

Introduction

The purpose of this report is to summarize the analysis results on the 147 ft Valmont 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

Document Type	Remarks
Tower Drawings	Valmont, Order # 17506-04, dated July 14, 2004.
Foundation Drawing	Valmont, DWG # B-119381, dated August 05, 2004.
Geotechnical Report	HP Geotechnical, Inc. Job # 304113, dated May 13, 2004.
Modification Drawings	N/A
Mount Analysis	Verizon SMART Tool Project #: 10337854, dated 01/29/2026.

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. 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.

Codes and Standards	ANSI/TIA-222-H / 2021 IBC / 2023 PPRBC
Wind Parameters	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 130.0 mph Ice Wind Speed (3-sec. Gust): 50.0 mph Design Ice Thickness: 0.25" Service Load Wind Speed: 60 mph + 0" Radial ice Exposure Category: C Risk Category: II Ground Elevation Factor (K_e): 0.828
Topographic Parameters	Method: Method 1 Feature Type: Flat Crest Height (H): 0 ft Length of Feature (L): 0.0 ft Distance to crest (x): 0.0 ft
Seismic Parameters:	S_s 0.185 g S_1 0.059 g

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	152.5	3	Nokia AEHC - Panel	Commscope MC-PM12M-AP4 (platform mount) w/ (1) Commscope MT-195-12HD (Handrail kit)	(3) 1.76" Hybrid (2) 3/16 CAT5e (2) 1 5/8" HCS 2.0 Hybrid	T-Mobile Sprint
2	150.0	3	Andrew / Commscope FFVV-65C-R3-V1 - Panel			
3		3	Nokia AHLOB - RRU			
4		3	Nokia AHFIG - RRU			
5		3	Samsung RRH-B8 - RRU			
6		2	Alliance High Cap Hybrid Breakout CRS Box - Junction Box			
7	142.0	1	Andrew / Commscope VHLP2-11W-4WH - Dish	Pipe Mount @ 147.0'		
8		1	DragonWave HORIZON COMPACT PLUS - ODU			
9	140.5	3	Ericsson AIR 6472 B77G (3450) + B77M (3840-3980) - Panel	(3) Sabre C10857007C Sector Mount w/ (2) 7/8" OD Mount Pipe	(6) 1 5/8" (4) 2" Conduit [Housing DC Power & Fiber] (3) 3/8" Fiber (6) 5/8" DC Power	AT&T
10	138.0	6	Andrew / Commscope NNH4-65C-R6-V3 - Panel			
11		3	Ericsson RRU 4490 B5 + B12 - RRU			
12		3	Ericsson RRU 4494 B14 + B29 - RRU			
13		3	Ericsson RRU 4890 B25 + B66 - RRU			
14		3	Raycap DC6-48-60-18-8F - OVP			
-	123.0	6	Antel LPA-80080/4CF - Panel	(3) 12.5' T-Arms	(18) 1 5/8"	Verizon
-		3	Antel BXA-70080/4CF - Panel			
-		3	Antel BXA -185080/8CF - Panel			
20	113.0	3	JMA Wireless MX08FRO665-21 - Panel	Valmont SNP8HR-396	(1) 1.6" Hybrid	Dish Wireless
21		3	Fujitsu TA08025-B605 - RRU			
22		3	Fujitsu TA08025-B604 - RRU			
23		1	Raycap RDIDC-9181-PF-48 - OVP			
-	70.0	1	RFS SUX-107A Dish - Dish	(1) Pipe and Chain	(1) 7/8"	Verizon

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
15	123.0	3	Ericsson AIR 6419 B77D (3700) - Panel	(3) 12.5' T-Arms	(18) 1 5/8" (2) 1.54" Hybrid	Verizon
16		3	Ericsson AIR 3283 B25 + B66 - Panel			
17		3	Andrew / Commscope NNSS-65C-HG-R2B - Panel			
18		3	Ericsson RRU 4490 B5 + B13 - RRU			
19		1	Raycap RVZDC-6627-PF-48 - OVP			
24	70.0	1	RFS SUX4-107A - Dish	(1) Pipe and Chain	(1) 7/8"	

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

Analysis Results

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

Tower Component	Utilization %	Pass / Fail
Pole Shaft	77.5%	Pass
Anchor Bolt	73.2%	Pass
Base Plate	57.4%	Pass
Serviceability	48.0%	Pass
Structure Rating – (Controlling Utilization of all Components)		77.5%

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4333.8	38.5	52.8

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.

Service Load Condition (Rigidity)

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

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
142.0	Andrew / Commscope VHLP2-11W-4WH - Dish	T-Mobile Sprint	0.000	1.636
70.0	RFS SUX4-107A - Dish	Verizon	0.000	0.757

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

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a comprehensive structural analysis.

Usage Diagram - Max Ratio 77.48% at 120.0ft

Structure: CO46077-A-SBA
Site Name: Pikes Peak Raceway
Height: 147.00 (ft)
Base Elev: 0.000 (ft)

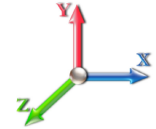
Code: EIA/TIA-222-H
Exposure: C
Gh: 1.1

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 1.9.2.9.447
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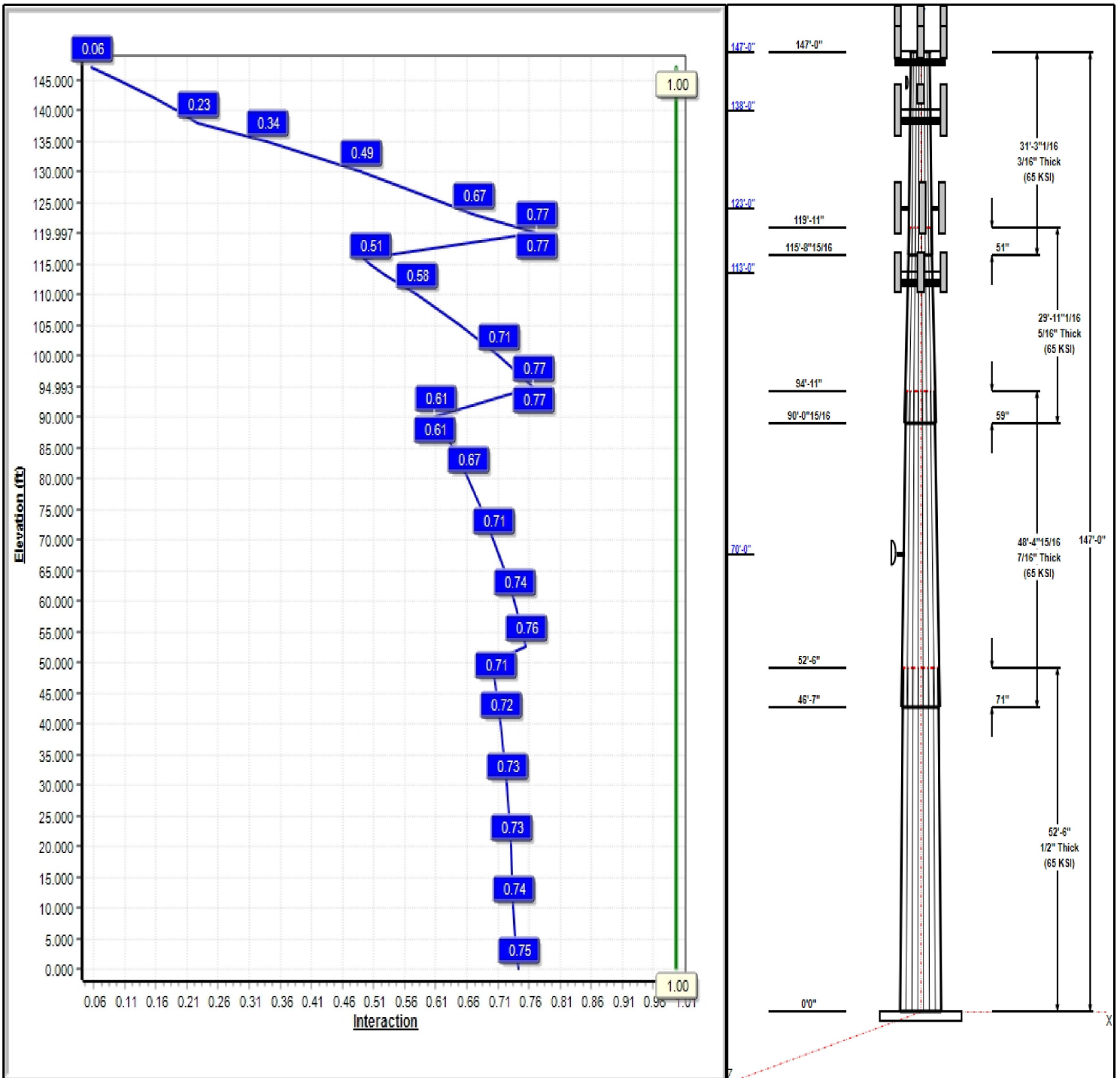
Dead Load Factor: 1.20 **Wind Speed:** 130.00
Wind Load Factor: 1.00 **Ice Thickness:** 0.25

Load Case : 1.2D + 1.0W 130 mph Wind at 60°



Iterations: 28

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Structure: CO46077-A-SBA

Type: Tapered	Base Shape: 16 Sided	3/16/2026
Site Name: Pikes Peak Raceway	Taper: 0.21997	1.9.2.9.447
Height: 147.00 (ft)	Wind Speed: 130.00	
Base Elev: 0.00 (ft)	Ice Thickness: 0.25	Page: 2



Shaft Properties

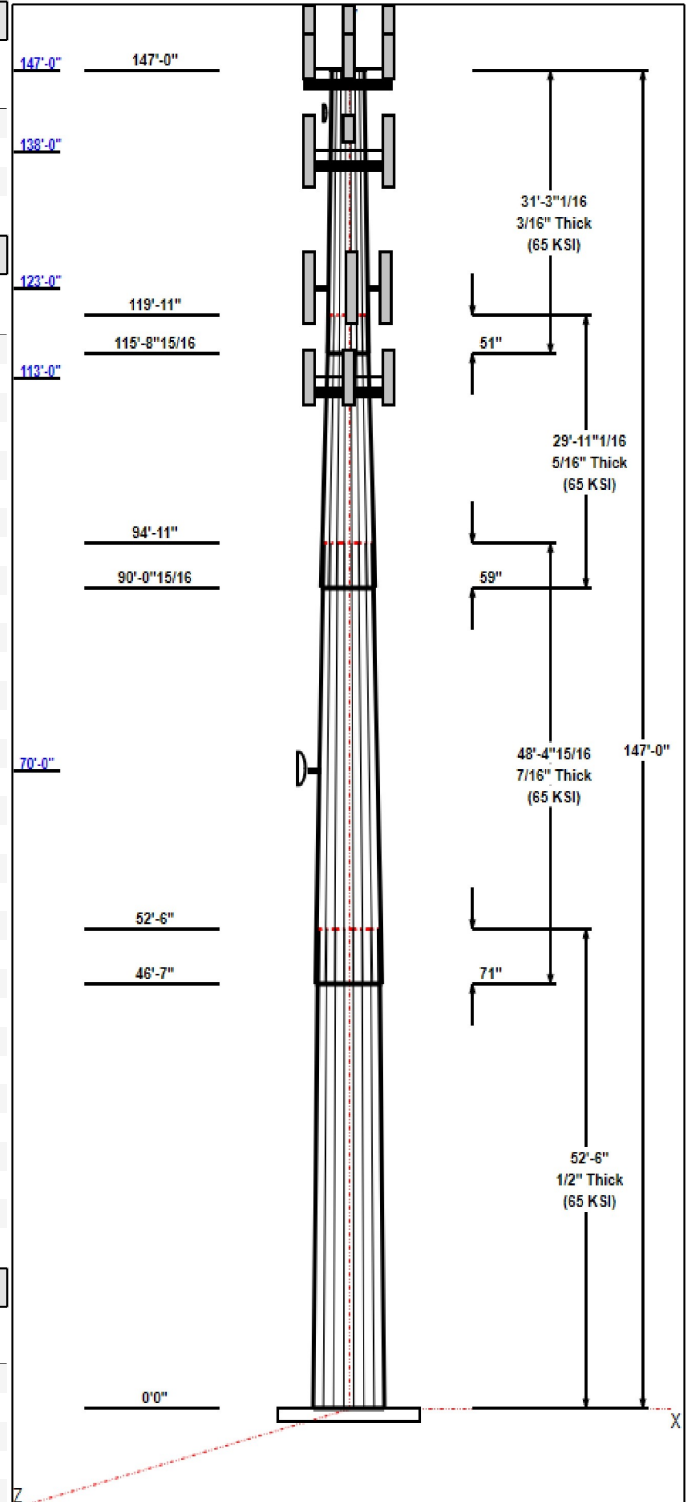
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.50	38.45	50.00	0.500		0.21997	65
2	48.41	29.98	40.63	0.438	Slip	0.21997	65
3	29.92	25.10	31.69	0.313	Slip	0.21997	65
4	31.25	19.54	26.41	0.188	Slip	0.21997	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
147.00	150.00	3	Commscope	T-Mobile Sprint
147.00	152.50	3	Nokia AEHC	T-Mobile Sprint
147.00	150.00	1	MC-PM12M-AP4	T-Mobile Sprint
147.00	150.00	1	MT-195-12HD	T-Mobile Sprint
147.00	147.00	1	Pipe Mount	T-Mobile Sprint
147.00	147.00	3	Nokia AHLOB	T-Mobile Sprint
147.00	150.00	3	Nokia AHFIG RRU	T-Mobile Sprint
147.00	150.00	3	Samsung RRRH-B8	T-Mobile Sprint
147.00	150.00	2	Alliance High Cap Hybrid	T-Mobile Sprint
142.00	142.00	1	Andrew VHLP2-11W-4WH	T-Mobile Sprint
142.00	142.00	1	Dragonwave Horizon	T-Mobile Sprint
138.00	140.50	3	AIR 6472 B77G (3450) +	AT&T
138.00	138.00	6	NNH4-65C-R6-V3	AT&T
138.00	138.00	3	Sabre C10857007C Sector	AT&T
138.00	138.00	3	RRU 4490 B5 + B12	AT&T
138.00	138.00	3	RRU 4494 B14 + B29	AT&T
138.00	138.00	3	RRU 4890 B25 + B66	AT&T
138.00	138.00	3	Raycap DC6-48-60-18-8F	AT&T
123.00	123.00	3	AIR 6419 B77D (3700)	Verizon
123.00	123.00	3	AIR 3283 B25 + B66	Verizon
123.00	123.00	3	NNSS-65C-HG-R2B	Verizon
123.00	123.00	3	T-Arm	Verizon
123.00	123.00	3	RRU 4490 B5 + B13	Verizon
123.00	123.00	1	RVZDC-6627-PF-48	Verizon
113.00	113.00	3	JMA Wireless	Dish Wireless
113.00	113.00	1	Valmont SNP8HR-396	Dish Wireless
113.00	113.00	3	Fujitsu TA08025-B605	Dish Wireless
113.00	113.00	3	Fujitsu TA08025-B604	Dish Wireless
113.00	113.00	1	Raycap	Dish Wireless
70.00	73.00	1	4'x4' Ice Shield	Verizon
70.00	70.00	1	RFS SUX4-107A	Verizon
70.00	70.00	1	Pipe and Chain	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	147.00	Inside	1 5/8" HCS 2.0 Hybrid	T-Mobile Sprint
0.00	147.00	Inside	1.76" Hybrid	T-Mobile Sprint
0.00	147.00	Inside	3/16 CAT5e	T-Mobile Sprint
0.00	138.00	Inside	1 5/8" Coax	AT&T
0.00	138.00	Inside	2" Conduit	AT&T
0.00	138.00	Inside	3/8" Fiber	AT&T
0.00	138.00	Inside	5/8" DC Power	AT&T
0.00	123.00	Outside	1 5/8" Coax	Verizon
0.00	123.00	Inside	1.54" Hybrid	Verizon
0.00	113.00	Inside	1.6" Hybrid	Dish Wireless



Structure: CO46077-A-SBA

Type: Tapered	Base Shape: 16 Sided	3/16/2026
Site Name: Pikes Peak Raceway	Taper: 0.21997	1.9.2.9.447
Height: 147.00 (ft)	Wind Speed: 130.00	
Base Elev: 0.00 (ft)	Ice Thickness: 0.25	Page: 3



0.00	70.00	Inside	7/8" Coax	Verizon
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Anchor Bolts

		Grade	
Qty	Specifications	(ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	63.5	60.0	Polygon

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 130 mph Wind	4333.6	38.5	52.8
1.2D + 1.0W 130 mph Wind at 30°	3753.1	33.4	52.8
1.2D + 1.0W 130 mph Wind at 60°	2167.0	19.3	52.8
1.2D + 1.0W 130 mph Wind at 90°	0.0	0.0	52.8
1.2D + 1.0W 130 mph Wind at 120°	2167.0	19.3	52.8
1.2D + 1.0W 130 mph Wind at 150°	3753.1	33.4	52.8
1.2D + 1.0W 130 mph Wind at 180°	4333.6	38.5	52.8
1.2D + 1.0W 130 mph Wind at 210°	3753.1	33.4	52.8
1.2D + 1.0W 130 mph Wind at 240°	2167.0	19.3	52.8
1.2D + 1.0W 130 mph Wind at 270°	0.0	0.0	52.8
1.2D + 1.0W 130 mph Wind at 300°	2167.0	19.3	52.8
1.2D + 1.0W 130 mph Wind at 330°	3753.1	33.4	52.8
0.9D + 1.0W 130 mph Wind	4273.0	38.5	39.6
0.9D + 1.0W 130 mph Wind at 30°	3700.6	33.4	39.6
0.9D + 1.0W 130 mph Wind at 60°	2136.6	19.3	39.6
0.9D + 1.0W 130 mph Wind at 90°	0.0	0.0	39.6
0.9D + 1.0W 130 mph Wind at 120°	2136.6	19.3	39.6
0.9D + 1.0W 130 mph Wind at 150°	3700.6	33.4	39.6
0.9D + 1.0W 130 mph Wind at 180°	4273.0	38.5	39.6
0.9D + 1.0W 130 mph Wind at 210°	3700.6	33.4	39.6
0.9D + 1.0W 130 mph Wind at 240°	2136.6	19.3	39.6
0.9D + 1.0W 130 mph Wind at 270°	0.0	0.0	39.6
0.9D + 1.0W 130 mph Wind at 300°	2136.6	19.3	39.6
0.9D + 1.0W 130 mph Wind at 330°	3700.6	33.4	39.6
1.2D + 1.0Di + 1.0Wi 50 mph Wind	758.7	7.2	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	657.2	6.2	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	379.4	3.6	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	0.0	0.0	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	379.4	3.6	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	657.2	6.2	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	758.7	7.2	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	657.2	6.2	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	379.4	3.6	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	0.0	0.0	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	379.4	3.6	56.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind at	657.2	6.2	56.2
1.0D + 1.0W 60 mph Wind	827.0	7.4	44.1
1.0D + 1.0W 60 mph Wind at 30°	716.3	6.4	44.1
1.0D + 1.0W 60 mph Wind at 60°	413.6	3.7	44.1
1.0D + 1.0W 60 mph Wind at 90°	0.0	0.0	44.1
1.0D + 1.0W 60 mph Wind at 120°	413.6	3.7	44.1
1.0D + 1.0W 60 mph Wind at 150°	716.3	6.4	44.1

Structure: CO46077-A-SBA

Type: Tapered	Base Shape: 16 Sided	3/16/2026
Site Name: Pikes Peak Raceway	Taper: 0.21997	1.9.2.9.447
Height: 147.00 (ft)	Wind Speed: 130.00	
Base Elev: 0.00 (ft)	Ice Thickness: 0.25	Page: 4

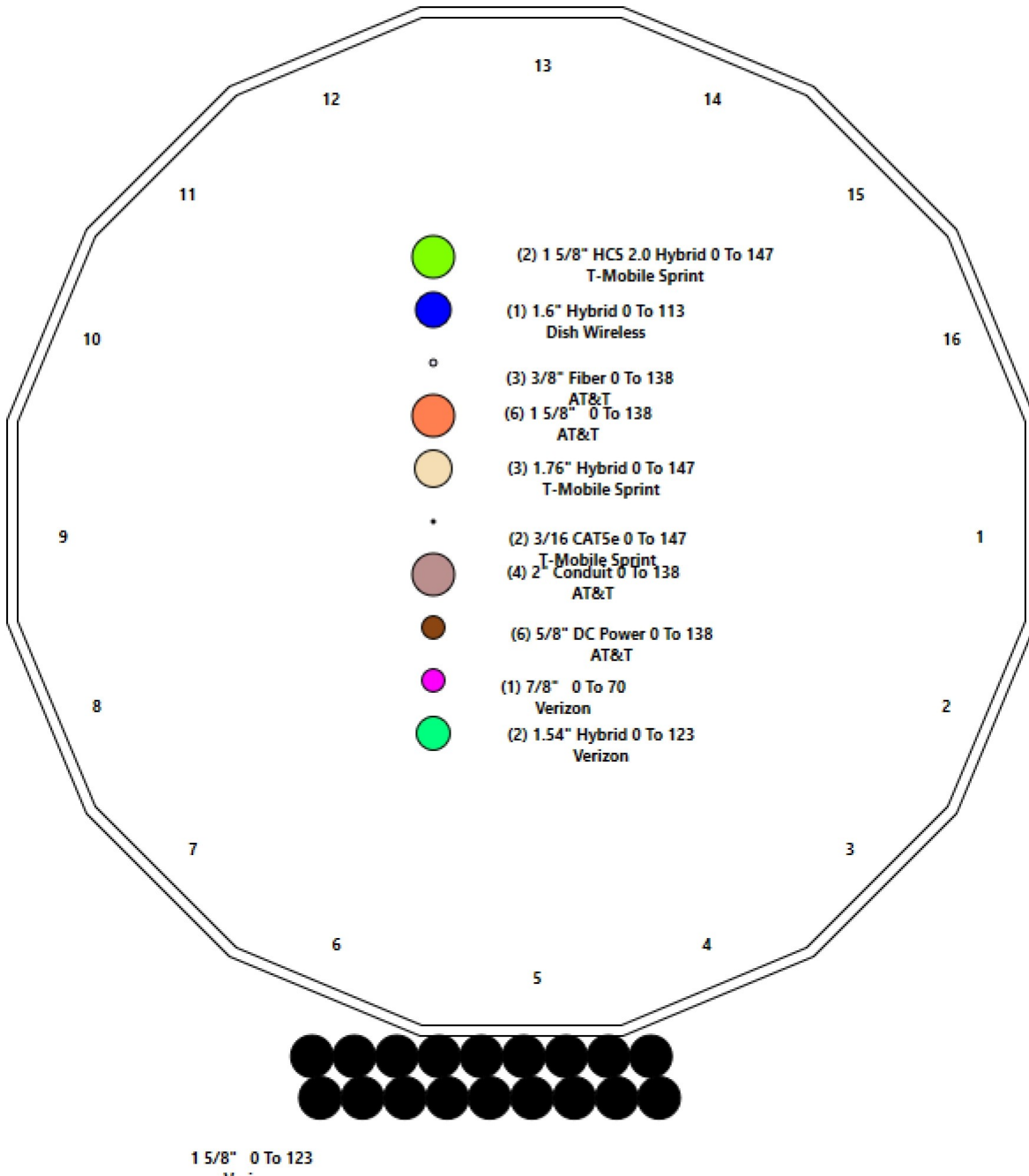


1.0D + 1.0W 60 mph Wind at 180°	827.0	7.4	44.1
1.0D + 1.0W 60 mph Wind at 210°	716.3	6.4	44.1
1.0D + 1.0W 60 mph Wind at 240°	413.6	3.7	44.1
1.0D + 1.0W 60 mph Wind at 270°	0.0	0.0	44.1
1.0D + 1.0W 60 mph Wind at 300°	413.6	3.7	44.1
1.0D + 1.0W 60 mph Wind at 330°	716.3	6.4	44.1
1.2D + 1.0Ev + 1.0Eh	106.7	0.8	54.7
0.9D + 1.0Ev + 1.0Eh	105.6	0.8	41.4

Structure: CO46077-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Pikes Peak Raceway
Height: 147.00 (ft)

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Shaft Properties

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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	16	52.500	0.5000	65		0.00	12,459
2	16	48.410	0.4375	65	Slip	71.00	8,016
3	16	29.920	0.3125	65	Slip	59.00	2,850
4	16	31.253	0.1875	65	Slip	51.00	1,450
Total Shaft Weight:							24,775

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	50.00	0.00	78.95	24439.41	18.30	100.00	38.45	52.50	60.53	11014.6	13.71	76.90	0.219966
2	40.63	46.58	56.09	11446.20	16.88	92.86	29.98	94.99	41.23	4545.81	12.04	68.53	0.219966
3	31.69	90.08	31.28	3889.13	18.58	101.40	25.10	120.00	24.71	1919.14	14.39	80.34	0.219966
4	26.41	115.7	15.69	1363.20	26.43	140.88	19.54	147.00	11.58	547.67	19.14	104.2	0.219966

Load Summary

Structure: CO46077-A-SBA	Code: EIA_H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 7



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	147.00	Commscope FFV-65C-R3-V1	3	183.40	21.12	0.72	251.49	21.423	0.72	0.00	3.00
2	147.00	Nokia AEHC	3	99.00	6.80	0.70	126.58	6.975	0.70	0.00	5.50
3	147.00	MC-PM12M-AP4	1	2300.00	44.00	1.00	2326.71	44.511	1.00	0.00	3.00
4	147.00	MT-195-12HD	1	256.00	7.10	1.00	258.97	7.182	1.00	0.00	3.00
5	147.00	Pipe Mount	1	29.20	1.90	1.00	39.34	2.310	1.00	0.00	0.00
6	147.00	Nokia AHLOB	3	70.54	3.22	0.67	83.44	3.339	0.67	0.00	0.00
7	147.00	Nokia AHFIG RRU	3	79.40	3.08	0.67	91.71	3.199	0.67	0.00	3.00
8	147.00	Samsung RRH-B8	3	59.80	2.67	0.67	71.33	2.779	0.67	0.00	3.00
9	147.00	Alliance High Cap Hybrid Breakout	2	8.80	1.26	0.84	14.78	1.339	0.84	0.00	3.00
10	142.00	Andrew VHLP2-11W-4WH	1	25.00	6.09	1.00	35.19	6.367	1.00	0.00	0.00
11	142.00	Dragonwave Horizon Compact Plu	1	11.50	0.84	1.00	15.24	0.950	1.00	0.00	0.00
12	138.00	AIR 6472 B77G (3450) + B77M (3	3	83.00	6.13	0.69	107.04	6.294	0.69	0.00	2.50
13	138.00	NNH4-65C-R6-V3	6	89.30	17.07	0.74	149.61	17.356	0.74	0.00	0.00
14	138.00	Sabre C10857007C Sector Mount	3	929.00	23.20	0.75	1089.78	25.877	0.75	0.00	0.00
15	138.00	RRU 4490 B5 + B12	3	58.00	3.15	0.67	71.02	3.256	0.67	0.00	0.00
16	138.00	RRU 4494 B14 + B29	3	58.00	3.15	0.67	71.02	3.256	0.67	0.00	0.00
17	138.00	RRU 4890 B25 + B66	3	58.00	3.15	0.67	71.02	3.256	0.67	0.00	0.00
18	138.00	Raycap DC6-48-60-18-8F	3	31.80	0.92	1.00	42.02	0.992	1.00	0.00	0.00
19	123.00	AIR 6419 B77D (3700)	3	65.00	4.18	0.79	82.25	4.314	0.79	0.00	0.00
20	123.00	AIR 3283 B25 + B66	3	110.23	7.87	0.83	143.69	8.059	0.84	0.00	0.00
21	123.00	NNSS-65C-HG-R2B	3	83.80	17.07	0.74	144.25	17.354	0.74	0.00	0.00
22	123.00	T-Arm	3	400.00	15.60	0.75	445.62	17.824	0.75	0.00	0.00
23	123.00	RRU 4490 B5 + B13	3	68.40	2.70	0.67	79.03	2.804	0.67	0.00	0.00
24	123.00	RVZDC-6627-PF-48	1	32.00	4.06	1.00	50.29	4.191	1.00	0.00	0.00
25	113.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	111.62	12.727	0.74	0.00	0.00
26	113.00	Valmont SNP8HR-396	1	1786.28	39.73	1.00	2089.32	47.812	1.00	0.00	0.00
27	113.00	Fujitsu TA08025-B605	3	75.00	1.96	0.67	83.47	2.051	0.67	0.00	0.00
28	113.00	Fujitsu TA08025-B604	3	63.90	1.96	0.67	72.10	2.051	0.67	0.00	0.00
29	113.00	Raycap RDIDC-9181-PF-48	1	21.90	2.01	1.00	30.53	2.102	1.00	0.00	0.00
30	70.00	4'x4' Ice Shield	1	100.00	3.15	1.00	110.78	3.490	1.00	0.00	3.00
31	70.00	RFS SUX4-107A	1	77.00	15.86	1.00	126.41	16.221	1.00	0.00	0.00
32	70.00	Pipe and Chain	1	40.00	2.63	1.00	52.40	3.552	1.00	0.00	0.00
Totals:			76	13,154.59			15,777.77				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	147.00	(2) 1 5/8" HCS 2.0 Hybrid	0.00	Inside
0.00	147.00	(3) 1.76" Hybrid	0.00	Inside
0.00	147.00	(2) 3/16 CAT5e	0.00	Inside
0.00	138.00	(6) 1 5/8" Coax	0.00	Inside
0.00	138.00	(4) 2" Conduit	0.00	Inside
0.00	138.00	(3) 3/8" Fiber	0.00	Inside
0.00	138.00	(6) 5/8" DC Power	0.00	Inside
0.00	123.00	(18) 1 5/8" Coax	5.94	Outside
0.00	123.00	(2) 1.54" 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	113.00	(1) 1.6" Hybrid		0.00		Inside					
0.00	70.00	(1) 7/8" Coax		0.00		Inside					

Shaft Section Properties

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	50.000	78.953	24439.4	18.30	100.00	81.9	958.8	0.0
5.00		0.5000	48.900	77.198	22846.3	17.86	97.80	82.4	916.5	1328.4
10.00		0.5000	47.800	75.444	21324.0	17.42	95.60	82.5	875.1	1298.5
15.00		0.5000	46.701	73.690	19870.8	16.99	93.40	82.5	834.6	1268.7
20.00		0.5000	45.601	71.936	18485.2	16.55	91.20	82.5	795.2	1238.8
25.00		0.5000	44.501	70.181	17165.6	16.11	89.00	82.5	756.6	1209.0
30.00		0.5000	43.401	68.427	15910.3	15.67	86.80	82.5	719.1	1179.1
35.00		0.5000	42.301	66.673	14717.7	15.24	84.60	82.5	682.5	1149.3
40.00		0.5000	41.201	64.919	13586.3	14.80	82.40	82.5	646.8	1119.4
45.00		0.5000	40.102	63.164	12514.4	14.36	80.20	82.5	612.1	1089.6
46.58	Bot - Section 2	0.5000	39.753	62.609	12187.1	14.22	79.51	82.5	601.4	338.8
50.00		0.5000	39.002	61.410	11500.4	13.92	78.00	82.5	578.4	1367.0
52.50	Top - Section 1	0.4375	39.327	54.275	10369.9	16.29	89.89	0.0	0.0	983.7
55.00		0.4375	38.777	53.507	9936.1	16.04	88.63	82.5	502.6	458.4
60.00		0.4375	37.677	51.972	9105.3	15.54	86.12	82.5	474.0	897.3
65.00		0.4375	36.577	50.437	8322.2	15.04	83.61	82.5	446.3	871.2
70.00		0.4375	35.477	48.903	7585.3	14.54	81.09	82.5	419.4	845.1
75.00		0.4375	34.378	47.368	6893.2	14.04	78.58	82.5	393.3	819.0
80.00		0.4375	33.278	45.833	6244.6	13.54	76.06	82.5	368.1	792.8
85.00		0.4375	32.178	44.298	5637.9	13.04	73.55	82.5	343.7	766.7
90.00		0.4375	31.078	42.763	5071.9	12.54	71.04	82.5	320.1	740.6
90.08	Bot - Section 3	0.4375	31.061	42.739	5063.6	12.53	71.00	82.5	319.8	11.2
94.99	Top - Section 2	0.3125	30.605	30.198	3500.6	17.89	97.94	0.0	0.0	1216.6
95.00		0.3125	30.603	30.196	3500.1	17.89	97.93	82.3	224.3	0.7
100.00		0.3125	29.503	29.100	3132.5	17.19	94.41	82.5	208.3	504.4
105.00		0.3125	28.404	28.003	2791.6	16.49	90.89	82.5	192.8	485.8
110.00		0.3125	27.304	26.907	2476.4	15.79	87.37	82.5	177.9	467.1
113.00		0.3125	26.644	26.249	2299.2	15.37	85.26	82.5	169.3	271.3
115.00		0.3125	26.204	25.811	2185.9	15.09	83.85	82.5	163.6	177.1
115.75	Bot - Section 4	0.3125	26.040	25.647	2144.5	14.98	83.33	82.5	161.5	65.4
120.00	Top - Section 3	0.1875	25.480	15.128	1222.6	25.44	135.89	0.0	0.0	587.0
120.00		0.1875	25.479	15.128	1222.5	25.44	135.89	73.8	94.1	0.2
123.00		0.1875	24.819	14.733	1129.2	24.74	132.37	74.6	89.2	152.4
125.00		0.1875	24.379	14.470	1069.8	24.27	130.02	75.1	86.1	99.4
130.00		0.1875	23.279	13.812	930.4	23.11	124.16	76.4	78.4	240.6
135.00		0.1875	22.180	13.154	803.7	21.94	118.29	77.7	71.1	229.4
138.00		0.1875	21.520	12.759	733.5	21.24	114.77	78.5	66.9	132.3
140.00		0.1875	21.080	12.496	689.1	20.77	112.43	79.1	64.1	85.9
142.00		0.1875	20.640	12.233	646.4	20.30	110.08	79.6	61.4	84.1
145.00		0.1875	19.980	11.838	585.9	19.60	106.56	80.4	57.5	122.9
147.00		0.1875	19.540	11.575	547.7	19.14	104.21	80.9	55.0	79.7

24774.9

Wind Loading - Shaft

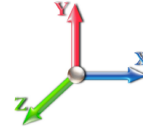
Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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Load Case: 1.2D + 1.0W 130 mph Wind at 60° - Controlling Direction

Iterations 28

Dead Load Factor 1.20 **Ice Thickness:** 0.00
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	28.916	31.81	463.23	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	28.916	31.81	453.04	0.790 *	0.000	5.00	21.008	16.60	527.9	0.0	1594.0
10.00		1.00	0.85	28.916	31.81	442.85	0.796 *	0.000	5.00	20.541	16.35	520.1	0.0	1558.2
15.00		1.00	0.85	28.916	31.81	432.66	0.802 *	0.000	5.00	20.073	16.11	512.3	0.0	1522.4
20.00		1.00	0.90	30.681	33.75	435.18	0.809 *	0.000	5.00	19.606	15.86	535.3	0.0	1486.6
25.00		1.00	0.95	32.156	35.37	434.78	0.816 *	0.000	5.00	19.139	15.62	552.4	0.0	1450.8
30.00		1.00	0.98	33.415	36.76	432.25	0.823 *	0.000	5.00	18.672	15.37	565.0	0.0	1415.0
35.00		1.00	1.01	34.517	37.97	428.18	0.831 *	0.000	5.00	18.204	15.13	574.3	0.0	1379.1
40.00		1.00	1.04	35.501	39.05	422.96	0.839 *	0.000	5.00	17.737	14.88	581.1	0.0	1343.3
45.00		1.00	1.07	36.392	40.03	416.80	0.847 *	0.000	5.00	17.270	14.64	585.9	0.0	1307.5
46.58 Bot - Section 2		1.00	1.08	36.658	40.32	414.69	0.853 *	0.000	1.58	5.371	4.58	184.8	0.0	406.6
50.00		1.00	1.09	37.209	40.93	409.89	0.858 *	0.000	3.42	11.685	10.02	410.3	0.0	1640.4
52.50 Top - Section 1		1.00	1.11	37.593	41.35	406.19	0.863 *	0.000	2.50	8.412	7.26	300.4	0.0	1180.4
55.00		1.00	1.12	37.963	41.76	411.64	0.861 *	0.000	2.50	8.295	7.14	298.1	0.0	550.1
60.00		1.00	1.14	38.664	42.53	403.64	0.868 *	0.000	5.00	16.240	14.09	599.5	0.0	1076.8
65.00		1.00	1.16	39.322	43.25	395.17	0.878 *	0.000	5.00	15.773	13.85	599.0	0.0	1045.4
70.00 Appurtenance(s)		1.00	1.17	39.940	43.93	386.29	0.889 *	0.000	5.00	15.305	13.60	597.7	0.0	1014.1
75.00		1.00	1.19	40.524	44.58	377.05	0.900 *	0.000	5.00	14.838	13.36	595.5	0.0	982.8
80.00		1.00	1.21	41.079	45.19	367.47	0.912 *	0.000	5.00	14.371	13.11	592.6	0.0	951.4
85.00		1.00	1.22	41.606	45.77	357.60	0.926 *	0.000	5.00	13.904	12.87	588.9	0.0	920.1
90.00		1.00	1.24	42.110	46.32	347.46	0.939 *	0.000	5.00	13.437	12.62	584.7	0.0	888.7
90.08 Bot - Section 3		1.00	1.24	42.117	46.33	347.31	0.947 *	0.000	0.08	0.202	0.19	8.9	0.0	13.4
94.99 Top - Section 2		1.00	1.25	42.591	46.85	337.09	0.954 *	0.000	4.92	13.011	12.42	581.8	0.0	1460.0
95.00		1.00	1.25	42.592	46.85	344.11	0.953 *	0.000	0.01	0.017	0.02	0.8	0.0	0.8
100.00		1.00	1.27	43.054	47.36	333.54	0.961 *	0.000	5.00	12.768	12.27	581.2	0.0	605.3
105.00		1.00	1.28	43.499	47.85	322.76	1.200 *	0.000	5.00	12.300	14.76	706.3	0.0	582.9
110.00		1.00	1.29	43.927	48.32	311.78	1.200 *	0.000	5.00	11.833	14.20	686.1	0.0	560.5
113.00 Appurtenance(s)		1.00	1.30	44.177	48.59	305.11	1.200 *	0.000	3.00	6.876	8.25	400.9	0.0	325.6
115.00		1.00	1.30	44.340	48.77	300.63	1.200 *	0.000	2.00	4.490	5.39	262.8	0.0	212.6
115.75 Bot - Section 4		1.00	1.31	44.400	48.84	298.95	1.200 *	0.000	0.75	1.657	1.99	97.1	0.0	78.4
120.00 Top - Section 3		1.00	1.32	44.739	49.21	289.31	1.200 *	0.000	4.25	9.370	11.24	553.3	0.0	704.4
120.00		1.00	1.32	44.739	49.21	293.62	1.200 *	0.000	0.00	0.007	0.01	0.4	0.0	0.2
123.00 Appurtenance(s)		1.00	1.32	44.972	49.47	286.76	1.200 *	0.000	3.00	6.410	7.69	380.5	0.0	182.9
125.00		1.00	1.33	45.125	49.64	282.16	0.750	0.000	2.00	4.180	3.14	155.6	0.0	119.2
130.00		1.00	1.34	45.499	50.05	270.54	0.750	0.000	5.00	10.123	7.59	380.0	0.0	288.7
135.00		1.00	1.35	45.862	50.45	258.79	0.750	0.000	5.00	9.656	7.24	365.4	0.0	275.3
138.00 Appurtenance(s)		1.00	1.35	46.075	50.68	251.67	0.750	0.000	3.00	5.569	4.18	211.7	0.0	158.7
140.00		1.00	1.36	46.215	50.84	246.90	0.750	0.000	2.00	3.620	2.71	138.0	0.0	103.1
142.00 Appurtenance(s)		1.00	1.36	46.353	50.99	242.11	0.750	0.000	2.00	3.545	2.66	135.6	0.0	101.0
145.00		1.00	1.37	46.557	51.21	234.88	0.750	0.000	3.00	5.177	3.88	198.8	0.0	147.4
147.00 Appurtenance(s)		1.00	1.37	46.692	51.36	230.04	0.750	0.000	2.00	3.358	2.52	129.3	0.0	95.6
Totals:									147.00			16,280.5		29,729.9

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



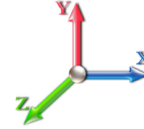
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Load Case: 1.2D + 1.0W 130 mph Wind at 60° - Controlling Direction

Iterations 28

Dead Load Factor 1.20

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	147.00	MT-195-12HD	1	46.891	51.580	1.00	1.00	7.10	307.20	0.000	3.000	-183.11	0.00	-549.33
2	147.00	Commscope	3	46.891	51.580	0.65	0.90	41.06	660.24	0.000	3.000	-1058.87	0.00	-3176.60
3	147.00	Nokia AEHC	3	47.054	51.760	0.63	0.90	12.85	356.40	0.000	5.500	-332.61	0.00	-1829.35
4	147.00	MC-PM12M-AP4	1	46.891	51.580	1.00	1.00	44.00	2760.00	0.000	3.000	-1134.76	0.00	-3404.28
5	147.00	Alliance High Cap Hybrid	2	46.891	51.580	0.76	0.90	1.91	21.12	0.000	3.000	-49.13	0.00	-147.40
6	147.00	Pipe Mount	1	46.692	51.361	1.00	1.00	1.90	35.04	0.000	0.000	-48.79	0.00	0.00
7	147.00	Nokia AHLOB	3	46.692	51.361	0.60	0.90	5.82	253.94	0.000	0.000	-149.59	0.00	0.00
8	147.00	Nokia AHFIG RRU	3	46.891	51.580	0.60	0.90	5.57	285.84	0.000	3.000	-143.69	0.00	-431.08
9	147.00	Samsung RRR-B8	3	46.891	51.580	0.50	0.75	4.03	215.28	0.000	3.000	-103.81	0.00	-311.42
10	142.00	Andrew VHLP2-11W-4WH	1	46.353	50.988	1.00	1.00	6.09	30.00	0.000	0.000	-155.26	0.00	0.00
11	142.00	Dragonwave Horizon	1	46.353	50.988	1.00	1.00	0.84	13.80	0.000	0.000	-21.42	0.00	0.00
12	138.00	Raycap DC6-48-60-18-8F	3	46.075	50.682	0.80	0.80	2.21	114.48	0.000	0.000	-55.95	0.00	0.00
13	138.00	RRU 4890 B25 + B66	3	46.075	50.682	0.54	0.80	5.07	208.80	0.000	0.000	-128.36	0.00	0.00
14	138.00	RRU 4494 B14 + B29	3	46.075	50.682	0.54	0.80	5.07	208.80	0.000	0.000	-128.36	0.00	0.00
15	138.00	RRU 4490 B5 + B12	3	46.075	50.682	0.54	0.80	5.07	208.80	0.000	0.000	-128.36	0.00	0.00
16	138.00	Sabre C10857007C	3	46.075	50.682	0.56	0.75	39.15	3344.40	0.000	0.000	-992.11	0.00	0.00
17	138.00	NNH4-65C-R6-V3	6	46.075	50.682	0.59	0.80	60.63	642.96	0.000	0.000	-1536.51	0.00	0.00
18	138.00	AIR 6472 B77G (3450) +	3	46.249	50.874	0.55	0.80	10.15	298.80	0.000	2.500	-258.22	0.00	-645.55
19	123.00	RVZDC-6627-PF-48	1	44.972	49.469	0.80	0.80	3.25	38.40	0.000	0.000	-80.34	0.00	0.00
20	123.00	RRU 4490 B5 + B13	3	44.972	49.469	0.54	0.80	4.34	246.24	0.000	0.000	-107.39	0.00	0.00
21	123.00	T-Arm	3	44.972	49.469	0.56	0.75	26.32	1440.00	0.000	0.000	-651.14	0.00	0.00
22	123.00	NNSS-65C-HG-R2B	3	44.972	49.469	0.59	0.80	30.32	301.68	0.000	0.000	-749.87	0.00	0.00
23	123.00	AIR 3283 B25 + B66	3	44.972	49.469	0.66	0.80	15.68	396.83	0.000	0.000	-387.77	0.00	0.00
24	123.00	AIR 6419 B77D (3700)	3	44.972	49.469	0.63	0.80	7.93	234.00	0.000	0.000	-196.03	0.00	0.00
25	113.00	Valmont SNP8HR-396	1	44.177	48.594	1.00	1.00	39.73	2143.54	0.000	0.000	-965.20	0.00	0.00
26	113.00	JMA Wireless	3	44.177	48.594	0.55	0.75	20.80	232.20	0.000	0.000	-505.28	0.00	0.00
27	113.00	Raycap	1	44.177	48.594	0.75	0.75	1.51	26.28	0.000	0.000	-36.63	0.00	0.00
28	113.00	Fujitsu TA08025-B605	3	44.177	48.594	0.50	0.75	2.95	270.00	0.000	0.000	-71.79	0.00	0.00
29	113.00	Fujitsu TA08025-B604	3	44.177	48.594	0.50	0.75	2.95	230.04	0.000	0.000	-71.79	0.00	0.00
30	70.00	Pipe and Chain	1	39.940	43.934	1.00	1.00	2.63	48.00	0.000	0.000	-57.77	0.00	0.00
31	70.00	RFS SUX4-107A	1	39.940	43.934	1.00	1.00	15.86	92.40	0.000	0.000	-348.40	0.00	0.00
32	70.00	4'x4' Ice Shield	1	40.294	44.324	1.00	1.00	3.15	120.00	0.000	3.000	-69.81	0.00	-209.43
Totals:									15,785.51			-10,908.1	0	

Total Applied Force Summary

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



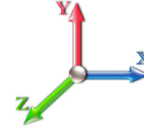
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Load Case: 1.2D + 1.0W 130 mph Wind at 60° - Controlling Direction

Iterations 28

Dead Load Factor 1.20

Wind Load Factor 1.00



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		-263.97	-1874.44	0.00	0.00
10.00		-260.07	-1838.62	0.00	0.00
15.00		-256.16	-1802.81	0.00	0.00
20.00		-267.66	-1766.99	0.00	0.00
25.00		-276.20	-1731.18	0.00	0.00
30.00		-282.50	-1695.36	0.00	0.00
35.00		-287.16	-1659.54	0.00	0.00
40.00		-290.55	-1623.73	0.00	0.00
45.00		-292.94	-1587.91	0.00	0.00
46.58		-92.41	-495.37	0.00	0.00
50.00		-205.15	-1831.96	0.00	0.00
52.50		-150.18	-1320.59	0.00	0.00
55.00		-149.07	-690.34	0.00	0.00
60.00		-299.73	-1357.17	0.00	0.00
65.00		-299.52	-1325.83	0.00	0.00
70.00	(3) attachments	-774.82	-1554.89	0.00	-209.43
75.00		-297.75	-1260.04	0.00	0.00
80.00		-296.28	-1228.70	0.00	0.00
85.00		-294.47	-1197.36	0.00	0.00
90.00		-292.35	-1166.02	0.00	0.00
90.08		-4.44	-17.64	0.00	0.00
94.99		-290.91	-1732.63	0.00	0.00
95.00		-0.39	-1.19	0.00	0.00
100.00		-290.59	-882.59	0.00	0.00
105.00		-388.66	-860.20	0.00	0.00
110.00		-378.94	-837.82	0.00	0.00
113.00	(11) attachments	-1872.81	-3394.00	0.00	0.00
115.00		-145.89	-321.09	0.00	0.00
115.75		-53.98	-118.95	0.00	0.00
120.00		-307.72	-934.96	0.00	0.00
120.00		-0.24	-0.39	0.00	0.00
123.00	(16) attachments	-2384.84	-3002.81	0.00	0.00
125.00		-77.81	-177.31	0.00	0.00
130.00		-190.00	-433.87	0.00	0.00
135.00		-182.68	-420.43	0.00	0.00
138.00	(24) attachments	-3333.72	-5272.85	0.00	-645.55
140.00		-69.00	-122.84	0.00	0.00
142.00	(2) attachments	-244.45	-164.49	0.00	0.00
145.00		-99.42	-177.00	0.00	0.00
147.00	(20) attachments	-3269.03	-5010.38	0.00	-9849.46
Totals:		-19,214.4	-52,892.2	0.00	-10,704.4
		5	9		4

Linear Appurtenance Segment Forces (Factored)

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



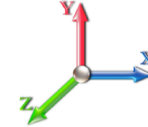
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Load Case: 1.2D + 1.0W 130 mph Wind at 60° - Controlling Direction

Iterations 28

Dead Load Factor 1.20

Wind Load Factor 1.00



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	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.118	1.053	28.916	0.00	112.32
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.120	1.061	28.916	0.00	112.32
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.123	1.070	28.916	0.00	112.32
20.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.126	1.079	30.681	0.00	112.32
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.129	1.088	32.156	0.00	112.32
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.133	1.098	33.415	0.00	112.32
35.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.136	1.108	34.517	0.00	112.32
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.140	1.119	35.501	0.00	112.32
45.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.143	1.130	36.392	0.00	112.32
46.58	1 5/8" Coax	Yes	1.58	0.000	5.94	0.78	0.00	0.146	1.138	36.658	0.00	35.57
50.00	1 5/8" Coax	Yes	3.42	0.000	5.94	1.69	0.00	0.148	1.144	37.209	0.00	76.75
52.50	1 5/8" Coax	Yes	2.50	0.000	5.94	1.24	0.00	0.150	1.151	37.593	0.00	56.16
55.00	1 5/8" Coax	Yes	2.50	0.000	5.94	1.24	0.00	0.149	1.148	37.963	0.00	56.16
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.152	1.157	38.664	0.00	112.32
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.157	1.171	39.322	0.00	112.32
70.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.162	1.185	39.940	0.00	112.32
75.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.167	1.200	40.524	0.00	112.32
80.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.172	1.217	41.079	0.00	112.32
85.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.178	1.234	41.606	0.00	112.32
90.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.184	1.253	42.110	0.00	112.32
90.08	1 5/8" Coax	Yes	0.08	0.000	5.94	0.04	0.00	0.188	1.263	42.117	0.00	1.72
94.99	1 5/8" Coax	Yes	4.92	0.000	5.94	2.43	0.00	0.191	1.273	42.591	0.00	110.45
95.00	1 5/8" Coax	Yes	0.01	0.000	5.94	0.00	0.00	0.190	1.271	42.592	0.00	0.15
100.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.194	1.282	43.054	0.00	112.32
105.00	1 5/8" Coax	Yes	5.00	0.600	5.94	2.48	1.49	0.201	0.000	43.499	-35.53	112.32
110.00	1 5/8" Coax	Yes	5.00	0.600	5.94	2.48	1.49	0.209	0.000	43.927	-35.88	112.32
113.00	1 5/8" Coax	Yes	3.00	0.600	5.94	1.49	0.89	0.216	0.000	44.177	-21.65	67.39
115.00	1 5/8" Coax	Yes	2.00	0.600	5.94	0.99	0.59	0.220	0.000	44.340	-14.49	44.93
115.75	1 5/8" Coax	Yes	0.75	0.600	5.94	0.37	0.22	0.223	0.000	44.400	-5.42	16.77
120.00	1 5/8" Coax	Yes	4.25	0.600	5.94	2.10	1.26	0.228	0.000	44.739	-31.06	95.47
120.00	1 5/8" Coax	Yes	0.00	0.600	5.94	0.00	0.00	0.229	0.000	44.739	-0.02	0.07
123.00	1 5/8" Coax	Yes	3.00	0.600	5.94	1.49	0.89	0.232	0.000	44.972	-22.04	67.39
Totals:											-166.1	2,763.1

Calculated Forces

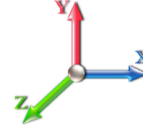
Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 14
	Struct Class: II	



Load Case: 1.2D + 1.0W 130 mph Wind at 60° - Controlling Direction

Iterations 28

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	-52.81	-19.27	-0.09	-2166.9	-3753.1	4333.77	5817.07	1385.62	5697.75	5886.84	0.00	0.000	0.000	0.746
5.00	-50.77	-19.12	-0.09	-2070.6	-3586.1	4141.05	5722.22	1354.83	5447.37	5660.89	0.13	0.247	0.000	0.741
10.00	-48.77	-18.96	-0.09	-1975.1	-3420.6	3949.88	5605.12	1324.04	5202.61	5417.75	0.53	0.499	0.000	0.739
15.00	-46.80	-18.80	-0.09	-1880.3	-3256.3	3760.29	5474.78	1293.26	4963.48	5167.45	1.19	0.756	0.000	0.737
20.00	-44.87	-18.63	-0.09	-1786.4	-3093.5	3572.29	5344.45	1262.47	4729.98	4923.06	2.12	1.018	0.000	0.735
25.00	-42.97	-18.44	-0.09	-1693.5	-2932.1	3386.07	5214.12	1231.68	4502.10	4684.60	3.33	1.286	0.000	0.732
30.00	-41.12	-18.23	-0.09	-1601.4	-2772.4	3201.77	5083.79	1200.90	4279.85	4452.05	4.82	1.559	0.000	0.728
35.00	-39.30	-18.02	-0.09	-1510.5	-2614.5	3019.51	4953.46	1170.11	4063.22	4225.43	6.60	1.837	0.000	0.723
40.00	-37.52	-17.80	-0.09	-1420.6	-2458.4	2839.40	4823.13	1139.32	3852.22	4004.72	8.68	2.120	0.000	0.718
45.00	-35.84	-17.53	-0.09	-1331.7	-2304.3	2661.53	4692.80	1108.54	3646.84	3789.94	11.05	2.408	0.000	0.711
46.58	-35.26	-17.48	-0.08	-1304.1	-2256.2	2606.05	4651.53	1098.79	3582.98	3723.16	11.87	2.503	0.000	0.709
50.00	-33.35	-17.29	-0.08	-1244.5	-2152.8	2486.71	4562.47	1077.75	3447.09	3581.08	13.73	2.706	0.000	0.703
52.50	-31.95	-17.15	-0.08	-1201.4	-2078.0	2400.36	4032.35	952.52	3077.24	3202.34	15.19	2.857	0.000	0.759
55.00	-31.14	-17.05	-0.08	-1158.7	-2003.7	2314.71	3975.33	939.05	2990.83	3111.91	16.73	3.009	0.000	0.753
60.00	-29.63	-16.80	-0.07	-1073.7	-1856.2	2144.43	3861.29	912.12	2821.69	2934.96	20.05	3.329	0.000	0.740
65.00	-28.15	-16.54	-0.07	-990.05	-1710.8	1976.68	3747.25	885.18	2657.48	2763.18	23.71	3.650	0.000	0.724
70.00	-26.53	-15.80	-0.06	-907.39	-1567.4	1811.11	3633.21	858.24	2498.19	2596.58	27.70	3.974	0.000	0.706
75.00	-25.14	-15.53	-0.06	-828.67	-1430.8	1653.46	3519.17	831.30	2343.83	2435.16	32.04	4.299	0.000	0.688
80.00	-23.79	-15.26	-0.05	-751.28	-1296.5	1498.51	3405.14	804.36	2194.39	2278.92	36.71	4.624	0.000	0.666
85.00	-22.47	-14.99	-0.05	-675.23	-1164.7	1346.32	3291.10	777.42	2049.87	2127.87	41.73	4.948	0.000	0.641
90.00	-21.28	-14.67	-0.04	-600.42	-1035.4	1196.92	3177.06	750.49	1910.27	1981.99	47.08	5.269	0.000	0.612
90.08	-21.18	-14.70	-0.04	-599.41	-1033.4	1194.68	3175.31	750.07	1908.17	1979.79	47.16	5.274	0.000	0.612
94.99	-19.44	-14.36	-0.04	-527.23	-908.75	1050.62	2237.53	529.97	1333.63	1385.41	52.75	5.584	0.000	0.770
95.00	-19.33	-14.40	-0.03	-527.28	-908.50	1050.42	2237.45	529.94	1333.50	1385.30	52.76	5.585	0.000	0.770
100.00	-18.32	-14.13	-0.03	-455.55	-784.34	907.03	2161.96	510.70	1238.42	1289.46	58.82	5.983	0.000	0.715
105.00	-17.38	-13.76	-0.02	-385.10	-662.57	766.35	2080.50	491.46	1146.86	1193.63	65.29	6.363	0.000	0.653
110.00	-16.50	-13.38	-0.02	-316.43	-544.11	629.44	1999.05	472.22	1058.81	1101.50	72.14	6.718	0.000	0.583
113.00	-13.51	-11.33	-0.01	-276.37	-475.05	549.59	1950.17	460.67	1007.67	1048.00	76.42	6.921	0.000	0.534
115.00	-13.20	-11.18	-0.01	-253.74	-436.08	504.53	1917.59	452.97	974.28	1013.07	79.34	7.052	0.000	0.507
115.75	-13.03	-11.14	-0.01	-245.46	-421.70	487.94	1905.43	450.10	961.96	1000.18	80.45	7.100	0.000	0.497
120.00	-12.14	-10.78	-0.01	-198.17	-340.37	393.86	1004.62	265.50	557.83	520.86	86.87	7.349	0.000	0.775
120.00	-12.09	-10.80	-0.01	-198.18	-340.28	393.79	1004.60	265.49	557.80	520.83	86.88	7.349	0.000	0.775
123.00	-9.67	-8.24	0.00	-165.84	-284.61	329.40	988.89	258.56	529.07	499.21	91.57	7.601	0.000	0.674
125.00	-9.45	-8.18	0.00	-149.42	-256.28	296.66	978.11	253.94	510.34	484.88	94.79	7.759	0.000	0.626
130.00	-8.98	-7.99	0.00	-108.58	-186.10	215.46	950.05	242.40	464.99	449.40	103.09	8.100	0.000	0.493
135.00	-8.57	-7.79	0.00	-68.67	-117.63	136.20	920.43	230.85	421.75	414.48	111.71	8.368	0.000	0.342
138.00	-4.32	-4.08	0.00	-44.64	-76.46	88.54	901.91	223.93	396.82	393.85	117.00	8.488	0.000	0.231
140.00	-4.21	-4.01	0.00	-36.48	-62.48	72.35	889.25	219.31	380.62	380.25	120.56	8.551	0.000	0.196
142.00	-4.11	-3.75	0.00	-28.48	-48.75	56.46	876.33	214.69	364.76	366.76	124.14	8.604	0.000	0.160
145.00	-3.96	-3.64	0.00	-17.22	-29.48	34.14	856.50	207.76	341.60	346.79	129.56	8.664	0.000	0.104
147.00	0.00	-3.27	0.00	-9.85	-17.06	19.70	842.96	203.15	326.59	333.65	133.19	8.690	0.000	0.060

Wind Loading - Shaft

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 15

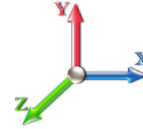


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.20
Wind Load Factor 1.00

Ice Thickness: 0.25



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	4.277	4.71	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	4.277	4.71	0.00	1.264 *	0.207	5.00	21.180	26.77	126.0	64.3	1658.3
10.00		1.00	0.85	4.277	4.71	0.00	1.274 *	0.222	5.00	20.726	26.40	124.2	67.4	1625.6
15.00		1.00	0.85	4.277	4.71	0.00	1.284 *	0.231	5.00	20.266	26.02	122.4	68.6	1591.0
20.00		1.00	0.90	4.539	4.99	0.00	1.294 *	0.238	5.00	19.804	25.64	128.0	68.9	1555.5
25.00		1.00	0.95	4.757	5.23	0.00	1.306 *	0.243	5.00	19.342	25.25	132.1	68.8	1519.6
30.00		1.00	0.98	4.943	5.44	0.00	1.317 *	0.248	5.00	18.878	24.87	135.2	68.3	1483.3
35.00		1.00	1.01	5.106	5.62	0.00	1.329 *	0.251	5.00	18.414	24.48	137.5	67.7	1446.8
40.00		1.00	1.04	5.252	5.78	0.00	1.342 *	0.255	5.00	17.950	24.09	139.2	66.8	1410.1
45.00		1.00	1.07	5.383	5.92	0.00	1.356 *	0.258	5.00	17.485	23.71	140.4	65.8	1373.3
46.58 Bot - Section 2		1.00	1.08	5.423	5.97	0.00	1.365 *	0.259	1.58	5.440	7.43	44.3	20.7	427.3
50.00		1.00	1.09	5.504	6.05	0.00	1.373 *	0.261	3.42	11.834	16.24	98.3	45.2	1685.6
52.50 Top - Section 1		1.00	1.11	5.561	6.12	0.00	1.382 *	0.262	2.50	8.521	11.77	72.0	32.8	1213.2
55.00		1.00	1.12	5.616	6.18	0.00	1.377 *	0.263	2.50	8.405	11.57	71.5	32.5	582.6
60.00		1.00	1.14	5.720	6.29	0.00	1.389 *	0.265	5.00	16.461	22.86	143.8	63.7	1140.5
65.00		1.00	1.16	5.817	6.40	0.00	1.405 *	0.268	5.00	15.996	22.47	143.8	62.3	1107.8
70.00 Appurtenance(s)		1.00	1.17	5.908	6.50	0.00	1.422 *	0.270	5.00	15.530	22.09	143.5	60.9	1075.0
75.00		1.00	1.19	5.995	6.59	0.00	1.440 *	0.271	5.00	15.064	21.70	143.1	59.5	1042.2
80.00		1.00	1.21	6.077	6.68	0.00	1.460 *	0.273	5.00	14.599	21.31	142.5	57.9	1009.4
85.00		1.00	1.22	6.155	6.77	0.00	1.481 *	0.275	5.00	14.133	20.93	141.7	56.4	976.5
90.00		1.00	1.24	6.229	6.85	0.00	1.503 *	0.276	5.00	13.667	20.54	140.8	54.8	943.5
90.08 Bot - Section 3		1.00	1.24	6.230	6.85	0.00	1.515 *	0.276	0.08	0.206	0.31	2.1	0.8	14.2
94.99 Top - Section 2		1.00	1.25	6.300	6.93	0.00	1.527 *	0.278	4.92	13.239	20.22	140.1	53.4	1513.3
95.00		1.00	1.25	6.301	6.93	0.00	1.525 *	0.278	0.01	0.018	0.03	0.2	0.1	0.9
100.00		1.00	1.27	6.369	7.01	0.00	1.538 *	0.279	5.00	13.000	19.99	140.1	52.6	657.9
105.00		1.00	1.28	6.435	7.08	0.00	1.200 *	0.281	5.00	12.534	15.04	106.5	50.9	633.8
110.00		1.00	1.29	6.498	7.15	0.00	1.200 *	0.282	5.00	12.068	14.48	103.5	49.2	609.7
113.00 Appurtenance(s)		1.00	1.30	6.535	7.19	0.00	1.200 *	0.283	3.00	7.017	8.42	60.5	28.9	354.5
115.00		1.00	1.30	6.559	7.22	0.00	1.200 *	0.283	2.00	4.585	5.50	39.7	19.0	231.6
115.75 Bot - Section 4		1.00	1.31	6.568	7.22	0.00	1.200 *	0.283	0.75	1.692	2.03	14.7	7.0	85.5
120.00 Top - Section 3		1.00	1.32	6.618	7.28	0.00	1.200 *	0.284	4.25	9.571	11.49	83.6	39.4	743.8
120.00		1.00	1.32	6.618	7.28	0.00	1.200 *	0.284	0.00	0.007	0.01	0.1	0.0	0.2
123.00 Appurtenance(s)		1.00	1.32	6.653	7.32	0.00	1.200 *	0.285	3.00	6.553	7.86	57.5	27.2	210.1
125.00		1.00	1.33	6.675	7.34	0.00	1.200	0.286	2.00	4.275	5.13	37.7	17.8	137.1
130.00		1.00	1.34	6.731	7.40	0.00	1.200	0.287	5.00	10.362	12.43	92.1	42.7	331.4
135.00		1.00	1.35	6.784	7.46	0.00	1.200	0.288	5.00	9.896	11.88	88.6	40.9	316.2
138.00 Appurtenance(s)		1.00	1.35	6.816	7.50	0.00	1.200	0.288	3.00	5.714	6.86	51.4	23.9	182.6
140.00		1.00	1.36	6.837	7.52	0.00	1.200	0.289	2.00	3.716	4.46	33.5	15.6	118.7
142.00 Appurtenance(s)		1.00	1.36	6.857	7.54	0.00	1.200	0.289	2.00	3.641	4.37	33.0	15.3	116.3
145.00		1.00	1.37	6.887	7.58	0.00	1.200	0.290	3.00	5.322	6.39	48.4	22.3	169.7
147.00 Appurtenance(s)		1.00	1.37	6.907	7.60	0.00	1.200	0.290	2.00	3.455	4.15	31.5	14.6	110.2
Totals:									147.00			3,635.1		31,404.7

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



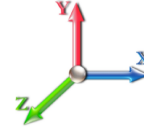
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	147.00	MT-195-12HD	1	6.937	7.630	1.00	1.00	7.18	-2833.83	0.000	3.000	-27.40	0.00	-82.20
2	147.00	Commscope	3	6.937	7.630	0.65	0.90	41.65	864.51	0.000	3.000	-158.88	0.00	-476.65
3	147.00	Nokia AEHC	3	6.961	7.657	0.63	0.90	13.18	327.83	0.000	5.500	-50.47	0.00	-277.59
4	147.00	MC-PM12M-AP4	1	6.937	7.630	1.00	1.00	44.51	5086.71	0.000	3.000	-169.81	0.00	-509.44
5	147.00	Alliance High Cap Hybrid	2	6.937	7.630	0.76	0.90	2.02	16.47	0.000	3.000	-7.72	0.00	-23.17
6	147.00	Pipe Mount	1	6.907	7.598	1.00	1.00	2.31	31.08	0.000	0.000	-8.78	0.00	0.00
7	147.00	Nokia AHLOB	3	6.907	7.598	0.60	0.90	6.04	213.56	0.000	0.000	-22.95	0.00	0.00
8	147.00	Nokia AHFIG RRU	3	6.937	7.630	0.60	0.90	5.79	269.66	0.000	3.000	-22.08	0.00	-66.23
9	147.00	Samsung RRR-B8	3	6.937	7.630	0.50	0.75	4.19	200.66	0.000	3.000	-15.98	0.00	-47.94
10	142.00	Andrew VHLP2-11W-4WH	1	6.857	7.543	1.00	1.00	6.37	23.89	0.000	0.000	-24.01	0.00	0.00
11	142.00	Dragonwave Horizon	1	6.857	7.543	1.00	1.00	0.95	11.14	0.000	0.000	-3.58	0.00	0.00
12	138.00	Raycap DC6-48-60-18-8F	3	6.816	7.497	0.80	0.80	2.38	92.04	0.000	0.000	-8.93	0.00	0.00
13	138.00	RRU 4890 B25 + B66	3	6.816	7.497	0.54	0.80	5.24	247.85	0.000	0.000	-19.63	0.00	0.00
14	138.00	RRU 4494 B14 + B29	3	6.816	7.497	0.54	0.80	5.24	247.85	0.000	0.000	-19.63	0.00	0.00
15	138.00	RRU 4490 B5 + B12	3	6.816	7.497	0.54	0.80	5.24	247.85	0.000	0.000	-19.63	0.00	0.00
16	138.00	Sabre C10857007C	3	6.816	7.497	0.56	0.75	43.67	2926.75	0.000	0.000	-163.70	0.00	0.00
17	138.00	NNH4-65C-R6-V3	6	6.816	7.497	0.59	0.80	61.65	1540.60	0.000	0.000	-231.10	0.00	0.00
18	138.00	AIR 6472 B77G (3450) +	3	6.842	7.526	0.55	0.80	10.42	272.81	0.000	2.500	-39.22	0.00	-98.05
19	123.00	RVZDC-6627-PF-48	1	6.653	7.318	0.80	0.80	3.35	-1.91	0.000	0.000	-12.27	0.00	0.00
20	123.00	RRU 4490 B5 + B13	3	6.653	7.318	0.54	0.80	4.51	211.54	0.000	0.000	-16.50	0.00	0.00
21	123.00	T-Arm	3	6.653	7.318	0.56	0.75	30.08	1336.87	0.000	0.000	-110.06	0.00	0.00
22	123.00	NNSS-65C-HG-R2B	3	6.653	7.318	0.59	0.80	30.82	431.72	0.000	0.000	-112.77	0.00	0.00
23	123.00	AIR 3283 B25 + B66	3	6.653	7.318	0.67	0.80	16.25	525.19	0.000	0.000	-59.44	0.00	0.00
24	123.00	AIR 6419 B77D (3700)	3	6.653	7.318	0.63	0.80	8.18	480.73	0.000	0.000	-29.93	0.00	0.00
25	113.00	Valmont SNP8HR-396	1	6.535	7.188	1.00	1.00	47.81	2284.85	0.000	0.000	-171.85	0.00	0.00
26	113.00	JMA Wireless	3	6.535	7.188	0.55	0.75	21.19	171.97	0.000	0.000	-76.17	0.00	0.00
27	113.00	Raycap	1	6.535	7.188	0.75	0.75	1.58	22.21	0.000	0.000	-5.67	0.00	0.00
28	113.00	Fujitsu TA08025-B605	3	6.535	7.188	0.50	0.75	3.09	257.62	0.000	0.000	-11.11	0.00	0.00
29	113.00	Fujitsu TA08025-B604	3	6.535	7.188	0.50	0.75	3.09	218.35	0.000	0.000	-11.11	0.00	0.00
30	70.00	Pipe and Chain	1	5.908	6.499	1.00	1.00	3.55	37.40	0.000	0.000	-11.54	0.00	0.00
31	70.00	RFS SUX4-107A	1	5.908	6.499	1.00	1.00	16.22	50.21	0.000	0.000	-52.71	0.00	0.00
32	70.00	4'x4' Ice Shield	1	5.961	6.557	1.00	1.00	3.49	30.78	0.000	3.000	-11.44	0.00	-34.32
Totals:									15,844.98			-1,706.05		

Total Applied Force Summary

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



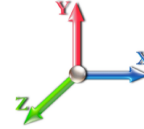
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



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		-62.99	-1997.12	0.00	0.00
10.00		-62.11	-1966.50	0.00	0.00
15.00		-61.21	-1933.17	0.00	0.00
20.00		-63.99	-1898.67	0.00	0.00
25.00		-66.06	-1863.48	0.00	0.00
30.00		-67.60	-1827.85	0.00	0.00
35.00		-68.75	-1791.90	0.00	0.00
40.00		-69.59	-1755.71	0.00	0.00
45.00		-70.20	-1719.32	0.00	0.00
46.58		-22.15	-536.92	0.00	0.00
50.00		-49.17	-1922.24	0.00	0.00
52.50		-36.01	-1386.45	0.00	0.00
55.00		-35.75	-755.98	0.00	0.00
60.00		-71.91	-1487.51	0.00	0.00
65.00		-71.89	-1455.13	0.00	0.00
70.00	(3) attachments	-147.46	-1541.05	0.00	-34.32
75.00		-71.55	-1387.01	0.00	0.00
80.00		-71.24	-1354.41	0.00	0.00
85.00		-70.84	-1321.75	0.00	0.00
90.00		-70.38	-1289.04	0.00	0.00
90.08		-1.07	-19.52	0.00	0.00
94.99		-70.06	-1853.28	0.00	0.00
95.00		-0.09	-1.36	0.00	0.00
100.00		-70.03	-1003.82	0.00	0.00
105.00		-64.74	-979.94	0.00	0.00
110.00		-63.38	-956.02	0.00	0.00
113.00	(11) attachments	-313.18	-3517.31	0.00	0.00
115.00		-24.54	-367.74	0.00	0.00
115.75		-9.09	-136.34	0.00	0.00
120.00		-51.88	-1033.31	0.00	0.00
120.00		-0.04	-0.46	0.00	0.00
123.00	(16) attachments	-376.89	-3398.65	0.00	0.00
125.00		-18.84	-195.12	0.00	0.00
130.00		-46.03	-476.59	0.00	0.00
135.00		-44.31	-461.32	0.00	0.00
138.00	(24) attachments	-527.52	-5845.43	0.00	-98.05
140.00		-16.77	-138.45	0.00	0.00
142.00	(2) attachments	-44.07	-171.02	0.00	0.00
145.00		-24.19	-199.29	0.00	0.00
147.00	(20) attachments	-499.82	-4306.53	0.00	-1483.22
	Totals:	-3,577.41	-56,252.7 2	0.00	-1,615.59

Linear Appurtenance Segment Forces (Factored)

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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 at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



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	1 5/8" Coax	Yes	5.00	0.000	5.94	2.65	0.00	0.118	1.053	4.277	0.00	170.72
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.66	0.00	0.120	1.061	4.277	0.00	172.82
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.67	0.00	0.123	1.070	4.277	0.00	174.12
20.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.67	0.00	0.126	1.079	4.539	0.00	175.07
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.68	0.00	0.129	1.088	4.757	0.00	175.83
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.68	0.00	0.133	1.098	4.943	0.00	176.46
35.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.68	0.00	0.136	1.108	5.106	0.00	177.01
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.69	0.00	0.140	1.119	5.252	0.00	177.49
45.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.69	0.00	0.143	1.130	5.383	0.00	177.91
46.58	1 5/8" Coax	Yes	1.58	0.000	5.94	0.85	0.00	0.146	1.138	5.423	0.00	56.38
50.00	1 5/8" Coax	Yes	3.42	0.000	5.94	1.84	0.00	0.148	1.144	5.504	0.00	121.84
52.50	1 5/8" Coax	Yes	2.50	0.000	5.94	1.35	0.00	0.150	1.151	5.561	0.00	89.24
55.00	1 5/8" Coax	Yes	2.50	0.000	5.94	1.35	0.00	0.149	1.148	5.616	0.00	89.33
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.70	0.00	0.152	1.157	5.720	0.00	178.98
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.70	0.00	0.157	1.171	5.817	0.00	179.28
70.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.70	0.00	0.162	1.185	5.908	0.00	179.57
75.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.70	0.00	0.167	1.200	5.995	0.00	179.83
80.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.70	0.00	0.172	1.217	6.077	0.00	180.08
85.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.70	0.00	0.178	1.234	6.155	0.00	180.32
90.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.71	0.00	0.184	1.253	6.229	0.00	180.54
90.08	1 5/8" Coax	Yes	0.08	0.000	5.94	0.04	0.00	0.188	1.263	6.230	0.00	2.77
94.99	1 5/8" Coax	Yes	4.92	0.000	5.94	2.66	0.00	0.191	1.273	6.300	0.00	177.74
95.00	1 5/8" Coax	Yes	0.01	0.000	5.94	0.00	0.00	0.190	1.271	6.301	0.00	0.24
100.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.71	0.00	0.194	1.282	6.369	0.00	180.96
105.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.71	3.25	0.201	0.000	6.435	-11.50	181.15
110.00	1 5/8" Coax	Yes	5.00	1.200	5.94	2.71	3.25	0.209	0.000	6.498	-11.62	181.34
113.00	1 5/8" Coax	Yes	3.00	1.200	5.94	1.63	1.95	0.216	0.000	6.535	-7.01	108.87
115.00	1 5/8" Coax	Yes	2.00	1.200	5.94	1.08	1.30	0.220	0.000	6.559	-4.69	72.61
115.75	1 5/8" Coax	Yes	0.75	1.200	5.94	0.40	0.49	0.223	0.000	6.568	-1.76	27.11
120.00	1 5/8" Coax	Yes	4.25	1.200	5.94	2.31	2.77	0.228	0.000	6.618	-10.07	154.43
120.00	1 5/8" Coax	Yes	0.00	1.200	5.94	0.00	0.00	0.229	0.000	6.618	-0.01	0.12
123.00	1 5/8" Coax	Yes	3.00	1.200	5.94	1.63	1.95	0.232	0.000	6.653	-7.15	109.07
Totals:											-53.8	4,389.2

Calculated Forces

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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 at 60° - Controlling Direction

Iterations 24

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	-56.25	-3.59	0.00	-379.43	-657.19	758.86	5817.07	1385.62	5697.75	5886.84	0.00	0.000	0.000	0.139
5.00	-54.25	-3.55	0.00	-361.49	-626.12	722.98	5722.22	1354.83	5447.37	5660.89	0.02	0.043	0.000	0.137
10.00	-52.28	-3.50	0.00	-343.77	-595.42	687.53	5605.12	1324.04	5202.61	5417.75	0.09	0.087	0.000	0.136
15.00	-50.34	-3.46	0.00	-326.25	-565.09	652.51	5474.78	1293.26	4963.48	5167.45	0.21	0.132	0.000	0.135
20.00	-48.43	-3.41	0.00	-308.96	-535.13	617.92	5344.45	1262.47	4729.98	4923.06	0.37	0.177	0.000	0.135
25.00	-46.57	-3.36	0.00	-291.90	-505.59	583.80	5214.12	1231.68	4502.10	4684.60	0.58	0.223	0.000	0.134
30.00	-44.73	-3.31	0.00	-275.10	-476.47	550.19	5083.79	1200.90	4279.85	4452.05	0.84	0.270	0.000	0.132
35.00	-42.94	-3.25	0.00	-258.56	-447.82	517.10	4953.46	1170.11	4063.22	4225.43	1.15	0.318	0.000	0.131
40.00	-41.18	-3.20	0.00	-242.29	-419.65	484.57	4823.13	1139.32	3852.22	4004.72	1.51	0.367	0.000	0.130
45.00	-39.45	-3.13	0.00	-226.31	-391.98	452.62	4692.80	1108.54	3646.84	3789.94	1.92	0.416	0.000	0.128
46.58	-38.91	-3.12	0.00	-221.36	-383.39	442.70	4651.53	1098.79	3582.98	3723.16	2.06	0.432	0.000	0.127
50.00	-36.99	-3.07	0.00	-210.71	-364.95	421.42	4562.47	1077.75	3447.09	3581.08	2.38	0.466	0.000	0.126
52.50	-35.60	-3.03	0.00	-203.04	-351.67	406.07	4032.35	952.52	3077.24	3202.34	2.63	0.492	0.000	0.136
55.00	-34.84	-3.01	0.00	-195.46	-338.53	390.90	3975.33	939.05	2990.83	3111.91	2.90	0.518	0.000	0.134
60.00	-33.35	-2.94	0.00	-180.42	-312.48	360.83	3861.29	912.12	2821.69	2934.96	3.47	0.571	0.000	0.132
65.00	-31.89	-2.88	0.00	-165.70	-286.98	331.39	3747.25	885.18	2657.48	2763.18	4.09	0.625	0.000	0.128
70.00	-30.35	-2.74	0.00	-151.27	-261.98	302.52	3633.21	858.24	2498.19	2596.58	4.78	0.680	0.000	0.125
75.00	-28.96	-2.67	0.00	-137.58	-238.27	275.14	3519.17	831.30	2343.83	2435.16	5.52	0.734	0.000	0.121
80.00	-27.60	-2.60	0.00	-124.22	-215.14	248.43	3405.14	804.36	2194.39	2278.92	6.32	0.788	0.000	0.117
85.00	-26.28	-2.54	0.00	-111.20	-192.58	222.38	3291.10	777.42	2049.87	2127.87	7.17	0.841	0.000	0.113
90.00	-24.99	-2.46	0.00	-98.52	-170.62	197.02	3177.06	750.49	1910.27	1981.99	8.08	0.894	0.000	0.107
90.08	-24.97	-2.47	0.00	-98.33	-170.29	196.64	3175.31	750.07	1908.17	1979.79	8.09	0.895	0.000	0.107
94.99	-23.11	-2.39	0.00	-86.20	-149.29	172.39	2237.53	529.97	1333.63	1385.41	9.04	0.946	0.000	0.135
95.00	-23.11	-2.39	0.00	-86.19	-149.26	172.36	2237.45	529.94	1333.50	1385.30	9.04	0.946	0.000	0.135
100.00	-22.10	-2.33	0.00	-74.22	-128.54	148.43	2161.96	510.70	1238.42	1289.46	10.07	1.011	0.000	0.125
105.00	-21.12	-2.26	0.00	-62.59	-108.39	125.16	2080.50	491.46	1146.86	1193.63	11.16	1.074	0.000	0.115
110.00	-20.16	-2.20	0.00	-51.27	-88.78	102.52	1999.05	472.22	1058.81	1101.50	12.32	1.132	0.000	0.103
113.00	-16.66	-1.86	0.00	-44.67	-77.35	89.32	1950.17	460.67	1007.67	1048.00	13.04	1.165	0.000	0.094
115.00	-16.29	-1.83	0.00	-40.96	-70.92	81.90	1917.59	452.97	974.28	1013.07	13.53	1.186	0.000	0.089
115.75	-16.15	-1.82	0.00	-39.59	-68.56	79.17	1905.43	450.10	961.96	1000.18	13.72	1.194	0.000	0.088
120.00	-15.12	-1.76	0.00	-31.85	-55.15	63.68	1004.62	265.50	557.83	520.86	14.80	1.234	0.000	0.137
120.00	-15.12	-1.76	0.00	-31.84	-55.14	63.67	1004.60	265.49	557.80	520.83	14.80	1.234	0.000	0.137
123.00	-11.74	-1.35	0.00	-26.55	-45.97	53.08	988.89	258.56	529.07	499.21	15.59	1.275	0.000	0.118
125.00	-11.54	-1.34	0.00	-23.84	-41.28	47.67	978.11	253.94	510.34	484.88	16.13	1.300	0.000	0.110
130.00	-11.06	-1.29	0.00	-17.15	-29.70	34.30	950.05	242.40	464.99	449.40	17.52	1.355	0.000	0.088
135.00	-10.60	-1.24	0.00	-10.70	-18.53	21.40	920.43	230.85	421.75	414.48	18.97	1.397	0.000	0.063
138.00	-4.78	-0.64	0.00	-6.87	-11.90	13.75	901.91	223.93	396.82	393.85	19.85	1.416	0.000	0.040
140.00	-4.65	-0.63	0.00	-5.59	-9.67	11.17	889.25	219.31	380.62	380.25	20.45	1.426	0.000	0.035
142.00	-4.48	-0.58	0.00	-4.33	-7.50	8.66	876.33	214.69	364.76	366.76	21.05	1.434	0.000	0.029
145.00	-4.28	-0.55	0.00	-2.59	-4.49	5.18	856.50	207.76	341.60	346.79	21.95	1.443	0.000	0.020
147.00	0.00	-0.50	0.00	-1.48	-2.57	2.97	842.96	203.15	326.59	333.65	22.56	1.447	0.000	0.009

Wind Loading - Shaft

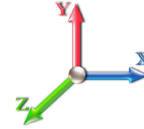
Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 20



Load Case: 1.0D + 1.0W 60 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.00 **Ice Thickness:** 0.00
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.511	6.06	213.80	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.511	6.06	209.10	0.790 *	0.000	5.00	21.008	16.60	100.6	0.0	1328.4
10.00		1.00	0.85	5.511	6.06	204.39	0.796 *	0.000	5.00	20.541	16.35	99.1	0.0	1298.5
15.00		1.00	0.85	5.511	6.06	199.69	0.802 *	0.000	5.00	20.073	16.11	97.6	0.0	1268.7
20.00		1.00	0.90	5.848	6.43	200.85	0.809 *	0.000	5.00	19.606	15.86	102.0	0.0	1238.8
25.00		1.00	0.95	6.129	6.74	200.67	0.816 *	0.000	5.00	19.139	15.62	105.3	0.0	1209.0
30.00		1.00	0.98	6.369	7.01	199.50	0.823 *	0.000	5.00	18.672	15.37	107.7	0.0	1179.1
35.00		1.00	1.01	6.579	7.24	197.62	0.831 *	0.000	5.00	18.204	15.13	109.5	0.0	1149.3
40.00		1.00	1.04	6.766	7.44	195.21	0.839 *	0.000	5.00	17.737	14.88	110.8	0.0	1119.4
45.00		1.00	1.07	6.936	7.63	192.37	0.847 *	0.000	5.00	17.270	14.64	111.7	0.0	1089.6
46.58 Bot - Section 2		1.00	1.08	6.987	7.69	191.39	0.853 *	0.000	1.58	5.371	4.58	35.2	0.0	338.8
50.00		1.00	1.09	7.092	7.80	189.18	0.858 *	0.000	3.42	11.685	10.02	78.2	0.0	1367.0
52.50 Top - Section 1		1.00	1.11	7.165	7.88	187.47	0.863 *	0.000	2.50	8.412	7.26	57.2	0.0	983.7
55.00		1.00	1.12	7.235	7.96	189.99	0.861 *	0.000	2.50	8.295	7.14	56.8	0.0	458.4
60.00		1.00	1.14	7.369	8.11	186.30	0.868 *	0.000	5.00	16.240	14.09	114.3	0.0	897.3
65.00		1.00	1.16	7.494	8.24	182.39	0.878 *	0.000	5.00	15.773	13.85	114.2	0.0	871.2
70.00 Appurtenance(s)		1.00	1.17	7.612	8.37	178.29	0.889 *	0.000	5.00	15.305	13.60	113.9	0.0	845.1
75.00		1.00	1.19	7.724	8.50	174.02	0.900 *	0.000	5.00	14.838	13.36	113.5	0.0	819.0
80.00		1.00	1.21	7.829	8.61	169.60	0.912 *	0.000	5.00	14.371	13.11	112.9	0.0	792.8
85.00		1.00	1.22	7.930	8.72	165.05	0.926 *	0.000	5.00	13.904	12.87	112.2	0.0	766.7
90.00		1.00	1.24	8.026	8.83	160.37	0.939 *	0.000	5.00	13.437	12.62	111.4	0.0	740.6
90.08 Bot - Section 3		1.00	1.24	8.027	8.83	160.30	0.947 *	0.000	0.08	0.202	0.19	1.7	0.0	11.2
94.99 Top - Section 2		1.00	1.25	8.118	8.93	155.58	0.954 *	0.000	4.92	13.011	12.42	110.9	0.0	1216.6
95.00		1.00	1.25	8.118	8.93	158.82	0.953 *	0.000	0.01	0.017	0.02	0.1	0.0	0.7
100.00		1.00	1.27	8.206	9.03	153.94	0.961 *	0.000	5.00	12.768	12.27	110.8	0.0	504.4
105.00		1.00	1.28	8.291	9.12	148.96	1.200 *	0.000	5.00	12.300	14.76	134.6	0.0	485.8
110.00		1.00	1.29	8.372	9.21	143.90	1.200 *	0.000	5.00	11.833	14.20	130.8	0.0	467.1
113.00 Appurtenance(s)		1.00	1.30	8.420	9.26	140.82	1.200 *	0.000	3.00	6.876	8.25	76.4	0.0	271.3
115.00		1.00	1.30	8.451	9.30	138.75	1.200 *	0.000	2.00	4.490	5.39	50.1	0.0	177.1
115.75 Bot - Section 4		1.00	1.31	8.462	9.31	137.97	1.200 *	0.000	0.75	1.657	1.99	18.5	0.0	65.4
120.00 Top - Section 3		1.00	1.32	8.527	9.38	133.53	1.200 *	0.000	4.25	9.370	11.24	105.5	0.0	587.0
120.00		1.00	1.32	8.527	9.38	135.52	1.200 *	0.000	0.00	0.007	0.01	0.1	0.0	0.2
123.00 Appurtenance(s)		1.00	1.32	8.571	9.43	132.35	1.200 *	0.000	3.00	6.410	7.69	72.5	0.0	152.4
125.00		1.00	1.33	8.601	9.46	130.23	0.750	0.000	2.00	4.180	3.14	29.7	0.0	99.4
130.00		1.00	1.34	8.672	9.54	124.87	0.750	0.000	5.00	10.123	7.59	72.4	0.0	240.6
135.00		1.00	1.35	8.741	9.62	119.44	0.750	0.000	5.00	9.656	7.24	69.6	0.0	229.4
138.00 Appurtenance(s)		1.00	1.35	8.782	9.66	116.16	0.750	0.000	3.00	5.569	4.18	40.3	0.0	132.3
140.00		1.00	1.36	8.808	9.69	113.95	0.750	0.000	2.00	3.620	2.71	26.3	0.0	85.9
142.00 Appurtenance(s)		1.00	1.36	8.835	9.72	111.74	0.750	0.000	2.00	3.545	2.66	25.8	0.0	84.1
145.00		1.00	1.37	8.874	9.76	108.41	0.750	0.000	3.00	5.177	3.88	37.9	0.0	122.9
147.00 Appurtenance(s)		1.00	1.37	8.899	9.79	106.17	0.750	0.000	2.00	3.358	2.52	24.7	0.0	79.7
Totals:									147.00			3,103.0	24,774.9	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 21

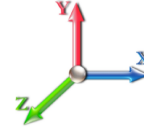


Load Case: 1.0D + 1.0W 60 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.00

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	
1	147.00	MT-195-12HD	1	8.937	9.831	1.00	1.00	7.10	256.00	0.000	3.000	-34.90	0.00	-104.70	
2	147.00	Commscope	3	8.937	9.831	0.65	0.90	41.06	550.20	0.000	3.000	-201.81	0.00	-605.44	
3	147.00	Nokia AEHC	3	8.968	9.865	0.63	0.90	12.85	297.00	0.000	5.500	-63.39	0.00	-348.66	
4	147.00	MC-PM12M-AP4	1	8.937	9.831	1.00	1.00	44.00	2300.00	0.000	3.000	-216.28	0.00	-648.84	
5	147.00	Alliance High Cap Hybrid	2	8.937	9.831	0.76	0.90	1.91	17.60	0.000	3.000	-9.36	0.00	-28.09	
6	147.00	Pipe Mount	1	8.899	9.789	1.00	1.00	1.90	29.20	0.000	0.000	-9.30	0.00	0.00	
7	147.00	Nokia AHLOB	3	8.899	9.789	0.60	0.90	5.82	211.62	0.000	0.000	-28.51	0.00	0.00	
8	147.00	Nokia AHFIG RRU	3	8.937	9.831	0.60	0.90	5.57	238.20	0.000	3.000	-27.39	0.00	-82.16	
9	147.00	Samsung RRR-B8	3	8.937	9.831	0.50	0.75	4.03	179.40	0.000	3.000	-19.78	0.00	-59.35	
10	142.00	Andrew VHLP2-11W-4WH	1	8.835	9.718	1.00	1.00	6.09	25.00	0.000	0.000	-29.59	0.00	0.00	
11	142.00	Dragonwave Horizon	1	8.835	9.718	1.00	1.00	0.84	11.50	0.000	0.000	-4.08	0.00	0.00	
12	138.00	Raycap DC6-48-60-18-8F	3	8.782	9.660	0.80	0.80	2.21	95.40	0.000	0.000	-10.66	0.00	0.00	
13	138.00	RRU 4890 B25 + B66	3	8.782	9.660	0.54	0.80	5.07	174.00	0.000	0.000	-24.46	0.00	0.00	
14	138.00	RRU 4494 B14 + B29	3	8.782	9.660	0.54	0.80	5.07	174.00	0.000	0.000	-24.46	0.00	0.00	
15	138.00	RRU 4490 B5 + B12	3	8.782	9.660	0.54	0.80	5.07	174.00	0.000	0.000	-24.46	0.00	0.00	
16	138.00	Sabre C10857007C	3	8.782	9.660	0.56	0.75	39.15	2787.00	0.000	0.000	-189.09	0.00	0.00	
17	138.00	NNH4-65C-R6-V3	6	8.782	9.660	0.59	0.80	60.63	535.80	0.000	0.000	-292.85	0.00	0.00	
18	138.00	AIR 6472 B77G (3450) +	3	8.815	9.696	0.55	0.80	10.15	249.00	0.000	2.500	-49.22	0.00	-123.04	
19	123.00	RVZDC-6627-PF-48	1	8.571	9.429	0.80	0.80	3.25	32.00	0.000	0.000	-15.31	0.00	0.00	
20	123.00	RRU 4490 B5 + B13	3	8.571	9.429	0.54	0.80	4.34	205.20	0.000	0.000	-20.47	0.00	0.00	
21	123.00	T-Arm	3	8.571	9.429	0.56	0.75	26.32	1200.00	0.000	0.000	-124.10	0.00	0.00	
22	123.00	NNSS-65C-HG-R2B	3	8.571	9.429	0.59	0.80	30.32	251.40	0.000	0.000	-142.92	0.00	0.00	
23	123.00	AIR 3283 B25 + B66	3	8.571	9.429	0.66	0.80	15.68	330.69	0.000	0.000	-73.91	0.00	0.00	
24	123.00	AIR 6419 B77D (3700)	3	8.571	9.429	0.63	0.80	7.93	195.00	0.000	0.000	-37.36	0.00	0.00	
25	113.00	Valmont SNP8HR-396	1	8.420	9.262	1.00	1.00	39.73	1786.28	0.000	0.000	-183.96	0.00	0.00	
26	113.00	JMA Wireless	3	8.420	9.262	0.55	0.75	20.80	193.50	0.000	0.000	-96.30	0.00	0.00	
27	113.00	Raycap	1	8.420	9.262	0.75	0.75	1.51	21.90	0.000	0.000	-6.98	0.00	0.00	
28	113.00	Fujitsu TA08025-B605	3	8.420	9.262	0.50	0.75	2.95	225.00	0.000	0.000	-13.68	0.00	0.00	
29	113.00	Fujitsu TA08025-B604	3	8.420	9.262	0.50	0.75	2.95	191.70	0.000	0.000	-13.68	0.00	0.00	
30	70.00	Pipe and Chain	1	7.612	8.374	1.00	1.00	2.63	40.00	0.000	0.000	-11.01	0.00	0.00	
31	70.00	RFS SUX4-107A	1	7.612	8.374	1.00	1.00	15.86	77.00	0.000	0.000	-66.40	0.00	0.00	
32	70.00	4'x4' Ice Shield	1	7.680	8.448	1.00	1.00	3.15	100.00	0.000	3.000	-13.31	0.00	-39.92	
Totals:									13,154.59						-2,079.03

Total Applied Force Summary

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



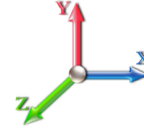
Page: 22

Load Case: 1.0D + 1.0W 60 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.00

Wind Load Factor 1.00



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		-50.31	-1562.03	0.00	0.00
10.00		-49.57	-1532.18	0.00	0.00
15.00		-48.82	-1502.34	0.00	0.00
20.00		-51.01	-1472.49	0.00	0.00
25.00		-52.64	-1442.65	0.00	0.00
30.00		-53.84	-1412.80	0.00	0.00
35.00		-54.73	-1382.95	0.00	0.00
40.00		-55.38	-1353.11	0.00	0.00
45.00		-55.83	-1323.26	0.00	0.00
46.58		-17.61	-412.81	0.00	0.00
50.00		-39.10	-1526.63	0.00	0.00
52.50		-28.62	-1100.49	0.00	0.00
55.00		-28.41	-575.28	0.00	0.00
60.00		-57.13	-1130.98	0.00	0.00
65.00		-57.09	-1104.86	0.00	0.00
70.00	(3) attachments	-147.68	-1295.75	0.00	-39.92
75.00		-56.75	-1050.03	0.00	0.00
80.00		-56.47	-1023.91	0.00	0.00
85.00		-56.12	-997.80	0.00	0.00
90.00		-55.72	-971.68	0.00	0.00
90.08		-0.85	-14.70	0.00	0.00
94.99		-55.45	-1443.86	0.00	0.00
95.00		-0.07	-0.99	0.00	0.00
100.00		-55.39	-735.49	0.00	0.00
105.00		-80.21	-716.84	0.00	0.00
110.00		-78.35	-698.18	0.00	0.00
113.00	(11) attachments	-360.62	-2828.34	0.00	0.00
115.00		-30.26	-267.57	0.00	0.00
115.75		-11.20	-99.13	0.00	0.00
120.00		-63.85	-779.14	0.00	0.00
120.00		-0.05	-0.32	0.00	0.00
123.00	(16) attachments	-458.21	-2502.34	0.00	0.00
125.00		-14.83	-147.76	0.00	0.00
130.00		-36.21	-361.55	0.00	0.00
135.00		-34.82	-350.36	0.00	0.00
138.00	(24) attachments	-635.39	-4394.04	0.00	-123.04
140.00		-13.15	-102.36	0.00	0.00
142.00	(2) attachments	-46.59	-137.07	0.00	0.00
145.00		-18.95	-147.50	0.00	0.00
147.00	(20) attachments	-623.06	-4175.32	0.00	-1877.26
Totals:		-3,690.36	-44,076.9	0.00	-2,040.21

Linear Appurtenance Segment Forces (Factored)

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

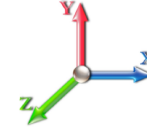


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Load Case: 1.0D + 1.0W 60 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.00
Wind Load Factor 1.00



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	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.118	1.053	5.511	0.00	93.60
10.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.120	1.061	5.511	0.00	93.60
15.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.123	1.070	5.511	0.00	93.60
20.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.126	1.079	5.848	0.00	93.60
25.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.129	1.088	6.129	0.00	93.60
30.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.133	1.098	6.369	0.00	93.60
35.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.136	1.108	6.579	0.00	93.60
40.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.140	1.119	6.766	0.00	93.60
45.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.143	1.130	6.936	0.00	93.60
46.58	1 5/8" Coax	Yes	1.58	0.000	5.94	0.78	0.00	0.146	1.138	6.987	0.00	29.64
50.00	1 5/8" Coax	Yes	3.42	0.000	5.94	1.69	0.00	0.148	1.144	7.092	0.00	63.96
52.50	1 5/8" Coax	Yes	2.50	0.000	5.94	1.24	0.00	0.150	1.151	7.165	0.00	46.80
55.00	1 5/8" Coax	Yes	2.50	0.000	5.94	1.24	0.00	0.149	1.148	7.235	0.00	46.80
60.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.152	1.157	7.369	0.00	93.60
65.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.157	1.171	7.494	0.00	93.60
70.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.162	1.185	7.612	0.00	93.60
75.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.167	1.200	7.724	0.00	93.60
80.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.172	1.217	7.829	0.00	93.60
85.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.178	1.234	7.930	0.00	93.60
90.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.184	1.253	8.026	0.00	93.60
90.08	1 5/8" Coax	Yes	0.08	0.000	5.94	0.04	0.00	0.188	1.263	8.027	0.00	1.44
94.99	1 5/8" Coax	Yes	4.92	0.000	5.94	2.43	0.00	0.191	1.273	8.118	0.00	92.04
95.00	1 5/8" Coax	Yes	0.01	0.000	5.94	0.00	0.00	0.190	1.271	8.118	0.00	0.12
100.00	1 5/8" Coax	Yes	5.00	0.000	5.94	2.48	0.00	0.194	1.282	8.206	0.00	93.60
105.00	1 5/8" Coax	Yes	5.00	1.143	5.94	2.48	2.83	0.201	0.000	8.291	-12.90	93.60
110.00	1 5/8" Coax	Yes	5.00	1.138	5.94	2.48	2.82	0.209	0.000	8.372	-12.97	93.60
113.00	1 5/8" Coax	Yes	3.00	1.135	5.94	1.49	1.68	0.216	0.000	8.420	-7.80	56.16
115.00	1 5/8" Coax	Yes	2.00	1.132	5.94	0.99	1.12	0.220	0.000	8.451	-5.21	37.44
115.75	1 5/8" Coax	Yes	0.75	1.132	5.94	0.37	0.42	0.223	0.000	8.462	-1.95	13.98
120.00	1 5/8" Coax	Yes	4.25	1.127	5.94	2.10	2.37	0.228	0.000	8.527	-11.12	79.56
120.00	1 5/8" Coax	Yes	0.00	1.127	5.94	0.00	0.00	0.229	0.000	8.527	-0.01	0.06
123.00	1 5/8" Coax	Yes	3.00	1.125	5.94	1.49	1.67	0.232	0.000	8.571	-7.87	56.16
Totals:											-59.8	2,302.6

Calculated Forces

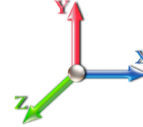
Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 24
	Struct Class: II	



Load Case: 1.0D + 1.0W 60 mph Wind at 60° - Controlling Direction

Iterations 24

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-44.07	-3.70	0.00	-413.55	-716.30	827.11	5817.07	1385.62	5697.75	5886.84	0.00	0.000	0.000	0.148
5.00	-42.51	-3.67	0.00	-395.05	-684.26	790.11	5722.22	1354.83	5447.37	5660.89	0.03	0.047	0.000	0.147
10.00	-40.97	-3.63	0.00	-376.72	-652.51	753.45	5605.12	1324.04	5202.61	5417.75	0.10	0.095	0.000	0.146
15.00	-39.46	-3.60	0.00	-358.56	-621.04	717.12	5474.78	1293.26	4963.48	5167.45	0.23	0.144	0.000	0.146
20.00	-37.98	-3.56	0.00	-340.56	-589.87	681.12	5344.45	1262.47	4729.98	4923.06	0.40	0.194	0.000	0.145
25.00	-36.53	-3.52	0.00	-322.74	-559.00	645.48	5214.12	1231.68	4502.10	4684.60	0.63	0.245	0.000	0.145
30.00	-35.11	-3.48	0.00	-305.12	-528.48	610.24	5083.79	1200.90	4279.85	4452.05	0.92	0.297	0.000	0.144
35.00	-33.72	-3.44	0.00	-287.71	-498.31	575.40	4953.46	1170.11	4063.22	4225.43	1.26	0.350	0.000	0.143
40.00	-32.37	-3.40	0.00	-270.50	-468.52	541.00	4823.13	1139.32	3852.22	4004.72	1.66	0.404	0.000	0.142
45.00	-31.04	-3.35	0.00	-253.53	-439.11	507.04	4692.80	1108.54	3646.84	3789.94	2.11	0.459	0.000	0.140
46.58	-30.62	-3.33	0.00	-248.23	-429.93	496.45	4651.53	1098.79	3582.98	3723.16	2.26	0.477	0.000	0.140
50.00	-29.09	-3.30	0.00	-236.84	-410.21	473.67	4562.47	1077.75	3447.09	3581.08	2.62	0.516	0.000	0.139
52.50	-27.99	-3.27	0.00	-228.60	-395.93	457.19	4032.35	952.52	3077.24	3202.34	2.90	0.545	0.000	0.150
55.00	-27.41	-3.25	0.00	-220.43	-381.77	440.84	3975.33	939.05	2990.83	3111.91	3.19	0.574	0.000	0.149
60.00	-26.27	-3.20	0.00	-204.18	-353.64	408.35	3861.29	912.12	2821.69	2934.96	3.82	0.634	0.000	0.146
65.00	-25.16	-3.15	0.00	-188.19	-325.92	376.35	3747.25	885.18	2657.48	2763.18	4.52	0.696	0.000	0.143
70.00	-23.87	-3.01	0.00	-172.40	-298.57	344.77	3633.21	858.24	2498.19	2596.58	5.28	0.757	0.000	0.139
75.00	-22.81	-2.96	0.00	-157.36	-272.53	314.70	3519.17	831.30	2343.83	2435.16	6.11	0.819	0.000	0.136
80.00	-21.78	-2.90	0.00	-142.59	-246.94	285.15	3405.14	804.36	2194.39	2278.92	7.00	0.881	0.000	0.132
85.00	-20.78	-2.85	0.00	-128.07	-221.79	256.12	3291.10	777.42	2049.87	2127.87	7.96	0.943	0.000	0.127
90.00	-19.81	-2.79	0.00	-113.82	-197.11	227.61	3177.06	750.49	1910.27	1981.99	8.98	1.004	0.000	0.121
90.08	-19.79	-2.80	0.00	-113.61	-196.74	227.19	3175.31	750.07	1908.17	1979.79	8.99	1.005	0.000	0.121
94.99	-18.35	-2.73	0.00	-99.86	-172.93	199.69	2237.53	529.97	1333.63	1385.41	10.06	1.064	0.000	0.152
95.00	-18.34	-2.74	0.00	-99.84	-172.90	199.66	2237.45	529.94	1333.50	1385.30	10.06	1.064	0.000	0.152
100.00	-17.60	-2.69	0.00	-86.15	-149.19	172.28	2161.96	510.70	1238.42	1289.46	11.22	1.139	0.000	0.142
105.00	-16.88	-2.61	0.00	-72.72	-125.92	145.41	2080.50	491.46	1146.86	1193.63	12.45	1.212	0.000	0.130
110.00	-16.18	-2.53	0.00	-59.67	-103.32	119.31	1999.05	472.22	1058.81	1101.50	13.75	1.279	0.000	0.117
113.00	-13.37	-2.14	0.00	-52.07	-90.17	104.13	1950.17	460.67	1007.67	1048.00	14.57	1.317	0.000	0.106
115.00	-13.10	-2.11	0.00	-47.79	-82.75	95.56	1917.59	452.97	974.28	1013.07	15.13	1.342	0.000	0.101
115.75	-13.00	-2.10	0.00	-46.21	-80.02	92.40	1905.43	450.10	961.96	1000.18	15.34	1.351	0.000	0.099
120.00	-12.22	-2.03	0.00	-37.28	-64.55	74.54	1004.62	265.50	557.83	520.86	16.56	1.398	0.000	0.156
120.00	-12.22	-2.03	0.00	-37.27	-64.54	74.53	1004.60	265.49	557.80	520.83	16.56	1.398	0.000	0.155
123.00	-9.74	-1.55	0.00	-31.17	-53.97	62.32	988.89	258.56	529.07	499.21	17.46	1.446	0.000	0.135
125.00	-9.59	-1.54	0.00	-28.07	-48.61	56.13	978.11	253.94	510.34	484.88	18.07	1.476	0.000	0.126
130.00	-9.23	-1.50	0.00	-20.40	-35.32	40.78	950.05	242.40	464.99	449.40	19.65	1.540	0.000	0.101
135.00	-8.88	-1.46	0.00	-12.90	-22.34	25.80	920.43	230.85	421.75	414.48	21.30	1.591	0.000	0.072
138.00	-4.52	-0.77	0.00	-8.39	-14.53	16.78	901.91	223.93	396.82	393.85	22.30	1.614	0.000	0.048
140.00	-4.42	-0.75	0.00	-6.86	-11.88	13.72	889.25	219.31	380.62	380.25	22.98	1.626	0.000	0.041
142.00	-4.28	-0.70	0.00	-5.36	-9.27	10.71	876.33	214.69	364.76	366.76	23.67	1.636	0.000	0.034
145.00	-4.14	-0.68	0.00	-3.24	-5.62	6.49	856.50	207.76	341.60	346.79	24.70	1.647	0.000	0.024
147.00	0.00	-0.62	0.00	-1.88	-3.25	3.75	842.96	203.15	326.59	333.65	25.39	1.652	0.000	0.011

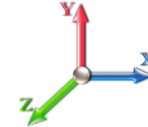
Seismic Segment Forces (Factored)

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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 + 1.0Ev + 1.0Eh						Iterations 22
Gust Response Factor	1.10			Sds	0.20	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.09	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.32	SA	0.03	Seismic Importance Factor 1.00



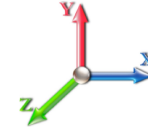
Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		1608.7	2.50	63.49	0.01	
10.00		1578.9	7.50	62.31	0.10	
15.00		1549.0	12.50	61.14	0.27	
20.00		1519.2	17.50	59.96	0.51	
25.00		1489.3	22.50	58.78	0.82	
30.00		1459.5	27.50	57.60	1.17	
35.00		1429.6	32.50	56.42	1.57	
40.00		1399.8	37.50	55.25	2.00	
45.00		1369.9	42.50	54.07	2.46	
46.58	Bot - Section 2	427.61	45.79	16.88	0.28	
50.00		1558.5	48.29	61.51	4.12	
52.50	Top - Section 1	1123.8	51.25	44.35	2.41	
55.00		598.65	53.75	23.63	0.75	
60.00		1177.7	57.50	46.48	3.33	
65.00		1151.5	62.50	45.45	3.76	
70.00	Appurtenance(s)	1342.4	67.50	52.98	5.97	
75.00		1096.2	72.50	43.27	4.59	
80.00		1070.1	77.50	42.23	5.00	
85.00		1044.0	82.50	41.20	5.39	
90.00		1017.9	87.50	40.17	5.76	
90.08	Bot - Section 3	15.40	90.04	0.61	0.00	
94.99	Top - Section 2	1489.3	92.53	58.78	13.80	
95.00		1.05	95.00	0.04	0.00	
100.00		781.70	97.50	30.85	4.22	
105.00		763.05	102.50	30.12	4.44	
110.00		744.40	107.50	29.38	4.65	
113.00	Appurtenance(s)	2856.0	111.50	112.72	73.67	
115.00		285.66	114.00	11.27	0.77	
115.75	Bot - Section 4	105.88	115.37	4.18	0.11	
120.00	Top - Section 3	817.57	117.87	32.27	6.75	
120.00		0.35	120.00	0.01	0.00	
123.00	Appurtenance(s)	2529.4	121.50	99.83	68.62	
125.00		157.43	124.00	6.21	0.28	
130.00		385.75	127.50	15.22	1.76	
135.00		374.56	132.50	14.78	1.79	
138.00	Appurtenance(s)	4408.5	136.50	173.99	263.08	
140.00		105.65	139.00	4.17	0.16	
142.00	Appurtenance(s)	140.36	141.00	5.54	0.28	
145.00		152.43	143.50	6.02	0.35	
147.00	Appurtenance(s)	4178.6	146.00	164.92	270.39	
Totals:		45,306.4		1,788.1	765.4	Total Wind: -38,428.9

Calculated Forces

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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 + 1.0Ev + 1.0Eh										Iterations 22
Gust Response Factor 1.10					Sds 0.20					Ss 0.18
Dead Load Factor 1.20			Seismic Load Factor 1.00			Sd1 0.09			S1 0.06	
Wind Load Factor 0.00		Structure Frequency (f1) 0.32		SA 0.03		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	-54.68	0.77	0.00	106.73	0.00	106.73	5817.07	1385.62	5697.75	5886.84	0.00	0.00	0.00	0.028
5.00	-52.74	0.77	0.00	102.89	0.00	102.89	5722.22	1354.83	5447.37	5660.89	0.00	0.01	0.01	0.027
10.00	-50.84	0.78	0.00	99.03	0.00	99.03	5605.12	1324.04	5202.61	5417.75	0.01	0.01	0.01	0.027
15.00	-48.98	0.78	0.00	95.13	0.00	95.13	5474.78	1293.26	4963.48	5167.45	0.03	0.02	0.02	0.027
20.00	-47.15	0.79	0.00	91.22	0.00	91.22	5344.45	1262.47	4729.98	4923.06	0.05	0.03	0.03	0.027
25.00	-45.36	0.79	0.00	87.28	0.00	87.28	5214.12	1231.68	4502.10	4684.60	0.08	0.03	0.03	0.027
30.00	-43.61	0.79	0.00	83.32	0.00	83.32	5083.79	1200.90	4279.85	4452.05	0.12	0.04	0.04	0.027
35.00	-41.89	0.80	0.00	79.35	0.00	79.35	4953.46	1170.11	4063.22	4225.43	0.17	0.05	0.05	0.027
40.00	-40.21	0.80	0.00	75.36	0.00	75.36	4823.13	1139.32	3852.22	4004.72	0.22	0.05	0.05	0.027
45.00	-38.57	0.80	0.00	71.37	0.00	71.37	4692.80	1108.54	3646.84	3789.94	0.28	0.06	0.06	0.027
46.58	-38.06	0.80	0.00	70.10	0.00	70.10	4651.53	1098.79	3582.98	3723.16	0.30	0.06	0.06	0.027
50.00	-36.16	0.80	0.00	67.37	0.00	67.37	4562.47	1077.75	3447.09	3581.08	0.35	0.07	0.07	0.027
52.50	-34.80	0.80	0.00	65.38	0.00	65.38	4032.35	952.52	3077.24	3202.34	0.39	0.07	0.07	0.029
55.00	-34.09	0.80	0.00	63.39	0.00	63.39	3975.33	939.05	2990.83	3111.91	0.43	0.08	0.08	0.029
60.00	-32.68	0.80	0.00	59.40	0.00	59.40	3861.29	912.12	2821.69	2934.96	0.51	0.09	0.09	0.029
65.00	-31.31	0.80	0.00	55.41	0.00	55.41	3747.25	885.18	2657.48	2763.18	0.61	0.10	0.10	0.028
70.00	-29.70	0.79	0.00	51.43	0.00	51.43	3633.21	858.24	2498.19	2596.58	0.71	0.11	0.11	0.028
75.00	-28.40	0.79	0.00	47.47	0.00	47.47	3519.17	831.30	2343.83	2435.16	0.83	0.11	0.11	0.028
80.00	-27.13	0.79	0.00	43.52	0.00	43.52	3405.14	804.36	2194.39	2278.92	0.95	0.12	0.12	0.027
85.00	-25.89	0.78	0.00	39.59	0.00	39.59	3291.10	777.42	2049.87	2127.87	1.09	0.13	0.13	0.026
90.00	-24.68	0.78	0.00	35.68	0.00	35.68	3177.06	750.49	1910.27	1981.99	1.23	0.14	0.14	0.026
90.08	-24.66	0.78	0.00	35.62	0.00	35.62	3175.31	750.07	1908.17	1979.79	1.24	0.14	0.14	0.026
94.99	-22.87	0.76	0.00	31.79	0.00	31.79	2237.53	529.97	1333.63	1385.41	1.39	0.15	0.15	0.033
95.00	-22.87	0.76	0.00	31.79	0.00	31.79	2237.45	529.94	1333.50	1385.30	1.39	0.15	0.15	0.033
100.00	-21.96	0.76	0.00	27.97	0.00	27.97	2161.96	510.70	1238.42	1289.46	1.55	0.16	0.16	0.032
105.00	-21.07	0.76	0.00	24.16	0.00	24.16	2080.50	491.46	1146.86	1193.63	1.73	0.18	0.18	0.030
110.00	-20.20	0.75	0.00	20.36	0.00	20.36	1999.05	472.22	1058.81	1101.50	1.92	0.19	0.19	0.029
113.00	-16.69	0.67	0.00	18.10	0.00	18.10	1950.17	460.67	1007.67	1048.00	2.04	0.19	0.19	0.026
115.00	-16.36	0.67	0.00	16.75	0.00	16.75	1917.59	452.97	974.28	1013.07	2.13	0.20	0.20	0.025
115.75	-16.24	0.67	0.00	16.25	0.00	16.25	1905.43	450.10	961.96	1000.18	2.16	0.20	0.20	0.025
120.00	-15.27	0.66	0.00	13.40	0.00	13.40	1004.62	265.50	557.83	520.86	2.34	0.21	0.21	0.041
120.00	-15.27	0.66	0.00	13.40	0.00	13.40	1004.60	265.49	557.80	520.83	2.34	0.21	0.21	0.041
123.00	-12.17	0.58	0.00	11.41	0.00	11.41	988.89	258.56	529.07	499.21	2.47	0.22	0.22	0.035
125.00	-11.98	0.59	0.00	10.24	0.00	10.24	978.11	253.94	510.34	484.88	2.56	0.22	0.22	0.033
130.00	-11.54	0.58	0.00	7.31	0.00	7.31	950.05	242.40	464.99	449.40	2.80	0.23	0.23	0.028
135.00	-11.10	0.58	0.00	4.39	0.00	4.39	920.43	230.85	421.75	414.48	3.06	0.24	0.24	0.023
138.00	-5.65	0.30	0.00	2.65	0.00	2.65	901.91	223.93	396.82	393.85	3.21	0.25	0.25	0.013
140.00	-5.53	0.29	0.00	2.06	0.00	2.06	889.25	219.31	380.62	380.25	3.31	0.25	0.25	0.012
142.00	-5.36	0.29	0.00	1.47	0.00	1.47	876.33	214.69	364.76	366.76	3.42	0.25	0.25	0.010
145.00	-5.17	0.29	0.00	0.59	0.00	0.59	856.50	207.76	341.60	346.79	3.58	0.25	0.25	0.008
147.00	0.00	0.27	0.00	0.00	0.00	0.00	842.96	203.15	326.59	333.65	3.68	0.25	0.25	0.000

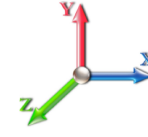
Seismic Segment Forces (Factored)

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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 + 1.0Ev + 1.0Eh						Iterations 22
Gust Response Factor	1.10			Sds	0.20	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.09	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.32	SA	0.03	Seismic Importance Factor 1.00



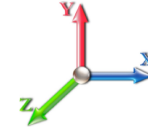
Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		1538.6	2.50	60.73	0.01	
10.00		1508.8	7.50	59.55	0.10	
15.00		1478.9	12.50	58.37	0.25	
20.00		1449.1	17.50	57.19	0.48	
25.00		1419.2	22.50	56.01	0.76	
30.00		1389.4	27.50	54.84	1.09	
35.00		1359.5	32.50	53.66	1.45	
40.00		1329.7	37.50	52.48	1.85	
45.00		1299.8	42.50	51.30	2.27	
46.58	Bot - Section 2	405.41	45.79	16.00	0.26	
50.00		1510.6	48.29	59.62	3.96	
52.50	Top - Section 1	1088.8	51.25	42.97	2.32	
55.00		563.60	53.75	22.24	0.68	
60.00		1107.6	57.50	43.71	3.02	
65.00		1081.4	62.50	42.68	3.40	
70.00	Appurtenance(s)	1272.3	67.50	50.22	5.49	
75.00		1026.9	72.50	40.53	4.13	
80.00		1000.8	77.50	39.50	4.48	
85.00		974.69	82.50	38.47	4.81	
90.00		948.58	87.50	37.44	5.13	
90.08	Bot - Section 3	14.34	90.04	0.57	0.00	
94.99	Top - Section 2	1421.1	92.53	56.09	12.87	
95.00		0.96	95.00	0.04	0.00	
100.00		712.38	97.50	28.12	3.59	
105.00		693.73	102.50	27.38	3.76	
110.00		675.08	107.50	26.64	3.92	
113.00	Appurtenance(s)	2814.4	111.50	111.08	73.30	
115.00		258.53	114.00	10.20	0.65	
115.75	Bot - Section 4	95.75	115.37	3.78	0.09	
120.00	Top - Section 3	759.92	117.87	29.99	5.97	
120.00		0.31	120.00	0.01	0.00	
123.00	Appurtenance(s)	2488.7	121.50	98.22	68.06	
125.00		142.92	124.00	5.64	0.23	
130.00		349.46	127.50	13.79	1.48	
135.00		338.27	132.50	13.35	1.50	
138.00	Appurtenance(s)	4386.7	136.50	173.13	266.90	
140.00		100.72	139.00	3.98	0.15	
142.00	Appurtenance(s)	135.43	141.00	5.35	0.27	
145.00		145.04	143.50	5.72	0.32	
147.00	Appurtenance(s)	4173.6	146.00	164.72	276.39	
Totals:		43,462.2		1,715.3	765.4	Total Wind: -38,428.9

Calculated Forces

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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 + 1.0Ev + 1.0Eh										Iterations 22
Gust Response Factor 1.10					Sds 0.20					Ss 0.18
Dead Load Factor 0.90			Seismic Load Factor 1.00			Sd1 0.09			S1 0.06	
Wind Load Factor 0.00		Structure Frequency (f1) 0.32		SA 0.03		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	-41.38	0.77	0.00	105.61	0.00	105.61	5817.07	1385.62	5697.75	5886.84	0.00	0.00	0.00	0.025
5.00	-39.92	0.77	0.00	101.78	0.00	101.78	5722.22	1354.83	5447.37	5660.89	0.00	0.01	0.01	0.025
10.00	-38.48	0.78	0.00	97.92	0.00	97.92	5605.12	1324.04	5202.61	5417.75	0.01	0.01	0.01	0.025
15.00	-37.07	0.78	0.00	94.05	0.00	94.05	5474.78	1293.26	4963.48	5167.45	0.03	0.02	0.02	0.025
20.00	-35.69	0.78	0.00	90.15	0.00	90.15	5344.45	1262.47	4729.98	4923.06	0.05	0.03	0.03	0.025
25.00	-34.33	0.78	0.00	86.24	0.00	86.24	5214.12	1231.68	4502.10	4684.60	0.08	0.03	0.03	0.025
30.00	-33.01	0.79	0.00	82.32	0.00	82.32	5083.79	1200.90	4279.85	4452.05	0.12	0.04	0.04	0.025
35.00	-31.71	0.79	0.00	78.39	0.00	78.39	4953.46	1170.11	4063.22	4225.43	0.16	0.05	0.05	0.025
40.00	-30.44	0.79	0.00	74.45	0.00	74.45	4823.13	1139.32	3852.22	4004.72	0.22	0.05	0.05	0.025
45.00	-29.19	0.79	0.00	70.50	0.00	70.50	4692.80	1108.54	3646.84	3789.94	0.28	0.06	0.06	0.025
46.58	-28.81	0.79	0.00	69.25	0.00	69.25	4651.53	1098.79	3582.98	3723.16	0.30	0.06	0.06	0.025
50.00	-27.37	0.79	0.00	66.55	0.00	66.55	4562.47	1077.75	3447.09	3581.08	0.35	0.07	0.07	0.025
52.50	-26.34	0.78	0.00	64.59	0.00	64.59	4032.35	952.52	3077.24	3202.34	0.38	0.07	0.07	0.027
55.00	-25.80	0.79	0.00	62.63	0.00	62.63	3975.33	939.05	2990.83	3111.91	0.42	0.08	0.08	0.027
60.00	-24.74	0.79	0.00	58.70	0.00	58.70	3861.29	912.12	2821.69	2934.96	0.51	0.09	0.09	0.026
65.00	-23.70	0.78	0.00	54.77	0.00	54.77	3747.25	885.18	2657.48	2763.18	0.60	0.09	0.09	0.026
70.00	-22.48	0.78	0.00	50.85	0.00	50.85	3633.21	858.24	2498.19	2596.58	0.71	0.10	0.10	0.026
75.00	-21.50	0.78	0.00	46.95	0.00	46.95	3519.17	831.30	2343.83	2435.16	0.82	0.11	0.11	0.025
80.00	-20.54	0.77	0.00	43.06	0.00	43.06	3405.14	804.36	2194.39	2278.92	0.94	0.12	0.12	0.025
85.00	-19.60	0.77	0.00	39.19	0.00	39.19	3291.10	777.42	2049.87	2127.87	1.08	0.13	0.13	0.024
90.00	-18.69	0.77	0.00	35.34	0.00	35.34	3177.06	750.49	1910.27	1981.99	1.22	0.14	0.14	0.024
90.08	-18.67	0.77	0.00	35.28	0.00	35.28	3175.31	750.07	1908.17	1979.79	1.22	0.14	0.14	0.024
94.99	-17.32	0.75	0.00	31.51	0.00	31.51	2237.53	529.97	1333.63	1385.41	1.37	0.15	0.15	0.030
95.00	-17.32	0.75	0.00	31.50	0.00	31.50	2237.45	529.94	1333.50	1385.30	1.37	0.15	0.15	0.030
100.00	-16.63	0.75	0.00	27.74	0.00	27.74	2161.96	510.70	1238.42	1289.46	1.54	0.16	0.16	0.029
105.00	-15.96	0.75	0.00	23.98	0.00	23.98	2080.50	491.46	1146.86	1193.63	1.71	0.17	0.17	0.028
110.00	-15.30	0.75	0.00	20.23	0.00	20.23	1999.05	472.22	1058.81	1101.50	1.90	0.19	0.19	0.026
113.00	-12.64	0.66	0.00	18.00	0.00	18.00	1950.17	460.67	1007.67	1048.00	2.02	0.19	0.19	0.024
115.00	-12.39	0.66	0.00	16.67	0.00	16.67	1917.59	452.97	974.28	1013.07	2.10	0.20	0.20	0.023
115.75	-12.30	0.66	0.00	16.17	0.00	16.17	1905.43	450.10	961.96	1000.18	2.13	0.20	0.20	0.023
120.00	-11.57	0.66	0.00	13.35	0.00	13.35	1004.62	265.50	557.83	520.86	2.31	0.21	0.21	0.037
120.00	-11.57	0.66	0.00	13.35	0.00	13.35	1004.60	265.49	557.80	520.83	2.31	0.21	0.21	0.037
123.00	-9.22	0.58	0.00	11.37	0.00	11.37	988.89	258.56	529.07	499.21	2.45	0.21	0.21	0.032
125.00	-9.08	0.58	0.00	10.21	0.00	10.21	978.11	253.94	510.34	484.88	2.54	0.22	0.22	0.030
130.00	-8.74	0.58	0.00	7.30	0.00	7.30	950.05	242.40	464.99	449.40	2.77	0.23	0.23	0.025
135.00	-8.41	0.58	0.00	4.39	0.00	4.39	920.43	230.85	421.75	414.48	3.02	0.24	0.24	0.020
138.00	-4.28	0.30	0.00	2.65	0.00	2.65	901.91	223.93	396.82	393.85	3.17	0.24	0.24	0.011
140.00	-4.19	0.29	0.00	2.06	0.00	2.06	889.25	219.31	380.62	380.25	3.28	0.25	0.25	0.010
142.00	-4.06	0.29	0.00	1.47	0.00	1.47	876.33	214.69	364.76	366.76	3.38	0.25	0.25	0.009
145.00	-3.92	0.29	0.00	0.59	0.00	0.59	856.50	207.76	341.60	346.79	3.54	0.25	0.25	0.006
147.00	0.00	0.28	0.00	0.00	0.00	0.00	842.96	203.15	326.59	333.65	3.64	0.25	0.25	0.000

Final Analysis Summary

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 29
	Struct Class: II	



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 + 1.0W 130 mph Wind	38.5	0.00	52.81	0.00	0.00	4333.57
1.2D + 1.0W 130 mph Wind at 30°	33.4	19.27	52.81	2166.95	0.10	3753.12
1.2D + 1.0W 130 mph Wind at 60°	19.3	33.38	52.81	3753.11	0.09	2166.96
1.2D + 1.0W 130 mph Wind at 90°	0.0	38.54	52.81	4333.57	0.00	0.00
1.2D + 1.0W 130 mph Wind at 120°	19.3	33.38	52.81	3753.11	0.09	2166.96
1.2D + 1.0W 130 mph Wind at 150°	33.4	19.27	52.81	2166.95	0.10	3753.12
1.2D + 1.0W 130 mph Wind at 180°	38.5	0.00	52.81	0.00	0.00	4333.57
1.2D + 1.0W 130 mph Wind at 210°	33.4	19.27	52.81	2166.95	0.10	3753.12
1.2D + 1.0W 130 mph Wind at 240°	19.3	33.38	52.81	3753.11	0.09	2166.96
1.2D + 1.0W 130 mph Wind at 270°	0.0	38.54	52.81	4333.57	0.00	0.00
1.2D + 1.0W 130 mph Wind at 300°	19.3	33.38	52.81	3753.11	0.09	2166.96
1.2D + 1.0W 130 mph Wind at 330°	33.4	19.27	52.81	2166.95	0.10	3753.12
0.9D + 1.0W 130 mph Wind	38.5	0.00	39.59	0.00	0.00	4272.96
0.9D + 1.0W 130 mph Wind at 30°	33.4	19.26	39.59	2136.60	0.09	3700.59
0.9D + 1.0W 130 mph Wind at 60°	19.3	33.35	39.59	3700.59	0.09	2136.60
0.9D + 1.0W 130 mph Wind at 90°	0.0	38.51	39.59	4272.96	0.00	0.00
0.9D + 1.0W 130 mph Wind at 120°	19.3	33.35	39.59	3700.59	0.09	2136.60
0.9D + 1.0W 130 mph Wind at 150°	33.4	19.26	39.59	2136.60	0.09	3700.59
0.9D + 1.0W 130 mph Wind at 180°	38.5	0.00	39.59	0.00	0.00	4272.96
0.9D + 1.0W 130 mph Wind at 210°	33.4	19.26	39.59	2136.60	0.09	3700.59
0.9D + 1.0W 130 mph Wind at 240°	19.3	33.35	39.59	3700.59	0.09	2136.60
0.9D + 1.0W 130 mph Wind at 270°	0.0	38.51	39.59	4272.96	0.00	0.00
0.9D + 1.0W 130 mph Wind at 300°	19.3	33.35	39.59	3700.59	0.09	2136.60
0.9D + 1.0W 130 mph Wind at 330°	33.4	19.26	39.59	2136.60	0.09	3700.59
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.2	0.00	56.25	0.00	0.00	758.75
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	3.59	56.25	379.43	0.00	657.19
1.2D + 1.0Di + 1.0Wi 50 mph Wind	3.6	6.21	56.25	657.19	0.00	379.43
1.2D + 1.0Di + 1.0Wi 50 mph Wind	0.0	7.18	56.25	758.75	0.00	0.00
1.2D + 1.0Di + 1.0Wi 50 mph Wind	3.6	6.21	56.25	657.19	0.00	379.43
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	3.59	56.25	379.43	0.00	657.19
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.2	0.00	56.25	0.00	0.00	758.75
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	3.59	56.25	379.43	0.00	657.19
1.2D + 1.0Di + 1.0Wi 50 mph Wind	3.6	6.21	56.25	657.19	0.00	379.43
1.2D + 1.0Di + 1.0Wi 50 mph Wind	0.0	7.18	56.25	758.75	0.00	0.00
1.2D + 1.0Di + 1.0Wi 50 mph Wind	3.6	6.21	56.25	657.19	0.00	379.43
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	3.59	56.25	379.43	0.00	657.19
1.0D + 1.0W 60 mph Wind	7.4	0.00	44.07	0.00	0.00	826.99
1.0D + 1.0W 60 mph Wind at 30°	6.4	3.70	44.07	413.55	0.00	716.30
1.0D + 1.0W 60 mph Wind at 60°	3.7	6.41	44.07	716.30	0.00	413.55
1.0D + 1.0W 60 mph Wind at 90°	0.0	7.40	44.07	826.99	0.00	0.00
1.0D + 1.0W 60 mph Wind at 120°	3.7	6.41	44.07	716.30	0.00	413.55
1.0D + 1.0W 60 mph Wind at 150°	6.4	3.70	44.07	413.55	0.00	716.30
1.0D + 1.0W 60 mph Wind at 180°	7.4	0.00	44.07	0.00	0.00	826.99
1.0D + 1.0W 60 mph Wind at 210°	6.4	3.70	44.07	413.55	0.00	716.30
1.0D + 1.0W 60 mph Wind at 240°	3.7	6.41	44.07	716.30	0.00	413.55
1.0D + 1.0W 60 mph Wind at 270°	0.0	7.40	44.07	826.99	0.00	0.00
1.0D + 1.0W 60 mph Wind at 300°	3.7	6.41	44.07	716.30	0.00	413.55

Final Analysis Summary

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (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



Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.0D + 1.0W 60 mph Wind at 330°	6.4	3.70	44.07	413.55	0.00	716.30
1.2D + 1.0Ev + 1.0Eh	0.8	0.00	54.68	0.00	0.00	106.73
0.9D + 1.0Ev + 1.0Eh	0.8	0.00	41.38	0.00	0.00	105.61

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 + 1.0W 130 mph Wind	-12.14	-21.43	0.00	-393.81	0.00	393.81	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 30°	-12.14	-18.60	0.01	-341.78	-195.73	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 60°	-12.14	-10.78	-0.01	-198.17	-340.37	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 90°	-12.14	0.00	0.00	0.00	-393.81	393.81	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 120°	-12.14	10.78	0.01	198.17	-340.37	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 150°	-12.14	18.60	-0.01	341.78	-195.73	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 180°	-12.14	21.43	0.00	393.81	0.00	393.81	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 210°	-12.14	18.60	0.01	341.78	195.73	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 240°	-12.14	10.78	-0.01	198.17	340.37	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 270°	-12.14	0.00	0.00	0.00	393.81	393.81	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 300°	-12.14	-10.78	0.01	-198.17	340.37	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
1.2D + 1.0W 130 mph Wind at 330°	-12.14	-18.60	-0.01	-341.78	195.73	393.86	1004.62	265.50	557.83	520.86	120.00	0.775
0.9D + 1.0W 130 mph Wind	-8.53	-20.94	0.00	-384.20	0.00	384.20	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 30°	-8.53	-18.17	0.01	-333.40	-190.99	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 60°	-8.53	-10.53	-0.01	-193.27	-332.08	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 90°	-8.53	0.00	0.00	0.00	-384.20	384.20	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 120°	-8.53	10.53	0.01	193.27	-332.08	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 150°	-8.53	18.17	-0.01	333.40	-190.99	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 180°	-8.53	20.94	0.00	384.20	0.00	384.20	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 210°	-8.53	18.17	0.01	333.40	190.99	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 240°	-8.53	10.53	-0.01	193.27	332.08	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 270°	-8.53	0.00	0.00	0.00	384.20	384.20	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 300°	-8.53	-10.53	0.01	-193.27	332.08	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
0.9D + 1.0W 130 mph Wind at 330°	-8.53	-18.17	-0.01	-333.40	190.99	384.23	1004.62	265.50	557.83	520.86	120.00	0.752
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	-7.18	0.00	-758.75	0.00	758.75	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	-6.21	0.00	-657.19	-379.43	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	-3.59	0.00	-379.43	-657.19	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	0.00	0.00	0.00	-758.75	758.75	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	3.59	0.00	379.43	-657.19	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	6.21	0.00	657.19	-379.43	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	7.18	0.00	758.75	0.00	758.75	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	6.21	0.00	657.19	379.43	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	3.59	0.00	379.43	657.19	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	0.00	0.00	0.00	758.75	758.75	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	-3.59	0.00	-379.43	657.19	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.25	-6.21	0.00	-657.19	379.43	758.86	5817.07	1385.6	5697.75	5886.84	0.00	0.139
1.0D + 1.0W 60 mph Wind	-12.22	-4.06	0.00	-74.53	0.00	74.53	1004.62	265.50	557.83	520.86	120.00	0.155
1.0D + 1.0W 60 mph Wind at 30°	-12.22	-3.52	0.00	-64.56	-37.26	74.54	1004.62	265.50	557.83	520.86	120.00	0.156

Final Analysis Summary

Structure: CO46077-A-SBA	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 31
	Struct Class: II	



Reactions


Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)							
1.0D + 1.0W 60 mph Wind at 60°	-12.22	-2.03	0.00	-37.28	-64.55	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.0D + 1.0W 60 mph Wind at 90°	-12.22	0.00	0.00	0.00	-74.53	74.53	1004.62	265.50	557.83	520.86	120.00	0.155	
1.0D + 1.0W 60 mph Wind at 120°	-12.22	2.03	0.00	37.28	-64.55	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.0D + 1.0W 60 mph Wind at 150°	-12.22	3.52	0.00	64.56	-37.26	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.0D + 1.0W 60 mph Wind at 180°	-12.22	4.06	0.00	74.53	0.00	74.53	1004.62	265.50	557.83	520.86	120.00	0.155	
1.0D + 1.0W 60 mph Wind at 210°	-12.22	3.52	0.00	64.56	37.26	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.0D + 1.0W 60 mph Wind at 240°	-12.22	2.03	0.00	37.28	64.55	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.0D + 1.0W 60 mph Wind at 270°	-12.22	0.00	0.00	0.00	74.53	74.53	1004.62	265.50	557.83	520.86	120.00	0.155	
1.0D + 1.0W 60 mph Wind at 300°	-12.22	-2.03	0.00	-37.28	64.55	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.0D + 1.0W 60 mph Wind at 330°	-12.22	-3.52	0.00	-64.56	37.26	74.54	1004.62	265.50	557.83	520.86	120.00	0.156	
1.2D + 1.0Ev + 1.0Eh	-15.27	0.66	0.00	13.40	0.00	13.40	1004.62	265.50	557.83	520.86	120.00	0.041	
0.9D + 1.0Ev + 1.0Eh	-11.57	0.66	0.00	13.35	0.00	13.35	1004.62	265.50	557.83	520.86	120.00	0.037	
0.480													

Base Plate Summary

Structure: CO46077-A-S	Code: TIA-222-H	3/16/2026
Site Name: Pikes Peak Raceway	Exposure: C	1.9.2.9.447
Height: 147.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 32



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 57.48
Moment (kip-ft): 3902.10	Width (in): 63.48	Number Bolts: 20.00
Axial (kip): 40.88	Style: Polygon	Bolt Type: 2.25" 18J
Shear (kip): 36.78	Polygon Sides: 16.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.0W 60° Wind)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 4333.77	Effective Len (in): 11.72	Ultimate (ksi): 100.00
Axial (kip): 52.81	Moment (kip-in): 686.63	Arrangement: Radial
Shear (kip): 38.55	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 46.17	Start Angle (deg): 0.00
	Stress Ratio: 0.57	Compression
		Force (kip): 183.59
		Allowable (kip): 268.39
		Ratio: 0.68
		Tension
		Force (kip): 178.31
		Allowable (kip): 243.75
		Ratio: 0.73

	Monopole Mat Foundation Design			3/16/2026
	Customer Name:	Verizon	TIA Standard:	TIA-222-H
	Site Name:		Structure Height (Ft.):	147
	Site Number:	CO46077-A-SBA	Engineer Name:	Yathish Medi
	Engr. Number:	168402	Date:	3/16/2026

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

Base Reactions (Factored 1.2D+1.0W):

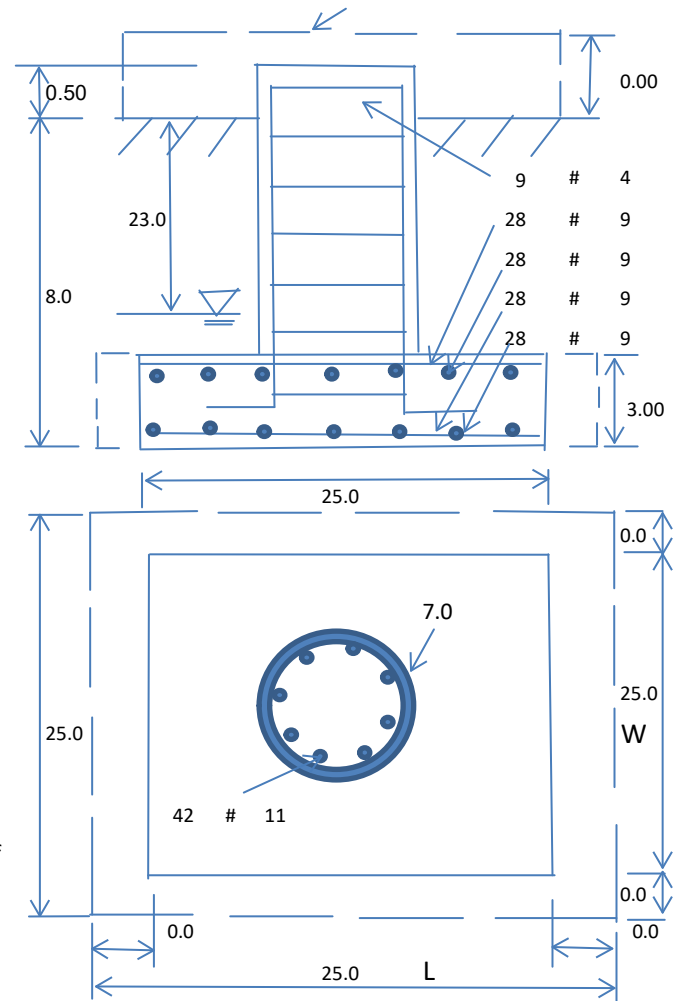
Axial Load (Kips):	52.8	Shear Force (Kips):	38.5
Uplift Force (Kips):		Moment (Kips-ft):	4333.8
Allowable overstress %:	5.0%		

Foundation Geometries:

Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	8.0	Mods required -Yes/No?:	No
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft.):	3.00		
Length of Pad (ft.):	25	Width of Pad (ft.):	25		
Pier Offset: (Along L side) (ft)	0	(Along W side) (ft)	0		

Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	42	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9.0	
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):	28	Qty. of Rebar in Pad (W):	28	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	28	Qty. of Rebar in Pad (W):	28	



Soil Design Parameters:

Soil Unit Weight (pcf):	115.0	Soil Buoyant Weight:	52.6	Pcf	
Water Table B.G.S. (ft):	23.0	Unit Weight of Water:	62.4	pcf	Uplift soil wedge angle from pad top: 15
Ultimate Bearing Pressure (psf):	5000	Ultimate Skin Friction:	0	psf	Soil C against concrete pad (psf): 0
Consider Friction for OTM (Y/N):	No				Soil φ against concrete pad: 30
Consider soil hor. resist. for OTM.:	No				

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	2932.58	Total Dry Soil Weight (Kips):	337.25
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	337.25	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2086.66	Total Dry Concrete Weight (Kips):	313.00
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	313.00	Total Vertical Load on Base (Kips):	703.05

Check Soil Capacities:

Calculated Maximum Net Soil Pressure under the base (psf):	1463	<	Allowable Factored Soil Bearing (psf):	3750	0.39	OK!
Foundation Overturning Resistance (kips-ft.):	8171	>	Design Overturning Moment (kips-ft):	4661	0.60	OK!

Check the capacities of Reinforcing in 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):	1.56	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	10073.1	> Design Factored Moment (Mu, Kips-Ft)	4545.6	0.45	OK!
Calculated Shear Capacity (Kips):	589.7	> Design Factored Shear (Kips):	38.5	0.07	OK!
Calculated Tension Capacity (Tn, Kips):	3538.1	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7261.5	> Design Factored Axial Load (Pu Kips):	52.8	0.01	OK!
Moment & Axial Strength Combination:	0.45	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.012	Reinforcement Ratio is satisfied per ACI			

(2) Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	799.5	> One-Way Factored Shear (L-D. Kips):	204.9	0.26	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	799.5	> One-Way Factored Shear (W-D., Kips):	204.9	0.26	OK!
One-Way Design Shear Capacity (Diagonal, Kips):	733.9	> One-Way Factored Shear (Diag., Kips):	192.3	0.26	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0026	Lower Steel Pad Reinf. Ratio (W-Direct.):	0.0026		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3948.8	> Moment at Bottom (L-Dir. K-Ft):	1318.1	0.33	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3948.8	> Moment at Bottom (W-Dir. K-Ft):	1318.1	0.33	OK!
Lower Steel Pad Moment Capacity (Diagonal,K-ft):	4478.8	> Moment at Bottom (Diagonal. K-Ft):	1387.1	0.31	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0026	Upper Steel Reinf. Ratio (W-Dir.):	0.0026		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	3948.8	> Moment at the top (L-Dir K-Ft):	1228.1	0.31	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	3948.8	> Moment at the top (W-Dir K-Ft):"	1331.5	0.34	OK!
Upper Steel Pad Moment Capacity (Diagonal, K-ft):	4478.8	> Moment at the top (Diagonal K-Ft):	1067.1	0.24	OK!

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

Moment transferred by punching shear:	1808.0	k-ft.	Max. factored shear stress (combined):	63.9	Psi
Max. factored shear stress (pier bending)	62.8	Psi	Factored shear Strength ϕv_n :	164.3	Psi
Max. factored shear stress (pier axial)	1.1	Psi	Check Usage of Punching Shear Capacity:	0.39	OK!

(4).Check Bending Capacity of the Pad Within the Effective Slab Width:

Overturning moment to be transferred by flexure:	2696.5	k-ft.	Effective Width for resisting OT moment:	16.0	ft.
Calculated # of Rebar in Effective width (Top + Bottom):	36		Actual number of Rebar in Effective width:	36	
Steel Pad Moment Capacity (Kips-ft):	5076.2	k-ft.	Check Usage of the Flexure Capacity:	0.53	OK!