



Structural Analysis Report

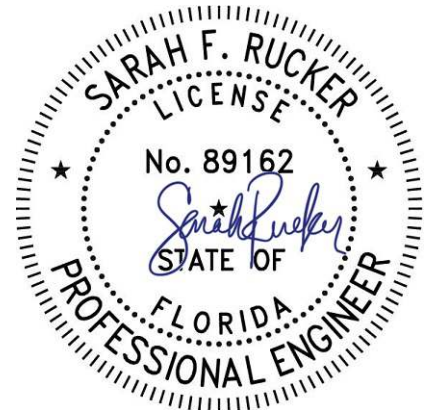
Structure : 300 ft Guyed Tower
ATC Asset Name : Thomas ARP3 Raw Land FL
ATC Asset Number : 417361
Engineering Number : 14430235_C3_03
Proposed Carrier : T-MOBILE
Carrier Site Name : 9JK1875 (UsA)
Carrier Site Number : 9JK1875A
Site Location : 744 NW Spradley Road
Lake City, FL 32055-5951
30.3663, -82.6294
County : Columbia
Date : April 6, 2023
Max Usage : 80%
Analysis Result : Pass

Prepared By:

Ryan Gingras
Structural Engineer I

A handwritten signature in blue ink, appearing to read 'R. Gingras'.

Reviewed By:



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

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

Sarah Rucker
Digitally signed by Sarah Rucker
Date: 2023.04.10 09:20:46 -04'00'

COA: 9053

Introduction

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

Supporting Documents

Tower Drawing:	Sabre Job #05-12108 Revision A, dated January 12, 2005
Foundation Drawing:	Sabre Job #05-12108 Revision A, dated January 12, 2005
Geotechnical Report:	SDII Project #3008708, dated August 9, 2004

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:	117 mph (3-second gust)
Basic Wind Speed w/ Ice:	30 mph (3-second gust) w/ 0.25" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2018 IBC / 7th ED (2020) Florida Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.09$, $S_i = 0.05$
Site Class:	D - Stiff Soil - Default

Conclusion

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

If you have any questions or require additional information, please contact American Tower via email at **Engineering@americantower.com** Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Proposed Carrier Final Loading

Elev.*	Qty	Equipment	Lines	Carrier
265.0'	4	Commscope FFVV-65C-R3-V1	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	4	Ericsson AIR 6419 B41		
	4	Ericsson Radio 4460 B25+B66		
	4	Ericsson Radio 4480 B71+B85A		
	4	Light Sector Frame		

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

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

Install proposed lines alongside existing T-MOBILE lines.

Other Existing/Reserved Loading

Elev.*	Qty	Equipment	Lines	Carrier
297.0'	-	-	(1) 1 5/8" Hybriflex	ALLTEL COMMUNICATIONS, LLC
295.0'	3	Light Sector Frame	-	VERIZON
	1	Commscope RC3DC-3315-PF-48	(4) 1 1/4" Coax (8) 1 5/8" Coax (1) 1.58" (40.1mm) Hybrid	ALLTEL COMMUNICATIONS, LLC
	1	VZW Unused Reserve (12203.87 sqin)		
	2	Antel RWA-80017_		
	3	Andrew ETD819HS12UB		
	3	Commscope E15R05P19 (27.6 lbs)		
	3	Ericsson RRUS 32 (50.8 lbs)		
	3	Ericsson Radio 2212 B13		
	4	Antel RWA-80016CF ____		
	6	CSS X7CQAP-86-865-V		
293.0'	3	Andrew ETD819HS12UB	-	ALLTEL COMMUNICATIONS, LLC
287.0'	1	Torque Arms	-	-
275.0'	3	CCI HBSA-M65R-KU-H6	(3) 0.39" (10mm) Fiber Trunk (4) 0.78" (19.7mm) 8 AWG 6 (2) 0.95" (24.2mm) Cable	AT&T MOBILITY
	3	Ericsson 4478 Band 14 (15" Height)		
	3	Ericsson RRUS 4415 B30		
	3	Ericsson RRUS 4449 B5, B12		
	3	Ericsson RRUS 8843 B2, B66A		
	3	Sector Frame		
	3	Raycap DC6-48-60-18-8C-EV		
	6	Commscope NNHH-65B-R4		

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

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

Structure Usages

Structural Component	Usage	Pass/Fail
Legs	68%	Pass
Diagonals	80%	Pass
Horizontals	27%	Pass
Guys	65%	Pass
Leg Bolts	4%	Pass

Foundation Reactions & Usages

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	Usage
Base Axial (k)	176.7	238.5	145.7	61%
Anchor 1 Uplift (kips)	73.8	99.6	58.5	59%
Anchor 1 Shear (kips)	83.5	112.7	65.7	58%

**The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2*

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

Standard Conditions

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

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

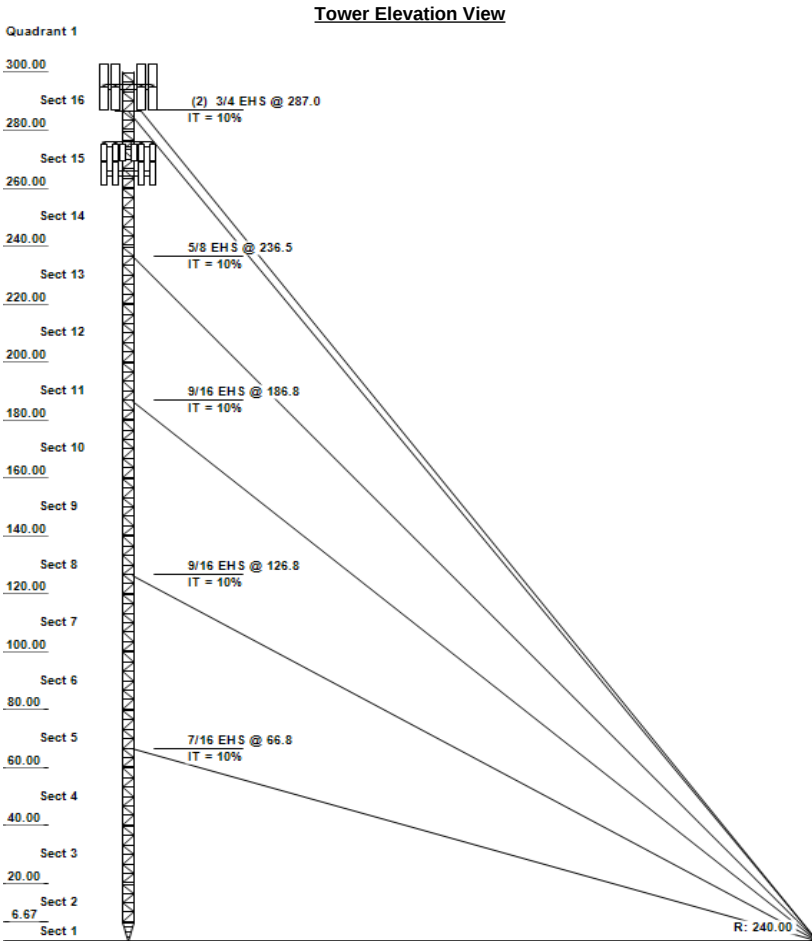
It is the responsibility of the client to ensure that the information provided to ATC Tower Services, LLC and used in the performance of our engineering services is correct and complete.

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

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

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

ANALYSIS PARAMETERS					
Nominal Wind:	117 mph	Ice Wind:	30 mph w/ 0.25" ice	Service Wind:	60 mph
Risk Category:	II	Exposure:	C	S _g :	0.091
Topo Category:	1	Topo Factor:	Method 1	S _i :	0.053
Structure Height:	300 ft	Base Elevation:	0 ft	Shape:	Triangle
Base Width:	3 ft	Top Width:	3 ft	Base Type:	Pivot



BASE REACTIONS

Axial (k):	145.69
Shear (k):	1.93

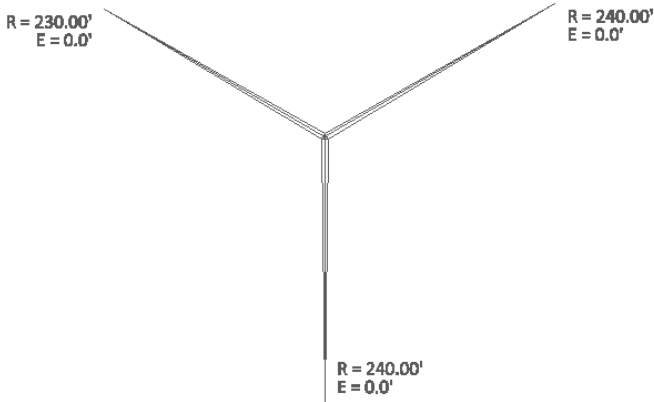
TOWER SECTION PROPERTIES			
Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 2 1/4" SOL		PLA 36 ksi 12 X 1/2"
2	SOL 50 ksi 2 1/4" SOL	SOL 36 ksi 1 1/4" SOLID	SOL 36 ksi 7/8" SOLID
3-4	SOL 50 ksi 2 1/4" SOL	SOL 36 ksi 1" SOLID	SOL 36 ksi 7/8" SOLID
5-14	SOL 50 ksi 2" SOLID	SOL 36 ksi 1" SOLID	SOL 36 ksi 7/8" SOLID
15	SOL 50 ksi 2" SOLID	SOL 36 ksi 1 1/4" SOLID	SOL 36 ksi 7/8" SOLID
16	SOL 50 ksi 1 3/4" SOL	SOL 36 ksi 1 1/4" SOLID	SOL 36 ksi 7/8" SOLID

SECONDARY BRACING MEMBERS			
Section	Sub Diagonal 1	Sub Diagonal 2	Sub Diagonal 3
1 - 16	-	-	-
Section	Sub Horizontal 1	Sub Horizontal 2	Sub Horizontal 3
1 - 16	-	-	-

DISCRETE APPURTENANCE		LINEAR APPURTENANCE	
Elev (ft)	Description	Elev To (ft)	Description
295.0	(6) CSS X7CQAP-86-865-V	297.0	(1) 1 5/8" Hybriflex
295.0	(4) Antel RWA-80016CF	295.0	(8) 1 5/8" Coax
295.0	(3) Commscope E15R05P19 (27.6 lbs)	295.0	(4) 1 1/4" Coax
295.0	(3) Flat Light Sector Frame	295.0	(1) Waveguide
295.0	(3) Ericsson RRUS 32 (50.8 lbs)	295.0	(1) 1.58" (40.1mm) Hybrid
295.0	(3) Ericsson Radio 2212 B13	284.0	(1) Waveguide
295.0	(3) Andrew ETD819HS12UB	275.0	(4) 0.78" (19.7mm) 8 AWG 6
295.0	(2) Antel RWA-80017	275.0	(3) 0.39" (10mm) Fiber Trunk
295.0	(1) VZW Unused Reserve (12203.87 s	275.0	(2) 0.95" (24.2mm) Cable
295.0	(1) Commscope RC3DC-3315-PF-48	265.0	(3) 1.99" (50.7mm) Hybrid
293.0	(3) Andrew ETD819HS12UB	265.0	(1) Waveguide
287.0	(1) Torque Arms		
275.0	(6) Commscope NNHH-65B-R4		
275.0	(3) Ericsson RRUS 4415 B30		
275.0	(3) Ericsson RRUS 4449 B5, B12		
275.0	(3) CCI HBSA-M65R-KU-H6		
275.0	(3) Ericsson RRUS 8843 B2, B66A		
275.0	(3) Ericsson 4478 Band 14 (15" Hei		
275.0	(3) Generic Round Sector Frame		
275.0	(3) Raycap DC6-48-60-18-8C-EV		
265.0	(4) Ericsson Radio 4460 B25+B66		
265.0	(4) Ericsson Radio 4480 B71+B85A		
265.0	(4) Ericsson AIR 6419 B41		
265.0	(4) Commscope FFVV-65C-R3-V1		
265.0	(4) Generic Flat Light Sector Fram		

GUY ANCHOR REACTIONS					
Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (k)	Shear (k)	
230.0	0.00	240	58.48	65.66	
240.0	0.00	0	30.00	34.51	
240.0	0.00	120	45.79	53.54	

Tower Plan View



ANALYSIS PARAMETERS			
Location:	Columbia County, FL	Height:	300 ft
Type and Shape:	Guyed, Triangle	Base Elevation:	0.00 ft
Manufacturer:	Sabre	Bottom Face Width:	3.00 ft
Kd	0.85	Top Face Width:	3.00 ft
Ke:	1.00		

ICE & WIND PARAMETERS			
Exposure Category:	C	Design Wind Speed Without Ice:	117 mph
Risk Category:	II	Design Wind Speed with Ice:	30 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	Flat	Design Ice Thickness:	0.25 in
Crest Height:	0 ft	HMSL:	115 ft

SEISMIC PARAMETERS					
Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):		1.01	
T _L (sec):	8	P:	1.3	C _s :	0.030
S _s :	0.091	S ₁ :	0.053	C _{s, Max} :	0.030
F _a :	1.600	F _v :	2.400	C _{s, Min} :	0.030
S _{ds} :	0.097	S _{d1} :	0.085		

LOAD CASES	
1.2D + 1.0W Normal	1.2D + 1.0W Normal - 117 mph Wind with No Ice
1.2D + 1.0W 60°	1.2D + 1.0W 60° - 117 mph Wind with No Ice
1.2D + 1.0W 90°	1.2D + 1.0W 90° - 117 mph Wind with No Ice
1.2D + 1.0Di + 1.0Wi Normal	1.2D + 1.0Di + 1.0Wi Normal - 30 mph Wind with 0.25" Radial Ice
1.2D + 1.0Di + 1.0Wi 60°	1.2D + 1.0Di + 1.0Wi 60° - 30 mph Wind with 0.25" Radial Ice
1.2D + 1.0Di + 1.0Wi 90°	1.2D + 1.0Di + 1.0Wi 90° - 30 mph Wind with 0.25" 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
1.0D + 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

ASSET: 417361, Thomas ARP3 Raw Land FL

CODE: ANSI/TIA-222-H

CUSTOMER: T-MOBILE

PROJECT: 14430235_C3_03

TOWER LOADING – DISCRETE APPURTENANCE

Discrete Appurtenance Properties for LC: **1.2D + 1.0W**

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc. (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
295.0	Commscope E15R05P19 (27.6 lbs)	3	28	0.9	0.9	9.9	6.4	0.80	0.50	-1.0	45.22	47.11	45	99
295.0	Andrew ETD819HS12UB	3	19	1.3	0.9	13.8	3.5	0.80	0.50	-2.1	132.19	47.07	63	67
295.0	Ericsson Radio 2212 B13	3	43	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.00	47.14	89	154
295.0	Ericsson RRUS 32 (50.8 lbs)	3	51	2.7	2.2	12.1	6.7	0.80	0.50	2.0	259.27	47.21	130	183
295.0	Commscope RC3DC-3315-PF-48	1	32	3.8	2.4	15.7	10.3	0.80	0.50	2.3	139.62	47.22	61	38
295.0	Antel RWA-80016CF	4	31	10.9	8.0	11.2	5.9	0.80	0.68	0.2	190.30	47.15	951	149
295.0	Antel RWA-80017	2	31	10.9	8.0	11.2	5.9	0.80	0.76	0.3	159.52	47.16	532	74
295.0	CSS X7CQAP-86-865-V	6	54	13.4	8.0	14.6	8.9	0.80	0.70	-0.1	180.99	47.14	1810	386
295.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	47.14	1081	1440
295.0	VZW Unused Reserve (12203.87 s	1	1541	84.7	0.0	0.0	0.0	0.80	0.90	0.0	0.00	47.14	2445	1850
293.0	Andrew ETD819HS12UB	3	19	1.3	0.9	13.8	3.5	0.80	0.50	0.0	0.00	47.08	63	67
287.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	46.87	598	600
275.0	Ericsson RRUS 8843 B2, B66A	3	72	1.6	1.2	13.2	10.9	0.80	0.50	0.0	0.00	46.45	78	259
275.0	Ericsson 4478 Band 14 (15" Hei	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	46.45	87	216
275.0	Ericsson RRUS 4415 B30	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	46.45	87	166
275.0	Ericsson RRUS 4449 B5, B12	3	71	2.0	1.5	13.2	9.4	0.80	0.50	2.1	196.24	46.53	93	256
275.0	Raycap DC6-48-60-18-8C-EV	3	16	4.8	2.6	18.3	10.2	0.80	0.50	1.0	227.04	46.49	227	58
275.0	CCI HBSA-M65R-KU-H6	3	45	8.5	5.7	13.7	8.5	0.80	0.69	-0.3	166.43	46.44	555	160
275.0	Commscope NNHH-65B-R4	6	84	12.3	6.0	19.6	7.8	0.80	0.64	-0.4	595.20	46.44	1488	603
275.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	46.45	857	1080
265.0	Ericsson Radio 4460 B25+B66	4	109	2.6	1.6	15.7	12.1	0.80	0.50	0.0	0.00	46.09	161	523
265.0	Ericsson Radio 4480 B71+B85A	4	84	2.9	1.8	15.7	7.5	0.80	0.50	0.0	0.00	46.09	179	403
265.0	Ericsson AIR 6419 B41	4	83	6.3	3.0	20.9	9.0	0.80	0.63	0.0	0.00	46.09	499	400
265.0	Generic Flat Light Sector Fram	4	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	46.09	1578	1920
265.0	Commscope FFVV-65C-R3-V1	4	125	21.1	8.0	25.2	9.3	0.80	0.63	0.0	0.00	46.09	1668	598
Totals		80	9,790	709.2									15,425	11,748

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

Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc. (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
295.0	Commscope E15R05P19 (27.6 lbs)	3	33	1.1	0.9	9.9	6.4	0.80	0.50	-1.0	3.34	3.10	3	116
295.0	Andrew ETD819HS12UB	3	24	1.4	0.9	13.8	3.5	0.80	0.50	-2.1	9.59	3.09	5	83
295.0	Ericsson Radio 2212 B13	3	52	2.0	1.4	13.5	6.3	0.80	0.50	0.0	0.00	3.10	6	181
295.0	Ericsson RRUS 32 (50.8 lbs)	3	64	2.9	2.2	12.1	6.7	0.80	0.50	2.0	18.35	3.10	9	221
295.0	Commscope RC3DC-3315-PF-48	1	52	4.0	2.4	15.7	10.3	0.80	0.50	2.3	9.75	3.10	4	58
295.0	Antel RWA-80016CF	4	67	11.2	8.0	11.2	5.9	0.80	0.68	0.2	12.84	3.10	64	293
295.0	Antel RWA-80017	2	68	11.5	8.0	11.2	5.9	0.80	0.76	0.3	11.04	3.10	37	148
295.0	CSS X7CQAP-86-865-V	6	103	14.1	8.0	14.6	8.9	0.80	0.70	-0.1	12.49	3.10	125	685
295.0	Flat Light Sector Frame	3	454	20.6	0.0	0.0	0.0	0.75	0.67	0.0	0.00	3.10	82	1601
295.0	VZW Unused Reserve (12203.87 s	1	1733	95.3	0.0	0.0	0.0	0.80	0.90	0.0	0.00	3.10	181	2041
293.0	Andrew ETD819HS12UB	3	24	1.4	0.9	13.8	3.5	0.80	0.50	0.0	0.00	3.10	5	83
287.0	Torque Arms	1	562	16.9	0.0	0.0	0.0	1.00	1.00	0.0	0.00	3.08	44	662
275.0	Ericsson RRUS 8843 B2, B66A	3	83	1.8	1.2	13.2	10.9	0.80	0.50	0.0	0.00	3.05	6	292
275.0	Ericsson 4478 Band 14 (15" Hei	3	70	2.0	1.4	13.4	7.7	0.80	0.50	0.0	0.00	3.05	6	245
275.0	Ericsson RRUS 4415 B30	3	55	2.0	1.4	13.4	5.9	0.80	0.50	0.0	0.00	3.05	6	192
275.0	Ericsson RRUS 4449 B5, B12	3	82	2.1	1.5	13.2	9.4	0.80	0.50	2.1	13.98	3.06	7	290
275.0	Raycap DC6-48-60-18-8C-EV	3	39	5.0	2.6	18.3	10.2	0.80	0.50	1.0	15.74	3.06	16	126
275.0	CCI HBSA-M65R-KU-H6	3	79	9.0	5.7	13.7	8.5	0.80	0.69	-0.3	11.54	3.05	38	263
275.0	Commscope NNHH-65B-R4	6	128	12.8	6.0	19.6	7.8	0.80	0.64	-0.4	40.72	3.05	102	870
275.0	Generic Round Sector Frame	3	365	17.3	0.0	0.0	0.0	0.75	0.67	0.0	0.00	3.05	68	1275
265.0	Ericsson Radio 4460 B25+B66	4	125	2.8	1.6	15.7	12.1	0.80	0.50	0.0	0.00	3.03	11	586
265.0	Ericsson Radio 4480 B71+B85A	4	97	3.0	1.8	15.7	7.5	0.80	0.50	0.0	0.00	3.03	13	457
265.0	Ericsson AIR 6419 B41	4	110	6.6	3.0	20.9	9.0	0.80	0.63	0.0	0.00	3.03	34	507
265.0	Generic Flat Light Sector Fram	4	453	20.6	0.0	0.0	0.0	0.75	0.75	0.0	0.00	3.03	119	2133
265.0	Commscope FFVV-65C-R3-V1	4	198	21.8	8.0	25.2	9.3	0.80	0.63	0.0	0.00	3.03	113	891
Totals		80	12,342	770.4									1104	14,300

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

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc. (ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
295.0	Commscope E15R05P19 (27.6 lbs)	3	28	0.9	0.9	9.9	6.4	0.80	0.50	-1.0	11.89	12.39	12	83
295.0	Andrew ETD819HS12UB	3	19	1.3	0.9	13.8	3.5	0.80	0.50	-2.1	34.76	12.38	17	56
295.0	Ericsson Radio 2212 B13	3	43	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.00	12.40	23	128
295.0	Ericsson RRUS 32 (50.8 lbs)	3	51	2.7	2.2	12.1	6.7	0.80	0.50	2.0	68.19	12.42	34	152
295.0	Commscope RC3DC-3315-PF-48	1	32	3.8	2.4	15.7	10.3	0.80	0.50	2.3	36.72	12.42	16	32
295.0	Antel RWA-80016CF	4	31	10.9	8.0	11.2	5.9	0.80	0.68	0.2	50.04	12.40	250	124
295.0	Antel RWA-80017	2	31	10.9	8.0	11.2	5.9	0.80	0.76	0.3	41.95	12.40	140	62
295.0	CSS X7CQAP-86-865-V	6	54	13.4	8.0	14.6	8.9	0.80	0.70	-0.1	47.60	12.40	476	322
295.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	12.40	284	1200
295.0	VZW Unused Reserve (12203.87 s	1	1541	84.7	0.0	0.0	0.0	0.80	0.90	0.0	0.00	12.40	643	1541
293.0	Andrew ETD819HS12UB	3	19	1.3	0.9	13.8	3.5	0.80	0.50	0.0	0.00	12.38	17	56
287.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.00	12.33	157	500
275.0	Ericsson RRUS 8843 B2, B66A	3	72	1.6	1.2	13.2	10.9	0.80	0.50	0.0	0.00	12.22	20	216

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_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)
275.0	Ericsson 4478 Band 14 (15" Hei	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	12.22	23	180
275.0	Ericsson RRUS 4415 B30	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	12.22	23	138
275.0	Ericsson RRUS 4449 B5, B12	3	71	2.0	1.5	13.2	9.4	0.80	0.50	2.1	51.61	12.24	25	213
275.0	Raycap DC6-48-60-18-8C-EV	3	16	4.8	2.6	18.3	10.2	0.80	0.50	1.0	59.71	12.23	60	48
275.0	CCI HBSA-M65R-KU-H6	3	45	8.5	5.7	13.7	8.5	0.80	0.69	-0.3	43.77	12.21	146	134
275.0	Commscope NNHH-65B-R4	6	84	12.3	6.0	19.6	7.8	0.80	0.64	-0.4	156.53	12.21	391	503
275.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	12.22	225	900
265.0	Ericsson Radio 4460 B25+B66	4	109	2.6	1.6	15.7	12.1	0.80	0.50	0.0	0.00	12.12	42	436
265.0	Ericsson Radio 4480 B71+B85A	4	84	2.9	1.8	15.7	7.5	0.80	0.50	0.0	0.00	12.12	47	336
265.0	Ericsson AIR 6419 B41	4	83	6.3	3.0	20.9	9.0	0.80	0.63	0.0	0.00	12.12	131	333
265.0	Generic Flat Light Sector Fram	4	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	12.12	415	1600
265.0	Commscope FFVV-65C-R3-V1	4	125	21.1	8.0	25.2	9.3	0.80	0.63	0.0	0.00	12.12	439	498
Totals		80	9,790	709.2									4,057	9,790

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_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	297.0	1 5/8" Hybriflex	1	1.98	1.30	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	295.0	1 5/8" Coax	8	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
0.0	295.0	1 1/4" Coax	4	1.55	0.63	50	3	Block	0.00	N	1.00	1.00	0.00
0.0	295.0	1.58" (40.1mm) Hybrid	1	1.58	1.61	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	295.0	Waveguide	1	2.00	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	284.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	275.0	0.39" (10mm) Fiber Trunk	3	0.39	0.06	100	2	Individual	0.00	N	1.00	1.00	0.01
0.0	275.0	0.78" (19.7mm) 8 AWG 6	4	0.78	0.59	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	275.0	0.95" (24.2mm) Cable	2	0.95	0.73	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	265.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	265.0	1.99" (50.7mm) Hybrid	3	1.99	1.90	100	1	Individual	0.00	N	1.00	1.00	0.00

ASSET: 417361, Thomas ARP3 Raw Land FL

CODE: ANSI/TIA-222-H

CUSTOMER: T-MOBILE

PROJECT: 14430235_C3_03

SECTION FORCES

1.2D + 1.0W Normal

Gust Response Factor (Gh): 0.85

117 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)
16	290	46.98	0.000	9.964	0.00	0.158	2.74	1.00	1.00	0.0	5.76	15.78	0.00	1499	0	630	964	1594
15	270	46.27	0.000	10.773	0.00	0.170	2.70	1.00	1.00	0.0	6.25	16.86	0.00	2041	0	663	1657	2320
14	250	45.53	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	2132	0	625	2013	2638
13	230	44.74	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	2138	0	650	1978	2628
12	210	43.89	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	2132	0	603	1940	2543
11	190	42.97	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	2138	0	624	1900	2524
10	170	41.98	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	2132	0	577	1856	2433
9	150	40.89	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	2132	0	562	1808	2369
8	130	39.67	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	2138	0	577	1754	2331
7	110	38.30	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	2132	0	526	1693	2220
6	90	36.72	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	2132	0	504	1623	2128
5	70	34.83	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	2138	0	506	1540	2046
4	50	32.45	0.000	11.054	0.00	0.173	2.69	1.00	1.00	0.0	6.41	17.23	0.00	2337	0	475	1434	1910
3	30	29.14	0.000	11.054	0.00	0.173	2.69	1.00	1.00	0.0	6.41	17.23	0.00	2337	0	427	1288	1715
2	13	25.21	0.000	7.776	0.00	0.183	2.65	1.00	1.00	0.0	4.53	12.02	0.00	1659	0	258	743	1001
1	3	25.21	3.282	2.584	0.00	0.521	1.87	1.00	1.00	0.0	5.08	9.52	0.00	1191	0	204	297	501
Totals															32,408	0		32,900

1.2D + 1.0W 60°

Gust Response Factor (Gh): 0.85

117 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)
16	290	46.98	0.000	9.964	0.00	0.158	2.74	0.80	1.00	0.0	5.76	15.78	0.00	1499	0	630	964	1594
15	270	46.27	0.000	10.773	0.00	0.170	2.70	0.80	1.00	0.0	6.25	16.86	0.00	2041	0	663	1657	2320
14	250	45.53	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	2132	0	625	2013	2638
13	230	44.74	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	2138	0	640	1978	2618
12	210	43.89	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	2132	0	603	1940	2543
11	190	42.97	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	2138	0	615	1900	2515
10	170	41.98	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	2132	0	577	1856	2433
9	150	40.89	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	2132	0	562	1808	2369
8	130	39.67	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	2138	0	567	1754	2321
7	110	38.30	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	2132	0	526	1693	2220
6	90	36.72	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	2132	0	504	1623	2128
5	70	34.83	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	2138	0	498	1540	2038
4	50	32.45	0.000	11.054	0.00	0.173	2.69	0.80	1.00	0.0	6.41	17.23	0.00	2337	0	475	1434	1910
3	30	29.14	0.000	11.054	0.00	0.173	2.69	0.80	1.00	0.0	6.41	17.23	0.00	2337	0	427	1288	1715
2	13	25.21	0.000	7.776	0.00	0.183	2.65	0.80	1.00	0.0	4.53	12.02	0.00	1659	0	258	743	1001
1	3	25.21	3.282	2.584	0.00	0.521	1.87	0.80	1.00	0.0	4.43	8.29	0.00	1191	0	178	297	475
Totals															32,408	0		32,836

1.2D + 1.0W 90°

Gust Response Factor (Gh): 0.85

117 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)
16	290	46.98	0.000	9.964	0.00	0.158	2.74	0.85	1.00	0.0	5.76	15.78	0.00	1499	0	630	964	1594
15	270	46.27	0.000	10.773	0.00	0.170	2.70	0.85	1.00	0.0	6.25	16.86	0.00	2041	0	663	1657	2320
14	250	45.53	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	2132	0	625	2013	2638
13	230	44.74	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	2138	0	642	1978	2620
12	210	43.89	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	2132	0	603	1940	2543
11	190	42.97	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	2138	0	617	1900	2517
10	170	41.98	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	2132	0	577	1856	2433
9	150	40.89	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	2132	0	562	1808	2369
8	130	39.67	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	2138	0	570	1754	2324
7	110	38.30	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	2132	0	526	1693	2220
6	90	36.72	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	2132	0	504	1623	2128
5	70	34.83	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	2138	0	500	1540	2040
4	50	32.45	0.000	11.054	0.00	0.173	2.69	0.85	1.00	0.0	6.41	17.23	0.00	2337	0	475	1434	1910
3	30	29.14	0.000	11.054	0.00	0.173	2.69	0.85	1.00	0.0	6.41	17.23	0.00	2337	0	427	1288	1715
2	13	25.21	0.000	7.776	0.00	0.183	2.65	0.85	1.00	0.0	4.53	12.02	0.00	1659	0	258	743	1001
1	3	25.21	3.282	2.584	0.00	0.521	1.87	0.85	1.00	0.0	4.59	8.60	0.00	1191	0	184	297	481
Totals															32,408	0		32,852

1.2D + 1.0Di + 1.0Wi Normal

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0.25" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
16	290	3.09	0.000	14.497	4.53	0.227	2.51	1.00	1.00	0.3	8.50	21.33	4.53	1810	311	56	77	133
15	270	3.04	0.000	15.274	4.50	0.237	2.48	1.00	1.00	0.3	9.00	22.28	4.50	2497	455	58	146	204
14	250	2.99	0.000	14.708	4.47	0.228	2.50	1.00	1.00	0.3	8.63	21.60	4.47	2645	512	55	186	241
13	230	2.94	0.500	14.464	4.43	0.232	2.49	1.00	1.00	0.3	8.99	22.40	4.43	2641	503	56	182	238
12	210	2.89	0.000	14.630	4.39	0.227	2.51	1.00	1.00	0.3	8.58	21.51	4.39	2634	502	53	178	231
11	190	2.83	0.500	14.380	4.35	0.231	2.49	1.00	1.00	0.3	8.94	22.31	4.35	2630	492	54	174	227
10	170	2.76	0.000	14.539	4.30	0.226	2.51	1.00	1.00	0.3	8.52	21.40	4.30	2622	490	50	170	220
9	150	2.69	0.000	14.485	4.24	0.225	2.51	1.00	1.00	0.3	8.49	21.34	4.24	2615	482	49	165	214

ASSET: 417361, Thomas ARP3 Raw Land FL

CODE: ANSI/TIA-222-H

CUSTOMER: T-MOBILE

PROJECT: 14430235_C3_03

SECTION FORCES

1.2D + 1.0Di + 1.0Wi Normal

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0.25" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
8	130	2.61	0.500	14.218	4.18	0.229	2.50	1.00	1.00	0.3	8.84	22.12	4.18	2609	471	49	159	208
7	110	2.52	0.000	14.356	4.11	0.223	2.52	1.00	1.00	0.3	8.41	21.19	4.11	2598	465	45	154	199
6	90	2.41	0.000	14.274	4.03	0.222	2.52	1.00	1.00	0.3	8.36	21.09	4.03	2587	455	43	147	190
5	70	2.29	0.500	13.967	3.93	0.225	2.51	1.00	1.00	0.3	8.68	21.83	3.93	2576	438	42	139	181
4	50	2.13	0.000	14.856	3.80	0.230	2.50	1.00	1.00	0.3	8.73	21.82	3.80	2766	429	40	128	167
3	30	1.92	0.000	14.667	3.61	0.227	2.51	1.00	1.00	0.2	8.61	21.60	3.61	2742	405	35	114	149
2	13	1.66	0.000	10.030	2.25	0.233	2.49	1.00	1.00	0.2	5.91	14.72	2.25	1909	251	21	65	85
1	3	1.66	3.282	3.283	0.70	0.572	1.82	1.00	1.00	0.2	5.67	10.34	0.70	1283	93	15	20	34

** = Section Force Exceeds Solidity Ratio Criteria

Totals 39,163 6,755 2,922

1.2D + 1.0Di + 1.0Wi 60°

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0.25" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
16	290	3.09	0.000	14.497	4.53	0.227	2.51	0.80	1.00	0.3	8.50	21.33	4.53	1810	311	56	77	133
15	270	3.04	0.000	15.274	4.50	0.237	2.48	0.80	1.00	0.3	9.00	22.28	4.50	2497	455	58	146	204
14	250	2.99	0.000	14.708	4.47	0.228	2.50	0.80	1.00	0.3	8.63	21.60	4.47	2645	512	55	186	241
13	230	2.94	0.500	14.464	4.43	0.232	2.49	0.80	1.00	0.3	8.89	22.15	4.43	2641	503	55	182	237
12	210	2.89	0.000	14.630	4.39	0.227	2.51	0.80	1.00	0.3	8.58	21.51	4.39	2634	502	53	178	231
11	190	2.83	0.500	14.380	4.35	0.231	2.49	0.80	1.00	0.3	8.84	22.06	4.35	2630	492	53	174	227
10	170	2.76	0.000	14.539	4.30	0.226	2.51	0.80	1.00	0.3	8.52	21.40	4.30	2622	490	50	170	220
9	150	2.69	0.000	14.485	4.24	0.225	2.51	0.80	1.00	0.3	8.49	21.34	4.24	2615	482	49	165	214
8	130	2.61	0.500	14.218	4.18	0.229	2.50	0.80	1.00	0.3	8.74	21.87	4.18	2609	471	48	159	208
7	110	2.52	0.000	14.356	4.11	0.223	2.52	0.80	1.00	0.3	8.41	21.19	4.11	2598	465	45	154	199
6	90	2.41	0.000	14.274	4.03	0.222	2.52	0.80	1.00	0.3	8.36	21.09	4.03	2587	455	43	147	190
5	70	2.29	0.500	13.967	3.93	0.225	2.51	0.80	1.00	0.3	8.58	21.58	3.93	2576	438	42	139	181
4	50	2.13	0.000	14.856	3.80	0.230	2.50	0.80	1.00	0.3	8.73	21.82	3.80	2766	429	40	128	167
3	30	1.92	0.000	14.667	3.61	0.227	2.51	0.80	1.00	0.2	8.61	21.60	3.61	2742	405	35	114	149
2	13	1.66	0.000	10.030	2.25	0.233	2.49	0.80	1.00	0.2	5.91	14.72	2.25	1909	251	21	65	85
1	3	1.66	3.282	3.283	0.70	0.572	1.82	0.80	1.00	0.2	5.01	9.14	0.70	1283	93	13	20	33

** = Section Force Exceeds Solidity Ratio Criteria

Totals 39,163 6,755 2,919

1.2D + 1.0Di + 1.0Wi 90°

Gust Response Factor (Gh): 0.85

Ice Importance Factor: 1.00

30 mph Wind with 0.25" Radial Ice

Wind Importance Factor (Iw): 1.00

Ice Dead Load Factor: 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
16	290	3.09	0.000	14.497	4.53	0.227	2.51	0.85	1.00	0.3	8.50	21.33	4.53	1810	311	56	77	133
15	270	3.04	0.000	15.274	4.50	0.237	2.48	0.85	1.00	0.3	9.00	22.28	4.50	2497	455	58	146	204
14	250	2.99	0.000	14.708	4.47	0.228	2.50	0.85	1.00	0.3	8.63	21.60	4.47	2645	512	55	186	241
13	230	2.94	0.500	14.464	4.43	0.232	2.49	0.85	1.00	0.3	8.92	22.22	4.43	2641	503	56	182	237
12	210	2.89	0.000	14.630	4.39	0.227	2.51	0.85	1.00	0.3	8.58	21.51	4.39	2634	502	53	178	231
11	190	2.83	0.500	14.380	4.35	0.231	2.49	0.85	1.00	0.3	8.87	22.12	4.35	2630	492	53	174	227
10	170	2.76	0.000	14.539	4.30	0.226	2.51	0.85	1.00	0.3	8.52	21.40	4.30	2622	490	50	170	220
9	150	2.69	0.000	14.485	4.24	0.225	2.51	0.85	1.00	0.3	8.49	21.34	4.24	2615	482	49	165	214
8	130	2.61	0.500	14.218	4.18	0.229	2.50	0.85	1.00	0.3	8.76	21.93	4.18	2609	471	49	159	208
7	110	2.52	0.000	14.356	4.11	0.223	2.52	0.85	1.00	0.3	8.41	21.19	4.11	2598	465	45	154	199
6	90	2.41	0.000	14.274	4.03	0.222	2.52	0.85	1.00	0.3	8.36	21.09	4.03	2587	455	43	147	190
5	70	2.29	0.500	13.967	3.93	0.225	2.51	0.85	1.00	0.3	8.61	21.64	3.93	2576	438	42	139	181
4	50	2.13	0.000	14.856	3.80	0.230	2.50	0.85	1.00	0.3	8.73	21.82	3.80	2766	429	40	128	167
3	30	1.92	0.000	14.667	3.61	0.227	2.51	0.85	1.00	0.2	8.61	21.60	3.61	2742	405	35	114	149
2	13	1.66	0.000	10.030	2.25	0.233	2.49	0.85	1.00	0.2	5.91	14.72	2.25	1909	251	21	65	85
1	3	1.66	3.282	3.283	0.70	0.572	1.82	0.85	1.00	0.2	5.17	9.44	0.70	1283	93	13	20	34

** = Section Force Exceeds Solidity Ratio Criteria

Totals 39,163 6,755 2,920

1.0D + 1.0W Service Normal

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _r	D _r	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
16	290	12.35	0.000	9.964	0.00	0.158	2.74	1.00	1.00	0.0	5.76	15.78	0.00	1249	0	166	253	419
15	270	12.17	0.000	10.773	0.00	0.170	2.70	1.00	1.00	0.0	6.25	16.86	0.00	1701	0	174	436	610
14	250	11.97	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	1777	0	164	529	694
13	230	11.77	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	1781	0	171	520	691
12	210	11.54	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	1777	0	159	510	669
11	190	11.30	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	1781	0	164	500	664
10	170	11.04	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	1777	0	152	488	640
9	150	10.75	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	1777	0	148	475	623
8	130	10.43	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	1781	0	152	461	613
7	110	10.07	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	1777	0	138	445	584
6	90	9.66	0.000	10.241	0.00	0.162	2.73	1.00	1.00	0.0	5.92	16.16	0.00	1777	0	133	427	560
5	70	9.16	0.500	10.035	0.00	0.166	2.71	1.00	1.00	0.0	6.30	17.10	0.00	1781	0	133	405	538
4	50	8.53	0.000	11.054	0.00	0.173	2.69	1.00	1.00	0.0	6.41	17.23	0.00	1947	0	125	377	502
3	30	7.66	0.000	11.054	0.00	0.173	2.69	1.00	1.00	0.0	6.41	17.23	0.00	1947	0	112	339	451
2	13	6.63	0.000	7.776	0.00	0.183	2.65	1.00	1.00	0.0	4.53	12.02	0.00	1382	0	68	195	263
1	3	6.63	3.282	2.584	0.00	0.521	1.87	1.00	1.00	0.0	5.08	9.52	0.00	992	0	54	78	132

ASSET: 417361, Thomas ARP3 Raw Land FL

CODE: ANSI/TIA-222-H

CUSTOMER: T-MOBILE

PROJECT: 14430235_C3_03

SECTION FORCES

1.0D + 1.0W Service Normal

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _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)
** = Section Force Exceeds Solidity Ratio Criteria														Totals	27,007	0		8,652

1.0D + 1.0W Service 60°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
16	290	12.35	0.000	9.964	0.00	0.158	2.74	0.80	1.00	0.0	5.76	15.78	0.00	1249	0	166	253	419
15	270	12.17	0.000	10.773	0.00	0.170	2.70	0.80	1.00	0.0	6.25	16.86	0.00	1701	0	174	436	610
14	250	11.97	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	1777	0	164	529	694
13	230	11.77	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	1781	0	168	520	688
12	210	11.54	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	1777	0	159	510	669
11	190	11.30	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	1781	0	162	500	661
10	170	11.04	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	1777	0	152	488	640
9	150	10.75	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	1777	0	148	475	623
8	130	10.43	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	1781	0	149	461	611
7	110	10.07	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	1777	0	138	445	584
6	90	9.66	0.000	10.241	0.00	0.162	2.73	0.80	1.00	0.0	5.92	16.16	0.00	1777	0	133	427	560
5	70	9.16	0.500	10.035	0.00	0.166	2.71	0.80	1.00	0.0	6.20	16.82	0.00	1781	0	131	405	536
4	50	8.53	0.000	11.054	0.00	0.173	2.69	0.80	1.00	0.0	6.41	17.23	0.00	1947	0	125	377	502
3	30	7.66	0.000	11.054	0.00	0.173	2.69	0.80	1.00	0.0	6.41	17.23	0.00	1947	0	112	339	451
2	13	6.63	0.000	7.776	0.00	0.183	2.65	0.80	1.00	0.0	4.53	12.02	0.00	1382	0	68	195	263
1	3	6.63	3.282	2.584	0.00	0.521	1.87	0.80	1.00	0.0	4.43	8.29	0.00	992	0	47	78	125
** = Section Force Exceeds Solidity Ratio Criteria														Totals	27,007	0		8,635

1.0D + 1.0W Service 90°

Gust Response Factor (Gh): 0.85

60 mph Wind with No Ice

Wind Importance Factor (Iw): 1.00

Section #	Elev (ft)	Q _Z (psf)	A _r (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt (lb)	Ice Wt (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
16	290	12.35	0.000	9.964	0.00	0.158	2.74	0.85	1.00	0.0	5.76	15.78	0.00	1249	0	166	253	419
15	270	12.17	0.000	10.773	0.00	0.170	2.70	0.85	1.00	0.0	6.25	16.86	0.00	1701	0	174	436	610
14	250	11.97	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	1777	0	164	529	694
13	230	11.77	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	1781	0	169	520	689
12	210	11.54	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	1777	0	159	510	669
11	190	11.30	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	1781	0	162	500	662
10	170	11.04	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	1777	0	152	488	640
9	150	10.75	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	1777	0	148	475	623
8	130	10.43	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	1781	0	150	461	611
7	110	10.07	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	1777	0	138	445	584
6	90	9.66	0.000	10.241	0.00	0.162	2.73	0.85	1.00	0.0	5.92	16.16	0.00	1777	0	133	427	560
5	70	9.16	0.500	10.035	0.00	0.166	2.71	0.85	1.00	0.0	6.23	16.89	0.00	1781	0	132	405	536
4	50	8.53	0.000	11.054	0.00	0.173	2.69	0.85	1.00	0.0	6.41	17.23	0.00	1947	0	125	377	502
3	30	7.66	0.000	11.054	0.00	0.173	2.69	0.85	1.00	0.0	6.41	17.23	0.00	1947	0	112	339	451
2	13	6.63	0.000	7.776	0.00	0.183	2.65	0.85	1.00	0.0	4.53	12.02	0.00	1382	0	68	195	263
1	3	6.63	3.282	2.584	0.00	0.521	1.87	0.85	1.00	0.0	4.59	8.60	0.00	992	0	48	78	127
** = Section Force Exceeds Solidity Ratio Criteria														Totals	27,007	0		8,640

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_C3_03

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S_s):	0.09
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L – Seconds):	8
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.10
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.08
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s :	0.03
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	1.01
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.25
Total Unfactored Dead Load:	36.80 k
Seismic Base Shear (E):	1.44 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Section/Appurtenance	Height Above Base (ft)	Weight (lb)	W_2 (lb-ft)	C_v	Horizontal Force (lb)	Vertical Force (lb)
16	290.00	1,249	1,521,137	0.059	85	1,523
15	270.00	1,701	1,894,368	0.074	106	2,074
14	250.00	1,777	1,796,895	0.070	100	2,167
13	230.00	1,781	1,622,754	0.063	90	2,172
12	210.00	1,777	1,444,233	0.056	80	2,167
11	190.00	1,781	1,277,256	0.050	71	2,172
10	170.00	1,777	1,108,256	0.043	62	2,167
9	150.00	1,777	947,381	0.037	53	2,167
8	130.00	1,781	793,880	0.031	44	2,172
7	110.00	1,777	642,295	0.025	36	2,167
6	90.00	1,777	499,490	0.019	28	2,167
5	70.00	1,781	365,481	0.014	20	2,172
4	50.00	1,947	262,068	0.010	15	2,375
3	30.00	1,947	138,171	0.005	8	2,375
2	13.34	1,382	35,508	0.001	2	1,686
1	3.34	992	4,490	0.000	0	1,210
Commscope E15R05P19 (27.6 lbs)	295.00	83	103,028	0.004	6	101
Andrew ETD819HS12UB	295.00	56	69,059	0.003	4	68
Ericsson Radio 2212 B13	295.00	128	159,769	0.006	9	157
Ericsson RRUS 32 (50.8 lbs)	295.00	152	189,632	0.007	11	186
Commscope RC3DC-3315-PF-48	295.00	32	39,818	0.002	2	39
Antel RWA-80016CF ____	295.00	124	154,294	0.006	9	151
Antel RWA-80017_	295.00	62	77,147	0.003	4	76
CSS X7CQAP-86-865-V	295.00	322	400,168	0.016	22	392
Flat Light Sector Frame	295.00	1,200	1,493,165	0.058	83	1,463
VZW Unused Reserve (12203.87 sqin)	295.00	1,541	1,917,847	0.074	107	1,879
Andrew ETD819HS12UB	293.00	56	68,473	0.003	4	68
Torque Arms	287.00	500	601,083	0.023	33	610
Ericsson RRUS 8843 B2, B66A	275.00	216	246,136	0.010	14	263
Ericsson 4478 Band 14 (15" Height)	275.00	180	204,771	0.008	11	219
Ericsson RRUS 4415 B30	275.00	138	157,253	0.006	9	168
Ericsson RRUS 4449 B5, B12	275.00	213	242,717	0.009	14	260
Raycap DC6-48-60-18-8C-EV	275.00	48	54,697	0.002	3	59
CCI HBSA-M65R-KU-H6	275.00	134	152,125	0.006	8	163
Commscope NNHH-65B-R4	275.00	503	572,949	0.022	32	613
Generic Round Sector Frame	275.00	900	1,025,565	0.040	57	1,097
Ericsson Radio 4460 B25+B66	265.00	436	474,295	0.018	26	532
Ericsson Radio 4480 B71+B85A	265.00	336	365,512	0.014	20	410
Ericsson AIR 6419 B41	265.00	333	362,466	0.014	20	406
Generic Flat Light Sector Frame	265.00	1,600	1,740,533	0.068	97	1,951
Commscope FFFV-65C-R3-V1	265.00	498	542,176	0.021	30	608

CODE: ANSI/TIA-222-H

PROJECT: 14430235_C3_03

Totals	36,797	25,768,339	1.000	1,435	44,871
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ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_C3_03

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_C3_03

FORCE/STRESS SUMMARY

Section 1 – 0.0' to 6.67'

	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F _y (ksi)	Φ _c P _n (kip)	Shear		# Bolt	# Hole	Use %	Controls
				X	Y	Z				ΦR _{nv} (kip)	Bear ΦR _n (kip)				
Member Compression															
L SOL - 2 1/4" SOLID	-56.27	1.2D + 1.0W 90°	1.68	100	100	100	35.83	35.83	162.89	0.00	0.00	0	0	34	Member X
H PLA - 12 X 1/2"	-0.03	1.2D + 1.0W N	0.731	100	100	100	3.92	3.92	215.90	0.00	0.00	0	0	0	Member Z
	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 PLA - 12 X 1/2"	5.83	1.2D + 1.0W N	36.0	58	194.40	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									

Section 2 – 6.7' to 20.00'

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	-62.30	1.2D + 1.0W 90°	3.208	100	100	100	68.43	68.43	127.05	0.00	0.00	0	0	49	Member X
H SOL - 7/8" SOLID	-0.55	1.2D + 1.0W N	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	5	Member X
D SOL - 1 1/4" SOLID	-2.92	1.2D + 1.0W 90°	4.392	100	100	100	118.06	118.06	19.09	0.00	0.00	0	0	15	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 SOL - 7/8" SOLID	3.00	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0	0	15	Member			
D SOL - 1 1/4" SOLID	2.46	1.2D + 1.0W N	36.0	58	39.76	0.00	0.00	0.00	0	0	6	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 3 – 20.0' to 40.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦR _{nv} (kip)									
L SOL - 2 1/4" SOLID	-68.24	1.2D + 1.0W 60°	3.25	100	100	100	69.33	69.33	125.90	0.00	0.00	0	0	54	Member X
H SOL - 7/8" SOLID	-0.23	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	2	Member X
D SOL - 1" SOLID	-2.10	1.2D + 1.0W N	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	26	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 SOL - 7/8" SOLID	0.60	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0	0	3	Member			
D SOL - 1" SOLID	1.21	1.2D + 1.0W N	36.0	58	25.45	0.00	0.00	0.00	0	0	4	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 %			F _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	ΦR _{nv} (kip)									
L SOL - 2 1/4" SOLID	-67.78	1.2D + 1.0W 60°	3.25	100	100	100	69.33	69.33	125.90	0.00	0.00	0	0	53	Member X
H SOL - 7/8" SOLID	-0.49	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	4	Member X
D SOL - 1" SOLID	-2.41	1.2D + 1.0W 60°	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	30	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 SOL - 7/8" SOLID	0.70	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00		0	0	3	Member		
D SOL - 1" SOLID	1.95	1.2D + 1.0W 90°	36.0	58	25.45	0.00	0.00	0.00		0	0	7	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 5 – 60.0' to 80.00'

ASSET: 417361, Thomas ARP3 Raw Land FL
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Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦRnv (kip)									
L SOL - 2" SOLID	-56.18	1.2D + 1.0W 90°	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	62	Member X
H SOL - 7/8" SOLID	-0.76	1.2D + 1.0W N	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	7	Member X
D SOL - 1" SOLID	-3.37	1.2D + 1.0W 90°	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	41	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 SOL - 7/8" SOLID	1.01	1.2D + 1.0W 60°	36.0	58	19.48	0.00	0.00	0.00	0	0	5	Member			
D SOL - 1" SOLID	2.67	1.2D + 1.0W 90°	36.0	58	25.45	0.00	0.00	0.00	0	0	10	Member			
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

ASSET: 417361, Thomas ARP3 Raw Land FL
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Section 6 – 80.0' to 100.00'

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	-55.93	1.2D + 1.0W 90°	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	61	Member X
H SOL - 7/8" SOLID	-0.27	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	2	Member X
D SOL - 1" SOLID	-1.75	1.2D + 1.0W N	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	21	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 SOL - 7/8" SOLID	0.55	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00		0	0	2	Member		
D SOL - 1" SOLID	1.16	1.2D + 1.0W N	36.0	58	25.45	0.00	0.00	0.00		0	0	4	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 7 – 100.0' to 120.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear ΦRn (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦRnv (kip)									
L SOL - 2" SOLID	-50.06	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	55	Member X
H SOL - 7/8" SOLID	-1.00	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	9	Member X
D SOL - 1" SOLID	-3.92	1.2D + 1.0W N	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	48	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 SOL - 7/8" SOLID	1.34	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00		0	0	6	Member		
D SOL - 1" SOLID	3.62	1.2D + 1.0W 90°	36.0	58	25.45	0.00	0.00	0.00		0	0	14	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type									

Section 8 – 120.0' to 140.00'

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	-61.99	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	68	Member X
H SOL - 7/8" SOLID	-1.46	1.2D + 1.0W N	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	13	Member X
D SOL - 1" SOLID	-5.02	1.2D + 1.0W 90°	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	62	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 SOL - 7/8" SOLID	1.50	1.2D + 1.0W 60°	36.0	58	19.48	0.00	0.00	0.00		0	0	7	Member		
D SOL - 1" SOLID	4.08	1.2D + 1.0W 90°	36.0	58	25.45	0.00	0.00	0.00		0	0	16	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 9 – 140.0' to 160.00'

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	-47.04	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	51	Member X
H SOL - 7/8" SOLID	-0.50	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	4	Member X
D SOL - 1" SOLID	-2.12	1.2D + 1.0W 60°	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	26	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 SOL - 7/8" SOLID	0.66	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0	0	3	Member			
D SOL - 1" SOLID	1.87	1.2D + 1.0W 90°	36.0	58	25.45	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									

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Section 10 – 160.0' to 180.00'

Member Compression														
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	
L SOL - 2" SOLID	-47.73	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0	0	52	Member X
H SOL - 7/8" SOLID	-0.51	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0	0	4	Member X
D SOL - 1" SOLID	-2.23	1.2D + 1.0W N	4.423	100	100	100	148.62	148.62	8.03	0.00	0	0	27	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 SOL - 7/8" SOLID	0.75	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0	0	3	Member		
D SOL - 1" SOLID	1.85	1.2D + 1.0W 90°	36.0	58	25.45	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									

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Section 11 – 180.0' to 200.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)									
L SOL - 2" SOLID	-54.79	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	60	Member X
H SOL - 7/8" SOLID	-0.91	1.2D + 1.0W N	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	8	Member X
D SOL - 1" SOLID	-3.89	1.2D + 1.0W 90°	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	48	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 SOL - 7/8" SOLID	1.03	1.2D + 1.0W 60°	36.0	58	19.48	0.00	0.00	0.00	0	0	5	Member			
D SOL - 1" SOLID	3.50	1.2D + 1.0W 90°	36.0	58	25.45	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 12 – 200.0' to 220.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear ΦR _n (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z	ΦR _{nv} (kip)									
L SOL - 2" SOLID	-36.98	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	40	Member X
H SOL - 7/8" SOLID	-0.51	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	4	Member X
D SOL - 1" SOLID	-2.28	1.2D + 1.0W N	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	28	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 SOL - 7/8" SOLID	0.74	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0	0	3	Member			
D SOL - 1" SOLID	2.08	1.2D + 1.0W 90°	36.0	58	25.45	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 13 – 220.0' to 240.00'

Member Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			F' _y (ksi)	Φ _c P _n (kip)	Shear	Bear Φ _{Rn} (kip)	# Bolt	# Hole	Use %	Controls	
	X			Y	Z	Φ _{Rnv} (kip)									
L SOL - 2" SOLID	-33.89	1.2D + 1.0W N	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	37	Member X
H SOL - 7/8" SOLID	-1.81	1.2D + 1.0W N	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	16	Member X
D SOL - 1" SOLID	-6.45	1.2D + 1.0W 90°	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	80	Member X
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear Φ _{Rnv} (kip)	Bear Φ _{Rn} (kip)	Blk Shear	Φ _t P _n (kip)	# Bolt	# Hole	Use %	Controls		
H SOL - 7/8" SOLID	1.98	1.2D + 1.0W 60°	36.0	58	19.48	0.00	0.00	0.00	0.00	0	0	10	Member		
D SOL - 1" SOLID	5.13	1.2D + 1.0W N	36.0	58	25.45	0.00	0.00	0.00	0.00	0	0	20	Member		
Max Splice Forces	Pu (kip)	Load Case	Φ _{Rnt} (kip)	Use %	Num Bolts	Bolt Type									

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Section 14 – 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					Controls
	X			Y	Z	ΦR _{nv} (kip)				Bear ΦR _n (kip)	# Bolt	# Hole	Use %		
L SOL - 2" SOLID	-46.68	1.2D + 1.0W 60°	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	51	Member X
H SOL - 7/8" SOLID	-1.50	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	14	Member X
D SOL - 1" SOLID	-4.74	1.2D + 1.0W N	4.423	100	100	100	148.62	148.62	8.03	0.00	0.00	0	0	58	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					Controls		
	Φ _t P _n (kip)							# Bolt	# Hole	Use %					
L SOL - 2" SOLID	3.70	1.2D + 1.0W N	50.0	65	141.37	0.00	0.00			0	0	2	Member		
H SOL - 7/8" SOLID	1.59	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0.00	0	0	8	Member		
D SOL - 1" SOLID	5.20	1.2D + 1.0W 90°	36.0	58	25.45	0.00	0.00	0.00	0.00	0	0	20	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

Section 15 – 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 Φ _{Rn} (kip)	# Bolt	# Hole	Use %	Controls
	X			Y	Z	Φ _{Rnv} (kip)									
L SOL - 2" SOLID	-49.89	1.2D + 1.0W 60°	3.25	100	100	100	78.00	78.00	90.61	0.00	0.00	0	0	55	Member X
H SOL - 7/8" SOLID	-2.57	1.2D + 1.0W 60°	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	24	Member X
D SOL - 1 1/4" SOLID	-7.17	1.2D + 1.0W N	4.423	100	100	100	118.90	118.90	18.89	0.00	0.00	0	0	37	Member X
Member Tension	Pu (kip)	Load Case	F _y (ksi)	F _u (ksi)	Φ _c P _n (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls			
	Φ _{Rnv} (kip)					Φ _{Rn} (kip)	Φ _t P _n (kip)								
L SOL - 2" SOLID	6.51	1.2D + 1.0W N	50.0	65	141.37	0.00	0.00			0	0	4	Member		
H SOL - 7/8" SOLID	2.39	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00		0	0	12	Member		
D SOL - 1 1/4" SOLID	7.68	1.2D + 1.0W 90°	36.0	58	39.76	0.00	0.00	0.00		0	0	19	Member		
Max Splice Forces	Pu (kip)	Load Case	Φ _{Rnt} (kip)	Use %	Num Bolts	Bolt Type									
Bot Tension	3.70					1.2D + 1.0W N	90.30	4	3	0.75" A325					

Section 16 – 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					Controls
	X			Y	Z	ΦR _{nv} (kip)				Bear ΦR _n (kip)	# Bolt	# Hole	Use %		
L SOL - 1 3/4" SOLID	-31.52	1.2D + 1.0W N	3.25	100	100	100	89.14	89.14	60.54	0.00	0.00	0	0	52	Member X
H SOL - 7/8" SOLID	-2.78	1.2D + 1.0W N	3	100	100	100	107.01	107.01	10.66	0.00	0.00	0	0	26	Member X
D SOL - 1 1/4" SOLID	-8.31	1.2D + 1.0W 90°	4.423	100	100	100	118.90	118.90	18.89	0.00	0.00	0	0	43	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					Controls		
	Φ _t P _n (kip)							# Bolt	# Hole	Use %					
L SOL - 1 3/4" SOLID	23.38	1.2D + 1.0W 60°	50.0	65	108.24	0.00	0.00			0	0	21	Member		
H SOL - 7/8" SOLID	5.34	1.2D + 1.0W N	36.0	58	19.48	0.00	0.00	0.00	0.00	0	0	27	Member		
D SOL - 1 1/4" SOLID	8.20	1.2D + 1.0W 90°	36.0	58	39.76	0.00	0.00	0.00	0.00	0	0	20	Member		
Max Splice Forces	Pu (kip)	Load Case	ΦR _{nt} (kip)	Use %	Num Bolts	Bolt Type									

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W Normal	66.75	7/16 EHS	A1	31	12.48	0.33	3
		7/16 EHS	A1b	31a	12.48	5.95	48
		7/16 EHS	A1a	31b	12.48	5.98	48
	126.75	9/16 EHS	A1	55	21	0.23	1
		9/16 EHS	A1b	55a	21	10.19	49
		9/16 EHS	A1a	55b	21	10.28	49
	186.75	9/16 EHS	A1	79	21	0.35	2
		9/16 EHS	A1b	79a	21	10.34	49
		9/16 EHS	A1a	79b	21	10.53	50
	236.50	5/8 EHS	A1	98	25.44	0.78	3
		5/8 EHS	A1b	98a	25.44	12.96	51
		5/8 EHS	A1a	98b	25.44	13.29	52
	286.75	3/4 EHS	A1b	T5	34.98	17.02	49
		3/4 EHS	A1	T5	34.98	1.47	4
		3/4 EHS	A1b	T5a	34.98	16.32	47
		3/4 EHS	A1a	T5a	34.98	16.74	48
		3/4 EHS	A1a	T5b	34.98	17.43	50
		3/4 EHS	A1	T5b	34.98	1.47	4
1.2D + 1.0W 60°	66.75	7/16 EHS	A1	31	12.48	1.6	13
		7/16 EHS	A1b	31a	12.48	1.61	13
		7/16 EHS	A1a	31b	12.48	7.44	60
	126.75	9/16 EHS	A1	55	21	2.53	12
		9/16 EHS	A1b	55a	21	2.53	12
		9/16 EHS	A1a	55b	21	12.46	59
	186.75	9/16 EHS	A1	79	21	2.86	14
		9/16 EHS	A1b	79a	21	2.86	14
		9/16 EHS	A1a	79b	21	12.85	61
	236.50	5/8 EHS	A1	98	25.44	3.58	14
		5/8 EHS	A1b	98a	25.44	3.58	14
		5/8 EHS	A1a	98b	25.44	16.41	65
	286.75	3/4 EHS	A1	T5	34.98	5.14	15
		3/4 EHS	A1b	T5	34.98	5.14	15
		3/4 EHS	A1a	T5a	34.98	20.7	59
		3/4 EHS	A1b	T5a	34.98	4.91	14
		3/4 EHS	A1	T5b	34.98	4.91	14
		3/4 EHS	A1a	T5b	34.98	20.7	59
1.2D + 1.0W 90°	66.75	7/16 EHS	A1	31	12.48	3.73	30
		7/16 EHS	A1b	31a	12.48	0.5	4
		7/16 EHS	A1a	31b	12.48	7.18	58
	126.75	9/16 EHS	A1	55	21	6.48	31
		9/16 EHS	A1b	55a	21	0.75	4
		9/16 EHS	A1a	55b	21	12.23	58
	186.75	9/16 EHS	A1	79	21	6.82	32
		9/16 EHS	A1b	79a	21	1.01	5
		9/16 EHS	A1a	79b	21	12.62	60
	236.50	5/8 EHS	A1	98	25.44	8.41	33
		5/8 EHS	A1b	98a	25.44	1.46	6
		5/8 EHS	A1a	98b	25.44	16.05	63
	286.75	3/4 EHS	A1	T5	34.98	11.44	33
		3/4 EHS	A1b	T5	34.98	2.33	7
		3/4 EHS	A1a	T5a	34.98	20.52	59
		3/4 EHS	A1b	T5a	34.98	2.25	6
		3/4 EHS	A1a	T5b	34.98	20.16	58
		3/4 EHS	A1	T5b	34.98	10.76	31
1.2D + 1.0Di + 1.0Wi Normal	66.75	7/16 EHS	A1	31	12.48	2.32	19
		7/16 EHS	A1b	31a	12.48	2.85	23
		7/16 EHS	A1a	31b	12.48	2.86	23
	126.75	9/16 EHS	A1	55	21	3.55	17
		9/16 EHS	A1b	55a	21	4.44	21

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0Di + 1.0Wi 60°	186.75	9/16 EHS	A1a	55b	21	4.49	21
		9/16 EHS	A1	79	21	3.3	16
		9/16 EHS	A1b	79a	21	4.21	20
		9/16 EHS	A1a	79b	21	4.28	20
	236.50	5/8 EHS	A1	98	25.44	3.81	15
		5/8 EHS	A1b	98a	25.44	4.89	19
		5/8 EHS	A1a	98b	25.44	5	20
		3/4 EHS	A1	T5	34.98	4.94	14
	286.75	3/4 EHS	A1b	T5	34.98	6.18	18
		3/4 EHS	A1a	T5a	34.98	6.26	18
		3/4 EHS	A1b	T5a	34.98	6.11	17
		3/4 EHS	A1a	T5b	34.98	6.32	18
	66.75	3/4 EHS	A1	T5b	34.98	4.93	14
		7/16 EHS	A1	31	12.48	2.49	20
		7/16 EHS	A1b	31a	12.48	2.49	20
		7/16 EHS	A1a	31b	12.48	3.02	24
	126.75	9/16 EHS	A1	55	21	3.82	18
		9/16 EHS	A1b	55a	21	3.82	18
		9/16 EHS	A1a	55b	21	4.77	23
		9/16 EHS	A1	79	21	3.58	17
	186.75	9/16 EHS	A1b	79a	21	3.58	17
		9/16 EHS	A1a	79b	21	4.56	22
		5/8 EHS	A1	98	25.44	4.14	16
	236.50	5/8 EHS	A1b	98a	25.44	4.14	16
		5/8 EHS	A1a	98b	25.44	5.34	21
		3/4 EHS	A1b	T5	34.98	5.34	15
		3/4 EHS	A1	T5	34.98	5.34	15
	286.75	3/4 EHS	A1a	T5a	34.98	6.67	19
		3/4 EHS	A1b	T5a	34.98	5.26	15
		3/4 EHS	A1a	T5b	34.98	6.67	19
		3/4 EHS	A1	T5b	34.98	5.26	15
	66.75	7/16 EHS	A1	31	12.48	2.67	21
		7/16 EHS	A1b	31a	12.48	2.36	19
		7/16 EHS	A1a	31b	12.48	2.98	24
	126.75	9/16 EHS	A1	55	21	4.13	20
		9/16 EHS	A1b	55a	21	3.62	17
		9/16 EHS	A1a	55b	21	4.7	22
		9/16 EHS	A1	79	21	3.89	19
	186.75	9/16 EHS	A1b	79a	21	3.37	16
		9/16 EHS	A1a	79b	21	4.5	21
		5/8 EHS	A1	98	25.44	4.51	18
	236.50	5/8 EHS	A1b	98a	25.44	3.89	15
		5/8 EHS	A1a	98b	25.44	5.26	21
		3/4 EHS	A1	T5	34.98	5.77	16
		3/4 EHS	A1b	T5	34.98	5.04	14
	286.75	3/4 EHS	A1a	T5a	34.98	6.59	19
		3/4 EHS	A1b	T5a	34.98	5	14
		3/4 EHS	A1	T5b	34.98	5.67	16
		3/4 EHS	A1a	T5b	34.98	6.56	19
	66.75	7/16 EHS	A1	31	12.48	2.02	16
		7/16 EHS	A1b	31a	12.48	2.06	17
		7/16 EHS	A1a	31b	12.48	2.07	17
	126.75	9/16 EHS	A1	55	21	3.2	15
		9/16 EHS	A1b	55a	21	3.35	16
		9/16 EHS	A1a	55b	21	3.38	16
		9/16 EHS	A1	79	21	2.99	14
	186.75	9/16 EHS	A1b	79a	21	3.26	16
		9/16 EHS	A1a	79b	21	3.32	16
	236.50	5/8 EHS	A1	98	25.44	3.47	14

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0Ev + 1.0Eh 60°	286.75	5/8 EHS	A1b	98a	25.44	3.91	15
		5/8 EHS	A1a	98b	25.44	4.01	16
		3/4 EHS	A1b	T5	34.98	5.1	15
		3/4 EHS	A1	T5	34.98	4.53	13
		3/4 EHS	A1b	T5a	34.98	5.07	14
		3/4 EHS	A1a	T5a	34.98	5.19	15
		3/4 EHS	A1a	T5b	34.98	5.21	15
		3/4 EHS	A1	T5b	34.98	4.52	13
	66.75	7/16 EHS	A1	31	12.48	2.03	16
		7/16 EHS	A1b	31a	12.48	2.03	16
		7/16 EHS	A1a	31b	12.48	2.09	17
		9/16 EHS	A1	55	21	3.25	15
	126.75	9/16 EHS	A1b	55a	21	3.25	15
		9/16 EHS	A1a	55b	21	3.44	16
		9/16 EHS	A1	79	21	3.08	15
	186.75	9/16 EHS	A1b	79a	21	3.08	15
		9/16 EHS	A1a	79b	21	3.41	16
		5/8 EHS	A1	98	25.44	3.62	14
	236.50	5/8 EHS	A1b	98a	25.44	3.62	14
		5/8 EHS	A1a	98b	25.44	4.16	16
		3/4 EHS	A1	T5	34.98	4.72	14
	286.75	3/4 EHS	A1b	T5	34.98	4.73	14
		3/4 EHS	A1a	T5a	34.98	5.39	15
		3/4 EHS	A1b	T5a	34.98	4.7	13
		3/4 EHS	A1	T5b	34.98	4.7	13
		3/4 EHS	A1a	T5b	34.98	5.39	15
	66.75	7/16 EHS	A1	31	12.48	2.05	16
		7/16 EHS	A1b	31a	12.48	2.02	16
		7/16 EHS	A1a	31b	12.48	2.08	17
		9/16 EHS	A1	55	21	3.3	16
	126.75	9/16 EHS	A1b	55a	21	3.21	15
		9/16 EHS	A1a	55b	21	3.42	16
		9/16 EHS	A1	79	21	3.17	15
		9/16 EHS	A1b	79a	21	3.01	14
	186.75	9/16 EHS	A1a	79b	21	3.39	16
		5/8 EHS	A1	98	25.44	3.77	15
		5/8 EHS	A1b	98a	25.44	3.51	14
1.2D + 1.0Ev + 1.0Eh 90°	236.50	5/8 EHS	A1a	98b	25.44	4.12	16
		3/4 EHS	A1b	T5	34.98	4.59	13
		3/4 EHS	A1	T5	34.98	4.91	14
	286.75	3/4 EHS	A1a	T5a	34.98	5.35	15
		3/4 EHS	A1b	T5a	34.98	4.57	13
		3/4 EHS	A1	T5b	34.98	4.88	14
		3/4 EHS	A1a	T5b	34.98	5.33	15
		7/16 EHS	A1	31	12.48	1.18	9
	66.75	7/16 EHS	A1b	31a	12.48	2.69	22
		7/16 EHS	A1a	31b	12.48	2.7	22
		9/16 EHS	A1	55	21	1.81	9
	126.75	9/16 EHS	A1b	55a	21	4.35	21
		9/16 EHS	A1a	55b	21	4.4	21
		9/16 EHS	A1	79	21	1.62	8
		9/16 EHS	A1b	79a	21	4.22	20
	186.75	9/16 EHS	A1a	79b	21	4.29	20
		5/8 EHS	A1	98	25.44	1.81	7
		5/8 EHS	A1b	98a	25.44	5.04	20
	236.50	5/8 EHS	A1a	98b	25.44	5.17	20
		3/4 EHS	A1b	T5	34.98	6.54	19
		3/4 EHS	A1	T5	34.98	2.46	7
		3/4 EHS	A1b	T5a	34.98	6.36	18
1.0D + 1.0W Service Normal	286.75	3/4 EHS	A1b	T5a	34.98	6.36	18
		3/4 EHS	A1	T5	34.98	2.46	7
		3/4 EHS	A1b	T5	34.98	6.54	19
	236.50	5/8 EHS	A1a	98b	25.44	5.17	20
		5/8 EHS	A1b	98a	25.44	5.04	20
		5/8 EHS	A1	98	25.44	1.81	7
	186.75	9/16 EHS	A1a	79b	21	4.29	20
		9/16 EHS	A1b	79a	21	4.22	20
		9/16 EHS	A1	79	21	1.62	8
	126.75	9/16 EHS	A1	55	21	1.81	9
		9/16 EHS	A1b	55a	21	4.35	21
		9/16 EHS	A1a	55b	21	4.4	21

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DETAILED CABLE FORCES							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.0D + 1.0W Service 60°	66.75	3/4 EHS	A1a	T5a	34.98	6.51	19
		3/4 EHS	A1a	T5b	34.98	6.7	19
		3/4 EHS	A1	T5b	34.98	2.46	7
		7/16 EHS	A1	31	12.48	1.66	13
		7/16 EHS	A1b	31a	12.48	1.66	13
		7/16 EHS	A1a	31b	12.48	3.18	25
	126.75	9/16 EHS	A1	55	21	2.63	13
		9/16 EHS	A1b	55a	21	2.63	13
		9/16 EHS	A1a	55b	21	5.23	25
	186.75	9/16 EHS	A1	79	21	2.54	12
		9/16 EHS	A1b	79a	21	2.54	12
		9/16 EHS	A1a	79b	21	5.2	25
	236.50	5/8 EHS	A1	98	25.44	3	12
		5/8 EHS	A1b	98a	25.44	3	12
		5/8 EHS	A1a	98b	25.44	6.41	25
	286.75	3/4 EHS	A1b	T5	34.98	4.08	12
		3/4 EHS	A1	T5	34.98	4.08	12
		3/4 EHS	A1a	T5a	34.98	8.18	23
		3/4 EHS	A1b	T5a	34.98	3.92	11
		3/4 EHS	A1	T5b	34.98	3.92	11
		3/4 EHS	A1a	T5b	34.98	8.18	23
	66.75	7/16 EHS	A1	31	12.48	2.17	17
		7/16 EHS	A1b	31a	12.48	1.3	10
		7/16 EHS	A1a	31b	12.48	3.05	24
	126.75	9/16 EHS	A1	55	21	3.47	17
		9/16 EHS	A1b	55a	21	2.02	10
		9/16 EHS	A1a	55b	21	5	24
	186.75	9/16 EHS	A1	79	21	3.37	16
		9/16 EHS	A1b	79a	21	1.87	9
		9/16 EHS	A1a	79b	21	4.94	24
1.0D + 1.0W Service 90°	236.50	5/8 EHS	A1	98	25.44	4.01	16
		5/8 EHS	A1b	98a	25.44	2.15	8
		5/8 EHS	A1a	98b	25.44	6.05	24
	286.75	3/4 EHS	A1	T5	34.98	5.34	15
		3/4 EHS	A1b	T5	34.98	2.97	8
		3/4 EHS	A1a	T5a	34.98	7.75	22
		3/4 EHS	A1b	T5a	34.98	2.89	8
		3/4 EHS	A1a	T5b	34.98	7.68	22
		3/4 EHS	A1	T5b	34.98	5.12	15

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MAXIMUM CABLE FORCES SUMMARY							
Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Available Tension (kip)	Applied Tension (kip)	Use (%)
1.2D + 1.0W 60°	66.75	7/16 EHS	A1a	31b	12.48	7.44	60
1.2D + 1.0W 60°	126.75	9/16 EHS	A1a	55b	21.00	12.46	59
1.2D + 1.0W 60°	186.75	9/16 EHS	A1a	79b	21.00	12.85	61
1.2D + 1.0W 60°	236.50	5/8 EHS	A1a	98b	25.44	16.41	65
1.2D + 1.0W 60°	286.75	3/4 EHS	A1a	T5a	34.98	20.70	59

MAXIMUM TORQUE ARM STRESS SUMMARY					
Load Case	Elevation (ft)	Member	Type	Compression (%)	Tension (%)
1.2D + 1.0W 60°	67.00	PL 2 x 0.375"	Horiz	0	17
1.2D + 1.0W 90°	127.00	PL 2 x 0.375"	Horiz	0	26
1.2D + 1.0W 60°	187.00	PL 2 x 0.375"	Horiz	0	23
1.2D + 1.0W 60°	235.00	PL 2 x 0.375"	Horiz	0	27
1.2D + 1.0W Normal	287.00	C15 x 33.9	Torque Arm	0	2

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DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	263.50	0.2205	0.0421	0.0182	0.0453
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	276.50	0.2189	0.0423	0.0195	0.0465
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	286.75	0.2136	0.0428	0.4376	0.4395
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	293.25	0.2137	0.0427	0.0395	0.0582
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	296.50	0.214	0.0427	0.0246	0.0479
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	263.50	0.2505	-0.0098	0.0202	0.0225
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	276.50	0.2518	-0.0058	0.0191	0.0194
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	286.75	0.2477	-0.0019	0.4429	0.4429
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	293.25	0.2491	-0.0019	0.0378	0.0378
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	296.50	0.2502	-0.0019	0.0217	0.0217
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	263.50	0.1813	-0.0140	0.0213	0.0252
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	276.50	0.1738	-0.0099	0.0412	0.0419
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	286.75	0.1628	-0.0061	0.4230	0.423
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	293.25	0.1597	-0.0059	0.0461	0.0465
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	296.50	0.159	-0.0059	0.0155	0.0164
1.2D + 1.0Ev + 1.0Eh 90° Seismic	263.50	0.049	-0.0095	0.0112	0.0144
1.2D + 1.0Ev + 1.0Eh 90° Seismic	276.50	0.0507	-0.0051	0.0086	0.0098
1.2D + 1.0Ev + 1.0Eh 90° Seismic	286.75	0.0504	-0.0011	0.3400	0.34
1.2D + 1.0Ev + 1.0Eh 90° Seismic	293.25	0.0508	-0.0010	0.0261	0.0262
1.2D + 1.0Ev + 1.0Eh 90° Seismic	296.50	0.051	-0.0010	0.0105	0.0105
1.2D + 1.0Ev + 1.0Eh 60° Seismic	263.50	0.0498	-0.0094	0.0109	0.0143
1.2D + 1.0Ev + 1.0Eh 60° Seismic	276.50	0.0514	-0.0051	0.0081	0.0096
1.2D + 1.0Ev + 1.0Eh 60° Seismic	286.75	0.0509	-0.0011	0.3416	0.3416
1.2D + 1.0Ev + 1.0Eh 60° Seismic	293.25	0.0513	-0.0011	0.0254	0.0254
1.2D + 1.0Ev + 1.0Eh 60° Seismic	296.50	0.0515	-0.0011	0.0103	0.0104
1.2D + 1.0Ev + 1.0Eh Normal Seismic	263.50	0.0468	-0.0095	0.0105	0.0139
1.2D + 1.0Ev + 1.0Eh Normal Seismic	276.50	0.0484	-0.0052	0.0090	0.0103
1.2D + 1.0Ev + 1.0Eh Normal Seismic	286.75	0.0478	-0.0013	0.3358	0.3358
1.2D + 1.0Ev + 1.0Eh Normal Seismic	293.25	0.0482	-0.0012	0.0264	0.0264
1.2D + 1.0Ev + 1.0Eh Normal Seismic	296.50	0.0483	-0.0012	0.0101	0.0101
1.2D + 1.0Di + 1.0Wi 90° 30 mph Wind with 0.25" Radial Ice	263.50	0.07	0.0037	0.0104	0.011
1.2D + 1.0Di + 1.0Wi 90° 30 mph Wind with 0.25" Radial Ice	276.50	0.0672	0.0070	0.0167	0.0181
1.2D + 1.0Di + 1.0Wi 90° 30 mph Wind with 0.25" Radial Ice	286.75	0.0633	0.0108	0.4244	0.4246
1.2D + 1.0Di + 1.0Wi 90° 30 mph Wind with 0.25" Radial Ice	293.25	0.062	0.0104	0.0387	0.0399
1.2D + 1.0Di + 1.0Wi 90° 30 mph Wind with 0.25" Radial Ice	296.50	0.0613	0.0104	0.0229	0.0248
1.2D + 1.0Di + 1.0Wi 60° 30 mph Wind with 0.25" Radial Ice	263.50	0.0761	-0.0111	0.0064	0.0123
1.2D + 1.0Di + 1.0Wi 60° 30 mph Wind with 0.25" Radial Ice	276.50	0.0737	-0.0065	0.0121	0.0135
1.2D + 1.0Di + 1.0Wi 60° 30 mph Wind with 0.25" Radial Ice	286.75	0.0698	-0.0023	0.4269	0.4269
1.2D + 1.0Di + 1.0Wi 60° 30 mph Wind with 0.25" Radial Ice	293.25	0.0686	-0.0023	0.0386	0.0386
1.2D + 1.0Di + 1.0Wi 60° 30 mph Wind with 0.25" Radial Ice	296.50	0.0681	-0.0023	0.0174	0.0174
1.2D + 1.0Di + 1.0Wi Normal 30 mph Wind with 0.25" Radial Ice	263.50	0.0602	-0.0125	0.0138	0.0186
1.2D + 1.0Di + 1.0Wi Normal 30 mph Wind with 0.25" Radial Ice	276.50	0.0565	-0.0080	0.0233	0.0244
1.2D + 1.0Di + 1.0Wi Normal 30 mph Wind with 0.25" Radial Ice	286.75	0.0514	-0.0040	0.4131	0.4131
1.2D + 1.0Di + 1.0Wi Normal 30 mph Wind with 0.25" Radial Ice	293.25	0.0497	-0.0040	0.0417	0.0419
1.2D + 1.0Di + 1.0Wi Normal 30 mph Wind with 0.25" Radial Ice	296.50	0.0489	-0.0040	0.0207	0.021
1.2D + 1.0W 90° 117 mph Wind with No Ice	263.50	1.611	0.0766	0.2514	0.2623
1.2D + 1.0W 90° 117 mph Wind with No Ice	276.50	1.6553	0.0684	0.2566	0.2656
1.2D + 1.0W 90° 117 mph Wind with No Ice	286.75	1.6737	0.0590	0.8871	0.8887
1.2D + 1.0W 90° 117 mph Wind with No Ice	293.25	1.6994	0.0597	0.2937	0.2977
1.2D + 1.0W 90° 117 mph Wind with No Ice	296.50	1.7137	0.0595	0.2214	0.2272
1.2D + 1.0W 60° 117 mph Wind with No Ice	263.50	1.233	-0.0153	0.1606	0.1613
1.2D + 1.0W 60° 117 mph Wind with No Ice	276.50	1.2569	-0.0100	0.1465	0.1465
1.2D + 1.0W 60° 117 mph Wind with No Ice	286.75	1.2575	-0.0065	0.8836	0.8836
1.2D + 1.0W 60° 117 mph Wind with No Ice	293.25	1.272	-0.0055	0.1714	0.1715
1.2D + 1.0W 60° 117 mph Wind with No Ice	296.50	1.2812	0.0054	0.1492	0.1492
1.2D + 1.0W Normal 117 mph Wind with No Ice	263.50	1.7872	-0.0227	0.2949	0.2951
1.2D + 1.0W Normal 117 mph Wind with No Ice	276.50	1.8415	-0.0167	0.2517	0.252
1.2D + 1.0W Normal 117 mph Wind with No Ice	286.75	1.8664	-0.0115	0.8240	0.824
1.2D + 1.0W Normal 117 mph Wind with No Ice	293.25	1.8968	-0.0125	0.3222	0.3223

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_C3_03

DEFLECTIONS AND ROTATIONS					
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W Normal 117 mph Wind with No Ice	296.50	1.9137	-0.0129	0.3477	0.3479

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H
PROJECT: 14430235_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	0.00	145.69	-1.63
	240.00	0.00	0	A1	0.00	-2.68	2.12
	230.00	0.00	240	A1a	-45.41	-47.89	-28.46
	240.00	0.00	120	A1b	45.35	-45.79	-28.46
1.2D + 1.0W 60°	0.00	0.00		1	-1.68	132.60	-0.96
	240.00	0.00	0	A1	-1.74	-12.88	14.10
	230.00	0.00	240	A1a	-56.86	-58.48	-32.83
	240.00	0.00	120	A1b	11.34	-12.88	-8.55
1.2D + 1.0W 90°	0.00	0.00		1	-1.73	141.29	-0.14
	240.00	0.00	0	A1	-2.28	-30.00	34.43
	230.00	0.00	240	A1a	-56.20	-57.34	-31.25
	240.00	0.00	120	A1b	3.75	-5.12	-3.09
1.2D + 1.0Di + 1.0Wi Normal	0.00	0.00		1	0.00	107.18	-0.18
	240.00	0.00	0	A1	0.00	-13.07	16.37
	230.00	0.00	240	A1a	-17.95	-17.48	-10.60
	240.00	0.00	120	A1b	17.94	-16.67	-10.60
1.2D + 1.0Di + 1.0Wi 60°	0.00	0.00		1	-0.15	106.83	-0.09
	240.00	0.00	0	A1	-0.21	-14.18	17.71
	230.00	0.00	240	A1a	-19.22	-18.64	-11.10
	240.00	0.00	120	A1b	15.23	-14.18	-9.04
1.2D + 1.0Di + 1.0Wi 90°	0.00	0.00		1	-0.18	107.01	0.00
	240.00	0.00	0	A1	-0.26	-15.42	19.27
	230.00	0.00	240	A1a	-18.99	-18.35	-10.85
	240.00	0.00	120	A1b	14.40	-13.34	-8.43
1.2D + 1.0Ev + 1.0Eh Normal	0.00	0.00		1	0.00	89.38	0.00
	240.00	0.00	0	A1	0.00	-12.12	14.98
	230.00	0.00	240	A1a	-14.21	-14.18	-8.21
	240.00	0.00	120	A1b	14.21	-13.54	-8.21
1.2D + 1.0Ev + 1.0Eh 60°	0.00	0.00		1	0.00	89.40	0.00
	240.00	0.00	0	A1	0.00	-12.59	15.46
	230.00	0.00	240	A1a	-14.62	-14.67	-8.44
	240.00	0.00	120	A1b	13.39	-12.59	-7.73
1.2D + 1.0Ev + 1.0Eh 90°	0.00	0.00		1	0.00	89.39	0.00
	240.00	0.00	0	A1	0.00	-13.06	15.93
	230.00	0.00	240	A1a	-14.51	-14.54	-8.38
	240.00	0.00	120	A1b	13.09	-12.24	-7.56
1.0D + 1.0W Service Normal	0.00	0.00		1	0.00	83.75	-0.63
	240.00	0.00	0	A1	0.00	-6.24	7.89
	230.00	0.00	240	A1a	-18.24	-18.36	-11.05
	240.00	0.00	120	A1b	18.23	-17.53	-11.05
1.0D + 1.0W Service 60°	0.00	0.00		1	-0.52	85.05	-0.30
	240.00	0.00	0	A1	-0.45	-10.46	12.66
	230.00	0.00	240	A1a	-22.63	-22.78	-13.06
	240.00	0.00	120	A1b	10.74	-10.46	-6.72
1.0D + 1.0W Service 90°	0.00	0.00		1	-0.61	84.41	0.01
	240.00	0.00	0	A1	-0.56	-13.98	16.96
	230.00	0.00	240	A1a	-21.54	-21.47	-12.18
	240.00	0.00	120	A1b	7.87	-7.47	-4.79

ASSET: 417361, Thomas ARP3 Raw Land FL
CUSTOMER: T-MOBILE

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MAXIMUM GUY ANCHOR REACTIONS

Radius (ft)	Drop (ft)	Azimuth (deg)	Uplift (kip)	Shear (kip)
230.00	0.00	240	58.48	65.66
240.00	0.00	0	30.00	34.51
240.00	0.00	120	45.79	53.54

MAXIMUM REACTIONS SUMMARY

Base / Anchor Group	Vertical Load (Compression for Base; Uplift for Anchor)	Horizontal Shear
Base	145.69 (kip)	1.93 (kip)
A1	58.48 (kip)	65.66 (kip)