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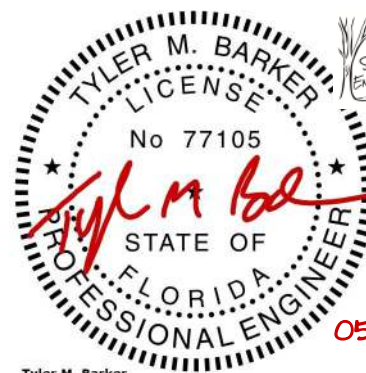


Structural Analysis Report

Structure : 245 ft Guyed Tower
ATC Site Name : Lacrosse FL 6, FL
ATC Asset Number : 303048
Engineering Number : 13626581_C3_02
Proposed Carrier : T-MOBILE
Carrier Site Name : 9JK0174A
Carrier Site Number : 9JK0174A
Site Location : 183 SE Waterleaf Dr.
Lake City, FL 32024-0233
29.951500,-82.570700
County : Columbia
Date : March 8, 2021
Max Usage : 67%
Result : Pass

Prepared By:
David Chickering
CLS

Reviewed By:



Digitally signed by
Tyler M. Barker PE
Date: 2021.05.25
12:29:22-04'00'

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05/25/2021

Tyler M. Barker
Old Sorrell Engineering PLLC
PE # 77105 Exp. 2/28/2023
COA # 34924

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 245 ft guyed tower to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	FWT/PJF Job #1956296-R, dated June 27, 1996
Foundation Drawing	FWT/PJF Job #1956296, dated July 8, 1996
Geotechnical Report	United Consulting Group Job #940648-01-05, dated June 8, 1994
Modifications	MEI Job #01-0140M, dated March 28, 2001 ATC Job #25968632, dated March 20, 2006

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:	120 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	30 mph (3-Second Gust) w/ 1/4" radial ice concurrent
Code:	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:	$S_s = 0.08$, $S_1 = 0.05$
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
204.0	3	Ericsson Radio 2212 B13/B5	Sector Frame	(18) 1 5/8" Coax (1) 1 5/8" Hybriflex	ALLTEL COMMUNICATIONS, LLC
	1	Raycap RRFDC-3315-PF-48 (32lbs)			
	3	Ericsson RRUS-32 (55.1 lbs)			
	6	Commscope NHH-65C-R2B			
	6	JMA Wireless DBC-67-C-1SF			
	6	CSS X7CAP-865			
194.0	1	CSA Wireless A-24A24-t	Sector Frame	(1) 1 5/8" Coax	T-MOBILE
170.0	2	Ceragon FibeAir RFU-C	Leg	(1) 0.405" (10.3mm) Coax	
	1	Andrew Microwaves HPX6-59-P3A/K			
150.0	1	Ceragon FibeAir RFU-C	Leg	(1) 0.405" (10.3mm) Coax	
	1	Andrew Microwaves UHX6-59-P3A/L			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
194.0	1	Andrew ATBT-TOP-24V	-	(6) 1 5/8" Coax (1) 1.58" (40.1mm) Hybrid	T-MOBILE
	3	Nokia AirScale Dual RRH 4T4R B12/71 240W AHLOA			
	3	Nokia FRIJ			
	3	Commscope FF-65C-R1			
	2	Nokia FXFB			
	6	CellMax CMA-BDHH/6521/E0-6			
	1	Nokia ASU9338TYP01			

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
194.0	3	Ericsson Radio 4449 B12,B71 (75 lbs)	Sector Frame	(2) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson RRUS 4415 B25			
	3	Ericsson 4424 B25			
	3	Commscope FFV4-65C-R3-V1			

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

Install proposed coax alongside existing T-MOBILE coax.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	66%	Pass
Diagonals	63%	Pass
Horizontals	29%	Pass
Guys	67%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Base Axial (kips)	124.0	167.4	97.4	58%
A1 Uplift (kips)	54.0	72.9	38.8	53%
A1 Shear (kips)	65.0	87.8	51.0	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.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
194.0	Ericsson Radio 4449 B12,B71 (75 lbs)	T-MOBILE	0.143	0.037	0.066
	Ericsson RRUS 4415 B25				
	Ericsson 4424 B25				
	CSA Wireless A-24A24-t				
	Commscope FFV4-65C-R3-V1				
170.0	Andrew Microwaves HPX6-59-P3A/K	T-MOBILE	0.152	0.036	0.035
150.0	Andrew Microwaves UHX6-59-P3A/L		0.154	0.035	0.030

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



Standard Conditions

All engineering services performed by 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.

Quadrant 1

245.00
240.00

Sect 16

224.10
220.00

Sect 14

200.00
195.90

Sect 12

180.00

Sect 11

160.00

Sect 10

140.00

Sect 9

120.00

Sect 8

100.00

Sect 7

80.00

Sect 6

60.00

Sect 5

40.00

Sect 4

20.00

Sect 3

8.00

Sect 1

7/8 EHS @ 24
IT = 10%

3/4 EHS @ 180.0
IT = 10%

5/8 EHS @ 120.0
IT = 10%

1/2 EHS @ 60.0
IT = 10%

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Loads: 120 mph no ice
30 mph w/ 1/4" radial ice
Site Class: D Ss: 0.08 S1: 0.05
60 mph Serviceability

Job Information

Client : T-MOBILE

Tower : 303048

Location : Lacrosse FL 6, FL Base Width : 4.00 ft

Code : ANSI/TIA-222-H

Topo Method: Method 1

Risk Cat : II

Topo: 1

Tower Ht : 245.00 ft

Exposure : C

Shape : Triangle

Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 2" SOLID	PL 36 ksi PL 2 x 0.25"	SAE 36 ksi 2.5X2.5X0.25
2 - 13	SOL 50 ksi 2" SOLID	SOL 36 ksi 5/8" SOLID	SAU 36 ksi 2X1.5X0.1875
14 - 17	SOL 50 ksi 2" SOLID	SOL 36 ksi 3/4" SOLID	SAU 36 ksi 2X1.5X0.1875

Discrete Appurtenance

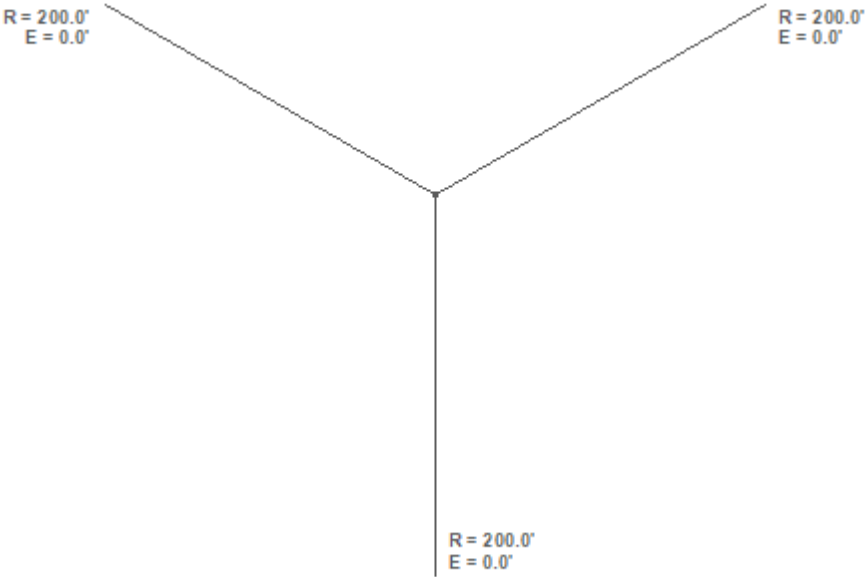
Elev (ft)	Type	Qty	Description
210.00	Mounting Frame	3	Flat Light Sector Frames
204.00	Panel	6	CSS X7CAP-865
204.00	Panel	6	Commscope NHH-65C-R2B
204.00		3	Ericsson RRUS-32 (55.1 lbs)
204.00		1	Raycap RRFDC-3315-PF-48 (32lbs)
204.00		3	Ericsson Radio 2212 B13/B5
204.00		6	JMA Wireless DBC-67-C-1SF
194.00	Panel	3	Commscope FFV4-65C-R3-V1
194.00	Dish	1	CSA Wireless A-24A24-t
194.00		3	Ericsson 4424 B25
194.00		3	Ericsson RRUS 4415 B25
194.00		3	Ericsson Radio 4449 B12,B71 (7
191.00	Mounting Frame	3	Round Sector Frames
170.00	Dish	1	Andrew Microwaves HPX6-59-P3A/
170.00		2	Ceragon FibeAir RFU-C
150.00	Dish	1	Andrew Microwaves UHX6-59-P3A/
150.00		1	Ceragon FibeAir RFU-C

Linear Appurtenance

Elev (ft)		Qty	Description
From	To		
5.00	245.00	1	Climbing Ladder
5.00	205.00	7	1 5/8" Coax
5.00	204.00	1	1 5/8" Hybriflex
5.00	204.00	11	1 5/8" Coax
5.00	194.00	1	1 5/8" Coax
0.00	194.00	2	1.99" (50.7mm) Hybri
5.00	170.00	1	0.405" (10.3mm) Coax
5.00	150.00	1	0.405" (10.3mm) Coax

R: 200.00

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Job Information				
Client : T-MOBILE				
Tower : 303048		Location : Lacrosse FL 6, FL	Base Width : 4.00 ft	
Code : ANSI/TIA-222-H		Topo Method:	Method 1	
Risk Cat : II		Topo: 1	Tower Ht : 245.00 ft	
Exposure : C			Shape : Triangle	

Guy Anchor Design Loads				
Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (kip)	Shear (kip)
200.00	0.00	0	38.84	50.97
200.00	0.00	240	38.84	50.97
200.00	0.00	120	38.84	50.97

Global Base Foundation Design Loads	
Vertical (kip)	Horizontal (kip)
97.42	1.88

Site Number: 303048

Code:

ANSI/TIA-222-H

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Site Name: Lacrosse FL 6, FL

Engineering Number: 13626581_C3_02

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Customer: T-MOBILE

Analysis Parameters

Location:	Columbia County, FL	Height (ft):	245
Code:	ANSI/TIA-222-H	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	4.00
Tower Manufacturer:	FWT Inc	Top Face Width (ft):	4.00
Tower Type:	Guyed		
Kd:	0.85		
Ke:	0.99		

Ice & Wind Parameters

Exposure Category:	C	Design Windspeed Without Ice:	120 mph
Risk Category:	II	Design Windspeed With Ice:	30 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	1	Design Ice Thickness:	0.25 in
Crest Height:	0 ft	HMSL:	153.00 ft

Seismic Parameters

Analysis Method: Equivalent Lateral Force Method

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 0.70

T_L (sec):	8	p:	1.3	C_s :	0.030
S_s :	0.081	S_1 :	0.048	C_s , Max:	0.036
F_a :	1.600	F_v :	2.400	C_s , Min:	0.030
S_{ds} :	0.086	S_{d1} :	0.077		

Load Cases

1.2D + 1.0W Normal	120 mph Normal with No Ice
1.2D + 1.0W 60 deg	120 mph 60 degree with No Ice
1.2D + 1.0W 90 deg	120 mph 90 degree with No Ice
1.2D + 1.0W 120 deg	120 mph 120 degree with No Ice
1.2D + 1.0W 180 deg	120 mph 180 degree with No Ice
1.2D + 1.0W 210 deg	120 mph 210 degree with No Ice
1.2D + 1.0W 240 deg	120 mph 240 degree with No Ice
1.2D + 1.0W 300 deg	120 mph 300 degree with No Ice
1.2D + 1.0W 330 deg	120 mph 330 degree with No Ice
1.2D + 1.0Di + 1.0Wi Normal	30 mph Normal with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	30 mph 60 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	30 mph 90 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 120 deg	30 mph 120 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	30 mph 180 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 210 deg	30 mph 210 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 240 deg	30 mph 240 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 300 deg	30 mph 300 deg with 0.25 in Radial Ice
1.2D + 1.0Di + 1.0Wi 330 deg	30 mph 330 deg with 0.25 in Radial Ice

Site Number: 303048

Code:

ANSI/TIA-222-H

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Site Name: Lacrosse FL 6, FL

Engineering Number: 13626581_C3_02

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Customer: T-MOBILE

Analysis Parameters

1.2D + 1.0Ev + 1.0Eh Normal	Seismic Normal
1.2D + 1.0Ev + 1.0Eh 60 deg	Seismic 60 deg
1.2D + 1.0Ev + 1.0Eh 90 deg	Seismic 90 deg
1.2D + 1.0Ev + 1.0Eh 120 deg	Seismic 120 deg
1.2D + 1.0Ev + 1.0Eh 180 deg	Seismic 180 deg
1.2D + 1.0Ev + 1.0Eh 210 deg	Seismic 210 deg
1.2D + 1.0Ev + 1.0Eh 240 deg	Seismic 240 deg
1.2D + 1.0Ev + 1.0Eh 300 deg	Seismic 300 deg
1.2D + 1.0Ev + 1.0Eh 330 deg	Seismic 330 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg
1.0D + 1.0W Service 120 deg	Serviceability - 60 mph Wind 120 deg
1.0D + 1.0W Service 180 deg	Serviceability - 60 mph Wind 180 deg
1.0D + 1.0W Service 210 deg	Serviceability - 60 mph Wind 210 deg
1.0D + 1.0W Service 240 deg	Serviceability - 60 mph Wind 240 deg
1.0D + 1.0W Service 300 deg	Serviceability - 60 mph Wind 300 deg
1.0D + 1.0W Service 330 deg	Serviceability - 60 mph Wind 330 deg

Site Number: 303048

Code:

ANSI/TIA-222-H

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Site Name: Lacrosse FL 6, FL

Engineering Number: 13626581_C3_02

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Customer: T-MOBILE

Tower Loading**Discrete Appurtenance Properties** 1.2D + 1.0W

Elevation (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)
210.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	46.11	1058	1440
204.0	JMA Wireless DBC-	6	7	0.4	0.6	6.2	3.4	0.80	0.50	0.0	0.0	45.83	33	48
204.0	Ericsson Radio 2212	3	47	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.0	45.83	87	171
204.0	Raycap RRFDC-3315-	1	32	2.8	2.4	11.7	10.3	0.80	0.50	0.0	0.0	45.83	44	38
204.0	Ericsson RRUS-32	3	55	2.9	2.3	12.4	7.4	0.80	0.50	0.0	0.0	45.83	133	198
204.0	Commscope NHH-	6	52	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	45.83	1491	372
204.0	CSS X7CAP-865	6	56	11.9	8.0	12.5	7.1	1.00	0.82	0.0	0.0	45.83	2271	403
194.0	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.4	0.80	0.50	0.0	0.0	45.34	76	270
194.0	Ericsson RRUS 4415	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.0	45.34	85	166
194.0	Ericsson 4424 B25	3	86	2.1	1.4	14.4	11.3	0.80	0.50	0.0	0.0	45.34	95	310
194.0	CSA Wireless A-	1	15	6.1	2.2	26.0	1.8	0.80	1.00	3.0	569.4	45.49	190	18
194.0	Commscope FFV4-	3	132	21.1	8.0	25.2	9.3	0.80	0.63	0.0	0.0	45.34	1230	474
191.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	45.19	933	1080
170.0	Ceragon FibeAir RFU-	2	9	0.5	0.7	7.9	3.4	1.00	0.50	0.0	0.0	44.10	19	22
170.0	Andrew Microwaves	1	320	41.3	6.5	77.5	53.3	1.00	1.00	-0.4	619.4	44.08	1548	384
150.0	Ceragon FibeAir RFU-	1	9	0.5	0.7	7.9	3.4	1.00	0.50	0.0	0.0	42.95	9	11
150.0	Andrew Microwaves	1	320	41.3	6.5	77.5	53.3	1.00	1.00	0.0	0.0	42.95	1509	384
Totals		49	4824	425.7									10812	5788

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (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)
210.0	Flat Light Sector	3	452	20.5	0.0	0.0	0.0	0.75	0.67	0.0	0.0	2.88	76	1596
204.0	JMA Wireless DBC-	6	9	0.4	0.6	6.2	3.4	0.80	0.50	0.0	0.0	2.86	2	60
204.0	Ericsson Radio 2212	3	56	2.0	1.4	13.5	6.3	0.80	0.50	0.0	0.0	2.86	6	197
204.0	Raycap RRFDC-3315-	1	48	3.0	2.4	11.7	10.3	0.80	0.50	0.0	0.0	2.86	3	54
204.0	Ericsson RRUS-32	3	68	3.1	2.3	12.4	7.4	0.80	0.50	0.0	0.0	2.86	9	239
204.0	Commscope NHH-	6	91	11.9	8.0	11.9	7.1	0.80	0.70	0.0	0.0	2.86	98	608
204.0	CSS X7CAP-865	6	97	12.4	8.0	12.5	7.1	1.00	0.82	0.0	0.0	2.86	149	647
194.0	Ericsson Radio 4449	3	85	1.8	1.3	13.2	10.4	0.80	0.50	0.0	0.0	2.83	5	301
194.0	Ericsson RRUS 4415	3	54	2.0	1.4	13.4	5.9	0.80	0.50	0.0	0.0	2.83	6	191
194.0	Ericsson 4424 B25	3	98	2.2	1.4	14.4	11.3	0.80	0.50	0.0	0.0	2.83	6	347
194.0	CSA Wireless A-	1	31	6.4	2.2	26.0	1.8	0.80	1.00	3.0	37.2	2.84	12	34
194.0	Commscope FFV4-	3	203	21.7	8.0	25.2	9.3	0.80	0.63	0.0	0.0	2.83	79	687
191.0	Round Sector	3	363	17.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	2.82	70	1268
170.0	Ceragon FibeAir RFU-	2	12	0.6	0.7	7.9	3.4	1.00	0.50	0.0	0.0	2.76	1	27
170.0	Andrew Microwaves	1	459	42.0	6.5	77.5	53.3	1.00	1.00	-0.4	39.3	2.75	98	523
150.0	Ceragon FibeAir RFU-	1	12	0.6	0.7	7.9	3.4	1.00	0.50	0.0	0.0	2.68	1	13
150.0	Andrew Microwaves	1	457	42.0	6.5	77.5	53.3	1.00	1.00	0.0	0.0	2.68	96	521
Totals		49	6348	455.5									717	7313

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (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)
210.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.53	264	1200
204.0	JMA Wireless DBC-	6	7	0.4	0.6	6.2	3.4	0.80	0.50	0.0	0.0	11.46	8	40
204.0	Ericsson Radio 2212	3	47	1.9	1.4	13.5	6.3	0.80	0.50	0.0	0.0	11.46	22	142
204.0	Raycap RRFDC-3315-	1	32	2.8	2.4	11.7	10.3	0.80	0.50	0.0	0.0	11.46	11	32

Site Number: 303048

Code:

ANSI/TIA-222-H

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Site Name: Lacrosse FL 6, FL

Engineering Number: 13626581_C3_02

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Customer: T-MOBILE

Tower Loading

204.0	Ericsson RRUS-32	3	55	2.9	2.3	12.4	7.4	0.80	0.50	0.0	0.0	11.46	33	165
204.0	Commscope NHH-	6	52	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	11.46	373	310
204.0	CSS X7CAP-865	6	56	11.9	8.0	12.5	7.1	1.00	0.82	0.0	0.0	11.46	568	336
194.0	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.4	0.80	0.50	0.0	0.0	11.34	19	225
194.0	Ericsson RRUS 4415	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.0	11.34	21	138
194.0	Ericsson 4424 B25	3	86	2.1	1.4	14.4	11.3	0.80	0.50	0.0	0.0	11.34	24	258
194.0	CSA Wireless A-	1	15	6.1	2.2	26.0	1.8	0.80	1.00	3.0	142.4	11.37	47	15
194.0	Commscope FFV4-	3	132	21.1	8.0	25.2	9.3	0.80	0.63	0.0	0.0	11.34	308	395
191.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	11.30	233	900
170.0	Ceragon FibeAir RFU-	2	9	0.5	0.7	7.9	3.4	1.00	0.50	0.0	0.0	11.02	5	18
170.0	Andrew Microwaves	1	320	41.3	6.5	77.5	53.3	1.00	1.00	-0.4	154.8	11.02	387	320
150.0	Ceragon FibeAir RFU-	1	9	0.5	0.7	7.9	3.4	1.00	0.50	0.0	0.0	10.74	2	9
150.0	Andrew Microwaves	1	320	41.3	6.5	77.5	53.3	1.00	1.00	0.0	0.0	10.74	377	320
Totals		49	4824	425.7									2703	4824

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Customer: T-MOBILE

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
5.00	245.0	Climbing Ladder	1	1.50	6.90	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	205.0	1 5/8" Coax	7	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
5.00	204.0	1 5/8" Coax	11	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
5.00	204.0	1 5/8" Hybriflex	1	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	194.0	1.99" (50.7mm)	2	1.99	1.90	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	194.0	1 5/8" Coax	1	1.98	0.82	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	170.0	0.405" (10.3mm)	1	0.41	0.11	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	150.0	0.405" (10.3mm)	1	0.41	0.11	100	2	Individual	0.00	N	1.00	1.00	0.00

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Customer: T-MOBILE

Equivalent Lateral Force Method

Spectral Response Acceleration for Short Period (S_s):	0.08
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L - Seconds):	8
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.09
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.08
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s :	0.04
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	0.70
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.10
Total Unfactored Dead Load:	23.30 k
Seismic Base Shear (E):	0.91 k

LoadCase 1.2D + 1.0Ev + 1.0Eh**Seismic**

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
17	242.50	300	127,162	0.024	22	365
16	232.05	982	396,847	0.075	68	1,195
15	222.05	311	119,621	0.022	20	378
14	210.00	1,504	544,621	0.102	93	1,831
13	197.95	336	113,932	0.021	19	409
12	187.95	1,207	386,718	0.073	66	1,469
11	170.00	1,580	453,330	0.085	77	1,924
10	150.00	1,524	380,784	0.072	65	1,855
9	130.00	1,525	325,472	0.061	56	1,856
8	110.00	1,584	281,193	0.053	48	1,928
7	90.00	1,525	217,041	0.041	37	1,856
6	70.00	1,525	164,543	0.031	28	1,856
5	50.00	1,584	117,950	0.022	20	1,928
4	30.00	1,525	64,687	0.012	11	1,856
3	14.02	898	16,466	0.003	3	1,093
2	7.02	200	1,711	0.000	0	243
1	3.00	365	1,225	0.000	0	444
Flat Light Sector Frames	210.00	1,200	434,483	0.082	74	1,461
JMA Wireless DBC-67-C-1SF	204.00	40	14,098	0.003	2	49
Ericsson Radio 2212 B13/B5	204.00	142	49,868	0.009	9	173
Raycap RRFDC-3315-PF-48 (32lbs)	204.00	32	11,222	0.002	2	39
Ericsson RRUS-32 (55.1 lbs)	204.00	165	57,969	0.011	10	201
Commscope NHH-65C-R2B	204.00	310	108,573	0.020	19	377
CSS X7CAP-865	204.00	336	117,831	0.022	20	409

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Equivalent Lateral Force Method

Ericsson Radio 4449 B12,B71 (75 lbs)	194.00	225	74,653	0.014	13	274
Ericsson RRUS 4415 B25	194.00	138	45,787	0.009	8	168
Ericsson 4424 B25	194.00	258	85,603	0.016	15	314
CSA Wireless A-24A24-t	194.00	15	4,977	0.001	1	18
Commscope FFV4-65C-R3-V1	194.00	395	131,191	0.025	22	481
Round Sector Frames	191.00	900	293,530	0.055	50	1,096
Ceragon FibeAir RFU-C	170.00	18	5,164	0.001	1	22
Andrew Microwaves HPX6-59-P3A/K	170.00	320	91,796	0.017	16	390
Ceragon FibeAir RFU-C	150.00	9	2,249	0.000	0	11
Andrew Microwaves UHX6-59-P3A/L	150.00	320	79,970	0.015	14	390
		23,296	5,322,262	1.000	909	28,358

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Customer: T-MOBILE

Force/Stress Summary

Section: 1		Section 1		Bot Elev (ft): 0.00				Height (ft): 6.000							
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use
		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%
Max Compression Member															Controls
LEG	SOL - 2" SOLID	-37.49	1.2D + 1.0W Normal	3.07	100	100	100	73.6	50.0	95.10	0	0	0.00	0.00	39 Member X
HORIZ	SAE - 2.5X2.5X0.25	-0.07	1.2D + 1.0W Normal	1.909	100	100	100	30.3	36.0	41.60	0	0	0.00	0.00	0 Member Z
DIAG		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	(kip)	%
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0
HORIZ	SAE - 2.5X2.5X0.25	4.25	1.2D + 1.0W Normal	36	58	38.56	0	0		0.00		0.00	0.00		11 Member
DIAG	PL - PL 2 x 0.25"	0.00	1.2D + 1.0W Normal	36	58	16.20	0	0		0.00		0.00	0.00		0 Member

Section: 2		Section 2		Bot Elev (ft): 6.00				Height (ft): 2.033							
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use
		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%
Max Compression Member															Controls
LEG	SOL - 2" SOLID	-36.00	1.2D + 1.0W 90 deg	1.76	100	100	100	42.2	50.0	124.08	0	0	0.00	0.00	29 Member X
HORIZ	SAU - 2X1.5X0.1875	-0.81	1.2D + 1.0W Normal	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	5 Member Z
DIAG	SOL - 5/8" SOLID	-0.89	1.2D + 1.0W Normal	4.370	50	50	50	151.3	36.0	3.03	0	0	0.00	0.00	Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	(kip)	%
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0
HORIZ	SAU - 2X1.5X0.1875	3.35	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		16 Member
DIAG	SOL - 5/8" SOLID	1.01	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00	0.00		10 Member

Section: 3		Section 3		Bot Elev (ft): 8.03				Height (ft): 11.967							
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use
		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%
Max Compression Member															Controls
LEG	SOL - 2" SOLID	-41.27	1.2D + 1.0W 60 deg	3.90	100	100	100	93.6	50.0	74.55	0	0	0.00	0.00	55 Member X
HORIZ	SAU - 2X1.5X0.1875	-1.38	1.2D + 1.0W Normal	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	8 Member Z
DIAG	SOL - 5/8" SOLID	-1.38	1.2D + 1.0W Normal	5.585	50	50	50	193.3	36.0	1.85	0	0	0.00	0.00	Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn	(kip)	%
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0
HORIZ	SAU - 2X1.5X0.1875	1.94	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		9 Member
DIAG	SOL - 5/8" SOLID	2.04	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00	0.00		20 Member

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Force/Stress Summary

Section: 4		Section 4		Bot Elev (ft): 20.00				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-41.11	1.2D + 1.0W 90 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	55	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 5/8" SOLID	-1.48	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit	Pn	%	Controls
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0	
HORIZ SAU - 2X1.5X0.1875		2.04	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00		0.00	10	Member
DIAG		0.00		0	0	0.00	0	0		0.00		0.00		0.00	0	

Section: 5		Section 5		Bot Elev (ft): 40.00				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-40.71	1.2D + 1.0W 60 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	54	Member X
HORIZ SAU - 2X1.5X0.1875		-1.77	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	11	Member Z
DIAG	SOL - 5/8" SOLID	-0.43	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit	Pn	%	Controls
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0	
HORIZ SAU - 2X1.5X0.1875		1.95	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00		0.00	9	Member
DIAG SOL - 5/8" SOLID		2.59	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00		0.00	26	Member

Section: 6		Section 6		Bot Elev (ft): 60.00				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-36.90	1.2D + 1.0W 90 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	49	Member X
HORIZ SAU - 2X1.5X0.1875		-1.94	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	12	Member Z
DIAG	SOL - 5/8" SOLID	-1.14	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit	Pn	%	Controls
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0	
HORIZ SAU - 2X1.5X0.1875		1.82	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00		0.00	9	Member
DIAG SOL - 5/8" SOLID		2.85	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00		0.00	28	Member

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Force/Stress Summary

Section: 7		Section 7		Bot Elev (ft): 80.00				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-36.67	1.2D + 1.0W 90 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	49	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 5/8" SOLID	-1.15	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn		%	Controls
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0	
HORIZ	SAU - 2X1.5X0.1875	1.96	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		9	Member
DIAG		0.00		0	0	0.00	0	0		0.00		0.00	0.00		0	

Section: 8		Section 8		Bot Elev (ft): 100.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-35.43	1.2D + 1.0W Normal	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	47	Member X
HORIZ	SAU - 2X1.5X0.1875	-2.42	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	15	Member Z
DIAG	SOL - 5/8" SOLID	-1.30	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn		%	Controls
LEG		0.00		0	0	0.00	0	0		0.00		0.00			0	
HORIZ	SAU - 2X1.5X0.1875	1.84	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		9	Member
DIAG	SOL - 5/8" SOLID	3.46	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00	0.00		34	Member

Section: 9		Section 9		Bot Elev (ft): 120.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-38.31	1.2D + 1.0W 90 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	51	Member X
HORIZ	SAU - 2X1.5X0.1875	-4.43	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	28	Member Z
DIAG	SOL - 5/8" SOLID	-0.76	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit Pn		%	Controls
LEG	SOL - 2" SOLID	9.38	1.2D + 1.0W Normal	50	65	141.37	0	0		0.00		0.00			6	Member
HORIZ	SAU - 2X1.5X0.1875	1.64	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		8	Member
DIAG	SOL - 5/8" SOLID	6.33	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00	0.00		63	Member

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Site Name: Lacrosse FL 6, FL

Engineering Number: 13626581_C3_02

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Customer: T-MOBILE

Force/Stress Summary

Section: 10		Section 10		Bot Elev (ft): 140.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID	-48.08	1.2D + 1.0W 90 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	64	Member X
HORIZ	SAU - 2X1.5X0.1875	-2.56	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	16	Member Z
DIAG	SOL - 5/8" SOLID	-1.46	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	(kip)	phiRn	phit Pn	(kip)	%	Controls
LEG	SOL - 2" SOLID	24.81	1.2D + 1.0W Normal	50	65	141.37	0	0		0.00		0.00			17	Member
HORIZ	SAU - 2X1.5X0.1875	2.39	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		11	Member
DIAG	SOL - 5/8" SOLID	3.96	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00	0.00		39	Member

Section: 11		Section 11		Bot Elev (ft): 160.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID	-47.15	1.2D + 1.0W 210 deg	3.89	100	100	100	93.4	50.0	74.73	0	0	0.00	0.00	63	Member X
HORIZ	SAU - 2X1.5X0.1875	-2.58	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	16	Member Z
DIAG	SOL - 5/8" SOLID	-0.06	1.2D + 1.0W Normal	5.580	50	50	50	193.1	36.0	1.86	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	(kip)	phiRn	phit Pn	(kip)	%	Controls
LEG	SOL - 2" SOLID	24.89	1.2D + 1.0W Normal	50	65	141.37	0	0		0.00		0.00			17	Member
HORIZ	SAU - 2X1.5X0.1875	2.21	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		11	Member
DIAG	SOL - 5/8" SOLID	3.79	1.2D + 1.0W 90 deg	36	58	9.94	0	0		0.00		0.00	0.00		38	Member

Section: 12		Section 12		Bot Elev (ft): 180.0				Height (ft): 15.900								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID	-49.13	1.2D + 1.0W 60 deg	3.91	100	100	100	93.8	50.0	74.34	0	0	0.00	0.00	66	Member X
HORIZ	SAU - 2X1.5X0.1875	-4.66	1.2D + 1.0W 90 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	29	Member Z
DIAG	SOL - 5/8" SOLID	-0.92	1.2D + 1.0W Normal	5.591	50	50	50	193.5	36.0	1.85	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk Shear		Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	(kip)	phiRn	phit Pn	(kip)	%	Controls
LEG	SOL - 2" SOLID	35.61	1.2D + 1.0W Normal	50	65	141.37	0	0		0.00		0.00			25	Member
HORIZ	SAU - 2X1.5X0.1875	2.14	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		10	Member
DIAG	SOL - 5/8" SOLID	6.70	1.2D + 1.0W 90 deg	36	58	19.88	0	0		0.00		0.00	0.00		33	User Input

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Customer: T-MOBILE

Force/Stress Summary

Section: 13		Section 13		Bot Elev (ft): 195.9				Height (ft): 4.100												
				Pu				Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID			-52.34	1.2D + 1.0W 60 deg			3.83	50	50	50	45.9	50.0	121.17	0	0	0.00	0.00	43	Member X
HORIZ	SAU - 2X1.5X0.1875			-0.67	1.2D + 1.0W 60 deg			4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	4	Member Z
DIAG	SOL - 5/8" SOLID			-1.07	1.2D + 1.0W Normal			5.536	50	50	50	191.6	36.0	1.89	0	0	0.00	0.00		Member X
				Pu				Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)		(kip)	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID			44.08	1.2D + 1.0W Normal			50	65	141.37	0	0	0	0.00		0.00			31	Member
HORIZ	SAU - 2X1.5X0.1875			1.29	1.2D + 1.0W Normal			36	58	20.09	0	0	0	0.00		0.00	0.00		6	Member
DIAG	SOL - 5/8" SOLID			2.79	1.2D + 1.0W 180 deg			36	58	19.88	0	0	0	0.00		0.00	0.00		14	User Input

Section: 14		Section 14		Bot Elev (ft): 200.0				Height (ft): 20.000												
				Pu				Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID			-52.26	1.2D + 1.0W 60 deg			3.89	50	50	50	46.7	50.0	120.54	0	0	0.00	0.00	43	Member X
HORIZ	SAU - 2X1.5X0.1875			-1.52	1.2D + 1.0W 60 deg			4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	9	Member Z
DIAG	SOL - 3/4" SOLID			-0.46	1.2D + 1.0W Normal			5.580	50	50	50	160.7	36.0	3.87	0	0	0.00	0.00		Member X
				Pu				Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)		(kip)	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID			44.15	1.2D + 1.0W Normal			50	65	141.37	0	0	0	0.00		0.00			31	Member
HORIZ	SAU - 2X1.5X0.1875			3.16	1.2D + 1.0W Normal			36	58	20.09	0	0	0	0.00		0.00	0.00		15	Member
DIAG	SOL - 3/4" SOLID			2.16	1.2D + 1.0W Normal			36	58	14.31	0	0	0	0.00		0.00	0.00		15	Member

Section: 15		Section 15		Bot Elev (ft): 220.0				Height (ft): 4.100												
				Pu				Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member				(kip)	Load Case			(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID			-37.12	1.2D + 1.0W 60 deg			3.83	50	50	50	45.9	50.0	121.17	0	0	0.00	0.00	30	Member X
HORIZ	SAU - 2X1.5X0.1875			-0.79	1.2D + 1.0W 180 deg			4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	5	Member Z
DIAG	SOL - 3/4" SOLID			-1.14	1.2D + 1.0W Normal			5.536	50	50	50	159.4	36.0	3.93	0	0	0.00	0.00		Member X
				Pu				Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member				(kip)	Load Case			(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)		(kip)	(kip)	(kip)	%	Controls
LEG	SOL - 2" SOLID			29.98	1.2D + 1.0W Normal			50	65	141.37	0	0	0	0.00		0.00			21	Member
HORIZ	SAU - 2X1.5X0.1875			1.58	1.2D + 1.0W Normal			36	58	20.09	0	0	0	0.00		0.00	0.00		7	Member
DIAG	SOL - 3/4" SOLID			2.27	1.2D + 1.0W Normal			36	58	14.31	0	0	0	0.00		0.00	0.00		15	Member

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Customer: T-MOBILE

Force/Stress Summary

Section: 16		Section 16		Bot Elev (ft): 224.1				Height (ft): 15.900								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-32.16	1.2D + 1.0W 60 deg	3.91	100	100	100	93.8	50.0	74.34	0	0	0.00	0.00	43	Member X
HORIZ	SAU - 2X1.5X0.1875	-0.19	1.2D + 1.0W 60 deg	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	1	Member Z
DIAG	SOL - 3/4" SOLID	-1.01	1.2D + 1.0W Normal	5.591	50	50	50	161.0	36.0	3.85	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit	Pn	%	Controls
LEG	SOL - 2" SOLID	20.78	1.2D + 1.0W Normal	50	65	141.37	0	0		0.00		0.00			14	Member
HORIZ	SAU - 2X1.5X0.1875	1.40	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		6	Member
DIAG	SOL - 3/4" SOLID	2.31	1.2D + 1.0W Normal	36	58	14.31	0	0		0.00		0.00	0.00		16	Member

Section: 17		Section 17		Bot Elev (ft): 240.0				Height (ft): 5.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	SOL - 2" SOLID	-0.27	1.2D + 1.0W Normal	0.27	100	100	100	6.6	50.0	140.93	0	0	0.00	0.00	0	Member X
HORIZ	SAU - 2X1.5X0.1875	-0.04	1.2D + 1.0W Normal	4.000	100	100	100	96.9	36.0	15.73	0	0	0.00	0.00	0	Member Z
DIAG	SOL - 3/4" SOLID	-0.02	1.2D + 1.0W Normal	5.986	50	50	50	172.4	36.0	3.36	0	0	0.00	0.00		Member X
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv		phiRn	phit	Pn	%	Controls
LEG	SOL - 2" SOLID	0.03	1.2D + 1.0W 60 deg	50	65	141.37	0	0		0.00		0.00			0	Member
HORIZ	SAU - 2X1.5X0.1875	1.02	1.2D + 1.0W Normal	36	58	20.09	0	0		0.00		0.00	0.00		5	Member
DIAG	SOL - 3/4" SOLID	0.16	1.2D + 1.0W 60 deg	36	58	14.31	0	0		0.00		0.00	0.00		1	Member

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Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal	0.00	00.00		1	0.00	97.39	-1.83	
	200.00	00.00	0	A1	0.00	-2.04	1.79	
	200.00	00.00	240	A1a	-36.29	-31.93	-22.29	
	200.00	00.00	120	A1b	36.29	-31.93	-22.29	
1.2D + 1.0W 60 deg	0.00	00.00		1	-1.63	88.95	-0.94	
	200.00	00.00	0	A1	-1.03	-9.62	10.92	
	200.00	00.00	240	A1a	-44.14	-38.84	-25.48	
	200.00	00.00	120	A1b	8.95	-9.62	-6.35	
1.2D + 1.0W 90 deg	0.00	00.00		1	-1.78	94.48	-0.09	
	200.00	00.00	0	A1	-1.35	-21.11	27.23	
	200.00	00.00	240	A1a	-44.03	-38.06	-24.74	
	200.00	00.00	120	A1b	3.24	-4.12	-2.41	
1.2D + 1.0W 120 deg	0.00	00.00		1	-1.59	97.42	0.92	
	200.00	00.00	0	A1	-1.16	-31.94	42.60	
	200.00	00.00	240	A1a	-37.47	-31.94	-20.29	
	200.00	00.00	120	A1b	1.55	-2.04	-0.89	
1.2D + 1.0W 180 deg	0.00	00.00		1	0.00	88.95	1.88	
	200.00	00.00	0	A1	0.00	-38.84	50.97	
	200.00	00.00	240	A1a	-9.97	-9.62	-4.57	
	200.00	00.00	120	A1b	9.97	-9.62	-4.57	
1.2D + 1.0W 210 deg	0.00	00.00		1	0.82	94.48	1.59	
	200.00	00.00	0	A1	0.59	-38.06	50.50	
	200.00	00.00	240	A1a	-3.70	-4.12	-1.60	
	200.00	00.00	120	A1b	24.25	-21.11	-12.44	
1.2D + 1.0W 240 deg	0.00	00.00		1	1.59	97.42	0.92	
	200.00	00.00	0	A1	1.16	-31.94	42.60	
	200.00	00.00	240	A1a	-1.55	-2.04	-0.89	
	200.00	00.00	120	A1b	37.47	-31.94	-20.29	
1.2D + 1.0W 300 deg	0.00	00.00		1	1.63	88.95	-0.94	
	200.00	00.00	0	A1	1.03	-9.62	10.92	
	200.00	00.00	240	A1a	-8.95	-9.62	-6.35	
	200.00	00.00	120	A1b	44.14	-38.84	-25.48	
1.2D + 1.0W 330 deg	0.00	00.00		1	0.97	94.48	-1.50	
	200.00	00.00	0	A1	0.47	-4.12	4.01	
	200.00	00.00	240	A1a	-22.90	-21.10	-14.78	
	200.00	00.00	120	A1b	43.44	-38.06	-25.77	
1.2D + 1.0Di + 1.0Wi Normal	0.00	00.00		1	0.00	79.02	-0.16	
	200.00	00.00	0	A1	0.00	-11.81	15.19	
	200.00	00.00	240	A1a	-15.67	-13.95	-9.17	
	200.00	00.00	120	A1b	15.67	-13.95	-9.17	
1.2D + 1.0Di + 1.0Wi 60 deg	0.00	00.00		1	-0.13	78.78	-0.08	
	200.00	00.00	0	A1	-0.11	-12.50	16.12	
	200.00	00.00	240	A1a	-16.43	-14.54	-9.49	
	200.00	00.00	120	A1b	13.91	-12.50	-8.16	
1.2D + 1.0Di + 1.0Wi 90 deg	0.00	00.00		1	-0.15	78.90	0.00	
	200.00	00.00	0	A1	-0.14	-13.21	17.12	
	200.00	00.00	240	A1a	-16.32	-14.42	-9.36	
	200.00	00.00	120	A1b	13.33	-11.99	-7.76	

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1.2D + 1.0Di + 1.0Wi 120 deg	0.00	00.00	1	-0.14	79.01	0.08
	200.00	00.00	0 A1	-0.11	-13.93	18.13
	200.00	00.00	240 A1a	-15.76	-13.93	-8.97
	200.00	00.00	120 A1b	13.19	-11.85	-7.62
1.2D + 1.0Di + 1.0Wi 180 deg	0.00	00.00	1	0.00	78.78	0.15
	200.00	00.00	0 A1	0.00	-14.58	19.02
	200.00	00.00	240 A1a	-14.00	-12.48	-7.95
	200.00	00.00	120 A1b	14.00	-12.48	-7.95
1.2D + 1.0Di + 1.0Wi 210 deg	0.00	00.00	1	0.08	78.89	0.13
	200.00	00.00	0 A1	0.05	-14.39	18.77
	200.00	00.00	240 A1a	-13.42	-12.02	-7.69
	200.00	00.00	120 A1b	14.90	-13.21	-8.44
1.2D + 1.0Di + 1.0Wi 240 deg	0.00	00.00	1	0.14	79.01	0.08
	200.00	00.00	0 A1	0.11	-13.93	18.13
	200.00	00.00	240 A1a	-13.19	-11.85	-7.62
	200.00	00.00	120 A1b	15.76	-13.93	-8.97
1.2D + 1.0Di + 1.0Wi 300 deg	0.00	00.00	1	0.13	78.78	-0.08
	200.00	00.00	0 A1	0.11	-12.50	16.12
	200.00	00.00	240 A1a	-13.91	-12.50	-8.16
	200.00	00.00	120 A1b	16.43	-14.54	-9.49
1.2D + 1.0Di + 1.0Wi 330 deg	0.00	00.00	1	0.08	78.89	-0.13
	200.00	00.00	0 A1	0.05	-12.02	15.46
	200.00	00.00	240 A1a	-14.76	-13.21	-8.68
	200.00	00.00	120 A1b	16.23	-14.39	-9.43
1.2D + 1.0Ev + 1.0Eh Normal M1	0.00	00.00	1	0.00	65.22	0.01
	200.00	00.00	0 A1	0.00	-10.76	13.71
	200.00	00.00	240 A1a	-12.54	-11.44	-7.24
	200.00	00.00	120 A1b	12.54	-11.44	-7.24
1.2D + 1.0Ev + 1.0Eh 60 deg M1	0.00	00.00	1	0.01	65.22	0.00
	200.00	00.00	0 A1	0.00	-10.99	13.97
	200.00	00.00	240 A1a	-12.76	-11.66	-7.37
	200.00	00.00	120 A1b	12.10	-10.99	-6.98
1.2D + 1.0Ev + 1.0Eh 90 deg M1	0.00	00.00	1	0.01	65.22	0.00
	200.00	00.00	0 A1	0.00	-11.21	14.22
	200.00	00.00	240 A1a	-12.70	-11.60	-7.33
	200.00	00.00	120 A1b	11.93	-10.82	-6.89
1.2D + 1.0Ev + 1.0Eh 120 deg M1	0.00	00.00	1	0.01	65.22	0.00
	200.00	00.00	0 A1	0.00	-11.44	14.48
	200.00	00.00	240 A1a	-12.54	-11.44	-7.24
	200.00	00.00	120 A1b	11.88	-10.76	-6.86
1.2D + 1.0Ev + 1.0Eh 180 deg M1	0.00	00.00	1	0.00	65.22	-0.01
	200.00	00.00	0 A1	0.00	-11.66	14.74
	200.00	00.00	240 A1a	-12.10	-10.99	-6.98
	200.00	00.00	120 A1b	12.10	-10.99	-6.98
1.2D + 1.0Ev + 1.0Eh 210 deg M1	0.00	00.00	1	0.00	65.22	-0.01
	200.00	00.00	0 A1	0.00	-11.60	14.67
	200.00	00.00	240 A1a	-11.93	-10.82	-6.89
	200.00	00.00	120 A1b	12.32	-11.21	-7.11
1.2D + 1.0Ev + 1.0Eh 240 deg M1	0.00	00.00	1	-0.01	65.22	0.00
	200.00	00.00	0 A1	0.00	-11.44	14.48
	200.00	00.00	240 A1a	-11.88	-10.76	-6.86
	200.00	00.00	120 A1b	12.54	-11.44	-7.24

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1.2D + 1.0Ev + 1.0Eh 300 deg M1	0.00	00.00		1	-0.01	65.22	0.00
	200.00	00.00	0	A1	0.00	-10.99	13.97
	200.00	00.00	240	A1a	-12.10	-10.99	-6.98
	200.00	00.00	120	A1b	12.76	-11.66	-7.37
1.2D + 1.0Ev + 1.0Eh 330 deg M1	0.00	00.00		1	0.00	65.22	0.01
	200.00	00.00	0	A1	0.00	-10.82	13.78
	200.00	00.00	240	A1a	-12.32	-11.21	-7.11
	200.00	00.00	120	A1b	12.70	-11.60	-7.33
1.0D + 1.0W Service Normal	0.00	00.00		1	0.00	61.84	-0.54
	200.00	00.00	0	A1	0.00	-6.83	8.23
	200.00	00.00	240	A1a	-15.70	-14.20	-9.36
	200.00	00.00	120	A1b	15.70	-14.20	-9.36
1.0D + 1.0W Service 60 deg	0.00	00.00		1	-0.45	61.60	-0.26
	200.00	00.00	0	A1	-0.26	-9.31	11.52
	200.00	00.00	240	A1a	-18.50	-16.52	-10.68
	200.00	00.00	120	A1b	9.85	-9.31	-5.98
1.0D + 1.0W Service 90 deg	0.00	00.00		1	-0.53	61.65	0.00
	200.00	00.00	0	A1	-0.32	-11.69	14.81
	200.00	00.00	240	A1a	-17.84	-15.88	-10.16
	200.00	00.00	120	A1b	7.86	-7.54	-4.67
1.0D + 1.0W Service 120 deg	0.00	00.00		1	-0.47	61.84	0.27
	200.00	00.00	0	A1	-0.26	-14.20	18.28
	200.00	00.00	240	A1a	-15.96	-14.20	-8.92
	200.00	00.00	120	A1b	7.13	-6.83	-4.11
1.0D + 1.0W Service 180 deg	0.00	00.00		1	0.00	61.60	0.52
	200.00	00.00	0	A1	0.00	-16.52	21.36
	200.00	00.00	240	A1a	-10.10	-9.31	-5.54
	200.00	00.00	120	A1b	10.10	-9.31	-5.54
1.0D + 1.0W Service 210 deg	0.00	00.00		1	0.26	61.66	0.46
	200.00	00.00	0	A1	0.12	-15.91	20.57
	200.00	00.00	240	A1a	-7.94	-7.51	-4.45
	200.00	00.00	120	A1b	12.99	-11.70	-7.13
1.0D + 1.0W Service 240 deg	0.00	00.00		1	0.47	61.84	0.27
	200.00	00.00	0	A1	0.26	-14.20	18.28
	200.00	00.00	240	A1a	-7.13	-6.83	-4.11
	200.00	00.00	120	A1b	15.96	-14.20	-8.92
1.0D + 1.0W Service 300 deg	0.00	00.00		1	0.45	61.60	-0.26
	200.00	00.00	0	A1	0.26	-9.31	11.52
	200.00	00.00	240	A1a	-9.85	-9.31	-5.98
	200.00	00.00	120	A1b	18.50	-16.52	-10.68
1.0D + 1.0W Service 330 deg	0.00	00.00		1	0.27	61.66	-0.46
	200.00	00.00	0	A1	0.12	-7.51	9.10
	200.00	00.00	240	A1a	-12.67	-11.70	-7.69
	200.00	00.00	120	A1b	17.75	-15.91	-10.39

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Guy Anchor Design Loads

Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (kip)	Shear (kip)
200.00	0.00	0	38.84	50.97
200.00	0.00	240	38.84	50.97
200.00	0.00	120	38.84	50.97

Maximum Cable Forces Summary

Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use %
1.2D + 1.0W 90 deg	59.99	1/2 EHS	A1a	24b	16.14	9.13	57
1.2D + 1.0W 90 deg	119.99	5/8 EHS	A1a	45b	25.44	17.10	67
1.2D + 1.0W 60 deg	179.99	3/4 EHS	A1a	66b	34.98	22.62	65
1.2D + 1.0W 60 deg	239.99	7/8 EHS	A1a	87b	47.82	17.57	37

Maximum Torque Arm Stress Summary

Load Case	Elevation (ft)	Member	Type	Compression %	Tension %
1.2D + 1.0W Normal	60.00	3X3X0.25	Horiz		8
1.2D + 1.0W Normal	120.00	3X3X0.25	Horiz		12
1.2D + 1.0W Normal	180.00	3X3X0.25	Horiz		13
1.2D + 1.0W Normal	240.00	3X3X0.25	Horiz		8

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Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
120 mph Normal with No Ice	151.95	1.148	0.0039	0.0916	0.0916
120 mph Normal with No Ice	171.95	1.135	0.0056	0.2237	0.2237
120 mph Normal with No Ice	191.99	1.060	0.0083	0.2738	0.2739
120 mph Normal with No Ice	195.90	1.039	0.0058	0.3408	0.3409
120 mph Normal with No Ice	204.16	0.976	0.0047	0.5304	0.5304
120 mph Normal with No Ice	211.95	0.897	0.0032	0.6490	0.6490
120 mph 60 degree with No Ice	151.95	0.749	-0.0004	0.1620	0.1620
120 mph 60 degree with No Ice	171.95	0.768	-0.0009	0.0485	0.0485
120 mph 60 degree with No Ice	191.99	0.758	-0.0058	0.0295	0.0296
120 mph 60 degree with No Ice	195.90	0.754	-0.0029	0.1402	0.1402
120 mph 60 degree with No Ice	204.16	0.729	0.0050	0.2901	0.2901
120 mph 60 degree with No Ice	211.95	0.686	0.0047	0.3716	0.3716
120 mph 90 degree with No Ice	151.95	1.021	0.3086	0.1367	0.3373
120 mph 90 degree with No Ice	171.95	1.020	0.3081	0.1003	0.3240
120 mph 90 degree with No Ice	191.99	0.965	0.2851	0.2146	0.3568
120 mph 90 degree with No Ice	195.90	0.950	0.2875	0.3589	0.4588
120 mph 90 degree with No Ice	204.16	0.901	0.3249	0.4525	0.5571
120 mph 90 degree with No Ice	211.95	0.835	0.3241	0.5529	0.6404
120 mph 120 degree with No Ice	151.95	1.149	0.0042	0.0919	0.0919
120 mph 120 degree with No Ice	171.95	1.136	0.0058	0.1691	0.1691
120 mph 120 degree with No Ice	191.99	1.061	0.0083	0.2619	0.2620
120 mph 120 degree with No Ice	195.90	1.040	0.0061	0.4008	0.4009
120 mph 120 degree with No Ice	204.16	0.977	0.0052	0.5337	0.5337
120 mph 120 degree with No Ice	211.95	0.897	0.0036	0.6502	0.6502
120 mph 180 degree with No Ice	151.95	0.749	0.0002	0.1617	0.1617
120 mph 180 degree with No Ice	171.95	0.767	0.0007	0.0959	0.0959
120 mph 180 degree with No Ice	191.99	0.758	0.0052	0.0400	0.0400
120 mph 180 degree with No Ice	195.90	0.754	0.0028	0.0809	0.0809
120 mph 180 degree with No Ice	204.16	0.729	0.0045	0.2870	0.2871
120 mph 180 degree with No Ice	211.95	0.686	0.0042	0.3710	0.3710
120 mph 210 degree with No Ice	151.95	1.022	0.3291	0.1374	0.3564
120 mph 210 degree with No Ice	171.95	1.019	0.3006	0.1650	0.3403
120 mph 210 degree with No Ice	191.99	0.964	0.2715	0.2190	0.3488
120 mph 210 degree with No Ice	195.90	0.949	0.2741	0.3297	0.4277
120 mph 210 degree with No Ice	204.16	0.901	0.3127	0.4502	0.5481
120 mph 210 degree with No Ice	211.95	0.834	0.3120	0.5526	0.6339
120 mph 240 degree with No Ice	151.95	1.149	-0.0042	0.0919	0.0919
120 mph 240 degree with No Ice	171.95	1.136	-0.0058	0.1691	0.1691
120 mph 240 degree with No Ice	191.99	1.061	-0.0083	0.2619	0.2620
120 mph 240 degree with No Ice	195.90	1.040	-0.0061	0.4008	0.4009
120 mph 240 degree with No Ice	204.16	0.977	-0.0052	0.5337	0.5337
120 mph 240 degree with No Ice	211.95	0.897	-0.0036	0.6502	0.6502
120 mph 300 degree with No Ice	151.95	0.749	0.0004	0.1620	0.1620
120 mph 300 degree with No Ice	171.95	0.768	0.0009	0.0485	0.0485
120 mph 300 degree with No Ice	191.99	0.758	0.0058	0.0295	0.0296
120 mph 300 degree with No Ice	195.90	0.754	0.0029	0.1402	0.1402
120 mph 300 degree with No Ice	204.16	0.729	-0.0050	0.2901	0.2901
120 mph 300 degree with No Ice	211.95	0.686	-0.0047	0.3716	0.3716
120 mph 330 degree with No Ice	151.95	1.021	0.3086	0.1364	0.3371
120 mph 330 degree with No Ice	171.95	1.019	0.3082	0.1693	0.3509
120 mph 330 degree with No Ice	191.99	0.964	0.2858	0.2277	0.3654
120 mph 330 degree with No Ice	195.90	0.949	0.2874	0.2928	0.4090
120 mph 330 degree with No Ice	204.16	0.901	0.3247	0.4488	0.5539
120 mph 330 degree with No Ice	211.95	0.835	0.3239	0.5520	0.6394
30 mph Normal with 0.25 in Radial Ice	151.95	0.040	0.0002	0.0048	0.0048

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30 mph Normal with 0.25 in Radial Ice	171.95	0.039	0.0002	0.0099	0.0099
30 mph Normal with 0.25 in Radial Ice	191.99	0.036	0.0002	0.0113	0.0113
30 mph Normal with 0.25 in Radial Ice	195.90	0.035	0.0002	0.0142	0.0142
30 mph Normal with 0.25 in Radial Ice	204.16	0.033	0.0003	0.0237	0.0237
30 mph Normal with 0.25 in Radial Ice	211.95	0.029	0.0003	0.0296	0.0296
30 mph 60 deg with 0.25 in Radial Ice	151.95	0.039	0.0002	0.0058	0.0058
30 mph 60 deg with 0.25 in Radial Ice	171.95	0.039	0.0001	0.0053	0.0053
30 mph 60 deg with 0.25 in Radial Ice	191.99	0.037	0.0002	0.0092	0.0092
30 mph 60 deg with 0.25 in Radial Ice	195.90	0.036	0.0002	0.0158	0.0158
30 mph 60 deg with 0.25 in Radial Ice	204.16	0.034	0.0003	0.0222	0.0222
30 mph 60 deg with 0.25 in Radial Ice	211.95	0.030	0.0003	0.0277	0.0277
30 mph 90 deg with 0.25 in Radial Ice	151.95	0.040	0.0102	0.0054	0.0115
30 mph 90 deg with 0.25 in Radial Ice	171.95	0.039	0.0106	0.0043	0.0113
30 mph 90 deg with 0.25 in Radial Ice	191.99	0.037	0.0108	0.0096	0.0142
30 mph 90 deg with 0.25 in Radial Ice	195.90	0.036	0.0108	0.0180	0.0209
30 mph 90 deg with 0.25 in Radial Ice	204.16	0.034	0.0110	0.0232	0.0255
30 mph 90 deg with 0.25 in Radial Ice	211.95	0.030	0.0110	0.0289	0.0307
30 mph 120 deg with 0.25 in Radial Ice	151.95	0.038	0.0002	0.0049	0.0049
30 mph 120 deg with 0.25 in Radial Ice	171.95	0.038	0.0002	0.0061	0.0061
30 mph 120 deg with 0.25 in Radial Ice	191.99	0.035	0.0002	0.0102	0.0102
30 mph 120 deg with 0.25 in Radial Ice	195.90	0.034	0.0002	0.0175	0.0175
30 mph 120 deg with 0.25 in Radial Ice	204.16	0.032	0.0003	0.0234	0.0234
30 mph 120 deg with 0.25 in Radial Ice	211.95	0.028	0.0003	0.0291	0.0291
30 mph 180 deg with 0.25 in Radial Ice	151.95	0.040	0.0002	0.0058	0.0058
30 mph 180 deg with 0.25 in Radial Ice	171.95	0.040	0.0001	0.0087	0.0087
30 mph 180 deg with 0.25 in Radial Ice	191.99	0.038	0.0002	0.0102	0.0102
30 mph 180 deg with 0.25 in Radial Ice	195.90	0.037	0.0002	0.0123	0.0123
30 mph 180 deg with 0.25 in Radial Ice	204.16	0.035	0.0003	0.0224	0.0224
30 mph 180 deg with 0.25 in Radial Ice	211.95	0.031	0.0003	0.0281	0.0281
30 mph 210 deg with 0.25 in Radial Ice	151.95	0.039	0.0087	0.0054	0.0102
30 mph 210 deg with 0.25 in Radial Ice	171.95	0.038	0.0091	0.0079	0.0119
30 mph 210 deg with 0.25 in Radial Ice	191.99	0.036	0.0093	0.0101	0.0136
30 mph 210 deg with 0.25 in Radial Ice	195.90	0.035	0.0094	0.0144	0.0170
30 mph 210 deg with 0.25 in Radial Ice	204.16	0.033	0.0095	0.0226	0.0243
30 mph 210 deg with 0.25 in Radial Ice	211.95	0.029	0.0095	0.0283	0.0297
30 mph 240 deg with 0.25 in Radial Ice	151.95	0.038	-0.0002	0.0049	0.0049
30 mph 240 deg with 0.25 in Radial Ice	171.95	0.038	-0.0002	0.0061	0.0061
30 mph 240 deg with 0.25 in Radial Ice	191.99	0.035	-0.0002	0.0102	0.0102
30 mph 240 deg with 0.25 in Radial Ice	195.90	0.034	-0.0002	0.0175	0.0175
30 mph 240 deg with 0.25 in Radial Ice	204.16	0.032	-0.0003	0.0234	0.0234
30 mph 240 deg with 0.25 in Radial Ice	211.95	0.028	-0.0003	0.0291	0.0291
30 mph 300 deg with 0.25 in Radial Ice	151.95	0.039	0.0002	0.0058	0.0058
30 mph 300 deg with 0.25 in Radial Ice	171.95	0.039	-0.0001	0.0053	0.0053
30 mph 300 deg with 0.25 in Radial Ice	191.99	0.037	-0.0002	0.0092	0.0092
30 mph 300 deg with 0.25 in Radial Ice	195.90	0.036	0.0002	0.0158	0.0158
30 mph 300 deg with 0.25 in Radial Ice	204.16	0.034	0.0003	0.0222	0.0222
30 mph 300 deg with 0.25 in Radial Ice	211.95	0.030	0.0003	0.0277	0.0277
30 mph 330 deg with 0.25 in Radial Ice	151.95	0.039	0.0087	0.0054	0.0102
30 mph 330 deg with 0.25 in Radial Ice	171.95	0.038	0.0091	0.0083	0.0121
30 mph 330 deg with 0.25 in Radial Ice	191.99	0.036	0.0093	0.0102	0.0136
30 mph 330 deg with 0.25 in Radial Ice	195.90	0.035	0.0094	0.0142	0.0168
30 mph 330 deg with 0.25 in Radial Ice	204.16	0.033	0.0095	0.0226	0.0243
30 mph 330 deg with 0.25 in Radial Ice	211.95	0.029	0.0095	0.0283	0.0297
Seismic Normal M1	151.95	0.012	0.0000	0.0075	0.0075
Seismic Normal M1	171.95	0.014	0.0000	0.0052	0.0052
Seismic Normal M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic Normal M1	195.90	0.016	0.0001	0.0016	0.0016
Seismic Normal M1	204.16	0.016	0.0001	0.0017	0.0017
Seismic Normal M1	211.95	0.016	0.0001	0.0039	0.0039
Seismic 60 deg M1	151.95	0.012	0.0000	0.0074	0.0074
Seismic 60 deg M1	171.95	0.014	0.0000	0.0050	0.0050
Seismic 60 deg M1	191.99	0.016	0.0001	0.0034	0.0034

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Seismic 60 deg M1	195.90	0.016	0.0001	0.0017	0.0017
Seismic 60 deg M1	204.16	0.016	0.0001	0.0018	0.0018
Seismic 60 deg M1	211.95	0.016	0.0001	0.0040	0.0040
Seismic 90 deg M1	151.95	0.012	0.0000	0.0075	0.0075
Seismic 90 deg M1	171.95	0.014	0.0000	0.0051	0.0051
Seismic 90 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 90 deg M1	195.90	0.016	0.0001	0.0017	0.0017
Seismic 90 deg M1	204.16	0.016	0.0001	0.0018	0.0018
Seismic 90 deg M1	211.95	0.016	0.0001	0.0040	0.0040
Seismic 120 deg M1	151.95	0.012	0.0000	0.0075	0.0075
Seismic 120 deg M1	171.95	0.014	0.0000	0.0052	0.0052
Seismic 120 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 120 deg M1	195.90	0.016	0.0001	0.0016	0.0016
Seismic 120 deg M1	204.16	0.016	0.0001	0.0017	0.0017
Seismic 120 deg M1	211.95	0.016	0.0001	0.0039	0.0039
Seismic 180 deg M1	151.95	0.012	0.0000	0.0074	0.0074
Seismic 180 deg M1	171.95	0.014	0.0000	0.0050	0.0050
Seismic 180 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 180 deg M1	195.90	0.016	0.0001	0.0017	0.0017
Seismic 180 deg M1	204.16	0.016	0.0001	0.0018	0.0018
Seismic 180 deg M1	211.95	0.016	0.0001	0.0040	0.0040
Seismic 210 deg M1	151.95	0.012	0.0000	0.0075	0.0075
Seismic 210 deg M1	171.95	0.014	0.0000	0.0051	0.0051
Seismic 210 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 210 deg M1	195.90	0.016	0.0001	0.0017	0.0017
Seismic 210 deg M1	204.16	0.016	0.0001	0.0018	0.0018
Seismic 210 deg M1	211.95	0.016	0.0001	0.0040	0.0040
Seismic 240 deg M1	151.95	0.012	0.0000	0.0075	0.0075
Seismic 240 deg M1	171.95	0.014	0.0000	0.0052	0.0052
Seismic 240 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 240 deg M1	195.90	0.016	0.0001	0.0016	0.0016
Seismic 240 deg M1	204.16	0.016	0.0001	0.0017	0.0017
Seismic 240 deg M1	211.95	0.016	0.0001	0.0039	0.0039
Seismic 300 deg M1	151.95	0.012	0.0000	0.0074	0.0074
Seismic 300 deg M1	171.95	0.014	0.0000	0.0050	0.0050
Seismic 300 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 300 deg M1	195.90	0.016	0.0001	0.0017	0.0017
Seismic 300 deg M1	204.16	0.016	0.0001	0.0018	0.0018
Seismic 300 deg M1	211.95	0.016	0.0001	0.0040	0.0040
Seismic 330 deg M1	151.95	0.012	0.0000	0.0075	0.0075
Seismic 330 deg M1	171.95	0.014	0.0000	0.0051	0.0051
Seismic 330 deg M1	191.99	0.016	0.0001	0.0034	0.0034
Seismic 330 deg M1	195.90	0.016	0.0001	0.0017	0.0017
Seismic 330 deg M1	204.16	0.016	0.0001	0.0018	0.0018
Seismic 330 deg M1	211.95	0.016	0.0001	0.0040	0.0040
Serviceability - 60 mph Wind Normal	151.95	0.154	0.0006	0.0197	0.0197
Serviceability - 60 mph Wind Normal	171.95	0.152	0.0006	0.0354	0.0354
Serviceability - 60 mph Wind Normal	191.99	0.141	0.0007	0.0430	0.0430
Serviceability - 60 mph Wind Normal	195.90	0.138	0.0008	0.0517	0.0517
Serviceability - 60 mph Wind Normal	204.16	0.129	0.0012	0.0894	0.0894
Serviceability - 60 mph Wind Normal	211.95	0.115	0.0009	0.1118	0.1118
Serviceability - 60 mph Wind 60 deg	151.95	0.147	0.0005	0.0295	0.0295
Serviceability - 60 mph Wind 60 deg	171.95	0.150	0.0005	0.0111	0.0111
Serviceability - 60 mph Wind 60 deg	191.99	0.145	0.0006	0.0228	0.0228
Serviceability - 60 mph Wind 60 deg	195.90	0.143	0.0007	0.0475	0.0475
Serviceability - 60 mph Wind 60 deg	204.16	0.136	0.0011	0.0710	0.0710
Serviceability - 60 mph Wind 60 deg	211.95	0.126	0.0009	0.0914	0.0914
Serviceability - 60 mph Wind 90 deg	151.95	0.148	0.0312	0.0256	0.0404
Serviceability - 60 mph Wind 90 deg	171.95	0.149	0.0322	0.0091	0.0334
Serviceability - 60 mph Wind 90 deg	191.99	0.142	0.0329	0.0296	0.0438
Serviceability - 60 mph Wind 90 deg	195.90	0.139	0.0330	0.0595	0.0678
Serviceability - 60 mph Wind 90 deg	204.16	0.131	0.0337	0.0793	0.0854

Site Number: 303048

Code:

ANSI/TIA-222-H

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Site Name: Lacrosse FL 6, FL

Engineering Number: 13626581_C3_02

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Customer: T-MOBILE

Serviceability - 60 mph Wind 90 deg	211.95	0.120	0.0335	0.1002	0.1053
Serviceability - 60 mph Wind 120 deg	151.95	0.154	0.0006	0.0198	0.0198
Serviceability - 60 mph Wind 120 deg	171.95	0.152	0.0006	0.0219	0.0219
Serviceability - 60 mph Wind 120 deg	191.99	0.142	0.0007	0.0400	0.0400
Serviceability - 60 mph Wind 120 deg	195.90	0.138	0.0008	0.0657	0.0657
Serviceability - 60 mph Wind 120 deg	204.16	0.129	0.0012	0.0902	0.0902
Serviceability - 60 mph Wind 120 deg	211.95	0.115	0.0009	0.1120	0.1120
Serviceability - 60 mph Wind 180 deg	151.95	0.147	0.0006	0.0295	0.0295
Serviceability - 60 mph Wind 180 deg	171.95	0.150	0.0005	0.0210	0.0210
Serviceability - 60 mph Wind 180 deg	191.99	0.145	0.0006	0.0257	0.0257
Serviceability - 60 mph Wind 180 deg	195.90	0.143	0.0007	0.0327	0.0327
Serviceability - 60 mph Wind 180 deg	204.16	0.136	0.0012	0.0703	0.0703
Serviceability - 60 mph Wind 180 deg	211.95	0.125	0.0009	0.0913	0.0913
Serviceability - 60 mph Wind 210 deg	151.95	0.149	0.0354	0.0255	0.0436
Serviceability - 60 mph Wind 210 deg	171.95	0.150	0.0363	0.0225	0.0427
Serviceability - 60 mph Wind 210 deg	191.99	0.143	0.0369	0.0326	0.0490
Serviceability - 60 mph Wind 210 deg	195.90	0.140	0.0371	0.0484	0.0602
Serviceability - 60 mph Wind 210 deg	204.16	0.132	0.0377	0.0792	0.0869
Serviceability - 60 mph Wind 210 deg	211.95	0.121	0.0376	0.1007	0.1071
Serviceability - 60 mph Wind 240 deg	151.95	0.154	-0.0006	0.0198	0.0198
Serviceability - 60 mph Wind 240 deg	171.95	0.152	-0.0006	0.0219	0.0219
Serviceability - 60 mph Wind 240 deg	191.99	0.142	-0.0007	0.0400	0.0400
Serviceability - 60 mph Wind 240 deg	195.90	0.138	-0.0008	0.0657	0.0657
Serviceability - 60 mph Wind 240 deg	204.16	0.129	-0.0012	0.0902	0.0902
Serviceability - 60 mph Wind 240 deg	211.95	0.115	-0.0009	0.1120	0.1120
Serviceability - 60 mph Wind 300 deg	151.95	0.147	0.0006	0.0295	0.0295
Serviceability - 60 mph Wind 300 deg	171.95	0.150	0.0005	0.0111	0.0111
Serviceability - 60 mph Wind 300 deg	191.99	0.145	0.0007	0.0228	0.0228
Serviceability - 60 mph Wind 300 deg	195.90	0.143	0.0007	0.0475	0.0475
Serviceability - 60 mph Wind 300 deg	204.16	0.136	0.0012	0.0710	0.0710
Serviceability - 60 mph Wind 300 deg	211.95	0.126	0.0010	0.0914	0.0914
Serviceability - 60 mph Wind 330 deg	151.95	0.149	0.0354	0.0255	0.0436
Serviceability - 60 mph Wind 330 deg	171.95	0.150	0.0363	0.0272	0.0451
Serviceability - 60 mph Wind 330 deg	191.99	0.143	0.0370	0.0337	0.0496
Serviceability - 60 mph Wind 330 deg	195.90	0.140	0.0371	0.0460	0.0583
Serviceability - 60 mph Wind 330 deg	204.16	0.132	0.0377	0.0791	0.0868
Serviceability - 60 mph Wind 330 deg	211.95	0.121	0.0376	0.1007	0.1071

Maximum Reactions Summary

Anchor Group	UpLift	Shear
Base	97.42	1.88
A1	38.84	50.97