STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

VIA ELECTRONIC MAIL

November 26, 2019

Jennifer Iliades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379

RE: **EM-CING-092-191101** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 20 Antolini Road, New Hartford, Connecticut.

Dear Ms. Iliades:

The Connecticut Siting Council (Council) is in receipt of your correspondence of November 22, 2019 submitted in response to the Council's November 6, 2019 notification of an incomplete request for exempt modification with regard to the above-referenced matter.

The submission renders the request for exempt modification complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

Robidoux, Evan

From: Jennifer Iliades <jiliades@clinellc.com>
Sent: Friday, November 22, 2019 1:09 PM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for EM-CING-092-191101 (20 Antolini Road, New Hartford)
Attachments: STAMPED PDF. AT&T MOBILITY @ 411182 Nepaug CT, CT (OAA751878_C3_01). Structural Analysis (79%).pdf

Good afternoon,

Attached please find the requested revised structural analysis pursuant to your letter dated November 6, 2016. A hard copy is being sent out today.

Thank you,

CENTERLINE COMMUNICATIONS

Jennifer Iliades | Site Acquisition Consultant
750 West Center Street, Suite 301 | West Bridgewater, MA 02379
Phone: 978.944.1804 | Fax: 508.819.3017
jiliades@clinellc.com | www.centerlinecommunications.com

From: Robidoux, Evan <Evan.Robidoux@ct.gov>
Sent: Thursday, November 7, 2019 9:10 AM
To: Jennifer Iliades <jiliades@clinellc.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for EM-CING-092-191101 (20 Antolini Road, New Hartford)

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

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Structural Analysis Report

Structure	:	**145 ft Monopole**
ATC Site Name	:	**Nepaug CT, CT**
ATC Asset Number	:	**411182**
Engineering Number	:	**OAA751878_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**New Hartford Nepaug**
Carrier Site Number	:	**CT1117**
Site Location	:	**20 Antolini Road** **New Hartford, CT 06057-3326** **41.828100,-73.015700**
County	:	**Litchfield**
Date	:	**September 12, 2019**
Max Usage	:	**79%**
Result	:	**Pass**

Prepared By:
Mark Iakovenko
Engineer Intern

Mark Iakovenko

Reviewed By:

COA: PEC.0001553

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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 145 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	EEI Project #8859 Rev. 2, dated March 30, 2001
Foundation Drawing	URS Grenier Woodward Clyde Project #F301682.04, dated October 13, 2000
Geotechnical Report	Dr. Clarence Welti Site Location: 20 Antolini Road, New Hartford, CT., dated March 27, 2000

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 / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, 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

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
160.0	1	RFS PD620-2	Low Profile Platform	(1) 7/8" Coax	OTHER
155.0	1	Generic 12' Omni	Low Profile Platform	(1) 7/8" Coax	
151.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	Low Profile Platform	(7) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent 1900MHz RRH			
	3	RFS APXVSPP18-C-A20			
	3	Commscope DT465B-2XR			
	3	Alcatel-Lucent 800 MHz RRH			
	3	Alcatel-Lucent ALU 800MHz External Notch Filter			
	3	Alcatel-Lucent RRH2x50-08			
145.0	1	Generic GPS	T-Arm	(1) 7/8" Coax (12) 1 5/8" Coax	VERIZON WIRELESS
142.0	3	Amphenol Antel BXA-70040/6CF			
	6	Amphenol Antel LPA-80040-4CF-EDIN-X			
140.0	3	Amphenol Antel BXA-171040-8CF			
	6	Generic TTA			
125.0	1	Generic E-911 GPS	T-Arm	(18) 1 5/8" Coax (1) 1/2" Coax	T-MOBILE
	3	Commscope LNX-6515DS-A1M (43.7 lb)			
	6	RFS APX16DWV-16DWV-S-E-ACU			
	3	RFS ATMAA1412D-1A20			
	3	RFS ATM1900D-1CWA			
82.0	3	Powerwave Allgon 7770.00	Low Profile Platform w/ LTE 2C_3C_4C_5C_RETRO 2020 UPGRADE	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (1) 3" conduit (12) 7/8" Coax	AT&T MOBILITY
	3	Spinner 756529			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)			
	6	Powerwave Allgon LGP21401			
	6	Powerwave Allgon LGP21901			
52.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(2) 1/2" Coax	SPRINT NEXTEL
	1	PCTEL GPS-TMG-HR-26N	Low Profile Platform		

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
82.0	6	Ericsson RRUS 11 (Band 12)	-	-	AT&T MOBILITY
	1	Powerwave Allgon P65-17-XLH-RR (50 lbs)			
	2	KMW AM-X-CD-16-65-00T-RET			
	3	Powerwave Allgon 7770.00			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
82.0	3	Ericsson RRUS 4478 B14	Low Profile Platform w/ LTE 2C_3C_4C_5C_RETRO 2020 UPGRADE	(1) 0.45" (11.5mm) Fiber (3) 0.78" (19.7mm) 8 AWG 6 (2) 2" conduit	AT&T MOBILITY
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson Radio 8843 - B2 + B66A (w/ protruding items)			
	1	Raycap DC9-48-60-24-8C-EV			
	4	CCI DMP65R-BU6DA			
	2	CCI DMP65R-BU8D			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	29%	Pass
Shaft	47%	Pass
Base Plate	79%	Pass
Flanges	59%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,128.4	4,223.3	2,110.8	50%
Shear (Kips)	29.2	39.4	20.6	52%
* 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) (°)
82.0	Ericsson RRUS 4478 B14	AT&T MOBILITY	0.419	0.615
	Ericsson RRUS 4449 B5, B12			
	Ericsson Radio 8843 - B2 + B66A (w/ protruding items)			
	Raycap DC9-48-60-24-8C-EV			
	CCI DMP65R-BU6DA			
	CCI DMP65R-BU8D			

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

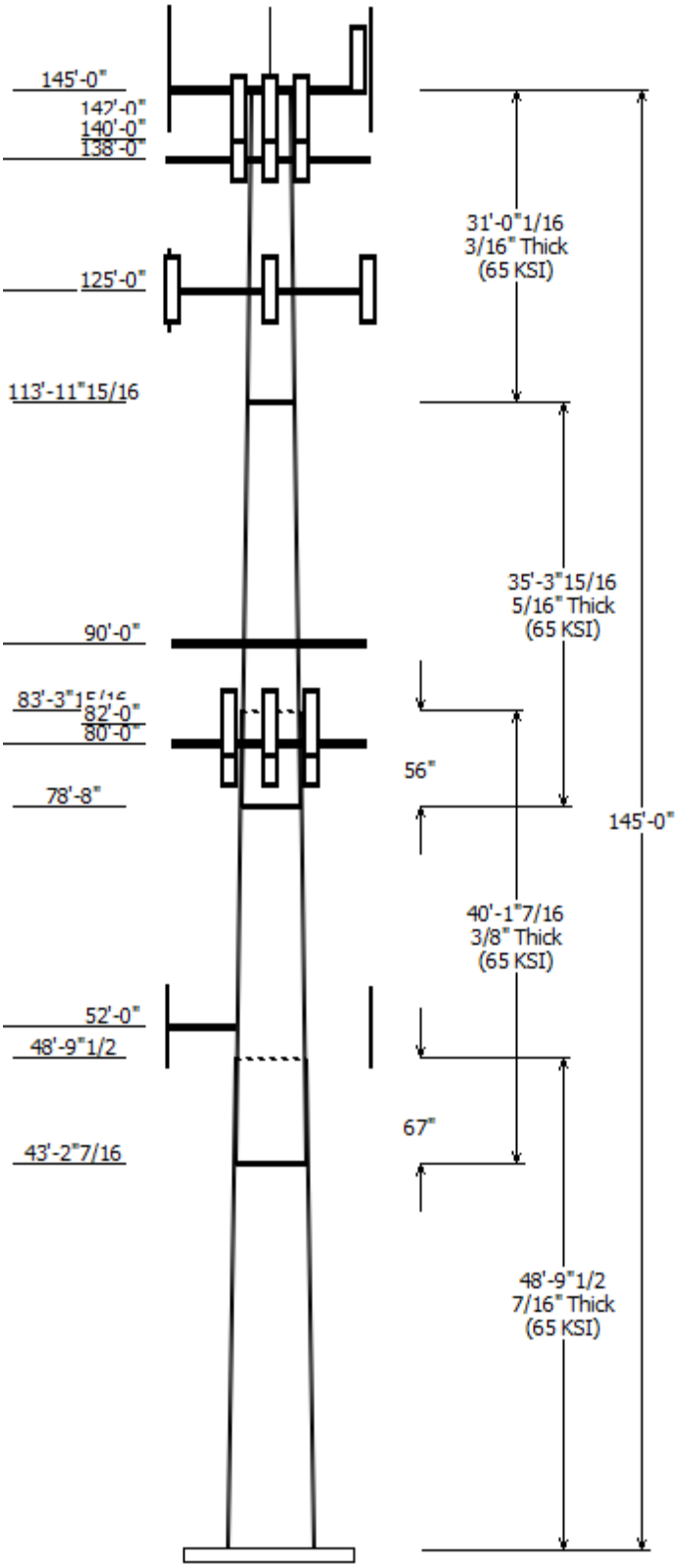
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

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

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

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



Job Information

Client :	AT&T MOBILITY		
Pole :	411182	Code:	ANSI/TIA-222-G
Location :	Nepaug CT, CT		
Description :	145' EEI Monopole	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	145.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.228448 (in/ft)		

Sections Properties

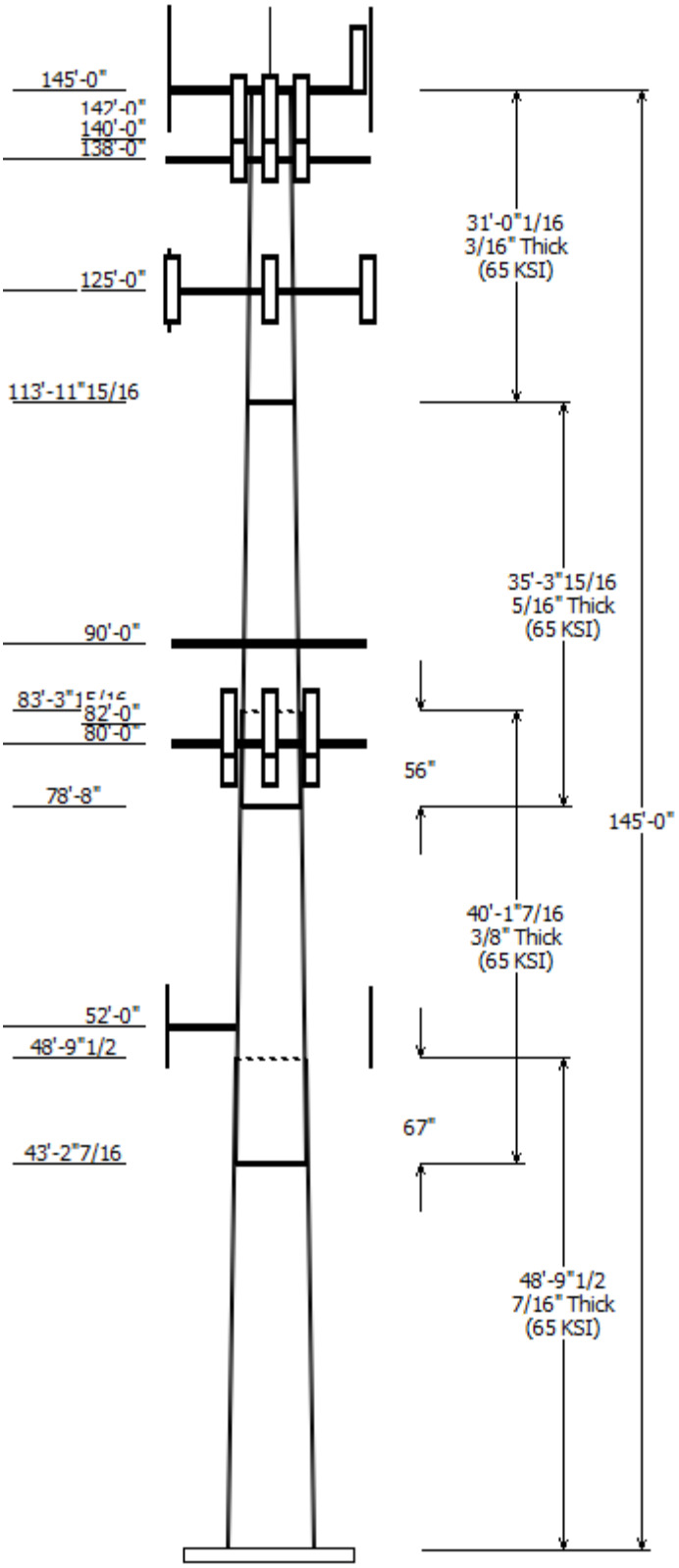
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	48.794	38.60	49.75	0.438		0.000	18 Sides	65
2	40.122	31.46	40.63	0.375	Slip Joint	67.063	18 Sides	65
3	35.328	25.08	33.15	0.313	Slip Joint	55.906	18 Sides	65
4	31.003	18.00	25.08	0.188	Butt Joint	0.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
145.000	155.000	1	RFS PD620-2
145.000	150.000	1	Generic 12' Omni
145.000	151.000	3	Commscope DT465B-2XR
145.000	151.000	3	RFS APXVSPP18-C-A20
145.000	151.000	3	Alcatel-Lucent TD-RRH8x20-25
145.000	151.000	3	Alcatel-Lucent 1900MHz RRH
145.000	151.000	3	Alcatel-Lucent 800 MHz RRH
145.000	151.000	3	Alcatel-Lucent RRH2x50-08
145.000	151.000	3	Alcatel-Lucent ALU 800MHz
145.000	145.000	1	Generic GPS
145.000	145.000	1	Flat Low Profile Platform
142.000	141.000	3	Amphenol Antel BXA-
142.000	141.000	6	Amphenol Antel LPA-80040-
140.000	141.000	3	Amphenol Antel BXA-171040-
140.000	141.000	6	Generic TTA
138.000	138.000	3	Round T-Arm
125.000	125.000	3	Round T-Arm
125.000	125.000	1	Generic E-911 GPS
125.000	125.000	3	Commscope LNX-6515DS-A1M
125.000	125.000	6	RFS APX16DWV-16DWV-S-E-
125.000	125.000	3	RFS ATMAA1412D-1A20
125.000	125.000	3	RFS ATM1900D-1CWA
90.000	90.000	1	Empty Flat Low Profile Platfor
82.000	82.000	2	CCI DMP65R-BU8D
82.000	82.000	4	CCI DMP65R-BU6DA
82.000	80.000	3	Powerwave Allgon 7770.00
82.000	82.000	1	Raycap DC9-48-60-24-8C-EV
82.000	82.000	3	Ericsson Radio 8843 - B2 + B66
82.000	82.000	3	Ericsson RRUS 4449 B5, B12
82.000	82.000	3	Ericsson RRUS 4478 B14
82.000	80.000	1	Raycap DC6-48-60-18-8F(32.8 lb
82.000	80.000	6	Powerwave Allgon LGP21401
82.000	80.000	6	Powerwave Allgon LGP21901
82.000	80.000	3	Spinner 756529
80.000	80.000	1	Flat Low Profile Platform
52.000	52.000	1	Stand-Off
52.000	52.000	1	PCTEL GPS-TMG-HR-26N
52.000	52.000	1	PCTEL GPS-TMG-HR-26N

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind



0.000	52.000	1/2" Coax	No
0.000	52.000	1/2" Coax	Yes
0.000	82.000	0.39" (10mm)	No
0.000	82.000	0.45" (11.5mm)	No
0.000	82.000	0.78" (19.7mm) 8	No
0.000	82.000	0.78" (19.7mm) 8	No
0.000	82.000	2" conduit	No
0.000	82.000	3" conduit	No
0.000	82.000	7/8" Coax	No
0.000	125.0	1 5/8" Coax	No
0.000	125.0	1 5/8" Coax	Yes
0.000	125.0	1/2" Coax	No
0.000	140.0	1 5/8" Coax	No
0.000	142.0	1 5/8" Coax	No
0.000	145.0	7/8" Coax	No
0.000	151.0	1 1/4" Hybriflex	No
0.000	151.0	1 1/4" Hybriflex	No
0.000	155.0	7/8" Coax	No
0.000	160.0	7/8" Coax	No

Load Cases

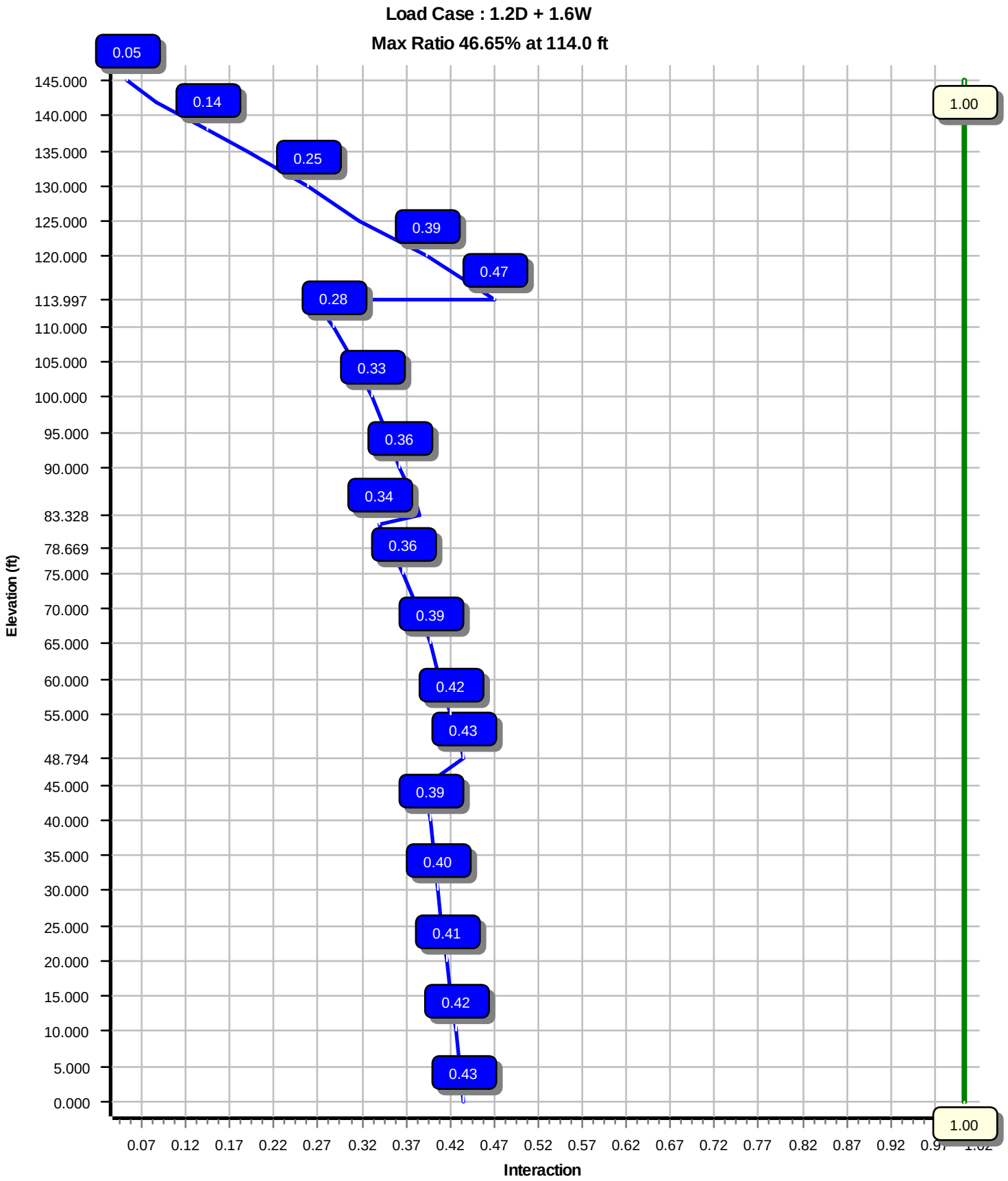
1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) 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	2108.29	20.55	43.51
0.9D + 1.6W	2086.88	20.53	32.63
1.2D + 1.0Di + 1.0Wi	480.09	4.72	71.71
(1.2 + 0.2Sds) * DL + E ELFM	172.52	1.55	43.17
(1.2 + 0.2Sds) * DL + E EMAM	225.47	1.97	43.17
(0.9 - 0.2Sds) * DL + E ELFM	170.42	1.55	30.02
(0.9 - 0.2Sds) * DL + E EMAM	222.39	1.97	30.02
1.0D + 1.0W	487.72	4.78	36.28

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 46.65% at 114.0 ft
0.05
0.14
0.25
0.39
0.47
0.28
0.33
0.36
0.34
0.36
0.39
0.42
0.43
0.39
0.40
0.41
0.42
0.43
1.00
1.00
145.000
140.000
135.000
130.000
125.000
120.000
113.997
110.000
105.000
100.000
95.000
90.000
83.328
78.669
75.000
70.000
65.000
60.000
55.000
48.794
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.07
0.12
0.17
0.22
0.27
0.32
0.37
0.42
0.47
0.52
0.57
0.62
0.67
0.72
0.77
0.82
0.87
0.92
Interaction

Site Number: 411182 | Code: ANSI/TIA-222-G |

Site Name: Nepaug CT, CT | Engineering Number:OAA751878_C3_01 | 9/12/2019 10:22:06 AM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	Litchfield County, CT	Height (ft) :	145
Code :	ANSI/TIA-222-G	Base Diameter (in) :	49.75
Shape :	18 Sides	Top Diameter (in) :	18.00
Pole Type :	Taper	Taper (in/ft) :	0.228
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 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):	2.11				
T_L (sec):	6	p:	1.3	C_s:	0.033
S_s:	0.181	S_1:	0.065	C_s Max:	0.033
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.193	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

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	48.794	0.4375	65		0.00	10,084	49.75	0.00	68.47	21037.5	18.29	113.71	38.60	48.79	53.00	9753.0	13.80	88.24	0.228448
2-18	40.122	0.3750	65	Slip	67.06	5,797	40.63	43.21	47.91	9809.0	17.34	108.35	31.46	83.33	37.00	4518.4	13.03	83.90	0.228448
3-18	35.328	0.3125	65	Slip	55.91	3,435	33.15	78.67	32.57	4438.4	16.94	106.09	25.08	114.00	24.57	1904.5	12.39	80.26	0.228448
4-18	31.003	0.1880	65	Butt	0.00	1,344	25.08	114.00	14.85	1163.1	21.76	133.42	18.00	145.00	10.63	426.0	15.12	95.74	0.228448
				Shaft Weight		20,659													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
145.00	Alcatel-Lucent ALU 800MHz	3	0.80	6.000	8.80	0.670	0.50	32.22	1.408	0.50
145.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	48.92	1.751	1.00
145.00	Alcatel-Lucent RRH2x50-08	3	0.80	6.000	52.90	1.700	0.50	131.73	2.847	0.50
145.00	Alcatel-Lucent 800 MHz RRH	3	0.80	6.000	53.00	2.130	0.67	151.18	3.429	0.67
145.00	Alcatel-Lucent 1900MHz RRH	3	0.80	6.000	44.00	3.260	0.72	188.91	4.843	0.72
145.00	Generic 12' Omni	1	0.80	5.000	40.00	3.600	1.00	160.76	9.315	1.00
145.00	Alcatel-Lucent TD-RRH8x20-25	3	0.80	6.000	70.00	4.050	0.61	195.71	5.818	0.61
145.00	RFS PD620-2	1	0.80	10.000	53.00	7.170	1.00	287.47	16.837	1.00
145.00	RFS APXVSPP18-C-A20	3	0.80	6.000	57.00	8.020	0.69	286.45	11.729	0.69
145.00	Commscope DT465B-2XR	3	0.80	6.000	58.00	9.100	0.69	326.73	12.785	0.69
145.00	Flat Low Profile Platform	1	0.75	0.000	1,500.00	26.100	1.00	2,361.80	51.495	1.00
142.00	Amphenol Antel LPA-80040-4CF-	6	0.75	-1.000	18.00	4.990	0.74	201.04	7.441	0.74
142.00	Amphenol Antel BXA-70040/6CF	3	0.75	-1.000	37.50	14.250	0.62	416.69	18.007	0.62
140.00	Generic TTA	6	1.00	1.000	10.00	1.200	0.50	57.75	2.162	0.50
140.00	Amphenol Antel BXA-171040-8CF	3	1.00	1.000	13.00	5.090	0.64	151.74	7.605	0.64
138.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	526.61	20.611	0.67
125.00	Generic E-911 GPS	1	0.80	0.000	5.00	0.580	1.00	38.55	1.159	1.00
125.00	RFS ATM1900D-1CWA	3	0.80	0.000	8.40	0.720	0.50	31.54	1.469	0.50
125.00	RFS ATMAA1412D-1A20	3	0.80	0.000	13.00	1.000	0.50	47.73	1.874	0.50
125.00	RFS APX16DWV-16DWV-S-E-ACU	6	0.80	0.000	39.60	6.080	0.60	146.98	8.775	0.60
125.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	523.64	20.494	0.67
125.00	Commscope LNX-6515DS-A1M	3	0.80	0.000	43.70	11.450	0.70	344.08	15.690	0.70
90.00	Empty Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,320.20	50.270	1.00
82.00	Spinner 756529	3	0.80	-2.000	1.50	0.140	0.50	8.31	0.499	0.50
82.00	Powerwave Allgon LGP21901	6	0.80	-2.000	5.50	0.200	0.50	15.14	0.601	0.50
82.00	Powerwave Allgon LGP21401	6	0.80	-2.000	14.10	1.100	0.50	45.44	1.993	0.50
82.00	Raycap DC6-48-60-18-8F(32.8	1	0.80	-2.000	32.80	1.470	1.00	110.30	2.347	1.00
82.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.90	1.840	0.50	129.36	2.966	0.50
82.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.970	0.50	151.96	3.142	0.50
82.00	Ericsson Radio 8843 - B2 + B66A	3	0.80	0.000	75.00	1.980	0.50	164.86	3.155	0.50
82.00	Raycap DC9-48-60-24-8C-EV	1	0.80	0.000	16.00	4.790	1.00	178.18	6.639	1.00
82.00	Powerwave Allgon 7770.00	3	0.80	-2.000	35.00	5.510	0.65	214.36	6.858	0.65
82.00	CCI DMP65R-BU6DA	4	0.80	0.000	79.40	12.710	0.63	403.00	16.214	0.63
82.00	CCI DMP65R-BU8D	2	0.80	0.000	95.70	17.870	0.72	522.67	22.499	0.72
80.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,312.21	50.034	1.00
52.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	6.41	0.306	1.00
52.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	6.41	0.306	1.00
52.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	158.49	4.880	1.00
Totals	Num Loadings:38	105			9,395.30			25,516.63		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier

0.00	160.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	155.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	Other
0.00	151.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	151.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	145.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	142.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	140.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	125.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	125.00	6	1 5/8" Coax	1.98	0.82	N	6	0.00	0.00	90	0.00	Y	T-MOBILE
0.00	125.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	82.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	82.00	1	0.45" (11.5mm) Fiber	0.45	0.08	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	82.00	3	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	82.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	82.00	2	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	82.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	82.00	12	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	52.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	52.00	1	1/2" Coax	0.63	0.15	N	1	0.00	0.00	90	0.00	Y	SPRINT NEXTEL

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		0.4375	49.750	68.474	21,037.5	18.29	113.71	79.9	832.9	0.0	0.0
5.00		0.4375	48.608	66.888	19,609.2	17.83	111.10	80.4	794.6	0.0	1,151.5
10.00		0.4375	47.466	65.302	18,247.0	17.37	108.49	81.0	757.2	0.0	1,124.5
15.00		0.4375	46.323	63.716	16,949.5	16.91	105.88	81.5	720.7	0.0	1,097.5
20.00		0.4375	45.181	62.130	15,715.0	16.45	103.27	82.1	685.1	0.0	1,070.6
25.00		0.4375	44.039	60.544	14,541.9	15.99	100.66	82.6	650.4	0.0	1,043.6
30.00		0.4375	42.897	58.958	13,428.7	15.53	98.05	82.6	616.6	0.0	1,016.6
35.00		0.4375	41.754	57.371	12,373.8	15.07	95.44	82.6	583.7	0.0	989.6
40.00		0.4375	40.612	55.785	11,375.6	14.60	92.83	82.6	551.7	0.0	962.6
43.21	Bot - Section 2	0.4375	39.880	54.768	10,764.8	14.31	91.15	82.6	531.7	0.0	603.0
45.00		0.4375	39.470	54.199	10,432.7	14.14	90.22	82.6	520.6	0.0	623.7
48.79	Top - Section 1	0.3750	39.353	46.392	8,905.0	16.74	104.94	81.7	445.7	0.0	1,297.6
50.00		0.3750	39.078	46.064	8,717.6	16.61	104.21	81.9	439.4	0.0	189.7
52.00		0.3750	38.621	45.520	8,412.5	16.40	102.99	82.1	429.0	0.0	311.6
55.00		0.3750	37.935	44.705	7,968.3	16.07	101.16	82.5	413.7	0.0	460.5
60.00		0.3750	36.793	43.345	7,263.2	15.54	98.11	82.6	388.8	0.0	749.0
65.00		0.3750	35.651	41.986	6,601.0	15.00	95.07	82.6	364.7	0.0	725.9
70.00		0.3750	34.509	40.626	5,980.3	14.46	92.02	82.6	341.3	0.0	702.8
75.00		0.3750	33.366	39.267	5,399.8	13.93	88.98	82.6	318.7	0.0	679.6
78.67	Bot - Section 3	0.3750	32.528	38.269	4,998.6	13.53	86.74	82.6	302.7	0.0	484.0
80.00		0.3750	32.224	37.907	4,858.1	13.39	85.93	82.6	296.9	0.0	319.3
82.00		0.3750	31.767	37.363	4,652.0	13.17	84.71	82.6	288.4	0.0	474.2
83.33	Top - Section 2	0.3125	32.089	31.517	4,020.7	16.34	102.68	82.2	246.8	0.0	311.2
85.00		0.3125	31.707	31.138	3,877.5	16.13	101.46	82.4	240.9	0.0	178.2
90.00		0.3125	30.565	30.005	3,469.5	15.48	97.81	82.6	223.6	0.0	520.1
95.00		0.3125	29.422	28.872	3,091.1	14.84	94.15	82.6	206.9	0.0	500.9
100.0		0.3125	28.280	27.739	2,741.3	14.19	90.50	82.6	190.9	0.0	481.6
105.0		0.3125	27.138	26.607	2,419.0	13.55	86.84	82.6	175.6	0.0	462.3
110.0		0.3125	25.996	25.474	2,123.0	12.90	83.19	82.6	160.9	0.0	443.0
114.0	Top - Section 3	0.3125	25.082	24.568	1,904.5	12.39	80.26	82.6	149.5	0.0	340.3
114.0	Bot - Section 4	0.1880	25.082	14.854	1,163.1	21.76	133.42	75.8	91.3	0.0	
115.0		0.1880	24.853	14.718	1,131.3	21.55	132.20	76.1	89.7	0.0	50.4
120.0		0.1880	23.711	14.036	981.3	20.48	126.12	77.3	81.5	0.0	244.6
125.0		0.1880	22.569	13.355	845.2	19.40	120.05	78.6	73.8	0.0	233.0
130.0		0.1880	21.427	12.673	722.2	18.33	113.97	79.8	66.4	0.0	221.4
135.0		0.1880	20.284	11.991	611.9	17.26	107.90	81.1	59.4	0.0	209.8
138.0		0.1880	19.599	11.582	551.4	16.62	104.25	81.9	55.4	0.0	120.3
140.0		0.1880	19.142	11.310	513.4	16.19	101.82	82.4	52.8	0.0	77.9
142.0		0.1880	18.685	11.037	477.1	15.76	99.39	82.6	50.3	0.0	76.0
145.0		0.1880	18.000	10.628	426.0	15.12	95.74	82.6	46.6	0.0	110.6
											20,659.4

Site Number: 411182 Code: ANSI/TIA-222-G

Site Name: Nepaug CT, CT Engineering Number:OAA751878_C3_01 9/12/2019 10:22:06 AM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 93 mph with No Ice 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

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		175.2	0.0					0.0	0.0	175.2	0.0	0.0	0.0
5.00		346.4	1,381.8					0.0	329.8	346.4	1,711.6	0.0	0.0
10.00		338.3	1,349.4					0.0	329.8	338.3	1,679.3	0.0	0.0
15.00		330.1	1,317.1					0.0	329.8	330.1	1,646.9	0.0	0.0
20.00		322.0	1,284.7					0.0	329.8	322.0	1,614.5	0.0	0.0
25.00		313.9	1,252.3					0.0	329.8	313.9	1,582.1	0.0	0.0
30.00		309.3	1,219.9					0.0	329.8	309.3	1,549.7	0.0	0.0
35.00		311.0	1,187.5					0.0	329.8	311.0	1,517.3	0.0	0.0
40.00		257.6	1,155.1					0.0	329.8	257.6	1,485.0	0.0	0.0
43.21	Bot - Section 2	158.8	723.6					0.0	211.5	158.8	935.0	0.0	0.0
45.00		180.1	748.4					0.0	118.4	180.1	866.8	0.0	0.0
48.79	Top - Section 1	161.2	1,557.2					0.0	250.3	161.2	1,807.4	0.0	0.0
50.00		103.4	227.6					0.0	79.5	103.4	307.1	0.0	0.0
52.00	Appurtenance(s)	161.1	374.0	96.5	0.0	0.0	121.4	0.0	131.9	257.6	627.3	0.0	0.0
55.00		257.1	552.6					0.0	196.8	257.1	749.4	0.0	0.0
60.00		319.8	898.8					0.0	328.0	319.8	1,226.9	0.0	0.0
65.00		317.0	871.1					0.0	328.0	317.0	1,199.1	0.0	0.0
70.00		313.5	843.3					0.0	328.0	313.5	1,171.3	0.0	0.0
75.00		268.6	815.6					0.0	328.0	268.6	1,143.6	0.0	0.0
78.67	Bot - Section 3	154.2	580.9					0.0	240.7	154.2	821.6	0.0	0.0
80.00	Appurtenance(s)	103.2	383.1	895.9	0.0	0.0	1,800.0	0.0	87.3	999.0	2,270.4	0.0	0.0
82.00	Appurtenance(s)	102.6	569.1	2,418.3	0.0	-896.5	1,683.1	0.0	131.2	2,520.9	2,383.4	0.0	0.0
83.33	Top - Section 2	91.9	373.4					0.0	52.2	91.9	425.6	0.0	0.0
85.00		201.8	213.9					0.0	65.7	201.8	279.6	0.0	0.0
90.00	Appurtenance(s)	298.3	624.2	926.5	0.0	0.0	1,800.0	0.0	196.4	1,224.9	2,620.6	0.0	0.0
95.00		291.7	601.0					0.0	196.4	291.7	797.5	0.0	0.0
100.00		284.5	577.9					0.0	196.4	284.5	774.4	0.0	0.0
105.00		276.8	554.8					0.0	196.4	276.8	751.2	0.0	0.0
110.00		242.5	531.7					0.0	196.4	242.5	728.1	0.0	0.0
114.00	Top - Section 3	132.3	408.4					0.0	157.0	132.3	565.5	0.0	0.0
115.00		154.1	60.5					0.0	39.4	154.1	99.9	0.0	0.0
120.00		251.3	293.5					0.0	196.4	251.3	490.0	0.0	0.0
125.00	Appurtenance(s)	242.0	279.6	2,101.6	0.0	0.0	1,425.5	0.0	196.4	2,343.6	1,901.5	0.0	0.0
130.00		232.3	265.7					0.0	107.0	232.3	372.7	0.0	0.0
135.00		179.5	251.8					0.0	107.0	179.5	358.8	0.0	0.0
138.00	Appurtenance(s)	108.6	144.4	586.5	0.0	0.0	900.0	0.0	64.2	695.1	1,108.6	0.0	0.0
140.00	Appurtenance(s)	84.8	93.5	539.7	0.0	539.7	118.8	0.0	42.8	624.5	255.1	0.0	0.0
142.00	Appurtenance(s)	103.4	91.3	1,472.9	0.0	-1,472.9	264.6	0.0	31.0	1,576.3	386.8	0.0	0.0
145.00	Appurtenance(s)	61.4	132.7	3,089.8	0.0	14,374.1	3,160.9	0.0	28.8	3,151.2	3,322.4	0.0	0.0
								Totals:		20,669.2	43,533.9	0.00	0.00

Load Case: 1.2D + 1.6W 93 mph with No Ice 24 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	-43.51	-20.55	0.00	-2,108.29	0.00	2,108.29	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.431
5.00	-41.75	-20.30	0.00	-2,005.55	0.00	2,005.55	4,841.97	2,420.99	9,572.23	4,793.23	0.07	-0.14	0.427
10.00	-40.02	-20.06	0.00	-1,904.05	0.00	1,904.05	4,758.98	2,379.49	9,183.06	4,598.35	0.30	-0.28	0.423
15.00	-38.32	-19.81	0.00	-1,803.77	0.00	1,803.77	4,674.44	2,337.22	8,798.83	4,405.95	0.67	-0.43	0.418
20.00	-36.66	-19.57	0.00	-1,704.70	0.00	1,704.70	4,588.36	2,294.18	8,419.76	4,216.14	1.19	-0.57	0.412
25.00	-35.03	-19.33	0.00	-1,606.83	0.00	1,606.83	4,498.09	2,249.05	8,041.37	4,026.66	1.87	-0.72	0.407
30.00	-33.44	-19.09	0.00	-1,510.16	0.00	1,510.16	4,380.25	2,190.13	7,623.52	3,817.43	2.71	-0.87	0.403
35.00	-31.87	-18.84	0.00	-1,414.70	0.00	1,414.70	4,262.42	2,131.21	7,216.83	3,613.78	3.71	-1.03	0.399
40.00	-30.35	-18.63	0.00	-1,320.48	0.00	1,320.48	4,144.58	2,072.29	6,821.28	3,415.71	4.87	-1.19	0.394
43.21	-29.39	-18.49	0.00	-1,260.77	0.00	1,260.77	4,069.03	2,034.51	6,573.54	3,291.66	5.71	-1.29	0.390
45.00	-28.50	-18.33	0.00	-1,227.60	0.00	1,227.60	4,026.74	2,013.37	6,436.88	3,223.22	6.20	-1.35	0.388
48.79	-26.67	-18.17	0.00	-1,158.04	0.00	1,158.04	3,411.63	1,705.82	5,454.59	2,731.35	7.33	-1.47	0.432
50.00	-26.35	-18.08	0.00	-1,136.13	0.00	1,136.13	3,393.84	1,696.92	5,387.43	2,697.72	7.70	-1.51	0.429
52.00	-25.70	-17.85	0.00	-1,099.97	0.00	1,099.97	3,364.13	1,682.06	5,276.62	2,642.23	8.35	-1.59	0.424
55.00	-24.92	-17.63	0.00	-1,046.43	0.00	1,046.43	3,319.09	1,659.55	5,111.79	2,559.69	9.39	-1.70	0.416
60.00	-23.65	-17.35	0.00	-958.27	0.00	958.27	3,220.32	1,610.16	4,807.35	2,407.25	11.26	-1.87	0.406
65.00	-22.41	-17.06	0.00	-871.53	0.00	871.53	3,119.32	1,559.66	4,509.03	2,257.87	13.32	-2.05	0.393
70.00	-21.19	-16.77	0.00	-786.22	0.00	786.22	3,018.31	1,509.16	4,220.27	2,113.27	15.56	-2.23	0.379
75.00	-20.02	-16.51	0.00	-702.38	0.00	702.38	2,917.31	1,458.66	3,941.06	1,973.46	18.00	-2.41	0.363
78.67	-19.18	-16.35	0.00	-641.81	0.00	641.81	2,843.19	1,421.59	3,742.24	1,873.90	19.90	-2.54	0.349
80.00	-16.94	-15.27	0.00	-620.05	0.00	620.05	2,816.31	1,408.15	3,671.40	1,838.43	20.61	-2.59	0.343
82.00	-14.66	-12.65	0.00	-589.52	0.00	589.52	2,775.90	1,387.95	3,566.22	1,785.76	21.71	-2.66	0.335
83.33	-14.23	-12.56	0.00	-572.71	0.00	572.71	2,331.02	1,165.51	3,037.65	1,521.08	22.46	-2.70	0.383
85.00	-13.93	-12.37	0.00	-551.72	0.00	551.72	2,310.11	1,155.05	2,973.86	1,489.14	23.42	-2.76	0.377
90.00	-11.34	-11.05	0.00	-489.87	0.00	489.87	2,229.24	1,114.62	2,764.32	1,384.22	26.41	-2.96	0.359
95.00	-10.52	-10.76	0.00	-434.59	0.00	434.59	2,145.07	1,072.54	2,558.49	1,281.15	29.61	-3.14	0.344
100.00	-9.73	-10.46	0.00	-380.82	0.00	380.82	2,060.90	1,030.45	2,360.62	1,182.06	33.00	-3.33	0.327
105.00	-8.97	-10.17	0.00	-328.52	0.00	328.52	1,976.73	988.37	2,170.71	1,086.97	36.59	-3.52	0.307
110.00	-8.23	-9.90	0.00	-277.68	0.00	277.68	1,892.56	946.28	1,988.77	995.86	40.37	-3.69	0.283
114.00	-7.66	-9.74	0.00	-238.10	0.00	238.10	1,825.27	912.63	1,849.04	925.89	43.52	-3.83	0.261
114.00	-7.66	-9.74	0.00	-238.10	0.00	238.10	1,013.43	506.71	1,036.97	519.26	43.52	-3.83	0.466
115.00	-7.54	-9.60	0.00	-228.33	0.00	228.33	1,007.45	503.72	1,021.30	511.41	44.32	-3.87	0.454
120.00	-7.03	-9.35	0.00	-180.32	0.00	180.32	976.71	488.36	943.94	472.67	48.51	-4.12	0.389
125.00	-5.28	-6.89	0.00	-133.57	0.00	133.57	944.43	472.21	868.07	434.68	52.96	-4.35	0.313
130.00	-4.91	-6.65	0.00	-99.12	0.00	99.12	910.60	455.30	793.90	397.54	57.62	-4.55	0.255
135.00	-4.55	-6.45	0.00	-65.90	0.00	65.90	875.23	437.61	721.66	361.37	62.47	-4.71	0.188
138.00	-3.50	-5.67	0.00	-46.56	0.00	46.56	853.26	426.63	679.33	340.17	65.45	-4.79	0.141
140.00	-3.30	-5.02	0.00	-34.69	0.00	34.69	838.31	419.15	651.57	326.27	67.47	-4.83	0.110
142.00	-3.04	-3.42	0.00	-24.64	0.00	24.64	820.01	410.00	621.83	311.38	69.50	-4.86	0.083
145.00	0.00	-3.15	0.00	-14.37	0.00	14.37	789.63	394.81	576.38	288.62	72.56	-4.90	0.050

Site Number: 411182 Code: ANSI/TIA-222-G

Site Name: Nepaug CT, CT Engineering Number:OAA751878_C3_01 9/12/2019 10:22:10 AM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 93 mph with No Ice (Reduced DL) — 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

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		175.2	0.0					0.0	0.0	175.2	0.0	0.0	0.0
5.00		346.4	1,036.4					0.0	247.4	346.4	1,283.7	0.0	0.0
10.00		338.3	1,012.1					0.0	247.4	338.3	1,259.4	0.0	0.0
15.00		330.1	987.8					0.0	247.4	330.1	1,235.2	0.0	0.0
20.00		322.0	963.5					0.0	247.4	322.0	1,210.9	0.0	0.0
25.00		313.9	939.2					0.0	247.4	313.9	1,186.6	0.0	0.0
30.00		309.3	914.9					0.0	247.4	309.3	1,162.3	0.0	0.0
35.00		311.0	890.6					0.0	247.4	311.0	1,138.0	0.0	0.0
40.00		257.6	866.4					0.0	247.4	257.6	1,113.7	0.0	0.0
43.21	Bot - Section 2	158.8	542.7					0.0	158.6	158.8	701.3	0.0	0.0
45.00		180.1	561.3					0.0	88.8	180.1	650.1	0.0	0.0
48.79	Top - Section 1	161.2	1,167.9					0.0	187.7	161.2	1,355.6	0.0	0.0
50.00		103.4	170.7					0.0	59.7	103.4	230.4	0.0	0.0
52.00	Appurtenance(s)	161.1	280.5	96.5	0.0	0.0	91.1	0.0	98.9	257.6	470.5	0.0	0.0
55.00		257.1	414.5					0.0	147.6	257.1	562.1	0.0	0.0
60.00		319.8	674.1					0.0	246.0	319.8	920.1	0.0	0.0
65.00		317.0	653.3					0.0	246.0	317.0	899.3	0.0	0.0
70.00		313.5	632.5					0.0	246.0	313.5	878.5	0.0	0.0
75.00		268.6	611.7					0.0	246.0	268.6	857.7	0.0	0.0
78.67	Bot - Section 3	154.2	435.6					0.0	180.5	154.2	616.2	0.0	0.0
80.00	Appurtenance(s)	103.2	287.4	895.9	0.0	0.0	1,350.0	0.0	65.5	999.0	1,702.8	0.0	0.0
82.00	Appurtenance(s)	102.6	426.8	2,418.3	0.0	-896.5	1,262.3	0.0	98.4	2,520.9	1,787.5	0.0	0.0
83.33	Top - Section 2	91.9	280.0					0.0	39.1	91.9	319.2	0.0	0.0
85.00		201.8	160.4					0.0	49.3	201.8	209.7	0.0	0.0
90.00	Appurtenance(s)	298.3	468.1	926.5	0.0	0.0	1,350.0	0.0	147.3	1,224.9	1,965.5	0.0	0.0
95.00		291.7	450.8					0.0	147.3	291.7	598.1	0.0	0.0
100.00		284.5	433.4					0.0	147.3	284.5	580.8	0.0	0.0
105.00		276.8	416.1					0.0	147.3	276.8	563.4	0.0	0.0
110.00		242.5	398.7					0.0	147.3	242.5	546.1	0.0	0.0
114.00	Top - Section 3	132.3	306.3					0.0	117.8	132.3	424.1	0.0	0.0
115.00		154.1	45.4					0.0	29.5	154.1	74.9	0.0	0.0
120.00		251.3	220.1					0.0	147.3	251.3	367.5	0.0	0.0
125.00	Appurtenance(s)	242.0	209.7	2,101.6	0.0	0.0	1,069.1	0.0	147.3	2,343.6	1,426.1	0.0	0.0
130.00		232.3	199.3					0.0	80.2	232.3	279.5	0.0	0.0
135.00		179.5	188.8					0.0	80.2	179.5	269.1	0.0	0.0
138.00	Appurtenance(s)	108.6	108.3	586.5	0.0	0.0	675.0	0.0	48.1	695.1	831.4	0.0	0.0
140.00	Appurtenance(s)	84.8	70.1	539.7	0.0	539.7	89.1	0.0	32.1	624.5	191.3	0.0	0.0
142.00	Appurtenance(s)	103.4	68.4	1,472.9	0.0	-1,472.9	198.4	0.0	23.2	1,576.3	290.1	0.0	0.0
145.00	Appurtenance(s)	61.4	99.5	3,089.8	0.0	14,374.1	2,370.7	0.0	21.6	3,151.2	2,491.8	0.0	0.0
								Totals:		20,669.2	32,650.4	0.00	0.00

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 24 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	-32.63	-20.53	0.00	-2,086.88	0.00	2,086.88	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.425
5.00	-31.29	-20.26	0.00	-1,984.21	0.00	1,984.21	4,841.97	2,420.99	9,572.23	4,793.23	0.07	-0.14	0.420
10.00	-29.99	-19.99	0.00	-1,882.90	0.00	1,882.90	4,758.98	2,379.49	9,183.06	4,598.35	0.29	-0.28	0.416
15.00	-28.70	-19.73	0.00	-1,782.94	0.00	1,782.94	4,674.44	2,337.22	8,798.83	4,405.95	0.66	-0.42	0.411
20.00	-27.44	-19.47	0.00	-1,684.30	0.00	1,684.30	4,588.36	2,294.18	8,419.76	4,216.14	1.18	-0.57	0.406
25.00	-26.21	-19.21	0.00	-1,586.98	0.00	1,586.98	4,498.09	2,249.05	8,041.37	4,026.66	1.85	-0.71	0.400
30.00	-25.00	-18.95	0.00	-1,490.95	0.00	1,490.95	4,380.25	2,190.13	7,623.52	3,817.43	2.68	-0.86	0.396
35.00	-23.82	-18.68	0.00	-1,396.21	0.00	1,396.21	4,262.42	2,131.21	7,216.83	3,613.78	3.67	-1.02	0.392
40.00	-22.67	-18.45	0.00	-1,302.80	0.00	1,302.80	4,144.58	2,072.29	6,821.28	3,415.71	4.82	-1.17	0.387
43.21	-21.95	-18.31	0.00	-1,243.64	0.00	1,243.64	4,069.03	2,034.51	6,573.54	3,291.66	5.64	-1.28	0.383
45.00	-21.27	-18.15	0.00	-1,210.79	0.00	1,210.79	4,026.74	2,013.37	6,436.88	3,223.22	6.13	-1.33	0.381
48.79	-19.90	-17.98	0.00	-1,141.92	0.00	1,141.92	3,411.63	1,705.82	5,454.59	2,731.35	7.24	-1.45	0.424
50.00	-19.65	-17.89	0.00	-1,120.24	0.00	1,120.24	3,393.84	1,696.92	5,387.43	2,697.72	7.61	-1.49	0.421
52.00	-19.16	-17.65	0.00	-1,084.46	0.00	1,084.46	3,364.13	1,682.06	5,276.62	2,642.23	8.26	-1.57	0.416
55.00	-18.56	-17.43	0.00	-1,031.50	0.00	1,031.50	3,319.09	1,659.55	5,111.79	2,559.69	9.28	-1.67	0.409
60.00	-17.60	-17.13	0.00	-944.36	0.00	944.36	3,220.32	1,610.16	4,807.35	2,407.25	11.12	-1.85	0.398
65.00	-16.66	-16.84	0.00	-858.70	0.00	858.70	3,119.32	1,559.66	4,509.03	2,257.87	13.16	-2.03	0.386
70.00	-15.74	-16.54	0.00	-774.52	0.00	774.52	3,018.31	1,509.16	4,220.27	2,113.27	15.37	-2.20	0.372
75.00	-14.85	-16.28	0.00	-691.82	0.00	691.82	2,917.31	1,458.66	3,941.06	1,973.46	17.77	-2.38	0.356
78.67	-14.22	-16.12	0.00	-632.10	0.00	632.10	2,843.19	1,421.59	3,742.24	1,873.90	19.65	-2.51	0.342
80.00	-12.55	-15.06	0.00	-610.65	0.00	610.65	2,816.31	1,408.15	3,671.40	1,838.43	20.36	-2.55	0.337
82.00	-10.86	-12.47	0.00	-580.54	0.00	580.54	2,775.90	1,387.95	3,566.22	1,785.76	21.44	-2.62	0.329
83.33	-10.54	-12.37	0.00	-563.98	0.00	563.98	2,331.02	1,165.51	3,037.65	1,521.08	22.18	-2.67	0.375
85.00	-10.31	-12.18	0.00	-543.29	0.00	543.29	2,310.11	1,155.05	2,973.86	1,489.14	23.12	-2.73	0.369
90.00	-8.37	-10.89	0.00	-482.38	0.00	482.38	2,229.24	1,114.62	2,764.32	1,384.22	26.08	-2.92	0.352
95.00	-7.76	-10.59	0.00	-427.93	0.00	427.93	2,145.07	1,072.54	2,558.49	1,281.15	29.23	-3.10	0.338
100.00	-7.16	-10.30	0.00	-374.97	0.00	374.97	2,060.90	1,030.45	2,360.62	1,182.06	32.58	-3.29	0.321
105.00	-6.58	-10.01	0.00	-323.47	0.00	323.47	1,976.73	988.37	2,170.71	1,086.97	36.12	-3.47	0.301
110.00	-6.03	-9.75	0.00	-273.42	0.00	273.42	1,892.56	946.28	1,988.77	995.86	39.84	-3.64	0.278
114.00	-5.60	-9.60	0.00	-234.44	0.00	234.44	1,825.27	912.63	1,849.04	925.89	42.95	-3.78	0.256
114.00	-5.60	-9.60	0.00	-234.44	0.00	234.44	1,013.43	506.71	1,036.97	519.26	42.95	-3.78	0.457
115.00	-5.51	-9.46	0.00	-224.82	0.00	224.82	1,007.45	503.72	1,021.30	511.41	43.75	-3.81	0.445
120.00	-5.12	-9.20	0.00	-177.54	0.00	177.54	976.71	488.36	943.94	472.67	47.88	-4.07	0.381
125.00	-3.85	-6.77	0.00	-131.54	0.00	131.54	944.43	472.21	868.07	434.68	52.26	-4.29	0.307
130.00	-3.56	-6.53	0.00	-97.67	0.00	97.67	910.60	455.30	793.90	397.54	56.85	-4.48	0.250
135.00	-3.30	-6.34	0.00	-65.02	0.00	65.02	875.23	437.61	721.66	361.37	61.63	-4.64	0.184
138.00	-2.52	-5.58	0.00	-46.01	0.00	46.01	853.26	426.63	679.33	340.17	64.58	-4.72	0.138
140.00	-2.38	-4.94	0.00	-34.31	0.00	34.31	838.31	419.15	651.57	326.27	66.56	-4.76	0.108
142.00	-2.22	-3.35	0.00	-24.42	0.00	24.42	820.01	410.00	621.83	311.38	68.56	-4.80	0.081
145.00	0.00	-3.15	0.00	-14.37	0.00	14.37	789.63	394.81	576.38	288.62	71.58	-4.83	0.050

Load Case: 1.2D + 1.0Di + 1.0Wi — 40 mph with 1.00 in Radial Ice — 23 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

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		39.7	0.0					0.0	0.0	39.7	0.0	0.0	0.0
5.00		78.8	1,867.2					12.8	403.1	91.6	2,270.4	0.0	0.0
10.00		77.5	1,880.8					13.7	412.2	91.2	2,293.0	0.0	0.0
15.00		76.0	1,864.3					14.2	416.9	90.2	2,281.1	0.0	0.0
20.00		74.4	1,837.9					14.5	420.1	88.9	2,258.0	0.0	0.0
25.00		72.8	1,806.4					14.7	422.7	87.6	2,229.1	0.0	0.0
30.00		72.0	1,771.6					14.9	424.8	87.0	2,196.4	0.0	0.0
35.00		72.7	1,734.7					15.5	426.6	88.2	2,161.2	0.0	0.0
40.00		60.4	1,696.0					16.3	428.2	76.7	2,124.2	0.0	0.0
43.21	Bot - Section 2	37.3	1,068.1					10.8	275.2	48.1	1,343.4	0.0	0.0
45.00		42.4	944.0					6.2	154.3	48.5	1,098.3	0.0	0.0
48.79	Top - Section 1	38.0	1,964.9					13.4	326.8	51.3	2,291.7	0.0	0.0
50.00		24.4	357.0					4.3	104.0	28.7	461.0	0.0	0.0
52.00	Appurtenance(s)	38.1	587.0	19.3	0.0	0.0	168.0	7.3	172.7	64.6	927.6	0.0	0.0
55.00		60.9	868.3					8.2	251.8	69.1	1,120.1	0.0	0.0
60.00		76.0	1,413.9					14.0	420.3	90.0	1,834.2	0.0	0.0
65.00		75.7	1,375.4					14.4	421.2	90.1	1,796.6	0.0	0.0
70.00		75.1	1,336.4					14.8	422.0	90.0	1,758.4	0.0	0.0
75.00		64.6	1,296.9					15.2	422.7	79.8	1,719.6	0.0	0.0
78.67	Bot - Section 3	37.2	927.9					11.4	310.6	48.6	1,238.5	0.0	0.0
80.00	Appurtenance(s)	24.9	510.6	198.6	0.0	0.0	2,312.2	4.2	112.7	227.7	2,935.5	0.0	0.0
82.00	Appurtenance(s)	24.8	758.5	376.9	0.0	-154.0	4,820.4	6.3	169.5	408.0	5,748.5	0.0	0.0
83.33	Top - Section 2	22.3	498.4					4.2	77.7	26.5	576.1	0.0	0.0
85.00		49.1	369.7					5.4	97.9	54.4	467.6	0.0	0.0
90.00	Appurtenance(s)	72.8	1,076.5	206.3	0.0	0.0	2,320.2	16.3	293.1	295.3	3,689.8	0.0	0.0
95.00		71.5	1,040.2					16.6	293.7	88.1	1,333.8	0.0	0.0
100.00		70.2	1,003.6					16.9	294.2	87.1	1,297.8	0.0	0.0
105.00		68.7	966.7					17.2	294.8	85.9	1,261.5	0.0	0.0
110.00		60.6	929.6					17.5	295.3	78.1	1,224.8	0.0	0.0
114.00	Top - Section 3	33.2	717.6					14.2	236.4	47.4	954.0	0.0	0.0
115.00		38.9	137.6					3.6	59.3	42.5	197.0	0.0	0.0
120.00		63.8	662.8					18.1	296.3	81.8	959.0	0.0	0.0
125.00	Appurtenance(s)	62.0	634.2	394.3	0.0	0.0	3,416.6	18.3	296.7	474.6	4,347.5	0.0	0.0
130.00		60.0	605.5					0.0	107.0	60.0	712.4	0.0	0.0
135.00		46.8	576.5					0.0	107.0	46.8	683.5	0.0	0.0
138.00	Appurtenance(s)	28.5	333.9	144.1	0.0	0.0	1,579.8	0.0	64.2	172.6	1,978.0	0.0	0.0
140.00	Appurtenance(s)	22.4	217.4	98.4	0.0	98.4	669.4	0.0	42.8	120.8	929.6	0.0	0.0
142.00	Appurtenance(s)	27.5	212.8	232.8	0.0	-232.8	2,017.0	0.0	31.0	260.3	2,260.8	0.0	0.0
145.00	Appurtenance(s)	16.4	309.4	613.9	0.0	2,767.0	6,412.4	0.0	28.8	630.3	6,750.5	0.0	0.0
								Totals:		4,738.31	71,710.4	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 1.00 in Radial Ice 23 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	-71.71	-4.72	0.00	-480.09	0.00	480.09	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.111
5.00	-69.44	-4.66	0.00	-456.50	0.00	456.50	4,841.97	2,420.99	9,572.23	4,793.23	0.02	-0.03	0.110
10.00	-67.14	-4.61	0.00	-433.18	0.00	433.18	4,758.98	2,379.49	9,183.06	4,598.35	0.07	-0.06	0.108
15.00	-64.86	-4.55	0.00	-410.13	0.00	410.13	4,674.44	2,337.22	8,798.83	4,405.95	0.15	-0.10	0.107
20.00	-62.60	-4.50	0.00	-387.36	0.00	387.36	4,588.36	2,294.18	8,419.76	4,216.14	0.27	-0.13	0.106
25.00	-60.37	-4.44	0.00	-364.87	0.00	364.87	4,498.09	2,249.05	8,041.37	4,026.66	0.43	-0.16	0.104
30.00	-58.17	-4.38	0.00	-342.67	0.00	342.67	4,380.25	2,190.13	7,623.52	3,817.43	0.62	-0.20	0.103
35.00	-56.00	-4.32	0.00	-320.76	0.00	320.76	4,262.42	2,131.21	7,216.83	3,613.78	0.84	-0.23	0.102
40.00	-53.88	-4.26	0.00	-299.17	0.00	299.17	4,144.58	2,072.29	6,821.28	3,415.71	1.11	-0.27	0.101
43.21	-52.53	-4.22	0.00	-285.50	0.00	285.50	4,069.03	2,034.51	6,573.54	3,291.66	1.30	-0.29	0.100
45.00	-51.43	-4.19	0.00	-277.93	0.00	277.93	4,026.74	2,013.37	6,436.88	3,223.22	1.41	-0.31	0.099
48.79	-49.14	-4.14	0.00	-262.04	0.00	262.04	3,411.63	1,705.82	5,454.59	2,731.35	1.67	-0.33	0.110
50.00	-48.68	-4.12	0.00	-257.04	0.00	257.04	3,393.84	1,696.92	5,387.43	2,697.72	1.75	-0.34	0.110
52.00	-47.75	-4.07	0.00	-248.81	0.00	248.81	3,364.13	1,682.06	5,276.62	2,642.23	1.90	-0.36	0.108
55.00	-46.63	-4.02	0.00	-236.61	0.00	236.61	3,319.09	1,659.55	5,111.79	2,559.69	2.13	-0.38	0.106
60.00	-44.79	-3.94	0.00	-216.53	0.00	216.53	3,220.32	1,610.16	4,807.35	2,407.25	2.56	-0.43	0.104
65.00	-42.99	-3.87	0.00	-196.80	0.00	196.80	3,119.32	1,559.66	4,509.03	2,257.87	3.02	-0.47	0.101
70.00	-41.23	-3.80	0.00	-177.45	0.00	177.45	3,018.31	1,509.16	4,220.27	2,113.27	3.53	-0.51	0.098
75.00	-39.51	-3.72	0.00	-158.47	0.00	158.47	2,917.31	1,458.66	3,941.06	1,973.46	4.09	-0.55	0.094
78.67	-38.27	-3.68	0.00	-144.81	0.00	144.81	2,843.19	1,421.59	3,742.24	1,873.90	4.52	-0.58	0.091
80.00	-35.34	-3.43	0.00	-139.92	0.00	139.92	2,816.31	1,408.15	3,671.40	1,838.43	4.68	-0.59	0.089
82.00	-29.59	-2.97	0.00	-133.07	0.00	133.07	2,775.90	1,387.95	3,566.22	1,785.76	4.93	-0.60	0.085
83.33	-29.02	-2.94	0.00	-129.13	0.00	129.13	2,331.02	1,165.51	3,037.65	1,521.08	5.10	-0.61	0.097
85.00	-28.55	-2.89	0.00	-124.21	0.00	124.21	2,310.11	1,155.05	2,973.86	1,489.14	5.31	-0.63	0.096
90.00	-24.86	-2.58	0.00	-109.74	0.00	109.74	2,229.24	1,114.62	2,764.32	1,384.22	5.99	-0.67	0.090
95.00	-23.53	-2.49	0.00	-96.87	0.00	96.87	2,145.07	1,072.54	2,558.49	1,281.15	6.72	-0.71	0.087
100.00	-22.23	-2.40	0.00	-84.42	0.00	84.42	2,060.90	1,030.45	2,360.62	1,182.06	7.48	-0.75	0.082
105.00	-20.97	-2.31	0.00	-72.42	0.00	72.42	1,976.73	988.37	2,170.71	1,086.97	8.29	-0.79	0.077
110.00	-19.74	-2.23	0.00	-60.85	0.00	60.85	1,892.56	946.28	1,988.77	995.86	9.15	-0.83	0.072
114.00	-18.79	-2.17	0.00	-51.94	0.00	51.94	1,825.27	912.63	1,849.04	925.89	9.86	-0.86	0.066
114.00	-18.79	-2.17	0.00	-51.94	0.00	51.94	1,013.43	506.71	1,036.97	519.26	9.86	-0.86	0.119
115.00	-18.59	-2.14	0.00	-49.76	0.00	49.76	1,007.45	503.72	1,021.30	511.41	10.04	-0.87	0.116
120.00	-17.63	-2.06	0.00	-39.06	0.00	39.06	976.71	488.36	943.94	472.67	10.98	-0.93	0.101
125.00	-13.29	-1.52	0.00	-28.77	0.00	28.77	944.43	472.21	868.07	434.68	11.98	-0.98	0.080
130.00	-12.58	-1.46	0.00	-21.16	0.00	21.16	910.60	455.30	793.90	397.54	13.02	-1.02	0.067
135.00	-11.89	-1.40	0.00	-13.87	0.00	13.87	875.23	437.61	721.66	361.37	14.11	-1.05	0.052
138.00	-9.92	-1.20	0.00	-9.66	0.00	9.66	853.26	426.63	679.33	340.17	14.78	-1.07	0.040
140.00	-8.99	-1.06	0.00	-7.16	0.00	7.16	838.31	419.15	651.57	326.27	15.23	-1.08	0.033
142.00	-6.74	-0.76	0.00	-5.04	0.00	5.04	820.01	410.00	621.83	311.38	15.68	-1.08	0.024
145.00	0.00	-0.63	0.00	-2.77	0.00	2.77	789.63	394.81	576.38	288.62	16.36	-1.09	0.010

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 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

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		40.8	0.0					0.0	0.0	40.8	0.0	0.0	0.0
5.00		80.6	1,151.5					0.0	274.9	80.6	1,426.4	0.0	0.0
10.00		78.7	1,124.5					0.0	274.9	78.7	1,399.4	0.0	0.0
15.00		76.8	1,097.5					0.0	274.9	76.8	1,372.4	0.0	0.0
20.00		74.9	1,070.6					0.0	274.9	74.9	1,345.4	0.0	0.0
25.00		73.1	1,043.6					0.0	274.9	73.1	1,318.4	0.0	0.0
30.00		72.0	1,016.6					0.0	274.9	72.0	1,291.4	0.0	0.0
35.00		72.4	989.6					0.0	274.9	72.4	1,264.5	0.0	0.0
40.00		60.0	962.6					0.0	274.9	60.0	1,237.5	0.0	0.0
43.21	Bot - Section 2	37.0	603.0					0.0	176.2	37.0	779.2	0.0	0.0
45.00		41.9	623.7					0.0	98.6	41.9	722.3	0.0	0.0
48.79	Top - Section 1	37.5	1,297.6					0.0	208.6	37.5	1,506.2	0.0	0.0
50.00		24.1	189.7					0.0	66.3	24.1	255.9	0.0	0.0
52.00	Appurtenance(s)	37.5	311.6	22.5	0.0	0.0	101.2	0.0	109.9	60.0	522.8	0.0	0.0
55.00		59.8	460.5					0.0	164.0	59.8	624.5	0.0	0.0
60.00		74.4	749.0					0.0	273.4	74.4	1,022.4	0.0	0.0
65.00		73.8	725.9					0.0	273.4	73.8	999.3	0.0	0.0
70.00		73.0	702.8					0.0	273.4	73.0	976.1	0.0	0.0
75.00		62.5	679.6					0.0	273.4	62.5	953.0	0.0	0.0
78.67	Bot - Section 3	35.9	484.0					0.0	200.6	35.9	684.6	0.0	0.0
80.00	Appurtenance(s)	24.0	319.3	208.5	0.0	0.0	1,500.0	0.0	72.8	232.5	1,892.0	0.0	0.0
82.00	Appurtenance(s)	23.9	474.2	562.9	0.0	-208.7	1,402.6	0.0	109.3	586.8	1,986.1	0.0	0.0
83.33	Top - Section 2	21.4	311.2					0.0	43.5	21.4	354.6	0.0	0.0
85.00		47.0	178.2					0.0	54.7	47.0	233.0	0.0	0.0
90.00	Appurtenance(s)	69.4	520.1	215.7	0.0	0.0	1,500.0	0.0	163.7	285.1	2,183.8	0.0	0.0
95.00		67.9	500.9					0.0	163.7	67.9	664.6	0.0	0.0
100.00		66.2	481.6					0.0	163.7	66.2	645.3	0.0	0.0
105.00		64.4	462.3					0.0	163.7	64.4	626.0	0.0	0.0
110.00		56.5	443.0					0.0	163.7	56.5	606.7	0.0	0.0
114.00	Top - Section 3	30.8	340.3					0.0	130.9	30.8	471.2	0.0	0.0
115.00		35.9	50.4					0.0	32.8	35.9	83.3	0.0	0.0
120.00		58.5	244.6					0.0	163.7	58.5	408.3	0.0	0.0
125.00	Appurtenance(s)	56.3	233.0	489.2	0.0	0.0	1,187.9	0.0	163.7	545.5	1,584.6	0.0	0.0
130.00		54.1	221.4					0.0	89.2	54.1	310.6	0.0	0.0
135.00		41.8	209.8					0.0	89.2	41.8	299.0	0.0	0.0
138.00	Appurtenance(s)	25.3	120.3	136.5	0.0	0.0	750.0	0.0	53.5	161.8	923.8	0.0	0.0
140.00	Appurtenance(s)	19.7	77.9	125.6	0.0	125.6	99.0	0.0	35.7	145.4	212.6	0.0	0.0
142.00	Appurtenance(s)	24.1	76.0	342.8	0.0	-342.8	220.5	0.0	25.8	366.9	322.4	0.0	0.0
145.00	Appurtenance(s)	14.3	110.6	719.2	0.0	3,345.7	2,634.1	0.0	24.0	733.5	2,768.7	0.0	0.0
								Totals:		4,811.02	36,278.2	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 23 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	-36.28	-4.78	0.00	-487.72	0.00	487.72	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.105
5.00	-34.85	-4.72	0.00	-463.82	0.00	463.82	4,841.97	2,420.99	9,572.23	4,793.23	0.02	-0.03	0.104
10.00	-33.45	-4.66	0.00	-440.23	0.00	440.23	4,758.98	2,379.49	9,183.06	4,598.35	0.07	-0.06	0.103
15.00	-32.07	-4.60	0.00	-416.93	0.00	416.93	4,674.44	2,337.22	8,798.83	4,405.95	0.15	-0.10	0.101
20.00	-30.72	-4.54	0.00	-393.94	0.00	393.94	4,588.36	2,294.18	8,419.76	4,216.14	0.28	-0.13	0.100
25.00	-29.40	-4.48	0.00	-371.25	0.00	371.25	4,498.09	2,249.05	8,041.37	4,026.66	0.43	-0.17	0.099
30.00	-28.11	-4.42	0.00	-348.85	0.00	348.85	4,380.25	2,190.13	7,623.52	3,817.43	0.63	-0.20	0.098
35.00	-26.84	-4.36	0.00	-326.74	0.00	326.74	4,262.42	2,131.21	7,216.83	3,613.78	0.86	-0.24	0.097
40.00	-25.60	-4.31	0.00	-304.93	0.00	304.93	4,144.58	2,072.29	6,821.28	3,415.71	1.13	-0.27	0.095
43.21	-24.82	-4.28	0.00	-291.12	0.00	291.12	4,069.03	2,034.51	6,573.54	3,291.66	1.32	-0.30	0.095
45.00	-24.10	-4.24	0.00	-283.44	0.00	283.44	4,026.74	2,013.37	6,436.88	3,223.22	1.43	-0.31	0.094
48.79	-22.59	-4.20	0.00	-267.36	0.00	267.36	3,411.63	1,705.82	5,454.59	2,731.35	1.69	-0.34	0.105
50.00	-22.33	-4.18	0.00	-262.29	0.00	262.29	3,393.84	1,696.92	5,387.43	2,697.72	1.78	-0.35	0.104
52.00	-21.81	-4.13	0.00	-253.93	0.00	253.93	3,364.13	1,682.06	5,276.62	2,642.23	1.93	-0.37	0.103
55.00	-21.18	-4.07	0.00	-241.56	0.00	241.56	3,319.09	1,659.55	5,111.79	2,559.69	2.17	-0.39	0.101
60.00	-20.16	-4.01	0.00	-221.19	0.00	221.19	3,220.32	1,610.16	4,807.35	2,407.25	2.60	-0.43	0.098
65.00	-19.16	-3.94	0.00	-201.16	0.00	201.16	3,119.32	1,559.66	4,509.03	2,257.87	3.08	-0.47	0.095
70.00	-18.18	-3.87	0.00	-181.46	0.00	181.46	3,018.31	1,509.16	4,220.27	2,113.27	3.60	-0.52	0.092
75.00	-17.22	-3.81	0.00	-162.11	0.00	162.11	2,917.31	1,458.66	3,941.06	1,973.46	4.16	-0.56	0.088
78.67	-16.54	-3.77	0.00	-148.14	0.00	148.14	2,843.19	1,421.59	3,742.24	1,873.90	4.60	-0.59	0.085
80.00	-14.65	-3.52	0.00	-143.12	0.00	143.12	2,816.31	1,408.15	3,671.40	1,838.43	4.76	-0.60	0.083
82.00	-12.67	-2.92	0.00	-136.07	0.00	136.07	2,775.90	1,387.95	3,566.22	1,785.76	5.02	-0.61	0.081
83.33	-12.31	-2.90	0.00	-132.19	0.00	132.19	2,331.02	1,165.51	3,037.65	1,521.08	5.19	-0.62	0.092
85.00	-12.08	-2.85	0.00	-127.35	0.00	127.35	2,310.11	1,155.05	2,973.86	1,489.14	5.41	-0.64	0.091
90.00	-9.90	-2.55	0.00	-113.08	0.00	113.08	2,229.24	1,114.62	2,764.32	1,384.22	6.10	-0.68	0.086
95.00	-9.23	-2.48	0.00	-100.33	0.00	100.33	2,145.07	1,072.54	2,558.49	1,281.15	6.84	-0.73	0.083
100.00	-8.58	-2.41	0.00	-87.92	0.00	87.92	2,060.90	1,030.45	2,360.62	1,182.06	7.63	-0.77	0.079
105.00	-7.96	-2.35	0.00	-75.85	0.00	75.85	1,976.73	988.37	2,170.71	1,086.97	8.45	-0.81	0.074
110.00	-7.35	-2.29	0.00	-64.12	0.00	64.12	1,892.56	946.28	1,988.77	995.86	9.33	-0.85	0.068
114.00	-6.88	-2.25	0.00	-54.99	0.00	54.99	1,825.27	912.63	1,849.04	925.89	10.06	-0.89	0.063
114.00	-6.88	-2.25	0.00	-54.99	0.00	54.99	1,013.43	506.71	1,036.97	519.26	10.06	-0.89	0.113
115.00	-6.79	-2.22	0.00	-52.73	0.00	52.73	1,007.45	503.72	1,021.30	511.41	10.24	-0.89	0.110
120.00	-6.39	-2.16	0.00	-41.65	0.00	41.65	976.71	488.36	943.94	472.67	11.21	-0.95	0.095
125.00	-4.81	-1.59	0.00	-30.86	0.00	30.86	944.43	472.21	868.07	434.68	12.24	-1.01	0.076
130.00	-4.50	-1.53	0.00	-22.91	0.00	22.91	910.60	455.30	793.90	397.54	13.31	-1.05	0.063
135.00	-4.20	-1.49	0.00	-15.24	0.00	15.24	875.23	437.61	721.66	361.37	14.44	-1.09	0.047
138.00	-3.28	-1.31	0.00	-10.77	0.00	10.77	853.26	426.63	679.33	340.17	15.13	-1.11	0.036
140.00	-3.07	-1.16	0.00	-8.03	0.00	8.03	838.31	419.15	651.57	326.27	15.59	-1.12	0.028
142.00	-2.75	-0.79	0.00	-5.71	0.00	5.71	820.01	410.00	621.83	311.38	16.06	-1.12	0.022
145.00	0.00	-0.73	0.00	-3.35	0.00	3.35	789.63	394.81	576.38	288.62	16.77	-1.13	0.012

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18	
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}):	0.19	
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):	2.11	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.80	
Total Unfactored Dead Load:	36.28	k
Seismic Base Shear (E):	1.55	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)
38	143.50	135	1,049	0.011	17	167
37	141.00	102	769	0.008	12	126
36	139.00	114	836	0.009	13	141
35	136.50	174	1,238	0.013	20	215
34	132.50	299	2,018	0.021	32	370
33	127.50	311	1,956	0.020	31	385
32	122.50	397	2,325	0.024	37	491
31	117.50	408	2,219	0.023	35	506
30	114.50	83	432	0.004	7	103
29	112.00	471	2,349	0.024	37	584
28	107.50	607	2,809	0.029	45	752
27	102.50	626	2,659	0.027	42	775
26	97.50	645	2,505	0.026	40	799
25	92.50	665	2,346	0.024	37	823
24	87.50	684	2,183	0.022	35	847
23	84.16	233	693	0.007	11	289
22	82.66	355	1,022	0.010	16	439
21	81.00	584	1,621	0.017	26	723
20	79.33	392	1,049	0.011	17	486
19	76.83	685	1,729	0.018	27	848
18	72.50	953	2,167	0.022	34	1,180
17	67.50	976	1,951	0.020	31	1,209
16	62.50	999	1,739	0.018	28	1,238

15	57.50	1,022	1,530	0.016	24	1,266
14	53.50	625	821	0.008	13	774
13	51.00	422	508	0.005	8	522
12	49.40	256	291	0.003	5	317
11	46.90	1,506	1,561	0.016	25	1,866
10	44.10	722	670	0.007	11	895
9	41.60	779	650	0.007	10	965
8	37.50	1,237	857	0.009	14	1,533
7	32.50	1,264	676	0.007	11	1,566
6	27.50	1,291	511	0.005	8	1,600
5	22.50	1,318	363	0.004	6	1,633
4	17.50	1,345	235	0.002	4	1,666
3	12.50	1,372	131	0.001	2	1,700
2	7.50	1,399	53	0.001	1	1,733
1	2.50	1,426	7	0.000	0	1,767
Alcatel-Lucent ALU 8	145.00	26	210	0.002	3	33
Generic GPS	145.00	10	79	0.001	1	12
Alcatel-Lucent RRH2x	145.00	159	1,261	0.013	20	197
Alcatel-Lucent 800 M	145.00	159	1,263	0.013	20	197
Alcatel-Lucent 1900M	145.00	132	1,049	0.011	17	163
Generic 12' Omni	145.00	40	318	0.003	5	50
Alcatel-Lucent TD-RR	145.00	210	1,668	0.017	26	260
RFS PD620-2	145.00	53	421	0.004	7	66
RFS APXVSPP18-C-A20	145.00	171	1,358	0.014	22	212
Commscope DT465B-2XR	145.00	174	1,382	0.014	22	216
Flat Low Profile Pla	145.00	1,500	11,915	0.122	189	1,858
Amphenol Antel LPA-8	142.00	108	826	0.008	13	134
Amphenol Antel BXA-7	142.00	112	861	0.009	14	139
Generic TTA	140.00	60	447	0.005	7	74
Amphenol Antel BXA-1	140.00	39	291	0.003	5	48
Round T-Arm	138.00	750	5,449	0.056	86	929
Generic E-911 GPS	125.00	5	30	0.000	0	6
RFS ATM1900D-1CWA	125.00	25	153	0.002	2	31
RFS ATMAA1412D-1A20	125.00	39	237	0.002	4	48
RFS APX16DWV-16DWV-S	125.00	238	1,444	0.015	23	294
Round T-Arm	125.00	750	4,558	0.047	72	929
Commscope LNX-6515DS	125.00	131	797	0.008	13	162
Empty Flat Low Profi	90.00	1,500	5,039	0.052	80	1,858
Spinner 756529	82.00	4	13	0.000	0	6
Powerwave Allgon LGP	82.00	33	94	0.001	1	41
Powerwave Allgon LGP	82.00	85	240	0.002	4	105
Raycap DC6-48-60-18-	82.00	33	93	0.001	1	41
Ericsson RRUS 4478 B	82.00	180	510	0.005	8	223
Ericsson RRUS 4449 B	82.00	213	605	0.006	10	264
Ericsson Radio 8843	82.00	225	639	0.007	10	279
Raycap DC9-48-60-24-	82.00	16	45	0.000	1	20
Powerwave Allgon 777	82.00	105	298	0.003	5	130
CCI DMP65R-BU6DA	82.00	318	902	0.009	14	393
CCI DMP65R-BU8D	82.00	191	544	0.006	9	237
Flat Low Profile Pla	80.00	1,500	4,074	0.042	65	1,858
PCTEL GPS-TMG-HR-26N	52.00	1	1	0.000	0	1
PCTEL GPS-TMG-HR-26N	52.00	1	1	0.000	0	1
Stand-Off	52.00	100	125	0.001	2	124
		36,278	97,768	1.000	1,551	44,935

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)
38	143.50	135	1,049	0.011	17	116

37	141.00	102	769	0.008	12	88
36	139.00	114	836	0.009	13	98
35	136.50	174	1,238	0.013	20	150
34	132.50	299	2,018	0.021	32	258
33	127.50	311	1,956	0.020	31	268
32	122.50	397	2,325	0.024	37	342
31	117.50	408	2,219	0.023	35	352
30	114.50	83	432	0.004	7	72
29	112.00	471	2,349	0.024	37	406
28	107.50	607	2,809	0.029	45	523
27	102.50	626	2,659	0.027	42	539
26	97.50	645	2,505	0.026	40	556
25	92.50	665	2,346	0.024	37	572
24	87.50	684	2,183	0.022	35	589
23	84.16	233	693	0.007	11	201
22	82.66	355	1,022	0.010	16	305
21	81.00	584	1,621	0.017	26	503
20	79.33	392	1,049	0.011	17	338
19	76.83	685	1,729	0.018	27	590
18	72.50	953	2,167	0.022	34	821
17	67.50	976	1,951	0.020	31	841
16	62.50	999	1,739	0.018	28	861
15	57.50	1,022	1,530	0.016	24	881
14	53.50	625	821	0.008	13	538
13	51.00	422	508	0.005	8	363
12	49.40	256	291	0.003	5	220
11	46.90	1,506	1,561	0.016	25	1,297
10	44.10	722	670	0.007	11	622
9	41.60	779	650	0.007	10	671
8	37.50	1,237	857	0.009	14	1,066
7	32.50	1,264	676	0.007	11	1,089
6	27.50	1,291	511	0.005	8	1,112
5	22.50	1,318	363	0.004	6	1,136
4	17.50	1,345	235	0.002	4	1,159
3	12.50	1,372	131	0.001	2	1,182
2	7.50	1,399	53	0.001	1	1,205
1	2.50	1,426	7	0.000	0	1,229
Alcatel-Lucent ALU 8	145.00	26	210	0.002	3	23
Generic GPS	145.00	10	79	0.001	1	9
Alcatel-Lucent RRH2x	145.00	159	1,261	0.013	20	137
Alcatel-Lucent 800 M	145.00	159	1,263	0.013	20	137
Alcatel-Lucent 1900M	145.00	132	1,049	0.011	17	114
Generic 12' Omni	145.00	40	318	0.003	5	34
Alcatel-Lucent TD-RR	145.00	210	1,668	0.017	26	181
RFS PD620-2	145.00	53	421	0.004	7	46
RFS APXVSPP18-C-A20	145.00	171	1,358	0.014	22	147
Commscope DT465B-2XR	145.00	174	1,382	0.014	22	150
Flat Low Profile Pla	145.00	1,500	11,915	0.122	189	1,292
Amphenol Antel LPA-8	142.00	108	826	0.008	13	93
Amphenol Antel BXA-7	142.00	112	861	0.009	14	97
Generic TTA	140.00	60	447	0.005	7	52
Amphenol Antel BXA-1	140.00	39	291	0.003	5	34
Round T-Arm	138.00	750	5,449	0.056	86	646
Generic E-911 GPS	125.00	5	30	0.000	0	4
RFS ATM1900D-1CWA	125.00	25	153	0.002	2	22
RFS ATMAA1412D-1A20	125.00	39	237	0.002	4	34
RFS APX16DWV-16DWV-S	125.00	238	1,444	0.015	23	205
Round T-Arm	125.00	750	4,558	0.047	72	646
Commscope LNX-6515DS	125.00	131	797	0.008	13	113
Empty Flat Low Profi	90.00	1,500	5,039	0.052	80	1,292
Spinner 756529	82.00	4	13	0.000	0	4
Powerwave Allgon LGP	82.00	33	94	0.001	1	28
Powerwave Allgon LGP	82.00	85	240	0.002	4	73
Raycap DC6-48-60-18-	82.00	33	93	0.001	1	28

Ericsson RRUS 4478 B	82.00	180	510	0.005	8	155
Ericsson RRUS 4449 B	82.00	213	605	0.006	10	183
Ericsson Radio 8843	82.00	225	639	0.007	10	194
Raycap DC9-48-60-24-	82.00	16	45	0.000	1	14
Powerwave Allgon 777	82.00	105	298	0.003	5	90
CCI DMP65R-BU6DA	82.00	318	902	0.009	14	274
CCI DMP65R-BU8D	82.00	191	544	0.006	9	165
Flat Low Profile Pla	80.00	1,500	4,074	0.042	65	1,292
PCTEL GPS-TMG-HR-26N	52.00	1	1	0.000	0	1
PCTEL GPS-TMG-HR-26N	52.00	1	1	0.000	0	1
Stand-Off	52.00	100	125	0.001	2	86
		36,278	97,768	1.000	1,551	31,250

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	-43.17	-1.55	0.00	-172.52	0.00	172.52	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.043
5.00	-41.43	-1.56	0.00	-164.75	0.00	164.75	4,841.97	2,420.99	9,572.23	4,793.23	0.01	-0.01	0.043
10.00	-39.73	-1.57	0.00	-156.94	0.00	156.94	4,758.98	2,379.49	9,183.06	4,598.35	0.02	-0.02	0.042
15.00	-38.07	-1.57	0.00	-149.11	0.00	149.11	4,674.44	2,337.22	8,798.83	4,405.95	0.05	-0.04	0.042
20.00	-36.43	-1.57	0.00	-141.25	0.00	141.25	4,588.36	2,294.18	8,419.76	4,216.14	0.10	-0.05	0.041
25.00	-34.83	-1.57	0.00	-133.40	0.00	133.40	4,498.09	2,249.05	8,041.37	4,026.66	0.15	-0.06	0.041
30.00	-33.27	-1.56	0.00	-125.55	0.00	125.55	4,380.25	2,190.13	7,623.52	3,817.43	0.22	-0.07	0.040
35.00	-31.73	-1.56	0.00	-117.73	0.00	117.73	4,262.42	2,131.21	7,216.83	3,613.78	0.31	-0.09	0.040
40.00	-30.77	-1.55	0.00	-109.95	0.00	109.95	4,144.58	2,072.29	6,821.28	3,415.71	0.40	-0.10	0.040
43.21	-29.87	-1.54	0.00	-104.98	0.00	104.98	4,069.03	2,034.51	6,573.54	3,291.66	0.47	-0.11	0.039
45.00	-28.01	-1.52	0.00	-102.21	0.00	102.21	4,026.74	2,013.37	6,436.88	3,223.22	0.51	-0.11	0.039
48.79	-27.69	-1.51	0.00	-96.46	0.00	96.46	3,411.63	1,705.82	5,454.59	2,731.35	0.61	-0.12	0.043
50.00	-27.17	-1.51	0.00	-94.63	0.00	94.63	3,393.84	1,696.92	5,387.43	2,697.72	0.64	-0.13	0.043
52.00	-26.27	-1.49	0.00	-91.62	0.00	91.62	3,364.13	1,682.06	5,276.62	2,642.23	0.69	-0.13	0.042
55.00	-25.00	-1.47	0.00	-87.14	0.00	87.14	3,319.09	1,659.55	5,111.79	2,559.69	0.78	-0.14	0.042
60.00	-23.77	-1.45	0.00	-79.78	0.00	79.78	3,220.32	1,610.16	4,807.35	2,407.25	0.93	-0.16	0.041
65.00	-22.56	-1.42	0.00	-72.54	0.00	72.54	3,119.32	1,559.66	4,509.03	2,257.87	1.10	-0.17	0.039
70.00	-21.38	-1.39	0.00	-65.44	0.00	65.44	3,018.31	1,509.16	4,220.27	2,113.27	1.29	-0.19	0.038
75.00	-20.53	-1.36	0.00	-58.51	0.00	58.51	2,917.31	1,458.66	3,941.06	1,973.46	1.49	-0.20	0.037
78.67	-20.04	-1.35	0.00	-53.52	0.00	53.52	2,843.19	1,421.59	3,742.24	1,873.90	1.65	-0.21	0.036
80.00	-17.46	-1.25	0.00	-51.73	0.00	51.73	2,816.31	1,408.15	3,671.40	1,838.43	1.71	-0.21	0.034
82.00	-15.28	-1.16	0.00	-49.23	0.00	49.23	2,775.90	1,387.95	3,566.22	1,785.76	1.80	-0.22	0.033
83.33	-15.00	-1.15	0.00	-47.69	0.00	47.69	2,331.02	1,165.51	3,037.65	1,521.08	1.86	-0.22	0.038
85.00	-14.15	-1.11	0.00	-45.77	0.00	45.77	2,310.11	1,155.05	2,973.86	1,489.14	1.94	-0.23	0.037
90.00	-11.47	-0.99	0.00	-40.20	0.00	40.20	2,229.24	1,114.62	2,764.32	1,384.22	2.19	-0.25	0.034
95.00	-10.67	-0.95	0.00	-35.26	0.00	35.26	2,145.07	1,072.54	2,558.49	1,281.15	2.46	-0.26	0.032
100.00	-9.89	-0.91	0.00	-30.52	0.00	30.52	2,060.90	1,030.45	2,360.62	1,182.06	2.74	-0.28	0.031
105.00	-9.14	-0.86	0.00	-25.99	0.00	25.99	1,976.73	988.37	2,170.71	1,086.97	3.03	-0.29	0.029
110.00	-8.56	-0.82	0.00	-21.69	0.00	21.69	1,892.56	946.28	1,988.77	995.86	3.35	-0.30	0.026
114.00	-8.46	-0.81	0.00	-18.41	0.00	18.41	1,825.27	912.63	1,849.04	925.89	3.61	-0.32	0.025
114.00	-8.46	-0.81	0.00	-18.41	0.00	18.41	1,013.43	506.71	1,036.97	519.26	3.61	-0.32	0.044
115.00	-7.95	-0.78	0.00	-17.60	0.00	17.60	1,007.45	503.72	1,021.30	511.41	3.67	-0.32	0.042
120.00	-7.46	-0.74	0.00	-13.71	0.00	13.71	976.71	488.36	943.94	472.67	4.02	-0.34	0.037
125.00	-5.60	-0.59	0.00	-10.00	0.00	10.00	944.43	472.21	868.07	434.68	4.38	-0.35	0.029
130.00	-5.23	-0.55	0.00	-7.07	0.00	7.07	910.60	455.30	793.90	397.54	4.76	-0.37	0.024
135.00	-5.02	-0.53	0.00	-4.31	0.00	4.31	875.23	437.61	721.66	361.37	5.15	-0.38	0.018
138.00	-3.95	-0.43	0.00	-2.71	0.00	2.71	853.26	426.63	679.33	340.17	5.39	-0.39	0.013
140.00	-3.70	-0.40	0.00	-1.86	0.00	1.86	838.31	419.15	651.57	326.27	5.56	-0.39	0.010
142.00	-3.26	-0.35	0.00	-1.06	0.00	1.06	820.01	410.00	621.83	311.38	5.72	-0.39	0.007
145.00	0.00	-0.33	0.00	0.00	0.00	0.00	789.63	394.81	576.38	288.62	5.96	-0.39	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	-30.02	-1.55	0.00	-170.42	0.00	170.42	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.040
5.00	-28.82	-1.56	0.00	-162.65	0.00	162.65	4,841.97	2,420.99	9,572.23	4,793.23	0.01	-0.01	0.040
10.00	-27.63	-1.56	0.00	-154.86	0.00	154.86	4,758.98	2,379.49	9,183.06	4,598.35	0.02	-0.02	0.039
15.00	-26.47	-1.56	0.00	-147.06	0.00	147.06	4,674.44	2,337.22	8,798.83	4,405.95	0.05	-0.03	0.039
20.00	-25.34	-1.56	0.00	-139.25	0.00	139.25	4,588.36	2,294.18	8,419.76	4,216.14	0.10	-0.05	0.039
25.00	-24.22	-1.56	0.00	-131.45	0.00	131.45	4,498.09	2,249.05	8,041.37	4,026.66	0.15	-0.06	0.038
30.00	-23.14	-1.55	0.00	-123.66	0.00	123.66	4,380.25	2,190.13	7,623.52	3,817.43	0.22	-0.07	0.038
35.00	-22.07	-1.54	0.00	-115.91	0.00	115.91	4,262.42	2,131.21	7,216.83	3,613.78	0.30	-0.08	0.037
40.00	-21.40	-1.53	0.00	-108.21	0.00	108.21	4,144.58	2,072.29	6,821.28	3,415.71	0.40	-0.10	0.037
43.21	-20.78	-1.52	0.00	-103.30	0.00	103.30	4,069.03	2,034.51	6,573.54	3,291.66	0.46	-0.11	0.036
45.00	-19.48	-1.50	0.00	-100.56	0.00	100.56	4,026.74	2,013.37	6,436.88	3,223.22	0.51	-0.11	0.036
48.79	-19.26	-1.50	0.00	-94.88	0.00	94.88	3,411.63	1,705.82	5,454.59	2,731.35	0.60	-0.12	0.040
50.00	-18.89	-1.49	0.00	-93.07	0.00	93.07	3,393.84	1,696.92	5,387.43	2,697.72	0.63	-0.12	0.040
52.00	-18.27	-1.47	0.00	-90.10	0.00	90.10	3,364.13	1,682.06	5,276.62	2,642.23	0.68	-0.13	0.040
55.00	-17.39	-1.45	0.00	-85.67	0.00	85.67	3,319.09	1,659.55	5,111.79	2,559.69	0.77	-0.14	0.039
60.00	-16.53	-1.43	0.00	-78.42	0.00	78.42	3,220.32	1,610.16	4,807.35	2,407.25	0.92	-0.15	0.038
65.00	-15.69	-1.40	0.00	-71.28	0.00	71.28	3,119.32	1,559.66	4,509.03	2,257.87	1.09	-0.17	0.037
70.00	-14.86	-1.36	0.00	-64.30	0.00	64.30	3,018.31	1,509.16	4,220.27	2,113.27	1.27	-0.18	0.035
75.00	-14.27	-1.34	0.00	-57.48	0.00	57.48	2,917.31	1,458.66	3,941.06	1,973.46	1.47	-0.20	0.034
78.67	-13.94	-1.32	0.00	-52.57	0.00	52.57	2,843.19	1,421.59	3,742.24	1,873.90	1.62	-0.21	0.033
80.00	-12.14	-1.23	0.00	-50.81	0.00	50.81	2,816.31	1,408.15	3,671.40	1,838.43	1.68	-0.21	0.032
82.00	-10.63	-1.14	0.00	-48.36	0.00	48.36	2,775.90	1,387.95	3,566.22	1,785.76	1.77	-0.22	0.031
83.33	-10.43	-1.13	0.00	-46.85	0.00	46.85	2,331.02	1,165.51	3,037.65	1,521.08	1.83	-0.22	0.035
85.00	-9.84	-1.10	0.00	-44.96	0.00	44.96	2,310.11	1,155.05	2,973.86	1,489.14	1.91	-0.23	0.034
90.00	-7.97	-0.97	0.00	-39.48	0.00	39.48	2,229.24	1,114.62	2,764.32	1,384.22	2.16	-0.24	0.032
95.00	-7.42	-0.93	0.00	-34.62	0.00	34.62	2,145.07	1,072.54	2,558.49	1,281.15	2.42	-0.26	0.030
100.00	-6.88	-0.89	0.00	-29.95	0.00	29.95	2,060.90	1,030.45	2,360.62	1,182.06	2.70	-0.27	0.029
105.00	-6.36	-0.84	0.00	-25.50	0.00	25.50	1,976.73	988.37	2,170.71	1,086.97	2.99	-0.29	0.027
110.00	-5.95	-0.81	0.00	-21.28	0.00	21.28	1,892.56	946.28	1,988.77	995.86	3.29	-0.30	0.025
114.00	-5.88	-0.80	0.00	-18.06	0.00	18.06	1,825.27	912.63	1,849.04	925.89	3.55	-0.31	0.023
114.00	-5.88	-0.80	0.00	-18.06	0.00	18.06	1,013.43	506.71	1,036.97	519.26	3.55	-0.31	0.041
115.00	-5.53	-0.76	0.00	-17.26	0.00	17.26	1,007.45	503.72	1,021.30	511.41	3.62	-0.31	0.039
120.00	-5.19	-0.73	0.00	-13.44	0.00	13.44	976.71	488.36	943.94	472.67	3.95	-0.33	0.034
125.00	-3.90	-0.57	0.00	-9.81	0.00	9.81	944.43	472.21	868.07	434.68	4.31	-0.35	0.027
130.00	-3.64	-0.54	0.00	-6.93	0.00	6.93	910.60	455.30	793.90	397.54	4.68	-0.36	0.021
135.00	-3.49	-0.52	0.00	-4.22	0.00	4.22	875.23	437.61	721.66	361.37	5.07	-0.37	0.016
138.00	-2.75	-0.42	0.00	-2.66	0.00	2.66	853.26	426.63	679.33	340.17	5.31	-0.38	0.011
140.00	-2.57	-0.39	0.00	-1.83	0.00	1.83	838.31	419.15	651.57	326.27	5.47	-0.38	0.009
142.00	-2.27	-0.35	0.00	-1.04	0.00	1.04	820.01	410.00	621.83	311.38	5.63	-0.38	0.006
145.00	0.00	-0.33	0.00	0.00	0.00	0.00	789.63	394.81	576.38	288.62	5.87	-0.38	0.000

Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period (S_s):	0.18
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}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.11
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)
38	143.50	135	1.851	1.781	1.068	0.345	40	167
37	141.00	102	1.787	1.481	0.955	0.305	27	126
36	139.00	114	1.737	1.267	0.872	0.275	27	141
35	136.50	174	1.675	1.029	0.777	0.240	36	215
34	132.50	299	1.578	0.713	0.641	0.187	49	370
33	127.50	311	1.461	0.410	0.498	0.130	35	385
32	122.50	397	1.349	0.194	0.381	0.082	28	491
31	117.50	408	1.241	0.047	0.287	0.042	15	506
30	114.50	83	1.178	-0.015	0.239	0.022	2	103
29	112.00	471	1.128	-0.053	0.204	0.008	3	584
28	107.50	607	1.039	-0.098	0.151	-0.013	-7	752
27	102.50	626	0.944	-0.120	0.106	-0.027	-15	775
26	97.50	645	0.855	-0.120	0.071	-0.033	-19	799
25	92.50	665	0.769	-0.106	0.045	-0.032	-18	823
24	87.50	684	0.688	-0.083	0.028	-0.024	-14	847
23	84.16	233	0.637	-0.066	0.019	-0.016	-3	289
22	82.66	355	0.614	-0.058	0.016	-0.012	-4	439
21	81.00	584	0.590	-0.049	0.013	-0.007	-4	723
20	79.33	392	0.566	-0.040	0.011	-0.002	-1	486
19	76.83	685	0.531	-0.027	0.009	0.005	3	848
18	72.50	953	0.472	-0.006	0.006	0.018	15	1,180
17	67.50	976	0.410	0.015	0.006	0.030	26	1,209
16	62.50	999	0.351	0.032	0.009	0.039	34	1,238
15	57.50	1,022	0.297	0.046	0.012	0.045	40	1,266
14	53.50	625	0.257	0.054	0.016	0.048	26	774
13	51.00	422	0.234	0.058	0.019	0.049	18	522
12	49.40	256	0.219	0.060	0.021	0.049	11	317
11	46.90	1,506	0.198	0.063	0.023	0.049	64	1,866
10	44.10	722	0.175	0.066	0.027	0.049	31	895
9	41.60	779	0.156	0.067	0.029	0.049	33	965
8	37.50	1,237	0.126	0.070	0.034	0.048	51	1,533
7	32.50	1,264	0.095	0.071	0.038	0.047	51	1,566
6	27.50	1,291	0.068	0.072	0.041	0.045	51	1,600
5	22.50	1,318	0.046	0.071	0.042	0.044	50	1,633

4	17.50	1,345	0.028	0.067	0.040	0.041	48	1,666
3	12.50	1,372	0.014	0.060	0.035	0.037	44	1,700
2	7.50	1,399	0.005	0.045	0.025	0.029	35	1,733
1	2.50	1,426	0.001	0.019	0.010	0.013	16	1,767
Alcatel-Lucent ALU 8	145.00	26	1.890	1.980	1.140	0.370	8	33
Generic GPS	145.00	10	1.890	1.980	1.140	0.370	3	12
Alcatel-Lucent RRH2x	145.00	159	1.890	1.980	1.140	0.370	51	197
Alcatel-Lucent 800 M	145.00	159	1.890	1.980	1.140	0.370	51	197
Alcatel-Lucent 1900M	145.00	132	1.890	1.980	1.140	0.370	42	163
Generic 12' Omni	145.00	40	1.890	1.980	1.140	0.370	13	50
Alcatel-Lucent TD-RR	145.00	210	1.890	1.980	1.140	0.370	67	260
RFS PD620-2	145.00	53	1.890	1.980	1.140	0.370	17	66
RFS APXVSPP18-C-A20	145.00	171	1.890	1.980	1.140	0.370	55	212
Commscope DT465B-	145.00	174	1.890	1.980	1.140	0.370	56	216
Flat Low Profile Pla	145.00	1,500	1.890	1.980	1.140	0.370	481	1,858
Amphenol Antel LPA-8	142.00	108	1.813	1.596	0.999	0.321	30	134
Amphenol Antel BXA-7	142.00	112	1.813	1.596	0.999	0.321	31	139
Generic TTA	140.00	60	1.762	1.371	0.913	0.290	15	74
Amphenol Antel BXA-1	140.00	39	1.762	1.371	0.913	0.290	10	48
Round T-Arm	138.00	750	1.712	1.168	0.833	0.261	169	929
Generic E-911 GPS	125.00	5	1.405	0.293	0.437	0.105	0	6
RFS ATM1900D-1CWA	125.00	25	1.405	0.293	0.437	0.105	2	31
RFS ATMAA1412D-1A20	125.00	39	1.405	0.293	0.437	0.105	4	48
RFS APX16DWV-16DWV-	125.00	238	1.405	0.293	0.437	0.105	22	294
Round T-Arm	125.00	750	1.405	0.293	0.437	0.105	68	929
Commscope LNX-	125.00	131	1.405	0.293	0.437	0.105	12	162
Empty Flat Low Profi	90.00	1,500	0.728	-0.095	0.036	-0.029	-38	1,858
Spinner 756529	82.00	4	0.604	-0.055	0.015	-0.010	0	6
Powerwave Allgon LGP	82.00	33	0.604	-0.055	0.015	-0.010	0	41
Powerwave Allgon LGP	82.00	85	0.604	-0.055	0.015	-0.010	-1	105
Raycap DC6-48-60-18-	82.00	33	0.604	-0.055	0.015	-0.010	0	41
Ericsson RRUS 4478 B	82.00	180	0.604	-0.055	0.015	-0.010	-2	223
Ericsson RRUS 4449 B	82.00	213	0.604	-0.055	0.015	-0.010	-2	264
Ericsson Radio 8843	82.00	225	0.604	-0.055	0.015	-0.010	-2	279
Raycap DC9-48-60-24-	82.00	16	0.604	-0.055	0.015	-0.010	0	20
Powerwave Allgon 777	82.00	105	0.604	-0.055	0.015	-0.010	-1	130
CCI DMP65R-BU6DA	82.00	318	0.604	-0.055	0.015	-0.010	-3	393
CCI DMP65R-BU8D	82.00	191	0.604	-0.055	0.015	-0.010	-2	237
Flat Low Profile Pla	80.00	1,500	0.575	-0.044	0.012	-0.004	-6	1,858
PCTEL GPS-TMG-HR-	52.00	1	0.243	0.056	0.018	0.048	0	1
PCTEL GPS-TMG-HR-	52.00	1	0.243	0.056	0.018	0.048	0	1
Stand-Off	52.00	100	0.243	0.056	0.018	0.048	4	124
		36,278	72.129	37.085	26.908	8.379	1,979	44,935

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)
38	143.50	135	1.851	1.781	1.068	0.345	40	116
37	141.00	102	1.787	1.481	0.955	0.305	27	88
36	139.00	114	1.737	1.267	0.872	0.275	27	98
35	136.50	174	1.675	1.029	0.777	0.240	36	150
34	132.50	299	1.578	0.713	0.641	0.187	49	258
33	127.50	311	1.461	0.410	0.498	0.130	35	268
32	122.50	397	1.349	0.194	0.381	0.082	28	342
31	117.50	408	1.241	0.047	0.287	0.042	15	352
30	114.50	83	1.178	-0.015	0.239	0.022	2	72
29	112.00	471	1.128	-0.053	0.204	0.008	3	406
28	107.50	607	1.039	-0.098	0.151	-0.013	-7	523

27	102.50	626	0.944	-0.120	0.106	-0.027	-15	539
26	97.50	645	0.855	-0.120	0.071	-0.033	-19	556
25	92.50	665	0.769	-0.106	0.045	-0.032	-18	572
24	87.50	684	0.688	-0.083	0.028	-0.024	-14	589
23	84.16	233	0.637	-0.066	0.019	-0.016	-3	201
22	82.66	355	0.614	-0.058	0.016	-0.012	-4	305
21	81.00	584	0.590	-0.049	0.013	-0.007	-4	503
20	79.33	392	0.566	-0.040	0.011	-0.002	-1	338
19	76.83	685	0.531	-0.027	0.009	0.005	3	590
18	72.50	953	0.472	-0.006	0.006	0.018	15	821
17	67.50	976	0.410	0.015	0.006	0.030	26	841
16	62.50	999	0.351	0.032	0.009	0.039	34	861
15	57.50	1,022	0.297	0.046	0.012	0.045	40	881
14	53.50	625	0.257	0.054	0.016	0.048	26	538
13	51.00	422	0.234	0.058	0.019	0.049	18	363
12	49.40	256	0.219	0.060	0.021	0.049	11	220
11	46.90	1,506	0.198	0.063	0.023	0.049	64	1,297
10	44.10	722	0.175	0.066	0.027	0.049	31	622
9	41.60	779	0.156	0.067	0.029	0.049	33	671
8	37.50	1,237	0.126	0.070	0.034	0.048	51	1,066
7	32.50	1,264	0.095	0.071	0.038	0.047	51	1,089
6	27.50	1,291	0.068	0.072	0.041	0.045	51	1,112
5	22.50	1,318	0.046	0.071	0.042	0.044	50	1,136
4	17.50	1,345	0.028	0.067	0.040	0.041	48	1,159
3	12.50	1,372	0.014	0.060	0.035	0.037	44	1,182
2	7.50	1,399	0.005	0.045	0.025	0.029	35	1,205
1	2.50	1,426	0.001	0.019	0.010	0.013	16	1,229
Alcatel-Lucent ALU 8	145.00	26	1.890	1.980	1.140	0.370	8	23
Generic GPS	145.00	10	1.890	1.980	1.140	0.370	3	9
Alcatel-Lucent RRH2x	145.00	159	1.890	1.980	1.140	0.370	51	137
Alcatel-Lucent 800 M	145.00	159	1.890	1.980	1.140	0.370	51	137
Alcatel-Lucent 1900M	145.00	132	1.890	1.980	1.140	0.370	42	114
Generic 12' Omni	145.00	40	1.890	1.980	1.140	0.370	13	34
Alcatel-Lucent TD-RR	145.00	210	1.890	1.980	1.140	0.370	67	181
RFS PD620-2	145.00	53	1.890	1.980	1.140	0.370	17	46
RFS APXVSPP18-C-A20	145.00	171	1.890	1.980	1.140	0.370	55	147
Commscope DT465B-	145.00	174	1.890	1.980	1.140	0.370	56	150
Flat Low Profile Pla	145.00	1,500	1.890	1.980	1.140	0.370	481	1,292
Amphenol Antel LPA-8	142.00	108	1.813	1.596	0.999	0.321	30	93
Amphenol Antel BXA-7	142.00	112	1.813	1.596	0.999	0.321	31	97
Generic TTA	140.00	60	1.762	1.371	0.913	0.290	15	52
Amphenol Antel BXA-1	140.00	39	1.762	1.371	0.913	0.290	10	34
Round T-Arm	138.00	750	1.712	1.168	0.833	0.261	169	646
Generic E-911 GPS	125.00	5	1.405	0.293	0.437	0.105	0	4
RFS ATM1900D-1CWA	125.00	25	1.405	0.293	0.437	0.105	2	22
RFS ATMAA1412D-1A20	125.00	39	1.405	0.293	0.437	0.105	4	34
RFS APX16DWV-16DWV-	125.00	238	1.405	0.293	0.437	0.105	22	205
Round T-Arm	125.00	750	1.405	0.293	0.437	0.105	68	646
Commscope LNX-	125.00	131	1.405	0.293	0.437	0.105	12	113
Empty Flat Low Profi	90.00	1,500	0.728	-0.095	0.036	-0.029	-38	1,292
Spinner 756529	82.00	4	0.604	-0.055	0.015	-0.010	0	4
Powerwave Allgon LGP	82.00	33	0.604	-0.055	0.015	-0.010	0	28
Powerwave Allgon LGP	82.00	85	0.604	-0.055	0.015	-0.010	-1	73
Raycap DC6-48-60-18-	82.00	33	0.604	-0.055	0.015	-0.010	0	28
Ericsson RRUS 4478 B	82.00	180	0.604	-0.055	0.015	-0.010	-2	155
Ericsson RRUS 4449 B	82.00	213	0.604	-0.055	0.015	-0.010	-2	183
Ericsson Radio 8843	82.00	225	0.604	-0.055	0.015	-0.010	-2	194
Raycap DC9-48-60-24-	82.00	16	0.604	-0.055	0.015	-0.010	0	14
Powerwave Allgon 777	82.00	105	0.604	-0.055	0.015	-0.010	-1	90
CCI DMP65R-BU6DA	82.00	318	0.604	-0.055	0.015	-0.010	-3	274
CCI DMP65R-BU8D	82.00	191	0.604	-0.055	0.015	-0.010	-2	165
Flat Low Profile Pla	80.00	1,500	0.575	-0.044	0.012	-0.004	-6	1,292
PCTEL GPS-TMG-HR-	52.00	1	0.243	0.056	0.018	0.048	0	1
PCTEL GPS-TMG-HR-	52.00	1	0.243	0.056	0.018	0.048	0	1

Stand-Off	52.00	100	0.243	0.056	0.018	0.048	4	86
		36,278	72.129	37.085	26.908	8.379	1,979	31,250

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	-43.17	-1.97	0.00	-225.47	0.00	225.47	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.054
5.00	-41.43	-1.94	0.00	-215.63	0.00	215.63	4,841.97	2,420.99	9,572.23	4,793.23	0.01	-0.01	0.054
10.00	-39.73	-1.91	0.00	-205.91	0.00	205.91	4,758.98	2,379.49	9,183.06	4,598.35	0.03	-0.03	0.053
15.00	-38.07	-1.87	0.00	-196.37	0.00	196.37	4,674.44	2,337.22	8,798.83	4,405.95	0.07	-0.05	0.053
20.00	-36.43	-1.83	0.00	-187.02	0.00	187.02	4,588.36	2,294.18	8,419.76	4,216.14	0.13	-0.06	0.052
25.00	-34.83	-1.79	0.00	-177.87	0.00	177.87	4,498.09	2,249.05	8,041.37	4,026.66	0.20	-0.08	0.052
30.00	-33.27	-1.74	0.00	-168.93	0.00	168.93	4,380.25	2,190.13	7,623.52	3,817.43	0.29	-0.10	0.052
35.00	-31.73	-1.70	0.00	-160.21	0.00	160.21	4,262.42	2,131.21	7,216.83	3,613.78	0.40	-0.11	0.052
40.00	-30.77	-1.67	0.00	-151.72	0.00	151.72	4,144.58	2,072.29	6,821.28	3,415.71	0.53	-0.13	0.052
43.21	-29.87	-1.64	0.00	-146.35	0.00	146.35	4,069.03	2,034.51	6,573.54	3,291.66	0.62	-0.14	0.052
45.00	-28.01	-1.58	0.00	-143.40	0.00	143.40	4,026.74	2,013.37	6,436.88	3,223.22	0.68	-0.15	0.051
48.79	-27.69	-1.57	0.00	-137.40	0.00	137.40	3,411.63	1,705.82	5,454.59	2,731.35	0.80	-0.16	0.058
50.00	-27.17	-1.56	0.00	-135.51	0.00	135.51	3,393.84	1,696.92	5,387.43	2,697.72	0.84	-0.17	0.058
52.00	-26.27	-1.53	0.00	-132.39	0.00	132.39	3,364.13	1,682.06	5,276.62	2,642.23	0.92	-0.18	0.058
55.00	-25.00	-1.49	0.00	-127.80	0.00	127.80	3,319.09	1,659.55	5,111.79	2,559.69	1.03	-0.19	0.057
60.00	-23.76	-1.46	0.00	-120.33	0.00	120.33	3,220.32	1,610.16	4,807.35	2,407.25	1.24	-0.21	0.057
65.00	-22.55	-1.44	0.00	-113.01	0.00	113.01	3,119.32	1,559.66	4,509.03	2,257.87	1.48	-0.24	0.057
70.00	-21.37	-1.43	0.00	-105.79	0.00	105.79	3,018.31	1,509.16	4,220.27	2,113.27	1.74	-0.26	0.057
75.00	-20.52	-1.43	0.00	-98.63	0.00	98.63	2,917.31	1,458.66	3,941.06	1,973.46	2.02	-0.28	0.057
78.67	-20.04	-1.44	0.00	-93.37	0.00	93.37	2,843.19	1,421.59	3,742.24	1,873.90	2.25	-0.30	0.057
80.00	-17.46	-1.43	0.00	-91.46	0.00	91.46	2,816.31	1,408.15	3,671.40	1,838.43	2.34	-0.31	0.056
82.00	-15.28	-1.44	0.00	-88.59	0.00	88.59	2,775.90	1,387.95	3,566.22	1,785.76	2.47	-0.32	0.055
83.33	-14.99	-1.44	0.00	-86.68	0.00	86.68	2,331.02	1,165.51	3,037.65	1,521.08	2.56	-0.33	0.063
85.00	-14.14	-1.46	0.00	-84.26	0.00	84.26	2,310.11	1,155.05	2,973.86	1,489.14	2.67	-0.34	0.063
90.00	-11.46	-1.50	0.00	-76.97	0.00	76.97	2,229.24	1,114.62	2,764.32	1,384.22	3.04	-0.37	0.061
95.00	-10.66	-1.52	0.00	-69.44	0.00	69.44	2,145.07	1,072.54	2,558.49	1,281.15	3.44	-0.40	0.059
100.00	-9.89	-1.54	0.00	-61.83	0.00	61.83	2,060.90	1,030.45	2,360.62	1,182.06	3.87	-0.43	0.057
105.00	-9.13	-1.54	0.00	-54.13	0.00	54.13	1,976.73	988.37	2,170.71	1,086.97	4.33	-0.46	0.054
110.00	-8.55	-1.54	0.00	-46.42	0.00	46.42	1,892.56	946.28	1,988.77	995.86	4.83	-0.49	0.051
114.00	-8.45	-1.54	0.00	-40.26	0.00	40.26	1,825.27	912.63	1,849.04	925.89	5.24	-0.51	0.048
114.00	-8.45	-1.54	0.00	-40.26	0.00	40.26	1,013.43	506.71	1,036.97	519.26	5.24	-0.51	0.086
115.00	-7.94	-1.52	0.00	-38.72	0.00	38.72	1,007.45	503.72	1,021.30	511.41	5.35	-0.51	0.084
120.00	-7.45	-1.50	0.00	-31.10	0.00	31.10	976.71	488.36	943.94	472.67	5.91	-0.56	0.073
125.00	-5.59	-1.34	0.00	-23.61	0.00	23.61	944.43	472.21	868.07	434.68	6.52	-0.60	0.060
130.00	-5.22	-1.29	0.00	-16.92	0.00	16.92	910.60	455.30	793.90	397.54	7.17	-0.63	0.048
135.00	-5.01	-1.25	0.00	-10.47	0.00	10.47	875.23	437.61	721.66	361.37	7.84	-0.66	0.035
138.00	-3.94	-1.04	0.00	-6.72	0.00	6.72	853.26	426.63	679.33	340.17	8.26	-0.67	0.024
140.00	-3.69	-0.99	0.00	-4.63	0.00	4.63	838.31	419.15	651.57	326.27	8.54	-0.68	0.019
142.00	-3.25	-0.88	0.00	-2.65	0.00	2.65	820.01	410.00	621.83	311.38	8.83	-0.68	0.012
145.00	0.00	-0.84	0.00	0.00	0.00	0.00	789.63	394.81	576.38	288.62	9.26	-0.68	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	-30.02	-1.97	0.00	-222.39	0.00	222.39	4,923.42	2,461.71	9,966.12	4,990.47	0.00	0.00	0.051
5.00	-28.81	-1.94	0.00	-212.57	0.00	212.57	4,841.97	2,420.99	9,572.23	4,793.23	0.01	-0.01	0.050
10.00	-27.63	-1.90	0.00	-202.88	0.00	202.88	4,758.98	2,379.49	9,183.06	4,598.35	0.03	-0.03	0.050
15.00	-26.47	-1.86	0.00	-193.37	0.00	193.37	4,674.44	2,337.22	8,798.83	4,405.95	0.07	-0.05	0.050
20.00	-25.34	-1.82	0.00	-184.08	0.00	184.08	4,588.36	2,294.18	8,419.76	4,216.14	0.13	-0.06	0.049
25.00	-24.22	-1.77	0.00	-175.00	0.00	175.00	4,498.09	2,249.05	8,041.37	4,026.66	0.20	-0.08	0.049
30.00	-23.13	-1.72	0.00	-166.15	0.00	166.15	4,380.25	2,190.13	7,623.52	3,817.43	0.29	-0.09	0.049
35.00	-22.07	-1.68	0.00	-157.52	0.00	157.52	4,262.42	2,131.21	7,216.83	3,613.78	0.40	-0.11	0.049
40.00	-21.40	-1.65	0.00	-149.13	0.00	149.13	4,144.58	2,072.29	6,821.28	3,415.71	0.52	-0.13	0.049
43.21	-20.77	-1.62	0.00	-143.84	0.00	143.84	4,069.03	2,034.51	6,573.54	3,291.66	0.61	-0.14	0.049
45.00	-19.48	-1.56	0.00	-140.93	0.00	140.93	4,026.74	2,013.37	6,436.88	3,223.22	0.67	-0.15	0.049
48.79	-19.26	-1.55	0.00	-135.03	0.00	135.03	3,411.63	1,705.82	5,454.59	2,731.35	0.79	-0.16	0.055
50.00	-18.89	-1.53	0.00	-133.16	0.00	133.16	3,393.84	1,696.92	5,387.43	2,697.72	0.83	-0.17	0.055
52.00	-18.27	-1.50	0.00	-130.10	0.00	130.10	3,364.13	1,682.06	5,276.62	2,642.23	0.90	-0.17	0.055
55.00	-17.39	-1.47	0.00	-125.59	0.00	125.59	3,319.09	1,659.55	5,111.79	2,559.69	1.02	-0.19	0.054
60.00	-16.52	-1.44	0.00	-118.26	0.00	118.26	3,220.32	1,610.16	4,807.35	2,407.25	1.23	-0.21	0.054
65.00	-15.68	-1.41	0.00	-111.08	0.00	111.08	3,119.32	1,559.66	4,509.03	2,257.87	1.46	-0.23	0.054
70.00	-14.86	-1.40	0.00	-104.02	0.00	104.02	3,018.31	1,509.16	4,220.27	2,113.27	1.71	-0.26	0.054
75.00	-14.27	-1.40	0.00	-97.02	0.00	97.02	2,917.31	1,458.66	3,941.06	1,973.46	1.99	-0.28	0.054
78.67	-13.93	-1.40	0.00	-91.88	0.00	91.88	2,843.19	1,421.59	3,742.24	1,873.90	2.21	-0.30	0.054
80.00	-12.14	-1.40	0.00	-90.01	0.00	90.01	2,816.31	1,408.15	3,671.40	1,838.43	2.30	-0.30	0.053
82.00	-10.63	-1.41	0.00	-87.20	0.00	87.20	2,775.90	1,387.95	3,566.22	1,785.76	2.43	-0.31	0.053
83.33	-10.42	-1.42	0.00	-85.33	0.00	85.33	2,331.02	1,165.51	3,037.65	1,521.08	2.52	-0.32	0.061
85.00	-9.83	-1.43	0.00	-82.96	0.00	82.96	2,310.11	1,155.05	2,973.86	1,489.14	2.63	-0.33	0.060
90.00	-7.97	-1.48	0.00	-75.80	0.00	75.80	2,229.24	1,114.62	2,764.32	1,384.22	2.99	-0.36	0.058
95.00	-7.41	-1.50	0.00	-68.39	0.00	68.39	2,145.07	1,072.54	2,558.49	1,281.15	3.38	-0.39	0.057
100.00	-6.87	-1.51	0.00	-60.90	0.00	60.90	2,060.90	1,030.45	2,360.62	1,182.06	3.81	-0.42	0.055
105.00	-6.35	-1.52	0.00	-53.33	0.00	53.33	1,976.73	988.37	2,170.71	1,086.97	4.26	-0.45	0.052
110.00	-5.94	-1.52	0.00	-45.72	0.00	45.72	1,892.56	946.28	1,988.77	995.86	4.75	-0.48	0.049
114.00	-5.87	-1.52	0.00	-39.66	0.00	39.66	1,825.27	912.63	1,849.04	925.89	5.16	-0.50	0.046
114.00	-5.87	-1.52	0.00	-39.66	0.00	39.66	1,013.43	506.71	1,036.97	519.26	5.16	-0.50	0.082
115.00	-5.52	-1.50	0.00	-38.14	0.00	38.14	1,007.45	503.72	1,021.30	511.41	5.26	-0.51	0.080
120.00	-5.18	-1.47	0.00	-30.64	0.00	30.64	976.71	488.36	943.94	472.67	5.82	-0.55	0.070
125.00	-3.89	-1.32	0.00	-23.28	0.00	23.28	944.43	472.21	868.07	434.68	6.42	-0.59	0.058
130.00	-3.63	-1.27	0.00	-16.68	0.00	16.68	910.60	455.30	793.90	397.54	7.05	-0.62	0.046
135.00	-3.48	-1.23	0.00	-10.33	0.00	10.33	875.23	437.61	721.66	361.37	7.72	-0.65	0.033
138.00	-2.74	-1.03	0.00	-6.62	0.00	6.62	853.26	426.63	679.33	340.17	8.13	-0.66	0.023
140.00	-2.56	-0.98	0.00	-4.56	0.00	4.56	838.31	419.15	651.57	326.27	8.41	-0.67	0.017
142.00	-2.26	-0.87	0.00	-2.61	0.00	2.61	820.01	410.00	621.83	311.38	8.69	-0.67	0.011
145.00	0.00	-0.84	0.00	0.00	0.00	0.00	789.63	394.81	576.38	288.62	9.11	-0.67	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	20.55	0.00	43.51	0.00	0.00	2108.29	114.00	0.47
0.9D + 1.6W	20.53	0.00	32.63	0.00	0.00	2086.88	114.00	0.46
1.2D + 1.0Di + 1.0Wi	4.72	0.00	71.71	0.00	0.00	480.09	114.00	0.12
(1.2 + 0.2Sds) * DL + E ELFM	1.55	0.00	43.17	0.00	0.00	172.52	114.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	1.97	0.00	43.17	0.00	0.00	225.47	114.00	0.09
(0.9 - 0.2Sds) * DL + E ELFM	1.55	0.00	30.02	0.00	0.00	170.42	114.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	1.97	0.00	30.02	0.00	0.00	222.39	114.00	0.08
1.0D + 1.0W	4.78	0.00	36.28	0.00	0.00	487.72	114.00	0.11

Base Plate & Anchor Rod Analysis

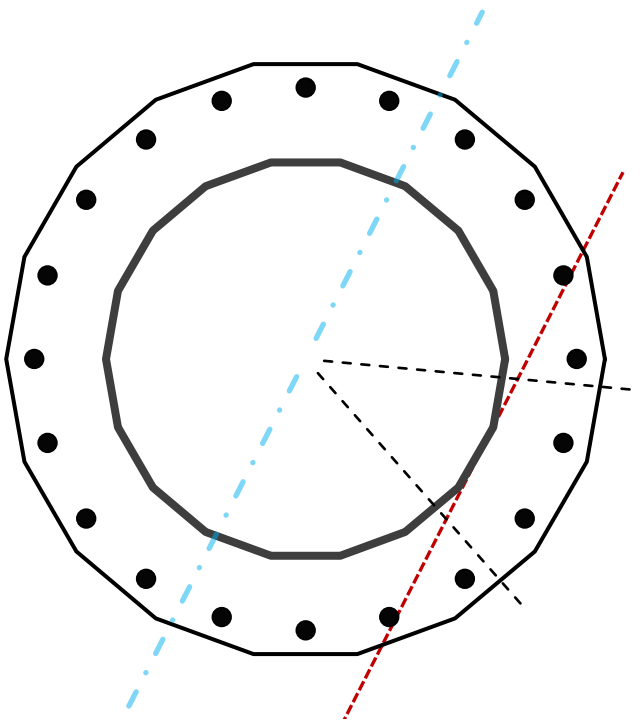
Pole Dimensions		
Number of Sides	18	-
Diameter	49.75	in
Thickness	0.4375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2108.3	k-ft
Axial, Pu	43.5	k
Shear, Vu	20.6	k
Neutral Axis	243	°

Report Capacities		
Component	Capacity	Result
Base Plate	79%	Pass
Anchor Rods	29%	Pass
Dwyidag	-	-

Base Plate		
Number of Sides	18	-
Diameter, ø	75	in
Thickness	2 3/4	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	2128.2	k
Bending Stress, ϕMn	2679.4	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	69	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.8	in
Orientation Offset		°
Applied Force, Pu	74.6	k
Anchor Rods, ϕPn	259.8	k



Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***@ 114 ft***
Pole Diameter	25.125	in
Pole Thickness	0.1875	in
Plate Diameter	32	in
Plate Thickness	1.5	in
Plate Fy	65	ksi
Weld Length	0.1875	in
f_s Resistance	199.48	k-in
Applied	38.22	k-in

Code Rev.	***G***
Moment	238.1 k-ft
Axial	7.7 k

Required Flange Thickness:
0.66 in OK

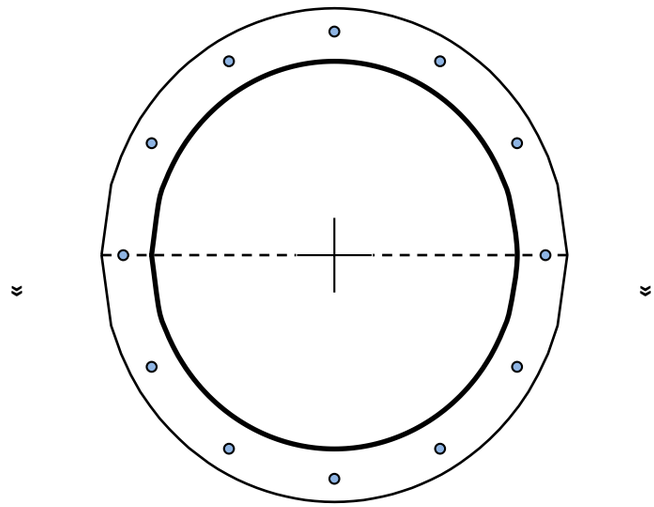
Date	9/12/2019
Engineer	-
Site #	411182
Carrier	-

Stiffeners

#	

Bolts

#	***12***	
Bolt Circle	29	in
(R)adial / (S)quare	R	
Bolt Gap	6	in
Diameter	1	in
Hole Diameter	1.125	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
f_s Resistance	54.52	k
Applied	32.19	k



Reinforcement

#	

Plate Stress Ratio:
19% Pass

Bolt Stress Ratio:
59% Pass

Extra Bolts O

#	