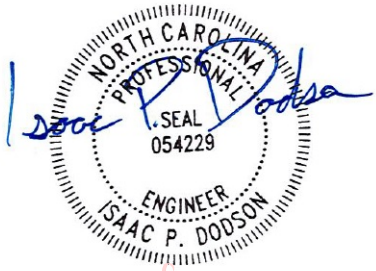
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	195 ft Monopole
ATC Asset Name	:	SPOUT SPRINGS NC
ATC Asset Number	:	280251
Engineering Number	:	14884017_C3_03
Proposed Carrier	:	AT&T MOBILITY
Carrier Site Name	:	368-389
Carrier Site Number	:	WSVWN0054969
Site Location	:	641 NC Hwy 24-87 Cameron, NC 27332-6191 35.2648° N, 79.0482° W
County	:	Harnett
Date	:	February 28, 2025
Max Usage	:	60%
Analysis Result	:	Pass



Isaac Dodson

Digitally signed by Isaac Dodson
Date: 2025.03.05 15:55:38 -05'00'

COA: P-1177

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 195 ft Monopole tower to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower:	Nello Corporation Drawing #205164, dated June 20, 2013
Foundation:	ATC Engineering File #537548E2, dated July 1, 2013
Geotechnical:	TEP Project #130596.10, dated June 26, 2013

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	118 mph (3-second gust)
Basic Wind Speed w/ Ice:	37 mph (3-second gust) w/ 0.62" radial ice concurrent
Code(s):	ANSI/TIA-222-I / 2015 IBC / 2018 North Carolina Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	S_{DS} = 0.18, S_{D1} = 0.11
Site Class:	Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact **Engineering@americantower.com** Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	59.7%	1.2D + 1.0W	Pass
Serviceability Usage	37.2%	1.0D + 1.0W	Pass
Base Plate @ 0.0 ft	48.1%	Rods	Pass
Pier	43.7%	Moment [Soil]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	3,737.0	50.6	30.8

Reactions shown reflect the results from the Load Case with maximum Moment excluding Overstrength Load Cases

Structure base reactions were analyzed using available geotechnical and foundation information.

AT&T MOBILITY Final Loading

Elev (ft)	Qty	Equipment	Lines
195.0	1	Raycap DC6-48-60-18-8C-EV (Enclosure)	(1) 0.78" (19.7mm) 8 AWG 6 (1) 2" conduit (1) 3/8" (0.38"- 9.5mm) RET Control Cable
	3	Light Sector Frame	
192.0	2	Raycap DC6-48-60-18-8C-EV (Enclosure)	(2) 0.39" (10mm) Fiber Trunk (3) 0.78" (19.7mm) 8 AWG 6 (1) 0.92" (23.4mm) Cable (1) 2" conduit
	3	Ericsson AIR 6472 B77G B77M (67.2lbs)	
	3	Ericsson RRUS 32 B30	
	3	Ericsson Radio 4490HP 44B5 44B12A C (20.6" Height)	
	3	Ericsson Radio 4494 44B14 20B29 M01	
	3	Ericsson Radio 4890HP B2/B25 B66	
	6	Kathrein Scala 840370799	

Install proposed lines inside the pole shaft.

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines
171.0	1	Platform with Handrails	-
	1	CellMax CMA-UBTULBULBHH/6516/16/21/21	(1) 1.75" (44.5mm) Hybrid
	1	Raycap RDIDC-9181-PF-48	
	2	JMA Wireless MX08FRO665-21	
	3	Fujitsu TA08025-B604	
	3	Fujitsu TA08025-B605	

(If table breaks across pages, please see previous page for data in merged cells)

Standard Conditions

All engineering services performed by A.T. Engineering Services, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Services, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Services, PLLC and used in the performance of our engineering services is correct and complete.

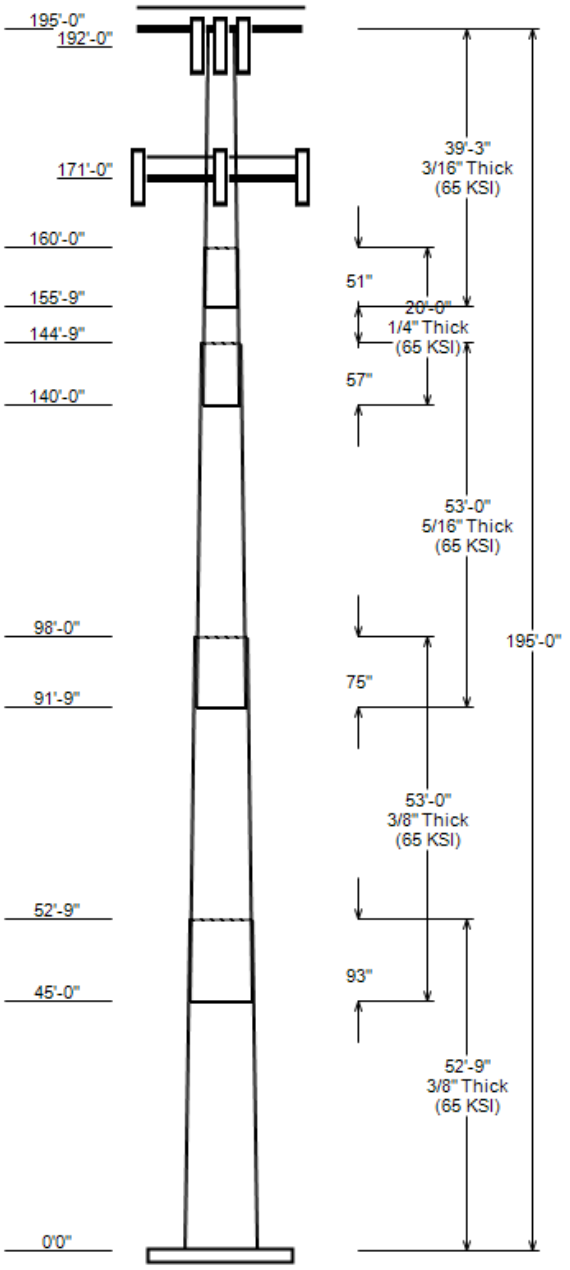
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Services, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Services, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Design Wind:	118 mph	**Ice Wind:**	37 mph w/ 0.6" ice	**Service Wind:**	60 mph
Risk Category:	II	**Exposure:**	C	**S_{D1}:** 0.110	**S_{DS}:** 0.180
Topo Factor:	Method 1	**Topo Feature:**	**Flat**		
Structure Height:	195.0 ft	**Base Elevation:**	0.00 ft	**Structure Type:**	Taper
Base Diameter:	66.38 in	**Base Rotation:**	0.00°	**Taper:**	0.2490 (in/ft)



POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in) Top	Flat Diameter (in) Bottom	Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
1	52.750	53.22	66.38	0.375		0.00	18 Sides	65
2	53.000	42.69	55.91	0.375	Slip Joint	93.00	18 Sides	65
3	53.000	31.66	44.87	0.312	Slip Joint	75.00	18 Sides	65
4	20.000	28.35	33.34	0.250	Slip Joint	57.00	18 Sides	65
5	39.250	20.00	29.79	0.188	Slip Joint	51.00	18 Sides	65

DISCRETE APPURTENANCE

Elev (ft)	Description
195.0	(1) Raycap DC6-48-60-18-8C-EV (Enclo
195.0	(3) Generic Flat Light Sector Frame
192.0	(3) Ericsson Radio 4890HP B2/B25 B66
192.0	(6) Kathrein Scala 840370799
192.0	(3) Ericsson Radio 4494 44B14 20B29 M
192.0	(3) Ericsson Radio 4490HP 44B5 44B12
192.0	(3) Ericsson AIR 6472 B77G B77M (67.2l
192.0	(2) Raycap DC6-48-60-18-8C-EV (Enclo
192.0	(3) Ericsson RRUS 32 B30
171.0	(3) Fujitsu TA08025-B605
171.0	(3) Fujitsu TA08025-B604
171.0	(2) JMA Wireless MX08FRO665-21
171.0	(1) Generic Flat Platform with Handrails
171.0	(1) CellMax CMA-UBTULBULBHH/6516/
171.0	(1) Raycap RDIDC-9181-PF-48

LINEAR APPURTENANCE

Elev To (ft)	Description
195.0	(1) 2" conduit
195.0	(1) 0.38" Cable
195.0	(1) 3/8" (0.38"- 9.5mm) RET Control Cabl
195.0	(1) 0.78" (19.7mm) 8 AWG 6
192.0	(3) 0.78" (19.7mm) 8 AWG 6
192.0	(2) 0.39" (10mm) Fiber Trunk
192.0	(1) 0.92" (23.4mm) Cable
192.0	(1) 2" conduit
171.0	(1) 1.75" (44.5mm) Hybrid

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	3737.04	50.64	30.75
0.9D + 1.0W	3699.73	37.97	30.74
1.2D + 1.0Di + 1.0Wi	544.72	59.52	4.68
1.2D + 1.0Ev + 1.0Eh	195.74	50.47	1.27
0.9D - 1.0Ev + 1.0Eh	193.12	35.28	1.27
1.0D + 1.0W	859.48	42.22	7.11

ANALYSIS PARAMETERS

Location:	Harnett County,NC	**Height:**	195 ft
Type and Shape:	Taper, 18 Sides	**Base Diameter:**	66.38 in
Manufacturer:	Undetermined	**Top Diameter:**	20.00 in
K_d (non-service):	0.95	**Taper:**	0.2490 in/ft
K_e:	0.99	**Rotation:**	0.000º

ICE & WIND PARAMETERS

Risk Category:	II	**Design Wind Speed:**	118 mph
Exposure Category:	C	**Design Wind Speed w/ Ice:**	37 mph
Design Ice Thickness:	0.62 in		
Topo Factor Procedure:	Method 1		
Crest Height(H):	0 ft	**Service Wind Speed:**	60 mph
Crest Length(L):	0 ft	**HMSL:**	334.00 ft
Feature:	Flat	**Distance from Apex (x):**	0 ft
		Upwind/Downwind:	

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	Default		**Period Based on Rayleigh Method (sec):**		2.50
T_L (sec):	8	**P:**	1	**C_s:**	0.030
S_{ds}:	0.180	**S_{d1}:**	0.110	**C_s Max:**	0.030
				C_s Min:	0.030

LOAD CASES

1.2D + 1.0W	118 mph Wind with No Ice
0.9D + 1.0W	118 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	37 mph Wind with 0.62" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice
1.2D + 1.0Ev + 1.5Eh	Seismic Overstrength
0.9D - 1.0Ev + 1.5Eh	Seismic Overstrength (Reduced DL)

SHAFT SECTION PROPERTIES

							Bottom						Top						
Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	52.75	0.3750	65		0.00	12,696	66.38	0.000	78.56	43,242.0	29.80	177.01	53.22	52.75	62.90	22,197.	23.62	141.93	0.2494
2-18	53.00	0.3750	65	Slip	93.00	10,502	55.91	45.000	66.10	25,752.6	24.88	149.09	42.69	98.00	50.36	11,393.	18.66	113.84	0.2494
3-18	53.00	0.3125	65	Slip	75.00	6,789	44.87	91.750	44.20	11,088.5	23.91	143.60	31.66	144.75	31.09	3,858.9	16.45	101.30	0.2494
4-18	20.00	0.2500	65	Slip	57.00	1,652	33.34	140.000	26.26	3,632.6	22.11	133.36	28.35	160.00	22.30	2,225.2	18.59	113.42	0.2494
5-18	39.25	0.1875	65	Slip	51.00	1,964	29.79	155.750	17.62	1,950.1	26.60	158.87	20.00	195.00	11.79	584.7	17.40	106.67	0.2494
			Total Shaft Weight			**33,603**													

DISCRETE APPURTENANCE PROPERTIES

					No Ice			Ice		
Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	EPAa (sf)	Orientation Factor	Weight (lb)	EPAa (sf)	Orientation Factor
195.00	Raycap DC6-48-60-18-8C-EV (Enc	1	0.80	0.000	16.00	2.687	1.00	51.63	3.172	1.00
195.00	Generic Flat Light Sector Fram	3	0.75	0.000	400.00	17.900	0.67	527.87	24.311	0.67
192.00	Ericsson Radio 4890HP B2/B25 B	3	0.80	0.000	68.00	2.217	0.67	93.49	2.632	0.67
192.00	Kathrein Scala 840370799	6	0.80	0.000	105.80	13.661	0.65	214.51	15.240	0.65
192.00	Ericsson AIR 6472 B77G B77M (6	3	0.80	0.000	67.20	4.779	0.65	116.11	5.432	0.65
192.00	Ericsson RRUS 32 B30	3	0.80	0.000	60.00	2.743	0.67	91.22	3.239	0.67
192.00	Raycap DC6-48-60-18-8C-EV (Enc	2	0.80	0.000	16.00	2.687	0.67	51.58	3.172	0.67
192.00	Ericsson Radio 4490HP 44B5 44B	3	0.80	0.000	65.00	2.678	0.67	94.65	3.136	0.67
192.00	Ericsson Radio 4494 44B14 20B2	3	0.80	0.000	57.30	2.202	0.67	80.62	2.616	0.67
171.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	101.28	2.348	0.50
171.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	45.72	2.245	1.00
171.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3245.27	51.198	1.00
171.00	CellMax CMA-UBTULBULBHH/6516/1	1	0.75	0.000	105.00	16.235	1.00	237.78	17.464	1.00
171.00	JMA Wireless MX08FRO665-21	2	0.75	0.000	64.50	12.489	0.73	172.33	13.668	0.73
171.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	88.36	2.348	0.50
Totals	**Row Count: 15**	**38**			**6,007.90**			**8,896.08**		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	195.00	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	195.00	1	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	195.00	1	3/8" (0.38"- 9.5mm) R	0.38	0.23	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	195.00	1	0.38" Cable	0.38	0.23	N	0	0	0	0	0	N	AT&T Mobility
0.00	192.00	3	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	192.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	192.00	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	192.00	1	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	171.00	1	1.75" (44.5mm) Hybrid	1.75	2.72	N	0	0	0	0	0	N	DISH WIRELESS L.L.C.

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	66.380	78.560	43,242.00	29.80	177.01	66.3	1283.1	0.0	0.0
5.00		0.3750	65.133	77.076	40,837.30	29.22	173.69	67	1234.9	0.0	1,324.0
10.00		0.3750	63.886	75.591	38,523.50	28.63	170.36	67.7	1187.7	0.0	1,298.7
15.00		0.3750	62.639	74.107	36,298.70	28.04	167.04	68.4	1141.4	0.0	1,273.5
20.00		0.3750	61.392	72.623	34,161.30	27.46	163.71	69.1	1096.0	0.0	1,248.2
25.00		0.3750	60.145	71.139	32,109.50	26.87	160.39	69.8	1051.5	0.0	1,223.0
30.00		0.3750	58.898	69.655	30,141.60	26.28	157.06	70.5	1008.0	0.0	1,197.7
35.00		0.3750	57.652	68.171	28,255.70	25.70	153.74	71.2	965.3	0.0	1,172.5
40.00		0.3750	56.405	66.687	26,450.20	25.11	150.41	71.9	923.6	0.0	1,147.2
45.00	Bot - Section 2	0.3750	55.158	65.203	24,723.30	24.52	147.09	72.6	882.8	0.0	1,122.0
50.00		0.3750	53.911	63.719	23,073.20	23.94	143.76	73.2	843.0	0.0	2,208.6
52.75	Top - Section 1	0.3750	53.975	63.795	23,156.30	23.97	143.93	73.2	845.0	0.0	1,193.2
55.00		0.3750	53.414	63.127	22,436.60	23.70	142.44	73.5	827.3	0.0	485.9
60.00		0.3750	52.167	61.643	20,891.10	23.12	139.11	74.2	788.8	0.0	1,061.4
65.00		0.3750	50.920	60.159	19,418.30	22.53	135.79	74.9	751.1	0.0	1,036.2
70.00		0.3750	49.673	58.675	18,016.30	21.95	132.46	75.6	714.4	0.0	1,010.9
75.00		0.3750	48.426	57.191	16,683.50	21.36	129.14	76.3	678.6	0.0	985.7
80.00		0.3750	47.179	55.707	15,418.10	20.77	125.81	77	643.7	0.0	960.4
85.00		0.3750	45.932	54.223	14,218.40	20.19	122.49	77.7	609.7	0.0	935.2
90.00		0.3750	44.685	52.739	13,082.50	19.60	119.16	78.3	576.6	0.0	909.9
91.75	Bot - Section 3	0.3750	44.249	52.219	12,699.80	19.40	118.00	78.6	565.3	0.0	312.5
95.00		0.3750	43.438	51.254	12,008.90	19.01	115.84	79	544.5	0.0	1,056.5
98.00	Top - Section 2	0.3125	43.315	42.652	9,965.20	23.03	138.61	74.3	453.1	0.0	957.9
100.00		0.3125	42.817	42.157	9,622.40	22.75	137.01	74.6	442.6	0.0	288.6
105.00		0.3125	41.570	40.920	8,800.20	22.04	133.02	75.5	417.0	0.0	706.7
110.00		0.3125	40.323	39.684	8,026.10	21.34	129.03	76.3	392.0	0.0	685.7
115.00		0.3125	39.076	38.447	7,298.90	20.64	125.04	77.1	367.9	0.0	664.7
120.00		0.3125	37.829	37.210	6,616.90	19.93	121.05	78	344.5	0.0	643.6
125.00		0.3125	36.582	35.973	5,978.80	19.23	117.06	78.8	321.9	0.0	622.6
130.00		0.3125	35.335	34.737	5,383.10	18.53	113.07	79.6	300.1	0.0	601.5
135.00		0.3125	34.088	33.500	4,828.40	17.82	109.08	80.4	279.0	0.0	580.5
140.00	Bot - Section 4	0.3125	32.841	32.263	4,313.10	17.12	105.09	81.3	258.7	0.0	559.4
144.75	Top - Section 3	0.2500	32.157	25.317	3,256.30	21.27	128.63	76.4	199.5	0.0	928.8
145.00		0.2500	32.094	25.267	3,237.30	21.23	128.38	76.4	198.7	0.0	21.5
150.00		0.2500	30.847	24.278	2,871.70	20.35	123.39	77.5	183.4	0.0	421.5
155.00		0.2500	29.600	23.289	2,534.70	19.47	118.40	78.5	168.7	0.0	404.6
155.75	Bot - Section 5	0.2500	29.413	23.140	2,486.50	19.33	117.65	78.7	166.5	0.0	59.2
160.00	Top - Section 4	0.1875	28.728	16.985	1,748.00	25.61	153.22	71.3	119.8	0.0	578.8
165.00		0.1875	27.482	16.243	1,528.80	24.43	146.57	72.7	109.6	0.0	282.7
170.00		0.1875	26.235	15.501	1,328.70	23.26	139.92	74	99.8	0.0	270.0
171.00		0.1875	25.985	15.352	1,290.90	23.03	138.59	74.3	97.8	0.0	52.5
175.00		0.1875	24.988	14.759	1,146.90	22.09	133.27	75.4	90.4	0.0	204.9
180.00		0.1875	23.741	14.017	982.40	20.92	126.62	76.8	81.5	0.0	244.8
185.00		0.1875	22.494	13.275	834.50	19.74	119.97	78.2	73.1	0.0	232.2
190.00		0.1875	21.247	12.533	702.20	18.57	113.32	79.6	65.1	0.0	219.5
192.00		0.1875	20.748	12.236	653.50	18.10	110.66	80.1	62.0	0.0	84.3
195.00		0.1875	20.000	11.790	584.70	17.40	106.67	80.9	57.6	0.0	122.6
										Total:	**33,602.3**

CALCULATED FORCES

Load Case: 1.2D + 1.0W — 118 mph Wind with No Ice — 26 Iterations

Gust Response Factor: 1.10
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 (deg)	Ratio
0.00	-50.64	-30.75	0.00	-3,737.0	0.00	3,737.04	4,691.11	1,378.72	8,219.04	6,384.77	0	0	0.597
5.00	-48.90	-30.22	0.00	-3,583.3	0.00	3,583.28	4,650.32	1,352.68	7,911.46	6,209.02	0.07	-0.12	0.588
10.00	-47.20	-29.70	0.00	-3,432.2	0.00	3,432.16	4,607.70	1,326.63	7,609.75	6,032.96	0.26	-0.24	0.580

CALCULATED FORCES

15.00	-45.53	-29.18	0.00	-3,283.6	0.00	3,283.65	4,563.23	1,300.58	7,313.90	5,856.74	0.58	-0.37	0.571
20.00	-43.89	-28.64	0.00	-3,137.8	0.00	3,137.75	4,516.91	1,274.54	7,023.92	5,680.51	1.03	-0.49	0.563
25.00	-42.28	-28.07	0.00	-2,994.6	0.00	2,994.58	4,468.76	1,248.49	6,739.80	5,504.40	1.61	-0.62	0.554
30.00	-40.71	-27.49	0.00	-2,854.2	0.00	2,854.23	4,418.76	1,222.45	6,461.55	5,328.56	2.33	-0.75	0.545
35.00	-39.16	-26.90	0.00	-2,716.8	0.00	2,716.78	4,366.92	1,196.40	6,189.17	5,153.13	3.19	-0.88	0.537
40.00	-37.65	-26.29	0.00	-2,582.3	0.00	2,582.30	4,313.24	1,170.35	5,922.65	4,978.26	4.18	-1.01	0.528
45.00	-36.18	-25.68	0.00	-2,450.8	0.00	2,450.84	4,257.72	1,144.31	5,662.00	4,804.09	5.32	-1.15	0.519
50.00	-33.41	-25.16	0.00	-2,322.4	0.00	2,322.43	4,200.35	1,118.26	5,407.21	4,630.75	6.6	-1.29	0.510
52.75	-31.91	-24.83	0.00	-2,253.2	0.00	2,253.24	4,203.35	1,119.60	5,420.18	4,639.65	7.36	-1.36	0.494
55.00	-31.26	-24.38	0.00	-2,197.4	0.00	2,197.38	4,176.98	1,107.88	5,307.30	4,561.94	8.02	-1.43	0.490
60.00	-29.86	-23.75	0.00	-2,075.5	0.00	2,075.47	4,117.04	1,081.84	5,060.72	4,390.02	9.59	-1.56	0.481
65.00	-28.50	-23.11	0.00	-1,956.7	0.00	1,956.74	4,055.25	1,055.79	4,820.00	4,219.29	11.3	-1.7	0.471
70.00	-27.17	-22.48	0.00	-1,841.2	0.00	1,841.16	3,991.63	1,029.74	4,585.14	4,049.88	13.16	-1.84	0.462
75.00	-25.87	-21.85	0.00	-1,728.8	0.00	1,728.75	3,926.16	1,003.70	4,356.15	3,881.94	15.16	-1.98	0.452
80.00	-24.61	-21.23	0.00	-1,619.5	0.00	1,619.48	3,858.85	977.65	4,133.03	3,715.61	17.32	-2.12	0.443
85.00	-23.37	-20.61	0.00	-1,513.3	0.00	1,513.33	3,789.70	951.61	3,915.77	3,551.04	19.62	-2.27	0.433
90.00	-22.18	-20.18	0.00	-1,410.3	0.00	1,410.27	3,718.70	925.56	3,704.38	3,388.36	22.07	-2.42	0.423
91.75	-21.77	-19.88	0.00	-1,375.0	0.00	1,374.96	3,693.42	916.45	3,631.78	3,331.90	22.97	-2.47	0.419
95.00	-20.43	-19.47	0.00	-1,310.4	0.00	1,310.35	3,645.86	899.52	3,498.85	3,227.73	24.68	-2.57	0.412
98.00	-19.22	-19.13	0.00	-1,252.0	0.00	1,251.96	2,852.65	748.54	2,907.37	2,525.54	26.32	-2.66	0.503
100.00	-18.82	-18.73	0.00	-1,213.7	0.00	1,213.70	2,832.12	739.86	2,840.33	2,478.07	27.45	-2.72	0.497
105.00	-17.87	-18.14	0.00	-1,120.1	0.00	1,120.06	2,779.51	718.15	2,676.14	2,360.17	30.39	-2.89	0.482
110.00	-16.94	-17.56	0.00	-1,029.4	0.00	1,029.38	2,725.06	696.45	2,516.84	2,243.47	33.51	-3.06	0.466
115.00	-16.04	-16.99	0.00	-941.6	0.00	941.59	2,668.77	674.74	2,362.43	2,128.12	36.81	-3.24	0.449
120.00	-15.17	-16.42	0.00	-856.7	0.00	856.66	2,610.63	653.04	2,212.90	2,014.27	40.3	-3.41	0.432
125.00	-14.33	-15.87	0.00	-774.5	0.00	774.54	2,550.65	631.33	2,068.27	1,902.04	43.96	-3.59	0.413
130.00	-13.51	-15.33	0.00	-695.2	0.00	695.18	2,488.83	609.63	1,928.52	1,791.59	47.82	-3.76	0.394
135.00	-12.72	-14.80	0.00	-618.5	0.00	618.52	2,425.17	587.92	1,793.65	1,683.06	51.85	-3.94	0.373
140.00	-11.96	-14.29	0.00	-544.5	0.00	544.50	2,359.67	566.22	1,663.68	1,576.59	56.06	-4.11	0.351
144.75	-10.77	-13.97	0.00	-476.6	0.00	476.61	1,740.42	444.31	1,280.46	1,142.61	60.23	-4.27	0.424
145.00	-10.73	-13.73	0.00	-473.1	0.00	473.12	1,738.20	443.44	1,275.46	1,138.90	60.46	-4.28	0.423
150.00	-10.14	-13.25	0.00	-404.4	0.00	404.44	1,692.74	426.08	1,177.54	1,065.35	65.04	-4.47	0.387
155.00	-9.57	-12.95	0.00	-338.2	0.00	338.21	1,645.43	408.72	1,083.53	993.03	69.82	-4.66	0.347
155.75	-9.49	-12.73	0.00	-328.5	0.00	328.49	1,638.18	406.11	1,069.77	982.30	70.55	-4.68	0.341
160.00	-8.73	-12.28	0.00	-274.4	0.00	274.39	1,089.67	298.08	768.40	640.73	74.78	-4.83	0.438
165.00	-8.31	-11.83	0.00	-213.0	0.00	213.00	1,062.22	285.06	702.73	597.12	79.92	-4.99	0.366
170.00	-7.91	-11.56	0.00	-153.8	0.00	153.84	1,032.93	272.04	640.00	553.95	85.23	-5.16	0.287
171.00	-4.39	-7.21	0.00	-142.3	0.00	142.29	1,026.86	269.43	627.80	545.38	86.31	-5.19	0.266
175.00	-4.11	-6.84	0.00	-113.4	0.00	113.44	1,001.81	259.01	580.19	511.35	90.71	-5.3	0.227
180.00	-3.77	-6.43	0.00	-79.3	0.00	79.26	968.83	245.99	523.32	469.47	96.32	-5.42	0.173
185.00	-3.46	-6.04	0.00	-47.1	0.00	47.10	934.02	232.97	469.39	428.45	102.04	-5.51	0.114
190.00	-3.15	-5.77	0.00	-16.9	0.00	16.90	897.37	219.95	418.38	388.44	107.84	-5.57	0.048
192.00	-1.46	-1.79	0.00	-5.4	0.00	5.37	882.19	214.74	398.80	372.74	110.17	-5.58	0.016
195.00	0.00	-1.64	0.00	0.0	0.00	0.00	858.87	206.92	370.31	349.57	113.67	-5.58	0.000

CALCULATED FORCES

Load Case: 0.9D + 1.0W — 118 mph Wind with No Ice (Reduced DL) — 26 Iterations

Gust Response Factor: 1.10
Dead load Factor: 0.90
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 (deg)	Ratio
0.00	-37.97	-30.74	0.00	-3,699.7	0.00	3,699.73	4,691.11	1,378.72	8,219.04	6,384.77	0	0	0.588
5.00	-36.65	-30.18	0.00	-3,546.0	0.00	3,546.04	4,650.32	1,352.68	7,911.46	6,209.02	0.06	-0.12	0.579
10.00	-35.36	-29.64	0.00	-3,395.1	0.00	3,395.12	4,607.70	1,326.63	7,609.75	6,032.96	0.25	-0.24	0.571
15.00	-34.09	-29.09	0.00	-3,246.9	0.00	3,246.93	4,563.23	1,300.58	7,313.90	5,856.74	0.57	-0.36	0.562
20.00	-32.85	-28.52	0.00	-3,101.5	0.00	3,101.48	4,516.91	1,274.54	7,023.92	5,680.51	1.02	-0.49	0.554
25.00	-31.63	-27.94	0.00	-2,958.8	0.00	2,958.85	4,468.76	1,248.49	6,739.80	5,504.40	1.6	-0.61	0.545
30.00	-30.44	-27.34	0.00	-2,819.2	0.00	2,819.16	4,418.76	1,222.45	6,461.55	5,328.56	2.31	-0.74	0.536
35.00	-29.27	-26.73	0.00	-2,682.5	0.00	2,682.47	4,366.92	1,196.40	6,189.17	5,153.13	3.16	-0.87	0.528
40.00	-28.13	-26.11	0.00	-2,548.8	0.00	2,548.84	4,313.24	1,170.35	5,922.65	4,978.26	4.14	-1	0.519
45.00	-27.01	-25.48	0.00	-2,418.3	0.00	2,418.31	4,257.72	1,144.31	5,662.00	4,804.09	5.26	-1.14	0.510
50.00	-24.92	-24.96	0.00	-2,290.9	0.00	2,290.91	4,200.35	1,118.26	5,407.21	4,630.75	6.52	-1.27	0.501
52.75	-23.79	-24.62	0.00	-2,222.3	0.00	2,222.28	4,203.35	1,119.60	5,420.18	4,639.65	7.28	-1.35	0.485
55.00	-23.30	-24.17	0.00	-2,166.9	0.00	2,166.88	4,176.98	1,107.88	5,307.30	4,561.94	7.93	-1.41	0.481
60.00	-22.24	-23.52	0.00	-2,046.0	0.00	2,046.05	4,117.04	1,081.84	5,060.72	4,390.02	9.48	-1.55	0.472
65.00	-21.21	-22.88	0.00	-1,928.4	0.00	1,928.44	4,055.25	1,055.79	4,820.00	4,219.29	11.17	-1.68	0.463
70.00	-20.21	-22.24	0.00	-1,814.0	0.00	1,814.04	3,991.63	1,029.74	4,585.14	4,049.88	13.01	-1.82	0.453
75.00	-19.23	-21.61	0.00	-1,702.8	0.00	1,702.83	3,926.16	1,003.70	4,356.15	3,881.94	14.98	-1.96	0.444
80.00	-18.27	-20.98	0.00	-1,594.8	0.00	1,594.80	3,858.85	977.65	4,133.03	3,715.61	17.11	-2.1	0.434
85.00	-17.34	-20.35	0.00	-1,489.9	0.00	1,489.91	3,789.70	951.61	3,915.77	3,551.04	19.38	-2.24	0.425
90.00	-16.44	-19.92	0.00	-1,388.1	0.00	1,388.14	3,718.70	925.56	3,704.38	3,388.36	21.8	-2.38	0.415
91.75	-16.13	-19.62	0.00	-1,353.3	0.00	1,353.27	3,693.42	916.45	3,631.78	3,331.90	22.69	-2.44	0.411
95.00	-15.12	-19.21	0.00	-1,289.5	0.00	1,289.51	3,645.86	899.52	3,498.85	3,227.73	24.38	-2.53	0.404
98.00	-14.21	-18.89	0.00	-1,231.9	0.00	1,231.86	2,852.65	748.54	2,907.37	2,525.54	26	-2.62	0.493
100.00	-13.91	-18.48	0.00	-1,194.1	0.00	1,194.09	2,832.12	739.86	2,840.33	2,478.07	27.11	-2.68	0.487
105.00	-13.19	-17.88	0.00	-1,101.7	0.00	1,101.71	2,779.51	718.15	2,676.14	2,360.17	30.01	-2.85	0.472
110.00	-12.49	-17.30	0.00	-1,012.3	0.00	1,012.29	2,725.06	696.45	2,516.84	2,243.47	33.08	-3.02	0.456
115.00	-11.81	-16.73	0.00	-925.8	0.00	925.79	2,668.77	674.74	2,362.43	2,128.12	36.34	-3.19	0.440
120.00	-11.15	-16.17	0.00	-842.1	0.00	842.14	2,610.63	653.04	2,212.90	2,014.27	39.78	-3.37	0.423
125.00	-10.52	-15.62	0.00	-761.3	0.00	761.30	2,550.65	631.33	2,068.27	1,902.04	43.39	-3.54	0.405
130.00	-9.90	-15.08	0.00	-683.2	0.00	683.21	2,488.83	609.63	1,928.52	1,791.59	47.19	-3.71	0.386
135.00	-9.31	-14.55	0.00	-607.8	0.00	607.82	2,425.17	587.92	1,793.65	1,683.06	51.17	-3.88	0.366
140.00	-8.74	-14.05	0.00	-535.0	0.00	535.05	2,359.67	566.22	1,663.68	1,576.59	55.32	-4.05	0.344
144.75	-7.85	-13.74	0.00	-468.3	0.00	468.33	1,740.42	444.31	1,280.46	1,142.61	59.42	-4.21	0.415
145.00	-7.82	-13.50	0.00	-464.9	0.00	464.90	1,738.20	443.44	1,275.46	1,138.90	59.65	-4.22	0.414
150.00	-7.37	-13.02	0.00	-397.4	0.00	397.39	1,692.74	426.08	1,177.54	1,065.35	64.16	-4.4	0.378
155.00	-6.95	-12.73	0.00	-332.3	0.00	332.31	1,645.43	408.72	1,083.53	993.03	68.87	-4.59	0.340
155.75	-6.88	-12.50	0.00	-322.8	0.00	322.76	1,638.18	406.11	1,069.77	982.30	69.59	-4.61	0.334
160.00	-6.31	-12.06	0.00	-269.6	0.00	269.62	1,089.67	298.08	768.40	640.73	73.76	-4.76	0.428
165.00	-6.00	-11.62	0.00	-209.3	0.00	209.32	1,062.22	285.06	702.73	597.12	78.82	-4.91	0.358
170.00	-5.70	-11.35	0.00	-151.2	0.00	151.23	1,032.93	272.04	640.00	553.95	84.05	-5.08	0.280
171.00	-3.15	-7.09	0.00	-139.9	0.00	139.88	1,026.86	269.43	627.80	545.38	85.12	-5.11	0.260
175.00	-2.94	-6.72	0.00	-111.5	0.00	111.51	1,001.81	259.01	580.19	511.35	89.44	-5.22	0.222
180.00	-2.70	-6.32	0.00	-77.9	0.00	77.90	968.83	245.99	523.32	469.47	94.97	-5.34	0.169
185.00	-2.46	-5.94	0.00	-46.3	0.00	46.29	934.02	232.97	469.39	428.45	100.6	-5.43	0.111
190.00	-2.24	-5.67	0.00	-16.6	0.00	16.59	897.37	219.95	418.38	388.44	106.31	-5.48	0.046
192.00	-1.05	-1.75	0.00	-5.2	0.00	5.25	882.19	214.74	398.80	372.74	108.6	-5.49	0.015
195.00	0.00	-1.64	0.00	0.0	0.00	0.00	858.87	206.92	370.31	349.57	112.05	-5.49	0.000

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi — 37 mph Wind with 0.62" Radial Ice — 25 Iterations

Gust Response Factor: 1.10 — Ice Dead Load Factor 1.00
Dead load Factor: 1.20 — Ice Importance 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 (deg)	Ratio
0.00	-59.52	-4.68	0.00	-544.7	0.00	544.72	4,691.11	1,378.72	8,219.04	6,384.77	0	0	0.098
5.00	-57.65	-4.59	0.00	-521.3	0.00	521.33	4,650.32	1,352.68	7,911.46	6,209.02	0.01	-0.02	0.096
10.00	-55.79	-4.51	0.00	-498.4	0.00	498.36	4,607.70	1,326.63	7,609.75	6,032.96	0.04	-0.04	0.095
15.00	-53.96	-4.42	0.00	-475.8	0.00	475.82	4,563.23	1,300.58	7,313.90	5,856.74	0.08	-0.05	0.093
20.00	-52.15	-4.33	0.00	-453.7	0.00	453.70	4,516.91	1,274.54	7,023.92	5,680.51	0.15	-0.07	0.091
25.00	-50.37	-4.24	0.00	-432.0	0.00	432.03	4,468.76	1,248.49	6,739.80	5,504.40	0.23	-0.09	0.090
30.00	-48.62	-4.15	0.00	-410.8	0.00	410.82	4,418.76	1,222.45	6,461.55	5,328.56	0.34	-0.11	0.088
35.00	-46.91	-4.05	0.00	-390.1	0.00	390.09	4,366.92	1,196.40	6,189.17	5,153.13	0.46	-0.13	0.086
40.00	-45.22	-3.95	0.00	-369.8	0.00	369.85	4,313.24	1,170.35	5,922.65	4,978.26	0.61	-0.15	0.085
45.00	-43.57	-3.85	0.00	-350.1	0.00	350.10	4,257.72	1,144.31	5,662.00	4,804.09	0.77	-0.17	0.083
50.00	-40.61	-3.76	0.00	-330.8	0.00	330.85	4,200.35	1,118.26	5,407.21	4,630.75	0.96	-0.19	0.081
52.75	-39.01	-3.71	0.00	-320.5	0.00	320.50	4,203.35	1,119.60	5,420.18	4,639.65	1.07	-0.2	0.078
55.00	-38.29	-3.64	0.00	-312.2	0.00	312.15	4,176.98	1,107.88	5,307.30	4,561.94	1.16	-0.21	0.078
60.00	-36.72	-3.53	0.00	-294.0	0.00	293.97	4,117.04	1,081.84	5,060.72	4,390.02	1.39	-0.22	0.076
65.00	-35.18	-3.43	0.00	-276.3	0.00	276.31	4,055.25	1,055.79	4,820.00	4,219.29	1.63	-0.24	0.074
70.00	-33.67	-3.32	0.00	-259.2	0.00	259.17	3,991.63	1,029.74	4,585.14	4,049.88	1.9	-0.26	0.072
75.00	-32.20	-3.22	0.00	-242.6	0.00	242.56	3,926.16	1,003.70	4,356.15	3,881.94	2.19	-0.28	0.071
80.00	-30.76	-3.12	0.00	-226.5	0.00	226.46	3,858.85	977.65	4,133.03	3,715.61	2.49	-0.3	0.069
85.00	-29.35	-3.01	0.00	-210.9	0.00	210.88	3,789.70	951.61	3,915.77	3,551.04	2.82	-0.32	0.067
90.00	-27.98	-2.94	0.00	-195.8	0.00	195.82	3,718.70	925.56	3,704.38	3,388.36	3.17	-0.34	0.065
91.75	-27.51	-2.89	0.00	-190.7	0.00	190.67	3,693.42	916.45	3,631.78	3,331.90	3.3	-0.35	0.065
95.00	-26.06	-2.82	0.00	-181.3	0.00	181.27	3,645.86	899.52	3,498.85	3,227.73	3.55	-0.37	0.063
98.00	-24.75	-2.77	0.00	-172.8	0.00	172.80	2,852.65	748.54	2,907.37	2,525.54	3.78	-0.38	0.077
100.00	-24.30	-2.70	0.00	-167.3	0.00	167.26	2,832.12	739.86	2,840.33	2,478.07	3.94	-0.39	0.076
105.00	-23.18	-2.60	0.00	-153.8	0.00	153.75	2,779.51	718.15	2,676.14	2,360.17	4.36	-0.41	0.073
110.00	-22.09	-2.51	0.00	-140.7	0.00	140.73	2,725.06	696.45	2,516.84	2,243.47	4.8	-0.43	0.071
115.00	-21.04	-2.41	0.00	-128.2	0.00	128.20	2,668.77	674.74	2,362.43	2,128.12	5.27	-0.46	0.068
120.00	-20.01	-2.32	0.00	-116.1	0.00	116.14	2,610.63	653.04	2,212.90	2,014.27	5.76	-0.48	0.065
125.00	-19.02	-2.23	0.00	-104.6	0.00	104.55	2,550.65	631.33	2,068.27	1,902.04	6.27	-0.51	0.062
130.00	-18.05	-2.14	0.00	-93.4	0.00	93.42	2,488.83	609.63	1,928.52	1,791.59	6.82	-0.53	0.059
135.00	-17.12	-2.05	0.00	-82.7	0.00	82.74	2,425.17	587.92	1,793.65	1,683.06	7.38	-0.55	0.056
140.00	-16.21	-1.96	0.00	-72.5	0.00	72.51	2,359.67	566.22	1,663.68	1,576.59	7.97	-0.57	0.053
144.75	-14.88	-1.91	0.00	-63.2	0.00	63.20	1,740.42	444.31	1,280.46	1,142.61	8.56	-0.6	0.064
145.00	-14.84	-1.87	0.00	-62.7	0.00	62.72	1,738.20	443.44	1,275.46	1,138.90	8.59	-0.6	0.064
150.00	-14.11	-1.79	0.00	-53.4	0.00	53.38	1,692.74	426.08	1,177.54	1,065.35	9.23	-0.62	0.058
155.00	-13.41	-1.74	0.00	-44.4	0.00	44.45	1,645.43	408.72	1,083.53	993.03	9.89	-0.65	0.053
155.75	-13.30	-1.70	0.00	-43.2	0.00	43.15	1,638.18	406.11	1,069.77	982.30	9.99	-0.65	0.052
160.00	-12.42	-1.62	0.00	-35.9	0.00	35.93	1,089.67	298.08	768.40	640.73	10.58	-0.67	0.068
165.00	-11.87	-1.55	0.00	-27.8	0.00	27.82	1,062.22	285.06	702.73	597.12	11.3	-0.69	0.058
170.00	-11.34	-1.50	0.00	-20.1	0.00	20.09	1,032.93	272.04	640.00	553.95	12.03	-0.71	0.047
171.00	-6.60	-0.97	0.00	-18.6	0.00	18.60	1,026.86	269.43	627.80	545.38	12.18	-0.72	0.041
175.00	-6.21	-0.91	0.00	-14.7	0.00	14.72	1,001.81	259.01	580.19	511.35	12.79	-0.73	0.035
180.00	-5.74	-0.83	0.00	-10.2	0.00	10.19	968.83	245.99	523.32	469.47	13.56	-0.75	0.028
185.00	-5.28	-0.77	0.00	-6.0	0.00	6.02	934.02	232.97	469.39	428.45	14.35	-0.76	0.020
190.00	-4.85	-0.72	0.00	-2.2	0.00	2.18	897.37	219.95	418.38	388.44	15.15	-0.77	0.011
192.00	-1.96	-0.25	0.00	-0.7	0.00	0.74	882.19	214.74	398.80	372.74	15.47	-0.77	0.004
195.00	0.00	-0.22	0.00	0.0	0.00	0.00	858.87	206.92	370.31	349.57	15.95	-0.77	0.000

CALCULATED FORCES

Load Case: 1.0D + 1.0W 60 mph Wind with No Ice 25 Iterations

Gust Response Factor: 1.10
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 (deg)	Ratio
0.00	-42.22	-7.11	0.00	-859.5	0.00	859.48	4,691.11	1,378.72	8,219.04	6,384.77	0	0	0.144
5.00	-40.83	-6.99	0.00	-823.9	0.00	823.92	4,650.32	1,352.68	7,911.46	6,209.02	0.01	-0.03	0.142
10.00	-39.46	-6.86	0.00	-789.0	0.00	789.00	4,607.70	1,326.63	7,609.75	6,032.96	0.06	-0.06	0.139
15.00	-38.11	-6.74	0.00	-754.7	0.00	754.70	4,563.23	1,300.58	7,313.90	5,856.74	0.13	-0.08	0.137
20.00	-36.79	-6.61	0.00	-721.0	0.00	721.02	4,516.91	1,274.54	7,023.92	5,680.51	0.24	-0.11	0.135
25.00	-35.50	-6.47	0.00	-688.0	0.00	687.98	4,468.76	1,248.49	6,739.80	5,504.40	0.37	-0.14	0.133
30.00	-34.23	-6.34	0.00	-655.6	0.00	655.62	4,418.76	1,222.45	6,461.55	5,328.56	0.54	-0.17	0.131
35.00	-32.98	-6.20	0.00	-623.9	0.00	623.94	4,366.92	1,196.40	6,189.17	5,153.13	0.73	-0.2	0.129
40.00	-31.76	-6.05	0.00	-593.0	0.00	592.96	4,313.24	1,170.35	5,922.65	4,978.26	0.96	-0.23	0.126
45.00	-30.57	-5.91	0.00	-562.7	0.00	562.69	4,257.72	1,144.31	5,662.00	4,804.09	1.22	-0.26	0.124
50.00	-28.29	-5.79	0.00	-533.1	0.00	533.14	4,200.35	1,118.26	5,407.21	4,630.75	1.52	-0.3	0.122
52.75	-27.06	-5.71	0.00	-517.2	0.00	517.21	4,203.35	1,119.60	5,420.18	4,639.65	1.69	-0.31	0.118
55.00	-26.54	-5.61	0.00	-504.4	0.00	504.36	4,176.98	1,107.88	5,307.30	4,561.94	1.84	-0.33	0.117
60.00	-25.40	-5.46	0.00	-476.3	0.00	476.32	4,117.04	1,081.84	5,060.72	4,390.02	2.2	-0.36	0.115
65.00	-24.30	-5.31	0.00	-449.0	0.00	449.02	4,055.25	1,055.79	4,820.00	4,219.29	2.6	-0.39	0.112
70.00	-23.21	-5.17	0.00	-422.4	0.00	422.45	3,991.63	1,029.74	4,585.14	4,049.88	3.02	-0.42	0.110
75.00	-22.16	-5.02	0.00	-396.6	0.00	396.62	3,926.16	1,003.70	4,356.15	3,881.94	3.48	-0.46	0.108
80.00	-21.13	-4.88	0.00	-371.5	0.00	371.52	3,858.85	977.65	4,133.03	3,715.61	3.98	-0.49	0.105
85.00	-20.12	-4.73	0.00	-347.2	0.00	347.15	3,789.70	951.61	3,915.77	3,551.04	4.51	-0.52	0.103
90.00	-19.14	-4.63	0.00	-323.5	0.00	323.49	3,718.70	925.56	3,704.38	3,388.36	5.07	-0.55	0.101
91.75	-18.80	-4.56	0.00	-315.4	0.00	315.39	3,693.42	916.45	3,631.78	3,331.90	5.28	-0.57	0.100
95.00	-17.70	-4.47	0.00	-300.6	0.00	300.56	3,645.86	899.52	3,498.85	3,227.73	5.67	-0.59	0.098
98.00	-16.70	-4.39	0.00	-287.2	0.00	287.15	2,852.65	748.54	2,907.37	2,525.54	6.05	-0.61	0.120
100.00	-16.38	-4.30	0.00	-278.4	0.00	278.37	2,832.12	739.86	2,840.33	2,478.07	6.31	-0.62	0.118
105.00	-15.61	-4.16	0.00	-256.9	0.00	256.88	2,779.51	718.15	2,676.14	2,360.17	6.98	-0.66	0.114
110.00	-14.85	-4.03	0.00	-236.1	0.00	236.08	2,725.06	696.45	2,516.84	2,243.47	7.7	-0.7	0.111
115.00	-14.12	-3.90	0.00	-215.9	0.00	215.94	2,668.77	674.74	2,362.43	2,128.12	8.46	-0.74	0.107
120.00	-13.40	-3.77	0.00	-196.5	0.00	196.46	2,610.63	653.04	2,212.90	2,014.27	9.26	-0.78	0.103
125.00	-12.71	-3.64	0.00	-177.6	0.00	177.63	2,550.65	631.33	2,068.27	1,902.04	10.1	-0.82	0.098
130.00	-12.04	-3.51	0.00	-159.4	0.00	159.44	2,488.83	609.63	1,928.52	1,791.59	10.98	-0.86	0.094
135.00	-11.39	-3.39	0.00	-141.9	0.00	141.87	2,425.17	587.92	1,793.65	1,683.06	11.91	-0.9	0.089
140.00	-10.76	-3.28	0.00	-124.9	0.00	124.90	2,359.67	566.22	1,663.68	1,576.59	12.88	-0.94	0.084
144.75	-9.76	-3.20	0.00	-109.3	0.00	109.34	1,740.42	444.31	1,280.46	1,142.61	13.84	-0.98	0.101
145.00	-9.74	-3.15	0.00	-108.5	0.00	108.54	1,738.20	443.44	1,275.46	1,138.90	13.89	-0.98	0.101
150.00	-9.25	-3.04	0.00	-92.8	0.00	92.79	1,692.74	426.08	1,177.54	1,065.35	14.94	-1.03	0.093
155.00	-8.77	-2.97	0.00	-77.6	0.00	77.60	1,645.43	408.72	1,083.53	993.03	16.04	-1.07	0.084
155.75	-8.71	-2.92	0.00	-75.4	0.00	75.38	1,638.18	406.11	1,069.77	982.30	16.21	-1.07	0.082
160.00	-8.07	-2.82	0.00	-63.0	0.00	62.97	1,089.67	298.08	768.40	640.73	17.18	-1.11	0.106
165.00	-7.72	-2.71	0.00	-48.9	0.00	48.89	1,062.22	285.06	702.73	597.12	18.36	-1.14	0.089
170.00	-7.38	-2.65	0.00	-35.3	0.00	35.33	1,032.93	272.04	640.00	553.95	19.58	-1.18	0.071
171.00	-4.16	-1.66	0.00	-32.7	0.00	32.67	1,026.86	269.43	627.80	545.38	19.83	-1.19	0.064
175.00	-3.91	-1.57	0.00	-26.0	0.00	26.05	1,001.81	259.01	580.19	511.35	20.84	-1.22	0.055
180.00	-3.61	-1.48	0.00	-18.2	0.00	18.20	968.83	245.99	523.32	469.47	22.13	-1.24	0.043
185.00	-3.32	-1.39	0.00	-10.8	0.00	10.82	934.02	232.97	469.39	428.45	23.44	-1.26	0.029
190.00	-3.05	-1.33	0.00	-3.9	0.00	3.88	897.37	219.95	418.38	388.44	24.77	-1.28	0.013
192.00	-1.34	-0.41	0.00	-1.2	0.00	1.23	882.19	214.74	398.80	372.74	25.31	-1.28	0.005
195.00	0.00	-0.38	0.00	0.0	0.00	0.00	858.87	206.92	370.31	349.57	26.11	-1.28	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

Design Spectral Response Acceleration at Short Period (S_{ds}):	0.180
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.110
Long-Period Transition Period (T_L – Seconds):	8
Importance Factor (I_e):	1.000
Response Modification Coefficient (R):	1.500
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.500
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	42.230 k
Seismic Base Shear (E):	1.270 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	193.5	137	5,120	0.010	13	169
45	191	107	3,887	0.008	10	132
44	187.5	275	9,675	0.020	25	340
43	182.5	288	9,586	0.020	25	356
42	177.5	300	9,466	0.020	25	371
41	173	249	7,466	0.015	19	308
40	170.5	66	1,929	0.004	5	82
39	167.5	339	9,519	0.020	25	419
38	162.5	352	9,293	0.019	24	435
37	157.875	638	15,892	0.033	41	788
36	155.375	70	1,681	0.004	4	86
35	152.5	474	11,021	0.023	29	586
34	147.5	491	10,676	0.022	28	607
33	144.875	25	524	0.001	1	31
32	142.375	995	20,161	0.041	53	1,229
31	137.5	629	11,886	0.024	31	777
30	132.5	650	11,407	0.024	30	803
29	127.5	671	10,904	0.022	28	829
28	122.5	692	10,382	0.021	27	855
27	117.5	713	9,842	0.020	26	881
26	112.5	734	9,288	0.019	24	907
25	107.5	755	8,724	0.018	23	933
24	102.5	776	8,153	0.017	21	959
23	99	316	3,100	0.006	8	391
22	96.5	999	9,307	0.019	24	1,235
21	93.375	1,102	9,604	0.020	25	1,361
20	90.875	337	2,781	0.006	7	416
19	87.5	979	7,497	0.015	20	1,210
18	82.5	1,004	6,836	0.014	18	1,241
17	77.5	1,030	6,184	0.013	16	1,273
16	72.5	1,055	5,545	0.011	14	1,304
15	67.5	1,080	4,921	0.010	13	1,335
14	62.5	1,105	4,318	0.009	11	1,366
13	57.5	1,131	3,738	0.008	10	1,398
12	53.875	517	1,501	0.003	4	639
11	51.375	1,231	3,250	0.007	8	1,522
10	47.5	2,278	5,139	0.011	13	2,815
9	42.5	1,191	2,152	0.004	6	1,472
8	37.5	1,216	1,711	0.004	4	1,504
7	32.5	1,242	1,312	0.003	3	1,535
6	27.5	1,267	958	0.002	2	1,566
5	22.5	1,292	654	0.001	2	1,597

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
4	17.5	1,317	403	0.001	1	1,628
3	12.5	1,343	210	0.000	1	1,660
2	7.5	1,368	77	0.000	0	1,691
1	2.5	1,393	9	0.000	0	1,722
Raycap DC6-48-60-18-8C-EV (Enclosure)	195	16	608	0.001	2	20
Raycap DC6-48-60-18-8C-EV (Enclosure)	192	32	1,180	0.002	3	40
Generic Flat Light Sector Frame	195	1,200	45,630	0.094	119	1,483
Ericsson Radio 4494 44B14 20B29 M01	192	172	6,337	0.013	17	212
Ericsson Radio 4890HP B2/B25 B66	192	204	7,520	0.016	20	252
Ericsson Radio 4490HP 44B5 44B12A C (20.6" Height)	192	195	7,188	0.015	19	241
Ericsson RRUS 32 B30	192	180	6,636	0.014	17	222
Ericsson AIR 6472 B77G B77M (67.2lbs)	192	202	7,432	0.015	19	249
Kathrein Scala 840370799	192	635	23,401	0.048	61	785
Raycap RDIDC-9181-PF-48	171	22	640	0.001	2	27
Fujitsu TA08025-B605	171	225	6,579	0.014	17	278
Fujitsu TA08025-B604	171	192	5,605	0.012	15	237
JMA Wireless MX08FRO665-21	171	129	3,772	0.008	10	159
CellMax CMA-UBTULBULBHH/6516/16/21/21	171	105	3,070	0.006	8	130
Generic Flat Platform with Handrails	171	2,500	73,102	0.150	190	3,090
	Totals:	**42,226**	**486,391**	**1.000**	**1,267**	**52,192**

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	193.5	137	5,120	0.010	13	118
45	191	107	3,887	0.008	10	92
44	187.5	275	9,675	0.020	25	238
43	182.5	288	9,586	0.020	25	249
42	177.5	300	9,466	0.020	25	260
41	173	249	7,466	0.015	19	216
40	170.5	66	1,929	0.004	5	57
39	167.5	339	9,519	0.020	25	293
38	162.5	352	9,293	0.019	24	304
37	157.875	638	15,892	0.033	41	551
36	155.375	70	1,681	0.004	4	60
35	152.5	474	11,021	0.023	29	409
34	147.5	491	10,676	0.022	28	424
33	144.875	25	524	0.001	1	22
32	142.375	995	20,161	0.041	53	859
31	137.5	629	11,886	0.024	31	543
30	132.5	650	11,407	0.024	30	561
29	127.5	671	10,904	0.022	28	580
28	122.5	692	10,382	0.021	27	598
27	117.5	713	9,842	0.020	26	616
26	112.5	734	9,288	0.019	24	634
25	107.5	755	8,724	0.018	23	652
24	102.5	776	8,153	0.017	21	670
23	99	316	3,100	0.006	8	273
22	96.5	999	9,307	0.019	24	863
21	93.375	1,102	9,604	0.020	25	952
20	90.875	337	2,781	0.006	7	291
19	87.5	979	7,497	0.015	20	846
18	82.5	1,004	6,836	0.014	18	868
17	77.5	1,030	6,184	0.013	16	890
16	72.5	1,055	5,545	0.011	14	911
15	67.5	1,080	4,921	0.010	13	933
14	62.5	1,105	4,318	0.009	11	955
13	57.5	1,131	3,738	0.008	10	977
12	53.875	517	1,501	0.003	4	447

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
11	51.375	1,231	3,250	0.007	8	1,064
10	47.5	2,278	5,139	0.011	13	1,968
9	42.5	1,191	2,152	0.004	6	1,029
8	37.5	1,216	1,711	0.004	4	1,051
7	32.5	1,242	1,312	0.003	3	1,073
6	27.5	1,267	958	0.002	2	1,095
5	22.5	1,292	654	0.001	2	1,116
4	17.5	1,317	403	0.001	1	1,138
3	12.5	1,343	210	0.000	1	1,160
2	7.5	1,368	77	0.000	0	1,182
1	2.5	1,393	9	0.000	0	1,204
Raycap DC6-48-60-18-8C-EV (Enclosure)	195	16	608	0.001	2	14
Raycap DC6-48-60-18-8C-EV (Enclosure)	192	32	1,180	0.002	3	28
Generic Flat Light Sector Frame	195	1,200	45,630	0.094	119	1,037
Ericsson Radio 4494 44B14 20B29 M01	192	172	6,337	0.013	17	149
Ericsson Radio 4890HP B2/B25 B66	192	204	7,520	0.016	20	176
Ericsson Radio 4490HP 44B5 44B12A C (20.6" Height)	192	195	7,188	0.015	19	168
Ericsson RRUS 32 B30	192	180	6,636	0.014	17	156
Ericsson AIR 6472 B77G B77M (67.2lbs)	192	202	7,432	0.015	19	174
Kathrein Scala 840370799	192	635	23,401	0.048	61	548
Raycap RDIDC-9181-PF-48	171	22	640	0.001	2	19
Fujitsu TA08025-B605	171	225	6,579	0.014	17	194
Fujitsu TA08025-B604	171	192	5,605	0.012	15	166
JMA Wireless MX08FRO665-21	171	129	3,772	0.008	10	111
CellMax CMA-UBTULBULBHH/6516/16/21/21	171	105	3,070	0.006	8	91
Generic Flat Platform with Handrails	171	2,500	73,102	0.150	190	2,160
	Totals:	**42,226**	**486,391**	**1.000**	**1,267**	**36,484**

SEISMIC FORCES

1.2D + 1.0Ev + 1.5Eh **Seismic Overstrength**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	193.5	137	5,120	0.010	20	169
45	191	107	3,887	0.008	15	132
44	187.5	275	9,675	0.020	38	340
43	182.5	288	9,586	0.020	37	356
42	177.5	300	9,466	0.020	37	371
41	173	249	7,466	0.015	29	308
40	170.5	66	1,929	0.004	8	82
39	167.5	339	9,519	0.020	37	419
38	162.5	352	9,293	0.019	36	435
37	157.875	638	15,892	0.033	62	788
36	155.375	70	1,681	0.004	7	86
35	152.5	474	11,021	0.023	43	586
34	147.5	491	10,676	0.022	42	607
33	144.875	25	524	0.001	2	31
32	142.375	995	20,161	0.041	79	1,229
31	137.5	629	11,886	0.024	46	777
30	132.5	650	11,407	0.024	45	803
29	127.5	671	10,904	0.022	43	829
28	122.5	692	10,382	0.021	41	855
27	117.5	713	9,842	0.020	38	881
26	112.5	734	9,288	0.019	36	907
25	107.5	755	8,724	0.018	34	933
24	102.5	776	8,153	0.017	32	959
23	99	316	3,100	0.006	12	391
22	96.5	999	9,307	0.019	36	1,235
21	93.375	1,102	9,604	0.020	38	1,361
20	90.875	337	2,781	0.006	11	416
19	87.5	979	7,497	0.015	29	1,210

SEISMIC FORCES

1.2D + 1.0Ev + 1.5Eh **Seismic Overstrength**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
18	82.5	1,004	6,836	0.014	27	1,241
17	77.5	1,030	6,184	0.013	24	1,273
16	72.5	1,055	5,545	0.011	22	1,304
15	67.5	1,080	4,921	0.010	19	1,335
14	62.5	1,105	4,318	0.009	17	1,366
13	57.5	1,131	3,738	0.008	15	1,398
12	53.875	517	1,501	0.003	6	639
11	51.375	1,231	3,250	0.007	13	1,522
10	47.5	2,278	5,139	0.011	20	2,815
9	42.5	1,191	2,152	0.004	8	1,472
8	37.5	1,216	1,711	0.004	7	1,504
7	32.5	1,242	1,312	0.003	5	1,535
6	27.5	1,267	958	0.002	4	1,566
5	22.5	1,292	654	0.001	3	1,597
4	17.5	1,317	403	0.001	2	1,628
3	12.5	1,343	210	0.000	1	1,660
2	7.5	1,368	77	0.000	0	1,691
1	2.5	1,393	9	0.000	0	1,722
Raycap DC6-48-60-18-8C-EV (Enclosure)	195	16	608	0.001	2	20
Raycap DC6-48-60-18-8C-EV (Enclosure)	192	32	1,180	0.002	5	40
Generic Flat Light Sector Frame	195	1,200	45,630	0.094	178	1,483
Ericsson Radio 4494 44B14 20B29 M01	192	172	6,337	0.013	25	212
Ericsson Radio 4890HP B2/B25 B66	192	204	7,520	0.016	29	252
Ericsson Radio 4490HP 44B5 44B12A C (20.6" Height)	192	195	7,188	0.015	28	241
Ericsson RRUS 32 B30	192	180	6,636	0.014	26	222
Ericsson AIR 6472 B77G B77M (67.2lbs)	192	202	7,432	0.015	29	249
Kathrein Scala 840370799	192	635	23,401	0.048	91	785
Raycap RDIDC-9181-PF-48	171	22	640	0.001	3	27
Fujitsu TA08025-B605	171	225	6,579	0.014	26	278
Fujitsu TA08025-B604	171	192	5,605	0.012	22	237
JMA Wireless MX08FRO665-21	171	129	3,772	0.008	15	159
CellMax CMA-UBTULBULBHH/6516/16/21/21	171	105	3,070	0.006	12	130
Generic Flat Platform with Handrails	171	2,500	73,102	0.150	286	3,090
	Totals:	**42,226**	**486,391**	**1.000**	**1,900**	**52,192**

SEISMIC FORCES

0.9D - 1.0Ev + 1.5Eh **Seismic Overstrength (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	193.5	137	5,120	0.010	20	118
45	191	107	3,887	0.008	15	92
44	187.5	275	9,675	0.020	38	238
43	182.5	288	9,586	0.020	37	249
42	177.5	300	9,466	0.020	37	260
41	173	249	7,466	0.015	29	216
40	170.5	66	1,929	0.004	8	57
39	167.5	339	9,519	0.020	37	293
38	162.5	352	9,293	0.019	36	304
37	157.875	638	15,892	0.033	62	551
36	155.375	70	1,681	0.004	7	60
35	152.5	474	11,021	0.023	43	409
34	147.5	491	10,676	0.022	42	424
33	144.875	25	524	0.001	2	22
32	142.375	995	20,161	0.041	79	859
31	137.5	629	11,886	0.024	46	543
30	132.5	650	11,407	0.024	45	561
29	127.5	671	10,904	0.022	43	580
28	122.5	692	10,382	0.021	41	598
27	117.5	713	9,842	0.020	38	616
26	112.5	734	9,288	0.019	36	634

SEISMIC FORCES

0.9D - 1.0Ev + 1.5Eh **Seismic Overstrength (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
25	107.5	755	8,724	0.018	34	652
24	102.5	776	8,153	0.017	32	670
23	99	316	3,100	0.006	12	273
22	96.5	999	9,307	0.019	36	863
21	93.375	1,102	9,604	0.020	38	952
20	90.875	337	2,781	0.006	11	291
19	87.5	979	7,497	0.015	29	846
18	82.5	1,004	6,836	0.014	27	868
17	77.5	1,030	6,184	0.013	24	890
16	72.5	1,055	5,545	0.011	22	911
15	67.5	1,080	4,921	0.010	19	933
14	62.5	1,105	4,318	0.009	17	955
13	57.5	1,131	3,738	0.008	15	977
12	53.875	517	1,501	0.003	6	447
11	51.375	1,231	3,250	0.007	13	1,064
10	47.5	2,278	5,139	0.011	20	1,968
9	42.5	1,191	2,152	0.004	8	1,029
8	37.5	1,216	1,711	0.004	7	1,051
7	32.5	1,242	1,312	0.003	5	1,073
6	27.5	1,267	958	0.002	4	1,095
5	22.5	1,292	654	0.001	3	1,116
4	17.5	1,317	403	0.001	2	1,138
3	12.5	1,343	210	0.000	1	1,160
2	7.5	1,368	77	0.000	0	1,182
1	2.5	1,393	9	0.000	0	1,204
Raycap DC6-48-60-18-8C-EV (Enclosure)	195	16	608	0.001	2	14
Raycap DC6-48-60-18-8C-EV (Enclosure)	192	32	1,180	0.002	5	28
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Ericsson Radio 4490HP 44B5 44B12A C (20.6" Height)	192	195	7,188	0.015	28	168
Ericsson RRUS 32 B30	192	180	6,636	0.014	26	156
Ericsson AIR 6472 B77G B77M (67.2lbs)	192	202	7,432	0.015	29	174
Kathrein Scala 840370799	192	635	23,401	0.048	91	548
Raycap RDIDC-9181-PF-48	171	22	640	0.001	3	19
Fujitsu TA08025-B605	171	225	6,579	0.014	26	194
Fujitsu TA08025-B604	171	192	5,605	0.012	22	166
JMA Wireless MX08FRO665-21	171	129	3,772	0.008	15	111
CellMax CMA-UBTULBULBHH/6516/16/21/21	171	105	3,070	0.006	12	91
Generic Flat Platform with Handrails	171	2,500	73,102	0.150	286	2,160
	Totals:	**42,226**	**486,391**	**1.000**	**1,900**	**36,484**

1.2D + 1.0Ev + 1.0Eh **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-50.47	-1.27	0.00	-195.74	0.00	195.74	4,691.11	1,378.72	8,219	6,384.77	0.00	0.00	0.04
5.00	-48.78	-1.27	0.00	-189.39	0.00	189.39	4,650.32	1,352.68	7,911	6,209.02	0.00	-0.01	0.04
10.00	-47.12	-1.28	0.00	-183.02	0.00	183.02	4,607.70	1,326.63	7,610	6,032.96	0.01	-0.01	0.04
15.00	-45.49	-1.28	0.00	-176.63	0.00	176.63	4,563.23	1,300.58	7,314	5,856.74	0.03	-0.02	0.04
20.00	-43.89	-1.29	0.00	-170.22	0.00	170.22	4,516.91	1,274.54	7,024	5,680.51	0.05	-0.03	0.04
25.00	-42.33	-1.29	0.00	-163.79	0.00	163.79	4,468.76	1,248.49	6,740	5,504.40	0.09	-0.03	0.04
30.00	-40.79	-1.29	0.00	-157.35	0.00	157.35	4,418.76	1,222.45	6,462	5,328.56	0.12	-0.04	0.04
35.00	-39.29	-1.29	0.00	-150.91	0.00	150.91	4,366.92	1,196.40	6,189	5,153.13	0.17	-0.05	0.04
40.00	-37.82	-1.29	0.00	-144.47	0.00	144.47	4,313.24	1,170.35	5,923	4,978.26	0.22	-0.06	0.04
45.00	-35.00	-1.27	0.00	-138.05	0.00	138.05	4,257.72	1,144.31	5,662	4,804.09	0.29	-0.06	0.04
50.00	-33.48	-1.27	0.00	-131.68	0.00	131.68	4,200.35	1,118.26	5,407	4,630.75	0.36	-0.07	0.04
52.75	-32.84	-1.26	0.00	-128.19	0.00	128.19	4,203.35	1,119.60	5,420	4,639.65	0.40	-0.07	0.04
55.00	-31.44	-1.26	0.00	-125.35	0.00	125.35	4,176.98	1,107.88	5,307	4,561.94	0.43	-0.08	0.04

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
60.00	-30.07	-1.25	0.00	-119.06	0.00	119.06	4,117.04	1,081.84	5,061	4,390.02	0.52	-0.09	0.03
65.00	-28.74	-1.24	0.00	-112.83	0.00	112.83	4,055.25	1,055.79	4,820	4,219.29	0.61	-0.09	0.03
70.00	-27.44	-1.22	0.00	-106.65	0.00	106.65	3,991.63	1,029.74	4,585	4,049.88	0.72	-0.10	0.03
75.00	-26.16	-1.21	0.00	-100.53	0.00	100.53	3,926.16	1,003.70	4,356	3,881.94	0.83	-0.11	0.03
80.00	-24.92	-1.19	0.00	-94.48	0.00	94.48	3,858.85	977.65	4,133	3,715.61	0.95	-0.12	0.03
85.00	-23.71	-1.17	0.00	-88.52	0.00	88.52	3,789.70	951.61	3,916	3,551.04	1.08	-0.13	0.03
90.00	-23.29	-1.17	0.00	-82.65	0.00	82.65	3,718.70	925.56	3,704	3,388.36	1.22	-0.14	0.03
91.75	-21.93	-1.14	0.00	-80.61	0.00	80.61	3,693.42	916.45	3,632	3,331.90	1.27	-0.14	0.03
95.00	-20.70	-1.12	0.00	-76.90	0.00	76.90	3,645.86	899.52	3,499	3,227.73	1.36	-0.14	0.03
98.00	-20.31	-1.11	0.00	-73.55	0.00	73.55	2,852.65	748.54	2,907	2,525.54	1.45	-0.15	0.04
100.00	-19.35	-1.09	0.00	-71.34	0.00	71.34	2,832.12	739.86	2,840	2,478.07	1.52	-0.15	0.04
105.00	-18.41	-1.07	0.00	-65.90	0.00	65.90	2,779.51	718.15	2,676	2,360.17	1.68	-0.16	0.04
110.00	-17.51	-1.04	0.00	-60.58	0.00	60.58	2,725.06	696.45	2,517	2,243.47	1.86	-0.17	0.03
115.00	-16.63	-1.02	0.00	-55.37	0.00	55.37	2,668.77	674.74	2,362	2,128.12	2.05	-0.18	0.03
120.00	-15.77	-0.99	0.00	-50.29	0.00	50.29	2,610.63	653.04	2,213	2,014.27	2.25	-0.19	0.03
125.00	-14.94	-0.96	0.00	-45.35	0.00	45.35	2,550.65	631.33	2,068	1,902.04	2.46	-0.20	0.03
130.00	-14.14	-0.93	0.00	-40.54	0.00	40.54	2,488.83	609.63	1,929	1,791.59	2.68	-0.21	0.03
135.00	-13.36	-0.90	0.00	-35.89	0.00	35.89	2,425.17	587.92	1,794	1,683.06	2.91	-0.22	0.03
140.00	-12.13	-0.84	0.00	-31.40	0.00	31.40	2,359.67	566.22	1,664	1,576.59	3.15	-0.23	0.03
144.75	-12.10	-0.84	0.00	-27.39	0.00	27.39	1,740.42	444.31	1,280	1,142.61	3.39	-0.24	0.03
145.00	-11.49	-0.81	0.00	-27.18	0.00	27.18	1,738.20	443.44	1,275	1,138.90	3.40	-0.24	0.03
150.00	-10.91	-0.78	0.00	-23.12	0.00	23.12	1,692.74	426.08	1,178	1,065.35	3.66	-0.26	0.03
155.00	-10.82	-0.78	0.00	-19.19	0.00	19.19	1,645.43	408.72	1,084	993.03	3.93	-0.27	0.03
155.75	-10.03	-0.74	0.00	-18.61	0.00	18.61	1,638.18	406.11	1,070	982.30	3.98	-0.27	0.03
160.00	-9.60	-0.71	0.00	-15.48	0.00	15.48	1,089.67	298.08	768	640.73	4.22	-0.28	0.03
165.00	-9.18	-0.69	0.00	-11.92	0.00	11.92	1,062.22	285.06	703	597.12	4.51	-0.28	0.03
170.00	-9.10	-0.68	0.00	-8.49	0.00	8.49	1,032.93	272.04	640	553.95	4.82	-0.29	0.02
171.00	-4.87	-0.40	0.00	-7.81	0.00	7.81	1,026.86	269.43	628	545.38	4.88	-0.30	0.02
175.00	-4.50	-0.37	0.00	-6.21	0.00	6.21	1,001.81	259.01	580	511.35	5.13	-0.30	0.02
180.00	-4.14	-0.35	0.00	-4.34	0.00	4.34	968.83	245.99	523	469.47	5.45	-0.31	0.01
185.00	-3.80	-0.32	0.00	-2.61	0.00	2.61	934.02	232.97	469	428.45	5.78	-0.31	0.01
190.00	-3.67	-0.31	0.00	-1.01	0.00	1.01	897.37	219.95	418	388.44	6.11	-0.32	0.01
192.00	-1.50	-0.13	0.00	-0.39	0.00	0.39	882.19	214.74	399	372.74	6.24	-0.32	0.00
195.00	0.00	-0.12	0.00	0.00	0.00	0.00	858.87	206.92	370	349.57	6.44	-0.32	0.00

0.9D - 1.0Ev + 1.0Eh **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-35.28	-1.27	0.00	-193.12	0.00	193.12	4,691.11	1,378.72	8,219	6,384.77	0.00	0.00	0.04
5.00	-34.10	-1.27	0.00	-186.78	0.00	186.78	4,650.32	1,352.68	7,911	6,209.02	0.00	-0.01	0.04
10.00	-32.94	-1.27	0.00	-180.43	0.00	180.43	4,607.70	1,326.63	7,610	6,032.96	0.01	-0.01	0.04
15.00	-31.80	-1.28	0.00	-174.06	0.00	174.06	4,563.23	1,300.58	7,314	5,856.74	0.03	-0.02	0.04
20.00	-30.68	-1.28	0.00	-167.68	0.00	167.68	4,516.91	1,274.54	7,024	5,680.51	0.05	-0.03	0.04
25.00	-29.59	-1.28	0.00	-161.30	0.00	161.30	4,468.76	1,248.49	6,740	5,504.40	0.08	-0.03	0.04
30.00	-28.51	-1.28	0.00	-154.91	0.00	154.91	4,418.76	1,222.45	6,462	5,328.56	0.12	-0.04	0.04
35.00	-27.46	-1.28	0.00	-148.52	0.00	148.52	4,366.92	1,196.40	6,189	5,153.13	0.17	-0.05	0.04
40.00	-26.43	-1.27	0.00	-142.14	0.00	142.14	4,313.24	1,170.35	5,923	4,978.26	0.22	-0.05	0.04
45.00	-24.47	-1.26	0.00	-135.78	0.00	135.78	4,257.72	1,144.31	5,662	4,804.09	0.28	-0.06	0.03
50.00	-23.40	-1.25	0.00	-129.48	0.00	129.48	4,200.35	1,118.26	5,407	4,630.75	0.35	-0.07	0.03
52.75	-22.95	-1.25	0.00	-126.03	0.00	126.03	4,203.35	1,119.60	5,420	4,639.65	0.39	-0.07	0.03
55.00	-21.98	-1.24	0.00	-123.22	0.00	123.22	4,176.98	1,107.88	5,307	4,561.94	0.43	-0.08	0.03
60.00	-21.02	-1.23	0.00	-117.01	0.00	117.01	4,117.04	1,081.84	5,061	4,390.02	0.51	-0.08	0.03
65.00	-20.09	-1.22	0.00	-110.86	0.00	110.86	4,055.25	1,055.79	4,820	4,219.29	0.61	-0.09	0.03
70.00	-19.18	-1.21	0.00	-104.76	0.00	104.76	3,991.63	1,029.74	4,585	4,049.88	0.71	-0.10	0.03
75.00	-18.29	-1.19	0.00	-98.72	0.00	98.72	3,926.16	1,003.70	4,356	3,881.94	0.82	-0.11	0.03
80.00	-17.42	-1.17	0.00	-92.76	0.00	92.76	3,858.85	977.65	4,133	3,715.61	0.93	-0.12	0.03
85.00	-16.57	-1.16	0.00	-86.89	0.00	86.89	3,789.70	951.61	3,916	3,551.04	1.06	-0.13	0.03
90.00	-16.28	-1.15	0.00	-81.11	0.00	81.11	3,718.70	925.56	3,704	3,388.36	1.20	-0.13	0.03

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
91.75	-15.33	-1.12	0.00	-79.10	0.00	79.10	3,693.42	916.45	3,632	3,331.90	1.25	-0.14	0.03
95.00	-14.47	-1.10	0.00	-75.45	0.00	75.45	3,645.86	899.52	3,499	3,227.73	1.34	-0.14	0.03
98.00	-14.19	-1.09	0.00	-72.15	0.00	72.15	2,852.65	748.54	2,907	2,525.54	1.43	-0.15	0.03
100.00	-13.52	-1.07	0.00	-69.97	0.00	69.97	2,832.12	739.86	2,840	2,478.07	1.49	-0.15	0.03
105.00	-12.87	-1.05	0.00	-64.62	0.00	64.62	2,779.51	718.15	2,676	2,360.17	1.66	-0.16	0.03
110.00	-12.24	-1.02	0.00	-59.39	0.00	59.39	2,725.06	696.45	2,517	2,243.47	1.83	-0.17	0.03
115.00	-11.62	-1.00	0.00	-54.27	0.00	54.27	2,668.77	674.74	2,362	2,128.12	2.02	-0.18	0.03
120.00	-11.02	-0.97	0.00	-49.28	0.00	49.28	2,610.63	653.04	2,213	2,014.27	2.21	-0.19	0.03
125.00	-10.44	-0.94	0.00	-44.43	0.00	44.43	2,550.65	631.33	2,068	1,902.04	2.42	-0.20	0.03
130.00	-9.88	-0.91	0.00	-39.71	0.00	39.71	2,488.83	609.63	1,929	1,791.59	2.63	-0.21	0.03
135.00	-9.34	-0.88	0.00	-35.15	0.00	35.15	2,425.17	587.92	1,794	1,683.06	2.86	-0.22	0.03
140.00	-8.48	-0.83	0.00	-30.75	0.00	30.75	2,359.67	566.22	1,664	1,576.59	3.10	-0.23	0.02
144.75	-8.46	-0.83	0.00	-26.82	0.00	26.82	1,740.42	444.31	1,280	1,142.61	3.33	-0.24	0.03
145.00	-8.03	-0.80	0.00	-26.61	0.00	26.61	1,738.20	443.44	1,275	1,138.90	3.34	-0.24	0.03
150.00	-7.62	-0.77	0.00	-22.63	0.00	22.63	1,692.74	426.08	1,178	1,065.35	3.60	-0.25	0.03
155.00	-7.56	-0.76	0.00	-18.79	0.00	18.79	1,645.43	408.72	1,084	993.03	3.87	-0.26	0.02
155.75	-7.01	-0.72	0.00	-18.21	0.00	18.21	1,638.18	406.11	1,070	982.30	3.91	-0.26	0.02
160.00	-6.71	-0.70	0.00	-15.15	0.00	15.15	1,089.67	298.08	768	640.73	4.15	-0.27	0.03
165.00	-6.42	-0.67	0.00	-11.67	0.00	11.67	1,062.22	285.06	703	597.12	4.44	-0.28	0.03
170.00	-6.36	-0.67	0.00	-8.31	0.00	8.31	1,032.93	272.04	640	553.95	4.73	-0.29	0.02
171.00	-3.40	-0.39	0.00	-7.64	0.00	7.64	1,026.86	269.43	628	545.38	4.79	-0.29	0.02
175.00	-3.14	-0.37	0.00	-6.08	0.00	6.08	1,001.81	259.01	580	511.35	5.04	-0.30	0.02
180.00	-2.90	-0.34	0.00	-4.25	0.00	4.25	968.83	245.99	523	469.47	5.35	-0.30	0.01
185.00	-2.66	-0.31	0.00	-2.55	0.00	2.55	934.02	232.97	469	428.45	5.68	-0.31	0.01
190.00	-2.57	-0.30	0.00	-0.98	0.00	0.98	897.37	219.95	418	388.44	6.00	-0.31	0.01
192.00	-1.05	-0.13	0.00	-0.38	0.00	0.38	882.19	214.74	399	372.74	6.13	-0.31	0.00
195.00	0.00	-0.12	0.00	0.00	0.00	0.00	858.87	206.92	370	349.57	6.33	-0.31	0.00

ANALYSIS SUMMARY

	Base Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	30.75	0.00	50.64	0.00	0.00	3737.04	0.00	0.6
0.9D + 1.0W	30.74	0.00	37.97	0.00	0.00	3699.73	0.00	0.59
1.2D + 1.0Di + 1.0Wi	4.68	0.00	59.52	0.00	0.00	544.72	0.00	0.1
1.2D + 1.0Ev + 1.0Eh	1.27	0.00	50.47	0.00	0.00	195.74	0.00	0.04
0.9D - 1.0Ev + 1.0Eh	1.27	0.00	35.28	0.00	0.00	193.12	0.00	0.04
1.0D + 1.0W	7.11	0.00	42.22	0.00	0.00	859.48	0.00	0.14

ANALYSIS SUMMARY – OVERSTRENGTH LOAD CASES

	Base 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 + 1.0Ev + 1.5Eh	1.90	0.00	50.47	0.00	0.00	293.61
0.9D - 1.0Ev + 1.5Eh	1.90	0.00	35.28	0.00	0.00	289.92

ASSET:	280251, SPOUT SPRINGS NC	CODE:	ANSI/TIA-222-I
CUSTOMER:	AT&T MOBILITY	PROJECT:	14884017

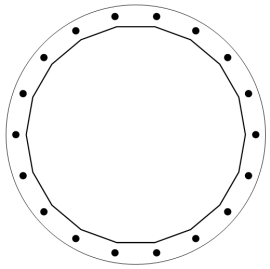
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
3737.04	50.64	30.75

PLATE PARAMETERS (ID# 17583)

Width:	79.5	in
Shape:	Round	
Thickness:	3	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Rod Detail Type:	d	
Clear Distance	3.25	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	10	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#18011]	Radial	18	2.25	73.5	A615-75	75	100	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	66.38"ø x 0.375" (18 Sides)	77.3661	-	-	42135.87	-
Bolt Group	Original (18) 2.25"ø	3.9761	3.2477	0.8393	36721.62	4.5

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	66.38"ø x 0.375" (18 Sides)	3737.0	50.64	30.75	1.000
Bolt Group	Original (18) 2.25"ø	3737.0	-	30.75	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	66.50	in	Flat Width:	11.727	in	Neutral Axis:	10	°
Point-to-Point Diameter:	67.53	in	Flat Radians:	0.349	rad	Bend Line Limits:	1.155 to 2.336	rad
Orientation Offset:	-	°						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	38.590	0.00	86.827	326.2	3907.2	8.3%	✓
Corners	36.765	0.00	82.721	239.7	3722.4	6.4%	✓
Circumferential	54.536	0.00	122.705	690.8	5521.7	12.5%	✓

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Interaction Result	
Original	18	2.25	106.5	2.7	243.6	43.7%	✓

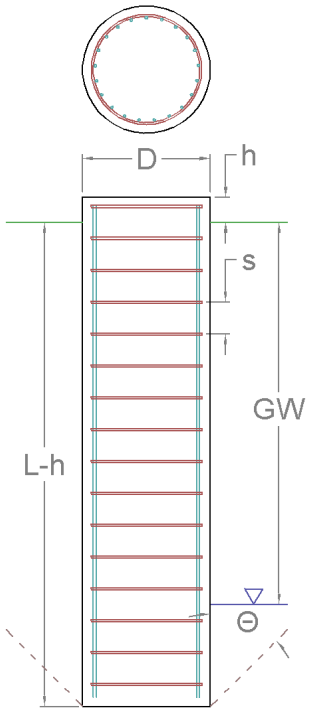
PIER FOUNDATION ANALYSIS

GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
3,737.04	50.64	30.75

FOUNDATION PARAMETERS

Pier Diameter:	D	8.00	ft
Pier Embedment Depth:	L-h	30.0	ft
Pier Height above Grade:	h	0.50	ft



SOIL PARAMETERS

Water Table Depth [BGL]: GW 5 ft

Layer Depth (ft) Top	Layer Depth (ft) Bottom	Unit Weight pcf	Cohesion psf	Friction Angle °	Ultimate Skin Friction psf	Ultimate Net Bearing psf
0	3.5	105	0	0	0	0
3.5	5	105	0	31	140	0
5	13.5	110	0	31	160	0
13.5	23.5	110	0	33	440	0
23.5	31	110	0	42	720	53,650

SOIL STRENGTH ANALYSIS

Volume of Concrete (ft^3)	Buoyant Weight of Concrete (k)	Skin Friction Resistance (k)	Inflection Point [BGL] (ft)
1,533.10	151.55	267.66	22.31

SOIL MOMENT ANALYSIS

Total Lateral Resistance (k)	Moment at Inflection Point, M_u (k-ft)	Additional Resistance (k-ft)	Nominal Moment Capacity, ΦM_n (k-ft)	Soil Moment Usage, $M_u / \Phi M_n$	
2,275.26	4,438.34	0.00	10,160.90	**43.7%**	✓

SOIL COMPRESSION ANALYSIS

Compressive Bearing Resistance (k)	Compressive Force, P_u (k)	Additional Resistance (k)	Nominal Compressive Capacity, ΦP_n (k)	Soil Compressive Usage, $P_u / \Phi P_n$	
2,696.74	124.53	0.00	2,223.31	**5.6%**	✓