Transcend Wireless

10 Industrial Avenue, Suite 3
Mahwah, NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

October 10, 2017

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: TS-T-Mobile-150-161024
T-Mobile Site Id CTNH371A
6 Mountain Road, Washington, CT
Notice of Construction Complete

Dear Attorney Bachman,

This office represents T-Mobile Northeast LLC ("T-Mobile") and has been retained to notify the Connecticut Siting Council ("Council") that the exempt modification decision conditions have been met and constructed in accordance with the documentation provided at the time of filing.

The Council acknowledged the above referenced T-Mobile notice of exempt modification on December 12, 2016.

The Council imposed the following condition in its acknowledgment:

- Within 45 days following completion of the equipment installation, T-Mobile shall provide documentation that its installation complied with the recommendations of the Structural Analysis Report.

The attached Statement of Special Inspections provides evidence of compliance with the conditions outlined by the Council.

Sincerely,

Jennifer Dupont
Project Coordinator
Transcend Wireless LLC on behalf of T-Mobile
10 Industrial Ave, Suite 3
Mahwah, NJ 07430

CENTEK engineering
Centered on Solutions℠

October 10, 2017

Mr. Dan Reid
Transcend Wireless
35 Griffin Road South
Bloomfield, Connecticut 06002

Re: Tower Modification Certification

Project:	**T-Mobile CTNH371A** 6 Mountain Road, Washington, CT
Tower Owner:	**American Tower Corp** 220 Lathrop Road, Candor, NY
Engineer:	**Hudson Design Group** 1600 Osgood Street, Building 20, Suite 3090, N. Andover, Ma

Centek Project No.: 17008.28

CSC Exempt Mod Reference No.: TS-T-Mobile-150-161024

Dear Mr. Reid,

We are providing this "Tower Modification Certification" with regard to the structural components at the above referenced project.

The following are the basis for substantiating compliance with Hudson Design Group's construction drawings dated 05/25/17 Rev. 05

- Review of the American Towers Corp. Structural Analysis dated 05/17/16.
- Review of the American Towers Corp. Structural Analysis dated 04/21/17.
- Review of Hudson Design Group Drawings dated 05/25/17 Rev. 05.
- Field observations by Centek Engineering personnel on 10/10/17 of the completed modifications which determined all modifications were installed in general compliance with the aforementioned documents

The modification design prepared by American Towers Corp. demonstrates the tower will not exceed 100 percent of the post construction structural rating. The work under this Contract has been reviewed and found, to the Engineer's best knowledge, information and belief, to be completed in general compliance with the documents referenced above. This certification is not a review of the adequacy or effectiveness of the modification/reinforcement solution.

Sincerely,

Carlo F. Centore, PE
Principal - Structural

STATE OF CONNECTICUT
CARLO F. CENTORE
No. 18894
LICENSED
PROFESSIONAL ENGINEER

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**168.6 ft Monopole**
ATC Site Name	:	**Washington North CT, CT**
ATC Site Number	:	**413782**
Engineering Number	:	**OAA701488_C3_01**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**MountainRd- Verizon Colo**
Carrier Site Number	:	**CTNH371A**
Site Location	:	**6 Mountain Road** **New Preston, CT 06777-1518** **41.669100,-73.365300**
County	:	**Litchfield**
Date	:	**April 20, 2017**
Max Usage	:	**99%**
Result	:	**Pass**

Prepared By:
Charles Dalton Wally, E.I.
Structural Engineer I

Charles D. Wally

Reviewed By:

STATE OF CONNECTICUT
SCOTT A. WIRGAU
30576
LICENSED
PROFESSIONAL ENGINEER

Apr 21 2017 5:18 PM cosign

COA: PEC.0001553

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Table of Contents

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 168.6 ft monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	EEI Job #15143, dated October 24, 2007
Foundation Drawing	EEI Job #15143, dated October 24, 2007
Geotechnical Report	JGI Project #J2075402, dated October 10, 2007
Modifications	Centek Job #10079.C03, dated July 13, 2010

Analysis

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

Basic Wind Speed:	93 mph (3-Second Gust, V_{asd}) / 120 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil

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 contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
167.0	167.0	12	RCU (Remote Control Unit)	Flush	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6	AT&T Mobility
		6	Powerwave TT08-19DB111-001			
		6	Ericsson RRUS 11 B2			
		1	KMW AM-X-CD-17-65-00T-RET			
		3	Powerwave P90-14-XLH-RR (7.3" Depth)			
		2	Kathrein 800-10864K			
162.0	162.0	1	Raycap DC6-48-60-18-8F ("Squid")	Flush	(1) 0.39" Fiber Trunk	
157.0	157.0	3	Andrew DBXNH-6565A-VTM	Stand-Offs	(12) 1 5/8" Coax	Verizon
146.0	146.0	3	Antel BXA-70063/6CF__2°	Stand-Offs	(6) 1 5/8" Coax	
		1	VZW Unused Reserve: 10,801 sq in			
136.0	136.0	1	E-911 GPS	T-Arms	-	T-Mobile
		3	RFS ATMAA1412D-1A20			
		3	RFS APXV18-206516S-C-A20			
		3	Commscope LNX-6515DS-A1M (96.6" Height)			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
136.0	136.0	-	-	-	(12) 1 5/8" Coax	T-Mobile

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
136.0	136.0	3	Ericsson RRUS 11 B12	T-Arms	(2) 1 5/8" Hybriflex	T-Mobile
		3	Ericsson RRUS 11 B2			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	50%	Pass
Shaft	99%	Pass
Base Plate	78%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,398.5	2,398.5	2,276.2	95%
Shear (Kips)	23.6	23.6	18.9	80%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
136.0	Ericsson RRUS 11 B12	T-Mobile	2.506	2.318
	Ericsson RRUS 11 B2			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

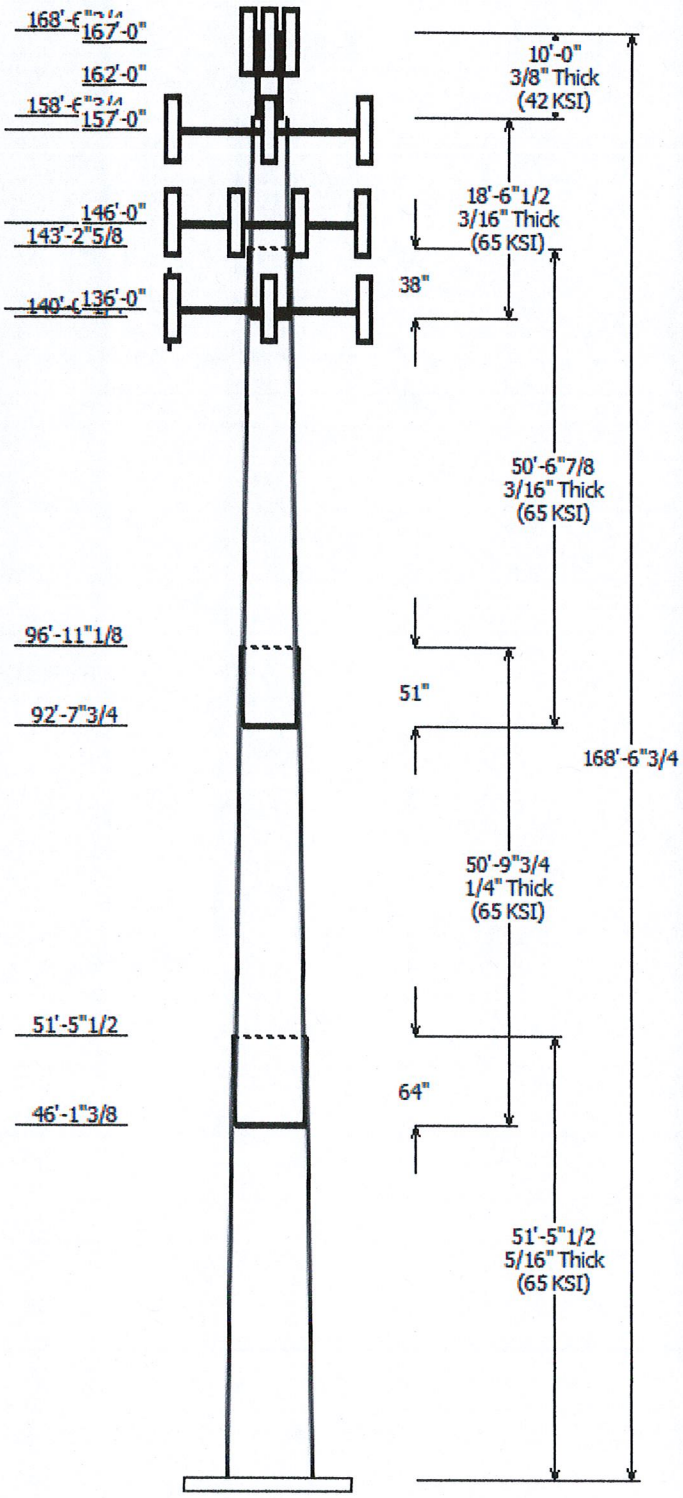
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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



Job Information

Pole :	413782	Code:	ANSI/TIA-222-G
Description :	159 ft EEI Monopole		
Client :	T-MOBILE	Struct Class :	II
Location :	Washington North CT, CT		
Shape :	18 Sides	Exposure :	B
Height :	168.56 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.190776 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	51.458	37.18	47.00	0.313		0.000	0.190800	65
2	50.810	29.00	38.70	0.250	Slip Joint	64.094	0.190800	65
3	50.573	20.55	30.20	0.188	Slip Joint	51.375	0.190800	65
4	18.542	18.00	21.53	0.188	Slip Joint	38.375	0.190800	65
5	10.000	12.75	12.75	0.375	Butt Joint	0.000	0.000000	42

Discrete Appurtenance

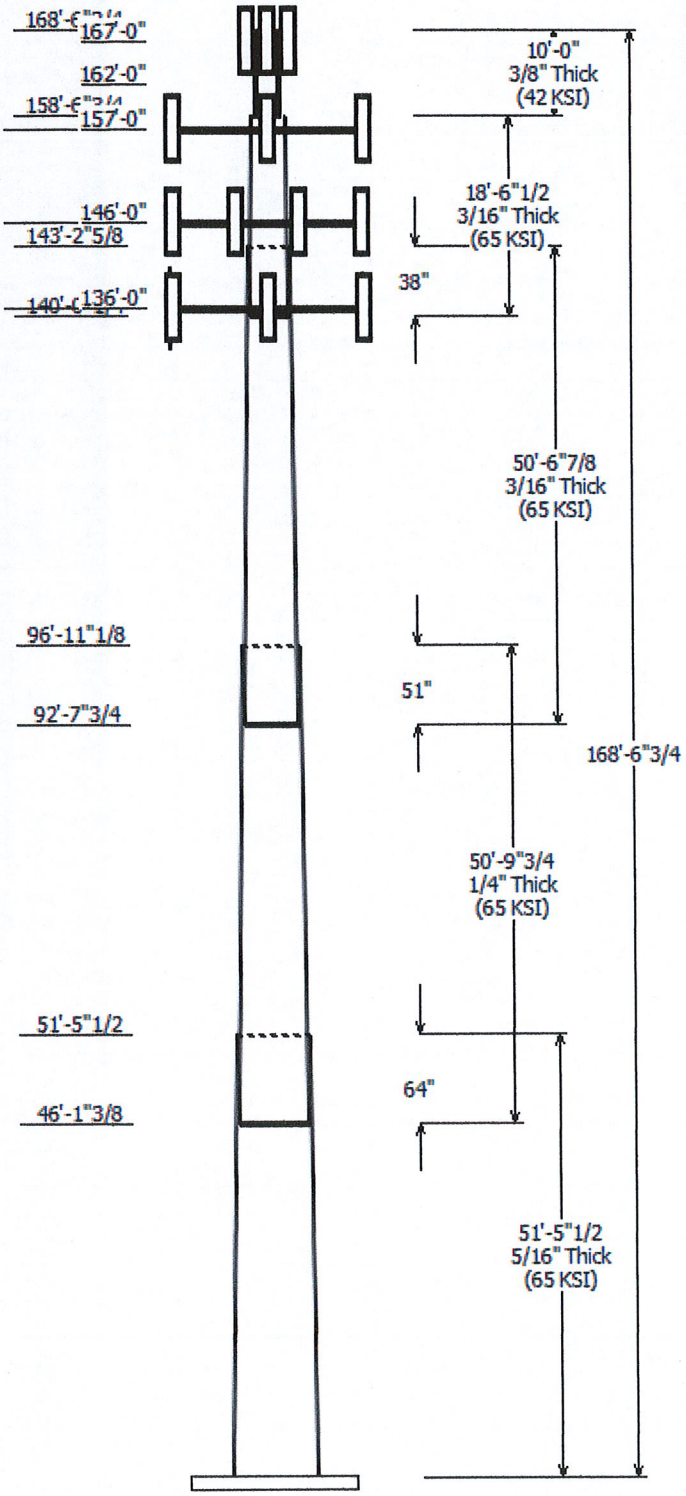
Attach Elev (ft)	Force Elev (ft)	Qty	Description
167.000	167.000	1	KMW AM-X-CD-17-65-00T-RET
167.000	167.000	2	Kathrein Scala 800-10864K
167.000	167.000	3	Powerwave Allgon P90-14-
167.000	167.000	12	RCU (Remote Control Unit)
167.000	167.000	6	Ericsson RRUS 11 B2
167.000	167.000	6	Powerwave Allgon TT08-
162.000	162.000	1	Raycap DC6-48-60-18-8F
157.000	157.000	3	Stand-Off
157.000	157.000	3	Andrew DBXNH-6565A-VTM
146.000	146.000	1	VZW Unused Reserve: 10,801
146.000	146.000	3	Stand-Off
146.000	146.000	3	Antel BXA-70063/6CF __ 2°
136.000	136.000	3	Flat T-Arm
136.000	136.000	3	RFS ATMAA1412D-1A20
136.000	136.000	1	E-911 GPS
136.000	136.000	3	Ericsson RRUS 11 B2
136.000	136.000	3	Ericsson RRUS 11 B12
136.000	136.000	3	RFS APXV18-206516S-C-A20
136.000	136.000	3	Commscope LNX-6515DS-A1M

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	136.0	1 5/8" Hybriflex	No
0.000	146.0	1 5/8" Coax	No
0.000	157.0	1 5/8" Coax	No
0.000	162.0	0.39" Fiber Trunk	Yes
0.000	167.0	0.78" 8 AWG 6	Yes
0.000	167.0	1 5/8" Coax	Yes

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal



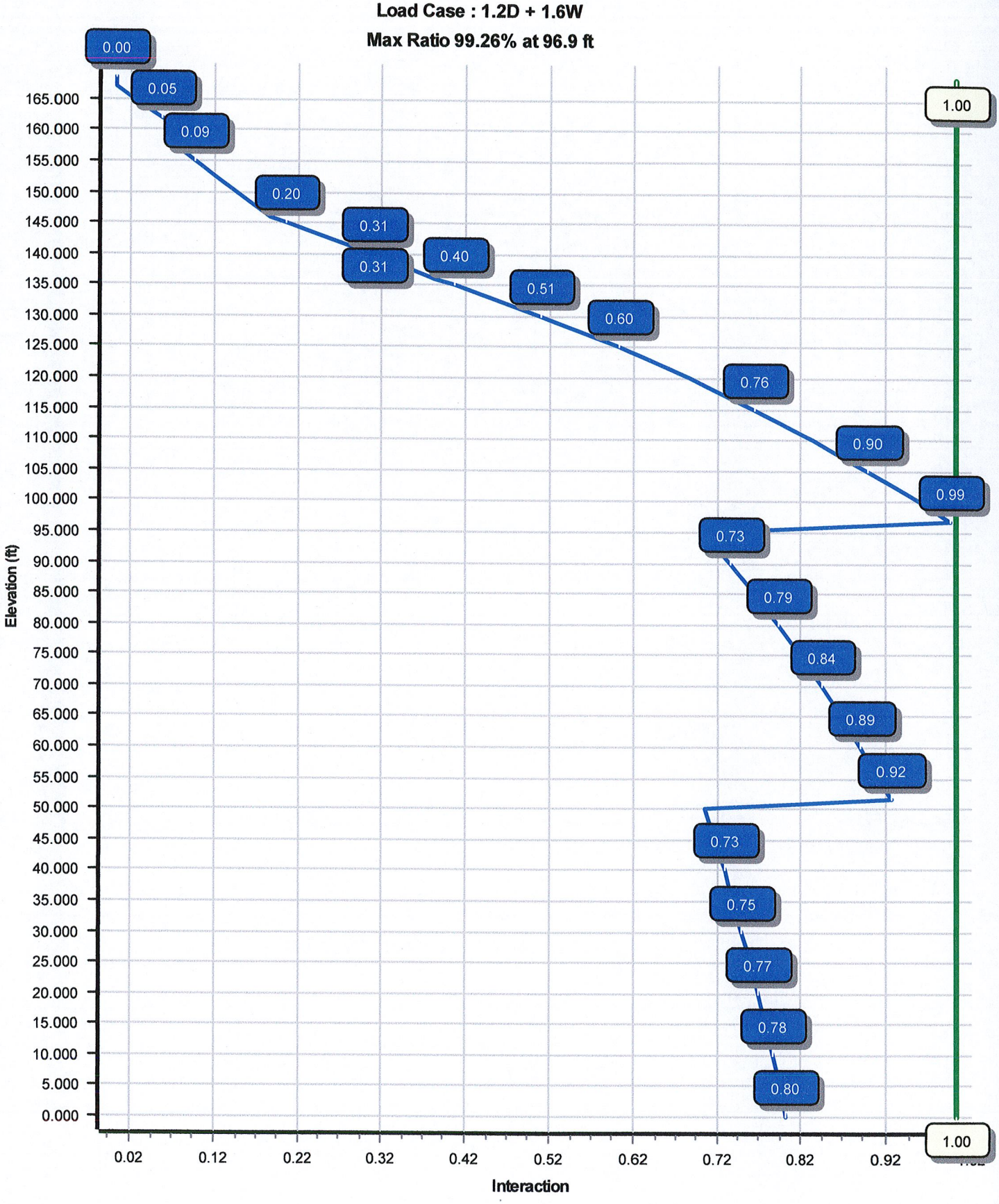
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2276.19	18.94	28.57
0.9D + 1.6W	2161.71	18.27	21.42
1.2D + 1.0Di + 1.0Wi	502.08	3.98	57.27
(1.2 + 0.2Sds) * DL + E ELFM	126.02	0.93	28.44
(1.2 + 0.2Sds) * DL + E EMAM	133.35	1.17	28.44
(0.9 - 0.2Sds) * DL + E ELFM	123.55	0.93	19.69
(0.9 - 0.2Sds) * DL + E EMAM	130.46	1.16	19.69
1.0D + 1.0W	567.50	4.75	23.84

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 99.26% at 96.9 ft
0.00
0.05
0.09
0.20
0.31
0.31
0.40
0.51
0.60
0.76
0.90
0.99
1.00
0.73
0.79
0.84
0.89
0.92
0.73
0.75
0.77
0.78
0.80
1.00
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 413782 Code: ANSI/TIA-222-G

Site Name: Washington North CT, CT Engineering Number:OAA701488_C3_01 4/20/2017 5:11:16 PM

Customer: T-MOBILE

Analysis Parameters

Location:	LITCHFIELD County, CT	Height (ft):	168.
Code:	ANSI/TIA-222-G	Base Diameter (in):	47.00
Shape:	18 Sides. Sect 5: Round	Top Diameter (in):	12.75
Pole Type:	Custom	Taper (in/ft) :	0.191
Pole Manfacturer:	EEI	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	40 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.84				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.191	S_1:	0.065	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.204	S_{d1}:	0.104		

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 413782 Code: ANSI/TIA-222-G

Site Name: Washington North CT, CT Engineering Number:OAA701488_C3_01 4/20/2017 5:11:16 PM

Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	51.458	0.3125	65		0.00	7,256	47.00	0.00	46.31	12752.5	25.11	150.40	37.18	51.46	36.57	6281.0	19.57	118.99	0.190776
2-18	50.810	0.2500	65	Slip	64.09	4,610	38.70	46.12	30.51	5699.5	25.89	154.81	29.00	96.93	22.82	2384.4	19.05	116.03	0.190776
3-18	50.573	0.1875	65	Slip	51.38	2,580	30.20	92.65	17.86	2032.7	26.99	161.07	20.55	143.22	12.12	635.0	17.92	109.61	0.190776
4-18	18.542	0.1875	65	Slip	38.38	735	21.53	140.02	12.71	731.7	18.84	114.87	18.00	158.56	10.60	424.9	15.52	96.00	0.190776
5-R	10.000	0.3750	42	Butt	0.00	496	12.75	158.56	14.58	279.3	0.00	34.00	12.75	168.56	14.58	279.3	0.00	34.00	0.000000
				Shaft Weight		15,677													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
167.00	Ericsson RRUS 11 B2	6	50.70	2.790	0.50	148.43	4.270	0.50	0.000	0.000
167.00	Kathrein Scala 800-10864K	2	55.10	7.120	0.65	262.85	10.032	0.65	0.000	0.000
167.00	KMW AM-X-CD-17-65-00T-	1	30.80	4.990	0.66	181.65	7.510	0.66	0.000	0.000
167.00	Powerwave Allgon P90-14-	3	30.00	5.070	0.69	194.90	7.597	0.69	0.000	0.000
167.00	Powerwave Allgon TT08-	6	22.00	0.920	0.50	57.85	1.916	0.50	0.000	0.000
167.00	RCU (Remote Control Unit)	12	1.00	0.160	0.50	8.47	0.677	0.50	0.000	0.000
162.00	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	114.82	2.098	1.00	0.000	0.000
157.00	Andrew DBXNH-6565A-VTM	3	34.20	5.370	0.80	203.86	8.014	0.80	0.000	0.000
157.00	Stand-Off	3	75.00	2.500	0.67	124.06	4.252	0.67	0.000	0.000
146.00	Antel BXA-70063/6CF __ 2°	3	17.00	7.570	0.65	205.37	11.244	0.65	0.000	0.000
146.00	Stand-Off	3	75.00	2.500	0.67	123.72	4.240	0.67	0.000	0.000
146.00	VZW Unused Reserve:	1	1096.40	75.070	1.00	2,113.81	144.731	1.00	0.000	0.000
136.00	Commscope LNX-6515DS-	3	43.70	11.470	0.70	347.73	15.761	0.70	0.000	0.000
136.00	E-911 GPS	1	5.00	0.580	0.50	33.49	1.165	0.50	0.000	0.000
136.00	Ericsson RRUS 11 B12	3	50.70	2.790	0.67	146.46	4.240	0.67	0.000	0.000
136.00	Ericsson RRUS 11 B2	3	50.70	2.790	0.67	146.46	4.240	0.67	0.000	0.000
136.00	Flat T-Arm	3	250.00	12.900	0.67	526.41	23.716	0.67	0.000	0.000
136.00	RFS APXV18-206516S-C-A20	3	18.70	3.620	0.50	111.19	6.078	0.50	0.000	0.000
136.00	RFS ATMAA1412D-1A20	3	13.00	1.000	0.50	65.10	1.596	0.50	0.000	0.000
	Totals	63	3696.40			10,894.53			Number of Loadings :	19

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	167.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	Y	AT&T Mobility
0.00	167.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	AT&T Mobility
0.00	162.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	Y	AT&T Mobility
0.00	157.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	146.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	136.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	T-Mobile

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3125	47.000	46.306	12,752.5	25.11	150.40	71.9	534.4	0.0	0.0
5.00		0.3125	46.046	45.360	11,986.7	24.57	147.35	72.5	512.7	0.0	779.8
10.00		0.3125	45.092	44.414	11,252.2	24.03	144.30	73.1	491.5	0.0	763.7
15.00		0.3125	44.138	43.468	10,548.4	23.49	141.24	73.8	470.7	0.0	747.6
20.00		0.3125	43.184	42.522	9,874.5	22.96	138.19	74.4	450.4	0.0	731.5
25.00		0.3125	42.231	41.576	9,229.9	22.42	135.14	75.0	430.5	0.0	715.4
30.00		0.3125	41.277	40.630	8,614.1	21.88	132.09	75.7	411.0	0.0	699.3
35.00		0.3125	40.323	39.684	8,026.2	21.34	129.03	76.3	392.0	0.0	683.2
40.00		0.3125	39.369	38.738	7,465.7	20.80	125.98	76.9	373.5	0.0	667.1
45.00		0.3125	38.415	37.792	6,932.0	20.26	122.93	77.6	355.4	0.0	651.0
46.12	Bot - Section 2	0.3125	38.202	37.580	6,816.3	20.14	122.25	77.7	351.4	0.0	143.3
50.00		0.3125	37.461	36.846	6,424.3	19.73	119.88	78.2	337.8	0.0	890.9
51.46	Top - Section 1	0.2500	37.683	29.702	5,258.3	25.17	150.73	71.8	274.8	0.0	330.1
55.00		0.2500	37.007	29.166	4,978.7	24.69	148.03	72.4	265.0	0.0	354.7
60.00		0.2500	36.053	28.409	4,601.1	24.02	144.21	73.2	251.4	0.0	489.8
65.00		0.2500	35.100	27.652	4,243.0	23.35	140.40	73.9	238.1	0.0	476.9
70.00		0.2500	34.146	26.895	3,904.1	22.67	136.58	74.7	225.2	0.0	464.0
75.00		0.2500	33.192	26.138	3,583.6	22.00	132.77	75.5	212.7	0.0	451.2
80.00		0.2500	32.238	25.381	3,281.3	21.33	128.95	76.3	200.5	0.0	438.3
85.00		0.2500	31.284	24.625	2,996.4	20.65	125.14	77.1	188.6	0.0	425.4
90.00		0.2500	30.330	23.868	2,728.5	19.98	121.32	77.9	177.2	0.0	412.5
92.65	Bot - Section 3	0.2500	29.825	23.467	2,593.4	19.63	119.30	78.3	171.3	0.0	213.1
95.00		0.2500	29.376	23.111	2,477.1	19.31	117.50	78.7	166.1	0.0	328.6
96.93	Top - Section 2	0.1875	29.384	17.375	1,871.2	26.22	156.71	70.6	125.4	0.0	265.2
100.0		0.1875	28.797	17.026	1,760.7	25.67	153.59	71.2	120.4	0.0	179.9
105.0		0.1875	27.843	16.458	1,590.4	24.77	148.50	72.3	112.5	0.0	284.8
110.0		0.1875	26.890	15.891	1,431.5	23.88	143.41	73.3	104.9	0.0	275.2
115.0		0.1875	25.936	15.323	1,283.5	22.98	138.32	74.4	97.5	0.0	265.5
120.0		0.1875	24.982	14.755	1,146.0	22.08	133.24	75.4	90.4	0.0	255.9
125.0		0.1875	24.028	14.188	1,018.8	21.19	128.15	76.5	83.5	0.0	246.2
130.0		0.1875	23.074	13.620	901.3	20.29	123.06	77.5	76.9	0.0	236.6
135.0		0.1875	22.120	13.052	793.3	19.39	117.97	78.6	70.6	0.0	226.9
136.0		0.1875	21.929	12.939	772.7	19.21	116.96	78.8	69.4	0.0	44.2
140.0		0.1875	21.166	12.485	694.2	18.49	112.89	79.6	64.6	0.0	173.0
140.0	Bot - Section 4	0.1875	21.162	12.482	693.8	18.49	112.87	79.7	64.6	0.0	0.9
143.2	Top - Section 3	0.1875	20.927	12.342	670.7	18.27	111.61	79.9	63.1	0.0	270.1
145.0		0.1875	20.587	12.140	638.3	17.95	109.80	80.3	61.1	0.0	74.2
146.0		0.1875	20.397	12.027	620.6	17.77	108.78	80.5	59.9	0.0	41.1
150.0		0.1875	19.634	11.572	552.9	17.05	104.71	81.3	55.5	0.0	160.6
155.0		0.1875	18.680	11.005	475.5	16.16	99.62	82.4	50.1	0.0	192.1
157.0		0.1875	18.298	10.778	446.6	15.80	97.59	82.6	48.1	0.0	74.1
158.5	Top - Section 4	0.1875	18.000	10.600	424.9	15.52	96.00	82.6	46.5	0.0	56.8
158.5	Bot - Section 5	0.3750	12.750	14.579	279.3	0.00	34.00	42.0	43.8	57.4	
160.0		0.3750	12.750	14.579	279.3	0.00	34.00	42.0	43.8	57.4	71.3
162.0		0.3750	12.750	14.579	279.3	0.00	34.00	42.0	43.8	57.4	99.2
165.0		0.3750	12.750	14.579	279.3	0.00	34.00	42.0	43.8	57.4	148.8
167.0		0.3750	12.750	14.579	279.3	0.00	34.00	42.0	43.8	57.4	99.2
168.5		0.3750	12.750	14.579	279.3	0.00	34.00	42.0	43.8	57.4	77.5
											15,677.0

Site Number: 413782
Site Name: Washington North CT, CT
Customer: T-MOBILE

Code: ANSI/TIA-222-G
Engineering Number:OAA701488_C3_01

4/20/2017 5:11:17 PM

Load Case: 1.2D + 1.6W — 93 mph with No Ice — 33 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		165.8	0.0					0.0	0.0	165.8	0.0	0.0	0.0
5.00		328.2	935.8					0.0	170.6	328.2	1,106.4	0.0	0.0
10.00		321.4	916.5					0.0	170.6	321.4	1,087.1	0.0	0.0
15.00		314.6	897.1					0.0	170.6	314.6	1,067.8	0.0	0.0
20.00		307.8	877.8					0.0	170.6	307.8	1,048.5	0.0	0.0
25.00		301.0	858.5					0.0	170.6	301.0	1,029.1	0.0	0.0
30.00		297.7	839.2					0.0	170.6	297.7	1,009.8	0.0	0.0
35.00		300.3	819.9					0.0	170.6	300.3	990.5	0.0	0.0
40.00		304.8	800.6					0.0	170.6	304.8	971.2	0.0	0.0
45.00		187.9	781.2					0.0	170.6	187.9	951.9	0.0	0.0
46.12	Bot - Section 2	157.2	171.9					0.0	38.1	157.2	210.0	0.0	0.0
50.00		168.9	1,069.1					0.0	132.5	168.9	1,201.6	0.0	0.0
51.46	Top - Section 1	158.9	396.1					0.0	49.8	158.9	445.9	0.0	0.0
55.00		272.7	425.7					0.0	120.9	272.7	546.5	0.0	0.0
60.00		321.1	587.7					0.0	170.6	321.1	758.4	0.0	0.0
65.00		322.6	572.3					0.0	170.6	322.6	742.9	0.0	0.0
70.00		323.4	556.8					0.0	170.6	323.4	727.5	0.0	0.0
75.00		323.7	541.4					0.0	170.6	323.7	712.0	0.0	0.0
80.00		323.4	525.9					0.0	170.6	323.4	696.6	0.0	0.0
85.00		322.6	510.5					0.0	170.6	322.6	681.1	0.0	0.0
90.00		246.0	495.0					0.0	170.6	246.0	665.7	0.0	0.0
92.65	Bot - Section 3	161.3	255.7					0.0	90.3	161.3	346.0	0.0	0.0
95.00		138.7	394.3					0.0	80.3	138.7	474.6	0.0	0.0
96.93	Top - Section 2	161.1	318.3					0.0	65.8	161.1	384.1	0.0	0.0
100.00		258.4	215.8					0.0	104.9	258.4	320.7	0.0	0.0
105.00		318.2	341.8					0.0	170.6	318.2	512.5	0.0	0.0
110.00		315.5	330.2					0.0	170.6	315.5	500.9	0.0	0.0
115.00		312.6	318.6					0.0	170.6	312.6	489.3	0.0	0.0
120.00		309.3	307.0					0.0	170.6	309.3	477.7	0.0	0.0
125.00		305.8	295.5					0.0	170.6	305.8	466.1	0.0	0.0
130.00		302.0	283.9					0.0	170.6	302.0	454.5	0.0	0.0
135.00		179.8	272.3					0.0	170.6	179.8	442.9	0.0	0.0
136.00	Appertunance(s)	147.9	53.1	2,052.8	0.0	0.0	1,542.5	0.0	34.1	2,200.7	1,629.7	0.0	0.0
140.00		118.8	207.6					0.0	124.0	118.8	331.7	0.0	0.0
140.02	Bot - Section 4	95.8	1.1					0.0	0.6	95.8	1.7	0.0	0.0
143.22	Top - Section 3	147.3	324.2					0.0	99.2	147.3	423.3	0.0	0.0
145.00		81.3	89.0					0.0	55.2	81.3	144.3	0.0	0.0
146.00	Appertunance(s)	144.9	49.3	3,866.6	0.0	0.0	1,646.9	0.0	31.0	4,011.5	1,727.2	0.0	0.0
150.00		316.4	192.7					0.0	100.4	316.4	293.1	0.0	0.0
155.00		278.7	230.5					80.7	125.5	359.4	356.0	0.0	0.0
157.00	Appertunance(s)	138.0	88.9	745.5	0.0	0.0	393.1	32.4	50.2	915.9	532.3	0.0	0.0
158.56	Top - Section 4	98.3	68.2					25.3	20.8	123.6	89.0	0.0	0.0
160.00		91.7	85.6					23.3	19.1	115.1	104.7	0.0	0.0
162.00	Appertunance(s)	134.0	119.1	53.7	0.0	0.0	38.2	32.5	26.6	220.2	183.8	0.0	0.0
165.00		134.4	178.6					48.9	39.7	183.3	218.3	0.0	0.0
167.00	Appertunance(s)	75.0	119.1	1,488.2	0.0	0.0	815.0	32.7	26.4	1,595.9	960.5	0.0	0.0
168.56		21.1	93.0					0.0	0.0	21.1	93.0	0.0	0.0

Load Case: 1.2D + 1.6W 93 mph with No Ice 33 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Totals:	19,038.9	28,608.2	0.00	0.00

Site Number: 413782 Code: ANSI/TIA-222-G

Site Name: Washington North CT, CT Engineering Number:OAA701488_C3_01 4/20/2017 5:11:18 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.6W 93 mph with No Ice 33 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.57	-18.94	0.00	-2,276.19	0.00	2,276.19	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.800
5.00	-27.38	-18.73	0.00	-2,181.52	0.00	2,181.52	2,959.81	1,479.91	5,567.76	2,788.02	0.13	-0.25	0.792
10.00	-26.21	-18.51	0.00	-2,087.89	0.00	2,087.89	2,923.38	1,461.69	5,383.76	2,695.88	0.53	-0.50	0.784
15.00	-25.06	-18.30	0.00	-1,995.33	0.00	1,995.33	2,885.88	1,442.94	5,200.69	2,604.21	1.19	-0.76	0.775
20.00	-23.94	-18.09	0.00	-1,903.82	0.00	1,903.82	2,847.29	1,423.65	5,018.68	2,513.07	2.13	-1.02	0.766
25.00	-22.83	-17.87	0.00	-1,813.38	0.00	1,813.38	2,807.63	1,403.81	4,837.86	2,422.53	3.34	-1.29	0.757
30.00	-21.74	-17.66	0.00	-1,724.01	0.00	1,724.01	2,766.89	1,383.44	4,658.36	2,332.64	4.84	-1.56	0.747
35.00	-20.68	-17.43	0.00	-1,635.73	0.00	1,635.73	2,725.06	1,362.53	4,480.31	2,243.49	6.62	-1.84	0.737
40.00	-19.63	-17.19	0.00	-1,548.59	0.00	1,548.59	2,682.17	1,341.08	4,303.83	2,155.12	8.70	-2.12	0.726
45.00	-18.64	-17.02	0.00	-1,462.65	0.00	1,462.65	2,638.19	1,319.10	4,129.06	2,067.60	11.08	-2.41	0.715
46.12	-18.39	-16.90	0.00	-1,443.64	0.00	1,443.64	2,628.22	1,314.11	4,090.25	2,048.17	11.65	-2.48	0.712
50.00	-17.15	-16.73	0.00	-1,378.02	0.00	1,378.02	2,593.14	1,296.57	3,956.11	1,981.00	13.76	-2.71	0.702
51.46	-16.67	-16.59	0.00	-1,353.63	0.00	1,353.63	1,919.32	959.66	2,955.63	1,480.01	14.60	-2.79	0.924
55.00	-16.06	-16.37	0.00	-1,294.88	0.00	1,294.88	1,899.39	949.70	2,871.79	1,438.03	16.75	-3.01	0.909
60.00	-15.22	-16.10	0.00	-1,213.03	0.00	1,213.03	1,870.33	935.17	2,753.97	1,379.03	20.09	-3.36	0.888
65.00	-14.39	-15.83	0.00	-1,132.52	0.00	1,132.52	1,840.20	920.10	2,636.91	1,320.41	23.80	-3.73	0.866
70.00	-13.59	-15.54	0.00	-1,053.38	0.00	1,053.38	1,808.98	904.49	2,520.72	1,262.23	27.90	-4.09	0.842
75.00	-12.81	-15.25	0.00	-975.67	0.00	975.67	1,776.69	888.34	2,405.54	1,204.56	32.38	-4.46	0.817
80.00	-12.04	-14.95	0.00	-899.43	0.00	899.43	1,743.32	871.66	2,291.50	1,147.45	37.25	-4.83	0.791
85.00	-11.30	-14.64	0.00	-824.68	0.00	824.68	1,708.87	854.43	2,178.71	1,090.98	42.50	-5.21	0.763
90.00	-10.58	-14.39	0.00	-751.47	0.00	751.47	1,673.34	836.67	2,067.32	1,035.20	48.15	-5.58	0.733
92.65	-10.21	-14.23	0.00	-713.40	0.00	713.40	1,654.10	827.05	2,008.98	1,005.98	51.30	-5.78	0.716
95.00	-9.71	-14.07	0.00	-679.91	0.00	679.91	1,636.74	818.37	1,957.44	980.18	54.19	-5.96	0.700
96.93	-9.30	-13.90	0.00	-652.80	0.00	652.80	1,103.35	551.67	1,325.55	663.76	56.62	-6.11	0.993
100.00	-8.92	-13.66	0.00	-610.09	0.00	610.09	1,091.13	545.56	1,284.38	643.14	60.63	-6.34	0.957
105.00	-8.35	-13.35	0.00	-541.78	0.00	541.78	1,070.38	535.19	1,217.67	609.74	67.51	-6.81	0.897
110.00	-7.79	-13.04	0.00	-475.01	0.00	475.01	1,048.55	524.27	1,151.42	576.56	74.86	-7.26	0.832
115.00	-7.25	-12.72	0.00	-409.80	0.00	409.80	1,025.64	512.82	1,085.75	543.68	82.69	-7.70	0.761
120.00	-6.73	-12.40	0.00	-346.19	0.00	346.19	1,001.65	500.83	1,020.79	511.15	90.96	-8.12	0.685
125.00	-6.23	-12.07	0.00	-284.20	0.00	284.20	976.59	488.30	956.67	479.05	99.65	-8.51	0.600
130.00	-5.76	-11.74	0.00	-223.85	0.00	223.85	950.45	475.22	893.52	447.42	108.72	-8.87	0.507
135.00	-5.32	-11.50	0.00	-165.18	0.00	165.18	923.23	461.61	831.46	416.35	118.14	-9.18	0.403
136.00	-4.04	-9.08	0.00	-153.67	0.00	153.67	917.66	458.83	819.19	410.21	120.06	-9.23	0.379
140.00	-3.72	-8.92	0.00	-117.35	0.00	117.35	894.93	447.47	770.63	385.89	127.85	-9.43	0.309
140.02	-3.72	-8.83	0.00	-117.16	0.00	117.16	894.81	447.41	770.38	385.76	127.89	-9.43	0.308
143.22	-3.31	-8.62	0.00	-88.94	0.00	88.94	887.67	443.84	755.59	378.35	134.23	-9.57	0.239
145.00	-3.18	-8.51	0.00	-73.59	0.00	73.59	877.23	438.62	734.36	367.72	137.80	-9.63	0.204
146.00	-2.14	-4.27	0.00	-65.07	0.00	65.07	871.31	435.66	722.52	361.80	139.81	-9.66	0.182
150.00	-1.90	-3.92	0.00	-47.98	0.00	47.98	847.20	423.60	675.75	338.38	147.91	-9.77	0.144
155.00	-1.60	-3.50	0.00	-28.41	0.00	28.41	816.09	408.05	618.71	309.81	158.15	-9.87	0.094
157.00	-1.24	-2.51	0.00	-21.40	0.00	21.40	800.73	400.36	594.40	297.64	162.27	-9.90	0.073
158.56	-1.17	-2.37	0.00	-17.48	0.00	17.48	787.55	393.77	574.90	287.88	165.49	-9.91	0.062
158.56	-1.17	-2.37	0.00	-17.48	0.00	17.48	551.08	275.54	275.63	180.95	165.49	-9.91	0.099
160.00	-1.08	-2.24	0.00	-14.07	0.00	14.07	551.08	275.54	275.63	180.95	168.47	-9.93	0.080
162.00	-0.94	-1.99	0.00	-9.59	0.00	9.59	551.08	275.54	275.63	180.95	172.61	-9.95	0.055
165.00	-0.76	-1.78	0.00	-3.61	0.00	3.61	551.08	275.54	275.63	180.95	178.84	-9.97	0.021
167.00	-0.09	-0.04	0.00	-0.06	0.00	0.06	551.08	275.54	275.63	180.95	183.00	-9.98	0.000
168.56	0.00	-0.02	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	186.25	-9.98	0.000

Site Number: 413782
Site Name: Washington North CT, CT
Customer: T-MOBILE

Code: ANSI/TIA-222-G
Engineering Number:OAA701488_C3_01

4/20/2017 5:11:18 PM

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

33 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		165.8	0.0										
5.00		328.2	701.8					0.0	0.0	165.8	0.0	0.0	0.0
10.00		321.4	687.3					0.0	128.0	328.2	829.8	0.0	0.0
15.00		314.6	672.9					0.0	128.0	321.4	815.3	0.0	0.0
20.00		307.8	658.4					0.0	128.0	314.6	800.8	0.0	0.0
25.00		301.0	643.9					0.0	128.0	307.8	786.3	0.0	0.0
30.00		297.7	629.4					0.0	128.0	301.0	771.9	0.0	0.0
35.00		300.3	614.9					0.0	128.0	297.7	757.4	0.0	0.0
40.00		304.7	600.4					0.0	128.0	300.3	742.9	0.0	0.0
45.00		187.6	585.9					0.0	128.0	304.7	728.4	0.0	0.0
46.12	Bot - Section 2	155.9	128.9					0.0	128.0	187.6	713.9	0.0	0.0
50.00		167.2	801.8					0.0	28.6	155.9	157.5	0.0	0.0
51.46	Top - Section 1	156.8	297.1					0.0	99.4	167.2	901.2	0.0	0.0
55.00		268.0	319.3					0.0	37.3	156.8	334.4	0.0	0.0
60.00		313.4	440.8					0.0	90.7	268.0	409.9	0.0	0.0
65.00		312.2	429.2					0.0	128.0	313.4	568.8	0.0	0.0
70.00		310.2	417.6					0.0	128.0	312.2	557.2	0.0	0.0
75.00		307.5	406.0					0.0	128.0	310.2	545.6	0.0	0.0
80.00		304.2	394.4					0.0	128.0	307.5	534.0	0.0	0.0
85.00		300.4	382.9					0.0	128.0	304.2	522.4	0.0	0.0
90.00		227.2	371.3					0.0	128.0	300.4	510.8	0.0	0.0
92.65	Bot - Section 3	147.7	191.8					0.0	128.0	227.2	499.2	0.0	0.0
95.00		126.4	295.7					0.0	67.7	147.7	259.5	0.0	0.0
96.93	Top - Section 2	146.2	238.7					0.0	60.3	126.4	356.0	0.0	0.0
100.00		233.0	161.9					0.0	49.3	146.2	288.0	0.0	0.0
105.00		284.0	256.4					0.0	78.7	233.0	240.5	0.0	0.0
110.00		278.0	247.7					0.0	128.0	284.0	384.3	0.0	0.0
115.00		271.5	239.0					0.0	128.0	278.0	375.6	0.0	0.0
120.00		264.7	230.3					0.0	128.0	271.5	367.0	0.0	0.0
125.00		257.6	221.6					0.0	128.0	264.7	358.3	0.0	0.0
130.00		250.2	212.9					0.0	128.0	257.6	349.6	0.0	0.0
135.00		147.4	204.2					0.0	128.0	250.2	340.9	0.0	0.0
136.00	Appertunance(s)	119.2	39.8	2,052.8	0.0	0.0	1,156.9	0.0	128.0	147.4	332.2	0.0	0.0
140.00		95.6	155.7					0.0	25.6	2,172.0	1,222.3	0.0	0.0
140.02	Bot - Section 4	75.9	0.8					0.0	93.0	95.6	248.7	0.0	0.0
143.22	Top - Section 3	116.8	243.1					0.0	0.5	75.9	1.3	0.0	0.0
145.00		64.2	66.8					0.0	74.4	116.8	317.5	0.0	0.0
146.00	Appertunance(s)	113.0	37.0	3,866.6	0.0	0.0	1,235.2	0.0	41.4	64.2	108.2	0.0	0.0
150.00		290.8	144.5					0.0	23.3	3,979.6	1,295.4	0.0	0.0
155.00		278.7	172.9					0.0	75.3	290.8	219.9	0.0	0.0
157.00	Appertunance(s)	138.0	66.7	745.5	0.0	0.0	294.8	80.7	94.1	359.4	267.0	0.0	0.0
158.56	Top - Section 4	98.3	51.1					32.4	37.7	915.9	399.2	0.0	0.0
160.00		91.7	64.2					25.3	15.6	123.6	66.7	0.0	0.0
162.00	Appertunance(s)	134.0	89.3	53.7	0.0	0.0	28.6	23.3	14.3	115.1	78.5	0.0	0.0
165.00		134.4	133.9					32.5	19.9	220.2	137.9	0.0	0.0
167.00	Appertunance(s)	75.0	89.3	1,488.2	0.0	0.0	611.3	48.9	29.8	183.3	163.7	0.0	0.0
168.56		21.1	69.8					32.7	19.8	1,595.9	720.4	0.0	0.0
								0.0	0.0	21.1	69.8	0.0	0.0

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

33 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor :1.00

Totals:	18,388.2	21,456.1	0.00	0.00

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 33 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-21.42	-18.27	0.00	-2,161.71	0.00	2,161.71	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.758
5.00	-20.51	-18.02	0.00	-2,070.38	0.00	2,070.38	2,959.81	1,479.91	5,567.76	2,788.02	0.13	-0.24	0.750
10.00	-19.63	-17.78	0.00	-1,980.27	0.00	1,980.27	2,923.38	1,461.69	5,383.76	2,695.88	0.50	-0.48	0.741
15.00	-18.75	-17.54	0.00	-1,891.37	0.00	1,891.37	2,885.88	1,442.94	5,200.69	2,604.21	1.13	-0.72	0.733
20.00	-17.90	-17.30	0.00	-1,803.69	0.00	1,803.69	2,847.29	1,423.65	5,018.68	2,513.07	2.02	-0.97	0.724
25.00	-17.05	-17.06	0.00	-1,717.21	0.00	1,717.21	2,807.63	1,403.81	4,837.86	2,422.53	3.17	-1.22	0.715
30.00	-16.23	-16.82	0.00	-1,631.93	0.00	1,631.93	2,766.89	1,383.44	4,658.36	2,332.64	4.59	-1.48	0.706
35.00	-15.42	-16.57	0.00	-1,547.85	0.00	1,547.85	2,725.06	1,362.53	4,480.31	2,243.49	6.28	-1.74	0.696
40.00	-14.62	-16.31	0.00	-1,465.02	0.00	1,465.02	2,682.17	1,341.08	4,303.83	2,155.12	8.25	-2.01	0.685
45.00	-13.87	-16.13	0.00	-1,383.49	0.00	1,383.49	2,638.19	1,319.10	4,129.06	2,067.60	10.50	-2.28	0.675
46.12	-13.68	-16.00	0.00	-1,365.47	0.00	1,365.47	2,628.22	1,314.11	4,090.25	2,048.17	11.04	-2.35	0.672
50.00	-12.74	-15.83	0.00	-1,303.33	0.00	1,303.33	2,593.14	1,296.57	3,956.11	1,981.00	13.04	-2.56	0.663
51.46	-12.38	-15.69	0.00	-1,280.24	0.00	1,280.24	1,919.32	959.66	2,955.63	1,480.01	13.84	-2.65	0.872
55.00	-11.91	-15.46	0.00	-1,224.67	0.00	1,224.67	1,899.39	949.70	2,871.79	1,438.03	15.88	-2.85	0.858
60.00	-11.27	-15.18	0.00	-1,147.38	0.00	1,147.38	1,870.33	935.17	2,753.97	1,379.03	19.04	-3.19	0.838
65.00	-10.64	-14.90	0.00	-1,071.46	0.00	1,071.46	1,840.20	920.10	2,636.91	1,320.41	22.55	-3.53	0.818
70.00	-10.03	-14.62	0.00	-996.94	0.00	996.94	1,808.98	904.49	2,520.72	1,262.23	26.43	-3.88	0.796
75.00	-9.43	-14.33	0.00	-923.84	0.00	923.84	1,776.69	888.34	2,405.54	1,204.56	30.67	-4.23	0.773
80.00	-8.84	-14.05	0.00	-852.17	0.00	852.17	1,743.32	871.66	2,291.50	1,147.45	35.28	-4.58	0.748
85.00	-8.27	-13.76	0.00	-781.94	0.00	781.94	1,708.87	854.43	2,178.71	1,090.98	40.26	-4.93	0.722
90.00	-7.73	-13.52	0.00	-713.17	0.00	713.17	1,673.34	836.67	2,067.32	1,035.20	45.61	-5.29	0.694
92.65	-7.45	-13.37	0.00	-677.39	0.00	677.39	1,654.10	827.05	2,008.98	1,005.98	48.59	-5.48	0.678
95.00	-7.07	-13.23	0.00	-645.91	0.00	645.91	1,636.74	818.37	1,957.44	980.18	51.33	-5.65	0.664
96.93	-6.76	-13.08	0.00	-620.41	0.00	620.41	1,103.35	551.67	1,325.55	663.76	53.64	-5.79	0.941
100.00	-6.47	-12.86	0.00	-580.22	0.00	580.22	1,091.13	545.56	1,284.38	643.14	57.43	-6.01	0.909
105.00	-6.02	-12.58	0.00	-515.92	0.00	515.92	1,070.38	535.19	1,217.67	609.74	63.95	-6.45	0.852
110.00	-5.59	-12.31	0.00	-453.00	0.00	453.00	1,048.55	524.27	1,151.42	576.56	70.92	-6.89	0.792
115.00	-5.17	-12.03	0.00	-391.47	0.00	391.47	1,025.64	512.82	1,085.75	543.68	78.34	-7.31	0.726
120.00	-4.77	-11.75	0.00	-331.33	0.00	331.33	1,001.65	500.83	1,020.79	511.15	86.19	-7.71	0.654
125.00	-4.39	-11.48	0.00	-272.58	0.00	272.58	976.59	488.30	956.67	479.05	94.44	-8.08	0.574
130.00	-4.02	-11.20	0.00	-215.20	0.00	215.20	950.45	475.22	893.52	447.42	103.06	-8.42	0.486
135.00	-3.68	-11.02	0.00	-159.19	0.00	159.19	923.23	461.61	831.46	416.35	112.01	-8.72	0.387
136.00	-2.79	-8.69	0.00	-148.17	0.00	148.17	917.66	458.83	819.19	410.21	113.84	-8.77	0.365
140.00	-2.54	-8.56	0.00	-113.41	0.00	113.41	894.93	447.47	770.63	385.89	121.24	-8.96	0.297
140.02	-2.54	-8.49	0.00	-113.23	0.00	113.23	894.81	447.41	770.38	385.76	121.28	-8.97	0.297
143.22	-2.23	-8.33	0.00	-86.08	0.00	86.08	887.67	443.84	755.59	378.35	127.31	-9.10	0.230
145.00	-2.13	-8.25	0.00	-71.24	0.00	71.24	877.23	438.62	734.36	367.72	130.70	-9.16	0.197
146.00	-1.48	-4.12	0.00	-62.99	0.00	62.99	871.31	435.66	722.52	361.80	132.61	-9.19	0.176
150.00	-1.30	-3.80	0.00	-46.53	0.00	46.53	847.20	423.60	675.75	338.38	140.32	-9.29	0.139
155.00	-1.10	-3.40	0.00	-27.55	0.00	27.55	816.09	408.05	618.71	309.81	150.06	-9.38	0.090
157.00	-0.85	-2.43	0.00	-20.75	0.00	20.75	800.73	400.36	594.40	297.64	153.98	-9.41	0.071
158.56	-0.80	-2.30	0.00	-16.95	0.00	16.95	787.55	393.77	574.90	287.88	157.05	-9.43	0.060
158.56	-0.80	-2.30	0.00	-16.95	0.00	16.95	551.08	275.54	275.63	180.95	157.05	-9.43	0.095
160.00	-0.74	-2.17	0.00	-13.64	0.00	13.64	551.08	275.54	275.63	180.95	159.88	-9.45	0.077
162.00	-0.64	-1.93	0.00	-9.30	0.00	9.30	551.08	275.54	275.63	180.95	163.83	-9.47	0.053
165.00	-0.51	-1.73	0.00	-3.50	0.00	3.50	551.08	275.54	275.63	180.95	169.76	-9.49	0.020
167.00	-0.07	-0.03	0.00	-0.05	0.00	0.05	551.08	275.54	275.63	180.95	173.71	-9.49	0.000
168.56	0.00	-0.02	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	176.81	-9.49	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 40 mph with 1.00 in Radial Ice — 32 Iterations

Gust Response Factor :1.10 | Ice Dead Load Factor :1.00 | Wind Importance Factor :1.00
Dead Load Factor :1.20 | Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		37.7	0.0					0.0	0.0	37.7	0.0	0.0	0.0
5.00		74.9	1,396.4					0.0	389.1	74.9	1,785.4	0.0	0.0
10.00		73.9	1,422.1					0.0	417.8	73.9	1,839.9	0.0	0.0
15.00		72.7	1,419.5					0.0	432.7	72.7	1,852.2	0.0	0.0
20.00		71.4	1,407.5					0.0	443.1	71.4	1,850.6	0.0	0.0
25.00		70.1	1,390.8					0.0	451.2	70.1	1,842.0	0.0	0.0
30.00		69.5	1,371.0					0.0	457.9	69.5	1,828.8	0.0	0.0
35.00		70.4	1,349.1					0.0	463.6	70.4	1,812.7	0.0	0.0
40.00		71.7	1,325.6					0.0	468.6	71.7	1,794.2	0.0	0.0
45.00		44.2	1,301.0					0.0	473.0	44.2	1,774.0	0.0	0.0
46.12	Bot - Section 2	36.8	288.3					0.0	106.3	36.8	394.5	0.0	0.0
50.00		39.5	1,473.4					0.0	370.8	39.5	1,844.2	0.0	0.0
51.46	Top - Section 1	37.2	547.8					0.0	139.8	37.2	687.6	0.0	0.0
55.00		63.7	789.5					0.0	340.9	63.7	1,130.4	0.0	0.0
60.00		74.7	1,093.0					0.0	484.1	74.7	1,577.1	0.0	0.0
65.00		74.6	1,069.3					0.0	487.3	74.6	1,556.6	0.0	0.0
70.00		74.4	1,045.0					0.0	490.2	74.4	1,535.3	0.0	0.0
75.00		74.1	1,020.3					0.0	493.0	74.1	1,513.3	0.0	0.0
80.00		73.6	995.3					0.0	495.6	73.6	1,490.9	0.0	0.0
85.00		73.0	969.8					0.0	498.0	73.0	1,467.9	0.0	0.0
90.00		55.4	944.1					0.0	500.4	55.4	1,444.5	0.0	0.0
92.65	Bot - Section 3	36.1	490.7					0.0	265.7	36.1	756.4	0.0	0.0
95.00		30.9	603.5					0.0	236.9	30.9	840.4	0.0	0.0
96.93	Top - Section 2	35.9	488.0					0.0	194.3	35.9	682.3	0.0	0.0
100.00		57.4	482.1					0.0	310.4	57.4	792.6	0.0	0.0
105.00		70.3	763.6					0.0	506.8	70.3	1,270.4	0.0	0.0
110.00		69.1	740.8					0.0	508.7	69.1	1,249.5	0.0	0.0
115.00		67.9	717.7					0.0	510.6	67.9	1,228.2	0.0	0.0
120.00		66.7	694.4					0.0	512.4	66.7	1,206.8	0.0	0.0
125.00		65.3	670.9					0.0	514.1	65.3	1,185.0	0.0	0.0
130.00		63.9	647.3					0.0	515.8	63.9	1,163.1	0.0	0.0
135.00		37.8	623.5					0.0	517.4	37.8	1,140.9	0.0	0.0
136.00	Appertunance(s)	30.8	122.9	377.4	0.0	0.0	3,740.3	0.0	103.7	408.2	3,966.9	0.0	0.0
140.00		24.7	478.8					0.0	402.8	24.7	881.6	0.0	0.0
140.02	Bot - Section 4	19.7	2.5					0.0	2.1	19.7	4.6	0.0	0.0
143.22	Top - Section 3	30.3	539.4					0.0	322.8	30.3	862.1	0.0	0.0
145.00		16.7	207.4					0.0	180.1	16.7	387.4	0.0	0.0
146.00	Appertunance(s)	29.6	115.3	825.6	0.0	0.0	1,000.2	0.0	101.2	855.2	1,216.6	0.0	0.0
150.00		52.4	448.1					0.0	381.6	52.4	829.7	0.0	0.0
155.00		40.0	536.8					20.6	478.3	60.6	1,015.2	0.0	0.0
157.00	Appertunance(s)	20.0	209.6	133.7	0.0	0.0	715.4	8.3	191.7	161.9	1,116.7	0.0	0.0
158.56	Top - Section 4	14.8	161.2					6.5	131.5	21.3	292.7	0.0	0.0
160.00		14.5	147.6					6.0	121.1	20.5	268.7	0.0	0.0
162.00	Appertunance(s)	21.2	205.4	10.2	0.0	0.0	103.5	8.4	168.7	39.8	477.6	0.0	0.0
165.00		21.3	308.4					12.6	230.8	33.9	539.2	0.0	0.0
167.00	Appertunance(s)	15.2	205.8	275.9	0.0	0.0	2,353.9	8.5	154.1	299.6	2,713.8	0.0	0.0
168.56		6.7	160.8					0.0	0.0	6.7	160.8	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 1.00 in Radial Ice 32 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Totals:	3,986.35	57,271.3	0.00	0.00

Site Number: 413782 Code: ANSI/TIA-222-G

Site Name: Washington North CT, CT Engineering Number:OAA701488_C3_01 4/20/2017 5:11:20 PM

Customer: T-MOBILE

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 1.00 in Radial Ice 32 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-57.27	-3.98	0.00	-502.08	0.00	502.08	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.193
5.00	-55.48	-3.95	0.00	-482.20	0.00	482.20	2,959.81	1,479.91	5,567.76	2,788.02	0.03	-0.05	0.192
10.00	-53.64	-3.93	0.00	-462.43	0.00	462.43	2,923.38	1,461.69	5,383.76	2,695.88	0.12	-0.11	0.190
15.00	-51.78	-3.91	0.00	-442.78	0.00	442.78	2,885.88	1,442.94	5,200.69	2,604.21	0.26	-0.17	0.188
20.00	-49.93	-3.88	0.00	-423.26	0.00	423.26	2,847.29	1,423.65	5,018.68	2,513.07	0.47	-0.23	0.186
25.00	-48.08	-3.85	0.00	-403.87	0.00	403.87	2,807.63	1,403.81	4,837.86	2,422.53	0.74	-0.29	0.184
30.00	-46.25	-3.82	0.00	-384.61	0.00	384.61	2,766.89	1,383.44	4,658.36	2,332.64	1.07	-0.35	0.182
35.00	-44.43	-3.79	0.00	-365.51	0.00	365.51	2,725.06	1,362.53	4,480.31	2,243.49	1.47	-0.41	0.179
40.00	-42.63	-3.75	0.00	-346.58	0.00	346.58	2,682.17	1,341.08	4,303.83	2,155.12	1.93	-0.47	0.177
45.00	-40.86	-3.72	0.00	-327.83	0.00	327.83	2,638.19	1,319.10	4,129.06	2,067.60	2.46	-0.54	0.174
46.12	-40.46	-3.70	0.00	-323.68	0.00	323.68	2,628.22	1,314.11	4,090.25	2,048.17	2.59	-0.55	0.173
50.00	-38.62	-3.67	0.00	-309.31	0.00	309.31	2,593.14	1,296.57	3,956.11	1,981.00	3.06	-0.60	0.171
51.46	-37.93	-3.64	0.00	-303.97	0.00	303.97	1,919.32	959.66	2,955.63	1,480.01	3.24	-0.62	0.225
55.00	-36.79	-3.61	0.00	-291.06	0.00	291.06	1,899.39	949.70	2,871.79	1,438.03	3.72	-0.67	0.222
60.00	-35.21	-3.56	0.00	-273.02	0.00	273.02	1,870.33	935.17	2,753.97	1,379.03	4.47	-0.75	0.217
65.00	-33.65	-3.52	0.00	-255.20	0.00	255.20	1,840.20	920.10	2,636.91	1,320.41	5.30	-0.83	0.212
70.00	-32.11	-3.47	0.00	-237.62	0.00	237.62	1,808.98	904.49	2,520.72	1,262.23	6.21	-0.91	0.206
75.00	-30.60	-3.41	0.00	-220.29	0.00	220.29	1,776.69	888.34	2,405.54	1,204.56	7.21	-1.00	0.200
80.00	-29.10	-3.35	0.00	-203.24	0.00	203.24	1,743.32	871.66	2,291.50	1,147.45	8.31	-1.08	0.194
85.00	-27.63	-3.29	0.00	-186.48	0.00	186.48	1,708.87	854.43	2,178.71	1,090.98	9.48	-1.17	0.187
90.00	-26.18	-3.24	0.00	-170.02	0.00	170.02	1,673.34	836.67	2,067.32	1,035.20	10.75	-1.25	0.180
92.65	-25.43	-3.20	0.00	-161.46	0.00	161.46	1,654.10	827.05	2,008.98	1,005.98	11.46	-1.30	0.176
95.00	-24.58	-3.17	0.00	-153.92	0.00	153.92	1,636.74	818.37	1,957.44	980.18	12.11	-1.34	0.172
96.93	-23.90	-3.13	0.00	-147.82	0.00	147.82	1,103.35	551.67	1,325.55	663.76	12.65	-1.37	0.244
100.00	-23.11	-3.09	0.00	-138.19	0.00	138.19	1,091.13	545.56	1,284.38	643.14	13.55	-1.42	0.236
105.00	-21.83	-3.03	0.00	-122.75	0.00	122.75	1,070.38	535.19	1,217.67	609.74	15.10	-1.53	0.222
110.00	-20.58	-2.96	0.00	-107.62	0.00	107.62	1,048.55	524.27	1,151.42	576.56	16.76	-1.63	0.206
115.00	-19.35	-2.89	0.00	-92.83	0.00	92.83	1,025.64	512.82	1,085.75	543.68	18.52	-1.73	0.190
120.00	-18.14	-2.81	0.00	-78.39	0.00	78.39	1,001.65	500.83	1,020.79	511.15	20.39	-1.83	0.172
125.00	-16.95	-2.73	0.00	-64.33	0.00	64.33	976.59	488.30	956.67	479.05	22.35	-1.92	0.152
130.00	-15.79	-2.65	0.00	-50.67	0.00	50.67	950.45	475.22	893.52	447.42	24.40	-2.00	0.130
135.00	-14.65	-2.58	0.00	-37.42	0.00	37.42	923.23	461.61	831.46	416.35	26.53	-2.06	0.106
136.00	-10.70	-2.04	0.00	-34.83	0.00	34.83	917.66	458.83	819.19	410.21	26.96	-2.08	0.097
140.00	-9.82	-1.98	0.00	-26.69	0.00	26.69	894.93	447.47	770.63	385.89	28.72	-2.12	0.080
140.02	-9.81	-1.97	0.00	-26.65	0.00	26.65	894.81	447.41	770.38	385.76	28.73	-2.12	0.080
143.22	-8.95	-1.91	0.00	-20.36	0.00	20.36	887.67	443.84	755.59	378.35	30.16	-2.15	0.064
145.00	-8.57	-1.88	0.00	-16.96	0.00	16.96	877.23	438.62	734.36	367.72	30.97	-2.17	0.056
146.00	-7.38	-0.98	0.00	-15.08	0.00	15.08	871.31	435.66	722.52	361.80	31.42	-2.18	0.050
150.00	-6.55	-0.90	0.00	-11.17	0.00	11.17	847.20	423.60	675.75	338.38	33.26	-2.20	0.041
155.00	-5.54	-0.80	0.00	-6.68	0.00	6.68	816.09	408.05	618.71	309.81	35.57	-2.22	0.028
157.00	-4.43	-0.59	0.00	-5.08	0.00	5.08	800.73	400.36	594.40	297.64	36.51	-2.23	0.023
158.56	-4.14	-0.56	0.00	-4.15	0.00	4.15	787.55	393.77	574.90	287.88	37.24	-2.23	0.020
158.56	-4.14	-0.56	0.00	-4.15	0.00	4.15	551.08	275.54	275.63	180.95	37.24	-2.23	0.030
160.00	-3.87	-0.53	0.00	-3.34	0.00	3.34	551.08	275.54	275.63	180.95	37.91	-2.24	0.026
162.00	-3.40	-0.47	0.00	-2.28	0.00	2.28	551.08	275.54	275.63	180.95	38.85	-2.24	0.019
165.00	-2.86	-0.42	0.00	-0.86	0.00	0.86	551.08	275.54	275.63	180.95	40.26	-2.25	0.010
167.00	-0.16	-0.01	0.00	-0.02	0.00	0.02	551.08	275.54	275.63	180.95	41.20	-2.25	0.000
168.56	0.00	-0.01	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	41.94	-2.25	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 31 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		43.1	0.0					0.0	0.0	43.1	0.0	0.0	0.0
5.00		85.4	779.8					0.0	142.2	85.4	922.0	0.0	0.0
10.00		83.6	763.7					0.0	142.2	83.6	905.9	0.0	0.0
15.00		81.8	747.6					0.0	142.2	81.8	889.8	0.0	0.0
20.00		80.1	731.5					0.0	142.2	80.1	873.7	0.0	0.0
25.00		78.3	715.4					0.0	142.2	78.3	857.6	0.0	0.0
30.00		77.4	699.3					0.0	142.2	77.4	841.5	0.0	0.0
35.00		78.1	683.2					0.0	142.2	78.1	825.4	0.0	0.0
40.00		79.3	667.1					0.0	142.2	79.3	809.3	0.0	0.0
45.00		48.8	651.0					0.0	142.2	48.8	793.2	0.0	0.0
46.12	Bot - Section 2	40.5	143.3					0.0	31.8	40.5	175.0	0.0	0.0
50.00		43.5	890.9					0.0	110.4	43.5	1,001.3	0.0	0.0
51.46	Top - Section 1	40.8	330.1					0.0	41.5	40.8	371.6	0.0	0.0
55.00		69.7	354.7					0.0	100.7	69.7	455.4	0.0	0.0
60.00		81.5	489.8					0.0	142.2	81.5	632.0	0.0	0.0
65.00		81.2	476.9					0.0	142.2	81.2	619.1	0.0	0.0
70.00		80.7	464.0					0.0	142.2	80.7	606.2	0.0	0.0
75.00		80.0	451.2					0.0	142.2	80.0	593.4	0.0	0.0
80.00		79.1	438.3					0.0	142.2	79.1	580.5	0.0	0.0
85.00		78.2	425.4					0.0	142.2	78.2	567.6	0.0	0.0
90.00		59.1	412.5					0.0	142.2	59.1	554.7	0.0	0.0
92.65	Bot - Section 3	38.4	213.1					0.0	75.2	38.4	288.3	0.0	0.0
95.00		32.9	328.6					0.0	67.0	32.9	395.5	0.0	0.0
96.93	Top - Section 2	38.0	265.2					0.0	54.8	38.0	320.0	0.0	0.0
100.00		60.6	179.9					0.0	87.4	60.6	267.2	0.0	0.0
105.00		73.9	284.8					0.0	142.2	73.9	427.0	0.0	0.0
110.00		72.3	275.2					0.0	142.2	72.3	417.4	0.0	0.0
115.00		70.6	265.5					0.0	142.2	70.6	407.7	0.0	0.0
120.00		68.9	255.9					0.0	142.2	68.9	398.1	0.0	0.0
125.00		67.0	246.2					0.0	142.2	67.0	388.4	0.0	0.0
130.00		65.1	236.6					0.0	142.2	65.1	378.8	0.0	0.0
135.00		38.3	226.9					0.0	142.2	38.3	369.1	0.0	0.0
136.00	Appertunance(s)	31.0	44.2	534.0	0.0	0.0	1,285.4	0.0	28.4	565.0	1,358.1	0.0	0.0
140.00		24.9	173.0					0.0	103.4	24.9	276.4	0.0	0.0
140.02	Bot - Section 4	19.8	0.9					0.0	0.5	19.8	1.4	0.0	0.0
143.22	Top - Section 3	30.4	270.1					0.0	82.6	30.4	352.8	0.0	0.0
145.00		16.7	74.2					0.0	46.0	16.7	120.2	0.0	0.0
146.00	Appertunance(s)	29.4	41.1	1,005.9	0.0	0.0	1,372.4	0.0	25.8	1,035.3	1,439.4	0.0	0.0
150.00		75.7	160.6					0.0	83.7	75.7	244.3	0.0	0.0
155.00		72.5	192.1					21.3	104.6	93.8	296.7	0.0	0.0
157.00	Appertunance(s)	35.9	74.1	193.9	0.0	0.0	327.6	8.6	41.8	238.4	443.6	0.0	0.0
158.56	Top - Section 4	25.6	56.8					6.7	17.3	32.3	74.1	0.0	0.0
160.00		23.9	71.3					6.2	15.9	30.1	87.2	0.0	0.0
162.00	Appertunance(s)	34.9	99.2	14.0	0.0	0.0	31.8	8.6	22.2	57.5	153.2	0.0	0.0
165.00		35.0	148.8					13.0	33.1	48.0	181.9	0.0	0.0
167.00	Appertunance(s)	19.5	99.2	387.2	0.0	0.0	679.2	8.7	22.0	415.4	800.5	0.0	0.0
168.56		5.5	77.5					0.0	0.0	5.5	77.5	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 31 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Totals:	4,784.92	23,840.2	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 31 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-23.84	-4.75	0.00	-567.50	0.00	567.50	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.205
5.00	-22.91	-4.69	0.00	-543.73	0.00	543.73	2,959.81	1,479.91	5,567.76	2,788.02	0.03	-0.06	0.203
10.00	-22.00	-4.63	0.00	-520.26	0.00	520.26	2,923.38	1,461.69	5,383.76	2,695.88	0.13	-0.13	0.201
15.00	-21.10	-4.57	0.00	-497.10	0.00	497.10	2,885.88	1,442.94	5,200.69	2,604.21	0.30	-0.19	0.198
20.00	-20.23	-4.51	0.00	-474.25	0.00	474.25	2,847.29	1,423.65	5,018.68	2,513.07	0.53	-0.25	0.196
25.00	-19.36	-4.45	0.00	-451.69	0.00	451.69	2,807.63	1,403.81	4,837.86	2,422.53	0.83	-0.32	0.193
30.00	-18.52	-4.39	0.00	-429.43	0.00	429.43	2,766.89	1,383.44	4,658.36	2,332.64	1.21	-0.39	0.191
35.00	-17.69	-4.33	0.00	-407.47	0.00	407.47	2,725.06	1,362.53	4,480.31	2,243.49	1.65	-0.46	0.188
40.00	-16.87	-4.26	0.00	-385.83	0.00	385.83	2,682.17	1,341.08	4,303.83	2,155.12	2.17	-0.53	0.185
45.00	-16.08	-4.22	0.00	-364.51	0.00	364.51	2,638.19	1,319.10	4,129.06	2,067.60	2.76	-0.60	0.182
46.12	-15.90	-4.19	0.00	-359.80	0.00	359.80	2,628.22	1,314.11	4,090.25	2,048.17	2.90	-0.62	0.182
50.00	-14.90	-4.14	0.00	-343.54	0.00	343.54	2,593.14	1,296.57	3,956.11	1,981.00	3.43	-0.67	0.179
51.46	-14.52	-4.11	0.00	-337.50	0.00	337.50	1,919.32	959.66	2,955.63	1,480.01	3.64	-0.70	0.236
55.00	-14.06	-4.05	0.00	-322.96	0.00	322.96	1,899.39	949.70	2,871.79	1,438.03	4.17	-0.75	0.232
60.00	-13.43	-3.98	0.00	-302.72	0.00	302.72	1,870.33	935.17	2,753.97	1,379.03	5.01	-0.84	0.227
65.00	-12.80	-3.91	0.00	-282.82	0.00	282.82	1,840.20	920.10	2,636.91	1,320.41	5.93	-0.93	0.221
70.00	-12.19	-3.84	0.00	-263.27	0.00	263.27	1,808.98	904.49	2,520.72	1,262.23	6.95	-1.02	0.215
75.00	-11.59	-3.77	0.00	-244.09	0.00	244.09	1,776.69	888.34	2,405.54	1,204.56	8.07	-1.11	0.209
80.00	-11.01	-3.69	0.00	-225.26	0.00	225.26	1,743.32	871.66	2,291.50	1,147.45	9.29	-1.21	0.203
85.00	-10.44	-3.62	0.00	-206.80	0.00	206.80	1,708.87	854.43	2,178.71	1,090.98	10.60	-1.30	0.196
90.00	-9.88	-3.56	0.00	-188.70	0.00	188.70	1,673.34	836.67	2,067.32	1,035.20	12.01	-1.39	0.188
92.65	-9.59	-3.52	0.00	-179.28	0.00	179.28	1,654.10	827.05	2,008.98	1,005.98	12.80	-1.44	0.184
95.00	-9.19	-3.49	0.00	-170.99	0.00	170.99	1,636.74	818.37	1,957.44	980.18	13.52	-1.49	0.180
96.93	-8.87	-3.45	0.00	-164.28	0.00	164.28	1,103.35	551.67	1,325.55	663.76	14.13	-1.53	0.256
100.00	-8.60	-3.39	0.00	-153.69	0.00	153.69	1,091.13	545.56	1,284.38	643.14	15.13	-1.58	0.247
105.00	-8.17	-3.32	0.00	-136.73	0.00	136.73	1,070.38	535.19	1,217.67	609.74	16.86	-1.70	0.232
110.00	-7.75	-3.25	0.00	-120.11	0.00	120.11	1,048.55	524.27	1,151.42	576.56	18.70	-1.82	0.216
115.00	-7.34	-3.18	0.00	-103.85	0.00	103.85	1,025.64	512.82	1,085.75	543.68	20.66	-1.93	0.198
120.00	-6.93	-3.11	0.00	-87.94	0.00	87.94	1,001.65	500.83	1,020.79	511.15	22.74	-2.03	0.179
125.00	-6.54	-3.04	0.00	-72.38	0.00	72.38	976.59	488.30	956.67	479.05	24.93	-2.13	0.158
130.00	-6.16	-2.97	0.00	-57.16	0.00	57.16	950.45	475.22	893.52	447.42	27.21	-2.22	0.134
135.00	-5.79	-2.92	0.00	-42.30	0.00	42.30	923.23	461.61	831.46	416.35	29.58	-2.30	0.108
136.00	-4.46	-2.31	0.00	-39.38	0.00	39.38	917.66	458.83	819.19	410.21	30.07	-2.32	0.101
140.00	-4.18	-2.27	0.00	-30.15	0.00	30.15	894.93	447.47	770.63	385.89	32.03	-2.37	0.083
140.02	-4.18	-2.25	0.00	-30.11	0.00	30.11	894.81	447.41	770.38	385.76	32.04	-2.37	0.083
143.22	-3.83	-2.21	0.00	-22.90	0.00	22.90	887.67	443.84	755.59	378.35	33.64	-2.40	0.065
145.00	-3.71	-2.19	0.00	-18.96	0.00	18.96	877.23	438.62	734.36	367.72	34.54	-2.42	0.056
146.00	-2.31	-1.10	0.00	-16.77	0.00	16.77	871.31	435.66	722.52	361.80	35.05	-2.43	0.049
150.00	-2.07	-1.01	0.00	-12.39	0.00	12.39	847.20	423.60	675.75	338.38	37.09	-2.46	0.039
155.00	-1.78	-0.90	0.00	-7.33	0.00	7.33	816.09	408.05	618.71	309.81	39.68	-2.48	0.026
157.00	-1.35	-0.65	0.00	-5.52	0.00	5.52	800.73	400.36	594.40	297.64	40.72	-2.49	0.020
158.56	-1.27	-0.61	0.00	-4.51	0.00	4.51	787.55	393.77	574.90	287.88	41.53	-2.49	0.017
158.56	-1.27	-0.61	0.00	-4.51	0.00	4.51	551.08	275.54	275.63	180.95	41.53	-2.49	0.027
160.00	-1.19	-0.58	0.00	-3.63	0.00	3.63	551.08	275.54	275.63	180.95	42.29	-2.50	0.022
162.00	-1.04	-0.51	0.00	-2.48	0.00	2.48	551.08	275.54	275.63	180.95	43.33	-2.50	0.016
165.00	-0.86	-0.46	0.00	-0.93	0.00	0.93	551.08	275.54	275.63	180.95	44.91	-2.51	0.007
167.00	-0.08	-0.01	0.00	-0.01	0.00	0.01	551.08	275.54	275.63	180.95	45.96	-2.51	0.000
168.56	0.00	-0.01	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	46.78	-2.51	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.84
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	23.84 k
Seismic Base Shear (E):	0.93 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	167.78	78	2,182	0.010	10	96
45	166.00	121	3,341	0.016	15	150
44	163.50	182	4,862	0.023	21	226
43	161.00	121	3,146	0.015	14	151
42	159.28	87	2,213	0.010	10	108
41	157.78	74	1,846	0.009	8	92
40	156.00	116	2,822	0.013	12	144
39	152.50	297	6,899	0.032	30	368
38	148.00	244	5,351	0.025	23	303
37	145.50	67	1,417	0.007	6	83
36	144.11	120	2,497	0.012	11	149
35	141.62	353	7,075	0.033	31	438
34	140.01	1	28	0.000	0	2
33	138.00	276	5,263	0.025	23	343
32	135.50	73	1,334	0.006	6	90
31	132.50	369	6,480	0.030	28	458
30	127.50	379	6,157	0.029	27	470
29	122.50	388	5,829	0.027	25	482
28	117.50	398	5,496	0.026	24	494
27	112.50	408	5,160	0.024	23	506
26	107.50	417	4,823	0.023	21	518
25	102.50	427	4,487	0.021	20	530
24	98.46	267	2,591	0.012	11	332

23	95.96	320	2,947	0.014	13	397
22	93.82	396	3,482	0.016	15	491
21	91.32	288	2,405	0.011	11	358
20	87.50	555	4,247	0.020	19	688
19	82.50	568	3,863	0.018	17	704
18	77.50	580	3,486	0.016	15	720
17	72.50	593	3,119	0.015	14	736
16	67.50	606	2,762	0.013	12	752
15	62.50	619	2,418	0.011	11	768
14	57.50	632	2,090	0.010	9	784
13	53.23	455	1,290	0.006	6	565
12	50.73	372	956	0.004	4	461
11	48.06	1,001	2,313	0.011	10	1,242
10	45.56	175	363	0.002	2	217
9	42.50	793	1,433	0.007	6	984
8	37.50	809	1,138	0.005	5	1,004
7	32.50	825	872	0.004	4	1,024
6	27.50	842	636	0.003	3	1,044
5	22.50	858	434	0.002	2	1,064
4	17.50	874	268	0.001	1	1,084
3	12.50	890	139	0.001	1	1,104
2	7.50	906	51	0.000	0	1,124
1	2.50	922	6	0.000	0	1,144
RCU (Remote Control	167.00	12	335	0.002	1	15
Powerwave Allgon TT0	167.00	132	3,681	0.017	16	164
Ericsson RRUS 11 B2	167.00	304	8,484	0.040	37	377
KMW AM-X-CD-17-65-00	167.00	31	859	0.004	4	38
Powerwave Allgon P90	167.00	90	2,510	0.012	11	112
Kathrein Scala 800-1	167.00	110	3,073	0.014	13	137
Raycap DC6-48-60-18-	162.00	32	835	0.004	4	39
Stand-Off	157.00	225	5,546	0.026	24	279
Andrew DBXNH-6565A-V	157.00	103	2,529	0.012	11	127
Stand-Off	146.00	225	4,796	0.023	21	279
Antel BXA-70063/6CF	146.00	51	1,087	0.005	5	63
VZW Unused Reserve:	146.00	1,096	23,371	0.110	102	1,360
E-911 GPS	136.00	5	92	0.000	0	6
RFS ATMAA1412D-1A20	136.00	39	721	0.003	3	48
Ericsson RRUS 11 B12	136.00	152	2,813	0.013	12	189
Ericsson RRUS 11 B2	136.00	152	2,813	0.013	12	189
RFS APXV18-206516S-C	136.00	56	1,038	0.005	5	70
Commscope LNX-6515DS	136.00	131	2,425	0.011	11	163
Flat T-Arm	136.00	750	13,872	0.065	61	931
		23,840	212,900	1.000	930	29,580

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
46	167.78	78	2,182	0.010	10	67
45	166.00	121	3,341	0.016	15	104
44	163.50	182	4,862	0.023	21	156
43	161.00	121	3,146	0.015	14	104
42	159.28	87	2,213	0.010	10	75
41	157.78	74	1,846	0.009	8	64
40	156.00	116	2,822	0.013	12	100
39	152.50	297	6,899	0.032	30	255
38	148.00	244	5,351	0.025	23	210
37	145.50	67	1,417	0.007	6	58
36	144.11	120	2,497	0.012	11	103
35	141.62	353	7,075	0.033	31	303

34	140.01	1	28	0.000	0	1
33	138.00	276	5,263	0.025	23	237
32	135.50	73	1,334	0.006	6	62
31	132.50	369	6,480	0.030	28	317
30	127.50	379	6,157	0.029	27	325
29	122.50	388	5,829	0.027	25	334
28	117.50	398	5,496	0.026	24	342
27	112.50	408	5,160	0.024	23	350
26	107.50	417	4,823	0.023	21	359
25	102.50	427	4,487	0.021	20	367
24	98.46	267	2,591	0.012	11	230
23	95.96	320	2,947	0.014	13	275
22	93.82	396	3,482	0.016	15	340
21	91.32	288	2,405	0.011	11	248
20	87.50	555	4,247	0.020	19	477
19	82.50	568	3,863	0.018	17	488
18	77.50	580	3,486	0.016	15	499
17	72.50	593	3,119	0.015	14	510
16	67.50	606	2,762	0.013	12	521
15	62.50	619	2,418	0.011	11	532
14	57.50	632	2,090	0.010	9	543
13	53.23	455	1,290	0.006	6	391
12	50.73	372	956	0.004	4	319
11	48.06	1,001	2,313	0.011	10	860
10	45.56	175	363	0.002	2	150
9	42.50	793	1,433	0.007	6	682
8	37.50	809	1,138	0.005	5	695
7	32.50	825	872	0.004	4	709
6	27.50	842	636	0.003	3	723
5	22.50	858	434	0.002	2	737
4	17.50	874	268	0.001	1	751
3	12.50	890	139	0.001	1	765
2	7.50	906	51	0.000	0	778
1	2.50	922	6	0.000	0	792
RCU (Remote Control	167.00	12	335	0.002	1	10
Powerwave Allgon TT0	167.00	132	3,681	0.017	16	113
Ericsson RRUS 11 B2	167.00	304	8,484	0.040	37	261
KMW AM-X-CD-17-65-00	167.00	31	859	0.004	4	26
Powerwave Allgon P90	167.00	90	2,510	0.012	11	77
Kathrein Scala 800-1	167.00	110	3,073	0.014	13	95
Raycap DC6-48-60-18-	162.00	32	835	0.004	4	27
Stand-Off	157.00	225	5,546	0.026	24	193
Andrew DBXNH-6565A-V	157.00	103	2,529	0.012	11	88
Stand-Off	146.00	225	4,796	0.023	21	193
Antel BXA-70063/6CF	146.00	51	1,087	0.005	5	44
VZW Unused Reserve:	146.00	1,096	23,371	0.110	102	942
E-911 GPS	136.00	5	92	0.000	0	4
RFS ATMAA1412D-1A20	136.00	39	721	0.003	3	34
Ericsson RRUS 11 B12	136.00	152	2,813	0.013	12	131
Ericsson RRUS 11 B2	136.00	152	2,813	0.013	12	131
RFS APXV18-206516S-C	136.00	56	1,038	0.005	5	48
Commscope LNX-6515DS	136.00	131	2,425	0.011	11	113
Flat T-Arm	136.00	750	13,872	0.065	61	644
		23,840	212,900	1.000	930	20,485

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.44	-0.93	0.00	-126.02	0.00	126.02	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.053
5.00	-27.31	-0.94	0.00	-121.36	0.00	121.36	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.053
10.00	-26.21	-0.94	0.00	-116.67	0.00	116.67	2,923.38	1,461.69	5,383.76	2,695.88	0.03	-0.03	0.052
15.00	-25.12	-0.95	0.00	-111.96	0.00	111.96	2,885.88	1,442.94	5,200.69	2,604.21	0.07	-0.04	0.052
20.00	-24.06	-0.95	0.00	-107.22	0.00	107.22	2,847.29	1,423.65	5,018.68	2,513.07	0.12	-0.06	0.051
25.00	-23.01	-0.95	0.00	-102.46	0.00	102.46	2,807.63	1,403.81	4,837.86	2,422.53	0.19	-0.07	0.050
30.00	-21.99	-0.95	0.00	-97.69	0.00	97.69	2,766.89	1,383.44	4,658.36	2,332.64	0.27	-0.09	0.050
35.00	-20.99	-0.95	0.00	-92.92	0.00	92.92	2,725.06	1,362.53	4,480.31	2,243.49	0.37	-0.10	0.049
40.00	-20.00	-0.95	0.00	-88.15	0.00	88.15	2,682.17	1,341.08	4,303.83	2,155.12	0.49	-0.12	0.048
45.00	-19.78	-0.95	0.00	-83.39	0.00	83.39	2,638.19	1,319.10	4,129.06	2,067.60	0.62	-0.14	0.048
46.12	-18.54	-0.94	0.00	-82.33	0.00	82.33	2,628.22	1,314.11	4,090.25	2,048.17	0.65	-0.14	0.047
50.00	-18.08	-0.94	0.00	-78.67	0.00	78.67	2,593.14	1,296.57	3,956.11	1,981.00	0.77	-0.15	0.047
51.46	-17.51	-0.94	0.00	-77.30	0.00	77.30	1,919.32	959.66	2,955.63	1,480.01	0.82	-0.16	0.061
55.00	-16.73	-0.93	0.00	-73.99	0.00	73.99	1,899.39	949.70	2,871.79	1,438.03	0.94	-0.17	0.060
60.00	-15.96	-0.92	0.00	-69.35	0.00	69.35	1,870.33	935.17	2,753.97	1,379.03	1.13	-0.19	0.059
65.00	-15.21	-0.91	0.00	-64.74	0.00	64.74	1,840.20	920.10	2,636.91	1,320.41	1.34	-0.21	0.057
70.00	-14.47	-0.90	0.00	-60.18	0.00	60.18	1,808.98	904.49	2,520.72	1,262.23	1.57	-0.23	0.056
75.00	-13.75	-0.89	0.00	-55.67	0.00	55.67	1,776.69	888.34	2,405.54	1,204.56	1.83	-0.25	0.054
80.00	-13.05	-0.87	0.00	-51.23	0.00	51.23	1,743.32	871.66	2,291.50	1,147.45	2.10	-0.27	0.052
85.00	-12.36	-0.86	0.00	-46.87	0.00	46.87	1,708.87	854.43	2,178.71	1,090.98	2.40	-0.30	0.050
90.00	-12.00	-0.85	0.00	-42.59	0.00	42.59	1,673.34	836.67	2,067.32	1,035.20	2.72	-0.32	0.048
92.65	-11.51	-0.83	0.00	-40.35	0.00	40.35	1,654.10	827.05	2,008.98	1,005.98	2.90	-0.33	0.047
95.00	-11.11	-0.82	0.00	-38.40	0.00	38.40	1,636.74	818.37	1,957.44	980.18	3.07	-0.34	0.046
96.93	-10.78	-0.81	0.00	-36.83	0.00	36.83	1,103.35	551.67	1,325.55	663.76	3.20	-0.35	0.065
100.00	-10.25	-0.79	0.00	-34.35	0.00	34.35	1,091.13	545.56	1,284.38	643.14	3.43	-0.36	0.063
105.00	-9.73	-0.77	0.00	-30.42	0.00	30.42	1,070.38	535.19	1,217.67	609.74	3.82	-0.39	0.059
110.00	-9.23	-0.74	0.00	-26.58	0.00	26.58	1,048.55	524.27	1,151.42	576.56	4.24	-0.41	0.055
115.00	-8.73	-0.72	0.00	-22.86	0.00	22.86	1,025.64	512.82	1,085.75	543.68	4.69	-0.44	0.051
120.00	-8.25	-0.69	0.00	-19.26	0.00	19.26	1,001.65	500.83	1,020.79	511.15	5.15	-0.46	0.046
125.00	-7.78	-0.67	0.00	-15.78	0.00	15.78	976.59	488.30	956.67	479.05	5.65	-0.48	0.041
130.00	-7.32	-0.64	0.00	-12.45	0.00	12.45	950.45	475.22	893.52	447.42	6.16	-0.50	0.036
135.00	-7.23	-0.63	0.00	-9.27	0.00	9.27	923.23	461.61	831.46	416.35	6.70	-0.52	0.030
136.00	-5.30	-0.49	0.00	-8.63	0.00	8.63	917.66	458.83	819.19	410.21	6.81	-0.52	0.027
140.00	-5.30	-0.49	0.00	-6.68	0.00	6.68	894.93	447.47	770.63	385.89	7.25	-0.53	0.023
140.02	-4.86	-0.45	0.00	-6.67	0.00	6.67	894.81	447.41	770.38	385.76	7.25	-0.53	0.023
143.22	-4.71	-0.44	0.00	-5.22	0.00	5.22	887.67	443.84	755.59	378.35	7.61	-0.54	0.019
145.00	-4.63	-0.44	0.00	-4.43	0.00	4.43	877.23	438.62	734.36	367.72	7.81	-0.54	0.017
146.00	-2.62	-0.27	0.00	-4.00	0.00	4.00	871.31	435.66	722.52	361.80	7.93	-0.55	0.014
150.00	-2.25	-0.23	0.00	-2.94	0.00	2.94	847.20	423.60	675.75	338.38	8.39	-0.55	0.011
155.00	-2.11	-0.22	0.00	-1.78	0.00	1.78	816.09	408.05	618.71	309.81	8.97	-0.56	0.008
157.00	-1.61	-0.17	0.00	-1.34	0.00	1.34	800.73	400.36	594.40	297.64	9.20	-0.56	0.007
158.56	-1.50	-0.16	0.00	-1.07	0.00	1.07	787.55	393.77	574.90	287.88	9.39	-0.56	0.006
158.56	-1.50	-0.16	0.00	-1.07	0.00	1.07	551.08	275.54	275.63	180.95	9.39	-0.56	0.009
160.00	-1.35	-0.14	0.00	-0.84	0.00	0.84	551.08	275.54	275.63	180.95	9.55	-0.56	0.007
162.00	-1.09	-0.12	0.00	-0.55	0.00	0.55	551.08	275.54	275.63	180.95	9.79	-0.56	0.005
165.00	-0.94	-0.10	0.00	-0.20	0.00	0.20	551.08	275.54	275.63	180.95	10.15	-0.57	0.003
167.00	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	10.38	-0.57	0.000
168.56	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	10.57	-0.57	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-19.69	-0.93	0.00	-123.55	0.00	123.55	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.049
5.00	-18.91	-0.94	0.00	-118.89	0.00	118.89	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.049
10.00	-18.15	-0.94	0.00	-114.22	0.00	114.22	2,923.38	1,461.69	5,383.76	2,695.88	0.03	-0.03	0.049
15.00	-17.40	-0.94	0.00	-109.53	0.00	109.53	2,885.88	1,442.94	5,200.69	2,604.21	0.06	-0.04	0.048
20.00	-16.66	-0.94	0.00	-104.82	0.00	104.82	2,847.29	1,423.65	5,018.68	2,513.07	0.12	-0.06	0.048
25.00	-15.94	-0.94	0.00	-100.10	0.00	100.10	2,807.63	1,403.81	4,837.86	2,422.53	0.18	-0.07	0.047
30.00	-15.23	-0.94	0.00	-95.39	0.00	95.39	2,766.89	1,383.44	4,658.36	2,332.64	0.26	-0.09	0.046
35.00	-14.53	-0.94	0.00	-90.67	0.00	90.67	2,725.06	1,362.53	4,480.31	2,243.49	0.36	-0.10	0.046
40.00	-13.85	-0.94	0.00	-85.97	0.00	85.97	2,682.17	1,341.08	4,303.83	2,155.12	0.48	-0.12	0.045
45.00	-13.70	-0.94	0.00	-81.28	0.00	81.28	2,638.19	1,319.10	4,129.06	2,067.60	0.61	-0.13	0.045
46.12	-12.84	-0.93	0.00	-80.24	0.00	80.24	2,628.22	1,314.11	4,090.25	2,048.17	0.64	-0.14	0.044
50.00	-12.52	-0.92	0.00	-76.64	0.00	76.64	2,593.14	1,296.57	3,956.11	1,981.00	0.76	-0.15	0.044
51.46	-12.13	-0.92	0.00	-75.29	0.00	75.29	1,919.32	959.66	2,955.63	1,480.01	0.80	-0.15	0.057
55.00	-11.59	-0.91	0.00	-72.04	0.00	72.04	1,899.39	949.70	2,871.79	1,438.03	0.92	-0.17	0.056
60.00	-11.05	-0.90	0.00	-67.48	0.00	67.48	1,870.33	935.17	2,753.97	1,379.03	1.10	-0.19	0.055
65.00	-10.53	-0.89	0.00	-62.96	0.00	62.96	1,840.20	920.10	2,636.91	1,320.41	1.31	-0.21	0.053
70.00	-10.02	-0.88	0.00	-58.49	0.00	58.49	1,808.98	904.49	2,520.72	1,262.23	1.54	-0.23	0.052
75.00	-9.52	-0.87	0.00	-54.09	0.00	54.09	1,776.69	888.34	2,405.54	1,204.56	1.78	-0.25	0.050
80.00	-9.03	-0.85	0.00	-49.75	0.00	49.75	1,743.32	871.66	2,291.50	1,147.45	2.05	-0.27	0.049
85.00	-8.56	-0.83	0.00	-45.49	0.00	45.49	1,708.87	854.43	2,178.71	1,090.98	2.35	-0.29	0.047
90.00	-8.31	-0.82	0.00	-41.32	0.00	41.32	1,673.34	836.67	2,067.32	1,035.20	2.66	-0.31	0.045
92.65	-7.97	-0.81	0.00	-39.14	0.00	39.14	1,654.10	827.05	2,008.98	1,005.98	2.83	-0.32	0.044
95.00	-7.70	-0.80	0.00	-37.24	0.00	37.24	1,636.74	818.37	1,957.44	980.18	2.99	-0.33	0.043
96.93	-7.47	-0.78	0.00	-35.70	0.00	35.70	1,103.35	551.67	1,325.55	663.76	3.13	-0.34	0.061
100.00	-7.10	-0.76	0.00	-33.29	0.00	33.29	1,091.13	545.56	1,284.38	643.14	3.35	-0.35	0.058
105.00	-6.74	-0.74	0.00	-29.47	0.00	29.47	1,070.38	535.19	1,217.67	609.74	3.73	-0.38	0.055
110.00	-6.39	-0.72	0.00	-25.74	0.00	25.74	1,048.55	524.27	1,151.42	576.56	4.14	-0.40	0.051
115.00	-6.05	-0.70	0.00	-22.13	0.00	22.13	1,025.64	512.82	1,085.75	543.68	4.57	-0.42	0.047
120.00	-5.71	-0.67	0.00	-18.64	0.00	18.64	1,001.65	500.83	1,020.79	511.15	5.03	-0.45	0.042
125.00	-5.39	-0.65	0.00	-15.28	0.00	15.28	976.59	488.30	956.67	479.05	5.50	-0.47	0.037
130.00	-5.07	-0.62	0.00	-12.05	0.00	12.05	950.45	475.22	893.52	447.42	6.01	-0.49	0.032
135.00	-5.01	-0.61	0.00	-8.97	0.00	8.97	923.23	461.61	831.46	416.35	6.52	-0.50	0.027
136.00	-3.67	-0.47	0.00	-8.36	0.00	8.36	917.66	458.83	819.19	410.21	6.63	-0.51	0.024
140.00	-3.67	-0.47	0.00	-6.47	0.00	6.47	894.93	447.47	770.63	385.89	7.06	-0.52	0.021
140.02	-3.36	-0.44	0.00	-6.46	0.00	6.46	894.81	447.41	770.38	385.76	7.06	-0.52	0.021
143.22	-3.26	-0.43	0.00	-5.06	0.00	5.06	887.67	443.84	755.59	378.35	7.41	-0.53	0.017
145.00	-3.20	-0.42	0.00	-4.30	0.00	4.30	877.23	438.62	734.36	367.72	7.61	-0.53	0.015
146.00	-1.81	-0.26	0.00	-3.88	0.00	3.88	871.31	435.66	722.52	361.80	7.72	-0.53	0.013
150.00	-1.56	-0.22	0.00	-2.85	0.00	2.85	847.20	423.60	675.75	338.38	8.17	-0.54	0.010
155.00	-1.46	-0.21	0.00	-1.72	0.00	1.72	816.09	408.05	618.71	309.81	8.73	-0.54	0.007
157.00	-1.12	-0.17	0.00	-1.30	0.00	1.30	800.73	400.36	594.40	297.64	8.96	-0.54	0.006
158.56	-1.04	-0.16	0.00	-1.04	0.00	1.04	787.55	393.77	574.90	287.88	9.14	-0.55	0.005
158.56	-1.04	-0.16	0.00	-1.04	0.00	1.04	551.08	275.54	275.63	180.95	9.14	-0.55	0.008
160.00	-0.94	-0.14	0.00	-0.82	0.00	0.82	551.08	275.54	275.63	180.95	9.30	-0.55	0.006
162.00	-0.75	-0.11	0.00	-0.54	0.00	0.54	551.08	275.54	275.63	180.95	9.53	-0.55	0.004
165.00	-0.65	-0.10	0.00	-0.20	0.00	0.20	551.08	275.54	275.63	180.95	9.88	-0.55	0.002
167.00	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	10.11	-0.55	0.000
168.56	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	10.29	-0.55	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.84
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
46	167.78	78	1.873	1.889	1.107	0.372	25	96
45	166.00	121	1.833	1.693	1.035	0.345	36	150
44	163.50	182	1.778	1.441	0.940	0.310	49	226
43	161.00	121	1.724	1.216	0.852	0.275	29	151
42	159.28	87	1.688	1.076	0.796	0.253	19	108
41	157.78	74	1.656	0.962	0.749	0.234	15	92
40	156.00	116	1.619	0.838	0.696	0.212	21	144
39	152.50	297	1.547	0.623	0.600	0.172	44	368
38	148.00	244	1.457	0.401	0.493	0.126	27	303
37	145.50	67	1.408	0.300	0.440	0.102	6	83
36	144.11	120	1.381	0.250	0.413	0.090	9	149
35	141.62	353	1.334	0.171	0.367	0.069	21	438
34	140.01	1	1.304	0.126	0.340	0.056	0	2
33	138.00	276	1.267	0.077	0.308	0.041	10	343
32	135.50	73	1.221	0.026	0.271	0.024	2	90
31	132.50	369	1.168	-0.023	0.232	0.006	2	458
30	127.50	379	1.081	-0.080	0.176	-0.020	-7	470
29	122.50	388	0.998	-0.110	0.130	-0.040	-13	482
28	117.50	398	0.918	-0.121	0.095	-0.053	-18	494
27	112.50	408	0.842	-0.118	0.067	-0.059	-21	506
26	107.50	417	0.769	-0.105	0.045	-0.059	-21	518
25	102.50	427	0.699	-0.087	0.030	-0.052	-19	530
24	98.46	267	0.645	-0.069	0.020	-0.043	-10	332
23	95.96	320	0.613	-0.057	0.016	-0.035	-10	397
22	93.82	396	0.586	-0.048	0.013	-0.028	-9	491
21	91.32	288	0.555	-0.036	0.010	-0.018	-5	358
20	87.50	555	0.509	-0.020	0.007	-0.003	-2	688
19	82.50	568	0.453	0.001	0.006	0.016	8	704
18	77.50	580	0.400	0.018	0.007	0.032	16	720
17	72.50	593	0.350	0.033	0.009	0.044	23	736
16	67.50	606	0.303	0.045	0.012	0.053	28	752
15	62.50	619	0.260	0.054	0.016	0.057	31	768
14	57.50	632	0.220	0.060	0.021	0.060	33	784
13	53.23	455	0.188	0.064	0.025	0.060	24	565

12	50.73	372	0.171	0.066	0.027	0.060	19	461
11	48.06	1,001	0.154	0.068	0.030	0.059	52	1,242
10	45.56	175	0.138	0.069	0.032	0.059	9	217
9	42.50	793	0.120	0.070	0.034	0.058	40	984
8	37.50	809	0.094	0.071	0.038	0.057	40	1,004
7	32.50	825	0.070	0.072	0.041	0.056	40	1,024
6	27.50	842	0.050	0.071	0.042	0.055	40	1,044
5	22.50	858	0.034	0.069	0.041	0.053	39	1,064
4	17.50	874	0.020	0.064	0.038	0.050	38	1,084
3	12.50	890	0.010	0.055	0.032	0.045	35	1,104
2	7.50	906	0.004	0.040	0.023	0.035	28	1,124
1	2.50	922	0.000	0.016	0.009	0.017	13	1,144
RCU (Remote Control	167.00	12	1.855	1.801	1.075	0.360	4	15
Powerwave Allgon TT0	167.00	132	1.855	1.801	1.075	0.360	41	164
Ericsson RRUS 11 B2	167.00	304	1.855	1.801	1.075	0.360	95	377
KMW AM-X-CD-17-65-00	167.00	31	1.855	1.801	1.075	0.360	10	38
Powerwave Allgon P90	167.00	90	1.855	1.801	1.075	0.360	28	112
Kathrein Scala 800-1	167.00	110	1.855	1.801	1.075	0.360	34	137
Raycap DC6-48-60-18-	162.00	32	1.746	1.303	0.887	0.289	8	39
Stand-Off	157.00	225	1.640	0.906	0.725	0.225	44	279
Andrew DBXNH-6565A-	157.00	103	1.640	0.906	0.725	0.225	20	127
Stand-Off	146.00	225	1.418	0.319	0.450	0.107	21	279
Antel BXA-70063/6CF	146.00	51	1.418	0.319	0.450	0.107	5	63
VZW Unused Reserve:	146.00	1,096	1.418	0.319	0.450	0.107	101	1,360
E-911 GPS	136.00	5	1.230	0.035	0.278	0.027	0	6
RFS ATMAA1412D-1A20	136.00	39	1.230	0.035	0.278	0.027	1	48
Ericsson RRUS 11 B12	136.00	152	1.230	0.035	0.278	0.027	4	189
Ericsson RRUS 11 B2	136.00	152	1.230	0.035	0.278	0.027	4	189
RFS APXV18-206516S-C	136.00	56	1.230	0.035	0.278	0.027	1	70
Commscope LNX-	136.00	131	1.230	0.035	0.278	0.027	3	163
Flat T-Arm	136.00	750	1.230	0.035	0.278	0.027	18	931
		23,840	64.533	26.343	22.812	6.616	1,175	29,580

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
46	167.78	78	1.873	1.889	1.107	0.372	25	67
45	166.00	121	1.833	1.693	1.035	0.345	36	104
44	163.50	182	1.778	1.441	0.940	0.310	49	156
43	161.00	121	1.724	1.216	0.852	0.275	29	104
42	159.28	87	1.688	1.076	0.796	0.253	19	75
41	157.78	74	1.656	0.962	0.749	0.234	15	64
40	156.00	116	1.619	0.838	0.696	0.212	21	100
39	152.50	297	1.547	0.623	0.600	0.172	44	255
38	148.00	244	1.457	0.401	0.493	0.126	27	210
37	145.50	67	1.408	0.300	0.440	0.102	6	58
36	144.11	120	1.381	0.250	0.413	0.090	9	103
35	141.62	353	1.334	0.171	0.367	0.069	21	303
34	140.01	1	1.304	0.126	0.340	0.056	0	1
33	138.00	276	1.267	0.077	0.308	0.041	10	237
32	135.50	73	1.221	0.026	0.271	0.024	2	62
31	132.50	369	1.168	-0.023	0.232	0.006	2	317
30	127.50	379	1.081	-0.080	0.176	-0.020	-7	325
29	122.50	388	0.998	-0.110	0.130	-0.040	-13	334
28	117.50	398	0.918	-0.121	0.095	-0.053	-18	342
27	112.50	408	0.842	-0.118	0.067	-0.059	-21	350
26	107.50	417	0.769	-0.105	0.045	-0.059	-21	359
25	102.50	427	0.699	-0.087	0.030	-0.052	-19	367

24	98.46	267	0.645	-0.069	0.020	-0.043	-10	230
23	95.96	320	0.613	-0.057	0.016	-0.035	-10	275
22	93.82	396	0.586	-0.048	0.013	-0.028	-9	340
21	91.32	288	0.555	-0.036	0.010	-0.018	-5	248
20	87.50	555	0.509	-0.020	0.007	-0.003	-2	477
19	82.50	568	0.453	0.001	0.006	0.016	8	488
18	77.50	580	0.400	0.018	0.007	0.032	16	499
17	72.50	593	0.350	0.033	0.009	0.044	23	510
16	67.50	606	0.303	0.045	0.012	0.053	28	521
15	62.50	619	0.260	0.054	0.016	0.057	31	532
14	57.50	632	0.220	0.060	0.021	0.060	33	543
13	53.23	455	0.188	0.064	0.025	0.060	24	391
12	50.73	372	0.171	0.066	0.027	0.060	19	319
11	48.06	1,001	0.154	0.068	0.030	0.059	52	860
10	45.56	175	0.138	0.069	0.032	0.059	9	150
9	42.50	793	0.120	0.070	0.034	0.058	40	682
8	37.50	809	0.094	0.071	0.038	0.057	40	695
7	32.50	825	0.070	0.072	0.041	0.056	40	709
6	27.50	842	0.050	0.071	0.042	0.055	40	723
5	22.50	858	0.034	0.069	0.041	0.053	39	737
4	17.50	874	0.020	0.064	0.038	0.050	38	751
3	12.50	890	0.010	0.055	0.032	0.045	35	765
2	7.50	906	0.004	0.040	0.023	0.035	28	778
1	2.50	922	0.000	0.016	0.009	0.017	13	792
RCU (Remote Control	167.00	12	1.855	1.801	1.075	0.360	4	10
Powerwave Allgon TT0	167.00	132	1.855	1.801	1.075	0.360	41	113
Ericsson RRUS 11 B2	167.00	304	1.855	1.801	1.075	0.360	95	261
KMW AM-X-CD-17-65-00	167.00	31	1.855	1.801	1.075	0.360	10	26
Powerwave Allgon P90	167.00	90	1.855	1.801	1.075	0.360	28	77
Kathrein Scala 800-1	167.00	110	1.855	1.801	1.075	0.360	34	95
Raycap DC6-48-60-18-	162.00	32	1.746	1.303	0.887	0.289	8	27
Stand-Off	157.00	225	1.640	0.906	0.725	0.225	44	193
Andrew DBXNH-6565A-	157.00	103	1.640	0.906	0.725	0.225	20	88
Stand-Off	146.00	225	1.418	0.319	0.450	0.107	21	193
Antel BXA-70063/6CF	146.00	51	1.418	0.319	0.450	0.107	5	44
VZW Unused Reserve:	146.00	1,096	1.418	0.319	0.450	0.107	101	942
E-911 GPS	136.00	5	1.230	0.035	0.278	0.027	0	4
RFS ATMAA1412D-1A20	136.00	39	1.230	0.035	0.278	0.027	1	34
Ericsson RRUS 11 B12	136.00	152	1.230	0.035	0.278	0.027	4	131
Ericsson RRUS 11 B2	136.00	152	1.230	0.035	0.278	0.027	4	131
RFS APXV18-206516S-C	136.00	56	1.230	0.035	0.278	0.027	1	48
Commscope LNX-	136.00	131	1.230	0.035	0.278	0.027	3	113
Flat T-Arm	136.00	750	1.230	0.035	0.278	0.027	18	644
		23,840	64.533	26.343	22.812	6.616	1,175	20,485

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.44	-1.17	0.00	-133.35	0.00	133.35	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.056
5.00	-27.31	-1.14	0.00	-127.52	0.00	127.52	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.055
10.00	-26.21	-1.12	0.00	-121.80	0.00	121.80	2,923.38	1,461.69	5,383.76	2,695.88	0.03	-0.03	0.054
15.00	-25.12	-1.08	0.00	-116.22	0.00	116.22	2,885.88	1,442.94	5,200.69	2,604.21	0.07	-0.04	0.053
20.00	-24.06	-1.05	0.00	-110.80	0.00	110.80	2,847.29	1,423.65	5,018.68	2,513.07	0.12	-0.06	0.053
25.00	-23.01	-1.02	0.00	-105.55	0.00	105.55	2,807.63	1,403.81	4,837.86	2,422.53	0.20	-0.08	0.052
30.00	-21.99	-0.98	0.00	-100.47	0.00	100.47	2,766.89	1,383.44	4,658.36	2,332.64	0.28	-0.09	0.051
35.00	-20.99	-0.94	0.00	-95.57	0.00	95.57	2,725.06	1,362.53	4,480.31	2,243.49	0.39	-0.11	0.050
40.00	-20.00	-0.91	0.00	-90.84	0.00	90.84	2,682.17	1,341.08	4,303.83	2,155.12	0.51	-0.12	0.050
45.00	-19.78	-0.90	0.00	-86.30	0.00	86.30	2,638.19	1,319.10	4,129.06	2,067.60	0.65	-0.14	0.049
46.12	-18.54	-0.85	0.00	-85.29	0.00	85.29	2,628.22	1,314.11	4,090.25	2,048.17	0.68	-0.14	0.049
50.00	-18.08	-0.83	0.00	-81.99	0.00	81.99	2,593.14	1,296.57	3,956.11	1,981.00	0.80	-0.16	0.048
51.46	-17.51	-0.81	0.00	-80.77	0.00	80.77	1,919.32	959.66	2,955.63	1,480.01	0.85	-0.16	0.064
55.00	-16.73	-0.78	0.00	-77.90	0.00	77.90	1,899.39	949.70	2,871.79	1,438.03	0.98	-0.18	0.063
60.00	-15.96	-0.75	0.00	-74.00	0.00	74.00	1,870.33	935.17	2,753.97	1,379.03	1.17	-0.20	0.062
65.00	-15.21	-0.73	0.00	-70.23	0.00	70.23	1,840.20	920.10	2,636.91	1,320.41	1.39	-0.22	0.061
70.00	-14.47	-0.71	0.00	-66.58	0.00	66.58	1,808.98	904.49	2,520.72	1,262.23	1.64	-0.24	0.061
75.00	-13.75	-0.70	0.00	-63.03	0.00	63.03	1,776.69	888.34	2,405.54	1,204.56	1.90	-0.27	0.060
80.00	-13.05	-0.69	0.00	-59.55	0.00	59.55	1,743.32	871.66	2,291.50	1,147.45	2.20	-0.29	0.059
85.00	-12.36	-0.69	0.00	-56.10	0.00	56.10	1,708.87	854.43	2,178.71	1,090.98	2.51	-0.32	0.059
90.00	-12.00	-0.70	0.00	-52.64	0.00	52.64	1,673.34	836.67	2,067.32	1,035.20	2.86	-0.34	0.058
92.65	-11.51	-0.71	0.00	-50.78	0.00	50.78	1,654.10	827.05	2,008.98	1,005.98	3.05	-0.36	0.057
95.00	-11.11	-0.72	0.00	-49.11	0.00	49.11	1,636.74	818.37	1,957.44	980.18	3.23	-0.37	0.057
96.93	-10.78	-0.73	0.00	-47.73	0.00	47.73	1,103.35	551.67	1,325.55	663.76	3.38	-0.38	0.082
100.00	-10.25	-0.75	0.00	-45.49	0.00	45.49	1,091.13	545.56	1,284.38	643.14	3.63	-0.40	0.080
105.00	-9.73	-0.77	0.00	-41.74	0.00	41.74	1,070.38	535.19	1,217.67	609.74	4.07	-0.43	0.078
110.00	-9.23	-0.80	0.00	-37.87	0.00	37.87	1,048.55	524.27	1,151.42	576.56	4.54	-0.47	0.074
115.00	-8.73	-0.82	0.00	-33.89	0.00	33.89	1,025.64	512.82	1,085.75	543.68	5.05	-0.50	0.071
120.00	-8.25	-0.83	0.00	-29.81	0.00	29.81	1,001.65	500.83	1,020.79	511.15	5.59	-0.54	0.067
125.00	-7.78	-0.84	0.00	-25.67	0.00	25.67	976.59	488.30	956.67	479.05	6.18	-0.57	0.062
130.00	-7.32	-0.83	0.00	-21.49	0.00	21.49	950.45	475.22	893.52	447.42	6.80	-0.61	0.056
135.00	-7.23	-0.83	0.00	-17.32	0.00	17.32	923.23	461.61	831.46	416.35	7.45	-0.64	0.049
136.00	-5.29	-0.77	0.00	-16.48	0.00	16.48	917.66	458.83	819.19	410.21	7.58	-0.64	0.046
140.00	-5.29	-0.77	0.00	-13.39	0.00	13.39	894.93	447.47	770.63	385.89	8.13	-0.66	0.041
140.02	-4.85	-0.75	0.00	-13.38	0.00	13.38	894.81	447.41	770.38	385.76	8.13	-0.66	0.040
143.22	-4.70	-0.74	0.00	-10.98	0.00	10.98	887.67	443.84	755.59	378.35	8.58	-0.68	0.034
145.00	-4.62	-0.73	0.00	-9.67	0.00	9.67	877.23	438.62	734.36	367.72	8.84	-0.69	0.032
146.00	-2.62	-0.55	0.00	-8.94	0.00	8.94	871.31	435.66	722.52	361.80	8.98	-0.69	0.028
150.00	-2.25	-0.51	0.00	-6.72	0.00	6.72	847.20	423.60	675.75	338.38	9.57	-0.71	0.023
155.00	-2.11	-0.48	0.00	-4.19	0.00	4.19	816.09	408.05	618.71	309.81	10.32	-0.72	0.016
157.00	-1.61	-0.40	0.00	-3.22	0.00	3.22	800.73	400.36	594.40	297.64	10.62	-0.73	0.013
158.56	-1.50	-0.38	0.00	-2.60	0.00	2.60	787.55	393.77	574.90	287.88	10.86	-0.73	0.011
158.56	-1.50	-0.38	0.00	-2.60	0.00	2.60	551.08	275.54	275.63	180.95	10.86	-0.73	0.017
160.00	-1.35	-0.35	0.00	-2.05	0.00	2.05	551.08	275.54	275.63	180.95	11.08	-0.73	0.014
162.00	-1.09	-0.29	0.00	-1.36	0.00	1.36	551.08	275.54	275.63	180.95	11.39	-0.73	0.009
165.00	-0.94	-0.25	0.00	-0.50	0.00	0.50	551.08	275.54	275.63	180.95	11.85	-0.74	0.004
167.00	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	12.16	-0.74	0.000
168.56	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	12.40	-0.74	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

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 (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-19.69	-1.16	0.00	-130.46	0.00	130.46	2,995.17	1,497.58	5,752.58	2,880.56	0.00	0.00	0.052
5.00	-18.91	-1.14	0.00	-124.64	0.00	124.64	2,959.81	1,479.91	5,567.76	2,788.02	0.01	-0.01	0.051
10.00	-18.15	-1.11	0.00	-118.94	0.00	118.94	2,923.38	1,461.69	5,383.76	2,695.88	0.03	-0.03	0.050
15.00	-17.40	-1.08	0.00	-113.39	0.00	113.39	2,885.88	1,442.94	5,200.69	2,604.21	0.07	-0.04	0.050
20.00	-16.66	-1.04	0.00	-108.01	0.00	108.01	2,847.29	1,423.65	5,018.68	2,513.07	0.12	-0.06	0.049
25.00	-15.94	-1.00	0.00	-102.81	0.00	102.81	2,807.63	1,403.81	4,837.86	2,422.53	0.19	-0.07	0.048
30.00	-15.23	-0.97	0.00	-97.79	0.00	97.79	2,766.89	1,383.44	4,658.36	2,332.64	0.28	-0.09	0.047
35.00	-14.53	-0.93	0.00	-92.95	0.00	92.95	2,725.06	1,362.53	4,480.31	2,243.49	0.38	-0.10	0.047
40.00	-13.85	-0.89	0.00	-88.30	0.00	88.30	2,682.17	1,341.08	4,303.83	2,155.12	0.50	-0.12	0.046
45.00	-13.70	-0.89	0.00	-83.83	0.00	83.83	2,638.19	1,319.10	4,129.06	2,067.60	0.63	-0.14	0.046
46.12	-12.84	-0.83	0.00	-82.84	0.00	82.84	2,628.22	1,314.11	4,090.25	2,048.17	0.66	-0.14	0.045
50.00	-12.52	-0.82	0.00	-79.61	0.00	79.61	2,593.14	1,296.57	3,956.11	1,981.00	0.78	-0.15	0.045
51.46	-12.13	-0.79	0.00	-78.42	0.00	78.42	1,919.32	959.66	2,955.63	1,480.01	0.83	-0.16	0.059
55.00	-11.59	-0.76	0.00	-75.61	0.00	75.61	1,899.39	949.70	2,871.79	1,438.03	0.95	-0.17	0.059
60.00	-11.05	-0.73	0.00	-71.79	0.00	71.79	1,870.33	935.17	2,753.97	1,379.03	1.15	-0.19	0.058
65.00	-10.53	-0.71	0.00	-68.12	0.00	68.12	1,840.20	920.10	2,636.91	1,320.41	1.36	-0.21	0.057
70.00	-10.02	-0.69	0.00	-64.58	0.00	64.58	1,808.98	904.49	2,520.72	1,262.23	1.59	-0.24	0.057
75.00	-9.52	-0.67	0.00	-61.14	0.00	61.14	1,776.69	888.34	2,405.54	1,204.56	1.85	-0.26	0.056
80.00	-9.04	-0.67	0.00	-57.78	0.00	57.78	1,743.32	871.66	2,291.50	1,147.45	2.14	-0.28	0.056
85.00	-8.56	-0.67	0.00	-54.44	0.00	54.44	1,708.87	854.43	2,178.71	1,090.98	2.45	-0.31	0.055
90.00	-8.31	-0.68	0.00	-51.09	0.00	51.09	1,673.34	836.67	2,067.32	1,035.20	2.78	-0.33	0.054
92.65	-7.97	-0.68	0.00	-49.31	0.00	49.31	1,654.10	827.05	2,008.98	1,005.98	2.97	-0.35	0.054
95.00	-7.70	-0.69	0.00	-47.69	0.00	47.69	1,636.74	818.37	1,957.44	980.18	3.15	-0.36	0.053
96.93	-7.47	-0.70	0.00	-46.35	0.00	46.35	1,103.35	551.67	1,325.55	663.76	3.29	-0.37	0.077
100.00	-7.10	-0.72	0.00	-44.19	0.00	44.19	1,091.13	545.56	1,284.38	643.14	3.54	-0.39	0.075
105.00	-6.74	-0.75	0.00	-40.56	0.00	40.56	1,070.38	535.19	1,217.67	609.74	3.96	-0.42	0.073
110.00	-6.39	-0.77	0.00	-36.83	0.00	36.83	1,048.55	524.27	1,151.42	576.56	4.42	-0.45	0.070
115.00	-6.05	-0.79	0.00	-32.98	0.00	32.98	1,025.64	512.82	1,085.75	543.68	4.91	-0.49	0.067
120.00	-5.71	-0.80	0.00	-29.03	0.00	29.03	1,001.65	500.83	1,020.79	511.15	5.44	-0.52	0.062
125.00	-5.38	-0.81	0.00	-25.02	0.00	25.02	976.59	488.30	956.67	479.05	6.01	-0.56	0.058
130.00	-5.07	-0.81	0.00	-20.97	0.00	20.97	950.45	475.22	893.52	447.42	6.61	-0.59	0.052
135.00	-5.00	-0.81	0.00	-16.93	0.00	16.93	923.23	461.61	831.46	416.35	7.24	-0.62	0.046
136.00	-3.66	-0.75	0.00	-16.13	0.00	16.13	917.66	458.83	819.19	410.21	7.37	-0.63	0.043
140.00	-3.66	-0.75	0.00	-13.12	0.00	13.12	894.93	447.47	770.63	385.89	7.91	-0.65	0.038
140.02	-3.36	-0.73	0.00	-13.10	0.00	13.10	894.81	447.41	770.38	385.76	7.91	-0.65	0.038
143.22	-3.26	-0.72	0.00	-10.77	0.00	10.77	887.67	443.84	755.59	378.35	8.35	-0.66	0.032
145.00	-3.20	-0.71	0.00	-9.49	0.00	9.49	877.23	438.62	734.36	367.72	8.60	-0.67	0.029
146.00	-1.81	-0.54	0.00	-8.77	0.00	8.77	871.31	435.66	722.52	361.80	8.74	-0.67	0.026
150.00	-1.56	-0.50	0.00	-6.60	0.00	6.60	847.20	423.60	675.75	338.38	9.31	-0.69	0.021
155.00	-1.46	-0.47	0.00	-4.12	0.00	4.12	816.09	408.05	618.71	309.81	10.04	-0.70	0.015
157.00	-1.11	-0.39	0.00	-3.17	0.00	3.17	800.73	400.36	594.40	297.64	10.33	-0.71	0.012
158.56	-1.04	-0.37	0.00	-2.55	0.00	2.55	787.55	393.77	574.90	287.88	10.57	-0.71	0.010
158.56	-1.04	-0.37	0.00	-2.55	0.00	2.55	551.08	275.54	275.63	180.95	10.57	-0.71	0.016
160.00	-0.93	-0.34	0.00	-2.02	0.00	2.02	551.08	275.54	275.63	180.95	10.78	-0.71	0.013
162.00	-0.75	-0.28	0.00	-1.34	0.00	1.34	551.08	275.54	275.63	180.95	11.08	-0.72	0.009
165.00	-0.65	-0.25	0.00	-0.49	0.00	0.49	551.08	275.54	275.63	180.95	11.53	-0.72	0.004
167.00	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	11.83	-0.72	0.000
168.56	0.00	0.00	0.00	0.00	0.00	0.00	551.08	275.54	275.63	180.95	12.07	-0.72	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	18.94	0.00	28.57	0.00	0.00	2276.19	96.93	0.99
0.9D + 1.6W	18.27	0.00	21.42	0.00	0.00	2161.71	96.93	0.94
1.2D + 1.0Di + 1.0Wi	3.98	0.00	57.27	0.00	0.00	502.08	96.93	0.24
(1.2 + 0.2Sds) * DL + E ELFM	0.93	0.00	28.44	0.00	0.00	126.02	96.93	0.07
(1.2 + 0.2Sds) * DL + E EMAM	1.17	0.00	28.44	0.00	0.00	133.35	96.93	0.08
(0.9 - 0.2Sds) * DL + E ELFM	0.93	0.00	19.69	0.00	0.00	123.55	96.93	0.06
(0.9 - 0.2Sds) * DL + E EMAM	1.16	0.00	19.69	0.00	0.00	130.46	96.93	0.08
1.0D + 1.0W	4.75	0.00	23.84	0.00	0.00	567.50	96.93	0.26

Base Summary

Reactions

Original Design			Analysis			
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment Design %
2,398.50	23.00	23.60	2,276.19	57.27	18.94	94.90

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	2.500	61.000	Round	0	0.00	9.323	510.94	655.54	0.78

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression Force (kip)	Compression Allow (kip)	Compression Ratio	Tension Force (kip)	Tension Allow (kip)	Tension Ratio
55.00	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	127.74	260.00	0.50	120.58	260.00	0.47