



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 190 ft Self Supported Tower
ATC Site Name : Unity Village MO 2, MO
ATC Asset Number : 306035
Engineering Number : 13619563_C3_03
Proposed Carrier : AT&T MOBILITY
Carrier Site Name : UNITY VILLAGE
Carrier Site Number : KS4022
Site Location : 2150 NW LOWENSTEIN
Lees Summit, MO 64081-1905
38.933600, -94.417500
County : Jackson
Date : May 26, 2021
Max Usage : 64%
Result : Pass



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Structural Engineer

Reviewed By:

COA: 2006031326



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 190 ft self supported tower to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	Allied Tower Drawing #B-16226, dated December 13, 1991
Foundation Drawing	Allied Tower Drawing #B-16327, dated February 6, 1992
Geotechnical Report	Geotechnology Job #J029737.02, dated May 19, 2017

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:	109 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1 ½" radial ice concurrent
Code:	ANSI/TIA-222-H / 2009 IBC
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.10$, $S_1 = 0.07$
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	Equipment	Mount Type	Lines	Carrier
180.0	1	Commscope RDIDC-9181-PF-48	Sector Frame	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	3	JMA Wireless MX08FRO665-21			
	3	Fujitsu TA08025-B605			
	3	Fujitsu TA08025-B604			
172.0	1	RFS DB-B1-6C-12AB-0Z	Sector Frame	(2) 1.25" (31.8mm) Hybrid	VERIZON WIRELESS
	1	RFS DB-T1-6Z-12AB-0Z			
	3	Ericsson AIR 32 B4A-B2P			
	3	Ericsson AIR 32 B2A-B4P			
	6	Andrew LNX-6515DS-A1M			
	3	Ericsson RRUS B13 w/ RRUS A2			
162.0	1	Andrew Microwaves UHX6-105	Leg	(1) EW37	AT&T MOBILITY
151.0	1	Raycap DC6-48-60-18-8F ("Squid")	Sector Frame	(2) 0.39" (10mm) Fiber Trunk (6) 0.76" (19.2mm) 8 AWG 6 (12) 1 5/8" Coax (1) 3/8" (0.38"- 9.5mm) RET Control Cable	
	6	Quintel QS86512-2			
	3	Alcatel-Lucent RRH4X25-WCS			
	3	Commscope SBNHH-1D65C			
	3	Alcatel-Lucent B25 RRH4x30			
	3	Alcatel-Lucent B66A RRH4x45-4R w/ Solar Shield			
	1	Raycap DC6-48-60-0-8F			
	3	Nokia AirScale RRH 4T4R B5 160W AHCA			
	3	Powerwave Allgon TT08-19DB111-001			
121.6	3	Andrew SBNHH-1D65C	Sector Frame	(5) 1 5/8" Coax (2) 1.46" (37.1mm) Hybrid (6) 7/8" Coax	T-MOBILE
120.0	2	Commscope HELIAX FiberFeed 12 RRU Pendant Connect			
	3	Nokia AirScale Dual RRH 4T4R B12/71 240W AHLOA			
	3	Nokia AHFIG 70.55 lbs			
	3	Andrew TMBX-6517-A1M			
	3	Nokia AEHC			
	3	Commscope FFHH-65C-R3			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
151.0	1	Raycap DC6-48-60-18-8C	-	-	AT&T MOBILITY
	3	Nokia Flexi RRH 4T4R B14 160W FRBI			
	3	Andrew SBNH-1D6565C			
	3	Alcatel-Lucent RRH2x40-07-L (20.5" Height)			

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
151.0	1	Raycap DC6-48-60-18-8F	Sector Frame	-	AT&T MOBILITY
	3	Nokia AHLBBA			
	3	Nokia AEQK AirScale MAA 64T64R 192AE n77 200W			

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

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	64%	Pass
Diagonals	37%	Pass
Horizontals	2%	Pass
Anchor Bolts	39%	Pass
Leg Bolts	55%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Uplift (Kips)	387.1	522.6	268.1	51%
Axial (Kips)	421.4	568.9	316.0	56%
Shear (Kips)	56.9	76.8	42.2	55%

* 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) (°)
162.0	Andrew Microwaves UHX6-105	AT&T MOBILITY	0.307	0.123	0.327
151.0	Nokia AEQK AirScale MAA 64T64R 192AE n77 200W		0.268	0.121	0.236
	Nokia AHLBBA				
	Raycap DC6-48-60-18-8F				

*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 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

It is the responsibility of the client to ensure that the information provided to ATC Tower Services 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, 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 is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Quadrant 1

190.00

Sect 10

180.00

Sect 9

160.00

Sect 8

140.00

Sect 7

120.00

Sect 6

100.00

Sect 5

80.00

Sect 4

60.00

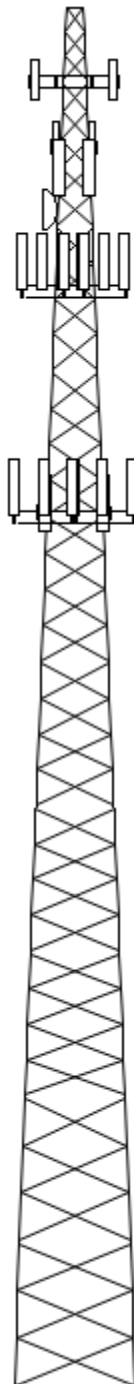
Sect 3

40.00

Sect 2

20.00

Sect 1



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Loads: 109 mph no ice
40 mph w/ 1"1/2 radial ice
Site Class: D Ss: 0.10 S1: 0.07
60 mph Serviceability

Job Information

Client : AT&T MOBILITY

Tower : 306035

Location : Unity Village MO

Base Width : 17.00 ft

Code : ANSI/TIA-222-H

Topo Method: Method 1

Top Width : 2.75 ft

Risk Cat : II

Topo: 1

Tower Ht : 190.00 ft

Exposure : C

Shape : Triangle

Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1	SOL 50 ksi 4 1/2" SOLID	SAE 36 ksi 3.5X3.5X0.375	
2	SOL 50 ksi 4 1/4" SOLID	SAE 36 ksi 3.5X3.5X0.3125	
3	SOL 50 ksi 4" SOLID	SAE 36 ksi 3X3X0.375	
4	SOL 50 ksi 3 3/4" SOLID	SAE 36 ksi 3X3X0.25	
5	SOL 50 ksi 3 1/2" SOLID	SAE 36 ksi 2.5X2.5X0.3125	
6	SOL 50 ksi 3 1/4" SOLID	SAE 36 ksi 2.5X2.5X0.25	
7	SOL 50 ksi 3" SOLID	SAE 36 ksi 2.5X2.5X0.1875	
8	SOL 50 ksi 2 1/2" SOLID	SAE 36 ksi 2X2X0.1875	
9	SOL 50 ksi 1 3/4" SOLID	SAE 36 ksi 1.5X1.5X0.1875	
10	SOL 50 ksi 1 1/2" SOLID	SAE 36 ksi 1.5X1.5X0.1875	SAE 36 ksi 1.5X1.5X0.1875

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
180.00	Panel	3	JMA Wireless MX08FRO665-21
180.00		3	Fujitsu TA08025-B605
180.00		3	Fujitsu TA08025-B604
180.00		1	Commscope RDIDC-9181-PF-48
180.00	Mounting Frame	3	Generic Flat Light Sector Fram
172.00	Panel	6	Andrew LNX-6515DS-A1M
172.00	Panel	3	Ericsson AIR 32 B2A-B4P
172.00	Panel	3	Ericsson AIR 32 B4A-B2P
172.00		3	Ericsson RRUS B13 w/ RRUS A2
172.00		1	RFS DB-T1-6Z-12AB-0Z
172.00		1	RFS DB-B1-6C-12AB-0Z
171.00	Mounting Frame	3	Flat Light Sector Frame
162.00	Dish	1	Andrew Microwaves UHX6-105
151.00	Panel	3	Commscope SBNHH-1D65C
151.00	Panel	3	Nokia AEQK AirScale MAA 64T64R
151.00		3	Nokia AHLBBA
151.00		3	Alcatel-Lucent RRH4X25-WCS
151.00		3	Alcatel-Lucent B25 RRH4x30
151.00		3	Alcatel-Lucent B66A RRH4x45-4R
151.00		1	Raycap DC6-48-60-0-8F
151.00		3	Nokia AirScale RRH 4T4R B5 160
151.00		1	Raycap DC6-48-60-18-8F
151.00		3	Powerwave Allgon TT08-19DB111-
151.00		1	Raycap DC6-48-60-18-8F ("Squid
151.00	Mounting Frame	3	Generic Round Sector Frame
151.00	Panel	6	Quintel QS86512-2
121.60	Panel	3	Andrew SBNHH-1D65C
120.00	Mounting Frame	3	Flat Light Sector Frame
120.00	Panel	3	Commscope FFHH-65C-R3
120.00	Panel	3	Nokia AEHC
120.00	Panel	3	Andrew TMBX-6517-A1M
120.00		3	Nokia AHFIG 70.55 lbs
120.00		3	Nokia AirScale Dual RRH 4T4R B
120.00		2	Commscope FIBERFEED 12

Linear Appurtenance

Elev (ft)	From	To	Qty	Description
	0.00	180.00	1	Waveguide
	0.00	180.00	1	Climbing Ladder
	0.00	180.00	1	1.75" (44.5mm) Hybri

Job Information			
Client : AT&T MOBILITY			
Tower : 306035	Location : Unity Village MO	Base Width : 17.00 ft	
Code : ANSI/TIA-222-H	Topo Method: Method 1	Top Width : 2.75 ft	
Risk Cat : II	Topo: 1	Tower Ht : 190.00 ft	
	Exposure : C	Shape : Triangle	

5.00	172.00	2	1.25" (31.8mm) Hybri
5.00	162.00	1	EW37
5.00	151.00	1	Waveguide
5.00	151.00	1	3/8" (0.38"- 9.5mm)
5.00	151.00	12	1 5/8" Coax
5.00	151.00	6	0.76" (19.2mm) 8 AWG
5.00	151.00	2	0.39" (10mm) Fiber T
5.00	120.00	1	Waveguide
5.00	120.00	6	7/8" Coax
5.00	120.00	5	1 5/8" Coax
0.00	120.00	2	1.46" (37.1mm) Hybri

Global Base Foundation Design Loads			
Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	4,365.92	58.28	42.24
DL + WL + IL	1,186.53	134.79	11.86

Individual Base Foundation Design Loads		
Vertical (kip)	Uplift (kip)	Horizontal (kip)
315.97	268.06	25.51

Site Number: 306035	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: Unity Village MO 2, MO	Engineering Number: 13619563_C3_03	5/26/2021 11:24:06 AM
Customer: AT&T MOBILITY		

Analysis Parameters

Location:	Jackson County, MO	Height (ft):	190
Code:	ANSI/TIA-222-H	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	17.00
Tower Manufacturer:	Allied Tower	Top Face Width (ft):	2.75
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:	0.85		
Ke:	0.97		

Ice & Wind Parameters

Exposure Category:	C	Design Windspeed Without Ice:	109 mph
Risk Category:	II	Design Windspeed With Ice:	40 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.50 in
Crest Height:	0 ft	HMSL:	982.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.95		
T_L (sec):	12	p:	1.3
S_S :	0.099	S_1 :	0.068
F_a :	1.600	F_v :	2.400
S_{ds} :	0.106	S_{d1} :	0.109
		C_S :	0.035
		C_S , Max:	0.038
		C_S , Min:	0.030

Load Cases

1.2D + 1.0W Normal	109 mph Normal with No Ice
1.2D + 1.0W 60 deg	109 mph 60 degree with No Ice
1.2D + 1.0W 90 deg	109 mph 90 degree with No Ice
0.9D + 1.0W Normal	109 mph Normal with No Ice (Reduced DL)
0.9D + 1.0W 60 deg	109 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.0W 90 deg	109 mph 90 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	40 mph Normal with 1.50 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	40 mph 60 deg with 1.50 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	40 mph 90 deg with 1.50 in Radial Ice
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
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL) Normal
0.9D - 1.0Ev + 1.0Eh 60 deg	Seismic (Reduced DL) 60 deg
0.9D - 1.0Ev + 1.0Eh 90 deg	Seismic (Reduced DL) 90 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

Site Number: 306035

Code:

ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

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)
180.0	Commscope RDIDC-	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.0	35.74	45	26
180.0	Fujitsu TA08025-	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.0	35.74	72	230
180.0	Fujitsu TA08025-	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.0	35.74	72	270
180.0	Generic Flat Light	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	35.74	918	1440
180.0	JMA Wireless	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.0	35.74	583	232
172.0	Andrew LNX-	6	50	11.4	8.0	11.9	7.1	0.80	0.70	-0.6	691.6	35.37	1153	359
172.0	Ericsson AIR 32 B2A-	3	106	6.5	4.7	12.9	8.7	0.80	0.71	0.0	0.0	35.40	334	381
172.0	Ericsson AIR 32 B4A-	3	106	6.5	4.7	12.9	8.7	0.80	0.71	-0.4	133.7	35.38	334	381
172.0	Ericsson RRUS B13	3	72	2.8	1.6	17.0	10.6	0.80	0.67	-1.6	215.6	35.33	135	259
172.0	RFS DB-B1-6C-12AB-	1	21	2.5	1.6	15.7	10.3	0.80	0.50	0.1	3.0	35.40	30	26
172.0	RFS DB-T1-6Z-12AB-	1	16	2.5	1.6	15.7	10.3	0.80	0.50	1.7	51.5	35.47	30	19
171.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	35.35	811	1440
162.0	Andrew Microwaves	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	1061.1	35.00	1061	337
151.0	Alcatel-Lucent B25	3	53	2.1	1.8	12.0	7.2	0.80	0.67	2.9	290.6	34.58	100	191
151.0	Alcatel-Lucent B66A	3	57	2.5	2.2	11.8	7.2	0.80	0.67	0.3	35.8	34.45	119	204
151.0	Alcatel-Lucent	3	70	3.2	2.6	12.0	8.7	0.80	0.72	0.2	32.0	34.45	160	252
151.0	Commscope SBNHH-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	1.3	732.7	34.50	564	179
151.0	Generic Round	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	34.44	635	1080
151.0	Nokia AEQK AirScale	3	99	4.4	2.5	17.7	9.5	0.80	0.66	0.0	0.0	34.44	202	357
151.0	Nokia AHLBBA	3	95	2.8	2.0	14.1	7.8	0.80	0.67	0.0	0.0	34.44	133	341
151.0	Nokia AirScale RRH	3	35	1.3	1.1	11.6	6.5	0.80	0.50	2.6	117.9	34.56	45	127
151.0	Powerwave Allgon	3	22	0.8	1.2	6.7	5.4	0.80	0.50	0.6	16.7	34.47	28	79
151.0	Quintel QS86512-2	6	135	11.5	8.0	12.0	9.6	0.80	0.74	0.7	835.4	34.47	1193	972
151.0	Raycap DC6-48-60-0-	1	33	1.4	1.9	11.0	11.0	0.80	1.00	-0.2	6.4	34.43	32	39
151.0	Raycap DC6-48-60-	1	20	1.3	2.0	9.7	9.7	0.80	1.00	0.0	0.0	34.44	30	24
151.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	11.0	0.80	1.00	0.0	0.0	34.44	34	38
121.6	Andrew SBNHH-	3	66	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	32.90	533	238
120.0	Andrew TMBX-6517-	3	20	6.0	7.0	6.5	3.3	0.80	0.77	0.4	124.0	32.84	310	71
120.0	Commscope FFHH-	3	126	21.1	8.0	25.2	9.3	0.80	0.63	1.5	1340.6	32.90	894	453
120.0	Commscope HELIAX	2	20	0.9	1.4	6.7	4.7	0.80	0.50	0.0	0.0	32.81	21	48
120.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	32.81	753	1440
120.0	Nokia AEHC	3	104	6.8	3.2	21.5	8.1	0.80	0.62	0.0	0.0	32.81	284	373
120.0	Nokia AHFIG 70.55	3	71	2.8	2.3	12.1	5.2	0.80	0.67	0.0	0.0	32.81	124	254
120.0	Nokia AirScale Dual	3	84	2.2	1.8	12.1	7.4	0.80	0.67	3.6	360.3	33.02	100	302
Totals		93	10386	723.4									11872	12463

Discrete Appurtenance Properties 0.9D + 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)
180.0	Commscope RDIDC-	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.0	35.74	45	20
180.0	Fujitsu TA08025-	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.0	35.74	72	173
180.0	Fujitsu TA08025-	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.0	35.74	72	203
180.0	Generic Flat Light	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	35.74	918	1080
180.0	JMA Wireless	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.0	35.74	583	174
172.0	Andrew LNX-	6	50	11.4	8.0	11.9	7.1	0.80	0.70	-0.6	691.6	35.37	1153	269
172.0	Ericsson AIR 32 B2A-	3	106	6.5	4.7	12.9	8.7	0.80	0.71	0.0	0.0	35.40	334	286
172.0	Ericsson AIR 32 B4A-	3	106	6.5	4.7	12.9	8.7	0.80	0.71	-0.4	133.7	35.38	334	286
172.0	Ericsson RRUS B13	3	72	2.8	1.6	17.0	10.6	0.80	0.67	-1.6	215.6	35.33	135	194
172.0	RFS DB-B1-6C-12AB-	1	21	2.5	1.6	15.7	10.3	0.80	0.50	0.1	3.0	35.40	30	19
172.0	RFS DB-T1-6Z-12AB-	1	16	2.5	1.6	15.7	10.3	0.80	0.50	1.7	51.5	35.47	30	14
171.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	35.35	811	1080

Site Number: 306035

Code:

ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Tower Loading

162.0	Andrew Microwaves	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	1061.1	35.00	1061	253
151.0	Alcatel-Lucent B25	3	53	2.1	1.8	12.0	7.2	0.80	0.67	2.9	290.6	34.58	100	143
151.0	Alcatel-Lucent B66A	3	57	2.5	2.2	11.8	7.2	0.80	0.67	0.3	35.8	34.45	119	153
151.0	Alcatel-Lucent	3	70	3.2	2.6	12.0	8.7	0.80	0.72	0.2	32.0	34.45	160	189
151.0	Commscope SBNHH-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	1.3	732.7	34.50	564	134
151.0	Generic Round	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	34.44	635	810
151.0	Nokia AEQK AirScale	3	99	4.4	2.5	17.7	9.5	0.80	0.66	0.0	0.0	34.44	202	268
151.0	Nokia AHLBBA	3	95	2.8	2.0	14.1	7.8	0.80	0.67	0.0	0.0	34.44	133	256
151.0	Nokia AirScale RRH	3	35	1.3	1.1	11.6	6.5	0.80	0.50	2.6	117.9	34.56	45	95
151.0	Powerwave Allgon	3	22	0.8	1.2	6.7	5.4	0.80	0.50	0.6	16.7	34.47	28	59
151.0	Quintel QS86512-2	6	135	11.5	8.0	12.0	9.6	0.80	0.74	0.7	835.4	34.47	1193	729
151.0	Raycap DC6-48-60-0-	1	33	1.4	1.9	11.0	11.0	0.80	1.00	-0.2	6.4	34.43	32	30
151.0	Raycap DC6-48-60-	1	20	1.3	2.0	9.7	9.7	0.80	1.00	0.0	0.0	34.44	30	18
151.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	11.0	0.80	1.00	0.0	0.0	34.44	34	29
121.6	Andrew SBNHH-	3	66	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	32.90	533	178
120.0	Andrew TMBX-6517-	3	20	6.0	7.0	6.5	3.3	0.80	0.77	0.4	124.0	32.84	310	53
120.0	Commscope FFHH-	3	126	21.1	8.0	25.2	9.3	0.80	0.63	1.5	1340.6	32.90	894	339
120.0	Commscope HELIAX	2	20	0.9	1.4	6.7	4.7	0.80	0.50	0.0	0.0	32.81	21	36
120.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	32.81	753	1080
120.0	Nokia AEHC	3	104	6.8	3.2	21.5	8.1	0.80	0.62	0.0	0.0	32.81	284	280
120.0	Nokia AHFIG 70.55	3	71	2.8	2.3	12.1	5.2	0.80	0.67	0.0	0.0	32.81	124	191
120.0	Nokia AirScale Dual	3	84	2.2	1.8	12.1	7.4	0.80	0.67	3.6	360.3	33.02	100	226
Totals		93	10386	723.4									11872	9347

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)
180.0	Commscope RDIDC-	1	80	2.8	1.3	14.0	8.0	0.80	1.00	0.0	0.0	4.81	9	84
180.0	Fujitsu TA08025-	3	123	2.9	1.3	15.0	7.9	0.80	0.50	0.0	0.0	4.81	14	408
180.0	Fujitsu TA08025-	3	139	2.9	1.3	15.0	9.1	0.80	0.50	0.0	0.0	4.81	14	461
180.0	Generic Flat Light	3	705	33.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	4.81	229	2356
180.0	JMA Wireless	3	325	15.3	6.0	20.0	8.0	0.80	0.64	0.0	0.0	4.81	96	1015
172.0	Andrew LNX-	6	282	14.7	8.0	11.9	7.1	0.80	0.70	-0.6	120.0	4.76	200	1753
172.0	Ericsson AIR 32 B2A-	3	268	8.8	4.7	12.9	8.7	0.80	0.71	0.0	0.0	4.77	60	868
172.0	Ericsson AIR 32 B4A-	3	268	8.8	4.7	12.9	8.7	0.80	0.71	-0.4	24.2	4.76	60	868
172.0	Ericsson RRUS B13	3	146	3.9	1.6	17.0	10.6	0.80	0.67	-1.6	40.6	4.76	25	480
172.0	RFS DB-B1-6C-12AB-	1	102	3.6	1.6	15.7	10.3	0.80	0.50	0.1	0.6	4.77	6	107
172.0	RFS DB-T1-6Z-12AB-	1	97	3.6	1.6	15.7	10.3	0.80	0.50	1.7	9.9	4.78	6	100
171.0	Flat Light Sector	3	705	33.2	0.0	0.0	0.0	0.75	0.67	0.0	0.0	4.76	203	2356
162.0	Andrew Microwaves	1	1000	39.2	6.0	72.0	0.0	1.00	1.00	1.0	157.0	4.71	157	1056
151.0	Alcatel-Lucent B25	3	113	3.1	1.8	12.0	7.2	0.80	0.67	2.9	57.5	4.66	20	372
151.0	Alcatel-Lucent B66A	3	127	3.7	2.2	11.8	7.2	0.80	0.67	0.3	7.0	4.64	23	415
151.0	Alcatel-Lucent	3	162	4.5	2.6	12.0	8.7	0.80	0.72	0.2	6.1	4.64	30	527
151.0	Commscope SBNHH-	3	280	14.7	8.0	11.9	7.1	0.80	0.70	1.3	126.6	4.65	97	868
151.0	Generic Round	3	669	31.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	4.64	184	2186
151.0	Nokia AEQK AirScale	3	216	5.8	2.5	17.7	9.5	0.80	0.66	0.0	0.0	4.64	36	706
151.0	Nokia AHLBBA	3	172	4.0	2.0	14.1	7.8	0.80	0.67	0.0	0.0	4.64	25	573
151.0	Nokia AirScale RRH	3	75	2.0	1.1	11.6	6.5	0.80	0.50	2.6	25.2	4.65	10	245
151.0	Powerwave Allgon	3	49	1.4	1.2	6.7	5.4	0.80	0.50	0.6	4.1	4.64	7	159
151.0	Quintel QS86512-2	6	396	14.7	8.0	12.0	9.6	0.80	0.74	0.7	144.3	4.64	206	2538
151.0	Raycap DC6-48-60-0-	1	91	2.0	1.9	11.0	11.0	0.80	1.00	-0.2	1.3	4.64	6	98
151.0	Raycap DC6-48-60-	1	73	1.9	2.0	9.7	9.7	0.80	1.00	0.0	0.0	4.64	6	77
151.0	Raycap DC6-48-60-	1	94	2.2	2.0	11.0	11.0	0.80	1.00	0.0	0.0	4.64	7	100
121.6	Andrew SBNHH-	3	291	14.5	8.0	11.9	7.1	0.80	0.70	0.0	0.0	4.43	92	913
120.0	Andrew TMBX-6517-	3	122	8.6	7.0	6.5	3.3	0.80	0.77	0.4	24.0	4.42	60	379

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Tower Loading

120.0 Commscope FFHH-	3	529	24.8	8.0	25.2	9.3	0.80	0.63	1.5	211.5	4.43	141	1662
120.0 Commscope HELIAX	2	48	1.6	1.4	6.7	4.7	0.80	0.50	0.0	0.0	4.42	5	104
120.0 Flat Light Sector	3	692	32.6	0.0	0.0	0.0	0.75	0.67	0.0	0.0	4.42	184	2317
120.0 Nokia AEHC	3	254	8.6	3.2	21.5	8.1	0.80	0.62	0.0	0.0	4.42	48	824
120.0 Nokia AHFIG 70.55	3	134	3.9	2.3	12.1	5.2	0.80	0.67	0.0	0.0	4.42	24	445
120.0 Nokia AirScale Dual	3	146	3.2	1.8	12.1	7.4	0.80	0.67	3.6	70.1	4.45	19	487
Totals	93	25829	1060.6									2312	27906

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)
180.0	Commscope RDIDC-	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.0	10.83	14	22
180.0	Fujitsu TA08025-	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.0	10.83	22	192
180.0	Fujitsu TA08025-	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.0	10.83	22	225
180.0	Generic Flat Light	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	10.83	278	1200
180.0	JMA Wireless	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.0	10.83	177	194
172.0	Andrew LNX-	6	50	11.4	8.0	11.9	7.1	0.80	0.70	-0.6	209.5	10.72	349	299
172.0	Ericsson AIR 32 B2A-	3	106	6.5	4.7	12.9	8.7	0.80	0.71	0.0	0.0	10.73	101	317
172.0	Ericsson AIR 32 B4A-	3	106	6.5	4.7	12.9	8.7	0.80	0.71	-0.4	40.5	10.72	101	317
172.0	Ericsson RRUS B13	3	72	2.8	1.6	17.0	10.6	0.80	0.67	-1.6	65.3	10.70	41	216
172.0	RFS DB-B1-6C-12AB-	1	21	2.5	1.6	15.7	10.3	0.80	0.50	0.1	0.9	10.73	9	21
172.0	RFS DB-T1-6Z-12AB-	1	16	2.5	1.6	15.7	10.3	0.80	0.50	1.7	15.6	10.75	9	16
171.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.71	246	1200
162.0	Andrew Microwaves	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	321.5	10.60	322	281
151.0	Alcatel-Lucent B25	3	53	2.1	1.8	12.0	7.2	0.80	0.67	2.9	88.0	10.48	30	159
151.0	Alcatel-Lucent B66A	3	57	2.5	2.2	11.8	7.2	0.80	0.67	0.3	10.9	10.44	36	170
151.0	Alcatel-Lucent	3	70	3.2	2.6	12.0	8.7	0.80	0.72	0.2	9.7	10.44	49	210
151.0	Commscope SBNHH-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	1.3	222.0	10.45	171	149
151.0	Generic Round	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.44	193	900
151.0	Nokia AEQK AirScale	3	99	4.4	2.5	17.7	9.5	0.80	0.66	0.0	0.0	10.44	61	298
151.0	Nokia AHLBBA	3	95	2.8	2.0	14.1	7.8	0.80	0.67	0.0	0.0	10.44	40	284
151.0	Nokia AirScale RRH	3	35	1.3	1.1	11.6	6.5	0.80	0.50	2.6	35.7	10.47	14	106
151.0	Powerwave Allgon	3	22	0.8	1.2	6.7	5.4	0.80	0.50	0.6	5.1	10.44	8	66
151.0	Quintel QS86512-2	6	135	11.5	8.0	12.0	9.6	0.80	0.74	0.7	253.1	10.45	362	810
151.0	Raycap DC6-48-60-0-	1	33	1.4	1.9	11.0	11.0	0.80	1.00	-0.2	1.9	10.43	10	33
151.0	Raycap DC6-48-60-	1	20	1.3	2.0	9.7	9.7	0.80	1.00	0.0	0.0	10.44	9	20
151.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	11.0	0.80	1.00	0.0	0.0	10.44	10	32
121.6	Andrew SBNHH-	3	66	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	9.97	162	198
120.0	Andrew TMBX-6517-	3	20	6.0	7.0	6.5	3.3	0.80	0.77	0.4	37.6	9.95	94	59
120.0	Commscope FFHH-	3	126	21.1	8.0	25.2	9.3	0.80	0.63	1.5	406.2	9.97	271	377
120.0	Commscope HELIAX	2	20	0.9	1.4	6.7	4.7	0.80	0.50	0.0	0.0	9.94	6	40
120.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	9.94	228	1200
120.0	Nokia AEHC	3	104	6.8	3.2	21.5	8.1	0.80	0.62	0.0	0.0	9.94	86	311
120.0	Nokia AHFIG 70.55	3	71	2.8	2.3	12.1	5.2	0.80	0.67	0.0	0.0	9.94	38	212
120.0	Nokia AirScale Dual	3	84	2.2	1.8	12.1	7.4	0.80	0.67	3.6	109.2	10.00	30	251
Totals		93	10386	723.4									3597	10386

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Tower LoadingLinear 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
0.00	180.0	1.75" (44.5mm)	1	1.75	2.72	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	Climbing Ladder	1	2.00	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	Waveguide	1	2.00	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
5.00	172.0	1.25" (31.8mm)	2	1.25	1.21	100	1	Individual	0.00	N	1.00	1.00	0.00
5.00	162.0	EW37	1	2.90	0.84	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	151.0	0.39" (10mm) Fiber	2	0.39	0.06	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	151.0	0.76" (19.2mm) 8	6	0.76	0.53	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	151.0	1 5/8" Coax	12	1.98	0.82	100	2	Individual	0.00	N	1.00	1.00	0.00
5.00	151.0	3/8" (0.38"-	1	0.38	0.23	100	2	Individual	0.00	N	1.00	1.00	0.01
5.00	151.0	Waveguide	1	2.00	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	120.0	1.46" (37.1mm)	2	1.46	1.70	100	3	Individual	0.00	N	1.00	1.00	0.00
5.00	120.0	1 5/8" Coax	5	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
5.00	120.0	7/8" Coax	6	1.09	0.33	83	3	Block	0.00	N	1.00	1.00	0.00
5.00	120.0	Waveguide	1	2.00	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00

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5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Section ForcesLoadCase 1.2D + 1.0W Normal

109 mph Normal with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	35.94	3.614	2.502	0.000	0.188	2.64	1.00	1.00	0.0	5.05	13.30	0.00	410	0	406	0	406
9	170.00	35.31	7.039	5.839	0.000	0.146	2.78	1.00	1.00	0.0	10.35	28.82	0.00	1354	0	865	368	1233
8	150.00	34.39	9.782	8.341	0.000	0.152	2.76	1.00	1.00	0.0	14.52	40.13	0.00	2421	0	1173	1111	2284
7	130.00	33.37	14.152	10.009	0.000	0.161	2.73	1.00	1.00	0.0	19.84	54.20	0.00	3402	0	1537	1574	3112
6	110.00	32.22	16.347	10.843	0.000	0.151	2.77	1.00	1.00	0.0	22.50	62.31	0.00	4493	0	1706	2266	3972
5	90.00	30.88	18.435	11.678	0.000	0.143	2.80	1.00	1.00	0.0	25.05	70.11	0.00	5262	0	1840	2172	4012
4	70.00	29.29	24.821	12.512	0.000	0.155	2.75	1.00	1.00	0.0	31.93	87.94	0.00	5772	0	2190	2060	4250
3	50.00	27.29	27.573	13.346	0.000	0.151	2.77	1.00	1.00	0.0	35.15	97.33	0.00	7277	0	2258	1919	4177
2	30.00	24.51	27.591	14.180	0.000	0.138	2.82	1.00	1.00	0.0	35.62	100.28	0.00	7254	0	2089	1724	3813
1	10.00	21.21	29.974	15.014	0.000	0.135	2.83	1.00	1.00	0.0	37.87	107.03	0.00	8174	0	1929	1180	3109
														45819	0			30368

LoadCase 1.2D + 1.0W 60 deg

109 mph 60 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	35.94	3.614	2.502	0.000	0.188	2.64	0.80	1.00	0.0	4.32	11.40	0.00	410	0	348	0	348
9	170.00	35.31	7.039	5.839	0.000	0.146	2.78	0.80	1.00	0.0	8.94	24.90	0.00	1354	0	747	368	1115
8	150.00	34.39	9.782	8.341	0.000	0.152	2.76	0.80	1.00	0.0	12.56	34.72	0.00	2421	0	1015	1111	2125
7	130.00	33.37	14.152	10.009	0.000	0.161	2.73	0.80	1.00	0.0	17.01	46.47	0.00	3402	0	1318	1574	2893
6	110.00	32.22	16.347	10.843	0.000	0.151	2.77	0.80	1.00	0.0	19.23	53.25	0.00	4493	0	1458	2266	3724
5	90.00	30.88	18.435	11.678	0.000	0.143	2.80	0.80	1.00	0.0	21.37	59.79	0.00	5262	0	1570	2172	3742
4	70.00	29.29	24.821	12.512	0.000	0.155	2.75	0.80	1.00	0.0	26.96	74.26	0.00	5772	0	1849	2060	3909
3	50.00	27.29	27.573	13.346	0.000	0.151	2.77	0.80	1.00	0.0	29.63	82.06	0.00	7277	0	1904	1919	3823
2	30.00	24.51	27.591	14.180	0.000	0.138	2.82	0.80	1.00	0.0	30.10	84.75	0.00	7254	0	1765	1724	3489
1	10.00	21.21	29.974	15.014	0.000	0.135	2.83	0.80	1.00	0.0	32.00	90.45	0.00	8174	0	1630	1180	2810
														45819	0			27979

LoadCase 1.2D + 1.0W 90 deg

109 mph 90 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	35.94	3.614	2.502	0.000	0.188	2.64	0.85	1.00	0.0	4.50	11.88	0.00	410	0	363	0	363
9	170.00	35.31	7.039	5.839	0.000	0.146	2.78	0.85	1.00	0.0	9.29	25.88	0.00	1354	0	777	368	1144
8	150.00	34.39	9.782	8.341	0.000	0.152	2.76	0.85	1.00	0.0	13.05	36.07	0.00	2421	0	1054	1111	2165
7	130.00	33.37	14.152	10.009	0.000	0.161	2.73	0.85	1.00	0.0	17.72	48.40	0.00	3402	0	1373	1574	2947
6	110.00	32.22	16.347	10.843	0.000	0.151	2.77	0.85	1.00	0.0	20.05	55.52	0.00	4493	0	1520	2266	3786
5	90.00	30.88	18.435	11.678	0.000	0.143	2.80	0.85	1.00	0.0	22.29	62.37	0.00	5262	0	1637	2172	3809
4	70.00	29.29	24.821	12.512	0.000	0.155	2.75	0.85	1.00	0.0	28.21	77.68	0.00	5772	0	1934	2060	3994
3	50.00	27.29	27.573	13.346	0.000	0.151	2.77	0.85	1.00	0.0	31.01	85.88	0.00	7277	0	1992	1919	3911
2	30.00	24.51	27.591	14.180	0.000	0.138	2.82	0.85	1.00	0.0	31.48	88.63	0.00	7254	0	1846	1724	3570
1	10.00	21.21	29.974	15.014	0.000	0.135	2.83	0.85	1.00	0.0	33.50	94.68	0.00	8174	0	1707	1180	2887

Site Number: 306035

Code:

ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Section Forces

45819 0 28577

LoadCase 0.9D + 1.0W Normal

109 mph Normal with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	35.94	3.614	2.502	0.000	0.188	2.64	1.00	1.00	0.0	5.05	13.30	0.00	307	0	406	0	406
9	170.00	35.31	7.039	5.839	0.000	0.146	2.78	1.00	1.00	0.0	10.35	28.82	0.00	1016	0	865	368	1233
8	150.00	34.39	9.782	8.341	0.000	0.152	2.76	1.00	1.00	0.0	14.52	40.13	0.00	1816	0	1173	1111	2284
7	130.00	33.37	14.152	10.009	0.000	0.161	2.73	1.00	1.00	0.0	19.84	54.20	0.00	2552	0	1537	1574	3112
6	110.00	32.22	16.347	10.843	0.000	0.151	2.77	1.00	1.00	0.0	22.50	62.31	0.00	3370	0	1706	2266	3972
5	90.00	30.88	18.435	11.678	0.000	0.143	2.80	1.00	1.00	0.0	25.05	70.11	0.00	3947	0	1840	2172	4012
4	70.00	29.29	24.821	12.512	0.000	0.155	2.75	1.00	1.00	0.0	31.93	87.94	0.00	4329	0	2190	2060	4250
3	50.00	27.29	27.573	13.346	0.000	0.151	2.77	1.00	1.00	0.0	35.15	97.33	0.00	5458	0	2258	1919	4177
2	30.00	24.51	27.591	14.180	0.000	0.138	2.82	1.00	1.00	0.0	35.62	100.28	0.00	5440	0	2089	1724	3813
1	10.00	21.21	29.974	15.014	0.000	0.135	2.83	1.00	1.00	0.0	38.00	107.39	0.00	6130	0	1936	1180	3116
														34364	0			30374

LoadCase 0.9D + 1.0W 60 deg

109 mph 60 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	35.94	3.614	2.502	0.000	0.188	2.64	0.80	1.00	0.0	4.32	11.40	0.00	307	0	348	0	348
9	170.00	35.31	7.039	5.839	0.000	0.146	2.78	0.80	1.00	0.0	8.94	24.90	0.00	1016	0	747	368	1115
8	150.00	34.39	9.782	8.341	0.000	0.152	2.76	0.80	1.00	0.0	12.56	34.72	0.00	1816	0	1015	1111	2125
7	130.00	33.37	14.152	10.009	0.000	0.161	2.73	0.80	1.00	0.0	17.01	46.47	0.00	2552	0	1318	1574	2893
6	110.00	32.22	16.347	10.843	0.000	0.151	2.77	0.80	1.00	0.0	19.23	53.25	0.00	3370	0	1458	2266	3724
5	90.00	30.88	18.435	11.678	0.000	0.143	2.80	0.80	1.00	0.0	21.37	59.79	0.00	3947	0	1570	2172	3742
4	70.00	29.29	24.821	12.512	0.000	0.155	2.75	0.80	1.00	0.0	26.96	74.26	0.00	4329	0	1849	2060	3909
3	50.00	27.29	27.573	13.346	0.000	0.151	2.77	0.80	1.00	0.0	29.63	82.06	0.00	5458	0	1904	1919	3823
2	30.00	24.51	27.591	14.180	0.000	0.138	2.82	0.80	1.00	0.0	30.10	84.75	0.00	5440	0	1765	1724	3489
1	10.00	21.21	29.974	15.014	0.000	0.135	2.83	0.80	1.00	0.0	32.00	90.45	0.00	6130	0	1630	1180	2810
														34364	0			27979

LoadCase 0.9D + 1.0W 90 deg

109 mph 90 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10 185.00	35.94	3.614	2.502	0.000	0.188	2.64	0.85	1.00	0.0	4.50	11.88	0.00	307	0	363	0	363
9 170.00	35.31	7.039	5.839	0.000	0.146	2.78	0.85	1.00	0.0	9.29	25.88	0.00	1016	0	777	368	1144
8 150.00	34.39	9.782	8.341	0.000	0.152	2.76	0.85	1.00	0.0	13.05	36.07	0.00	1816	0	1054	1111	2165
7 130.00	33.37	14.152	10.009	0.000	0.161	2.73	0.85	1.00	0.0	17.72	48.40	0.00	2552	0	1373	1574	2947
6 110.00	32.22	16.347	10.843	0.000	0.151	2.77	0.85	1.00	0.0	20.05	55.52	0.00	3370	0	1520	2266	3786
5 90.00	30.88	18.435	11.678	0.000	0.143	2.80	0.85	1.00	0.0	22.29	62.37	0.00	3947	0	1637	2172	3809
4 70.00	29.29	24.821	12.512	0.000	0.155	2.75	0.85	1.00	0.0	28.21	77.68	0.00	4329	0	1934	2060	3994
3 50.00	27.29	27.573	13.346	0.000	0.151	2.77	0.85	1.00	0.0	31.01	85.88	0.00	5458	0	1992	1919	3911

Site Number: 306035

Code:

ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Section Forces

2	30.00	24.51	27.591	14.180	0.000	0.138	2.82	0.85	1.00	0.0	31.48	88.63	0.00	5440	0	1846	1724	3570
1	10.00	21.21	29.974	15.014	0.000	0.135	2.83	0.85	1.00	0.0	33.50	94.68	0.00	6130	0	1707	1180	2887
														34364	0			28577

LoadCase 1.2D + 1.0Di + 1.0Wi Normal

40 mph Normal with 1.50 in Radial Ice

Gust Response Factor (Gh): 0.85

Ice Dead Load Factor 1.00

Ice Importance Factor :1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	4.84	3.614	17.297	14.79	0.589	1.81	1.00	1.00	1.8	16.36	29.63	14.79	1217	807	122	0	122
9	170.00	4.76	7.039	34.645	28.80	0.444	1.98	1.00	1.00	1.8	29.78	59.06	28.81	3600	2245	239	135	374
8	150.00	4.63	9.782	37.543	29.20	0.379	2.11	1.00	1.00	1.7	33.33	70.26	29.20	6938	4517	277	480	756
7	130.00	4.49	14.152	41.541	31.53	0.358	2.15	1.00	1.00	1.7	39.86	85.87	31.53	9702	6299	328	708	1036
6	110.00	4.34	16.347	44.876	34.03	0.329	2.22	1.00	1.00	1.7	43.65	96.98	34.03	12533	8040	358	992	1350
5	90.00	4.16	18.435	47.845	36.16	0.306	2.28	1.00	1.00	1.7	47.19	107.55	36.17	13371	8108	380	963	1344
4	70.00	3.94	24.821	50.736	38.22	0.306	2.28	1.00	1.00	1.6	55.31	126.07	38.22	14288	8516	423	899	1322
3	50.00	3.68	27.573	53.218	39.87	0.292	2.32	1.00	1.00	1.6	59.31	137.49	39.87	15748	8470	429	833	1263
2	30.00	3.30	27.591	48.046	33.86	0.246	2.45	1.00	1.00	1.5	55.65	136.27	33.87	15101	7847	382	761	1143
1	10.00	2.86	29.974	47.197	32.18	0.229	2.50	1.00	1.00	1.3	57.36	143.50	32.18	14388	6215	348	494	842
														106884	61065			9552

LoadCase 1.2D + 1.0Di + 1.0Wi 60 deg

40 mph 60 deg with 1.50 in Radial Ice

Gust Response Factor (Gh): 0.85

Ice Dead Load Factor 1.00

Ice Importance Factor :1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	4.84	3.614	17.297	14.79	0.589	1.81	0.80	1.00	1.8	15.64	28.32	14.79	1217	807	117	0	117
9	170.00	4.76	7.039	34.645	28.80	0.444	1.98	0.80	1.00	1.8	28.37	56.27	28.81	3600	2245	227	135	363
8	150.00	4.63	9.782	37.543	29.20	0.379	2.11	0.80	1.00	1.7	31.37	66.14	29.20	6938	4517	260	480	740
7	130.00	4.49	14.152	41.541	31.53	0.358	2.15	0.80	1.00	1.7	37.03	79.77	31.53	9702	6299	305	708	1013
6	110.00	4.34	16.347	44.876	34.03	0.329	2.22	0.80	1.00	1.7	40.38	89.72	34.03	12533	8040	331	992	1323
5	90.00	4.16	18.435	47.845	36.16	0.306	2.28	0.80	1.00	1.7	43.50	99.15	36.17	13371	8108	351	963	1314
4	70.00	3.94	24.821	50.736	38.22	0.306	2.28	0.80	1.00	1.6	50.35	114.75	38.22	14288	8516	385	899	1284
3	50.00	3.68	27.573	53.218	39.87	0.292	2.32	0.80	1.00	1.6	53.80	124.71	39.87	15748	8470	390	833	1223
2	30.00	3.30	27.591	48.046	33.86	0.246	2.45	0.80	1.00	1.5	50.14	122.76	33.87	15101	7847	344	761	1105
1	10.00	2.86	29.974	47.197	32.18	0.229	2.50	0.80	1.00	1.3	51.36	128.50	32.18	14388	6215	312	494	806
														106884	61065			9287

LoadCase 1.2D + 1.0Di + 1.0Wi 90 deg

40 mph 90 deg with 1.50 in Radial Ice

Gust Response Factor (Gh): 0.85

Ice Dead Load Factor 1.00

Ice Importance Factor :1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10	185.00	4.84	3.614	17.297	14.79	0.589	1.81	0.85	1.00	1.8	15.82	28.65	14.79	1217	807	118	0	118
9	170.00	4.76	7.039	34.645	28.80	0.444	1.98	0.85	1.00	1.8	28.73	56.97	28.81	3600	2245	230	135	366
8	150.00	4.63	9.782	37.543	29.20	0.379	2.11	0.85	1.00	1.7	31.86	67.17	29.20	6938	4517	264	480	744
7	130.00	4.49	14.152	41.541	31.53	0.358	2.15	0.85	1.00	1.7	37.74	81.30	31.53	9702	6299	311	708	1019
6	110.00	4.34	16.347	44.876	34.03	0.329	2.22	0.85	1.00	1.7	41.20	91.53	34.03	12533	8040	338	992	1330
5	90.00	4.16	18.435	47.845	36.16	0.306	2.28	0.85	1.00	1.7	44.42	101.25	36.17	13371	8108	358	963	1321

Site Number: 306035

Code:

ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Section Forces

4	70.00	3.94	24.821	50.736	38.22	0.306	2.28	0.85	1.00	1.6	51.59	117.58	38.22	14288	8516	394	899	1293	
3	50.00	3.68	27.573	53.218	39.87	0.292	2.32	0.85	1.00	1.6	55.18	127.90	39.87	15748	8470	400	833	1233	
2	30.00	3.30	27.591	48.046	33.86	0.246	2.45	0.85	1.00	1.5	51.52	126.14	33.87	15101	7847	354	761	1115	
1	10.00	2.86	29.974	47.197	32.18	0.229	2.50	0.85	1.00	1.3	52.86	132.25	32.18	14388	6215	321	494	815	
														106884	61065				9353

LoadCase 1.0D + 1.0W Service Normal

Serviceability - 60 mph Wind Normal

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw): 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _i	D _i	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)	
10	185.00	10.89	3.614	2.502	0.000	0.188	2.64	1.00	1.00	0.0	5.05	13.30	0.00	341	0	123	0	123	
9	170.00	10.70	7.039	5.839	0.000	0.146	2.78	1.00	1.00	0.0	10.35	28.82	0.00	1129	0	262	111	373	
8	150.00	10.42	9.782	8.341	0.000	0.152	2.76	1.00	1.00	0.0	14.52	40.13	0.00	2018	0	355	337	692	
7	130.00	10.11	14.152	10.009	0.000	0.161	2.73	1.00	1.00	0.0	19.84	54.20	0.00	2835	0	466	477	943	
6	110.00	9.76	16.347	10.843	0.000	0.151	2.77	1.00	1.00	0.0	22.50	62.31	0.00	3744	0	517	687	1204	
5	90.00	9.36	18.435	11.678	0.000	0.143	2.80	1.00	1.00	0.0	25.05	70.11	0.00	4385	0	558	658	1216	
4	70.00	8.88	24.821	12.512	0.000	0.155	2.75	1.00	1.00	0.0	31.93	87.94	0.00	4810	0	663	624	1288	
3	50.00	8.27	27.573	13.346	0.000	0.151	2.77	1.00	1.00	0.0	35.15	97.33	0.00	6065	0	684	582	1266	
2	30.00	7.43	27.591	14.180	0.000	0.138	2.82	1.00	1.00	0.0	35.62	100.28	0.00	6045	0	633	522	1155	
1	10.00	6.43	29.974	15.014	0.000	0.135	2.83	1.00	1.00	0.0	38.48	108.74	0.00	6811	0	594	358	951	
														38182	0				9211

LoadCase 1.0D + 1.0W Service 60 deg

Serviceability - 60 mph Wind 60 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw): 1.00

Section	Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)	
10	185.00	10.89	3.614	2.502	0.000	0.188	2.64	0.80	1.00	0.0	4.32	11.40	0.00	341	0	106	0	106	
9	170.00	10.70	7.039	5.839	0.000	0.146	2.78	0.80	1.00	0.0	8.94	24.90	0.00	1129	0	226	111	338	
8	150.00	10.42	9.782	8.341	0.000	0.152	2.76	0.80	1.00	0.0	12.56	34.72	0.00	2018	0	308	337	644	
7	130.00	10.11	14.152	10.009	0.000	0.161	2.73	0.80	1.00	0.0	17.01	46.47	0.00	2835	0	399	477	876	
6	110.00	9.76	16.347	10.843	0.000	0.151	2.77	0.80	1.00	0.0	19.23	53.25	0.00	3744	0	442	687	1128	
5	90.00	9.36	18.435	11.678	0.000	0.143	2.80	0.80	1.00	0.0	21.37	59.79	0.00	4385	0	476	658	1134	
4	70.00	8.88	24.821	12.512	0.000	0.155	2.75	0.80	1.00	0.0	26.96	74.26	0.00	4810	0	560	624	1185	
3	50.00	8.27	27.573	13.346	0.000	0.151	2.77	0.80	1.00	0.0	29.63	82.06	0.00	6065	0	577	582	1158	
2	30.00	7.43	27.591	14.180	0.000	0.138	2.82	0.80	1.00	0.0	30.10	84.75	0.00	6045	0	535	522	1057	
1	10.00	6.43	29.974	15.014	0.000	0.135	2.83	0.80	1.00	0.0	32.48	91.80	0.00	6811	0	501	358	859	
														38182	0				8485

LoadCase 1.0D + 1.0W Service 90 deg

Serviceability - 60 mph Wind 90 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw): 1.00

Section Elev. (ft)	Q _z (psf)	A _f (sf)	A _r (sf)	Ice A _r (sf)	e	C _f	D _f	D _r	T _{iz} (in)	A _e (sf)	EPA _a (sf)	EPA _{ai} (sf)	Wt. (lb)	Ice Wt. (lb)	F _{st} (lb)	F _a (lb)	Force (lb)
10 185.00	10.89	3.614	2.502	0.000	0.188	2.64	0.85	1.00	0.0	4.50	11.88	0.00	341	0	110	0	110
9 170.00	10.70	7.039	5.839	0.000	0.146	2.78	0.85	1.00	0.0	9.29	25.88	0.00	1129	0	235	111	347
8 150.00	10.42	9.782	8.341	0.000	0.152	2.76	0.85	1.00	0.0	13.05	36.07	0.00	2018	0	319	337	656

Site Number: 306035

Code: ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Section Forces

7	130.00	10.11	14.152	10.009	0.000	0.161	2.73	0.85	1.00	0.0	17.72	48.40	0.00	2835	0	416	477	893
6	110.00	9.76	16.347	10.843	0.000	0.151	2.77	0.85	1.00	0.0	20.05	55.52	0.00	3744	0	461	687	1147
5	90.00	9.36	18.435	11.678	0.000	0.143	2.80	0.85	1.00	0.0	22.29	62.37	0.00	4385	0	496	658	1154
4	70.00	8.88	24.821	12.512	0.000	0.155	2.75	0.85	1.00	0.0	28.21	77.68	0.00	4810	0	586	624	1210
3	50.00	8.27	27.573	13.346	0.000	0.151	2.77	0.85	1.00	0.0	31.01	85.88	0.00	6065	0	604	582	1185
2	30.00	7.43	27.591	14.180	0.000	0.138	2.82	0.85	1.00	0.0	31.48	88.63	0.00	6045	0	559	522	1082
1	10.00	6.43	29.974	15.014	0.000	0.135	2.83	0.85	1.00	0.0	33.98	96.04	0.00	6811	0	525	358	882
														38182	0			8666

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

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Customer: AT&T MOBILITY

Equivalent Lateral Force Method

Spectral Response Acceleration for Short Period (S_s):	0.10
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Long-Period Transition Period (T_L - Seconds):	12
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}):	0.11
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s :	0.04
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	0.95
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.23
Total Unfactored Dead Load:	48.57 k
Seismic Base Shear (E):	2.22 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)
10	185.00	341	205,129	0.017	37	417
9	170.00	1,129	611,340	0.050	111	1,378
8	150.00	2,018	937,452	0.077	170	2,464
7	130.00	2,835	1,105,48	0.090	201	3,462
6	110.00	3,744	1,189,47	0.097	216	4,572
5	90.00	4,385	1,089,41	0.089	198	5,355
4	70.00	4,810	878,121	0.072	160	5,873
3	50.00	6,065	733,039	0.060	133	7,405
2	30.00	6,045	390,660	0.032	71	7,381
1	10.00	6,811	114,517	0.009	21	8,317
Commscope RDIDC-9181-PF-48	180.00	22	12,723	0.001	2	27
Fujitsu TA08025-B604	180.00	192	111,373	0.009	20	234
Fujitsu TA08025-B605	180.00	225	130,720	0.011	24	275
Generic Flat Light Sector Frame	180.00	1,200	697,173	0.057	127	1,465
JMA Wireless MX08FRO665-21	180.00	193	112,419	0.009	20	236
Andrew LNX-6515DS-A1M	172.00	299	164,188	0.013	30	365
Ericsson AIR 32 B2A-B4P	172.00	317	174,408	0.014	32	388
Ericsson AIR 32 B4A-B2P	172.00	317	174,408	0.014	32	388
Ericsson RRUS B13 w/ RRUS A2	172.00	216	118,690	0.010	22	264
RFS DB-B1-6C-12AB-0Z	172.00	21	11,759	0.001	2	26
RFS DB-T1-6Z-12AB-0Z	172.00	16	8,792	0.001	2	20
Flat Light Sector Frame	171.00	1,200	654,693	0.054	119	1,465
Andrew Microwaves UHX6-105	162.00	281	143,477	0.012	26	343
Alcatel-Lucent B25 RRH4x30	151.00	159	74,481	0.006	14	194
Alcatel-Lucent B66A RRH4x45-4R w/	151.00	170	79,821	0.007	15	208

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Equivalent Lateral Force Method

Alcatel-Lucent RRH4X25-WCS	151.00	210	98,371	0.008	18	256
Commscope SBNHH-1D65C	151.00	149	69,703	0.006	13	182
Generic Round Sector Frame	151.00	900	421,591	0.034	77	1,099
Nokia AEQK AirScale MAA 64T64R	151.00	298	139,406	0.011	25	363
Nokia AHLBBA	151.00	284	133,223	0.011	24	347
Nokia AirScale RRH 4T4R B5 160W AHCA	151.00	106	49,607	0.004	9	129
Powerwave Allgon TT08-19DB111-001	151.00	66	30,917	0.003	6	81
Quintel QS86512-2	151.00	810	379,432	0.031	69	989
Raycap DC6-48-60-0-8F	151.00	33	15,365	0.001	3	40
Raycap DC6-48-60-18-8F	151.00	20	9,369	0.001	2	24
Raycap DC6-48-60-18-8F ("Squid")	151.00	32	14,896	0.001	3	39
Andrew SBNHH-1D65C	121.60	198	71,237	0.006	13	242
Andrew TMBX-6517-A1M	120.00	59	20,995	0.002	4	73
Commscope FFHH-65C-R3	120.00	377	133,288	0.011	24	460
Commscope HELIAX FiberFeed 12 RRU	120.00	40	14,138	0.001	3	49
Flat Light Sector Frame	120.00	1,200	424,146	0.035	77	1,465
Nokia AEHC	120.00	311	109,854	0.009	20	380
Nokia AHFIG 70.55 lbs	120.00	212	74,862	0.006	14	259
Nokia AirScale Dual RRH 4T4R B12/71	120.00	251	88,859	0.007	16	307
		48,568	12,223,014	1.000	2,222	59,307

LoadCase 0.9D - 1.0Ev + 1.0Eh**Seismic (Reduced DL)**

Section	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
10	185.00	341	205,129	0.017	37	300
9	170.00	1,129	611,340	0.050	111	992
8	150.00	2,018	937,452	0.077	170	1,773
7	130.00	2,835	1,105,48	0.090	201	2,492
6	110.00	3,744	1,189,47	0.097	216	3,291
5	90.00	4,385	1,089,41	0.089	198	3,854
4	70.00	4,810	878,121	0.072	160	4,227
3	50.00	6,065	733,039	0.060	133	5,330
2	30.00	6,045	390,660	0.032	71	5,313
1	10.00	6,811	114,517	0.009	21	5,986
Commscope RDIDC-9181-PF-48	180.00	22	12,723	0.001	2	19
Fujitsu TA08025-B604	180.00	192	111,373	0.009	20	168
Fujitsu TA08025-B605	180.00	225	130,720	0.011	24	198
Generic Flat Light Sector Frame	180.00	1,200	697,173	0.057	127	1,055
JMA Wireless MX08FRO665-21	180.00	193	112,419	0.009	20	170
Andrew LNX-6515DS-A1M	172.00	299	164,188	0.013	30	263
Ericsson AIR 32 B2A-B4P	172.00	317	174,408	0.014	32	279
Ericsson AIR 32 B4A-B2P	172.00	317	174,408	0.014	32	279
Ericsson RRUS B13 w/ RRUS A2	172.00	216	118,690	0.010	22	190
RFS DB-B1-6C-12AB-0Z	172.00	21	11,759	0.001	2	19
RFS DB-T1-6Z-12AB-0Z	172.00	16	8,792	0.001	2	14
Flat Light Sector Frame	171.00	1,200	654,693	0.054	119	1,055
Andrew Microwaves UHX6-105	162.00	281	143,477	0.012	26	247
Alcatel-Lucent B25 RRH4x30	151.00	159	74,481	0.006	14	140
Alcatel-Lucent B66A RRH4x45-4R w/	151.00	170	79,821	0.007	15	150
Alcatel-Lucent RRH4X25-WCS	151.00	210	98,371	0.008	18	185
Commscope SBNHH-1D65C	151.00	149	69,703	0.006	13	131
Generic Round Sector Frame	151.00	900	421,591	0.034	77	791
Nokia AEQK AirScale MAA 64T64R	151.00	298	139,406	0.011	25	262

Site Number: 306035

Code: ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Equivalent Lateral Force Method

Nokia AHLBBA	151.00	284	133,223	0.011	24	250
Nokia AirScale RRH 4T4R B5 160W AHCA	151.00	106	49,607	0.004	9	93
Powerwave Allgon TT08-19DB111-001	151.00	66	30,917	0.003	6	58
Quintel QS86512-2	151.00	810	379,432	0.031	69	712
Raycap DC6-48-60-0-8F	151.00	33	15,365	0.001	3	29
Raycap DC6-48-60-18-8F	151.00	20	9,369	0.001	2	18
Raycap DC6-48-60-18-8F ("Squid")	151.00	32	14,896	0.001	3	28
Andrew SBNHH-1D65C	121.60	198	71,237	0.006	13	174
Andrew TMBX-6517-A1M	120.00	59	20,995	0.002	4	52
Commscope FFHH-65C-R3	120.00	377	133,288	0.011	24	331
Commscope HELIAX FiberFeed 12 RRU	120.00	40	14,138	0.001	3	35
Flat Light Sector Frame	120.00	1,200	424,146	0.035	77	1,055
Nokia AEHC	120.00	311	109,854	0.009	20	273
Nokia AHFIG 70.55 lbs	120.00	212	74,862	0.006	14	186
Nokia AirScale Dual RRH 4T4R B12/71	120.00	251	88,859	0.007	16	221
		48,568	12,223,014	1.000	2,222	42,685

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Force/Stress Summary

Section: 1		Section 1	Bot Elev (ft): 0.00				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	%
LEG	SOL - 4 1/2" SOLID	-310.06	1.2D + 1.0W Normal		6.51	100	100	100	69.4	50.0	503.25	0	0	0.00	0.00	61 Member X
HORIZ		0.00			0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3.5X3.5X0.375	-8.32	1.2D + 1.0W 90 deg		17.05	50	50	50	148.9	36.0	32.01	2	1	27.61	52.20	30 Bolt Shear

		Pu			Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Blk Shear	Use	Controls
Max Tension Member		(kip)	Load Case		(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	phiRn	phiRn	%	
LEG	SOL - 4 1/2" SOLID	269.13	0.9D + 1.0W 60 deg		50	65	715.68	0	0		0.00	0.00		37	Member
HORIZ		0.00			0	0	0.00	0	0		0.00	0.00	0.00	0	
DIAG	SAE - 3.5X3.5X0.375	8.11	1.2D + 1.0W 90 deg		36	58	72.50	2	1		27.61	41.76	34.87	29	Bolt Shear

Max Splice Forces		Pu	Load Case	phiRnt	Use	Num		
		(kip)		(kip)	%	Bolts	Bolt Type	
Top Tension		240.91	0.9D + 1.0W 60 deg	0.00	0	0		
Top Compression		282.82	1.2D + 1.0W Normal	0.00	0			
Bot Tension		269.13	0.9D + 1.0W 60 deg	843.15	10	6	2" F1554 GD 55	
Bot Compression		316.33	1.2D + 1.0W Normal	824.41	39			

Section: 2		Section 2	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	%
LEG	SOL - 4 1/4" SOLID	-275.77	1.2D + 1.0W Normal		6.51	100	100	100	73.5	50.0	430.15	0	0	0.00	0.00	64 Member X
HORIZ		0.00			0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3.5X3.5X0.3125	-8.02	1.2D + 1.0W 90 deg		15.67	50	50	50	136.3	36.0	32.20	2	1	27.61	43.50	29 Bolt Shear

Max Tension Member		Pu	Load Case	Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Blk Shear	Use	Controls
		(kip)		(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	phiRn	phiRn	%	
LEG	SOL - 4 1/4" SOLID	237.48	1.2D + 1.0W 60 deg	50	65	638.37	0	0		0.00	0.00		37	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00	0.00	0	
DIAG	SAE - 3.5X3.5X0.3125	7.76	1.2D + 1.0W 90 deg	36	58	61.18	2	1		27.61	34.80	29.06	28	Bolt Shear

Max Splice Forces		Pu	Load Case	phiRnt	Use	Num		
		(kip)		(kip)	%	Bolts	Bolt Type	
Top Tension		210.90	0.9D + 1.0W 60 deg	0.00	0	0		
Top Compression		246.61	1.2D + 1.0W Normal	0.00	0			
Bot Tension		240.91	0.9D + 1.0W 60 deg	523.32	46	6	1.25" A325	
Bot Compression		0.00		0.00	0			

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Force/Stress Summary

Section: 3		Section 3		Bot Elev (ft): 40.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	PhiC	Pn	Num	Shear	Bear		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use
													(kip)	(kip)	%
LEG	SOL - 4" SOLID	-240.92	1.2D + 1.0W Normal	4.88	100	100	100	58.6	50.0	440.08	0	0	0.00	0.00	54 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3X3X0.375	-7.25	1.2D + 1.0W 90 deg	14.63	50	50	50	149.6	36.0	26.99	2	1	27.61	52.20	26 Member Z

		Pu	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
Max Tension Member		(kip)											
LEG	SOL - 4" SOLID	211.25	0.9D + 1.0W 60 deg	50	65	565.47	0	0	0.00	0.00		37	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 3X3X0.375	7.22	1.2D + 1.0W 90 deg	36	58	60.43	2	1	27.61	41.76	30.79	26	Bolt Shear

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		179.98	0.9D + 1.0W 60 deg	0.00	0	0	
Top Compression		209.40	1.2D + 1.0W Normal	0.00	0		
Bot Tension		210.90	0.9D + 1.0W 60 deg	523.32	40	6	1.25" A325
Bot Compression		0.00		0.00	0		

Section: 4		Section 4		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	(kip)	(kip)	%	Controls
LEG	SOL - 3 3/4" SOLID	-203.87	1.2D + 1.0W Normal	4.88	100	100	100	62.5	50.0	373.68	0	0	0.00	0.00	54	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 3X3X0.25	-6.64	1.2D + 1.0W 90 deg	13.23	50	50	50	134.1	36.0	22.92	2	1	27.61	34.80	28	Member Z

		Pu	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
Max Tension Member		(kip)											
LEG	SOL - 3 3/4" SOLID	180.27	0.9D + 1.0W 60 deg	50	65	497.02	0	0	0.00	0.00		36	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 3X3X0.25	6.59	1.2D + 1.0W 90 deg	36	58	41.37	2	1	27.61	27.84	20.53	32	Blk Shear

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		147.92	0.9D + 1.0W 60 deg	0.00	0	0	
Top Compression		172.13	1.2D + 1.0W Normal	0.00	0		
Bot Tension		179.98	0.9D + 1.0W 60 deg	327.10	55	6	1 A325
Bot Compression		0.00		0.00	0		

Site Number: 306035

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Force/Stress Summary

Section: 5		Section 5		Bot Elev (ft): 80.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	PhiC	Pn Num		Shear	Bear		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use
													(kip)	(kip)	%
LEG	SOL - 3 1/2" SOLID	-166.64	1.2D + 1.0W Normal	4.88	100	100	100	66.9	50.0	312.05	0	0	0.00	0.00	53 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 2.5X2.5X0.3125	-6.12	1.2D + 1.0W 90 deg	11.84	50	50	50	145.4	36.0	19.77	2	1	17.67	34.80	34 Bolt Shear

		Pu	Load Case	Fy (ksi)	Fu (ksi)	PhiT	Pn Num (kip) Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
Max Tension Member		(kip)											
LEG	SOL - 3 1/2" SOLID	148.15	0.9D + 1.0W 60 deg	50	65	432.95	0	0	0.00	0.00		34	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 2.5X2.5X0.3125	6.09	1.2D + 1.0W 90 deg	36	58	41.90	2	1	17.67	27.73	21.75	34	Bolt Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	114.61	0.9D + 1.0W 60 deg	0.00	0	0	
Top Compression	134.25	1.2D + 1.0W Normal	0.00	0		
Bot Tension	147.92	0.9D + 1.0W 60 deg	327.10	45	6	1 A325
Bot Compression	0.00		0.00	0		

Section: 6		Section 6		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 - 3 1/4" SOLID	-128.76	1.2D + 1.0W Normal	5.00	100	100	100	73.9	50.0	250.38	0	0	0.00	0.00	51 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 2.5X2.5X0.25	-5.81	1.2D + 1.0W 90 deg	10.57	50	50	50	129.2	36.0	20.41	2	1	17.67	27.84	32 Bolt Shear

		Pu	Load Case	Fy (ksi)	Fu (ksi)	PhiT	Pn Num (kip) Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
Max Tension Member		(kip)											
LEG	SOL - 3 1/4" SOLID	109.81	0.9D + 1.0W 60 deg	50	65	373.32	0	0	0.00	0.00		29	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 2.5X2.5X0.25	5.76	1.2D + 1.0W 90 deg	36	58	34.24	2	1	17.67	22.18	17.40	33	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	77.17	0.9D + 1.0W 60 deg	0.00	0	0	
Top Compression	92.81	1.2D + 1.0W Normal	0.00	0		
Bot Tension	114.61	0.9D + 1.0W 60 deg	218.07	53	4	1 A325
Bot Compression	0.00		0.00	0		

Site Number: 306035

Code:

ANSI/TIA-222-H

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

5/26/2021 11:24:06 AM

Customer: AT&T MOBILITY

Force/Stress Summary

Section: 7		Section 7		Bot Elev (ft): 120.0				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use
LEG	SOL - 3" SOLID	-87.44	1.2D + 1.0W Normal	4.88	100	100	100	78.1	50.0	203.71	0	0	0.00	0.00	42 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 2.5X2.5X0.1875	-4.46	1.2D + 1.0W 90 deg	8.289	50	50	50	105.4	36.0	21.14	2	1	17.67	20.88	25 Bolt Shear

			Pu		Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Blk Shear		
Max Tension Member			(kip)	Load Case	(ksi)	(ksi)	(kip)		Bolts	Holes	phiRnv (kip)	phiRn (kip)	phit Pn (kip)	Use %	Controls
LEG	SOL - 3" SOLID		77.52	1.2D + 1.0W 60 deg	50	65	318.10		0	0	0.00	0.00		24	Member
HORIZ			0.00		0	0	0.00		0	0	0.00	0.00	0.00	0	
DIAG	SAE - 2.5X2.5X0.1875		4.39	1.2D + 1.0W 90 deg	36	58	25.99		2	1	17.67	16.64	13.05	33	Blk Shear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		48.07	0.9D + 1.0W 60 deg		0.00	0			
Top Compression		58.33	1.2D + 1.0W Normal		0.00	0			
Bot Tension		77.17	0.9D + 1.0W 60 deg		218.07	35	4	1 A325	
Bot Compression		0.00			0.00	0			

Section: 8		Section 8		Bot Elev (ft): 140.0				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear phiRnv	Bear phiRn	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	SOL - 2 1/2" SOLID	-53.65	1.2D + 1.0W Normal	4.88	100	100	100	93.7	50.0	116.30	0	0	0.00	0.00	46 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 2X2X0.1875	-4.11	1.2D + 1.0W 90 deg	7.966	50	50	50	121.3	36.0	13.83	2	1	17.67	20.88	29 Member Z

		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	Use	Controls
									(kip)	(kip)	(kip)	%	
LEG	SOL - 2 1/2" SOLID	47.24	1.2D + 1.0W 60 deg	50	65	220.95	0	0	0.00	0.00		21	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	SAE - 2X2X0.1875	4.12	1.2D + 1.0W 90 deg	36	58	19.89	2	1	17.67	16.64	11.01	37	Blk Shear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		19.05	0.9D + 1.0W 60 deg		0.00	0			
Top Compression		23.91	1.2D + 1.0W Normal		0.00	0			
Bot Tension		48.07	0.9D + 1.0W 60 deg		120.41	40	4	0.75" A325	
Bot Compression		0.00			0.00	0			

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Force/Stress Summary

Section: 9		Section 9		Bot Elev (ft): 160.0				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear	Bear		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	Use
LEG	SOL - 1 3/4" SOLID	-20.74	1.2D + 1.0W Normal	3.90	100	100	100	107.1	50.0	46.81	0	0	0.00	0.00	44 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 1.5X1.5X0.1875	-2.18	1.2D + 1.0W Normal	6.213	50	50	50	127.2	36.0	9.37	2	1	17.67	20.88	23 Member Z

Max Tension Member		Pu			Fy	Fu	Phit	Pn Num	Num	Shear	Bear	Blk Shear	Use	Controls
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	phiRnv	phiRn	% Controls
LEG	SOL - 1 3/4" SOLID	18.62	1.2D + 1.0W 60 deg	50	65	108.24	0	0	0.00	0.00				17 Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00		0.00		0
DIAG	SAE - 1.5X1.5X0.1875	2.32	1.2D + 1.0W 60 deg	36	58	13.85	2	1	17.67	16.64		8.97		25 Blk Shear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		0.02	0.9D + 1.0W 60 deg		0.00	0	0		
Top Compression		2.25	1.2D + 1.0Di + 1.0Wi		0.00	0			
Bot Tension		19.05	0.9D + 1.0W 60 deg		120.41	16	4	0.75" A325	
Bot Compression		0.00			0.00	0			

Section: 10		Section 10		Bot Elev (ft): 180.0				Height (ft): 10.000							
		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 - 1 1/2" SOLID	-0.91	1.2D + 1.0W Normal	0.25	100	100	100	8.0	50.0	79.15	0	0	0.00	0.00	1 Member X
HORIZ	SAE - 1.5X1.5X0.1875	-0.21	1.2D + 1.0W Normal	2.752	100	100	100	116.3	36.0	10.96	2	1	17.67	20.88	1 Member Z
DIAG	SAE - 1.5X1.5X0.1875	-0.34	1.2D + 1.0W Normal	4.676	50	50	50	101.8	36.0	12.86	2	1	17.67	20.88	2 Member Z

Max Tension Member		Pu			Fy	Fu	Phit	Pn Num	Num	Shear	Bear	Blk Shear	Use	Controls
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	phiRnv	phiRn	% Controls
LEG	SOL - 1 1/2" SOLID	0.25	1.2D + 1.0W Normal	50	65	79.52	0	0	0.00	0.00				0 Member
HORIZ	SAE - 1.5X1.5X0.1875	0.21	1.2D + 1.0W 60 deg	36	58	13.85	2	1	17.67	16.64		8.97		2 Blk Shear
DIAG	SAE - 1.5X1.5X0.1875	0.34	1.2D + 1.0W Normal	36	58	13.85	2	1	17.67	16.64		8.97		3 Blk Shear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		0.00			0.00	0	0		
Top Compression		0.10	1.2D + 1.0Di + 1.0Wi		0.00	0			
Bot Tension		0.02	0.9D + 1.0W 60 deg		120.41	0	4	0.75" A325	
Bot Compression		0.00			0.00	0			

Site Number: 306035

Code:

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal	9.81	00.00	0	1	0.00	315.97	-25.51	
	9.81	00.00	120	1a	8.46	-128.85	-8.36	
	9.81	00.00	240	1b	-8.46	-128.85	-8.36	
1.2D + 1.0W 60 deg	9.81	00.00	0	1	-2.77	161.15	-12.53	
	9.81	00.00	120	1a	-12.22	160.74	3.86	
	9.81	00.00	240	1b	-19.52	-263.61	-11.26	
1.2D + 1.0W 90 deg	9.81	00.00	0	1	-3.28	19.43	-0.85	
	9.81	00.00	120	1a	-19.29	267.26	9.26	
	9.81	00.00	240	1b	-17.88	-228.41	-8.41	
0.9D + 1.0W Normal	9.81	00.00	0	1	0.00	310.70	-25.29	
	9.81	00.00	120	1a	8.65	-133.50	-8.48	
	9.81	00.00	240	1b	-8.65	-133.50	-8.48	
0.9D + 1.0W 60 deg	9.81	00.00	0	1	-2.77	156.09	-12.30	
	9.81	00.00	120	1a	-12.03	155.68	3.75	
	9.81	00.00	240	1b	-19.71	-268.06	-11.37	
0.9D + 1.0W 90 deg	9.81	00.00	0	1	-3.29	14.57	-0.63	
	9.81	00.00	120	1a	-19.09	262.05	9.15	
	9.81	00.00	240	1b	-18.07	-232.91	-8.52	
1.2D + 1.0Di + 1.0Wi Normal	9.81	00.00	0	1	0.00	125.52	-6.21	
	9.81	00.00	120	1a	3.19	4.63	-2.83	
	9.81	00.00	240	1b	-3.19	4.63	-2.83	
1.2D + 1.0Di + 1.0Wi 60 deg	9.81	00.00	0	1	-0.83	84.52	-2.68	
	9.81	00.00	120	1a	-2.73	84.45	0.62	
	9.81	00.00	240	1b	-6.49	-34.19	-3.75	
1.2D + 1.0Di + 1.0Wi 90 deg	9.81	00.00	0	1	-0.96	44.93	0.71	
	9.81	00.00	120	1a	-4.73	113.73	2.18	
	9.81	00.00	240	1b	-5.97	-23.87	-2.89	
1.2D + 1.0Ev + 1.0Eh Normal M1	9.81	00.00	0	1	0.00	37.95	-2.24	
	9.81	00.00	120	1a	-0.28	9.99	0.04	
	9.81	00.00	240	1b	0.28	9.99	0.04	
1.2D + 1.0Ev + 1.0Eh 60 deg M1	9.81	00.00	0	1	-0.11	28.63	-1.58	
	9.81	00.00	120	1a	-1.42	28.63	0.69	
	9.81	00.00	240	1b	-0.34	0.67	-0.20	
1.2D + 1.0Ev + 1.0Eh 90 deg M1	9.81	00.00	0	1	-0.13	19.31	-0.92	
	9.81	00.00	120	1a	-1.82	35.45	0.97	
	9.81	00.00	240	1b	-0.22	3.16	-0.06	
0.9D - 1.0Ev + 1.0Eh Normal M1	9.81	00.00	0	1	0.00	32.51	-1.98	
	9.81	00.00	120	1a	-0.06	4.59	-0.09	
	9.81	00.00	240	1b	0.06	4.59	-0.09	
0.9D - 1.0Ev + 1.0Eh 60 deg M1	9.81	00.00	0	1	-0.11	23.20	-1.32	
	9.81	00.00	120	1a	-1.20	23.20	0.56	
	9.81	00.00	240	1b	-0.57	-4.72	-0.33	
0.9D - 1.0Ev + 1.0Eh 90 deg M1	9.81	00.00	0	1	-0.13	13.90	-0.66	
	9.81	00.00	120	1a	-1.59	30.01	0.85	

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Customer: AT&T MOBILITY

	9.81	00.00	240	1b	-0.45	-2.22	-0.18
1.0D + 1.0W Service Normal	9.81	00.00	0	1	0.00	105.97	-8.23
	9.81	00.00	120	1a	2.14	-28.70	-2.29
	9.81	00.00	240	1b	-2.14	-28.70	-2.29
1.0D + 1.0W Service 60 deg	9.81	00.00	0	1	-0.84	59.09	-4.29
	9.81	00.00	120	1a	-4.13	58.97	1.41
	9.81	00.00	240	1b	-5.49	-69.50	-3.17
1.0D + 1.0W Service 90 deg	9.81	00.00	0	1	-1.00	16.19	-0.75
	9.81	00.00	120	1a	-6.28	91.22	3.05
	9.81	00.00	240	1b	-4.99	-58.84	-2.30

Max Uplift:	268.06(kip)	Moment Ice:	1,186.53 (kip-ft)	Moment:	4,365.92 (kip-ft)	1.2D + 1.0W Normal
Max Down:	315.97(kip)	Total Down Ice:	134.79 (kip)	Total Down:	58.28 (kip)	
Max Shear:	25.51 (kip)	Total Shear Ice:	11.86 (kip)	Total Shear:	42.24 (kip)	

Site Number: 306035

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Site Name: Unity Village MO 2, MO

Engineering Number: 13619563_C3_03

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Customer: AT&T MOBILITY

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
109 mph Normal with No Ice	120.00	0.565	0.2044	0.6294	0.6428
109 mph Normal with No Ice	120.25	0.568	0.2053	0.6297	0.6386
109 mph Normal with No Ice	150.00	0.887	0.3008	0.7808	0.8351
109 mph Normal with No Ice	160.25	1.013	0.2992	1.0826	1.0826
109 mph Normal with No Ice	171.95	1.164	0.1934	0.6407	0.6677
109 mph Normal with No Ice	180.00	1.270	0.1869	0.8992	0.8992
109 mph 60 degree with No Ice	120.00	0.541	0.2830	0.5632	0.6303
109 mph 60 degree with No Ice	120.25	0.544	0.2841	0.5688	0.6358
109 mph 60 degree with No Ice	150.00	0.851	0.4127	0.6469	0.7674
109 mph 60 degree with No Ice	160.25	0.972	0.4174	0.8872	0.9805
109 mph 60 degree with No Ice	171.95	1.117	0.2777	0.7962	0.8432
109 mph 60 degree with No Ice	180.00	1.219	0.2719	0.8801	0.9211
109 mph 90 degree with No Ice	120.00	0.547	-0.2809	0.5411	0.5790
109 mph 90 degree with No Ice	120.25	0.549	-0.2817	0.5482	0.5816
109 mph 90 degree with No Ice	150.00	0.858	-0.4001	0.5985	0.6973
109 mph 90 degree with No Ice	160.25	0.979	-0.4073	0.8119	0.8362
109 mph 90 degree with No Ice	171.95	1.126	-0.2798	0.8492	0.8775
109 mph 90 degree with No Ice	180.00	1.229	-0.2783	0.8700	0.8815
109 mph Normal with No Ice (Reduced DL)	120.00	0.564	0.2045	0.6280	0.6415
109 mph Normal with No Ice (Reduced DL)	120.25	0.567	0.2053	0.6284	0.6374
109 mph Normal with No Ice (Reduced DL)	150.00	0.885	0.3009	0.7792	0.8335
109 mph Normal with No Ice (Reduced DL)	160.25	1.011	0.2993	1.0792	1.0792
109 mph Normal with No Ice (Reduced DL)	171.95	1.162	0.1934	0.6388	0.6658
109 mph Normal with No Ice (Reduced DL)	180.00	1.267	0.1869	0.8968	0.8968
109 mph 60 deg with No Ice (Reduced DL)	120.00	0.540	0.2829	0.5618	0.6290
109 mph 60 deg with No Ice (Reduced DL)	120.25	0.543	0.2839	0.5675	0.6345
109 mph 60 deg with No Ice (Reduced DL)	150.00	0.849	0.4125	0.6451	0.7657
109 mph 60 deg with No Ice (Reduced DL)	160.25	0.970	0.4172	0.8849	0.9784
109 mph 60 deg with No Ice (Reduced DL)	171.95	1.114	0.2776	0.7942	0.8413
109 mph 60 deg with No Ice (Reduced DL)	180.00	1.217	0.2717	0.8772	0.9183
109 mph 90 deg with No Ice (Reduced DL)	120.00	0.546	-0.2809	0.5398	0.5779
109 mph 90 deg with No Ice (Reduced DL)	120.25	0.548	-0.2817	0.5469	0.5805
109 mph 90 deg with No Ice (Reduced DL)	150.00	0.856	-0.4000	0.5969	0.6959
109 mph 90 deg with No Ice (Reduced DL)	160.25	0.977	-0.4072	0.8090	0.8333
109 mph 90 deg with No Ice (Reduced DL)	171.95	1.124	-0.2797	0.8472	0.8757
109 mph 90 deg with No Ice (Reduced DL)	180.00	1.227	-0.2783	0.8672	0.8787
40 mph Normal with 1.50 in Radial Ice	120.00	0.150	0.0311	0.1593	0.1593
40 mph Normal with 1.50 in Radial Ice	120.25	0.151	0.0313	0.1602	0.1602
40 mph Normal with 1.50 in Radial Ice	150.00	0.233	0.0461	0.1911	0.1966
40 mph Normal with 1.50 in Radial Ice	160.25	0.264	0.0445	0.2576	0.2576
40 mph Normal with 1.50 in Radial Ice	171.95	0.302	0.0253	0.1699	0.1716
40 mph Normal with 1.50 in Radial Ice	180.00	0.329	0.0236	0.2241	0.2241
40 mph 60 deg with 1.50 in Radial Ice	120.00	0.148	-0.0394	0.1510	0.1559
40 mph 60 deg with 1.50 in Radial Ice	120.25	0.149	-0.0395	0.1518	0.1567
40 mph 60 deg with 1.50 in Radial Ice	150.00	0.229	0.0562	0.1703	0.1793
40 mph 60 deg with 1.50 in Radial Ice	160.25	0.260	0.0557	0.2240	0.2309
40 mph 60 deg with 1.50 in Radial Ice	171.95	0.297	-0.0367	0.2002	0.2032
40 mph 60 deg with 1.50 in Radial Ice	180.00	0.324	-0.0365	0.2288	0.2312
40 mph 90 deg with 1.50 in Radial Ice	120.00	0.149	-0.0486	0.1461	0.1481
40 mph 90 deg with 1.50 in Radial Ice	120.25	0.149	-0.0487	0.1470	0.1490
40 mph 90 deg with 1.50 in Radial Ice	150.00	0.229	-0.0682	0.1614	0.1692
40 mph 90 deg with 1.50 in Radial Ice	160.25	0.261	-0.0688	0.2151	0.2178
40 mph 90 deg with 1.50 in Radial Ice	171.95	0.298	-0.0454	0.2092	0.2105
40 mph 90 deg with 1.50 in Radial Ice	180.00	0.324	-0.0451	0.2248	0.2260
Seismic Normal M1	120.00	0.038	0.0015	0.0421	0.0421

Site Number: 306035	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: Unity Village MO 2, MO	Engineering Number: 13619563_C3_03	5/26/2021 11:24:06 AM
Customer: AT&T MOBILITY		

Seismic Normal M1	120.25	0.038	0.0015	0.0425	0.0425
Seismic Normal M1	150.00	0.061	0.0019	0.0513	0.0513
Seismic Normal M1	160.25	0.070	0.0023	0.0732	0.0732
Seismic Normal M1	171.95	0.081	0.0020	0.0550	0.0550
Seismic Normal M1	180.00	0.089	0.0021	0.0608	0.0608
Seismic 60 deg M1	120.00	0.038	-0.0015	0.0423	0.0423
Seismic 60 deg M1	120.25	0.038	-0.0015	0.0425	0.0425
Seismic 60 deg M1	150.00	0.061	0.0019	0.0516	0.0516
Seismic 60 deg M1	160.25	0.070	0.0023	0.0732	0.0732
Seismic 60 deg M1	171.95	0.081	0.0020	0.0547	0.0547
Seismic 60 deg M1	180.00	0.089	0.0022	0.0631	0.0631
Seismic 90 deg M1	120.00	0.038	-0.0017	0.0417	0.0417
Seismic 90 deg M1	120.25	0.038	-0.0017	0.0418	0.0418
Seismic 90 deg M1	150.00	0.061	-0.0022	0.0511	0.0511
Seismic 90 deg M1	160.25	0.070	-0.0027	0.0704	0.0704
Seismic 90 deg M1	171.95	0.081	-0.0024	0.0548	0.0549
Seismic 90 deg M1	180.00	0.089	-0.0025	0.0620	0.0620
Seismic (Reduced DL) Normal M1	120.00	0.038	0.0015	0.0420	0.0420
Seismic (Reduced DL) Normal M1	120.25	0.038	0.0015	0.0424	0.0424
Seismic (Reduced DL) Normal M1	150.00	0.061	0.0019	0.0512	0.0512
Seismic (Reduced DL) Normal M1	160.25	0.070	0.0023	0.0730	0.0730
Seismic (Reduced DL) Normal M1	171.95	0.081	0.0020	0.0548	0.0548
Seismic (Reduced DL) Normal M1	180.00	0.089	0.0021	0.0609	0.0609
Seismic (Reduced DL) 60 deg M1	120.00	0.038	-0.0015	0.0422	0.0422
Seismic (Reduced DL) 60 deg M1	120.25	0.038	-0.0015	0.0424	0.0424
Seismic (Reduced DL) 60 deg M1	150.00	0.061	0.0019	0.0514	0.0514
Seismic (Reduced DL) 60 deg M1	160.25	0.070	0.0023	0.0729	0.0729
Seismic (Reduced DL) 60 deg M1	171.95	0.081	0.0020	0.0546	0.0546
Seismic (Reduced DL) 60 deg M1	180.00	0.089	0.0022	0.0626	0.0626
Seismic (Reduced DL) 90 deg M1	120.00	0.038	-0.0017	0.0415	0.0415
Seismic (Reduced DL) 90 deg M1	120.25	0.038	-0.0017	0.0417	0.0417
Seismic (Reduced DL) 90 deg M1	150.00	0.061	-0.0021	0.0510	0.0510
Seismic (Reduced DL) 90 deg M1	160.25	0.070	-0.0026	0.0702	0.0702
Seismic (Reduced DL) 90 deg M1	171.95	0.081	-0.0023	0.0547	0.0547
Seismic (Reduced DL) 90 deg M1	180.00	0.089	-0.0025	0.0615	0.0615
Serviceability - 60 mph Wind Normal	120.00	0.171	0.0611	0.1900	0.1944
Serviceability - 60 mph Wind Normal	120.25	0.172	0.0613	0.1902	0.1931
Serviceability - 60 mph Wind Normal	150.00	0.268	0.0897	0.2359	0.2524
Serviceability - 60 mph Wind Normal	160.25	0.307	0.0887	0.3266	0.3266
Serviceability - 60 mph Wind Normal	171.95	0.352	0.0565	0.1936	0.2013
Serviceability - 60 mph Wind Normal	180.00	0.384	0.0543	0.2711	0.2711
Serviceability - 60 mph Wind 60 deg	120.00	0.164	0.0725	0.1706	0.1853
Serviceability - 60 mph Wind 60 deg	120.25	0.165	0.0728	0.1722	0.1869
Serviceability - 60 mph Wind 60 deg	150.00	0.257	0.1051	0.1958	0.2222
Serviceability - 60 mph Wind 60 deg	160.25	0.294	0.1058	0.2683	0.2885
Serviceability - 60 mph Wind 60 deg	171.95	0.338	0.0697	0.2409	0.2508
Serviceability - 60 mph Wind 60 deg	180.00	0.369	0.0680	0.2670	0.2755
Serviceability - 60 mph Wind 90 deg	120.00	0.165	-0.0847	0.1639	0.1750
Serviceability - 60 mph Wind 90 deg	120.25	0.166	-0.0850	0.1658	0.1758
Serviceability - 60 mph Wind 90 deg	150.00	0.260	-0.1206	0.1813	0.2107
Serviceability - 60 mph Wind 90 deg	160.25	0.296	-0.1226	0.2457	0.2532
Serviceability - 60 mph Wind 90 deg	171.95	0.341	-0.0835	0.2571	0.2652
Serviceability - 60 mph Wind 90 deg	180.00	0.372	-0.0828	0.2639	0.2672

Maximum Reactions Summary

Anchor Group	Vertical (kip)				Horizontal (kip)		Moment (kip-ft)	
	DL+WL	DL+WL+IL	UpLift	Shear	DL+WL	DL+WL+IL	DL+WL	DL+WL+IL
Base	58.28	134.79	315.97	25.51	42.24	11.86	4365.92	1186.53