



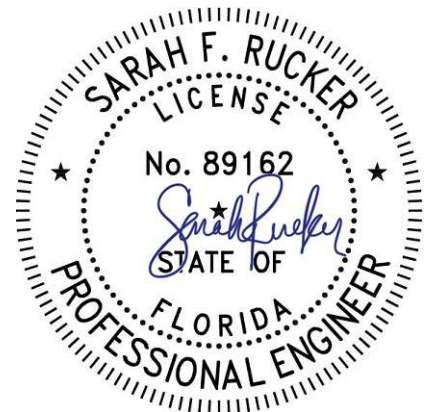
Structural Analysis Report

Structure : 300 ft Guyed Tower
ATC Asset Name : Lake City FL SQA
ATC Asset Number : 412243
Engineering Number : 14857598_C3_02
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : PHILLIPS LAKE CITY
Carrier Site Number : 5000077708
Site Location : 233 North West Ranch Court
Lake City, FL 32055-8079
30.2258° N, 82.7249° W
County : Columbia
Date : May 17, 2024
Max Usage : 80%
Analysis Result : Pass

Created By:

Steven Nedrud
Structural Engineer II

A handwritten signature in black ink, appearing to read 'Steven Nedrud'.



This item has been electronically signed and sealed by Sarah F. Rucker, PE on the date shown using a digital signature.

Printed copies are not considered signed and sealed and the signature must be verified on any electronic copies.

Sarah
Rucker

Digitally signed by Sarah Rucker
Date: 2024.05.19 10:21:18 -04'00'

COA: 9053

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft Guyed tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower:	FWT Inc. Job #21563000, dated June 27, 2000
Foundation:	FWT Inc. Job #21563000, dated July 10, 2000
Geotechnical:	E&A Project #00-1215, dated June 1, 2000

Analysis

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

Basic Wind Speed:	119 mph (3-second gust)
Basic Wind Speed w/ Ice:	No Ice Considered
Code(s):	ANSI/TIA-222-H / 2021 IBC / 8th ED (2023) Florida Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.09$, $S_i = 0.05$
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 reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact Engineering@americantower.com. Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Location	Result
Leg	80.0%	Member X	Section 14	Pass
Diagonal	45.0%	Member	Section 17	Pass
Horizontal	32.0%	Member Z	Section 17	Pass
Bolt	28.2%	-	Section 15	Pass
Torque Arm	48.0%	Compression	Elevation 116 ft	Pass
Cable	54.0%	Tension	Elevation 288 ft	Pass
Serviceability Usage	6.0%	Rotation	Elevation 300 ft	Pass
Mat & Pier	45.7%	Bearing [Soil]	Node 1	Pass
Guy Anchor	25.7%	Flexure [Steel]	Node A1	Pass
Guy Anchor	25.7%	Flexure [Steel]	Node A1a	Pass
Guy Anchor	25.7%	Flexure [Steel]	Node A1b	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Uplift (k)	Shear (k)
Guyed – Pivot Base	-	95.1	-	1.5
Guyed Anchor - A1	-	-	36.0	45.9

**Reactions shown are maximum overall and not limited by Load Case*

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

VERIZON WIRELESS Final Loading

Elev (ft)	Qty	Equipment	Lines
301.0	1	Raycap RxxDC-3315-PF-48 (32 lbs)	(3) 1 5/8" Hybriflex
	1	Raycap RxxDC-3315-PF-48 (32 lbs)	
	1	Unused Reserve (11013.720 sqin)	
	3	Ericsson AIR 6419 N77G	
	3	Ericsson RRUS 4490	
	3	Ericsson RRUS 4890	
	3	Sector Frames with Site Pro 1 Crossover Kit	
	6	JMA Wireless MX06FHG865-HG	

Install proposed lines in the place of the existing VERIZON WIRELESS lines.

Other Existing/Reserved Loading

No loading was considered in addition to the VERIZON WIRELESS Final Loading.



Standard Conditions

All engineering services performed by ATC Tower Services, LLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts, and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of ATC Tower Services, LLC

It is the responsibility of the client to ensure that the information provided to ATC Tower Services, LLC and used in the performance of our engineering services is correct and complete.

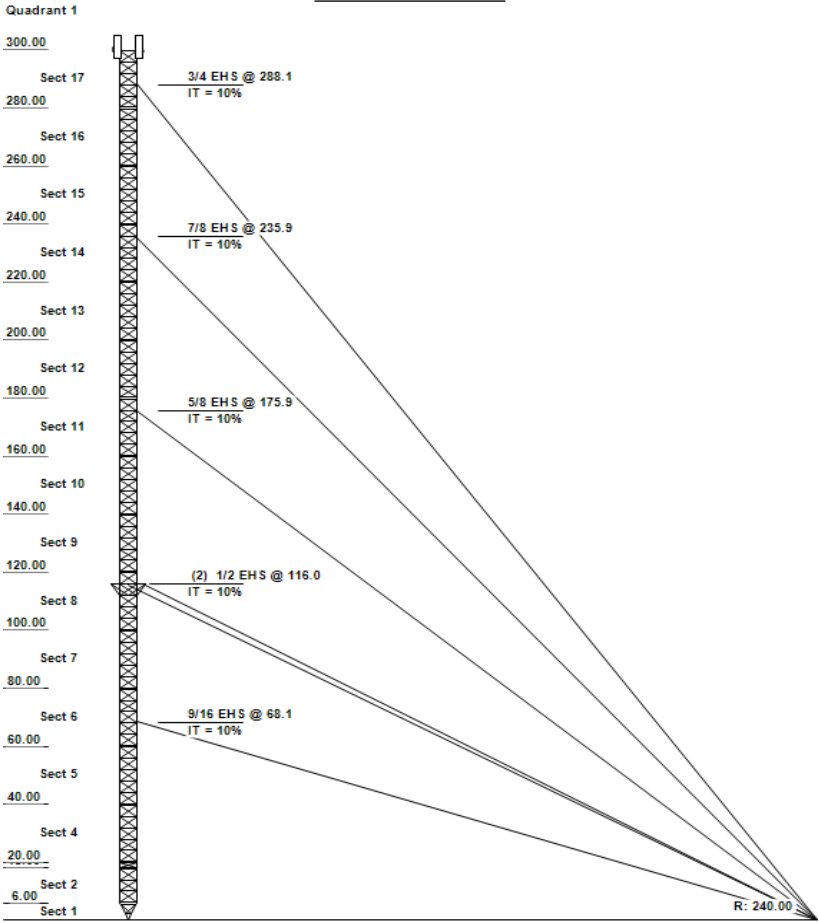
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and ATC Tower Services, LLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Tower Services, LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS					
Nominal Wind:	119 mph	Ice Wind:	30 mph w/ 0" ice	Service Wind:	60 mph
Risk Category:	II	Exposure:	C	S _s :	0.086
Topo Category:	1	Topo Factor:	Method 1	S ₁ :	0.051
Structure Height:	300 ft	Base Elevation:	0 ft	Shape:	Triangle
Base Width:	4 ft	Top Width:	4 ft	Base Type:	Pivot

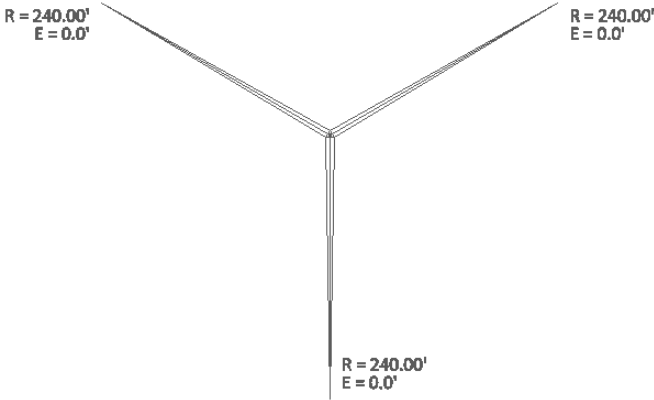
Tower Elevation View



BASE REACTIONS

Axial (k):	95.13
Shear (k):	1.53

Tower Plan View



TOWER SECTION PROPERTIES			
Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 2 1/4" SOL	PL 50 ksi PL 4 x 0.75"	SAE 36 ksi 4X4X0.375
2-5	SOL 50 ksi 2 1/4" SOL	SOL 50 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.1875
6-7	SOL 50 ksi 2" SOLID	SOL 50 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.1875
8-9	SOL 50 ksi 2" SOLID	SOL 50 ksi 3/4" SOLID	SAE 36 ksi 2.5X2.5X0.1875
10-13	SOL 50 ksi 2" SOLID	SOL 50 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.1875
14-15	SOL 50 ksi 2" SOLID	SOL 50 ksi 3/4" SOLID	SAE 36 ksi 2.5X2.5X0.1875
16-17	SOL 50 ksi 2" SOLID	SOL 50 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.1875

SECONDARY BRACING MEMBERS

DISCRETE APPURTENANCE		LINEAR APPURTENANCE	
Elev (ft)	Description	Elev To (ft)	Description
301.0	(6) JMA Wireless MX06FHG865-HG	301.0	(3) 1 5/8" Hybriflex
301.0	(3) Ericsson RRUS 4490		
301.0	(3) Ericsson RRUS 4890		
301.0	(3) Sector Frames with Site Pro 1		
301.0	(3) Ericsson AIR 6419 N77G		
301.0	(1) Raycap RxxDC-3315-PF-48 (32 lb		
301.0	(1) Raycap RxxDC-3315-PF-48 (32 lb		
301.0	(1) Unused Reserve (11013.720 sqin		
301.0	(1) VZW Unused Reserve (3294.84 sq		

GUY ANCHOR REACTIONS

Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (k)	Shear (k)
240.0	0.00	0	35.99	45.91
240.0	0.00	120	35.99	45.91
240.0	0.00	240	35.99	45.91

ANALYSIS PARAMETERS			
Location:	Columbia County, FL	Height:	300 ft
Type and Shape:	Guyed, Triangle	Base Elevation:	0.00 ft
Manufacturer:	Undetermined	Bottom Face Width:	4.00 ft
Kd	0.85	Top Face Width:	4.00 ft
Ke:	0.99		

ICE & WIND PARAMETERS			
Exposure Category:	C	Design Wind Speed Without Ice:	119 mph
Risk Category:	II	Design Wind Speed with Ice:	30 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	Flat	Design Ice Thickness:	0.00 in
Crest Height:	0 ft	HMSL:	150 ft

SEISMIC PARAMETERS					
Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):		0.72	
T _L (sec):	8	P:	1.3	C _s :	0.031
S _s :	0.086	S ₁ :	0.051	C _{s, Max} :	0.038
F _a :	1.600	F _v :	2.400	C _{s, Min} :	0.030
S _{ds} :	0.092	S _{d1} :	0.082		

LOAD CASES	
1.2D + 1.0W Normal	1.2D + 1.0W Normal - 119 mph Wind with No Ice
1.2D + 1.0W 60°	1.2D + 1.0W 60° - 119 mph Wind with No Ice
1.2D + 1.0W 90°	1.2D + 1.0W 90° - 119 mph Wind with No Ice
1.2D + 1.0W 120°	1.2D + 1.0W 120° - 119 mph Wind with No Ice
1.2D + 1.0W 180°	1.2D + 1.0W 180° - 119 mph Wind with No Ice
1.2D + 1.0W 210°	1.2D + 1.0W 210° - 119 mph Wind with No Ice
1.2D + 1.0W 240°	1.2D + 1.0W 240° - 119 mph Wind with No Ice
1.2D + 1.0W 300°	1.2D + 1.0W 300° - 119 mph Wind with No Ice
1.2D + 1.0W 330°	1.2D + 1.0W 330° - 119 mph Wind with No Ice
1.2D + 1.0Di + 1.0Wi Normal	1.2D + 1.0Di + 1.0Wi Normal - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 60°	1.2D + 1.0Di + 1.0Wi 60° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 90°	1.2D + 1.0Di + 1.0Wi 90° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 120°	1.2D + 1.0Di + 1.0Wi 120° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 180°	1.2D + 1.0Di + 1.0Wi 180° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 210°	1.2D + 1.0Di + 1.0Wi 210° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 240°	1.2D + 1.0Di + 1.0Wi 240° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 300°	1.2D + 1.0Di + 1.0Wi 300° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Di + 1.0Wi 330°	1.2D + 1.0Di + 1.0Wi 330° - 30 mph Wind with 0" Radial Ice
1.2D + 1.0Ev + 1.0Eh Normal	1.2D + 1.0Ev + 1.0Eh Normal - Seismic
1.2D + 1.0Ev + 1.0Eh 60°	1.2D + 1.0Ev + 1.0Eh 60° - Seismic
1.2D + 1.0Ev + 1.0Eh 90°	1.2D + 1.0Ev + 1.0Eh 90° - Seismic
1.2D + 1.0Ev + 1.0Eh 120°	1.2D + 1.0Ev + 1.0Eh 120° - Seismic
1.2D + 1.0Ev + 1.0Eh 180°	1.2D + 1.0Ev + 1.0Eh 180° - Seismic
1.2D + 1.0Ev + 1.0Eh 210°	1.2D + 1.0Ev + 1.0Eh 210° - Seismic
1.2D + 1.0Ev + 1.0Eh 240°	1.2D + 1.0Ev + 1.0Eh 240° - Seismic
1.2D + 1.0Ev + 1.0Eh 300°	1.2D + 1.0Ev + 1.0Eh 300° - Seismic

LOAD CASES	
1.2D + 1.0Ev + 1.0Eh 330°	1.2D + 1.0Ev + 1.0Eh 330° - Seismic
1.0D + 1.0W Service Normal	1.0D + 1.0W Service Normal - 60 mph Wind with No Ice
1.0D + 1.0W Service 60°	1.0D + 1.0W Service 60° - 60 mph Wind with No Ice
1.0D + 1.0W Service 90°	1.0D + 1.0W Service 90° - 60 mph Wind with No Ice
1.0D + 1.0W Service 120°	1.0D + 1.0W Service 120° - 60 mph Wind with No Ice
1.0D + 1.0W Service 180°	1.0D + 1.0W Service 180° - 60 mph Wind with No Ice
1.0D + 1.0W Service 210°	1.0D + 1.0W Service 210° - 60 mph Wind with No Ice
1.0D + 1.0W Service 240°	1.0D + 1.0W Service 240° - 60 mph Wind with No Ice
1.0D + 1.0W Service 300°	1.0D + 1.0W Service 300° - 60 mph Wind with No Ice
1.0D + 1.0W Service 330°	1.0D + 1.0W Service 330° - 60 mph Wind with No Ice

TOWER LOADING – DISCRETE APPURTENANCE

Discrete Appurtenance Properties for LC: 1.2D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc. (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
301.0	Raycap RxxDC-3315-PF-48 (32 lb	1	32	2.5	1.6	15.7	10.3	0.80	1.00	4.0	335.15	49.05	84	38
301.0	Raycap RxxDC-3315-PF-48 (32 lb	1	32	2.5	1.6	15.7	10.3	0.80	1.00	4.0	335.15	49.05	84	38
301.0	Ericsson RRUS 4490	3	68	2.7	1.7	15.7	7.0	0.80	0.67	0.0	0.00	48.92	180	246
301.0	Ericsson RRUS 4890	3	70	2.7	1.7	15.7	7.2	0.80	0.67	0.0	0.00	48.92	180	250
301.0	Ericsson AIR 6419 N77G	3	70	3.9	2.5	15.7	6.7	0.80	0.63	0.0	0.00	48.92	247	252
301.0	JMA Wireless MX06FHG865-HG	6	51	11.6	8.0	12.2	7.5	0.80	0.70	0.0	0.00	48.92	1622	367
301.0	Sector Frames with Site Pro 1	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	48.92	1256	1440
301.0	Unused Reserve (11013.720 sqin	1	839	76.5	0.0	0.0	0.0	0.80	0.90	0.0	0.00	48.92	2290	1007
Totals		21	3,032	232.8									5,942	3,639

Discrete Appurtenance Properties for LC: 1.2D + 1.0Di + 1.0Wi

Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc. (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
301.0	Raycap RxxDC-3315-PF-48 (32 lb	1	32	2.5	1.6	15.7	10.3	0.80	1.00	4.0	21.30	3.12	5	38
301.0	Raycap RxxDC-3315-PF-48 (32 lb	1	32	2.5	1.6	15.7	10.3	0.80	1.00	4.0	21.30	3.12	5	38
301.0	Ericsson RRUS 4490	3	68	2.7	1.7	15.7	7.0	0.80	0.67	0.0	0.00	3.11	11	246
301.0	Ericsson RRUS 4890	3	70	2.7	1.7	15.7	7.2	0.80	0.67	0.0	0.00	3.11	11	250
301.0	Ericsson AIR 6419 N77G	3	70	3.9	2.5	15.7	6.7	0.80	0.63	0.0	0.00	3.11	16	252
301.0	JMA Wireless MX06FHG865-HG	6	51	11.6	8.0	12.2	7.5	0.80	0.70	0.0	0.00	3.11	103	367
301.0	Sector Frames with Site Pro 1	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	3.11	80	1440
301.0	Unused Reserve (11013.720 sqin	1	839	76.5	0.0	0.0	0.0	0.80	0.90	0.0	0.00	3.11	146	1007
Totals		21	3,032	232.8									378	3,639

Discrete Appurtenance Properties for LC: 1.0D + 1.0W Service

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc. (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
301.0	Raycap RxxDC-3315-PF-48 (32 lb	1	32	2.5	1.6	15.7	10.3	0.80	1.00	4.0	85.20	12.47	21	32
301.0	Raycap RxxDC-3315-PF-48 (32 lb	1	32	2.5	1.6	15.7	10.3	0.80	1.00	4.0	85.20	12.47	21	32
301.0	Ericsson RRUS 4490	3	68	2.7	1.7	15.7	7.0	0.80	0.67	0.0	0.00	12.44	46	205
301.0	Ericsson RRUS 4890	3	70	2.7	1.7	15.7	7.2	0.80	0.67	0.0	0.00	12.44	46	208
301.0	Ericsson AIR 6419 N77G	3	70	3.9	2.5	15.7	6.7	0.80	0.63	0.0	0.00	12.44	63	210
301.0	JMA Wireless MX06FHG865-HG	6	51	11.6	8.0	12.2	7.5	0.80	0.70	0.0	0.00	12.44	412	306
301.0	Sector Frames with Site Pro 1	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	12.44	319	1200
301.0	Unused Reserve (11013.720 sqin	1	839	76.5	0.0	0.0	0.0	0.80	0.90	0.0	0.00	12.44	582	839
Totals		21	3,032	232.8									1,511	3,032

TOWER LOADING – LINEAR APPURTENANCE

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	% In Wind	Spread On Faces	Bundling	Cluster Dia (in)	Out of Zone	Spacing (in)	Orient. Factor	K _a Override
0.0	301.0	1 5/8" Hybriflex	3	1.98	1.30	100	2	Individual	0.00	N	1.00	1.00	0.00

SECTION FORCES																		
1.2D + 1.0W Normal					Gust Response Factor (Gh):				0.85									
119 mph Wind with No Ice					Wind Importance Factor (Iw):				1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	1082	294	1376
16	270	47.81	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	1031	290	1321
15	250	47.04	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	1131	285	1416
14	230	46.22	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1442	0	1129	280	1409
13	210	45.35	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	978	275	1253
12	190	44.40	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	958	269	1227
11	170	43.37	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	967	263	1230
10	150	42.24	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	911	256	1167
9	130	40.99	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	986	248	1234
8	110	39.57	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	952	240	1191
7	90	37.94	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	818	230	1048
6	70	35.98	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	802	218	1020
5	50	33.52	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	751	203	954
4	30	30.10	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	674	182	857
3	19	27.34	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	209	0	107	17	123
2	12	26.05	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	906	0	363	95	457
1	3	26.05	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	821	0	245	39	284
Totals														20,981	0	17,569		

1.2D + 1.0W 60°					Gust Response Factor (Gh):				0.85									
119 mph Wind with No Ice					Wind Importance Factor (Iw):				1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	988	294	1282
16	270	47.81	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	946	290	1236
15	250	47.04	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	1029	285	1314
14	230	46.22	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1442	0	1025	280	1305
13	210	45.35	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	897	275	1172
12	190	44.40	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	879	269	1148
11	170	43.37	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	883	263	1146
10	150	42.24	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	836	256	1092
9	130	40.99	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	896	248	1145
8	110	39.57	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	865	240	1105
7	90	37.94	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	751	230	981
6	70	35.98	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	733	218	951
5	50	33.52	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	692	203	895
4	30	30.10	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	621	182	804
3	19	27.34	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	209	0	93	17	110
2	12	26.05	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	906	0	333	95	427
1	3	26.05	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	821	0	210	39	249
Totals														20,981	0	16,361		

1.2D + 1.0W 90°					Gust Response Factor (Gh):				0.85									
119 mph Wind with No Ice					Wind Importance Factor (Iw):				1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	1012	294	1306
16	270	47.81	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	968	290	1257
15	250	47.04	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	1054	285	1339
14	230	46.22	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1442	0	1051	280	1331
13	210	45.35	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	918	275	1192
12	190	44.40	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	899	269	1168
11	170	43.37	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	904	263	1167
10	150	42.24	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	855	256	1111
9	130	40.99	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	919	248	1167
8	110	39.57	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	887	240	1127
7	90	37.94	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	768	230	998
6	70	35.98	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	750	218	968
5	50	33.52	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	707	203	910
4	30	30.10	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	635	182	817
3	19	27.34	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	209	0	97	17	113
2	12	26.05	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	906	0	340	95	435
1	3	26.05	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	821	0	219	39	258
Totals														20,981	0	16,663		

1.2D + 1.0W 120°						Gust Response Factor (Gh):				0.85									
119 mph Wind with No Ice						Wind Importance Factor (Iw):				1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
17	290	48.53	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	1082	294	1376	
16	270	47.81	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	1031	290	1321	
15	250	47.04	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	1131	285	1416	
14	230	46.22	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1442	0	1129	280	1409	
13	210	45.35	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	978	275	1253	

SECTION FORCES																		
1.2D + 1.0W 120°																		
Gust Response Factor (Gh):											0.85							
119 mph Wind with No Ice											Wind Importance Factor (Iw): 1.00							
Section #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	190	44.40	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	958	269	1227
11	170	43.37	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	967	263	1230
10	150	42.24	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	911	256	1167
9	130	40.99	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	986	248	1234
8	110	39.57	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	952	240	1191
7	90	37.94	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	818	230	1048
6	70	35.98	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	802	218	1020
5	50	33.52	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	751	203	954
4	30	30.10	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	674	182	857
3	19	27.34	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	209	0	107	17	123
2	12	26.05	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	906	0	363	95	457
1	3	26.05	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	821	0	245	39	284
Totals														20,981	0	17,569		
1.2D + 1.0W 180°																		
Gust Response Factor (Gh):											0.85							
119 mph Wind with No Ice											Wind Importance Factor (Iw): 1.00							
Section #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	988	294	1282
16	270	47.81	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	946	290	1236
15	250	47.04	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	1029	285	1314
14	230	46.22	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1442	0	1025	280	1305
13	210	45.35	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	897	275	1172
12	190	44.40	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	879	269	1148
11	170	43.37	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	883	263	1146
10	150	42.24	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	836	256	1092
9	130	40.99	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	896	248	1145
8	110	39.57	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	865	240	1105
7	90	37.94	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	751	230	981
6	70	35.98	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	733	218	951
5	50	33.52	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	692	203	895
4	30	30.10	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	621	182	804
3	19	27.34	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	209	0	93	17	110
2	12	26.05	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	906	0	333	95	427
1	3	26.05	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	821	0	210	39	249
Totals														20,981	0	16,361		
1.2D + 1.0W 210°																		
Gust Response Factor (Gh):											0.85							
119 mph Wind with No Ice											Wind Importance Factor (Iw): 1.00							
Section #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	1012	294	1306
16	270	47.81	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	968	290	1257
15	250	47.04	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	1054	285	1339
14	230	46.22	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1442	0	1051	280	1331
13	210	45.35	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	918	275	1192
12	190	44.40	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	899	269	1168
11	170	43.37	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	904	263	1167
10	150	42.24	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	855	256	1111
9	130	40.99	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	919	248	1167
8	110	39.57	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	887	240	1127
7	90	37.94	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	768	230	998
6	70	35.98	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	750	218	968
5	50	33.52	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	707	203	910
4	30	30.10	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	635	182	817
3	19	27.34	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	209	0	97	17	113
2	12	26.05	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	906	0	340	95	435
1	3	26.05	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	821	0	219	39	258
Totals														20,981	0	16,663		
1.2D + 1.0W 240°																		
Gust Response Factor (Gh):											0.85							
119 mph Wind with No Ice											Wind Importance Factor (Iw): 1.00							
Section #	Elev (ft)	Q _Z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	1082	294	1376
16	270	47.81	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	1031	290	1321
15	250	47.04	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	1131	285	1416
14	230	46.22	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1442	0	1129	280	1409
13	210	45.35	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	978	275	1253
12	190	44.40	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	958	269	1227
11	170	43.37	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	967	263	1230
10	150	42.24	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	911	256	1167
9	130	40.99	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	986	248	1234
8	110	39.57	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	952	240	1191

ASSET: 412243, Lake City FL SQA

CODE: ANSI/TIA-222-H

CUSTOMER: VERIZON WIRELESS

PROJECT: 14857598_C3_02

SECTION FORCES

1.2D + 1.0W 240°

Gust Response Factor (Gh): 0.85

119 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
7	90	37.94	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	818	230	1048
6	70	35.98	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	802	218	1020
5	50	33.52	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	751	203	954
4	30	30.10	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	674	182	857
3	19	27.34	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	209	0	107	17	123
2	12	26.05	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	906	0	363	95	457
1	3	26.05	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	821	0	245	39	284
Totals															20,981	0		17,569

1.2D + 1.0W 300°

Gust Response Factor (Gh): 0.85

119 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	988	294	1282
16	270	47.81	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	946	290	1236
15	250	47.04	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	1029	285	1314
14	230	46.22	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1442	0	1025	280	1305
13	210	45.35	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	897	275	1172
12	190	44.40	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	879	269	1148
11	170	43.37	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	883	263	1146
10	150	42.24	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	836	256	1092
9	130	40.99	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	896	248	1145
8	110	39.57	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	865	240	1105
7	90	37.94	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	751	230	981
6	70	35.98	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	733	218	951
5	50	33.52	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	692	203	895
4	30	30.10	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	621	182	804
3	19	27.34	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	209	0	93	17	110
2	12	26.05	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	906	0	333	95	427
1	3	26.05	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	821	0	210	39	249
Totals															20,981	0		16,361

1.2D + 1.0W 330°

Gust Response Factor (Gh): 0.85

119 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	48.53	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	1012	294	1306
16	270	47.81	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	968	290	1257
15	250	47.04	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	1054	285	1339
14	230	46.22	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1442	0	1051	280	1331
13	210	45.35	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	918	275	1192
12	190	44.40	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	899	269	1168
11	170	43.37	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	904	263	1167
10	150	42.24	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	855	256	1111
9	130	40.99	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	919	248	1167
8	110	39.57	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	887	240	1127
7	90	37.94	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	768	230	998
6	70	35.98	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	750	218	968
5	50	33.52	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	707	203	910
4	30	30.10	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	635	182	817
3	19	27.34	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	209	0	97	17	113
2	12	26.05	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	906	0	340	95	435
1	3	26.05	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	821	0	219	39	258
Totals															20,981	0		16,663

1.2D + 1.0Di + 1.0Wi Normal

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	69	26	95
16	270	3.04	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	66	26	91
15	250	2.99	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	72	25	97
14	230	2.94	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1442	0	72	24	96
13	210	2.88	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	62	24	87
12	190	2.82	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	61	24	85
11	170	2.76	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	61	23	85
10	150	2.68	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	58	23	81
9	130	2.61	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	63	22	84
8	110	2.52	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	60	21	81
7	90	2.41	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	52	20	72
6	70	2.29	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	51	19	70
5	50	2.13	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	48	18	66
4	30	1.91	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	43	16	59
3	19	1.74	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	209	0	7	1	8

SECTION FORCES																		
1.2D + 1.0Di + 1.0Wi Normal																		
Gust Response Factor (Gh): 0.85											Ice Importance Factor: 1.00							
Wind Importance Factor (Iw): 1.00											Ice Dead Load Factor: 1.00							
30 mph Wind with 0" Radial Ice																		
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _t	D _t	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
2	12	1.66	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	906	0	23	8	31
1	3	1.66	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	821	0	16	2	18
Totals														20,981	0			1,206
1.2D + 1.0Di + 1.0Wi 60°																		
Gust Response Factor (Gh): 0.85											Ice Importance Factor: 1.00							
Wind Importance Factor (Iw): 1.00											Ice Dead Load Factor: 1.00							
30 mph Wind with 0" Radial Ice																		
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _t	D _t	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	63	26	89
16	270	3.04	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	60	26	86
15	250	2.99	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	65	25	90
14	230	2.94	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1442	0	65	24	89
13	210	2.88	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	57	24	81
12	190	2.82	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	56	24	80
11	170	2.76	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	56	23	79
10	150	2.68	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	53	23	76
9	130	2.61	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	57	22	79
8	110	2.52	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	55	21	76
7	90	2.41	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	48	20	68
6	70	2.29	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	47	19	66
5	50	2.13	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	44	18	62
4	30	1.91	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	39	16	56
3	19	1.74	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	209	0	6	1	7
2	12	1.66	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	906	0	21	8	29
1	3	1.66	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	821	0	13	2	16
Totals														20,981	0			1,129
1.2D + 1.0Di + 1.0Wi 90°																		
Gust Response Factor (Gh): 0.85											Ice Importance Factor: 1.00							
Wind Importance Factor (Iw): 1.00											Ice Dead Load Factor: 1.00							
30 mph Wind with 0" Radial Ice																		
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _t	D _t	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	64	26	90
16	270	3.04	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	61	26	87
15	250	2.99	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	67	25	92
14	230	2.94	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1442	0	67	24	91
13	210	2.88	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	58	24	83
12	190	2.82	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	57	24	81
11	170	2.76	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	57	23	81
10	150	2.68	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	54	23	77
9	130	2.61	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	58	22	80
8	110	2.52	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	56	21	77
7	90	2.41	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	49	20	69
6	70	2.29	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	48	19	67
5	50	2.13	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	45	18	63
4	30	1.91	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	40	16	56
3	19	1.74	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	209	0	6	1	7
2	12	1.66	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	906	0	22	8	30
1	3	1.66	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	821	0	14	2	16
Totals														20,981	0			1,148
1.2D + 1.0Di + 1.0Wi 120°																		
Gust Response Factor (Gh): 0.85											Ice Importance Factor: 1.00							
Wind Importance Factor (Iw): 1.00											Ice Dead Load Factor: 1.00							
30 mph Wind with 0" Radial Ice																		
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _t	D _t	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	69	26	95
16	270	3.04	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	66	26	91
15	250	2.99	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	72	25	97
14	230	2.94	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1442	0	72	24	96
13	210	2.88	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	62	24	87
12	190	2.82	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	61	24	85
11	170	2.76	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	61	23	85
10	150	2.68	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	58	23	81
9	130	2.61	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	63	22	84
8	110	2.52	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	60	21	81
7	90	2.41	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	52	20	72
6	70	2.29	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	51	19	70
5	50	2.13	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	48	18	66
4	30	1.91	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	43	16	59
3	19	1.74	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	209	0	7	1	8
2	12	1.66	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	906	0	23	8	31
1	3	1.66	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	821	0	16	2	18
Totals														20,981	0			1,206

SECTION FORCES																		
1.2D + 1.0Di + 1.0Wi 180°					Gust Response Factor (Gh): 0.85					Ice Importance Factor: 1.00								
30 mph Wind with 0" Radial Ice					Wind Importance Factor (Iw): 1.00					Ice Dead Load Factor: 1.00								
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	63	26	89
16	270	3.04	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	60	26	86
15	250	2.99	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	65	25	90
14	230	2.94	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1442	0	65	24	89
13	210	2.88	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	57	24	81
12	190	2.82	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	56	24	80
11	170	2.76	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	56	23	79
10	150	2.68	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	53	23	76
9	130	2.61	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	57	22	79
8	110	2.52	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	55	21	76
7	90	2.41	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	48	20	68
6	70	2.29	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	47	19	66
5	50	2.13	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	44	18	62
4	30	1.91	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	39	16	56
3	19	1.74	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	209	0	6	1	7
2	12	1.66	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	906	0	21	8	29
1	3	1.66	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	821	0	13	2	16
Totals														20,981	0	1,129		

1.2D + 1.0Di + 1.0Wi 210°					Gust Response Factor (Gh): 0.85					Ice Importance Factor: 1.00								
30 mph Wind with 0" Radial Ice					Wind Importance Factor (Iw): 1.00					Ice Dead Load Factor: 1.00								
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	64	26	90
16	270	3.04	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	61	26	87
15	250	2.99	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	67	25	92
14	230	2.94	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1442	0	67	24	91
13	210	2.88	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	58	24	83
12	190	2.82	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	57	24	81
11	170	2.76	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	57	23	81
10	150	2.68	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	54	23	77
9	130	2.61	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	58	22	80
8	110	2.52	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	56	21	77
7	90	2.41	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	49	20	69
6	70	2.29	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	48	19	67
5	50	2.13	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	45	18	63
4	30	1.91	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	40	16	56
3	19	1.74	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	209	0	6	1	7
2	12	1.66	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	906	0	22	8	30
1	3	1.66	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	821	0	14	2	16
Totals														20,981	0	1,148		

1.2D + 1.0Di + 1.0Wi 240°					Gust Response Factor (Gh): 0.85					Ice Importance Factor: 1.00								
30 mph Wind with 0" Radial Ice					Wind Importance Factor (Iw): 1.00					Ice Dead Load Factor: 1.00								
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	69	26	95
16	270	3.04	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	66	26	91
15	250	2.99	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	72	25	97
14	230	2.94	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1442	0	72	24	96
13	210	2.88	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	62	24	87
12	190	2.82	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	61	24	85
11	170	2.76	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	61	23	85
10	150	2.68	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	58	23	81
9	130	2.61	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	63	22	84
8	110	2.52	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1431	0	60	21	81
7	90	2.41	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1284	0	52	20	72
6	70	2.29	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1304	0	51	19	70
5	50	2.13	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	48	18	66
4	30	1.91	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1489	0	43	16	59
3	19	1.74	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	209	0	7	1	8
2	12	1.66	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	906	0	23	8	31
1	3	1.66	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	821	0	16	2	18
Totals														20,981	0	1,206		

1.2D + 1.0Di + 1.0Wi 300°					Gust Response Factor (Gh): 0.85					Ice Importance Factor: 1.00								
30 mph Wind with 0" Radial Ice					Wind Importance Factor (Iw): 1.00					Ice Dead Load Factor: 1.00								
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	63	26	89
16	270	3.04	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	60	26	86
15	250	2.99	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	65	25	90
14	230	2.94	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1442	0	65	24	89
13	210	2.88	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	57	24	81

ASSET: 412243, Lake City FL SQA

CODE: ANSI/TIA-222-H

CUSTOMER: VERIZON WIRELESS

PROJECT: 14857598_C3_02

SECTION FORCES

1.2D + 1.0Di + 1.0Wi 300°

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
12	190	2.82	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	56	24	80
11	170	2.76	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	56	23	79
10	150	2.68	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	53	23	76
9	130	2.61	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	57	22	79
8	110	2.52	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1431	0	55	21	76
7	90	2.41	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1284	0	48	20	68
6	70	2.29	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1304	0	47	19	66
5	50	2.13	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	44	18	62
4	30	1.91	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1489	0	39	16	56
3	19	1.74	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	209	0	6	1	7
2	12	1.66	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	906	0	21	8	29
1	3	1.66	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	821	0	13	2	16

Totals 20,981 0 1,129

1.2D + 1.0Di + 1.0Wi 330°

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	3.08	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	64	26	90
16	270	3.04	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	61	26	87
15	250	2.99	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	67	25	92
14	230	2.94	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1442	0	67	24	91
13	210	2.88	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	58	24	83
12	190	2.82	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	57	24	81
11	170	2.76	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	57	23	81
10	150	2.68	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	54	23	77
9	130	2.61	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	58	22	80
8	110	2.52	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1431	0	56	21	77
7	90	2.41	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1284	0	49	20	69
6	70	2.29	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1304	0	48	19	67
5	50	2.13	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	45	18	63
4	30	1.91	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1489	0	40	16	56
3	19	1.74	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	209	0	6	1	7
2	12	1.66	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	906	0	22	8	30
1	3	1.66	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	821	0	14	2	16

Totals 20,981 0 1,148

1.0D + 1.0W Service Normal

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	275	75	350
16	270	12.15	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	262	74	336
15	250	11.96	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	288	72	360
14	230	11.75	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1201	0	287	71	358
13	210	11.53	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	249	70	319
12	190	11.29	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	244	68	312
11	170	11.03	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	246	67	313
10	150	10.74	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	232	65	297
9	130	10.42	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	251	63	314
8	110	10.06	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	242	61	303
7	90	9.64	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	208	58	267
6	70	9.15	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	204	55	259
5	50	8.52	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1240	0	191	52	242
4	30	7.65	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1240	0	171	46	218
3	19	6.95	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	174	0	27	4	31
2	12	6.62	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	755	0	92	24	116
1	3	6.62	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	684	0	62	10	72

Totals 17,484 0 4,466

1.0D + 1.0W Service 60°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	251	75	326
16	270	12.15	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	241	74	314
15	250	11.96	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	262	72	334
14	230	11.75	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1201	0	261	71	332
13	210	11.53	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	228	70	298
12	190	11.29	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	223	68	292
11	170	11.03	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	224	67	291
10	150	10.74	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	213	65	278
9	130	10.42	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	228	63	291
8	110	10.06	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	220	61	281

ASSET: 412243, Lake City FL SQA

CODE: ANSI/TIA-222-H

CUSTOMER: VERIZON WIRELESS

PROJECT: 14857598_C3_02

SECTION FORCES

1.0D + 1.0W Service 60°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
7	90	9.64	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	191	58	249
6	70	9.15	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	186	55	242
5	50	8.52	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1240	0	176	52	228
4	30	7.65	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1240	0	158	46	204
3	19	6.95	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	174	0	24	4	28
2	12	6.62	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	755	0	85	24	109
1	3	6.62	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	684	0	53	10	63
Totals														17,484	0			4,159

1.0D + 1.0W Service 90°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	257	75	332
16	270	12.15	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	246	74	320
15	250	11.96	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	268	72	340
14	230	11.75	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1201	0	267	71	338
13	210	11.53	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	233	70	303
12	190	11.29	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	228	68	297
11	170	11.03	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	230	67	297
10	150	10.74	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	217	65	282
9	130	10.42	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	234	63	297
8	110	10.06	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	225	61	286
7	90	9.64	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	195	58	254
6	70	9.15	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	191	55	246
5	50	8.52	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1240	0	180	52	231
4	30	7.65	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1240	0	161	46	208
3	19	6.95	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	174	0	25	4	29
2	12	6.62	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	755	0	86	24	111
1	3	6.62	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	684	0	56	10	66
Totals														17,484	0			4,236

1.0D + 1.0W Service 120°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	275	75	350
16	270	12.15	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	262	74	336
15	250	11.96	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	288	72	360
14	230	11.75	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1201	0	287	71	358
13	210	11.53	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	249	70	319
12	190	11.29	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	244	68	312
11	170	11.03	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	246	67	313
10	150	10.74	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	232	65	297
9	130	10.42	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	251	63	314
8	110	10.06	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	242	61	303
7	90	9.64	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	208	58	267
6	70	9.15	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	204	55	259
5	50	8.52	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1240	0	191	52	242
4	30	7.65	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1240	0	171	46	218
3	19	6.95	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	174	0	27	4	31
2	12	6.62	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	755	0	92	24	116
1	3	6.62	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	684	0	62	10	72
Totals														17,484	0			4,466

1.0D + 1.0W Service 180°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	251	75	326
16	270	12.15	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	241	74	314
15	250	11.96	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	262	72	334
14	230	11.75	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1201	0	261	71	332
13	210	11.53	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	228	70	298
12	190	11.29	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	223	68	292
11	170	11.03	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	224	67	291
10	150	10.74	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	213	65	278
9	130	10.42	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	228	63	291
8	110	10.06	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	220	61	281
7	90	9.64	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	191	58	249
6	70	9.15	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	186	55	242
5	50	8.52	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1240	0	176	52	228
4	30	7.65	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1240	0	158	46	204
3	19	6.95	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	174	0	24	4	28

SECTION FORCES																		
1.0D + 1.0W Service 180°						Gust Response Factor (Gh):			0.85									
60 mph Wind with No Ice						Wind Importance Factor (Iw):			1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
2	12	6.62	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	755	0	85	24	109
1	3	6.62	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	684	0	53	10	63
Totals														17,484	0			4,159
1.0D + 1.0W Service 210°						Gust Response Factor (Gh):			0.85									
60 mph Wind with No Ice						Wind Importance Factor (Iw):			1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	257	75	332
16	270	12.15	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	246	74	320
15	250	11.96	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	268	72	340
14	230	11.75	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1201	0	267	71	338
13	210	11.53	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	233	70	303
12	190	11.29	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	228	68	297
11	170	11.03	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	230	67	297
10	150	10.74	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	217	65	282
9	130	10.42	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	234	63	297
8	110	10.06	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	225	61	286
7	90	9.64	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	195	58	254
6	70	9.15	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	191	55	246
5	50	8.52	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1240	0	180	52	231
4	30	7.65	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1240	0	161	46	208
3	19	6.95	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	174	0	25	4	29
2	12	6.62	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	755	0	86	24	111
1	3	6.62	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	684	0	56	10	66
Totals														17,484	0			4,236
1.0D + 1.0W Service 240°						Gust Response Factor (Gh):			0.85									
60 mph Wind with No Ice						Wind Importance Factor (Iw):			1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	275	75	350
16	270	12.15	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	262	74	336
15	250	11.96	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	288	72	360
14	230	11.75	4.993	10.054	0.00	0.181	2.66	1.00	1.00	0.0	10.80	28.74	0.00	1201	0	287	71	358
13	210	11.53	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	249	70	319
12	190	11.29	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	244	68	312
11	170	11.03	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	246	67	313
10	150	10.74	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	232	65	297
9	130	10.42	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	251	63	314
8	110	10.06	4.792	10.054	0.00	0.178	2.67	1.00	1.00	0.0	10.59	28.29	0.00	1192	0	242	61	303
7	90	9.64	3.833	9.490	0.00	0.160	2.74	1.00	1.00	0.0	9.28	25.38	0.00	1070	0	208	58	267
6	70	9.15	4.194	9.490	0.00	0.164	2.72	1.00	1.00	0.0	9.64	26.23	0.00	1087	0	204	55	259
5	50	8.52	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1240	0	191	52	242
4	30	7.65	3.812	10.312	0.00	0.169	2.70	1.00	1.00	0.0	9.74	26.35	0.00	1240	0	171	46	218
3	19	6.95	1.271	1.177	0.00	0.292	2.32	1.00	1.00	0.0	1.98	4.60	0.00	174	0	27	4	31
2	12	6.62	2.542	6.176	0.00	0.174	2.69	1.00	1.00	0.0	6.10	16.38	0.00	755	0	92	24	116
1	3	6.62	4.176	2.411	0.00	0.502	1.90	1.00	1.00	0.0	5.83	11.06	0.00	684	0	62	10	72
Totals														17,484	0			4,466
1.0D + 1.0W Service 300°						Gust Response Factor (Gh):			0.85									
60 mph Wind with No Ice						Wind Importance Factor (Iw):			1.00									
Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	251	75	326
16	270	12.15	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	241	74	314
15	250	11.96	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	262	72	334
14	230	11.75	4.993	10.054	0.00	0.181	2.66	0.80	1.00	0.0	9.80	26.09	0.00	1201	0	261	71	332
13	210	11.53	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	228	70	298
12	190	11.29	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	223	68	292
11	170	11.03	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	224	67	291
10	150	10.74	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	213	65	278
9	130	10.42	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	228	63	291
8	110	10.06	4.792	10.054	0.00	0.178	2.67	0.80	1.00	0.0	9.63	25.73	0.00	1192	0	220	61	281
7	90	9.64	3.833	9.490	0.00	0.160	2.74	0.80	1.00	0.0	8.51	23.28	0.00	1070	0	191	58	249
6	70	9.15	4.194	9.490	0.00	0.164	2.72	0.80	1.00	0.0	8.81	23.95	0.00	1087	0	186	55	242
5	50	8.52	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1240	0	176	52	228
4	30	7.65	3.812	10.312	0.00	0.169	2.70	0.80	1.00	0.0	8.98	24.28	0.00	1240	0	158	46	204
3	19	6.95	1.271	1.177	0.00	0.292	2.32	0.80	1.00	0.0	1.73	4.01	0.00	174	0	24	4	28
2	12	6.62	2.542	6.176	0.00	0.174	2.69	0.80	1.00	0.0	5.59	15.02	0.00	755	0	85	24	109
1	3	6.62	4.176	2.411	0.00	0.502	1.90	0.80	1.00	0.0	4.99	9.48	0.00	684	0	53	10	63
Totals														17,484	0			4,159

SECTION FORCES																		
1.0D + 1.0W Service 330°					Gust Response Factor (Gh):					0.85								
60 mph Wind with No Ice					Wind Importance Factor (Iw):					1.00								
Section #	Elev (ft)	Q _z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
17	290	12.34	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	257	75	332
16	270	12.15	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	246	74	320
15	250	11.96	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	268	72	340
14	230	11.75	4.993	10.054	0.00	0.181	2.66	0.85	1.00	0.0	10.05	26.75	0.00	1201	0	267	71	338
13	210	11.53	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	233	70	303
12	190	11.29	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	228	68	297
11	170	11.03	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	230	67	297
10	150	10.74	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	217	65	282
9	130	10.42	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	234	63	297
8	110	10.06	4.792	10.054	0.00	0.178	2.67	0.85	1.00	0.0	9.87	26.37	0.00	1192	0	225	61	286
7	90	9.64	3.833	9.490	0.00	0.160	2.74	0.85	1.00	0.0	8.70	23.81	0.00	1070	0	195	58	254
6	70	9.15	4.194	9.490	0.00	0.164	2.72	0.85	1.00	0.0	9.02	24.52	0.00	1087	0	191	55	246
5	50	8.52	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1240	0	180	52	231
4	30	7.65	3.812	10.312	0.00	0.169	2.70	0.85	1.00	0.0	9.17	24.80	0.00	1240	0	161	46	208
3	19	6.95	1.271	1.177	0.00	0.292	2.32	0.85	1.00	0.0	1.79	4.16	0.00	174	0	25	4	29
2	12	6.62	2.542	6.176	0.00	0.174	2.69	0.85	1.00	0.0	5.72	15.36	0.00	755	0	86	24	111
1	3	6.62	4.176	2.411	0.00	0.502	1.90	0.85	1.00	0.0	5.20	9.87	0.00	684	0	56	10	66
Totals														17,484	0	4,236		

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S _s):	0.09
Spectral Response Acceleration at 1.0 Second Period (S ₁):	0.05
Long-Period Transition Period (T _L – Seconds):	8
Importance Factor (I _e):	1.00
Site Coefficient F _a :	1.60
Site Coefficient F _v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S _{ds}):	0.09
Design Spectral Response Acceleration at 1.0 Second Period (S _{d1}):	0.08
Seismic Response Coefficient (C _s):	0.03
Upper Limit C _s :	0.04
Lower Limit C _s :	0.03
Period based on Rayleigh Method (sec):	0.72
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.11
Total Unfactored Dead Load:	20.52 k
Seismic Base Shear (E):	0.82 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Section/Appurtenance	Height Above Base (ft)	Weight (lb)	W ₂ (lb-ft)	Cvx	Horizontal Force (lb)	Vertical Force (lb)
17	290.00	1,087	595,177	0.095	78	1,324
16	270.00	1,070	541,270	0.087	71	1,304
15	250.00	1,192	553,653	0.089	72	1,453
14	230.00	1,201	508,480	0.081	66	1,464
13	210.00	1,070	409,289	0.066	53	1,304
12	190.00	1,070	366,177	0.059	48	1,304
11	170.00	1,087	328,615	0.053	43	1,324
10	150.00	1,070	281,524	0.045	37	1,304
9	130.00	1,192	267,543	0.043	35	1,453
8	110.00	1,192	222,182	0.036	29	1,453
7	90.00	1,070	159,511	0.026	21	1,304
6	70.00	1,087	122,497	0.020	16	1,324
5	50.00	1,240	96,176	0.015	13	1,511
4	30.00	1,240	54,493	0.009	7	1,511
3	19.00	174	4,610	0.001	1	212
2	12.00	755	11,977	0.002	2	920
1	3.00	684	2,323	0.000	0	834
Raycap RxxDC-3315-PF-48 (32 lbs)	300.00	32	18,199	0.003	2	39
Raycap RxxDC-3315-PF-48 (32 lbs)	300.00	32	18,199	0.003	2	39
Ericsson RRUS 4490	300.00	205	116,701	0.019	15	250
Ericsson RRUS 4890	300.00	208	118,578	0.019	15	254
Ericsson AIR 6419 N77G	300.00	210	119,431	0.019	16	256
JMA Wireless MX06FHG865-HG	300.00	306	174,028	0.028	23	373
Sector Frames with Site Pro 1 Crossover Kit	300.00	1,200	682,463	0.109	89	1,462
Unused Reserve (11013.720 sqin)	300.00	839	477,042	0.076	62	1,022
Totals		20,517	6,250,136	1.000	816	24,996

FORCE/STRESS SUMMARY

Section 1 – 0.0' to 6.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)					
Member Compression															
L SOL - 2 1/4" SOLID	-36.72	1.2D + 1.0W 60°	2.679	100	100	100	57.15	50.00	140.92	0.00	0.00	0	0	26	Member X
D PL - PL 4 x 0.75"	-7.12	1.2D + 1.0W N	3.993	50	50	50	99.60	50.00	85.02	0.00	0.00	0	0	0	Member Y
Member Tension										Blk Shear Φ _t P _n (kip)					
H SAE - 4X4X0.375	6.99	1.2D + 1.0W N	36.0		58			92.66	0.00	0.00	0.00	0	0	7	Member
Max Splice Forces															
	Pu (kip)	Load Case		ΦR _{nt} (kip)	Use %		Num Bolts		Bolt Type						

Section 2 – 6.0' to 18.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)					
Member Compression															
L SOL - 2 1/4" SOLID	-35.73	1.2D + 1.0W 60°	3.85	100	100	100	82.13	50.00	109.26	0.00	0.00	0	0	32	Member X
D SOL - 5/8" SOLID	-1.00	1.2D + 1.0W N	5.552	50	50	50	192.18	50.00	1.88	0.00	0.00	0	0	0	Member X
Member Tension										Blk Shear Φ _t P _n (kip)					
H SAE - 2X2X0.1875	4.88	1.2D + 1.0W N	36.0		58			23.17	0.00	0.00	0.00	0	0	21	Member
D SOL - 5/8" SOLID	0.10	1.2D + 1.0W N	50.0		65			13.81	0.00	0.00	0.00	0	0	0	Member
Max Splice Forces															
	Pu (kip)	Load Case		ΦR _{nt} (kip)	Use %		Num Bolts		Bolt Type						

Section 3 – 18.0' to 20.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)					
Member Compression															
L SOL - 2 1/4" SOLID	-37.57	1.2D + 1.0W 60°	1.55	100	100	100	33.07	50.00	165.18	0.00	0.00	0	0	22	Member X
D SOL - 5/8" SOLID	-0.58	1.2D + 1.0W N	4.29	50	50	50	148.49	50.00	3.14	0.00	0.00	0	0	0	Member X
Member Tension										Blk Shear Φ _t P _n (kip)					
H SAE - 2X2X0.1875	0.27	1.2D + 1.0W N	36.0		58			23.17	0.00	0.00	0.00	0	0	1	Member
D SOL - 5/8" SOLID	0.19	1.2D + 1.0W N	50.0		65			13.81	0.00	0.00	0.00	0	0	1	Member
Max Splice Forces															
	Pu (kip)	Load Case		ΦR _{nt} (kip)	Use %		Num Bolts		Bolt Type						

Section 4 – 20.0' to 40.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)					
Member Compression															
L SOL - 2 1/4" SOLID	-37.90	1.2D + 1.0W 60°	3.9	100	100	100	83.20	50.00	107.86	0.00	0.00	0	0	35	Member X
D SOL - 5/8" SOLID	-1.11	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
Member Tension										Blk Shear Φ _t P _n (kip)					
H SAE - 2X2X0.1875	1.41	1.2D + 1.0W N	36.0		58			23.17	0.00	0.00	0.00	0	0	6	Member
Max Splice Forces															
	Pu (kip)	Load Case		ΦR _{nt} (kip)	Use %		Num Bolts		Bolt Type						

Section 5 – 40.0' to 60.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
Member Compression				X	Y	Z									

CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H

PROJECT: 14857598_C3_02

FORCE/STRESS SUMMARY

Section 5 – 40.0' to 60.00'

										Shear					
Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
L SOL - 2 1/4" SOLID	-37.85	1.2D + 1.0W 60°	3.9	X	Y	Z	KL/R	83.20	50.00	107.86	0.00	0	0	35	Member X
D SOL - 5/8" SOLID	-0.68	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
										Blk Shear					
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	Bear ΦR _n (kip)	Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
H SAE - 2X2X0.1875	1.41	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00	0	0	6	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

FORCE/STRESS SUMMARY

Section 6 – 60.0' to 80.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z										
L SOL - 2" SOLID	-33.23	1.2D + 1.0W 60°	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	44	Member X
D SOL - 5/8" SOLID	-0.47	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	ΦR _n (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls		
									Φ _t P _n (kip)						
H SAE - 2X2X0.1875	1.54	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00		0	0	6	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 7 – 80.0' to 100.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦR _{nv} (kip)									
L SOL - 2" SOLID	-31.06	1.2D + 1.0W 60°	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	41	Member X
D SOL - 5/8" SOLID	-0.84	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	ΦR _{nv} (kip)	ΦR _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls	
	Φ _t P _n (kip)														
H SAE - 2X2X0.1875	1.50	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00	0	0	0	0	6	Member	
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 8 – 100.0' to 120.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear		# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦRnv (kip)				Bear ΦRn (kip)					
L SOL - 2" SOLID	-28.56	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	38	Member X
H SAE - 2.5X2.5X0.1875	-0.03	1.2D + 1.0W N	4	100	100	100	108.48	36.00	20.46	0.00	0.00	0	0	0	Member Z
D SOL - 3/4" SOLID	-0.77	1.2D + 1.0W N	5.587	50	50	50	160.89	50.00	3.86	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	ΦcPn (kip)	ΦRnv (kip)	ΦRn (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls		
	Φt Pn (kip)														
H SAE - 2.5X2.5X0.1875	3.11	1.2D + 1.0W 60°	36.0	58	29.22	0.00	0.00	0.00		0	0	10	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

Section 9 – 120.0' to 140.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear		# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦRnv (kip)				Bear ΦRn (kip)					
L SOL - 2" SOLID	-27.22	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	36	Member X
D SOL - 3/4" SOLID	-1.52	1.2D + 1.0W N	5.587	50	50	50	160.89	50.00	3.86	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	ΦcPn (kip)	ΦRnv (kip)	ΦRn (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls		
	Φt Pn (kip)														
H SAE - 2.5X2.5X0.1875	1.79	1.2D + 1.0W 90°	36.0	58	29.22	0.00	0.00	0.00		0	0	6	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

Section 10 – 140.0' to 160.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)					
Member Compression															
L SOL - 2" SOLID	-30.18	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	40	Member X

FORCE/STRESS SUMMARY

Section 10 – 140.0' to 160.00'

		Pu	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
Member Compression		(kip)			X	Y	Z			KL/R					
D SOL - 5/8" SOLID		-0.64	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0	0	0	Member X
		Pu	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls	
Member Tension		(kip)							Φ _t P _n (kip)						
H SAE - 2X2X0.1875		1.21	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00	0	0	5	Member		
Max Splice Forces		Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type								

Section 11 – 160.0' to 180.00'

		Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
Member Compression					X	Y	Z			KL/R						ΦR _{nv} (kip)
L SOL - 2" SOLID		-38.30	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	51	Member X
D SOL - 5/8" SOLID		-0.20	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
		Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls		
Member Tension									Φ _t P _n (kip)							
H SAE - 2X2X0.1875		1.29	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00	0	0	5	Member			
D SOL - 5/8" SOLID		0.17	1.2D + 1.0W 90°	50.0	65	13.81	0.00	0.00	0.00	0	0	1	Member			
Max Splice Forces		Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 12 – 180.0' to 200.00'

										Shear						
Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	ΦRnv (kip)	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls	
L SOL - 2" SOLID	-40.03	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	53	Member X	
D SOL - 5/8" SOLID	-0.79	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X	
Member Tension	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	ΦcPn (kip)	Shear ΦRnv (kip)	Bear ΦRn (kip)	Blk Shear Φt Pn (kip)	# Bolt	# Hole	Use %	Controls				
H SAE - 2X2X0.1875	1.21	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00	0	0	5	Member				
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type										

Section 13 – 200.0' to 220.00'

		Pu (kip)	Load Case	Len (ft)	Bracing %			F _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
Member Compression					X	Y	Z			KL/R						ΦR _{nv} (kip)
L SOL - 2" SOLID		-48.53	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	65	Member X
H SAE - 2X2X0.1875		-0.16	1.2D + 1.0W N	4	100	100	100	121.12	36.00	13.87	0.00	0.00	0	0	1	Member Z
D SOL - 5/8" SOLID		-0.33	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
		Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls		
Member Tension									Φ _t P _n (kip)							
L SOL - 2" SOLID		3.30	1.2D + 1.0W 60°	50.0	65	141.37	0.00	0.00			0	0	2	Member		
H SAE - 2X2X0.1875		1.44	1.2D + 1.0W 60°	36.0	58	23.17	0.00	0.00	0.00		0	0	6	Member		
D SOL - 5/8" SOLID		0.32	1.2D + 1.0W 60°	50.0	65	13.81	0.00	0.00	0.00		0	0	2	Member		
Max Splice Forces		Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 14 – 220.0' to 240.00'

Member Compression	Pu	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
	(kip)			ΦR _{nv} (kip)											
L SOL - 2" SOLID	-59.90	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	80	Member X

FORCE/STRESS SUMMARY

Section 14 – 220.0' to 240.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear		Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				Φ _t P _n (kip)						
H SAE - 2.5X2.5X0.1875	-0.55	1.2D + 1.0W N	4	100	100	100	108.48	36.00	20.46	0.00	0.00	0	0	2	Member Z	
D SOL - 3/4" SOLID	-0.32	1.2D + 1.0W N	5.587	50	50	50	160.89	50.00	3.86	0.00	0.00	0	0	0	Member X	
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls			
	Φ _t P _n (kip)															
L SOL - 2" SOLID	26.68	1.2D + 1.0W 60°	50.0	65	141.37	0.00	0.00			0	0	18	Member			
H SAE - 2.5X2.5X0.1875	2.24	1.2D + 1.0W 60°	36.0	58	29.22	0.00	0.00	0.00		0	0	7	Member			
D SOL - 3/4" SOLID	1.80	1.2D + 1.0W 90°	50.0	65	19.88	0.00	0.00	0.00		0	0	9	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type										
Bot Tension	3.93	1.2D + 1.0W 180°	90.30	4	3	0.75" A325										

Section 15 – 240.0' to 260.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear		# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				Bear ΦR _n (kip)					
L SOL - 2" SOLID	-53.30	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	71	Member X
H SAE - 2.5X2.5X0.1875	-0.87	1.2D + 1.0W N	4	100	100	100	108.48	36.00	20.46	0.00	0.00	0	0	4	Member Z
D SOL - 3/4" SOLID	-2.59	1.2D + 1.0W N	5.587	50	50	50	160.89	50.00	3.86	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	Blk Shear Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
L SOL - 2" SOLID	25.45	1.2D + 1.0W 60°	50.0	65	141.37	0.00	0.00		0	0	18	Member			
H SAE - 2.5X2.5X0.1875	1.85	1.2D + 1.0W 60°	36.0	58	29.22	0.00	0.00	0.00	0	0	6	Member			
D SOL - 3/4" SOLID	1.06	1.2D + 1.0W 60°	50.0	65	19.88	0.00	0.00	0.00	0	0	5	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									
Bot Tension	25.50	1.2D + 1.0W 180°	90.30	28	3	0.75" A325									

Section 16 – 260.0' to 280.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear		# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				Bear ΦR _n (kip)					
L SOL - 2" SOLID	-36.38	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	48	Member X
H SAE - 2X2X0.1875	-0.33	1.2D + 1.0W N	4	100	100	100	121.12	36.00	13.87	0.00	0.00	0	0	2	Member Z
D SOL - 5/8" SOLID	-1.55	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear ΦR _{nv} (kip)	Bear ΦR _n (kip)	Blk Shear Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
L SOL - 2" SOLID	12.40	1.2D + 1.0W 60°	50.0	65	141.37	0.00	0.00		0	0	8	Member			
H SAE - 2X2X0.1875	1.00	1.2D + 1.0W 60°	36.0	58	23.17	0.00	0.00	0.00	0	0	4	Member			
D SOL - 5/8" SOLID	0.46	1.2D + 1.0W 60°	50.0	65	13.81	0.00	0.00	0.00	0	0	3	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									
Bot Tension	12.52	1.2D + 1.0W 180°	90.30	14	3	0.75" A325									

Section 17 – 280.0' to 300.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F _y (ksi)	Φ _c P _n (kip)	Shear		# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				Bear ΦR _n (kip)					
L SOL - 2" SOLID	-26.48	1.2D + 1.0W N	3.9	100	100	100	93.60	50.00	74.50	0.00	0.00	0	0	35	Member X
H SAE - 2X2X0.1875	-4.45	1.2D + 1.0W 210°	4	100	100	100	121.12	36.00	13.87	0.00	0.00	0	0	32	Member Z
D SOL - 5/8" SOLID	-0.89	1.2D + 1.0W N	5.587	50	50	50	193.38	50.00	1.85	0.00	0.00	0	0	0	Member X

Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear		Bear ΦR _n (kip)	Blk Shear		# Bolt	# Hole	Use %	Controls
	ΦR _{nv} (kip)					Φ _t P _n (kip)								
L SOL - 2" SOLID	13.45	1.2D + 1.0W 60°	50.0	65	141.37	0.00	0.00	0.00	0	0	9	Member		
H SAE - 2X2X0.1875	1.32	1.2D + 1.0W N	36.0	58	23.17	0.00	0.00	0.00	0	0	5	Member		

FORCE/STRESS SUMMARY											
D SOL - 5/8" SOLID	6.34	1.2D + 1.0W 210°	50.0	65	13.81	0.00	0.00	0.00	0	0	45 Member
Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type					
Bot Tension	6.55	1.2D + 1.0W 180°	90.30	7	3	0.75" A325					

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14857598_C3_02

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W Normal	68.05	9/16 EHS	A1	29	21	2.38	11
		9/16 EHS	A1b	29a	21	4.79	23
		9/16 EHS	A1a	29b	21	4.79	23
	115.85	1/2 EHS	A1	T2	16.14	1.82	11
		1/2 EHS	A1b	T2	16.14	3.93	24
		1/2 EHS	A1a	T2a	16.14	3.94	24
		1/2 EHS	A1b	T2a	16.14	3.94	24
		1/2 EHS	A1	T2b	16.14	1.82	11
		1/2 EHS	A1a	T2b	16.14	3.93	24
		5/8 EHS	A1	66	25.44	2.33	9
	175.85	5/8 EHS	A1b	66a	25.44	6.28	25
		5/8 EHS	A1a	66b	25.44	6.28	25
		7/8 EHS	A1	87	47.82	1.77	4
		7/8 EHS	A1b	87a	47.82	13.71	29
		7/8 EHS	A1a	87b	47.82	13.71	29
	235.85	3/4 EHS	A1	106	34.98	2.02	6
		3/4 EHS	A1b	106a	34.98	14.3	41
		3/4 EHS	A1a	106b	34.98	14.3	41
1.2D + 1.0W 60°	68.05	9/16 EHS	A1	29	21	3.4	16
		9/16 EHS	A1b	29a	21	3.4	16
		9/16 EHS	A1a	29b	21	6.07	29
	115.85	1/2 EHS	A1	T2	16.14	2.97	18
		1/2 EHS	A1b	T2	16.14	2.97	18
		1/2 EHS	A1a	T2a	16.14	4.93	31
		1/2 EHS	A1b	T2a	16.14	2.9	18
		1/2 EHS	A1	T2b	16.14	2.9	18
		1/2 EHS	A1a	T2b	16.14	4.93	31
		5/8 EHS	A1	66	25.44	4.5	18
	175.85	5/8 EHS	A1b	66a	25.44	4.49	18
		5/8 EHS	A1a	66b	25.44	7.97	31
		7/8 EHS	A1	87	47.82	7.37	15
		7/8 EHS	A1b	87a	47.82	7.37	15
		7/8 EHS	A1a	87b	47.82	17.82	37
	235.85	3/4 EHS	A1	106	34.98	5.84	17
		3/4 EHS	A1b	106a	34.98	5.85	17
		3/4 EHS	A1a	106b	34.98	18.77	54
1.2D + 1.0W 90°	68.05	9/16 EHS	A1	29	21	4.01	19
		9/16 EHS	A1b	29a	21	2.7	13
		9/16 EHS	A1a	29b	21	5.64	27
	115.85	1/2 EHS	A1b	T2	16.14	2.25	14
		1/2 EHS	A1	T2	16.14	3.46	21
		1/2 EHS	A1b	T2a	16.14	2.25	14
		1/2 EHS	A1a	T2a	16.14	4.52	28
		1/2 EHS	A1	T2b	16.14	3.38	21
		1/2 EHS	A1a	T2b	16.14	4.64	29
		5/8 EHS	A1	66	25.44	5.41	21
	175.85	5/8 EHS	A1b	66a	25.44	3.23	13
		5/8 EHS	A1a	66b	25.44	7.44	29
		7/8 EHS	A1	87	47.82	10.72	22
		7/8 EHS	A1b	87a	47.82	3.95	8
		7/8 EHS	A1a	87b	47.82	16.71	35
	235.85	3/4 EHS	A1	106	34.98	9.99	29
		3/4 EHS	A1b	106a	34.98	3.08	9
		3/4 EHS	A1a	106b	34.98	17.64	50
1.2D + 1.0W 120°	68.05	9/16 EHS	A1	29	21	4.79	23
		9/16 EHS	A1b	29a	21	2.38	11
		9/16 EHS	A1a	29b	21	4.79	23
	115.85	1/2 EHS	A1	T2	16.14	3.93	24
		1/2 EHS	A1b	T2	16.14	1.82	11

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14857598_C3_02

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
		1/2 EHS	A1a	T2a	16.14	3.93	24
		1/2 EHS	A1b	T2a	16.14	1.82	11
		1/2 EHS	A1	T2b	16.14	3.94	24
	175.85	1/2 EHS	A1a	T2b	16.14	3.94	24
		5/8 EHS	A1	66	25.44	6.29	25
		5/8 EHS	A1b	66a	25.44	2.33	9
	235.85	5/8 EHS	A1a	66b	25.44	6.29	25
		7/8 EHS	A1	87	47.82	13.72	29
		7/8 EHS	A1b	87a	47.82	1.77	4
	288.05	7/8 EHS	A1a	87b	47.82	13.72	29
		3/4 EHS	A1	106	34.98	14.3	41
		3/4 EHS	A1b	106a	34.98	2.02	6
	68.05	3/4 EHS	A1a	106b	34.98	14.29	41
		9/16 EHS	A1	29	21	6.07	29
		9/16 EHS	A1b	29a	21	3.4	16
	115.85	9/16 EHS	A1a	29b	21	3.4	16
		1/2 EHS	A1b	T2	16.14	2.9	18
1.2D + 1.0W 180°		1/2 EHS	A1	T2	16.14	4.93	31
		1/2 EHS	A1b	T2a	16.14	2.97	18
		1/2 EHS	A1a	T2a	16.14	2.97	18
	175.85	1/2 EHS	A1	T2b	16.14	4.93	31
		5/8 EHS	A1a	T2b	16.14	2.9	18
		5/8 EHS	A1	66	25.44	7.97	31
	235.85	5/8 EHS	A1b	66a	25.44	4.5	18
		5/8 EHS	A1a	66b	25.44	4.5	18
		7/8 EHS	A1	87	47.82	17.81	37
	288.05	7/8 EHS	A1b	87a	47.82	7.37	15
		7/8 EHS	A1a	87b	47.82	7.37	15
		3/4 EHS	A1	106	34.98	18.79	54
1.2D + 1.0W 210°		3/4 EHS	A1b	106a	34.98	5.85	17
		3/4 EHS	A1a	106b	34.98	5.85	17
	68.05	9/16 EHS	A1	29	21	5.64	27
		9/16 EHS	A1b	29a	21	4.01	19
		9/16 EHS	A1a	29b	21	2.7	13
	115.85	1/2 EHS	A1b	T2	16.14	3.38	21
		1/2 EHS	A1	T2	16.14	4.64	29
		1/2 EHS	A1a	T2a	16.14	2.25	14
	175.85	1/2 EHS	A1b	T2a	16.14	3.46	21
		1/2 EHS	A1a	T2b	16.14	2.25	14
		1/2 EHS	A1	T2b	16.14	4.52	28
	235.85	5/8 EHS	A1	66	25.44	7.43	29
		5/8 EHS	A1b	66a	25.44	5.41	21
		5/8 EHS	A1a	66b	25.44	3.23	13
	288.05	7/8 EHS	A1	87	47.82	16.7	35
		7/8 EHS	A1b	87a	47.82	10.72	22
		7/8 EHS	A1a	87b	47.82	3.95	8
1.2D + 1.0W 240°		3/4 EHS	A1	106	34.98	17.66	50
		3/4 EHS	A1b	106a	34.98	9.98	29
		3/4 EHS	A1a	106b	34.98	3.08	9
	68.05	9/16 EHS	A1	29	21	4.79	23
		9/16 EHS	A1b	29a	21	4.79	23
		9/16 EHS	A1a	29b	21	2.38	11
	115.85	1/2 EHS	A1b	T2	16.14	3.94	24
		1/2 EHS	A1	T2	16.14	3.94	24
		1/2 EHS	A1b	T2a	16.14	3.93	24
	175.85	1/2 EHS	A1a	T2a	16.14	1.82	11
		1/2 EHS	A1	T2b	16.14	3.93	24
		1/2 EHS	A1a	T2b	16.14	1.82	11
		5/8 EHS	A1	66	25.44	6.29	25

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14857598_C3_02

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	235.85	5/8 EHS	A1b	66a	25.44	6.29	25
		5/8 EHS	A1a	66b	25.44	2.33	9
		7/8 EHS	A1	87	47.82	13.72	29
		7/8 EHS	A1b	87a	47.82	13.72	29
	288.05	7/8 EHS	A1a	87b	47.82	1.77	4
		3/4 EHS	A1	106	34.98	14.3	41
		3/4 EHS	A1b	106a	34.98	14.29	41
		3/4 EHS	A1a	106b	34.98	2.02	6
	68.05	9/16 EHS	A1	29	21	3.4	16
		9/16 EHS	A1b	29a	21	6.07	29
		9/16 EHS	A1a	29b	21	3.4	16
		1/2 EHS	A1	T2	16.14	2.9	18
1.2D + 1.0W 300°	115.85	1/2 EHS	A1b	T2	16.14	4.93	31
		1/2 EHS	A1b	T2a	16.14	4.93	31
		1/2 EHS	A1a	T2a	16.14	2.9	18
		1/2 EHS	A1	T2b	16.14	2.97	18
	175.85	1/2 EHS	A1a	T2b	16.14	2.97	18
		5/8 EHS	A1	66	25.44	4.5	18
		5/8 EHS	A1b	66a	25.44	7.97	31
		5/8 EHS	A1a	66b	25.44	4.49	18
	235.85	7/8 EHS	A1	87	47.82	7.37	15
		7/8 EHS	A1b	87a	47.82	17.82	37
		7/8 EHS	A1a	87b	47.82	7.37	15
	288.05	3/4 EHS	A1	106	34.98	5.84	17
		3/4 EHS	A1b	106a	34.98	18.77	54
		3/4 EHS	A1a	106b	34.98	5.85	17
	68.05	9/16 EHS	A1	29	21	2.7	13
		9/16 EHS	A1b	29a	21	5.64	27
		9/16 EHS	A1a	29b	21	4.01	19
	115.85	1/2 EHS	A1b	T2	16.14	4.52	28
		1/2 EHS	A1	T2	16.14	2.25	14
		1/2 EHS	A1b	T2a	16.14	4.64	29
		1/2 EHS	A1a	T2a	16.14	3.38	21
	175.85	1/2 EHS	A1a	T2b	16.14	3.46	21
		1/2 EHS	A1	T2b	16.14	2.25	14
		5/8 EHS	A1	66	25.44	3.24	13
		5/8 EHS	A1b	66a	25.44	7.43	29
	235.85	5/8 EHS	A1a	66b	25.44	5.41	21
		7/8 EHS	A1	87	47.82	3.95	8
		7/8 EHS	A1b	87a	47.82	16.7	35
		7/8 EHS	A1a	87b	47.82	10.71	22
	288.05	3/4 EHS	A1	106	34.98	3.08	9
		3/4 EHS	A1b	106a	34.98	17.65	50
		3/4 EHS	A1a	106b	34.98	9.99	29
1.2D + 1.0Di + 1.0Wi Normal	68.05	9/16 EHS	A1	29	21	4.07	19
		9/16 EHS	A1b	29a	21	4.26	20
		9/16 EHS	A1a	29b	21	4.26	20
	115.85	1/2 EHS	A1	T2	16.14	2.98	18
		1/2 EHS	A1b	T2	16.14	3.13	19
		1/2 EHS	A1b	T2a	16.14	3.13	19
		1/2 EHS	A1a	T2a	16.14	3.13	19
	175.85	1/2 EHS	A1a	T2b	16.14	3.13	19
		1/2 EHS	A1	T2b	16.14	2.98	18
		5/8 EHS	A1	66	25.44	4.43	17
		5/8 EHS	A1b	66a	25.44	4.68	18
	235.85	5/8 EHS	A1a	66b	25.44	4.68	18
		7/8 EHS	A1	87	47.82	7.85	16
		7/8 EHS	A1b	87a	47.82	8.45	18
		7/8 EHS	A1a	87b	47.82	8.45	18

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14857598_C3_02

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0Di + 1.0Wi 60°	288.05	3/4 EHS	A1	106	34.98	5.35	15
		3/4 EHS	A1b	106a	34.98	6.21	18
		3/4 EHS	A1a	106b	34.98	6.21	18
	68.05	9/16 EHS	A1	29	21	4.13	20
		9/16 EHS	A1b	29a	21	4.13	20
		9/16 EHS	A1a	29b	21	4.3	20
	115.85	1/2 EHS	A1b	T2	16.14	3.02	19
		1/2 EHS	A1	T2	16.14	3.02	19
		1/2 EHS	A1b	T2a	16.14	3.02	19
		1/2 EHS	A1a	T2a	16.14	3.16	20
		1/2 EHS	A1a	T2b	16.14	3.16	20
		1/2 EHS	A1	T2b	16.14	3.02	19
1.2D + 1.0Di + 1.0Wi 90°	175.85	5/8 EHS	A1	66	25.44	4.5	18
		5/8 EHS	A1b	66a	25.44	4.5	18
		5/8 EHS	A1a	66b	25.44	4.73	19
	235.85	7/8 EHS	A1	87	47.82	8.03	17
		7/8 EHS	A1b	87a	47.82	8.03	17
		7/8 EHS	A1a	87b	47.82	8.61	18
	288.05	3/4 EHS	A1	106	34.98	5.62	16
		3/4 EHS	A1b	106a	34.98	5.62	16
		3/4 EHS	A1a	106b	34.98	6.45	18
	68.05	9/16 EHS	A1	29	21	4.19	20
		9/16 EHS	A1b	29a	21	4.09	19
		9/16 EHS	A1a	29b	21	4.29	20
1.2D + 1.0Di + 1.0Wi 120°	115.85	1/2 EHS	A1b	T2	16.14	2.99	19
		1/2 EHS	A1	T2	16.14	3.08	19
		1/2 EHS	A1b	T2a	16.14	2.99	19
		1/2 EHS	A1a	T2a	16.14	3.16	20
		1/2 EHS	A1a	T2b	16.14	3.16	20
		1/2 EHS	A1	T2b	16.14	3.07	19
	175.85	5/8 EHS	A1	66	25.44	4.58	18
		5/8 EHS	A1b	66a	25.44	4.45	17
		5/8 EHS	A1a	66b	25.44	4.72	19
	235.85	7/8 EHS	A1	87	47.82	8.24	17
		7/8 EHS	A1b	87a	47.82	7.9	17
		7/8 EHS	A1a	87b	47.82	8.58	18
1.2D + 1.0Di + 1.0Wi 180°	288.05	3/4 EHS	A1	106	34.98	5.91	17
		3/4 EHS	A1b	106a	34.98	5.42	15
		3/4 EHS	A1a	106b	34.98	6.39	18
	68.05	9/16 EHS	A1	29	21	4.26	20
		9/16 EHS	A1b	29a	21	4.07	19
		9/16 EHS	A1a	29b	21	4.26	20
	115.85	1/2 EHS	A1b	T2	16.14	2.98	18
		1/2 EHS	A1	T2	16.14	3.13	19
		1/2 EHS	A1b	T2a	16.14	2.98	18
		1/2 EHS	A1a	T2a	16.14	3.13	19
		1/2 EHS	A1a	T2b	16.14	3.13	19
		1/2 EHS	A1	T2b	16.14	3.13	19
1.2D + 1.0Di + 1.0Wi 180°	175.85	5/8 EHS	A1	66	25.44	4.68	18
		5/8 EHS	A1b	66a	25.44	4.42	17
		5/8 EHS	A1a	66b	25.44	4.68	18
	235.85	7/8 EHS	A1	87	47.82	8.45	18
		7/8 EHS	A1b	87a	47.82	7.85	16
		7/8 EHS	A1a	87b	47.82	8.45	18
	288.05	3/4 EHS	A1	106	34.98	6.21	18
		3/4 EHS	A1b	106a	34.98	5.35	15
		3/4 EHS	A1a	106b	34.98	6.21	18
	68.05	9/16 EHS	A1	29	21	4.3	20
		9/16 EHS	A1b	29a	21	4.13	20

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	115.85	9/16 EHS	A1a	29b	21	4.13	20
		1/2 EHS	A1	T2	16.14	3.16	20
		1/2 EHS	A1b	T2	16.14	3.02	19
		1/2 EHS	A1a	T2a	16.14	3.02	19
		1/2 EHS	A1b	T2a	16.14	3.02	19
		1/2 EHS	A1	T2b	16.14	3.16	20
	175.85	1/2 EHS	A1a	T2b	16.14	3.02	19
		5/8 EHS	A1	66	25.44	4.73	19
		5/8 EHS	A1b	66a	25.44	4.49	18
	235.85	5/8 EHS	A1a	66b	25.44	4.49	18
		7/8 EHS	A1	87	47.82	8.62	18
		7/8 EHS	A1b	87a	47.82	8.02	17
	288.05	7/8 EHS	A1a	87b	47.82	8.02	17
		3/4 EHS	A1	106	34.98	6.47	18
		3/4 EHS	A1b	106a	34.98	5.61	16
		3/4 EHS	A1a	106b	34.98	5.61	16
1.2D + 1.0Di + 1.0Wi 210°	68.05	9/16 EHS	A1	29	21	4.29	20
		9/16 EHS	A1b	29a	21	4.19	20
		9/16 EHS	A1a	29b	21	4.09	19
	115.85	1/2 EHS	A1b	T2	16.14	3.07	19
		1/2 EHS	A1	T2	16.14	3.16	20
		1/2 EHS	A1b	T2a	16.14	3.08	19
		1/2 EHS	A1a	T2a	16.14	2.99	19
		1/2 EHS	A1a	T2b	16.14	2.99	19
		1/2 EHS	A1	T2b	16.14	3.16	20
	175.85	5/8 EHS	A1	66	25.44	4.72	19
		5/8 EHS	A1b	66a	25.44	4.58	18
		5/8 EHS	A1a	66b	25.44	4.45	17
	235.85	7/8 EHS	A1	87	47.82	8.58	18
		7/8 EHS	A1b	87a	47.82	8.24	17
		7/8 EHS	A1a	87b	47.82	7.9	17
	288.05	3/4 EHS	A1	106	34.98	6.39	18
		3/4 EHS	A1b	106a	34.98	5.91	17
		3/4 EHS	A1a	106b	34.98	5.42	15
1.2D + 1.0Di + 1.0Wi 240°	68.05	9/16 EHS	A1	29	21	4.26	20
		9/16 EHS	A1b	29a	21	4.26	20
		9/16 EHS	A1a	29b	21	4.07	19
	115.85	1/2 EHS	A1b	T2	16.14	3.13	19
		1/2 EHS	A1	T2	16.14	3.13	19
		1/2 EHS	A1a	T2a	16.14	2.98	18
		1/2 EHS	A1b	T2a	16.14	3.13	19
		1/2 EHS	A1a	T2b	16.14	2.98	18
		1/2 EHS	A1	T2b	16.14	3.13	19
	175.85	5/8 EHS	A1	66	25.44	4.68	18
		5/8 EHS	A1b	66a	25.44	4.68	18
		5/8 EHS	A1a	66b	25.44	4.42	17
	235.85	7/8 EHS	A1	87	47.82	8.45	18
		7/8 EHS	A1b	87a	47.82	8.45	18
		7/8 EHS	A1a	87b	47.82	7.85	16
	288.05	3/4 EHS	A1	106	34.98	6.21	18
		3/4 EHS	A1b	106a	34.98	6.21	18
		3/4 EHS	A1a	106b	34.98	5.35	15
1.2D + 1.0Di + 1.0Wi 300°	68.05	9/16 EHS	A1	29	21	4.13	20
		9/16 EHS	A1b	29a	21	4.3	20
		9/16 EHS	A1a	29b	21	4.13	20
	115.85	1/2 EHS	A1b	T2	16.14	3.16	20
		1/2 EHS	A1	T2	16.14	3.02	19
		1/2 EHS	A1a	T2a	16.14	3.02	19
		1/2 EHS	A1b	T2a	16.14	3.16	20

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0Di + 1.0Wi 330°	175.85	1/2 EHS	A1	T2b	16.14	3.02	19
		1/2 EHS	A1a	T2b	16.14	3.02	19
		5/8 EHS	A1	66	25.44	4.5	18
		5/8 EHS	A1b	66a	25.44	4.73	19
	235.85	5/8 EHS	A1a	66b	25.44	4.5	18
		7/8 EHS	A1	87	47.82	8.03	17
		7/8 EHS	A1b	87a	47.82	8.61	18
		7/8 EHS	A1a	87b	47.82	8.03	17
	288.05	3/4 EHS	A1	106	34.98	5.62	16
		3/4 EHS	A1b	106a	34.98	6.45	18
		3/4 EHS	A1a	106b	34.98	5.62	16
	68.05	9/16 EHS	A1	29	21	4.09	19
		9/16 EHS	A1b	29a	21	4.29	20
		9/16 EHS	A1a	29b	21	4.19	20
	115.85	1/2 EHS	A1b	T2	16.14	3.16	20
		1/2 EHS	A1	T2	16.14	2.99	19
		1/2 EHS	A1b	T2a	16.14	3.16	20
		1/2 EHS	A1a	T2a	16.14	3.07	19
	175.85	1/2 EHS	A1	T2b	16.14	2.99	19
		1/2 EHS	A1a	T2b	16.14	3.08	19
		5/8 EHS	A1	66	25.44	4.45	17
		5/8 EHS	A1b	66a	25.44	4.72	19
	235.85	5/8 EHS	A1a	66b	25.44	4.58	18
		7/8 EHS	A1	87	47.82	7.9	17
		7/8 EHS	A1b	87a	47.82	8.58	18
		7/8 EHS	A1a	87b	47.82	8.23	17
	288.05	3/4 EHS	A1	106	34.98	5.42	15
		3/4 EHS	A1b	106a	34.98	6.39	18
		3/4 EHS	A1a	106b	34.98	5.91	17
1.2D + 1.0Ev + 1.0Eh Normal	68.05	9/16 EHS	A1	29	21	3.44	16
		9/16 EHS	A1b	29a	21	3.47	17
		9/16 EHS	A1a	29b	21	3.47	17
	115.85	1/2 EHS	A1	T2	16.14	2.57	16
		1/2 EHS	A1b	T2	16.14	2.62	16
		1/2 EHS	A1b	T2a	16.14	2.62	16
		1/2 EHS	A1a	T2a	16.14	2.62	16
	175.85	1/2 EHS	A1a	T2b	16.14	2.62	16
		1/2 EHS	A1	T2b	16.14	2.57	16
		5/8 EHS	A1	66	25.44	3.93	15
		5/8 EHS	A1b	66a	25.44	4.04	16
	235.85	5/8 EHS	A1a	66b	25.44	4.04	16
		7/8 EHS	A1	87	47.82	7.16	15
		7/8 EHS	A1b	87a	47.82	7.51	16
		7/8 EHS	A1a	87b	47.82	7.51	16
	288.05	3/4 EHS	A1	106	34.98	5.12	15
		3/4 EHS	A1b	106a	34.98	5.55	16
		3/4 EHS	A1a	106b	34.98	5.55	16
1.2D + 1.0Ev + 1.0Eh 60°	68.05	9/16 EHS	A1	29	21	3.45	16
		9/16 EHS	A1b	29a	21	3.45	16
		9/16 EHS	A1a	29b	21	3.49	17
	115.85	1/2 EHS	A1	T2	16.14	2.59	16
		1/2 EHS	A1b	T2	16.14	2.59	16
		1/2 EHS	A1b	T2a	16.14	2.59	16
		1/2 EHS	A1a	T2a	16.14	2.63	16
	175.85	1/2 EHS	A1a	T2b	16.14	2.63	16
		1/2 EHS	A1	T2b	16.14	2.59	16
		5/8 EHS	A1	66	25.44	3.96	16
		5/8 EHS	A1b	66a	25.44	3.96	16
		5/8 EHS	A1a	66b	25.44	4.07	16

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0Ev + 1.0Eh 90°	235.85	7/8 EHS	A1	87	47.82	7.28	15
		7/8 EHS	A1b	87a	47.82	7.28	15
		7/8 EHS	A1a	87b	47.82	7.63	16
	288.05	3/4 EHS	A1	106	34.98	5.27	15
		3/4 EHS	A1b	106a	34.98	5.27	15
		3/4 EHS	A1a	106b	34.98	5.7	16
	68.05	9/16 EHS	A1	29	21	3.46	16
		9/16 EHS	A1b	29a	21	3.44	16
		9/16 EHS	A1a	29b	21	3.48	17
	115.85	1/2 EHS	A1	T2	16.14	2.6	16
		1/2 EHS	A1b	T2	16.14	2.58	16
		1/2 EHS	A1a	T2a	16.14	2.63	16
		1/2 EHS	A1b	T2a	16.14	2.58	16
		1/2 EHS	A1	T2b	16.14	2.6	16
		1/2 EHS	A1a	T2b	16.14	2.63	16
	175.85	5/8 EHS	A1	66	25.44	4	16
		5/8 EHS	A1b	66a	25.44	3.94	15
		5/8 EHS	A1a	66b	25.44	4.06	16
1.2D + 1.0Ev + 1.0Eh 120°	235.85	7/8 EHS	A1	87	47.82	7.4	15
		7/8 EHS	A1b	87a	47.82	7.19	15
		7/8 EHS	A1a	87b	47.82	7.6	16
	288.05	3/4 EHS	A1	106	34.98	5.41	15
		3/4 EHS	A1b	106a	34.98	5.16	15
		3/4 EHS	A1a	106b	34.98	5.66	16
	68.05	9/16 EHS	A1	29	21	3.47	17
		9/16 EHS	A1b	29a	21	3.44	16
		9/16 EHS	A1a	29b	21	3.47	17
	115.85	1/2 EHS	A1b	T2	16.14	2.57	16
		1/2 EHS	A1	T2	16.14	2.62	16
		1/2 EHS	A1b	T2a	16.14	2.57	16
		1/2 EHS	A1a	T2a	16.14	2.62	16
		1/2 EHS	A1a	T2b	16.14	2.62	16
		1/2 EHS	A1	T2b	16.14	2.62	16
	175.85	5/8 EHS	A1	66	25.44	4.04	16
		5/8 EHS	A1b	66a	25.44	3.93	15
		5/8 EHS	A1a	66b	25.44	4.04	16
1.2D + 1.0Ev + 1.0Eh 180°	235.85	7/8 EHS	A1	87	47.82	7.51	16
		7/8 EHS	A1b	87a	47.82	7.16	15
		7/8 EHS	A1a	87b	47.82	7.51	16
	288.05	3/4 EHS	A1	106	34.98	5.55	16
		3/4 EHS	A1b	106a	34.98	5.12	15
		3/4 EHS	A1a	106b	34.98	5.55	16
	68.05	9/16 EHS	A1	29	21	3.49	17
		9/16 EHS	A1b	29a	21	3.45	16
		9/16 EHS	A1a	29b	21	3.45	16
	115.85	1/2 EHS	A1b	T2	16.14	2.59	16
		1/2 EHS	A1	T2	16.14	2.63	16
		1/2 EHS	A1b	T2a	16.14	2.59	16
		1/2 EHS	A1a	T2a	16.14	2.59	16
		1/2 EHS	A1	T2b	16.14	2.63	16
		1/2 EHS	A1a	T2b	16.14	2.59	16
	175.85	5/8 EHS	A1	66	25.44	4.07	16
		5/8 EHS	A1b	66a	25.44	3.96	16
		5/8 EHS	A1a	66b	25.44	3.96	16
	235.85	7/8 EHS	A1	87	47.82	7.63	16
		7/8 EHS	A1b	87a	47.82	7.28	15
		7/8 EHS	A1a	87b	47.82	7.28	15
	288.05	3/4 EHS	A1	106	34.98	5.7	16
		3/4 EHS	A1b	106a	34.98	5.27	15
		3/4 EHS	A1a	106b	34.98	5.27	15

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0Ev + 1.0Eh 210°	68.05	3/4 EHS	A1a	106b	34.98	5.27	15
		9/16 EHS	A1	29	21	3.48	17
		9/16 EHS	A1b	29a	21	3.46	16
		9/16 EHS	A1a	29b	21	3.44	16
	115.85	1/2 EHS	A1b	T2	16.14	2.6	16
		1/2 EHS	A1	T2	16.14	2.63	16
		1/2 EHS	A1b	T2a	16.14	2.6	16
		1/2 EHS	A1a	T2a	16.14	2.58	16
		1/2 EHS	A1	T2b	16.14	2.63	16
		1/2 EHS	A1a	T2b	16.14	2.58	16
	175.85	5/8 EHS	A1	66	25.44	4.06	16
		5/8 EHS	A1b	66a	25.44	4	16
		5/8 EHS	A1a	66b	25.44	3.94	15
		7/8 EHS	A1	87	47.82	7.6	16
	235.85	7/8 EHS	A1b	87a	47.82	7.4	15
		7/8 EHS	A1a	87b	47.82	7.19	15
		3/4 EHS	A1	106	34.98	5.66	16
		3/4 EHS	A1b	106a	34.98	5.41	15
		3/4 EHS	A1a	106b	34.98	5.16	15
1.2D + 1.0Ev + 1.0Eh 240°	68.05	9/16 EHS	A1	29	21	3.47	17
		9/16 EHS	A1b	29a	21	3.47	17
		9/16 EHS	A1a	29b	21	3.44	16
		1/2 EHS	A1	T2	16.14	2.62	16
	115.85	1/2 EHS	A1b	T2	16.14	2.62	16
		1/2 EHS	A1b	T2a	16.14	2.62	16
		1/2 EHS	A1a	T2a	16.14	2.57	16
		1/2 EHS	A1	T2b	16.14	2.62	16
		1/2 EHS	A1a	T2b	16.14	2.57	16
	175.85	5/8 EHS	A1	66	25.44	4.04	16
		5/8 EHS	A1b	66a	25.44	4.04	16
		5/8 EHS	A1a	66b	25.44	3.93	15
		7/8 EHS	A1	87	47.82	7.51	16
	235.85	7/8 EHS	A1b	87a	47.82	7.51	16
		7/8 EHS	A1a	87b	47.82	7.16	15
		3/4 EHS	A1	106	34.98	5.55	16
		3/4 EHS	A1b	106a	34.98	5.55	16
		3/4 EHS	A1a	106b	34.98	5.12	15
1.2D + 1.0Ev + 1.0Eh 300°	68.05	9/16 EHS	A1	29	21	3.45	16
		9/16 EHS	A1b	29a	21	3.49	17
		9/16 EHS	A1a	29b	21	3.45	16
		1/2 EHS	A1b	T2	16.14	2.63	16
	115.85	1/2 EHS	A1	T2	16.14	2.59	16
		1/2 EHS	A1b	T2a	16.14	2.63	16
		1/2 EHS	A1a	T2a	16.14	2.59	16
		1/2 EHS	A1a	T2b	16.14	2.59	16
		1/2 EHS	A1	T2b	16.14	2.59	16
	175.85	5/8 EHS	A1	66	25.44	3.96	16
		5/8 EHS	A1b	66a	25.44	4.07	16
		5/8 EHS	A1a	66b	25.44	3.96	16
		7/8 EHS	A1	87	47.82	7.28	15
	235.85	7/8 EHS	A1b	87a	47.82	7.63	16
		7/8 EHS	A1a	87b	47.82	7.28	15
		3/4 EHS	A1	106	34.98	5.27	15
		3/4 EHS	A1b	106a	34.98	5.7	16
		3/4 EHS	A1a	106b	34.98	5.27	15
1.2D + 1.0Ev + 1.0Eh 330°	68.05	9/16 EHS	A1	29	21	3.44	16
		9/16 EHS	A1b	29a	21	3.48	17
		9/16 EHS	A1a	29b	21	3.46	16
	115.85	1/2 EHS	A1b	T2	16.14	2.63	16

ASSET: 412243, Lake City FL SQA
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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	175.85	1/2 EHS	A1	T2	16.14	2.58	16
		1/2 EHS	A1a	T2a	16.14	2.6	16
		1/2 EHS	A1b	T2a	16.14	2.63	16
		1/2 EHS	A1a	T2b	16.14	2.6	16
		1/2 EHS	A1	T2b	16.14	2.58	16
		5/8 EHS	A1	66	25.44	3.94	15
	235.85	5/8 EHS	A1b	66a	25.44	4.06	16
		5/8 EHS	A1a	66b	25.44	4	16
		7/8 EHS	A1	87	47.82	7.19	15
		7/8 EHS	A1b	87a	47.82	7.6	16
		7/8 EHS	A1a	87b	47.82	7.4	15
		3/4 EHS	A1	106	34.98	5.16	15
	288.05	3/4 EHS	A1b	106a	34.98	5.66	16
		3/4 EHS	A1a	106b	34.98	5.41	15
	68.05	9/16 EHS	A1	29	21	3.09	15
		9/16 EHS	A1b	29a	21	3.76	18
		9/16 EHS	A1a	29b	21	3.76	18
		1/2 EHS	A1	T2	16.14	2.3	14
		1/2 EHS	A1b	T2	16.14	2.9	18
		1/2 EHS	A1b	T2a	16.14	2.9	18
1.0D + 1.0W Service Normal	115.85	1/2 EHS	A1a	T2a	16.14	2.9	18
		1/2 EHS	A1a	T2b	16.14	2.9	18
		1/2 EHS	A1	T2b	16.14	2.3	14
		5/8 EHS	A1	66	25.44	3.49	14
		5/8 EHS	A1b	66a	25.44	4.49	18
		5/8 EHS	A1a	66b	25.44	4.49	18
	235.85	7/8 EHS	A1	87	47.82	6.03	13
		7/8 EHS	A1b	87a	47.82	8.44	18
		7/8 EHS	A1a	87b	47.82	8.44	18
		3/4 EHS	A1	106	34.98	3.28	9
		3/4 EHS	A1b	106a	34.98	6.8	19
		3/4 EHS	A1a	106b	34.98	6.8	19
	288.05	9/16 EHS	A1	29	21	3.28	16
		9/16 EHS	A1b	29a	21	3.28	16
		9/16 EHS	A1a	29b	21	3.94	19
		1/2 EHS	A1	T2	16.14	2.5	15
		1/2 EHS	A1b	T2	16.14	2.5	15
		1/2 EHS	A1b	T2a	16.14	2.48	15
1.0D + 1.0W Service 60°	115.85	1/2 EHS	A1a	T2a	16.14	3.02	19
		1/2 EHS	A1a	T2b	16.14	3.02	19
		1/2 EHS	A1	T2b	16.14	2.48	15
		5/8 EHS	A1	66	25.44	3.81	15
		5/8 EHS	A1b	66a	25.44	3.81	15
		5/8 EHS	A1a	66b	25.44	4.71	19
	235.85	7/8 EHS	A1	87	47.82	6.76	14
		7/8 EHS	A1b	87a	47.82	6.76	14
		7/8 EHS	A1a	87b	47.82	9.26	19
		3/4 EHS	A1	106	34.98	4.65	13
		3/4 EHS	A1b	106a	34.98	4.66	13
		3/4 EHS	A1a	106b	34.98	7.99	23
	288.05	9/16 EHS	A1	29	21	3.5	17
		9/16 EHS	A1b	29a	21	3.15	15
		9/16 EHS	A1a	29b	21	3.9	19
		1/2 EHS	A1	T2	16.14	2.71	17
		1/2 EHS	A1b	T2	16.14	2.35	15
		1/2 EHS	A1b	T2a	16.14	2.36	15
1.0D + 1.0W Service 90°	68.05	1/2 EHS	A1a	T2a	16.14	2.99	19
		1/2 EHS	A1a	T2b	16.14	3.01	19
		1/2 EHS	A1	T2b	16.14	2.68	17
	115.85	9/16 EHS	A1	29	21	3.5	17
		9/16 EHS	A1b	29a	21	3.15	15
		9/16 EHS	A1a	29b	21	3.9	19

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	175.85	5/8 EHS	A1	66	25.44	4.14	16
		5/8 EHS	A1b	66a	25.44	3.59	14
		5/8 EHS	A1a	66b	25.44	4.67	18
	235.85	7/8 EHS	A1	87	47.82	7.56	16
		7/8 EHS	A1b	87a	47.82	6.22	13
		7/8 EHS	A1a	87b	47.82	9.06	19
	288.05	3/4 EHS	A1	106	34.98	5.74	16
		3/4 EHS	A1b	106a	34.98	3.7	11
		3/4 EHS	A1a	106b	34.98	7.66	22
1.0D + 1.0W Service 120°	68.05	9/16 EHS	A1	29	21	3.76	18
		9/16 EHS	A1b	29a	21	3.09	15
		9/16 EHS	A1a	29b	21	3.76	18
	115.85	1/2 EHS	A1b	T2	16.14	2.3	14
		1/2 EHS	A1	T2	16.14	2.9	18
		1/2 EHS	A1b	T2a	16.14	2.3	14
		1/2 EHS	A1a	T2a	16.14	2.9	18
		1/2 EHS	A1a	T2b	16.14	2.9	18
		1/2 EHS	A1	T2b	16.14	2.9	18
	175.85	5/8 EHS	A1	66	25.44	4.49	18
		5/8 EHS	A1b	66a	25.44	3.49	14
		5/8 EHS	A1a	66b	25.44	4.49	18
	235.85	7/8 EHS	A1	87	47.82	8.44	18
		7/8 EHS	A1b	87a	47.82	6.03	13
		7/8 EHS	A1a	87b	47.82	8.44	18
	288.05	3/4 EHS	A1	106	34.98	6.8	19
		3/4 EHS	A1b	106a	34.98	3.28	9
		3/4 EHS	A1a	106b	34.98	6.8	19
1.0D + 1.0W Service 180°	68.05	9/16 EHS	A1	29	21	3.94	19
		9/16 EHS	A1b	29a	21	3.28	16
		9/16 EHS	A1a	29b	21	3.28	16
	115.85	1/2 EHS	A1b	T2	16.14	2.48	15
		1/2 EHS	A1	T2	16.14	3.02	19
		1/2 EHS	A1b	T2a	16.14	2.5	15
		1/2 EHS	A1a	T2a	16.14	2.5	15
		1/2 EHS	A1	T2b	16.14	3.02	19
		1/2 EHS	A1a	T2b	16.14	2.48	15
	175.85	5/8 EHS	A1	66	25.44	4.71	19
		5/8 EHS	A1b	66a	25.44	3.81	15
		5/8 EHS	A1a	66b	25.44	3.81	15
	235.85	7/8 EHS	A1	87	47.82	9.26	19
		7/8 EHS	A1b	87a	47.82	6.76	14
		7/8 EHS	A1a	87b	47.82	6.76	14
	288.05	3/4 EHS	A1	106	34.98	7.99	23
		3/4 EHS	A1b	106a	34.98	4.65	13
		3/4 EHS	A1a	106b	34.98	4.65	13
1.0D + 1.0W Service 210°	68.05	9/16 EHS	A1	29	21	3.9	19
		9/16 EHS	A1b	29a	21	3.5	17
		9/16 EHS	A1a	29b	21	3.15	15
	115.85	1/2 EHS	A1b	T2	16.14	2.68	17
		1/2 EHS	A1	T2	16.14	3	19
		1/2 EHS	A1a	T2a	16.14	2.35	15
		1/2 EHS	A1b	T2a	16.14	2.71	17
		1/2 EHS	A1a	T2b	16.14	2.36	15
		1/2 EHS	A1	T2b	16.14	2.99	19
	175.85	5/8 EHS	A1	66	25.44	4.67	18
		5/8 EHS	A1b	66a	25.44	4.14	16
		5/8 EHS	A1a	66b	25.44	3.59	14
	235.85	7/8 EHS	A1	87	47.82	9.06	19
		7/8 EHS	A1b	87a	47.82	7.56	16

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.0D + 1.0W Service 240°	288.05	7/8 EHS	A1a	87b	47.82	6.22	13
		3/4 EHS	A1	106	34.98	7.66	22
		3/4 EHS	A1b	106a	34.98	5.74	16
		3/4 EHS	A1a	106b	34.98	3.7	11
	68.05	9/16 EHS	A1	29	21	3.76	18
		9/16 EHS	A1b	29a	21	3.76	18
		9/16 EHS	A1a	29b	21	3.09	15
		1/2 EHS	A1b	T2	16.14	2.9	18
	115.85	1/2 EHS	A1	T2	16.14	2.9	18
		1/2 EHS	A1b	T2a	16.14	2.9	18
		1/2 EHS	A1a	T2a	16.14	2.3	14
		1/2 EHS	A1	T2b	16.14	2.9	18
	175.85	1/2 EHS	A1a	T2b	16.14	2.3	14
		5/8 EHS	A1	66	25.44	4.49	18
		5/8 EHS	A1b	66a	25.44	4.49	18
		5/8 EHS	A1a	66b	25.44	3.49	14
1.0D + 1.0W Service 300°	235.85	7/8 EHS	A1	87	47.82	8.44	18
		7/8 EHS	A1b	87a	47.82	8.44	18
		7/8 EHS	A1a	87b	47.82	6.03	13
		3/4 EHS	A1	106	34.98	6.8	19
	288.05	3/4 EHS	A1b	106a	34.98	6.8	19
		3/4 EHS	A1a	106b	34.98	3.28	9
	68.05	9/16 EHS	A1	29	21	3.28	16
		9/16 EHS	A1b	29a	21	3.94	19
		9/16 EHS	A1a	29b	21	3.28	16
	115.85	1/2 EHS	A1	T2	16.14	2.48	15
		1/2 EHS	A1b	T2	16.14	3.02	19
		1/2 EHS	A1b	T2a	16.14	3.02	19
		1/2 EHS	A1a	T2a	16.14	2.48	15
	175.85	1/2 EHS	A1	T2b	16.14	2.5	15
		1/2 EHS	A1a	T2b	16.14	2.5	15
1.0D + 1.0W Service 330°	235.85	5/8 EHS	A1	66	25.44	3.81	15
		5/8 EHS	A1b	66a	25.44	4.71	19
		5/8 EHS	A1a	66b	25.44	3.81	15
		7/8 EHS	A1	87	47.82	6.76	14
	288.05	7/8 EHS	A1b	87a	47.82	9.26	19
		7/8 EHS	A1a	87b	47.82	6.76	14
		3/4 EHS	A1	106	34.98	4.65	13
		3/4 EHS	A1b	106a	34.98	7.99	23
	68.05	3/4 EHS	A1a	106b	34.98	4.66	13
		9/16 EHS	A1	29	21	3.15	15
		9/16 EHS	A1b	29a	21	3.9	19
		9/16 EHS	A1a	29b	21	3.5	17
	115.85	1/2 EHS	A1b	T2	16.14	2.99	19
		1/2 EHS	A1	T2	16.14	2.36	15
		1/2 EHS	A1b	T2a	16.14	3	19
		1/2 EHS	A1a	T2a	16.14	2.68	17
1.0D + 1.0W Service 330°	175.85	1/2 EHS	A1a	T2b	16.14	2.71	17
		1/2 EHS	A1	T2b	16.14	2.35	15
		5/8 EHS	A1	66	25.44	3.59	14
		5/8 EHS	A1b	66a	25.44	4.67	18
	235.85	5/8 EHS	A1a	66b	25.44	4.14	16
		7/8 EHS	A1	87	47.82	6.22	13
		7/8 EHS	A1b	87a	47.82	9.06	19
		7/8 EHS	A1a	87b	47.82	7.56	16
	288.05	3/4 EHS	A1	106	34.98	3.7	11
		3/4 EHS	A1b	106a	34.98	7.66	22
		3/4 EHS	A1a	106b	34.98	5.74	16

MAXIMUM CABLE FORCES SUMMARY							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W 60°	68.05	9/16 EHS	A1a	29b	21.00	6.07	29
1.2D + 1.0W 60°	115.85	1/2 EHS	A1a	T2a	16.14	4.93	31
1.2D + 1.0W 60°	175.85	5/8 EHS	A1a	66b	25.44	7.97	31
1.2D + 1.0W 60°	235.85	7/8 EHS	A1a	87b	47.82	17.82	37
1.2D + 1.0W 60°	288.05	3/4 EHS	A1a	106b	34.98	18.77	54

MAXIMUM TORQUE ARM STRESS SUMMARY					
Load Case	Elevation (ft)	Member	Type	Compression (%)	Tension (%)
1.2D + 1.0W Normal	68.00	PL 3 x 0.375	Horiz	0	11
1.2D + 1.0W 60°	116.00	2X2X0.1875	Lower Kicker	48	0
1.2D + 1.0W 60°	116.00	2X2X0.1875	Torque Arm	0	19
1.2D + 1.0W 60°	176.00	PL 3 x 0.375	Horiz	0	10
1.2D + 1.0W 60°	236.00	PL 3 x 0.375	Horiz	0	13
1.2D + 1.0W Normal	288.00	PL 3 x 0.375	Horiz	0	13

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DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	300.00	0.1751	0.0392	0.2144	0.218
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	300.00	0.2007	-0.0008	0.2022	0.2022
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	300.00	0.139	0.0007	0.1713	0.1713
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	300.00	0.1752	0.0395	0.2167	0.2202
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	300.00	0.2013	0.0007	0.2381	0.2381
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	300.00	0.139	-0.0007	0.1713	0.1713
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	300.00	0.1751	0.0409	0.1745	0.1792
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	300.00	0.2007	0.0008	0.2022	0.2022
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	300.00	0.1396	0.0006	0.2070	0.207
1.2D + 1.0Ev + 1.0Eh 330° Seismic	300.00	0.031	0.0000	0.0195	0.0195
1.2D + 1.0Ev + 1.0Eh 300° Seismic	300.00	0.0308	0.0000	0.0193	0.0193
1.2D + 1.0Ev + 1.0Eh 240° Seismic	300.00	0.0312	0.0000	0.0197	0.0197
1.2D + 1.0Ev + 1.0Eh 210° Seismic	300.00	0.031	0.0000	0.0195	0.0195
1.2D + 1.0Ev + 1.0Eh 180° Seismic	300.00	0.0308	0.0000	0.0193	0.0193
1.2D + 1.0Ev + 1.0Eh 120° Seismic	300.00	0.0312	0.0000	0.0197	0.0197
1.2D + 1.0Ev + 1.0Eh 90° Seismic	300.00	0.031	0.0000	0.0195	0.0195
1.2D + 1.0Ev + 1.0Eh 60° Seismic	300.00	0.0308	0.0000	0.0193	0.0193
1.2D + 1.0Ev + 1.0Eh Normal Seismic	300.00	0.0312	0.0000	0.0197	0.0197
1.2D + 1.0Di + 1.0Wi 330° 30 mph Wind with 0" Radial Ice	300.00	0.0393	0.0066	0.0511	0.0516
1.2D + 1.0Di + 1.0Wi 300° 30 mph Wind with 0" Radial Ice	300.00	0.0407	0.0002	0.0451	0.0451
1.2D + 1.0Di + 1.0Wi 240° 30 mph Wind with 0" Radial Ice	300.00	0.0382	0.0002	0.0438	0.0438
1.2D + 1.0Di + 1.0Wi 210° 30 mph Wind with 0" Radial Ice	300.00	0.0393	0.0066	0.0513	0.0517
1.2D + 1.0Di + 1.0Wi 180° 30 mph Wind with 0" Radial Ice	300.00	0.042	0.0002	0.0545	0.0545
1.2D + 1.0Di + 1.0Wi 120° 30 mph Wind with 0" Radial Ice	300.00	0.0382	-0.0002	0.0438	0.0438
1.2D + 1.0Di + 1.0Wi 90° 30 mph Wind with 0" Radial Ice	300.00	0.0391	0.0065	0.0409	0.0414
1.2D + 1.0Di + 1.0Wi 60° 30 mph Wind with 0" Radial Ice	300.00	0.0407	0.0002	0.0451	0.0451
1.2D + 1.0Di + 1.0Wi Normal 30 mph Wind with 0" Radial Ice	300.00	0.0384	0.0002	0.0527	0.0527
1.2D + 1.0W 330° 119 mph Wind with No Ice	300.00	1.2584	0.0644	1.2313	1.233
1.2D + 1.0W 300° 119 mph Wind with No Ice	300.00	1.1268	-0.0051	0.9740	0.974
1.2D + 1.0W 240° 119 mph Wind with No Ice	300.00	1.3357	0.0063	1.2529	1.2529
1.2D + 1.0W 210° 119 mph Wind with No Ice	300.00	1.2585	0.0712	1.2062	1.2083
1.2D + 1.0W 180° 119 mph Wind with No Ice	300.00	1.1296	0.0005	1.1181	1.1181
1.2D + 1.0W 120° 119 mph Wind with No Ice	300.00	1.3357	-0.0063	1.2529	1.2529
1.2D + 1.0W 90° 119 mph Wind with No Ice	300.00	1.2557	0.0676	1.0572	1.0594
1.2D + 1.0W 60° 119 mph Wind with No Ice	300.00	1.1268	0.0051	0.9740	0.974
1.2D + 1.0W Normal 119 mph Wind with No Ice	300.00	1.3378	0.0030	1.3999	1.3999

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14857598_C3_02

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					FX* (kip)	FY* (kip)	FZ* (kip)
1.2D + 1.0W Normal	0.00	0.00		1	0.00	90.98	-1.53
	240.00	0.00	0	A1	0.00	-5.87	9.07
	240.00	0.00	240	A1a	-29.96	-27.58	-19.22
	240.00	0.00	120	A1b	29.96	-27.58	-19.22
1.2D + 1.0W 60°	0.00	0.00		1	-1.06	95.12	-0.61
	240.00	0.00	0	A1	-1.64	-15.13	20.32
	240.00	0.00	240	A1a	-39.76	-35.99	-22.96
	240.00	0.00	120	A1b	16.78	-15.13	-11.58
1.2D + 1.0W 90°	0.00	0.00		1	-1.32	93.61	0.06
	240.00	0.00	0	A1	-2.07	-21.39	27.90
	240.00	0.00	240	A1a	-37.55	-33.58	-20.79
	240.00	0.00	120	A1b	10.94	-9.22	-7.18
1.2D + 1.0W 120°	0.00	0.00		1	-1.32	90.98	0.76
	240.00	0.00	0	A1	-1.67	-27.59	35.56
	240.00	0.00	240	A1a	-31.63	-27.59	-16.34
	240.00	0.00	120	A1b	7.84	-5.86	-4.53
1.2D + 1.0W 180°	0.00	0.00		1	0.00	95.13	1.23
	240.00	0.00	0	A1	0.00	-35.99	45.91
	240.00	0.00	240	A1a	-18.42	-15.13	-8.74
	240.00	0.00	120	A1b	18.42	-15.13	-8.74
1.2D + 1.0W 210°	0.00	0.00		1	0.71	93.61	1.11
	240.00	0.00	0	A1	0.77	-33.59	42.92
	240.00	0.00	240	A1a	-11.69	-9.22	-5.89
	240.00	0.00	120	A1b	25.20	-21.39	-12.16
1.2D + 1.0W 240°	0.00	0.00		1	1.32	90.98	0.76
	240.00	0.00	0	A1	1.67	-27.59	35.56
	240.00	0.00	240	A1a	-7.84	-5.86	-4.53
	240.00	0.00	120	A1b	31.63	-27.59	-16.34
1.2D + 1.0W 300°	0.00	0.00		1	1.06	95.12	-0.61
	240.00	0.00	0	A1	1.64	-15.13	20.32
	240.00	0.00	240	A1a	-16.78	-15.13	-11.58
	240.00	0.00	120	A1b	39.76	-35.99	-22.96
1.2D + 1.0W 330°	0.00	0.00		1	0.61	93.61	-1.17
	240.00	0.00	0	A1	0.75	-9.23	13.08
	240.00	0.00	240	A1a	-23.12	-21.39	-15.74
	240.00	0.00	120	A1b	36.78	-33.58	-22.13
1.2D + 1.0Di + 1.0Wi Normal	0.00	0.00		1	0.00	76.86	-0.10
	240.00	0.00	0	A1	0.00	-14.90	21.39
	240.00	0.00	240	A1a	-19.94	-16.26	-11.63
	240.00	0.00	120	A1b	19.94	-16.26	-11.63
1.2D + 1.0Di + 1.0Wi 60°	0.00	0.00		1	-0.08	76.65	-0.04
	240.00	0.00	0	A1	-0.10	-15.32	21.90
	240.00	0.00	240	A1a	-20.36	-16.62	-11.75
	240.00	0.00	120	A1b	18.91	-15.33	-11.04
1.2D + 1.0Di + 1.0Wi 90°	0.00	0.00		1	-0.09	76.76	0.00
	240.00	0.00	0	A1	-0.13	-15.79	22.48
	240.00	0.00	240	A1a	-20.30	-16.54	-11.67
	240.00	0.00	120	A1b	18.62	-15.02	-10.81
1.2D + 1.0Di + 1.0Wi 120°	0.00	0.00		1	-0.08	76.86	0.05
	240.00	0.00	0	A1	-0.10	-16.26	23.08
	240.00	0.00	240	A1a	-20.04	-16.26	-11.45
	240.00	0.00	120	A1b	18.53	-14.90	-10.70
1.2D + 1.0Di + 1.0Wi 180°	0.00	0.00		1	0.00	76.65	0.09
	240.00	0.00	0	A1	0.00	-16.65	23.53
	240.00	0.00	240	A1a	-19.00	-15.31	-10.85
	240.00	0.00	120	A1b	19.00	-15.31	-10.85
1.2D + 1.0Di + 1.0Wi 210°	0.00	0.00		1	0.05	76.76	0.08
	240.00	0.00	0	A1	0.05	-16.54	23.42
	240.00	0.00	240	A1a	-18.67	-15.02	-10.72

ASSET: 412243, Lake City FL SQA
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14857598_C3_02

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					FX* (kip)	FY* (kip)	FZ* (kip)
1.2D + 1.0Di + 1.0Wi 240°	240.00	0.00	120	A1b	19.53	-15.79	-11.13
	0.00	0.00		1	0.08	76.86	0.05
	240.00	0.00	0	A1	0.10	-16.26	23.08
	240.00	0.00	240	A1a	-18.53	-14.90	-10.70
	240.00	0.00	120	A1b	20.04	-16.26	-11.45
1.2D + 1.0Di + 1.0Wi 300°	0.00	0.00		1	0.08	76.65	-0.04
	240.00	0.00	0	A1	0.10	-15.32	21.90
	240.00	0.00	240	A1a	-18.91	-15.33	-11.04
	240.00	0.00	120	A1b	20.36	-16.62	-11.75
	0.00	0.00		1	0.05	76.76	-0.08
1.2D + 1.0Di + 1.0Wi 330°	240.00	0.00	0	A1	0.05	-15.02	21.53
	240.00	0.00	240	A1a	-19.40	-15.79	-11.35
	240.00	0.00	120	A1b	20.25	-16.54	-11.75
	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-13.39	19.06
1.2D + 1.0Ev + 1.0Eh Normal	240.00	0.00	240	A1a	-17.13	-14.07	-9.89
	240.00	0.00	120	A1b	17.13	-14.07	-9.89
	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-13.62	19.30
	240.00	0.00	240	A1a	-17.34	-14.31	-10.01
1.2D + 1.0Ev + 1.0Eh 60°	240.00	0.00	120	A1b	16.71	-13.62	-9.65
	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-13.84	19.54
	240.00	0.00	240	A1a	-17.28	-14.24	-9.98
	240.00	0.00	120	A1b	16.56	-13.45	-9.56
1.2D + 1.0Ev + 1.0Eh 90°	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-14.07	19.78
	240.00	0.00	240	A1a	-17.13	-14.07	-9.89
	240.00	0.00	120	A1b	16.50	-13.39	-9.53
	0.00	0.00		1	0.00	71.32	0.00
1.2D + 1.0Ev + 1.0Eh 120°	240.00	0.00	0	A1	0.00	-14.31	20.02
	240.00	0.00	240	A1a	-16.71	-13.62	-9.65
	240.00	0.00	120	A1b	16.71	-13.62	-9.65
	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-14.24	19.96
1.2D + 1.0Ev + 1.0Eh 180°	240.00	0.00	240	A1a	-16.56	-13.45	-9.56
	240.00	0.00	120	A1b	16.92	-13.84	-9.77
	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-14.07	19.78
	240.00	0.00	240	A1a	-16.50	-13.39	-9.53
1.2D + 1.0Ev + 1.0Eh 210°	240.00	0.00	120	A1b	17.13	-14.07	-9.89
	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-13.62	19.30
	240.00	0.00	240	A1a	-16.71	-13.62	-9.65
	240.00	0.00	120	A1b	17.34	-14.31	-10.01
1.2D + 1.0Ev + 1.0Eh 240°	0.00	0.00		1	0.00	71.32	0.00
	240.00	0.00	0	A1	0.00	-13.45	19.12
	240.00	0.00	240	A1a	-16.92	-13.84	-9.77
	240.00	0.00	120	A1b	17.28	-14.24	-9.98
	0.00	0.00		1	0.00	68.53	-0.38
1.0D + 1.0W Service Normal	240.00	0.00	0	A1	0.00	-10.72	15.77
	240.00	0.00	240	A1a	-19.25	-16.18	-11.59
	240.00	0.00	120	A1b	19.25	-16.18	-11.59
	0.00	0.00		1	-0.29	68.43	-0.17
	240.00	0.00	0	A1	-0.41	-12.67	17.99
1.0D + 1.0W Service 60°	240.00	0.00	240	A1a	-21.15	-17.91	-12.21
	240.00	0.00	120	A1b	15.37	-12.67	-9.35
	0.00	0.00		1	-0.35	68.47	0.01
	240.00	0.00	0	A1	-0.52	-14.39	20.18

DETAILED REACTIONS							
Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					FX* (kip)	FY* (kip)	FZ* (kip)
1.0D + 1.0W Service 120°	240.00	0.00	240	A1a	-20.85	-17.47	-11.82
	240.00	0.00	120	A1b	14.11	-11.30	-8.36
	0.00	0.00		1	-0.33	68.53	0.19
	240.00	0.00	0	A1	-0.41	-16.18	22.47
	240.00	0.00	240	A1a	-19.67	-16.18	-10.88
1.0D + 1.0W Service 180°	240.00	0.00	120	A1b	13.66	-10.72	-7.89
	0.00	0.00		1	0.00	68.43	0.34
	240.00	0.00	0	A1	0.00	-17.92	24.42
	240.00	0.00	240	A1a	-15.79	-12.67	-8.64
	240.00	0.00	120	A1b	15.79	-12.67	-8.64
1.0D + 1.0W Service 210°	0.00	0.00		1	0.18	68.47	0.30
	240.00	0.00	0	A1	0.19	-17.46	23.95
	240.00	0.00	240	A1a	-14.30	-11.30	-8.04
	240.00	0.00	120	A1b	17.74	-14.39	-9.64
	0.00	0.00		1	0.33	68.53	0.19
1.0D + 1.0W Service 240°	240.00	0.00	0	A1	0.41	-16.18	22.47
	240.00	0.00	240	A1a	-13.66	-10.72	-7.89
	240.00	0.00	120	A1b	19.67	-16.18	-10.88
	0.00	0.00		1	0.29	68.43	-0.17
	240.00	0.00	0	A1	0.41	-12.67	17.99
1.0D + 1.0W Service 300°	240.00	0.00	240	A1a	-15.37	-12.67	-9.35
	240.00	0.00	120	A1b	21.15	-17.91	-12.21
	0.00	0.00		1	0.17	68.47	-0.31
	240.00	0.00	0	A1	0.19	-11.30	16.40
	240.00	0.00	240	A1a	-17.22	-14.39	-10.54
1.0D + 1.0W Service 330°	240.00	0.00	120	A1b	20.65	-17.46	-12.14

MAXIMUM GUY ANCHOR REACTIONS				
Radius (ft)	Drop (ft)	Azimuth (deg)	Uplift (kip)	Shear (kip)
240.00	0.00	0	35.99	45.91
240.00	0.00	120	35.99	45.91
240.00	0.00	240	35.99	45.91

MAXIMUM REACTIONS SUMMARY		
Base / Anchor Group	Vertical Load <i>(Compression for Base; Uplift for Anchor)</i>	Horizontal Shear
Base	95.13 (kip)	1.53 (kip)
A1	35.99 (kip)	45.91 (kip)

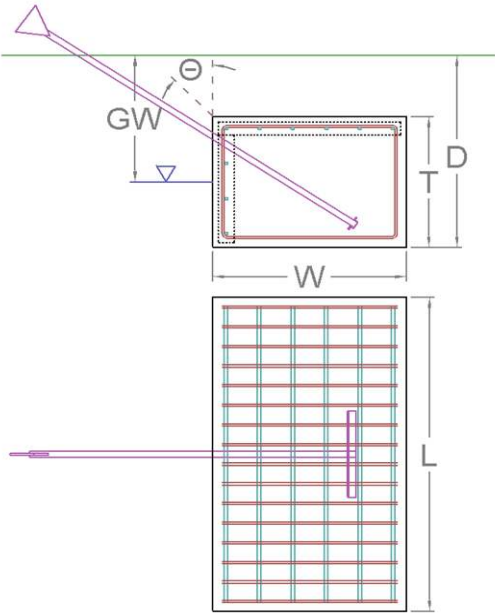
GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A1a @ r = 240 ft)

APPLIED REACTIONS

Uplift (k)	Shear (k)
35.99	45.91

FOUNDATION PARAMETERS

Base Depth:	D	10	ft
Block Width:	W	4	ft
Block Length:	L	21	ft
Block Thickness:	T	4	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(6) #7 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #7 bars [60 ksi]	



SOIL PARAMETERS

Water Table Depth [BGL]:	GW	12	ft
Soil Unit Weight:		112	pcf
Friction Angle:		32	°
Cohesion:		0	psf
Ultimate Skin Friction		164	psf
Coefficient of Shear Friction:		0.2	
Uplift Pullout Angle:	θ	30	°
Uplift at ____ of Anchor:		Top	

SOIL STRENGTH ANALYSIS

Uplift Strength Reduction Factor, Φ _u	Shear Strength Reduction Factor, Φ _v	Dead Load Factor
0.75	0.75	0.9

SOIL UPLIFT ANALYSIS

Uplift Resistance from Skin Friction and Soil Shear (k)	Additional Uplift Resistance (k)	Uplift Capacity, ΦT _n (k)	Soil Uplift Usage, T _u / ΦT _n	
17.01	0	158.90	22.6%	✓

SOIL SHEAR ANALYSIS

Skin Friction Resistance (k)	Normal Force Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Additional Shear Resistance (k)	Shear Capacity, ΦV _n (k)	Soil Shear Usage, V _u / ΦV _n	
4.13	12.03	2,916.11	244.95	0	195.84	23.4%	✓

REINFORCING STEEL STRENGTH ANALYSIS

Strength Shear Reduction Factor, Φ_v	Strength Reduction Factor for Lateral Flexure, Φ_{BV}	Strength Reduction Factor for Vertical Flexure, Φ_{BT}	Compression Zone Factor, β_1
0.75	0.9	0.9	0.65

REINFORCING ONE WAY SHEAR ANALYSIS - SHEAR

One Way Shear due to Shear, V_u (k)	One Way Shear Capacity due to Shear, $\Phi_c V_n$ (k)	Rebar One Way Shear Usage, $V_u / \Phi_c V_n$
18.95	173.76	10.9%



REINFORCING ONE WAY SHEAR ANALYSIS – UPLIFT

One Way Shear due to Uplift, V_u (k)	One Way Shear Capacity due to Uplift, $\Phi_c V_n$ (k)	Rebar One Way Shear Usage, $V_u / \Phi_c V_n$
14.85	173.76	8.5%



REINFORCING FLEXURE ANALYSIS - SHEAR

Flexure Load, M_{uv} (k-ft)	Distance to steel, d_v (in)	Whitney Block, a_v (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bv} M_{nv}$ (k-ft)	Rebar Flexural Usage, $M_{uv} / \Phi_{bv} M_{nv}$
120.51	44.062	1.176	0.0925	469.52	25.7%



REINFORCING FLEXURE ANALYSIS – UPLIFT

Flexure Load, M_{ut} (k-ft)	Depth to steel, d_t (in)	Whitney Block, a_t (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bt} M_{nt}$ (k-ft)	Rebar Flexural Usage, $M_{ut} / \Phi_{bt} M_{nt}$
94.47	44.062	1.765	0.0607	699.52	13.5%



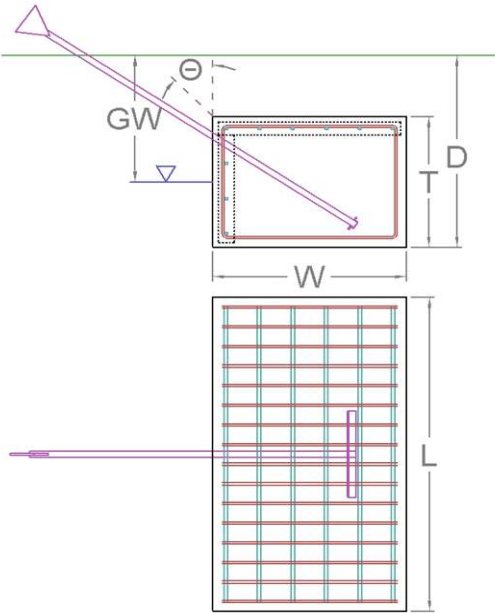
GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A1 @ r = 240 ft)

APPLIED REACTIONS

Uplift (k)	Shear (k)
35.99	45.91

FOUNDATION PARAMETERS

Base Depth:	D	10	ft
Block Width:	W	4	ft
Block Length:	L	21	ft
Block Thickness:	T	4	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(6) #7 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #7 bars [60 ksi]	



SOIL PARAMETERS

Water Table Depth [BGL]:	GW	12	ft
Soil Unit Weight:		112	pcf
Friction Angle:		32	°
Cohesion:		0	psf
Ultimate Skin Friction		164	psf
Coefficient of Shear Friction:		0.2	
Uplift Pullout Angle:	θ	30	°
Uplift at ____ of Anchor:		Top	

SOIL STRENGTH ANALYSIS

Uplift Strength Reduction Factor, Φ _u	Shear Strength Reduction Factor, Φ _v	Dead Load Factor
0.75	0.75	0.9

SOIL UPLIFT ANALYSIS

Uplift Resistance from Skin Friction and Soil Shear (k)	Additional Uplift Resistance (k)	Uplift Capacity, ΦT _n (k)	Soil Uplift Usage, T _u / ΦT _n	
17.01	0	158.90	22.6%	✓

SOIL SHEAR ANALYSIS

Skin Friction Resistance (k)	Normal Force Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Additional Shear Resistance (k)	Shear Capacity, ΦV _n (k)	Soil Shear Usage, V _u / ΦV _n	
4.13	12.03	2,916.11	244.95	0	195.84	23.4%	✓

REINFORCING STEEL STRENGTH ANALYSIS

Strength Shear Reduction Factor, Φ_v	Strength Reduction Factor for Lateral Flexure, Φ_{BV}	Strength Reduction Factor for Vertical Flexure, Φ_{BT}	Compression Zone Factor, β_1
0.75	0.9	0.9	0.65

REINFORCING ONE WAY SHEAR ANALYSIS - SHEAR

One Way Shear due to Shear, V_u (k)	One Way Shear Capacity due to Shear, $\Phi_c V_n$ (k)	Rebar One Way Shear Usage, $V_u / \Phi_c V_n$
18.95	173.76	10.9%



REINFORCING ONE WAY SHEAR ANALYSIS – UPLIFT

One Way Shear due to Uplift, V_u (k)	One Way Shear Capacity due to Uplift, $\Phi_c V_n$ (k)	Rebar One Way Shear Usage, $V_u / \Phi_c V_n$
14.85	173.76	8.5%



REINFORCING FLEXURE ANALYSIS - SHEAR

Flexure Load, M_{uv} (k-ft)	Distance to steel, d_v (in)	Whitney Block, a_v (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bv} M_{nv}$ (k-ft)	Rebar Flexural Usage, $M_{uv} / \Phi_{bv} M_{nv}$
120.51	44.062	1.176	0.0925	469.52	25.7%



REINFORCING FLEXURE ANALYSIS – UPLIFT

Flexure Load, M_{ut} (k-ft)	Depth to steel, d_t (in)	Whitney Block, a_t (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bt} M_{nt}$ (k-ft)	Rebar Flexural Usage, $M_{ut} / \Phi_{bt} M_{nt}$
94.47	44.062	1.765	0.0607	699.52	13.5%



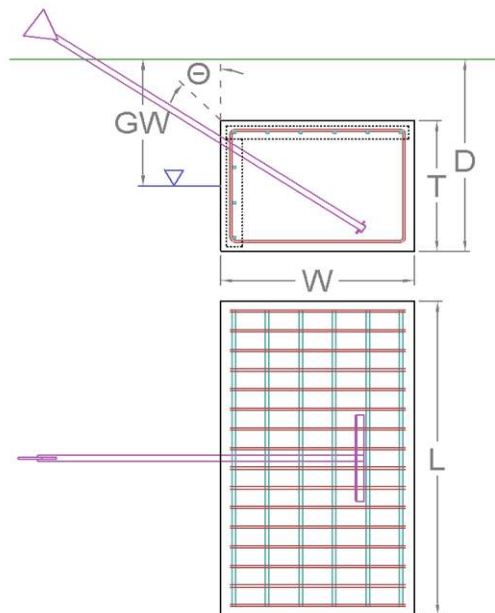
GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A1b @ r = 240 ft)

APPLIED REACTIONS

Uplift (k)	Shear (k)
35.99	45.91

FOUNDATION PARAMETERS

Base Depth:	D	10	ft
Block Width:	W	4	ft
Block Length:	L	21	ft
Block Thickness:	T	4	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(6) #7 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #7 bars [60 ksi]	



SOIL PARAMETERS

Water Table Depth [BGL]:	GW	12	ft
Soil Unit Weight:		112	pcf
Friction Angle:		32	°
Cohesion:		0	psf
Ultimate Skin Friction		164	psf
Coefficient of Shear Friction:		0.2	
Uplift Pullout Angle:	θ	30	°
Uplift at ____ of Anchor:		Top	

SOIL STRENGTH ANALYSIS

Uplift Strength Reduction Factor, Φ_u	Shear Strength Reduction Factor, Φ_v	Dead Load Factor
0.75	0.75	0.9

SOIL UPLIFT ANALYSIS

Uplift Resistance from Skin Friction and Soil Shear (k)	Additional Uplift Resistance (k)	Uplift Capacity, ΦT_n (k)	Soil Uplift Usage, $T_u / \Phi T_n$	
17.01	0	158.90	22.6%	✓

SOIL SHEAR ANALYSIS

Skin Friction Resistance (k)	Normal Force Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Additional Shear Resistance (k)	Shear Capacity, ΦV_n (k)	Soil Shear Usage, $V_u / \Phi V_n$	
4.13	12.03	2,916.11	244.95	0	195.84	23.4%	✓

REINFORCING STEEL STRENGTH ANALYSIS

Strength Shear Reduction Factor, Φ_v	Strength Reduction Factor for Lateral Flexure, Φ_{BV}	Strength Reduction Factor for Vertical Flexure, Φ_{BT}	Compression Zone Factor, β_1
0.75	0.9	0.9	0.65

REINFORCING ONE WAY SHEAR ANALYSIS - SHEAR

One Way Shear due to Shear, V_u (k)	One Way Shear Capacity due to Shear, $\Phi_c V_n$ (k)	Rebar One Way Shear Usage, $V_u / \Phi_c V_n$	
18.95	173.76	10.9%	✓

REINFORCING ONE WAY SHEAR ANALYSIS – UPLIFT

One Way Shear due to Uplift, V_u (k)	One Way Shear Capacity due to Uplift, $\Phi_c V_n$ (k)	Rebar One Way Shear Usage, $V_u / \Phi_c V_n$	
14.85	173.76	8.5%	

REINFORCING FLEXURE ANALYSIS - SHEAR

Flexure Load, M_{uv} (k-ft)	Distance to steel, d_v (in)	Whitney Block, a_v (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bv} M_{nv}$ (k-ft)	Rebar Flexural Usage, $M_{uv} / \Phi_{bv} M_{nv}$	
120.51	44.062	1.176	0.0925	469.52	25.7%	

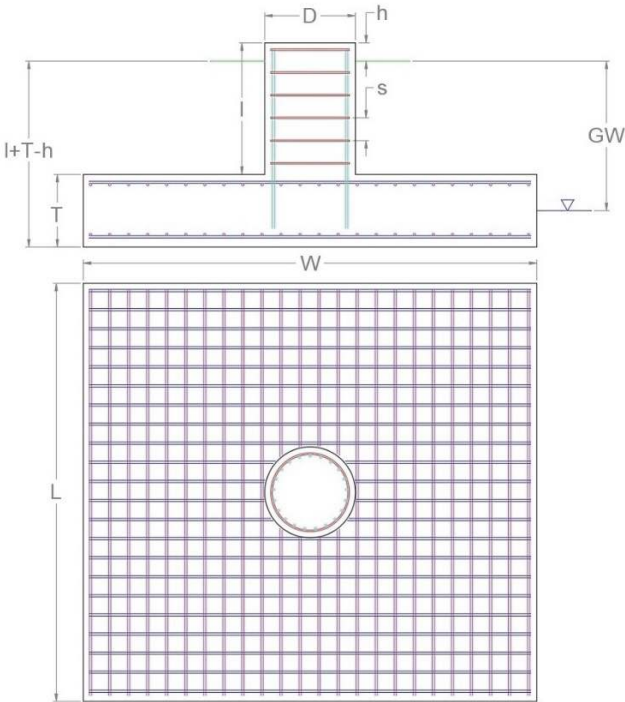
REINFORCING FLEXURE ANALYSIS – UPLIFT

Flexure Load, M_{ut} (k-ft)	Depth to steel, d_t (in)	Whitney Block, a_t (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bt} M_{nt}$ (k-ft)	Rebar Flexural Usage, $M_{ut} / \Phi_{bt} M_{nt}$	
94.47	44.062	1.765	0.0607	699.52	13.5%	

MAT & PIER FOUNDATION ANALYSIS (NODE 1)

APPLIED GLOBAL REACTIONS		
Moment (k-ft)	Axial (k)	Shear (k)
0.00	95.13	1.23

FOUNDATION PARAMETERS			
Mat Length:	L	10.5	ft
Mat Width:	W	10.5	ft
Mat Thickness:	T	2.5	ft
Base Depth:	L+T-h	6	ft
Pier Shape:		Round	
Pier Diameter:	D	3.5	ft
Pier Height above Grade:	h	1	ft
Concrete Compressive Strength:		3,000	psi
Mat Bottom Rebar:		(11) #8 bars [60 ksi]	
Pier Vertical Rebar:		(12) #8 bars [60 ksi]	
Pier Rebar Ties:	s	#5 bars @ 6.0" c/c [40 ksi]	
Rebar Clear Cover:		3.0	in
Tower Eccentricity:	ecc	0	ft
Tower Leg Count		1	



SOIL PARAMETERS			
Water Table Depth [BGL]:	GW	9	ft
Soil Unit Weight:		112	pcf
Ultimate Skin Friction:			psf
Ultimate Bearing Pressure:		5,000	psf
Bearing Pressure Type:		Gross	
Coefficient of Shear Friction:		0.2	

SOIL STRENGTH ANALYSIS			
Soil Strength Reduction Factor, Φ_s	Uplift Strength Reduction Factor, Φ_s	Asset Dead Load Factor	Dead Load Factor
0.6	0.75	0.9	1.2

SOIL OVERTURNING ANALYSIS		
Design Moment, $M_{u,Design}$ (k-ft)	Nominal Overturning Capacity, $\Phi_m M_n$ (k-ft)	Soil Overturning Usage, $M_{u,Design} / \Phi_m M_n$
8.61	835.02	1.0%

SOIL BEARING ANALYSIS			
Net Bearing Pressure, $P_{u,Net}$ (psf)	Nominal Bearing Capacity, $\Phi_b P_n$ (k-ft)	Bearing Pressure Controlling Load Direction	Soil Bearing Usage, $P_{u,net} / \Phi_b P_n$
1,372.00	3,000.00	Parallel to Pad Edge	45.7%

SOIL SLIDING SHEAR ANALYSIS					
Applied Shear Force, V_u (k)	Friction Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Nominal Shear Capacity, $\Phi_s V_n$ (k)	Soil Sliding Shear Usage, $V_u / \Phi_s V_n$
1.23	0.00	532.0	13.96	28.37	4.0%

MAT REINFORCING STEEL STRENGTH ANALYSIS

Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
29,000	0.9	0.75	0.65

MAT REINFORCING ONE WAY SHEAR ANALYSIS

One Way Design Shear, V_u (k)	Nominal One Way Shear Capacity, $\Phi_c V_n$ (k)	One Way Shear Controlling Load Direction	Mat One Way Shear Usage, $V_u / \Phi_c V_n$
7.33	179.84	Diagonal to Pad Edge	4.1%



MAT REINFORCING PUNCHING SHEAR ANALYSIS

Punching Shear Design Stress, v_u (psi)	Nominal Punching Shear Capacity, $\Phi_c V_n$ (psi)	Mat Punching Shear Usage, $v_u / \Phi_c V_n$
15.7	164.3	9.6%



MAT REINFORCING MOMENT TRANSFER ANALYSIS

Moment Transfer Effective Flexural Width, w_f (in)	Neutral Axis Depth (in)	Pier Moment at Joint, M_{ut} (k-in)	Nominal Moment Transfer Capacity, $\Phi M_{sc,f}$ (k-in)	Mat Moment Transfer Usage, $0.6 M_{ut} / \Phi M_{sc,f}$
11.00	1.70	0.00	12,990.5	0.0%



MAT REINFORCING FLEXURE ANALYSIS – LOWER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Lower Rebar Flexure Usage, $M_u / \Phi M_n$
66.50	989.76	Parallel to Pad Edge	6.7%



PIER REINFORCING STEEL STRENGTH ANALYSIS

Rebar Cage Diameter (in)	Steel Elastic Modulus, E (ksi)	Strength Bending/Tension Reduction Factor, Φ_b	Strength Shear Reduction Factor, Φ_v	Strength Compression Reduction Factor, Φ_c
33.75	29,000	0.9	0.75	0.65

PIER REINFORCING MOMENT ANALYSIS

Design Moment, M_u (k-ft)	Nominal Moment Capacity, $\Phi_b M_n$ (k-ft)	Bending Reinforcement Ratio	Pier Rebar Flexure Usage, $M_u / \Phi_b M_n$
5.54	705.67	0.007	0.8%



PIER REINFORCING COMPRESSION ANALYSIS

Design Compression, P_u (k)	Nominal Compressive Capacity, $\Phi_p P_n$ (k)	Pier Rebar Compressive Usage, $P_u / \Phi_p P_n$
95.13	1,849.17	5.1%



PIER REINFORCING SHEAR ANALYSIS

Design Shear, V_u (k)	Nominal Shear Capacity, $\Phi_v V_n$ (k)	Pier Rebar Shear Usage, $V_u / \Phi_v V_n$
1.23	221.89	0.6%

