



Structural Analysis Report

Structure : 340 ft Guyed Tower
ATC Asset Name : Mineral
ATC Asset Number : 310370
Engineering Number : 14921176_C3_03
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : MINERAL
Carrier Site Number : 5000114073
Site Location : 977 Chopping Road
Mineral, VA 23117-4145
38.0372° N, 77.924° W
County : Louisa
Date : November 13, 2024
Max Usage : 89%
Analysis Result : Pass



COA: 0407004594

Table of Contents

Introduction	3
Supporting Documents	3
Analysis	3
Conclusion	3
Structure Usages	4
Maximum Reactions	4
Tower Loading	5
Standard Conditions	Attached
Calculations	Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 340 ft Guyed tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower:	FWT Job #6766000, dated January 19, 1999
Foundation:	FWT, PJF Job #1944894, dated September 9, 1994
Geotechnical:	Triad Engineering Project #G-877, dated September 1, 1994

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:	111 mph (3-second gust)
Basic Wind Speed w/ Ice:	30 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / Virginia Uniform State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.27$, $S_i = 0.06$
Site Class:	D - Stiff Soil - Default

**Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222, ANNEX-S*

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	89.1%	Member X	Section 22	Pass
Diagonal	54.2%	Member	Section 24	Pass
Horizontal	35.7%	Member	Section 1	Pass
Bolt	14.6%	-	Section 22	Pass
Torque Arm	21.0%	Compression	Elevation 218 ft	Pass
Cable	84.0%	Tension	Elevation 328 ft	Pass
Serviceability Usage	6.0%	Rotation	Elevation 300 ft	Pass
Mat & Pier	85.1%	Bearing [Soil]	Node 1	Pass
Guy Anchor	27.3%	Tension [Anchor Rod]	Node A1	Pass
Guy Anchor	26.9%	Tension [Anchor Rod]	Node A1a	Pass
Guy Anchor	27.4%	Tension [Anchor Rod]	Node A1b	Pass
Guy Anchor	47.4%	Tension [Anchor Rod]	Node A2	Pass
Guy Anchor	46.2%	Tension [Anchor Rod]	Node A2a	Pass
Guy Anchor	46.4%	Tension [Anchor Rod]	Node A2b	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Uplift (k)	Shear (k)
Guyed – Pivot Base	-	140.8	-	0.6
Guyed Anchor - A2	-	-	27.0	27.5
Guyed Anchor - A1	-	-	10.5	12.7

**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
335.0	2	Raycap RCMD-6627-PF-48	(2) 1 5/8" Hybriflex
	3	Sector Frame	
	3	Samsung B2/B66A RRH ORAN (RF 4439d-25A)	
	3	Samsung MT6413-77A	
	3	Samsung RF4461d-13A	
	6	JMA Wireless MX06FHG865-HG	

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

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines
338.0	-	-	(1) 1 1/4" Hybriflex Cable
335.8	3	Antel BXA-80080/8CF	-
335.6	3	Andrew HBXX-6517DS-A2M (43 lbs)	-
319.0	3	Ericsson AIR 6419 B77G	-
317.0	1	Commscope NNH4-65B-R6H4	(2) 0.39" (10mm) Fiber Trunk (1) 0.76" (19.2mm) 8 AWG 6 (1) 0.82" (20.8mm) 8 AWG 6 (1) 0.92" (23.4mm) Cable (4) 1.19" (30.3mm) Cable
	1	Commscope NNHH-65B-R4 (77.4 lbs)	
	2	Commscope NNH4-65C-R6-V3 (102.5 lbs)	
	2	Commscope NNHH-65C-R4	
	2	Raycap DC9-48-60-24-8C-EV (Enclosure)	
	3	Ericsson RRUS 4478 B14 (18.1" Height)	
	3	Ericsson Radio 4490HP 44B5 44B12A C (17.5" Height)	
	3	Ericsson Radio 4890HP 48B2/B25 48B66 M01 (68.3lbs)	
	3	Light Sector Frame	
315.0	3	Ericsson AIR 6419 B77D/ C-Band	-
306.0	3	Site Pro 1 VFA12-HD	-
302.0	3	Ericsson AIR 6419 B41	(3) 1.99" (50.7mm) Hybrid
	3	Ericsson Radio 4460 B25+B66	
	3	Ericsson Radio 4480 B71+B85A	
	3	RFS APXVAALL24 43-U-NA20	
	3	RFS APXVLL19P_43-C-A20	

(If table breaks across pages, please see previous page for data in merged cells)



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.

ASSET: Mineral, 310370
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176

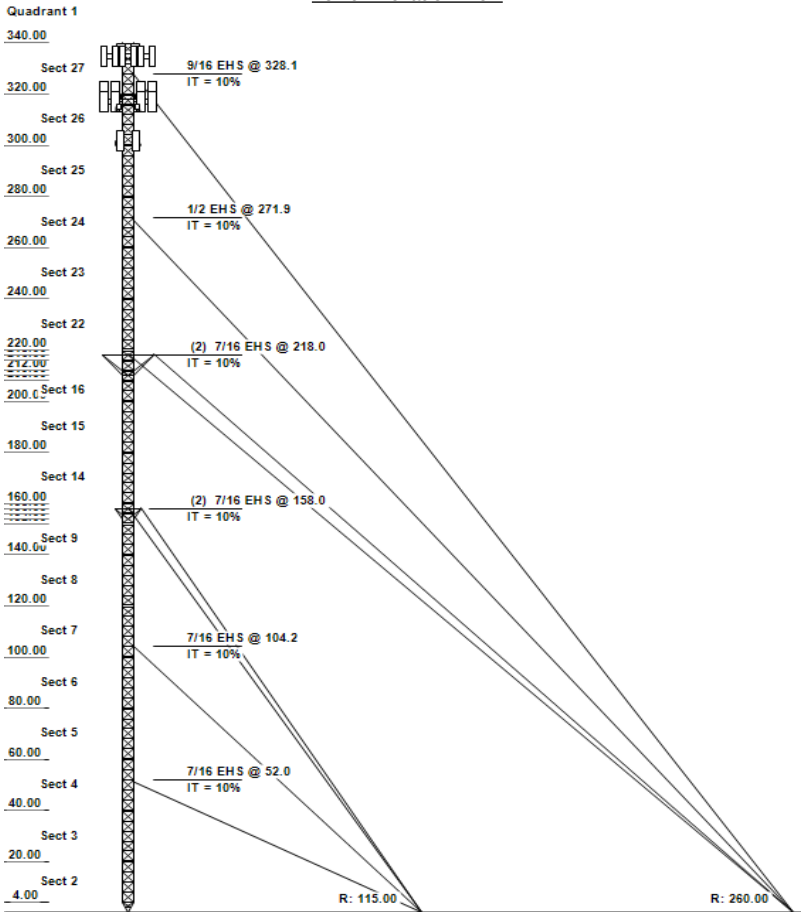
ANALYSIS PARAMETERS

Design Wind: 108 mph Ice Wind: 29 mph w/ 0.85" ice Service Wind: 60 mph
Risk Category: II Exposure: B S_s : 0.271 S_i : 0.059
Topo Factor: Method 1 Topo Feature: Topo Category: 1
Structure Height: 340 ft Base Elevation: 0 ft Shape: Triangle
Base Width: 3.00 ft Top Width: 3.00 ft Base Type: Pivot

TOWER SECTION PROPERTIES

Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 2 1/4" SOLID	PL 36 ksi PL 2 x 0.5"	SAE 36 ksi 2X2X0.25
2 - 7	SOL 50 ksi 2 1/4" SOLID	SOL 36 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.125
8	SOL 50 ksi 2" SOLID	SOL 36 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.125
9 - 15	SOL 50 ksi 2" SOLID	SOL 36 ksi 3/4" SOLID	SAU 36 ksi 2X1.5X0.1875
16 - 22	SOL 50 ksi 2" SOLID	SOL 36 ksi 7/8" SOLID	SAU 36 ksi 2X1.5X0.25
23 - 26	SOL 50 ksi 2" SOLID	SOL 36 ksi 5/8" SOLID	SAE 36 ksi 2X2X0.125
27	SOL 50 ksi 2" SOLID	SOL 36 ksi 3/4" SOLID	SAU 36 ksi 2X1.5X0.1875

Tower Elevation View



DISCRETE APPURTENANCE

Elev (ft)	Description
335.8	(3) Antel BXA-80080/8CF
335.6	(3) Andrew HBXX-6517DS-A2M (43 lbs)
335.0	(6) JMA Wireless MX06FHG865-HG
335.0	(3) Samsung MT6413-77A
335.0	(3) Samsung B2/B66A RRH ORAN (RF 4
335.0	(3) Samsung RF4461d-13A
335.0	(3) Generic Round Sector Frame
335.0	(2) Raycap RCMDC-6627-PF-48
319.0	(3) Ericsson AIR 6419 B77G
317.0	(3) Ericsson Radio 4890HP 48B2/B25 48
317.0	(2) Commscope NNH4-65C-R6-V3 (102.5
317.0	(3) Ericsson RRUS 4478 B14 (18.1" Heig
317.0	(2) Commscope NNHH-65C-R4
317.0	(3) Ericsson Radio 4490HP 44B5 44B12A
317.0	(2) Raycap DC9-48-60-24-8C-EV (Enclos
317.0	(3) Generic Flat Light Sector Frame
317.0	(1) Commscope NNH4-65B-R6H4
317.0	(1) Commscope NNHH-65B-R4 (77.4 lbs)
315.0	(3) Ericsson AIR 6419 B77D/ C-Band
306.0	(3) Site Pro 1 VFA12-HD
302.0	(3) Ericsson Radio 4480 B71+B85A
302.0	(3) Ericsson AIR 6419 B41
302.0	(3) Ericsson Radio 4460 B25+B66
302.0	(3) RFS APXVLL19P_43-C-A20
302.0	(3) RFS APXVAALL24 43-U-NA20
216.0	(1) Generic Torque Arm
160.0	(1) Generic Torque Arm

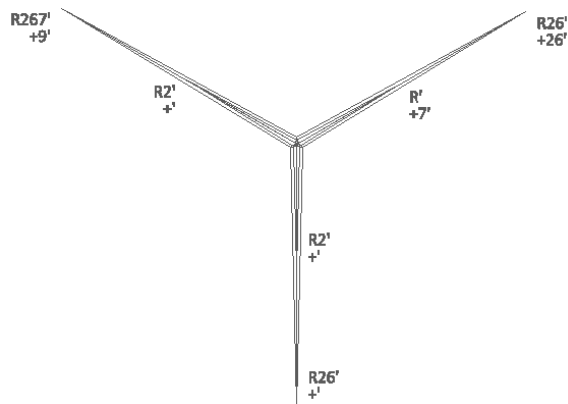
LINEAR APPURTENANCE

Elev (ft)	Description
335.8	(3) Antel BXA-80080/8CF
335.6	(3) Andrew HBXX-6517DS-A2M (43 lbs)
335.0	(6) JMA Wireless MX06FHG865-HG
335.0	(3) Samsung MT6413-77A
335.0	(3) Samsung B2/B66A RRH ORAN (RF 4
335.0	(3) Samsung RF4461d-13A
335.0	(3) Generic Round Sector Frame
335.0	(2) Raycap RCMDC-6627-PF-48
319.0	(3) Ericsson AIR 6419 B77G
317.0	(3) Ericsson Radio 4890HP 48B2/B25 48
317.0	(2) Commscope NNH4-65C-R6-V3 (102.5
317.0	(3) Ericsson RRUS 4478 B14 (18.1" Heig
317.0	(2) Commscope NNHH-65C-R4
317.0	(3) Ericsson Radio 4490HP 44B5 44B12A
317.0	(2) Raycap DC9-48-60-24-8C-EV (Enclos
317.0	(3) Generic Flat Light Sector Frame
317.0	(1) Commscope NNH4-65B-R6H4
317.0	(1) Commscope NNHH-65B-R4 (77.4 lbs)
315.0	(3) Ericsson AIR 6419 B77D/ C-Band
306.0	(3) Site Pro 1 VFA12-HD
302.0	(3) Ericsson Radio 4480 B71+B85A
302.0	(3) Ericsson AIR 6419 B41
302.0	(3) Ericsson Radio 4460 B25+B66
302.0	(3) RFS APXVLL19P_43-C-A20
302.0	(3) RFS APXVAALL24 43-U-NA20
216.0	(1) Generic Torque Arm
160.0	(1) Generic Torque Arm

BASE REACTIONS

Axial (k): 140.80
Shear (k): 0.64

Tower Plan View



GUY ANCHOR REACTIONS

Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (k)	Shear (k)
115.0	17.00	120	10.30	12.66
125.0	5.00	0	10.47	12.40
125.0	11.00	240	10.00	12.51
260.0	11.00	0	27.00	27.32
260.0	26.00	120	25.66	27.48
267.0	19.00	240	25.52	27.31

ANALYSIS PARAMETERS					
Location:	Louisa County, VA	Height:	340 ft		
Type and Shape:	Guyed, Triangle	Base Elevation:	0.00 ft		
Manufacturer:	FWT	Bottom Face Width:	3.00 ft		
Kd	0.85	Top Face Width:	3.00 ft		
Ke:	0.98				
ICE & WIND PARAMETERS					
Exposure Category:	B	Design Wind Speed Without Ice:	108 mph		
Risk Category:	II	Design Wind Speed with Ice:	29 mph		
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph		
Topographic Category:	1	Design Ice Thickness:	0.85 in		
Crest Height:	ft	HMSL:	455 ft		
SEISMIC PARAMETERS					
Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	1.79		
T _L (sec):	12	P:	1.3	C _s :	0.030
S _{ds} :	0.286	S _{d1} :	0.094	C _{s, Max} :	0.030
S _s :	0.271	S ₁ :	0.059	C _{s, Min} :	0.030
F _a :	1.583	F _v :	2.400		
LOAD CASES					
1.2D + 1.0W Normal		1.2D + 1.0W Normal - 108.19 mph Wind with No Ice			
1.2D + 1.0W 60°		1.2D + 1.0W 60° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 90°		1.2D + 1.0W 90° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 120°		1.2D + 1.0W 120° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 180°		1.2D + 1.0W 180° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 210°		1.2D + 1.0W 210° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 240°		1.2D + 1.0W 240° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 300°		1.2D + 1.0W 300° - 108.19 mph Wind with No Ice			
1.2D + 1.0W 330°		1.2D + 1.0W 330° - 108.19 mph Wind with No Ice			
1.2D + 1.0Di + 1.0Wi Normal		1.2D + 1.0Di + 1.0Wi Normal - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 60°		1.2D + 1.0Di + 1.0Wi 60° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 90°		1.2D + 1.0Di + 1.0Wi 90° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 120°		1.2D + 1.0Di + 1.0Wi 120° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 180°		1.2D + 1.0Di + 1.0Wi 180° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 210°		1.2D + 1.0Di + 1.0Wi 210° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 240°		1.2D + 1.0Di + 1.0Wi 240° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 300°		1.2D + 1.0Di + 1.0Wi 300° - 29.24 mph Wind with 0.85" Radial Ice			
1.2D + 1.0Di + 1.0Wi 330°		1.2D + 1.0Di + 1.0Wi 330° - 29.24 mph Wind with 0.85" 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			
1.2D + 1.0Ev + 1.0Eh 330°		1.2D + 1.0Ev + 1.0Eh 330° - Seismic			

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

LOAD CASES	
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

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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)
317.0	Ericsson Radio 4490HP 44B5 44B	3	68	1.5	1.5	15.1	6.8	0.80	0.67	0.0	0.00	10.59	21	204
317.0	Ericsson RRUS 4478 B14 (18.1"	3	59	2.0	1.5	13.4	8.3	0.80	0.50	0.0	0.00	10.59	22	178
317.0	Ericsson Radio 4890HP 48B2/B25	3	68	2.2	1.5	15.1	6.9	0.80	0.50	0.0	0.00	10.59	24	205
317.0	Raycap DC9-48-60-24-8C-EV (Enc	2	19	2.7	2.2	12.4	9.7	0.80	0.67	0.0	0.00	10.59	26	37
317.0	Commscope NNH4-65B-R6H4	1	83	12.3	6.0	19.6	7.8	0.80	1.00	0.0	0.00	10.59	88	83
317.0	Commscope NNHH-65B-R4 (77.4 lb	1	77	12.3	6.0	19.6	7.8	0.80	0.73	0.7	45.18	10.60	65	77
317.0	Commscope NNHH-65C-R4	2	99	17.1	8.0	19.6	7.8	0.80	0.64	0.4	62.96	10.59	157	198
317.0	Commscope NNH4-65C-R6-V3 (102.	2	103	17.1	8.0	19.6	7.8	0.80	0.73	0.0	0.00	10.59	179	205
317.0	Generic Flat Light Sector Fram	3	800	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	10.59	243	2400
315.0	Ericsson AIR 6419 B77D/ C-Band	3	64	3.8	2.4	16.1	7.3	0.80	0.64	0.0	0.00	10.57	52	192
306.0	Site Pro 1 VFA12-HD	3	690	13.3	0.0	0.0	0.0	0.75	0.67	0.0	0.00	10.48	179	2070
302.0	Ericsson Radio 4460 B25+B66	3	109	2.6	1.6	15.7	12.1	0.80	0.50	0.0	0.00	10.44	27	327
302.0	Ericsson Radio 4480 B71+B85A	3	84	2.9	1.8	15.7	7.5	0.80	0.50	0.0	0.00	10.44	30	252
302.0	Ericsson AIR 6419 B41	3	69	5.6	2.8	20.0	6.3	0.80	0.60	0.0	0.00	10.44	72	206
302.0	RFS APXVLL19P_43-C-A20	3	41	8.2	6.3	11.3	4.6	0.80	0.65	0.0	0.00	10.44	114	123
302.0	RFS APXVAALL24 43-U-NA20	3	123	20.2	8.0	24.0	8.5	0.80	0.63	0.0	0.00	10.44	272	368
216.0	Generic Torque Arm	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	9.49	121	500
160.0	Generic Torque Arm	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	8.71	111	500
Totals		72	11,649	582.2									2,842	11,649

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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	338.0	1 1/4" Hybriflex Cable	1	1.54	1.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	335.0	1 5/8" Hybriflex	2	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	317.0	0.76" (19.2mm) 8 AWG 6	1	0.76	0.53	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	317.0	0.82" (20.8mm) 8 AWG 6	1	0.82	0.62	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	317.0	1.19" (30.3mm) Cable	4	1.19	1.11	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	317.0	0.92" (23.4mm) Cable	1	0.92	0.89	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	317.0	0.39" (10mm) Fiber Trunk	2	0.39	0.06	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	302.0	1.99" (50.7mm) Hybrid	3	1.99	1.90	100	1	Individual	0.00	N	1.00	1.00	0.00

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

SECTION FORCES

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)
25	290	10.32	2.833	9.139	0.00	0.189	2.63	0.80	1.00	0.0	7.55	19.88	0.00	1202	0	174	205	380
24	270	10.11	3.111	9.139	0.00	0.193	2.62	0.80	1.00	0.0	7.78	20.37	0.00	1222	0	175	201	376
23	250	9.89	2.833	9.139	0.00	0.189	2.63	0.80	1.00	0.0	7.55	19.88	0.00	1202	0	167	197	364
22	230	9.66	2.833	10.128	0.00	0.205	2.58	0.80	1.00	0.0	8.16	21.07	0.00	1411	0	173	192	365
21	219	9.53	0.472	0.982	0.00	0.230	2.50	0.80	1.00	0.0	0.96	2.39	0.00	149	0	19	19	38
20	217	9.50	0.932	0.982	0.00	0.302	2.29	0.80	1.00	0.0	1.35	3.08	0.00	174	0	25	19	44
19	214	9.46	0.944	1.975	0.00	0.230	2.50	0.80	1.00	0.0	1.92	4.78	0.00	298	0	38	38	76
18	211	9.43	0.472	0.983	0.00	0.230	2.50	0.80	1.00	0.0	0.96	2.40	0.00	149	0	19	19	38
17	209	9.40	0.932	0.982	0.00	0.302	2.29	0.80	1.00	0.0	1.35	3.08	0.00	174	0	25	19	43
16	204	9.34	1.417	4.013	0.00	0.214	2.55	0.80	1.00	0.0	3.48	8.86	0.00	576	0	70	74	145
15	190	9.15	2.833	9.634	0.00	0.197	2.61	0.80	1.00	0.0	7.86	20.48	0.00	1295	0	159	182	341
14	170	8.86	2.833	9.634	0.00	0.197	2.61	0.80	1.00	0.0	7.86	20.48	0.00	1295	0	154	176	331
13	159	8.69	0.472	0.939	0.00	0.223	2.52	0.80	1.00	0.0	0.93	2.34	0.00	136	0	17	17	35
12	157	8.66	0.472	0.939	0.00	0.223	2.52	0.80	1.00	0.0	0.93	2.34	0.00	136	0	17	17	34
11	155	8.63	0.472	0.939	0.00	0.223	2.52	0.80	1.00	0.0	0.93	2.34	0.00	136	0	17	17	34
10	153	8.60	0.472	0.939	0.00	0.223	2.52	0.80	1.00	0.0	0.93	2.34	0.00	136	0	17	17	34
9	146	8.48	1.889	5.759	0.00	0.201	2.59	0.80	1.00	0.0	4.86	12.59	0.00	783	0	91	101	192
8	130	8.21	2.833	9.139	0.00	0.189	2.63	0.80	1.00	0.0	7.55	19.88	0.00	1202	0	139	163	302
7	110	7.83	3.094	9.962	0.00	0.205	2.58	0.80	1.00	0.0	8.26	21.32	0.00	1392	0	142	156	298
6	90	7.39	2.812	9.965	0.00	0.200	2.59	0.80	1.00	0.0	8.03	20.84	0.00	1373	0	131	147	278
5	70	6.88	2.812	9.965	0.00	0.200	2.59	0.80	1.00	0.0	8.03	20.84	0.00	1373	0	122	137	259
4	50	6.25	3.094	9.965	0.00	0.205	2.58	0.80	1.00	0.0	8.26	21.32	0.00	1393	0	113	124	238
3	30	5.40	2.812	9.965	0.00	0.200	2.59	0.80	1.00	0.0	8.03	20.84	0.00	1373	0	96	107	203
2	12	5.39	2.344	7.960	0.00	0.202	2.59	0.80	1.00	0.0	6.50	16.82	0.00	1101	0	77	86	163
1	2	5.39	1.639	1.635	0.00	0.485	1.92	0.80	1.00	0.0	2.42	4.64	0.00	346	0	21	18	40
Totals														22,156	0			5,206

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)
27	330	10.71	3.111	9.634	0.00	0.201	2.59	0.85	1.00	0.0	8.24	21.36	0.00	1050	0	194	48	242
26	310	10.52	2.833	9.139	0.00	0.189	2.63	0.85	1.00	0.0	7.69	20.25	0.00	1080	0	181	139	320
25	290	10.32	2.833	9.139	0.00	0.189	2.63	0.85	1.00	0.0	7.69	20.25	0.00	1202	0	178	205	383
24	270	10.11	3.111	9.139	0.00	0.193	2.62	0.85	1.00	0.0	7.93	20.77	0.00	1222	0	179	201	380
23	250	9.89	2.833	9.139	0.00	0.189	2.63	0.85	1.00	0.0	7.69	20.25	0.00	1202	0	170	197	367
22	230	9.66	2.833	10.128	0.00	0.205	2.58	0.85	1.00	0.0	8.31	21.43	0.00	1411	0	176	192	368
21	219	9.53	0.472	0.982	0.00	0.230	2.50	0.85	1.00	0.0	0.98	2.45	0.00	149	0	20	19	39
20	217	9.50	0.932	0.982	0.00	0.302	2.29	0.85	1.00	0.0	1.39	3.19	0.00	174	0	26	19	45
19	214	9.46	0.944	1.975	0.00	0.230	2.50	0.85	1.00	0.0	1.96	4.90	0.00	298	0	39	38	77
18	211	9.43	0.472	0.983	0.00	0.230	2.50	0.85	1.00	0.0	0.98	2.45	0.00	149	0	20	19	38
17	209	9.40	0.932	0.982	0.00	0.302	2.29	0.85	1.00	0.0	1.39	3.19	0.00	174	0	25	19	44
16	204	9.34	1.417	4.013	0.00	0.214	2.55	0.85	1.00	0.0	3.55	9.04	0.00	576	0	72	74	146
15	190	9.15	2.833	9.634	0.00	0.197	2.61	0.85	1.00	0.0	8.00	20.85	0.00	1295	0	162	182	344
14	170	8.86	2.833	9.634	0.00	0.197	2.61	0.85	1.00	0.0	8.00	20.85	0.00	1295	0	157	176	333
13	159	8.69	0.472	0.939	0.00	0.223	2.52	0.85	1.00	0.0	0.95	2.40	0.00	136	0	18	17	35
12	157	8.66	0.472	0.939	0.00	0.223	2.52	0.85	1.00	0.0	0.95	2.40	0.00	136	0	18	17	35
11	155	8.63	0.472	0.939	0.00	0.223	2.52	0.85	1.00	0.0	0.95	2.40	0.00	136	0	18	17	35
10	153	8.60	0.472	0.939	0.00	0.223	2.52	0.85	1.00	0.0	0.95	2.40	0.00	136	0	18	17	35
9	146	8.48	1.889	5.759	0.00	0.201	2.59	0.85	1.00	0.0	4.95	12.83	0.00	783	0	93	101	194
8	130	8.21	2.833	9.139	0.00	0.189	2.63	0.85	1.00	0.0	7.69	20.25	0.00	1202	0	141	163	305
7	110	7.83	3.094	9.962	0.00	0.205	2.58	0.85	1.00	0.0	8.42	21.72	0.00	1392	0	144	156	300
6	90	7.39	2.812	9.965	0.00	0.200	2.59	0.85	1.00	0.0	8.17	21.20	0.00	1373	0	133	147	280
5	70	6.88	2.812	9.965	0.00	0.200	2.59	0.85	1.00	0.0	8.17	21.20	0.00	1373	0	124	137	261
4	50	6.25	3.094	9.965	0.00	0.205	2.58	0.85	1.00	0.0	8.42	21.72	0.00	1393	0	115	124	240
3	30	5.40	2.812	9.965	0.00	0.200	2.59	0.85	1.00	0.0	8.17	21.20	0.00	1373	0	97	107	205
2	12	5.39	2.344	7.960	0.00	0.202	2.59	0.85	1.00	0.0	6.61	17.12	0.00	1101	0	79	86	164
1	2	5.39	1.639	1.635	0.00	0.485	1.92	0.85	1.00	0.0	2.50	4.80	0.00	346	0	22	18	40
Totals														22,156	0			5,255

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S_s):	0.27
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L - Seconds):	12
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.58
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.29
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s :	0.03
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	1.79
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.65
Total Unfactored Dead Load:	33.81 k
Seismic Base Shear (E):	1.32 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)
27	330.00	1,050	14,724,761	0.056	74	1,320
26	310.00	1,080	13,666,020	0.052	68	1,358
25	290.00	1,202	13,632,516	0.052	68	1,512
24	270.00	1,222	12,317,006	0.047	62	1,536
23	250.00	1,202	10,676,799	0.041	53	1,512
22	230.00	1,411	10,918,634	0.042	55	1,773
21	219.00	149	1,063,097	0.004	5	187
20	217.00	174	1,222,498	0.005	6	219
19	214.00	298	2,046,855	0.008	10	374
18	211.00	149	1,000,533	0.004	5	187
17	209.00	174	1,149,177	0.004	6	219
16	204.00	576	3,659,208	0.014	18	724
15	190.00	1,295	7,320,857	0.028	37	1,629
14	170.00	1,295	6,095,715	0.023	31	1,629
13	159.00	136	571,804	0.002	3	171
12	157.00	136	560,009	0.002	3	171
11	155.00	136	548,311	0.002	3	171
10	153.00	136	536,710	0.002	3	171
9	146.00	783	2,869,034	0.011	14	985
8	130.00	1,202	3,637,635	0.014	18	1,512
7	110.00	1,392	3,199,484	0.012	16	1,751
6	90.00	1,373	2,267,151	0.009	11	1,726
5	70.00	1,373	1,498,876	0.006	8	1,726
4	50.00	1,393	873,609	0.003	4	1,751
3	30.00	1,373	371,419	0.001	2	1,726
2	12.00	1,101	65,859	0.000	0	1,384
1	2.00	346	1,082	0.000	0	435
Antel BXA-80080/8CF	335.80	93	1,342,349	0.005	7	117
Andrew HBXX-6517DS-A2M (43 lbs)	335.60	129	1,860,142	0.007	9	162
Samsung B2/B66A RRR ORAN (RF 4439d-25A)	335.00	224	3,221,949	0.012	16	282
Samsung RF4461d-13A	335.00	237	3,411,730	0.013	17	298
Samsung MT6413-77A	335.00	172	2,471,455	0.009	12	216
Raycap RCMDC-6627-PF-48	335.00	64	920,146	0.004	5	80
JMA Wireless MX06FHG865-HG	335.00	306	4,399,449	0.017	22	385
Generic Round Sector Frame	335.00	2,100	30,192,297	0.115	151	2,640
Ericsson AIR 6419 B77G	319.00	198	2,630,286	0.010	13	249
Ericsson Radio 4490HP 44B5 44B12A C (17.5" Height)	317.00	204	2,678,015	0.010	13	256
Ericsson RRUS 4478 B14 (18.1" Height)	317.00	178	2,339,325	0.009	12	224
Ericsson Radio 4890HP 48B2/B25 48B66 M01 (68.3lbs)	317.00	205	2,689,830	0.010	13	258
Raycap DC9-48-60-24-8C-EV (Enclosure)	317.00	37	485,718	0.002	2	47
Commscope NNH4-65B-R6H4	317.00	83	1,093,523	0.004	5	105
Commscope NNH4-65B-R4 (77.4 lbs)	317.00	77	1,016,070	0.004	5	97

ASSET:	310370, Mineral			CODE:	ANSI/TIA-222-H	
CUSTOMER:	VERIZON WIRELESS			PROJECT:	14921176_C3_03	
Commscope NNHH-65C-R4	317.00	198	2,604,501	0.010	13	249
Commscope NNH4-65C-R6-V3 (102.5 lbs)	317.00	205	2,691,143	0.010	13	258
Generic Flat Light Sector Frame	317.00	2,400	31,506,060	0.120	158	3,017
Ericsson AIR 6419 B77D/ C-Band	315.00	192	2,494,354	0.010	12	241
Site Pro 1 VFA12-HD	306.00	2,070	25,638,835	0.097	128	2,602
Ericsson Radio 4460 B25+B66	302.00	327	3,963,386	0.015	20	411
Ericsson Radio 4480 B71+B85A	302.00	252	3,054,352	0.012	15	317
Ericsson AIR 6419 B41	302.00	206	2,490,752	0.010	12	258
RFS APXVLL19P_43-C-A20	302.00	123	1,487,179	0.006	7	154
RFS APXVAALL24 43-U-NA20	302.00	368	4,465,172	0.017	22	463
Generic Torque Arm	216.00	500	3,489,991	0.013	17	629
Generic Torque Arm	160.00	500	2,129,217	0.008	11	629
Totals		33,806	263,261,886	1.000	1,318	42,501

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 1 – 0.0' to 4.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear ΦRnv (kip)	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z										
L SOL - 2 1/4" SOLID	-51.32	1.2D + 1.0Di + 1.0Wi 240°	2.179	100	100	100	46.49	50.00	152.77	0.00	0.00	0	0	34	Member X
D PL - PL 2 x 0.5"	-1.89	1.2D + 1.0W N	3.041	100	100	100	201.75	36.00	7.03	0.00	0.00	0	0	0	Member Y
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 - 2X2X0.25	10.88	1.2D + 1.0Di + 1.0Wi 120°	36.0	58	30.46	0.00	0.00	0.00	0	0	36	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

Section 2 – 4.0' to 20.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦRnv (kip)				ΦRn (kip)					
L SOL - 2 1/4" SOLID	-44.38	1.2D + 1.0Di + 1.0Wi 240°	3.865	100	100	100	82.45	50.00	108.84	0.00	0.00	0	0	41	Member X
D SOL - 5/8" SOLID	-1.41	1.2D + 1.0W N	4.893	50	50	50	169.36	36.00	2.42	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 - 2X2X0.125	2.91	1.2D + 1.0Di + 1.0Wi 240°	36.0	58	15.55	0.00	0.00	0.00	0	0	19	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 3 – 20.0' to 40.00'

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 1/4" SOLID	-43.80	1.2D + 1.0Di + 1.0Wi 210°	3.9	100	100	100	83.20	50.00	107.86	0.00	0.00	0	0	41	Member X
D SOL - 5/8" SOLID	-1.24	1.2D + 1.0W N	4.92	50	50	50	170.32	36.00	2.39	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)														
H SAE - 2X2X0.125	2.06	1.2D + 1.0Di + 1.0Wi 120°	36.0	58	15.55	0.00	0.00	0.00		0	0	13	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 4 – 40.0' to 60.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear ΦRnv (kip)	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls
	X	Y	Z												
L SOL - 2 1/4" SOLID	-42.79	1.2D + 1.0Di + 1.0Wi 240°	3.9	100	100	100	83.20	50.00	107.86	0.00	0.00	0	0	40	Member X
D SOL - 5/8" SOLID	-0.87	1.2D + 1.0W N	4.92	50	50	50	170.32	36.00	2.39	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 - 2X2X0.125	2.01	1.2D + 1.0Di + 1.0Wi 120°	36.0	58	15.55	0.00	0.00	0.00	0	0	13	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

Section 5 – 60.0' to 80.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %				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	KL/R								
L SOL - 2 1/4" SOLID	-40.95	1.2D + 1.0Di + 1.0Wi 60°	3.9	100	100	100	83.20	50.00	107.86	0.00	0.00	0	0	38	Member X
D SOL - 5/8" SOLID	-1.50	1.2D + 1.0W N	4.92	50	50	50	170.32	36.00	2.39	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 Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
Member Tension															
H SAE - 2X2X0.125	1.93	1.2D + 1.0Di + 1.0Wi 120°	36.0	58	15.55	0.00	0.00	0.00	0	0	12	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 6 – 80.0' to 100.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)	ΦR _n (kip)				
Member Compression															
L SOL - 2 1/4" SOLID	-40.15	1.2D + 1.0Di + 1.0Wi 60°	3.9	100	100	100	83.20	50.00	107.86	0.00	0.00	0	0	37	Member X
D SOL - 5/8" SOLID	-1.00	1.2D + 1.0W N	4.92	50	50	50	170.32	36.00	2.39	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		
								Φ _t P _n (kip)							
Member Tension															
H SAE - 2X2X0.125	1.89	1.2D + 1.0Di + 1.0Wi N	36.0	58	15.55	0.00	0.00	0.00		0	0	12	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 7 – 100.0' to 120.00'

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

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

Section 7 – 100.0' to 120.00'

©2007 - 2022 by ATC IP LLC. All rights reserved. Page 22 of 57 Model ID: 103339 Scenario ID: 342528 11/13/2024 13:19:54

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 8 – 120.0' to 140.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	KL/R			ΦR _{nv}	ΦR _n					
									(kip)	(kip)					
L SOL - 2" SOLID	-37.98	1.2D + 1.0Di + 1.0Wi 60°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	51	Member X
D SOL - 5/8" SOLID	-1.34	1.2D + 1.0W N	4.914	50	50	50	170.10	36.00	2.40	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 - 2X2X0.125	2.15	1.2D + 1.0Di + 1.0Wi 60°	36.0	58	15.55	0.00	0.00	0.00	0	0	14	Member			
D SOL - 5/8" SOLID	0.00	1.2D + 1.0Di + 1.0Wi 60°	36.0	58	9.94	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 9 – 140.0' to 152.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				ΦR _n (kip)					
L SOL - 2" SOLID	-36.08	1.2D + 1.0W 120°	3.82	100	100	100	91.68	50.00	76.46	0.00	0.00	0	0	47	Member X
D SOL - 3/4" SOLID	-1.38	1.2D + 1.0W N	4.857	50	50	50	139.89	36.00	5.10	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 Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
H SAU - 2X1.5X0.1875	2.81	1.2D + 1.0Di + 1.0Wi 240°	36.0	58	20.09	0.00	0.00	0.00	0	0	14	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 10 – 152.0' to 154.00'

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	-41.23	1.2D + 1.0W 120°	1.73	100	100	100	41.52	50.00	124.63	0.00	0.00	0	0	33	Member X
H SAU - 2X1.5X0.1875	-0.10	1.2D + 1.0W 60°	3	100	100	100	115.90	36.00	12.89	0.00	0.00	0	0	1	Member Z
D SOL - 3/4" SOLID	-0.22	1.2D + 1.0W N	2.29	50	50	50	65.94	36.00	11.39	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 Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
H SAU - 2X1.5X0.1875	0.58	1.2D + 1.0W 60°	36.0	58	20.09	0.00	0.00	0.00	0	0	3	Member			
D SOL - 3/4" SOLID	0.69	1.2D + 1.0W 210°	36.0	58	14.31	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 – 154.0' to 156.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	KL/R			ΦR _{nv} (kip)	ΦR _n (kip)					
L SOL - 2" SOLID	-41.29	1.2D + 1.0W 120°	1.73	100	100	100	41.52	50.00	124.63	0.00	0.00	0	0	33	Member X
H SAU - 2X1.5X0.1875	-0.33	1.2D + 1.0W 120°	3	100	100	100	115.90	36.00	12.89	0.00	0.00	0	0	3	Member Z
D SOL - 3/4" SOLID	-0.75	1.2D + 1.0W N	2.29	50	50	50	65.94	36.00	11.39	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 SAU - 2X1.5X0.1875	0.55	1.2D + 1.0W 60°	36.0	58	20.09	0.00	0.00	0.00	0	0	3	Member			
D SOL - 3/4" SOLID	0.71	1.2D + 1.0W 210°	36.0	58	14.31	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									

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 12 – 156.0' to 158.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦRnv (kip)				ΦRn (kip)					
L SOL - 2" SOLID	-42.51	1.2D + 1.0W 120°	1.73	100	100	100	41.52	50.00	124.63	0.00	0.00	0	0	34	Member X
H SAU - 2X1.5X0.1875	-0.06	1.2D + 1.0W 210°	3	100	100	100	115.90	36.00	12.89	0.00	0.00	0	0	0	Member Z
D SOL - 3/4" SOLID	-0.28	1.2D + 1.0W N	2.29	50	50	50	65.94	36.00	11.39	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	# Bolt	# Hole	Use %	Controls			
	Φt Pn (kip)														
H SAU - 2X1.5X0.1875	0.40	1.2D + 1.0W 60°	36.0	58	20.09	0.00	0.00	0.00	0	0	2	Member			
D SOL - 3/4" SOLID	0.17	1.2D + 1.0W 300°	36.0	58	14.31	0.00	0.00	0.00	0	0	1	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 13 – 158.0' to 160.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	Φ _{R_{nv}} (kip)			Φ _{R_n} (kip)						
L SOL - 2" SOLID	-42.62	1.2D + 1.0W 120°	1.73	100	100	100	41.52	50.00	124.63	0.00	0.00	0	0	34	Member X
H SAU - 2X1.5X0.1875	-0.28	1.2D + 1.0W 120°	3	100	100	100	115.90	36.00	12.89	0.00	0.00	0	0	2	Member Z
D SOL - 3/4" SOLID	-0.19	1.2D + 1.0W N	2.29	50	50	50	65.94	36.00	11.39	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 Φ _{R_{nv}} (kip)	Bear Φ _{R_n} (kip)	Blk Shear	# Bolt	# Hole	Use %	Controls			
	Φ _t P _n (kip)														
H SAU - 2X1.5X0.1875	0.62	1.2D + 1.0W 180°	36.0	58	20.09	0.00	0.00	0.00	0	0	3	Member			
D SOL - 3/4" SOLID	0.17	1.2D + 1.0W 300°	36.0	58	14.31	0.00	0.00	0.00	0	0	1	Member			
Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type									

Section 14 – 160.0' to 180.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦR _{nv} (kip)			ΦR _n (kip)						
L SOL - 2" SOLID	-41.84	1.2D + 1.0W 120°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	56	Member X
D SOL - 3/4" SOLID	-1.90	1.2D + 1.0W N	4.914	50	50	50	141.52	36.00	4.98	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			
H SAU - 2X1.5X0.1875	2.45	1.2D + 1.0Di + 1.0Wi 210°	36.0	58	20.09	0.00	0.00	0.00	0	0	12	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 15 – 180.0' to 200.00'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				X	Y	Z				Φ _{R_{nv}} (kip)	Φ _{R_n} (kip)				
Member Compression															
L SOL - 2" SOLID	-50.91	1.2D + 1.0W 120°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	68	Member X
D SOL - 3/4" SOLID	-1.37	1.2D + 1.0W N	4.914	50	50	50	141.52	36.00	4.98	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 Φ _{R_{nv}} (kip)	Bear Φ _{R_n} (kip)	Blk Shear Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
Member Tension															
H SAU - 2X1.5X0.1875	2.38	1.2D + 1.0W 240°	36.0	58	20.09	0.00	0.00	0.00	0	0	12	Member			
Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type									

Section 16 – 200.0' to 208.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
	X			Y	Z	Φ _{R_{nv}} (kip)				Φ _{R_n} (kip)					
L SOL - 2" SOLID	-55.72	1.2D + 1.0W 120°	3.725	100	100	100	89.40	50.00	78.81	0.00	0.00	0	0	71	Member X
H SAU - 2X1.5X0.25	-0.12	1.2D + 1.0W 120°	3	100	100	100	116.25	36.00	16.77	0.00	0.00	0	0	1	Member Z
D SOL - 7/8" SOLID	-1.64	1.2D + 1.0W N	4.783	50	50	50	118.09	36.00	9.35	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 Φ _{R_{nv}} (kip)	Bear Φ _{R_n} (kip)	Blk Shear Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
H SAU - 2X1.5X0.25	3.31		1.2D + 1.0W 240°	36.0	58	26.24	0.00	0.00	0.00	0	0	13	Member		
Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type									

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 17 – 208.0' to 210.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear ΦRnv (kip)	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z										
L SOL - 2" SOLID	-59.18	1.2D + 1.0W 120°	1.72	100	100	100	41.28	50.00	124.81	0.00	0.00	0	0	47	Member X
H SAU - 2X1.5X0.25	-1.52	1.2D + 1.0W 90°	1.5	100	100	100	88.12	36.00	22.04	0.00	0.00	0	0	7	Member Z
D SOL - 7/8" SOLID	-1.44	1.2D + 1.0W N	2.282	50	50	50	56.35	36.00	16.48	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 SAU - 2X1.5X0.25	1.43	1.2D + 1.0W 240°	36.0	58	26.24	0.00	0.00	0.00	0	0	5	Member			
D SOL - 7/8" SOLID	0.20	1.2D + 1.0W 330°	36.0	58	19.48	0.00	0.00	0.00	0	0	1	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 18 – 210.0' to 212.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	Φ _{R_{nv}} (kip)			Φ _{R_n} (kip)						
L SOL - 2" SOLID	-57.35	1.2D + 1.0W 120°	1.73	100	100	100	41.52	50.00	124.63	0.00	0.00	0	0	46	Member X
H SAU - 2X1.5X0.25	-0.66	1.2D + 1.0W 120°	3	100	100	100	116.25	36.00	16.77	0.00	0.00	0	0	4	Member Z
D SOL - 7/8" SOLID	-4.68	1.2D + 1.0W N	2.29	50	50	50	56.54	36.00	16.46	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 Φ _{R_{nv}} (kip)	Bear Φ _{R_n} (kip)	Blk Shear Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls			
L SOL - 2" SOLID	6.86	1.2D + 1.0W 180°	50.0	65	141.37	0.00	0.00		0	0	5	Member			
H SAU - 2X1.5X0.25	2.07	1.2D + 1.0W 210°	36.0	58	26.24	0.00	0.00	0.00	0	0	8	Member			
D SOL - 7/8" SOLID	0.48	1.2D + 1.0W 210°	36.0	58	19.48	0.00	0.00	0.00	0	0	2	Member			
Max Splice Forces	Pu (kip)	Load Case	Φ _{R_{nt}} (kip)	Use %	Num Bolts	Bolt Type									

Section 19 – 212.0' to 216.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦR _{nv} (kip)			ΦR _n (kip)						
L SOL - 2" SOLID	-64.12	1.2D + 1.0W 120°	3.44	100	100	100	82.56	50.00	85.89	0.00	0.00	0	0	75	Member X
H SAU - 2X1.5X0.25	-0.90	1.2D + 1.0W 120°	3	100	100	100	116.25	36.00	16.77	0.00	0.00	0	0	5	Member Z
D SOL - 7/8" SOLID	-0.36	1.2D + 1.0W N	4.564	50	50	50	112.70	36.00	9.98	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	11.71	1.2D + 1.0W 180°	50.0	65	141.37	0.00	0.00		0	0	8	Member			
H SAU - 2X1.5X0.25	2.12	1.2D + 1.0W 210°	36.0	58	26.24	0.00	0.00	0.00	0	0	8	Member			
D SOL - 7/8" SOLID	1.02	1.2D + 1.0W 210°	36.0	58	19.48	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 20 – 216.0' to 218.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦR _{nv} (kip)			ΦR _n (kip)						
L SOL - 2" SOLID	-70.80	1.2D + 1.0W 120°	1.72	100	100	100	41.28	50.00	124.81	0.00	0.00	0	0	57	Member X
H SAU - 2X1.5X0.25	-6.17	1.2D + 1.0W 120°	1.5	100	100	100	88.12	36.00	22.04	0.00	0.00	0	0	28	Member Z
D SOL - 7/8" SOLID	-0.36	1.2D + 1.0W N	2.282	50	50	50	56.35	36.00	16.48	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	15.63	1.2D + 1.0W 180°	50.0	65	141.37	0.00	0.00		0	0	11	Member			
H SAU - 2X1.5X0.25	7.40	1.2D + 1.0W 210°	36.0	58	26.24	0.00	0.00	0.00	0	0	28	Member			
D SOL - 7/8" SOLID	1.46	1.2D + 1.0W 210°	36.0	58	19.48	0.00	0.00	0.00	0	0	8	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 21 – 218.0' to 220.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦRnv (kip)			ΦRn (kip)						
L SOL - 2" SOLID	-70.79	1.2D + 1.0W 120°	1.72	100	100	100	41.28	50.00	124.81	0.00	0.00	0	0	57	Member X
H SAU - 2X1.5X0.25	-0.57	1.2D + 1.0W 120°	3	100	100	100	116.25	36.00	16.77	0.00	0.00	0	0	3	Member Z
D SOL - 7/8" SOLID	-1.41	1.2D + 1.0W N	2.282	50	50	50	56.35	36.00	16.48	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
L SOL - 2" SOLID	15.66	1.2D + 1.0W 180°	50.0	65	141.37	0.00	0.00		0	0	11	Member
H SAU - 2X1.5X0.25	1.81	1.2D + 1.0W 210°	36.0	58	26.24	0.00	0.00	0.00	0	0	7	Member

FORCE/STRESS SUMMARY											
D SOL - 7/8" SOLID	1.31	1.2D + 1.0W 90°	36.0	58	19.48	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					

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY

Section 22 – 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	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				ΦR _n (kip)					
L SOL - 2" SOLID	-66.59	1.2D + 1.0W 120°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	89	Member X
H SAU - 2X1.5X0.25	-0.80	1.2D + 1.0W 120°	3	100	100	100	116.25	36.00	16.77	0.00	0.00	0	0	5	Member Z
D SOL - 7/8" SOLID	-4.00	1.2D + 1.0W N	4.914	50	50	50	121.33	36.00	8.98	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	13.20	1.2D + 1.0W 180°	50.0	65	141.37	0.00	0.00		0	0	9	Member			
H SAU - 2X1.5X0.25	3.30	1.2D + 1.0W 210°	36.0	58	26.24	0.00	0.00	0.00	0	0	13	Member			
D SOL - 7/8" SOLID	1.11	1.2D + 1.0W 90°	36.0	58	19.48	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									
Bot Tension	13.17					1.2D + 1.0W 180°	90.30	15	3	0.75" A325					

Section 23 – 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	Bear	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				ΦR _n (kip)					
L SOL - 2" SOLID	-53.15	1.2D + 1.0W 120°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	71	Member X
H SAE - 2X2X0.125	-0.20	1.2D + 1.0W 120°	3	100	100	100	105.23	36.00	11.26	0.00	0.00	0	0	2	Member Z
D SOL - 5/8" SOLID	-2.06	1.2D + 1.0W N	4.914	50	50	50	170.10	36.00	2.40	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	2.87	1.2D + 1.0W 210°	50.0	65	141.37	0.00	0.00		0	0	2	Member			
H SAE - 2X2X0.125	1.51	1.2D + 1.0W 120°	36.0	58	15.55	0.00	0.00	0.00	0	0	10	Member			
D SOL - 5/8" SOLID	0.26	1.2D + 1.0W 90°	36.0	58	9.94	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	2.46	1.2D + 1.0W 210°	90.30	3	3	0.75" A325									

Section 24 – 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	Bear	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)				ΦR _n (kip)					
L SOL - 2" SOLID	-46.03	1.2D + 1.0W 120°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	62	Member X
H SAE - 2X2X0.125	-3.19	1.2D + 1.0W 330°	3	100	100	100	105.23	36.00	11.26	0.00	0.00	0	0	28	Member Z
D SOL - 5/8" SOLID	-1.44	1.2D + 1.0W N	4.914	50	50	50	170.10	36.00	2.40	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	4.34	1.2D + 1.0W 180°	50.0	65	141.37	0.00	0.00		0	0	3	Member			
H SAE - 2X2X0.125	1.45	1.2D + 1.0W 210°	36.0	58	15.55	0.00	0.00	0.00	0	0	9	Member			
D SOL - 5/8" SOLID	5.39	1.2D + 1.0W 330°	36.0	58	9.94	0.00	0.00	0.00	0	0	54	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 25 – 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 ΦR _{nv} (kip)	Bear ΦR _n (kip)	#	#	Use	Controls
	X			Y	Z					Bolt	Hole	%			
L SOL - 2" SOLID	-31.08	1.2D + 1.0W 120°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	42	Member X
H SAE - 2X2X0.125	-2.72	1.2D + 1.0W 330°	3	100	100	100	105.23	36.00	11.26	0.00	0.00	0	0	24	Member Z
D SOL - 5/8" SOLID	-0.53	1.2D + 1.0W N	4.914	50	50	50	170.10	36.00	2.40	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)						
H SAE - 2X2X0.125	0.93	1.2D + 1.0W 120°	36.0	58	15.55	0.00	0.00	0.00		0	0	6	Member

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

FORCE/STRESS SUMMARY												
D SOL - 5/8" SOLID	4.79	1.2D + 1.0W 330°	36.0	58	9.94	0.00	0.00	0.00	0	0	48	Member
Max Splice Forces	P _u		ΦR _{nt}	Use	Num	Bolt Type						
	(kip)	Load Case	(kip)	%	Bolts							

Section 26 – 300.0' to 320.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Φc Pn (kip)	Shear ΦRnv (kip)	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls	
L SOL - 2" SOLID	-26.28	1.2D + 1.0W 180°	3.892	100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	35	Member X
H SAE - 2X2X0.125	-1.26	1.2D + 1.0W 300°	3	100	100	100	105.23	36.00	11.26	0.00	0.00	0	0	11	Member Z
D SOL - 5/8" SOLID	-1.19	1.2D + 1.0W N	4.914	50	50	50	170.10	36.00	2.40	0.00	0.00	0	0	0	Member X
Member Tension	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	ΦtPn (kip)	Shear ΦRnv (kip)	Bear ΦRn (kip)	Blk Shear Φt Pn (kip)	# Bolt	# Hole	Use %	Controls			
L SOL - 2" SOLID	2.73	1.2D + 1.0W 240°	50.0	65	141.37	0.00	0.00		0	0	2	Member			
H SAE - 2X2X0.125	1.60	1.2D + 1.0W 240°	36.0	58	15.55	0.00	0.00	0.00	0	0	10	Member			
D SOL - 5/8" SOLID	3.99	1.2D + 1.0W 330°	36.0	58	9.94	0.00	0.00	0.00	0	0	40	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

Section 27 – 320.0' to 340.00'

										Shear	Bear															
Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Φc Pn (kip)	ΦRnv (kip)	ΦRn (kip)	# Bolt	# Hole	Use %	Controls												
	X			Y	Z																					
	L SOL - 2" SOLID			-13.01	1.2D + 1.0W 210°	3.892									100	100	100	93.41	50.00	74.70	0.00	0.00	0	0	17	Member X
	H SAU - 2X1.5X0.1875			-0.45	1.2D + 1.0W 60°	3									100	100	100	115.90	36.00	12.89	0.00	0.00	0	0	3	Member Z
	D SOL - 3/4" SOLID			-0.69	1.2D + 1.0W N	4.914									50	50	50	141.52	36.00	4.98	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														
L SOL - 2" SOLID	6.46	1.2D + 1.0W 60°	50.0	65	141.37	0.00	0.00		0	0	5	Member														
H SAU - 2X1.5X0.1875	0.96	1.2D + 1.0W 120°	36.0	58	20.09	0.00	0.00	0.00	0	0	5	Member														
D SOL - 3/4" SOLID	2.15	1.2D + 1.0W 330°	36.0	58	14.31	0.00	0.00	0.00	0	0	15	Member														
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type																				

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W Normal	51.95	7/16 EHS	A1	20	12.48	0.65	5
		7/16 EHS	A1b	20a	12.48	2.94	24
		7/16 EHS	A1a	20b	12.48	2.92	23
	104.16	7/16 EHS	A1	39	12.48	0.19	2
		7/16 EHS	A1b	39a	12.48	3.03	24
		7/16 EHS	A1a	39b	12.48	2.97	24
	158.00	7/16 EHS	A1	T3	12.48	0.83	7
		7/16 EHS	A1b	T3	12.48	3.05	24
		7/16 EHS	A1a	T3a	12.48	3.06	25
		7/16 EHS	A1b	T3a	12.48	3.08	25
		7/16 EHS	A1a	T3b	12.48	3.02	24
		7/16 EHS	A1	T3b	12.48	0.83	7
	218.00	7/16 EHS	A2	T4	12.48	0.36	3
		7/16 EHS	A2b	T4	12.48	4.27	34
		7/16 EHS	A2a	T4a	12.48	4.59	37
		7/16 EHS	A2b	T4a	12.48	4.57	37
		7/16 EHS	A2	T4b	12.48	0.36	3
		7/16 EHS	A2a	T4b	12.48	4.24	34
	271.95	1/2 EHS	A2	111	16.14	0.58	4
		1/2 EHS	A2b	111a	16.14	8.39	52
		1/2 EHS	A2a	111b	16.14	8.38	52
	328.05	9/16 EHS	A2	131	21	0.87	4
		9/16 EHS	A2b	131a	21	14.71	70
		9/16 EHS	A2a	131b	21	14.7	70
1.2D + 1.0W 60°	51.95	7/16 EHS	A1	20	12.48	1.41	11
		7/16 EHS	A1b	20a	12.48	1.41	11
		7/16 EHS	A1a	20b	12.48	3.75	30
	104.16	7/16 EHS	A1	39	12.48	1.36	11
		7/16 EHS	A1b	39a	12.48	1.34	11
		7/16 EHS	A1a	39b	12.48	4.26	34
	158.00	7/16 EHS	A1	T3	12.48	1.67	13
		7/16 EHS	A1b	T3	12.48	1.61	13
		7/16 EHS	A1b	T3a	12.48	1.59	13
		7/16 EHS	A1a	T3a	12.48	4.26	34
		7/16 EHS	A1a	T3b	12.48	4.29	34
		7/16 EHS	A1	T3b	12.48	1.64	13
	218.00	7/16 EHS	A2b	T4	12.48	2.12	17
		7/16 EHS	A2	T4	12.48	2.16	17
		7/16 EHS	A2a	T4a	12.48	5.45	44
		7/16 EHS	A2b	T4a	12.48	2.13	17
		7/16 EHS	A2	T4b	12.48	2.16	17
		7/16 EHS	A2a	T4b	12.48	5.49	44
	271.95	1/2 EHS	A2	111	16.14	2.51	16
		1/2 EHS	A2b	111a	16.14	2.44	15
		1/2 EHS	A2a	111b	16.14	10.22	63
	328.05	9/16 EHS	A2	131	21	3.04	14
		9/16 EHS	A2b	131a	21	2.96	14
		9/16 EHS	A2a	131b	21	16.85	80
1.2D + 1.0W 90°	51.95	7/16 EHS	A1	20	12.48	2.11	17
		7/16 EHS	A1b	20a	12.48	0.78	6
		7/16 EHS	A1a	20b	12.48	3.47	28
	104.16	7/16 EHS	A1	39	12.48	2.06	17
		7/16 EHS	A1b	39a	12.48	0.67	5
		7/16 EHS	A1a	39b	12.48	3.82	31
	158.00	7/16 EHS	A1	T3	12.48	2.29	18
		7/16 EHS	A1b	T3	12.48	1.06	9
		7/16 EHS	A1b	T3a	12.48	1.04	8
		7/16 EHS	A1a	T3a	12.48	3.81	30
		7/16 EHS	A1	T3b	12.48	2.28	18

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	218.00	7/16 EHS	A1a	T3b	12.48	3.9	31
		7/16 EHS	A2b	T4	12.48	0.94	8
		7/16 EHS	A2	T4	12.48	3.38	27
		7/16 EHS	A2b	T4a	12.48	0.88	7
		7/16 EHS	A2a	T4a	12.48	4.98	40
	271.95	7/16 EHS	A2	T4b	12.48	3.54	28
		7/16 EHS	A2a	T4b	12.48	5.38	43
		1/2 EHS	A2	111	16.14	5.63	35
		1/2 EHS	A2b	111a	16.14	0.96	6
		1/2 EHS	A2a	111b	16.14	10.02	62
	328.05	9/16 EHS	A2	131	21	9.24	44
		9/16 EHS	A2b	131a	21	1.2	6
		9/16 EHS	A2a	131b	21	17.11	81
1.2D + 1.0W 120°	51.95	7/16 EHS	A1	20	12.48	2.89	23
		7/16 EHS	A1b	20a	12.48	0.59	5
		7/16 EHS	A1a	20b	12.48	2.85	23
	104.16	7/16 EHS	A1	39	12.48	2.95	24
		7/16 EHS	A1b	39a	12.48	0.12	1
		7/16 EHS	A1a	39b	12.48	2.9	23
	158.00	7/16 EHS	A1	T3	12.48	3.05	24
		7/16 EHS	A1b	T3	12.48	0.78	6
		7/16 EHS	A1b	T3a	12.48	0.78	6
		7/16 EHS	A1a	T3a	12.48	2.95	24
		7/16 EHS	A1a	T3b	12.48	3.01	24
	218.00	7/16 EHS	A1	T3b	12.48	3.07	25
		7/16 EHS	A2	T4	12.48	4.32	35
		7/16 EHS	A2b	T4	12.48	0.26	2
		7/16 EHS	A2a	T4a	12.48	4.15	33
		7/16 EHS	A2b	T4a	12.48	0.26	2
	271.95	7/16 EHS	A2a	T4b	12.48	4.55	36
		7/16 EHS	A2	T4b	12.48	4.63	37
		1/2 EHS	A2	111	16.14	8.56	53
		1/2 EHS	A2b	111a	16.14	0.49	3
		1/2 EHS	A2a	111b	16.14	8.29	51
	328.05	9/16 EHS	A2	131	21	15.02	72
		9/16 EHS	A2b	131a	21	0.77	4
		9/16 EHS	A2a	131b	21	14.61	70
1.2D + 1.0W 180°	51.95	7/16 EHS	A1	20	12.48	3.79	30
		7/16 EHS	A1b	20a	12.48	1.37	11
		7/16 EHS	A1a	20b	12.48	1.37	11
	104.16	7/16 EHS	A1	39	12.48	4.3	34
		7/16 EHS	A1b	39a	12.48	1.3	10
		7/16 EHS	A1a	39b	12.48	1.3	10
	158.00	7/16 EHS	A1	T3	12.48	4.34	35
		7/16 EHS	A1b	T3	12.48	1.56	13
		7/16 EHS	A1a	T3a	12.48	1.57	13
		7/16 EHS	A1b	T3a	12.48	1.6	13
		7/16 EHS	A1a	T3b	12.48	1.55	12
	218.00	7/16 EHS	A1	T3b	12.48	4.33	35
		7/16 EHS	A2	T4	12.48	5.66	45
		7/16 EHS	A2b	T4	12.48	2.1	17
		7/16 EHS	A2a	T4a	12.48	2.09	17
		7/16 EHS	A2b	T4a	12.48	2.11	17
	271.95	7/16 EHS	A2	T4b	12.48	5.62	45
		7/16 EHS	A2a	T4b	12.48	2.1	17
		1/2 EHS	A2	111	16.14	10.5	65
		1/2 EHS	A2b	111a	16.14	2.41	15
		1/2 EHS	A2a	111b	16.14	2.41	15
	328.05	9/16 EHS	A2	131	21	17.28	82

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W 210°	51.95	9/16 EHS	A2b	131a	21	2.89	14
		9/16 EHS	A2a	131b	21	2.91	14
		7/16 EHS	A1	20	12.48	3.53	28
		7/16 EHS	A1b	20a	12.48	2.11	17
	104.16	7/16 EHS	A1a	20b	12.48	0.79	6
		7/16 EHS	A1	39	12.48	3.87	31
		7/16 EHS	A1b	39a	12.48	2.03	16
		7/16 EHS	A1a	39b	12.48	0.66	5
	158.00	7/16 EHS	A1b	T3	12.48	2.21	18
		7/16 EHS	A1	T3	12.48	3.94	32
		7/16 EHS	A1b	T3a	12.48	2.21	18
		7/16 EHS	A1a	T3a	12.48	1.04	8
	218.00	7/16 EHS	A1	T3b	12.48	3.89	31
		7/16 EHS	A1a	T3b	12.48	1.01	8
		7/16 EHS	A2	T4	12.48	5.54	44
		7/16 EHS	A2b	T4	12.48	3.49	28
	271.95	7/16 EHS	A2a	T4a	12.48	0.95	8
		7/16 EHS	A2b	T4a	12.48	3.31	27
		7/16 EHS	A2a	T4b	12.48	0.9	7
		7/16 EHS	A2	T4b	12.48	5.19	42
	328.05	1/2 EHS	A2	111	16.14	10.35	64
		1/2 EHS	A2b	111a	16.14	5.48	34
		1/2 EHS	A2a	111b	16.14	0.98	6
		9/16 EHS	A2	131	21	17.61	84
1.2D + 1.0W 240°	51.95	9/16 EHS	A2b	131a	21	9	43
		9/16 EHS	A2a	131b	21	1.22	6
		7/16 EHS	A1	20	12.48	2.93	24
		7/16 EHS	A1b	20a	12.48	2.91	23
	104.16	7/16 EHS	A1a	20b	12.48	0.65	5
		7/16 EHS	A1	39	12.48	2.96	24
		7/16 EHS	A1b	39a	12.48	2.96	24
		7/16 EHS	A1a	39b	12.48	0.11	1
	158.00	7/16 EHS	A1b	T3	12.48	3.02	24
		7/16 EHS	A1	T3	12.48	3.06	25
		7/16 EHS	A1a	T3a	12.48	0.77	6
		7/16 EHS	A1b	T3a	12.48	2.98	24
	218.00	7/16 EHS	A1a	T3b	12.48	0.77	6
		7/16 EHS	A1	T3b	12.48	3.04	24
		7/16 EHS	A2b	T4	12.48	4.54	36
		7/16 EHS	A2	T4	12.48	4.64	37
	271.95	7/16 EHS	A2b	T4a	12.48	4.17	33
		7/16 EHS	A2a	T4a	12.48	0.27	2
		7/16 EHS	A2	T4b	12.48	4.32	35
		7/16 EHS	A2a	T4b	12.48	0.27	2
	328.05	1/2 EHS	A2	111	16.14	8.57	53
		1/2 EHS	A2b	111a	16.14	8.31	52
		1/2 EHS	A2a	111b	16.14	0.5	3
		9/16 EHS	A2	131	21	15.02	72
1.2D + 1.0W 300°	51.95	9/16 EHS	A2b	131a	21	14.62	70
		9/16 EHS	A2a	131b	21	0.79	4
		7/16 EHS	A1	20	12.48	1.48	12
		7/16 EHS	A1b	20a	12.48	3.84	31
	104.16	7/16 EHS	A1a	20b	12.48	1.47	12
		7/16 EHS	A1	39	12.48	1.41	11
		7/16 EHS	A1b	39a	12.48	4.4	35
		7/16 EHS	A1a	39b	12.48	1.38	11
	158.00	7/16 EHS	A1	T3	12.48	1.67	13
		7/16 EHS	A1b	T3	12.48	4.36	35
		7/16 EHS	A1a	T3a	12.48	1.61	13

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W 330°	218.00	7/16 EHS	A1b	T3a	12.48	4.33	35
		7/16 EHS	A1	T3b	12.48	1.7	14
		7/16 EHS	A1a	T3b	12.48	1.63	13
		7/16 EHS	A2b	T4	12.48	5.56	45
		7/16 EHS	A2	T4	12.48	2.19	18
		7/16 EHS	A2b	T4a	12.48	5.48	44
	271.95	7/16 EHS	A2a	T4a	12.48	2.16	17
		7/16 EHS	A2a	T4b	12.48	2.15	17
		7/16 EHS	A2	T4b	12.48	2.21	18
		1/2 EHS	A2	111	16.14	2.56	16
		1/2 EHS	A2b	111a	16.14	10.28	64
		1/2 EHS	A2a	111b	16.14	2.49	15
	328.05	9/16 EHS	A2	131	21	3.08	15
		9/16 EHS	A2b	131a	21	16.91	81
		9/16 EHS	A2a	131b	21	3.02	14
	51.95	7/16 EHS	A1	20	12.48	0.87	7
		7/16 EHS	A1b	20a	12.48	3.57	29
		7/16 EHS	A1a	20b	12.48	2.17	17
	104.16	7/16 EHS	A1	39	12.48	0.75	6
		7/16 EHS	A1b	39a	12.48	3.97	32
		7/16 EHS	A1a	39b	12.48	2.09	17
	158.00	7/16 EHS	A1b	T3	12.48	3.92	31
		7/16 EHS	A1	T3	12.48	1.11	9
		7/16 EHS	A1b	T3a	12.48	3.96	32
	218.00	7/16 EHS	A1a	T3a	12.48	2.26	18
		7/16 EHS	A1	T3b	12.48	1.14	9
		7/16 EHS	A1a	T3b	12.48	2.25	18
	271.95	7/16 EHS	A2	T4	12.48	0.96	8
		7/16 EHS	A2b	T4	12.48	5.11	41
		7/16 EHS	A2b	T4a	12.48	5.38	43
1.2D + 1.0Di + 1.0Wi Normal	218.00	7/16 EHS	A2a	T4a	12.48	3.54	28
		7/16 EHS	A2	T4b	12.48	1.03	8
		7/16 EHS	A2a	T4b	12.48	3.34	27
		1/2 EHS	A2	111	16.14	1.06	7
		1/2 EHS	A2b	111a	16.14	10.12	63
		1/2 EHS	A2a	111b	16.14	5.53	34
	328.05	9/16 EHS	A2	131	21	1.31	6
		9/16 EHS	A2b	131a	21	17.21	82
		9/16 EHS	A2a	131b	21	9.08	43
	51.95	7/16 EHS	A1	20	12.48	2.74	22
		7/16 EHS	A1b	20a	12.48	3.09	25
		7/16 EHS	A1a	20b	12.48	3.08	25
	104.16	7/16 EHS	A1	39	12.48	2.53	20
		7/16 EHS	A1b	39a	12.48	2.98	24
		7/16 EHS	A1a	39b	12.48	2.94	24
	158.00	7/16 EHS	A1	T3	12.48	2.44	20
		7/16 EHS	A1b	T3	12.48	2.9	23
		7/16 EHS	A1a	T3a	12.48	2.87	23
	218.00	7/16 EHS	A1b	T3a	12.48	2.88	23
		7/16 EHS	A1a	T3b	12.48	2.89	23
		7/16 EHS	A1	T3b	12.48	2.45	20
	271.95	7/16 EHS	A2	T4	12.48	3.81	30
		7/16 EHS	A2b	T4	12.48	4.33	35
		7/16 EHS	A2a	T4a	12.48	4.32	35
	51.95	7/16 EHS	A2b	T4a	12.48	4.33	35
		7/16 EHS	A2	T4b	12.48	3.81	31
		7/16 EHS	A2a	T4b	12.48	4.33	35
	271.95	1/2 EHS	A2	111	16.14	4.31	27
		1/2 EHS	A2b	111a	16.14	5.28	33

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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°	328.05	1/2 EHS	A2a	111b	16.14	5.29	33
		9/16 EHS	A2	131	21	4.91	23
		9/16 EHS	A2b	131a	21	6.49	31
		9/16 EHS	A2a	131b	21	6.52	31
	51.95	7/16 EHS	A1	20	12.48	2.85	23
		7/16 EHS	A1b	20a	12.48	2.82	23
		7/16 EHS	A1a	20b	12.48	3.17	25
		7/16 EHS	A1	39	12.48	2.67	21
	104.16	7/16 EHS	A1b	39a	12.48	2.65	21
		7/16 EHS	A1a	39b	12.48	3.04	24
		7/16 EHS	A1	T3	12.48	2.61	21
		7/16 EHS	A1b	T3	12.48	2.51	20
1.2D + 1.0Di + 1.0Wi 90°	158.00	7/16 EHS	A1a	T3a	12.48	3.05	24
		7/16 EHS	A1b	T3a	12.48	2.48	20
		7/16 EHS	A1a	T3b	12.48	3.06	24
		7/16 EHS	A1	T3b	12.48	2.58	21
	218.00	7/16 EHS	A2	T4	12.48	3.95	32
		7/16 EHS	A2b	T4	12.48	3.88	31
		7/16 EHS	A2a	T4a	12.48	4.44	36
		7/16 EHS	A2b	T4a	12.48	3.88	31
	271.95	7/16 EHS	A2	T4b	12.48	3.95	32
		7/16 EHS	A2a	T4b	12.48	4.45	36
		1/2 EHS	A2	111	16.14	4.62	29
		1/2 EHS	A2b	111a	16.14	4.49	28
	328.05	1/2 EHS	A2a	111b	16.14	5.58	35
		9/16 EHS	A2	131	21	5.44	26
		9/16 EHS	A2b	131a	21	5.28	25
		9/16 EHS	A2a	131b	21	7.03	33
	51.95	7/16 EHS	A1	20	12.48	2.97	24
		7/16 EHS	A1b	20a	12.48	2.73	22
		7/16 EHS	A1a	20b	12.48	3.15	25
	104.16	7/16 EHS	A1	39	12.48	2.83	23
		7/16 EHS	A1b	39a	12.48	2.53	20
		7/16 EHS	A1a	39b	12.48	3.03	24
	158.00	7/16 EHS	A1	T3	12.48	2.81	23
		7/16 EHS	A1b	T3	12.48	2.39	19
		7/16 EHS	A1a	T3a	12.48	2.99	24
		7/16 EHS	A1b	T3a	12.48	2.39	19
	218.00	7/16 EHS	A1	T3b	12.48	2.79	22
		7/16 EHS	A1a	T3b	12.48	3	24
		7/16 EHS	A2	T4	12.48	4.19	34
		7/16 EHS	A2b	T4	12.48	3.76	30
1.2D + 1.0Di + 1.0Wi 120°	271.95	7/16 EHS	A2b	T4a	12.48	3.77	30
		7/16 EHS	A2a	T4a	12.48	4.42	35
		7/16 EHS	A2a	T4b	12.48	4.44	36
		7/16 EHS	A2	T4b	12.48	4.18	33
	328.05	1/2 EHS	A2	111	16.14	5.03	31
		1/2 EHS	A2b	111a	16.14	4.26	26
		1/2 EHS	A2a	111b	16.14	5.52	34
		9/16 EHS	A2	131	21	6.06	29
	51.95	9/16 EHS	A2b	131a	21	4.88	23
		9/16 EHS	A2a	131b	21	6.91	33
		7/16 EHS	A1	20	12.48	3.11	25
		7/16 EHS	A1b	20a	12.48	2.7	22
1.2D + 1.0Di + 1.0Wi 120°	104.16	7/16 EHS	A1a	20b	12.48	3.07	25
		7/16 EHS	A1	39	12.48	3	24
		7/16 EHS	A1b	39a	12.48	2.5	20
		7/16 EHS	A1a	39b	12.48	2.93	23
	158.00	7/16 EHS	A1	T3	12.48	3	24

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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 180°	218.00	7/16 EHS	A1b	T3	12.48	2.35	19
		7/16 EHS	A1a	T3a	12.48	2.89	23
		7/16 EHS	A1b	T3a	12.48	2.35	19
		7/16 EHS	A1a	T3b	12.48	2.88	23
		7/16 EHS	A1	T3b	12.48	2.99	24
		7/16 EHS	A2b	T4	12.48	3.74	30
		7/16 EHS	A2	T4	12.48	4.42	35
		7/16 EHS	A2a	T4a	12.48	4.32	35
	271.95	7/16 EHS	A2b	T4a	12.48	3.75	30
		7/16 EHS	A2a	T4b	12.48	4.33	35
		7/16 EHS	A2	T4b	12.48	4.42	35
		1/2 EHS	A2	111	16.14	5.44	34
	328.05	1/2 EHS	A2b	111a	16.14	4.19	26
		1/2 EHS	A2a	111b	16.14	5.29	33
		9/16 EHS	A2	131	21	6.68	32
		9/16 EHS	A2b	131a	21	4.75	23
	104.16	9/16 EHS	A2a	131b	21	6.52	31
		7/16 EHS	A1	20	12.48	3.21	26
		7/16 EHS	A1b	20a	12.48	2.82	23
		7/16 EHS	A1a	20b	12.48	2.81	23
		7/16 EHS	A1	39	12.48	3.13	25
		7/16 EHS	A1b	39a	12.48	2.63	21
		7/16 EHS	A1a	39b	12.48	2.59	21
		7/16 EHS	A1	T3	12.48	3.14	25
	218.00	7/16 EHS	A1b	T3	12.48	2.5	20
		7/16 EHS	A1a	T3a	12.48	2.51	20
		7/16 EHS	A1b	T3a	12.48	2.52	20
		7/16 EHS	A1a	T3b	12.48	2.5	20
		7/16 EHS	A1	T3b	12.48	3.14	25
		7/16 EHS	A2	T4	12.48	4.55	36
		7/16 EHS	A2b	T4	12.48	3.88	31
		7/16 EHS	A2a	T4a	12.48	3.87	31
	271.95	7/16 EHS	A2b	T4a	12.48	3.88	31
		7/16 EHS	A2	T4b	12.48	4.55	36
		7/16 EHS	A2a	T4b	12.48	3.87	31
		1/2 EHS	A2	111	16.14	5.75	36
		1/2 EHS	A2b	111a	16.14	4.49	28
		1/2 EHS	A2a	111b	16.14	4.5	28
		9/16 EHS	A2	131	21	7.23	34
		9/16 EHS	A2b	131a	21	5.27	25
	104.16	9/16 EHS	A2a	131b	21	5.3	25
		7/16 EHS	A1	20	12.48	3.19	26
		7/16 EHS	A1b	20a	12.48	2.95	24
		7/16 EHS	A1a	20b	12.48	2.73	22
		7/16 EHS	A1	39	12.48	3.1	25
		7/16 EHS	A1b	39a	12.48	2.8	22
		7/16 EHS	A1a	39b	12.48	2.5	20
		7/16 EHS	A1	T3	12.48	3.1	25
1.2D + 1.0Di + 1.0Wi 210°	218.00	7/16 EHS	A1b	T3	12.48	2.69	22
		7/16 EHS	A1b	T3a	12.48	2.71	22
		7/16 EHS	A1a	T3a	12.48	2.38	19
		7/16 EHS	A1	T3b	12.48	3.11	25
		7/16 EHS	A1a	T3b	12.48	2.39	19
		7/16 EHS	A2b	T4	12.48	4.1	33
		7/16 EHS	A2	T4	12.48	4.53	36
		7/16 EHS	A2a	T4a	12.48	3.75	30
	158.00	7/16 EHS	A2b	T4a	12.48	4.11	33
		7/16 EHS	A2	T4b	12.48	4.53	36
		7/16 EHS	A2a	T4b	12.48	3.76	30
	104.16	7/16 EHS	A1	20	12.48	3.19	26
		7/16 EHS	A1b	20a	12.48	2.95	24
		7/16 EHS	A1a	20b	12.48	2.73	22
		7/16 EHS	A1	39	12.48	3.1	25
		7/16 EHS	A1b	39a	12.48	2.8	22
		7/16 EHS	A1a	39b	12.48	2.5	20
		7/16 EHS	A1	T3	12.48	3.1	25
		7/16 EHS	A1b	T3	12.48	2.69	22

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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 240°	271.95	1/2 EHS	A2	111	16.14	5.68	35
		1/2 EHS	A2b	111a	16.14	4.89	30
		1/2 EHS	A2a	111b	16.14	4.26	26
	328.05	9/16 EHS	A2	131	21	7.1	34
		9/16 EHS	A2b	131a	21	5.88	28
		9/16 EHS	A2a	131b	21	4.91	23
	51.95	7/16 EHS	A1	20	12.48	3.12	25
		7/16 EHS	A1b	20a	12.48	3.09	25
		7/16 EHS	A1a	20b	12.48	2.71	22
	104.16	7/16 EHS	A1	39	12.48	3	24
		7/16 EHS	A1b	39a	12.48	2.98	24
		7/16 EHS	A1a	39b	12.48	2.47	20
	158.00	7/16 EHS	A1	T3	12.48	2.98	24
		7/16 EHS	A1b	T3	12.48	2.89	23
		7/16 EHS	A1b	T3a	12.48	2.89	23
		7/16 EHS	A1a	T3a	12.48	2.34	19
		7/16 EHS	A1a	T3b	12.48	2.35	19
	218.00	7/16 EHS	A1	T3b	12.48	3	24
		7/16 EHS	A2b	T4	12.48	4.33	35
		7/16 EHS	A2	T4	12.48	4.41	35
		7/16 EHS	A2a	T4a	12.48	3.74	30
		7/16 EHS	A2b	T4a	12.48	4.33	35
1.2D + 1.0Di + 1.0Wi 300°	271.95	7/16 EHS	A2a	T4b	12.48	3.74	30
		7/16 EHS	A2	T4b	12.48	4.42	35
		1/2 EHS	A2	111	16.14	5.44	34
		1/2 EHS	A2b	111a	16.14	5.28	33
		1/2 EHS	A2a	111b	16.14	4.21	26
	328.05	9/16 EHS	A2	131	21	6.69	32
		9/16 EHS	A2b	131a	21	6.49	31
		9/16 EHS	A2a	131b	21	4.79	23
	51.95	7/16 EHS	A1	20	12.48	2.86	23
		7/16 EHS	A1b	20a	12.48	3.2	26
		7/16 EHS	A1a	20b	12.48	2.82	23
	104.16	7/16 EHS	A1	39	12.48	2.67	21
		7/16 EHS	A1b	39a	12.48	3.12	25
		7/16 EHS	A1a	39b	12.48	2.61	21
	158.00	7/16 EHS	A1a	39b	12.48	2.61	21
		7/16 EHS	A1	T3	12.48	2.6	21
		7/16 EHS	A1b	T3	12.48	3.05	24
		7/16 EHS	A1a	T3a	12.48	2.5	20
		7/16 EHS	A1b	T3a	12.48	3.04	24
	218.00	7/16 EHS	A1a	T3b	12.48	2.52	20
		7/16 EHS	A1	T3b	12.48	2.62	21
		7/16 EHS	A2	T4	12.48	3.94	32
		7/16 EHS	A2b	T4	12.48	4.46	36
		7/16 EHS	A2a	T4a	12.48	3.87	31
1.2D + 1.0Di + 1.0Wi 330°	271.95	7/16 EHS	A2b	T4a	12.48	4.45	36
		7/16 EHS	A2	T4b	12.48	3.96	32
		7/16 EHS	A2a	T4b	12.48	3.88	31
	328.05	1/2 EHS	A2	111	16.14	4.63	29
		1/2 EHS	A2b	111a	16.14	5.58	35
		1/2 EHS	A2a	111b	16.14	4.51	28
	51.95	9/16 EHS	A2	131	21	5.45	26
		9/16 EHS	A2b	131a	21	7.02	33
		9/16 EHS	A2a	131b	21	5.32	25
	104.16	7/16 EHS	A1	20	12.48	2.77	22
		7/16 EHS	A1b	20a	12.48	3.18	25
		7/16 EHS	A1a	20b	12.48	2.95	24
	271.95	7/16 EHS	A1	39	12.48	2.56	21
		7/16 EHS	A1b	39a	12.48	3.09	25
		7/16 EHS	A1a	39a	12.48	3.09	25

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	158.00	7/16 EHS	A1a	39b	12.48	2.77	22
		7/16 EHS	A1	T3	12.48	2.49	20
		7/16 EHS	A1b	T3	12.48	3.01	24
		7/16 EHS	A1b	T3a	12.48	3	24
		7/16 EHS	A1a	T3a	12.48	2.68	22
		7/16 EHS	A1a	T3b	12.48	2.71	22
	218.00	7/16 EHS	A1	T3b	12.48	2.49	20
		7/16 EHS	A2	T4	12.48	3.83	31
		7/16 EHS	A2b	T4	12.48	4.43	35
		7/16 EHS	A2a	T4a	12.48	4.1	33
		7/16 EHS	A2b	T4a	12.48	4.44	36
		7/16 EHS	A2a	T4b	12.48	4.12	33
	271.95	7/16 EHS	A2	T4b	12.48	3.83	31
		1/2 EHS	A2	111	16.14	4.39	27
		1/2 EHS	A2b	111a	16.14	5.51	34
	328.05	1/2 EHS	A2a	111b	16.14	4.91	30
		9/16 EHS	A2	131	21	5.05	24
		9/16 EHS	A2b	131a	21	6.88	33
	1.2D + 1.0Ev + 1.0Eh Normal	9/16 EHS	A2a	131b	21	5.93	28
		7/16 EHS	A1	20	12.48	2.02	16
		7/16 EHS	A1b	20a	12.48	2.01	16
		7/16 EHS	A1a	20b	12.48	2.01	16
	104.16	7/16 EHS	A1	39	12.48	1.89	15
		7/16 EHS	A1b	39a	12.48	1.89	15
		7/16 EHS	A1a	39b	12.48	1.86	15
	158.00	7/16 EHS	A1	T3	12.48	1.79	14
		7/16 EHS	A1b	T3	12.48	1.79	14
		7/16 EHS	A1a	T3a	12.48	1.77	14
		7/16 EHS	A1b	T3a	12.48	1.79	14
		7/16 EHS	A1a	T3b	12.48	1.77	14
		7/16 EHS	A1	T3b	12.48	1.79	14
	218.00	7/16 EHS	A2	T4	12.48	1.9	15
		7/16 EHS	A2b	T4	12.48	1.99	16
		7/16 EHS	A2a	T4a	12.48	2	16
		7/16 EHS	A2b	T4a	12.48	2	16
		7/16 EHS	A2	T4b	12.48	1.9	15
		7/16 EHS	A2a	T4b	12.48	1.99	16
	271.95	1/2 EHS	A2	111	16.14	2.25	14
		1/2 EHS	A2b	111a	16.14	2.65	16
		1/2 EHS	A2a	111b	16.14	2.66	16
	328.05	9/16 EHS	A2	131	21	2.7	13
		9/16 EHS	A2b	131a	21	3.58	17
		9/16 EHS	A2a	131b	21	3.58	17
	1.2D + 1.0Ev + 1.0Eh 60°	7/16 EHS	A1	20	12.48	2.03	16
		7/16 EHS	A1b	20a	12.48	2	16
		7/16 EHS	A1a	20b	12.48	2.01	16
	104.16	7/16 EHS	A1	39	12.48	1.89	15
		7/16 EHS	A1b	39a	12.48	1.87	15
		7/16 EHS	A1a	39b	12.48	1.87	15
	158.00	7/16 EHS	A1	T3	12.48	1.8	14
		7/16 EHS	A1b	T3	12.48	1.77	14
		7/16 EHS	A1a	T3a	12.48	1.79	14
		7/16 EHS	A1b	T3a	12.48	1.77	14
		7/16 EHS	A1a	T3b	12.48	1.79	14
		7/16 EHS	A1	T3b	12.48	1.8	14
	218.00	7/16 EHS	A2	T4	12.48	1.94	16
		7/16 EHS	A2b	T4	12.48	1.9	15
		7/16 EHS	A2a	T4a	12.48	2.03	16
		7/16 EHS	A2b	T4a	12.48	1.91	15

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	271.95	7/16 EHS	A2	T4b	12.48	1.95	16
		7/16 EHS	A2a	T4b	12.48	2.03	16
		1/2 EHS	A2	111	16.14	2.41	15
	328.05	1/2 EHS	A2b	111a	16.14	2.34	15
		1/2 EHS	A2a	111b	16.14	2.8	17
		9/16 EHS	A2	131	21	3.01	14
		9/16 EHS	A2b	131a	21	2.93	14
		9/16 EHS	A2a	131b	21	3.88	18
	51.95	7/16 EHS	A1	20	12.48	2.03	16
		7/16 EHS	A1b	20a	12.48	2	16
		7/16 EHS	A1a	20b	12.48	2.01	16
	104.16	7/16 EHS	A1	39	12.48	1.9	15
		7/16 EHS	A1b	39a	12.48	1.87	15
		7/16 EHS	A1a	39b	12.48	1.87	15
	158.00	7/16 EHS	A1	T3	12.48	1.81	15
		7/16 EHS	A1b	T3	12.48	1.76	14
		7/16 EHS	A1a	T3a	12.48	1.78	14
	218.00	7/16 EHS	A1b	T3a	12.48	1.76	14
		7/16 EHS	A1	T3b	12.48	1.81	15
		7/16 EHS	A1a	T3b	12.48	1.78	14
		7/16 EHS	A2	T4	12.48	1.98	16
		7/16 EHS	A2b	T4	12.48	1.87	15
		7/16 EHS	A2b	T4a	12.48	1.88	15
		7/16 EHS	A2a	T4a	12.48	2.01	16
		7/16 EHS	A2	T4b	12.48	2	16
		7/16 EHS	A2a	T4b	12.48	2.02	16
	271.95	1/2 EHS	A2	111	16.14	2.56	16
		1/2 EHS	A2b	111a	16.14	2.23	14
		1/2 EHS	A2a	111b	16.14	2.76	17
	328.05	9/16 EHS	A2	131	21	3.33	16
		9/16 EHS	A2b	131a	21	2.7	13
		9/16 EHS	A2a	131b	21	3.79	18
1.2D + 1.0Ev + 1.0Eh 120°	51.95	7/16 EHS	A1	20	12.48	2.04	16
		7/16 EHS	A1b	20a	12.48	1.99	16
		7/16 EHS	A1a	20b	12.48	2.01	16
	104.16	7/16 EHS	A1	39	12.48	1.91	15
		7/16 EHS	A1b	39a	12.48	1.86	15
		7/16 EHS	A1a	39b	12.48	1.86	15
	158.00	7/16 EHS	A1	T3	12.48	1.82	15
		7/16 EHS	A1b	T3	12.48	1.76	14
		7/16 EHS	A1b	T3a	12.48	1.76	14
		7/16 EHS	A1a	T3a	12.48	1.77	14
		7/16 EHS	A1a	T3b	12.48	1.78	14
		7/16 EHS	A1	T3b	12.48	1.83	15
	218.00	7/16 EHS	A2	T4	12.48	2.02	16
		7/16 EHS	A2b	T4	12.48	1.86	15
		7/16 EHS	A2a	T4a	12.48	1.98	16
		7/16 EHS	A2b	T4a	12.48	1.86	15
		7/16 EHS	A2a	T4b	12.48	1.99	16
1.2D + 1.0Ev + 1.0Eh 180°	271.95	7/16 EHS	A2	T4b	12.48	2.04	16
		1/2 EHS	A2	111	16.14	2.71	17
		1/2 EHS	A2b	111a	16.14	2.19	14
	328.05	1/2 EHS	A2a	111b	16.14	2.65	16
		9/16 EHS	A2	131	21	3.65	17
		9/16 EHS	A2b	131a	21	2.62	12
	51.95	9/16 EHS	A2a	131b	21	3.56	17
		7/16 EHS	A1	20	12.48	2.04	16
		7/16 EHS	A1b	20a	12.48	2	16
		7/16 EHS	A1a	20b	12.48	2	16

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	104.16	7/16 EHS	A1	39	12.48	1.91	15
		7/16 EHS	A1b	39a	12.48	1.87	15
		7/16 EHS	A1a	39b	12.48	1.85	15
	158.00	7/16 EHS	A1	T3	12.48	1.84	15
		7/16 EHS	A1b	T3	12.48	1.77	14
		7/16 EHS	A1b	T3a	12.48	1.77	14
		7/16 EHS	A1a	T3a	12.48	1.75	14
		7/16 EHS	A1a	T3b	12.48	1.75	14
		7/16 EHS	A1	T3b	12.48	1.84	15
	218.00	7/16 EHS	A2	T4	12.48	2.08	17
		7/16 EHS	A2b	T4	12.48	1.91	15
		7/16 EHS	A2a	T4a	12.48	1.89	15
		7/16 EHS	A2b	T4a	12.48	1.9	15
		7/16 EHS	A2a	T4b	12.48	1.91	15
		7/16 EHS	A2	T4b	12.48	2.08	17
	271.95	1/2 EHS	A2	111	16.14	2.88	18
		1/2 EHS	A2b	111a	16.14	2.33	14
		1/2 EHS	A2a	111b	16.14	2.34	14
	328.05	9/16 EHS	A2	131	21	3.99	19
		9/16 EHS	A2b	131a	21	2.91	14
		9/16 EHS	A2a	131b	21	2.92	14
		9/16 EHS	A2a	131b	21	2.92	14
1.2D + 1.0Ev + 1.0Eh 210°	51.95	7/16 EHS	A1	20	12.48	2.04	16
		7/16 EHS	A1b	20a	12.48	2	16
		7/16 EHS	A1a	20b	12.48	1.99	16
	104.16	7/16 EHS	A1	39	12.48	1.91	15
		7/16 EHS	A1b	39a	12.48	1.88	15
		7/16 EHS	A1a	39b	12.48	1.84	15
	158.00	7/16 EHS	A1	T3	12.48	1.83	15
		7/16 EHS	A1b	T3	12.48	1.78	14
		7/16 EHS	A1a	T3a	12.48	1.74	14
		7/16 EHS	A1b	T3a	12.48	1.78	14
		7/16 EHS	A1	T3b	12.48	1.83	15
		7/16 EHS	A1a	T3b	12.48	1.74	14
	218.00	7/16 EHS	A2	T4	12.48	2.07	17
		7/16 EHS	A2b	T4	12.48	1.96	16
		7/16 EHS	A2b	T4a	12.48	1.94	16
		7/16 EHS	A2a	T4a	12.48	1.87	15
		7/16 EHS	A2	T4b	12.48	2.06	17
		7/16 EHS	A2a	T4b	12.48	1.88	15
	271.95	1/2 EHS	A2	111	16.14	2.83	18
		1/2 EHS	A2b	111a	16.14	2.49	15
		1/2 EHS	A2a	111b	16.14	2.24	14
	328.05	9/16 EHS	A2	131	21	3.89	19
		9/16 EHS	A2b	131a	21	3.24	15
		9/16 EHS	A2a	131b	21	2.71	13
		9/16 EHS	A2a	131b	21	2.71	13
1.2D + 1.0Ev + 1.0Eh 240°	51.95	7/16 EHS	A1	20	12.48	2.04	16
		7/16 EHS	A1b	20a	12.48	2.01	16
		7/16 EHS	A1a	20b	12.48	1.99	16
	104.16	7/16 EHS	A1	39	12.48	1.91	15
		7/16 EHS	A1b	39a	12.48	1.89	15
		7/16 EHS	A1a	39b	12.48	1.84	15
	158.00	7/16 EHS	A1b	T3	12.48	1.79	14
		7/16 EHS	A1	T3	12.48	1.82	15
		7/16 EHS	A1a	T3a	12.48	1.74	14
		7/16 EHS	A1b	T3a	12.48	1.79	14
		7/16 EHS	A1a	T3b	12.48	1.74	14
		7/16 EHS	A1	T3b	12.48	1.82	15
	218.00	7/16 EHS	A2	T4	12.48	2.04	16
		7/16 EHS	A2b	T4	12.48	2	16
		7/16 EHS	A2b	T4	12.48	2	16
		7/16 EHS	A2b	T4	12.48	2	16

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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 300°	271.95	7/16 EHS	A2a	T4a	12.48	1.86	15
		7/16 EHS	A2b	T4a	12.48	1.99	16
		7/16 EHS	A2a	T4b	12.48	1.86	15
		7/16 EHS	A2	T4b	12.48	2.03	16
	328.05	1/2 EHS	A2	111	16.14	2.72	17
		1/2 EHS	A2b	111a	16.14	2.65	16
		1/2 EHS	A2a	111b	16.14	2.2	14
		9/16 EHS	A2	131	21	3.66	17
	51.95	9/16 EHS	A2b	131a	21	3.57	17
		9/16 EHS	A2a	131b	21	2.63	13
		7/16 EHS	A1	20	12.48	2.03	16
		7/16 EHS	A1b	20a	12.48	2.01	16
	104.16	7/16 EHS	A1a	20b	12.48	2	16
		7/16 EHS	A1	39	12.48	1.89	15
		7/16 EHS	A1b	39a	12.48	1.89	15
		7/16 EHS	A1a	39b	12.48	1.85	15
	158.00	7/16 EHS	A1	T3	12.48	1.8	14
		7/16 EHS	A1b	T3	12.48	1.81	14
		7/16 EHS	A1b	T3a	12.48	1.81	14
		7/16 EHS	A1a	T3a	12.48	1.75	14
	218.00	7/16 EHS	A1a	T3b	12.48	1.75	14
		7/16 EHS	A1	T3b	12.48	1.8	14
		7/16 EHS	A2	T4	12.48	1.95	16
		7/16 EHS	A2b	T4	12.48	2.04	16
	271.95	7/16 EHS	A2a	T4a	12.48	1.91	15
		7/16 EHS	A2b	T4a	12.48	2.04	16
		7/16 EHS	A2a	T4b	12.48	1.9	15
		7/16 EHS	A2	T4b	12.48	1.94	16
1.2D + 1.0Ev + 1.0Eh 330°	328.05	1/2 EHS	A2	111	16.14	2.41	15
		1/2 EHS	A2b	111a	16.14	2.8	17
		1/2 EHS	A2a	111b	16.14	2.35	15
		9/16 EHS	A2	131	21	3.02	14
	51.95	9/16 EHS	A2b	131a	21	3.89	19
		9/16 EHS	A2a	131b	21	2.94	14
		7/16 EHS	A1	20	12.48	2.02	16
		7/16 EHS	A1b	20a	12.48	2.01	16
	104.16	7/16 EHS	A1a	20b	12.48	2	16
		7/16 EHS	A1	39	12.48	1.89	15
		7/16 EHS	A1b	39a	12.48	1.89	15
		7/16 EHS	A1a	39b	12.48	1.86	15
	158.00	7/16 EHS	A1	T3	12.48	1.79	14
		7/16 EHS	A1b	T3	12.48	1.8	14
		7/16 EHS	A1a	T3a	12.48	1.76	14
		7/16 EHS	A1b	T3a	12.48	1.8	14
	218.00	7/16 EHS	A1a	T3b	12.48	1.76	14
		7/16 EHS	A1	T3b	12.48	1.79	14
		7/16 EHS	A2	T4	12.48	1.92	15
		7/16 EHS	A2b	T4	12.48	2.02	16
	271.95	7/16 EHS	A2b	T4a	12.48	2.03	16
		7/16 EHS	A2a	T4a	12.48	1.95	16
		7/16 EHS	A2	T4b	12.48	1.91	15
		7/16 EHS	A2a	T4b	12.48	1.94	16
1.0D + 1.0W Service Normal	328.05	1/2 EHS	A2	111	16.14	2.3	14
		1/2 EHS	A2b	111a	16.14	2.76	17
		1/2 EHS	A2a	111b	16.14	2.5	16
		9/16 EHS	A2	131	21	2.79	13
	51.95	9/16 EHS	A2b	131a	21	3.81	18
		9/16 EHS	A2a	131b	21	3.25	15
		7/16 EHS	A1	20	12.48	1.56	12

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
		7/16 EHS	A1b	20a	12.48	2.3	18
		7/16 EHS	A1a	20b	12.48	2.29	18
		7/16 EHS	A1	39	12.48	1.32	11
		7/16 EHS	A1b	39a	12.48	2.26	18
		7/16 EHS	A1a	39b	12.48	2.23	18
		7/16 EHS	A1b	T3	12.48	2.16	17
		7/16 EHS	A1	T3	12.48	1.34	11
		7/16 EHS	A1a	T3a	12.48	2.11	17
		7/16 EHS	A1b	T3a	12.48	2.13	17
		7/16 EHS	A1	T3b	12.48	1.34	11
		7/16 EHS	A1a	T3b	12.48	2.13	17
		7/16 EHS	A2b	T4	12.48	2.44	20
		7/16 EHS	A2	T4	12.48	1.37	11
		7/16 EHS	A2b	T4a	12.48	2.45	20
		7/16 EHS	A2a	T4a	12.48	2.45	20
		7/16 EHS	A2a	T4b	12.48	2.42	19
		7/16 EHS	A2	T4b	12.48	1.38	11
		1/2 EHS	A2	111	16.14	1.09	7
		1/2 EHS	A2b	111a	16.14	3.47	22
		1/2 EHS	A2a	111b	16.14	3.47	21
		9/16 EHS	A2	131	21	0.74	4
		9/16 EHS	A2b	131a	21	4.92	23
		9/16 EHS	A2a	131b	21	4.92	23
1.0D + 1.0W Service 60°		7/16 EHS	A1	20	12.48	1.8	14
		7/16 EHS	A1b	20a	12.48	1.78	14
		7/16 EHS	A1a	20b	12.48	2.49	20
		7/16 EHS	A1	39	12.48	1.64	13
		7/16 EHS	A1b	39a	12.48	1.61	13
		7/16 EHS	A1a	39b	12.48	2.5	20
		7/16 EHS	A1	T3	12.48	1.63	13
		7/16 EHS	A1b	T3	12.48	1.59	13
		7/16 EHS	A1a	T3a	12.48	2.41	19
		7/16 EHS	A1b	T3a	12.48	1.58	13
		7/16 EHS	A1a	T3b	12.48	2.42	19
		7/16 EHS	A1	T3b	12.48	1.61	13
		7/16 EHS	A2	T4	12.48	1.79	14
		7/16 EHS	A2b	T4	12.48	1.75	14
		7/16 EHS	A2a	T4a	12.48	2.77	22
		7/16 EHS	A2b	T4a	12.48	1.76	14
		7/16 EHS	A2	T4b	12.48	1.79	14
		7/16 EHS	A2a	T4b	12.48	2.78	22
		1/2 EHS	A2	111	16.14	2.06	13
		1/2 EHS	A2b	111a	16.14	2	12
		1/2 EHS	A2a	111b	16.14	4.35	27
		9/16 EHS	A2	131	21	2.44	12
		9/16 EHS	A2b	131a	21	2.37	11
		9/16 EHS	A2a	131b	21	6.57	31
1.0D + 1.0W Service 90°		7/16 EHS	A1	20	12.48	2.05	16
		7/16 EHS	A1b	20a	12.48	1.58	13
		7/16 EHS	A1a	20b	12.48	2.43	19
		7/16 EHS	A1	39	12.48	1.93	15
		7/16 EHS	A1b	39a	12.48	1.38	11
		7/16 EHS	A1a	39b	12.48	2.42	19
		7/16 EHS	A1	T3	12.48	1.88	15
		7/16 EHS	A1b	T3	12.48	1.4	11
		7/16 EHS	A1a	T3a	12.48	2.33	19
		7/16 EHS	A1b	T3a	12.48	1.41	11
		7/16 EHS	A1a	T3b	12.48	2.33	19
		7/16 EHS	A1	T3b	12.48	1.86	15

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	218.00	7/16 EHS	A2	T4	12.48	2.14	17
		7/16 EHS	A2b	T4	12.48	1.43	11
		7/16 EHS	A2a	T4a	12.48	2.65	21
		7/16 EHS	A2b	T4a	12.48	1.46	12
		7/16 EHS	A2	T4b	12.48	2.15	17
	271.95	7/16 EHS	A2a	T4b	12.48	2.7	22
		1/2 EHS	A2	111	16.14	2.81	17
		1/2 EHS	A2b	111a	16.14	1.31	8
	328.05	1/2 EHS	A2a	111b	16.14	4.1	25
		9/16 EHS	A2	131	21	3.74	18
		9/16 EHS	A2b	131a	21	1.28	6
	51.95	9/16 EHS	A2a	131b	21	6.11	29
		7/16 EHS	A1	20	12.48	2.29	18
		7/16 EHS	A1b	20a	12.48	1.5	12
1.0D + 1.0W Service 120°	104.16	7/16 EHS	A1a	20b	12.48	2.26	18
		7/16 EHS	A1	39	12.48	2.25	18
		7/16 EHS	A1b	39a	12.48	1.27	10
	158.00	7/16 EHS	A1a	39b	12.48	2.2	18
		7/16 EHS	A1b	T3	12.48	1.3	10
		7/16 EHS	A1	T3	12.48	2.18	17
	218.00	7/16 EHS	A1a	T3a	12.48	2.11	17
		7/16 EHS	A1b	T3a	12.48	1.3	10
		7/16 EHS	A1a	T3b	12.48	2.1	17
		7/16 EHS	A1	T3b	12.48	2.16	17
		7/16 EHS	A2b	T4	12.48	1.32	11
	271.95	7/16 EHS	A2	T4	12.48	2.49	20
		7/16 EHS	A2b	T4a	12.48	1.34	11
		7/16 EHS	A2a	T4a	12.48	2.41	19
		7/16 EHS	A2a	T4b	12.48	2.45	20
		7/16 EHS	A2	T4b	12.48	2.5	20
	328.05	1/2 EHS	A2	111	16.14	3.56	22
		1/2 EHS	A2b	111a	16.14	1.01	6
		1/2 EHS	A2a	111b	16.14	3.46	21
1.0D + 1.0W Service 180°	51.95	9/16 EHS	A2	131	21	5.05	24
		9/16 EHS	A2b	131a	21	0.7	3
		9/16 EHS	A2a	131b	21	4.92	23
	104.16	7/16 EHS	A1	20	12.48	2.52	20
		7/16 EHS	A1b	20a	12.48	1.76	14
		7/16 EHS	A1a	20b	12.48	1.77	14
	158.00	7/16 EHS	A1	39	12.48	2.54	20
		7/16 EHS	A1b	39a	12.48	1.6	13
		7/16 EHS	A1a	39b	12.48	1.58	13
		7/16 EHS	A1b	T3	12.48	1.56	13
		7/16 EHS	A1	T3	12.48	2.46	20
	218.00	7/16 EHS	A1a	T3a	12.48	1.56	13
		7/16 EHS	A1b	T3a	12.48	1.58	13
		7/16 EHS	A1a	T3b	12.48	1.55	12
		7/16 EHS	A1	T3b	12.48	2.46	20
		7/16 EHS	A2	T4	12.48	2.85	23
	271.95	7/16 EHS	A2b	T4	12.48	1.74	14
		7/16 EHS	A2a	T4a	12.48	1.73	14
		7/16 EHS	A2b	T4a	12.48	1.74	14
		7/16 EHS	A2	T4b	12.48	2.84	23
		7/16 EHS	A2a	T4b	12.48	1.74	14
	328.05	1/2 EHS	A2	111	16.14	4.47	28
		1/2 EHS	A2b	111a	16.14	1.98	12
		1/2 EHS	A2a	111b	16.14	1.98	12
		9/16 EHS	A2	131	21	6.72	32
		9/16 EHS	A2b	131a	21	2.33	11

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.0D + 1.0W Service 210°	51.95	9/16 EHS	A2a	131b	21	2.34	11
		7/16 EHS	A1	20	12.48	2.47	20
		7/16 EHS	A1b	20a	12.48	2.02	16
	104.16	7/16 EHS	A1a	20b	12.48	1.59	13
		7/16 EHS	A1	39	12.48	2.47	20
		7/16 EHS	A1b	39a	12.48	1.91	15
	158.00	7/16 EHS	A1a	39b	12.48	1.36	11
		7/16 EHS	A1b	T3	12.48	1.81	14
		7/16 EHS	A1	T3	12.48	2.37	19
	218.00	7/16 EHS	A1a	T3a	12.48	1.38	11
		7/16 EHS	A1b	T3a	12.48	1.83	15
		7/16 EHS	A1	T3b	12.48	2.38	19
	271.95	7/16 EHS	A1a	T3b	12.48	1.38	11
		7/16 EHS	A2	T4	12.48	2.76	22
		7/16 EHS	A2b	T4	12.48	2.1	17
	328.05	7/16 EHS	A2a	T4a	12.48	1.43	11
		7/16 EHS	A2b	T4a	12.48	2.09	17
		7/16 EHS	A2a	T4b	12.48	1.45	12
1.0D + 1.0W Service 240°	51.95	7/16 EHS	A2	T4b	12.48	2.73	22
		1/2 EHS	A2	111	16.14	4.2	26
		1/2 EHS	A2b	111a	16.14	2.72	17
	104.16	1/2 EHS	A2a	111b	16.14	1.32	8
		9/16 EHS	A2	131	21	6.25	30
		9/16 EHS	A2b	131a	21	3.62	17
	158.00	9/16 EHS	A2a	131b	21	1.29	6
		7/16 EHS	A1	20	12.48	2.31	19
		7/16 EHS	A1b	20a	12.48	2.28	18
	218.00	7/16 EHS	A1a	20b	12.48	1.53	12
		7/16 EHS	A1	39	12.48	2.26	18
		7/16 EHS	A1b	39a	12.48	2.24	18
	271.95	7/16 EHS	A1a	39b	12.48	1.27	10
		7/16 EHS	A1	T3	12.48	2.16	17
		7/16 EHS	A1b	T3	12.48	2.12	17
	328.05	7/16 EHS	A1a	T3a	12.48	1.28	10
		7/16 EHS	A1b	T3a	12.48	2.13	17
		7/16 EHS	A1	T3b	12.48	2.18	17
1.0D + 1.0W Service 300°	51.95	7/16 EHS	A1a	T3b	12.48	1.28	10
		7/16 EHS	A2b	T4	12.48	2.45	20
		7/16 EHS	A2	T4	12.48	2.5	20
	104.16	7/16 EHS	A2a	T4a	12.48	1.33	11
		7/16 EHS	A2b	T4a	12.48	2.42	19
		7/16 EHS	A2	T4b	12.48	2.48	20
	158.00	7/16 EHS	A2a	T4b	12.48	1.33	11
		1/2 EHS	A2	111	16.14	3.57	22
		1/2 EHS	A2b	111a	16.14	3.47	21
	218.00	1/2 EHS	A2a	111b	16.14	1.04	6
		9/16 EHS	A2	131	21	5.06	24
		9/16 EHS	A2b	131a	21	4.92	23
	271.95	9/16 EHS	A2a	131b	21	0.74	4
		7/16 EHS	A1	20	12.48	1.82	15
		7/16 EHS	A1b	20a	12.48	2.52	20

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
	218.00	7/16 EHS	A1a	T3b	12.48	1.58	13
		7/16 EHS	A1	T3b	12.48	1.64	13
		7/16 EHS	A2	T4	12.48	1.79	14
		7/16 EHS	A2b	T4	12.48	2.8	22
		7/16 EHS	A2a	T4a	12.48	1.76	14
		7/16 EHS	A2b	T4a	12.48	2.78	22
	271.95	7/16 EHS	A2	T4b	12.48	1.8	14
		7/16 EHS	A2a	T4b	12.48	1.75	14
		1/2 EHS	A2	111	16.14	2.07	13
		1/2 EHS	A2b	111a	16.14	4.39	27
		1/2 EHS	A2a	111b	16.14	2.02	13
	328.05	9/16 EHS	A2	131	21	2.46	12
		9/16 EHS	A2b	131a	21	6.62	32
		9/16 EHS	A2a	131b	21	2.4	11
1.0D + 1.0W Service 330°	51.95	7/16 EHS	A1	20	12.48	1.64	13
		7/16 EHS	A1b	20a	12.48	2.46	20
		7/16 EHS	A1a	20b	12.48	2.05	16
	104.16	7/16 EHS	A1	39	12.48	1.42	11
		7/16 EHS	A1b	39a	12.48	2.48	20
		7/16 EHS	A1a	39b	12.48	1.91	15
	158.00	7/16 EHS	A1	T3	12.48	1.44	12
		7/16 EHS	A1b	T3	12.48	2.37	19
		7/16 EHS	A1b	T3a	12.48	2.36	19
	218.00	7/16 EHS	A1a	T3a	12.48	1.81	15
		7/16 EHS	A1a	T3b	12.48	1.83	15
		7/16 EHS	A1	T3b	12.48	1.45	12
		7/16 EHS	A2	T4	12.48	1.49	12
		7/16 EHS	A2b	T4	12.48	2.69	22
		7/16 EHS	A2a	T4a	12.48	2.12	17
		7/16 EHS	A2b	T4a	12.48	2.7	22
		7/16 EHS	A2a	T4b	12.48	2.1	17
		7/16 EHS	A2	T4b	12.48	1.49	12
	271.95	1/2 EHS	A2	111	16.14	1.39	9
		1/2 EHS	A2b	111a	16.14	4.13	26
		1/2 EHS	A2a	111b	16.14	2.76	17
	328.05	9/16 EHS	A2	131	21	1.36	6
		9/16 EHS	A2b	131a	21	6.15	29
		9/16 EHS	A2a	131b	21	3.68	18

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

MAXIMUM CABLE FORCES SUMMARY

Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W 300°	51.95	7/16 EHS	A1b	20a	12.48	3.84	31
1.2D + 1.0W 300°	104.16	7/16 EHS	A1b	39a	12.48	4.40	35
1.2D + 1.0W 180°	158.00	7/16 EHS	A1	T3	12.48	4.34	35
1.2D + 1.0W 180°	218.00	7/16 EHS	A2	T4	12.48	5.66	45
1.2D + 1.0W 180°	271.95	1/2 EHS	A2	111	16.14	10.50	65
1.2D + 1.0W 210°	328.05	9/16 EHS	A2	131	21.00	17.61	84

MAXIMUM TORQUE ARM STRESS SUMMARY

Load Case	Elevation (ft)	Member	Type	Compression (%)	Tension (%)
1.2D + 1.0Di + 1.0Wi Normal	52.00	PL 3 x 0.375	Horiz	0	10
1.2D + 1.0Di + 1.0Wi Normal	104.00	PL 3 x 0.375	Horiz	0	8.7
1.2D + 1.0W 180°	158.00	3.5X3.5X0.375	Lower Kicker	7.9	0
1.2D + 1.0W 300°	158.00	3.5X3.5X0.375	Torque Arm	0	3.6
1.2D + 1.0W 210°	218.00	3X3X0.25	Lower Kicker	21	0
1.2D + 1.0W 330°	218.00	3X3X0.25	Torque Arm	0	16.6
1.2D + 1.0W Normal	272.00	PL 3 x 0.375	Horiz	0	10.2
1.2D + 1.0W Normal	328.00	PL 3 x 0.375	Horiz	0	15.4

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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	160.00	0.0549	0.0016	0.0492	0.0492
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	216.00	0.0935	-0.0068	0.0501	0.0506
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	300.27	0.3404	-0.0869	0.2316	0.2472
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	304.16	0.3539	-0.0920	0.1904	0.2115
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	315.84	0.3913	-0.1047	0.1849	0.2123
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	319.73	0.4023	-0.1047	0.1281	0.1652
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	335.84	0.4489	-0.1054	0.1753	0.2045
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	160.00	0.0637	-0.0095	0.0615	0.0622
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	216.00	0.1141	-0.0178	0.0621	0.0642
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	300.27	0.3696	-0.1216	0.2255	0.2562
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	304.16	0.3828	-0.1278	0.1837	0.2238
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	315.84	0.4191	-0.1431	0.1690	0.2208
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	319.73	0.4296	-0.1433	0.1183	0.1857
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	335.84	0.4742	-0.1444	0.1662	0.2202
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	160.00	0.0503	-0.0056	0.0423	0.0426
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	216.00	0.0806	-0.0086	0.0398	0.0408
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	300.27	0.3221	-0.0527	0.2221	0.2283
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	304.16	0.3352	-0.0554	0.1818	0.1901
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	315.84	0.3711	-0.0621	0.1676	0.1784
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	319.73	0.3816	-0.0616	0.1187	0.1336
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	335.84	0.4259	-0.0614	0.1651	0.1761
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	160.00	0.0581	0.0078	0.0565	0.0571
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	216.00	0.1054	0.0101	0.0596	0.0602
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	300.27	0.3695	0.0330	0.2390	0.2413
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	304.16	0.3838	0.0343	0.2003	0.2032
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	315.84	0.4232	0.0371	0.1924	0.1957
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	319.73	0.4348	0.0373	0.1383	0.1433
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	335.84	0.4842	0.0390	0.1842	0.1883
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	160.00	0.0662	0.0042	0.0694	0.0695
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	216.00	0.1261	0.0098	0.0719	0.0724
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	300.27	0.4	0.0693	0.2369	0.2469
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	304.16	0.4141	0.0730	0.1965	0.2096
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	315.84	0.4529	0.0819	0.1912	0.2077
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	319.73	0.4643	0.0820	0.1290	0.1529
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	335.84	0.5124	0.0834	0.1785	0.197
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	160.00	0.0448	0.0090	0.0448	0.0457
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	216.00	0.0778	0.0173	0.0421	0.0455
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	300.27	0.3218	0.1218	0.2257	0.2565
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	304.16	0.335	0.1280	0.1828	0.2231
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	315.84	0.3712	0.1435	0.1682	0.2209
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	319.73	0.3817	0.1438	0.1188	0.1865
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	335.84	0.4262	0.1449	0.1659	0.2203
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	160.00	0.0501	0.0165	0.0528	0.0553
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	216.00	0.0936	0.0233	0.0561	0.0601
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	300.27	0.3496	0.1235	0.2344	0.2649
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	304.16	0.3633	0.1290	0.1924	0.2317
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	315.84	0.4014	0.1431	0.1740	0.2251
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	319.73	0.4125	0.1434	0.1313	0.1944
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	335.84	0.4597	0.1446	0.1763	0.228
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	160.00	0.0582	0.0055	0.0631	0.0633
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	216.00	0.1115	0.0089	0.0663	0.0666
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	300.27	0.3683	0.0528	0.2236	0.2298
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	304.16	0.3816	0.0554	0.1852	0.1933
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	315.84	0.4181	0.0620	0.1716	0.1821
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	319.73	0.4288	0.0615	0.1211	0.1355
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	335.84	0.4741	0.0612	0.1690	0.1798
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	160.00	0.0461	-0.0036	0.0361	0.0363
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	216.00	0.0692	-0.0093	0.0324	0.0334
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	300.27	0.2947	-0.0687	0.2109	0.2218

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	304.16	0.307	-0.0723	0.1706	0.1853
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	315.84	0.3408	-0.0813	0.1670	0.1858
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	319.73	0.3506	-0.0816	0.1052	0.1332
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	335.84	0.3921	-0.0830	0.1552	0.176
1.2D + 1.0Ev + 1.0Eh 330° Seismic	160.00	0.0047	-0.0001	0.0067	0.0067
1.2D + 1.0Ev + 1.0Eh 330° Seismic	216.00	0.0116	-0.0004	0.0166	0.0166
1.2D + 1.0Ev + 1.0Eh 330° Seismic	300.27	0.0794	-0.0002	0.0659	0.0659
1.2D + 1.0Ev + 1.0Eh 330° Seismic	304.16	0.0833	-0.0003	0.0553	0.0553
1.2D + 1.0Ev + 1.0Eh 330° Seismic	315.84	0.0941	-0.0003	0.0515	0.0515
1.2D + 1.0Ev + 1.0Eh 330° Seismic	319.73	0.0974	-0.0002	0.0396	0.0396
1.2D + 1.0Ev + 1.0Eh 330° Seismic	335.84	0.1105	-0.0002	0.0484	0.0484
1.2D + 1.0Ev + 1.0Eh 300° Seismic	160.00	0.0057	-0.0001	0.0091	0.0091
1.2D + 1.0Ev + 1.0Eh 300° Seismic	216.00	0.0143	-0.0003	0.0161	0.0161
1.2D + 1.0Ev + 1.0Eh 300° Seismic	300.27	0.0806	-0.0003	0.0643	0.0643
1.2D + 1.0Ev + 1.0Eh 300° Seismic	304.16	0.0844	-0.0004	0.0535	0.0535
1.2D + 1.0Ev + 1.0Eh 300° Seismic	315.84	0.0948	-0.0004	0.0496	0.0496
1.2D + 1.0Ev + 1.0Eh 300° Seismic	319.73	0.0979	-0.0003	0.0371	0.0371
1.2D + 1.0Ev + 1.0Eh 300° Seismic	335.84	0.1105	-0.0002	0.0463	0.0463
1.2D + 1.0Ev + 1.0Eh 240° Seismic	160.00	0.0065	0.0000	0.0125	0.0125
1.2D + 1.0Ev + 1.0Eh 240° Seismic	216.00	0.02	-0.0002	0.0205	0.0205
1.2D + 1.0Ev + 1.0Eh 240° Seismic	300.27	0.0961	-0.0002	0.0718	0.0718
1.2D + 1.0Ev + 1.0Eh 240° Seismic	304.16	0.1004	-0.0003	0.0608	0.0608
1.2D + 1.0Ev + 1.0Eh 240° Seismic	315.84	0.1124	-0.0003	0.0568	0.0568
1.2D + 1.0Ev + 1.0Eh 240° Seismic	319.73	0.116	-0.0002	0.0453	0.0453
1.2D + 1.0Ev + 1.0Eh 240° Seismic	335.84	0.1306	-0.0001	0.0535	0.0535
1.2D + 1.0Ev + 1.0Eh 210° Seismic	160.00	0.0064	0.0000	0.0132	0.0132
1.2D + 1.0Ev + 1.0Eh 210° Seismic	216.00	0.0211	0.0002	0.0219	0.0219
1.2D + 1.0Ev + 1.0Eh 210° Seismic	300.27	0.0979	-0.0001	0.0709	0.0709
1.2D + 1.0Ev + 1.0Eh 210° Seismic	304.16	0.1022	-0.0002	0.0600	0.06
1.2D + 1.0Ev + 1.0Eh 210° Seismic	315.84	0.1139	-0.0002	0.0558	0.0558
1.2D + 1.0Ev + 1.0Eh 210° Seismic	319.73	0.1174	0.0001	0.0441	0.0441
1.2D + 1.0Ev + 1.0Eh 210° Seismic	335.84	0.1316	-0.0001	0.0523	0.0523
1.2D + 1.0Ev + 1.0Eh 180° Seismic	160.00	0.006	0.0001	0.0145	0.0145
1.2D + 1.0Ev + 1.0Eh 180° Seismic	216.00	0.0217	0.0003	0.0232	0.0232
1.2D + 1.0Ev + 1.0Eh 180° Seismic	300.27	0.0986	0.0002	0.0694	0.0694
1.2D + 1.0Ev + 1.0Eh 180° Seismic	304.16	0.1027	0.0003	0.0583	0.0583
1.2D + 1.0Ev + 1.0Eh 180° Seismic	315.84	0.1141	0.0003	0.0538	0.0538
1.2D + 1.0Ev + 1.0Eh 180° Seismic	319.73	0.1175	0.0002	0.0411	0.0411
1.2D + 1.0Ev + 1.0Eh 180° Seismic	335.84	0.1311	0.0001	0.0499	0.0499
1.2D + 1.0Ev + 1.0Eh 120° Seismic	160.00	0.0035	0.0001	0.0147	0.0147
1.2D + 1.0Ev + 1.0Eh 120° Seismic	216.00	0.0175	0.0003	0.0231	0.0231
1.2D + 1.0Ev + 1.0Eh 120° Seismic	300.27	0.0931	0.0003	0.0696	0.0696
1.2D + 1.0Ev + 1.0Eh 120° Seismic	304.16	0.0973	0.0003	0.0588	0.0588
1.2D + 1.0Ev + 1.0Eh 120° Seismic	315.84	0.1088	0.0004	0.0546	0.0546
1.2D + 1.0Ev + 1.0Eh 120° Seismic	319.73	0.1122	0.0003	0.0428	0.0428
1.2D + 1.0Ev + 1.0Eh 120° Seismic	335.84	0.1262	0.0002	0.0513	0.0513
1.2D + 1.0Ev + 1.0Eh 90° Seismic	160.00	0.0019	0.0000	0.0138	0.0138
1.2D + 1.0Ev + 1.0Eh 90° Seismic	216.00	0.0146	0.0002	0.0218	0.0218
1.2D + 1.0Ev + 1.0Eh 90° Seismic	300.27	0.0861	0.0003	0.0661	0.0661
1.2D + 1.0Ev + 1.0Eh 90° Seismic	304.16	0.0901	0.0004	0.0555	0.0555
1.2D + 1.0Ev + 1.0Eh 90° Seismic	315.84	0.1009	0.0004	0.0514	0.0514
1.2D + 1.0Ev + 1.0Eh 90° Seismic	319.73	0.1041	0.0003	0.0394	0.0394
1.2D + 1.0Ev + 1.0Eh 90° Seismic	335.84	0.1172	0.0002	0.0481	0.0481
1.2D + 1.0Ev + 1.0Eh 60° Seismic	160.00	0.0008	0.0000	0.0122	0.0122
1.2D + 1.0Ev + 1.0Eh 60° Seismic	216.00	0.0117	0.0002	0.0200	0.02
1.2D + 1.0Ev + 1.0Eh 60° Seismic	300.27	0.0799	0.0002	0.0637	0.0637
1.2D + 1.0Ev + 1.0Eh 60° Seismic	304.16	0.0836	0.0003	0.0530	0.053
1.2D + 1.0Ev + 1.0Eh 60° Seismic	315.84	0.0939	0.0003	0.0490	0.049
1.2D + 1.0Ev + 1.0Eh 60° Seismic	319.73	0.097	0.0002	0.0362	0.0362

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh 60° Seismic	335.84	0.1093	0.0001	0.0456	0.0456
1.2D + 1.0Ev + 1.0Eh Normal Seismic	160.00	0.0033	-0.0001	0.0078	0.0078
1.2D + 1.0Ev + 1.0Eh Normal Seismic	216.00	0.0106	-0.0003	0.0188	0.0188
1.2D + 1.0Ev + 1.0Eh Normal Seismic	300.27	0.0829	-0.0002	0.0691	0.0691
1.2D + 1.0Ev + 1.0Eh Normal Seismic	304.16	0.087	-0.0002	0.0583	0.0583
1.2D + 1.0Ev + 1.0Eh Normal Seismic	315.84	0.0985	-0.0002	0.0544	0.0544
1.2D + 1.0Ev + 1.0Eh Normal Seismic	319.73	0.1019	-0.0002	0.0424	0.0424
1.2D + 1.0Ev + 1.0Eh Normal Seismic	335.84	0.1159	-0.0001	0.0515	0.0515
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0349	0.0082	0.0258	0.0271
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0437	0.0074	0.0118	0.0139
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1115	-0.0020	0.0651	0.0652
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.115	-0.0029	0.0524	0.0525
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1245	-0.0052	0.0487	0.049
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.1272	-0.0047	0.0287	0.0291
1.2D + 1.0Di + 1.0Wi 330° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.1385	-0.0042	0.0446	0.0448
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0414	-0.0034	0.0342	0.0343
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.057	-0.0056	0.0190	0.0196
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1427	-0.0322	0.0706	0.0776
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1467	-0.0338	0.0570	0.0663
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1573	-0.0379	0.0507	0.0631
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.1603	-0.0378	0.0317	0.0491
1.2D + 1.0Di + 1.0Wi 300° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.1726	-0.0380	0.0478	0.0611
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0347	-0.0034	0.0409	0.041
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0546	-0.0037	0.0253	0.0255
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1435	-0.0158	0.0647	0.0665
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1471	-0.0165	0.0509	0.0535
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1566	-0.0183	0.0422	0.046
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.1591	-0.0182	0.0236	0.0296
1.2D + 1.0Di + 1.0Wi 240° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.1693	-0.0180	0.0389	0.0428
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0349	0.0084	0.0479	0.0485
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0657	0.0106	0.0361	0.0374
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1694	0.0271	0.0724	0.0773
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1737	0.0278	0.0587	0.065
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1848	0.0294	0.0521	0.0595
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.1878	0.0298	0.0314	0.0433
1.2D + 1.0Di + 1.0Wi 210° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.2002	0.0306	0.0463	0.0555
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0366	0.0003	0.0526	0.0526
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0731	0.0022	0.0407	0.0408
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1839	0.0167	0.0776	0.0794
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1885	0.0177	0.0640	0.0664
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.2005	0.0199	0.0581	0.0613
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.2039	0.0199	0.0350	0.0401
1.2D + 1.0Di + 1.0Wi 180° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.2176	0.0201	0.0515	0.0553
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0138	0.0035	0.0437	0.0438
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0397	0.0056	0.0284	0.029
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1271	0.0321	0.0659	0.0733
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1308	0.0337	0.0525	0.0623
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1404	0.0378	0.0450	0.0587
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.143	0.0377	0.0255	0.0455
1.2D + 1.0Di + 1.0Wi 120° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.1538	0.0379	0.0422	0.0567
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0093	0.0138	0.0384	0.0406
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0288	0.0164	0.0246	0.0292
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1186	0.0539	0.0692	0.0878
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1226	0.0558	0.0561	0.0791
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1333	0.0604	0.0492	0.0776
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.1362	0.0609	0.0317	0.0686
1.2D + 1.0Di + 1.0Wi 90° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.1487	0.0616	0.0479	0.078
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0197	0.0067	0.0320	0.0326
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0319	0.0054	0.0240	0.0244

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	300.27	0.1223	0.0184	0.0731	0.0754
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	304.16	0.1267	0.0192	0.0614	0.0643
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	315.84	0.1384	0.0211	0.0565	0.0602
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	319.73	0.1418	0.0209	0.0367	0.0422
1.2D + 1.0Di + 1.0Wi 60° 29.24 mph Wind with 0.85" Radial Ice	335.84	0.156	0.0208	0.0542	0.0581
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	160.00	0.0222	0.0005	0.0135	0.0135
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	216.00	0.0175	-0.0020	0.0041	0.0043
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	300.27	0.0802	-0.0162	0.0610	0.0631
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	304.16	0.0837	-0.0171	0.0487	0.0516
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	315.84	0.093	-0.0194	0.0463	0.0502
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	319.73	0.0956	-0.0193	0.0241	0.0309
1.2D + 1.0Di + 1.0Wi Normal 29.24 mph Wind with 0.85" Radial Ice	335.84	0.1065	-0.0196	0.0419	0.0462
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	160.00	0.2412	0.0021	0.2397	0.2397
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	216.00	0.542	-0.0290	0.4562	0.4571
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	300.27	2.0935	-0.7375	1.3816	1.5656
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	304.16	2.1788	-0.7536	1.2291	1.4378
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	315.84	2.4259	-0.7753	1.2158	1.442
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	319.73	2.5011	-0.7295	1.0551	1.2827
1.2D + 1.0W 330° 108.19 mph Wind with No Ice	335.84	2.8275	-0.7190	1.1936	1.3935
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	160.00	0.2739	-0.0339	0.2547	0.2569
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	216.00	0.5107	-0.0559	0.2904	0.2949
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	300.27	1.5146	-0.6266	0.8465	1.0532
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	304.16	1.5654	-0.6428	0.7103	0.958
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	315.84	1.7061	-0.6797	0.6462	0.9362
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	319.73	1.7448	-0.6757	0.4793	0.8274
1.2D + 1.0W 300° 108.19 mph Wind with No Ice	335.84	1.9206	-0.6745	0.6514	0.9377
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	160.00	0.2026	-0.0164	0.2182	0.2188
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	216.00	0.5578	-0.0277	0.5463	0.547
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	300.27	2.4527	-0.2700	1.6702	1.6906
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	304.16	2.5578	-0.2799	1.5105	1.5341
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	315.84	2.8639	-0.2937	1.4768	1.5048
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	319.73	2.9614	-0.2939	1.3331	1.3651
1.2D + 1.0W 240° 108.19 mph Wind with No Ice	335.84	3.3688	-0.2895	1.4740	1.502
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	160.00	0.2548	0.0271	0.2563	0.2575
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	216.00	0.5866	0.0285	0.4933	0.4936
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	300.27	2.2174	-0.2757	1.4453	1.4712
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	304.16	2.3068	-0.2764	1.2924	1.3215
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	315.84	2.5664	-0.2572	1.2697	1.2955
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	319.73	2.646	-0.2120	1.1175	1.1374
1.2D + 1.0W 210° 108.19 mph Wind with No Ice	335.84	2.9899	-0.2004	1.2561	1.272
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	160.00	0.289	0.0165	0.2726	0.2731
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	216.00	0.5535	0.0314	0.3250	0.3261
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	300.27	1.6278	0.3653	0.9040	0.975
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	304.16	1.6827	0.3749	0.7713	0.8575
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	315.84	1.8361	0.3977	0.7556	0.8528
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	319.73	1.8822	0.3959	0.5518	0.6762
1.2D + 1.0W 180° 108.19 mph Wind with No Ice	335.84	2.0758	0.3968	0.7140	0.8169
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	160.00	0.1956	0.0341	0.2216	0.2241
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	216.00	0.5586	0.0609	0.5575	0.5608
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	300.27	2.4815	0.5458	1.6886	1.7721
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	304.16	2.5881	0.5650	1.5307	1.6268
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	315.84	2.8986	0.6016	1.4954	1.6095
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	319.73	2.9973	0.6012	1.3537	1.4812
1.2D + 1.0W 120° 108.19 mph Wind with No Ice	335.84	3.4101	0.5973	1.4935	1.6077
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	160.00	0.234	0.0594	0.2474	0.2539
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	216.00	0.5533	0.0748	0.4838	0.4881
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	300.27	2.1393	0.1332	1.4016	1.407
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	304.16	2.2271	0.1486	1.2627	1.2705
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	315.84	2.4815	0.1913	1.2141	1.2285

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	319.73	2.5616	0.2373	1.0902	1.1141
1.2D + 1.0W 90° 108.19 mph Wind with No Ice	335.84	2.8977	0.2444	1.2261	1.2487
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	160.00	0.2705	0.0204	0.2615	0.2623
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	216.00	0.5183	0.0292	0.3053	0.3064
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	300.27	1.5268	0.2623	0.8497	0.8893
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	304.16	1.5783	0.2694	0.7218	0.7704
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	315.84	1.7213	0.2865	0.6767	0.733
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	319.73	1.764	0.2830	0.5106	0.5815
1.2D + 1.0W 60° 108.19 mph Wind with No Ice	335.84	1.9441	0.2796	0.6667	0.7229
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	160.00	0.2068	-0.0154	0.2157	0.2162
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	216.00	0.55	-0.0349	0.5264	0.5271
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	300.27	2.3866	-0.3193	1.6197	1.6493
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	304.16	2.4886	-0.3315	1.4631	1.4974
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	315.84	2.7852	-0.3523	1.4628	1.502
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	319.73	2.8796	-0.3528	1.2756	1.3235
1.2D + 1.0W Normal 108.19 mph Wind with No Ice	335.84	3.2742	-0.3525	1.4287	1.4707

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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	-0.02	103.84	-0.61
	125.00	5.00	0	A1	0.00	-1.55	1.61
	125.00	11.00	240	A1a	-7.71	-7.10	-4.77
	115.00	17.00	120	A1b	7.72	-7.24	-4.76
	260.00	11.00	0	A2	0.00	-1.34	0.99
	267.00	19.00	240	A2a	-19.24	-21.46	-12.18
	260.00	26.00	120	A2b	19.27	-21.48	-12.18
1.2D + 1.0W 60°	0.00	0.00		1	-0.43	98.73	-0.23
	125.00	5.00	0	A1	-0.27	-3.80	4.31
	125.00	11.00	240	A1a	-10.83	-10.00	-6.26
	115.00	17.00	120	A1b	3.58	-3.61	-2.37
	260.00	11.00	0	A2	-0.81	-6.53	6.61
	267.00	19.00	240	A2a	-23.65	-25.52	-13.66
	260.00	26.00	120	A2b	5.38	-6.17	-4.03
1.2D + 1.0W 90°	0.00	0.00		1	-0.55	102.66	0.06
	125.00	5.00	0	A1	-0.34	-5.39	6.37
	125.00	11.00	240	A1a	-9.89	-9.00	-5.56
	115.00	17.00	120	A1b	2.05	-2.20	-1.32
	260.00	11.00	0	A2	-1.07	-14.95	15.00
	267.00	19.00	240	A2a	-23.50	-25.23	-13.00
	260.00	26.00	120	A2b	1.93	-2.47	-1.54
1.2D + 1.0W 120°	0.00	0.00		1	-0.56	104.25	0.32
	125.00	5.00	0	A1	-0.28	-7.36	8.85
	125.00	11.00	240	A1a	-7.80	-6.94	-4.19
	115.00	17.00	120	A1b	1.27	-1.38	-0.74
	260.00	11.00	0	A2	-0.93	-22.54	22.56
	267.00	19.00	240	A2a	-19.97	-21.25	-10.46
	260.00	26.00	120	A2b	0.67	-1.03	-0.39
1.2D + 1.0W 180°	0.00	0.00		1	-0.01	99.79	0.48
	125.00	5.00	0	A1	0.00	-10.47	12.40
	125.00	11.00	240	A1a	-3.78	-3.49	-1.87
	115.00	17.00	120	A1b	3.76	-3.54	-1.87
	260.00	11.00	0	A2	0.00	-27.00	27.32
	267.00	19.00	240	A2a	-6.09	-6.08	-2.58
	260.00	26.00	120	A2b	6.10	-6.07	-2.60
1.2D + 1.0W 210°	0.00	0.00		1	0.30	103.61	0.44
	125.00	5.00	0	A1	0.13	-9.47	11.29
	125.00	11.00	240	A1a	-2.17	-2.13	-1.10
	115.00	17.00	120	A1b	5.64	-5.12	-2.89
	260.00	11.00	0	A2	0.50	-26.81	26.98
	267.00	19.00	240	A2a	-2.33	-2.51	-0.91
	260.00	26.00	120	A2b	13.59	-14.15	-6.62
1.2D + 1.0W 240°	0.00	0.00		1	0.54	104.44	0.33
	125.00	5.00	0	A1	0.28	-7.38	8.89
	125.00	11.00	240	A1a	-1.32	-1.36	-0.76
	115.00	17.00	120	A1b	7.84	-7.09	-4.22
	260.00	11.00	0	A2	0.93	-22.55	22.58
	267.00	19.00	240	A2a	-0.70	-1.07	-0.41
	260.00	26.00	120	A2b	20.00	-21.29	-10.49
1.2D + 1.0W 300°	0.00	0.00		1	0.40	99.52	-0.23
	125.00	5.00	0	A1	0.27	-3.91	4.46
	125.00	11.00	240	A1a	-3.72	-3.66	-2.46
	115.00	17.00	120	A1b	10.97	-10.30	-6.33
	260.00	11.00	0	A2	0.81	-6.64	6.73
	267.00	19.00	240	A2a	-5.47	-6.29	-4.10
	260.00	26.00	120	A2b	23.79	-25.66	-13.74
1.2D + 1.0W 330°	0.00	0.00		1	0.20	102.89	-0.48
	125.00	5.00	0	A1	0.13	-2.43	2.62
	125.00	11.00	240	A1a	-5.52	-5.21	-3.57

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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 Normal	115.00	17.00	120	A1b	9.94	-9.33	-5.88
	260.00	11.00	0	A2	0.39	-2.81	2.60
	267.00	19.00	240	A2a	-12.65	-14.30	-8.54
	260.00	26.00	120	A2b	23.23	-25.45	-13.97
	0.00	0.00		1	-0.03	140.57	-0.07
	125.00	5.00	0	A1	0.00	-5.47	7.25
	125.00	11.00	240	A1a	-7.49	-6.23	-4.44
	115.00	17.00	120	A1b	7.48	-6.35	-4.43
	260.00	11.00	0	A2	0.00	-9.38	11.11
	267.00	19.00	240	A2a	-12.18	-11.37	-7.36
1.2D + 1.0Di + 1.0Wi 60°	260.00	26.00	120	A2b	12.20	-11.39	-7.36
	0.00	0.00		1	-0.09	139.81	-0.03
	125.00	5.00	0	A1	-0.10	-5.81	7.67
	125.00	11.00	240	A1a	-7.88	-6.56	-4.55
	115.00	17.00	120	A1b	6.55	-5.50	-3.89
	260.00	11.00	0	A2	-0.29	-10.14	11.93
	267.00	19.00	240	A2a	-12.99	-12.07	-7.50
	260.00	26.00	120	A2b	10.27	-9.56	-6.25
	0.00	0.00		1	-0.10	140.28	0.02
	125.00	5.00	0	A1	-0.12	-6.24	8.19
1.2D + 1.0Di + 1.0Wi 90°	125.00	11.00	240	A1a	-7.82	-6.47	-4.46
	115.00	17.00	120	A1b	6.30	-5.25	-3.69
	260.00	11.00	0	A2	-0.35	-11.12	13.05
	267.00	19.00	240	A2a	-12.93	-11.91	-7.31
	260.00	26.00	120	A2b	9.79	-8.99	-5.80
	0.00	0.00		1	-0.09	140.74	0.05
	125.00	5.00	0	A1	-0.10	-6.67	8.71
	125.00	11.00	240	A1a	-7.57	-6.21	-4.26
	115.00	17.00	120	A1b	6.22	-5.16	-3.59
	260.00	11.00	0	A2	-0.29	-12.10	14.17
1.2D + 1.0Di + 1.0Wi 120°	267.00	19.00	240	A2a	-12.47	-11.37	-6.86
	260.00	26.00	120	A2b	9.71	-8.82	-5.60
	0.00	0.00		1	-0.03	140.05	0.08
	125.00	5.00	0	A1	0.00	-7.01	9.12
	125.00	11.00	240	A1a	-6.66	-5.41	-3.73
	115.00	17.00	120	A1b	6.64	-5.51	-3.73
	260.00	11.00	0	A2	0.00	-12.88	14.99
	267.00	19.00	240	A2a	-10.53	-9.53	-5.75
	260.00	26.00	120	A2b	10.54	-9.54	-5.76
	0.00	0.00		1	0.02	140.42	0.07
1.2D + 1.0Di + 1.0Wi 180°	125.00	5.00	0	A1	0.05	-6.93	9.03
	125.00	11.00	240	A1a	-6.36	-5.15	-3.62
	115.00	17.00	120	A1b	7.11	-5.92	-3.97
	260.00	11.00	0	A2	0.14	-12.70	14.82
	267.00	19.00	240	A2a	-9.89	-8.96	-5.55
	260.00	26.00	120	A2b	11.55	-10.47	-6.26
	0.00	0.00		1	0.04	140.80	0.05
	125.00	5.00	0	A1	0.10	-6.67	8.73
	125.00	11.00	240	A1a	-6.25	-5.07	-3.61
	115.00	17.00	120	A1b	7.57	-6.35	-4.26
1.2D + 1.0Di + 1.0Wi 240°	260.00	11.00	0	A2	0.29	-12.10	14.17
	267.00	19.00	240	A2a	-9.70	-8.82	-5.60
	260.00	26.00	120	A2b	12.48	-11.40	-6.88
	0.00	0.00		1	0.03	139.93	-0.02
	125.00	5.00	0	A1	0.10	-5.83	7.69
	125.00	11.00	240	A1a	-6.59	-5.43	-3.92
	115.00	17.00	120	A1b	7.90	-6.70	-4.56
	260.00	11.00	0	A2	0.29	-10.15	11.93
	267.00	19.00	240	A2a	-10.26	-9.55	-6.26

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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 330°	260.00	26.00	120	A2b	13.04	-12.12	-7.52
	0.00	0.00		1	0.00	140.24	-0.05
	125.00	5.00	0	A1	0.05	-5.56	7.36
	125.00	11.00	240	A1a	-7.03	-5.83	-4.20
	115.00	17.00	120	A1b	7.79	-6.61	-4.55
	260.00	11.00	0	A2	0.14	-9.56	11.29
	267.00	19.00	240	A2a	-11.20	-10.48	-6.88
1.2D + 1.0Ev + 1.0Eh Normal	260.00	26.00	120	A2b	12.81	-11.93	-7.55
	0.00	0.00		1	-0.01	76.87	0.01
	125.00	5.00	0	A1	0.00	-4.49	5.55
	125.00	11.00	240	A1a	-4.86	-4.28	-2.81
	115.00	17.00	120	A1b	4.85	-4.36	-2.80
	260.00	11.00	0	A2	0.00	-5.55	6.07
	267.00	19.00	240	A2a	-6.28	-6.43	-3.63
1.2D + 1.0Ev + 1.0Eh 60°	260.00	26.00	120	A2b	6.30	-6.44	-3.64
	0.00	0.00		1	-0.01	76.83	0.01
	125.00	5.00	0	A1	0.00	-4.51	5.57
	125.00	11.00	240	A1a	-4.88	-4.31	-2.82
	115.00	17.00	120	A1b	4.81	-4.31	-2.78
	260.00	11.00	0	A2	0.00	-5.96	6.44
	267.00	19.00	240	A2a	-6.60	-6.80	-3.81
1.2D + 1.0Ev + 1.0Eh 90°	260.00	26.00	120	A2b	5.61	-5.62	-3.24
	0.00	0.00		1	-0.01	76.84	0.01
	125.00	5.00	0	A1	0.00	-4.54	5.59
	125.00	11.00	240	A1a	-4.88	-4.30	-2.81
	115.00	17.00	120	A1b	4.79	-4.29	-2.77
	260.00	11.00	0	A2	0.00	-6.36	6.82
	267.00	19.00	240	A2a	-6.51	-6.69	-3.75
1.2D + 1.0Ev + 1.0Eh 120°	260.00	26.00	120	A2b	5.37	-5.33	-3.10
	0.00	0.00		1	-0.01	76.85	0.01
	125.00	5.00	0	A1	0.00	-4.56	5.62
	125.00	11.00	240	A1a	-4.86	-4.28	-2.80
	115.00	17.00	120	A1b	4.79	-4.28	-2.76
	260.00	11.00	0	A2	0.00	-6.78	7.20
	267.00	19.00	240	A2a	-6.26	-6.40	-3.61
1.2D + 1.0Ev + 1.0Eh 180°	260.00	26.00	120	A2b	5.28	-5.23	-3.05
	0.00	0.00		1	-0.01	76.87	0.01
	125.00	5.00	0	A1	0.00	-4.59	5.64
	125.00	11.00	240	A1a	-4.81	-4.23	-2.78
	115.00	17.00	120	A1b	4.81	-4.30	-2.78
	260.00	11.00	0	A2	0.00	-7.22	7.60
	267.00	19.00	240	A2a	-5.59	-5.60	-3.22
1.2D + 1.0Ev + 1.0Eh 210°	260.00	26.00	120	A2b	5.60	-5.60	-3.23
	0.00	0.00		1	-0.01	76.89	0.01
	125.00	5.00	0	A1	0.00	-4.58	5.63
	125.00	11.00	240	A1a	-4.80	-4.22	-2.77
	115.00	17.00	120	A1b	4.83	-4.33	-2.79
	260.00	11.00	0	A2	0.00	-7.09	7.48
	267.00	19.00	240	A2a	-5.36	-5.33	-3.10
1.2D + 1.0Ev + 1.0Eh 240°	260.00	26.00	120	A2b	5.94	-6.01	-3.43
	0.00	0.00		1	-0.01	76.90	0.01
	125.00	5.00	0	A1	0.00	-4.56	5.62
	125.00	11.00	240	A1a	-4.79	-4.21	-2.77
	115.00	17.00	120	A1b	4.85	-4.35	-2.80
	260.00	11.00	0	A2	0.00	-6.79	7.21
	267.00	19.00	240	A2a	-5.28	-5.24	-3.05
1.2D + 1.0Ev + 1.0Eh 300°	260.00	26.00	120	A2b	6.28	-6.42	-3.63
	0.00	0.00		1	-0.01	76.88	0.01
	125.00	5.00	0	A1	0.00	-4.51	5.57

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					FX* (kip)	FY* (kip)	FZ* (kip)
1.2D + 1.0Ev + 1.0Eh 330°	125.00	11.00	240	A1a	-4.82	-4.23	-2.78
	115.00	17.00	120	A1b	4.88	-4.38	-2.82
	260.00	11.00	0	A2	0.00	-5.97	6.46
	267.00	19.00	240	A2a	-5.61	-5.63	-3.24
	260.00	26.00	120	A2b	6.63	-6.83	-3.82
	0.00	0.00		1	-0.01	76.88	0.01
	125.00	5.00	0	A1	0.00	-4.50	5.55
	125.00	11.00	240	A1a	-4.84	-4.26	-2.79
	115.00	17.00	120	A1b	4.87	-4.38	-2.81
	260.00	11.00	0	A2	0.00	-5.67	6.18
1.0D + 1.0W Service Normal	267.00	19.00	240	A2a	-5.94	-6.02	-3.43
	260.00	26.00	120	A2b	6.54	-6.72	-3.77
	0.00	0.00		1	-0.01	69.92	-0.19
	125.00	5.00	0	A1	0.00	-3.30	4.07
	125.00	11.00	240	A1a	-5.71	-5.10	-3.39
	115.00	17.00	120	A1b	5.71	-5.20	-3.39
	260.00	11.00	0	A2	0.00	-2.64	3.08
	267.00	19.00	240	A2a	-8.10	-8.47	-4.96
	260.00	26.00	120	A2b	8.12	-8.48	-4.97
	0.00	0.00		1	-0.17	70.83	-0.09
1.0D + 1.0W Service 60°	125.00	5.00	0	A1	-0.08	-4.01	4.91
	125.00	11.00	240	A1a	-6.44	-5.76	-3.72
	115.00	17.00	120	A1b	4.19	-3.82	-2.51
	260.00	11.00	0	A2	-0.25	-5.14	5.52
	267.00	19.00	240	A2a	-10.20	-10.69	-5.89
	260.00	26.00	120	A2b	4.69	-4.84	-2.99
	0.00	0.00		1	-0.20	70.54	0.01
	125.00	5.00	0	A1	-0.10	-4.65	5.70
	125.00	11.00	240	A1a	-6.25	-5.57	-3.57
	115.00	17.00	120	A1b	3.69	-3.35	-2.17
1.0D + 1.0W Service 90°	260.00	11.00	0	A2	-0.31	-7.06	7.50
	267.00	19.00	240	A2a	-9.71	-10.06	-5.47
	260.00	26.00	120	A2b	3.26	-3.20	-2.01
	0.00	0.00		1	-0.18	70.14	0.10
	125.00	5.00	0	A1	-0.08	-5.38	6.58
	125.00	11.00	240	A1a	-5.73	-5.05	-3.21
	115.00	17.00	120	A1b	3.45	-3.10	-1.99
	260.00	11.00	0	A2	-0.25	-8.98	9.47
	267.00	19.00	240	A2a	-8.33	-8.45	-4.52
	260.00	26.00	120	A2b	2.65	-2.42	-1.53
1.0D + 1.0W Service 120°	0.00	0.00		1	-0.01	71.05	0.19
	125.00	5.00	0	A1	0.00	-6.09	7.40
	125.00	11.00	240	A1a	-4.24	-3.72	-2.35
	115.00	17.00	120	A1b	4.23	-3.79	-2.35
	260.00	11.00	0	A2	0.00	-11.32	11.75
	267.00	19.00	240	A2a	-4.88	-4.79	-2.53
	260.00	26.00	120	A2b	4.88	-4.78	-2.54
	0.00	0.00		1	0.09	70.70	0.17
	125.00	5.00	0	A1	0.04	-5.89	7.19
	125.00	11.00	240	A1a	-3.72	-3.27	-2.10
1.0D + 1.0W Service 210°	115.00	17.00	120	A1b	4.96	-4.41	-2.75
	260.00	11.00	0	A2	0.12	-10.64	11.10
	267.00	19.00	240	A2a	-3.37	-3.20	-1.81
	260.00	26.00	120	A2b	6.65	-6.63	-3.49
	0.00	0.00		1	0.16	70.26	0.11
	125.00	5.00	0	A1	0.08	-5.39	6.60
	125.00	11.00	240	A1a	-3.48	-3.05	-2.01
	115.00	17.00	120	A1b	5.74	-5.15	-3.22
	260.00	11.00	0	A2	0.25	-8.99	9.48

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

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 300°	267.00	19.00	240	A2a	-2.67	-2.47	-1.54
	260.00	26.00	120	A2b	8.35	-8.47	-4.54
	0.00	0.00		1	0.15	71.10	-0.08
	125.00	5.00	0	A1	0.08	-4.04	4.94
	125.00	11.00	240	A1a	-4.23	-3.78	-2.54
	115.00	17.00	120	A1b	6.47	-5.90	-3.74
	260.00	11.00	0	A2	0.25	-5.17	5.56
	267.00	19.00	240	A2a	-4.71	-4.88	-3.00
	260.00	26.00	120	A2b	10.29	-10.79	-5.94
	0.00	0.00		1	0.08	70.64	-0.16
1.0D + 1.0W Service 330°	125.00	5.00	0	A1	0.04	-3.56	4.35
	125.00	11.00	240	A1a	-4.93	-4.40	-2.96
	115.00	17.00	120	A1b	6.27	-5.71	-3.66
	260.00	11.00	0	A2	0.12	-3.48	3.87
	267.00	19.00	240	A2a	-6.41	-6.72	-4.06
	260.00	26.00	120	A2b	9.67	-10.14	-5.72

ASSET: 310370, Mineral
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H
PROJECT: 14921176_C3_03

MAXIMUM GUY ANCHOR REACTIONS

Radius (ft)	Drop (ft)	Azimuth (deg)	Uplift (kip)	Shear (kip)
115.00	17.00	120	10.30	12.66
125.00	5.00	0	10.47	12.40
125.00	11.00	240	10.00	12.51
260.00	11.00	0	27.00	27.32
260.00	26.00	120	25.66	27.48
267.00	19.00	240	25.52	27.31

MAXIMUM REACTIONS SUMMARY

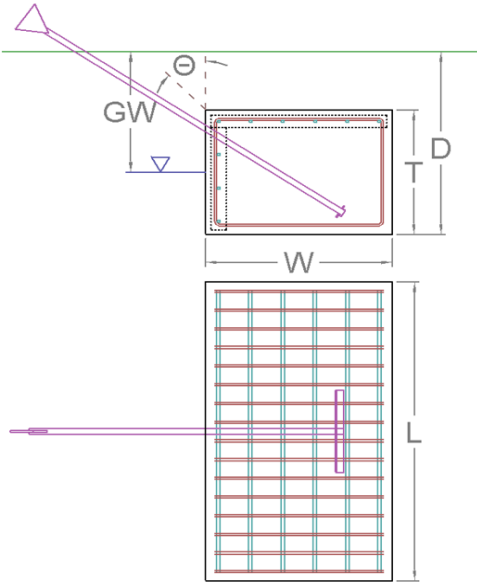
Base / Anchor Group	Vertical Load <i>(Compression for Base; Uplift for Anchor)</i>	Horizontal Shear
Guyed - Pivot Base	140.80 (kip)	0.64 (kip)
Guyed Anchor - A1	10.47 (kip)	12.66 (kip)
Guyed Anchor - A2	27.00 (kip)	27.48 (kip)

GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A1 @ r = 125 ft)

APPLIED REACTIONS	
Uplift (k)	Shear (k)
10.47	12.40

FOUNDATION PARAMETERS			
Base Depth:	D	6.5	ft
Block Width:	W	6	ft
Block Length:	L	28	ft
Block Thickness:	T	6	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(5) #6 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #6 bars [60 ksi]	
Anchor Rod Quantity & Shape:		(1) Solid Rod	
Anchor Rod Area (gross/net):		1.770 // 1.770	in ²
Anchor Rod Strength (fy/fu):		42 // 58	ksi

SOIL PARAMETERS			
Water Table Depth [BGL]:	GW	4	ft
Soil Unit Weight:		107	pcf
Friction Angle:		27	°
Cohesion:		0	psf
Ultimate Skin Friction		150	psf
Coefficient of Shear Friction:		0.3	
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
32.17	0	145.10	7.2%

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
8.25	33.03	997.27	167.54	0	156.62	7.9%

ANCHOR ROD STRENGTH ANALYSIS				
Yield Strength Reduction Factor, Φ _y	Tensile Strength Reduction Factor, Φ _t	Resultant Tensile Load, T _u (k)	Tensile Capacity, ΦT _n (k-ft)	Anchor Rod Tensile Usage, T _u / ΦT _n
0.8	0.65	16.2	59.47	27.3%

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, $V_u / \Phi_c V_n$	
4.95	402.99	1.2%	

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, $V_u / \Phi_c V_n$	
4.18	402.99	1.0%	

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, $M_{uv} / \Phi_{bv} M_{nv}$	
43.40	68.125	0.575	0.2990	537.27	8.1%	

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, $M_{ut} / \Phi_{bt} M_{nt}$	
36.64	68.125	0.719	0.2386	670.88	5.5%	

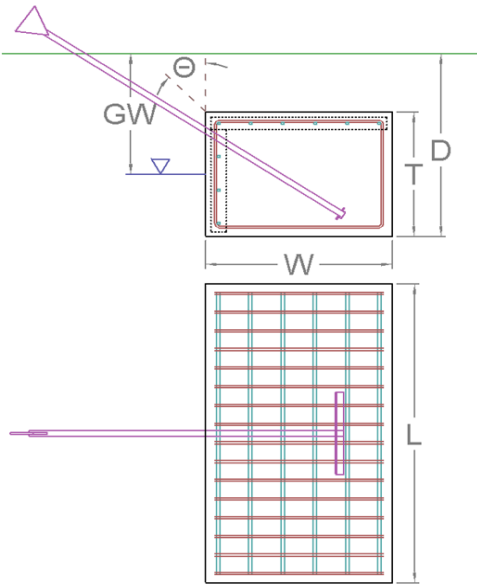
GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A1a @ r = 125 ft)

APPLIED REACTIONS

Uplift (k)	Shear (k)
10.00	12.51

FOUNDATION PARAMETERS

Base Depth:	D	6.5	ft
Block Width:	W	6	ft
Block Length:	L	28	ft
Block Thickness:	T	6	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(5) #6 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #6 bars [60 ksi]	
Anchor Rod Quantity & Shape:		(1) Solid Rod	
Anchor Rod Area (gross/net):		1.770 // 1.770	in ²
Anchor Rod Strength (fy//fu):		42 // 58	ksi



SOIL PARAMETERS

Water Table Depth [BGL]:	GW	4	ft
Soil Unit Weight:		107	pcf
Friction Angle:		27	°
Cohesion:		0	psf
Ultimate Skin Friction		150	psf
Coefficient of Shear Friction:		0.3	
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	
31.94	0	144.94	6.9%	✓

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	
8.43	33.17	997.27	167.54	0	156.86	8.0%	✓

ANCHOR ROD STRENGTH ANALYSIS

Yield Strength Reduction Factor, Φ _y	Tensile Strength Reduction Factor, Φ _t	Resultant Tensile Load, T _u (k)	Tensile Capacity, ΦT _n (k-ft)	Anchor Rod Tensile Usage, T _u / ΦT _n	
0.8	0.65	16.0	59.47	26.9%	✓

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, $V_u / \Phi_c V_n$
4.99	402.99	1.2%



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, $V_u / \Phi_c V_n$
3.99	402.99	1.0%



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, $M_{uv} / \Phi_{bv} M_{nv}$
43.78	68.125	0.575	0.2990	537.27	8.1%



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, $M_{ut} / \Phi_{bt} M_{nt}$
35.00	68.125	0.719	0.2386	670.88	5.2%

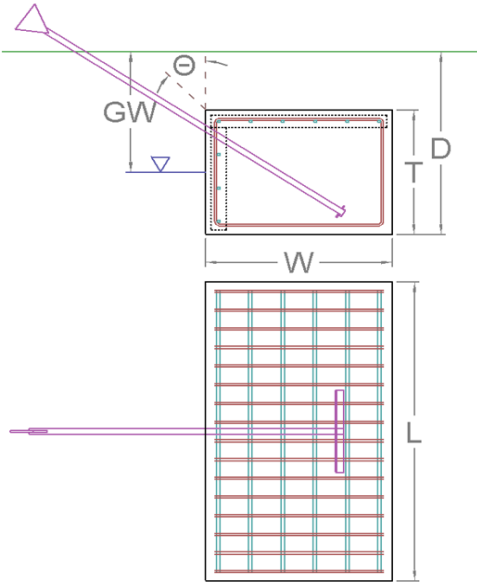


GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A1b @ r = 115 ft)

APPLIED REACTIONS	
Uplift (k)	Shear (k)
10.30	12.66

FOUNDATION PARAMETERS			
Base Depth:	D	6.5	ft
Block Width:	W	6	ft
Block Length:	L	28	ft
Block Thickness:	T	6	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(5) #6 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #6 bars [60 ksi]	
Anchor Rod Quantity & Shape:		(1) Solid Rod	
Anchor Rod Area (gross/net):		1.770 // 1.770	in ²
Anchor Rod Strength (fy//fu):		42 // 58	ksi

SOIL PARAMETERS			
Water Table Depth [BGL]:	GW	4	ft
Soil Unit Weight:		107	pcf
Friction Angle:		27	°
Cohesion:		0	psf
Ultimate Skin Friction		150	psf
Coefficient of Shear Friction:		0.3	
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
32.02	0	144.99	7.1%

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
8.38	33.08	997.27	167.54	0	156.75	8.1%

ANCHOR ROD STRENGTH ANALYSIS				
Yield Strength Reduction Factor, Φ _y	Tensile Strength Reduction Factor, Φ _t	Resultant Tensile Load, T _u (k)	Tensile Capacity, ΦT _n (k-ft)	Anchor Rod Tensile Usage, T _u / ΦT _n
0.8	0.65	16.3	59.47	27.4%

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, $V_u / \Phi_c V_n$
5.05	402.99	1.3%



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, $V_u / \Phi_c V_n$
4.11	402.99	1.0%



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, $M_{uv} / \Phi_{bv} M_{nv}$
44.31	68.125	0.575	0.2990	537.27	8.2%



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, $M_{ut} / \Phi_{bt} M_{nt}$
36.05	68.125	0.719	0.2386	670.88	5.4%

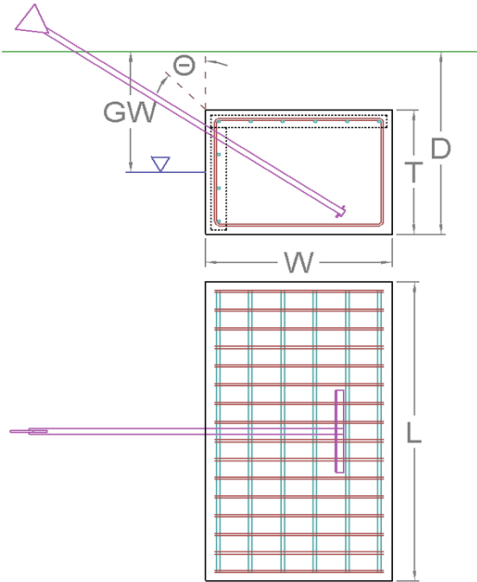


GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A2 @ r = 260 ft)

APPLIED REACTIONS	
Uplift (k)	Shear (k)
27.00	27.32

FOUNDATION PARAMETERS			
Base Depth:	D	7	ft
Block Width:	W	6.5	ft
Block Length:	L	32	ft
Block Thickness:	T	6.5	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(5) #6 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #6 bars [60 ksi]	
Anchor Rod Quantity & Shape:		(1) Solid Rod	
Anchor Rod Area (gross/net):		2.410 // 2.410	in ²
Anchor Rod Strength (fy/fu):		42 // 58	ksi

SOIL PARAMETERS			
Water Table Depth [BGL]:	GW	4	ft
Soil Unit Weight:		110	pcf
Friction Angle:		0	°
Cohesion:		900	psf
Ultimate Skin Friction		450	psf
Coefficient of Shear Friction:		0.3	
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
120.33	0	206.99	13.0%

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
27.05	39.23	2,212.50	460.20	0	394.86	6.9%

ANCHOR ROD STRENGTH ANALYSIS				
Yield Strength Reduction Factor, Φ _y	Tensile Strength Reduction Factor, Φ _t	Resultant Tensile Load, T _u (k)	Tensile Capacity, ΦT _n (k-ft)	Anchor Rod Tensile Usage, T _u / ΦT _n
0.8	0.65	38.4	80.98	47.4%

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, $V_u / \Phi_c V_n$	
11.03	475.02	2.3%	

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, $V_u / \Phi_c V_n$	
10.90	475.02	2.3%	

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, $M_{uv} / \Phi_{bv} M_{nv}$	
109.28	74.125	0.531	0.3530	584.97	18.7%	

REINFORCING FLEXURE ANALYSIS - UPLIFT

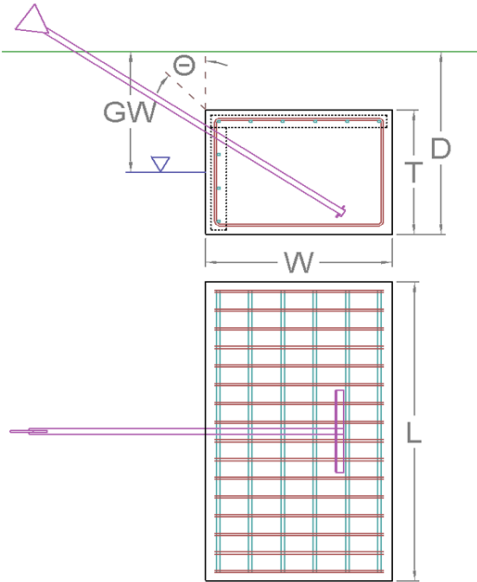
Flexure Load, M_{ut} (k-ft)	Depth to steel, d_t (in)	Whitney Block, a_t (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bt} M_{nt}$ (k-ft)	Rebar Flexural Usage, $M_{ut} / \Phi_{bt} M_{nt}$	
108.00	74.125	0.664	0.2818	730.55	14.8%	

GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A2a @ r = 267 ft)

APPLIED REACTIONS	
Uplift (k)	Shear (k)
25.52	27.31

FOUNDATION PARAMETERS			
Base Depth:	D	7	ft
Block Width:	W	6.5	ft
Block Length:	L	32	ft
Block Thickness:	T	6.5	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(5) #6 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #6 bars [60 ksi]	
Anchor Rod Quantity & Shape:		(1) Solid Rod	
Anchor Rod Area (gross/net):		2.410 // 2.410	in ²
Anchor Rod Strength (fy/fu):		42 // 58	ksi

SOIL PARAMETERS			
Water Table Depth [BGL]:	GW	4	ft
Soil Unit Weight:		110	pcf
Friction Angle:		0	°
Cohesion:		900	psf
Ultimate Skin Friction		450	psf
Coefficient of Shear Friction:		0.3	
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
119.56	0	206.99	12.3%

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
27.78	39.68	2,212.50	460.20	0	395.74	6.9%

ANCHOR ROD STRENGTH ANALYSIS				
Yield Strength Reduction Factor, Φ _y	Tensile Strength Reduction Factor, Φ _t	Resultant Tensile Load, T _u (k)	Tensile Capacity, ΦT _n (k-ft)	Anchor Rod Tensile Usage, T _u / ΦT _n
0.8	0.65	37.4	80.98	46.2%

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, $V_u / \Phi_c V_n$
11.02	475.02	2.3%



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, $V_u / \Phi_c V_n$
10.30	475.02	2.2%



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, $M_{uv} / \Phi_{bv} M_{nv}$
109.24	74.125	0.531	0.3530	584.97	18.7%



REINFORCING FLEXURE ANALYSIS - UPLIFT

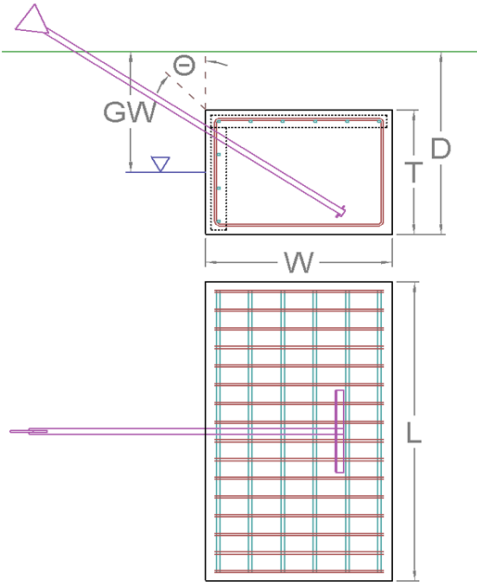
Flexure Load, M_{ut} (k-ft)	Depth to steel, d_t (in)	Whitney Block, a_t (in)	Strain in Rebar, ϵ_t (in/in)	Flexural Capacity, $\Phi_{bt} M_{nt}$ (k-ft)	Rebar Flexural Usage, $M_{ut} / \Phi_{bt} M_{nt}$
102.08	74.125	0.664	0.2818	730.55	14.0%



GUY ANCHOR BLOCK FOUNDATION ANALYSIS (NODE A2b @ r = 260 ft)

APPLIED REACTIONS	
Uplift (k)	Shear (k)
25.66	27.48

FOUNDATION PARAMETERS			
Base Depth:	D	7	ft
Block Width:	W	6.5	ft
Block Length:	L	32	ft
Block Thickness:	T	6.5	ft
Concrete Compressive Strength:		3,000	psi
Top Rebar Quantity, Size, & Yield:		(5) #6 bars [60 ksi]	
Side Rebar Quantity, Size, & Yield:		(4) #6 bars [60 ksi]	
Anchor Rod Quantity & Shape:		(1) Solid Rod	
Anchor Rod Area (gross/net):		2.410 // 2.410	in ²
Anchor Rod Strength (fy/fu):		42 // 58	ksi



SOIL PARAMETERS			
Water Table Depth [BGL]:	GW	4	ft
Soil Unit Weight:		110	pcf
Friction Angle:		0	°
Cohesion:		900	psf
Ultimate Skin Friction		450	psf
Coefficient of Shear Friction:		0.3	
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
119.55	0	206.99	12.4%

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
27.79	39.63	2,212.50	460.20	0	395.72	6.9%

ANCHOR ROD STRENGTH ANALYSIS				
Yield Strength Reduction Factor, Φ _y	Tensile Strength Reduction Factor, Φ _t	Resultant Tensile Load, T _u (k)	Tensile Capacity, ΦT _n (k-ft)	Anchor Rod Tensile Usage, T _u / ΦT _n
0.8	0.65	37.6	80.98	46.4%

REINFORCING STEEL STRENGTH ANALYSIS			
Strength Shear Reduction Factor, Φ _v	Strength Reduction Factor for Lateral Flexure, Φ _{BL}	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, $V_u / \Phi_c V_n$	
11.09	475.02	2.3%	

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, $V_u / \Phi_c V_n$	
10.36	475.02	2.2%	

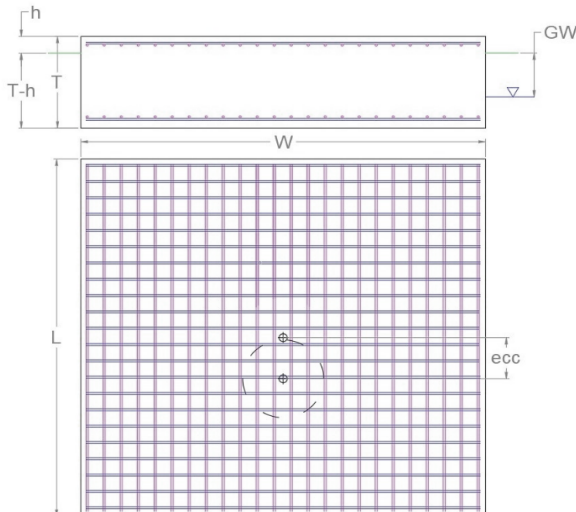
REINFORCING FLEXURE ANALYSIS - SHEAR

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, $M_{uv} / \Phi_{bv} M_{nv}$	
109.92	74.125	0.531	0.3530	584.97	18.8%	

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, $M_{ut} / \Phi_{bt} M_{nt}$	
102.64	74.125	0.664	0.2818	730.55	14.0%	

MAT & PIER FOUNDATION ANALYSIS (NODE 1)

APPLIED GLOBAL REACTIONS					
Moment (k-ft)		Axial (k)		Shear (k)	
0.00		140.80		0.07	
FOUNDATION PARAMETERS					
Mat Length:	L	10	ft		
Mat Width:	W	10	ft		
Mat Thickness:	T	5.5	ft		
Base Depth:	L+T-h	5	ft		
Concrete Compressive Strength:		3,000	psi		
Mat Top Rebar:		(10) #6 bars [60 ksi]			
Mat Bottom Rebar:		(10) #6 bars [60 ksi]			
Rebar Clear Cover:		3.0	in		
Tower Eccentricity:	ecc	0	ft		
Tower Leg Count		1			
SOIL PARAMETERS					
Water Table Depth [BGL]:	GW	7	ft		
Soil Unit Weight:		107	pcf		
Ultimate Skin Friction:		50	psf		
Ultimate Bearing Pressure:		4,700	psf		
Bearing Pressure Type:		Gross			
Coefficient of Shear Friction:		0.3			
					
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		1.2	1.2	
SOIL OVERTURNING ANALYSIS					
Design Moment, $M_{u,Design}$ (k-ft)	Nominal Overturning Capacity, $\Phi_m M_n$ (k-ft)		Soil Overturning Usage, $M_{u,Design} / \Phi_m M_n$		
0.38	1,248.14		0.0%		
SOIL BEARING ANALYSIS					
Net Bearing Pressure, $P_{u,Net}$ (psf)	Nominal Bearing Capacity, $\Phi_b P_n$ (psf)		Bearing Pressure Controlling Load Direction	Soil Bearing Usage, $P_{u,net} / \Phi_b P_n$	
2,399.00	2,820.00		Parallel to Pad Edge	85.1%	
SOIL SLIDING SHEAR ANALYSIS					
Applied Shear Force, V_u (k)	Friction Resistance (k)	Passive Pressure (psf)	Passive Pressure Resistance (k)	Nominal Shear Capacity, Φ_s V_n (k)	Soil Sliding Shear Usage, $V_u / \Phi_s V_n$
0.07	59.95	240.8	13.24	43.91	0.0%
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, $V_u / \Phi_c V_n$	
5.78	231.20	Diagonal to Pad Edge	2.5%	

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, $v_u / \Phi_c v_n$	
9.1	164.3	5.5%	

MAT REINFORCING MOMENT TRANSFER ANALYSIS

Moment Transfer Effective Flexural Width, w_t (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, $0.6 M_{ut} / \Phi M_{sc,f}$	
16.50	0.87	0.00	24,528.4	0.0%	

MAT REINFORCING FLEXURE ANALYSIS - UPPER STEEL

Factored Moment, M_u (k-ft)	Nominal Flexural Capacity, ΦM_n (k-ft)	Flexural Steel Controlling Load Direction	Mat Upper Rebar Flexure Usage, $M_u / \Phi M_n$	
0.04	1,644.74	Diagonal to Pad Edge	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, $M_u / \Phi M_n$	
176.10	1,225.29	Parallel to Pad Edge	14.4%	