



**AMERICAN TOWER®**  
CORPORATION



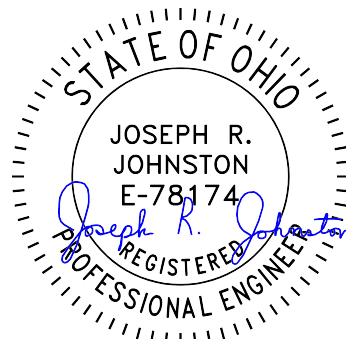
## Structural Analysis Report

**Structure** : 150 ft Monopole  
**ATC Asset Name** : Dublin OH  
**ATC Asset Number** : 307538  
**Engineering Number** : 14846627\_C3\_03  
**Proposed Carrier** : AT&T MOBILITY  
**Carrier Site Name** : DUBLIN  
**Carrier Site Number** : WSOWP0033711  
**Site Location** : 5580 Shier Rings Rd  
Dublin, OH 43016-1277  
40.097° N, 83.1402° W  
**County** : Franklin  
**Date** : August 27, 2024  
**Max Usage** : 81%  
**Analysis Result** : Pass

Created By:

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*Brad Davenport*



8/28/2024

COA: COA.02041



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft Monopole tower to reflect the change in loading by AT&T MOBILITY.

## Supporting Documents

<b>Tower:</b>	Valmont #DC0720Z, dated January 2, 1991
<b>Foundation:</b>	Popowych Project #9067, November 13, 1990
<b>Geotechnical:</b>	ATEC File #22-03228, dated December 24, 1990
<b>Modification:</b>	ATC Project #OAA717362_C6_03, dated February 21, 2018 ATC Project #13619927_C6_05, dated June 15, 2021

## 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.

<b>Basic Wind Speed:</b>	108 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	40 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code(s):</b>	ANSI/TIA-222-H / 2021 IBC / 2024 Ohio Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Spectral Response:</b>	$S_s = 0.12$ , $S_i = 0.06$
<b>Site Class:</b>	D - Stiff Soil - 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](mailto: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	81.0%	1.2D + 1.0W	Pass
Reinforcement	57.5%	0 ft to 15.48 ft	Pass
Upper Termination	74.3%	0 ft to 15.48 ft	Pass
Intermediate Connector	38.1%	49.42 ft to 108.94 ft	Pass
Lower Termination	78.8%	49.42 ft to 108.94 ft	Pass
Serviceability Usage	65.4%	1.0D + 1.0W	Pass
Base Plate @ 0.0 ft	61.4%	Rods	Pass
Pier	49.9%	Flexure [Steel]	Pass

### Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	1,731.2	34.5	16.9

*\*Reactions shown reflect the results from the Load Case with maximum Moment*

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

**AT&T MOBILITY Final Loading**

Elev (ft)	Qty	Equipment	Lines
155.0	3	Ericsson AIR 6419 B77D	-
154.0	3	Raycap DC6-48-60-18-8F ("Squid")	-
153.0	3	Ericsson RRUS 4478 B14	(3) 0.39" (10mm) Fiber Trunk (1) 0.88" (22.4mm) 8 AWG 6 (5) 0.96" (24.3mm) Cable (1) 2" Carflex Non-Metallic Conduit (1) 7/8" Coax
	3	Ericsson RRUS 4490	
	3	Ericsson RRUS 4890	
	3	Ericsson Radio 4415 B30	
	6	Commscope NNH4-65C-R6 (102.1 lbs)	
151.0	3	Ericsson AIR 6419 B77G	(10) 1 5/8" Coax
150.0	1	Platform with Handrails	-
	3	Mount Reinforcement	

Install proposed lines inside the pole shaft.

**Other Existing/Reserved Loading**

Elev (ft)	Qty	Equipment	Lines	Carrier
144.2	1	TTA	-	CLEVELAND UNLIMITED INC
144.0	-	-	(3) 1 5/8" Coax	CLEVELAND UNLIMITED INC
143.8	6	56" x 6" Panel	-	CLEVELAND UNLIMITED INC
143.0	1	Low Profile Platform	-	CLEVELAND UNLIMITED INC

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



## **Standard Conditions**

All engineering services performed by ATC Tower Services LLC 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 ATC Tower Services LLC

It is the responsibility of the client to ensure that the information provided to ATC Tower Services LLC 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 ATC Tower Services LLC, 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. ATC Tower Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

**ANALYSIS PARAMETERS**

<b>Design Wind:</b> 108 mph	<b>Ice Wind:</b> 40 mph w/ 1.0" ice	<b>Service Wind:</b> 60 mph
<b>Risk Category:</b> II	<b>Exposure:</b> B	<b>S<sub>g</sub>:</b> 0.122 <b>S<sub>i</sub>:</b> 0.060
<b>Topo Factor:</b> Method 1	<b>Topo Feature:</b>	<b>Topo Category:</b> 1
<b>Structure Height:</b> 150.0 ft	<b>Base Elevation:</b> 0.00 ft	<b>Structure Type:</b> Taper
<b>Base Diameter:</b> 37.50 in	<b>Base Rotation:</b> 0.00°	<b>Taper:</b> 0.1560 (in/ft)

**POLE SECTION PROPERTIES**

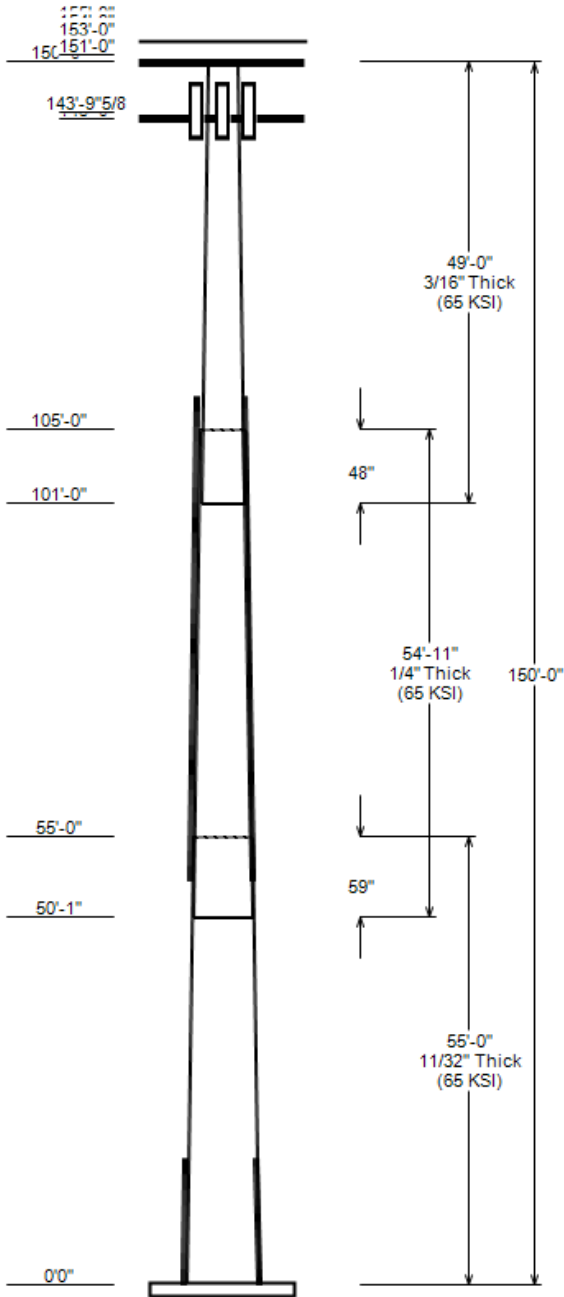
Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
		Top	Bottom					
1	55.000	28.92	37.50	0.344		0.00	12 Sides	65
2	54.917	21.62	30.19	0.250	Slip Joint	59.00	12 Sides	65
3	49.000	14.98	22.62	0.188	Slip Joint	48.00	12 Sides	65

**DISCRETE APPURTENANCE**

Elev (ft)	Description
155.0	(3) Ericsson AIR 6419 B77D
154.0	(3) Raycap DC6-48-60-18-8F ("Squid")
153.0	(3) Ericsson Radio 4415 B30
153.0	(3) Ericsson RRUS 4890
153.0	(3) Ericsson RRUS 4490
153.0	(3) Ericsson RRUS 4478 B14
153.0	(6) Commscope NNH4-65C-R6 (102.1 lb
151.0	(3) Ericsson AIR 6419 B77G
150.0	(1) Generic Round Platform with Handrail
150.0	(3) Generic Mount Reinforcement
144.2	(1) Generic TTA
143.8	(6) Generic 56" x 6" Panel
143.0	(1) Generic Round Low Profile Platform

**LINEAR APPURTENANCE**

Elev To (ft)	Description
153.0	(1) 0.39" (10mm) Fiber Trunk
153.0	(1) 7/8" Coax
153.0	(5) 0.96" (24.3mm) Cable
153.0	(1) 0.88" (22.4mm) 8 AWG 6
153.0	(2) 0.39" (10mm) Fiber Trunk
153.0	(1) 2" Carflex Non-Metallic Conduit
151.0	(10) 1 5/8" Coax
144.0	(3) 1 5/8" Coax
113.5	(1) #20 Dywidag
113.5	(1) #20 Dywidag
113.5	(1) #20 Dywidag
113.5	(1) #20 Dywidag
22.5	(1) #20 Dywidag
22.5	(1) #20 Dywidag
22.5	(1) #20 Dywidag



**GLOBAL BASE REACTIONS**

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	1731.20	34.50	16.88
0.9D + 1.0W	1689.30	25.87	16.87
1.2D + 1.0Di + 1.0Wi	312.58	44.69	2.69
1.2D + 1.0Ev + 1.0Eh	120.80	34.96	0.86
0.9D - 1.0Ev + 1.0Eh	117.07	24.92	0.86
1.0D + 1.0W	471.18	28.75	4.66

ANALYSIS PARAMETERS

<b>Location:</b>	Franklin County,OH	<b>Height:</b>	150 ft
<b>Type and Shape:</b>	Taper, 12 Sides	<b>Base Diameter:</b>	37.50 in
<b>Manufacturer:</b>	Valmont	<b>Top Diameter:</b>	14.98 in
<b>K<sub>d</sub> (non-service):</b>	0.95	<b>Taper:</b>	0.1560 in/ft
<b>K<sub>e</sub>:</b>	0.97	<b>Rotation:</b>	0.000°

ICE & WIND PARAMETERS

<b>Risk Category:</b>	II	<b>Design Wind Speed:</b>	108 mph
<b>Exposure Category:</b>	B	<b>Design Wind Speed w/ Ice:</b>	40 mph
<b>Topo Factor Procedure:</b>	Method 1	<b>Design Ice Thickness:</b>	1.00 in
<b>Topographic Category:</b>	1	<b>Service Wind Speed:</b>	60 mph
<b>Crest Height:</b>	0 ft	<b>HMSL:</b>	906.00 ft

SEISMIC PARAMETERS

<b>Analysis Method:</b>	Equivalent Lateral Force Method		
<b>Site Class:</b>	D - Stiff Soil	<b>Period Based on Rayleigh Method (sec):</b>	3.48
<b>T<sub>L</sub> (sec):</b>	12	<b>P:</b>	1
<b>S<sub>ds</sub>:</b>	0.130	<b>S<sub>d1</sub>:</b>	0.096
<b>S<sub>s</sub>:</b>	0.122	<b>S<sub>1</sub>:</b>	0.060
<b>F<sub>a</sub>:</b>	1.600	<b>F<sub>v</sub>:</b>	2.400
		<b>C<sub>s</sub>:</b>	0.030
		<b>C<sub>s</sub> Max:</b>	0.030
		<b>C<sub>s</sub> Min:</b>	0.030

LOAD CASES

1.2D + 1.0W	108 mph Wind with No Ice
0.9D + 1.0W	108 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph Wind with 1" 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



SHAFT SECTION PROPERTIES

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Bottom						Top								
						Weight (lb)	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-12	55.00	0.3438	65		0.00	6,809	37.50	0.000	41.13	7,248.4	26.55	109.08	28.92	55.00	31.64	3,297.8	19.86	84.12	0.1560	
2-12	54.92	0.2500	65	Slip	59.00	3,859	30.19	50.083	24.10	2,757.2	29.68	120.75	21.62	105.00	17.21	1,003.1	20.50	86.49	0.1560	
3-12	49.00	0.1875	65	Slip	48.00	1,874	22.62	101.000	13.54	870.1	29.65	120.65	14.98	150.00	8.93	249.4	18.73	79.89	0.1560	
<b>Total Shaft Weight</b>						<b>12,542</b>														

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
155.00	Ericsson AIR 6419 B77D	3	0.75	0.000	63.10	4.186	0.67	137.58	5.123	0.67
154.00	Raycap DC6-48-60-18-8F ("Squid	3	0.75	0.000	18.90	1.470	1.00	60.11	1.936	1.00
153.00	Ericsson Radio 4415 B30	3	0.75	0.000	43.00	1.650	0.50	71.15	2.217	0.50
153.00	Commscope NNH4-65C-R6 (102.1 I	6	0.75	0.000	102.10	17.073	0.64	321.31	19.535	0.64
153.00	Ericsson RRUS 4490	3	0.75	0.000	68.40	2.695	0.67	115.27	3.418	0.67
153.00	Ericsson RRUS 4890	3	0.75	0.000	69.50	2.695	0.67	116.93	3.418	0.67
153.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	96.82	2.441	0.50
151.00	Ericsson AIR 6419 B77G	3	0.75	0.000	66.10	3.797	0.65	130.89	4.677	0.65
150.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3581.67	43.524	1.00
150.00	Generic Mount Reinforcement	3	1.00	0.000	200.00	4.980	1.00	329.24	8.300	1.00
144.20	Generic TTA	1	0.80	0.000	10.00	1.200	1.00	33.96	1.683	1.00
143.80	Generic 56" x 6" Panel	6	0.80	0.000	30.00	3.440	0.68	74.14	4.680	0.68
143.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2413.25	34.460	1.00
<b>Totals</b>	<b>Row Count: 13</b>	<b>39</b>			<b>6,944.30</b>			<b>11,575.55</b>		

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	153.00	5	0.96" (24.3mm) Cable	0.96	0.88	N	2	1	1	0	1	N	AT&T MOBILITY
0.00	153.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	2	1	1	0	1	N	AT&T MOBILITY
0.00	153.00	1	2" Carflex Non-Metall	2.36	0.68	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	1	0.88" (22.4mm) 8 AWG	0.88	0.68	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	153.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	151.00	10	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	144.00	3	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	CLEVELAND UNLIMITED I
43.50	113.50	1	#20 Dywidag	4	4.68	N	1	0	0	180	0	Y	
43.50	113.50	1	#20 Dywidag	4	4.68	N	1	0	0	270	0	Y	
43.50	113.50	1	#20 Dywidag	4	4.68	N	1	0	0	90	0	Y	
43.50	113.50	1	#20 Dywidag	4	4.68	N	1	0	0	0	0	Y	
0.00	22.50	1	#20 Dywidag	4	4.68	N	1	0	0	270	0	Y	
0.00	22.50	1	#20 Dywidag	4	4.68	N	1	0	0	90	0	Y	
0.00	22.50	1	#20 Dywidag	4	4.68	N	1	0	0	180	0	Y	
0.00	22.50	1	#20 Dywidag	4	4.68	N	1	0	0	0	0	Y	

ADDITIONAL STEEL

Intermediate Connectors

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Bracket Type	Spacing (in)	Length (in)	Connectors	Continuation?
0.00	15.48	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	N
49.42	108.94	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	N

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)	Additional Reinforcing		
												Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	Weight (lb)
0.00		0.3438	37.500	41.133	7,248.40	26.55	109.08	75.8	373.4	0.0	0.0	19.640	4,843.00	0.0
1.00		0.3438	37.344	40.961	7,157.50	26.43	108.62	75.9	370.3	0.0	139.7	19.640	4,809.10	66.8
2.00		0.3438	37.188	40.788	7,067.40	26.30	108.17	76	367.1	0.0	139.1	19.640	4,775.30	66.8
3.00		0.3438	37.032	40.615	6,978.00	26.18	107.71	76.2	364.0	0.0	138.5	19.640	4,741.60	66.8
4.00		0.3438	36.876	40.443	6,889.40	26.06	107.26	76.3	360.9	0.0	137.9	19.640	4,708.00	66.8
5.00		0.3438	36.720	40.270	6,801.50	25.94	106.81	76.4	357.8	0.0	137.3	19.640	4,674.60	66.8
6.00		0.3438	36.564	40.097	6,714.40	25.82	106.35	76.6	354.8	0.0	136.7	19.640	4,641.20	66.8
7.00		0.3438	36.408	39.925	6,628.00	25.70	105.90	76.7	351.7	0.0	136.1	19.640	4,608.00	66.8
8.00		0.3438	36.252	39.752	6,542.40	25.57	105.45	76.8	348.6	0.0	135.6	19.640	4,574.90	66.8
9.00		0.3438	36.096	39.579	6,457.50	25.45	104.99	77	345.6	0.0	135.0	19.640	4,542.00	66.8
10.00		0.3438	35.940	39.407	6,373.40	25.33	104.54	77.1	342.6	0.0	134.4	19.640	4,509.10	66.8
11.00		0.3438	35.784	39.234	6,289.90	25.21	104.08	77.2	339.6	0.0	133.8	19.640	4,476.40	66.8
12.00		0.3438	35.628	39.061	6,207.30	25.09	103.63	77.4	336.6	0.0	133.2	19.640	4,443.80	66.8
13.00		0.3438	35.472	38.889	6,125.30	24.97	103.18	77.5	333.6	0.0	132.6	19.640	4,411.30	66.8
14.00		0.3438	35.316	38.716	6,044.10	24.85	102.72	77.6	330.6	0.0	132.0	19.640	4,378.90	66.8
15.00		0.3438	35.160	38.543	5,963.60	24.72	102.27	77.7	327.7	0.0	131.4	19.640	4,346.60	66.8
15.48	Reinf. Top	0.3438	35.086	38.460	5,925.20	24.67	102.05	77.8	326.2	0.0	62.9	19.640	4,331.20	32.1
16.00		0.3438	35.004	38.371	5,883.80	24.60	101.82	77.9	324.7	0.0	68.0			
17.00		0.3438	34.848	38.198	5,804.70	24.48	101.36	78	321.8	0.0	130.3			
18.00		0.3438	34.692	38.025	5,726.30	24.36	100.91	78.1	318.9	0.0	129.7			
19.00		0.3438	34.537	37.853	5,648.70	24.24	100.46	78.3	316.0	0.0	129.1			
20.00		0.3438	34.381	37.680	5,571.70	24.12	100.00	78.4	313.1	0.0	128.5			
21.00		0.3438	34.225	37.507	5,495.50	23.99	99.55	78.5	310.2	0.0	127.9			
22.00		0.3438	34.069	37.335	5,420.00	23.87	99.09	78.7	307.3	0.0	127.3			
23.00		0.3438	33.913	37.162	5,345.10	23.75	98.64	78.8	304.5	0.0	126.7			
24.00		0.3438	33.757	36.989	5,270.90	23.63	98.19	78.9	301.6	0.0	126.2			
25.00		0.3438	33.601	36.817	5,197.50	23.51	97.73	79.1	298.8	0.0	125.6			
26.00		0.3438	33.445	36.644	5,124.70	23.39	97.28	79.2	296.0	0.0	125.0			
27.00		0.3438	33.289	36.471	5,052.60	23.26	96.83	79.3	293.2	0.0	124.4			
28.00		0.3438	33.133	36.299	4,981.20	23.14	96.37	79.5	290.4	0.0	123.8			
29.00		0.3438	32.977	36.126	4,910.40	23.02	95.92	79.6	287.7	0.0	123.2			
30.00		0.3438	32.821	35.953	4,840.30	22.90	95.46	79.7	284.9	0.0	122.6			
31.00		0.3438	32.665	35.781	4,770.90	22.78	95.01	79.9	282.2	0.0	122.0			
32.00		0.3438	32.509	35.608	4,702.20	22.66	94.56	80	279.4	0.0	121.5			
33.00		0.3438	32.353	35.435	4,634.10	22.54	94.10	80.1	276.7	0.0	120.9			
34.00		0.3438	32.197	35.263	4,566.70	22.41	93.65	80.3	274.0	0.0	120.3			
35.00		0.3438	32.041	35.090	4,499.90	22.29	93.20	80.4	271.3	0.0	119.7			
36.00		0.3438	31.885	34.917	4,433.80	22.17	92.74	80.5	268.6	0.0	119.1			
37.00		0.3438	31.729	34.745	4,368.40	22.05	92.29	80.7	266.0	0.0	118.5			
38.00		0.3438	31.573	34.572	4,303.60	21.93	91.84	80.8	263.3	0.0	117.9			
39.00		0.3438	31.417	34.399	4,239.40	21.81	91.38	80.9	260.7	0.0	117.3			
40.00		0.3438	31.261	34.227	4,175.90	21.68	90.93	81.1	258.1	0.0	116.8			
41.00		0.3438	31.105	34.054	4,113.00	21.56	90.47	81.2	255.4	0.0	116.2			
42.00		0.3438	30.949	33.881	4,050.80	21.44	90.02	81.3	252.9	0.0	115.6			
43.00		0.3438	30.793	33.709	3,989.20	21.32	89.57	81.5	250.3	0.0	115.0			
44.00		0.3438	30.637	33.536	3,928.20	21.20	89.11	81.6	247.7	0.0	114.4			
45.00		0.3438	30.481	33.363	3,867.80	21.08	88.66	81.7	245.1	0.0	113.8			
46.00		0.3438	30.325	33.191	3,808.10	20.96	88.21	81.9	242.6	0.0	113.2			
47.00		0.3438	30.169	33.018	3,748.90	20.83	87.75	81.9	240.1	0.0	112.6			
48.00		0.3438	30.013	32.845	3,690.40	20.71	87.30	81.9	237.5	0.0	112.1			
49.00		0.3438	29.857	32.673	3,632.50	20.59	86.84	81.9	235.0	0.0	111.5			
49.42	Reinf Bottom	0.3438	29.792	32.600	3,608.40	20.54	86.65	81.9	234.0	0.0	46.6			
50.00		0.3438	29.701	32.500	3,575.20	20.47	86.39	81.9	232.5	0.0	64.2	19.640	3,292.90	38.7
50.08	Bot - Section 2	0.3438	29.688	32.485	3,570.50	20.46	86.35	81.9	232.3	0.0	9.2	19.640	3,290.60	5.6
51.00		0.3438	29.545	32.327	3,518.60	20.35	85.94	81.9	230.1	0.0	176.1	19.640	3,355.00	61.2
52.00		0.3438	29.389	32.155	3,462.50	20.23	85.48	81.9	227.6	0.0	191.1	19.640	3,326.80	66.8
53.00		0.3438	29.233	31.982	3,407.00	20.10	85.03	81.9	225.1	0.0	190.1	19.640	3,298.70	66.8
54.00		0.3438	29.077	31.809	3,352.10	19.98	84.58	81.9	222.7	0.0	189.1	19.640	3,270.70	66.8
55.00	Top - Section 1	0.2500	29.421	23.483	2,550.70	28.85	117.69	73.2	167.5	0.0	188.1	19.640	3,242.90	66.8

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)	Additional Reinforcing		
												Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	Weight (lb)
56.00		0.2500	29.265	23.357	2,510.00	28.69	117.06	73.4	165.7	0.0	79.7	19.640	3,215.10	66.8
57.00		0.2500	29.110	23.232	2,469.70	28.52	116.44	73.6	163.9	0.0	79.3	19.640	3,187.50	66.8
58.00		0.2500	28.954	23.106	2,429.90	28.35	115.81	73.8	162.1	0.0	78.8	19.640	3,160.00	66.8
59.00		0.2500	28.798	22.981	2,390.50	28.19	115.19	74	160.4	0.0	78.4	19.640	3,132.60	66.8
60.00		0.2500	28.642	22.855	2,351.50	28.02	114.57	74.2	158.6	0.0	78.0	19.640	3,105.40	66.8
61.00		0.2500	28.486	22.730	2,313.00	27.85	113.94	74.3	156.9	0.0	77.6	19.640	3,078.20	66.8
62.00		0.2500	28.330	22.604	2,274.90	27.68	113.32	74.5	155.1	0.0	77.1	19.640	3,051.20	66.8
63.00		0.2500	28.174	22.479	2,237.20	27.52	112.69	74.7	153.4	0.0	76.7	19.640	3,024.30	66.8
64.00		0.2500	28.018	22.353	2,199.90	27.35	112.07	74.9	151.7	0.0	76.3	19.640	2,997.50	66.8
65.00		0.2500	27.862	22.227	2,163.00	27.18	111.45	75.1	150.0	0.0	75.8	19.640	2,970.80	66.8
66.00		0.2500	27.706	22.102	2,126.60	27.02	110.82	75.3	148.3	0.0	75.4	19.640	2,944.30	66.8
67.00		0.2500	27.550	21.976	2,090.50	26.85	110.20	75.4	146.6	0.0	75.0	19.640	2,917.90	66.8
68.00		0.2500	27.394	21.851	2,054.90	26.68	109.58	75.6	144.9	0.0	74.6	19.640	2,891.50	66.8
69.00		0.2500	27.238	21.725	2,019.70	26.51	108.95	75.8	143.2	0.0	74.1	19.640	2,865.40	66.8
70.00		0.2500	27.082	21.600	1,984.90	26.35	108.33	76	141.6	0.0	73.7	19.640	2,839.30	66.8
71.00		0.2500	26.926	21.474	1,950.50	26.18	107.70	76.2	139.9	0.0	73.3	19.640	2,813.30	66.8
72.00		0.2500	26.770	21.349	1,916.50	26.01	107.08	76.3	138.3	0.0	72.9	19.640	2,787.50	66.8
73.00		0.2500	26.614	21.223	1,882.80	25.85	106.46	76.5	136.7	0.0	72.4	19.640	2,761.80	66.8
74.00		0.2500	26.458	21.097	1,849.60	25.68	105.83	76.7	135.1	0.0	72.0	19.640	2,736.20	66.8
75.00		0.2500	26.302	20.972	1,816.80	25.51	105.21	76.9	133.4	0.0	71.6	19.640	2,710.70	66.8
76.00		0.2500	26.146	20.846	1,784.40	25.34	104.58	77.1	131.8	0.0	71.1	19.640	2,685.40	66.8
77.00		0.2500	25.990	20.721	1,752.30	25.18	103.96	77.3	130.2	0.0	70.7	19.640	2,660.20	66.8
78.00		0.2500	25.834	20.595	1,720.60	25.01	103.34	77.4	128.7	0.0	70.3	19.640	2,635.00	66.8
79.00		0.2500	25.678	20.470	1,689.40	24.84	102.71	77.6	127.1	0.0	69.9	19.640	2,610.00	66.8
80.00		0.2500	25.522	20.344	1,658.50	24.68	102.09	77.8	125.5	0.0	69.4	19.640	2,585.20	66.8
81.00		0.2500	25.366	20.219	1,628.00	24.51	101.46	78	124.0	0.0	69.0	19.640	2,560.40	66.8
82.00		0.2500	25.210	20.093	1,597.80	24.34	100.84	78.2	122.4	0.0	68.6	19.640	2,535.80	66.8
83.00		0.2500	25.054	19.967	1,568.00	24.17	100.22	78.3	120.9	0.0	68.2	19.640	2,511.30	66.8
84.00		0.2500	24.898	19.842	1,538.60	24.01	99.59	78.5	119.4	0.0	67.7	19.640	2,486.90	66.8
85.00		0.2500	24.742	19.716	1,509.60	23.84	98.97	78.7	117.9	0.0	67.3	19.640	2,462.60	66.8
86.00		0.2500	24.586	19.591	1,481.00	23.67	98.35	78.9	116.4	0.0	66.9	19.640	2,438.40	66.8
87.00		0.2500	24.430	19.465	1,452.70	23.50	97.72	79.1	114.9	0.0	66.4	19.640	2,414.40	66.8
88.00		0.2500	24.274	19.340	1,424.70	23.34	97.10	79.3	113.4	0.0	66.0	19.640	2,390.50	66.8
89.00		0.2500	24.118	19.214	1,397.20	23.17	96.47	79.4	111.9	0.0	65.6	19.640	2,366.70	66.8
90.00		0.2500	23.962	19.088	1,370.00	23.00	95.85	79.6	110.4	0.0	65.2	19.640	2,343.00	66.8
91.00		0.2500	23.806	18.963	1,343.10	22.84	95.23	79.8	109.0	0.0	64.7	19.640	2,319.40	66.8
92.00		0.2500	23.650	18.837	1,316.60	22.67	94.60	80	107.5	0.0	64.3	19.640	2,296.00	66.8
93.00		0.2500	23.494	18.712	1,290.50	22.50	93.98	80.2	106.1	0.0	63.9	19.640	2,272.70	66.8
94.00		0.2500	23.339	18.586	1,264.60	22.33	93.35	80.4	104.7	0.0	63.5	19.640	2,249.50	66.8
95.00		0.2500	23.183	18.461	1,239.20	22.17	92.73	80.5	103.3	0.0	63.0	19.640	2,226.40	66.8
96.00		0.2500	23.027	18.335	1,214.10	22.00	92.11	80.7	101.9	0.0	62.6	19.640	2,203.40	66.8
97.00		0.2500	22.871	18.210	1,189.30	21.83	91.48	80.9	100.5	0.0	62.2	19.640	2,180.60	66.8
98.00		0.2500	22.715	18.084	1,164.90	21.67	90.86	81.1	99.1	0.0	61.7	19.640	2,157.90	66.8
99.00		0.2500	22.559	17.958	1,140.80	21.50	90.23	81.3	97.7	0.0	61.3	19.640	2,135.30	66.8
100.00		0.2500	22.403	17.833	1,117.00	21.33	89.61	81.4	96.3	0.0	60.9	19.640	2,112.80	66.8
101.00	Bot - Section 3	0.2500	22.247	17.707	1,093.60	21.16	88.99	81.6	95.0	0.0	60.5	19.640	2,090.40	66.8
102.00		0.2500	22.091	17.582	1,070.50	21.00	88.36	81.8	93.6	0.0	106.0	19.640	2,121.80	66.8
103.00		0.2500	21.935	17.456	1,047.70	20.83	87.74	81.9	92.3	0.0	105.2	19.640	2,099.40	66.8
104.00		0.2500	21.779	17.331	1,025.30	20.66	87.12	81.9	90.9	0.0	104.5	19.640	2,077.10	66.8
105.00	Top - Section 2	0.1875	21.998	13.168	799.50	28.76	117.32	73.4	70.2	0.0	103.7	19.640	2,055.00	66.8
106.00		0.1875	21.842	13.074	782.50	28.53	116.49	73.6	69.2	0.0	44.6	19.640	2,032.90	66.8
107.00		0.1875	21.686	12.980	765.70	28.31	115.66	73.8	68.2	0.0	44.3	19.640	2,011.00	66.8
108.00		0.1875	21.530	12.885	749.20	28.09	114.83	74.1	67.2	0.0	44.0	19.640	1,989.20	66.8
108.94	Reinf. Top	0.1875	21.383	12.797	733.80	27.88	114.04	74.3	66.3	0.0	41.1	19.640	1,968.80	62.8
109.00		0.1875	21.374	12.791	732.80	27.87	113.99	74.3	66.2	0.0	2.6			
110.00		0.1875	21.218	12.697	716.80	27.64	113.16	74.6	65.3	0.0	43.4			
111.00		0.1875	21.062	12.603	701.00	27.42	112.33	74.8	64.3	0.0	43.0			
112.00		0.1875	20.906	12.509	685.40	27.20	111.50	75.1	63.3	0.0	42.7			
113.00		0.1875	20.750	12.415	670.00	26.97	110.67	75.3	62.4	0.0	42.4			
114.00		0.1875	20.594	12.320	654.90	26.75	109.83	75.5	61.4	0.0	42.1			
115.00		0.1875	20.438	12.226	640.00	26.53	109.00	75.8	60.5	0.0	41.8			

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)	Additional Reinforcing		
												Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	Weight (lb)
116.00		0.1875	20.282	12.132	625.30	26.30	108.17	76	59.6	0.0	41.4			
117.00		0.1875	20.126	12.038	610.80	26.08	107.34	76.3	58.6	0.0	41.1			
118.00		0.1875	19.970	11.944	596.60	25.86	106.51	76.5	57.7	0.0	40.8			
119.00		0.1875	19.814	11.850	582.60	25.64	105.68	76.8	56.8	0.0	40.5			
120.00		0.1875	19.658	11.755	568.80	25.41	104.84	77	55.9	0.0	40.2			
121.00		0.1875	19.502	11.661	555.30	25.19	104.01	77.2	55.0	0.0	39.8			
122.00		0.1875	19.346	11.567	541.90	24.97	103.18	77.5	54.1	0.0	39.5			
123.00		0.1875	19.190	11.473	528.80	24.74	102.35	77.7	53.2	0.0	39.2			
124.00		0.1875	19.034	11.379	515.90	24.52	101.52	78	52.4	0.0	38.9			
125.00		0.1875	18.878	11.285	503.20	24.30	100.68	78.2	51.5	0.0	38.6			
126.00		0.1875	18.722	11.190	490.70	24.08	99.85	78.5	50.6	0.0	38.2			
127.00		0.1875	18.566	11.096	478.40	23.85	99.02	78.7	49.8	0.0	37.9			
128.00		0.1875	18.410	11.002	466.30	23.63	98.19	78.9	48.9	0.0	37.6			
129.00		0.1875	18.254	10.908	454.50	23.41	97.36	79.2	48.1	0.0	37.3			
130.00		0.1875	18.098	10.814	442.80	23.18	96.53	79.4	47.3	0.0	37.0			
131.00		0.1875	17.942	10.720	431.30	22.96	95.69	79.7	46.4	0.0	36.6			
132.00		0.1875	17.787	10.625	420.10	22.74	94.86	79.9	45.6	0.0	36.3			
133.00		0.1875	17.631	10.531	409.00	22.52	94.03	80.2	44.8	0.0	36.0			
134.00		0.1875	17.475	10.437	398.10	22.29	93.20	80.4	44.0	0.0	35.7			
135.00		0.1875	17.319	10.343	387.40	22.07	92.37	80.6	43.2	0.0	35.4			
136.00		0.1875	17.163	10.249	376.90	21.85	91.53	80.9	42.4	0.0	35.0			
137.00		0.1875	17.007	10.155	366.70	21.62	90.70	81.1	41.6	0.0	34.7			
138.00		0.1875	16.851	10.060	356.50	21.40	89.87	81.4	40.9	0.0	34.4			
139.00		0.1875	16.695	9.966	346.60	21.18	89.04	81.6	40.1	0.0	34.1			
140.00		0.1875	16.539	9.872	336.90	20.96	88.21	81.9	39.4	0.0	33.8			
141.00		0.1875	16.383	9.778	327.30	20.73	87.37	81.9	38.6	0.0	33.4			
142.00		0.1875	16.227	9.684	318.00	20.51	86.54	81.9	37.9	0.0	33.1			
143.00		0.1875	16.071	9.590	308.80	20.29	85.71	81.9	37.1	0.0	32.8			
143.80		0.1875	15.946	9.514	301.60	20.11	85.05	81.9	36.5	0.0	26.0			
144.00		0.1875	15.915	9.495	299.80	20.06	84.88	81.9	36.4	0.0	6.5			
144.20		0.1875	15.884	9.477	298.00	20.02	84.71	81.9	36.2	0.0	6.5			
145.00		0.1875	15.759	9.401	291.00	19.84	84.05	81.9	35.7	0.0	25.7			
146.00		0.1875	15.603	9.307	282.30	19.62	83.22	81.9	35.0	0.0	31.8			
147.00		0.1875	15.447	9.213	273.80	19.40	82.38	81.9	34.2	0.0	31.5			
148.00		0.1875	15.291	9.119	265.50	19.17	81.55	81.9	33.5	0.0	31.2			
149.00		0.1875	15.135	9.025	257.40	18.95	80.72	81.9	32.9	0.0	30.9			
150.00		0.1875	14.979	8.930	249.40	18.73	79.89	81.9	32.2	0.0	30.5			
<b>Totals:</b>											<b>12,542.3</b>	<b>5,010.0</b>		

CALCULATED FORCES

Load Case: 1.2D + 1.0W												108 mph Wind with No Ice			38 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	-34.50	-16.88	0.00	-1,731.2	0.00	1,731.20	2,804.67	721.89	2,530.39	2,121.74	0	0	0.498			
1.00	-34.19	-16.80	0.00	-1,714.3	0.00	1,714.33	2,797.79	718.86	2,509.20	2,107.56	0	-0.04	0.495			
2.00	-33.89	-16.73	0.00	-1,697.5	0.00	1,697.53	2,790.86	715.83	2,488.09	2,093.40	0.02	-0.08	0.493			
3.00	-33.59	-16.65	0.00	-1,680.8	0.00	1,680.80	2,783.89	712.80	2,467.08	2,079.25	0.04	-0.12	0.490			
4.00	-33.29	-16.58	0.00	-1,664.2	0.00	1,664.15	2,776.88	709.77	2,446.15	2,065.12	0.07	-0.16	0.487			
5.00	-32.99	-16.50	0.00	-1,647.6	0.00	1,647.57	2,769.83	706.74	2,425.32	2,051.00	0.11	-0.2	0.485			
6.00	-32.70	-16.43	0.00	-1,631.1	0.00	1,631.07	2,762.74	703.71	2,404.57	2,036.89	0.16	-0.24	0.482			
7.00	-32.40	-16.35	0.00	-1,614.6	0.00	1,614.64	2,755.61	700.68	2,383.91	2,022.80	0.21	-0.28	0.479			
8.00	-32.10	-16.28	0.00	-1,598.3	0.00	1,598.29	2,748.43	697.65	2,363.34	2,008.73	0.27	-0.32	0.477			
9.00	-31.81	-16.20	0.00	-1,582.0	0.00	1,582.01	2,741.22	694.62	2,342.86	1,994.67	0.35	-0.37	0.474			
10.00	-31.51	-16.13	0.00	-1,565.8	0.00	1,565.81	2,733.96	691.59	2,322.47	1,980.63	0.43	-0.41	0.471			
11.00	-31.22	-16.05	0.00	-1,549.7	0.00	1,549.68	2,726.66	688.55	2,302.17	1,966.60	0.52	-0.45	0.469			
12.00	-30.92	-15.98	0.00	-1,533.6	0.00	1,533.63	2,719.32	685.52	2,281.96	1,952.60	0.62	-0.49	0.466			
13.00	-30.63	-15.90	0.00	-1,517.6	0.00	1,517.65	2,711.94	682.49	2,261.84	1,938.61	0.72	-0.53	0.463			

CALCULATED FORCES

14.00	-30.34	-15.83	0.00	-1,501.8	0.00	1,501.75	2,704.52	679.46	2,241.80	1,924.63	0.84	-0.57	0.460
15.00	-30.05	-15.77	0.00	-1,485.9	0.00	1,485.92	2,697.06	676.43	2,221.86	1,910.68	0.96	-0.61	0.458
15.48	-29.91	-15.73	0.00	-1,478.4	0.00	1,478.35	2,693.46	674.98	2,212.31	1,903.99	1.02	-0.63	0.456
15.48	-29.91	-15.73	0.00	-1,478.4	0.00	1,478.35	2,693.46	674.98	2,212.31	1,903.99	1.02	-0.63	0.788
16.00	-29.80	-15.68	0.00	-1,470.2	0.00	1,470.18	2,689.56	673.40	2,202.00	1,896.74	1.09	-0.65	0.787
17.00	-29.58	-15.63	0.00	-1,454.5	0.00	1,454.49	2,682.01	670.37	2,182.23	1,882.83	1.24	-0.72	0.784
18.00	-29.36	-15.57	0.00	-1,438.9	0.00	1,438.87	2,674.42	667.34	2,162.56	1,868.93	1.4	-0.79	0.781
19.00	-29.15	-15.51	0.00	-1,423.3	0.00	1,423.30	2,666.80	664.31	2,142.97	1,855.06	1.57	-0.86	0.779
20.00	-28.93	-15.45	0.00	-1,407.8	0.00	1,407.79	2,659.13	661.28	2,123.47	1,841.20	1.76	-0.93	0.776
21.00	-28.72	-15.39	0.00	-1,392.3	0.00	1,392.34	2,651.42	658.25	2,104.06	1,827.36	1.96	-1.01	0.773
22.00	-28.50	-15.33	0.00	-1,377.0	0.00	1,376.96	2,643.67	655.22	2,084.74	1,813.55	2.18	-1.08	0.771
23.00	-28.30	-15.28	0.00	-1,361.6	0.00	1,361.63	2,635.87	652.19	2,065.50	1,799.76	2.42	-1.15	0.768
24.00	-28.11	-15.25	0.00	-1,346.4	0.00	1,346.35	2,628.04	649.16	2,046.36	1,785.99	2.66	-1.22	0.765
25.00	-27.92	-15.23	0.00	-1,331.1	0.00	1,331.10	2,620.17	646.13	2,027.31	1,772.24	2.93	-1.29	0.762
26.00	-27.74	-15.20	0.00	-1,315.9	0.00	1,315.87	2,612.25	643.10	2,008.34	1,758.51	3.21	-1.37	0.759
27.00	-27.55	-15.17	0.00	-1,300.7	0.00	1,300.67	2,604.29	640.07	1,989.47	1,744.81	3.5	-1.44	0.757
28.00	-27.36	-15.14	0.00	-1,285.5	0.00	1,285.50	2,596.29	637.04	1,970.68	1,731.13	3.81	-1.51	0.754
29.00	-27.18	-15.12	0.00	-1,270.4	0.00	1,270.36	2,588.25	634.01	1,951.98	1,717.48	4.14	-1.59	0.751
30.00	-26.99	-15.09	0.00	-1,255.2	0.00	1,255.24	2,580.17	630.98	1,933.38	1,703.85	4.48	-1.66	0.748
31.00	-26.81	-15.06	0.00	-1,240.2	0.00	1,240.15	2,572.05	627.95	1,914.86	1,690.24	4.83	-1.73	0.745
32.00	-26.62	-15.03	0.00	-1,225.1	0.00	1,225.09	2,563.89	624.92	1,896.43	1,676.66	5.2	-1.81	0.742
33.00	-26.44	-15.01	0.00	-1,210.1	0.00	1,210.06	2,555.68	621.89	1,878.09	1,663.10	5.59	-1.88	0.739
34.00	-26.26	-14.98	0.00	-1,195.0	0.00	1,195.05	2,547.44	618.86	1,859.83	1,649.57	5.99	-1.95	0.735
35.00	-26.08	-14.95	0.00	-1,180.1	0.00	1,180.07	2,539.15	615.83	1,841.67	1,636.07	6.41	-2.03	0.732
36.00	-25.90	-14.92	0.00	-1,165.1	0.00	1,165.13	2,530.82	612.80	1,823.60	1,622.59	6.84	-2.1	0.729
37.00	-25.72	-14.88	0.00	-1,150.2	0.00	1,150.21	2,522.45	609.77	1,805.61	1,609.14	7.29	-2.18	0.726
38.00	-25.54	-14.85	0.00	-1,135.3	0.00	1,135.33	2,514.04	606.74	1,787.72	1,595.72	7.75	-2.25	0.722
39.00	-25.36	-14.82	0.00	-1,120.5	0.00	1,120.48	2,505.59	603.71	1,769.91	1,582.33	8.23	-2.32	0.719
40.00	-25.18	-14.79	0.00	-1,105.7	0.00	1,105.66	2,497.10	600.68	1,752.19	1,568.96	8.72	-2.4	0.715
41.00	-25.01	-14.76	0.00	-1,090.9	0.00	1,090.87	2,488.57	597.65	1,734.57	1,555.63	9.24	-2.47	0.712
42.00	-24.83	-14.72	0.00	-1,076.1	0.00	1,076.11	2,479.99	594.61	1,717.03	1,542.32	9.76	-2.55	0.708
43.00	-24.66	-14.68	0.00	-1,061.4	0.00	1,061.39	2,471.37	591.58	1,699.58	1,529.04	10.3	-2.62	0.705
44.00	-24.47	-14.61	0.00	-1,046.7	0.00	1,046.71	2,462.72	588.55	1,682.22	1,515.79	10.86	-2.7	0.701
45.00	-24.28	-14.54	0.00	-1,032.1	0.00	1,032.10	2,454.02	585.52	1,664.95	1,502.57	11.43	-2.77	0.697
46.00	-24.09	-14.47	0.00	-1,017.6	0.00	1,017.56	2,445.28	582.49	1,647.76	1,489.39	12.02	-2.85	0.694
47.00	-23.90	-14.40	0.00	-1,003.1	0.00	1,003.09	2,433.75	579.46	1,630.67	1,474.56	12.63	-2.92	0.691
48.00	-23.70	-14.33	0.00	-988.7	0.00	988.70	2,421.02	576.43	1,613.67	1,459.09	13.25	-3	0.688
49.00	-23.52	-14.27	0.00	-974.4	0.00	974.37	2,408.29	573.40	1,596.75	1,443.70	13.88	-3.08	0.685
49.42	-23.44	-14.23	0.00	-968.4	0.00	968.38	2,402.95	572.13	1,589.67	1,437.27	14.16	-3.11	0.684
50.00	-23.29	-14.20	0.00	-960.1	0.00	960.12	2,395.56	570.37	1,579.93	1,428.40	14.54	-3.15	0.357
50.08	-23.26	-14.16	0.00	-958.9	0.00	958.94	2,394.50	570.12	1,578.53	1,427.13	14.59	-3.16	0.356
51.00	-22.93	-14.07	0.00	-946.0	0.00	945.96	2,382.84	567.34	1,563.19	1,413.17	15.2	-3.19	0.349
52.00	-22.58	-13.97	0.00	-931.9	0.00	931.89	2,370.11	564.31	1,546.54	1,398.03	15.87	-3.23	0.346
53.00	-22.22	-13.87	0.00	-917.9	0.00	917.92	2,357.38	561.28	1,529.98	1,382.97	16.55	-3.27	0.344
54.00	-21.87	-13.77	0.00	-904.0	0.00	904.05	2,344.65	558.25	1,513.51	1,367.99	17.24	-3.31	0.341
55.00	-21.52	-13.66	0.00	-890.3	0.00	890.29	1,548.01	412.13	1,134.11	920.03	17.94	-3.35	0.435
56.00	-21.30	-13.57	0.00	-876.6	0.00	876.62	1,543.56	409.92	1,122.02	912.45	18.64	-3.38	0.430
57.00	-21.08	-13.48	0.00	-863.0	0.00	863.05	1,539.08	407.72	1,109.99	904.86	19.36	-3.43	0.425
58.00	-20.85	-13.38	0.00	-849.6	0.00	849.58	1,534.55	405.52	1,098.03	897.28	20.08	-3.47	0.420
59.00	-20.63	-13.29	0.00	-836.2	0.00	836.20	1,529.98	403.31	1,086.13	889.71	20.81	-3.51	0.415
60.00	-20.41	-13.19	0.00	-822.9	0.00	822.91	1,525.38	401.11	1,074.30	882.14	21.55	-3.56	0.410
61.00	-20.19	-13.10	0.00	-809.7	0.00	809.72	1,520.73	398.91	1,062.53	874.58	22.3	-3.6	0.405
62.00	-19.98	-13.00	0.00	-796.6	0.00	796.62	1,516.03	396.70	1,050.83	867.02	23.06	-3.64	0.401
63.00	-19.76	-12.90	0.00	-783.6	0.00	783.62	1,511.30	394.50	1,039.19	859.47	23.83	-3.68	0.396
64.00	-19.54	-12.81	0.00	-770.7	0.00	770.72	1,506.53	392.30	1,027.62	851.93	24.6	-3.73	0.391
65.00	-19.32	-12.71	0.00	-757.9	0.00	757.91	1,501.71	390.09	1,016.11	844.39	25.39	-3.77	0.386
66.00	-19.11	-12.61	0.00	-745.2	0.00	745.20	1,496.86	387.89	1,004.67	836.87	26.18	-3.81	0.381
67.00	-18.89	-12.52	0.00	-732.6	0.00	732.58	1,491.96	385.68	993.29	829.35	26.98	-3.85	0.376
68.00	-18.68	-12.42	0.00	-720.1	0.00	720.07	1,487.02	383.48	981.97	821.84	27.79	-3.89	0.372
69.00	-18.47	-12.32	0.00	-707.6	0.00	707.65	1,482.04	381.28	970.72	814.33	28.61	-3.93	0.367
70.00	-18.25	-12.22	0.00	-695.3	0.00	695.33	1,477.02	379.07	959.54	806.84	29.44	-3.97	0.362
71.00	-18.04	-12.12	0.00	-683.1	0.00	683.11	1,471.96	376.87	948.42	799.36	30.28	-4.01	0.357
72.00	-17.83	-12.02	0.00	-671.0	0.00	670.98	1,466.86	374.67	937.36	791.89	31.12	-4.06	0.353

CALCULATED FORCES

73.00	-17.62	-11.93	0.00	-659.0	0.00	658.96	1,461.71	372.46	926.37	784.43	31.98	-4.1	0.348
74.00	-17.41	-11.83	0.00	-647.0	0.00	647.04	1,456.52	370.26	915.45	776.97	32.84	-4.14	0.343
75.00	-17.20	-11.73	0.00	-635.2	0.00	635.21	1,451.30	368.06	904.59	769.54	33.71	-4.18	0.338
76.00	-16.99	-11.63	0.00	-623.5	0.00	623.48	1,446.03	365.85	893.79	762.11	34.59	-4.21	0.334
77.00	-16.78	-11.53	0.00	-611.9	0.00	611.86	1,440.72	363.65	883.06	754.69	35.47	-4.25	0.329
78.00	-16.58	-11.43	0.00	-600.3	0.00	600.33	1,435.37	361.45	872.40	747.29	36.37	-4.29	0.324
79.00	-16.37	-11.32	0.00	-588.9	0.00	588.91	1,429.98	359.24	861.80	739.90	37.27	-4.33	0.320
80.00	-16.16	-11.22	0.00	-577.6	0.00	577.58	1,424.55	357.04	851.26	732.52	38.18	-4.37	0.315
81.00	-15.96	-11.12	0.00	-566.4	0.00	566.36	1,419.07	354.83	840.79	725.16	39.1	-4.41	0.310
82.00	-15.75	-11.02	0.00	-555.2	0.00	555.24	1,413.56	352.63	830.38	717.81	40.03	-4.45	0.306
83.00	-15.55	-10.92	0.00	-544.2	0.00	544.22	1,408.00	350.43	820.04	710.48	40.96	-4.48	0.301
84.00	-15.35	-10.82	0.00	-533.3	0.00	533.30	1,402.40	348.22	809.76	703.16	41.9	-4.52	0.296
85.00	-15.14	-10.72	0.00	-522.5	0.00	522.48	1,396.76	346.02	799.55	695.86	42.86	-4.56	0.292
86.00	-14.94	-10.61	0.00	-511.8	0.00	511.76	1,391.08	343.82	789.40	688.57	43.81	-4.6	0.287
87.00	-14.74	-10.51	0.00	-501.2	0.00	501.15	1,385.36	341.61	779.32	681.30	44.78	-4.63	0.283
88.00	-14.54	-10.41	0.00	-490.6	0.00	490.63	1,379.60	339.41	769.30	674.04	45.75	-4.67	0.278
89.00	-14.34	-10.31	0.00	-480.2	0.00	480.22	1,373.79	337.21	759.35	666.80	46.73	-4.71	0.273
90.00	-14.14	-10.21	0.00	-469.9	0.00	469.92	1,367.95	335.00	749.46	659.58	47.72	-4.74	0.269
91.00	-13.94	-10.10	0.00	-459.7	0.00	459.71	1,362.06	332.80	739.64	652.38	48.72	-4.78	0.264
92.00	-13.75	-10.00	0.00	-449.6	0.00	449.61	1,356.14	330.60	729.88	645.19	49.72	-4.81	0.260
93.00	-13.55	-9.90	0.00	-439.6	0.00	439.61	1,350.17	328.39	720.18	638.03	50.73	-4.85	0.255
94.00	-13.35	-9.80	0.00	-429.7	0.00	429.71	1,344.16	326.19	710.55	630.88	51.75	-4.88	0.251
95.00	-13.16	-9.69	0.00	-419.9	0.00	419.91	1,338.11	323.99	700.99	623.75	52.78	-4.92	0.246
96.00	-12.96	-9.59	0.00	-410.2	0.00	410.22	1,332.01	321.78	691.49	616.64	53.81	-4.95	0.242
97.00	-12.77	-9.49	0.00	-400.6	0.00	400.63	1,325.88	319.58	682.06	609.56	54.85	-4.99	0.237
98.00	-12.57	-9.38	0.00	-391.1	0.00	391.14	1,319.71	317.37	672.69	602.49	55.9	-5.02	0.233
99.00	-12.38	-9.28	0.00	-381.8	0.00	381.76	1,313.49	315.17	663.38	595.44	56.95	-5.05	0.229
100.00	-12.19	-9.18	0.00	-372.5	0.00	372.48	1,307.23	312.97	654.14	588.41	58.01	-5.08	0.224
101.00	-12.00	-9.07	0.00	-363.3	0.00	363.30	1,300.93	310.76	644.97	581.41	59.08	-5.12	0.220
102.00	-11.75	-8.97	0.00	-354.2	0.00	354.23	1,294.59	308.56	635.85	574.43	60.15	-5.15	0.212
103.00	-11.51	-8.86	0.00	-345.3	0.00	345.26	1,286.70	306.36	626.81	566.80	61.23	-5.18	0.208
104.00	-11.26	-8.75	0.00	-336.4	0.00	336.40	1,277.44	304.15	617.83	558.63	62.32	-5.21	0.204
105.00	-11.02	-8.64	0.00	-327.7	0.00	327.66	869.30	231.10	475.47	386.27	63.41	-5.24	0.244
106.00	-10.85	-8.53	0.00	-319.0	0.00	319.02	865.94	229.45	468.70	382.00	64.51	-5.27	0.238
107.00	-10.68	-8.43	0.00	-310.5	0.00	310.49	862.54	227.79	461.97	377.74	65.62	-5.3	0.233
108.00	-10.51	-8.33	0.00	-302.1	0.00	302.06	859.11	226.14	455.29	373.48	66.73	-5.33	0.227
108.94	-10.35	-8.26	0.00	-294.2	0.00	294.23	855.84	224.59	449.06	369.48	67.78	-5.36	0.222
108.94	-10.35	-8.26	0.00	-294.2	0.00	294.23	855.84	224.59	449.06	369.48	67.78	-5.36	0.810
109.00	-10.34	-8.23	0.00	-293.7	0.00	293.73	855.63	224.49	448.67	369.23	67.85	-5.37	0.809
110.00	-10.23	-8.15	0.00	-285.5	0.00	285.50	852.10	222.83	442.09	364.98	68.99	-5.48	0.796
111.00	-10.13	-8.07	0.00	-277.3	0.00	277.34	848.54	221.18	435.55	360.73	70.14	-5.59	0.782
112.00	-10.03	-7.99	0.00	-269.3	0.00	269.27	844.94	219.53	429.07	356.49	71.32	-5.7	0.769
113.00	-9.93	-7.91	0.00	-261.3	0.00	261.28	841.29	217.88	422.64	352.26	72.53	-5.81	0.755
114.00	-9.85	-7.84	0.00	-253.4	0.00	253.36	837.61	216.22	416.25	348.03	73.76	-5.92	0.741
115.00	-9.77	-7.80	0.00	-245.5	0.00	245.53	833.88	214.57	409.92	343.81	75.01	-6.03	0.727
116.00	-9.69	-7.76	0.00	-237.7	0.00	237.73	830.11	212.92	403.63	339.60	76.28	-6.14	0.713
117.00	-9.61	-7.72	0.00	-230.0	0.00	229.97	826.30	211.27	397.39	335.39	77.57	-6.24	0.699
118.00	-9.53	-7.68	0.00	-222.2	0.00	222.25	822.45	209.61	391.20	331.19	78.89	-6.35	0.684
119.00	-9.46	-7.63	0.00	-214.6	0.00	214.58	818.56	207.96	385.05	327.00	80.23	-6.45	0.669
120.00	-9.38	-7.59	0.00	-207.0	0.00	206.95	814.63	206.31	378.96	322.82	81.59	-6.55	0.654
121.00	-9.31	-7.55	0.00	-199.4	0.00	199.35	810.65	204.66	372.92	318.64	82.97	-6.66	0.638
122.00	-9.23	-7.51	0.00	-191.8	0.00	191.80	806.64	203.00	366.92	314.48	84.37	-6.76	0.623
123.00	-9.16	-7.47	0.00	-184.3	0.00	184.29	802.58	201.35	360.97	310.33	85.79	-6.86	0.607
124.00	-9.08	-7.43	0.00	-176.8	0.00	176.82	798.48	199.70	355.07	306.18	87.23	-6.95	0.590
125.00	-9.01	-7.38	0.00	-169.4	0.00	169.40	794.34	198.04	349.22	302.05	88.7	-7.05	0.574
126.00	-8.94	-7.34	0.00	-162.0	0.00	162.01	790.16	196.39	343.42	297.93	90.18	-7.14	0.557
127.00	-8.87	-7.30	0.00	-154.7	0.00	154.67	785.94	194.74	337.67	293.82	91.68	-7.23	0.539
128.00	-8.80	-7.26	0.00	-147.4	0.00	147.37	781.68	193.09	331.96	289.72	93.2	-7.32	0.521
129.00	-8.73	-7.21	0.00	-140.1	0.00	140.12	777.38	191.43	326.30	285.63	94.74	-7.41	0.503
130.00	-8.66	-7.17	0.00	-132.9	0.00	132.90	773.03	189.78	320.70	281.56	96.3	-7.5	0.485
131.00	-8.59	-7.13	0.00	-125.7	0.00	125.73	768.64	188.13	315.14	277.50	97.87	-7.58	0.466
132.00	-8.53	-7.09	0.00	-118.6	0.00	118.60	764.22	186.48	309.63	273.45	99.46	-7.66	0.446
133.00	-8.46	-7.04	0.00	-111.5	0.00	111.52	759.75	184.82	304.17	269.42	101.07	-7.74	0.427

CALCULATED FORCES

134.00	-8.40	-7.00	0.00	-104.5	0.00	104.48	755.24	183.17	298.75	265.40	102.7	-7.81	0.406
135.00	-8.33	-6.95	0.00	-97.5	0.00	97.48	750.69	181.52	293.39	261.39	104.34	-7.88	0.385
136.00	-8.27	-6.91	0.00	-90.5	0.00	90.53	746.09	179.87	288.07	257.40	105.99	-7.95	0.364
137.00	-8.21	-6.87	0.00	-83.6	0.00	83.62	741.46	178.21	282.80	253.43	107.66	-8.02	0.342
138.00	-8.14	-6.82	0.00	-76.8	0.00	76.75	736.79	176.56	277.58	249.47	109.34	-8.08	0.320
139.00	-8.08	-6.78	0.00	-69.9	0.00	69.93	732.07	174.91	272.41	245.53	111.03	-8.14	0.297
140.00	-8.02	-6.73	0.00	-63.2	0.00	63.16	727.31	173.25	267.29	241.60	112.74	-8.2	0.274
141.00	-7.96	-6.68	0.00	-56.4	0.00	56.43	720.73	171.60	262.22	237.10	114.45	-8.25	0.251
142.00	-7.91	-6.64	0.00	-49.7	0.00	49.74	713.79	169.95	257.20	232.53	116.18	-8.29	0.227
143.00	-5.73	-5.56	0.00	-43.1	0.00	43.10	706.85	168.30	252.22	228.01	117.92	-8.33	0.198
143.80	-5.52	-5.13	0.00	-38.7	0.00	38.66	701.29	166.97	248.27	224.42	119.31	-8.36	0.181
144.00	-5.51	-5.12	0.00	-37.6	0.00	37.63	699.90	166.64	247.29	223.52	119.66	-8.37	0.177
144.20	-5.49	-5.07	0.00	-36.6	0.00	36.61	698.52	166.31	246.31	222.63	120.01	-8.38	0.173
145.00	-5.45	-5.03	0.00	-32.6	0.00	32.55	692.96	164.99	242.41	219.09	121.41	-8.4	0.157
146.00	-5.40	-4.98	0.00	-27.5	0.00	27.52	686.02	163.34	237.58	214.69	123.17	-8.43	0.137
147.00	-5.35	-4.93	0.00	-22.5	0.00	22.54	679.08	161.69	232.80	210.35	124.93	-8.46	0.116
148.00	-5.30	-4.88	0.00	-17.6	0.00	17.61	672.14	160.03	228.07	206.04	126.7	-8.48	0.094
149.00	-5.25	-4.84	0.00	-12.7	0.00	12.73	665.20	158.38	223.38	201.78	128.47	-8.5	0.072
150.00	0.00	-4.01	0.00	-7.9	0.00	7.89	658.26	156.73	218.75	197.57	130.25	-8.51	0.041

CALCULATED FORCES

Load Case: 0.9D + 1.0W

108 mph Wind with No Ice (Reduced DL)

38 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	-25.87	-16.87	0.00	-1,689.3	0.00	1,689.30	2,804.67	721.89	2,530.39	2,121.74	0	0	0.484
1.00	-25.64	-16.79	0.00	-1,672.4	0.00	1,672.43	2,797.79	718.86	2,509.20	2,107.56	0	-0.04	0.481
2.00	-25.41	-16.71	0.00	-1,655.6	0.00	1,655.64	2,790.86	715.83	2,488.09	2,093.40	0.02	-0.08	0.479
3.00	-25.19	-16.63	0.00	-1,638.9	0.00	1,638.93	2,783.89	712.80	2,467.08	2,079.25	0.04	-0.12	0.476
4.00	-24.96	-16.55	0.00	-1,622.3	0.00	1,622.30	2,776.88	709.77	2,446.15	2,065.12	0.07	-0.16	0.473
5.00	-24.73	-16.47	0.00	-1,605.8	0.00	1,605.75	2,769.83	706.74	2,425.32	2,051.00	0.11	-0.2	0.471
6.00	-24.50	-16.39	0.00	-1,589.3	0.00	1,589.28	2,762.74	703.71	2,404.57	2,036.89	0.15	-0.24	0.468
7.00	-24.28	-16.31	0.00	-1,572.9	0.00	1,572.89	2,755.61	700.68	2,383.91	2,022.80	0.21	-0.28	0.465
8.00	-24.05	-16.23	0.00	-1,556.6	0.00	1,556.59	2,748.43	697.65	2,363.34	2,008.73	0.27	-0.32	0.462
9.00	-23.83	-16.15	0.00	-1,540.4	0.00	1,540.36	2,741.22	694.62	2,342.86	1,994.67	0.34	-0.36	0.460
10.00	-23.61	-16.06	0.00	-1,524.2	0.00	1,524.22	2,733.96	691.59	2,322.47	1,980.63	0.42	-0.4	0.457
11.00	-23.38	-15.98	0.00	-1,508.2	0.00	1,508.15	2,726.66	688.55	2,302.17	1,966.60	0.51	-0.44	0.454
12.00	-23.16	-15.90	0.00	-1,492.2	0.00	1,492.17	2,719.32	685.52	2,281.96	1,952.60	0.6	-0.48	0.452
13.00	-22.94	-15.82	0.00	-1,476.3	0.00	1,476.26	2,711.94	682.49	2,261.84	1,938.61	0.71	-0.51	0.449
14.00	-22.72	-15.74	0.00	-1,460.4	0.00	1,460.44	2,704.52	679.46	2,241.80	1,924.63	0.82	-0.55	0.446
15.00	-22.50	-15.68	0.00	-1,444.7	0.00	1,444.70	2,697.06	676.43	2,221.86	1,910.68	0.94	-0.59	0.443
15.48	-22.39	-15.64	0.00	-1,437.2	0.00	1,437.17	2,693.46	674.98	2,212.31	1,903.99	1	-0.61	0.442
15.48	-22.39	-15.64	0.00	-1,437.2	0.00	1,437.17	2,693.46	674.98	2,212.31	1,903.99	1	-0.61	0.764
16.00	-22.31	-15.59	0.00	-1,429.0	0.00	1,429.04	2,689.56	673.40	2,202.00	1,896.74	1.07	-0.63	0.762
17.00	-22.14	-15.52	0.00	-1,413.4	0.00	1,413.45	2,682.01	670.37	2,182.23	1,882.83	1.21	-0.7	0.759
18.00	-21.97	-15.45	0.00	-1,397.9	0.00	1,397.93	2,674.42	667.34	2,162.56	1,868.93	1.36	-0.77	0.757
19.00	-21.81	-15.38	0.00	-1,382.5	0.00	1,382.48	2,666.80	664.31	2,142.97	1,855.06	1.53	-0.84	0.754
20.00	-21.64	-15.32	0.00	-1,367.1	0.00	1,367.10	2,659.13	661.28	2,123.47	1,841.20	1.71	-0.91	0.751
21.00	-21.48	-15.25	0.00	-1,351.8	0.00	1,351.78	2,651.42	658.25	2,104.06	1,827.36	1.91	-0.98	0.748
22.00	-21.31	-15.18	0.00	-1,336.5	0.00	1,336.54	2,643.67	655.22	2,084.74	1,813.55	2.13	-1.05	0.746
23.00	-21.16	-15.12	0.00	-1,321.4	0.00	1,321.36	2,635.87	652.19	2,065.50	1,799.76	2.35	-1.12	0.743
24.00	-21.01	-15.08	0.00	-1,306.2	0.00	1,306.24	2,628.04	649.16	2,046.36	1,785.99	2.6	-1.19	0.740
25.00	-20.87	-15.05	0.00	-1,291.2	0.00	1,291.16	2,620.17	646.13	2,027.31	1,772.24	2.85	-1.26	0.737
26.00	-20.72	-15.01	0.00	-1,276.1	0.00	1,276.11	2,612.25	643.10	2,008.34	1,758.51	3.12	-1.33	0.734
27.00	-20.58	-14.98	0.00	-1,261.1	0.00	1,261.10	2,604.29	640.07	1,989.47	1,744.81	3.41	-1.4	0.731
28.00	-20.44	-14.94	0.00	-1,246.1	0.00	1,246.12	2,596.29	637.04	1,970.68	1,731.13	3.71	-1.47	0.728
29.00	-20.29	-14.91	0.00	-1,231.2	0.00	1,231.18	2,588.25	634.01	1,951.98	1,717.48	4.03	-1.54	0.725
30.00	-20.15	-14.87	0.00	-1,216.3	0.00	1,216.27	2,580.17	630.98	1,933.38	1,703.85	4.36	-1.61	0.722
31.00	-20.01	-14.84	0.00	-1,201.4	0.00	1,201.40	2,572.05	627.95	1,914.86	1,690.24	4.7	-1.68	0.719
32.00	-19.87	-14.80	0.00	-1,186.6	0.00	1,186.57	2,563.89	624.92	1,896.43	1,676.66	5.06	-1.75	0.716
33.00	-19.73	-14.76	0.00	-1,171.8	0.00	1,171.77	2,555.68	621.89	1,878.09	1,663.10	5.44	-1.83	0.713
34.00	-19.59	-14.72	0.00	-1,157.0	0.00	1,157.01	2,547.44	618.86	1,859.83	1,649.57	5.83	-1.9	0.710
35.00	-19.45	-14.69	0.00	-1,142.3	0.00	1,142.28	2,539.15	615.83	1,841.67	1,636.07	6.23	-1.97	0.706
36.00	-19.31	-14.65	0.00	-1,127.6	0.00	1,127.60	2,530.82	612.80	1,823.60	1,622.59	6.65	-2.04	0.703
37.00	-19.17	-14.61	0.00	-1,113.0	0.00	1,112.95	2,522.45	609.77	1,805.61	1,609.14	7.09	-2.11	0.700
38.00	-19.03	-14.57	0.00	-1,098.3	0.00	1,098.34	2,514.04	606.74	1,787.72	1,595.72	7.54	-2.18	0.696
39.00	-18.90	-14.53	0.00	-1,083.8	0.00	1,083.77	2,505.59	603.71	1,769.91	1,582.33	8	-2.26	0.693
40.00	-18.76	-14.49	0.00	-1,069.2	0.00	1,069.24	2,497.10	600.68	1,752.19	1,568.96	8.48	-2.33	0.690
41.00	-18.63	-14.45	0.00	-1,054.8	0.00	1,054.75	2,488.57	597.65	1,734.57	1,555.63	8.98	-2.4	0.686
42.00	-18.49	-14.41	0.00	-1,040.3	0.00	1,040.30	2,479.99	594.61	1,717.03	1,542.32	9.49	-2.47	0.683
43.00	-18.36	-14.36	0.00	-1,025.9	0.00	1,025.89	2,471.37	591.58	1,699.58	1,529.04	10.01	-2.55	0.679
44.00	-18.22	-14.29	0.00	-1,011.5	0.00	1,011.53	2,462.72	588.55	1,682.22	1,515.79	10.55	-2.62	0.675
45.00	-18.07	-14.21	0.00	-997.2	0.00	997.24	2,454.02	585.52	1,664.95	1,502.57	11.11	-2.69	0.672
46.00	-17.92	-14.13	0.00	-983.0	0.00	983.04	2,445.28	582.49	1,647.76	1,489.39	11.68	-2.76	0.668
47.00	-17.77	-14.05	0.00	-968.9	0.00	968.91	2,433.75	579.46	1,630.67	1,474.56	12.27	-2.84	0.665
48.00	-17.63	-13.97	0.00	-954.8	0.00	954.85	2,421.02	576.43	1,613.67	1,459.09	12.87	-2.91	0.662
49.00	-17.49	-13.91	0.00	-940.9	0.00	940.88	2,408.29	573.40	1,596.75	1,443.70	13.49	-2.98	0.660
49.42	-17.43	-13.87	0.00	-935.0	0.00	935.04	2,402.95	572.13	1,589.67	1,437.27	13.75	-3.01	0.658
50.00	-17.31	-13.84	0.00	-927.0	0.00	926.99	2,395.56	570.37	1,579.93	1,428.40	14.12	-3.06	0.343
50.08	-17.29	-13.80	0.00	-925.8	0.00	925.84	2,394.50	570.12	1,578.53	1,427.13	14.17	-3.06	0.343



CALCULATED FORCES

51.00	-17.05	-13.71	0.00	-913.2	0.00	913.19	2,382.84	567.34	1,563.19	1,413.17	14.76	-3.09	0.336
52.00	-16.78	-13.61	0.00	-899.5	0.00	899.48	2,370.11	564.31	1,546.54	1,398.03	15.42	-3.13	0.333
53.00	-16.51	-13.51	0.00	-885.9	0.00	885.87	2,357.38	561.28	1,529.98	1,382.97	16.08	-3.17	0.330
54.00	-16.25	-13.41	0.00	-872.4	0.00	872.36	2,344.65	558.25	1,513.51	1,367.99	16.74	-3.21	0.328
55.00	-15.98	-13.31	0.00	-859.0	0.00	858.95	1,548.01	412.13	1,134.11	920.03	17.42	-3.24	0.418
56.00	-15.81	-13.21	0.00	-845.6	0.00	845.64	1,543.56	409.92	1,122.02	912.45	18.1	-3.28	0.413
57.00	-15.65	-13.12	0.00	-832.4	0.00	832.43	1,539.08	407.72	1,109.99	904.86	18.79	-3.32	0.408
58.00	-15.48	-13.02	0.00	-819.3	0.00	819.31	1,534.55	405.52	1,098.03	897.28	19.5	-3.36	0.403
59.00	-15.31	-12.93	0.00	-806.3	0.00	806.29	1,529.98	403.31	1,086.13	889.71	20.2	-3.41	0.399
60.00	-15.15	-12.83	0.00	-793.4	0.00	793.36	1,525.38	401.11	1,074.30	882.14	20.92	-3.45	0.394
61.00	-14.98	-12.74	0.00	-780.5	0.00	780.53	1,520.73	398.91	1,062.53	874.58	21.65	-3.49	0.389
62.00	-14.82	-12.64	0.00	-767.8	0.00	767.79	1,516.03	396.70	1,050.83	867.02	22.38	-3.53	0.384
63.00	-14.66	-12.54	0.00	-755.2	0.00	755.15	1,511.30	394.50	1,039.19	859.47	23.13	-3.57	0.380
64.00	-14.49	-12.45	0.00	-742.6	0.00	742.61	1,506.53	392.30	1,027.62	851.93	23.88	-3.61	0.375
65.00	-14.33	-12.35	0.00	-730.2	0.00	730.16	1,501.71	390.09	1,016.11	844.39	24.64	-3.65	0.370
66.00	-14.17	-12.25	0.00	-717.8	0.00	717.82	1,496.86	387.89	1,004.67	836.87	25.41	-3.69	0.366
67.00	-14.01	-12.15	0.00	-705.6	0.00	705.56	1,491.96	385.68	993.29	829.35	26.18	-3.73	0.361
68.00	-13.85	-12.06	0.00	-693.4	0.00	693.41	1,487.02	383.48	981.97	821.84	26.97	-3.77	0.356
69.00	-13.69	-11.96	0.00	-681.4	0.00	681.35	1,482.04	381.28	970.72	814.33	27.76	-3.81	0.352
70.00	-13.53	-11.86	0.00	-669.4	0.00	669.39	1,477.02	379.07	959.54	806.84	28.56	-3.85	0.347
71.00	-13.37	-11.76	0.00	-657.5	0.00	657.53	1,471.96	376.87	948.42	799.36	29.37	-3.89	0.343
72.00	-13.21	-11.66	0.00	-645.8	0.00	645.77	1,466.86	374.67	937.36	791.89	30.19	-3.93	0.338
73.00	-13.05	-11.56	0.00	-634.1	0.00	634.11	1,461.71	372.46	926.37	784.43	31.02	-3.97	0.333
74.00	-12.89	-11.47	0.00	-622.5	0.00	622.54	1,456.52	370.26	915.45	776.97	31.85	-4	0.329
75.00	-12.74	-11.37	0.00	-611.1	0.00	611.08	1,451.30	368.06	904.59	769.54	32.7	-4.04	0.324
76.00	-12.58	-11.27	0.00	-599.7	0.00	599.71	1,446.03	365.85	893.79	762.11	33.55	-4.08	0.320
77.00	-12.42	-11.17	0.00	-588.4	0.00	588.44	1,440.72	363.65	883.06	754.69	34.4	-4.12	0.315
78.00	-12.27	-11.07	0.00	-577.3	0.00	577.27	1,435.37	361.45	872.40	747.29	35.27	-4.16	0.310
79.00	-12.11	-10.97	0.00	-566.2	0.00	566.21	1,429.98	359.24	861.80	739.90	36.14	-4.19	0.306
80.00	-11.96	-10.87	0.00	-555.2	0.00	555.24	1,424.55	357.04	851.26	732.52	37.03	-4.23	0.301
81.00	-11.80	-10.77	0.00	-544.4	0.00	544.37	1,419.07	354.83	840.79	725.16	37.92	-4.27	0.297
82.00	-11.65	-10.67	0.00	-533.6	0.00	533.60	1,413.56	352.63	830.38	717.81	38.81	-4.3	0.292
83.00	-11.50	-10.57	0.00	-522.9	0.00	522.93	1,408.00	350.43	820.04	710.48	39.72	-4.34	0.288
84.00	-11.35	-10.47	0.00	-512.4	0.00	512.36	1,402.40	348.22	809.76	703.16	40.63	-4.38	0.283
85.00	-11.20	-10.37	0.00	-501.9	0.00	501.89	1,396.76	346.02	799.55	695.86	41.55	-4.41	0.279
86.00	-11.04	-10.27	0.00	-491.5	0.00	491.52	1,391.08	343.82	789.40	688.57	42.48	-4.45	0.275
87.00	-10.89	-10.17	0.00	-481.2	0.00	481.25	1,385.36	341.61	779.32	681.30	43.41	-4.48	0.270
88.00	-10.74	-10.07	0.00	-471.1	0.00	471.08	1,379.60	339.41	769.30	674.04	44.35	-4.52	0.266
89.00	-10.60	-9.97	0.00	-461.0	0.00	461.01	1,373.79	337.21	759.35	666.80	45.3	-4.55	0.261
90.00	-10.45	-9.87	0.00	-451.0	0.00	451.04	1,367.95	335.00	749.46	659.58	46.26	-4.59	0.257
91.00	-10.30	-9.77	0.00	-441.2	0.00	441.18	1,362.06	332.80	739.64	652.38	47.22	-4.62	0.253
92.00	-10.15	-9.67	0.00	-431.4	0.00	431.41	1,356.14	330.60	729.88	645.19	48.19	-4.66	0.248
93.00	-10.00	-9.57	0.00	-421.7	0.00	421.74	1,350.17	328.39	720.18	638.03	49.17	-4.69	0.244
94.00	-9.86	-9.47	0.00	-412.2	0.00	412.18	1,344.16	326.19	710.55	630.88	50.16	-4.72	0.240
95.00	-9.71	-9.37	0.00	-402.7	0.00	402.71	1,338.11	323.99	700.99	623.75	51.15	-4.76	0.235
96.00	-9.57	-9.27	0.00	-393.3	0.00	393.34	1,332.01	321.78	691.49	616.64	52.15	-4.79	0.231
97.00	-9.42	-9.16	0.00	-384.1	0.00	384.08	1,325.88	319.58	682.06	609.56	53.15	-4.82	0.227
98.00	-9.28	-9.06	0.00	-374.9	0.00	374.91	1,319.71	317.37	672.69	602.49	54.16	-4.85	0.222
99.00	-9.13	-8.96	0.00	-365.8	0.00	365.85	1,313.49	315.17	663.38	595.44	55.18	-4.88	0.218
100.00	-8.99	-8.86	0.00	-356.9	0.00	356.89	1,307.23	312.97	654.14	588.41	56.21	-4.92	0.214
101.00	-8.85	-8.76	0.00	-348.0	0.00	348.02	1,300.93	310.76	644.97	581.41	57.24	-4.95	0.210
102.00	-8.66	-8.66	0.00	-339.3	0.00	339.26	1,294.59	308.56	635.85	574.43	58.28	-4.98	0.202
103.00	-8.48	-8.55	0.00	-330.6	0.00	330.60	1,286.70	306.36	626.81	566.80	59.32	-5.01	0.198
104.00	-8.30	-8.45	0.00	-322.0	0.00	322.05	1,277.44	304.15	617.83	558.63	60.37	-5.04	0.194
105.00	-8.12	-8.34	0.00	-313.6	0.00	313.60	869.30	231.10	475.47	386.27	61.43	-5.07	0.232
106.00	-7.99	-8.24	0.00	-305.3	0.00	305.26	865.94	229.45	468.70	382.00	62.49	-5.09	0.227
107.00	-7.86	-8.14	0.00	-297.0	0.00	297.02	862.54	227.79	461.97	377.74	63.56	-5.12	0.222
108.00	-7.74	-8.04	0.00	-288.9	0.00	288.88	859.11	226.14	455.29	373.48	64.64	-5.15	0.216
108.94	-7.62	-7.98	0.00	-281.3	0.00	281.31	855.84	224.59	449.06	369.48	65.65	-5.18	0.212
108.94	-7.62	-7.98	0.00	-281.3	0.00	281.31	855.84	224.59	449.06	369.48	65.65	-5.18	0.772
109.00	-7.61	-7.95	0.00	-280.8	0.00	280.83	855.63	224.49	448.67	369.23	65.72	-5.18	0.771
110.00	-7.53	-7.87	0.00	-272.9	0.00	272.89	852.10	222.83	442.09	364.98	66.82	-5.29	0.758
111.00	-7.45	-7.78	0.00	-265.0	0.00	265.02	848.54	221.18	435.55	360.73	67.93	-5.4	0.745

CALCULATED FORCES

112.00	-7.38	-7.70	0.00	-257.2	0.00	257.24	844.94	219.53	429.07	356.49	69.07	-5.5	0.732
113.00	-7.30	-7.61	0.00	-249.5	0.00	249.54	841.29	217.88	422.64	352.26	70.24	-5.61	0.718
114.00	-7.24	-7.54	0.00	-241.9	0.00	241.93	837.61	216.22	416.25	348.03	71.42	-5.71	0.705
115.00	-7.17	-7.49	0.00	-234.4	0.00	234.39	833.88	214.57	409.92	343.81	72.63	-5.82	0.692
116.00	-7.11	-7.45	0.00	-226.9	0.00	226.90	830.11	212.92	403.63	339.60	73.86	-5.92	0.678
117.00	-7.06	-7.40	0.00	-219.4	0.00	219.45	826.30	211.27	397.39	335.39	75.1	-6.02	0.664
118.00	-7.00	-7.36	0.00	-212.0	0.00	212.05	822.45	209.61	391.20	331.19	76.37	-6.12	0.650
119.00	-6.94	-7.32	0.00	-204.7	0.00	204.69	818.56	207.96	385.05	327.00	77.66	-6.22	0.636
120.00	-6.88	-7.27	0.00	-197.4	0.00	197.37	814.63	206.31	378.96	322.82	78.98	-6.32	0.621
121.00	-6.82	-7.23	0.00	-190.1	0.00	190.10	810.65	204.66	372.92	318.64	80.31	-6.42	0.606
122.00	-6.77	-7.18	0.00	-182.9	0.00	182.88	806.64	203.00	366.92	314.48	81.66	-6.51	0.591
123.00	-6.71	-7.14	0.00	-175.7	0.00	175.69	802.58	201.35	360.97	310.33	83.03	-6.61	0.576
124.00	-6.65	-7.09	0.00	-168.6	0.00	168.56	798.48	199.70	355.07	306.18	84.42	-6.7	0.560
125.00	-6.60	-7.05	0.00	-161.5	0.00	161.46	794.34	198.04	349.22	302.05	85.83	-6.79	0.544
126.00	-6.54	-7.01	0.00	-154.4	0.00	154.41	790.16	196.39	343.42	297.93	87.26	-6.88	0.528
127.00	-6.49	-6.96	0.00	-147.4	0.00	147.41	785.94	194.74	337.67	293.82	88.71	-6.97	0.511
128.00	-6.44	-6.92	0.00	-140.4	0.00	140.44	781.68	193.09	331.96	289.72	90.17	-7.05	0.494
129.00	-6.39	-6.87	0.00	-133.5	0.00	133.53	777.38	191.43	326.30	285.63	91.65	-7.14	0.477
130.00	-6.33	-6.83	0.00	-126.7	0.00	126.66	773.03	189.78	320.70	281.56	93.15	-7.22	0.459
131.00	-6.28	-6.78	0.00	-119.8	0.00	119.83	768.64	188.13	315.14	277.50	94.67	-7.3	0.441
132.00	-6.23	-6.74	0.00	-113.0	0.00	113.04	764.22	186.48	309.63	273.45	96.2	-7.37	0.423
133.00	-6.18	-6.69	0.00	-106.3	0.00	106.31	759.75	184.82	304.17	269.42	97.75	-7.45	0.404
134.00	-6.13	-6.65	0.00	-99.6	0.00	99.61	755.24	183.17	298.75	265.40	99.31	-7.52	0.385
135.00	-6.09	-6.60	0.00	-93.0	0.00	92.96	750.69	181.52	293.39	261.39	100.89	-7.59	0.365
136.00	-6.04	-6.56	0.00	-86.4	0.00	86.36	746.09	179.87	288.07	257.40	102.48	-7.65	0.345
137.00	-5.99	-6.52	0.00	-79.8	0.00	79.80	741.46	178.21	282.80	253.43	104.09	-7.72	0.324
138.00	-5.94	-6.47	0.00	-73.3	0.00	73.28	736.79	176.56	277.58	249.47	105.71	-7.78	0.303
139.00	-5.90	-6.42	0.00	-66.8	0.00	66.81	732.07	174.91	272.41	245.53	107.34	-7.83	0.282
140.00	-5.85	-6.38	0.00	-60.4	0.00	60.39	727.31	173.25	267.29	241.60	108.98	-7.88	0.259
141.00	-5.81	-6.33	0.00	-54.0	0.00	54.01	720.73	171.60	262.22	237.10	110.63	-7.93	0.237
142.00	-5.77	-6.29	0.00	-47.7	0.00	47.67	713.79	169.95	257.20	232.53	112.29	-7.98	0.214
143.00	-4.15	-5.30	0.00	-41.4	0.00	41.39	706.85	168.30	252.22	228.01	113.96	-8.02	0.188
143.80	-4.01	-4.89	0.00	-37.1	0.00	37.14	701.29	166.97	248.27	224.42	115.3	-8.05	0.172
144.00	-4.00	-4.88	0.00	-36.2	0.00	36.17	699.90	166.64	247.29	223.52	115.64	-8.05	0.168
144.20	-3.99	-4.82	0.00	-35.2	0.00	35.19	698.52	166.31	246.31	222.63	115.98	-8.06	0.165
145.00	-3.96	-4.78	0.00	-31.3	0.00	31.33	692.96	164.99	242.41	219.09	117.32	-8.08	0.150
146.00	-3.93	-4.74	0.00	-26.6	0.00	26.55	686.02	163.34	237.58	214.69	119.01	-8.11	0.130
147.00	-3.89	-4.69	0.00	-21.8	0.00	21.82	679.08	161.69	232.80	210.35	120.71	-8.14	0.110
148.00	-3.85	-4.64	0.00	-17.1	0.00	17.13	672.14	160.03	228.07	206.04	122.41	-8.16	0.090
149.00	-3.82	-4.60	0.00	-12.5	0.00	12.49	665.20	158.38	223.38	201.78	124.12	-8.17	0.068
150.00	0.00	-4.01	0.00	-7.9	0.00	7.89	658.26	156.73	218.75	197.57	125.82	-8.18	0.041

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi      40 mph Wind with 1" Radial Ice      36 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	-44.69	-2.69	0.00	-312.6	0.00	312.58	2,804.67	721.89	2,530.39	2,121.74	0	0	0.099
1.00	-44.36	-2.69	0.00	-309.9	0.00	309.89	2,797.79	718.86	2,509.20	2,107.56	0	-0.01	0.099
2.00	-44.02	-2.68	0.00	-307.2	0.00	307.21	2,790.86	715.83	2,488.09	2,093.40	0	-0.01	0.098
3.00	-43.69	-2.67	0.00	-304.5	0.00	304.53	2,783.89	712.80	2,467.08	2,079.25	0.01	-0.02	0.098
4.00	-43.35	-2.67	0.00	-301.8	0.00	301.85	2,776.88	709.77	2,446.15	2,065.12	0.01	-0.03	0.097
5.00	-43.01	-2.66	0.00	-299.2	0.00	299.19	2,769.83	706.74	2,425.32	2,051.00	0.02	-0.04	0.097
6.00	-42.68	-2.65	0.00	-296.5	0.00	296.53	2,762.74	703.71	2,404.57	2,036.89	0.03	-0.04	0.096
7.00	-42.34	-2.65	0.00	-293.9	0.00	293.87	2,755.61	700.68	2,383.91	2,022.80	0.04	-0.05	0.096
8.00	-42.00	-2.64	0.00	-291.2	0.00	291.22	2,748.43	697.65	2,363.34	2,008.73	0.05	-0.06	0.096
9.00	-41.67	-2.63	0.00	-288.6	0.00	288.58	2,741.22	694.62	2,342.86	1,994.67	0.06	-0.07	0.095
10.00	-41.33	-2.63	0.00	-286.0	0.00	285.95	2,733.96	691.59	2,322.47	1,980.63	0.08	-0.07	0.095
11.00	-40.99	-2.62	0.00	-283.3	0.00	283.32	2,726.66	688.55	2,302.17	1,966.60	0.09	-0.08	0.094
12.00	-40.66	-2.62	0.00	-280.7	0.00	280.70	2,719.32	685.52	2,281.96	1,952.60	0.11	-0.09	0.094
13.00	-40.32	-2.61	0.00	-278.1	0.00	278.08	2,711.94	682.49	2,261.84	1,938.61	0.13	-0.1	0.093
14.00	-39.99	-2.60	0.00	-275.5	0.00	275.47	2,704.52	679.46	2,241.80	1,924.63	0.15	-0.1	0.093
15.00	-39.65	-2.60	0.00	-272.9	0.00	272.87	2,697.06	676.43	2,221.86	1,910.68	0.17	-0.11	0.092
15.48	-39.49	-2.59	0.00	-271.6	0.00	271.63	2,693.46	674.98	2,212.31	1,903.99	0.19	-0.11	0.092
15.48	-39.49	-2.59	0.00	-271.6	0.00	271.63	2,693.46	674.98	2,212.31	1,903.99	0.19	-0.11	0.157
16.00	-39.36	-2.59	0.00	-270.3	0.00	270.28	2,689.56	673.40	2,202.00	1,896.74	0.2	-0.12	0.157
17.00	-39.11	-2.59	0.00	-267.7	0.00	267.69	2,682.01	670.37	2,182.23	1,882.83	0.23	-0.13	0.157
18.00	-38.86	-2.58	0.00	-265.1	0.00	265.10	2,674.42	667.34	2,162.56	1,868.93	0.25	-0.14	0.156
19.00	-38.61	-2.58	0.00	-262.5	0.00	262.52	2,666.80	664.31	2,142.97	1,855.06	0.29	-0.16	0.156
20.00	-38.35	-2.58	0.00	-259.9	0.00	259.93	2,659.13	661.28	2,123.47	1,841.20	0.32	-0.17	0.156
21.00	-38.10	-2.58	0.00	-257.4	0.00	257.36	2,651.42	658.25	2,104.06	1,827.36	0.36	-0.18	0.155
22.00	-37.85	-2.57	0.00	-254.8	0.00	254.78	2,643.67	655.22	2,084.74	1,813.55	0.4	-0.2	0.155
23.00	-37.62	-2.57	0.00	-252.2	0.00	252.21	2,635.87	652.19	2,065.50	1,799.76	0.44	-0.21	0.154
24.00	-37.40	-2.57	0.00	-249.6	0.00	249.64	2,628.04	649.16	2,046.36	1,785.99	0.49	-0.22	0.154
25.00	-37.19	-2.56	0.00	-247.1	0.00	247.07	2,620.17	646.13	2,027.31	1,772.24	0.53	-0.24	0.154
26.00	-36.98	-2.56	0.00	-244.5	0.00	244.51	2,612.25	643.10	2,008.34	1,758.51	0.59	-0.25	0.153
27.00	-36.76	-2.56	0.00	-242.0	0.00	241.95	2,604.29	640.07	1,989.47	1,744.81	0.64	-0.26	0.153
28.00	-36.55	-2.56	0.00	-239.4	0.00	239.39	2,596.29	637.04	1,970.68	1,731.13	0.7	-0.28	0.152
29.00	-36.34	-2.55	0.00	-236.8	0.00	236.84	2,588.25	634.01	1,951.98	1,717.48	0.76	-0.29	0.152
30.00	-36.13	-2.55	0.00	-234.3	0.00	234.28	2,580.17	630.98	1,933.38	1,703.85	0.82	-0.31	0.152
31.00	-35.91	-2.55	0.00	-231.7	0.00	231.73	2,572.05	627.95	1,914.86	1,690.24	0.88	-0.32	0.151
32.00	-35.70	-2.54	0.00	-229.2	0.00	229.19	2,563.89	624.92	1,896.43	1,676.66	0.95	-0.33	0.151
33.00	-35.50	-2.54	0.00	-226.6	0.00	226.64	2,555.68	621.89	1,878.09	1,663.10	1.02	-0.35	0.150
34.00	-35.29	-2.54	0.00	-224.1	0.00	224.11	2,547.44	618.86	1,859.83	1,649.57	1.1	-0.36	0.150
35.00	-35.08	-2.53	0.00	-221.6	0.00	221.57	2,539.15	615.83	1,841.67	1,636.07	1.17	-0.37	0.149
36.00	-34.87	-2.53	0.00	-219.0	0.00	219.04	2,530.82	612.80	1,823.60	1,622.59	1.25	-0.39	0.149
37.00	-34.67	-2.53	0.00	-216.5	0.00	216.51	2,522.45	609.77	1,805.61	1,609.14	1.34	-0.4	0.148
38.00	-34.46	-2.52	0.00	-214.0	0.00	213.98	2,514.04	606.74	1,787.72	1,595.72	1.42	-0.42	0.148
39.00	-34.26	-2.52	0.00	-211.5	0.00	211.46	2,505.59	603.71	1,769.91	1,582.33	1.51	-0.43	0.147
40.00	-34.05	-2.51	0.00	-208.9	0.00	208.94	2,497.10	600.68	1,752.19	1,568.96	1.6	-0.44	0.147
41.00	-33.85	-2.51	0.00	-206.4	0.00	206.43	2,488.57	597.65	1,734.57	1,555.63	1.7	-0.46	0.146
42.00	-33.65	-2.51	0.00	-203.9	0.00	203.92	2,479.99	594.61	1,717.03	1,542.32	1.8	-0.47	0.146
43.00	-33.45	-2.50	0.00	-201.4	0.00	201.41	2,471.37	591.58	1,699.58	1,529.04	1.9	-0.49	0.145
44.00	-33.23	-2.50	0.00	-198.9	0.00	198.91	2,462.72	588.55	1,682.22	1,515.79	2	-0.5	0.145
45.00	-33.00	-2.49	0.00	-196.4	0.00	196.41	2,454.02	585.52	1,664.95	1,502.57	2.11	-0.52	0.144
46.00	-32.77	-2.49	0.00	-193.9	0.00	193.92	2,445.28	582.49	1,647.76	1,489.39	2.22	-0.53	0.144
47.00	-32.53	-2.48	0.00	-191.4	0.00	191.44	2,433.75	579.46	1,630.67	1,474.56	2.33	-0.54	0.143
48.00	-32.30	-2.47	0.00	-189.0	0.00	188.96	2,421.02	576.43	1,613.67	1,459.09	2.44	-0.56	0.143
49.00	-32.07	-2.47	0.00	-186.5	0.00	186.48	2,408.29	573.40	1,596.75	1,443.70	2.56	-0.57	0.143
49.42	-31.98	-2.47	0.00	-185.4	0.00	185.45	2,402.95	572.13	1,589.67	1,437.27	2.61	-0.58	0.142
50.00	-31.80	-2.46	0.00	-184.0	0.00	184.02	2,395.56	570.37	1,579.93	1,428.40	2.68	-0.59	0.075
50.08	-31.77	-2.46	0.00	-183.8	0.00	183.81	2,394.50	570.12	1,578.53	1,427.13	2.69	-0.59	0.075

CALCULATED FORCES

51.00	-31.40	-2.45	0.00	-181.6	0.00	181.56	2,382.84	567.34	1,563.19	1,413.17	2.81	-0.6	0.074
52.00	-30.99	-2.44	0.00	-179.1	0.00	179.11	2,370.11	564.31	1,546.54	1,398.03	2.93	-0.6	0.073
53.00	-30.59	-2.42	0.00	-176.7	0.00	176.67	2,357.38	561.28	1,529.98	1,382.97	3.06	-0.61	0.073
54.00	-30.18	-2.41	0.00	-174.2	0.00	174.25	2,344.65	558.25	1,513.51	1,367.99	3.19	-0.62	0.072
55.00	-29.78	-2.40	0.00	-171.8	0.00	171.84	1,548.01	412.13	1,134.11	920.03	3.32	-0.63	0.093
56.00	-29.51	-2.39	0.00	-169.4	0.00	169.44	1,543.56	409.92	1,122.02	912.45	3.45	-0.63	0.092
57.00	-29.24	-2.38	0.00	-167.0	0.00	167.05	1,539.08	407.72	1,109.99	904.86	3.58	-0.64	0.091
58.00	-28.97	-2.37	0.00	-164.7	0.00	164.67	1,534.55	405.52	1,098.03	897.28	3.72	-0.65	0.090
59.00	-28.70	-2.36	0.00	-162.3	0.00	162.31	1,529.98	403.31	1,086.13	889.71	3.86	-0.66	0.089
60.00	-28.43	-2.34	0.00	-160.0	0.00	159.95	1,525.38	401.11	1,074.30	882.14	3.99	-0.67	0.088
61.00	-28.16	-2.33	0.00	-157.6	0.00	157.61	1,520.73	398.91	1,062.53	874.58	4.14	-0.67	0.087
62.00	-27.89	-2.32	0.00	-155.3	0.00	155.27	1,516.03	396.70	1,050.83	867.02	4.28	-0.68	0.086
63.00	-27.63	-2.31	0.00	-153.0	0.00	152.95	1,511.30	394.50	1,039.19	859.47	4.42	-0.69	0.085
64.00	-27.36	-2.30	0.00	-150.6	0.00	150.64	1,506.53	392.30	1,027.62	851.93	4.57	-0.7	0.085
65.00	-27.09	-2.29	0.00	-148.3	0.00	148.34	1,501.71	390.09	1,016.11	844.39	4.71	-0.71	0.084
66.00	-26.83	-2.28	0.00	-146.0	0.00	146.05	1,496.86	387.89	1,004.67	836.87	4.86	-0.72	0.083
67.00	-26.56	-2.26	0.00	-143.8	0.00	143.78	1,491.96	385.68	993.29	829.35	5.01	-0.72	0.082
68.00	-26.30	-2.25	0.00	-141.5	0.00	141.51	1,487.02	383.48	981.97	821.84	5.17	-0.73	0.081
69.00	-26.04	-2.24	0.00	-139.3	0.00	139.26	1,482.04	381.28	970.72	814.33	5.32	-0.74	0.080
70.00	-25.77	-2.23	0.00	-137.0	0.00	137.02	1,477.02	379.07	959.54	806.84	5.48	-0.75	0.079
71.00	-25.51	-2.22	0.00	-134.8	0.00	134.79	1,471.96	376.87	948.42	799.36	5.63	-0.76	0.078
72.00	-25.25	-2.21	0.00	-132.6	0.00	132.57	1,466.86	374.67	937.36	791.89	5.79	-0.76	0.077
73.00	-24.99	-2.19	0.00	-130.4	0.00	130.36	1,461.71	372.46	926.37	784.43	5.95	-0.77	0.076
74.00	-24.73	-2.18	0.00	-128.2	0.00	128.17	1,456.52	370.26	915.45	776.97	6.12	-0.78	0.075
75.00	-24.47	-2.17	0.00	-126.0	0.00	125.99	1,451.30	368.06	904.59	769.54	6.28	-0.79	0.074
76.00	-24.21	-2.16	0.00	-123.8	0.00	123.82	1,446.03	365.85	893.79	762.11	6.45	-0.8	0.074
77.00	-23.95	-2.14	0.00	-121.7	0.00	121.67	1,440.72	363.65	883.06	754.69	6.61	-0.8	0.073
78.00	-23.70	-2.13	0.00	-119.5	0.00	119.52	1,435.37	361.45	872.40	747.29	6.78	-0.81	0.072
79.00	-23.44	-2.12	0.00	-117.4	0.00	117.39	1,429.98	359.24	861.80	739.90	6.95	-0.82	0.071
80.00	-23.18	-2.11	0.00	-115.3	0.00	115.27	1,424.55	357.04	851.26	732.52	7.13	-0.83	0.070
81.00	-22.93	-2.09	0.00	-113.2	0.00	113.17	1,419.07	354.83	840.79	725.16	7.3	-0.83	0.069
82.00	-22.67	-2.08	0.00	-111.1	0.00	111.07	1,413.56	352.63	830.38	717.81	7.47	-0.84	0.068
83.00	-22.42	-2.07	0.00	-109.0	0.00	108.99	1,408.00	350.43	820.04	710.48	7.65	-0.85	0.067
84.00	-22.16	-2.05	0.00	-106.9	0.00	106.92	1,402.40	348.22	809.76	703.16	7.83	-0.86	0.066
85.00	-21.91	-2.04	0.00	-104.9	0.00	104.87	1,396.76	346.02	799.55	695.86	8.01	-0.86	0.065
86.00	-21.66	-2.03	0.00	-102.8	0.00	102.83	1,391.08	343.82	789.40	688.57	8.19	-0.87	0.064
87.00	-21.41	-2.01	0.00	-100.8	0.00	100.80	1,385.36	341.61	779.32	681.30	8.38	-0.88	0.063
88.00	-21.16	-2.00	0.00	-98.8	0.00	98.78	1,379.60	339.41	769.30	674.04	8.56	-0.89	0.062
89.00	-20.91	-1.99	0.00	-96.8	0.00	96.78	1,373.79	337.21	759.35	666.80	8.75	-0.89	0.061
90.00	-20.66	-1.97	0.00	-94.8	0.00	94.80	1,367.95	335.00	749.46	659.58	8.93	-0.9	0.061
91.00	-20.41	-1.96	0.00	-92.8	0.00	92.83	1,362.06	332.80	739.64	652.38	9.12	-0.91	0.060
92.00	-20.16	-1.94	0.00	-90.9	0.00	90.87	1,356.14	330.60	729.88	645.19	9.32	-0.91	0.059
93.00	-19.92	-1.93	0.00	-88.9	0.00	88.93	1,350.17	328.39	720.18	638.03	9.51	-0.92	0.058
94.00	-19.67	-1.91	0.00	-87.0	0.00	87.00	1,344.16	326.19	710.55	630.88	9.7	-0.93	0.057
95.00	-19.42	-1.89	0.00	-85.1	0.00	85.10	1,338.11	323.99	700.99	623.75	9.9	-0.94	0.056
96.00	-19.18	-1.88	0.00	-83.2	0.00	83.20	1,332.01	321.78	691.49	616.64	10.09	-0.94	0.055
97.00	-18.93	-1.86	0.00	-81.3	0.00	81.32	1,325.88	319.58	682.06	609.56	10.29	-0.95	0.054
98.00	-18.69	-1.84	0.00	-79.5	0.00	79.46	1,319.71	317.37	672.69	602.49	10.49	-0.96	0.053
99.00	-18.45	-1.83	0.00	-77.6	0.00	77.62	1,313.49	315.17	663.38	595.44	10.69	-0.96	0.052
100.00	-18.20	-1.81	0.00	-75.8	0.00	75.79	1,307.23	312.97	654.14	588.41	10.9	-0.97	0.051
101.00	-17.96	-1.79	0.00	-74.0	0.00	73.98	1,300.93	310.76	644.97	581.41	11.1	-0.98	0.050
102.00	-17.72	-1.78	0.00	-72.2	0.00	72.19	1,294.59	308.56	635.85	574.43	11.3	-0.98	0.049
103.00	-17.47	-1.76	0.00	-70.4	0.00	70.41	1,288.20	306.36	626.81	566.80	11.51	-0.99	0.048
104.00	-17.23	-1.74	0.00	-68.6	0.00	68.65	1,277.44	304.15	617.83	558.63	11.72	-1	0.047
105.00	-16.99	-1.72	0.00	-66.9	0.00	66.92	1,269.30	301.94	608.92	550.46	11.93	-1	0.046
106.00	-16.75	-1.70	0.00	-65.2	0.00	65.20	1,261.14	299.73	600.20	542.29	12.14	-1.01	0.045
107.00	-16.51	-1.69	0.00	-63.5	0.00	63.49	1,252.95	297.52	591.47	534.12	12.35	-1.01	0.044
108.00	-16.27	-1.67	0.00	-61.8	0.00	61.81	1,244.73	295.31	582.73	525.95	12.56	-1.02	0.043
108.94	-15.99	-1.66	0.00	-60.2	0.00	60.24	1,236.48	293.10	574.07	517.78	12.77	-1.03	0.042
108.94	-15.99	-1.66	0.00	-60.2	0.00	60.24	1,236.48	293.10	574.07	517.78	12.77	-1.03	0.182
109.00	-15.90	-1.65	0.00	-60.1	0.00	60.14	1,236.48	293.10	574.07	517.78	12.78	-1.03	0.182
110.00	-15.76	-1.64	0.00	-58.5	0.00	58.49	1,228.20	290.89	565.39	509.61	13	-1.05	0.179
111.00	-15.62	-1.63	0.00	-56.8	0.00	56.85	1,220.00	288.68	556.70	501.44	13.22	-1.07	0.176

CALCULATED FORCES

112.00	-15.48	-1.62	0.00	-55.2	0.00	55.22	844.94	219.53	429.07	356.49	13.45	-1.1	0.173
113.00	-15.34	-1.60	0.00	-53.6	0.00	53.60	841.29	217.88	422.64	352.26	13.68	-1.12	0.170
114.00	-15.22	-1.60	0.00	-52.0	0.00	51.99	837.61	216.22	416.25	348.03	13.92	-1.14	0.168
115.00	-15.12	-1.59	0.00	-50.4	0.00	50.40	833.88	214.57	409.92	343.81	14.16	-1.16	0.165
116.00	-15.02	-1.58	0.00	-48.8	0.00	48.81	830.11	212.92	403.63	339.60	14.4	-1.19	0.162
117.00	-14.92	-1.58	0.00	-47.2	0.00	47.23	826.30	211.27	397.39	335.39	14.65	-1.21	0.159
118.00	-14.82	-1.57	0.00	-45.6	0.00	45.65	822.45	209.61	391.20	331.19	14.91	-1.23	0.156
119.00	-14.72	-1.56	0.00	-44.1	0.00	44.08	818.56	207.96	385.05	327.00	15.17	-1.25	0.153
120.00	-14.62	-1.56	0.00	-42.5	0.00	42.52	814.63	206.31	378.96	322.82	15.43	-1.27	0.150
121.00	-14.52	-1.55	0.00	-41.0	0.00	40.96	810.65	204.66	372.92	318.64	15.7	-1.29	0.147
122.00	-14.42	-1.54	0.00	-39.4	0.00	39.41	806.64	203.00	366.92	314.48	15.97	-1.31	0.143
123.00	-14.32	-1.54	0.00	-37.9	0.00	37.86	802.58	201.35	360.97	310.33	16.25	-1.33	0.140
124.00	-14.23	-1.53	0.00	-36.3	0.00	36.33	798.48	199.70	355.07	306.18	16.53	-1.35	0.137
125.00	-14.13	-1.52	0.00	-34.8	0.00	34.80	794.34	198.04	349.22	302.05	16.82	-1.37	0.133
126.00	-14.03	-1.52	0.00	-33.3	0.00	33.27	790.16	196.39	343.42	297.93	17.11	-1.39	0.129
127.00	-13.94	-1.51	0.00	-31.8	0.00	31.76	785.94	194.74	337.67	293.82	17.4	-1.41	0.126
128.00	-13.84	-1.50	0.00	-30.2	0.00	30.25	781.68	193.09	331.96	289.72	17.7	-1.43	0.122
129.00	-13.75	-1.49	0.00	-28.8	0.00	28.75	777.38	191.43	326.30	285.63	18	-1.45	0.118
130.00	-13.66	-1.49	0.00	-27.2	0.00	27.25	773.03	189.78	320.70	281.56	18.3	-1.46	0.115
131.00	-13.56	-1.48	0.00	-25.8	0.00	25.76	768.64	188.13	315.14	277.50	18.61	-1.48	0.111
132.00	-13.47	-1.47	0.00	-24.3	0.00	24.28	764.22	186.48	309.63	273.45	18.93	-1.5	0.106
133.00	-13.38	-1.46	0.00	-22.8	0.00	22.81	759.75	184.82	304.17	269.42	19.24	-1.51	0.102
134.00	-13.29	-1.46	0.00	-21.4	0.00	21.35	755.24	183.17	298.75	265.40	19.56	-1.53	0.098
135.00	-13.20	-1.45	0.00	-19.9	0.00	19.89	750.69	181.52	293.39	261.39	19.88	-1.54	0.094
136.00	-13.11	-1.44	0.00	-18.4	0.00	18.45	746.09	179.87	288.07	257.40	20.21	-1.56	0.089
137.00	-13.02	-1.43	0.00	-17.0	0.00	17.01	741.46	178.21	282.80	253.43	20.53	-1.57	0.085
138.00	-12.93	-1.42	0.00	-15.6	0.00	15.58	736.79	176.56	277.58	249.47	20.86	-1.58	0.080
139.00	-12.84	-1.41	0.00	-14.2	0.00	14.15	732.07	174.91	272.41	245.53	21.2	-1.6	0.075
140.00	-12.76	-1.41	0.00	-12.7	0.00	12.74	727.31	173.25	267.29	241.60	21.53	-1.61	0.070
141.00	-12.67	-1.40	0.00	-11.3	0.00	11.33	720.73	171.60	262.22	237.10	21.87	-1.62	0.065
142.00	-12.58	-1.39	0.00	-9.9	0.00	9.94	713.79	169.95	257.20	232.53	22.21	-1.63	0.060
143.00	-9.83	-1.15	0.00	-8.6	0.00	8.55	706.85	168.30	252.22	228.01	22.55	-1.63	0.051
143.80	-9.34	-1.06	0.00	-7.6	0.00	7.63	701.29	166.97	248.27	224.42	22.83	-1.64	0.047
144.00	-9.32	-1.06	0.00	-7.4	0.00	7.42	699.90	166.64	247.29	223.52	22.9	-1.64	0.047
144.20	-9.28	-1.05	0.00	-7.2	0.00	7.21	698.52	166.31	246.31	222.63	22.96	-1.64	0.046
145.00	-9.21	-1.04	0.00	-6.4	0.00	6.37	692.96	164.99	242.41	219.09	23.24	-1.65	0.042
146.00	-9.13	-1.03	0.00	-5.3	0.00	5.34	686.02	163.34	237.58	214.69	23.59	-1.65	0.038
147.00	-9.05	-1.02	0.00	-4.3	0.00	4.31	679.08	161.69	232.80	210.35	23.93	-1.66	0.034
148.00	-8.97	-1.01	0.00	-3.3	0.00	3.29	672.14	160.03	228.07	206.04	24.28	-1.66	0.029
149.00	-8.89	-1.00	0.00	-2.3	0.00	2.28	665.20	158.38	223.38	201.78	24.63	-1.67	0.025
150.00	0.00	-0.74	0.00	-1.3	0.00	1.29	658.26	156.73	218.75	197.57	24.98	-1.67	0.007

CALCULATED FORCES

Load Case: 1.0D + 1.0W

60 mph Wind with No Ice

36 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	-28.75	-4.66	0.00	-471.2	0.00	471.18	2,804.67	721.89	2,530.39	2,121.74	0	0	0.140
1.00	-28.51	-4.64	0.00	-466.5	0.00	466.52	2,797.79	718.86	2,509.20	2,107.56	0	-0.01	0.139
2.00	-28.27	-4.61	0.00	-461.9	0.00	461.89	2,790.86	715.83	2,488.09	2,093.40	0	-0.02	0.139
3.00	-28.03	-4.59	0.00	-457.3	0.00	457.27	2,783.89	712.80	2,467.08	2,079.25	0.01	-0.03	0.138
4.00	-27.78	-4.57	0.00	-452.7	0.00	452.68	2,776.88	709.77	2,446.15	2,065.12	0.02	-0.04	0.137
5.00	-27.54	-4.55	0.00	-448.1	0.00	448.11	2,769.83	706.74	2,425.32	2,051.00	0.03	-0.06	0.136
6.00	-27.30	-4.53	0.00	-443.6	0.00	443.56	2,762.74	703.71	2,404.57	2,036.89	0.04	-0.07	0.135
7.00	-27.06	-4.51	0.00	-439.0	0.00	439.03	2,755.61	700.68	2,383.91	2,022.80	0.06	-0.08	0.135
8.00	-26.83	-4.48	0.00	-434.5	0.00	434.52	2,748.43	697.65	2,363.34	2,008.73	0.07	-0.09	0.134
9.00	-26.59	-4.46	0.00	-430.0	0.00	430.04	2,741.22	694.62	2,342.86	1,994.67	0.09	-0.1	0.133
10.00	-26.35	-4.44	0.00	-425.6	0.00	425.58	2,733.96	691.59	2,322.47	1,980.63	0.12	-0.11	0.132
11.00	-26.11	-4.42	0.00	-421.1	0.00	421.14	2,726.66	688.55	2,302.17	1,966.60	0.14	-0.12	0.132
12.00	-25.88	-4.40	0.00	-416.7	0.00	416.72	2,719.32	685.52	2,281.96	1,952.60	0.17	-0.13	0.131
13.00	-25.64	-4.38	0.00	-412.3	0.00	412.32	2,711.94	682.49	2,261.84	1,938.61	0.2	-0.14	0.130
14.00	-25.40	-4.35	0.00	-408.0	0.00	407.95	2,704.52	679.46	2,241.80	1,924.63	0.23	-0.15	0.129
15.00	-25.17	-4.34	0.00	-403.6	0.00	403.59	2,697.06	676.43	2,221.86	1,910.68	0.26	-0.17	0.128
15.48	-25.06	-4.33	0.00	-401.5	0.00	401.51	2,693.46	674.98	2,212.31	1,903.99	0.28	-0.17	0.128
15.48	-25.06	-4.33	0.00	-401.5	0.00	401.51	2,693.46	674.98	2,212.31	1,903.99	0.28	-0.17	0.220
16.00	-24.97	-4.31	0.00	-399.3	0.00	399.26	2,689.56	673.40	2,202.00	1,896.74	0.3	-0.18	0.220
17.00	-24.80	-4.29	0.00	-395.0	0.00	394.95	2,682.01	670.37	2,182.23	1,882.83	0.34	-0.2	0.219
18.00	-24.64	-4.28	0.00	-390.7	0.00	390.66	2,674.42	667.34	2,162.56	1,868.93	0.38	-0.22	0.218
19.00	-24.47	-4.26	0.00	-386.4	0.00	386.38	2,666.80	664.31	2,142.97	1,855.06	0.43	-0.23	0.218
20.00	-24.30	-4.24	0.00	-382.1	0.00	382.12	2,659.13	661.28	2,123.47	1,841.20	0.48	-0.25	0.217
21.00	-24.14	-4.22	0.00	-377.9	0.00	377.88	2,651.42	658.25	2,104.06	1,827.36	0.53	-0.27	0.216
22.00	-23.98	-4.20	0.00	-373.7	0.00	373.66	2,643.67	655.22	2,084.74	1,813.55	0.59	-0.29	0.215
23.00	-23.82	-4.19	0.00	-369.4	0.00	369.45	2,635.87	652.19	2,065.50	1,799.76	0.66	-0.31	0.214
24.00	-23.68	-4.18	0.00	-365.3	0.00	365.27	2,628.04	649.16	2,046.36	1,785.99	0.72	-0.33	0.214
25.00	-23.53	-4.17	0.00	-361.1	0.00	361.09	2,620.17	646.13	2,027.31	1,772.24	0.8	-0.35	0.213
26.00	-23.39	-4.16	0.00	-356.9	0.00	356.92	2,612.25	643.10	2,008.34	1,758.51	0.87	-0.37	0.212
27.00	-23.25	-4.15	0.00	-352.8	0.00	352.75	2,604.29	640.07	1,989.47	1,744.81	0.95	-0.39	0.211
28.00	-23.11	-4.14	0.00	-348.6	0.00	348.60	2,596.29	637.04	1,970.68	1,731.13	1.04	-0.41	0.210
29.00	-22.96	-4.14	0.00	-344.5	0.00	344.46	2,588.25	634.01	1,951.98	1,717.48	1.12	-0.43	0.209
30.00	-22.82	-4.13	0.00	-340.3	0.00	340.32	2,580.17	630.98	1,933.38	1,703.85	1.22	-0.45	0.209
31.00	-22.68	-4.12	0.00	-336.2	0.00	336.19	2,572.05	627.95	1,914.86	1,690.24	1.31	-0.47	0.208
32.00	-22.54	-4.11	0.00	-332.1	0.00	332.08	2,563.89	624.92	1,896.43	1,676.66	1.41	-0.49	0.207
33.00	-22.40	-4.10	0.00	-328.0	0.00	327.97	2,555.68	621.89	1,878.09	1,663.10	1.52	-0.51	0.206
34.00	-22.27	-4.09	0.00	-323.9	0.00	323.87	2,547.44	618.86	1,859.83	1,649.57	1.63	-0.53	0.205
35.00	-22.13	-4.08	0.00	-319.8	0.00	319.78	2,539.15	615.83	1,841.67	1,636.07	1.74	-0.55	0.204
36.00	-21.99	-4.07	0.00	-315.7	0.00	315.70	2,530.82	612.80	1,823.60	1,622.59	1.86	-0.57	0.203
37.00	-21.85	-4.06	0.00	-311.6	0.00	311.63	2,522.45	609.77	1,805.61	1,609.14	1.98	-0.59	0.202
38.00	-21.72	-4.05	0.00	-307.6	0.00	307.57	2,514.04	606.74	1,787.72	1,595.72	2.11	-0.61	0.201
39.00	-21.58	-4.04	0.00	-303.5	0.00	303.52	2,505.59	603.71	1,769.91	1,582.33	2.24	-0.63	0.200
40.00	-21.45	-4.03	0.00	-299.5	0.00	299.47	2,497.10	600.68	1,752.19	1,568.96	2.37	-0.65	0.200
41.00	-21.31	-4.02	0.00	-295.4	0.00	295.44	2,488.57	597.65	1,734.57	1,555.63	2.51	-0.67	0.199
42.00	-21.18	-4.01	0.00	-291.4	0.00	291.42	2,479.99	594.61	1,717.03	1,542.32	2.65	-0.69	0.198
43.00	-21.05	-4.00	0.00	-287.4	0.00	287.41	2,471.37	591.58	1,699.58	1,529.04	2.8	-0.71	0.197
44.00	-20.90	-3.98	0.00	-283.4	0.00	283.42	2,462.72	588.55	1,682.22	1,515.79	2.95	-0.73	0.196
45.00	-20.75	-3.96	0.00	-279.4	0.00	279.44	2,454.02	585.52	1,664.95	1,502.57	3.11	-0.75	0.194
46.00	-20.60	-3.94	0.00	-275.5	0.00	275.48	2,445.28	582.49	1,647.76	1,489.39	3.27	-0.77	0.193
47.00	-20.45	-3.92	0.00	-271.6	0.00	271.55	2,433.75	579.46	1,630.67	1,474.56	3.43	-0.79	0.193
48.00	-20.31	-3.89	0.00	-267.6	0.00	267.63	2,421.02	576.43	1,613.67	1,459.09	3.6	-0.81	0.192
49.00	-20.16	-3.88	0.00	-263.7	0.00	263.74	2,408.29	573.40	1,596.75	1,443.70	3.77	-0.83	0.191
49.42	-20.10	-3.87	0.00	-262.1	0.00	262.11	2,402.95	572.13	1,589.67	1,437.27	3.84	-0.84	0.191
50.00	-19.97	-3.86	0.00	-259.9	0.00	259.87	2,395.56	570.37	1,579.93	1,428.40	3.95	-0.85	0.100
50.08	-19.95	-3.85	0.00	-259.5	0.00	259.54	2,394.50	570.12	1,578.53	1,427.13	3.96	-0.86	0.100

CALCULATED FORCES

51.00	-19.68	-3.82	0.00	-256.0	0.00	256.02	2,382.84	567.34	1,563.19	1,413.17	4.13	-0.87	0.098
52.00	-19.39	-3.80	0.00	-252.2	0.00	252.19	2,370.11	564.31	1,546.54	1,398.03	4.31	-0.88	0.097
53.00	-19.10	-3.77	0.00	-248.4	0.00	248.40	2,357.38	561.28	1,529.98	1,382.97	4.49	-0.89	0.096
54.00	-18.81	-3.74	0.00	-244.6	0.00	244.63	2,344.65	558.25	1,513.51	1,367.99	4.68	-0.9	0.096
55.00	-18.51	-3.71	0.00	-240.9	0.00	240.89	1,548.01	412.13	1,134.11	920.03	4.87	-0.91	0.122
56.00	-18.33	-3.69	0.00	-237.2	0.00	237.18	1,543.56	409.92	1,122.02	912.45	5.06	-0.92	0.120
57.00	-18.15	-3.66	0.00	-233.5	0.00	233.50	1,539.08	407.72	1,109.99	904.86	5.26	-0.93	0.119
58.00	-17.97	-3.63	0.00	-229.8	0.00	229.84	1,534.55	405.52	1,098.03	897.28	5.45	-0.94	0.118
59.00	-17.79	-3.61	0.00	-226.2	0.00	226.20	1,529.98	403.31	1,086.13	889.71	5.65	-0.95	0.116
60.00	-17.61	-3.58	0.00	-222.6	0.00	222.60	1,525.38	401.11	1,074.30	882.14	5.85	-0.96	0.115
61.00	-17.43	-3.55	0.00	-219.0	0.00	219.01	1,520.73	398.91	1,062.53	874.58	6.05	-0.98	0.114
62.00	-17.25	-3.53	0.00	-215.5	0.00	215.46	1,516.03	396.70	1,050.83	867.02	6.26	-0.99	0.112
63.00	-17.07	-3.50	0.00	-211.9	0.00	211.93	1,511.30	394.50	1,039.19	859.47	6.47	-1	0.111
64.00	-16.89	-3.48	0.00	-208.4	0.00	208.43	1,506.53	392.30	1,027.62	851.93	6.68	-1.01	0.110
65.00	-16.71	-3.45	0.00	-205.0	0.00	204.95	1,501.71	390.09	1,016.11	844.39	6.89	-1.02	0.108
66.00	-16.53	-3.42	0.00	-201.5	0.00	201.51	1,496.86	387.89	1,004.67	836.87	7.11	-1.03	0.107
67.00	-16.35	-3.39	0.00	-198.1	0.00	198.08	1,491.96	385.68	993.29	829.35	7.32	-1.04	0.106
68.00	-16.18	-3.37	0.00	-194.7	0.00	194.69	1,487.02	383.48	981.97	821.84	7.54	-1.06	0.104
69.00	-16.00	-3.34	0.00	-191.3	0.00	191.32	1,482.04	381.28	970.72	814.33	7.77	-1.07	0.103
70.00	-15.82	-3.31	0.00	-188.0	0.00	187.98	1,477.02	379.07	959.54	806.84	7.99	-1.08	0.102
71.00	-15.65	-3.29	0.00	-184.7	0.00	184.67	1,471.96	376.87	948.42	799.36	8.22	-1.09	0.100
72.00	-15.47	-3.26	0.00	-181.4	0.00	181.38	1,466.86	374.67	937.36	791.89	8.45	-1.1	0.099
73.00	-15.30	-3.23	0.00	-178.1	0.00	178.12	1,461.71	372.46	926.37	784.43	8.68	-1.11	0.098
74.00	-15.12	-3.21	0.00	-174.9	0.00	174.89	1,456.52	370.26	915.45	776.97	8.91	-1.12	0.096
75.00	-14.95	-3.18	0.00	-171.7	0.00	171.68	1,451.30	368.06	904.59	769.54	9.15	-1.13	0.095
76.00	-14.78	-3.15	0.00	-168.5	0.00	168.50	1,446.03	365.85	893.79	762.11	9.39	-1.14	0.094
77.00	-14.60	-3.12	0.00	-165.4	0.00	165.35	1,440.72	363.65	883.06	754.69	9.63	-1.15	0.092
78.00	-14.43	-3.10	0.00	-162.2	0.00	162.23	1,435.37	361.45	872.40	747.29	9.87	-1.16	0.091
79.00	-14.26	-3.07	0.00	-159.1	0.00	159.14	1,429.98	359.24	861.80	739.90	10.11	-1.17	0.090
80.00	-14.09	-3.04	0.00	-156.1	0.00	156.07	1,424.55	357.04	851.26	732.52	10.36	-1.18	0.088
81.00	-13.91	-3.01	0.00	-153.0	0.00	153.03	1,419.07	354.83	840.79	725.16	10.61	-1.19	0.087
82.00	-13.74	-2.99	0.00	-150.0	0.00	150.01	1,413.56	352.63	830.38	717.81	10.86	-1.21	0.086
83.00	-13.57	-2.96	0.00	-147.0	0.00	147.03	1,408.00	350.43	820.04	710.48	11.12	-1.22	0.084
84.00	-13.40	-2.93	0.00	-144.1	0.00	144.07	1,402.40	348.22	809.76	703.16	11.37	-1.23	0.083
85.00	-13.23	-2.90	0.00	-141.1	0.00	141.14	1,396.76	346.02	799.55	695.86	11.63	-1.24	0.082
86.00	-13.06	-2.87	0.00	-138.2	0.00	138.24	1,391.08	343.82	789.40	688.57	11.89	-1.25	0.081
87.00	-12.89	-2.85	0.00	-135.4	0.00	135.37	1,385.36	341.61	779.32	681.30	12.15	-1.26	0.079
88.00	-12.73	-2.82	0.00	-132.5	0.00	132.52	1,379.60	339.41	769.30	674.04	12.42	-1.27	0.078
89.00	-12.56	-2.79	0.00	-129.7	0.00	129.70	1,373.79	337.21	759.35	666.80	12.68	-1.28	0.077
90.00	-12.39	-2.76	0.00	-126.9	0.00	126.91	1,367.95	335.00	749.46	659.58	12.95	-1.28	0.076
91.00	-12.22	-2.74	0.00	-124.2	0.00	124.15	1,362.06	332.80	739.64	652.38	13.22	-1.29	0.074
92.00	-12.06	-2.71	0.00	-121.4	0.00	121.41	1,356.14	330.60	729.88	645.19	13.49	-1.3	0.073
93.00	-11.89	-2.68	0.00	-118.7	0.00	118.71	1,350.17	328.39	720.18	638.03	13.77	-1.31	0.072
94.00	-11.73	-2.65	0.00	-116.0	0.00	116.03	1,344.16	326.19	710.55	630.88	14.04	-1.32	0.070
95.00	-11.56	-2.62	0.00	-113.4	0.00	113.37	1,338.11	323.99	700.99	623.75	14.32	-1.33	0.069
96.00	-11.40	-2.60	0.00	-110.8	0.00	110.75	1,332.01	321.78	691.49	616.64	14.6	-1.34	0.068
97.00	-11.23	-2.57	0.00	-108.2	0.00	108.16	1,325.88	319.58	682.06	609.56	14.88	-1.35	0.067
98.00	-11.07	-2.54	0.00	-105.6	0.00	105.59	1,319.71	317.37	672.69	602.49	15.17	-1.36	0.066
99.00	-10.90	-2.51	0.00	-103.0	0.00	103.05	1,313.49	315.17	663.38	595.44	15.45	-1.37	0.064
100.00	-10.74	-2.48	0.00	-100.5	0.00	100.54	1,307.23	312.97	654.14	588.41	15.74	-1.38	0.063
101.00	-10.58	-2.46	0.00	-98.0	0.00	98.05	1,300.93	310.76	644.97	581.41	16.03	-1.39	0.062
102.00	-10.37	-2.43	0.00	-95.6	0.00	95.60	1,294.59	308.56	635.85	574.43	16.32	-1.39	0.060
103.00	-10.16	-2.40	0.00	-93.2	0.00	93.17	1,286.70	306.36	626.81	566.80	16.61	-1.4	0.059
104.00	-9.96	-2.37	0.00	-90.8	0.00	90.77	1,277.44	304.15	617.83	558.63	16.91	-1.41	0.057
105.00	-9.75	-2.34	0.00	-88.4	0.00	88.41	869.30	231.10	475.47	386.27	17.21	-1.42	0.069
106.00	-9.60	-2.31	0.00	-86.1	0.00	86.07	865.94	229.45	468.70	382.00	17.5	-1.43	0.067
107.00	-9.46	-2.28	0.00	-83.8	0.00	83.76	862.54	227.79	461.97	377.74	17.8	-1.44	0.066
108.00	-9.31	-2.26	0.00	-81.5	0.00	81.48	859.11	226.14	455.29	373.48	18.11	-1.44	0.064
108.94	-9.17	-2.24	0.00	-79.4	0.00	79.36	855.84	224.59	449.06	369.48	18.39	-1.45	0.063
108.94	-9.17	-2.24	0.00	-79.4	0.00	79.36	855.84	224.59	449.06	369.48	18.39	-1.45	0.226
109.00	-9.17	-2.23	0.00	-79.2	0.00	79.22	855.63	224.49	448.67	369.23	18.41	-1.45	0.225
110.00	-9.09	-2.21	0.00	-77.0	0.00	76.99	852.10	222.83	442.09	364.98	18.72	-1.48	0.222
111.00	-9.01	-2.18	0.00	-74.8	0.00	74.79	848.54	221.18	435.55	360.73	19.03	-1.51	0.218

CALCULATED FORCES

112.00	-8.93	-2.16	0.00	-72.6	0.00	72.60	844.94	219.53	429.07	356.49	19.35	-1.54	0.214
113.00	-8.85	-2.14	0.00	-70.4	0.00	70.44	841.29	217.88	422.64	352.26	19.68	-1.57	0.211
114.00	-8.78	-2.12	0.00	-68.3	0.00	68.30	837.61	216.22	416.25	348.03	20.01	-1.6	0.207
115.00	-8.72	-2.11	0.00	-66.2	0.00	66.19	833.88	214.57	409.92	343.81	20.35	-1.63	0.203
116.00	-8.67	-2.09	0.00	-64.1	0.00	64.08	830.11	212.92	403.63	339.60	20.69	-1.66	0.199
117.00	-8.61	-2.08	0.00	-62.0	0.00	61.99	826.30	211.27	397.39	335.39	21.04	-1.69	0.195
118.00	-8.55	-2.07	0.00	-59.9	0.00	59.90	822.45	209.61	391.20	331.19	21.4	-1.72	0.191
119.00	-8.49	-2.06	0.00	-57.8	0.00	57.83	818.56	207.96	385.05	327.00	21.76	-1.75	0.187
120.00	-8.43	-2.05	0.00	-55.8	0.00	55.77	814.63	206.31	378.96	322.82	22.13	-1.77	0.183
121.00	-8.38	-2.04	0.00	-53.7	0.00	53.72	810.65	204.66	372.92	318.64	22.51	-1.8	0.179
122.00	-8.32	-2.02	0.00	-51.7	0.00	51.69	806.64	203.00	366.92	314.48	22.89	-1.83	0.175
123.00	-8.26	-2.01	0.00	-49.7	0.00	49.66	802.58	201.35	360.97	310.33	23.27	-1.85	0.170
124.00	-8.21	-2.00	0.00	-47.6	0.00	47.65	798.48	199.70	355.07	306.18	23.66	-1.88	0.166
125.00	-8.15	-1.99	0.00	-45.6	0.00	45.65	794.34	198.04	349.22	302.05	24.06	-1.91	0.161
126.00	-8.09	-1.98	0.00	-43.7	0.00	43.66	790.16	196.39	343.42	297.93	24.46	-1.93	0.157
127.00	-8.04	-1.97	0.00	-41.7	0.00	41.68	785.94	194.74	337.67	293.82	24.87	-1.96	0.152
128.00	-7.98	-1.95	0.00	-39.7	0.00	39.72	781.68	193.09	331.96	289.72	25.28	-1.98	0.147
129.00	-7.93	-1.94	0.00	-37.8	0.00	37.76	777.38	191.43	326.30	285.63	25.7	-2	0.143
130.00	-7.88	-1.93	0.00	-35.8	0.00	35.82	773.03	189.78	320.70	281.56	26.12	-2.03	0.138
131.00	-7.82	-1.92	0.00	-33.9	0.00	33.89	768.64	188.13	315.14	277.50	26.55	-2.05	0.132
132.00	-7.77	-1.91	0.00	-32.0	0.00	31.97	764.22	186.48	309.63	273.45	26.98	-2.07	0.127
133.00	-7.72	-1.89	0.00	-30.1	0.00	30.06	759.75	184.82	304.17	269.42	27.42	-2.09	0.122
134.00	-7.66	-1.88	0.00	-28.2	0.00	28.17	755.24	183.17	298.75	265.40	27.86	-2.11	0.116
135.00	-7.61	-1.87	0.00	-26.3	0.00	26.29	750.69	181.52	293.39	261.39	28.3	-2.13	0.111
136.00	-7.56	-1.86	0.00	-24.4	0.00	24.42	746.09	179.87	288.07	257.40	28.75	-2.15	0.105
137.00	-7.51	-1.85	0.00	-22.6	0.00	22.56	741.46	178.21	282.80	253.43	29.2	-2.17	0.099
138.00	-7.46	-1.83	0.00	-20.7	0.00	20.71	736.79	176.56	277.58	249.47	29.66	-2.19	0.093
139.00	-7.40	-1.82	0.00	-18.9	0.00	18.88	732.07	174.91	272.41	245.53	30.12	-2.2	0.087
140.00	-7.35	-1.81	0.00	-17.1	0.00	17.06	727.31	173.25	267.29	241.60	30.58	-2.22	0.081
141.00	-7.30	-1.80	0.00	-15.2	0.00	15.25	720.73	171.60	262.22	237.10	31.05	-2.23	0.075
142.00	-7.25	-1.78	0.00	-13.4	0.00	13.45	713.79	169.95	257.20	232.53	31.51	-2.24	0.068
143.00	-5.34	-1.50	0.00	-11.7	0.00	11.67	706.85	168.30	252.22	228.01	31.99	-2.25	0.059
143.80	-5.12	-1.38	0.00	-10.5	0.00	10.47	701.29	166.97	248.27	224.42	32.36	-2.26	0.054
144.00	-5.11	-1.38	0.00	-10.2	0.00	10.19	699.90	166.64	247.29	223.52	32.46	-2.26	0.053
144.20	-5.09	-1.37	0.00	-9.9	0.00	9.92	698.52	166.31	246.31	222.63	32.55	-2.27	0.052
145.00	-5.06	-1.35	0.00	-8.8	0.00	8.82	692.96	164.99	242.41	219.09	32.93	-2.27	0.048
146.00	-5.01	-1.34	0.00	-7.5	0.00	7.47	686.02	163.34	237.58	214.69	33.41	-2.28	0.042
147.00	-4.97	-1.33	0.00	-6.1	0.00	6.13	679.08	161.69	232.80	210.35	33.89	-2.29	0.037
148.00	-4.92	-1.32	0.00	-4.8	0.00	4.80	672.14	160.03	228.07	206.04	34.37	-2.29	0.031
149.00	-4.88	-1.30	0.00	-3.5	0.00	3.48	665.20	158.38	223.38	201.78	34.85	-2.3	0.025
150.00	0.00	-1.11	0.00	-2.2	0.00	2.18	658.26	156.73	218.75	197.57	35.33	-2.3	0.011



EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.122
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.060
Long-Period Transition Period ( $T_L$ - Seconds):	12
Importance Factor ( $I_e$ ):	1.000
Site Coefficient $F_a$ :	1.600
Site Coefficient $F_v$ :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.130
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.096
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):	3.480
Redundancy Factor ( $\rho$ ):	1.000
Seismic Force Distribution Exponent ( $k$ ):	2.000
Total Unfactored Dead Load:	28.750 k
Seismic Base Shear (E):	0.860 k

SEISMIC FORCES

Segment	Seismic	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
156		149.5	45	1,006	0.004	3	55
155		148.5	45	1,000	0.004	3	56
154		147.5	46	993	0.004	3	56
153		146.5	46	987	0.004	3	56
152		145.5	46	980	0.004	3	57
151		144.6	37	779	0.003	3	46
150		144.1	9	194	0.001	1	11
149		143.9	10	204	0.001	1	12
148		143.4	40	813	0.003	3	48
147		142.5	50	1,010	0.004	3	61
146		141.5	50	1,002	0.004	3	61
145		140.5	50	994	0.004	3	62
144		139.5	51	986	0.004	3	62
143		138.5	51	978	0.004	3	63
142		137.5	51	970	0.004	3	63
141		136.5	52	962	0.004	3	63
140		135.5	52	954	0.004	3	64
139		134.5	52	946	0.004	3	64
138		133.5	53	938	0.004	3	64
137		132.5	53	929	0.004	3	65
136		131.5	53	921	0.004	3	65
135		130.5	54	912	0.003	3	66
134		129.5	54	904	0.003	3	66
133		128.5	54	895	0.003	3	66
132		127.5	55	886	0.003	3	67
131		126.5	55	878	0.003	3	67
130		125.5	55	869	0.003	3	68
129		124.5	55	860	0.003	3	68
128		123.5	56	851	0.003	3	68
127		122.5	56	842	0.003	3	69
126		121.5	56	833	0.003	3	69
125		120.5	57	824	0.003	3	70
124		119.5	57	815	0.003	3	70
123		118.5	57	806	0.003	3	70
122		117.5	58	797	0.003	3	71
121		116.5	58	788	0.003	3	71
120		115.5	58	779	0.003	3	72
119		114.5	59	769	0.003	3	72

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
118	113.5	68	881	0.003	3	84
117	112.5	78	988	0.004	3	96
116	111.5	78	974	0.004	3	96
115	110.5	79	961	0.004	3	96
114	109.5	79	947	0.004	3	97
113	108.97	5	56	0.000	0	6
112	108.47	137	1,616	0.006	5	168
111	107.5	146	1,692	0.006	6	180
110	106.5	147	1,665	0.006	5	180
109	105.5	147	1,637	0.006	5	180
108	104.5	206	2,252	0.008	7	253
107	103.5	207	2,217	0.008	7	254
106	102.5	208	2,182	0.008	7	255
105	101.5	208	2,147	0.008	7	256
104	100.5	163	1,646	0.006	5	200
103	99.5	163	1,617	0.006	5	200
102	98.5	164	1,589	0.006	5	201
101	97.5	164	1,561	0.006	5	201
100	96.5	165	1,533	0.006	5	202
99	95.5	165	1,505	0.006	5	202
98	94.5	165	1,478	0.006	5	203
97	93.5	166	1,450	0.006	5	203
96	92.5	166	1,423	0.005	5	204
95	91.5	167	1,396	0.005	5	204
94	90.5	167	1,369	0.005	4	205
93	89.5	168	1,343	0.005	4	206
92	88.5	168	1,316	0.005	4	206
91	87.5	168	1,290	0.005	4	207
90	86.5	169	1,264	0.005	4	207
89	85.5	169	1,238	0.005	4	208
88	84.5	170	1,212	0.005	4	208
87	83.5	170	1,187	0.004	4	209
86	82.5	171	1,161	0.004	4	209
85	81.5	171	1,136	0.004	4	210
84	80.5	171	1,111	0.004	4	210
83	79.5	172	1,086	0.004	4	211
82	78.5	172	1,062	0.004	3	211
81	77.5	173	1,038	0.004	3	212
80	76.5	173	1,013	0.004	3	212
79	75.5	174	990	0.004	3	213
78	74.5	174	966	0.004	3	213
77	73.5	174	942	0.004	3	214
76	72.5	175	919	0.004	3	214
75	71.5	175	896	0.003	3	215
74	70.5	176	873	0.003	3	215
73	69.5	176	851	0.003	3	216
72	68.5	177	829	0.003	3	217
71	67.5	177	807	0.003	3	217
70	66.5	177	785	0.003	3	218
69	65.5	178	763	0.003	2	218
68	64.5	178	742	0.003	2	219
67	63.5	179	721	0.003	2	219
66	62.5	179	700	0.003	2	220
65	61.5	180	679	0.003	2	220
64	60.5	180	659	0.002	2	221
63	59.5	180	639	0.002	2	221
62	58.5	181	619	0.002	2	222
61	57.5	181	599	0.002	2	222
60	56.5	182	580	0.002	2	223
59	55.5	182	561	0.002	2	223
58	54.5	291	863	0.003	3	356

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
57	53.5	292	834	0.003	3	357
56	52.5	293	806	0.003	3	359
55	51.5	294	779	0.003	3	360
54	50.5417	270	690	0.003	2	331
53	50.0417	18	44	0.000	0	22
52	49.71	124	306	0.001	1	152
51	49.21	62	149	0.001	0	76
50	48.5	147	346	0.001	1	180
49	47.5	148	333	0.001	1	181
48	46.5	148	321	0.001	1	182
47	45.5	149	308	0.001	1	183
46	44.5	149	296	0.001	1	183
45	43.5	141	266	0.001	1	173
44	42.5	132	238	0.001	1	162
43	41.5	133	228	0.001	1	162
42	40.5	133	218	0.001	1	163
41	39.5	134	209	0.001	1	164
40	38.5	134	199	0.001	1	165
39	37.5	135	190	0.001	1	165
38	36.5	135	180	0.001	1	166
37	35.5	136	171	0.001	1	167
36	34.5	137	163	0.001	1	168
35	33.5	137	154	0.001	1	168
34	32.5	138	146	0.001	0	169
33	31.5	138	137	0.000	0	170
32	30.5	139	129	0.000	0	170
31	29.5	140	121	0.000	0	171
30	28.5	140	114	0.000	0	172
29	27.5	141	106	0.000	0	173
28	26.5	141	99	0.000	0	173
27	25.5	142	92	0.000	0	174
26	24.5	143	86	0.000	0	175
25	23.5	143	79	0.000	0	175
24	22.5	153	77	0.000	0	188
23	21.5	163	75	0.000	0	200
22	20.5	164	69	0.000	0	201
21	19.5	164	62	0.000	0	201
20	18.5	165	56	0.000	0	202
19	17.5	165	51	0.000	0	203
18	16.5	166	45	0.000	0	203
17	15.74	87	21	0.000	0	106
16	15.24	112	26	0.000	0	137
15	14.5	234	49	0.000	0	287
14	13.5	234	43	0.000	0	287
13	12.5	235	37	0.000	0	288
12	11.5	236	31	0.000	0	289
11	10.5	236	26	0.000	0	290
10	9.5	237	21	0.000	0	290
9	8.5	237	17	0.000	0	291
8	7.5	238	13	0.000	0	292
7	6.5	239	10	0.000	0	293
6	5.5	239	7	0.000	0	293
5	4.5	240	5	0.000	0	294
4	3.5	240	3	0.000	0	295
3	2.5	241	2	0.000	0	295
2	1.5	242	1	0.000	0	296
1	0.5	242	0	0.000	0	297
Ericsson AIR 6419 B77D	150	189	4,259	0.016	14	232
Raycap DC6-48-60-18-8F ("Squid")	150	57	1,276	0.005	4	70
Ericsson Radio 4415 B30	150	129	2,902	0.011	9	158
Ericsson RRUS 4478 B14	150	180	4,043	0.015	13	220

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
Ericsson RRUS 4890	150	208	4,691	0.018	15	256
Ericsson RRUS 4490	150	205	4,617	0.018	15	252
Commscope NNH4-65C-R6 (102.1 lbs)	150	613	13,784	0.052	45	751
Ericsson AIR 6419 B77G	150	198	4,462	0.017	15	243
Generic Mount Reinforcement	150	600	13,500	0.051	44	736
Generic Round Platform with Handrails	150	2,500	56,250	0.213	183	3,065
Generic TTA	144.2	10	208	0.001	1	12
Generic 56" x 6" Panel	143.8	180	3,722	0.014	12	221
Generic Round Low Profile Platform	143	1,875	38,342	0.145	125	2,299
<b>Totals:</b>		<b>28,753</b>	<b>264,424</b>	<b>1.000</b>	<b>863</b>	<b>35,252</b>

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
156	149.5	45	1,006	0.004	3	39
155	148.5	45	1,000	0.004	3	40
154	147.5	46	993	0.004	3	40
153	146.5	46	987	0.004	3	40
152	145.5	46	980	0.004	3	40
151	144.6	37	779	0.003	3	33
150	144.1	9	194	0.001	1	8
149	143.9	10	204	0.001	1	9
148	143.4	40	813	0.003	3	35
147	142.5	50	1,010	0.004	3	43
146	141.5	50	1,002	0.004	3	44
145	140.5	50	994	0.004	3	44
144	139.5	51	986	0.004	3	44
143	138.5	51	978	0.004	3	45
142	137.5	51	970	0.004	3	45
141	136.5	52	962	0.004	3	45
140	135.5	52	954	0.004	3	45
139	134.5	52	946	0.004	3	46
138	133.5	53	938	0.004	3	46
137	132.5	53	929	0.004	3	46
136	131.5	53	921	0.004	3	47
135	130.5	54	912	0.003	3	47
134	129.5	54	904	0.003	3	47
133	128.5	54	895	0.003	3	47
132	127.5	55	886	0.003	3	48
131	126.5	55	878	0.003	3	48
130	125.5	55	869	0.003	3	48
129	124.5	55	860	0.003	3	48
128	123.5	56	851	0.003	3	49
127	122.5	56	842	0.003	3	49
126	121.5	56	833	0.003	3	49
125	120.5	57	824	0.003	3	50
124	119.5	57	815	0.003	3	50
123	118.5	57	806	0.003	3	50
122	117.5	58	797	0.003	3	50
121	116.5	58	788	0.003	3	51
120	115.5	58	779	0.003	3	51
119	114.5	59	769	0.003	3	51
118	113.5	68	881	0.003	3	60
117	112.5	78	988	0.004	3	68
116	111.5	78	974	0.004	3	68
115	110.5	79	961	0.004	3	69
114	109.5	79	947	0.004	3	69
113	108.97	5	56	0.000	0	4
112	108.47	137	1,616	0.006	5	120
111	107.5	146	1,692	0.006	6	128

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
110	106.5	147	1,665	0.006	5	128
109	105.5	147	1,637	0.006	5	129
108	104.5	206	2,252	0.008	7	180
107	103.5	207	2,217	0.008	7	181
106	102.5	208	2,182	0.008	7	181
105	101.5	208	2,147	0.008	7	182
104	100.5	163	1,646	0.006	5	142
103	99.5	163	1,617	0.006	5	143
102	98.5	164	1,589	0.006	5	143
101	97.5	164	1,561	0.006	5	144
100	96.5	165	1,533	0.006	5	144
99	95.5	165	1,505	0.006	5	144
98	94.5	165	1,478	0.006	5	145
97	93.5	166	1,450	0.006	5	145
96	92.5	166	1,423	0.005	5	145
95	91.5	167	1,396	0.005	5	146
94	90.5	167	1,369	0.005	4	146
93	89.5	168	1,343	0.005	4	146
92	88.5	168	1,316	0.005	4	147
91	87.5	168	1,290	0.005	4	147
90	86.5	169	1,264	0.005	4	148
89	85.5	169	1,238	0.005	4	148
88	84.5	170	1,212	0.005	4	148
87	83.5	170	1,187	0.004	4	149
86	82.5	171	1,161	0.004	4	149
85	81.5	171	1,136	0.004	4	149
84	80.5	171	1,111	0.004	4	150
83	79.5	172	1,086	0.004	4	150
82	78.5	172	1,062	0.004	3	151
81	77.5	173	1,038	0.004	3	151
80	76.5	173	1,013	0.004	3	151
79	75.5	174	990	0.004	3	152
78	74.5	174	966	0.004	3	152
77	73.5	174	942	0.004	3	152
76	72.5	175	919	0.004	3	153
75	71.5	175	896	0.003	3	153
74	70.5	176	873	0.003	3	154
73	69.5	176	851	0.003	3	154
72	68.5	177	829	0.003	3	154
71	67.5	177	807	0.003	3	155
70	66.5	177	785	0.003	3	155
69	65.5	178	763	0.003	2	155
68	64.5	178	742	0.003	2	156
67	63.5	179	721	0.003	2	156
66	62.5	179	700	0.003	2	157
65	61.5	180	679	0.003	2	157
64	60.5	180	659	0.002	2	157
63	59.5	180	639	0.002	2	158
62	58.5	181	619	0.002	2	158
61	57.5	181	599	0.002	2	158
60	56.5	182	580	0.002	2	159
59	55.5	182	561	0.002	2	159
58	54.5	291	863	0.003	3	254
57	53.5	292	834	0.003	3	255
56	52.5	293	806	0.003	3	256
55	51.5	294	779	0.003	3	257
54	50.5417	270	690	0.003	2	236
53	50.0417	18	44	0.000	0	16
52	49.71	124	306	0.001	1	108
51	49.21	62	149	0.001	0	54
50	48.5	147	346	0.001	1	129

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
49	47.5	148	333	0.001	1	129
48	46.5	148	321	0.001	1	130
47	45.5	149	308	0.001	1	130
46	44.5	149	296	0.001	1	131
45	43.5	141	266	0.001	1	123
44	42.5	132	238	0.001	1	115
43	41.5	133	228	0.001	1	116
42	40.5	133	218	0.001	1	116
41	39.5	134	209	0.001	1	117
40	38.5	134	199	0.001	1	117
39	37.5	135	190	0.001	1	118
38	36.5	135	180	0.001	1	118
37	35.5	136	171	0.001	1	119
36	34.5	137	163	0.001	1	119
35	33.5	137	154	0.001	1	120
34	32.5	138	146	0.001	0	120
33	31.5	138	137	0.000	0	121
32	30.5	139	129	0.000	0	121
31	29.5	140	121	0.000	0	122
30	28.5	140	114	0.000	0	122
29	27.5	141	106	0.000	0	123
28	26.5	141	99	0.000	0	124
27	25.5	142	92	0.000	0	124
26	24.5	143	86	0.000	0	125
25	23.5	143	79	0.000	0	125
24	22.5	153	77	0.000	0	134
23	21.5	163	75	0.000	0	142
22	20.5	164	69	0.000	0	143
21	19.5	164	62	0.000	0	143
20	18.5	165	56	0.000	0	144
19	17.5	165	51	0.000	0	144
18	16.5	166	45	0.000	0	145
17	15.74	87	21	0.000	0	76
16	15.24	112	26	0.000	0	98
15	14.5	234	49	0.000	0	204
14	13.5	234	43	0.000	0	205
13	12.5	235	37	0.000	0	205
12	11.5	236	31	0.000	0	206
11	10.5	236	26	0.000	0	206
10	9.5	237	21	0.000	0	207
9	8.5	237	17	0.000	0	208
8	7.5	238	13	0.000	0	208
7	6.5	239	10	0.000	0	209
6	5.5	239	7	0.000	0	209
5	4.5	240	5	0.000	0	210
4	3.5	240	3	0.000	0	210
3	2.5	241	2	0.000	0	211
2	1.5	242	1	0.000	0	211
1	0.5	242	0	0.000	0	212
Ericsson AIR 6419 B77D	150	189	4,259	0.016	14	165
Raycap DC6-48-60-18-8F ("Squid")	150	57	1,276	0.005	4	50
Ericsson Radio 4415 B30	150	129	2,902	0.011	9	113
Ericsson RRUS 4478 B14	150	180	4,043	0.015	13	157
Ericsson RRUS 4890	150	208	4,691	0.018	15	182
Ericsson RRUS 4490	150	205	4,617	0.018	15	179
Commscope NNH4-65C-R6 (102.1 lbs)	150	613	13,784	0.052	45	535
Ericsson AIR 6419 B77G	150	198	4,462	0.017	15	173
Generic Mount Reinforcement	150	600	13,500	0.051	44	524
Generic Round Platform with Handrails	150	2,500	56,250	0.213	183	2,185
Generic TTA	144.2	10	208	0.001	1	9
Generic 56" x 6" Panel	143.8	180	3,722	0.014	12	157

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
Generic Round Low Profile Platform	143	1,875	38,342	0.145	125	1,639
<b>Totals:</b>		<b>28,753</b>	<b>264,424</b>	<b>1.000</b>	<b>863</b>	<b>25,130</b>

1.2D + 1.0Ev + 1.0Eh

Seismic

CALCULATED FORCES

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 (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.96	-0.86	0.00	-120.80	0.00	120.80	2,804.67	721.89	2,530	2,121.74	0.00	0.00	0.04
1.00	-34.66	-0.86	0.00	-119.94	0.00	119.94	2,797.79	718.86	2,509	2,107.56	0.00	0.00	0.04
2.00	-34.36	-0.86	0.00	-119.07	0.00	119.07	2,790.86	715.83	2,488	2,093.40	0.00	-0.01	0.04
3.00	-34.07	-0.87	0.00	-118.21	0.00	118.21	2,783.89	712.80	2,467	2,079.25	0.00	-0.01	0.04
4.00	-33.77	-0.87	0.00	-117.34	0.00	117.34	2,776.88	709.77	2,446	2,065.12	0.00	-0.01	0.04
5.00	-33.48	-0.87	0.00	-116.47	0.00	116.47	2,769.83	706.74	2,425	2,051.00	0.01	-0.01	0.04
6.00	-33.19	-0.87	0.00	-115.61	0.00	115.61	2,762.74	703.71	2,405	2,036.89	0.01	-0.02	0.04
7.00	-32.90	-0.87	0.00	-114.74	0.00	114.74	2,755.61	700.68	2,384	2,022.80	0.01	-0.02	0.04
8.00	-32.61	-0.87	0.00	-113.86	0.00	113.86	2,748.43	697.65	2,363	2,008.73	0.02	-0.02	0.04
9.00	-32.32	-0.88	0.00	-112.99	0.00	112.99	2,741.22	694.62	2,343	1,994.67	0.02	-0.03	0.04
10.00	-32.03	-0.88	0.00	-112.11	0.00	112.11	2,733.96	691.59	2,322	1,980.63	0.03	-0.03	0.04
11.00	-31.74	-0.88	0.00	-111.24	0.00	111.24	2,726.66	688.55	2,302	1,966.60	0.04	-0.03	0.04
12.00	-31.45	-0.88	0.00	-110.36	0.00	110.36	2,719.32	685.52	2,282	1,952.60	0.04	-0.03	0.04
13.00	-31.16	-0.88	0.00	-109.48	0.00	109.48	2,711.94	682.49	2,262	1,938.61	0.05	-0.04	0.04
14.00	-30.87	-0.88	0.00	-108.60	0.00	108.60	2,704.52	679.46	2,242	1,924.63	0.06	-0.04	0.04
15.00	-30.74	-0.88	0.00	-107.72	0.00	107.72	2,697.06	676.43	2,222	1,910.68	0.07	-0.04	0.04
15.48	-30.63	-0.88	0.00	-107.29	0.00	107.29	2,693.46	674.98	2,212	1,903.99	0.07	-0.04	0.04
15.48	-30.63	-0.88	0.00	-107.29	0.00	107.29	2,693.46	674.98	2,212	1,903.99	0.07	-0.04	0.07
16.00	-30.43	-0.88	0.00	-106.84	0.00	106.84	2,689.56	673.40	2,202	1,896.74	0.08	-0.05	0.07
17.00	-30.22	-0.89	0.00	-105.95	0.00	105.95	2,682.01	670.37	2,182	1,882.83	0.09	-0.05	0.07
18.00	-30.02	-0.89	0.00	-105.06	0.00	105.06	2,674.42	667.34	2,163	1,868.93	0.10	-0.06	0.07
19.00	-29.82	-0.89	0.00	-104.17	0.00	104.17	2,666.80	664.31	2,143	1,855.06	0.11	-0.06	0.07
20.00	-29.62	-0.89	0.00	-103.28	0.00	103.28	2,659.13	661.28	2,123	1,841.20	0.12	-0.07	0.07
21.00	-29.42	-0.90	0.00	-102.39	0.00	102.39	2,651.42	658.25	2,104	1,827.36	0.14	-0.07	0.07
22.00	-29.23	-0.90	0.00	-101.49	0.00	101.49	2,643.67	655.22	2,085	1,813.55	0.16	-0.08	0.07
23.00	-29.06	-0.90	0.00	-100.59	0.00	100.59	2,635.87	652.19	2,066	1,799.76	0.17	-0.08	0.07
24.00	-28.88	-0.90	0.00	-99.69	0.00	99.69	2,628.04	649.16	2,046	1,785.99	0.19	-0.09	0.07
25.00	-28.71	-0.91	0.00	-98.79	0.00	98.79	2,620.17	646.13	2,027	1,772.24	0.21	-0.09	0.07
26.00	-28.54	-0.91	0.00	-97.88	0.00	97.88	2,612.25	643.10	2,008	1,758.51	0.23	-0.10	0.07
27.00	-28.36	-0.91	0.00	-96.98	0.00	96.98	2,604.29	640.07	1,989	1,744.81	0.25	-0.10	0.07
28.00	-28.19	-0.91	0.00	-96.07	0.00	96.07	2,596.29	637.04	1,971	1,731.13	0.27	-0.11	0.07
29.00	-28.02	-0.91	0.00	-95.16	0.00	95.16	2,588.25	634.01	1,952	1,717.48	0.30	-0.12	0.07
30.00	-27.85	-0.92	0.00	-94.24	0.00	94.24	2,580.17	630.98	1,933	1,703.85	0.32	-0.12	0.07
31.00	-27.68	-0.92	0.00	-93.33	0.00	93.33	2,572.05	627.95	1,915	1,690.24	0.35	-0.13	0.07
32.00	-27.51	-0.92	0.00	-92.41	0.00	92.41	2,563.89	624.92	1,896	1,676.66	0.37	-0.13	0.07
33.00	-27.34	-0.92	0.00	-91.49	0.00	91.49	2,555.68	621.89	1,878	1,663.10	0.40	-0.14	0.07
34.00	-27.17	-0.92	0.00	-90.57	0.00	90.57	2,547.44	618.86	1,860	1,649.57	0.43	-0.14	0.07
35.00	-27.01	-0.92	0.00	-89.65	0.00	89.65	2,539.15	615.83	1,842	1,636.07	0.46	-0.15	0.07
36.00	-26.84	-0.93	0.00	-88.73	0.00	88.73	2,530.82	612.80	1,824	1,622.59	0.49	-0.15	0.07
37.00	-26.68	-0.93	0.00	-87.80	0.00	87.80	2,522.45	609.77	1,806	1,609.14	0.53	-0.16	0.07
38.00	-26.51	-0.93	0.00	-86.88	0.00	86.88	2,514.04	606.74	1,788	1,595.72	0.56	-0.17	0.07
39.00	-26.35	-0.93	0.00	-85.95	0.00	85.95	2,505.59	603.71	1,770	1,582.33	0.60	-0.17	0.07
40.00	-26.18	-0.93	0.00	-85.02	0.00	85.02	2,497.10	600.68	1,752	1,568.96	0.63	-0.18	0.07
41.00	-26.02	-0.93	0.00	-84.09	0.00	84.09	2,488.57	597.65	1,735	1,555.63	0.67	-0.18	0.07
42.00	-25.86	-0.93	0.00	-83.15	0.00	83.15	2,479.99	594.61	1,717	1,542.32	0.71	-0.19	0.06
43.00	-25.69	-0.94	0.00	-82.22	0.00	82.22	2,471.37	591.58	1,700	1,529.04	0.75	-0.19	0.06
44.00	-25.50	-0.94	0.00	-81.28	0.00	81.28	2,462.72	588.55	1,682	1,515.79	0.79	-0.20	0.06
45.00	-25.32	-0.94	0.00	-80.35	0.00	80.35	2,454.02	585.52	1,665	1,502.57	0.83	-0.21	0.06
46.00	-25.14	-0.94	0.00	-79.41	0.00	79.41	2,445.28	582.49	1,648	1,489.39	0.88	-0.21	0.06
47.00	-24.96	-0.94	0.00	-78.47	0.00	78.47	2,433.75	579.46	1,631	1,474.56	0.92	-0.22	0.06
48.00	-24.78	-0.94	0.00	-77.53	0.00	77.53	2,421.02	576.43	1,614	1,459.09	0.97	-0.22	0.06
49.00	-24.70	-0.94	0.00	-76.59	0.00	76.59	2,408.29	573.40	1,597	1,443.70	1.02	-0.23	0.06

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
49.42	-24.55	-0.94	0.00	-76.20	0.00	76.20	2,402.95	572.13	1,590	1,437.27	1.04	-0.23	0.06
50.00	-24.53	-0.94	0.00	-75.65	0.00	75.65	2,395.56	570.37	1,580	1,428.40	1.07	-0.24	0.03
50.08	-24.20	-0.94	0.00	-75.57	0.00	75.57	2,394.50	570.12	1,579	1,427.13	1.07	-0.24	0.03
51.00	-23.84	-0.94	0.00	-74.72	0.00	74.72	2,382.84	567.34	1,563	1,413.17	1.11	-0.24	0.03
52.00	-23.48	-0.93	0.00	-73.78	0.00	73.78	2,370.11	564.31	1,547	1,398.03	1.17	-0.24	0.03
53.00	-23.12	-0.93	0.00	-72.85	0.00	72.85	2,357.38	561.28	1,530	1,382.97	1.22	-0.24	0.03
54.00	-22.76	-0.93	0.00	-71.92	0.00	71.92	2,344.65	558.25	1,514	1,367.99	1.27	-0.25	0.03
55.00	-22.54	-0.92	0.00	-70.99	0.00	70.99	1,548.01	412.13	1,134	920.03	1.32	-0.25	0.04
56.00	-22.32	-0.92	0.00	-70.07	0.00	70.07	1,543.56	409.92	1,122	912.45	1.37	-0.25	0.04
57.00	-22.10	-0.92	0.00	-69.14	0.00	69.14	1,539.08	407.72	1,110	904.86	1.43	-0.26	0.04
58.00	-21.87	-0.92	0.00	-68.22	0.00	68.22	1,534.55	405.52	1,098	897.28	1.48	-0.26	0.04
59.00	-21.65	-0.92	0.00	-67.30	0.00	67.30	1,529.98	403.31	1,086	889.71	1.54	-0.26	0.04
60.00	-21.43	-0.92	0.00	-66.39	0.00	66.39	1,525.38	401.11	1,074	882.14	1.59	-0.27	0.04
61.00	-21.21	-0.91	0.00	-65.47	0.00	65.47	1,520.73	398.91	1,063	874.58	1.65	-0.27	0.04
62.00	-20.99	-0.91	0.00	-64.56	0.00	64.56	1,516.03	396.70	1,051	867.02	1.71	-0.27	0.04
63.00	-20.77	-0.91	0.00	-63.64	0.00	63.64	1,511.30	394.50	1,039	859.47	1.76	-0.28	0.04
64.00	-20.55	-0.91	0.00	-62.73	0.00	62.73	1,506.53	392.30	1,028	851.93	1.82	-0.28	0.04
65.00	-20.34	-0.91	0.00	-61.83	0.00	61.83	1,501.71	390.09	1,016	844.39	1.88	-0.29	0.04
66.00	-20.12	-0.90	0.00	-60.92	0.00	60.92	1,496.86	387.89	1,005	836.87	1.94	-0.29	0.04
67.00	-19.90	-0.90	0.00	-60.02	0.00	60.02	1,491.96	385.68	993	829.35	2.00	-0.29	0.04
68.00	-19.69	-0.90	0.00	-59.12	0.00	59.12	1,487.02	383.48	982	821.84	2.06	-0.30	0.04
69.00	-19.47	-0.89	0.00	-58.22	0.00	58.22	1,482.04	381.28	971	814.33	2.13	-0.30	0.04
70.00	-19.25	-0.89	0.00	-57.33	0.00	57.33	1,477.02	379.07	960	806.84	2.19	-0.30	0.04
71.00	-19.04	-0.89	0.00	-56.43	0.00	56.43	1,471.96	376.87	948	799.36	2.25	-0.31	0.04
72.00	-18.82	-0.89	0.00	-55.54	0.00	55.54	1,466.86	374.67	937	791.89	2.32	-0.31	0.04
73.00	-18.61	-0.88	0.00	-54.66	0.00	54.66	1,461.71	372.46	926	784.43	2.38	-0.31	0.04
74.00	-18.40	-0.88	0.00	-53.78	0.00	53.78	1,456.52	370.26	915	776.97	2.45	-0.32	0.03
75.00	-18.18	-0.88	0.00	-52.90	0.00	52.90	1,451.30	368.06	905	769.54	2.51	-0.32	0.03
76.00	-17.97	-0.87	0.00	-52.02	0.00	52.02	1,446.03	365.85	894	762.11	2.58	-0.32	0.03
77.00	-17.76	-0.87	0.00	-51.15	0.00	51.15	1,440.72	363.65	883	754.69	2.65	-0.33	0.03
78.00	-17.55	-0.87	0.00	-50.28	0.00	50.28	1,435.37	361.45	872	747.29	2.72	-0.33	0.03
79.00	-17.34	-0.86	0.00	-49.41	0.00	49.41	1,429.98	359.24	862	739.90	2.79	-0.33	0.03
80.00	-17.13	-0.86	0.00	-48.55	0.00	48.55	1,424.55	357.04	851	732.52	2.86	-0.34	0.03
81.00	-16.92	-0.85	0.00	-47.69	0.00	47.69	1,419.07	354.83	841	725.16	2.93	-0.34	0.03
82.00	-16.71	-0.85	0.00	-46.84	0.00	46.84	1,413.56	352.63	830	717.81	3.00	-0.34	0.03
83.00	-16.50	-0.85	0.00	-45.99	0.00	45.99	1,408.00	350.43	820	710.48	3.07	-0.34	0.03
84.00	-16.29	-0.84	0.00	-45.14	0.00	45.14	1,402.40	348.22	810	703.16	3.14	-0.35	0.03
85.00	-16.08	-0.84	0.00	-44.30	0.00	44.30	1,396.76	346.02	800	695.86	3.22	-0.35	0.03
86.00	-15.88	-0.83	0.00	-43.46	0.00	43.46	1,391.08	343.82	789	688.57	3.29	-0.35	0.03
87.00	-15.67	-0.83	0.00	-42.63	0.00	42.63	1,385.36	341.61	779	681.30	3.36	-0.36	0.03
88.00	-15.47	-0.82	0.00	-41.80	0.00	41.80	1,379.60	339.41	769	674.04	3.44	-0.36	0.03
89.00	-15.26	-0.82	0.00	-40.98	0.00	40.98	1,373.79	337.21	759	666.80	3.52	-0.36	0.03
90.00	-15.05	-0.81	0.00	-40.16	0.00	40.16	1,367.95	335.00	749	659.58	3.59	-0.37	0.03
91.00	-14.85	-0.81	0.00	-39.35	0.00	39.35	1,362.06	332.80	740	652.38	3.67	-0.37	0.03
92.00	-14.65	-0.80	0.00	-38.54	0.00	38.54	1,356.14	330.60	730	645.19	3.75	-0.37	0.03
93.00	-14.44	-0.80	0.00	-37.74	0.00	37.74	1,350.17	328.39	720	638.03	3.83	-0.38	0.03
94.00	-14.24	-0.79	0.00	-36.94	0.00	36.94	1,344.16	326.19	711	630.88	3.90	-0.38	0.03
95.00	-14.04	-0.79	0.00	-36.15	0.00	36.15	1,338.11	323.99	701	623.75	3.98	-0.38	0.03
96.00	-13.84	-0.78	0.00	-35.36	0.00	35.36	1,332.01	321.78	691	616.64	4.06	-0.38	0.03
97.00	-13.63	-0.78	0.00	-34.58	0.00	34.58	1,325.88	319.58	682	609.56	4.15	-0.39	0.03
98.00	-13.43	-0.77	0.00	-33.80	0.00	33.80	1,319.71	317.37	673	602.49	4.23	-0.39	0.03
99.00	-13.23	-0.76	0.00	-33.03	0.00	33.03	1,313.49	315.17	663	595.44	4.31	-0.39	0.02
100.00	-13.03	-0.76	0.00	-32.27	0.00	32.27	1,307.23	312.97	654	588.41	4.39	-0.40	0.02
101.00	-12.78	-0.75	0.00	-31.51	0.00	31.51	1,300.93	310.76	645	581.41	4.47	-0.40	0.02
102.00	-12.52	-0.74	0.00	-30.76	0.00	30.76	1,294.59	308.56	636	574.43	4.56	-0.40	0.02
103.00	-12.27	-0.73	0.00	-30.02	0.00	30.02	1,286.70	306.36	627	566.80	4.64	-0.40	0.02
104.00	-12.02	-0.72	0.00	-29.29	0.00	29.29	1,277.44	304.15	618	558.63	4.73	-0.41	0.02
105.00	-11.84	-0.72	0.00	-28.56	0.00	28.56	869.30	231.10	475	386.27	4.81	-0.41	0.03
106.00	-11.66	-0.71	0.00	-27.84	0.00	27.84	865.94	229.45	469	382.00	4.90	-0.41	0.03
107.00	-11.48	-0.71	0.00	-27.13	0.00	27.13	862.54	227.79	462	377.74	4.99	-0.42	0.03
108.00	-11.31	-0.70	0.00	-26.43	0.00	26.43	859.11	226.14	455	373.48	5.07	-0.42	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
108.94	-11.30	-0.70	0.00	-25.77	0.00	25.77	855.84	224.59	449	369.48	5.16	-0.42	0.02
108.94	-11.30	-0.70	0.00	-25.77	0.00	25.77	855.84	224.59	449	369.48	5.16	-0.42	0.08
109.00	-11.21	-0.70	0.00	-25.73	0.00	25.73	855.63	224.49	449	369.23	5.16	-0.42	0.08
110.00	-11.11	-0.70	0.00	-25.03	0.00	25.03	852.10	222.83	442	364.98	5.25	-0.43	0.08
111.00	-11.01	-0.69	0.00	-24.33	0.00	24.33	848.54	221.18	436	360.73	5.34	-0.44	0.08
112.00	-10.92	-0.69	0.00	-23.64	0.00	23.64	844.94	219.53	429	356.49	5.44	-0.45	0.08
113.00	-10.83	-0.69	0.00	-22.95	0.00	22.95	841.29	217.88	423	352.26	5.53	-0.46	0.08
114.00	-10.76	-0.69	0.00	-22.26	0.00	22.26	837.61	216.22	416	348.03	5.63	-0.47	0.08
115.00	-10.69	-0.69	0.00	-21.57	0.00	21.57	833.88	214.57	410	343.81	5.73	-0.48	0.08
116.00	-10.62	-0.69	0.00	-20.88	0.00	20.88	830.11	212.92	404	339.60	5.83	-0.49	0.07
117.00	-10.55	-0.68	0.00	-20.20	0.00	20.20	826.30	211.27	397	335.39	5.93	-0.50	0.07
118.00	-10.48	-0.68	0.00	-19.51	0.00	19.51	822.45	209.61	391	331.19	6.04	-0.51	0.07
119.00	-10.41	-0.68	0.00	-18.83	0.00	18.83	818.56	207.96	385	327.00	6.14	-0.52	0.07
120.00	-10.34	-0.68	0.00	-18.15	0.00	18.15	814.63	206.31	379	322.82	6.25	-0.52	0.07
121.00	-10.27	-0.68	0.00	-17.47	0.00	17.47	810.65	204.66	373	318.64	6.36	-0.53	0.07
122.00	-10.20	-0.68	0.00	-16.79	0.00	16.79	806.64	203.00	367	314.48	6.48	-0.54	0.07
123.00	-10.13	-0.67	0.00	-16.12	0.00	16.12	802.58	201.35	361	310.33	6.59	-0.55	0.07
124.00	-10.06	-0.67	0.00	-15.44	0.00	15.44	798.48	199.70	355	306.18	6.71	-0.56	0.06
125.00	-10.00	-0.67	0.00	-14.77	0.00	14.77	794.34	198.04	349	302.05	6.83	-0.57	0.06
126.00	-9.93	-0.67	0.00	-14.10	0.00	14.10	790.16	196.39	343	297.93	6.95	-0.58	0.06
127.00	-9.86	-0.67	0.00	-13.43	0.00	13.43	785.94	194.74	338	293.82	7.07	-0.58	0.06
128.00	-9.79	-0.66	0.00	-12.77	0.00	12.77	781.68	193.09	332	289.72	7.19	-0.59	0.06
129.00	-9.73	-0.66	0.00	-12.11	0.00	12.11	777.38	191.43	326	285.63	7.32	-0.60	0.06
130.00	-9.66	-0.66	0.00	-11.44	0.00	11.44	773.03	189.78	321	281.56	7.44	-0.61	0.05
131.00	-9.60	-0.66	0.00	-10.79	0.00	10.79	768.64	188.13	315	277.50	7.57	-0.61	0.05
132.00	-9.53	-0.65	0.00	-10.13	0.00	10.13	764.22	186.48	310	273.45	7.70	-0.62	0.05
133.00	-9.47	-0.65	0.00	-9.48	0.00	9.48	759.75	184.82	304	269.42	7.83	-0.63	0.05
134.00	-9.40	-0.65	0.00	-8.83	0.00	8.83	755.24	183.17	299	265.40	7.96	-0.63	0.05
135.00	-9.34	-0.65	0.00	-8.18	0.00	8.18	750.69	181.52	293	261.39	8.10	-0.64	0.04
136.00	-9.28	-0.64	0.00	-7.53	0.00	7.53	746.09	179.87	288	257.40	8.23	-0.65	0.04
137.00	-9.21	-0.64	0.00	-6.89	0.00	6.89	741.46	178.21	283	253.43	8.37	-0.65	0.04
138.00	-9.15	-0.64	0.00	-6.25	0.00	6.25	736.79	176.56	278	249.47	8.50	-0.66	0.04
139.00	-9.09	-0.63	0.00	-5.61	0.00	5.61	732.07	174.91	272	245.53	8.64	-0.66	0.04
140.00	-9.03	-0.63	0.00	-4.98	0.00	4.98	727.31	173.25	267	241.60	8.78	-0.67	0.03
141.00	-8.97	-0.63	0.00	-4.35	0.00	4.35	722.53	171.60	262	237.10	8.92	-0.67	0.03
142.00	-8.90	-0.62	0.00	-3.72	0.00	3.72	717.79	169.95	257	232.53	9.06	-0.67	0.03
143.00	-6.56	-0.47	0.00	-3.10	0.00	3.10	706.85	168.30	252	228.01	9.20	-0.68	0.02
143.80	-6.33	-0.45	0.00	-2.73	0.00	2.73	701.29	166.97	248	224.42	9.31	-0.68	0.02
144.00	-6.32	-0.45	0.00	-2.64	0.00	2.64	699.90	166.64	247	223.52	9.34	-0.68	0.02
144.20	-6.26	-0.45	0.00	-2.55	0.00	2.55	698.52	166.31	246	222.63	9.37	-0.68	0.02
145.00	-6.20	-0.44	0.00	-2.19	0.00	2.19	692.96	164.99	242	219.09	9.49	-0.68	0.02
146.00	-6.14	-0.44	0.00	-1.74	0.00	1.74	686.02	163.34	238	214.69	9.63	-0.68	0.02
147.00	-6.09	-0.44	0.00	-1.30	0.00	1.30	679.08	161.69	233	210.35	9.77	-0.68	0.02
148.00	-6.03	-0.43	0.00	-0.86	0.00	0.86	672.14	160.03	228	206.04	9.92	-0.69	0.01
149.00	-5.98	-0.43	0.00	-0.43	0.00	0.43	665.20	158.38	223	201.78	10.06	-0.69	0.01
150.00	0.00	-0.36	0.00	0.00	0.00	0.00	658.26	156.73	219	197.57	10.20	-0.69	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	-24.92	-0.86	0.00	-117.07	0.00	117.07	2,804.67	721.89	2,530	2,121.74	0.00	0.00	0.04
1.00	-24.71	-0.86	0.00	-116.21	0.00	116.21	2,797.79	718.86	2,509	2,107.56	0.00	0.00	0.04
2.00	-24.50	-0.86	0.00	-115.35	0.00	115.35	2,790.86	715.83	2,488	2,093.40	0.00	-0.01	0.04
3.00	-24.29	-0.86	0.00	-114.49	0.00	114.49	2,783.89	712.80	2,467	2,079.25	0.00	-0.01	0.04
4.00	-24.08	-0.87	0.00	-113.62	0.00	113.62	2,776.88	709.77	2,446	2,065.12	0.00	-0.01	0.04
5.00	-23.87	-0.87	0.00	-112.76	0.00	112.76	2,769.83	706.74	2,425	2,051.00	0.01	-0.01	0.04
6.00	-23.66	-0.87	0.00	-111.89	0.00	111.89	2,762.74	703.71	2,405	2,036.89	0.01	-0.02	0.04
7.00	-23.45	-0.87	0.00	-111.02	0.00	111.02	2,755.61	700.68	2,384	2,022.80	0.01	-0.02	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
8.00	-23.24	-0.87	0.00	-110.15	0.00	110.15	2,748.43	697.65	2,363	2,008.73	0.02	-0.02	0.04
9.00	-23.04	-0.87	0.00	-109.28	0.00	109.28	2,741.22	694.62	2,343	1,994.67	0.02	-0.02	0.04
10.00	-22.83	-0.87	0.00	-108.41	0.00	108.41	2,733.96	691.59	2,322	1,980.63	0.03	-0.03	0.04
11.00	-22.62	-0.87	0.00	-107.54	0.00	107.54	2,726.66	688.55	2,302	1,966.60	0.04	-0.03	0.04
12.00	-22.42	-0.87	0.00	-106.67	0.00	106.67	2,719.32	685.52	2,282	1,952.60	0.04	-0.03	0.04
13.00	-22.21	-0.87	0.00	-105.79	0.00	105.79	2,711.94	682.49	2,262	1,938.61	0.05	-0.04	0.04
14.00	-22.01	-0.88	0.00	-104.92	0.00	104.92	2,704.52	679.46	2,242	1,924.63	0.06	-0.04	0.04
15.00	-21.91	-0.88	0.00	-104.05	0.00	104.05	2,697.06	676.43	2,222	1,910.68	0.07	-0.04	0.04
15.48	-21.84	-0.88	0.00	-103.62	0.00	103.62	2,693.46	674.98	2,212	1,903.99	0.07	-0.04	0.04
15.48	-21.84	-0.88	0.00	-103.62	0.00	103.62	2,693.46	674.98	2,212	1,903.99	0.07	-0.04	0.06
16.00	-21.69	-0.88	0.00	-103.17	0.00	103.17	2,689.56	673.40	2,202	1,896.74	0.07	-0.04	0.06
17.00	-21.55	-0.88	0.00	-102.29	0.00	102.29	2,682.01	670.37	2,182	1,882.83	0.08	-0.05	0.06
18.00	-21.40	-0.88	0.00	-101.41	0.00	101.41	2,674.42	667.34	2,163	1,868.93	0.10	-0.05	0.06
19.00	-21.26	-0.88	0.00	-100.53	0.00	100.53	2,666.80	664.31	2,143	1,855.06	0.11	-0.06	0.06
20.00	-21.11	-0.88	0.00	-99.65	0.00	99.65	2,659.13	661.28	2,123	1,841.20	0.12	-0.06	0.06
21.00	-20.97	-0.88	0.00	-98.77	0.00	98.77	2,651.42	658.25	2,104	1,827.36	0.14	-0.07	0.06
22.00	-20.84	-0.89	0.00	-97.88	0.00	97.88	2,643.67	655.22	2,085	1,813.55	0.15	-0.08	0.06
23.00	-20.71	-0.89	0.00	-97.00	0.00	97.00	2,635.87	652.19	2,066	1,799.76	0.17	-0.08	0.06
24.00	-20.59	-0.89	0.00	-96.11	0.00	96.11	2,628.04	649.16	2,046	1,785.99	0.18	-0.09	0.06
25.00	-20.46	-0.89	0.00	-95.22	0.00	95.22	2,620.17	646.13	2,027	1,772.24	0.20	-0.09	0.06
26.00	-20.34	-0.89	0.00	-94.33	0.00	94.33	2,612.25	643.10	2,008	1,758.51	0.22	-0.10	0.06
27.00	-20.22	-0.89	0.00	-93.44	0.00	93.44	2,604.29	640.07	1,989	1,744.81	0.24	-0.10	0.06
28.00	-20.10	-0.89	0.00	-92.54	0.00	92.54	2,596.29	637.04	1,971	1,731.13	0.26	-0.11	0.06
29.00	-19.97	-0.90	0.00	-91.65	0.00	91.65	2,588.25	634.01	1,952	1,717.48	0.29	-0.11	0.06
30.00	-19.85	-0.90	0.00	-90.75	0.00	90.75	2,580.17	630.98	1,933	1,703.85	0.31	-0.12	0.06
31.00	-19.73	-0.90	0.00	-89.86	0.00	89.86	2,572.05	627.95	1,915	1,690.24	0.34	-0.12	0.06
32.00	-19.61	-0.90	0.00	-88.96	0.00	88.96	2,563.89	624.92	1,896	1,676.66	0.36	-0.13	0.06
33.00	-19.49	-0.90	0.00	-88.06	0.00	88.06	2,555.68	621.89	1,878	1,663.10	0.39	-0.13	0.06
34.00	-19.37	-0.90	0.00	-87.16	0.00	87.16	2,547.44	618.86	1,860	1,649.57	0.42	-0.14	0.06
35.00	-19.25	-0.90	0.00	-86.26	0.00	86.26	2,539.15	615.83	1,842	1,636.07	0.45	-0.14	0.06
36.00	-19.13	-0.90	0.00	-85.36	0.00	85.36	2,530.82	612.80	1,824	1,622.59	0.48	-0.15	0.06
37.00	-19.02	-0.90	0.00	-84.46	0.00	84.46	2,522.45	609.77	1,806	1,609.14	0.51	-0.15	0.06
38.00	-18.90	-0.90	0.00	-83.55	0.00	83.55	2,514.04	606.74	1,788	1,595.72	0.54	-0.16	0.06
39.00	-18.78	-0.91	0.00	-82.65	0.00	82.65	2,505.59	603.71	1,770	1,582.33	0.58	-0.17	0.06
40.00	-18.66	-0.91	0.00	-81.74	0.00	81.74	2,497.10	600.68	1,752	1,568.96	0.61	-0.17	0.06
41.00	-18.55	-0.91	0.00	-80.84	0.00	80.84	2,488.57	597.65	1,735	1,555.63	0.65	-0.18	0.06
42.00	-18.43	-0.91	0.00	-79.93	0.00	79.93	2,479.99	594.61	1,717	1,542.32	0.69	-0.18	0.06
43.00	-18.31	-0.91	0.00	-79.02	0.00	79.02	2,471.37	591.58	1,700	1,529.04	0.72	-0.19	0.06
44.00	-18.18	-0.91	0.00	-78.11	0.00	78.11	2,462.72	588.55	1,682	1,515.79	0.76	-0.19	0.06
45.00	-18.05	-0.91	0.00	-77.21	0.00	77.21	2,454.02	585.52	1,665	1,502.57	0.81	-0.20	0.06
46.00	-17.92	-0.91	0.00	-76.30	0.00	76.30	2,445.28	582.49	1,648	1,489.39	0.85	-0.20	0.06
47.00	-17.79	-0.91	0.00	-75.39	0.00	75.39	2,433.75	579.46	1,631	1,474.56	0.89	-0.21	0.06
48.00	-17.66	-0.91	0.00	-74.48	0.00	74.48	2,421.02	576.43	1,614	1,459.09	0.94	-0.22	0.06
49.00	-17.61	-0.91	0.00	-73.57	0.00	73.57	2,408.29	573.40	1,597	1,443.70	0.98	-0.22	0.06
49.42	-17.50	-0.91	0.00	-73.19	0.00	73.19	2,402.95	572.13	1,590	1,437.27	1.00	-0.22	0.06
50.00	-17.48	-0.91	0.00	-72.66	0.00	72.66	2,395.56	570.37	1,580	1,428.40	1.03	-0.23	0.03
50.08	-17.25	-0.91	0.00	-72.58	0.00	72.58	2,394.50	570.12	1,579	1,427.13	1.03	-0.23	0.03
51.00	-16.99	-0.90	0.00	-71.75	0.00	71.75	2,382.84	567.34	1,563	1,413.17	1.08	-0.23	0.03
52.00	-16.74	-0.90	0.00	-70.85	0.00	70.85	2,370.11	564.31	1,547	1,398.03	1.12	-0.23	0.03
53.00	-16.48	-0.90	0.00	-69.95	0.00	69.95	2,357.38	561.28	1,530	1,382.97	1.17	-0.24	0.03
54.00	-16.23	-0.90	0.00	-69.05	0.00	69.05	2,344.65	558.25	1,514	1,367.99	1.22	-0.24	0.03
55.00	-16.07	-0.89	0.00	-68.15	0.00	68.15	1,548.01	412.13	1,134	920.03	1.27	-0.24	0.04
56.00	-15.91	-0.89	0.00	-67.26	0.00	67.26	1,543.56	409.92	1,122	912.45	1.32	-0.24	0.04
57.00	-15.75	-0.89	0.00	-66.37	0.00	66.37	1,539.08	407.72	1,110	904.86	1.38	-0.25	0.04
58.00	-15.59	-0.89	0.00	-65.48	0.00	65.48	1,534.55	405.52	1,098	897.28	1.43	-0.25	0.04
59.00	-15.43	-0.89	0.00	-64.59	0.00	64.59	1,529.98	403.31	1,086	889.71	1.48	-0.25	0.04
60.00	-15.28	-0.88	0.00	-63.70	0.00	63.70	1,525.38	401.11	1,074	882.14	1.54	-0.26	0.04
61.00	-15.12	-0.88	0.00	-62.82	0.00	62.82	1,520.73	398.91	1,063	874.58	1.59	-0.26	0.04
62.00	-14.96	-0.88	0.00	-61.93	0.00	61.93	1,516.03	396.70	1,051	867.02	1.65	-0.26	0.04
63.00	-14.81	-0.88	0.00	-61.05	0.00	61.05	1,511.30	394.50	1,039	859.47	1.70	-0.27	0.04
64.00	-14.65	-0.88	0.00	-60.17	0.00	60.17	1,506.53	392.30	1,028	851.93	1.76	-0.27	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
65.00	-14.50	-0.87	0.00	-59.30	0.00	59.30	1,501.71	390.09	1,016	844.39	1.81	-0.27	0.04
66.00	-14.34	-0.87	0.00	-58.42	0.00	58.42	1,496.86	387.89	1,005	836.87	1.87	-0.28	0.03
67.00	-14.19	-0.87	0.00	-57.55	0.00	57.55	1,491.96	385.68	993	829.35	1.93	-0.28	0.03
68.00	-14.03	-0.87	0.00	-56.68	0.00	56.68	1,487.02	383.48	982	821.84	1.99	-0.28	0.03
69.00	-13.88	-0.86	0.00	-55.82	0.00	55.82	1,482.04	381.28	971	814.33	2.05	-0.29	0.03
70.00	-13.72	-0.86	0.00	-54.96	0.00	54.96	1,477.02	379.07	960	806.84	2.11	-0.29	0.03
71.00	-13.57	-0.86	0.00	-54.10	0.00	54.10	1,471.96	376.87	948	799.36	2.17	-0.29	0.03
72.00	-13.42	-0.85	0.00	-53.24	0.00	53.24	1,466.86	374.67	937	791.89	2.23	-0.30	0.03
73.00	-13.27	-0.85	0.00	-52.38	0.00	52.38	1,461.71	372.46	926	784.43	2.30	-0.30	0.03
74.00	-13.11	-0.85	0.00	-51.53	0.00	51.53	1,456.52	370.26	915	776.97	2.36	-0.30	0.03
75.00	-12.96	-0.84	0.00	-50.68	0.00	50.68	1,451.30	368.06	905	769.54	2.42	-0.31	0.03
76.00	-12.81	-0.84	0.00	-49.84	0.00	49.84	1,446.03	365.85	894	762.11	2.49	-0.31	0.03
77.00	-12.66	-0.84	0.00	-49.00	0.00	49.00	1,440.72	363.65	883	754.69	2.55	-0.31	0.03
78.00	-12.51	-0.83	0.00	-48.16	0.00	48.16	1,435.37	361.45	872	747.29	2.62	-0.32	0.03
79.00	-12.36	-0.83	0.00	-47.33	0.00	47.33	1,429.98	359.24	862	739.90	2.69	-0.32	0.03
80.00	-12.21	-0.83	0.00	-46.50	0.00	46.50	1,424.55	357.04	851	732.52	2.75	-0.32	0.03
81.00	-12.06	-0.82	0.00	-45.67	0.00	45.67	1,419.07	354.83	841	725.16	2.82	-0.33	0.03
82.00	-11.91	-0.82	0.00	-44.85	0.00	44.85	1,413.56	352.63	830	717.81	2.89	-0.33	0.03
83.00	-11.76	-0.81	0.00	-44.03	0.00	44.03	1,408.00	350.43	820	710.48	2.96	-0.33	0.03
84.00	-11.61	-0.81	0.00	-43.21	0.00	43.21	1,402.40	348.22	810	703.16	3.03	-0.33	0.03
85.00	-11.46	-0.81	0.00	-42.40	0.00	42.40	1,396.76	346.02	800	695.86	3.10	-0.34	0.03
86.00	-11.32	-0.80	0.00	-41.59	0.00	41.59	1,391.08	343.82	789	688.57	3.17	-0.34	0.03
87.00	-11.17	-0.80	0.00	-40.79	0.00	40.79	1,385.36	341.61	779	681.30	3.24	-0.34	0.03
88.00	-11.02	-0.79	0.00	-40.00	0.00	40.00	1,379.60	339.41	769	674.04	3.31	-0.35	0.03
89.00	-10.88	-0.79	0.00	-39.20	0.00	39.20	1,373.79	337.21	759	666.80	3.39	-0.35	0.03
90.00	-10.73	-0.78	0.00	-38.41	0.00	38.41	1,367.95	335.00	749	659.58	3.46	-0.35	0.03
91.00	-10.58	-0.78	0.00	-37.63	0.00	37.63	1,362.06	332.80	740	652.38	3.53	-0.36	0.03
92.00	-10.44	-0.77	0.00	-36.85	0.00	36.85	1,356.14	330.60	730	645.19	3.61	-0.36	0.03
93.00	-10.29	-0.77	0.00	-36.08	0.00	36.08	1,350.17	328.39	720	638.03	3.69	-0.36	0.02
94.00	-10.15	-0.76	0.00	-35.31	0.00	35.31	1,344.16	326.19	711	630.88	3.76	-0.36	0.02
95.00	-10.01	-0.76	0.00	-34.55	0.00	34.55	1,338.11	323.99	701	623.75	3.84	-0.37	0.02
96.00	-9.86	-0.75	0.00	-33.79	0.00	33.79	1,332.01	321.78	691	616.64	3.91	-0.37	0.02
97.00	-9.72	-0.75	0.00	-33.04	0.00	33.04	1,325.88	319.58	682	609.56	3.99	-0.37	0.02
98.00	-9.58	-0.74	0.00	-32.29	0.00	32.29	1,319.71	317.37	673	602.49	4.07	-0.38	0.02
99.00	-9.43	-0.74	0.00	-31.55	0.00	31.55	1,313.49	315.17	663	595.44	4.15	-0.38	0.02
100.00	-9.29	-0.73	0.00	-30.81	0.00	30.81	1,307.23	312.97	654	588.41	4.23	-0.38	0.02
101.00	-9.11	-0.72	0.00	-30.08	0.00	30.08	1,300.93	310.76	645	581.41	4.31	-0.38	0.02
102.00	-8.93	-0.71	0.00	-29.36	0.00	29.36	1,294.59	308.56	636	574.43	4.39	-0.39	0.02
103.00	-8.75	-0.71	0.00	-28.65	0.00	28.65	1,288.20	306.36	627	566.80	4.47	-0.39	0.02
104.00	-8.57	-0.70	0.00	-27.94	0.00	27.94	1,277.44	304.15	618	558.63	4.55	-0.39	0.02
105.00	-8.44	-0.69	0.00	-27.24	0.00	27.24	869.30	231.10	475	386.27	4.64	-0.39	0.02
106.00	-8.31	-0.69	0.00	-26.55	0.00	26.55	865.94	229.45	469	382.00	4.72	-0.40	0.02
107.00	-8.18	-0.68	0.00	-25.87	0.00	25.87	862.54	227.79	462	377.74	4.80	-0.40	0.02
108.00	-8.06	-0.67	0.00	-25.19	0.00	25.19	859.11	226.14	455	373.48	4.88	-0.40	0.02
108.94	-8.06	-0.67	0.00	-24.55	0.00	24.55	855.84	224.59	449	369.48	4.96	-0.40	0.02
108.94	-8.06	-0.67	0.00	-24.55	0.00	24.55	855.84	224.59	449	369.48	4.96	-0.40	0.08
109.00	-7.99	-0.67	0.00	-24.51	0.00	24.51	855.63	224.49	449	369.23	4.97	-0.40	0.08
110.00	-7.92	-0.67	0.00	-23.84	0.00	23.84	852.10	222.83	442	364.98	5.05	-0.41	0.08
111.00	-7.85	-0.67	0.00	-23.17	0.00	23.17	848.54	221.18	436	360.73	5.14	-0.42	0.07
112.00	-7.78	-0.66	0.00	-22.51	0.00	22.51	844.94	219.53	429	356.49	5.23	-0.43	0.07
113.00	-7.72	-0.66	0.00	-21.84	0.00	21.84	841.29	217.88	423	352.26	5.32	-0.44	0.07
114.00	-7.67	-0.66	0.00	-21.18	0.00	21.18	837.61	216.22	416	348.03	5.42	-0.45	0.07
115.00	-7.62	-0.66	0.00	-20.52	0.00	20.52	833.88	214.57	410	343.81	5.51	-0.46	0.07
116.00	-7.57	-0.66	0.00	-19.86	0.00	19.86	830.11	212.92	404	339.60	5.61	-0.47	0.07
117.00	-7.52	-0.66	0.00	-19.20	0.00	19.20	826.30	211.27	397	335.39	5.71	-0.48	0.07
118.00	-7.47	-0.65	0.00	-18.55	0.00	18.55	822.45	209.61	391	331.19	5.81	-0.49	0.07
119.00	-7.42	-0.65	0.00	-17.89	0.00	17.89	818.56	207.96	385	327.00	5.91	-0.49	0.06
120.00	-7.37	-0.65	0.00	-17.24	0.00	17.24	814.63	206.31	379	322.82	6.02	-0.50	0.06
121.00	-7.32	-0.65	0.00	-16.59	0.00	16.59	810.65	204.66	373	318.64	6.12	-0.51	0.06
122.00	-7.27	-0.65	0.00	-15.95	0.00	15.95	806.64	203.00	367	314.48	6.23	-0.52	0.06
123.00	-7.22	-0.64	0.00	-15.30	0.00	15.30	802.58	201.35	361	310.33	6.34	-0.53	0.06

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
124.00	-7.17	-0.64	0.00	-14.66	0.00	14.66	798.48	199.70	355	306.18	6.45	-0.54	0.06
125.00	-7.12	-0.64	0.00	-14.02	0.00	14.02	794.34	198.04	349	302.05	6.57	-0.54	0.06
126.00	-7.08	-0.64	0.00	-13.38	0.00	13.38	790.16	196.39	343	297.93	6.68	-0.55	0.05
127.00	-7.03	-0.63	0.00	-12.74	0.00	12.74	785.94	194.74	338	293.82	6.80	-0.56	0.05
128.00	-6.98	-0.63	0.00	-12.11	0.00	12.11	781.68	193.09	332	289.72	6.92	-0.57	0.05
129.00	-6.93	-0.63	0.00	-11.48	0.00	11.48	777.38	191.43	326	285.63	7.03	-0.57	0.05
130.00	-6.89	-0.63	0.00	-10.85	0.00	10.85	773.03	189.78	321	281.56	7.16	-0.58	0.05
131.00	-6.84	-0.62	0.00	-10.22	0.00	10.22	768.64	188.13	315	277.50	7.28	-0.59	0.05
132.00	-6.79	-0.62	0.00	-9.60	0.00	9.60	764.22	186.48	310	273.45	7.40	-0.59	0.04
133.00	-6.75	-0.62	0.00	-8.98	0.00	8.98	759.75	184.82	304	269.42	7.53	-0.60	0.04
134.00	-6.70	-0.62	0.00	-8.36	0.00	8.36	755.24	183.17	299	265.40	7.65	-0.61	0.04
135.00	-6.66	-0.61	0.00	-7.75	0.00	7.75	750.69	181.52	293	261.39	7.78	-0.61	0.04
136.00	-6.61	-0.61	0.00	-7.13	0.00	7.13	746.09	179.87	288	257.40	7.91	-0.62	0.04
137.00	-6.57	-0.61	0.00	-6.53	0.00	6.53	741.46	178.21	283	253.43	8.04	-0.62	0.04
138.00	-6.52	-0.60	0.00	-5.92	0.00	5.92	736.79	176.56	278	249.47	8.17	-0.63	0.03
139.00	-6.48	-0.60	0.00	-5.32	0.00	5.32	732.07	174.91	272	245.53	8.30	-0.63	0.03
140.00	-6.43	-0.60	0.00	-4.72	0.00	4.72	727.31	173.25	267	241.60	8.44	-0.64	0.03
141.00	-6.39	-0.59	0.00	-4.12	0.00	4.12	720.73	171.60	262	237.10	8.57	-0.64	0.03
142.00	-6.35	-0.59	0.00	-3.53	0.00	3.53	713.79	169.95	257	232.53	8.71	-0.64	0.02
143.00	-4.67	-0.44	0.00	-2.94	0.00	2.94	706.85	168.30	252	228.01	8.84	-0.65	0.02
143.80	-4.51	-0.43	0.00	-2.58	0.00	2.58	701.29	166.97	248	224.42	8.95	-0.65	0.02
144.00	-4.50	-0.43	0.00	-2.50	0.00	2.50	699.90	166.64	247	223.52	8.98	-0.65	0.02
144.20	-4.46	-0.42	0.00	-2.41	0.00	2.41	698.52	166.31	246	222.63	9.00	-0.65	0.02
145.00	-4.42	-0.42	0.00	-2.07	0.00	2.07	692.96	164.99	242	219.09	9.11	-0.65	0.02
146.00	-4.38	-0.42	0.00	-1.65	0.00	1.65	686.02	163.34	238	214.69	9.25	-0.65	0.01
147.00	-4.34	-0.41	0.00	-1.23	0.00	1.23	679.08	161.69	233	210.35	9.39	-0.65	0.01
148.00	-4.30	-0.41	0.00	-0.82	0.00	0.82	672.14	160.03	228	206.04	9.52	-0.66	0.01
149.00	-4.26	-0.41	0.00	-0.41	0.00	0.41	665.20	158.38	223	201.78	9.66	-0.66	0.01
150.00	0.00	-0.36	0.00	0.00	0.00	0.00	658.26	156.73	219	197.57	9.80	-0.66	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions						Max Usage	
	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	16.88	0.00	34.50	0.00	0.00	1731.20	108.94	0.81
0.9D + 1.0W	16.87	0.00	25.87	0.00	0.00	1689.30	108.94	0.77
1.2D + 1.0Di + 1.0Wi	2.69	0.00	44.69	0.00	0.00	312.58	108.94	0.18
1.2D + 1.0Ev + 1.0Eh	0.86	0.00	34.96	0.00	0.00	120.80	108.94	0.08
0.9D - 1.0Ev + 1.0Eh	0.86	0.00	24.92	0.00	0.00	117.07	108.94	0.08
1.0D + 1.0W	4.66	0.00	28.75	0.00	0.00	471.18	108.94	0.23

ADDITIONAL STEEL SUMMARY

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors				Max Member		
			VQ/I (k/in)	Shear Applied (kips)	phiVn (kips)	Ratio	Pu (kip)	phiPn (kip)	Ratio
0.00	15.48	SOL #20 All Thread Bar	158.0	4.7	16.8	0.282	190.0	330.5	0.5749
49.42	108.94	SOL #20 All Thread Bar	213.7	6.4	16.8	0.3815	165.5	330.5	0.5007

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors				Lower Termination Connectors					
			MQ/I (kips)	phiVn (kips)	Number Required	Number Actual	Ratio	MQ/I (kips)	phiVn (kip)	Number Required	Number Actual	Ratio
0.00	15.48	SOL #20 All Thread Bar	178.201	12	15	20	0.7425	0	12	0	0	0.0000
49.42	108.94	SOL #20 All Thread Bar	90.6477	12	8	12	0.6295	151.2356	12	13	16	0.7877

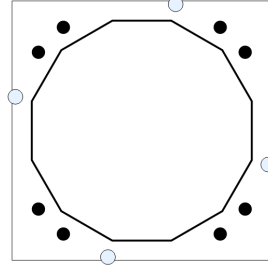
**BASE PLATE ANALYSIS @ 0 FT**

**APPLIED REACTIONS**

Moment (k-ft)	Axial (k)	Shear (k)
1731.2	34.5	16.88

**PLATE PARAMETERS (ID# 30601)**

Width:	44	in
Shape:	Square	
Thickness:	3.5	in
Grade:	A871-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Clip Length:	0	in
Rod Detail Type:	c	
Clear Distance:	-	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	40	°



**ANCHOR ROD PARAMETERS**

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Spacing (in)	Offset (°)
Original [ID#31402]	Cluster	8	2.25	44	A615-75	75	100	6	-

**DYWIDAG BAR PARAMETERS**

Quantity	Bar Size	Bar Diameter (in)	F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
4 [ID# 2833]	#20	2.5	80	100	Angle	2.19	44.38	75

**COMPONENT PROPERTIES**

Component	ID	Gross Area (in <sup>2</sup> )	Net Area (in <sup>2</sup> )	Individual Inertia (in <sup>4</sup> )	Moment of Inertia (in <sup>4</sup> )	Threads/in
Pole	37.5"Ø x 0.3438" (12 Sides)	39.6748	-	-	6848.36	-
Bolt Group	Original (8) 2.25"Ø	3.9761	3.2477	0.8393	5566.40	4.5
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	4841.76	-

**REACTION DISTRIBUTION**

Component	ID	Moment M <sub>u</sub> (k-ft)	Axial Load P <sub>u</sub> (k)	Shear V <sub>u</sub> (k)	Moment Factor
Pole	37.5"Ø x 0.3438" (12 Sides)	1014.2	34.50	16.88	0.586
Bolt Group	Original (8) 2.25"Ø	1014.2	-	16.88	0.586
Dywidag Group	(4) #20	717.0	-	-	0.414

**BASE PLATE BEND LINE ANALYSIS @ 0 FT**

**POLE PROPERTIES**

Flat-to-Flat Diameter:	37.62	in	Flat Width:	10.082	in
Point-to-Point Diameter:	38.95	in	Flat Radians:	0.524	rad
Orientation Offset:	15	°			

**PLATE PROPERTIES**


Neutral Axis: 40 °

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in <sup>3</sup> )	Applied Moment M <sub>u</sub> (k-in)	Moment Capacity ΦM <sub>n</sub> (k-in)	Flexure Result M <sub>u</sub> /ΦM <sub>n</sub>
Flats	24.600	0.00	75.339	474.3	4068.3	11.7%
Corners	23.273	0.00	71.274	278.6	3848.8	7.2%


ASSET: 307538, Dublin OH  
CUSTOMER: AT&T MOBILITY

CODE: ANSI/TIA-222-H  
PROJECT: 14846627

**ELASTIC ANCHOR ROD ANALYSIS**

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load $P_u$ (k)	Applied Shear Load $V_u$ (k)	Compressive Capacity $\Phi P_n$ (k)	Compressive Result	Interaction Result
Original	8	2.25	149.2	0.2	243.6	0.613	61.4% 

**DYWIDAG BAR ANALYSIS**

Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load $P_u$ (k)	Compressive Capacity $\Phi P_n$ (k)	Compressive Result $P_u / \Phi P_n$
4	#20	44.38	162.1	368.2	44.0% 

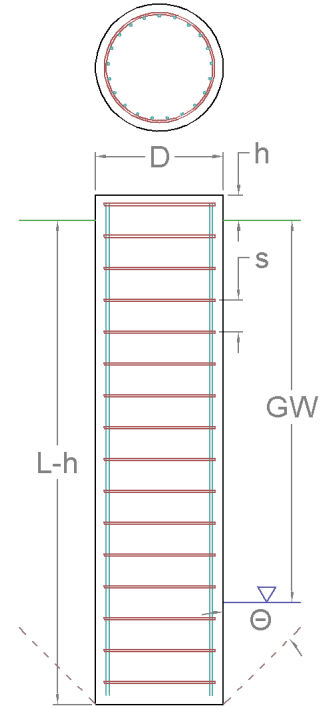
### PIER FOUNDATION ANALYSIS

#### GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
1,731.20	34.50	16.88

#### FOUNDATION PARAMETERS

Pier Diameter:	D	6.00	ft
Pier Embedment Depth:	L-h	30.8	ft
Pier Height above Grade:	h	0.70	ft
Concrete Compressive Strength:		3,000	psi
Vertical Rebar:		(16) #11 bars [60 ksi]	
Tie Rebar:	s	#5 bars @ 18.0" c/c [60 ksi]	
Rebar Clear Cover:		3.00	in



#### SOIL PARAMETERS

Water Table Depth [BGL]: GW 11 ft

Layer Depth (ft)	Unit Weight	Cohesion	Friction Angle	Ultimate Skin	Ultimate Net
				Friction	Bearing
Top	Bottom	pcf	°	psf	psf
2.5	5	110	0	0	0
5	7.5	122	2,400	0	0
7.5	11	122	2,509	1,065	0
11	15	123	3,273	1,755	0
15	20	123	3,414	1,807	0
20	25	123	3,658	1,891	0
25	30	124	4,022	2,006	0
30	35	124	4,027	2,008	0
35	40	125	4,056	2,017	34,078

#### SOIL STRENGTH ANALYSIS

Volume of Concrete (ft³)	Buoyant Weight of Concrete (k)	Skin Friction Resistance (k)	Inflection Point [BGL] (ft)
890.64	98.66	770.45	19.94

#### SOIL MOMENT ANALYSIS

Total Lateral Resistance (k)	Moment at Inflection Point, M <sub>u</sub> (k-ft)	Additional Resistance (k-ft)	Nominal Moment Capacity, ΦM <sub>n</sub> (k-ft)	Soil Moment Usage, M <sub>u</sub> / ΦM <sub>n</sub>
4,112.58	2,079.68	0.00	19,262.23	10.8% <span style="float: right;">✔</span>

#### SOIL COMPRESSION ANALYSIS


Compressive Bearing Resistance (k)	Compressive Force, P <sub>u</sub> (k)	Additional Resistance (k)	Nominal Compressive Capacity, ΦP <sub>n</sub> (k)	Soil Compressive Usage, P <sub>u</sub> / ΦP <sub>n</sub>
0.00	74.26	0.00	577.84	12.9% <span style="float: right;">✔</span>




**REINFORCING STEEL STRENGTH ANALYSIS**

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, $\Phi_b$	Strength Shear Reduction Factor, $\Phi_v$	Strength Compression Reduction Factor, $\Phi_c$
63.34	29,000	0.9	0.75	0.65

**PIER REINFORCING MOMENT ANALYSIS**

Design Moment, $M_u$ (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u / \Phi_b M_n$
1,743.59	3,492.33	0.01	49.9% 

**PIER REINFORCING COMPRESSION ANALYSIS**

Buoyant Weight of Concrete (k)	Design Compression, $P_u$ (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$
98.66	74.26	6,144.47	1.2% 

**PIER REINFORCING SHEAR ANALYSIS**

Design Shear, $V_u$ (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$
138.51	425.21	32.6% 