax	Yes	1.00	0.000	1.11	0.09	0.00	0.036	0.000	11.104	0.00	0.52
105.00	7/8" Coax	Yes	4.00	0.000	1.11	0.37	0.00	0.036	0.000	11.195	0.00	2.08
110.00	7/8" Coax	Yes	5.00	0.000	1.11	0.46	0.00	0.037	0.000	11.305	0.00	2.60
Totals:											0.0	106.8

Calculated Forces

Structure: CT13055-A-SBA
Site Name: Monroe Turnpike
Height: 159.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

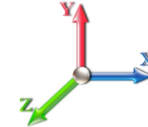
Code: EIA/TIA-222-G 2/28/2018
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.01	-8.52	0.00	-1012.9	0.00	1012.92	4390.37	2195.18	10447.7	5231.64	0.00	0.000	0.000	0.203
5.00	-37.63	-8.42	0.00	-970.31	0.00	970.31	4330.30	2165.15	10051.2	5033.11	0.03	-0.048	0.000	0.201
10.00	-36.28	-8.33	0.00	-928.20	0.00	928.20	4267.86	2133.93	9656.46	4835.41	0.10	-0.098	0.000	0.200
15.00	-34.97	-8.23	0.00	-886.56	0.00	886.56	4203.05	2101.52	9263.74	4638.76	0.23	-0.150	0.000	0.199
20.00	-33.68	-8.13	0.00	-845.39	0.00	845.39	4135.87	2067.94	8873.53	4443.36	0.42	-0.203	0.000	0.198
25.00	-32.42	-8.03	0.00	-804.72	0.00	804.72	4066.33	2033.16	8486.25	4249.43	0.66	-0.258	0.000	0.197
30.00	-31.19	-7.93	0.00	-764.57	0.00	764.57	3994.42	1997.21	8102.30	4057.17	0.96	-0.315	0.000	0.196
35.00	-29.98	-7.82	0.00	-724.94	0.00	724.94	3920.13	1960.07	7722.12	3866.80	1.32	-0.374	0.000	0.195
40.00	-28.81	-7.71	0.00	-685.85	0.00	685.85	3843.48	1921.74	7346.10	3678.51	1.75	-0.434	0.000	0.194
45.00	-27.66	-7.59	0.00	-647.31	0.00	647.31	3764.47	1882.23	6974.67	3492.52	2.24	-0.497	0.000	0.193
47.00	-27.15	-7.50	0.00	-632.13	0.00	632.13	3732.20	1866.10	6827.48	3418.81	2.45	-0.523	0.000	0.192
47.50	-27.04	-7.50	0.00	-628.38	0.00	628.38	3724.07	1862.03	6790.81	3400.45	2.51	-0.530	0.000	0.192
50.00	-26.03	-7.44	0.00	-609.63	0.00	609.63	3683.08	1841.54	6608.25	3309.03	2.79	-0.563	0.000	0.191
53.25	-24.74	-7.36	0.00	-585.44	0.00	585.44	3673.19	1836.60	6564.80	3287.28	3.19	-0.607	0.000	0.185
55.00	-24.36	-7.33	0.00	-572.57	0.00	572.57	3644.05	1822.03	6438.04	3223.81	3.42	-0.632	0.000	0.184
60.00	-23.28	-7.21	0.00	-535.93	0.00	535.93	3559.18	1779.59	6079.73	3044.38	4.12	-0.698	0.000	0.183
65.00	-22.24	-7.10	0.00	-499.85	0.00	499.85	3471.95	1735.97	5727.45	2867.98	4.88	-0.766	0.000	0.181
70.00	-21.22	-6.99	0.00	-464.34	0.00	464.34	3382.35	1691.17	5381.61	2694.80	5.72	-0.836	0.000	0.179
75.00	-20.23	-6.88	0.00	-429.39	0.00	429.39	3290.37	1645.19	5042.64	2525.07	6.64	-0.908	0.000	0.176
80.00	-19.21	-6.70	0.00	-394.85	0.00	394.85	3180.13	1590.07	4687.51	2347.24	7.63	-0.983	0.000	0.174
85.00	-18.28	-6.60	0.00	-361.33	0.00	361.33	3055.11	1527.56	4324.37	2165.40	8.70	-1.060	0.000	0.173
90.00	-17.38	-6.49	0.00	-328.35	0.00	328.35	2930.09	1465.05	3975.87	1990.89	9.85	-1.139	0.000	0.171
95.00	-16.51	-6.38	0.00	-295.89	0.00	295.89	2805.07	1402.54	3642.00	1823.71	11.09	-1.220	0.000	0.168
97.00	-16.17	-6.34	0.00	-283.13	0.00	283.13	2755.06	1377.53	3512.56	1758.89	11.61	-1.254	0.000	0.167
100.00	-15.35	-6.27	0.00	-264.10	0.00	264.10	2680.05	1340.03	3322.78	1663.86	12.41	-1.306	0.000	0.164
101.00	-15.08	-6.26	0.00	-257.83	0.00	257.83	2260.99	1130.50	2846.84	1425.54	12.69	-1.323	0.000	0.188
105.00	-14.50	-6.18	0.00	-232.80	0.00	232.80	2179.85	1089.93	2642.58	1323.26	13.82	-1.392	0.000	0.183
110.00	-13.74	-6.01	0.00	-201.75	0.00	201.75	2075.67	1037.84	2394.76	1199.16	15.33	-1.487	0.000	0.175
115.00	-13.06	-5.92	0.00	-171.68	0.00	171.68	1971.49	985.74	2159.14	1081.18	16.94	-1.582	0.000	0.165
120.00	-12.41	-5.83	0.00	-142.08	0.00	142.08	1867.30	933.65	1935.73	969.30	18.65	-1.675	0.000	0.153
125.00	-11.79	-5.74	0.00	-112.93	0.00	112.93	1763.12	881.56	1724.51	863.54	20.45	-1.764	0.000	0.138
130.00	-8.94	-4.16	0.00	-83.12	0.00	83.12	1658.94	829.47	1525.49	763.88	22.35	-1.846	0.000	0.114
135.00	-8.42	-4.07	0.00	-62.33	0.00	62.33	1554.75	777.38	1338.67	670.33	24.32	-1.918	0.000	0.098
140.00	-5.79	-2.71	0.00	-40.07	0.00	40.07	1450.57	725.28	1164.05	582.89	26.36	-1.981	0.000	0.073
145.00	-5.37	-2.63	0.00	-26.53	0.00	26.53	1346.38	673.19	1001.64	501.56	28.47	-2.031	0.000	0.057
148.25	-5.14	-2.58	0.00	-18.00	0.00	18.00	1278.66	639.33	902.61	451.97	29.86	-2.058	0.000	0.044
149.00	-2.63	-1.34	0.00	-14.90	0.00	14.90	1263.04	631.52	880.49	440.90	30.18	-2.063	0.000	0.036
150.00	-2.52	-1.32	0.00	-13.56	0.00	13.56	1242.20	621.10	851.42	426.34	30.61	-2.070	0.000	0.034
150.50	-2.47	-1.32	0.00	-12.90	0.00	12.90	761.18	380.59	536.85	268.82	30.83	-2.073	0.000	0.051
155.00	-2.28	-1.25	0.00	-6.98	0.00	6.98	704.92	352.46	460.03	230.36	32.80	-2.094	0.000	0.034
159.00	0.00	-1.17	0.00	-1.96	0.00	1.96	654.91	327.45	396.72	198.65	34.56	-2.111	0.000	0.010

Final Analysis Summary

Structure: CT13055-A-SBA	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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	32.8	0.00	46.76	0.00	0.00	3917.55
0.9D + 1.6W 93 mph Wind	32.8	0.00	35.05	0.00	0.00	3868.90
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.2	0.00	73.63	0.00	0.00	1224.43
1.2D + 1.0E	2.1	0.00	46.81	0.00	0.00	265.26
0.9D + 1.0E	2.1	0.00	35.11	0.00	0.00	261.72
1.0D + 1.0W 60 mph Wind	8.5	0.00	39.01	0.00	0.00	1012.92

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	-46.76	-32.77	0.00	-3917.5	0.00	-3917.5	4390.37	2195.1	10447.7	5231.64	0.00	0.760
0.9D + 1.6W 93 mph Wind	-35.05	-32.75	0.00	-3868.9	0.00	-3868.9	4390.37	2195.1	10447.7	5231.64	0.00	0.748
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-73.63	-10.25	0.00	-1224.4	0.00	-1224.4	4390.37	2195.1	10447.7	5231.64	0.00	0.251
1.2D + 1.0E	-18.26	-1.64	0.00	-81.32	0.00	-81.32	2260.99	1130.5	2846.84	1425.54	101.00	0.065
0.9D + 1.0E	-13.69	-1.61	0.00	-79.79	0.00	-79.79	2260.99	1130.5	2846.84	1425.54	101.00	0.062
1.0D + 1.0W 60 mph Wind	-39.01	-8.52	0.00	-1012.9	0.00	-1012.9	4390.37	2195.1	10447.7	5231.64	0.00	0.203

Base Plate Summary

Structure: CT13055-A-SB	Code: EIA/TIA-222-G	2/28/2018
Site Name: Monroe Turnpike	Exposure: C	
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): 60.00	Bolt Circle: 65.00
Moment (kip-ft): 3665.00	Width (in): 71.00	Number Bolts: 14.00
Axial (kip): 41.45	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 31.29	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 3917.55	Effective Len (in): 17.18	Ultimate (ksi): 100.00
Axial (kip): 73.63	Moment (kip-in): 719.40	Arrangement: Radial
Shear (kip): 32.77	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): -9.35884418920846	Start Angle (deg): 0.00
Moment Design %: 106.89	Stress Ratio: 0.61	Compression
		Force (kip): 211.90
		Allowable (kip): 260.00
		Ratio: 0.83
		Tension
		Force (kip): 201.38
		Allowable (kip): 260.00
		Ratio: 0.79



Monopole Mat Foundation Design

Date
2/28/2018

Customer Name:	Sprint Nextel	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	159
Site Number:	CT13055-A-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	48580	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

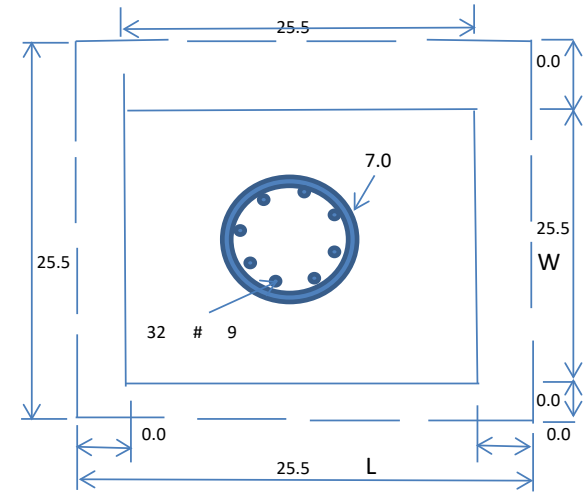
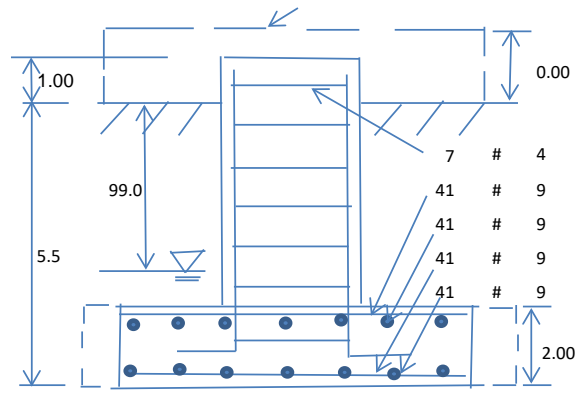
Base Reactions (Factored):

Axial Load (Kips):	46.8	Shear Force (Kips):	32.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3917.6

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	25.5	Width of Pad (ft.):	25.5
Final Length of pad (ft)	25.5	Final width of pad (ft):	25.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0



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 #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	32	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	41	Qty. of Rebar in Pad (W):	41	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	41	Qty. of Rebar in Pad (W):	41	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:		Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	Angle from Bottm of Pad:
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00	25
				30

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	2141.18	Total Dry Soil Weight (Kips):	246.24
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	246.24	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1473.68	Total Dry Concrete Weight (Kips):	221.05
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	221.05	Total Vertical Load on Base (Kips):	514.05

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2852	<	Allowable Factored Soil Bearing (psf):	9000	0.32	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5958.3	>	Design Factored Momont (kips-ft):	4131	0.69	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.44					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):	1.00	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	5377.0	> Design Factored Moment (Mu, Kips-Ft)	4065.2	0.76	OK!
Calculated Shear Capacity (Kips):	660.1	> Design Factored Shear (Kips):	32.8	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	1728.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9741.3	> Design Factored Axial Load (Pu Kips):	46.8	0.00	OK!
Moment & Axial Strength Combination:	0.76	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	593.3	> One-Way Factored Shear (L-D. Kips):	260.7	0.44	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	593.3	> One-Way Factored Shear (W-D., Kips)	260.7	0.44	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	676.2	> One-Way Factored Shear (C-C, Kips):	280.6	0.42	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0066	OK! Lower Steel Pad Reinf. Ratio (W-Direct	0.0066		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3552.6	> Moment at Bottom (L-Direct. K-Ft):	983.7	0.28	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3552.6	> Moment at Bottom (W-Direct. K-Ft):	983.7	0.28	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4949.8	> Moment at Bottom (C-C Dir. K-Ft):	1391.1	0.28	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0066	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0066		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	3552.6	> Moment at the top (L-Dir Kips-Ft):	242.9	0.07	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	3552.6	> Moment at the top (W-Dir Kips-Ft):	242.9	0.07	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4949.8	> Moment at the top (C-C Direc. K-Ft):	498.1	0.10	OK!