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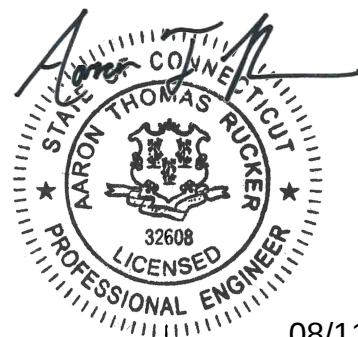
Structural Analysis Report

Structure : 149 ft Monopole
ATC Site Name : East Putnam CT,CT
ATC Site Number : 415784
Engineering Number : 13714591_C3_02
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : EAST PUTNAM
Carrier Site Number : 467938
Site Location : 165 Elmwood Hill Road
THOMPSON, CT 06277-2600
41.9293, -71.8101
County : Windham
Date : August 10, 2021
Max Usage : 44%
Result : Pass

Prepared By:

Nolan Laird
TEP

Reviewed By:



08/11/2021

COA : PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft Monopole to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower Drawings	Valmont Job # 09242-1124, dated February 20, 2009 Mapped by Hightower Solutions, Inc. Site #41578, dated October 27, 2015
Foundation Drawing	Valmont Job # 09242-1124, dated February 20, 2009
Geotechnical Report	Clarence Welts Assoc File # 15691, dated October 23, 2008
Mount Mod Drawings	GPD Project # 2021740.467938.02, dated July 13, 2021

Analysis

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

Basic Wind Speed:	121 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.19$, $S_i = 0.06$
Site Class:	D - Stiff Soil - Default

Conclusion

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

If you have any questions or require additional information, please 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	Equipment	Mount Type	Lines	Carrier
149.0	2	RFS DB-T1-6Z-8AB-0Z	Platform with Handrails	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	6	Swedcom SC-E 6014 rev2			
	1	VZW Unused Reserve (17021.55 sqin)			
140.2	1	Raycap DC6-48-60-18-8F ("Squid")	Low Profile Platform	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax	AT&T MOBILITY
137.0	3	KMW AM-X-CD-17-65-00T-RET (96" Height)			
	6	Powerwave Allgon 7770.00			
	6	Ericsson RRUS-11			
	1	Raycap DC2-48-60-0-9E			
	6	Powerwave Allgon LGP13519			
	6	Powerwave Allgon LGP21401			
126.0	1	Generic Dish Reserve	Sector Frames	-	ATC RESERVED

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
149.0	6	Alcatel-Lucent B25 RRH4x30	-	(6) 1 5/8" Coax	VERIZON WIRELESS
	6	Commscope SBNHH-1D65B			
	3	Alcatel-Lucent RRH4X45-B66 w/ Solar Shield			

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
149.0	3	Samsung B2/B66A RRH-BR049	Platform with Handrails	-	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung MT6407-77A			
	6	JMA Wireless MX06FRO660-03			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	32%	Pass
Shaft	35%	Pass
Reinforcement	28%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Usage
Moment (Kips-Ft)	7300.0	2962.8	41%
Shear (Kips)	63.0	27.6	44%

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

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
149.0	Samsung B2/B66A RRH-BR049	VERIZON WIRELESS	0.686	0.510
	JMA Wireless MX06FRO660-03			
	Samsung MT6407-77A			
	Samsung B5/B13 RRH-BR04C			

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



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.

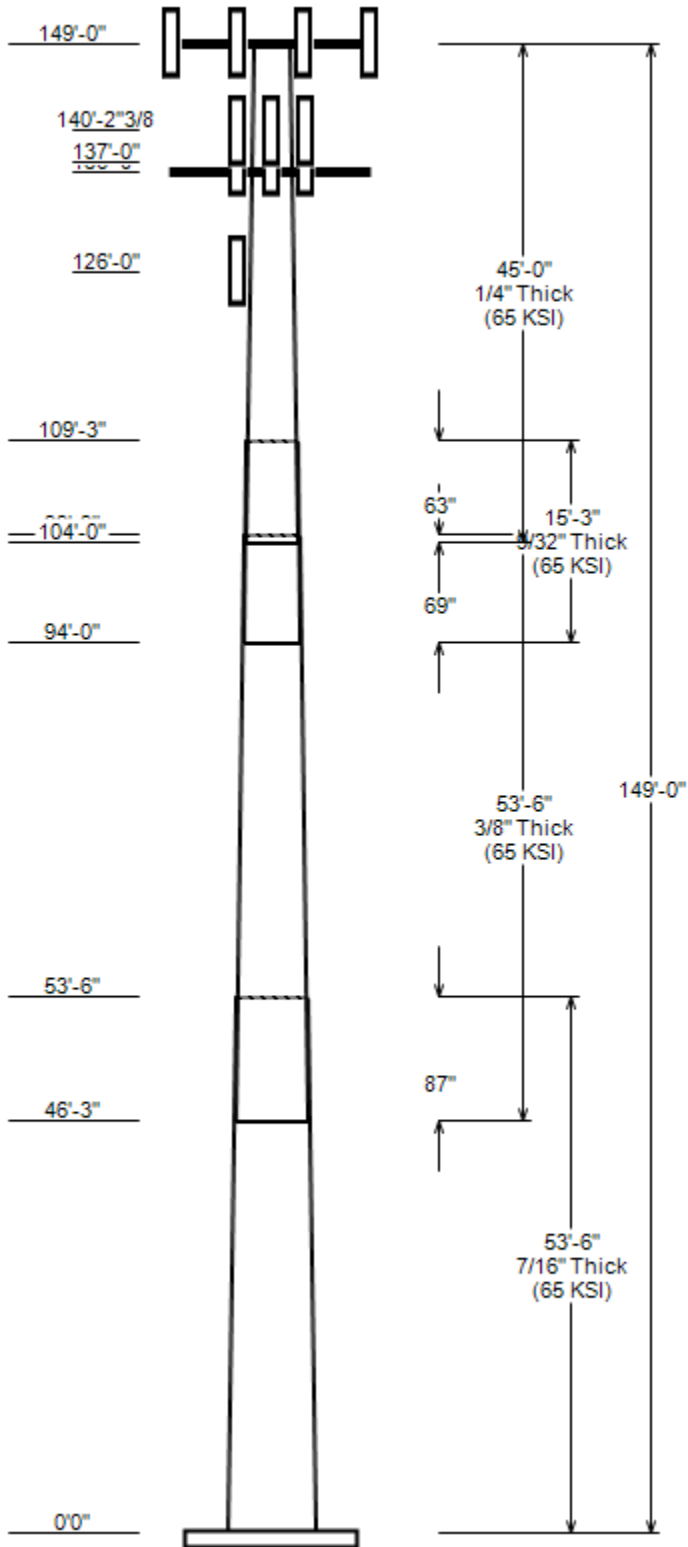
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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

Asset : 415784, East Putnam CT
 Client :
 Code : ANSI/TIA-222-H

Height : 149 ft
 Base Width : 70.28
 Shape : 18 Sides



SITE PARAMETERS

Description : 149 ft EEL
 Base Elev (ft): 0.00 Structure Class: II
 Taper : 0.29600 (In/ft) Exposure : B
 Topographic Category : 1 Topographic Feature:
 Topo Method : Method 1

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
		Top	Bottom					
1	53.500	54.46	70.28	0.438		0.000	18 Sides	65
2	53.500	41.53	57.35	0.375	Slip Joint	87.000	18 Sides	65
3	15.250	39.28	43.79	0.281	Slip Joint	69.000	18 Sides	65
4	45.000	28.03	41.34	0.250	Slip Joint	63.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.0	149.0	3	Samsung B2/B66A RRH-BR049
149.0	149.0	3	Samsung B5/B13 RRH-BR04C
149.0	149.0	6	Swedcom SC-E 6014 rev2
149.0	149.0	3	Samsung MT6407-77A
149.0	149.0	2	RFS DB-T1-6Z-8AB-0Z
149.0	149.0	6	JMA Wireless MX06FRO660-03
149.0	149.0	1	Flat Platform w/ Handrails
149.0	149.0	1	VZW Unused Reserve (17021.55 s
140.2	140.2	1	Raycap DC6-48-60-18-8F ("Squid
137.0	137.0	6	Powerwave Allgon LGP13519
137.0	137.0	1	Raycap DC2-48-60-0-9E
137.0	137.0	6	Powerwave Allgon LGP21401
137.0	137.0	6	Ericsson RRUS-11
137.0	137.0	6	Powerwave Allgon 7770.00
137.0	137.8	3	KMW AM-X-CD-17-65-00T-RET (96"
136.0	136.0	1	Round Low Profile Platform
126.0	126.0	1	Generic Dish Reserve

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
5.0	149.0	1 5/8" Hybriflex	No
5.0	149.0	1 5/8" Coax	No
5.0	137.0	1 5/8" Coax	No
5.0	137.0	0.78" (19.7mm) 8 AWG 6	No
5.0	137.0	0.39" (10mm) Fiber Trunk	No

LOAD CASES

1.2D + 1.0W Normal	121 mph wind with no ice
0.9D + 1.0W Normal	121 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	2962.79	27.63	52.36
0.9D + 1.0W Normal	2947.78	27.63	39.26
1.2D + 1.0Di + 1.0Wi Normal	821.26	7.76	70.68
1.2D + 1.0Ev + 1.0Eh Normal	188.05	1.62	52.09
0.9D - 1.0Ev + 1.0Eh Normal	186.91	1.62	36.14

JOB INFORMATION

Asset : 415784, East Putnam CT
 Client :
 Code : ANSI/TIA-222-H

Height : 149 ft
 Base Width : 70.28
 Shape : 18 Sides

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.0D + 1.0W Service Normal	649.69	6.08	43.64

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
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ASSET: 415784, East Putnam CT
CUSTOMER:

CODE: ANSI/TIA-222-H
ENG NO: 13714591_C3_02

ANALYSIS PARAMETERS

Location:	Windham County,CT	Height:	149 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	70.28 in
Manufacturer:	EEI	Top Diameter:	28.03 in
K _d (non-service):	0.95	Taper:	0.2960 in/ft
K _e :	0.98	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	121 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	634.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	1.58
T _L (sec):	6	P:	1
S _s :	0.187	S ₁ :	0.055
F _a :	1.600	F _v :	2.400
S _{ds} :	0.199	S _{d1} :	0.088
		C _s :	0.037
		C _s Max:	0.037
		C _s Min:	0.030

LOAD CASES

1.2D + 1.0W Normal	121 mph wind with no ice
0.9D + 1.0W Normal	121 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

ASSET: 415784, East Putnam CT
 CUSTOMER:

CODE: ANSI/TIA-222-H
 ENG NO: 13714591_C3_02

SHAFT SECTION PROPERTIES

Bottom										Top									
Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.50	0.4375	65		0.00	15,656	70.28	0.000	96.98	59,769.8	26.91	160.64	54.46	53.50	75.01	27,656.8	20.54	124.48	0.2957
2-18	53.50	0.3750	65	Slip	87.00	10,631	57.35	46.250	67.81	27,815.1	25.56	152.94	41.53	99.75	48.98	10,482.3	18.12	110.75	0.2957
3-18	15.25	0.2813	65	Slip	69.00	1,911	43.79	94.000	38.85	9,292.8	26.04	155.68	39.28	109.25	34.82	6,692.4	23.21	139.65	0.2957
4-18	45.00	0.2500	65	Slip	63.00	4,184	41.34	104.000	32.60	6,953.0	27.74	165.34	28.03	149.00	22.04	2,148.8	18.36	112.11	0.2957

Shaft Weight 32,382

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
149.00	Flat Platform w/ Handrails	1	1.00	0.000	2000.00	42.400	1.00	2947.48	56.382	1.00
149.00	JMA Wireless MX06FRO660-03	6	0.75	0.000	60.00	9.872	0.71	219.85	11.701	0.71
149.00	RFS DB-T1-6Z-8AB-0Z	2	0.75	0.000	44.00	4.800	0.67	127.91	5.747	0.67
149.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	149.55	5.722	0.61
149.00	Swedcom SC-E 6014 rev2	6	0.75	0.000	15.00	3.334	0.67	78.06	4.446	0.67
149.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	108.44	2.477	0.50
149.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	126.93	2.477	0.50
149.00	VZW Unused Reserve (17021.55 s	1	0.75	0.000	1253.10	118.20	0.90	1835.10	173.105	0.90
140.20	Raycap DC6-48-60-18-8F ("Squid	1	0.80	0.000	31.80	1.470	1.00	72.74	1.933	1.00
137.00	Powerwave Allgon 7770.00	6	0.80	0.000	35.00	5.508	0.75	117.47	6.188	0.75
137.00	Ericsson RRUS-11	6	0.80	0.000	55.00	3.792	0.67	114.41	4.642	0.67
137.00	Powerwave Allgon LGP21401	6	0.80	0.000	14.10	1.104	0.50	30.61	1.576	0.50
137.00	Raycap DC2-48-60-0-9E	1	0.80	0.000	16.00	0.884	1.00	35.41	1.301	1.00
137.00	Powerwave Allgon LGP13519	6	0.80	0.000	5.30	0.290	0.50	11.57	0.546	0.50
137.00	KMW AM-X-CD-17-65-00T-RET (96"	3	0.80	0.800	59.50	11.310	0.68	201.02	13.443	0.68
136.00	Round Low Profile Platform	1	1.00	0.000	1500.00	21.700	1.00	1928.44	34.396	1.00
126.00	Generic Dish Reserve	1	0.80	0.000	1835.00	70.000	1.00	7455.62	182.005	1.00

Totals Num Loadings: 17 56 8,717.70 19,720.25

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
5.00	149.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
5.00	149.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
5.00	137.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	137.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
5.00	137.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY

ASSET: 415784, East Putnam CT
 CUSTOMER:

CODE: ANSI/TIA-222-H
 ENG NO: 13714591_C3_02

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.4375	70.280	96.982	59,769.80	26.91	160.64	69.7	1675.1	0.0	0.0
5.00		0.4375	68.801	94.928	56,053.30	26.32	157.26	70.4	1604.7	0.0	1,632.6
10.00		0.4375	67.323	92.875	52,494.20	25.72	153.88	71.1	1535.8	0.0	1,597.6
15.00		0.4375	65.844	90.822	49,089.10	25.13	150.50	71.8	1468.4	0.0	1,562.7
20.00		0.4375	64.365	88.769	45,834.40	24.53	147.12	72.5	1402.6	0.0	1,527.8
25.00		0.4375	62.887	86.715	42,726.90	23.93	143.74	73.2	1338.2	0.0	1,492.8
30.00		0.4375	61.408	84.662	39,763.10	23.34	140.36	74	1275.4	0.0	1,457.9
35.00		0.4375	59.929	82.609	36,939.70	22.74	136.98	74.7	1214.0	0.0	1,423.0
40.00		0.4375	58.451	80.556	34,253.20	22.15	133.60	75.4	1154.2	0.0	1,388.0
45.00		0.4375	56.972	78.502	31,700.20	21.55	130.22	76.1	1095.9	0.0	1,353.1
46.25	Bot - Section 2	0.4375	56.602	77.989	31,082.40	21.40	129.38	76.2	1081.6	0.0	332.8
50.00		0.4375	55.493	76.449	29,277.30	20.96	126.84	76.8	1039.1	0.0	1,842.3
53.50	Top - Section 1	0.3750	55.208	65.263	24,791.70	24.55	147.22	72.5	884.5	0.0	1,686.5
55.00		0.3750	54.765	64.735	24,194.80	24.34	146.04	72.8	870.2	0.0	331.8
60.00		0.3750	53.286	62.975	22,274.70	23.64	142.10	73.6	823.3	0.0	1,086.4
65.00		0.3750	51.807	61.215	20,458.90	22.95	138.15	74.4	777.8	0.0	1,056.5
70.00		0.3750	50.329	59.455	18,744.50	22.25	134.21	75.2	733.6	0.0	1,026.5
75.00		0.3750	48.850	57.695	17,128.80	21.56	130.27	76	690.6	0.0	996.6
80.00		0.3750	47.371	55.935	15,608.60	20.86	126.32	76.9	649.0	0.0	966.6
85.00		0.3750	45.893	54.175	14,181.20	20.17	122.38	77.7	608.6	0.0	936.7
90.00		0.3750	44.414	52.415	12,843.50	19.47	118.44	78.5	569.6	0.0	906.8
94.00	Bot - Section 3	0.3750	43.231	51.007	11,836.10	18.92	115.28	79.2	539.3	0.0	703.8
95.00		0.3750	42.935	50.655	11,592.70	18.78	114.49	79.3	531.8	0.0	304.7
99.75	Top - Section 2	0.2813	42.093	37.330	8,245.30	24.97	149.64	72	385.8	0.0	1,418.8
100.00		0.2813	42.019	37.264	8,201.70	24.93	149.37	72.1	384.4	0.0	31.7
104.00	Bot - Section 4	0.2813	40.836	36.208	7,523.90	24.19	145.17	73	362.9	0.0	500.0
105.00		0.2813	40.540	35.944	7,360.50	24.00	144.12	73.2	357.6	0.0	233.3
109.25	Top - Section 3	0.2500	39.784	31.369	6,194.20	26.65	159.13	70.1	306.7	0.0	972.6
110.00		0.2500	39.562	31.193	6,090.50	26.49	158.25	70.2	303.2	0.0	79.8
115.00		0.2500	38.083	30.019	5,428.70	25.45	152.33	71.5	280.8	0.0	520.7
120.00		0.2500	36.604	28.846	4,816.80	24.41	146.42	72.7	259.2	0.0	500.8
125.00		0.2500	35.126	27.673	4,252.60	23.36	140.50	73.9	238.5	0.0	480.8
126.00		0.2500	34.830	27.438	4,145.30	23.16	139.32	74.2	234.4	0.0	93.8
130.00		0.2500	33.647	26.500	3,734.30	22.32	134.59	75.1	218.6	0.0	367.1
135.00		0.2500	32.168	25.326	3,259.90	21.28	128.67	76.4	199.6	0.0	440.9
136.00		0.2500	31.873	25.092	3,170.10	21.07	127.49	76.6	195.9	0.0	85.8
137.00		0.2500	31.577	24.857	3,082.00	20.86	126.31	76.9	192.2	0.0	85.0
140.00		0.2500	30.690	24.153	2,827.50	20.24	122.76	77.6	181.5	0.0	250.2
140.20		0.2500	30.631	24.106	2,811.10	20.19	122.52	77.6	180.8	0.0	16.4
145.00		0.2500	29.211	22.980	2,435.20	19.19	116.84	78.8	164.2	0.0	384.5
149.00		0.2500	28.028	22.041	2,148.80	18.36	112.11	79.8	151.0	0.0	306.4
Totals:										32,382.1	

ASSET: 415784, East Putnam CT
CUSTOMER:

CODE: ANSI/TIA-222-H
ENG NO: 13714591_C3_02

Load Case: 1.2D + 1.0W Normal	121 mph wind with no ice	20 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.20		
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	-52.36	-27.63	0.00	-2,962.8	0.00	2,962.79	6,087.54	1,702.03	10,736.47	8,761.99	0.00	0	0.347
5.00	-50.37	-27.16	0.00	-2,824.6	0.00	2,824.62	6,018.54	1,665.99	10,286.71	8,478.14	0.04	-0.07	0.342
10.00	-48.30	-26.66	0.00	-2,688.8	0.00	2,688.80	5,946.95	1,629.96	9,846.57	8,194.94	0.15	-0.14	0.336
15.00	-46.29	-26.17	0.00	-2,555.5	0.00	2,555.48	5,872.77	1,593.92	9,416.05	7,912.65	0.33	-0.21	0.331
20.00	-44.31	-25.69	0.00	-2,424.6	0.00	2,424.64	5,796.00	1,557.89	8,995.16	7,631.49	0.59	-0.28	0.326
25.00	-42.38	-25.21	0.00	-2,296.2	0.00	2,296.21	5,716.64	1,521.85	8,583.90	7,351.72	0.93	-0.36	0.320
30.00	-40.49	-24.73	0.00	-2,170.2	0.00	2,170.17	5,634.69	1,485.82	8,182.25	7,073.55	1.34	-0.43	0.314
35.00	-38.64	-24.25	0.00	-2,046.5	0.00	2,046.50	5,550.15	1,449.78	7,790.23	6,797.24	1.83	-0.51	0.308
40.00	-36.84	-23.76	0.00	-1,925.2	0.00	1,925.23	5,463.02	1,413.75	7,407.83	6,523.03	2.40	-0.58	0.302
45.00	-35.09	-23.44	0.00	-1,806.4	0.00	1,806.43	5,373.29	1,377.72	7,035.05	6,251.14	3.05	-0.66	0.296
46.25	-34.65	-23.19	0.00	-1,777.1	0.00	1,777.13	5,350.46	1,368.71	6,943.36	6,183.56	3.23	-0.68	0.294
50.00	-32.33	-22.81	0.00	-1,690.2	0.00	1,690.16	5,280.98	1,341.68	6,671.90	5,981.82	3.78	-0.74	0.289
53.50	-30.22	-22.53	0.00	-1,610.4	0.00	1,610.35	4,260.00	1,145.36	5,672.44	4,811.12	4.35	-0.79	0.342
55.00	-29.77	-22.20	0.00	-1,576.6	0.00	1,576.55	4,239.83	1,136.10	5,581.04	4,749.34	4.60	-0.82	0.339
60.00	-28.33	-21.69	0.00	-1,465.5	0.00	1,465.54	4,170.91	1,105.21	5,281.73	4,544.25	5.51	-0.91	0.330
65.00	-26.93	-21.17	0.00	-1,357.1	0.00	1,357.11	4,099.40	1,074.32	4,990.68	4,340.65	6.51	-1	0.320
70.00	-25.56	-20.66	0.00	-1,251.2	0.00	1,251.25	4,025.30	1,043.44	4,707.87	4,138.76	7.60	-1.09	0.309
75.00	-24.23	-20.14	0.00	-1,148.0	0.00	1,147.96	3,948.61	1,012.55	4,433.31	3,938.84	8.80	-1.18	0.298
80.00	-22.94	-19.63	0.00	-1,047.2	0.00	1,047.24	3,869.33	981.66	4,167.00	3,741.11	10.08	-1.27	0.286
85.00	-21.69	-19.13	0.00	-949.1	0.00	949.07	3,787.46	950.78	3,908.94	3,545.82	11.46	-1.36	0.274
90.00	-20.47	-18.67	0.00	-853.4	0.00	853.42	3,703.00	919.89	3,659.12	3,353.21	12.94	-1.45	0.260
94.00	-19.53	-18.42	0.00	-778.7	0.00	778.73	3,633.56	895.18	3,465.21	3,201.20	14.19	-1.53	0.249
95.00	-19.13	-18.14	0.00	-760.3	0.00	760.31	3,615.94	889.00	3,417.56	3,163.51	14.51	-1.54	0.246
99.75	-17.32	-17.85	0.00	-674.2	0.00	674.16	2,419.87	655.14	2,474.09	2,084.17	16.09	-1.63	0.331
100.00	-17.27	-17.66	0.00	-669.7	0.00	669.70	2,417.42	653.99	2,465.35	2,078.35	16.18	-1.63	0.330
104.00	-16.57	-17.41	0.00	-599.1	0.00	599.07	2,377.33	635.45	2,327.60	1,985.56	17.58	-1.72	0.309
105.00	-16.26	-17.16	0.00	-581.6	0.00	581.65	2,367.05	630.82	2,293.78	1,962.46	17.94	-1.74	0.304
109.25	-14.99	-16.90	0.00	-508.7	0.00	508.71	1,977.83	550.52	1,965.70	1,611.28	19.54	-1.83	0.324
110.00	-14.87	-16.64	0.00	-496.0	0.00	496.03	1,971.90	547.43	1,943.70	1,597.38	19.83	-1.85	0.319
115.00	-14.12	-16.18	0.00	-412.8	0.00	412.83	1,930.87	526.84	1,800.25	1,504.94	21.82	-1.95	0.283
120.00	-13.39	-15.73	0.00	-331.9	0.00	331.94	1,887.25	506.25	1,662.29	1,413.07	23.92	-2.05	0.243
125.00	-12.70	-15.45	0.00	-253.3	0.00	253.31	1,841.04	485.66	1,529.83	1,322.02	26.12	-2.14	0.200
126.00	-10.45	-12.89	0.00	-237.9	0.00	237.87	1,831.49	481.54	1,504.00	1,303.93	26.57	-2.15	0.189
130.00	-9.92	-12.50	0.00	-186.3	0.00	186.31	1,792.24	465.07	1,402.87	1,232.02	28.40	-2.21	0.157
135.00	-9.29	-12.23	0.00	-123.8	0.00	123.82	1,740.84	444.48	1,281.41	1,143.31	30.75	-2.27	0.114
136.00	-7.40	-11.18	0.00	-111.6	0.00	111.59	1,730.25	440.36	1,257.77	1,125.75	31.23	-2.28	0.104
137.00	-6.35	-8.72	0.00	-99.8	0.00	99.80	1,719.56	436.24	1,234.36	1,108.25	31.71	-2.29	0.094
140.00	-6.03	-8.58	0.00	-73.6	0.00	73.65	1,686.86	423.89	1,165.44	1,056.14	33.16	-2.32	0.074
140.20	-5.97	-8.33	0.00	-71.9	0.00	71.93	1,684.65	423.06	1,160.92	1,052.69	33.26	-2.32	0.072
145.00	-5.48	-7.98	0.00	-31.9	0.00	31.92	1,630.29	403.29	1,054.98	970.73	35.60	-2.34	0.037
149.00	0.00	-7.75	0.00	0.0	0.00	0.00	1,583.16	386.82	970.57	903.84	37.57	-2.35	0.000

ASSET: 415784, East Putnam CT
CUSTOMER:

CODE: ANSI/TIA-222-H
ENG NO: 13714591_C3_02

Load Case: 0.9D + 1.0W Normal	121 mph wind with no ice	20 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 0.90		
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	-39.26	-27.63	0.00	-2,947.8	0.00	2,947.78	6,087.54	1,702.03	10,736.47	8,761.99	0.00	0	0.343
5.00	-37.76	-27.14	0.00	-2,809.6	0.00	2,809.65	6,018.54	1,665.99	10,286.71	8,478.14	0.04	-0.07	0.338
10.00	-36.21	-26.63	0.00	-2,673.9	0.00	2,673.94	5,946.95	1,629.96	9,846.57	8,194.94	0.15	-0.14	0.333
15.00	-34.69	-26.12	0.00	-2,540.8	0.00	2,540.82	5,872.77	1,593.92	9,416.05	7,912.65	0.33	-0.21	0.327
20.00	-33.20	-25.62	0.00	-2,410.2	0.00	2,410.22	5,796.00	1,557.89	8,995.16	7,631.49	0.59	-0.28	0.322
25.00	-31.74	-25.13	0.00	-2,282.1	0.00	2,282.11	5,716.64	1,521.85	8,583.90	7,351.72	0.92	-0.35	0.316
30.00	-30.32	-24.65	0.00	-2,156.4	0.00	2,156.44	5,634.69	1,485.82	8,182.25	7,073.55	1.33	-0.43	0.311
35.00	-28.93	-24.16	0.00	-2,033.2	0.00	2,033.19	5,550.15	1,449.78	7,790.23	6,797.24	1.82	-0.5	0.305
40.00	-27.57	-23.66	0.00	-1,912.4	0.00	1,912.40	5,463.02	1,413.75	7,407.83	6,523.03	2.39	-0.58	0.299
45.00	-26.25	-23.34	0.00	-1,794.1	0.00	1,794.11	5,373.29	1,377.72	7,035.05	6,251.14	3.03	-0.66	0.292
46.25	-25.92	-23.08	0.00	-1,764.9	0.00	1,764.94	5,350.46	1,368.71	6,943.36	6,183.56	3.21	-0.68	0.291
50.00	-24.18	-22.69	0.00	-1,678.4	0.00	1,678.38	5,280.98	1,341.68	6,671.90	5,981.82	3.76	-0.73	0.285
53.50	-22.59	-22.42	0.00	-1,599.0	0.00	1,598.96	4,260.00	1,145.36	5,672.44	4,811.12	4.32	-0.79	0.338
55.00	-22.25	-22.09	0.00	-1,565.3	0.00	1,565.33	4,239.83	1,136.10	5,581.04	4,749.34	4.57	-0.81	0.335
60.00	-21.16	-21.57	0.00	-1,454.9	0.00	1,454.90	4,170.91	1,105.21	5,281.73	4,544.25	5.48	-0.9	0.326
65.00	-20.10	-21.05	0.00	-1,347.1	0.00	1,347.07	4,099.40	1,074.32	4,990.68	4,340.65	6.47	-0.99	0.316
70.00	-19.07	-20.53	0.00	-1,241.8	0.00	1,241.84	4,025.30	1,043.44	4,707.87	4,138.76	7.56	-1.08	0.305
75.00	-18.07	-20.01	0.00	-1,139.2	0.00	1,139.21	3,948.61	1,012.55	4,433.31	3,938.84	8.74	-1.17	0.294
80.00	-17.10	-19.50	0.00	-1,039.2	0.00	1,039.17	3,869.33	981.66	4,167.00	3,741.11	10.02	-1.26	0.283
85.00	-16.15	-18.99	0.00	-941.7	0.00	941.68	3,787.46	950.78	3,908.94	3,545.82	11.39	-1.35	0.270
90.00	-15.24	-18.54	0.00	-846.7	0.00	846.73	3,703.00	919.89	3,659.12	3,353.21	12.86	-1.44	0.257
94.00	-14.53	-18.28	0.00	-772.6	0.00	772.59	3,633.56	895.18	3,465.21	3,201.20	14.10	-1.52	0.246
95.00	-14.23	-18.00	0.00	-754.3	0.00	754.31	3,615.94	889.00	3,417.56	3,163.51	14.42	-1.53	0.243
99.75	-12.87	-17.72	0.00	-668.8	0.00	668.82	2,419.87	655.14	2,474.09	2,084.17	15.99	-1.62	0.327
100.00	-12.83	-17.53	0.00	-664.4	0.00	664.38	2,417.42	653.99	2,465.35	2,078.35	16.07	-1.62	0.326
104.00	-12.30	-17.28	0.00	-594.3	0.00	594.28	2,377.33	635.45	2,327.60	1,985.56	17.47	-1.71	0.305
105.00	-12.07	-17.03	0.00	-577.0	0.00	577.00	2,367.05	630.82	2,293.78	1,962.46	17.83	-1.73	0.300
109.25	-11.11	-16.77	0.00	-504.6	0.00	504.63	1,977.83	550.52	1,965.70	1,611.28	19.41	-1.82	0.320
110.00	-11.02	-16.51	0.00	-492.0	0.00	492.05	1,971.90	547.43	1,943.70	1,597.38	19.70	-1.84	0.315
115.00	-10.45	-16.05	0.00	-409.5	0.00	409.50	1,930.87	526.84	1,800.25	1,504.94	21.68	-1.94	0.278
120.00	-9.91	-15.59	0.00	-329.3	0.00	329.26	1,887.25	506.25	1,662.29	1,413.07	23.76	-2.04	0.239
125.00	-9.39	-15.32	0.00	-251.3	0.00	251.29	1,841.04	485.66	1,529.83	1,322.02	25.95	-2.12	0.196
126.00	-7.72	-12.78	0.00	-236.0	0.00	235.97	1,831.49	481.54	1,504.00	1,303.93	26.39	-2.14	0.186
130.00	-7.33	-12.39	0.00	-184.8	0.00	184.84	1,792.24	465.07	1,402.87	1,232.02	28.21	-2.2	0.155
135.00	-6.85	-12.13	0.00	-122.9	0.00	122.87	1,740.84	444.48	1,281.41	1,143.31	30.55	-2.26	0.112
136.00	-5.44	-11.10	0.00	-110.7	0.00	110.73	1,730.25	440.36	1,257.77	1,125.75	31.02	-2.27	0.102
137.00	-4.68	-8.65	0.00	-99.0	0.00	99.02	1,719.56	436.24	1,234.36	1,108.25	31.50	-2.28	0.092
140.00	-4.44	-8.51	0.00	-73.1	0.00	73.08	1,686.86	423.89	1,165.44	1,056.14	32.93	-2.3	0.072
140.20	-4.40	-8.27	0.00	-71.4	0.00	71.38	1,684.65	423.06	1,160.92	1,052.69	33.03	-2.3	0.071
145.00	-4.03	-7.92	0.00	-31.7	0.00	31.68	1,630.29	403.29	1,054.98	970.73	35.36	-2.33	0.035
149.00	0.00	-7.75	0.00	0.0	0.00	0.00	1,583.16	386.82	970.57	903.84	37.31	-2.33	0.000

ASSET: 415784, East Putnam CT
 CUSTOMER:

CODE: ANSI/TIA-222-H
 ENG NO: 13714591_C3_02

Load Case: 1.2D + 1.0Di + 1.0Wi Normal				50 mph wind with 1" radial ice				19 Iterations			
Gust Response Factor: 1.10		Ice Dead Load Factor		1.00							
Dead load Factor: 1.20								Ice Importance Factor		1.00	
Wind Load Factor: 1.00											

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	-70.68	-7.76	0.00	-821.3	0.00	821.26	6,087.54	1,702.03	10,736.47	8,761.99	0.00	0	0.105
5.00	-68.38	-7.63	0.00	-782.5	0.00	782.46	6,018.54	1,665.99	10,286.71	8,478.14	0.01	-0.02	0.104
10.00	-65.98	-7.49	0.00	-744.3	0.00	744.33	5,946.95	1,629.96	9,846.57	8,194.94	0.04	-0.04	0.102
15.00	-63.61	-7.35	0.00	-706.9	0.00	706.90	5,872.77	1,593.92	9,416.05	7,912.65	0.09	-0.06	0.100
20.00	-61.28	-7.21	0.00	-670.2	0.00	670.15	5,796.00	1,557.89	8,995.16	7,631.49	0.16	-0.08	0.098
25.00	-58.99	-7.08	0.00	-634.1	0.00	634.08	5,716.64	1,521.85	8,583.90	7,351.72	0.26	-0.1	0.097
30.00	-56.74	-6.95	0.00	-598.7	0.00	598.67	5,634.69	1,485.82	8,182.25	7,073.55	0.37	-0.12	0.095
35.00	-54.54	-6.81	0.00	-563.9	0.00	563.93	5,550.15	1,449.78	7,790.23	6,797.24	0.51	-0.14	0.093
40.00	-52.38	-6.67	0.00	-529.9	0.00	529.86	5,463.02	1,413.75	7,407.83	6,523.03	0.66	-0.16	0.091
45.00	-50.27	-6.58	0.00	-496.5	0.00	496.49	5,373.29	1,377.72	7,035.05	6,251.14	0.84	-0.18	0.089
46.25	-49.75	-6.51	0.00	-488.3	0.00	488.26	5,350.46	1,368.71	6,943.36	6,183.56	0.89	-0.19	0.088
50.00	-47.18	-6.40	0.00	-463.8	0.00	463.83	5,280.98	1,341.68	6,671.90	5,981.82	1.05	-0.2	0.086
53.50	-44.82	-6.33	0.00	-441.4	0.00	441.41	4,260.00	1,145.36	5,672.44	4,811.12	1.20	-0.22	0.102
55.00	-44.27	-6.23	0.00	-431.9	0.00	431.92	4,239.83	1,136.10	5,581.04	4,749.34	1.27	-0.23	0.101
60.00	-42.50	-6.09	0.00	-400.8	0.00	400.75	4,170.91	1,105.21	5,281.73	4,544.25	1.52	-0.25	0.098
65.00	-40.76	-5.94	0.00	-370.3	0.00	370.31	4,099.40	1,074.32	4,990.68	4,340.65	1.80	-0.28	0.095
70.00	-39.07	-5.79	0.00	-340.6	0.00	340.61	4,025.30	1,043.44	4,707.87	4,138.76	2.10	-0.3	0.092
75.00	-37.42	-5.65	0.00	-311.6	0.00	311.64	3,948.61	1,012.55	4,433.31	3,938.84	2.43	-0.32	0.089
80.00	-35.82	-5.50	0.00	-283.4	0.00	283.40	3,869.33	981.66	4,167.00	3,741.11	2.78	-0.35	0.085
85.00	-34.26	-5.36	0.00	-255.9	0.00	255.89	3,787.46	950.78	3,908.94	3,545.82	3.16	-0.37	0.081
90.00	-32.75	-5.22	0.00	-229.1	0.00	229.12	3,703.00	919.89	3,659.12	3,353.21	3.56	-0.4	0.077
94.00	-31.56	-5.15	0.00	-208.2	0.00	208.22	3,633.56	895.18	3,465.21	3,201.20	3.91	-0.42	0.074
95.00	-31.11	-5.07	0.00	-203.1	0.00	203.07	3,615.94	889.00	3,417.56	3,163.51	3.99	-0.42	0.073
99.75	-29.02	-4.99	0.00	-179.0	0.00	179.00	2,419.87	655.14	2,474.09	2,084.17	4.43	-0.44	0.098
100.00	-28.96	-4.93	0.00	-177.8	0.00	177.75	2,417.42	653.99	2,465.35	2,078.35	4.45	-0.45	0.098
104.00	-28.03	-4.86	0.00	-158.0	0.00	158.03	2,377.33	635.45	2,327.60	1,985.56	4.83	-0.47	0.091
105.00	-27.67	-4.79	0.00	-153.2	0.00	153.17	2,367.05	630.82	2,293.78	1,962.46	4.93	-0.48	0.090
109.25	-26.16	-4.71	0.00	-132.8	0.00	132.83	1,977.83	550.52	1,965.70	1,611.28	5.37	-0.5	0.096
110.00	-26.01	-4.64	0.00	-129.3	0.00	129.29	1,971.90	547.43	1,943.70	1,597.38	5.45	-0.5	0.094
115.00	-24.99	-4.50	0.00	-106.1	0.00	106.12	1,930.87	526.84	1,800.25	1,504.94	5.99	-0.53	0.084
120.00	-24.01	-4.37	0.00	-83.6	0.00	83.62	1,887.25	506.25	1,662.29	1,413.07	6.56	-0.56	0.072
125.00	-23.06	-4.28	0.00	-61.8	0.00	61.79	1,841.04	485.66	1,529.83	1,322.02	7.15	-0.58	0.059
126.00	-16.30	-3.15	0.00	-57.5	0.00	57.50	1,831.49	481.54	1,504.00	1,303.93	7.27	-0.58	0.053
130.00	-15.57	-3.03	0.00	-44.9	0.00	44.91	1,792.24	465.07	1,402.87	1,232.02	7.77	-0.59	0.045
135.00	-14.69	-2.95	0.00	-29.8	0.00	29.76	1,740.84	444.48	1,281.41	1,143.31	8.40	-0.61	0.035
136.00	-12.38	-2.66	0.00	-26.8	0.00	26.81	1,730.25	440.36	1,257.77	1,125.75	8.52	-0.61	0.031
137.00	-9.96	-2.12	0.00	-24.0	0.00	24.03	1,719.56	436.24	1,234.36	1,108.25	8.65	-0.61	0.028
140.00	-9.50	-2.08	0.00	-17.7	0.00	17.67	1,686.86	423.89	1,165.44	1,056.14	9.04	-0.62	0.022
140.20	-9.40	-2.01	0.00	-17.2	0.00	17.25	1,684.65	423.06	1,160.92	1,052.69	9.07	-0.62	0.022
145.00	-8.68	-1.90	0.00	-7.6	0.00	7.60	1,630.29	403.29	1,054.98	970.73	9.69	-0.63	0.013
149.00	0.00	-1.81	0.00	0.0	0.00	0.00	1,583.16	386.82	970.57	903.84	10.22	-0.63	0.000

ASSET: 415784, East Putnam CT
CUSTOMER:

CODE: ANSI/TIA-222-H
ENG NO: 13714591_C3_02

Load Case: 1.0D + 1.0W Service Normal	60 mph Wind with No Ice	19 Iterations
Gust Response Factor: 1.10		
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	-43.64	-6.08	0.00	-649.7	0.00	649.69	6,087.54	1,702.03	10,736.47	8,761.99	0.00	0	0.081
5.00	-42.01	-5.97	0.00	-619.3	0.00	619.30	6,018.54	1,665.99	10,286.71	8,478.14	0.01	-0.02	0.080
10.00	-40.32	-5.86	0.00	-589.4	0.00	589.44	5,946.95	1,629.96	9,846.57	8,194.94	0.03	-0.03	0.079
15.00	-38.66	-5.75	0.00	-560.1	0.00	560.14	5,872.77	1,593.92	9,416.05	7,912.65	0.07	-0.05	0.077
20.00	-37.04	-5.64	0.00	-531.4	0.00	531.39	5,796.00	1,557.89	8,995.16	7,631.49	0.13	-0.06	0.076
25.00	-35.45	-5.53	0.00	-503.2	0.00	503.19	5,716.64	1,521.85	8,583.90	7,351.72	0.20	-0.08	0.075
30.00	-33.90	-5.43	0.00	-475.5	0.00	475.52	5,634.69	1,485.82	8,182.25	7,073.55	0.29	-0.09	0.073
35.00	-32.38	-5.32	0.00	-448.4	0.00	448.37	5,550.15	1,449.78	7,790.23	6,797.24	0.40	-0.11	0.072
40.00	-30.90	-5.21	0.00	-421.8	0.00	421.76	5,463.02	1,413.75	7,407.83	6,523.03	0.53	-0.13	0.070
45.00	-29.45	-5.14	0.00	-395.7	0.00	395.70	5,373.29	1,377.72	7,035.05	6,251.14	0.67	-0.14	0.069
46.25	-29.10	-5.09	0.00	-389.3	0.00	389.28	5,350.46	1,368.71	6,943.36	6,183.56	0.71	-0.15	0.068
50.00	-27.18	-5.00	0.00	-370.2	0.00	370.20	5,280.98	1,341.68	6,671.90	5,981.82	0.83	-0.16	0.067
53.50	-25.43	-4.94	0.00	-352.7	0.00	352.70	4,260.00	1,145.36	5,672.44	4,811.12	0.95	-0.17	0.079
55.00	-25.07	-4.87	0.00	-345.3	0.00	345.29	4,239.83	1,136.10	5,581.04	4,749.34	1.01	-0.18	0.079
60.00	-23.89	-4.75	0.00	-321.0	0.00	320.95	4,170.91	1,105.21	5,281.73	4,544.25	1.21	-0.2	0.076
65.00	-22.74	-4.64	0.00	-297.2	0.00	297.19	4,099.40	1,074.32	4,990.68	4,340.65	1.43	-0.22	0.074
70.00	-21.62	-4.53	0.00	-274.0	0.00	273.99	4,025.30	1,043.44	4,707.87	4,138.76	1.67	-0.24	0.072
75.00	-20.53	-4.41	0.00	-251.4	0.00	251.36	3,948.61	1,012.55	4,433.31	3,938.84	1.93	-0.26	0.069
80.00	-19.47	-4.30	0.00	-229.3	0.00	229.30	3,869.33	981.66	4,167.00	3,741.11	2.21	-0.28	0.066
85.00	-18.44	-4.19	0.00	-207.8	0.00	207.80	3,787.46	950.78	3,908.94	3,545.82	2.51	-0.3	0.063
90.00	-17.44	-4.09	0.00	-186.9	0.00	186.86	3,703.00	919.89	3,659.12	3,353.21	2.84	-0.32	0.060
94.00	-16.66	-4.03	0.00	-170.5	0.00	170.50	3,633.56	895.18	3,465.21	3,201.20	3.11	-0.33	0.058
95.00	-16.33	-3.97	0.00	-166.5	0.00	166.47	3,615.94	889.00	3,417.56	3,163.51	3.18	-0.34	0.057
99.75	-14.83	-3.91	0.00	-147.6	0.00	147.61	2,419.87	655.14	2,474.09	2,084.17	3.53	-0.36	0.077
100.00	-14.79	-3.87	0.00	-146.6	0.00	146.63	2,417.42	653.99	2,465.35	2,078.35	3.54	-0.36	0.077
104.00	-14.21	-3.81	0.00	-131.2	0.00	131.16	2,377.33	635.45	2,327.60	1,985.56	3.85	-0.38	0.072
105.00	-13.96	-3.76	0.00	-127.4	0.00	127.35	2,367.05	630.82	2,293.78	1,962.46	3.93	-0.38	0.071
109.25	-12.91	-3.70	0.00	-111.4	0.00	111.38	1,977.83	550.52	1,965.70	1,611.28	4.28	-0.4	0.076
110.00	-12.82	-3.64	0.00	-108.6	0.00	108.60	1,971.90	547.43	1,943.70	1,597.38	4.34	-0.4	0.075
115.00	-12.20	-3.54	0.00	-90.4	0.00	90.39	1,930.87	526.84	1,800.25	1,504.94	4.78	-0.43	0.066
120.00	-11.61	-3.44	0.00	-72.7	0.00	72.68	1,887.25	506.25	1,662.29	1,413.07	5.24	-0.45	0.058
125.00	-11.03	-3.38	0.00	-55.5	0.00	55.47	1,841.04	485.66	1,529.83	1,322.02	5.72	-0.47	0.048
126.00	-9.09	-2.82	0.00	-52.1	0.00	52.09	1,831.49	481.54	1,504.00	1,303.93	5.82	-0.47	0.045
130.00	-8.65	-2.74	0.00	-40.8	0.00	40.80	1,792.24	465.07	1,402.87	1,232.02	6.22	-0.48	0.038
135.00	-8.12	-2.68	0.00	-27.1	0.00	27.12	1,740.84	444.48	1,281.41	1,143.31	6.74	-0.5	0.028
136.00	-6.51	-2.45	0.00	-24.4	0.00	24.44	1,730.25	440.36	1,257.77	1,125.75	6.84	-0.5	0.026
137.00	-5.56	-1.91	0.00	-21.9	0.00	21.86	1,719.56	436.24	1,234.36	1,108.25	6.95	-0.5	0.023
140.00	-5.29	-1.88	0.00	-16.1	0.00	16.13	1,686.86	423.89	1,165.44	1,056.14	7.26	-0.51	0.018
140.20	-5.24	-1.83	0.00	-15.8	0.00	15.76	1,684.65	423.06	1,160.92	1,052.69	7.29	-0.51	0.018
145.00	-4.82	-1.75	0.00	-7.0	0.00	6.99	1,630.29	403.29	1,054.98	970.73	7.80	-0.51	0.010
149.00	0.00	-1.70	0.00	0.0	0.00	0.00	1,583.16	386.82	970.57	903.84	8.23	-0.51	0.000

EQUIVALENT LATERAL FORCES METHOD ANALYSIS
 (Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.187
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.199
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.037
Upper Limit C_s :	0.037
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	1.580
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.540
Total Unfactored Dead Load:	43.650 k
Seismic Base Shear (E):	1.620 k

1.2D + 1.0Ev + 1.0Eh Normal Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
40	147	336	728	0.018	30	417
39	142.6	421	868	0.022	36	522
38	140.1	18	36	0.001	1	22
37	138.5	273	538	0.014	22	338
36	136.5	104	200	0.005	8	128
35	135.5	104	199	0.005	8	129
34	132.5	534	984	0.025	40	662
33	128	441	772	0.020	32	547
32	125.5	112	191	0.005	8	139
31	122.5	574	938	0.024	38	711
30	117.5	594	910	0.023	37	736
29	112.5	614	880	0.022	36	761
28	109.625	94	129	0.003	5	116
27	107.125	1,052	1,398	0.035	57	1,304
26	104.5	252	322	0.008	13	312
25	102	574	708	0.018	29	712
24	99.875	36	43	0.001	2	45
23	97.375	1,507	1,730	0.044	71	1,869
22	94.5	323	354	0.009	15	401
21	92	778	819	0.021	34	965
20	87.5	1,000	973	0.025	40	1,240
19	82.5	1,030	916	0.023	38	1,277
18	77.5	1,060	856	0.022	35	1,314
17	72.5	1,090	794	0.020	33	1,351
16	67.5	1,120	731	0.018	30	1,388
15	62.5	1,149	667	0.017	27	1,425
14	57.5	1,179	602	0.015	25	1,462
13	54.25	360	168	0.004	7	446
12	51.75	1,752	760	0.019	31	2,172
11	48.125	1,912	742	0.019	30	2,371
10	45.625	356	127	0.003	5	441
9	42.5	1,446	463	0.012	19	1,793
8	37.5	1,481	391	0.010	16	1,836
7	32.5	1,516	322	0.008	13	1,880

ASSET: 415784, East Putnam CT
 CUSTOMER:

CODE: ANSI/TIA-222-H
 ENG NO: 13714591_C3_02

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
6	27.5	1,551	254	0.006	10	1,923
5	22.5	1,586	191	0.005	8	1,966
4	17.5	1,621	133	0.003	5	2,010
3	12.5	1,656	81	0.002	3	2,053
2	7.5	1,691	38	0.001	2	2,096
1	2.5	1,633	7	0.000	0	2,024
Samsung B2/B66A RRH-BR049	149	253	559	0.014	23	314
Samsung B5/B13 RRH-BR04C	149	211	466	0.012	19	261
Swedcom SC-E 6014 rev2	149	90	199	0.005	8	112
Samsung MT6407-77A	149	245	541	0.014	22	304
RFS DB-T1-6Z-8AB-0Z	149	88	194	0.005	8	109
JMA Wireless MX06FRO660-03	149	360	795	0.020	33	446
Flat Platform w/ Handrails	149	2,000	4,418	0.112	181	2,480
VZW Unused Reserve (17021.55 sqin)	149	1,253	2,768	0.070	113	1,554
Raycap DC6-48-60-18-8F ("Squid")	140.2	32	64	0.002	3	39
Powerwave Allgon LGP13519	137	32	62	0.002	3	39
Raycap DC2-48-60-0-9E	137	16	31	0.001	1	20
Powerwave Allgon LGP21401	137	85	164	0.004	7	105
Ericsson RRUS-11	137	330	641	0.016	26	409
Powerwave Allgon 7770.00	137	210	408	0.010	17	260
KMW AM-X-CD-17-65-00T-RET (96" Height)	137	178	346	0.009	14	221
Round Low Profile Platform	136	1,500	2,879	0.073	118	1,860
Generic Dish Reserve	126	1,835	3,131	0.079	128	2,275
		43,645	39,630	1.000	1,623	54,115

0.9D - 1.0Ev + 1.0Eh Normal

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
40	147	336	728	0.018	30	289
39	142.6	421	868	0.022	36	362
38	140.1	18	36	0.001	1	15
37	138.5	273	538	0.014	22	235
36	136.5	104	200	0.005	8	89
35	135.5	104	199	0.005	8	90
34	132.5	534	984	0.025	40	459
33	128	441	772	0.020	32	380
32	125.5	112	191	0.005	8	97
31	122.5	574	938	0.024	38	494
30	117.5	594	910	0.023	37	511
29	112.5	614	880	0.022	36	528
28	109.625	94	129	0.003	5	81
27	107.125	1,052	1,398	0.035	57	904
26	104.5	252	322	0.008	13	217
25	102	574	708	0.018	29	494
24	99.875	36	43	0.001	2	31
23	97.375	1,507	1,730	0.044	71	1,296
22	94.5	323	354	0.009	15	278
21	92	778	819	0.021	34	669
20	87.5	1,000	973	0.025	40	860
19	82.5	1,030	916	0.023	38	886
18	77.5	1,060	856	0.022	35	911
17	72.5	1,090	794	0.020	33	937
16	67.5	1,120	731	0.018	30	963
15	62.5	1,149	667	0.017	27	989
14	57.5	1,179	602	0.015	25	1,014
13	54.25	360	168	0.004	7	309
12	51.75	1,752	760	0.019	31	1,507
11	48.125	1,912	742	0.019	30	1,645
10	45.625	356	127	0.003	5	306
9	42.5	1,446	463	0.012	19	1,244
8	37.5	1,481	391	0.010	16	1,274
7	32.5	1,516	322	0.008	13	1,304

ASSET: 415784, East Putnam CT
 CUSTOMER:

CODE: ANSI/TIA-222-H
 ENG NO: 13714591_C3_02

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
6	27.5	1,551	254	0.006	10	1,334
5	22.5	1,586	191	0.005	8	1,364
4	17.5	1,621	133	0.003	5	1,394
3	12.5	1,656	81	0.002	3	1,424
2	7.5	1,691	38	0.001	2	1,454
1	2.5	1,633	7	0.000	0	1,404
Samsung B2/B66A RRH-BR049	149	253	559	0.014	23	218
Samsung B5/B13 RRH-BR04C	149	211	466	0.012	19	181
Swedcom SC-E 6014 rev2	149	90	199	0.005	8	77
Samsung MT6407-77A	149	245	541	0.014	22	211
RFS DB-T1-6Z-8AB-0Z	149	88	194	0.005	8	76
JMA Wireless MX06FRO660-03	149	360	795	0.020	33	310
Flat Platform w/ Handrails	149	2,000	4,418	0.112	181	1,720
VZW Unused Reserve (17021.55 sqin)	149	1,253	2,768	0.070	113	1,078
Raycap DC6-48-60-18-8F ("Squid")	140.2	32	64	0.002	3	27
Powerwave Allgon LGP13519	137	32	62	0.002	3	27
Raycap DC2-48-60-0-9E	137	16	31	0.001	1	14
Powerwave Allgon LGP21401	137	85	164	0.004	7	73
Ericsson RRUS-11	137	330	641	0.016	26	284
Powerwave Allgon 7770.00	137	210	408	0.010	17	181
KMW AM-X-CD-17-65-00T-RET (96" Height)	137	178	346	0.009	14	154
Round Low Profile Platform	136	1,500	2,879	0.073	118	1,290
Generic Dish Reserve	126	1,835	3,131	0.079	128	1,578
		43,645	39,630	1.000	1,623	37,539

1.2D + 1.0Ev + 1.0Eh Normal

Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-52.09	-1.62	0.00	-188.05	0.00	188.05	6,087.54	1,702.03	10,736	8,761.99	0.00	0.00	0.03
5.00	-49.99	-1.63	0.00	-179.93	0.00	179.93	6,018.54	1,665.99	10,287	8,478.14	0.00	0.00	0.03
10.00	-47.94	-1.63	0.00	-171.80	0.00	171.80	5,946.95	1,629.96	9,847	8,194.94	0.01	-0.01	0.03
15.00	-45.93	-1.62	0.00	-163.66	0.00	163.66	5,872.77	1,593.92	9,416	7,912.65	0.02	-0.01	0.03
20.00	-43.97	-1.62	0.00	-155.54	0.00	155.54	5,796.00	1,557.89	8,995	7,631.49	0.04	-0.02	0.03
25.00	-42.04	-1.61	0.00	-147.45	0.00	147.45	5,716.64	1,521.85	8,584	7,351.72	0.06	-0.02	0.03
30.00	-40.16	-1.60	0.00	-139.39	0.00	139.39	5,634.69	1,485.82	8,182	7,073.55	0.09	-0.03	0.03
35.00	-38.33	-1.59	0.00	-131.38	0.00	131.38	5,550.15	1,449.78	7,790	6,797.24	0.12	-0.03	0.03
40.00	-36.53	-1.57	0.00	-123.44	0.00	123.44	5,463.02	1,413.75	7,408	6,523.03	0.15	-0.04	0.03
45.00	-36.09	-1.57	0.00	-115.59	0.00	115.59	5,373.29	1,377.72	7,035	6,251.14	0.20	-0.04	0.03
46.25	-33.72	-1.54	0.00	-113.63	0.00	113.63	5,350.46	1,368.71	6,943	6,183.56	0.21	-0.04	0.03
50.00	-31.55	-1.51	0.00	-107.87	0.00	107.87	5,280.98	1,341.68	6,672	5,981.82	0.24	-0.05	0.02
53.50	-31.10	-1.50	0.00	-102.60	0.00	102.60	4,260.00	1,145.36	5,672	4,811.12	0.28	-0.05	0.03
55.00	-29.64	-1.48	0.00	-100.35	0.00	100.35	4,239.83	1,136.10	5,581	4,749.34	0.29	-0.05	0.03
60.00	-28.22	-1.45	0.00	-92.97	0.00	92.97	4,170.91	1,105.21	5,282	4,544.25	0.35	-0.06	0.03
65.00	-26.83	-1.42	0.00	-85.73	0.00	85.73	4,099.40	1,074.32	4,991	4,340.65	0.42	-0.06	0.03
70.00	-25.48	-1.39	0.00	-78.62	0.00	78.62	4,025.30	1,043.44	4,708	4,138.76	0.49	-0.07	0.03
75.00	-24.16	-1.36	0.00	-71.67	0.00	71.67	3,948.61	1,012.55	4,433	3,938.84	0.56	-0.08	0.02
80.00	-22.89	-1.32	0.00	-64.90	0.00	64.90	3,869.33	981.66	4,167	3,741.11	0.64	-0.08	0.02
85.00	-21.65	-1.28	0.00	-58.31	0.00	58.31	3,787.46	950.78	3,909	3,545.82	0.73	-0.09	0.02
90.00	-20.68	-1.25	0.00	-51.91	0.00	51.91	3,703.00	919.89	3,659	3,353.21	0.83	-0.09	0.02
94.00	-20.28	-1.23	0.00	-46.93	0.00	46.93	3,633.56	895.18	3,465	3,201.20	0.90	-0.10	0.02
95.00	-18.41	-1.16	0.00	-45.70	0.00	45.70	3,615.94	889.00	3,418	3,163.51	0.93	-0.10	0.02
99.75	-18.37	-1.16	0.00	-40.20	0.00	40.20	2,419.87	655.14	2,474	2,084.17	1.02	-0.10	0.03
100.00	-17.65	-1.13	0.00	-39.91	0.00	39.91	2,417.42	653.99	2,465	2,078.35	1.03	-0.10	0.03
104.00	-17.34	-1.12	0.00	-35.40	0.00	35.40	2,377.33	635.45	2,328	1,985.56	1.12	-0.11	0.03
105.00	-16.04	-1.06	0.00	-34.28	0.00	34.28	2,367.05	630.82	2,294	1,962.46	1.14	-0.11	0.02
109.25	-15.92	-1.05	0.00	-29.80	0.00	29.80	1,977.83	550.52	1,966	1,611.28	1.24	-0.11	0.03
110.00	-15.16	-1.02	0.00	-29.01	0.00	29.01	1,971.90	547.43	1,944	1,597.38	1.26	-0.12	0.03
115.00	-14.42	-0.98	0.00	-23.93	0.00	23.93	1,930.87	526.84	1,800	1,504.94	1.38	-0.12	0.02
120.00	-13.71	-0.94	0.00	-19.04	0.00	19.04	1,887.25	506.25	1,662	1,413.07	1.51	-0.13	0.02
125.00	-13.57	-0.93	0.00	-14.35	0.00	14.35	1,841.04	485.66	1,530	1,322.02	1.65	-0.13	0.02
126.00	-10.75	-0.77	0.00	-13.42	0.00	13.42	1,831.49	481.54	1,504	1,303.93	1.68	-0.13	0.02
130.00	-10.09	-0.72	0.00	-10.35	0.00	10.35	1,792.24	465.07	1,403	1,232.02	1.79	-0.14	0.01
135.00	-9.96	-0.72	0.00	-6.73	0.00	6.73	1,740.84	444.48	1,281	1,143.31	1.94	-0.14	0.01

ASSET: 415784, East Putnam CT

CODE: ANSI/TIA-222-H

CUSTOMER:

ENG NO: 13714591_C3_02

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
136.00	-7.97	-0.59	0.00	-6.01	0.00	6.01	1,730.25	440.36	1,258	1,125.75	1.97	-0.14	0.01
137.00	-6.58	-0.49	0.00	-5.43	0.00	5.43	1,719.56	436.24	1,234	1,108.25	2.00	-0.14	0.01
140.00	-6.56	-0.49	0.00	-3.95	0.00	3.95	1,686.86	423.89	1,165	1,056.14	2.08	-0.14	0.01
140.20	-6.00	-0.45	0.00	-3.85	0.00	3.85	1,684.65	423.06	1,161	1,052.69	2.09	-0.14	0.01
145.00	-5.58	-0.42	0.00	-1.68	0.00	1.68	1,630.29	403.29	1,055	970.73	2.23	-0.14	0.01
149.00	0.00	-0.41	0.00	0.00	0.00	0.00	1,583.16	386.82	971	903.84	2.35	-0.14	0.00

0.9D - 1.0Ev + 1.0Eh Normal

Seismic (Reduced DL)

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.14	-1.62	0.00	-186.91	0.00	186.91	6,087.54	1,702.03	10,736	8,761.99	0.00	0.00	0.03
5.00	-34.68	-1.62	0.00	-178.80	0.00	178.80	6,018.54	1,665.99	10,287	8,478.14	0.00	0.00	0.03
10.00	-33.26	-1.62	0.00	-170.67	0.00	170.67	5,946.95	1,629.96	9,847	8,194.94	0.01	-0.01	0.03
15.00	-31.86	-1.62	0.00	-162.56	0.00	162.56	5,872.77	1,593.92	9,416	7,912.65	0.02	-0.01	0.03
20.00	-30.50	-1.61	0.00	-154.45	0.00	154.45	5,796.00	1,557.89	8,995	7,631.49	0.04	-0.02	0.03
25.00	-29.16	-1.61	0.00	-146.38	0.00	146.38	5,716.64	1,521.85	8,584	7,351.72	0.06	-0.02	0.03
30.00	-27.86	-1.59	0.00	-138.35	0.00	138.35	5,634.69	1,485.82	8,182	7,073.55	0.08	-0.03	0.03
35.00	-26.59	-1.58	0.00	-130.38	0.00	130.38	5,550.15	1,449.78	7,790	6,797.24	0.12	-0.03	0.02
40.00	-25.34	-1.56	0.00	-122.48	0.00	122.48	5,463.02	1,413.75	7,408	6,523.03	0.15	-0.04	0.02
45.00	-25.04	-1.56	0.00	-114.66	0.00	114.66	5,373.29	1,377.72	7,035	6,251.14	0.19	-0.04	0.02
46.25	-23.39	-1.53	0.00	-112.71	0.00	112.71	5,350.46	1,368.71	6,943	6,183.56	0.20	-0.04	0.02
50.00	-21.88	-1.50	0.00	-106.98	0.00	106.98	5,280.98	1,341.68	6,672	5,981.82	0.24	-0.05	0.02
53.50	-21.58	-1.49	0.00	-101.74	0.00	101.74	4,260.00	1,145.36	5,672	4,811.12	0.28	-0.05	0.03
55.00	-20.56	-1.47	0.00	-99.51	0.00	99.51	4,239.83	1,136.10	5,581	4,749.34	0.29	-0.05	0.03
60.00	-19.57	-1.44	0.00	-92.17	0.00	92.17	4,170.91	1,105.21	5,282	4,544.25	0.35	-0.06	0.03
65.00	-18.61	-1.41	0.00	-84.97	0.00	84.97	4,099.40	1,074.32	4,991	4,340.65	0.41	-0.06	0.02
70.00	-17.67	-1.38	0.00	-77.92	0.00	77.92	4,025.30	1,043.44	4,708	4,138.76	0.48	-0.07	0.02
75.00	-16.76	-1.34	0.00	-71.02	0.00	71.02	3,948.61	1,012.55	4,433	3,938.84	0.56	-0.07	0.02
80.00	-15.87	-1.31	0.00	-64.29	0.00	64.29	3,869.33	981.66	4,167	3,741.11	0.64	-0.08	0.02
85.00	-15.01	-1.27	0.00	-57.76	0.00	57.76	3,787.46	950.78	3,909	3,545.82	0.73	-0.09	0.02
90.00	-14.35	-1.23	0.00	-51.42	0.00	51.42	3,703.00	919.89	3,659	3,353.21	0.82	-0.09	0.02
94.00	-14.07	-1.22	0.00	-46.48	0.00	46.48	3,633.56	895.18	3,465	3,201.20	0.90	-0.10	0.02
95.00	-12.77	-1.15	0.00	-45.26	0.00	45.26	3,615.94	889.00	3,418	3,163.51	0.92	-0.10	0.02
99.75	-12.74	-1.15	0.00	-39.80	0.00	39.80	2,419.87	655.14	2,474	2,084.17	1.02	-0.10	0.02
100.00	-12.25	-1.12	0.00	-39.52	0.00	39.52	2,417.42	653.99	2,465	2,078.35	1.02	-0.10	0.02
104.00	-12.03	-1.10	0.00	-35.04	0.00	35.04	2,377.33	635.45	2,328	1,985.56	1.11	-0.11	0.02
105.00	-11.12	-1.05	0.00	-33.94	0.00	33.94	2,367.05	630.82	2,294	1,962.46	1.13	-0.11	0.02
109.25	-11.04	-1.04	0.00	-29.49	0.00	29.49	1,977.83	550.52	1,966	1,611.28	1.23	-0.11	0.02
110.00	-10.52	-1.01	0.00	-28.71	0.00	28.71	1,971.90	547.43	1,944	1,597.38	1.25	-0.11	0.02
115.00	-10.01	-0.97	0.00	-23.69	0.00	23.69	1,930.87	526.84	1,800	1,504.94	1.37	-0.12	0.02
120.00	-9.51	-0.93	0.00	-18.85	0.00	18.85	1,887.25	506.25	1,662	1,413.07	1.50	-0.13	0.02
125.00	-9.42	-0.92	0.00	-14.20	0.00	14.20	1,841.04	485.66	1,530	1,322.02	1.64	-0.13	0.02
126.00	-7.46	-0.76	0.00	-13.28	0.00	13.28	1,831.49	481.54	1,504	1,303.93	1.67	-0.13	0.01
130.00	-7.00	-0.72	0.00	-10.24	0.00	10.24	1,792.24	465.07	1,403	1,232.02	1.78	-0.14	0.01
135.00	-6.91	-0.71	0.00	-6.66	0.00	6.66	1,740.84	444.48	1,281	1,143.31	1.92	-0.14	0.01
136.00	-5.53	-0.58	0.00	-5.95	0.00	5.95	1,730.25	440.36	1,258	1,125.75	1.95	-0.14	0.01
137.00	-4.56	-0.49	0.00	-5.37	0.00	5.37	1,719.56	436.24	1,234	1,108.25	1.98	-0.14	0.01
140.00	-4.55	-0.49	0.00	-3.91	0.00	3.91	1,686.86	423.89	1,165	1,056.14	2.07	-0.14	0.01
140.20	-4.16	-0.45	0.00	-3.81	0.00	3.81	1,684.65	423.06	1,161	1,052.69	2.07	-0.14	0.01
145.00	-3.87	-0.42	0.00	-1.67	0.00	1.67	1,630.29	403.29	1,055	970.73	2.22	-0.14	0.00
149.00	0.00	-0.41	0.00	0.00	0.00	0.00	1,583.16	386.82	971	903.84	2.34	-0.14	0.00

ASSET: 415784, East Putnam CT
CUSTOMER:

CODE: ANSI/TIA-222-H
ENG NO: 13714591_C3_02

ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	27.63	0.00	52.36	0.00	0.00	2962.79	0.00	0.35
0.9D + 1.0W Normal	27.63	0.00	39.26	0.00	0.00	2947.78	0.00	0.34
1.2D + 1.0Di + 1.0Wi Normal	7.76	0.00	70.68	0.00	0.00	821.26	0.00	0.11
1.2D + 1.0Ev + 1.0Eh Normal	1.63	0.00	52.09	0.00	0.00	188.05	0.00	0.03
0.9D - 1.0Ev + 1.0Eh Normal	1.62	0.00	36.14	0.00	0.00	186.91	0.00	0.03
1.0D + 1.0W Service Normal	6.08	0.00	43.64	0.00	0.00	649.69	0.00	0.08

Base Plate & Anchor Rod Analysis

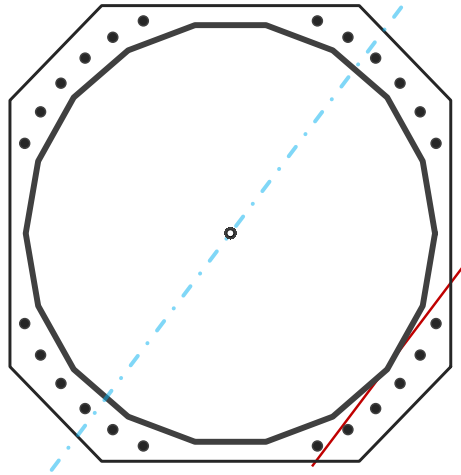
Pole Dimensions		
Number of Sides	18	-
Diameter	70.28	in
Thickness	7/16	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,962.8	k-ft
Axial, Pu	52.4	k
Shear, Vu	27.6	k
Neutral Axis	232	°

Report Capacities		
Component	Capacity	Result
Base Plate	28%	Pass
Anchor Rods	32%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	77	in
Thickness	3	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	16	in
Orientation Offset		°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	1090.6	k
Bending Stress, ϕM_n	3897.1	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	24	-
Diameter, ϕ	2 1/4	in
Bolt Circle	78	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset		°
Applied Force, Pu	78.0	k
Anchor Rods, ϕP_n	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	27.6	2962.8	1.00
Anchor Rod Forces	27.6	2962.8	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
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	95.5082	5.3060	0.3396		58241.92
Bolt	3.9761	3.2477	0.8393	4.5	59296.97
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	77	in
Thickness, t	3	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	31.460	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	78	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	78.0	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕP_n	243.6	k
Tensile Capacity, ϕR_n	0.320	OK
Interaction Capacity	0.321	OK

External Base Plate		
Chord Length AA	38.489	in
Additional AA	0.000	in
Section Modulus, Z	86.601	in ³
Applied Moment, Mu	1090.6	k-ft
Bending Capacity, ϕM_n	3897.1	k-ft
Capacity, Mu/ ϕM_n	0.280	OK
Chord Length AB	37.403	in
Additional AB	0.000	in
Section Modulus, Z	84.158	in ³
Applied Moment, Mu	883.6	k-ft
Bending Capacity, ϕM_n	3787.1	k-ft
Capacity, Mu/ ϕM_n	0.233	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		

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, ϕM_n	0.0	k-ft
Capacity, Mu/ ϕM_n		