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

January 22, 2020

Greg Milano
SAI Group, LLC
12 Industrial Way
Salem, NH 03079

RE: **EM-CING-073-200106** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 26 Mell Road, Lisbon, Connecticut.

Dear Mr. Milano:

The Connecticut Siting Council (Council) is in receipt of your correspondence of January 17, 2020 submitted in response to the Council's January 16, 2020 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: Greg Milano <gmilano@saigrp.com>
Sent: Friday, January 17, 2020 5:31 PM
To: Robidoux, Evan; CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for EM-CING-073-200106 (26 Mell Road, Lisbon)
Attachments: AT&T CT2058 CSC Application 20 Mell Road Lisbon Incomplete Letter 1.16.19.pdf

EM-CING-073-200106 - Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) CT2058 - 20 Mell Road, Lisbon, CT 06351
N 41.590825
W -72.016888

Dear Ms. Bachman:
AT&T provides a Structural Analysis report stamped and signed by a licensed Engineer in the State of Connecticut to rectify an identified deficiency in our previous filing (See attached).
Please accept this letter as completion of notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Greg Milano

SAI Group, LLC
12 Industrial Way
Salem, NH 03079
gmilano@saigrp.com
Mobile: 860-707-9001

From: Robidoux, Evan <Evan.Robidoux@ct.gov>
Sent: Thursday, January 16, 2020 4:00 PM
To: Greg Milano <gmilano@saigrp.com>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Council Incomplete Letter for EM-CING-073-200106 (26 Mell Road, Lisbon)

Please see the attached correspondence.

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

Greg Milano
SAI Group, LLC
12 Industrial Way
Salem, NH 03079
860-707-9001
gmilano@saigrp.com

January 16, 2020

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

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Greg Milano

SAI Group, LLC
12 Industrial Way
Salem, NH 03079
860-707-9001
gmilano@saigrp.com

Attachments

AMERICAN TOWER®
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Structural Analysis Report

Structure	:	**180.4 ft Monopole**
ATC Site Name	:	**Lisbon CT 3, CT**
ATC Asset Number	:	**302503**
Engineering Number	:	**OAA754270_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Lisbon-Mel Road**
Carrier Site Number	:	**CT2058**
Site Location	:	**20 Mel Road** **Jewett City, CT 06351-3017** **41.590800, -72.016900**
County	:	**New London**
Date	:	**November 20, 2019**
Max Usage	:	**91%**
Result	:	**Pass**

Prepared By:
Daniel Hinshaw
Structural Engineer I

Reviewed By:

Authorized by "EOR"
Nov 25 2019 8:06 AM cosign

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 180.4 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	HTS Mapping Project #HTS011509, dated January 13, 2009
Foundation Drawing	SNET Drawing #3C255, dated August 8, 1990
Geotechnical Report	DOG Project #GEO17-00679-01, dated March 3, 2017
Modifications	ATC Job #50406832, dated October 25, 2012 ATC Job #42728432, dated January 28, 2009
Mount Analysis	HDG Project #CT2058, dated October 25, 2019

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:	103 mph (3-Second Gust, V_{asd}) / 135 mph (3-second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" 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 = 0.17, 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
192.0	1	Generic 6' Omni	-	(1) 1 5/8" Coax	Spok Holdings, Inc.
184.0	6	Powerwave Allgon LGP21401		(2) 0.65" (16.4mm) 8 AWG 2C (12) 1 5/8" Coax (1) 1.3" (33mm) Hybrid (Type 1) (1) 2" conduit	AT&T Mobility
	6	LGP Allgon LGP21903			
	1	Raycap DC6-48-60-18-8F (23.5" Height)			
	3	Ericsson RRUS 32 B2			
	3	Powerwave Allgon 7770.00			
10.0	1	Channel Master Type 120	Flush	(1) 0.28" (7mm) RG-6	Spok Holdings, Inc.

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
184.0	3	Ericsson RRUS-11 800 MHz	Platform with Handrails	-	AT&T Mobility
	2	CCI HPA-65R-BUU-H8			
	1	CCI HPA-65R-BUU-H6			
	3	Powerwave Allgon 7770.00			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
184.0	3	Ericsson RRUS 4449 B5, B12	Site Pro 1 V-Frame Sector Frames	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (1) 2" conduit	AT&T Mobility
	3	Ericsson RRUS 4478 B14			
	1	Raycap DC6-48-60-18-8C			
	2	CCI DMP65R-BU6DA			
	4	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 coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	76%	Pass
Shaft	81%	Pass
Base Plate	25%	Pass
Reinforcement	91%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,461.5	85%
Axial (Kips)	52.0	2%
Shear (Kips)	31.9	29%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
180.4	Ericsson RRUS 4449 B5, B12	AT&T Mobility	2.972	1.869
	Ericsson RRUS 4478 B14			
	Raycap DC6-48-60-18-8C			
	CCI DMP65R-BU6DA			
	CCI DMP65R-BU8D			
10.0	Channel Master Type 120	Spok Holdings, Inc.	0.010	0.109

***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:

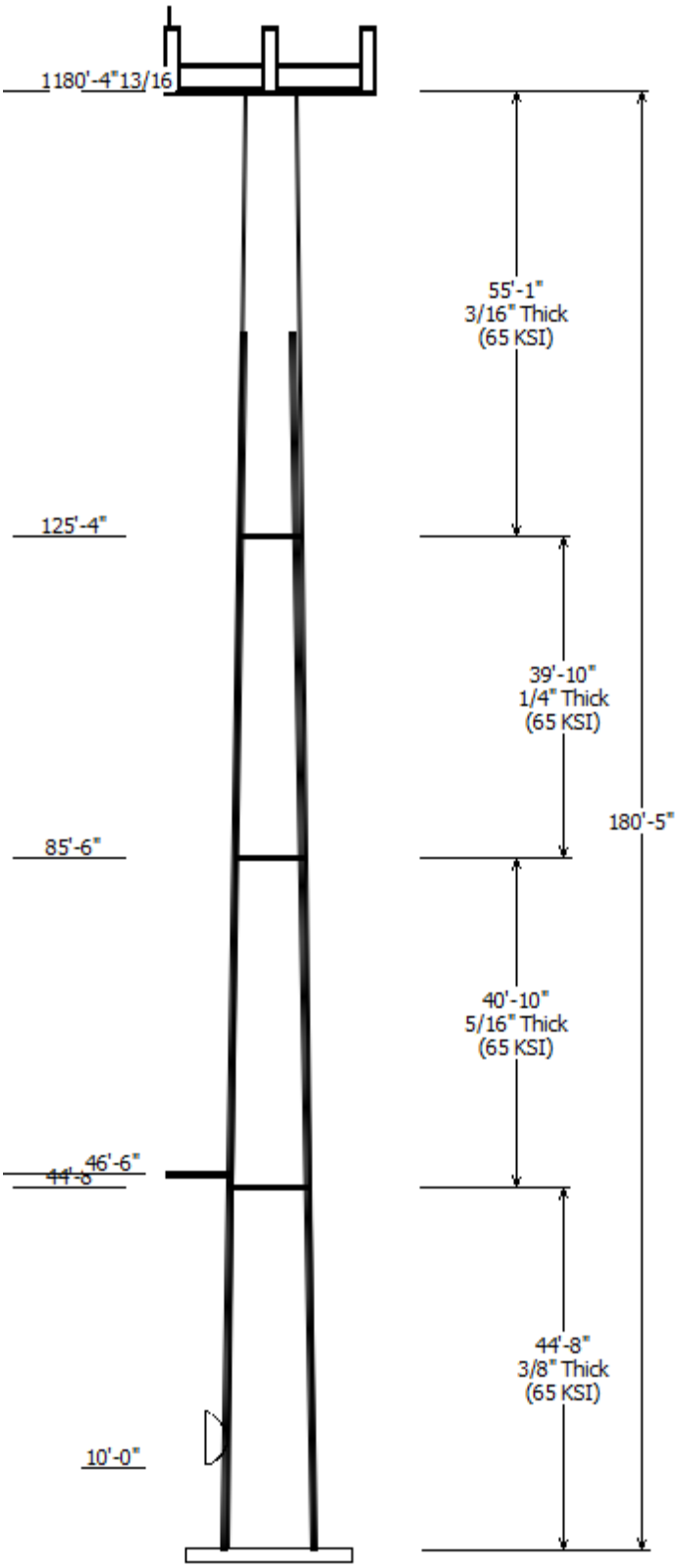
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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 :	302503	Code:	ANSI/TIA-222-G
Location :	Lisbon CT 3, CT		
Description :	180'-5" Mapped Monopole	Struct Class :	II
Shape :	12 Sides	Exposure :	B
Height :	180.42 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.147760 (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	44.667	35.09	41.69	0.375		0.000	12 Sides	65
2	40.833	29.06	35.09	0.313	Butt Joint	0.000	12 Sides	65
3	39.833	23.17	29.06	0.250	Butt Joint	0.000	12 Sides	65
4	55.083	15.04	23.17	0.188	Butt Joint	0.000	12 Sides	65

Discrete Appurtenance

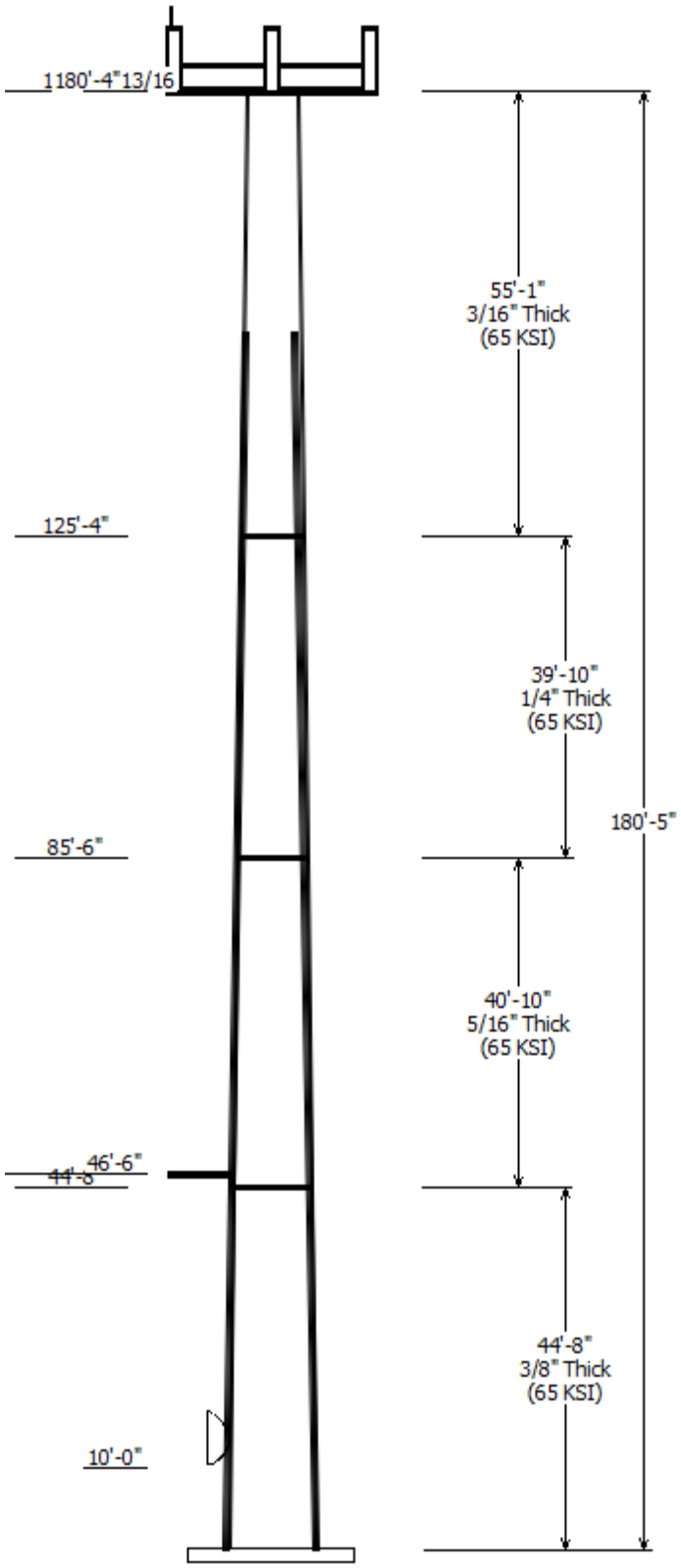
Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.400	184.000	3	Generic Flat Light Sector Fram
180.400	184.000	4	CCI DMP65R-BU8D
180.400	184.000	2	CCI DMP65R-BU6DA
180.400	185.000	3	Powerwave Allgon 7770.00
180.400	185.000	3	Ericsson RRUS 32 B2
180.400	184.000	1	Raycap DC6-48-60-18-8C
180.400	184.000	3	Ericsson RRUS 4478 B14
180.400	184.000	3	Ericsson RRUS 4449 B5, B12
180.400	185.000	1	Raycap DC6-48-60-18-8F (23.5"
180.400	185.000	6	Powerwave Allgon LGP21401
180.400	185.000	6	LGP Allgon LGP21903
180.400	189.000	1	Generic 6' Omni
46.500	46.500	1	Round Side Arm
10.000	14.000	1	Channel Master Type 120

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	10.000	0.28" (7mm) RG-6	Yes
0.000	155.0	#20 Dywdag Bars	Yes
0.000	155.0	#20 Dywdag Bars	Yes
0.000	155.0	#20 Dywdag Bars	Yes
0.000	155.0	#20 Dywdag Bars	Yes
0.000	184.0	0.39" (10mm)	No
0.000	184.0	0.65" (16.4mm) 8	No
0.000	184.0	0.78" (19.7mm) 8	No
0.000	184.0	1 5/8" Coax	No
0.000	184.0	1.3" (33mm)	No
0.000	184.0	2" conduit	No
0.000	184.0	2" conduit	No
0.000	192.0	1 5/8" Coax	No

Load Cases

1.2D + 1.6W	103 mph with No Ice
0.9D + 1.6W	103 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 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



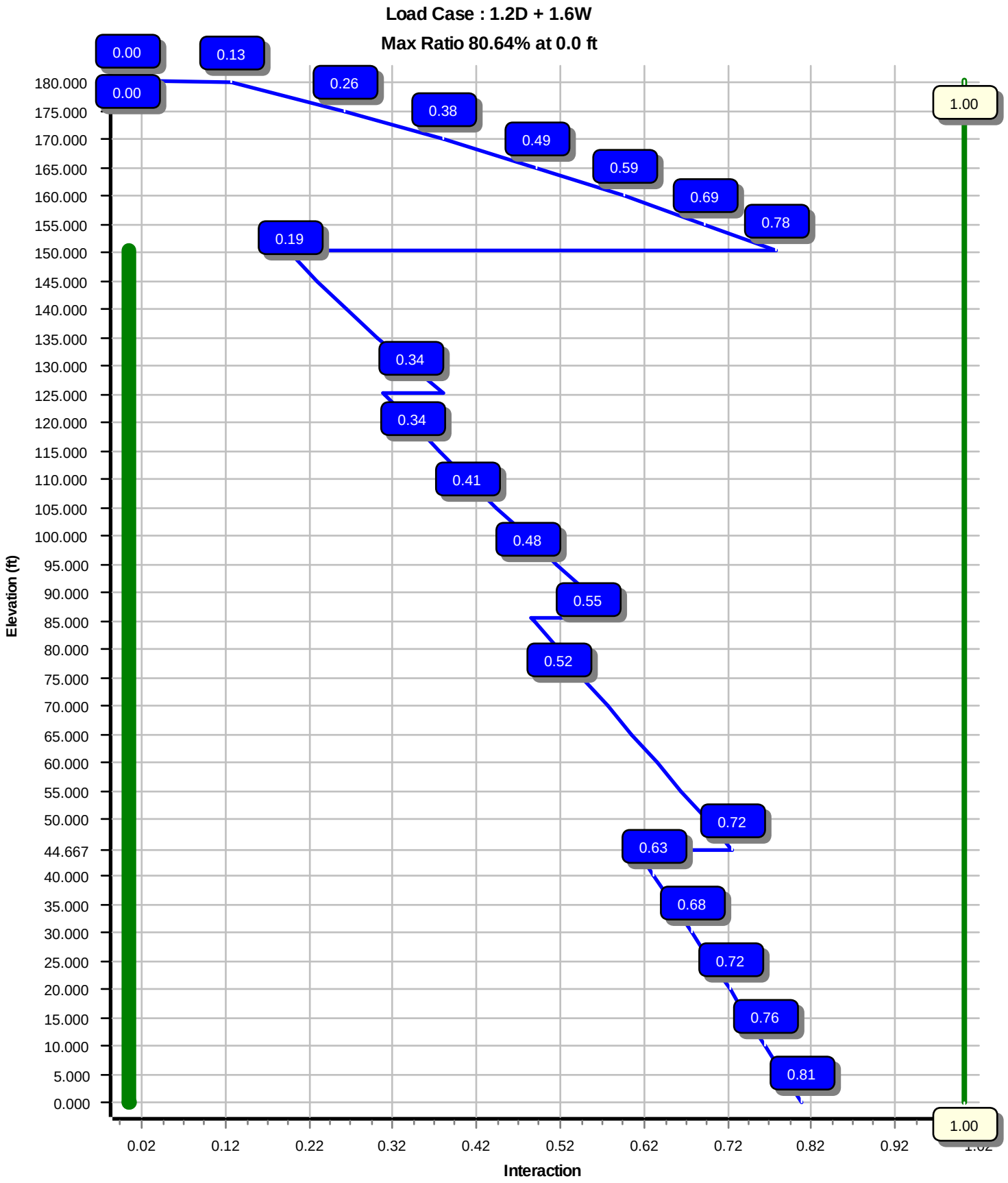
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3461.48	31.93	52.00
0.9D + 1.6W	3392.45	31.36	38.98
1.2D + 1.0Di + 1.0Wi	700.67	5.94	69.22
(1.2 + 0.2Sds) * DL + E ELFM	236.59	1.70	51.65
(1.2 + 0.2Sds) * DL + E EMAM	205.14	1.70	51.65
(0.9 - 0.2Sds) * DL + E ELFM	231.38	1.70	36.10
(0.9 - 0.2Sds) * DL + E EMAM	200.29	1.70	36.10
1.0D + 1.0W	655.61	6.00	43.40

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	10.00	0.116	0.109


Load Case : 1.2D + 1.6W
Max Ratio 80.64% at 0.0 ft
0.00
0.13
0.26
0.38
0.49
0.59
0.69
0.78
0.00
0.19
0.34
0.34
0.41
0.48
0.55
0.52
0.72
0.63
0.68
0.72
0.76
0.81
1.00
1.00
180.000
175.000
170.000
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
44.667
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: 302503 **Code: ANSI/TIA-222-G**

Site Name: Lisbon CT 3, CT **Engineering Number:** **11/20/2019 5:03:14 PM**

Customer: AT&T MOBILITY

Analysis Parameters

Location :	**New London County, CT**	**Height (ft) :**	**180.4166**
Code :	**ANSI/TIA-222-G**	**Base Diameter (in) :**	**41.70**
Shape :	**12 Sides**	**Top Diameter (in) :**	**15.04**
Pole Type :	**Taper**	**Taper (in/ft) :**	**0.148**
Pole Manfacturer :		**Rotation (deg) :**	**0.00**

Ice & Wind Parameters

Structure Class:	**II**	**Design Wind Speed Without Ice:**	**103 mph**
Exposure Category:	**B**	**Design Wind Speed With Ice:**	**50 mph**
Topographic Category:	**1**	**Operational Wind Speed:**	**60 mph**
Crest Height:	**0 ft**	**Design Ice Thickness:**	**0.75 in**

Seismic Parameters

Analysis Method: **Equivalent Modal Analysis & Equivalent Lateral Force Methods**

Site Class: **D - Stiff Soil**

Period Based on Rayleigh Method (sec): **3.07**

T_L (sec):	**6**	**p:**	**1.3**	**C_s:**	**0.030**
S_s:	**0.169**	**S_1:**	**0.060**	**C_s Max:**	**0.030**
F_a:	**1.600**	**F_v:**	**2.400**	**C_s Min:**	**0.030**
S_{ds}:	**0.180**	**S_{d1}:**	**0.096**		

Load Cases

1.2D + 1.6W	**103 mph with No Ice**
0.9D + 1.6W	**103 mph with No Ice (Reduced DL)**
1.2D + 1.0Di + 1.0Wi	**50 mph with 0.75 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)
1-12	44.667	0.3750	65		0.00	6,978	41.69	0.00	49.90	10875.9	27.12	111.20	35.09	44.67	41.93	6452.8	22.40	93.60	0.147760
2-12	40.833	0.3125	65	Butt	0.00	4,442	35.09	44.67	35.00	5406.4	27.42	112.32	29.06	85.50	28.93	3052.9	22.24	93.01	0.147760
3-12	39.833	0.2500	65	Butt	0.00	2,823	29.06	85.50	23.20	2458.3	28.47	116.26	23.17	125.33	18.46	1238.7	22.16	92.72	0.147760
4-12	55.083	0.1875	65	Butt	0.00	2,141	23.17	125.33	13.88	936.6	30.45	123.62	15.04	180.42	8.97	252.5	18.81	80.21	0.147760
				Shaft Weight		16,385													

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
180.40	LGP Allgon LGP21903	6	0.80	4.600	5.50	0.230	0.50	14.08	0.575	0.50
180.40	Powerwave Allgon LGP21401	6	0.80	4.600	14.10	1.100	0.50	39.56	1.826	0.50
180.40	Raycap DC6-48-60-18-8F (23.5"	1	0.80	4.600	20.00	1.260	1.00	73.74	1.932	1.00
180.40	Generic 6' Omni	1	1.00	8.600	25.00	1.760	1.00	72.05	3.044	1.00
180.40	Ericsson RRUS 4449 B5, B12	3	0.80	3.600	71.00	1.970	0.50	136.78	2.922	0.50
180.40	Ericsson RRUS 4478 B14	3	0.80	3.600	59.40	2.020	0.67	122.03	2.982	0.67
180.40	Raycap DC6-48-60-18-8C	1	0.80	3.600	16.00	2.030	1.00	75.42	2.805	1.00
180.40	Ericsson RRUS 32 B2	3	0.80	4.600	53.00	2.740	0.67	128.07	3.932	0.67
180.40	Powerwave Allgon 7770.00	3	0.80	4.600	35.00	5.510	0.65	173.26	6.586	0.65
180.40	CCI DMP65R-BU6DA	2	0.80	3.600	79.40	12.710	0.72	342.31	15.557	0.72
180.40	CCI DMP65R-BU8D	4	0.80	3.600	95.70	17.870	0.63	442.59	21.631	0.63
180.40	Generic Flat Light Sector Frame	3	0.75	3.600	400.00	17.900	0.75	707.16	33.300	0.75
46.50	Round Side Arm	1	1.00	0.000	150.00	5.200	1.00	215.09	7.618	1.00
10.00	Channel Master Type 120	1	1.00	4.000	126.00	20.190	1.00	278.74	22.425	1.00
Totals	Num Loadings:14	38			2,851.40			7,293.75		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	192.00	1	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	SPOK HOLDINGS,
0.00	184.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	2	0.65" (16.4mm) 8 AWG	0.65	0.31	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	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	184.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	1	1.3" (33mm) Hybrid	1.30	1.00	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	184.00	1	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	155.00	1	#20 Dywdag Bars	4.00	16.70	N	1	0.00	0.00	0	0.00	Y	-
0.00	155.00	1	#20 Dywdag Bars	4.00	16.70	N	1	0.00	0.00	90	0.00	Y	-
0.00	155.00	1	#20 Dywdag Bars	4.00	16.70	N	1	0.00	0.00	180	0.00	Y	-
0.00	155.00	1	#20 Dywdag Bars	4.00	16.70	N	1	0.00	0.00	270	0.00	Y	-
0.00	10.00	1	0.28" (7mm) RG-6	0.28	0.03	N	1	0.00	0.00	90	0.00	Y	SPOK HOLDINGS,

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections Description	Intermediate Connections Spacing (in)	Intermediate Connections Len (in)	Connectors	Continuation?

0.00	150.5	4	SOL	#20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No

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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	41.699	49.898	10,875.9	27.12	111.20	75.1	503.9	0.0	0.0	19.64	5,801	0.0
5.00		0.3750	40.960	49.006	10,302.9	26.59	109.23	75.7	485.9	0.0	841.4	19.64	5,626	334.0
10.00		0.3750	40.221	48.114	9,750.4	26.06	107.26	76.3	468.3	0.0	826.2	19.64	5,454	334.0
15.00		0.3750	39.482	47.222	9,218.1	25.53	105.29	76.9	451.0	0.0	811.0	19.64	5,284	334.0
20.00		0.3750	38.743	46.330	8,705.4	25.00	103.32	77.4	434.1	0.0	795.8	19.64	5,117	334.0
25.00		0.3750	38.004	45.438	8,212.2	24.48	101.35	78.0	417.4	0.0	780.7	19.64	4,953	334.0
30.00		0.3750	37.266	44.546	7,737.9	23.95	99.38	78.6	401.1	0.0	765.5	19.64	4,792	334.0
35.00		0.3750	36.527	43.653	7,282.3	23.42	97.41	79.2	385.1	0.0	750.3	19.64	4,633	334.0
40.00		0.3750	35.788	42.761	6,844.9	22.89	95.43	79.7	369.5	0.0	735.1	19.64	4,477	334.0
44.67	Top - Section 1	0.3750	35.099	41.929	6,452.8	22.40	93.60	80.3	355.2	0.0	672.4	19.64	4,333	311.7
44.67	Bot - Section 2	0.3125	35.099	35.003	5,406.4	27.42	112.32	74.8	297.6	0.0		19.64	4,333	
45.00		0.3125	35.049	34.954	5,383.5	27.37	112.16	74.9	296.7	0.0	39.7	19.64	4,323	22.3
46.50		0.3125	34.828	34.731	5,281.1	27.18	111.45	75.1	292.9	0.0	177.8	19.64	4,278	100.2
50.00		0.3125	34.310	34.210	5,047.2	26.74	109.79	75.6	284.2	0.0	410.5	19.64	4,173	233.8
55.00		0.3125	33.572	33.467	4,725.3	26.11	107.43	76.2	271.9	0.0	575.7	19.64	4,024	334.0
60.00		0.3125	32.833	32.724	4,417.3	25.47	105.07	76.9	259.9	0.0	563.1	19.64	3,879	334.0
65.00		0.3125	32.094	31.980	4,123.0	24.84	102.70	77.6	248.2	0.0	550.4	19.64	3,736	334.0
70.00		0.3125	31.355	31.237	3,842.1	24.21	100.34	78.3	236.7	0.0	537.8	19.64	3,596	334.0
75.00		0.3125	30.616	30.493	3,574.3	23.57	97.97	79.0	225.5	0.0	525.1	19.64	3,459	334.0
80.00		0.3125	29.878	29.750	3,319.2	22.94	95.61	79.7	214.6	0.0	512.5	19.64	3,324	334.0
85.00		0.3125	29.139	29.007	3,076.5	22.31	93.24	80.4	204.0	0.0	499.8	19.64	3,192	334.0
85.50	Top - Section 2	0.3125	29.065	28.932	3,052.9	22.24	93.01	80.5	202.9	0.0	49.3	19.64	3,179	33.4
85.50	Bot - Section 3	0.2500	29.065	23.196	2,458.3	28.47	116.26	73.7	163.4	0.0		19.64	3,179	
90.00		0.2500	28.400	22.661	2,292.0	27.76	113.60	74.4	155.9	0.0	351.1	19.64	3,063	300.6
95.00		0.2500	27.661	22.066	2,116.3	26.97	110.65	75.3	147.8	0.0	380.5	19.64	2,936	334.0
100.0		0.2500	26.922	21.471	1,949.7	26.18	107.69	76.2	139.9	0.0	370.4	19.64	2,812	334.0
105.0		0.2500	26.184	20.877	1,792.1	25.38	104.73	77.0	132.2	0.0	360.3	19.64	2,691	334.0
110.0		0.2500	25.445	20.282	1,643.3	24.59	101.78	77.9	124.8	0.0	350.1	19.64	2,572	334.0
115.0		0.2500	24.706	19.687	1,502.9	23.80	98.82	78.8	117.5	0.0	340.0	19.64	2,457	334.0
120.0		0.2500	23.967	19.092	1,370.8	23.01	95.87	79.6	110.5	0.0	329.9	19.64	2,343	334.0
125.0		0.2500	23.228	18.498	1,246.7	22.22	92.91	80.5	103.7	0.0	319.8	19.64	2,233	334.0
125.3	Top - Section 3	0.2500	23.179	18.458	1,238.7	22.16	92.72	80.5	103.2	0.0	21.0	19.64	2,225	22.3
125.3	Bot - Section 4	0.1875	23.179	13.881	936.6	30.45	123.62	71.5	78.1	0.0		19.64	2,225	
130.0		0.1875	22.490	13.465	854.8	29.46	119.94	72.6	73.4	0.0	217.1	19.64	2,125	311.7
135.0		0.1875	21.751	13.019	772.7	28.40	116.00	73.7	68.6	0.0	225.3	19.64	2,020	334.0
140.0		0.1875	21.012	12.573	695.9	27.35	112.06	74.9	64.0	0.0	217.7	19.64	1,917	334.0
145.0		0.1875	20.273	12.127	624.5	26.29	108.12	76.0	59.5	0.0	210.1	19.64	1,817	334.0
150.0		0.1875	19.534	11.681	558.1	25.24	104.18	77.2	55.2	0.0	202.5	19.64	1,720	334.0
150.5	Reinf. Top	0.1875	19.461	11.636	551.7	25.13	103.79	77.3	54.8	0.0	19.8	19.64	1,711	33.4
155.0		0.1875	18.796	11.235	496.5	24.18	100.24	78.3	51.0	0.0	175.1			
160.0		0.1875	18.057	10.789	439.7	23.12	96.30	79.5	47.0	0.0	187.4			
165.0		0.1875	17.318	10.343	387.4	22.07	92.36	80.6	43.2	0.0	179.8			
170.0		0.1875	16.579	9.897	339.4	21.01	88.42	81.8	39.5	0.0	172.2			
175.0		0.1875	15.840	9.450	295.6	19.96	84.48	81.9	36.0	0.0	164.6			
180.0		0.1875	15.102	9.004	255.6	18.90	80.54	81.9	32.7	0.0	157.0			
180.4		0.1875	15.043	8.969	252.6	18.82	80.23	81.9	32.4	0.0	12.2			
180.4		0.1875	15.040	8.967	252.5	18.81	80.21	81.9	32.4	0.0	0.5			
											16,384.5			10,053.

Load Case: 1.2D + 1.6W — 103 mph with No Ice — 30 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

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		357.3	0.0					0.0	0.0	357.3	0.0	0.0	0.0
5.00		711.0	1,009.6					0.0	926.7	711.0	1,936.3	0.0	0.0
10.00	Appurtenance(s)	703.9	991.4	641.8	0.0	2,567.1	151.2	0.0	926.7	1,345.7	2,069.3	0.0	0.0
15.00		696.8	973.2					0.0	926.5	696.8	1,899.7	0.0	0.0
20.00		662.3	955.0					0.0	926.5	662.3	1,881.5	0.0	0.0
25.00		625.3	936.8					127.1	926.5	752.5	1,863.3	0.0	0.0
30.00		620.5	918.6					127.1	926.5	747.6	1,845.1	0.0	0.0
35.00		628.2	900.4					130.2	926.5	758.4	1,826.9	0.0	0.0
40.00		617.9	882.2					135.6	926.5	753.5	1,808.7	0.0	0.0
44.67	Top - Section 1	322.1	806.9					131.1	864.7	453.2	1,671.6	0.0	0.0
45.00		119.0	47.6					9.5	61.8	128.5	109.4	0.0	0.0
46.50	Appurtenance(s)	325.6	213.4	187.5	0.0	0.0	180.0	43.1	278.0	556.2	671.4	0.0	0.0
50.00		556.2	492.6					102.0	648.6	658.2	1,141.2	0.0	0.0
55.00		657.2	690.9					149.3	926.5	806.5	1,617.4	0.0	0.0
60.00		658.9	675.7					153.3	926.5	812.2	1,602.2	0.0	0.0
65.00		659.0	660.5					156.9	926.5	815.9	1,587.0	0.0	0.0
70.00		657.6	645.3					159.1	926.5	816.7	1,571.9	0.0	0.0
75.00		654.9	630.2					160.7	926.5	815.7	1,556.7	0.0	0.0
80.00		651.0	615.0					162.3	926.5	813.3	1,541.5	0.0	0.0
85.00		356.7	599.8					163.7	926.5	520.4	1,526.3	0.0	0.0
85.50	Top - Section 2	321.6	59.1					16.4	92.6	338.1	151.8	0.0	0.0
90.00		607.7	421.3					148.7	833.9	756.4	1,255.2	0.0	0.0
95.00		633.1	456.6					166.4	926.5	799.5	1,383.1	0.0	0.0
100.00		625.3	444.4					167.7	926.5	793.0	1,371.0	0.0	0.0
105.00		616.7	432.3					168.9	926.5	785.6	1,358.8	0.0	0.0
110.00		607.3	420.2					170.0	926.5	777.3	1,346.7	0.0	0.0
115.00		597.2	408.0					171.2	926.5	768.4	1,334.5	0.0	0.0
120.00		586.4	395.9					172.2	926.5	758.7	1,322.4	0.0	0.0
125.00		309.6	383.7					173.2	926.5	482.8	1,310.2	0.0	0.0
125.33	Top - Section 3	284.6	25.1					11.6	61.7	296.2	86.9	0.0	0.0
130.00		543.9	260.6					162.7	864.8	706.5	1,125.3	0.0	0.0
135.00		550.4	270.4					175.2	926.5	725.6	1,196.9	0.0	0.0
140.00		537.3	261.2					176.1	926.5	713.4	1,187.8	0.0	0.0
145.00		523.6	252.1					177.0	926.5	700.6	1,178.7	0.0	0.0
150.00		283.8	243.0					177.9	926.5	461.7	1,169.6	0.0	0.0
150.50	Reinf. Top	251.1	23.8					17.8	92.7	269.0	116.5	0.0	0.0
155.00		428.7	210.1					160.9	473.1	589.7	683.3	0.0	0.0
160.00		399.7	224.8					0.0	124.9	399.7	349.7	0.0	0.0
165.00		386.8	215.7					0.0	124.9	386.8	340.6	0.0	0.0
170.00		373.4	206.6					0.0	124.9	373.4	331.5	0.0	0.0
175.00		359.8	197.5					0.0	124.9	359.8	322.4	0.0	0.0
180.00		190.2	188.4					0.0	124.9	190.2	313.3	0.0	0.0
180.40		14.4	14.7					0.0	10.0	14.4	24.7	0.0	0.0
180.42		0.6	0.6					0.0	0.4	0.6	1.0	0.0	0.0
								Totals:		26,429.0	48,989.3	0.00	0.00

Load Case: 1.2D + 1.6W — 103 mph with No Ice — 30 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	-52.00	-31.93	0.00	-3,461.48	0.00	3,461.48	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.806
5.00	-49.91	-31.46	0.00	-3,301.85	0.00	3,301.85	3,339.53	1,669.77	5,587.61	2,759.51	0.15	-0.29	0.785
10.00	-47.69	-30.34	0.00	-3,141.97	0.00	3,141.97	3,303.67	1,651.84	5,426.07	2,679.73	0.61	-0.58	0.762
15.00	-45.66	-29.85	0.00	-2,990.27	0.00	2,990.27	3,266.89	1,633.44	5,265.23	2,600.30	1.37	-0.86	0.741
20.00	-43.64	-29.37	0.00	-2,841.04	0.00	2,841.04	3,229.18	1,614.59	5,105.20	2,521.27	2.43	-1.15	0.719
25.00	-41.65	-28.78	0.00	-2,694.19	0.00	2,694.19	3,190.54	1,595.27	4,946.05	2,442.67	3.78	-1.43	0.697
30.00	-39.69	-28.18	0.00	-2,550.27	0.00	2,550.27	3,150.98	1,575.49	4,787.88	2,364.55	5.44	-1.72	0.675
35.00	-37.75	-27.55	0.00	-2,409.37	0.00	2,409.37	3,110.50	1,555.25	4,630.76	2,286.96	7.39	-2.00	0.653
40.00	-35.85	-26.90	0.00	-2,271.63	0.00	2,271.63	3,069.09	1,534.55	4,474.78	2,209.92	9.63	-2.28	0.630
44.67	-34.13	-26.46	0.00	-2,146.12	0.00	2,146.12	3,029.61	1,514.81	4,330.30	2,138.57	11.98	-2.54	0.608
44.67	-34.13	-26.46	0.00	-2,146.12	0.00	2,146.12	2,356.88	1,178.44	3,380.89	1,669.69	11.98	-2.54	0.723
45.00	-34.00	-26.36	0.00	-2,137.30	0.00	2,137.30	2,354.99	1,177.50	3,373.36	1,665.97	12.16	-2.56	0.721
46.50	-33.29	-25.86	0.00	-2,097.77	0.00	2,097.77	2,346.45	1,173.22	3,339.48	1,649.24	12.98	-2.65	0.712
50.00	-32.07	-25.29	0.00	-2,007.26	0.00	2,007.26	2,326.18	1,163.09	3,260.58	1,610.28	15.00	-2.86	0.692
55.00	-30.37	-24.56	0.00	-1,880.80	0.00	1,880.80	2,296.44	1,148.22	3,148.31	1,554.83	18.16	-3.16	0.662
60.00	-28.69	-23.80	0.00	-1,758.01	0.00	1,758.01	2,265.77	1,132.89	3,036.63	1,499.68	21.63	-3.46	0.632
65.00	-27.05	-23.03	0.00	-1,638.99	0.00	1,638.99	2,234.19	1,117.09	2,925.62	1,444.85	25.41	-3.75	0.603
70.00	-25.42	-22.23	0.00	-1,523.87	0.00	1,523.87	2,201.67	1,100.84	2,815.37	1,390.41	29.49	-4.04	0.574
75.00	-23.83	-21.42	0.00	-1,412.72	0.00	1,412.72	2,168.24	1,084.12	2,705.97	1,336.38	33.86	-4.32	0.544
80.00	-22.26	-20.59	0.00	-1,305.62	0.00	1,305.62	2,133.87	1,066.94	2,597.50	1,282.81	38.53	-4.59	0.515
85.00	-20.73	-20.00	0.00	-1,202.66	0.00	1,202.66	2,098.59	1,049.29	2,490.04	1,229.74	43.47	-4.86	0.486
85.50	-20.56	-19.70	0.00	-1,192.66	0.00	1,192.66	2,095.01	1,047.50	2,479.36	1,224.46	43.98	-4.89	0.483
85.50	-20.56	-19.70	0.00	-1,192.66	0.00	1,192.66	1,537.79	768.90	1,827.83	902.70	43.98	-4.89	0.584
90.00	-19.29	-18.92	0.00	-1,104.00	0.00	1,104.00	1,518.16	759.08	1,762.50	870.43	48.70	-5.12	0.550
95.00	-17.90	-18.09	0.00	-1,009.38	0.00	1,009.38	1,495.46	747.73	1,690.19	834.72	54.21	-5.40	0.513
100.00	-16.53	-17.24	0.00	-918.94	0.00	918.94	1,471.85	735.92	1,618.25	799.19	60.01	-5.68	0.477
105.00	-15.18	-16.39	0.00	-832.73	0.00	832.73	1,447.30	723.65	1,546.78	763.90	66.08	-5.94	0.442
110.00	-13.86	-15.54	0.00	-750.77	0.00	750.77	1,421.84	710.92	1,475.86	728.87	72.42	-6.19	0.407
115.00	-12.56	-14.68	0.00	-673.08	0.00	673.08	1,395.45	697.72	1,405.58	694.16	79.02	-6.43	0.373
120.00	-11.28	-13.82	0.00	-599.69	0.00	599.69	1,368.13	684.07	1,336.01	659.81	85.86	-6.66	0.340
125.00	-10.01	-13.20	0.00	-530.61	0.00	530.61	1,339.89	669.95	1,267.25	625.85	92.94	-6.87	0.308
125.33	-9.93	-12.92	0.00	-526.21	0.00	526.21	1,337.98	668.99	1,262.70	623.60	93.42	-6.89	0.306
125.33	-9.93	-12.92	0.00	-526.21	0.00	526.21	893.38	446.69	847.72	418.66	93.42	-6.89	0.378
130.00	-8.86	-12.11	0.00	-465.93	0.00	465.93	879.61	439.81	809.42	399.74	100.23	-7.08	0.339
135.00	-7.72	-11.27	0.00	-405.38	0.00	405.38	863.96	431.98	768.47	379.52	107.74	-7.29	0.300
140.00	-6.61	-10.43	0.00	-349.05	0.00	349.05	847.39	423.70	727.68	359.37	115.45	-7.48	0.262
145.00	-5.50	-9.59	0.00	-296.91	0.00	296.91	829.90	414.95	687.15	339.36	123.36	-7.65	0.227
150.00	-4.39	-8.99	0.00	-248.94	0.00	248.94	811.48	405.74	646.95	319.51	131.44	-7.81	0.193
150.50	-4.30	-8.71	0.00	-244.44	0.00	244.44	809.59	404.79	642.96	317.53	132.25	-7.83	0.190
150.50	-4.30	-8.71	0.00	-244.44	0.00	244.44	809.59	404.79	642.96	317.53	132.25	-7.83	0.776
155.00	-3.66	-8.05	0.00	-205.25	0.00	205.25	792.13	396.07	607.18	299.86	139.67	-7.96	0.690
160.00	-3.30	-7.64	0.00	-164.99	0.00	164.99	771.86	385.93	567.92	280.48	148.27	-8.49	0.593
165.00	-2.97	-7.23	0.00	-126.81	0.00	126.81	750.67	375.34	529.26	261.38	157.38	-8.96	0.489

Load Case: 1.2D + 1.6W — 103 mph with No Ice — 30 Iterations

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

170.00	-2.66	-6.82	0.00	-90.68	0.00	90.68	728.55	364.28	491.27	242.62	166.94	-9.36	0.378
175.00	-2.37	-6.42	0.00	-56.58	0.00	56.58	696.59	348.30	448.31	221.40	176.87	-9.67	0.259
180.00	-2.09	-6.19	0.00	-24.47	0.00	24.47	663.72	331.86	406.75	200.88	187.06	-9.86	0.125
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	187.88	-9.87	0.000
180.42	0.00	0.00	0.00	0.00	0.00	0.00	660.98	330.49	403.38	199.21	187.92	-9.87	0.000

Load Case: 0.9D + 1.6W — 103 mph with No Ice (Reduced DL) — 30 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

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		283.3	0.0					0.0	0.0	283.3	0.0	0.0	0.0
5.00		561.6	757.2					0.0	695.0	561.6	1,452.3	0.0	0.0
10.00	Appurtenance(s)	551.5	743.6	641.8	0.0	2,567.1	113.4	0.0	695.0	1,193.3	1,552.0	0.0	0.0
15.00		541.4	729.9					0.0	694.9	541.4	1,424.8	0.0	0.0
20.00		583.9	716.3					0.0	694.9	583.9	1,411.1	0.0	0.0
25.00		625.3	702.6					127.1	694.9	752.5	1,397.5	0.0	0.0
30.00		620.5	688.9					127.1	694.9	747.6	1,383.8	0.0	0.0
35.00		628.2	675.3					130.2	694.9	758.4	1,370.2	0.0	0.0
40.00		617.9	661.6					135.6	694.9	753.5	1,356.5	0.0	0.0
44.67	Top - Section 1	322.1	605.2					131.1	648.6	453.2	1,253.7	0.0	0.0
45.00		119.0	35.7					9.5	46.3	128.5	82.0	0.0	0.0
46.50	Appurtenance(s)	325.6	160.1	187.5	0.0	0.0	135.0	43.1	208.5	556.2	503.5	0.0	0.0
50.00		556.2	369.5					102.0	486.4	658.2	855.9	0.0	0.0
55.00		657.2	518.2					149.3	694.9	806.5	1,213.0	0.0	0.0
60.00		658.9	506.8					153.3	694.9	812.2	1,201.7	0.0	0.0
65.00		659.0	495.4					156.9	694.9	815.9	1,190.3	0.0	0.0
70.00		657.6	484.0					159.1	694.9	816.7	1,178.9	0.0	0.0
75.00		654.9	472.6					160.7	694.9	815.7	1,167.5	0.0	0.0
80.00		651.0	461.2					162.3	694.9	813.3	1,156.1	0.0	0.0
85.00		356.7	449.9					163.7	694.9	520.4	1,144.7	0.0	0.0
85.50	Top - Section 2	321.6	44.4					16.4	69.5	338.1	113.8	0.0	0.0
90.00		607.7	316.0					148.7	625.4	756.4	941.4	0.0	0.0
95.00		633.1	342.4					166.4	694.9	799.5	1,037.3	0.0	0.0
100.00		625.3	333.3					167.7	694.9	793.0	1,028.2	0.0	0.0
105.00		616.7	324.2					168.9	694.9	785.6	1,019.1	0.0	0.0
110.00		607.3	315.1					170.0	694.9	777.3	1,010.0	0.0	0.0
115.00		597.2	306.0					171.2	694.9	768.4	1,000.9	0.0	0.0
120.00		586.4	296.9					172.2	694.9	758.7	991.8	0.0	0.0
125.00		309.6	287.8					173.2	694.9	482.8	982.7	0.0	0.0
125.33	Top - Section 3	284.6	18.9					11.6	46.3	296.2	65.2	0.0	0.0
130.00		543.9	195.4					162.7	648.6	706.5	844.0	0.0	0.0
135.00		550.4	202.8					175.2	694.9	725.6	897.7	0.0	0.0
140.00		537.3	195.9					176.1	694.9	713.4	890.8	0.0	0.0
145.00		523.6	189.1					177.0	694.9	700.6	884.0	0.0	0.0
150.00		283.8	182.3					177.9	694.9	461.7	877.2	0.0	0.0
150.50	Reinf. Top	251.1	17.9					17.8	69.5	269.0	87.3	0.0	0.0
155.00		428.7	157.6					160.9	354.9	589.7	512.5	0.0	0.0
160.00		399.7	168.6					0.0	93.7	399.7	262.3	0.0	0.0
165.00		386.8	161.8					0.0	93.7	386.8	255.5	0.0	0.0
170.00		373.4	155.0					0.0	93.7	373.4	248.6	0.0	0.0
175.00		359.8	148.1					0.0	93.7	359.8	241.8	0.0	0.0
180.00		190.2	141.3					0.0	93.7	190.2	235.0	0.0	0.0
180.40		14.4	11.0					0.0	7.5	14.4	18.5	0.0	0.0
180.42		0.6	0.5					0.0	0.3	0.6	0.8	0.0	0.0
								Totals:		25,819.3	36,742.0	0.00	0.00

Site Number: 302503 Code: ANSI/TIA-222-G

Site Name: Lisbon CT 3, CT Engineering Number: 11/20/2019 5:03:24 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W 103 mph with No Ice (Reduced DL) 30 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	-38.98	-31.36	0.00	-3,392.45	0.00	3,392.45	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.788
5.00	-37.38	-30.97	0.00	-3,235.68	0.00	3,235.68	3,339.53	1,669.77	5,587.61	2,759.51	0.15	-0.28	0.767
10.00	-35.69	-29.95	0.00	-3,078.24	0.00	3,078.24	3,303.67	1,651.84	5,426.07	2,679.73	0.60	-0.56	0.745
15.00	-34.13	-29.55	0.00	-2,928.51	0.00	2,928.51	3,266.89	1,633.44	5,265.23	2,600.30	1.34	-0.85	0.724
20.00	-32.58	-29.11	0.00	-2,780.74	0.00	2,780.74	3,229.18	1,614.59	5,105.20	2,521.27	2.38	-1.13	0.702
25.00	-31.06	-28.47	0.00	-2,635.22	0.00	2,635.22	3,190.54	1,595.27	4,946.05	2,442.67	3.71	-1.40	0.680
30.00	-29.57	-27.83	0.00	-2,492.86	0.00	2,492.86	3,150.98	1,575.49	4,787.88	2,364.55	5.33	-1.68	0.658
35.00	-28.09	-27.16	0.00	-2,353.70	0.00	2,353.70	3,110.50	1,555.25	4,630.76	2,286.96	7.23	-1.96	0.636
40.00	-26.64	-26.48	0.00	-2,217.88	0.00	2,217.88	3,069.09	1,534.55	4,474.78	2,209.92	9.43	-2.23	0.613
44.67	-25.35	-26.04	0.00	-2,094.30	0.00	2,094.30	3,029.61	1,514.81	4,330.30	2,138.57	11.73	-2.48	0.592
44.67	-25.35	-26.04	0.00	-2,094.30	0.00	2,094.30	2,356.88	1,178.44	3,380.89	1,669.69	11.73	-2.48	0.704
45.00	-25.25	-25.93	0.00	-2,085.61	0.00	2,085.61	2,354.99	1,177.50	3,373.36	1,665.97	11.91	-2.50	0.702
46.50	-24.70	-25.42	0.00	-2,046.72	0.00	2,046.72	2,346.45	1,173.22	3,339.48	1,649.24	12.71	-2.59	0.693
50.00	-23.77	-24.83	0.00	-1,957.75	0.00	1,957.75	2,326.18	1,163.09	3,260.58	1,610.28	14.69	-2.80	0.672
55.00	-22.48	-24.07	0.00	-1,833.63	0.00	1,833.63	2,296.44	1,148.22	3,148.31	1,554.83	17.78	-3.09	0.643
60.00	-21.21	-23.30	0.00	-1,713.27	0.00	1,713.27	2,265.77	1,132.89	3,036.63	1,499.68	21.17	-3.38	0.615
65.00	-19.96	-22.51	0.00	-1,596.78	0.00	1,596.78	2,234.19	1,117.09	2,925.62	1,444.85	24.86	-3.66	0.586
70.00	-18.73	-21.71	0.00	-1,484.23	0.00	1,484.23	2,201.67	1,100.84	2,815.37	1,390.41	28.84	-3.94	0.557
75.00	-17.53	-20.89	0.00	-1,375.70	0.00	1,375.70	2,168.24	1,084.12	2,705.97	1,336.38	33.12	-4.22	0.528
80.00	-16.35	-20.07	0.00	-1,271.23	0.00	1,271.23	2,133.87	1,066.94	2,597.50	1,282.81	37.67	-4.48	0.500
85.00	-15.20	-19.50	0.00	-1,170.88	0.00	1,170.88	2,098.59	1,049.29	2,490.04	1,229.74	42.51	-4.75	0.472
85.50	-15.07	-19.18	0.00	-1,161.14	0.00	1,161.14	2,095.01	1,047.50	2,479.36	1,224.46	43.00	-4.77	0.469
85.50	-15.07	-19.18	0.00	-1,161.14	0.00	1,161.14	1,537.79	768.90	1,827.83	902.70	43.00	-4.77	0.567
90.00	-14.11	-18.41	0.00	-1,074.80	0.00	1,074.80	1,518.16	759.08	1,762.50	870.43	47.61	-5.00	0.534
95.00	-13.07	-17.59	0.00	-982.74	0.00	982.74	1,495.46	747.73	1,690.19	834.72	52.99	-5.28	0.498
100.00	-12.05	-16.75	0.00	-894.81	0.00	894.81	1,471.85	735.92	1,618.25	799.19	58.65	-5.54	0.463
105.00	-11.04	-15.92	0.00	-811.04	0.00	811.04	1,447.30	723.65	1,546.78	763.90	64.58	-5.79	0.429
110.00	-10.05	-15.08	0.00	-731.45	0.00	731.45	1,421.84	710.92	1,475.86	728.87	70.77	-6.04	0.395
115.00	-9.08	-14.25	0.00	-656.02	0.00	656.02	1,395.45	697.72	1,405.58	694.16	77.21	-6.27	0.362
120.00	-8.13	-13.42	0.00	-584.78	0.00	584.78	1,368.13	684.07	1,336.01	659.81	83.89	-6.50	0.330
125.00	-7.19	-12.84	0.00	-517.70	0.00	517.70	1,339.89	669.95	1,267.25	625.85	90.79	-6.71	0.299
125.33	-7.13	-12.55	0.00	-513.42	0.00	513.42	1,337.98	668.99	1,262.70	623.60	91.26	-6.72	0.297
125.33	-7.13	-12.55	0.00	-513.42	0.00	513.42	893.38	446.69	847.72	418.66	91.26	-6.72	0.367
130.00	-6.34	-11.77	0.00	-454.86	0.00	454.86	879.61	439.81	809.42	399.74	97.90	-6.91	0.330
135.00	-5.50	-10.96	0.00	-396.02	0.00	396.02	863.96	431.98	768.47	379.52	105.23	-7.11	0.292
140.00	-4.67	-10.15	0.00	-341.24	0.00	341.24	847.39	423.70	727.68	359.37	112.76	-7.30	0.256
145.00	-3.86	-9.35	0.00	-290.48	0.00	290.48	829.90	414.95	687.15	339.36	120.48	-7.47	0.221
150.00	-3.04	-8.79	0.00	-243.70	0.00	243.70	811.48	405.74	646.95	319.51	128.36	-7.62	0.189
150.50	-2.98	-8.51	0.00	-239.31	0.00	239.31	809.59	404.79	642.96	317.53	129.16	-7.64	0.186
150.50	-2.98	-8.51	0.00	-239.31	0.00	239.31	809.59	404.79	642.96	317.53	129.16	-7.64	0.758
155.00	-2.50	-7.87	0.00	-201.00	0.00	201.00	792.13	396.07	607.18	299.86	136.40	-7.76	0.674
160.00	-2.24	-7.46	0.00	-161.64	0.00	161.64	771.86	385.93	567.92	280.48	144.79	-8.28	0.580
165.00	-1.99	-7.06	0.00	-124.33	0.00	124.33	750.67	375.34	529.26	261.38	153.69	-8.75	0.479

Load Case: 0.9D + 1.6W — 103 mph with No Ice (Reduced DL) — 30 Iterations

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

170.00	-1.76	-6.66	0.00	-89.06	0.00	89.06	728.55	364.28	491.27	242.62	163.03	-9.14	0.370
175.00	-1.55	-6.27	0.00	-55.77	0.00	55.77	696.59	348.30	448.31	221.40	172.73	-9.44	0.254
180.00	-1.34	-6.05	0.00	-24.41	0.00	24.41	663.72	331.86	406.75	200.88	182.69	-9.63	0.124
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	183.49	-9.65	0.000
180.42	0.00	0.00	0.00	0.00	0.00	0.00	660.98	330.49	403.38	199.21	183.52	-9.65	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 29 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		52.8	0.0					0.0	0.0	52.8	0.0	0.0	0.0
5.00		105.0	1,325.7					27.5	994.6	132.5	2,320.3	0.0	0.0
10.00	Appurtenance(s)	103.7	1,339.1	105.0	0.0	419.9	238.9	28.5	1,003.8	237.1	2,581.8	0.0	0.0
15.00		102.2	1,333.2					25.1	1,004.4	127.3	2,337.5	0.0	0.0
20.00		100.6	1,321.0					25.3	1,007.4	125.9	2,328.4	0.0	0.0
25.00		98.9	1,305.5					25.5	1,009.8	124.4	2,315.3	0.0	0.0
30.00		98.4	1,287.9					25.6	1,011.7	124.0	2,299.7	0.0	0.0
35.00		99.9	1,269.0					26.4	1,013.4	126.3	2,282.4	0.0	0.0
40.00		98.5	1,249.0					27.6	1,014.9	126.1	2,263.9	0.0	0.0
44.67	Top - Section 1	51.4	1,147.3					26.7	948.4	78.1	2,095.6	0.0	0.0
45.00		19.0	72.0					1.9	67.8	21.0	139.8	0.0	0.0
46.50	Appurtenance(s)	52.1	322.9	40.5	0.0	0.0	215.1	8.8	305.1	101.4	843.1	0.0	0.0
50.00		89.2	745.8					20.9	712.2	110.0	1,458.1	0.0	0.0
55.00		105.6	1,048.3					30.6	1,018.4	136.2	2,066.6	0.0	0.0
60.00		106.1	1,028.9					31.5	1,019.4	137.7	2,048.3	0.0	0.0
65.00		106.4	1,009.2					32.4	1,020.3	138.8	2,029.4	0.0	0.0
70.00		106.5	989.1					33.1	1,021.1	139.7	2,010.2	0.0	0.0
75.00		106.4	968.7					33.9	1,021.9	140.3	1,990.6	0.0	0.0
80.00		106.0	948.1					34.6	1,022.7	140.7	1,970.7	0.0	0.0
85.00		58.2	927.2					35.3	1,023.4	93.5	1,950.6	0.0	0.0
85.50	Top - Section 2	52.6	91.9					3.6	102.4	56.2	194.3	0.0	0.0
90.00		99.6	710.8					32.4	921.7	132.0	1,632.5	0.0	0.0
95.00		104.1	772.0					36.6	1,024.7	140.7	1,796.7	0.0	0.0
100.00		103.2	753.7					37.2	1,025.3	140.4	1,778.9	0.0	0.0
105.00		102.1	735.1					37.8	1,025.9	139.9	1,761.0	0.0	0.0
110.00		100.9	716.4					38.4	1,026.4	139.3	1,742.8	0.0	0.0
115.00		99.6	697.6					38.9	1,027.0	138.6	1,724.5	0.0	0.0
120.00		98.3	678.6					39.5	1,027.5	137.7	1,706.1	0.0	0.0
125.00		52.0	659.5					40.0	1,028.0	92.0	1,687.5	0.0	0.0
125.33	Top - Section 3	48.0	43.5					2.7	68.5	50.7	112.0	0.0	0.0
130.00		92.0	511.5					37.8	959.9	129.8	1,471.4	0.0	0.0
135.00		93.5	532.0					41.0	1,028.9	134.5	1,560.9	0.0	0.0
140.00		91.7	515.6					41.5	1,029.4	133.2	1,545.0	0.0	0.0
145.00		89.9	499.2					42.0	1,029.8	131.9	1,529.0	0.0	0.0
150.00		48.9	482.7					42.4	1,030.2	91.3	1,512.9	0.0	0.0
150.50	Reinf. Top	43.5	47.7					4.3	103.0	47.8	150.8	0.0	0.0
155.00		81.6	419.1					38.6	566.9	120.2	985.9	0.0	0.0
160.00		83.9	449.3					0.0	124.9	83.9	574.3	0.0	0.0
165.00		81.8	432.6					0.0	124.9	81.8	557.5	0.0	0.0
170.00		79.6	415.7					0.0	124.9	79.6	540.7	0.0	0.0
175.00		77.3	398.8					0.0	124.9	77.3	523.7	0.0	0.0
180.00		41.1	381.9					0.0	124.9	41.1	506.8	0.0	0.0
180.40		3.1	30.1					0.0	10.0	3.1	40.1	0.0	0.0
180.42		0.1	1.2					0.0	0.4	0.1	1.7	0.0	0.0
								Totals:		4,736.67	62,969.2	0.00	0.00

Site Number: 302503 Code: ANSI/TIA-222-G

Site Name: Lisbon CT 3, CT Engineering Number: 11/20/2019 5:03:29 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 29 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	-69.22	-5.94	0.00	-700.67	0.00	700.67	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.176
5.00	-66.89	-5.88	0.00	-670.96	0.00	670.96	3,339.53	1,669.77	5,587.61	2,759.51	0.03	-0.06	0.172
10.00	-64.31	-5.70	0.00	-641.16	0.00	641.16	3,303.67	1,651.84	5,426.07	2,679.73	0.12	-0.12	0.167
15.00	-61.96	-5.63	0.00	-612.66	0.00	612.66	3,266.89	1,633.44	5,265.23	2,600.30	0.28	-0.18	0.163
20.00	-59.63	-5.56	0.00	-584.51	0.00	584.51	3,229.18	1,614.59	5,105.20	2,521.27	0.49	-0.23	0.159
25.00	-57.31	-5.48	0.00	-556.73	0.00	556.73	3,190.54	1,595.27	4,946.05	2,442.67	0.77	-0.29	0.155
30.00	-55.01	-5.40	0.00	-529.32	0.00	529.32	3,150.98	1,575.49	4,787.88	2,364.55	1.11	-0.35	0.150
35.00	-52.72	-5.31	0.00	-502.32	0.00	502.32	3,110.50	1,555.25	4,630.76	2,286.96	1.51	-0.41	0.146
40.00	-50.45	-5.22	0.00	-475.76	0.00	475.76	3,069.09	1,534.55	4,474.78	2,209.92	1.97	-0.47	0.141
44.67	-48.35	-5.15	0.00	-451.40	0.00	451.40	3,029.61	1,514.81	4,330.30	2,138.57	2.46	-0.52	0.137
44.67	-48.35	-5.15	0.00	-451.40	0.00	451.40	2,356.88	1,178.44	3,380.89	1,669.69	2.46	-0.52	0.163
45.00	-48.21	-5.13	0.00	-449.69	0.00	449.69	2,354.99	1,177.50	3,373.36	1,665.97	2.49	-0.53	0.163
46.50	-47.37	-5.05	0.00	-441.99	0.00	441.99	2,346.45	1,173.22	3,339.48	1,649.24	2.66	-0.55	0.161
50.00	-45.91	-4.97	0.00	-424.30	0.00	424.30	2,326.18	1,163.09	3,260.58	1,610.28	3.08	-0.59	0.157
55.00	-43.84	-4.86	0.00	-399.45	0.00	399.45	2,296.44	1,148.22	3,148.31	1,554.83	3.73	-0.66	0.151
60.00	-41.78	-4.74	0.00	-375.14	0.00	375.14	2,265.77	1,132.89	3,036.63	1,499.68	4.45	-0.72	0.145
65.00	-39.75	-4.62	0.00	-351.42	0.00	351.42	2,234.19	1,117.09	2,925.62	1,444.85	5.24	-0.78	0.139
70.00	-37.74	-4.49	0.00	-328.31	0.00	328.31	2,201.67	1,100.84	2,815.37	1,390.41	6.09	-0.84	0.132
75.00	-35.75	-4.36	0.00	-305.84	0.00	305.84	2,168.24	1,084.12	2,705.97	1,336.38	7.00	-0.90	0.126
80.00	-33.77	-4.22	0.00	-284.03	0.00	284.03	2,133.87	1,066.94	2,597.50	1,282.81	7.98	-0.96	0.120
85.00	-31.82	-4.11	0.00	-262.92	0.00	262.92	2,098.59	1,049.29	2,490.04	1,229.74	9.02	-1.02	0.114
85.50	-31.63	-4.07	0.00	-260.86	0.00	260.86	2,095.01	1,047.50	2,479.36	1,224.46	9.13	-1.03	0.113
85.50	-31.63	-4.07	0.00	-260.86	0.00	260.86	1,537.79	768.90	1,827.83	902.70	9.13	-1.03	0.137
90.00	-29.99	-3.94	0.00	-242.55	0.00	242.55	1,518.16	759.08	1,762.50	870.43	10.12	-1.08	0.130
95.00	-28.20	-3.79	0.00	-222.86	0.00	222.86	1,495.46	747.73	1,690.19	834.72	11.28	-1.14	0.122
100.00	-26.42	-3.64	0.00	-203.89	0.00	203.89	1,471.85	735.92	1,618.25	799.19	12.51	-1.20	0.114
105.00	-24.66	-3.49	0.00	-185.68	0.00	185.68	1,447.30	723.65	1,546.78	763.90	13.80	-1.26	0.106
110.00	-22.91	-3.33	0.00	-168.23	0.00	168.23	1,421.84	710.92	1,475.86	728.87	15.15	-1.31	0.098
115.00	-21.19	-3.17	0.00	-151.56	0.00	151.56	1,395.45	697.72	1,405.58	694.16	16.55	-1.37	0.090
120.00	-19.48	-3.01	0.00	-135.69	0.00	135.69	1,368.13	684.07	1,336.01	659.81	18.02	-1.42	0.083
125.00	-17.80	-2.89	0.00	-120.63	0.00	120.63	1,339.89	669.95	1,267.25	625.85	19.53	-1.47	0.076
125.33	-17.69	-2.84	0.00	-119.67	0.00	119.67	1,337.98	668.99	1,262.70	623.60	19.63	-1.47	0.075
125.33	-17.69	-2.84	0.00	-119.67	0.00	119.67	893.38	446.69	847.72	418.66	19.63	-1.47	0.093
130.00	-16.22	-2.68	0.00	-106.42	0.00	106.42	879.61	439.81	809.42	399.74	21.09	-1.52	0.084
135.00	-14.66	-2.52	0.00	-93.00	0.00	93.00	863.96	431.98	768.47	379.52	22.71	-1.56	0.075
140.00	-13.12	-2.35	0.00	-80.40	0.00	80.40	847.39	423.70	727.68	359.37	24.37	-1.61	0.066
145.00	-11.59	-2.19	0.00	-68.64	0.00	68.64	829.90	414.95	687.15	339.36	26.08	-1.65	0.057
150.00	-10.08	-2.05	0.00	-57.71	0.00	57.71	811.48	405.74	646.95	319.51	27.82	-1.69	0.049
150.50	-9.93	-2.00	0.00	-56.68	0.00	56.68	809.59	404.79	642.96	317.53	28.00	-1.69	0.048
150.50	-9.93	-2.00	0.00	-56.68	0.00	56.68	809.59	404.79	642.96	317.53	28.00	-1.69	0.191
155.00	-8.94	-1.87	0.00	-47.66	0.00	47.66	792.13	396.07	607.18	299.86	29.61	-1.72	0.170
160.00	-8.37	-1.78	0.00	-38.32	0.00	38.32	771.86	385.93	567.92	280.48	31.47	-1.84	0.148
165.00	-7.81	-1.70	0.00	-29.41	0.00	29.41	750.67	375.34	529.26	261.38	33.46	-1.95	0.123

Load Case: **1.2D + 1.0Di + 1.0Wi** **50 mph with 0.75 in Radial Ice** **29 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

170.00	-7.27	-1.61	0.00	-20.93	0.00	20.93	728.55	364.28	491.27	242.62	35.55	-2.04	0.096
175.00	-6.75	-1.52	0.00	-12.89	0.00	12.89	696.59	348.30	448.31	221.40	37.73	-2.11	0.068
180.00	-6.25	-1.46	0.00	-5.29	0.00	5.29	663.72	331.86	406.75	200.88	39.97	-2.16	0.036
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	40.16	-2.16	0.000
180.42	0.00	0.00	0.00	0.00	0.00	0.00	660.98	330.49	403.38	199.21	40.16	-2.16	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 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		53.8	0.0					0.0	0.0	53.8	0.0	0.0	0.0
5.00		106.6	841.4					0.0	772.2	106.6	1,613.6	0.0	0.0
10.00	Appurtenance(s)	104.7	826.2	121.8	0.0	487.1	126.0	0.0	772.2	226.4	1,724.4	0.0	0.0
15.00		102.7	811.0					0.0	772.1	102.7	1,583.1	0.0	0.0
20.00		110.8	795.8					0.0	772.1	110.8	1,567.9	0.0	0.0
25.00		118.7	780.7					24.1	772.1	142.8	1,552.8	0.0	0.0
30.00		117.7	765.5					24.1	772.1	141.9	1,537.6	0.0	0.0
35.00		119.2	750.3					24.7	772.1	143.9	1,522.4	0.0	0.0
40.00		117.2	735.1					25.7	772.1	143.0	1,507.2	0.0	0.0
44.67	Top - Section 1	61.1	672.4					24.9	720.6	86.0	1,393.0	0.0	0.0
45.00		22.6	39.7					1.8	51.5	24.4	91.2	0.0	0.0
46.50	Appurtenance(s)	61.8	177.8	35.6	0.0	0.0	150.0	8.2	231.6	105.5	559.5	0.0	0.0
50.00		105.5	410.5					19.4	540.5	124.9	951.0	0.0	0.0
55.00		124.7	575.7					28.3	772.1	153.0	1,347.8	0.0	0.0
60.00		125.0	563.1					29.1	772.1	154.1	1,335.2	0.0	0.0
65.00		125.1	550.4					29.8	772.1	154.8	1,322.5	0.0	0.0
70.00		124.8	537.8					30.4	772.1	155.2	1,309.9	0.0	0.0
75.00		124.3	525.1					31.1	772.1	155.4	1,297.2	0.0	0.0
80.00		123.5	512.5					31.7	772.1	155.2	1,284.6	0.0	0.0
85.00		67.7	499.8					32.2	772.1	99.9	1,271.9	0.0	0.0
85.50	Top - Section 2	61.0	49.3					3.3	77.2	64.3	126.5	0.0	0.0
90.00		115.3	351.1					29.5	694.9	144.9	1,046.0	0.0	0.0
95.00		120.1	380.5					33.3	772.1	153.4	1,152.6	0.0	0.0
100.00		118.7	370.4					33.8	772.1	152.5	1,142.5	0.0	0.0
105.00		117.0	360.3					34.3	772.1	151.3	1,132.3	0.0	0.0
110.00		115.2	350.1					34.8	772.1	150.0	1,122.2	0.0	0.0
115.00		113.3	340.0					35.2	772.1	148.6	1,112.1	0.0	0.0
120.00		111.3	329.9					35.7	772.1	146.9	1,102.0	0.0	0.0
125.00		58.7	319.8					36.1	772.1	94.8	1,091.9	0.0	0.0
125.33	Top - Section 3	54.0	21.0					2.4	51.5	56.4	72.4	0.0	0.0
130.00		103.2	217.1					34.1	720.6	137.3	937.8	0.0	0.0
135.00		104.4	225.3					36.9	772.1	141.4	997.4	0.0	0.0
140.00		102.0	217.7					37.3	772.1	139.3	989.8	0.0	0.0
145.00		99.4	210.1					37.7	772.1	137.1	982.2	0.0	0.0
150.00		53.8	202.5					38.1	772.1	91.9	974.6	0.0	0.0
150.50	Reinf. Top	47.7	19.8					3.8	77.2	51.5	97.0	0.0	0.0
155.00		81.4	175.1					34.6	394.3	116.0	569.4	0.0	0.0
160.00		75.9	187.4					0.0	104.1	75.9	291.5	0.0	0.0
165.00		73.4	179.8					0.0	104.1	73.4	283.9	0.0	0.0
170.00		70.9	172.2					0.0	104.1	70.9	276.3	0.0	0.0
175.00		68.3	164.6					0.0	104.1	68.3	268.7	0.0	0.0
180.00		36.1	157.0					0.0	104.1	36.1	261.1	0.0	0.0
180.40		2.7	12.2					0.0	8.3	2.7	20.6	0.0	0.0
180.42		0.1	0.5					0.0	0.3	0.1	0.9	0.0	0.0
								Totals:		4,945.15	40,824.4	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 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	-43.40	-6.00	0.00	-655.61	0.00	655.61	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.160
5.00	-41.78	-5.93	0.00	-625.63	0.00	625.63	3,339.53	1,669.77	5,587.61	2,759.51	0.03	-0.05	0.156
10.00	-40.05	-5.74	0.00	-595.49	0.00	595.49	3,303.67	1,651.84	5,426.07	2,679.73	0.12	-0.11	0.151
15.00	-38.46	-5.67	0.00	-566.80	0.00	566.80	3,266.89	1,633.44	5,265.23	2,600.30	0.26	-0.16	0.147
20.00	-36.89	-5.59	0.00	-538.45	0.00	538.45	3,229.18	1,614.59	5,105.20	2,521.27	0.46	-0.22	0.143
25.00	-35.33	-5.47	0.00	-510.52	0.00	510.52	3,190.54	1,595.27	4,946.05	2,442.67	0.72	-0.27	0.138
30.00	-33.79	-5.35	0.00	-483.16	0.00	483.16	3,150.98	1,575.49	4,787.88	2,364.55	1.03	-0.33	0.134
35.00	-32.26	-5.23	0.00	-456.39	0.00	456.39	3,110.50	1,555.25	4,630.76	2,286.96	1.40	-0.38	0.129
40.00	-30.75	-5.10	0.00	-430.25	0.00	430.25	3,069.09	1,534.55	4,474.78	2,209.92	1.82	-0.43	0.125
44.67	-29.36	-5.02	0.00	-406.43	0.00	406.43	3,029.61	1,514.81	4,330.30	2,138.57	2.27	-0.48	0.120
44.67	-29.36	-5.02	0.00	-406.43	0.00	406.43	2,356.88	1,178.44	3,380.89	1,669.69	2.27	-0.48	0.143
45.00	-29.26	-5.00	0.00	-404.76	0.00	404.76	2,354.99	1,177.50	3,373.36	1,665.97	2.31	-0.48	0.143
46.50	-28.70	-4.90	0.00	-397.26	0.00	397.26	2,346.45	1,173.22	3,339.48	1,649.24	2.46	-0.50	0.141
50.00	-27.75	-4.79	0.00	-380.09	0.00	380.09	2,326.18	1,163.09	3,260.58	1,610.28	2.84	-0.54	0.137
55.00	-26.40	-4.65	0.00	-356.12	0.00	356.12	2,296.44	1,148.22	3,148.31	1,554.83	3.44	-0.60	0.131
60.00	-25.06	-4.51	0.00	-332.85	0.00	332.85	2,265.77	1,132.89	3,036.63	1,499.68	4.10	-0.66	0.125
65.00	-23.74	-4.36	0.00	-310.31	0.00	310.31	2,234.19	1,117.09	2,925.62	1,444.85	4.82	-0.71	0.119
70.00	-22.42	-4.21	0.00	-288.50	0.00	288.50	2,201.67	1,100.84	2,815.37	1,390.41	5.59	-0.76	0.113
75.00	-21.13	-4.06	0.00	-267.45	0.00	267.45	2,168.24	1,084.12	2,705.97	1,336.38	6.42	-0.82	0.108
80.00	-19.84	-3.90	0.00	-247.16	0.00	247.16	2,133.87	1,066.94	2,597.50	1,282.81	7.30	-0.87	0.102
85.00	-18.57	-3.79	0.00	-227.66	0.00	227.66	2,098.59	1,049.29	2,490.04	1,229.74	8.24	-0.92	0.096
85.50	-18.44	-3.73	0.00	-225.77	0.00	225.77	2,095.01	1,047.50	2,479.36	1,224.46	8.34	-0.93	0.096
85.50	-18.44	-3.73	0.00	-225.77	0.00	225.77	1,537.79	768.90	1,827.83	902.70	8.34	-0.93	0.116
90.00	-17.39	-3.58	0.00	-208.98	0.00	208.98	1,518.16	759.08	1,762.50	870.43	9.23	-0.97	0.109
95.00	-16.24	-3.43	0.00	-191.06	0.00	191.06	1,495.46	747.73	1,690.19	834.72	10.28	-1.02	0.102
100.00	-15.10	-3.27	0.00	-173.93	0.00	173.93	1,471.85	735.92	1,618.25	799.19	11.38	-1.07	0.094
105.00	-13.97	-3.10	0.00	-157.61	0.00	157.61	1,447.30	723.65	1,546.78	763.90	12.53	-1.12	0.087
110.00	-12.85	-2.94	0.00	-142.09	0.00	142.09	1,421.84	710.92	1,475.86	728.87	13.73	-1.17	0.081
115.00	-11.74	-2.78	0.00	-127.38	0.00	127.38	1,395.45	697.72	1,405.58	694.16	14.98	-1.22	0.074
120.00	-10.63	-2.62	0.00	-113.48	0.00	113.48	1,368.13	684.07	1,336.01	659.81	16.28	-1.26	0.067
125.00	-9.54	-2.50	0.00	-100.40	0.00	100.40	1,339.89	669.95	1,267.25	625.85	17.63	-1.30	0.061
125.33	-9.47	-2.45	0.00	-99.57	0.00	99.57	1,337.98	668.99	1,262.70	623.60	17.72	-1.30	0.061
125.33	-9.47	-2.45	0.00	-99.57	0.00	99.57	893.38	446.69	847.72	418.66	17.72	-1.30	0.075
130.00	-8.54	-2.29	0.00	-88.15	0.00	88.15	879.61	439.81	809.42	399.74	19.01	-1.34	0.067
135.00	-7.54	-2.13	0.00	-76.69	0.00	76.69	863.96	431.98	768.47	379.52	20.43	-1.38	0.059
140.00	-6.55	-1.97	0.00	-66.02	0.00	66.02	847.39	423.70	727.68	359.37	21.90	-1.42	0.052
145.00	-5.57	-1.81	0.00	-56.15	0.00	56.15	829.90	414.95	687.15	339.36	23.40	-1.45	0.045
150.00	-4.60	-1.70	0.00	-47.08	0.00	47.08	811.48	405.74	646.95	319.51	24.93	-1.48	0.038
150.50	-4.51	-1.65	0.00	-46.23	0.00	46.23	809.59	404.79	642.96	317.53	25.09	-1.48	0.038
150.50	-4.51	-1.65	0.00	-46.23	0.00	46.23	809.59	404.79	642.96	317.53	25.09	-1.48	0.151
155.00	-3.94	-1.52	0.00	-38.82	0.00	38.82	792.13	396.07	607.18	299.86	26.50	-1.51	0.134
160.00	-3.65	-1.44	0.00	-31.22	0.00	31.22	771.86	385.93	567.92	280.48	28.13	-1.61	0.116
165.00	-3.36	-1.37	0.00	-24.01	0.00	24.01	750.67	375.34	529.26	261.38	29.86	-1.70	0.096

Load Case: 1.0D + 1.0W Serviceability 60 mph 28 Iterations

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

170.00	-3.09	-1.29	0.00	-17.18	0.00	17.18	728.55	364.28	491.27	242.62	31.68	-1.77	0.075
175.00	-2.82	-1.22	0.00	-10.72	0.00	10.72	696.59	348.30	448.31	221.40	33.57	-1.83	0.052
180.00	-2.56	-1.17	0.00	-4.64	0.00	4.64	663.72	331.86	406.75	200.88	35.51	-1.87	0.027
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	35.66	-1.87	0.000
180.42	0.00	0.00	0.00	0.00	0.00	0.00	660.98	330.49	403.38	199.21	35.67	-1.87	0.000

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.17	
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}):	0.18	
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):	3.07	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	43.40	k
Seismic Base Shear (E):	1.69	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)
43	180.41	1	28	0.000	0	1
42	180.20	21	668	0.002	3	25
41	177.50	261	8,226	0.021	36	323
40	172.50	269	7,995	0.021	35	332
39	167.50	276	7,751	0.020	34	341
38	162.50	284	7,496	0.019	33	351
37	157.50	291	7,230	0.019	32	360
36	152.75	569	13,285	0.034	58	704
35	150.25	97	2,191	0.006	10	120
34	147.50	975	21,204	0.055	93	1,205
33	142.50	982	19,945	0.051	87	1,214
32	137.50	990	18,714	0.048	82	1,223
31	132.50	997	17,511	0.045	76	1,233
30	127.67	938	15,285	0.039	67	1,159
29	125.17	72	1,134	0.003	5	89
28	122.50	1,092	16,385	0.042	72	1,350
27	117.50	1,102	15,214	0.039	66	1,362
26	112.50	1,112	14,075	0.036	61	1,375
25	107.50	1,122	12,969	0.033	57	1,387
24	102.50	1,132	11,897	0.031	52	1,400
23	97.50	1,142	10,861	0.028	47	1,412
22	92.50	1,153	9,862	0.025	43	1,425
21	87.75	1,046	8,054	0.021	35	1,293

20	85.25	126	919	0.002	4	156
19	82.50	1,272	8,657	0.022	38	1,572
18	77.50	1,285	7,716	0.020	34	1,588
17	72.50	1,297	6,819	0.018	30	1,603
16	67.50	1,310	5,968	0.015	26	1,619
15	62.50	1,323	5,166	0.013	23	1,635
14	57.50	1,335	4,414	0.011	19	1,650
13	52.50	1,348	3,715	0.010	16	1,666
12	48.25	951	2,214	0.006	10	1,175
11	45.75	409	857	0.002	4	506
10	44.83	91	183	0.000	1	113
9	42.33	1,393	2,496	0.006	11	1,722
8	37.50	1,507	2,120	0.005	9	1,863
7	32.50	1,522	1,608	0.004	7	1,882
6	27.50	1,538	1,163	0.003	5	1,901
5	22.50	1,553	786	0.002	3	1,919
4	17.50	1,568	480	0.001	2	1,938
3	12.50	1,583	247	0.001	1	1,957
2	7.50	1,598	90	0.000	0	1,976
1	2.50	1,614	10	0.000	0	1,995
LGP Allgon LGP21903	180.40	33	1,074	0.003	5	41
Powerwave Allgon LGP	180.40	85	2,753	0.007	12	105
Raycap DC6-48-60-18-	180.40	20	651	0.002	3	25
Generic 6' Omni	180.40	25	814	0.002	4	31
Ericsson RRUS 4449 B	180.40	213	6,932	0.018	30	263
Ericsson RRUS 4478 B	180.40	178	5,799	0.015	25	220
Raycap DC6-48-60-18-	180.40	16	521	0.001	2	20
Ericsson RRUS 32 B2	180.40	159	5,175	0.013	23	197
Powerwave Allgon 777	180.40	105	3,417	0.009	15	130
CCI DMP65R-BU6DA	180.40	159	5,168	0.013	23	196
CCI DMP65R-BU8D	180.40	383	12,458	0.032	54	473
Generic Flat Light S	180.40	1,200	39,053	0.101	170	1,483
Round Side Arm	46.50	150	324	0.001	1	185
Channel Master Type	10.00	126	13	0.000	0	156
		43,400	387,758	1.000	1,693	53,645

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)
43	180.41	1	28	0.000	0	1
42	180.20	21	668	0.002	3	18
41	177.50	261	8,226	0.021	36	226
40	172.50	269	7,995	0.021	35	232
39	167.50	276	7,751	0.020	34	239
38	162.50	284	7,496	0.019	33	245
37	157.50	291	7,230	0.019	32	252
36	152.75	569	13,285	0.034	58	492
35	150.25	97	2,191	0.006	10	84
34	147.50	975	21,204	0.055	93	842
33	142.50	982	19,945	0.051	87	849
32	137.50	990	18,714	0.048	82	855
31	132.50	997	17,511	0.045	76	862
30	127.67	938	15,285	0.039	67	810
29	125.17	72	1,134	0.003	5	63
28	122.50	1,092	16,385	0.042	72	943
27	117.50	1,102	15,214	0.039	66	952
26	112.50	1,112	14,075	0.036	61	961
25	107.50	1,122	12,969	0.033	57	970
24	102.50	1,132	11,897	0.031	52	978

23	97.50	1,142	10,861	0.028	47	987
22	92.50	1,153	9,862	0.025	43	996
21	87.75	1,046	8,054	0.021	35	904
20	85.25	126	919	0.002	4	109
19	82.50	1,272	8,657	0.022	38	1,099
18	77.50	1,285	7,716	0.020	34	1,110
17	72.50	1,297	6,819	0.018	30	1,121
16	67.50	1,310	5,968	0.015	26	1,132
15	62.50	1,323	5,166	0.013	23	1,143
14	57.50	1,335	4,414	0.011	19	1,154
13	52.50	1,348	3,715	0.010	16	1,164
12	48.25	951	2,214	0.006	10	822
11	45.75	409	857	0.002	4	354
10	44.83	91	183	0.000	1	79
9	42.33	1,393	2,496	0.006	11	1,204
8	37.50	1,507	2,120	0.005	9	1,302
7	32.50	1,522	1,608	0.004	7	1,315
6	27.50	1,538	1,163	0.003	5	1,328
5	22.50	1,553	786	0.002	3	1,341
4	17.50	1,568	480	0.001	2	1,355
3	12.50	1,583	247	0.001	1	1,368
2	7.50	1,598	90	0.000	0	1,381
1	2.50	1,614	10	0.000	0	1,394
LGP Allgon LGP21903	180.40	33	1,074	0.003	5	29
Powerwave Allgon LGP	180.40	85	2,753	0.007	12	73
Raycap DC6-48-60-18-	180.40	20	651	0.002	3	17
Generic 6' Omni	180.40	25	814	0.002	4	22
Ericsson RRUS 4449 B	180.40	213	6,932	0.018	30	184
Ericsson RRUS 4478 B	180.40	178	5,799	0.015	25	154
Raycap DC6-48-60-18-	180.40	16	521	0.001	2	14
Ericsson RRUS 32 B2	180.40	159	5,175	0.013	23	137
Powerwave Allgon 777	180.40	105	3,417	0.009	15	91
CCI DMP65R-BU6DA	180.40	159	5,168	0.013	23	137
CCI DMP65R-BU8D	180.40	383	12,458	0.032	54	331
Generic Flat Light S	180.40	1,200	39,053	0.101	170	1,037
Round Side Arm	46.50	150	324	0.001	1	130
Channel Master Type	10.00	126	13	0.000	0	109
		43,400	387,758	1.000	1,693	37,495

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	-51.65	-1.70	0.00	-236.59	0.00	236.59	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.065
5.00	-49.67	-1.72	0.00	-228.09	0.00	228.09	3,339.53	1,669.77	5,587.61	2,759.51	0.01	-0.02	0.064
10.00	-47.56	-1.73	0.00	-219.50	0.00	219.50	3,303.67	1,651.84	5,426.07	2,679.73	0.04	-0.04	0.063
15.00	-45.62	-1.74	0.00	-210.84	0.00	210.84	3,266.89	1,633.44	5,265.23	2,600.30	0.09	-0.06	0.061
20.00	-43.70	-1.75	0.00	-202.12	0.00	202.12	3,229.18	1,614.59	5,105.20	2,521.27	0.17	-0.08	0.060
25.00	-41.80	-1.76	0.00	-193.36	0.00	193.36	3,190.54	1,595.27	4,946.05	2,442.67	0.26	-0.10	0.059
30.00	-39.92	-1.76	0.00	-184.55	0.00	184.55	3,150.98	1,575.49	4,787.88	2,364.55	0.38	-0.12	0.057
35.00	-38.05	-1.76	0.00	-175.73	0.00	175.73	3,110.50	1,555.25	4,630.76	2,286.96	0.52	-0.14	0.055
40.00	-36.33	-1.76	0.00	-166.91	0.00	166.91	3,069.09	1,534.55	4,474.78	2,209.92	0.68	-0.16	0.054
44.67	-36.22	-1.77	0.00	-158.70	0.00	158.70	3,029.61	1,514.81	4,330.30	2,138.57	0.84	-0.18	0.053
44.67	-36.22	-1.77	0.00	-158.70	0.00	158.70	2,356.88	1,178.44	3,380.89	1,669.69	0.84	-0.18	0.063
45.00	-35.71	-1.76	0.00	-158.11	0.00	158.11	2,354.99	1,177.50	3,373.36	1,665.97	0.86	-0.18	0.062
46.50	-34.35	-1.76	0.00	-155.46	0.00	155.46	2,346.45	1,173.22	3,339.48	1,649.24	0.91	-0.19	0.061
50.00	-32.69	-1.74	0.00	-149.32	0.00	149.32	2,326.18	1,163.09	3,260.58	1,610.28	1.06	-0.21	0.060
55.00	-31.03	-1.73	0.00	-140.60	0.00	140.60	2,296.44	1,148.22	3,148.31	1,554.83	1.29	-0.23	0.057
60.00	-29.40	-1.71	0.00	-131.95	0.00	131.95	2,265.77	1,132.89	3,036.63	1,499.68	1.54	-0.25	0.055
65.00	-27.78	-1.69	0.00	-123.39	0.00	123.39	2,234.19	1,117.09	2,925.62	1,444.85	1.81	-0.27	0.053
70.00	-26.18	-1.66	0.00	-114.94	0.00	114.94	2,201.67	1,100.84	2,815.37	1,390.41	2.11	-0.29	0.050
75.00	-24.59	-1.63	0.00	-106.63	0.00	106.63	2,168.24	1,084.12	2,705.97	1,336.38	2.42	-0.31	0.047
80.00	-23.01	-1.59	0.00	-98.49	0.00	98.49	2,133.87	1,066.94	2,597.50	1,282.81	2.76	-0.34	0.045
85.00	-22.86	-1.59	0.00	-90.53	0.00	90.53	2,098.59	1,049.29	2,490.04	1,229.74	3.13	-0.36	0.043
85.50	-21.57	-1.55	0.00	-89.74	0.00	89.74	2,095.01	1,047.50	2,479.36	1,224.46	3.16	-0.36	0.042
85.50	-21.57	-1.55	0.00	-89.74	0.00	89.74	1,537.79	768.90	1,827.83	902.70	3.16	-0.36	0.051
90.00	-20.14	-1.50	0.00	-82.76	0.00	82.76	1,518.16	759.08	1,762.50	870.43	3.51	-0.38	0.048
95.00	-18.73	-1.45	0.00	-75.24	0.00	75.24	1,495.46	747.73	1,690.19	834.72	3.91	-0.40	0.044
100.00	-17.33	-1.40	0.00	-67.97	0.00	67.97	1,471.85	735.92	1,618.25	799.19	4.34	-0.42	0.041
105.00	-15.94	-1.34	0.00	-60.97	0.00	60.97	1,447.30	723.65	1,546.78	763.90	4.78	-0.44	0.038
110.00	-14.57	-1.27	0.00	-54.29	0.00	54.29	1,421.84	710.92	1,475.86	728.87	5.25	-0.45	0.034
115.00	-13.20	-1.20	0.00	-47.94	0.00	47.94	1,395.45	697.72	1,405.58	694.16	5.74	-0.47	0.031
120.00	-11.86	-1.12	0.00	-41.96	0.00	41.96	1,368.13	684.07	1,336.01	659.81	6.24	-0.49	0.028
125.00	-11.77	-1.11	0.00	-36.38	0.00	36.38	1,339.89	669.95	1,267.25	625.85	6.76	-0.50	0.025
125.33	-10.61	-1.04	0.00	-36.01	0.00	36.01	1,337.98	668.99	1,262.70	623.60	6.79	-0.50	0.024
125.33	-10.61	-1.04	0.00	-36.01	0.00	36.01	893.38	446.69	847.72	418.66	6.79	-0.50	0.030
130.00	-9.37	-0.95	0.00	-31.17	0.00	31.17	879.61	439.81	809.42	399.74	7.29	-0.52	0.027
135.00	-8.15	-0.86	0.00	-26.41	0.00	26.41	863.96	431.98	768.47	379.52	7.84	-0.53	0.023
140.00	-6.94	-0.76	0.00	-22.10	0.00	22.10	847.39	423.70	727.68	359.37	8.40	-0.54	0.020
145.00	-5.73	-0.66	0.00	-18.29	0.00	18.29	829.90	414.95	687.15	339.36	8.97	-0.55	0.016
150.00	-5.61	-0.65	0.00	-14.98	0.00	14.98	811.48	405.74	646.95	319.51	9.56	-0.56	0.014
150.50	-4.91	-0.59	0.00	-14.66	0.00	14.66	809.59	404.79	642.96	317.53	9.62	-0.56	0.014
150.50	-4.91	-0.59	0.00	-14.66	0.00	14.66	809.59	404.79	642.96	317.53	9.62	-0.56	0.052
155.00	-4.55	-0.55	0.00	-12.02	0.00	12.02	792.13	396.07	607.18	299.86	10.15	-0.57	0.046
160.00	-4.20	-0.52	0.00	-9.26	0.00	9.26	771.86	385.93	567.92	280.48	10.77	-0.60	0.038
165.00	-3.86	-0.48	0.00	-6.67	0.00	6.67	750.67	375.34	529.26	261.38	11.41	-0.63	0.031
170.00	-3.53	-0.44	0.00	-4.25	0.00	4.25	728.55	364.28	491.27	242.62	12.08	-0.65	0.022
175.00	-3.21	-0.41	0.00	-2.03	0.00	2.03	696.59	348.30	448.31	221.40	12.77	-0.66	0.014
180.00	0.00	0.00	0.00	0.00	0.00	0.00	663.72	331.86	406.75	200.88	13.46	-0.67	0.000
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	13.52	-0.67	0.000

180.42	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**660.98**	**330.49**	**403.38**	**199.21**	**13.52**	**-0.67**	**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	-36.10	-1.70	0.00	-231.38	0.00	231.38	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.061
5.00	-34.72	-1.71	0.00	-222.89	0.00	222.89	3,339.53	1,669.77	5,587.61	2,759.51	0.01	-0.02	0.060
10.00	-33.24	-1.72	0.00	-214.35	0.00	214.35	3,303.67	1,651.84	5,426.07	2,679.73	0.04	-0.04	0.058
15.00	-31.89	-1.73	0.00	-205.76	0.00	205.76	3,266.89	1,633.44	5,265.23	2,600.30	0.09	-0.06	0.057
20.00	-30.54	-1.73	0.00	-197.12	0.00	197.12	3,229.18	1,614.59	5,105.20	2,521.27	0.16	-0.08	0.056
25.00	-29.22	-1.73	0.00	-188.47	0.00	188.47	3,190.54	1,595.27	4,946.05	2,442.67	0.26	-0.10	0.055
30.00	-27.90	-1.73	0.00	-179.79	0.00	179.79	3,150.98	1,575.49	4,787.88	2,364.55	0.37	-0.12	0.053
35.00	-26.60	-1.73	0.00	-171.12	0.00	171.12	3,110.50	1,555.25	4,630.76	2,286.96	0.50	-0.14	0.052
40.00	-25.39	-1.73	0.00	-162.46	0.00	162.46	3,069.09	1,534.55	4,474.78	2,209.92	0.66	-0.16	0.050
44.67	-25.31	-1.73	0.00	-154.40	0.00	154.40	3,029.61	1,514.81	4,330.30	2,138.57	0.82	-0.18	0.049
44.67	-25.31	-1.73	0.00	-154.40	0.00	154.40	2,356.88	1,178.44	3,380.89	1,669.69	0.82	-0.18	0.058
45.00	-24.96	-1.73	0.00	-153.82	0.00	153.82	2,354.99	1,177.50	3,373.36	1,665.97	0.84	-0.18	0.058
46.50	-24.01	-1.72	0.00	-151.23	0.00	151.23	2,346.45	1,173.22	3,339.48	1,649.24	0.89	-0.18	0.057
50.00	-22.84	-1.70	0.00	-145.22	0.00	145.22	2,326.18	1,163.09	3,260.58	1,610.28	1.03	-0.20	0.056
55.00	-21.69	-1.69	0.00	-136.70	0.00	136.70	2,296.44	1,148.22	3,148.31	1,554.83	1.25	-0.22	0.053
60.00	-20.55	-1.67	0.00	-128.25	0.00	128.25	2,265.77	1,132.89	3,036.63	1,499.68	1.50	-0.24	0.051
65.00	-19.41	-1.65	0.00	-119.90	0.00	119.90	2,234.19	1,117.09	2,925.62	1,444.85	1.76	-0.26	0.049
70.00	-18.29	-1.62	0.00	-111.67	0.00	111.67	2,201.67	1,100.84	2,815.37	1,390.41	2.05	-0.29	0.047
75.00	-17.18	-1.58	0.00	-103.58	0.00	103.58	2,168.24	1,084.12	2,705.97	1,336.38	2.36	-0.31	0.044
80.00	-16.08	-1.55	0.00	-95.66	0.00	95.66	2,133.87	1,066.94	2,597.50	1,282.81	2.69	-0.33	0.042
85.00	-15.97	-1.54	0.00	-87.93	0.00	87.93	2,098.59	1,049.29	2,490.04	1,229.74	3.05	-0.35	0.040
85.50	-15.07	-1.51	0.00	-87.16	0.00	87.16	2,095.01	1,047.50	2,479.36	1,224.46	3.08	-0.35	0.039
85.50	-15.07	-1.51	0.00	-87.16	0.00	87.16	1,537.79	768.90	1,827.83	902.70	3.08	-0.35	0.047
90.00	-14.07	-1.46	0.00	-80.38	0.00	80.38	1,518.16	759.08	1,762.50	870.43	3.42	-0.37	0.044
95.00	-13.09	-1.41	0.00	-73.07	0.00	73.07	1,495.46	747.73	1,690.19	834.72	3.81	-0.39	0.041
100.00	-12.11	-1.36	0.00	-66.01	0.00	66.01	1,471.85	735.92	1,618.25	799.19	4.23	-0.41	0.038
105.00	-11.14	-1.30	0.00	-59.22	0.00	59.22	1,447.30	723.65	1,546.78	763.90	4.66	-0.42	0.035
110.00	-10.18	-1.23	0.00	-52.74	0.00	52.74	1,421.84	710.92	1,475.86	728.87	5.11	-0.44	0.032
115.00	-9.23	-1.16	0.00	-46.58	0.00	46.58	1,395.45	697.72	1,405.58	694.16	5.59	-0.46	0.029
120.00	-8.28	-1.08	0.00	-40.77	0.00	40.77	1,368.13	684.07	1,336.01	659.81	6.07	-0.47	0.026
125.00	-8.22	-1.08	0.00	-35.35	0.00	35.35	1,339.89	669.95	1,267.25	625.85	6.58	-0.49	0.023
125.33	-7.41	-1.01	0.00	-34.99	0.00	34.99	1,337.98	668.99	1,262.70	623.60	6.61	-0.49	0.023
125.33	-7.41	-1.01	0.00	-34.99	0.00	34.99	893.38	446.69	847.72	418.66	6.61	-0.49	0.028
130.00	-6.55	-0.92	0.00	-30.30	0.00	30.30	879.61	439.81	809.42	399.74	7.10	-0.50	0.025
135.00	-5.70	-0.84	0.00	-25.67	0.00	25.67	863.96	431.98	768.47	379.52	7.63	-0.52	0.021
140.00	-4.85	-0.74	0.00	-21.49	0.00	21.49	847.39	423.70	727.68	359.37	8.18	-0.53	0.018
145.00	-4.01	-0.64	0.00	-17.78	0.00	17.78	829.90	414.95	687.15	339.36	8.74	-0.54	0.015
150.00	-3.92	-0.63	0.00	-14.56	0.00	14.56	811.48	405.74	646.95	319.51	9.30	-0.55	0.013
150.50	-3.43	-0.57	0.00	-14.25	0.00	14.25	809.59	404.79	642.96	317.53	9.36	-0.55	0.013
150.50	-3.43	-0.57	0.00	-14.25	0.00	14.25	809.59	404.79	642.96	317.53	9.36	-0.55	0.049
155.00	-3.18	-0.54	0.00	-11.68	0.00	11.68	792.13	396.07	607.18	299.86	9.88	-0.56	0.043
160.00	-2.93	-0.50	0.00	-8.99	0.00	8.99	771.86	385.93	567.92	280.48	10.48	-0.59	0.036
165.00	-2.70	-0.47	0.00	-6.47	0.00	6.47	750.67	375.34	529.26	261.38	11.11	-0.61	0.028
170.00	-2.46	-0.43	0.00	-4.13	0.00	4.13	728.55	364.28	491.27	242.62	11.76	-0.63	0.020
175.00	-2.24	-0.39	0.00	-1.97	0.00	1.97	696.59	348.30	448.31	221.40	12.42	-0.64	0.012
180.00	0.00	0.00	0.00	0.00	0.00	0.00	663.72	331.86	406.75	200.88	13.10	-0.65	0.000
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	13.16	-0.65	0.000

180.42	0.00	0.00	0.00	0.00	0.00	0.00	660.98	330.49	403.38	199.21	13.16	-0.65	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):	0.17
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}):	0.18
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	3.07
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)
43	180.41	1	1.890	1.979	1.140	0.339	0	1
42	180.20	21	1.885	1.956	1.131	0.337	6	25
41	177.50	261	1.829	1.675	1.029	0.303	69	323
40	172.50	269	1.728	1.230	0.858	0.245	57	332
39	167.50	276	1.629	0.871	0.710	0.193	46	341
38	162.50	284	1.533	0.586	0.583	0.146	36	351
37	157.50	291	1.440	0.365	0.475	0.104	26	360
36	152.75	569	1.355	0.204	0.387	0.068	34	704
35	150.25	97	1.311	0.136	0.346	0.051	4	120
34	147.50	975	1.263	0.073	0.305	0.034	29	1,205
33	142.50	982	1.179	-0.014	0.239	0.007	6	1,214
32	137.50	990	1.098	-0.071	0.185	-0.015	-13	1,223
31	132.50	997	1.019	-0.105	0.141	-0.032	-28	1,233
30	127.67	938	0.946	-0.119	0.106	-0.044	-36	1,159
29	125.17	72	0.910	-0.122	0.091	-0.049	-3	89
28	122.50	1,092	0.871	-0.121	0.077	-0.052	-49	1,350
27	117.50	1,102	0.802	-0.112	0.054	-0.055	-52	1,362
26	112.50	1,112	0.735	-0.097	0.037	-0.052	-50	1,375
25	107.50	1,122	0.671	-0.078	0.025	-0.044	-43	1,387
24	102.50	1,132	0.610	-0.057	0.016	-0.032	-32	1,400
23	97.50	1,142	0.552	-0.035	0.010	-0.017	-17	1,412
22	92.50	1,153	0.497	-0.015	0.007	0.000	0	1,425
21	87.75	1,046	0.447	0.003	0.006	0.015	14	1,293
20	85.25	126	0.422	0.011	0.006	0.022	2	156
19	82.50	1,272	0.395	0.020	0.007	0.030	33	1,572
18	77.50	1,285	0.349	0.033	0.009	0.040	44	1,588
17	72.50	1,297	0.305	0.044	0.012	0.047	53	1,603
16	67.50	1,310	0.265	0.053	0.016	0.051	58	1,619
15	62.50	1,323	0.227	0.059	0.020	0.053	61	1,635
14	57.50	1,335	0.192	0.064	0.024	0.054	62	1,650
13	52.50	1,348	0.160	0.067	0.029	0.053	62	1,666
12	48.25	951	0.135	0.069	0.032	0.053	44	1,175
11	45.75	409	0.122	0.070	0.034	0.052	19	506
10	44.83	91	0.117	0.070	0.035	0.052	4	113

9	42.33	1,393	0.104	0.071	0.037	0.052	62	1,722
8	37.50	1,507	0.082	0.072	0.039	0.051	66	1,863
7	32.50	1,522	0.061	0.072	0.041	0.050	65	1,882
6	27.50	1,538	0.044	0.071	0.042	0.048	65	1,901
5	22.50	1,553	0.029	0.068	0.040	0.047	63	1,919
4	17.50	1,568	0.018	0.063	0.037	0.044	60	1,938
3	12.50	1,583	0.009	0.053	0.031	0.039	54	1,957
2	7.50	1,598	0.003	0.038	0.021	0.031	42	1,976
1	2.50	1,614	0.000	0.015	0.008	0.014	20	1,995
LGP Allgon LGP21903	180.40	33	1.890	1.978	1.139	0.339	10	41
Powerwave Allgon LGP	180.40	85	1.890	1.978	1.139	0.339	25	105
Raycap DC6-48-60-18-	180.40	20	1.890	1.978	1.139	0.339	6	25
Generic 6' Omni	180.40	25	1.890	1.978	1.139	0.339	7	31
Ericsson RRUS 4449 B	180.40	213	1.890	1.978	1.139	0.339	63	263
Ericsson RRUS 4478 B	180.40	178	1.890	1.978	1.139	0.339	52	220
Raycap DC6-48-60-18-	180.40	16	1.890	1.978	1.139	0.339	5	20
Ericsson RRUS 32 B2	180.40	159	1.890	1.978	1.139	0.339	47	197
Powerwave Allgon 777	180.40	105	1.890	1.978	1.139	0.339	31	130
CCI DMP65R-BU6DA	180.40	159	1.890	1.978	1.139	0.339	47	196
CCI DMP65R-BU8D	180.40	383	1.890	1.978	1.139	0.339	113	473
Generic Flat Light S	180.40	1,200	1.890	1.978	1.139	0.339	353	1,483
Round Side Arm	46.50	150	0.126	0.070	0.034	0.052	7	185
Channel Master Type	10.00	126	0.006	0.047	0.027	0.036	4	156
		43,400	52.047	33.069	22.210	6.492	1,712	53,645

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)
43	180.41	1	1.890	1.979	1.140	0.339	0	1
42	180.20	21	1.885	1.956	1.131	0.337	6	18
41	177.50	261	1.829	1.675	1.029	0.303	69	226
40	172.50	269	1.728	1.230	0.858	0.245	57	232
39	167.50	276	1.629	0.871	0.710	0.193	46	239
38	162.50	284	1.533	0.586	0.583	0.146	36	245
37	157.50	291	1.440	0.365	0.475	0.104	26	252
36	152.75	569	1.355	0.204	0.387	0.068	34	492
35	150.25	97	1.311	0.136	0.346	0.051	4	84
34	147.50	975	1.263	0.073	0.305	0.034	29	842
33	142.50	982	1.179	-0.014	0.239	0.007	6	849
32	137.50	990	1.098	-0.071	0.185	-0.015	-13	855
31	132.50	997	1.019	-0.105	0.141	-0.032	-28	862
30	127.67	938	0.946	-0.119	0.106	-0.044	-36	810
29	125.17	72	0.910	-0.122	0.091	-0.049	-3	63
28	122.50	1,092	0.871	-0.121	0.077	-0.052	-49	943
27	117.50	1,102	0.802	-0.112	0.054	-0.055	-52	952
26	112.50	1,112	0.735	-0.097	0.037	-0.052	-50	961
25	107.50	1,122	0.671	-0.078	0.025	-0.044	-43	970
24	102.50	1,132	0.610	-0.057	0.016	-0.032	-32	978
23	97.50	1,142	0.552	-0.035	0.010	-0.017	-17	987
22	92.50	1,153	0.497	-0.015	0.007	0.000	0	996
21	87.75	1,046	0.447	0.003	0.006	0.015	14	904
20	85.25	126	0.422	0.011	0.006	0.022	2	109
19	82.50	1,272	0.395	0.020	0.007	0.030	33	1,099
18	77.50	1,285	0.349	0.033	0.009	0.040	44	1,110
17	72.50	1,297	0.305	0.044	0.012	0.047	53	1,121
16	67.50	1,310	0.265	0.053	0.016	0.051	58	1,132
15	62.50	1,323	0.227	0.059	0.020	0.053	61	1,143
14	57.50	1,335	0.192	0.064	0.024	0.054	62	1,154

13	**52.50**	**1,348**	**0.160**	**0.067**	**0.029**	**0.053**	**62**	**1,164**
12	**48.25**	**951**	**0.135**	**0.069**	**0.032**	**0.053**	**44**	**822**
11	**45.75**	**409**	**0.122**	**0.070**	**0.034**	**0.052**	**19**	**354**
10	**44.83**	**91**	**0.117**	**0.070**	**0.035**	**0.052**	**4**	**79**
9	**42.33**	**1,393**	**0.104**	**0.071**	**0.037**	**0.052**	**62**	**1,204**
8	**37.50**	**1,507**	**0.082**	**0.072**	**0.039**	**0.051**	**66**	**1,302**
7	**32.50**	**1,522**	**0.061**	**0.072**	**0.041**	**0.050**	**65**	**1,315**
6	**27.50**	**1,538**	**0.044**	**0.071**	**0.042**	**0.048**	**65**	**1,328**
5	**22.50**	**1,553**	**0.029**	**0.068**	**0.040**	**0.047**	**63**	**1,341**
4	**17.50**	**1,568**	**0.018**	**0.063**	**0.037**	**0.044**	**60**	**1,355**
3	**12.50**	**1,583**	**0.009**	**0.053**	**0.031**	**0.039**	**54**	**1,368**
2	**7.50**	**1,598**	**0.003**	**0.038**	**0.021**	**0.031**	**42**	**1,381**
1	**2.50**	**1,614**	**0.000**	**0.015**	**0.008**	**0.014**	**20**	**1,394**
LGP Allgon LGP21903	**180.40**	**33**	**1.890**	**1.978**	**1.139**	**0.339**	**10**	**29**
Powerwave Allgon LGP	**180.40**	**85**	**1.890**	**1.978**	**1.139**	**0.339**	**25**	**73**
Raycap DC6-48-60-18-	**180.40**	**20**	**1.890**	**1.978**	**1.139**	**0.339**	**6**	**17**
Generic 6' Omni	**180.40**	**25**	**1.890**	**1.978**	**1.139**	**0.339**	**7**	**22**
Ericsson RRUS 4449 B	**180.40**	**213**	**1.890**	**1.978**	**1.139**	**0.339**	**63**	**184**
Ericsson RRUS 4478 B	**180.40**	**178**	**1.890**	**1.978**	**1.139**	**0.339**	**52**	**154**
Raycap DC6-48-60-18-	**180.40**	**16**	**1.890**	**1.978**	**1.139**	**0.339**	**5**	**14**
Ericsson RRUS 32 B2	**180.40**	**159**	**1.890**	**1.978**	**1.139**	**0.339**	**47**	**137**
Powerwave Allgon 777	**180.40**	**105**	**1.890**	**1.978**	**1.139**	**0.339**	**31**	**91**
CCI DMP65R-BU6DA	**180.40**	**159**	**1.890**	**1.978**	**1.139**	**0.339**	**47**	**137**
CCI DMP65R-BU8D	**180.40**	**383**	**1.890**	**1.978**	**1.139**	**0.339**	**113**	**331**
Generic Flat Light S	**180.40**	**1,200**	**1.890**	**1.978**	**1.139**	**0.339**	**353**	**1,037**
Round Side Arm	**46.50**	**150**	**0.126**	**0.070**	**0.034**	**0.052**	**7**	**130**
Channel Master Type	**10.00**	**126**	**0.006**	**0.047**	**0.027**	**0.036**	**4**	**109**
		43,400	**52.047**	**33.069**	**22.210**	**6.492**	**1,712**	**37,495**

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	-51.65	-1.70	0.00	-205.14	0.00	205.14	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.058
5.00	-49.67	-1.67	0.00	-196.65	0.00	196.65	3,339.53	1,669.77	5,587.61	2,759.51	0.01	-0.02	0.057
10.00	-47.56	-1.63	0.00	-188.29	0.00	188.29	3,303.67	1,651.84	5,426.07	2,679.73	0.04	-0.03	0.055
15.00	-45.62	-1.58	0.00	-180.16	0.00	180.16	3,266.89	1,633.44	5,265.23	2,600.30	0.08	-0.05	0.054
20.00	-43.70	-1.53	0.00	-172.27	0.00	172.27	3,229.18	1,614.59	5,105.20	2,521.27	0.14	-0.07	0.053
25.00	-41.80	-1.47	0.00	-164.63	0.00	164.63	3,190.54	1,595.27	4,946.05	2,442.67	0.23	-0.09	0.051
30.00	-39.92	-1.42	0.00	-157.27	0.00	157.27	3,150.98	1,575.49	4,787.88	2,364.55	0.33	-0.10	0.050
35.00	-38.06	-1.36	0.00	-150.19	0.00	150.19	3,110.50	1,555.25	4,630.76	2,286.96	0.44	-0.12	0.049
40.00	-36.33	-1.30	0.00	-143.40	0.00	143.40	3,069.09	1,534.55	4,474.78	2,209.92	0.58	-0.14	0.047
44.67	-36.22	-1.30	0.00	-137.32	0.00	137.32	3,029.61	1,514.81	4,330.30	2,138.57	0.72	-0.16	0.047
44.67	-36.22	-1.30	0.00	-137.32	0.00	137.32	2,356.88	1,178.44	3,380.89	1,669.69	0.72	-0.16	0.055
45.00	-35.71	-1.29	0.00	-136.89	0.00	136.89	2,354.99	1,177.50	3,373.36	1,665.97	0.73	-0.16	0.055
46.50	-34.35	-1.24	0.00	-134.96	0.00	134.96	2,346.45	1,173.22	3,339.48	1,649.24	0.78	-0.16	0.055
50.00	-32.69	-1.18	0.00	-130.63	0.00	130.63	2,326.18	1,163.09	3,260.58	1,610.28	0.91	-0.18	0.053
55.00	-31.04	-1.12	0.00	-124.73	0.00	124.73	2,296.44	1,148.22	3,148.31	1,554.83	1.10	-0.20	0.052
60.00	-29.40	-1.07	0.00	-119.11	0.00	119.11	2,265.77	1,132.89	3,036.63	1,499.68	1.32	-0.22	0.050
65.00	-27.78	-1.01	0.00	-113.78	0.00	113.78	2,234.19	1,117.09	2,925.62	1,444.85	1.56	-0.24	0.049
70.00	-26.18	-0.96	0.00	-108.72	0.00	108.72	2,201.67	1,100.84	2,815.37	1,390.41	1.81	-0.26	0.048
75.00	-24.59	-0.92	0.00	-103.91	0.00	103.91	2,168.24	1,084.12	2,705.97	1,336.38	2.09	-0.28	0.046
80.00	-23.02	-0.89	0.00	-99.32	0.00	99.32	2,133.87	1,066.94	2,597.50	1,282.81	2.39	-0.30	0.045
85.00	-22.86	-0.89	0.00	-94.89	0.00	94.89	2,098.59	1,049.29	2,490.04	1,229.74	2.71	-0.32	0.044
85.50	-21.57	-0.87	0.00	-94.45	0.00	94.45	2,095.01	1,047.50	2,479.36	1,224.46	2.75	-0.32	0.044
85.50	-21.57	-0.87	0.00	-94.45	0.00	94.45	1,537.79	768.90	1,827.83	902.70	2.75	-0.32	0.053
90.00	-20.14	-0.87	0.00	-90.53	0.00	90.53	1,518.16	759.08	1,762.50	870.43	3.06	-0.34	0.052
95.00	-18.73	-0.89	0.00	-86.18	0.00	86.18	1,495.46	747.73	1,690.19	834.72	3.42	-0.36	0.050
100.00	-17.33	-0.92	0.00	-81.75	0.00	81.75	1,471.85	735.92	1,618.25	799.19	3.81	-0.39	0.048
105.00	-15.94	-0.96	0.00	-77.18	0.00	77.18	1,447.30	723.65	1,546.78	763.90	4.23	-0.41	0.046
110.00	-14.57	-1.00	0.00	-72.40	0.00	72.40	1,421.84	710.92	1,475.86	728.87	4.67	-0.43	0.044
115.00	-13.21	-1.05	0.00	-67.39	0.00	67.39	1,395.45	697.72	1,405.58	694.16	5.14	-0.46	0.042
120.00	-11.86	-1.09	0.00	-62.15	0.00	62.15	1,368.13	684.07	1,336.01	659.81	5.63	-0.48	0.039
125.00	-11.77	-1.10	0.00	-56.69	0.00	56.69	1,339.89	669.95	1,267.25	625.85	6.14	-0.50	0.037
125.33	-10.61	-1.12	0.00	-56.32	0.00	56.32	1,337.98	668.99	1,262.70	623.60	6.18	-0.50	0.036
125.33	-10.61	-1.12	0.00	-56.32	0.00	56.32	893.38	446.69	847.72	418.66	6.18	-0.50	0.045
130.00	-9.37	-1.15	0.00	-51.08	0.00	51.08	879.61	439.81	809.42	399.74	6.68	-0.52	0.041
135.00	-8.15	-1.15	0.00	-45.35	0.00	45.35	863.96	431.98	768.47	379.52	7.24	-0.55	0.037
140.00	-6.93	-1.13	0.00	-39.60	0.00	39.60	847.39	423.70	727.68	359.37	7.83	-0.57	0.033
145.00	-5.73	-1.09	0.00	-33.93	0.00	33.93	829.90	414.95	687.15	339.36	8.44	-0.59	0.028
150.00	-5.61	-1.09	0.00	-28.46	0.00	28.46	811.48	405.74	646.95	319.51	9.07	-0.61	0.024
150.50	-4.91	-1.05	0.00	-27.91	0.00	27.91	809.59	404.79	642.96	317.53	9.13	-0.61	0.024
150.50	-4.91	-1.05	0.00	-27.91	0.00	27.91	809.59	404.79	642.96	317.53	9.13	-0.61	0.094
155.00	-4.55	-1.02	0.00	-23.19	0.00	23.19	792.13	396.07	607.18	299.86	9.71	-0.62	0.083
160.00	-4.19	-0.99	0.00	-18.08	0.00	18.08	771.86	385.93	567.92	280.48	10.40	-0.68	0.070
165.00	-3.85	-0.94	0.00	-13.14	0.00	13.14	750.67	375.34	529.26	261.38	11.14	-0.73	0.055
170.00	-3.52	-0.88	0.00	-8.44	0.00	8.44	728.55	364.28	491.27	242.62	11.93	-0.77	0.040
175.00	-3.20	-0.81	0.00	-4.04	0.00	4.04	696.59	348.30	448.31	221.40	12.76	-0.80	0.023
180.00	0.00	0.00	0.00	0.00	0.00	0.00	663.72	331.86	406.75	200.88	13.60	-0.81	0.000
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	13.67	-0.81	0.000

180.42	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**660.98**	**330.49**	**403.38**	**199.21**	**13.67**	**-0.81**	**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	-36.10	-1.70	0.00	-200.29	0.00	200.29	3,374.47	1,687.24	5,749.79	2,839.61	0.00	0.00	0.054
5.00	-34.72	-1.66	0.00	-191.80	0.00	191.80	3,339.53	1,669.77	5,587.61	2,759.51	0.01	-0.02	0.052
10.00	-33.24	-1.62	0.00	-183.49	0.00	183.49	3,303.67	1,651.84	5,426.07	2,679.73	0.04	-0.03	0.051
15.00	-31.89	-1.56	0.00	-175.41	0.00	175.41	3,266.89	1,633.44	5,265.23	2,600.30	0.08	-0.05	0.050
20.00	-30.55	-1.51	0.00	-167.59	0.00	167.59	3,229.18	1,614.59	5,105.20	2,521.27	0.14	-0.07	0.049
25.00	-29.22	-1.45	0.00	-160.05	0.00	160.05	3,190.54	1,595.27	4,946.05	2,442.67	0.22	-0.08	0.047
30.00	-27.90	-1.39	0.00	-152.80	0.00	152.80	3,150.98	1,575.49	4,787.88	2,364.55	0.32	-0.10	0.046
35.00	-26.60	-1.33	0.00	-145.84	0.00	145.84	3,110.50	1,555.25	4,630.76	2,286.96	0.43	-0.12	0.045
40.00	-25.39	-1.27	0.00	-139.19	0.00	139.19	3,069.09	1,534.55	4,474.78	2,209.92	0.56	-0.13	0.044
44.67	-25.32	-1.27	0.00	-133.25	0.00	133.25	3,029.61	1,514.81	4,330.30	2,138.57	0.70	-0.15	0.043
44.67	-25.32	-1.27	0.00	-133.25	0.00	133.25	2,356.88	1,178.44	3,380.89	1,669.69	0.70	-0.15	0.051
45.00	-24.96	-1.25	0.00	-132.83	0.00	132.83	2,354.99	1,177.50	3,373.36	1,665.97	0.71	-0.15	0.051
46.50	-24.01	-1.21	0.00	-130.94	0.00	130.94	2,346.45	1,173.22	3,339.48	1,649.24	0.76	-0.16	0.050
50.00	-22.85	-1.15	0.00	-126.73	0.00	126.73	2,326.18	1,163.09	3,260.58	1,610.28	0.88	-0.17	0.049
55.00	-21.69	-1.09	0.00	-121.00	0.00	121.00	2,296.44	1,148.22	3,148.31	1,554.83	1.07	-0.19	0.048
60.00	-20.55	-1.03	0.00	-115.56	0.00	115.56	2,265.77	1,132.89	3,036.63	1,499.68	1.28	-0.21	0.047
65.00	-19.42	-0.97	0.00	-110.41	0.00	110.41	2,234.19	1,117.09	2,925.62	1,444.85	1.51	-0.23	0.045
70.00	-18.30	-0.92	0.00	-105.54	0.00	105.54	2,201.67	1,100.84	2,815.37	1,390.41	1.76	-0.25	0.044
75.00	-17.19	-0.88	0.00	-100.93	0.00	100.93	2,168.24	1,084.12	2,705.97	1,336.38	2.03	-0.27	0.043
80.00	-16.09	-0.85	0.00	-96.53	0.00	96.53	2,133.87	1,066.94	2,597.50	1,282.81	2.33	-0.29	0.042
85.00	-15.98	-0.85	0.00	-92.30	0.00	92.30	2,098.59	1,049.29	2,490.04	1,229.74	2.64	-0.31	0.041
85.50	-15.08	-0.83	0.00	-91.88	0.00	91.88	2,095.01	1,047.50	2,479.36	1,224.46	2.67	-0.31	0.041
85.50	-15.08	-0.83	0.00	-91.88	0.00	91.88	1,537.79	768.90	1,827.83	902.70	2.67	-0.31	0.050
90.00	-14.08	-0.83	0.00	-88.14	0.00	88.14	1,518.16	759.08	1,762.50	870.43	2.97	-0.33	0.048
95.00	-13.09	-0.85	0.00	-83.99	0.00	83.99	1,495.46	747.73	1,690.19	834.72	3.33	-0.35	0.047
100.00	-12.11	-0.88	0.00	-79.76	0.00	79.76	1,471.85	735.92	1,618.25	799.19	3.71	-0.37	0.045
105.00	-11.14	-0.92	0.00	-75.37	0.00	75.37	1,447.30	723.65	1,546.78	763.90	4.11	-0.40	0.043
110.00	-10.18	-0.97	0.00	-70.78	0.00	70.78	1,421.84	710.92	1,475.86	728.87	4.54	-0.42	0.041
115.00	-9.23	-1.01	0.00	-65.95	0.00	65.95	1,395.45	697.72	1,405.58	694.16	5.00	-0.44	0.039
120.00	-8.28	-1.06	0.00	-60.88	0.00	60.88	1,368.13	684.07	1,336.01	659.81	5.47	-0.47	0.037
125.00	-8.22	-1.06	0.00	-55.58	0.00	55.58	1,339.89	669.95	1,267.25	625.85	5.98	-0.49	0.035
125.33	-7.41	-1.09	0.00	-55.23	0.00	55.23	1,337.98	668.99	1,262.70	623.60	6.01	-0.49	0.034
125.33	-7.41	-1.09	0.00	-55.23	0.00	55.23	893.38	446.69	847.72	418.66	6.01	-0.49	0.043
130.00	-6.55	-1.12	0.00	-50.12	0.00	50.12	879.61	439.81	809.42	399.74	6.50	-0.51	0.039
135.00	-5.69	-1.12	0.00	-44.54	0.00	44.54	863.96	431.98	768.47	379.52	7.05	-0.53	0.035
140.00	-4.84	-1.11	0.00	-38.92	0.00	38.92	847.39	423.70	727.68	359.37	7.62	-0.55	0.031
145.00	-4.00	-1.08	0.00	-33.36	0.00	33.36	829.90	414.95	687.15	339.36	8.21	-0.57	0.027
150.00	-3.92	-1.07	0.00	-27.98	0.00	27.98	811.48	405.74	646.95	319.51	8.82	-0.59	0.023
150.50	-3.43	-1.03	0.00	-27.44	0.00	27.44	809.59	404.79	642.96	317.53	8.88	-0.59	0.023
150.50	-3.43	-1.03	0.00	-27.44	0.00	27.44	809.59	404.79	642.96	317.53	8.88	-0.59	0.091
155.00	-3.17	-1.01	0.00	-22.80	0.00	22.80	792.13	396.07	607.18	299.86	9.45	-0.61	0.080
160.00	-2.93	-0.97	0.00	-17.76	0.00	17.76	771.86	385.93	567.92	280.48	10.12	-0.67	0.067
165.00	-2.69	-0.92	0.00	-12.91	0.00	12.91	750.67	375.34	529.26	261.38	10.85	-0.72	0.053
170.00	-2.46	-0.86	0.00	-8.29	0.00	8.29	728.55	364.28	491.27	242.62	11.62	-0.76	0.038
175.00	-2.23	-0.79	0.00	-3.97	0.00	3.97	696.59	348.30	448.31	221.40	12.42	-0.78	0.021
180.00	0.00	0.00	0.00	0.00	0.00	0.00	663.72	331.86	406.75	200.88	13.25	-0.79	0.000
180.40	0.00	0.00	0.00	0.00	0.00	0.00	661.08	330.54	403.51	199.28	13.31	-0.79	0.000

180.42	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**660.98**	**330.49**	**403.38**	**199.21**	**13.32**	**-0.79**	**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	31.93	0.00	52.00	0.00	0.00	3461.48	0.00	0.81
0.9D + 1.6W	31.36	0.00	38.98	0.00	0.00	3392.45	0.00	0.79
1.2D + 1.0Di + 1.0Wi	5.94	0.00	69.22	0.00	0.00	700.67	150.50	0.19
(1.2 + 0.2Sds) * DL + E ELFM	1.70	0.00	51.65	0.00	0.00	236.59	0.00	0.07
(1.2 + 0.2Sds) * DL + E EMAM	1.70	0.00	51.65	0.00	0.00	205.14	150.50	0.09
(0.9 - 0.2Sds) * DL + E ELFM	1.70	0.00	36.10	0.00	0.00	231.38	0.00	0.06
(0.9 - 0.2Sds) * DL + E EMAM	1.70	0.00	36.10	0.00	0.00	200.29	150.50	0.09
1.0D + 1.0W	6.00	0.00	43.40	0.00	0.00	655.61	0.00	0.16

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	150.50	(4) SOL-#20 All Thread Bar	306.1	9.2	16.8	0.546	300.7	330.5	0.910

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	150.50	(4) SOL-#20 All Thread Bar	83.8	12.0	7	12	0.582	0.0	12.0	0	0	0.000

Site Name:	Lisbon CT 3
Site Number:	302503
Engineering Number:	OAA754270_C3_01
Engineer:	DH
Date:	11/19/2019

Design Base Loads (Factored) - Design per TIA-222-G Standard

Moment (Overturning) (M_u):	3461.5	k-ft
Shear/Leg (V_u):	31.9	k
Compression/Leg (P_u):	52.0	k
Uplift/Leg (T_u):	0.0	k
Tower Type (GT / SST / MP):	MP	

Length / Width of Block:	14.0	ft
Thickness of Block:	6.0	ft
Block Height Above Ground:	0.5	ft
Depth Below Ground Surface to Water Table (w):	30.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil:	130.0	pcf
Unit Weight of Water:	62.4	pcf
Ultimate Compressive Bearing Pressure:	30000	psf
Capacity Increase (Due to Transient Loads):	1.00	
Pullout Angle:	45.0	degrees
Rod Diameter:	1.00	in
Rod Ultimate Strength:	90	ksi
Rod Net Area:	0.79	in^2
Number of Rods:	16	
Diameter of Cored Hole:	3.00	in
Ultimate Grout / Rock Interface Bond Strength:	100	psi
Ultimate Grout / Rock Anchor Interface Bond Strength:	400	psi
Overall Rod Embedment Length:	72	in
Rod Exposure Above Lock Off Nut in Foundation:	36	in
Rod Embedment Circle:	137	in
Free Stress Length:	0	in
Soil / Concrete Friction Coefficient:	0.55	
Rock Anchor Design Plastic or Elastic:	Elastic	
Ignore Pullout Weight Resistance (Y/N):	Y	
Weight of Concrete (Buoyancy Effect Considered):	176.4	k
Compressive Bearing Resistance:	4618.1	k
Pullout Weight / Rod:		k - Ignored
Rock / Grout Bond Strength / Rod:	67.9	k
Grout / Rod Bond Strength / Rod:	90.5	k
Factored Nominal Moment Capacity per Leg ($\phi_s M_n$):	4322.2	k
Factored Nominal Uplift Capacity per Leg ($\phi_s T_n$):	1012.1	k
Factored Nominal Compressive Capacity per Leg ($\phi_s P_n$):	3463.6	k
Factored Nominal Shear Capacity per Leg ($\phi_s V_n$):	666.8	k
M_u:	3653.1	k-ft
T_u:	0.0	k
P_u:	77.9	k
V_u:	31.9	k
$T_u/\phi_s T_n + M_u/\phi_s M_n$:	0.85	Result: OK
$P_u/\phi_s P_n$:	0.02	Result: OK

Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	3000	psi
Vertical Steel Rebar Size #:	11	
Vertical Steel Rebar Area:	1.56	in^2
# of Vertical Steel Rebars:	52	Minimum # of vertical rebar met
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	4	
Horizontal Tie / Stirrup Area:	0.20	in^2
Horizontal Tie / Stirrup Spacing:	12.0	in
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	40	ksi
Rod Bearing Plate Diameter:	8.0	in
Rod Bearing Plate Thickness:	1.0	in
Anchor Bearing Plate Yield Strength:	36	ksi
Anchor Rod Nut Diameter:	2.02	in
Rebar Cage Diameter:	160.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-05 - 9.3.2.3
Strength Compression/Bearing Reduction Factor ($\phi_{P/B}$):	0.65	ACI318-05 - 9.3.2.2
Factored Nominal Moment Capacity ($\phi_B M_n$):	28558.1	k-ft - ACI318-05 - 10.2
$M_u/\phi_B M_n$:	0.13	Result: OK
Design Shear (V_u):	268.8	k
Factored Nominal Shear Capacity ($\phi_V V_n$):	938.6	k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u/\phi_V V_n$:	0.29	Result: OK
Design Tension (T_u):	0.0	k
Factored Nominal Tension Capacity ($\phi_T T_n$):	4380.5	k - ACI318-05 - 10.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	52.0	k
Factored Nominal Compression Capacity ($\phi_P P_n$):	34454.1	k - ACI318-05 - 10.3.6.2
$P_u/\phi_P P_n$:	0.00	Result: OK

Bearing Plate Design

Plate Bearing Design Load (P_u):	43.0	k
Plate Shear Design Load (V_u):	43.0	k
Factored Rod Bearing Plate Capacity of a Single Anchor ($\phi_B P_n$):	164.0	k
Bearing Plate Pressure:	0.9	ksi
Plate Design Moment (M_u):	12.4	k-in
Critical Length:	6.88	in
Plastic Modulus:	1.72	in^3
Factored Nominal Plate Flexural Resistance ($\phi_B M_n$):	55.7	k-in
Factored Nominal Plate Shear Resistance ($\phi_V V_n$):	123.4	k
Factored Punch Shear Capacity Resisting Plate Load ($\phi_P P_n$):	667.7	k - ACI318-05 - 11.11.2.1
Interaction Equation:	0.35	Result: OK

Base Plate & Anchor Rod Analysis

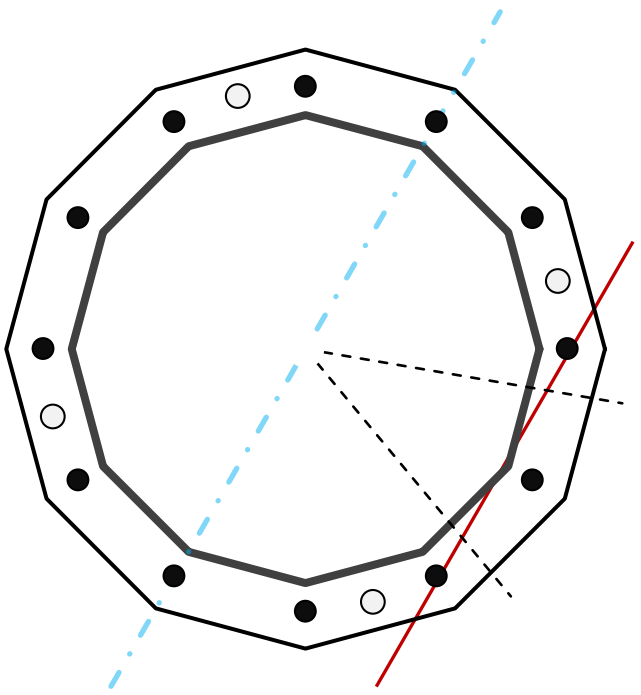
Pole Dimensions		
Number of Sides	12	-
Diameter	41.699	in
Thickness	0.375	in
Orientation Offset		°

Base Reactions		
Moment, Mu	3461.5	k-ft
Axial, Pu	52.0	k
Shear, Vu	31.9	k
Neutral Axis	240	°

Report Capacities		
Component	Capacity	Result
Base Plate	25%	Pass
Anchor Rods	76%	Pass
Dwyidag	57%	Pass

Base Plate		
Number of Sides	12	-
Diameter, ø	53.699	in
Thickness	2 1/2	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	c	η=0.55
Clear Distance	N/A	in
Applied Moment, Mu	423.6	k
Bending Stress, ϕMn	1700.6	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	12	-
Diameter, ø	2 1/4	in
Bolt Circle	48.699	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.7	in
Orientation Offset		°
Applied Force, Pu	193.6	k
Anchor Rods, ϕPn	259.8	k



Dywidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, ø	2.5	in
Bracket Type	Angle	-
Circle	48.58	in
Orientation Offset	15	°
Applied Force, Pu	222.5	k
Dywidag Bar, ϕPn	392.7	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	31.9	2212.7	0.64
Anchor Rod Forces	31.9	2212.7	0.64
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1248.8	0.36
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	48.1295	4.0108	0.1889		10275.94
Bolt	3.9761	3.2477	0.8393	4.5	10463.96
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		5799.78
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	12	-
Width, W	53.699	in
Thickness, t	2.5	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	33.835	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	12	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	48.699	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	193.6	k
Applied Shear, Vu	1.5	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.745	OK
Interaction Capacity	0.756	OK

External Base Plate		
Chord Length AA	33.993	in
Additional AA	5.000	in
Section Modulus, Z	60.926	in^3
Applied Moment, Mu	423.6	k-ft
Bending Capacity, ϕMn	3290.0	k-ft
Capacity, Mu/ϕMn	0.129	OK
Chord Length AB	32.513	in
Additional AB	5.000	in
Section Modulus, Z	58.614	in^3
Applied Moment, Mu	280.3	k-ft
Bending Capacity, ϕMn	3165.2	k-ft
Capacity, Mu/ϕMn	0.089	OK
Bend Line Length	20.155	in
Additional Bend Line	0.000	in
Section Modulus, Z	31.492	in^3
Applied Moment, Mu	423.6	k-ft
Bending Capacity, ϕMn	1700.6	k-ft
Capacity, Mu/ϕMn	0.249	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	48.579	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	222.5	k
Compressive Capacity, ϕPn	392.7	k
Capacity, Pu/ϕPn	0.567	OK

Flange Plate Analysis

Flange Plate			
	Plate Type	***Flange***	***@ 125 ft***
	Pole Diameter	23.179	in
	Pole Thickness	0.1875	in
	Plate Diameter	29.6028	in
	Plate Thickness	1.25	in
	Plate Fy	36	ksi
	Weld Length	0.1875	in
	f_s Resistance	51.20	k-in
	Applied	18.19	k-in

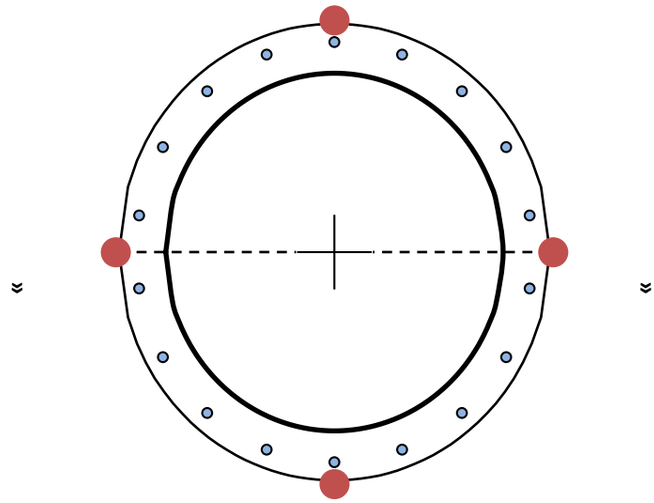
Code Rev.	***G***	
Moment	526.2	k-ft
Axial	9.9	k

Required Flange Thickness:
0.75 in OK

Date	11/20/2019	
Engineer	DH	
Site #	302503	
Carrier	AT&T Mobility	

Stiffeners		
#	***0***	

Bolts			
	#	***18***	
	Bolt Circle	27.237	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	14.22	k



Reinforcement			
	#	***4***	
•	DYW. Circle	30.054	in
	Offset Angle	0	°
	Type	#20	
	Diameter	2.5	in
	Fu	100	ksi
	f_s Resistance	392.70	k
	Applied	149.31	k

Extra Bolts 0	
#	

Plate Stress Ratio:
36% Pass

Bolt Stress Ratio:
26% Pass

Reinforcement Stress Ratio:
38% Pass

JHANA ARSENAULT
6034210470
SAI COMMUNICATIONS
12 INDUSTRIAL WAY
SALEM NH 03079

1 LBS

1 OF 1

SHIP TO:
MELANIE BACHMAN
6035606185
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN CT 06051

CT 067 9-06

UPS GROUND
TRACKING #: 1Z 9V0 F66 03 9259 3893

BILLING: P/P

Reference No.1: CT2058 CT-103-19006

XOL 20.01.16 NV45 20.0A 10/2019