



AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 298 ft Guyed Tower
ATC Site Name : Lees Summit, MO
ATC Site Number : 306030
Engineering Number : 12913784
Proposed Carrier : Operations Structural
Carrier Site Name : N/A
Carrier Site Number : N/A
Site Location : 111 Sw Hook Road
Lees Summit, MO 64082-4305
38.865100,-94.377100
County : JACKSON
Date : February 8, 2019
Max Usage : 100%
Result : Pass

Prepared By:
Brian Davies, E.I.
Structural Engineer II

Reviewed By:

COA: 2006031326



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
Proposed Equipment	2
Structure Usages	3
Foundations	3
Deflection, Twist, and Sway.....	3
Standard Conditions	4
Calculations	Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 298 ft guyed tower to reflect the current state of loading.

Supporting Documents

Tower Drawings	Andrew Drawing #GI-9015-01, dated May 22, 1989
Foundation Drawing	Andrew Drawing #GTF-613, dated March 10, 1987
Geotechnical Report	FDH Project #04-1121E, dated December 15, 2004
Modifications	Andrew Drawing #GI-95699A, dated February 15, 1996 ATC Job #24857321, dated February 6, 2006 ATC Job #OAA713535_C6_13, dated May 1, 2018

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:	90 mph (3-Second Gust, V_{ASD}) / 115 mph (3-Second Gust, V_{ULT})
Basic Wind Speed w/ Ice:	45 mph (3-Second Gust) w/ 0.6875" radial ice concurrent*
Code:	ANSI/TIA-222-G / 2012 IBC
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.11$, $S_1 = 0.07$
Site Class:	D - Stiff Soil

*Wind speed, ice thickness and topographic effects have been adjusted per site specific climatic study in accordance with ASCE 7-10 Section 26.5.3, IBC Section 1609.3, and TIA-222-G Section 2.6.6.2.5

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

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
287.0	286.0	1	Generic 20' Dipole	Leg	(1) 3/8" Coax	AT&T Mobility
280.0	280.0	1	Generic 8' HP Dish	Leg	(1) EW52	
200.0	201.0	1	Andrew UHX6-59	Leg	(2) EW52	
	200.0	1	Andrew PARX6-65			
190.0	196.0	1	Raycap DC6-48-60-18-8F(32.8 lbs)	Commscope SFG23HD-12-4-96 Sector Frames	(2) 0.39" Fiber Trunk (6) 1 5/8" Coax (6) 0.78" 8 AWG 6 (1) 3/8" RET Control Cable	
	194.0	3	CCI HPA-65R-BUU-H8			
		1	Powerwave P65-16-XLH-RR			
		2	Powerwave P65-15-XLH-RR			
		193.0	3			
	3		Powerwave TT08-19DB111-001			
	190.0	6	Quintel QS86512-2			
		3	Alcatel-Lucent RRH4x25-WCS-4R			
		3	Alcatel-Lucent B66A RRH4X45 w/ solar shield			
		3	Nokia Flexi RRH 4T4R B14 160W FRBI			
		3	Alcatel-Lucent B25 RRH4x30-4R			
		1	Raycap DC6-48-60-0-8C			
		1	Raycap DC6-48-60-18-8C			
183.0	180.0	1	Generic 6' HP Dish	Leg	(1) EW52	
173.0	174.0	1	Generic 6' HP Dish	Leg	(1) EW90	
170.0	172.0	1	Andrew PAR6-59	Leg	(1) EW52	
20.0	18.0	1	Generic 3' Yagi	Leg	(1) 3/8" Coax	
12.0	15.0	1	Generic GPS	Leg	(1) 1/4" Coax	

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as proposed						

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	100%	Pass
Diagonals	85%	Pass
Horizontals	89%	Pass
Guys	96%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Base Axial (kips)	153.4	96%
Anchor 1 Uplift (kips)	45.6	71%
Anchor 1 Shear (kips)	53.6	53%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, 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) (°)
280.0	Generic 8' HP Dish	AT&T MOBILITY	0.190	0.057	0.285
200.0	Andrew Microwaves UHX6-59		0.281	0.025	0.054
	Andrew Microwaves PARX6-65				
183.0	Generic 6' HP Dish		0.273	0.020	0.142
173.0	Generic 6' HP Dish		0.253	0.018	0.129
170.0	Andrew Microwaves PAR6-59		0.247		0.154

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



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:

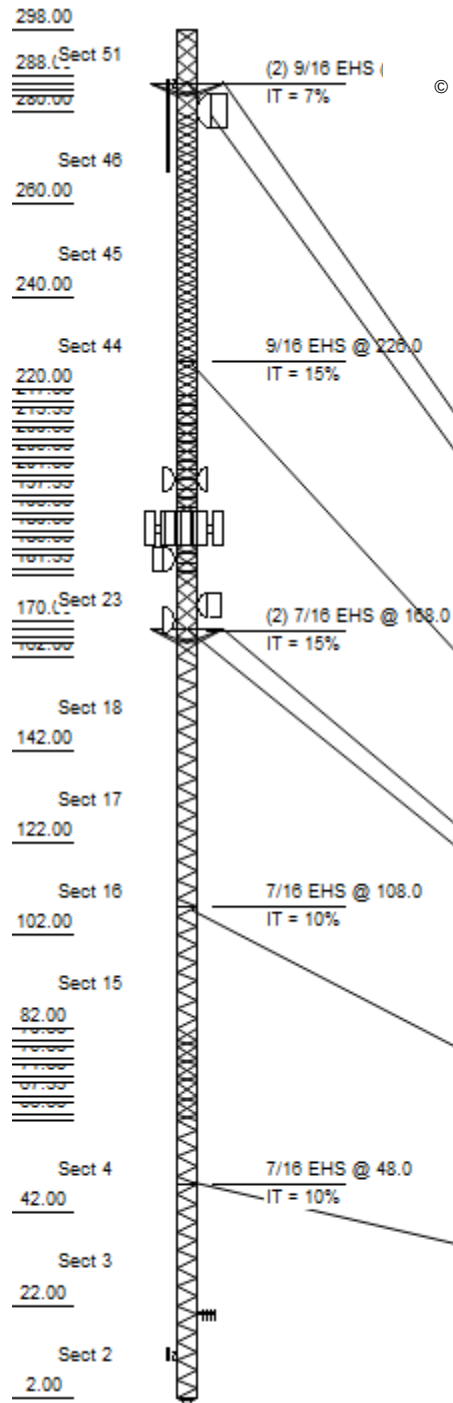
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of ATC Tower Services

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.



© 2007 - 2019 by ATC IP LLC. All rights reserved.

Loads: 90 mph no ice
45 mph w/ 11/16" radial ice
Site Class: D Ss: 0.11 S1: 0.07
60 mph Serviceability

Job Information

Tower : 306030

Location : Lees Summit,

Base Width : 3.50 ft

Client :

Code : ANSI/TIA-222-G

Tower Ht : 298.00 ft

Shape : Triangle

Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1	CHN 50 ksi C12 x 30		CHN 36 ksi C12 x 30
2 - 20	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	
21	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	DAE 36 ksi 2X2X0.25
22	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	DUM 36 ksi 0.1X0.1X1
23	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	
24 - 43	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	
44 - 46	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	
47 - 48	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	
49 - 50	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	DUM 36 ksi 0.1X0.1X1
51	PLA 50 ksi SAW 5.938" x	PLA 36 ksi SAW 2.75" x 0.119"	SAE 36 ksi 3X3X0.25

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
287.00	Whip	1	Generic 20' Dipole
286.00	Other	1	Torque Arms
280.00	Dish	1	Generic 8' HP Dish
200.00	Dish	1	Andrew Microwaves PARX6-65
200.00	Dish	1	Andrew Microwaves UHX6-59
190.00	Mounting Frame	3	Commscope SFG23HD-12-4-96
190.00	Panel	3	CCI HPA-65R-BUU-H8
190.00	Panel	6	Quintel QS86512-2
190.00	Panel	1	Powerwave Allgon P65-16-XLH-RR
190.00	Panel	2	Powerwave Allgon P65-15-XLH-RR
190.00		3	Alcatel-Lucent RRH4x25-WCS-4R
190.00		3	Alcatel-Lucent B66A RRH4X45 w
190.00		3	Nokia Flexi RRH 4T4R B14 160W
190.00		3	Alcatel-Lucent B25 RRH4x30-4R
190.00		1	Raycap DC6-48-60-0-8C
190.00		1	Raycap DC6-48-60-18-8C
190.00		3	Alcatel-Lucent RRH2x40-07-L
190.00		1	Raycap DC6-48-60-18-8F(32.8 lb
190.00		3	Powerwave Allgon TT08-19DB111-
183.00	Dish	1	Generic 6' HP Dish
173.00	Dish	1	Generic 6' HP Dish
170.00	Dish	1	Andrew Microwaves PAR6-59
168.00	Other	1	Torque Arms
20.00	Yagi	1	Generic 3' Yagi
12.00	Whip	1	Generic GPS

Linear Appurtenance

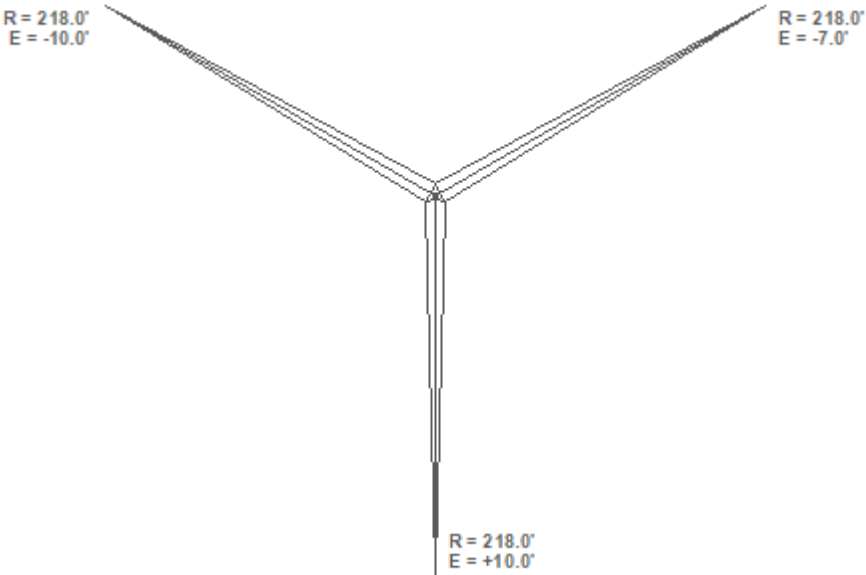
Elev (ft)	From	To	Qty	Description
	0.00	298.00	1	Climbing Ladder
	5.00	287.00	1	3/8" Coax
	5.00	280.00	1	EW52
	5.00	200.00	2	EW52
	5.00	190.00	1	3/8" (0.38"- 9.5mm)
	5.00	190.00	6	1 5/8" Coax
	5.00	190.00	2	0.78" (19.7mm) 8 AWG
	5.00	190.00	4	0.78" (19.7mm) 8 AWG
	5.00	190.00	2	0.39" (10mm) Fiber T
	5.00	183.00	1	EW52
	5.00	173.00	1	EW90
	5.00	170.00	1	EW52

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Job Information		
Tower : 306030	Location : Lees Summit,	Base Width : 3.50 ft
Client :		
Code : ANSI/TIA-222-G		Tower Ht : 298.00 ft
		Shape : Triangle

5.00	20.00	1	3/8" Coax
5.00	12.00	1	1/4" Coax

© 2007 - 2019 by ATC IP LLC. All rights reserved.



Job Information		
Tower : 306030	Location : Lees Summit,	Base Width : 3.50 ft
Client :		
Code : ANSI/TIA-222-G		Tower Ht : 298.00 ft
		Shape : Triangle

Guy Anchor Design Loads				
Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (kip)	Shear (kip)
218.00	10.00	0	40.91	53.40
218.00	-10.00	240	45.52	53.47
218.00	-7.00	120	44.54	53.15

Global Base Foundation Design Loads	
Vertical (kip)	Horizontal (kip)
153.35	0.78

Site Number: 306030	Code: ANSI/TIA-222-G	© 2007 - 2019 by ATC IP LLC. All rights reserved.
Site Name: Lees Summit, MO	Engineering Number:	2/8/2019 10:53:15 AM
Customer:		

Analysis Parameters

Location:	JACKSON County, MO	Height (ft):	298
Code:	ANSI/TIA-222-G	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	3.50
Tower Manufacturer:	Andrew Corp	Top Face Width (ft):	3.50
Tower Type:	Guyed		
Kd:			
Ke:			

Ice & Wind Parameters

Structure Class:	II	Design Windspeed Without Ice:	90 mph
Exposure Category:	C	Design Windspeed With Ice:	45 mph
Topographic Category:	1	Operational Windspeed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.70 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.77		
T_L (sec):	12	p:	1.3
S_S :	0.110	S_1 :	0.070
F_a :	1.600	F_v :	2.400
S_{ds} :	0.117	S_{d1} :	0.112
		C_S :	0.047
		C_S , Max:	0.058
		C_S , Min:	0.030

Load Cases

1.2D + 1.6W Normal	90 mph Normal with No Ice
1.2D + 1.6W 60 deg	90 mph 60 degree with No Ice
1.2D + 1.6W 90 deg	90 mph 90 degree with No Ice
1.2D + 1.6W 120 deg	90 mph 120 degree with No Ice
1.2D + 1.6W 180 deg	90 mph 180 degree with No Ice
1.2D + 1.6W 210 deg	90 mph 210 degree with No Ice
1.2D + 1.6W 240 deg	90 mph 240 degree with No Ice
1.2D + 1.6W 300 deg	90 mph 300 degree with No Ice
1.2D + 1.6W 330 deg	90 mph 330 degree with No Ice
1.2D + 1.0Di + 1.0Wi Normal	45 mph Normal with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	45 mph 60 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	45 mph 90 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 120 deg	45 mph 120 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 180 deg	45 mph 180 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 210 deg	45 mph 210 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 240 deg	45 mph 240 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 300 deg	45 mph 300 deg with 0.70 in Radial Ice
1.2D + 1.0Di + 1.0Wi 330 deg	45 mph 330 deg with 0.70 in Radial Ice
(1.2 + 0.2S _{ds}) * DL + E Normal	Seismic Normal

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:15 AM

Customer:

Analysis Parameters

(1.2 + 0.2Sds) * DL + E 60 deg	Seismic 60 deg
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 deg
(1.2 + 0.2Sds) * DL + E 120 deg	Seismic 120 deg
(1.2 + 0.2Sds) * DL + E 180 deg	Seismic 180 deg
(1.2 + 0.2Sds) * DL + E 210 deg	Seismic 210 deg
(1.2 + 0.2Sds) * DL + E 240 deg	Seismic 240 deg
(1.2 + 0.2Sds) * DL + E 300 deg	Seismic 300 deg
(1.2 + 0.2Sds) * DL + E 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: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:15 AM

Customer:

Tower LoadingDiscrete Appurtenance Properties 1.2D + 1.6W

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)
287.0	Generic 20' Dipole	1	60	7.5	20.0	3.0	3.0	1.00	1.00	-1.0	284.6	27.83	285	72
286.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.83	568	600
280.0	Generic 8' HP Dish	1	470	63.4	8.0	96.0	0.0	1.00	0.81	0.0	0.0	27.71	1936	564
200.0	Andrew Microwaves	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	1253.5	25.84	1253	337
200.0	Andrew Microwaves	1	278	47.0	6.0	72.0	0.0	1.00	0.90	0.0	0.0	25.81	1486	334
190.0	Powerwave Allgon	3	22	0.8	1.2	6.7	5.4	0.80	0.50	3.0	99.1	25.62	33	79
190.0	Raycap DC6-48-60-	1	33	1.5	2.0	11.0	11.0	0.80	1.00	6.0	246.6	25.70	41	39
190.0	Alcatel-Lucent	3	52	1.7	1.6	10.6	9.7	0.80	0.50	3.0	213.2	25.62	71	189
190.0	Raycap DC6-48-60-	1	16	2.0	1.7	18.2	6.4	0.80	0.67	0.0	0.0	25.53	38	19
190.0	Raycap DC6-48-60-0-	1	16	2.0	1.7	18.2	6.4	0.80	0.67	0.0	0.0	25.53	38	19
190.0	Alcatel-Lucent B25	3	51	2.1	1.8	12.0	7.2	0.80	0.50	0.0	0.0	25.53	89	184
190.0	Nokia Flexi RRH	3	51	2.4	1.9	12.6	6.3	0.80	0.50	0.0	0.0	25.53	101	183
190.0	Alcatel-Lucent B66A	3	57	2.5	2.2	11.8	7.2	0.80	0.50	0.0	0.0	25.53	106	204
190.0	Alcatel-Lucent	3	70	3.2	2.6	12.0	8.7	0.80	0.50	0.0	0.0	25.53	132	252
190.0	Powerwave Allgon	2	41	5.4	4.3	12.0	6.0	0.80	0.66	4.0	800.0	25.65	200	98
190.0	Powerwave Allgon	1	53	8.1	6.0	12.0	6.0	0.80	0.67	4.0	608.0	25.65	152	64
190.0	Quintel QS86512-2	6	135	11.5	8.0	12.0	9.6	0.80	0.74	0.0	0.0	25.53	1415	972
190.0	CCI HPA-65R-BUU-H8	3	68	13.0	7.7	14.8	7.4	0.80	0.67	4.0	2912.0	25.65	728	245
190.0	Commscope	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	25.53	754	1080
183.0	Generic 6' HP Dish	1	281	35.7	6.0	72.0	0.0	1.00	0.81	-3.0	2976.0	25.25	992	337
173.0	Generic 6' HP Dish	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	1216.0	25.07	1216	337
170.0	Andrew Microwaves	1	134	52.8	6.4	76.3	13.2	1.00	0.90	2.0	3234.5	25.01	1617	161
168.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	24.88	508	600
20.00	Generic 3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	-2.0	126.0	15.55	63	12
12.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	3.0	55.0	14.98	18	12
Totals		47	5828	525.4									13839	6993

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)
287.0	Generic 20' Dipole	1	281	19.4	20.0	3.0	3.0	1.00	1.00	-1.0	114.4	6.96	114	293
286.0	Torque Arms	1	847	25.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.96	150	947
280.0	Generic 8' HP Dish	1	1711	68.0	8.0	96.0	0.0	1.00	0.81	0.0	0.0	6.93	324	1805
200.0	Andrew Microwaves	1	553	39.0	6.0	72.0	0.0	1.00	1.00	1.0	214.2	6.46	214	609
200.0	Andrew Microwaves	1	733	51.5	6.0	72.0	0.0	1.00	0.90	0.0	0.0	6.45	254	788
190.0	Powerwave Allgon	3	47	1.4	1.2	6.7	5.4	0.80	0.50	3.0	27.4	6.40	9	155
190.0	Raycap DC6-48-60-	1	92	2.1	2.0	11.0	11.0	0.80	1.00	6.0	56.1	6.43	9	98
190.0	Alcatel-Lucent	3	110	2.6	1.6	10.6	9.7	0.80	0.50	3.0	50.1	6.40	17	362
190.0	Raycap DC6-48-60-	1	72	2.8	1.7	18.2	6.4	0.80	0.67	0.0	0.0	6.38	8	75
190.0	Raycap DC6-48-60-0-	1	63	2.8	1.7	18.2	6.4	0.80	0.67	0.0	0.0	6.38	8	66
190.0	Alcatel-Lucent B25	3	109	3.1	1.8	12.0	7.2	0.80	0.50	0.0	0.0	6.38	20	358
190.0	Nokia Flexi RRH	3	111	3.4	1.9	12.6	6.3	0.80	0.50	0.0	0.0	6.38	22	363
190.0	Alcatel-Lucent B66A	3	124	3.6	2.2	11.8	7.2	0.80	0.50	0.0	0.0	6.38	24	406
190.0	Alcatel-Lucent	3	157	4.4	2.6	12.0	8.7	0.80	0.50	0.0	0.0	6.38	29	514
190.0	Powerwave Allgon	2	155	7.3	4.3	12.0	6.0	0.80	0.66	4.0	168.6	6.41	42	327
190.0	Powerwave Allgon	1	211	10.8	6.0	12.0	6.0	0.80	0.67	4.0	126.2	6.41	32	221
190.0	Quintel QS86512-2	6	384	14.6	8.0	12.0	9.6	0.80	0.74	0.0	0.0	6.38	281	2468
190.0	CCI HPA-65R-BUU-H8	3	314	16.4	7.7	14.8	7.4	0.80	0.67	4.0	575.1	6.41	144	982
190.0	Commscope	3	652	30.2	0.0	0.0	0.0	0.75	0.67	0.0	0.0	6.38	247	2136
183.0	Generic 6' HP Dish	1	957	39.0	6.0	72.0	0.0	1.00	0.81	-3.0	508.3	6.31	169	1013
173.0	Generic 6' HP Dish	1	954	39.0	6.0	72.0	0.0	1.00	1.00	1.0	207.6	6.27	208	1010

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:15 AM

Customer:

Tower Loading

170.0	Andrew Microwaves	1	635	57.4	6.4	76.3	13.2	1.00	0.90	2.0	549.4	6.25	275	662
168.0	Torque Arms	1	829	24.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.22	132	929
20.00	Generic 3' Yagi	1	75	7.5	3.0	36.0	3.0	1.00	1.00	-2.0	49.8	3.89	25	77
12.00	Generic GPS	1	31	1.4	1.0	9.0	6.0	1.00	1.00	3.0	13.0	3.75	4	33
Totals		47	15536	688.4									2761	16701

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)
287.0	Generic 20' Dipole	1	60	7.5	20.0	3.0	3.0	1.00	1.00	-1.0	79.1	12.37	79	60
286.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	12.37	158	500
280.0	Generic 8' HP Dish	1	470	63.4	8.0	96.0	0.0	1.00	0.81	0.0	0.0	12.31	538	470
200.0	Andrew Microwaves	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	348.2	11.48	348	281
200.0	Andrew Microwaves	1	278	47.0	6.0	72.0	0.0	1.00	0.90	0.0	0.0	11.47	413	278
190.0	Powerwave Allgon	3	22	0.8	1.2	6.7	5.4	0.80	0.50	3.0	27.5	11.39	9	66
190.0	Raycap DC6-48-60-	1	33	1.5	2.0	11.0	11.0	0.80	1.00	6.0	68.5	11.42	11	33
190.0	Alcatel-Lucent	3	52	1.7	1.6	10.6	9.7	0.80	0.50	3.0	59.2	11.39	20	157
190.0	Raycap DC6-48-60-	1	16	2.0	1.7	18.2	6.4	0.80	0.67	0.0	0.0	11.35	10	16
190.0	Raycap DC6-48-60-0-	1	16	2.0	1.7	18.2	6.4	0.80	0.67	0.0	0.0	11.35	10	16
190.0	Alcatel-Lucent B25	3	51	2.1	1.8	12.0	7.2	0.80	0.50	0.0	0.0	11.35	25	153
190.0	Nokia Flexi RRH	3	51	2.4	1.9	12.6	6.3	0.80	0.50	0.0	0.0	11.35	28	152
190.0	Alcatel-Lucent B66A	3	57	2.5	2.2	11.8	7.2	0.80	0.50	0.0	0.0	11.35	29	170
190.0	Alcatel-Lucent	3	70	3.2	2.6	12.0	8.7	0.80	0.50	0.0	0.0	11.35	37	210
190.0	Powerwave Allgon	2	41	5.4	4.3	12.0	6.0	0.80	0.66	4.0	222.2	11.40	56	82
190.0	Powerwave Allgon	1	53	8.1	6.0	12.0	6.0	0.80	0.67	4.0	168.9	11.40	42	53
190.0	Quintel QS86512-2	6	135	11.5	8.0	12.0	9.6	0.80	0.74	0.0	0.0	11.35	393	810
190.0	CCI HPA-65R-BUU-H8	3	68	13.0	7.7	14.8	7.4	0.80	0.67	4.0	808.9	11.40	202	204
190.0	Commscope	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.35	209	900
183.0	Generic 6' HP Dish	1	281	35.7	6.0	72.0	0.0	1.00	0.81	-3.0	826.7	11.22	276	281
173.0	Generic 6' HP Dish	1	281	35.7	6.0	72.0	0.0	1.00	1.00	1.0	337.8	11.14	338	281
170.0	Andrew Microwaves	1	134	52.8	6.4	76.3	13.2	1.00	0.90	2.0	898.5	11.11	449	134
168.0	Torque Arms	1	500	15.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.06	141	500
20.00	Generic 3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	-2.0	35.0	6.91	18	10
12.00	Generic GPS	1	10	0.9	1.0	9.0	6.0	1.00	1.00	3.0	15.3	6.66	5	10
Totals		47	5828	525.4									3844	5828

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:15 AM

Customer:

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	298.0	Climbing Ladder	1	1.50	6.90	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
5.00	287.0	3/8" Coax	1	0.44	0.08	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
5.00	280.0	EW52	1	2.25	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
5.00	200.0	EW52	2	2.25	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
5.00	190.0	0.39" (10mm) Fiber	2	0.39	0.06	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
5.00	190.0	0.78" (19.7mm) 8	4	0.78	0.59	25	Lin App	Block	0.00	N	1.00	1.00	0.00
5.00	190.0	0.78" (19.7mm) 8	2	0.78	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
5.00	190.0	1 5/8" Coax	6	1.98	0.82	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
5.00	190.0	3/8" (0.38"-	1	0.38	0.23	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
5.00	183.0	EW52	1	2.25	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
5.00	173.0	EW90	1	1.32	0.32	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
5.00	170.0	EW52	1	2.25	0.59	100	Lin App	Individual	0.00	N	1.00	1.00	0.01
5.00	20.00	3/8" Coax	1	0.44	0.08	100	Lin App	Individual	0.00	N	1.00	1.00	0.00
5.00	12.00	1/4" Coax	1	0.34	0.06	100	Lin App	Individual	0.00	N	1.00	1.00	0.00

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Equivalent Lateral Force Method

(Based on ASCE7-10 Chapters 11, 12 & 15)

Spectral Response Acceleration for Short Period (S_s):	0.11
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):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.12
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Seismic Response Coefficient (C_s):	0.05
Upper Limit C_s :	0.06
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	0.77
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.13
Total Unfactored Dead Load:	19.31 k
Seismic Base Shear (E):	1.18 k

LoadCase (1.2 + 0.2Sds) * DL + E**Seismic**

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
51	293.00	376	236,311	0.038	45	460
50	287.16	54	33,264	0.005	6	66
49	285.50	54	33,093	0.005	6	66
48	284.00	56	34,210	0.006	7	69
47	281.66	108	65,181	0.011	12	133
46	270.00	744	426,034	0.069	82	910
45	250.00	744	390,420	0.063	75	910
44	230.00	795	379,649	0.062	73	973
43	218.66	107	48,086	0.008	9	130
42	216.66	77	34,225	0.006	7	94
41	214.66	107	47,089	0.008	9	130
40	212.66	77	33,509	0.005	6	94
39	210.66	107	46,095	0.007	9	130
38	208.66	77	32,795	0.005	6	94
37	206.66	107	45,104	0.007	9	130
36	204.66	77	32,083	0.005	6	94
35	202.66	107	44,115	0.007	8	130
34	200.66	77	31,374	0.005	6	94
33	198.66	110	44,401	0.007	8	134
32	196.66	78	31,293	0.005	6	96
31	194.67	110	43,387	0.007	8	134
30	192.67	78	30,573	0.005	6	96
29	190.67	116	44,650	0.007	9	142
28	188.67	90	34,333	0.006	7	110

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Equivalent Lateral Force Method

27	186.67	133	50,223	0.008	10	163
26	184.67	90	33,508	0.005	6	110
25	182.67	134	49,365	0.008	9	164
24	180.67	91	32,971	0.005	6	111
23	175.00	438	153,417	0.025	29	536
22	169.17	74	25,063	0.004	5	91
21	167.50	175	58,260	0.009	11	214
20	166.00	73	23,916	0.004	5	89
19	163.67	149	48,279	0.008	9	182
18	152.00	829	247,414	0.040	47	1,014
17	132.00	829	210,827	0.034	40	1,014
16	112.00	855	180,387	0.029	35	1,046
15	92.00	829	139,985	0.023	27	1,014
14	80.67	123	17,867	0.003	3	150
13	78.67	73	10,251	0.002	2	89
12	76.67	123	16,867	0.003	3	150
11	74.67	73	9,663	0.002	2	89
10	72.67	123	15,872	0.003	3	150
9	70.67	73	9,078	0.001	2	89
8	68.67	123	14,885	0.002	3	150
7	66.67	73	8,497	0.001	2	89
6	64.67	123	13,905	0.002	3	150
5	62.67	73	7,921	0.001	2	89
4	52.00	855	75,551	0.012	14	1,046
3	32.00	829	42,253	0.007	8	1,014
2	12.00	794	13,305	0.002	3	972
1	1.00	900	900	0.000	0	1,101
Generic 20' Dipole	287.00	60	36,823	0.006	7	73
Torque Arms	286.00	500	305,648	0.050	58	612
Generic 8' HP Dish	280.00	470	280,482	0.046	54	575
Andrew Microwaves UHX6-59	200.00	281	114,488	0.019	22	344
Andrew Microwaves PARX6-65	200.00	278	113,266	0.018	22	340
Powerwave Allgon TT08-19DB111-001	190.00	66	25,371	0.004	5	81
Raycap DC6-48-60-18-8F(32.8 lbs)	190.00	33	12,608	0.002	2	40
Alcatel-Lucent RRH2x40-07-L	190.00	157	60,428	0.010	12	192
Raycap DC6-48-60-18-8C	190.00	16	6,150	0.001	1	20
Raycap DC6-48-60-0-8C	190.00	16	6,150	0.001	1	20
Alcatel-Lucent B25 RRH4x30-4R	190.00	153	58,814	0.010	11	187
Nokia Flexi RRH 4T4R B14 160W FRBI	190.00	152	58,468	0.009	11	186
Alcatel-Lucent B66A RRH4X45 w/ solar	190.00	170	65,502	0.011	13	208
Alcatel-Lucent RRH4x25-WCS-4R	190.00	210	80,724	0.013	15	257
Powerwave Allgon P65-15-XLH-RR	190.00	82	31,521	0.005	6	100
Powerwave Allgon P65-16-XLH-RR	190.00	53	20,373	0.003	4	65
Quintel QS86512-2	190.00	810	311,366	0.051	60	991
CCI HPA-65R-BUU-H8	190.00	204	78,418	0.013	15	250
Commscope SFG23HD-12-4-96 Round	190.00	900	345,962	0.056	66	1,101
Generic 6' HP Dish	183.00	281	103,514	0.017	20	344
Generic 6' HP Dish	173.00	281	97,122	0.016	19	344
Andrew Microwaves PAR6-59	170.00	134	45,404	0.007	9	164
Torque Arms	168.00	500	167,161	0.027	32	612
Generic 3' Yagi	20.00	10	299	0.000	0	12
Generic GPS	12.00	10	168	0.000	0	12

19,312

6,157,935

1.000

1,178

23,627

Site Number: 306030

Code: ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Equivalent Lateral Force Method

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Equivalent Modal Analysis Method

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.11
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
Importance Factor (I_e):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	2.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.12
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	0.77
Redundancy Factor (p):	1.30

LoadCase (1.2 + 0.2S_{ds}) * DL + E

Seismic

Section	Height Above Base (ft)	Weight (lb)	a	b	c	S_{az}	Horizontal Force (lb)	Vertical Force (lb)
51	293.00	376	1.827	1.664	1.025	0.288	56	460
50	287.16	54	1.755	1.342	0.902	0.264	7	66
49	285.50	54	1.735	1.258	0.869	0.257	7	66
48	284.00	56	1.717	1.186	0.840	0.251	7	69
47	281.66	108	1.688	1.079	0.797	0.242	14	133
46	270.00	744	1.551	0.636	0.606	0.203	78	910
45	250.00	744	1.330	0.164	0.363	0.150	58	910
44	230.00	795	1.126	-0.054	0.203	0.115	47	973
43	218.66	107	1.018	-0.105	0.140	0.100	6	130
42	216.66	77	0.999	-0.110	0.131	0.098	4	94
41	214.66	107	0.981	-0.114	0.122	0.096	5	130
40	212.66	77	0.963	-0.117	0.114	0.094	4	94
39	210.66	107	0.945	-0.120	0.106	0.092	5	130
38	208.66	77	0.927	-0.121	0.098	0.090	4	94
37	206.66	107	0.909	-0.122	0.091	0.088	5	130
36	204.66	77	0.891	-0.122	0.084	0.087	3	94
35	202.66	107	0.874	-0.121	0.078	0.085	5	130
34	200.66	77	0.857	-0.120	0.072	0.084	3	94
33	198.66	110	0.840	-0.118	0.066	0.082	5	134
32	196.66	78	0.823	-0.116	0.061	0.081	3	96
31	194.67	110	0.807	-0.113	0.056	0.079	5	134
30	192.67	78	0.790	-0.110	0.051	0.078	3	96
29	190.67	116	0.774	-0.107	0.047	0.077	5	142
28	188.67	90	0.758	-0.103	0.043	0.075	4	110
27	186.67	133	0.742	-0.099	0.039	0.074	5	163
26	184.67	90	0.726	-0.094	0.035	0.073	3	110
25	182.67	134	0.710	-0.090	0.032	0.072	5	164
24	180.67	91	0.695	-0.085	0.029	0.070	3	111
23	175.00	438	0.652	-0.071	0.021	0.067	15	536
22	169.17	74	0.609	-0.056	0.016	0.064	2	91
21	167.50	175	0.597	-0.052	0.014	0.064	6	214
20	166.00	73	0.586	-0.048	0.013	0.063	2	89
19	163.67	149	0.570	-0.042	0.012	0.062	5	182
18	152.00	829	0.492	-0.013	0.007	0.056	24	1,014
17	132.00	829	0.371	0.027	0.008	0.046	20	1,014
16	112.00	855	0.267	0.052	0.015	0.037	17	1,046
15	92.00	829	0.180	0.065	0.026	0.028	12	1,014
14	80.67	123	0.138	0.069	0.032	0.024	2	150
13	78.67	73	0.132	0.069	0.033	0.023	1	89

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Equivalent Modal Analysis Method

12	76.67	123	0.125	0.070	0.034	0.022	1	150
11	74.67	73	0.119	0.070	0.035	0.022	1	89
10	72.67	123	0.112	0.070	0.035	0.021	1	150
9	70.67	73	0.106	0.071	0.036	0.020	1	89
8	68.67	123	0.100	0.071	0.037	0.020	1	150
7	66.67	73	0.095	0.071	0.038	0.019	1	89
6	64.67	123	0.089	0.071	0.039	0.018	1	150
5	62.67	73	0.084	0.072	0.039	0.018	1	89
4	52.00	855	0.058	0.072	0.041	0.015	7	1,046
3	32.00	829	0.022	0.065	0.039	0.010	4	1,014
2	12.00	794	0.003	0.038	0.021	0.005	2	972
1	1.00	900	0.000	0.004	0.002	0.000	0	1,101
Generic 20' Dipole	287.00	60	1.753	1.334	0.899	0.263	8	73
Torque Arms	286.00	500	1.741	1.283	0.879	0.259	67	612
Generic 8' HP Dish	280.00	470	1.669	1.007	0.767	0.236	58	575
Andrew Microwaves UHX6-59	200.00	281	0.851	-0.119	0.070	0.083	12	344
Andrew Microwaves PARX6-65	200.00	278	0.851	-0.119	0.070	0.083	12	340
Powerwave Allgon TT08-	190.00	66	0.768	-0.105	0.045	0.076	3	81
Raycap DC6-48-60-18-8F(32.8 lbs)	190.00	33	0.768	-0.105	0.045	0.076	1	40
Alcatel-Lucent RRH2x40-07-L	190.00	157	0.768	-0.105	0.045	0.076	6	192
Raycap DC6-48-60-18-8C	190.00	16	0.768	-0.105	0.045	0.076	1	20
Raycap DC6-48-60-0-8C	190.00	16	0.768	-0.105	0.045	0.076	1	20
Alcatel-Lucent B25 RRH4x30-4R	190.00	153	0.768	-0.105	0.045	0.076	6	187
Nokia Flexi RRH 4T4R B14 160W	190.00	152	0.768	-0.105	0.045	0.076	6	186
Alcatel-Lucent B66A RRH4X45	190.00	170	0.768	-0.105	0.045	0.076	7	208
Alcatel-Lucent RRH4x25-WCS-4R	190.00	210	0.768	-0.105	0.045	0.076	8	257
Powerwave Allgon P65-15-XLH-	190.00	82	0.768	-0.105	0.045	0.076	3	100
Powerwave Allgon P65-16-XLH-	190.00	53	0.768	-0.105	0.045	0.076	2	65
Quintel QS86512-2	190.00	810	0.768	-0.105	0.045	0.076	32	991
CCI HPA-65R-BUU-H8	190.00	204	0.768	-0.105	0.045	0.076	8	250
Commscope SFG23HD-12-4-96	190.00	900	0.768	-0.105	0.045	0.076	36	1,101
Generic 6' HP Dish	183.00	281	0.713	-0.091	0.032	0.072	10	344
Generic 6' HP Dish	173.00	281	0.637	-0.066	0.019	0.066	10	344
Andrew Microwaves PAR6-59	170.00	134	0.615	-0.058	0.016	0.065	5	164
Torque Arms	168.00	500	0.601	-0.053	0.015	0.064	17	612
Generic 3' Yagi	20.00	10	0.009	0.053	0.030	0.007	0	12
Generic GPS	12.00	10	0.003	0.038	0.021	0.005	0	12
		19,312	55.460	7.546	11.140	6.437	806	23,627

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 1		80TB1		Bot Elev (ft): 0.00				Height (ft): 2.000								
		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	CHN - C12 x 30	-70.67	1.2D + 1.0Di +	0.95	100	100	100	14.9	50.0	390.50	0	0	0.00	0.00	18	Member Y
HORIZ	CHN - C12 x 30	-1.35	1.2D + 1.6W	1.167	100	100	100	11.9	36.0	283.64	0	0	0.00	0.00	0	Member Y
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	phiRn	phiRn	%	Controls
LEG		0.00		0	0	0.00	0	0		0.00	0.00			0	
HORIZ	CHN - C12 x 30	28.90	1.2D + 1.0Di +	36	58	285.77	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	

Max Splice Forces		Pu		phiRnt	Use	Num	
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		0.00		0.00	0	0	
Top Compression		36.08	1.2D + 1.0Di +	0.00	0		
Bot Tension		0.00		0.00	0		
Bot Compression		0.00		0.00	0		

Section: 2		M46-GI-77-02		Bot Elev (ft): 2.00				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	PLA - SAW 5.938" x 0	-51.69	1.2D + 1.0Di +	2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	100	Member Y
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-0.74	1.2D + 1.6W	4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	15	User Input

Max Tension Member		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Blk	Shear		
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	phiRn	phiRn	phiRn	Use	Controls
LEG		0.00		0	0	0.00	0	0		0.00	0.00			0	
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	0.73	1.2D + 1.6W 180	36	58	6.53	1	1		0.00	0.00		0.00	11	User Input

Max Splice Forces		Pu		phiRnt	Use	Num	
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		0.00		0.00	0	0	
Top Compression		51.91	1.2D + 1.0Di +	0.00	0		
Bot Tension		0.00		0.00	0		
Bot Compression		36.08	1.2D + 1.0Di +	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 3		M46-GI-77-02		Bot Elev (ft): 22.00			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	(kip)	(kip)	%	Controls
LEG	PLA - SAW 5.938" x 0	-51.84	1.2D + 1.0Di +	2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	100	Member Y
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-1.17	1.2D + 1.6W	4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	23	User Input

		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	phiRn	phiRn	%	Controls	
LEG		0.00		0	0	0.00	0	0		0.00	0.00			0		
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0		
DIAG	PLA - SAW 2.75" x 0.	1.24	1.2D + 1.6W 90	36	58	6.53	1	1		0.00	0.00		0.00	18	User Input	

Max Splice Forces		Pu		phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		49.57	1.2D + 1.0Di +	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		51.91	1.2D + 1.0Di +	0.00	0			

Section: 4		M46-GI-77-02		Bot Elev (ft): 42.00				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	PLA - SAW 5.938" x 0	-49.27	1.2D + 1.0Di +	2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	95	Member Y
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-1.70	1.2D + 1.6W 90	4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	34	User Input

		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	phiRn	phiRn	%	Controls	
LEG		0.00		0	0	0.00	0	0		0.00	0.00			0		
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0		
DIAG	PLA - SAW 2.75" x 0.	1.64	1.2D + 1.6W 90	36	58	6.53	1	1		0.00	0.00		0.00	25	User Input	

Max Splice Forces		Pu		phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		48.56	1.2D + 1.0Di +	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		49.57	1.2D + 1.0Di +	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 5 M46-GI-77-02 XBay Bot Elev (ft): 62.00 Height (ft): 1.333

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear		Bear phiRn (kip)	Use %	Controls
				X	Y	Z					phiRnv (kip)	phiRn (kip)			
LEG PLA - SAW 5.938" x 0	-48.96	1.2D + 1.0Di +	1.33	100	100	100	22.2	50.0	64.24	12	2	149.10	234.00	76	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	-0.41	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	8	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	0.99	1.2D + 1.6W 90	36	58	6.53	1	1	0.00	0.00	0.00	15	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	48.65	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	48.56	1.2D + 1.0Di +	0.00	0		

Section: 6 M46-GI-77-02 XBay Bot Elev (ft): 63.33 Height (ft): 2.667

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear		Bear phiRn (kip)	Use %	Controls
				X	Y	Z					phiRnv (kip)	phiRn (kip)			
LEG PLA - SAW 5.938" x 0	-47.37	1.2D + 1.0Di +	2.67	100	100	100	44.4	50.0	57.64	12	2	149.10	234.00	82	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	-1.49	1.2D + 1.0Di +	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	30	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	48.99	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	48.65	1.2D + 1.0Di +	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 7 M46-GI-77-02 XBay Bot Elev (ft): 66.00 Height (ft): 1.333

		Pu		Len	Bracing %			F'y	Phic Pn	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn
LEG	PLA - SAW 5.938" x 0	-49.77	1.2D + 1.0Di +	1.33	100	100	100	22.2	50.0	64.24	12	2	149.10	234.00
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00
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	%	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.39	1.2D + 1.0Di +	36	58	6.53	1	1	0.00	0.00	0.00	21	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		48.97	1.2D + 1.0Di +	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		48.99	1.2D + 1.0Di +	0.00	0			

Section: 8 M46-GI-77-02 XBay Bot Elev (ft): 67.33 Height (ft): 2.667

		Pu		Len	Bracing %			F'y	Phic Pn	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn
LEG	PLA - SAW 5.938" x 0	-47.08	1.2D + 1.0Di +	2.67	100	100	100	44.4	50.0	57.64	12	2	149.10	234.00
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00
DIAG	PLA - SAW 2.75" x 0.	-1.77	1.2D + 1.0Di +	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70

		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		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		49.16	1.2D + 1.0Di +	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		48.97	1.2D + 1.0Di +	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 9 M46-GI-77-02 XBay Bot Elev (ft): 70.00 Height (ft): 1.333

		Pu	Len	Bracing %			F'y	Phic Pn	Num	Shear	Bear	Use	
Max Compression Member		(kip)	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Num	Holes	phiRnv	phiRn
LEG	PLA - SAW 5.938" x 0	-50.05	1.33	100	100	100	22.2	50.0	64.24	12	2	149.10	234.00
HORIZ		0.00	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00
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	Controls
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	
LEG		0.00	0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00	0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.45	36	58	6.53	1	1	0.00	0.00	0.00	22	User Input

		Pu	phiRnt	Use	Num	Bolt Type
Max Splice Forces		(kip)	(kip)	%	Bolts	
Top Tension		0.00	0.00	0	0	
Top Compression		49.10	0.00	0		
Bot Tension		0.00	0.00	0		
Bot Compression		49.16	0.00	0		

Section: 10 M46-GI-77-02 XBay Bot Elev (ft): 71.33 Height (ft): 2.667

		Pu	Len	Bracing %			F'y	Phic Pn	Num	Shear	Bear	Use	
Max Compression Member		(kip)	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Num	Holes	phiRnv	phiRn
LEG	PLA - SAW 5.938" x 0	-47.11	2.67	100	100	100	44.4	50.0	57.64	12	2	149.10	234.00
HORIZ		0.00	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00
DIAG	PLA - SAW 2.75" x 0.	-1.72	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70

		Pu	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use	Controls
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	
LEG		0.00	0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00	0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG		0.00	0	0	0.00	0	0	0.00	0.00	0.00	0	

		Pu	phiRnt	Use	Num	Bolt Type
Max Splice Forces		(kip)	(kip)	%	Bolts	
Top Tension		0.00	0.00	0	0	
Top Compression		49.15	0.00	0		
Bot Tension		0.00	0.00	0		
Bot Compression		49.10	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 11 M46-GI-77-02 XBay Bot Elev (ft): 74.00 Height (ft): 1.333

		Pu	Len	Bracing %			F'y	Phic Pn	Num	Shear	Bear	Use	
Max Compression Member		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Bolts	phiRnv	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	-49.95	1.33	100	100	100	22.2	50.0	64.24	12	2	149.10	234.00
HORIZ		0.00	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00
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	Controls
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	
LEG		0.00	0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00	0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.38	36	58	6.53	1	1	0.00	0.00	0.00	21	User Input

		Pu	phiRnt	Use	Num	Bolt Type
Max Splice Forces		(kip)	(kip)	%	Bolts	
Top Tension		0.00	0.00	0	0	
Top Compression		49.04	0.00	0		
Bot Tension		0.00	0.00	0		
Bot Compression		49.15	0.00	0		

Section: 12 M46-GI-77-02 XBay Bot Elev (ft): 75.33 Height (ft): 2.667

		Pu	Len	Bracing %			F'y	Phic Pn	Num	Shear	Bear	Use	
Max Compression Member		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Bolts	phiRnv	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	-47.33	2.67	100	100	100	44.4	50.0	57.64	12	2	149.10	234.00
HORIZ		0.00	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00
DIAG	PLA - SAW 2.75" x 0.	-1.48	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70

		Pu	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use	Controls
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	
LEG		0.00	0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00	0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG		0.00	0	0	0.00	0	0	0.00	0.00	0.00	0	

		Pu	phiRnt	Use	Num	Bolt Type
Max Splice Forces		(kip)	(kip)	%	Bolts	
Top Tension		0.00	0.00	0	0	
Top Compression		48.94	0.00	0		
Bot Tension		0.00	0.00	0		
Bot Compression		49.04	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 13 M46-GI-77-02 XBay Bot Elev (ft): 78.00 Height (ft): 1.333

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear		Bear phiRn (kip)	Use %	Controls
				X	Y	Z					phiRnv (kip)	phiRn (kip)			
LEG PLA - SAW 5.938" x 0	-49.36	1.2D + 1.0Di +	1.33	100	100	100	22.2	50.0	64.24	12	2	149.10	234.00	76	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00		

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	1.00	1.2D + 1.0Di +	36	58	6.53	1	1	0.00	0.00	0.00	15	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	48.80	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	48.94	1.2D + 1.0Di +	0.00	0		

Section: 14 M46-GI-77-02 XBay Bot Elev (ft): 79.33 Height (ft): 2.667

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear		Bear phiRn (kip)	Use %	Controls
				X	Y	Z					phiRnv (kip)	phiRn (kip)			
LEG PLA - SAW 5.938" x 0	-48.10	1.2D + 1.0Di +	2.67	100	100	100	44.4	50.0	57.64	12	2	149.10	234.00	83	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	-0.78	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	15	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	0.26	1.2D + 1.6W 60	36	58	6.53	1	1	0.00	0.00	0.00	3	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	48.56	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	48.80	1.2D + 1.0Di +	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 15		M46-GI-77-02	Bot Elev (ft): 82.00		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	PLA - SAW 5.938" x 0	-48.45	1.2D + 1.0Di +		2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	93 Member Y
HORIZ		0.00			0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-1.79	1.2D + 1.6W		4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	36 User Input

		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	phiRn	(kip)	(kip)	% Controls
LEG		0.00			0	0	0.00	0	0	0.00	0.00				0
HORIZ		0.00			0	0	0.00	0	0	0.00	0.00	0.00			0
DIAG	PLA - SAW 2.75" x 0.	1.80	1.2D + 1.6W	210	36	58	6.53	1	1	0.00	0.00	0.00			27 User Input

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case		(kip)	%	Bolts	Bolt Type	
Top Tension		0.00			0.00	0	0		
Top Compression		44.85	1.2D + 1.0Di +		0.00	0			
Bot Tension		0.00			0.00	0			
Bot Compression		48.56	1.2D + 1.0Di +		0.00	0			

Section: 16		M46-GI-77-02	Bot Elev (ft): 102.0		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	PLA - SAW 5.938" x 0	-45.61	1.2D + 1.6W		2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	88 Member Y
HORIZ		0.00			0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-2.46	1.2D + 1.6W	90	4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	50 User Input

		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	phiRn	(kip)	(kip)	% Controls
LEG		0.00			0	0	0.00	0	0	0.00	0.00				0
HORIZ		0.00			0	0	0.00	0	0	0.00	0.00	0.00			0
DIAG	PLA - SAW 2.75" x 0.	2.44	1.2D + 1.6W	90	36	58	6.53	1	1	0.00	0.00	0.00			37 User Input

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case		(kip)	%	Bolts	Bolt Type	
Top Tension		0.00			0.00	0	0		
Top Compression		41.21	1.2D + 1.0Di +		0.00	0			
Bot Tension		0.00			0.00	0			
Bot Compression		44.85	1.2D + 1.0Di +		0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 17		M46-GI-77-02	Bot Elev (ft): 122.0		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	PLA - SAW 5.938" x 0	-41.40	1.2D + 1.0Di +	2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	80	Member Y
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-1.58	1.2D + 1.6W	4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	32	User Input

		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		0.00		0	0	0.00	0	0	0.00	0.00			0	
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.64	1.2D + 1.6W 90	36	58	6.53	1	1	0.00	0.00		0.00	25	User Input

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		0.00		0.00	0	0			
Top Compression		41.26	1.2D + 1.0Di +	0.00	0				
Bot Tension		0.00		0.00	0				
Bot Compression		41.21	1.2D + 1.0Di +	0.00	0				

Section: 18		M46-GI-77-02	Bot Elev (ft): 142.0		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	PLA - SAW 5.938" x 0	-40.81	1.2D + 1.0Di +	2.00	200	200	133	59.0	50.0	51.65	12	2	149.10	234.00	79	Member Y
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-1.24	1.2D + 1.6W	4.031	100	100	100	0.0	0.0	4.90	1	1	0.00	8.70	25	User Input

		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		0.00		0	0	0.00	0	0	0.00	0.00			0	
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.69	1.2D + 1.6W	36	58	6.53	1	1	0.00	0.00		0.00	25	User Input

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		0.00		0.00	0	0			
Top Compression		37.99	1.2D + 1.0Di +	0.00	0				
Bot Tension		0.00		0.00	0				
Bot Compression		41.26	1.2D + 1.0Di +	0.00	0				

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 19 M46-GI-77-01S** Bot Elev (ft): 162.0 Height (ft): 3.333

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear		Bear phiRn (kip)	Use %	Controls
				X	Y	Z					phiRnv (kip)	phiRn (kip)			
LEG PLA - SAW 5.938" x 0	-36.87	1.2D + 1.0Di +	3.33	100	100	100	55.6	50.0	53.15	12	2	149.10	234.00	69	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	-2.35	1.2D + 1.6W	4.833	50	50	50	0.0	0.0	5.67	1	1	0.00	8.70	41	User Input

Max Tension Member	Pu (kip)	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
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	0.96	1.2D + 1.6W 240	36	58	6.53	1	1	0.00	0.00	0.00	14	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	38.17	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	37.99	1.2D + 1.0Di +	0.00	0		

Section: 20 M46-GI-77-01S** Bot Elev (ft): 165.3 Height (ft): 1.333

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear		Bear phiRn (kip)	Use %	Controls
				X	Y	Z					phiRnv (kip)	phiRn (kip)			
LEG PLA - SAW 5.938" x 0	-33.51	1.2D + 1.6W	1.33	100	100	100	22.2	50.0	64.24	0	0	0.00	0.00	52	Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	-4.07	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	5.67	1	1	0.00	8.70	71	User Input

Max Tension Member	Pu (kip)	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
LEG PLA - SAW 5.938" x 0	1.51	1.2D + 1.6W 180	50	65	66.60	0	0	0.00	0.00		2	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	2.52	1.2D + 1.6W 120	36	58	6.53	1	1	0.00	0.00	0.00	38	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	2.27	1.2D + 1.6W 180	0.00	0	0	
Top Compression	36.10	1.2D + 1.6W	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	38.17	1.2D + 1.0Di +	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 21 M46-GI-77-01S** Bot Elev (ft): 166.6 Height (ft): 1.666

		Pu	Load Case	Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)		(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-40.04	1.2D + 1.6W	1.67	200	200	133	49.1	50.0	55.82	0	0	0.00	0.00	71 Member Y
HORIZ	DAE - 2X2X0.25	-10.50	1.2D + 1.6W	1.750	100	100	100	57.8	36.0	51.10	2	2	24.30	27.84	43 Bolt Shear
DIAG	PLA - SAW 2.75" x 0.	-3.32	1.2D + 1.6W	2.416	100	100	100	0.0	0.0	5.67	1	1	0.00	8.70	58 User Input

		Pu	Load Case	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use	
Max Tension Member		(kip)		(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	Controls
LEG	PLA - SAW 5.938" x 0	5.62	1.2D + 1.6W	180	50	65	66.60	0	0	0.00	0.00		8 Member
HORIZ	DAE - 2X2X0.25	17.37	1.2D + 1.6W	330	36	58	51.14	2	2	24.30	20.71	19.52	88 Blk Shear
DIAG	PLA - SAW 2.75" x 0.	3.32	1.2D + 1.6W	90	36	58	6.53	1	1	0.00	0.00	0.00	50 User Input

		Pu	Load Case	phiRnt	Use	Num		
Max Splice Forces		(kip)		(kip)	%	Bolts	Bolt Type	
Top Tension		5.62	1.2D + 1.6W	180	0.00	0		
Top Compression		40.04	1.2D + 1.6W		0.00	0		
Bot Tension		2.27	1.2D + 1.6W	180	0.00	0		
Bot Compression		36.10	1.2D + 1.6W		0.00	0		

Section: 22 M46-GI-77-01S** Bot Elev (ft): 168.3 Height (ft): 1.667

		Pu	Load Case	Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)		(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-39.81	1.2D + 1.6W	1.67	200	200	133	49.1	50.0	55.82	0	0	0.00	0.00	71 Member Y
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-4.82	1.2D + 1.6W	2.417	100	100	100	0.0	0.0	5.67	1	1	0.00	8.70	84 User Input

		Pu	Load Case	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use	
Max Tension Member		(kip)		(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	%	Controls
LEG	PLA - SAW 5.938" x 0	5.87	1.2D + 1.6W	180	50	65	66.60	0	0	0.00	0.00		8 Member
HORIZ		0.00			0	0	0.00	0	0	0.00	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	4.79	1.2D + 1.6W	210	36	58	6.53	1	1	0.00	0.00	0.00	73 User Input

		Pu	Load Case	phiRnt	Use	Num		
Max Splice Forces		(kip)		(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		33.56	1.2D + 1.6W		0.00	0		
Bot Tension		5.62	1.2D + 1.6W	180	0.00	0		
Bot Compression		40.04	1.2D + 1.6W		0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 23 M46-GI-77-01S** Bot Elev (ft): 170.0 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	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-30.96	1.2D + 1.0Di +	3.33	100	100	100	55.6	50.0	53.15	0	0	0.00	0.00	58 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-4.76	1.2D + 1.6W	4.833	50	50	50	0.0	0.0	5.67	1	1	0.00	8.70	83 User Input

		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	phiRn	%	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	4.28	1.2D + 1.6W 210	36	58	6.53	1	1	0.00	0.00	0.00	65	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		29.11	1.2D + 1.6W 330	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		33.56	1.2D + 1.6W	0.00	0			

Section: 24 M46-GI-77-02XBay Bot Elev (ft): 180.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-30.50	1.2D + 1.6W 90	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	66 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-2.07	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	42 User Input

		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	phiRn	%	Controls
LEG		0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	2.88	1.2D + 1.6W 330	36	58	6.53	1	1	0.00	0.00	0.00	44	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.55	1.2D + 1.6W	0.00	0	0		
Top Compression		31.72	1.2D + 1.6W 330	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		29.11	1.2D + 1.6W 330	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 25 M46-GI-77-02XBay Bot Elev (ft): 181.3 Height (ft): 2.667

		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	PLA - SAW 5.938" x 0	-33.30	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	74	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-3.71	1.2D + 1.6W 90	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	75	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	4.47	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			11	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00			0	
DIAG	PLA - SAW 2.75" x 0.	2.54	1.2D + 1.6W 90	36	58	6.53	1	1		0.00	0.00			38	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		6.73	1.2D + 1.6W	0.00	0	0	
Top Compression		37.17	1.2D + 1.6W 90	0.00	0		
Bot Tension		0.55	1.2D + 1.6W	0.00	0		
Bot Compression		31.72	1.2D + 1.6W 330	0.00	0		

Section: 26 M46-GI-77-02XBay Bot Elev (ft): 184.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-39.02	1.2D + 1.6W 90	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	84	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-2.03	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	41	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	7.61	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			18	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00			0	
DIAG	PLA - SAW 2.75" x 0.	3.05	1.2D + 1.6W 60	36	58	6.53	1	1		0.00	0.00			46	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		9.42	1.2D + 1.6W 120	0.00	0	0	
Top Compression		39.71	1.2D + 1.6W 90	0.00	0		
Bot Tension		6.73	1.2D + 1.6W	0.00	0		
Bot Compression		37.17	1.2D + 1.6W 90	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 27 M46-GI-77-02XBay Bot Elev (ft): 185.3 Height (ft): 2.667

		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	PLA - SAW 5.938" x 0	-40.59	1.2D + 1.6W 90	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	90	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-3.33	1.2D + 1.6W 60	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	67	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	12.71	1.2D + 1.6W 120	50	65	40.56	12	2		149.10	171.84			31	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00			0	
DIAG	PLA - SAW 2.75" x 0.	1.99	1.2D + 1.6W 120	36	58	6.53	1	1		0.00	0.00			30	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		14.72	1.2D + 1.6W 120	0.00	0	0	
Top Compression		43.96	1.2D + 1.6W 90	0.00	0		
Bot Tension		9.42	1.2D + 1.6W 120	0.00	0		
Bot Compression		39.71	1.2D + 1.6W 90	0.00	0		

Section: 28 M46-GI-77-02XBay Bot Elev (ft): 188.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-45.19	1.2D + 1.6W 90	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	98	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-2.07	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	42	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	15.61	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			38	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00			0	
DIAG	PLA - SAW 2.75" x 0.	3.33	1.2D + 1.6W 210	36	58	6.53	1	1		0.00	0.00			51	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		17.40	1.2D + 1.6W	0.00	0	0	
Top Compression		44.88	1.2D + 1.6W 60	0.00	0		
Bot Tension		14.72	1.2D + 1.6W 120	0.00	0		
Bot Compression		43.96	1.2D + 1.6W 90	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 29 M46-GI-77-02XBay Bot Elev (ft): 189.3 Height (ft): 2.667

		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	PLA - SAW 5.938" x 0	-42.80	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	95	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-2.01	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	41	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	20.57	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			50	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	0.35	1.2D + 1.6W 330	36	58	6.53	1	1		0.00	0.00		0.00	5	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		20.71	1.2D + 1.6W	0.00	0	0	
Top Compression		44.43	1.2D + 1.6W 330	0.00	0		
Bot Tension		17.40	1.2D + 1.6W	0.00	0		
Bot Compression		44.88	1.2D + 1.6W 60	0.00	0		

Section: 30 M46-GI-77-02XBay Bot Elev (ft): 192.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-44.88	1.2D + 1.6W 60	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	97	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-0.12	1.2D + 1.6W 90	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	2	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	20.60	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			50	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.72	1.2D + 1.6W 120	36	58	6.53	1	1		0.00	0.00		0.00	26	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		20.90	1.2D + 1.6W	0.00	0	0	
Top Compression		44.58	1.2D + 1.6W 330	0.00	0		
Bot Tension		20.71	1.2D + 1.6W	0.00	0		
Bot Compression		44.43	1.2D + 1.6W 330	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 31 M46-GI-77-02XBay Bot Elev (ft): 193.3 Height (ft): 2.667

		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	PLA - SAW 5.938" x 0	-43.21	1.2D + 1.6W 60	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	96	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-1.87	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	38	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	21.67	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			53	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	0.08	1.2D + 1.6W 210	36	58	6.53	1	1		0.00	0.00		0.00	1	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		21.53	1.2D + 1.6W	0.00	0	0	
Top Compression		44.86	1.2D + 1.6W 330	0.00	0		
Bot Tension		20.90	1.2D + 1.6W	0.00	0		
Bot Compression		44.58	1.2D + 1.6W 330	0.00	0		

Section: 32 M46-GI-77-02XBay Bot Elev (ft): 196.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-45.37	1.2D + 1.6W 60	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	98	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-0.05	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	1	User Input

		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	phiRn	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	21.44	1.2D + 1.6W	50	65	40.56	12	2		149.10	171.84			52	Member
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.62	1.2D + 1.6W	36	58	6.53	1	1		0.00	0.00		0.00	24	User Input

		Pu		phiRnt	Use	Num	
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		21.71	1.2D + 1.6W	0.00	0	0	
Top Compression		44.89	1.2D + 1.6W 330	0.00	0		
Bot Tension		21.53	1.2D + 1.6W	0.00	0		
Bot Compression		44.86	1.2D + 1.6W 330	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:16 AM

Customer:

Force/Stress Summary

Section: 33 M46-GI-77-02XBay Bot Elev (ft): 197.3 Height (ft): 2.667

		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-43.43	1.2D + 1.6W 60	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	96 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-1.76	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	35 User Input

		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	phiRn	% Controls	
LEG	PLA - SAW 5.938" x 0	22.36	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		55	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		21.93	1.2D + 1.6W	0.00	0	0		
Top Compression		44.73	1.2D + 1.6W 330	0.00	0			
Bot Tension		21.71	1.2D + 1.6W	0.00	0			
Bot Compression		44.89	1.2D + 1.6W 330	0.00	0			

Section: 34 M46-GI-77-02XBay Bot Elev (ft): 200.0 Height (ft): 1.333

		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-44.31	1.2D + 1.6W 60	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	96 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-0.84	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	17 User Input

		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	phiRn	% Controls	
LEG	PLA - SAW 5.938" x 0	21.63	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		53	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	2.19	1.2D + 1.6W 330	36	58	6.53	1	1	0.00	0.00	0.00	33	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		21.28	1.2D + 1.6W	0.00	0	0		
Top Compression		43.37	1.2D + 1.6W 330	0.00	0			
Bot Tension		21.93	1.2D + 1.6W	0.00	0			
Bot Compression		44.73	1.2D + 1.6W 330	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 35 M46-GI-77-02XBay Bot Elev (ft): 201.3 Height (ft): 2.667

		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	PLA - SAW 5.938" x 0	-40.64	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	90 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-2.37	1.2D + 1.6W 60	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	48 User Input

		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	phiRn	% Controls	
LEG	PLA - SAW 5.938" x 0	20.34	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		50	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	0.88	1.2D + 1.6W 120	36	58	6.53	1	1	0.00	0.00	0.00	13	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		18.40	1.2D + 1.6W	0.00	0	0		
Top Compression		40.79	1.2D + 1.6W 330	0.00	0			
Bot Tension		21.28	1.2D + 1.6W	0.00	0			
Bot Compression		43.37	1.2D + 1.6W 330	0.00	0			

Section: 36 M46-GI-77-02XBay Bot Elev (ft): 204.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-40.78	1.2D + 1.6W	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	88 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-0.79	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	16 User Input

		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	phiRn	% Controls	
LEG	PLA - SAW 5.938" x 0	17.48	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		43	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.98	1.2D + 1.6W 60	36	58	6.53	1	1	0.00	0.00	0.00	30	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		16.97	1.2D + 1.6W	0.00	0	0		
Top Compression		39.44	1.2D + 1.6W 330	0.00	0			
Bot Tension		18.40	1.2D + 1.6W	0.00	0			
Bot Compression		40.79	1.2D + 1.6W 330	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 37 M46-GI-77-02XBay Bot Elev (ft): 205.3 Height (ft): 2.667

		Pu	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Bolts	Num Holes	Shear		Use %	Controls
Max Compression Member		(kip)			X	Y	Z					phiRnv (kip)	Bear phiRn (kip)		
LEG	PLA - SAW 5.938" x 0	-36.69	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	81 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-2.39	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	48 User Input

		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	PLA - SAW 5.938" x 0	15.91	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		39	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.02	1.2D + 1.6W 210	36	58	6.53	1	1	0.00	0.00	0.00	15	User Input

		Pu	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Max Splice Forces		(kip)					
Top Tension		13.69	1.2D + 1.6W	0.00	0	0	
Top Compression		36.56	1.2D + 1.6W 330	0.00	0		
Bot Tension		16.97	1.2D + 1.6W	0.00	0		
Bot Compression		39.44	1.2D + 1.6W 330	0.00	0		

Section: 38 M46-GI-77-02XBay Bot Elev (ft): 208.0 Height (ft): 1.333

		Pu	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Bolts	Num Holes	Shear		Use %	Controls
Max Compression Member		(kip)			X	Y	Z					phiRnv (kip)	Bear phiRn (kip)		
LEG	PLA - SAW 5.938" x 0	-36.42	1.2D + 1.6W	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	78 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-0.93	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	19 User Input

		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	PLA - SAW 5.938" x 0	12.63	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		31	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	2.03	1.2D + 1.6W 180	36	58	6.53	1	1	0.00	0.00	0.00	31	User Input

		Pu	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Max Splice Forces		(kip)					
Top Tension		12.04	1.2D + 1.6W	0.00	0	0	
Top Compression		35.06	1.2D + 1.6W 330	0.00	0		
Bot Tension		13.69	1.2D + 1.6W	0.00	0		
Bot Compression		36.56	1.2D + 1.6W 330	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 39 M46-GI-77-02XBay Bot Elev (ft): 209.3 Height (ft): 2.667

		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PLA - SAW 5.938" x 0	-32.25	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	71 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-2.54	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	51 User Input

		Pu		Fy	Fu	Phit	Pn 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	PLA - SAW 5.938" x 0	10.80	1.2D + 1.6W	50	65	40.56	12	2	149.10		171.84			26 Member
HORIZ		0.00		0	0	0.00	0	0	0.00		0.00			0
DIAG	PLA - SAW 2.75" x 0.	1.21	1.2D + 1.6W 210	36	58	6.53	1	1	0.00		0.00			18 User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		8.32	1.2D + 1.6W	0.00	0	0		
Top Compression		31.86	1.2D + 1.6W 330	0.00	0			
Bot Tension		12.04	1.2D + 1.6W	0.00	0			
Bot Compression		35.06	1.2D + 1.6W 330	0.00	0			

Section: 40 M46-GI-77-02XBay Bot Elev (ft): 212.0 Height (ft): 1.333

		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PLA - SAW 5.938" x 0	-31.58	1.2D + 1.6W	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	68 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-1.08	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	22 User Input

		Pu		Fy	Fu	Phit	Pn 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	PLA - SAW 5.938" x 0	7.13	1.2D + 1.6W	50	65	40.56	12	2	149.10		171.84			17 Member
HORIZ		0.00		0	0	0.00	0	0	0.00		0.00			0
DIAG	PLA - SAW 2.75" x 0.	2.16	1.2D + 1.6W 210	36	58	6.53	1	1	0.00		0.00			33 User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		6.46	1.2D + 1.6W	0.00	0	0		
Top Compression		30.21	1.2D + 1.6W 330	0.00	0			
Bot Tension		8.32	1.2D + 1.6W	0.00	0			
Bot Compression		31.86	1.2D + 1.6W 330	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 41 M46-GI-77-02XBay Bot Elev (ft): 213.3 Height (ft): 2.667

		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	PLA - SAW 5.938" x 0	-27.91	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	62 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-2.64	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	53 User Input

		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	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	5.03	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		12	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	1.46	1.2D + 1.6W 330	36	58	6.53	1	1	0.00	0.00	0.00	22	User Input

		Pu		phiRnt	Use	Num	Bolt Type
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	
Top Tension		2.30	1.2D + 1.6W	0.00	0	0	
Top Compression		27.94	1.2D + 1.6W	0.00	0		
Bot Tension		6.46	1.2D + 1.6W	0.00	0		
Bot Compression		30.21	1.2D + 1.6W 330	0.00	0		

Section: 42 M46-GI-77-02XBay Bot Elev (ft): 216.0 Height (ft): 1.333

		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	PLA - SAW 5.938" x 0	-27.85	1.2D + 1.6W	1.33	50	50	50	11.1	46.4	46.11	12	2	149.10	175.50	60 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-1.32	1.2D + 1.6W	3.745	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	26 User Input

		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	phiRn	%	Controls
LEG	PLA - SAW 5.938" x 0	1.04	1.2D + 1.6W	50	65	40.56	12	2	149.10	171.84		2	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	2.20	1.2D + 1.6W 210	36	58	6.53	1	1	0.00	0.00	0.00	33	User Input

		Pu		phiRnt	Use	Num	Bolt Type
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	
Top Tension		0.27	1.2D + 1.6W	0.00	0	0	
Top Compression		26.86	1.2D + 1.6W	0.00	0		
Bot Tension		2.30	1.2D + 1.6W	0.00	0		
Bot Compression		27.94	1.2D + 1.6W	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 43 M46-GI-77-02XBay Bot Elev (ft): 217.3 Height (ft): 2.667

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
				X	Y	Z								
LEG PLA - SAW 5.938" x 0	-24.95	1.2D + 1.6W	2.67	50	50	50	22.2	46.4	44.97	12	2	149.10	175.50	55 Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG PLA - SAW 2.75" x 0.	-2.60	1.2D + 1.6W	4.400	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	53 User Input

Max Tension Member	Pu (kip)	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
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	1.77	1.2D + 1.6W 210	36	58	6.53	1	1	0.00	0.00	0.00	27	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	24.54	1.2D + 1.6W	0.00	0		
Bot Tension	0.27	1.2D + 1.6W	0.00	0		
Bot Compression	26.86	1.2D + 1.6W	0.00	0		

Section: 44 MI-9015-.01.2 Bot Elev (ft): 220.0 Height (ft): 20.000

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
				X	Y	Z								
LEG PLA - SAW 5.938" x 0	-24.05	1.2D + 1.6W	2.00	100	100	100	33.3	50.0	61.40	12	2	149.10	234.00	39 Member Z
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG PLA - SAW 2.75" x 0.	-2.30	1.2D + 1.6W 90	4.031	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	47 User Input

Max Tension Member	Pu (kip)	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
LEG PLA - SAW 5.938" x 0	3.69	1.2D + 1.6W 180	50	65	53.87	12	2	149.10	229.13		6	Member
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	2.29	1.2D + 1.6W 90	36	58	6.53	1	1	0.00	0.00	0.00	35	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	17.32	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	24.54	1.2D + 1.6W	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 45		MI-9015-.01.1		Bot Elev (ft): 240.0		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	(kip)	(kip)	%	Controls
LEG	PLA - SAW 5.938" x 0	-20.30	1.2D + 1.6W 60	2.00	100	100	100	33.3	50.0	61.40	12	2	149.10	234.00	33	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-0.81	1.2D + 1.6W 60	4.031	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	16	User Input

		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	phiRn	phiRn	%	Controls	
LEG	PLA - SAW 5.938" x 0	7.16	1.2D + 1.6W	50	65	53.87	12	2		149.10	229.13			13	Member	
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0		
DIAG	PLA - SAW 2.75" x 0.	0.81	1.2D + 1.6W 60	36	58	6.53	1	1		0.00	0.00		0.00	12	User Input	

Max Splice Forces		Pu		phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		7.29	1.2D + 1.6W	0.00	0	0		
Top Compression		20.65	1.2D + 1.6W 60	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		17.32	1.2D + 1.0Di +	0.00	0			

Section: 46		MI-9015-.01.1		Bot Elev (ft): 260.0				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	PLA - SAW 5.938" x 0	-22.79	1.2D + 1.6W 60	2.00	100	100	100	33.3	50.0	61.40	12	2	149.10	234.00	37	Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	-1.24	1.2D + 1.0Di +	4.031	50	50	50	0.0	0.0	4.90	1	1	0.00	8.70	25	User Input

		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	phiRn	phiRn	%	Controls	
LEG	PLA - SAW 5.938" x 0	7.41	1.2D + 1.6W	50	65	53.87	12	2		149.10	229.13			13	Member	
HORIZ		0.00		0	0	0.00	0	0		0.00	0.00		0.00	0		
DIAG	PLA - SAW 2.75" x 0.	1.97	1.2D + 1.0Di +	36	58	6.53	1	1		0.00	0.00		0.00	30	User Input	

Max Splice Forces		Pu		phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		3.32	1.2D + 1.6W	0.00	0	0		
Top Compression		21.67	1.2D + 1.6W 60	0.00	0			
Bot Tension		7.29	1.2D + 1.6W	0.00	0			
Bot Compression		20.65	1.2D + 1.6W 60	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 47 M46-GI-77-01S** Bot Elev (ft): 280.0 Height (ft): 3.333

		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-17.02	1.2D + 1.6W 60	3.33	100	100	100	55.6	50.0	53.15	12	2	149.10	234.00	32 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-3.71	1.2D + 1.0Di +	4.833	50	50	50	0.0	0.0	5.67	1	1	0.00	8.70	65 User Input

		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	phiRn	% Controls	
LEG	PLA - SAW 5.938" x 0	4.57	1.2D + 1.6W	50	65	53.87	12	2	149.10	229.13		8	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.00		0.00	0	0		
Top Compression		18.79	1.2D + 1.6W 60	0.00	0			
Bot Tension		3.32	1.2D + 1.6W	0.00	0			
Bot Compression		21.67	1.2D + 1.6W 60	0.00	0			

Section: 48 M46-GI-77-01S** Bot Elev (ft): 283.3 Height (ft): 1.333

		Pu		Len	Bracing %			F'y	Phic	Pn Num		Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	% Controls
LEG	PLA - SAW 5.938" x 0	-1.49	1.2D + 1.6W 60	1.33	100	100	100	22.2	50.0	64.24	0	0	0.00	0.00	2 Member Z
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	PLA - SAW 2.75" x 0.	-3.76	1.2D + 1.6W 60	3.745	50	50	50	0.0	0.0	5.67	1	1	0.00	8.70	66 User Input

		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	phiRn	% Controls	
LEG	PLA - SAW 5.938" x 0	1.34	1.2D + 1.6W 60	50	65	66.60	0	0	0.00	0.00		2	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG	PLA - SAW 2.75" x 0.	2.64	1.2D + 1.6W 120	36	58	6.53	1	1	0.00	0.00	0.00	40	User Input

		Pu		phiRnt	Use	Num		
Max Splice Forces		(kip)	Load Case	(kip)	%	Bolts	Bolt Type	
Top Tension		0.31	1.2D + 1.6W 120	0.00	0	0		
Top Compression		1.57	1.2D + 1.6W 240	0.00	0			
Bot Tension		0.00		0.00	0			
Bot Compression		18.79	1.2D + 1.6W 60	0.00	0			

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 49 M46-GI-77-01S** Bot Elev (ft): 284.6 Height (ft): 1.667

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
				X	Y	Z								
LEG PLA - SAW 5.938" x 0	-6.94	1.2D + 1.6W	1.67	200	200	133	49.1	50.0	55.82	0	0	0.00	0.00	12 Member Y
HORIZDUM - 0.1X0.1X1	-0.02	1.2D + 1.6W	1.750	100	100	100	0.2	36.0	0.32	0	0	0.00	0.00	5 Member X
DIAG	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	

Max Tension Member	Pu (kip)	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
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZDUM - 0.1X0.1X1	0.03	1.2D + 1.6W	36	58	0.32	0	0	0.00	0.00	0.00	7	Member
DIAG PLA - SAW 2.75" x 0.	5.10	1.2D + 1.0Di +	36	58	6.53	1	1	0.00	0.00	0.00	78	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	6.95	1.2D + 1.0Di +	0.00	0		
Bot Tension	0.31	1.2D + 1.6W 120	0.00	0		
Bot Compression	1.57	1.2D + 1.6W 240	0.00	0		

Section: 50 M46-GI-77-01S** Bot Elev (ft): 286.3 Height (ft): 1.667

Max Compression Member	Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	PhiC Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
				X	Y	Z								
LEG PLA - SAW 5.938" x 0	-6.66	1.2D + 1.6W	1.67	200	200	133	49.1	50.0	55.82	0	0	0.00	0.00	11 Member Y
HORIZ	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	

Max Tension Member	Pu (kip)	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
LEG	0.00		0	0	0.00	0	0	0.00	0.00		0	
HORIZ	0.00		0	0	0.00	0	0	0.00	0.00	0.00	0	
DIAG PLA - SAW 2.75" x 0.	5.16	1.2D + 1.0Di +	36	58	6.53	1	1	0.00	0.00	0.00	79	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	1.87	1.2D + 1.6W 60	0.00	0	0	
Top Compression	2.47	1.2D + 1.6W	0.00	0		
Bot Tension	0.00		0.00	0		
Bot Compression	6.95	1.2D + 1.0Di +	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Force/Stress Summary

Section: 51 M46-GI-77-01S** Bot Elev (ft): 288.0 Height (ft): 10.000

										Shear		Bear				
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	phiRnv	phiRn	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PLA - SAW 5.938" x 0	-1.67	1.2D + 1.6W	3.33	100	100	100	55.6	50.0	53.15	0	0	0.00	0.00	3	Member Z
HORIZ	SAE - 3X3X0.25	-0.38	1.2D + 1.6W	3.500	100	100	100	95.5	36.0	28.87	0	0	0.00	0.00	1	Member Z
DIAG	PLA - SAW 2.75" x 0.	-1.04	1.2D + 1.6W 60	4.833	50	50	50	0.0	0.0	5.67	1	1	0.00	8.70	18	User Input

		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	phit Pn	%	
									(kip)	(kip)	(kip)		
LEG	PLA - SAW 5.938" x 0	1.84	1.2D + 1.6W 60	50	65	66.60	0	0	0.00	0.00			2 Member
HORIZ	SAE - 3X3X0.25	0.24	1.2D + 1.6W	36	58	46.66	0	0	0.00	0.00	0.00		0 Member
DIAG	PLA - SAW 2.75" x 0.	0.70	1.2D + 1.6W 90	36	58	6.53	1	1	0.00	0.00	0.00	10	User Input

Max Splice Forces	Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	0.00		0.00	0	0	
Top Compression	0.07	1.2D + 1.0Di +	0.00	0		
Bot Tension	1.87	1.2D + 1.6W 60	0.00	0		
Bot Compression	2.47	1.2D + 1.6W	0.00	0		

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.6W Normal	0.00	00.00		1	0.01	109.34	-0.02	
	218.00	10.00	0	A1	0.00	-2.46	1.92	
	218.00	-10.00	240	A1a	-40.35	-40.41	-25.23	
	218.00	-07.00	120	A1b	40.34	-39.77	-25.22	
1.2D + 1.6W 60 deg	0.00	00.00		1	-0.56	90.90	-0.36	
	218.00	10.00	0	A1	-1.36	-9.58	10.92	
	218.00	-10.00	240	A1a	-45.44	-44.91	-26.23	
	218.00	-07.00	120	A1b	8.69	-10.48	-6.62	
1.2D + 1.6W 90 deg	0.00	00.00		1	-0.29	99.31	-0.29	
	218.00	10.00	0	A1	-1.83	-22.63	28.85	
	218.00	-10.00	240	A1a	-46.74	-45.52	-25.98	
	218.00	-07.00	120	A1b	3.21	-4.89	-2.61	
1.2D + 1.6W 120 deg	0.00	00.00		1	-0.07	106.80	0.11	
	218.00	10.00	0	A1	-1.64	-36.44	47.72	
	218.00	-10.00	240	A1a	-42.27	-40.73	-22.49	
	218.00	-07.00	120	A1b	1.84	-3.04	-1.07	
1.2D + 1.6W 180 deg	0.00	00.00		1	0.00	88.62	0.78	
	218.00	10.00	0	A1	0.00	-40.65	52.72	
	218.00	-10.00	240	A1a	-10.56	-11.15	-4.49	
	218.00	-07.00	120	A1b	10.57	-10.99	-4.50	
1.2D + 1.6W 210 deg	0.00	00.00		1	-0.07	97.27	0.53	
	218.00	10.00	0	A1	0.84	-40.91	53.39	
	218.00	-10.00	240	A1a	-4.00	-5.14	-1.55	
	218.00	-07.00	120	A1b	26.02	-25.02	-12.90	
1.2D + 1.6W 240 deg	0.00	00.00		1	0.10	106.37	0.12	
	218.00	10.00	0	A1	1.64	-36.50	47.76	
	218.00	-10.00	240	A1a	-1.88	-3.14	-1.08	
	218.00	-07.00	120	A1b	42.29	-40.14	-22.51	
1.2D + 1.6W 300 deg	0.00	00.00		1	0.57	90.56	-0.37	
	218.00	10.00	0	A1	1.36	-9.65	11.00	
	218.00	-10.00	240	A1a	-8.76	-10.71	-6.66	
	218.00	-07.00	120	A1b	45.47	-44.27	-26.25	
1.2D + 1.6W 330 deg	0.00	00.00		1	0.43	100.09	-0.10	
	218.00	10.00	0	A1	0.63	-4.25	3.90	
	218.00	-10.00	240	A1a	-23.83	-25.00	-15.89	
	218.00	-07.00	120	A1b	45.58	-44.54	-27.33	
1.2D + 1.0Di + 1.0Wi Normal	0.00	00.00		1	0.01	153.35	0.16	
	218.00	10.00	0	A1	0.00	-12.94	20.77	
	218.00	-10.00	240	A1a	-31.69	-27.42	-20.05	
	218.00	-07.00	120	A1b	31.68	-26.94	-20.04	
1.2D + 1.0Di + 1.0Wi 60 deg	0.00	00.00		1	0.05	151.80	0.06	
	218.00	10.00	0	A1	-1.47	-16.72	25.91	
	218.00	-10.00	240	A1a	-36.49	-31.27	-21.07	
	218.00	-07.00	120	A1b	21.65	-18.63	-14.23	
1.2D + 1.0Di + 1.0Wi 90 deg	0.00	00.00		1	0.07	151.73	0.03	
	218.00	10.00	0	A1	-1.83	-20.32	31.46	
	218.00	-10.00	240	A1a	-35.85	-30.22	-19.87	
	218.00	-07.00	120	A1b	18.71	-15.63	-11.64	

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

1.2D + 1.0Di + 1.0Wi 120 deg	0.00	00.00		1	0.10	151.90	-0.01
	218.00	10.00	0	A1	-1.48	-24.16	37.32
	218.00	-10.00	240	A1a	-33.18	-27.38	-17.42
	218.00	-07.00	120	A1b	17.88	-14.44	-10.33
1.2D + 1.0Di + 1.0Wi 180 deg	0.00	00.00		1	0.01	150.61	0.02
	218.00	10.00	0	A1	0.00	-27.75	42.05
	218.00	-10.00	240	A1a	-23.25	-19.07	-11.70
	218.00	-07.00	120	A1b	23.25	-18.74	-11.71
1.2D + 1.0Di + 1.0Wi 210 deg	0.00	00.00		1	-0.03	150.95	0.01
	218.00	10.00	0	A1	0.69	-26.77	40.88
	218.00	-10.00	240	A1a	-19.50	-16.00	-10.43
	218.00	-07.00	120	A1b	28.26	-22.70	-14.18
1.2D + 1.0Di + 1.0Wi 240 deg	0.00	00.00		1	-0.09	151.66	0.00
	218.00	10.00	0	A1	1.48	-24.15	37.32
	218.00	-10.00	240	A1a	-17.87	-14.71	-10.32
	218.00	-07.00	120	A1b	33.16	-26.89	-17.41
1.2D + 1.0Di + 1.0Wi 300 deg	0.00	00.00		1	-0.03	151.62	0.06
	218.00	10.00	0	A1	1.47	-16.75	25.94
	218.00	-10.00	240	A1a	-21.66	-18.99	-14.24
	218.00	-07.00	120	A1b	36.47	-30.73	-21.06
1.2D + 1.0Di + 1.0Wi 330 deg	0.00	00.00		1	-0.02	152.46	0.10
	218.00	10.00	0	A1	0.69	-14.04	22.14
	218.00	-10.00	240	A1a	-26.37	-23.09	-17.38
	218.00	-07.00	120	A1b	35.12	-29.72	-21.12
(1.2 + 0.2Sds) * DL + E Normal M1	0.00	00.00		1	0.00	57.74	0.01
	218.00	10.00	0	A1	0.00	-9.01	12.44
	218.00	-10.00	240	A1a	-11.63	-11.10	-6.71
	218.00	-07.00	120	A1b	11.64	-10.93	-6.72
(1.2 + 0.2Sds) * DL + E Normal M2	0.00	00.00		1	0.00	57.73	0.00
	218.00	10.00	0	A1	0.00	-9.18	12.67
	218.00	-10.00	240	A1a	-11.53	-11.01	-6.66
	218.00	-07.00	120	A1b	11.54	-10.84	-6.67
(1.2 + 0.2Sds) * DL + E 60 deg M1	0.00	00.00		1	0.00	57.73	0.00
	218.00	10.00	0	A1	0.00	-9.35	12.82
	218.00	-10.00	240	A1a	-11.90	-11.40	-6.87
	218.00	-07.00	120	A1b	11.05	-10.28	-6.38
(1.2 + 0.2Sds) * DL + E 60 deg M2	0.00	00.00		1	0.00	57.73	0.00
	218.00	10.00	0	A1	0.00	-9.43	12.94
	218.00	-10.00	240	A1a	-11.71	-11.23	-6.76
	218.00	-07.00	120	A1b	11.15	-10.37	-6.44
(1.2 + 0.2Sds) * DL + E 90 deg M1	0.00	00.00		1	0.01	57.74	0.00
	218.00	10.00	0	A1	0.00	-9.64	13.15
	218.00	-10.00	240	A1a	-11.86	-11.36	-6.85
	218.00	-07.00	120	A1b	10.83	-10.03	-6.26
(1.2 + 0.2Sds) * DL + E 90 deg M2	0.00	00.00		1	0.00	57.74	0.00
	218.00	10.00	0	A1	0.00	-9.65	13.17
	218.00	-10.00	240	A1a	-11.67	-11.17	-6.74
	218.00	-07.00	120	A1b	11.02	-10.21	-6.36
(1.2 + 0.2Sds) * DL + E 120 deg M1	0.00	00.00		1	0.00	57.74	0.00
	218.00	10.00	0	A1	0.00	-9.96	13.51
	218.00	-10.00	240	A1a	-11.63	-11.09	-6.71
	218.00	-07.00	120	A1b	10.79	-9.98	-6.23

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

(1.2 + 0.2Sds) * DL + E 120 deg M2	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-9.88	13.40
	218.00	-10.00	240 A1a	-11.53	-11.01	-6.66
	218.00	-07.00	120 A1b	10.97	-10.15	-6.33
(1.2 + 0.2Sds) * DL + E 180 deg M1	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-10.25	13.84
	218.00	-10.00	240 A1a	-11.07	-10.47	-6.39
	218.00	-07.00	120 A1b	11.09	-10.32	-6.40
(1.2 + 0.2Sds) * DL + E 180 deg M2	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-10.08	13.62
	218.00	-10.00	240 A1a	-11.16	-10.56	-6.44
	218.00	-07.00	120 A1b	11.18	-10.40	-6.45
(1.2 + 0.2Sds) * DL + E 210 deg M1	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-10.15	13.74
	218.00	-10.00	240 A1a	-10.90	-10.28	-6.29
	218.00	-07.00	120 A1b	11.35	-10.60	-6.55
(1.2 + 0.2Sds) * DL + E 210 deg M2	0.00	00.00	1	0.00	57.73	0.00
	218.00	10.00	0 A1	0.00	-10.01	13.55
	218.00	-10.00	240 A1a	-11.05	-10.43	-6.38
	218.00	-07.00	120 A1b	11.33	-10.59	-6.54
(1.2 + 0.2Sds) * DL + E 240 deg M1	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-9.96	13.52
	218.00	-10.00	240 A1a	-10.78	-10.15	-6.22
	218.00	-07.00	120 A1b	11.64	-10.93	-6.72
(1.2 + 0.2Sds) * DL + E 240 deg M2	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-9.88	13.41
	218.00	-10.00	240 A1a	-10.98	-10.33	-6.34
	218.00	-07.00	120 A1b	11.53	-10.82	-6.66
(1.2 + 0.2Sds) * DL + E 300 deg M1	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-9.35	12.83
	218.00	-10.00	240 A1a	-11.05	-10.45	-6.38
	218.00	-07.00	120 A1b	11.92	-11.23	-6.88
(1.2 + 0.2Sds) * DL + E 300 deg M2	0.00	00.00	1	0.00	57.73	0.00
	218.00	10.00	0 A1	0.00	-9.46	12.97
	218.00	-10.00	240 A1a	-11.14	-10.54	-6.44
	218.00	-07.00	120 A1b	11.70	-11.03	-6.76
(1.2 + 0.2Sds) * DL + E 330 deg M1	0.00	00.00	1	0.00	57.74	0.00
	218.00	10.00	0 A1	0.00	-9.10	12.54
	218.00	-10.00	240 A1a	-11.33	-10.76	-6.54
	218.00	-07.00	120 A1b	11.86	-11.17	-6.85
(1.2 + 0.2Sds) * DL + E 330 deg M2	0.00	00.00	1	0.00	57.73	0.00
	218.00	10.00	0 A1	0.00	-9.27	12.77
	218.00	-10.00	240 A1a	-11.33	-10.76	-6.54
	218.00	-07.00	120 A1b	11.67	-11.00	-6.74
1.0D + 1.0W Service Normal	0.00	00.00	1	0.00	56.08	-0.29
	218.00	10.00	0 A1	0.00	-4.00	5.56
	218.00	-10.00	240 A1a	-15.41	-14.90	-9.35
	218.00	-07.00	120 A1b	15.41	-14.66	-9.34
1.0D + 1.0W Service 60 deg	0.00	00.00	1	-0.23	56.90	-0.14
	218.00	10.00	0 A1	-0.38	-7.83	10.33
	218.00	-10.00	240 A1a	-18.73	-18.12	-10.81
	218.00	-07.00	120 A1b	8.74	-8.64	-5.49
1.0D + 1.0W Service 90 deg	0.00	00.00	1	-0.27	56.33	0.00

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

	218.00	10.00	0	A1	-0.47	-10.50	14.05
	218.00	-10.00	240	A1a	-18.08	-17.33	-10.22
	218.00	-07.00	120	A1b	6.24	-6.09	-3.82
1.0D + 1.0W Service 120 deg	0.00	00.00		1	-0.25	55.66	0.15
	218.00	10.00	0	A1	-0.38	-13.46	18.22
	218.00	-10.00	240	A1a	-15.98	-15.08	-8.78
	218.00	-07.00	120	A1b	4.96	-4.62	-2.87
1.0D + 1.0W Service 180 deg	0.00	00.00		1	0.00	56.66	0.28
	218.00	10.00	0	A1	0.00	-16.42	21.87
	218.00	-10.00	240	A1a	-9.39	-9.05	-4.98
	218.00	-07.00	120	A1b	9.40	-8.91	-4.99
1.0D + 1.0W Service 210 deg	0.00	00.00		1	0.13	56.18	0.25
	218.00	10.00	0	A1	0.18	-15.66	20.96
	218.00	-10.00	240	A1a	-6.61	-6.37	-3.60
	218.00	-07.00	120	A1b	12.58	-11.76	-6.71
1.0D + 1.0W Service 240 deg	0.00	00.00		1	0.25	55.61	0.15
	218.00	10.00	0	A1	0.38	-13.50	18.26
	218.00	-10.00	240	A1a	-5.00	-4.74	-2.89
	218.00	-07.00	120	A1b	16.02	-14.88	-8.80
1.0D + 1.0W Service 300 deg	0.00	00.00		1	0.23	56.87	-0.14
	218.00	10.00	0	A1	0.37	-7.86	10.38
	218.00	-10.00	240	A1a	-8.78	-8.82	-5.51
	218.00	-07.00	120	A1b	18.77	-17.88	-10.84
1.0D + 1.0W Service 330 deg	0.00	00.00		1	0.14	56.51	-0.24
	218.00	10.00	0	A1	0.18	-5.40	7.21
	218.00	-10.00	240	A1a	-11.84	-11.68	-7.38
	218.00	-07.00	120	A1b	17.83	-17.00	-10.51

Maximum Reactions Summary

	<u>Base</u>
Vertical (kip)	153.35
Horizontal (kip)	0.78

<u>Anch1</u>
-45.52
53.47

Site Number: 306030

Code: ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Guy Anchor Design Loads

Radius (ft)	Drop (ft)	Azimuth (°)	Uplift (kip)	Shear (kip)
218.00	10.00	0	40.91	53.40
218.00	-10.00	240	45.52	53.47
218.00	-7.00	120	44.54	53.15

Maximum Cable Forces Summary

Load Case	Elevation (ft)	Cable	Anchor Node	Tower Node	Allow Tension (kip)	Applied Tension (kip)	Use %
1.2D + 1.0Di + 1.0Wi 60 deg	48.00	7/16 EHS	A1a	27b	12.48	6.45	52
1.2D + 1.6W 90 deg	107.99	7/16 EHS	A1a	57b	12.48	8.89	71
1.2D + 1.6W 90 deg	168.33	7/16 EHS	A1a	T3a	12.48	11.87	95
1.2D + 1.6W 90 deg	225.99	9/16 EHS	A1a	114b	21.00	16.86	80
1.2D + 1.0Di + 1.0Wi 60 deg	286.33	9/16 EHS	A1a	T5a	21.00	9.00	43

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
90 mph Normal with No Ice	12.00	0.146	0.0411	0.6844	0.6856
90 mph Normal with No Ice	20.00	0.239	0.0361	0.6495	0.6505
90 mph Normal with No Ice	168.33	1.941	0.0068	0.6707	0.6707
90 mph Normal with No Ice	170.00	1.964	0.0083	0.8847	0.8847
90 mph Normal with No Ice	173.33	2.008	0.0085	0.7890	0.7891
90 mph Normal with No Ice	184.00	2.143	0.0091	0.5584	0.5585
90 mph Normal with No Ice	189.33	2.196	0.0096	0.6396	0.6396
90 mph Normal with No Ice	200.00	2.249	0.0080	0.1164	0.1165
90 mph Normal with No Ice	280.00	1.578	0.0402	0.8745	0.8746
90 mph Normal with No Ice	286.33	1.488	0.0625	0.9319	0.9320
90 mph 60 degree with No Ice	12.00	0.090	0.0240	0.4126	0.4133
90 mph 60 degree with No Ice	20.00	0.146	0.0196	0.3898	0.3902
90 mph 60 degree with No Ice	168.33	1.071	0.0209	0.5133	0.5134
90 mph 60 degree with No Ice	170.00	1.086	0.0265	0.5233	0.5234
90 mph 60 degree with No Ice	173.33	1.119	0.0296	0.5381	0.5389
90 mph 60 degree with No Ice	184.00	1.220	0.0260	0.5910	0.5912
90 mph 60 degree with No Ice	189.33	1.261	0.0395	0.3031	0.3057
90 mph 60 degree with No Ice	200.00	1.302	0.0256	0.0722	0.0755
90 mph 60 degree with No Ice	280.00	1.048	-0.0235	0.4059	0.4065
90 mph 60 degree with No Ice	286.33	1.000	0.0223	0.4829	0.4835
90 mph 90 degree with No Ice	12.00	0.112	0.1332	0.5013	0.5187
90 mph 90 degree with No Ice	20.00	0.181	0.1290	0.4887	0.5050
90 mph 90 degree with No Ice	168.33	1.552	0.0504	0.6212	0.6228
90 mph 90 degree with No Ice	170.00	1.570	0.0507	0.5608	0.5631
90 mph 90 degree with No Ice	173.33	1.608	0.0529	0.6093	0.6107
90 mph 90 degree with No Ice	184.00	1.720	0.0634	0.6887	0.6909
90 mph 90 degree with No Ice	189.33	1.763	0.0687	0.1562	0.1701
90 mph 90 degree with No Ice	200.00	1.802	0.0804	0.0534	0.0965
90 mph 90 degree with No Ice	280.00	1.277	0.1629	0.6823	0.6977
90 mph 90 degree with No Ice	286.33	1.202	0.1768	0.7301	0.7512
90 mph 120 degree with No Ice	12.00	0.140	0.0002	0.6508	0.6508
90 mph 120 degree with No Ice	20.00	0.229	-0.0036	0.6292	0.6292
90 mph 120 degree with No Ice	168.33	1.838	-0.0687	0.6738	0.6767
90 mph 120 degree with No Ice	170.00	1.859	-0.0767	0.7051	0.7087
90 mph 120 degree with No Ice	173.33	1.901	-0.0810	0.7028	0.7068
90 mph 120 degree with No Ice	184.00	2.030	-0.0776	0.7129	0.7172
90 mph 120 degree with No Ice	189.33	2.080	-0.0952	0.3658	0.3777
90 mph 120 degree with No Ice	200.00	2.128	-0.0837	0.0586	0.1025
90 mph 120 degree with No Ice	280.00	1.520	-0.0734	0.7985	0.7998
90 mph 120 degree with No Ice	286.33	1.441	-0.0661	0.8304	0.8318
90 mph 180 degree with No Ice	12.00	0.084	0.0177	0.3861	0.3865
90 mph 180 degree with No Ice	20.00	0.135	0.0137	0.3506	0.3508
90 mph 180 degree with No Ice	168.33	0.929	-0.0040	0.4647	0.4647
90 mph 180 degree with No Ice	170.00	0.945	-0.0039	0.6456	0.6457
90 mph 180 degree with No Ice	173.33	0.977	-0.0039	0.5688	0.5689
90 mph 180 degree with No Ice	184.00	1.076	-0.0040	0.4063	0.4063
90 mph 180 degree with No Ice	189.33	1.117	-0.0040	0.5233	0.5233
90 mph 180 degree with No Ice	200.00	1.158	-0.0040	0.1099	0.1100
90 mph 180 degree with No Ice	280.00	0.930	0.0153	0.3633	0.3640
90 mph 180 degree with No Ice	286.33	0.889	0.0164	0.4162	0.4168
90 mph 210 degree with No Ice	12.00	0.108	0.1756	0.4794	0.5105
90 mph 210 degree with No Ice	20.00	0.174	0.1708	0.4546	0.4856
90 mph 210 degree with No Ice	168.33	1.426	0.1249	0.5722	0.5849
90 mph 210 degree with No Ice	170.00	1.444	0.1328	0.6929	0.7056
90 mph 210 degree with No Ice	173.33	1.481	0.1392	0.6452	0.6584

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

90 mph 210 degree with No Ice	184.00	1.592	0.1446	0.5259	0.5445
90 mph 210 degree with No Ice	189.33	1.635	0.1650	0.4832	0.5101
90 mph 210 degree with No Ice	200.00	1.674	0.1655	0.0980	0.1903
90 mph 210 degree with No Ice	280.00	1.180	0.2179	0.6429	0.6720
90 mph 210 degree with No Ice	286.33	1.108	0.2174	0.6837	0.7174
90 mph 240 degree with No Ice	12.00	0.139	0.0604	0.6436	0.6464
90 mph 240 degree with No Ice	20.00	0.227	0.0552	0.6223	0.6247
90 mph 240 degree with No Ice	168.33	1.816	0.0590	0.6763	0.6784
90 mph 240 degree with No Ice	170.00	1.837	0.0671	0.7038	0.7066
90 mph 240 degree with No Ice	173.33	1.879	0.0714	0.7012	0.7046
90 mph 240 degree with No Ice	184.00	2.008	0.0679	0.7123	0.7156
90 mph 240 degree with No Ice	189.33	2.058	0.0858	0.3671	0.3768
90 mph 240 degree with No Ice	200.00	2.106	0.0748	0.0608	0.0964
90 mph 240 degree with No Ice	280.00	1.509	0.0626	0.7875	0.7882
90 mph 240 degree with No Ice	286.33	1.432	0.0554	0.8190	0.8198
90 mph 300 degree with No Ice	12.00	0.089	0.0252	0.4072	0.4079
90 mph 300 degree with No Ice	20.00	0.144	0.0216	0.3850	0.3856
90 mph 300 degree with No Ice	168.33	1.049	-0.0053	0.5117	0.5119
90 mph 300 degree with No Ice	170.00	1.064	-0.0110	0.5167	0.5168
90 mph 300 degree with No Ice	173.33	1.096	-0.0150	0.5332	0.5340
90 mph 300 degree with No Ice	184.00	1.196	-0.0131	0.5868	0.5870
90 mph 300 degree with No Ice	189.33	1.237	-0.0276	0.2988	0.3014
90 mph 300 degree with No Ice	200.00	1.278	-0.0183	0.0695	0.0731
90 mph 300 degree with No Ice	280.00	1.029	0.0318	0.3970	0.3978
90 mph 300 degree with No Ice	286.33	0.982	0.0489	0.4728	0.4733
90 mph 330 degree with No Ice	12.00	0.115	0.1659	0.5135	0.5394
90 mph 330 degree with No Ice	20.00	0.185	0.1620	0.4869	0.5129
90 mph 330 degree with No Ice	168.33	1.566	0.0736	0.6064	0.6104
90 mph 330 degree with No Ice	170.00	1.585	0.0688	0.7453	0.7485
90 mph 330 degree with No Ice	173.33	1.625	0.0681	0.6851	0.6874
90 mph 330 degree with No Ice	184.00	1.741	0.0826	0.5280	0.5342
90 mph 330 degree with No Ice	189.33	1.787	0.0749	0.5092	0.5130
90 mph 330 degree with No Ice	200.00	1.828	0.0992	0.0636	0.1159
90 mph 330 degree with No Ice	280.00	1.266	0.2411	0.7351	0.7672
90 mph 330 degree with No Ice	286.33	1.180	0.2648	0.7952	0.8242
45 mph Normal with 0.70 in Radial Ice	12.00	0.062	0.0268	0.2877	0.2889
45 mph Normal with 0.70 in Radial Ice	20.00	0.100	0.0196	0.2693	0.2700
45 mph Normal with 0.70 in Radial Ice	168.33	0.428	0.0019	0.0342	0.0342
45 mph Normal with 0.70 in Radial Ice	170.00	0.429	0.0019	0.0742	0.0742
45 mph Normal with 0.70 in Radial Ice	173.33	0.430	0.0019	0.0281	0.0285
45 mph Normal with 0.70 in Radial Ice	184.00	0.433	0.0016	0.0174	0.0174
45 mph Normal with 0.70 in Radial Ice	189.33	0.432	0.0013	0.0105	0.0105
45 mph Normal with 0.70 in Radial Ice	200.00	0.417	-0.0010	0.1247	0.1247
45 mph Normal with 0.70 in Radial Ice	280.00	0.059	0.0336	0.5479	0.5479
45 mph Normal with 0.70 in Radial Ice	286.33	0.129	0.0645	0.6206	0.6206
45 mph 60 deg with 0.70 in Radial Ice	12.00	0.052	0.0230	0.2399	0.2410
45 mph 60 deg with 0.70 in Radial Ice	20.00	0.084	0.0156	0.2266	0.2271
45 mph 60 deg with 0.70 in Radial Ice	168.33	0.406	-0.0091	0.0832	0.0837
45 mph 60 deg with 0.70 in Radial Ice	170.00	0.408	-0.0089	0.1076	0.1080
45 mph 60 deg with 0.70 in Radial Ice	173.33	0.413	-0.0088	0.0883	0.0884
45 mph 60 deg with 0.70 in Radial Ice	184.00	0.430	-0.0088	0.1039	0.1043
45 mph 60 deg with 0.70 in Radial Ice	189.33	0.436	-0.0084	0.0487	0.0496
45 mph 60 deg with 0.70 in Radial Ice	200.00	0.440	-0.0086	0.0308	0.0320
45 mph 60 deg with 0.70 in Radial Ice	280.00	0.236	0.0217	0.2924	0.2925
45 mph 60 deg with 0.70 in Radial Ice	286.33	0.209	0.0486	0.3585	0.3618
45 mph 90 deg with 0.70 in Radial Ice	12.00	0.055	0.1349	0.2382	0.2736
45 mph 90 deg with 0.70 in Radial Ice	20.00	0.087	0.1275	0.2271	0.2604
45 mph 90 deg with 0.70 in Radial Ice	168.33	0.379	0.0480	0.0622	0.0767
45 mph 90 deg with 0.70 in Radial Ice	170.00	0.381	0.0487	0.0818	0.0928
45 mph 90 deg with 0.70 in Radial Ice	173.33	0.384	0.0498	0.0611	0.0776
45 mph 90 deg with 0.70 in Radial Ice	184.00	0.395	0.0536	0.0829	0.0970
45 mph 90 deg with 0.70 in Radial Ice	189.33	0.398	0.0561	0.0678	0.0880

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

45 mph 90 deg with 0.70 in Radial Ice	200.00	0.394	0.0599	0.1089	0.1232
45 mph 90 deg with 0.70 in Radial Ice	280.00	0.231	0.1057	0.4258	0.4300
45 mph 90 deg with 0.70 in Radial Ice	286.33	0.251	0.1297	0.5013	0.5178
45 mph 120 deg with 0.70 in Radial Ice	12.00	0.056	0.0241	0.2581	0.2591
45 mph 120 deg with 0.70 in Radial Ice	20.00	0.091	0.0172	0.2457	0.2462
45 mph 120 deg with 0.70 in Radial Ice	168.33	0.364	-0.0106	0.0247	0.0255
45 mph 120 deg with 0.70 in Radial Ice	170.00	0.365	-0.0103	0.0530	0.0535
45 mph 120 deg with 0.70 in Radial Ice	173.33	0.365	-0.0100	0.0148	0.0167
45 mph 120 deg with 0.70 in Radial Ice	184.00	0.367	-0.0086	0.0235	0.0245
45 mph 120 deg with 0.70 in Radial Ice	189.33	0.365	-0.0078	0.0844	0.0845
45 mph 120 deg with 0.70 in Radial Ice	200.00	0.348	-0.0071	0.1475	0.1477
45 mph 120 deg with 0.70 in Radial Ice	280.00	0.144	0.0140	0.5382	0.5386
45 mph 120 deg with 0.70 in Radial Ice	286.33	0.211	0.0343	0.6048	0.6057
45 mph 180 deg with 0.70 in Radial Ice	12.00	0.044	0.0228	0.2040	0.2053
45 mph 180 deg with 0.70 in Radial Ice	20.00	0.072	0.0155	0.1883	0.1889
45 mph 180 deg with 0.70 in Radial Ice	168.33	0.320	-0.0034	0.0772	0.0773
45 mph 180 deg with 0.70 in Radial Ice	170.00	0.323	-0.0034	0.1286	0.1286
45 mph 180 deg with 0.70 in Radial Ice	173.33	0.328	-0.0035	0.0967	0.0968
45 mph 180 deg with 0.70 in Radial Ice	184.00	0.345	-0.0036	0.0756	0.0757
45 mph 180 deg with 0.70 in Radial Ice	189.33	0.352	-0.0037	0.0869	0.0870
45 mph 180 deg with 0.70 in Radial Ice	200.00	0.355	-0.0037	0.0142	0.0149
45 mph 180 deg with 0.70 in Radial Ice	280.00	0.158	0.0076	0.2796	0.2798
45 mph 180 deg with 0.70 in Radial Ice	286.33	0.136	0.0250	0.3066	0.3076
45 mph 210 deg with 0.70 in Radial Ice	12.00	0.050	0.1369	0.2157	0.2555
45 mph 210 deg with 0.70 in Radial Ice	20.00	0.079	0.1295	0.2008	0.2389
45 mph 210 deg with 0.70 in Radial Ice	168.33	0.313	0.0543	0.0652	0.0849
45 mph 210 deg with 0.70 in Radial Ice	170.00	0.315	0.0547	0.1126	0.1242
45 mph 210 deg with 0.70 in Radial Ice	173.33	0.318	0.0555	0.0757	0.0928
45 mph 210 deg with 0.70 in Radial Ice	184.00	0.329	0.0582	0.0538	0.0793
45 mph 210 deg with 0.70 in Radial Ice	189.33	0.332	0.0600	0.0919	0.1089
45 mph 210 deg with 0.70 in Radial Ice	200.00	0.326	0.0644	0.1031	0.1215
45 mph 210 deg with 0.70 in Radial Ice	280.00	0.172	0.0973	0.4219	0.4330
45 mph 210 deg with 0.70 in Radial Ice	286.33	0.209	0.1156	0.4807	0.4839
45 mph 240 deg with 0.70 in Radial Ice	12.00	0.054	0.0268	0.2531	0.2546
45 mph 240 deg with 0.70 in Radial Ice	20.00	0.088	0.0196	0.2402	0.2410
45 mph 240 deg with 0.70 in Radial Ice	168.33	0.351	0.0051	0.0277	0.0278
45 mph 240 deg with 0.70 in Radial Ice	170.00	0.352	0.0049	0.0539	0.0539
45 mph 240 deg with 0.70 in Radial Ice	173.33	0.352	0.0045	0.0152	0.0153
45 mph 240 deg with 0.70 in Radial Ice	184.00	0.354	0.0031	0.0227	0.0228
45 mph 240 deg with 0.70 in Radial Ice	189.33	0.352	0.0023	0.0851	0.0851
45 mph 240 deg with 0.70 in Radial Ice	200.00	0.334	0.0017	0.1485	0.1485
45 mph 240 deg with 0.70 in Radial Ice	280.00	0.156	0.0160	0.5386	0.5389
45 mph 240 deg with 0.70 in Radial Ice	286.33	0.223	0.0357	0.6041	0.6052
45 mph 300 deg with 0.70 in Radial Ice	12.00	0.050	0.0247	0.2341	0.2354
45 mph 300 deg with 0.70 in Radial Ice	20.00	0.082	0.0174	0.2214	0.2220
45 mph 300 deg with 0.70 in Radial Ice	168.33	0.392	0.0058	0.0854	0.0856
45 mph 300 deg with 0.70 in Radial Ice	170.00	0.394	0.0056	0.1063	0.1064
45 mph 300 deg with 0.70 in Radial Ice	173.33	0.399	0.0054	0.0878	0.0878
45 mph 300 deg with 0.70 in Radial Ice	184.00	0.416	0.0053	0.1029	0.1030
45 mph 300 deg with 0.70 in Radial Ice	189.33	0.422	0.0048	0.0478	0.0480
45 mph 300 deg with 0.70 in Radial Ice	200.00	0.425	0.0055	0.0318	0.0322
45 mph 300 deg with 0.70 in Radial Ice	280.00	0.224	0.0344	0.2887	0.2888
45 mph 300 deg with 0.70 in Radial Ice	286.33	0.198	0.0620	0.3534	0.3569
45 mph 330 deg with 0.70 in Radial Ice	12.00	0.058	0.1388	0.2521	0.2874
45 mph 330 deg with 0.70 in Radial Ice	20.00	0.092	0.1313	0.2360	0.2701
45 mph 330 deg with 0.70 in Radial Ice	168.33	0.397	0.0574	0.0768	0.0959
45 mph 330 deg with 0.70 in Radial Ice	170.00	0.398	0.0579	0.0937	0.1096
45 mph 330 deg with 0.70 in Radial Ice	173.33	0.402	0.0589	0.0718	0.0892
45 mph 330 deg with 0.70 in Radial Ice	184.00	0.413	0.0629	0.0772	0.0995
45 mph 330 deg with 0.70 in Radial Ice	189.33	0.416	0.0648	0.0303	0.0704
45 mph 330 deg with 0.70 in Radial Ice	200.00	0.411	0.0696	0.0855	0.1098
45 mph 330 deg with 0.70 in Radial Ice	280.00	0.175	0.1225	0.4361	0.4457

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

45 mph 330 deg with 0.70 in Radial Ice	286.33	0.187	0.1531	0.5075	0.5154
Seismic Normal M1	12.00	0.002	0.0052	0.0062	0.0080
Seismic Normal M1	20.00	0.002	0.0019	0.0060	0.0063
Seismic Normal M1	168.33	0.030	-0.0011	0.0217	0.0217
Seismic Normal M1	170.00	0.031	-0.0011	0.0360	0.0360
Seismic Normal M1	173.33	0.032	-0.0011	0.0225	0.0225
Seismic Normal M1	184.00	0.036	-0.0011	0.0222	0.0223
Seismic Normal M1	189.33	0.038	-0.0010	0.0186	0.0186
Seismic Normal M1	200.00	0.040	-0.0009	0.0077	0.0078
Seismic Normal M1	280.00	0.041	0.0005	0.0111	0.0111
Seismic Normal M1	286.33	0.043	0.0025	0.0289	0.0289
Seismic Normal M2	12.00	0.001	0.0052	0.0051	0.0072
Seismic Normal M2	20.00	0.002	0.0019	0.0048	0.0052
Seismic Normal M2	168.33	0.020	-0.0011	0.0159	0.0159
Seismic Normal M2	170.00	0.021	-0.0011	0.0274	0.0274
Seismic Normal M2	173.33	0.021	-0.0011	0.0141	0.0142
Seismic Normal M2	184.00	0.024	-0.0011	0.0154	0.0154
Seismic Normal M2	189.33	0.025	-0.0010	0.0140	0.0140
Seismic Normal M2	200.00	0.027	-0.0009	0.0097	0.0097
Seismic Normal M2	280.00	0.042	0.0006	0.0132	0.0133
Seismic Normal M2	286.33	0.046	0.0026	0.0256	0.0257
Seismic 60 deg M1	12.00	0.001	0.0043	0.0055	0.0069
Seismic 60 deg M1	20.00	0.002	0.0011	0.0052	0.0053
Seismic 60 deg M1	168.33	0.027	-0.0016	0.0280	0.0281
Seismic 60 deg M1	170.00	0.028	-0.0016	0.0323	0.0323
Seismic 60 deg M1	173.33	0.029	-0.0015	0.0228	0.0229
Seismic 60 deg M1	184.00	0.033	-0.0013	0.0222	0.0223
Seismic 60 deg M1	189.33	0.035	-0.0012	0.0178	0.0178
Seismic 60 deg M1	200.00	0.037	-0.0010	0.0064	0.0065
Seismic 60 deg M1	280.00	0.036	-0.0011	0.0106	0.0107
Seismic 60 deg M1	286.33	0.037	0.0019	0.0281	0.0281
Seismic 60 deg M2	12.00	0.001	0.0043	0.0047	0.0063
Seismic 60 deg M2	20.00	0.002	0.0011	0.0044	0.0045
Seismic 60 deg M2	168.33	0.018	-0.0015	0.0207	0.0208
Seismic 60 deg M2	170.00	0.018	-0.0015	0.0246	0.0246
Seismic 60 deg M2	173.33	0.019	-0.0014	0.0143	0.0143
Seismic 60 deg M2	184.00	0.021	-0.0012	0.0154	0.0155
Seismic 60 deg M2	189.33	0.022	-0.0011	0.0131	0.0132
Seismic 60 deg M2	200.00	0.024	-0.0009	0.0086	0.0086
Seismic 60 deg M2	280.00	0.037	-0.0011	0.0117	0.0117
Seismic 60 deg M2	286.33	0.040	0.0020	0.0293	0.0294
Seismic 90 deg M1	12.00	0.001	0.0051	0.0050	0.0071
Seismic 90 deg M1	20.00	0.002	0.0019	0.0047	0.0050
Seismic 90 deg M1	168.33	0.025	-0.0016	0.0293	0.0293
Seismic 90 deg M1	170.00	0.026	-0.0016	0.0366	0.0366
Seismic 90 deg M1	173.33	0.027	-0.0015	0.0237	0.0237
Seismic 90 deg M1	184.00	0.031	-0.0013	0.0230	0.0230
Seismic 90 deg M1	189.33	0.033	-0.0012	0.0186	0.0186
Seismic 90 deg M1	200.00	0.035	-0.0010	0.0072	0.0073
Seismic 90 deg M1	280.00	0.035	-0.0014	0.0101	0.0102
Seismic 90 deg M1	286.33	0.038	0.0015	0.0273	0.0273
Seismic 90 deg M2	12.00	0.001	0.0043	0.0044	0.0060
Seismic 90 deg M2	20.00	0.002	0.0011	0.0040	0.0041
Seismic 90 deg M2	168.33	0.015	-0.0015	0.0212	0.0213
Seismic 90 deg M2	170.00	0.016	-0.0015	0.0273	0.0273
Seismic 90 deg M2	173.33	0.016	-0.0014	0.0144	0.0144
Seismic 90 deg M2	184.00	0.018	-0.0012	0.0151	0.0152
Seismic 90 deg M2	189.33	0.019	-0.0011	0.0130	0.0130
Seismic 90 deg M2	200.00	0.021	-0.0009	0.0083	0.0083
Seismic 90 deg M2	280.00	0.034	-0.0013	0.0126	0.0126
Seismic 90 deg M2	286.33	0.038	0.0015	0.0296	0.0296
Seismic 120 deg M1	12.00	0.001	0.0042	0.0039	0.0057

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Seismic 120 deg M1	20.00	0.001	0.0011	0.0036	0.0037
Seismic 120 deg M1	168.33	0.020	-0.0017	0.0269	0.0270
Seismic 120 deg M1	170.00	0.020	-0.0016	0.0365	0.0366
Seismic 120 deg M1	173.33	0.021	-0.0016	0.0223	0.0223
Seismic 120 deg M1	184.00	0.025	-0.0013	0.0209	0.0209
Seismic 120 deg M1	189.33	0.027	-0.0012	0.0169	0.0169
Seismic 120 deg M1	200.00	0.028	-0.0010	0.0057	0.0057
Seismic 120 deg M1	280.00	0.029	-0.0012	0.0080	0.0081
Seismic 120 deg M1	286.33	0.033	-0.0012	0.0251	0.0251
Seismic 120 deg M2	12.00	0.001	0.0043	0.0039	0.0057
Seismic 120 deg M2	20.00	0.001	0.0011	0.0035	0.0037
Seismic 120 deg M2	168.33	0.011	-0.0015	0.0201	0.0202
Seismic 120 deg M2	170.00	0.012	-0.0015	0.0279	0.0279
Seismic 120 deg M2	173.33	0.012	-0.0014	0.0140	0.0141
Seismic 120 deg M2	184.00	0.014	-0.0012	0.0142	0.0142
Seismic 120 deg M2	189.33	0.015	-0.0011	0.0124	0.0124
Seismic 120 deg M2	200.00	0.016	-0.0009	0.0077	0.0078
Seismic 120 deg M2	280.00	0.030	-0.0012	0.0156	0.0156
Seismic 120 deg M2	286.33	0.035	-0.0012	0.0312	0.0312
Seismic 180 deg M1	12.00	0.001	0.0035	0.0022	0.0041
Seismic 180 deg M1	20.00	0.001	0.0005	0.0017	0.0018
Seismic 180 deg M1	168.33	0.010	-0.0014	0.0254	0.0255
Seismic 180 deg M1	170.00	0.011	-0.0014	0.0301	0.0301
Seismic 180 deg M1	173.33	0.012	-0.0014	0.0206	0.0207
Seismic 180 deg M1	184.00	0.016	-0.0011	0.0201	0.0201
Seismic 180 deg M1	189.33	0.017	-0.0010	0.0150	0.0150
Seismic 180 deg M1	200.00	0.019	-0.0008	0.0040	0.0040
Seismic 180 deg M1	280.00	0.019	-0.0004	0.0066	0.0066
Seismic 180 deg M1	286.33	0.022	0.0006	0.0231	0.0231
Seismic 180 deg M2	12.00	0.001	0.0028	0.0029	0.0040
Seismic 180 deg M2	20.00	0.001	-0.0001	0.0026	0.0026
Seismic 180 deg M2	168.33	0.001	-0.0016	0.0176	0.0177
Seismic 180 deg M2	170.00	0.002	-0.0015	0.0225	0.0225
Seismic 180 deg M2	173.33	0.002	-0.0015	0.0117	0.0118
Seismic 180 deg M2	184.00	0.004	-0.0011	0.0127	0.0128
Seismic 180 deg M2	189.33	0.005	-0.0009	0.0097	0.0098
Seismic 180 deg M2	200.00	0.006	-0.0007	0.0052	0.0052
Seismic 180 deg M2	280.00	0.019	-0.0004	0.0171	0.0171
Seismic 180 deg M2	286.33	0.023	0.0005	0.0341	0.0341
Seismic 210 deg M1	12.00	0.001	0.0029	0.0022	0.0035
Seismic 210 deg M1	20.00	0.001	0.0000	0.0018	0.0018
Seismic 210 deg M1	168.33	0.011	-0.0014	0.0236	0.0237
Seismic 210 deg M1	170.00	0.012	-0.0014	0.0330	0.0331
Seismic 210 deg M1	173.33	0.013	-0.0013	0.0201	0.0201
Seismic 210 deg M1	184.00	0.016	-0.0011	0.0189	0.0189
Seismic 210 deg M1	189.33	0.017	-0.0009	0.0142	0.0142
Seismic 210 deg M1	200.00	0.019	-0.0007	0.0031	0.0032
Seismic 210 deg M1	280.00	0.019	0.0000	0.0068	0.0068
Seismic 210 deg M1	286.33	0.023	0.0007	0.0239	0.0239
Seismic 210 deg M2	12.00	0.001	0.0023	0.0028	0.0035
Seismic 210 deg M2	20.00	0.001	-0.0003	0.0024	0.0025
Seismic 210 deg M2	168.33	0.003	-0.0016	0.0162	0.0163
Seismic 210 deg M2	170.00	0.004	-0.0016	0.0245	0.0246
Seismic 210 deg M2	173.33	0.004	-0.0015	0.0114	0.0115
Seismic 210 deg M2	184.00	0.005	-0.0011	0.0117	0.0118
Seismic 210 deg M2	189.33	0.006	-0.0009	0.0091	0.0092
Seismic 210 deg M2	200.00	0.007	-0.0006	0.0043	0.0044
Seismic 210 deg M2	280.00	0.019	-0.0001	0.0166	0.0166
Seismic 210 deg M2	286.33	0.024	0.0006	0.0332	0.0332
Seismic 240 deg M1	12.00	0.001	0.0043	0.0032	0.0053
Seismic 240 deg M1	20.00	0.001	0.0012	0.0030	0.0031
Seismic 240 deg M1	168.33	0.017	-0.0009	0.0270	0.0270

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Seismic 240 deg M1	170.00	0.018	-0.0009	0.0365	0.0366
Seismic 240 deg M1	173.33	0.019	-0.0010	0.0223	0.0224
Seismic 240 deg M1	184.00	0.022	-0.0009	0.0208	0.0209
Seismic 240 deg M1	189.33	0.024	-0.0009	0.0167	0.0168
Seismic 240 deg M1	200.00	0.026	-0.0008	0.0055	0.0055
Seismic 240 deg M1	280.00	0.027	0.0005	0.0078	0.0079
Seismic 240 deg M1	286.33	0.031	0.0010	0.0249	0.0249
Seismic 240 deg M2	12.00	0.001	0.0035	0.0034	0.0048
Seismic 240 deg M2	20.00	0.001	0.0005	0.0031	0.0031
Seismic 240 deg M2	168.33	0.009	-0.0012	0.0195	0.0195
Seismic 240 deg M2	170.00	0.009	-0.0012	0.0272	0.0272
Seismic 240 deg M2	173.33	0.009	-0.0012	0.0133	0.0134
Seismic 240 deg M2	184.00	0.011	-0.0011	0.0132	0.0132
Seismic 240 deg M2	189.33	0.012	-0.0009	0.0114	0.0114
Seismic 240 deg M2	200.00	0.013	-0.0008	0.0066	0.0067
Seismic 240 deg M2	280.00	0.026	0.0004	0.0157	0.0157
Seismic 240 deg M2	286.33	0.031	0.0009	0.0312	0.0312
Seismic 300 deg M1	12.00	0.001	0.0044	0.0050	0.0066
Seismic 300 deg M1	20.00	0.002	0.0012	0.0048	0.0050
Seismic 300 deg M1	168.33	0.025	-0.0009	0.0284	0.0284
Seismic 300 deg M1	170.00	0.026	-0.0009	0.0323	0.0324
Seismic 300 deg M1	173.33	0.027	-0.0009	0.0228	0.0229
Seismic 300 deg M1	184.00	0.031	-0.0009	0.0220	0.0221
Seismic 300 deg M1	189.33	0.033	-0.0009	0.0176	0.0176
Seismic 300 deg M1	200.00	0.035	-0.0007	0.0062	0.0062
Seismic 300 deg M1	280.00	0.034	0.0005	0.0104	0.0104
Seismic 300 deg M1	286.33	0.036	0.0019	0.0279	0.0279
Seismic 300 deg M2	12.00	0.001	0.0035	0.0042	0.0055
Seismic 300 deg M2	20.00	0.002	0.0005	0.0040	0.0040
Seismic 300 deg M2	168.33	0.016	-0.0012	0.0203	0.0204
Seismic 300 deg M2	170.00	0.016	-0.0012	0.0240	0.0240
Seismic 300 deg M2	173.33	0.017	-0.0012	0.0134	0.0135
Seismic 300 deg M2	184.00	0.019	-0.0010	0.0142	0.0142
Seismic 300 deg M2	189.33	0.020	-0.0009	0.0118	0.0119
Seismic 300 deg M2	200.00	0.021	-0.0007	0.0072	0.0072
Seismic 300 deg M2	280.00	0.033	0.0004	0.0125	0.0125
Seismic 300 deg M2	286.33	0.036	0.0018	0.0304	0.0304
Seismic 330 deg M1	12.00	0.001	0.0052	0.0059	0.0078
Seismic 330 deg M1	20.00	0.002	0.0020	0.0057	0.0060
Seismic 330 deg M1	168.33	0.029	-0.0009	0.0264	0.0264
Seismic 330 deg M1	170.00	0.030	-0.0009	0.0349	0.0349
Seismic 330 deg M1	173.33	0.031	-0.0009	0.0232	0.0233
Seismic 330 deg M1	184.00	0.035	-0.0009	0.0229	0.0229
Seismic 330 deg M1	189.33	0.037	-0.0009	0.0186	0.0187
Seismic 330 deg M1	200.00	0.039	-0.0008	0.0075	0.0076
Seismic 330 deg M1	280.00	0.039	0.0004	0.0112	0.0112
Seismic 330 deg M1	286.33	0.042	0.0023	0.0288	0.0288
Seismic 330 deg M2	12.00	0.001	0.0043	0.0048	0.0064
Seismic 330 deg M2	20.00	0.002	0.0011	0.0045	0.0046
Seismic 330 deg M2	168.33	0.018	-0.0012	0.0190	0.0190
Seismic 330 deg M2	170.00	0.019	-0.0012	0.0257	0.0257
Seismic 330 deg M2	173.33	0.020	-0.0011	0.0137	0.0138
Seismic 330 deg M2	184.00	0.022	-0.0010	0.0150	0.0150
Seismic 330 deg M2	189.33	0.023	-0.0010	0.0128	0.0129
Seismic 330 deg M2	200.00	0.025	-0.0008	0.0085	0.0085
Seismic 330 deg M2	280.00	0.038	0.0004	0.0131	0.0132
Seismic 330 deg M2	286.33	0.042	0.0023	0.0285	0.0286
Serviceability - 60 mph Wind Normal	12.00	0.027	0.0126	0.1234	0.1241
Serviceability - 60 mph Wind Normal	20.00	0.043	0.0099	0.1124	0.1128
Serviceability - 60 mph Wind Normal	168.33	0.243	0.0026	0.0758	0.0759
Serviceability - 60 mph Wind Normal	170.00	0.246	0.0026	0.1470	0.1470
Serviceability - 60 mph Wind Normal	173.33	0.252	0.0024	0.1166	0.1166

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Serviceability - 60 mph Wind Normal	184.00	0.272	0.0018	0.0684	0.0685
Serviceability - 60 mph Wind Normal	189.33	0.279	0.0014	0.1001	0.1001
Serviceability - 60 mph Wind Normal	200.00	0.281	0.0006	0.0284	0.0285
Serviceability - 60 mph Wind Normal	280.00	0.040	0.0067	0.2852	0.2852
Serviceability - 60 mph Wind Normal	286.33	0.011	0.0105	0.3098	0.3098
Serviceability - 60 mph Wind 60 deg	12.00	0.022	0.0097	0.1012	0.1016
Serviceability - 60 mph Wind 60 deg	20.00	0.036	0.0068	0.0945	0.0947
Serviceability - 60 mph Wind 60 deg	168.33	0.230	-0.0042	0.1130	0.1130
Serviceability - 60 mph Wind 60 deg	170.00	0.234	-0.0038	0.1184	0.1184
Serviceability - 60 mph Wind 60 deg	173.33	0.241	-0.0035	0.1171	0.1171
Serviceability - 60 mph Wind 60 deg	184.00	0.263	-0.0036	0.1354	0.1354
Serviceability - 60 mph Wind 60 deg	189.33	0.272	-0.0026	0.0640	0.0640
Serviceability - 60 mph Wind 60 deg	200.00	0.279	-0.0029	0.0224	0.0226
Serviceability - 60 mph Wind 60 deg	280.00	0.190	-0.0084	0.1199	0.1201
Serviceability - 60 mph Wind 60 deg	286.33	0.177	-0.0077	0.1462	0.1463
Serviceability - 60 mph Wind 90 deg	12.00	0.023	0.0355	0.1013	0.1074
Serviceability - 60 mph Wind 90 deg	20.00	0.037	0.0319	0.0959	0.1010
Serviceability - 60 mph Wind 90 deg	168.33	0.229	0.0136	0.1074	0.1081
Serviceability - 60 mph Wind 90 deg	170.00	0.232	0.0137	0.0981	0.0990
Serviceability - 60 mph Wind 90 deg	173.33	0.239	0.0139	0.1075	0.1080
Serviceability - 60 mph Wind 90 deg	184.00	0.260	0.0150	0.1424	0.1429
Serviceability - 60 mph Wind 90 deg	189.33	0.268	0.0161	0.0146	0.0213
Serviceability - 60 mph Wind 90 deg	200.00	0.273	0.0190	0.0426	0.0461
Serviceability - 60 mph Wind 90 deg	280.00	0.148	0.0466	0.1931	0.1984
Serviceability - 60 mph Wind 90 deg	286.33	0.136	0.0508	0.2165	0.2224
Serviceability - 60 mph Wind 120 deg	12.00	0.025	0.0109	0.1158	0.1163
Serviceability - 60 mph Wind 120 deg	20.00	0.041	0.0084	0.1087	0.1090
Serviceability - 60 mph Wind 120 deg	168.33	0.233	-0.0063	0.0881	0.0881
Serviceability - 60 mph Wind 120 deg	170.00	0.236	-0.0064	0.1090	0.1090
Serviceability - 60 mph Wind 120 deg	173.33	0.242	-0.0062	0.1025	0.1027
Serviceability - 60 mph Wind 120 deg	184.00	0.262	-0.0047	0.1207	0.1208
Serviceability - 60 mph Wind 120 deg	189.33	0.268	-0.0047	0.0518	0.0518
Serviceability - 60 mph Wind 120 deg	200.00	0.270	-0.0030	0.0536	0.0537
Serviceability - 60 mph Wind 120 deg	280.00	0.035	0.0080	0.2790	0.2791
Serviceability - 60 mph Wind 120 deg	286.33	0.014	0.0076	0.2976	0.2976
Serviceability - 60 mph Wind 180 deg	12.00	0.020	0.0090	0.0910	0.0915
Serviceability - 60 mph Wind 180 deg	20.00	0.032	0.0061	0.0815	0.0817
Serviceability - 60 mph Wind 180 deg	168.33	0.196	-0.0013	0.1039	0.1039
Serviceability - 60 mph Wind 180 deg	170.00	0.199	-0.0013	0.1547	0.1548
Serviceability - 60 mph Wind 180 deg	173.33	0.207	-0.0013	0.1292	0.1292
Serviceability - 60 mph Wind 180 deg	184.00	0.229	-0.0013	0.0868	0.0868
Serviceability - 60 mph Wind 180 deg	189.33	0.238	-0.0013	0.1191	0.1191
Serviceability - 60 mph Wind 180 deg	200.00	0.244	-0.0013	0.0086	0.0087
Serviceability - 60 mph Wind 180 deg	280.00	0.162	0.0040	0.1097	0.1099
Serviceability - 60 mph Wind 180 deg	286.33	0.151	0.0031	0.1238	0.1239
Serviceability - 60 mph Wind 210 deg	12.00	0.022	0.0367	0.0947	0.1016
Serviceability - 60 mph Wind 210 deg	20.00	0.034	0.0330	0.0861	0.0922
Serviceability - 60 mph Wind 210 deg	168.33	0.202	0.0172	0.0985	0.1000
Serviceability - 60 mph Wind 210 deg	170.00	0.206	0.0175	0.1428	0.1438
Serviceability - 60 mph Wind 210 deg	173.33	0.213	0.0177	0.1236	0.1245
Serviceability - 60 mph Wind 210 deg	184.00	0.235	0.0181	0.0983	0.0999
Serviceability - 60 mph Wind 210 deg	189.33	0.243	0.0196	0.1033	0.1052
Serviceability - 60 mph Wind 210 deg	200.00	0.248	0.0221	0.0354	0.0418
Serviceability - 60 mph Wind 210 deg	280.00	0.123	0.0493	0.1886	0.1928
Serviceability - 60 mph Wind 210 deg	286.33	0.114	0.0499	0.2081	0.2140
Serviceability - 60 mph Wind 240 deg	12.00	0.025	0.0128	0.1144	0.1151
Serviceability - 60 mph Wind 240 deg	20.00	0.040	0.0101	0.1074	0.1079
Serviceability - 60 mph Wind 240 deg	168.33	0.231	0.0049	0.0904	0.0904
Serviceability - 60 mph Wind 240 deg	170.00	0.234	0.0050	0.1098	0.1099
Serviceability - 60 mph Wind 240 deg	173.33	0.240	0.0047	0.1035	0.1036
Serviceability - 60 mph Wind 240 deg	184.00	0.259	0.0031	0.1213	0.1213
Serviceability - 60 mph Wind 240 deg	189.33	0.266	0.0031	0.0523	0.0523

Site Number: 306030

Code:

ANSI/TIA-222-G

© 2007 - 2019 by ATC IP LLC. All rights reserved.

Site Name: Lees Summit, MO

Engineering Number:

2/8/2019 10:53:17 AM

Customer:

Serviceability - 60 mph Wind 240 deg	200.00	0.268	0.0015	0.0531	0.0531
Serviceability - 60 mph Wind 240 deg	280.00	0.033	0.0027	0.2784	0.2785
Serviceability - 60 mph Wind 240 deg	286.33	0.013	0.0018	0.2968	0.2968
Serviceability - 60 mph Wind 300 deg	12.00	0.022	0.0113	0.0993	0.0999
Serviceability - 60 mph Wind 300 deg	20.00	0.035	0.0083	0.0929	0.0933
Serviceability - 60 mph Wind 300 deg	168.33	0.225	0.0035	0.1139	0.1139
Serviceability - 60 mph Wind 300 deg	170.00	0.229	0.0031	0.1175	0.1176
Serviceability - 60 mph Wind 300 deg	173.33	0.236	0.0027	0.1167	0.1167
Serviceability - 60 mph Wind 300 deg	184.00	0.258	0.0024	0.1348	0.1348
Serviceability - 60 mph Wind 300 deg	189.33	0.267	0.0015	0.0635	0.0635
Serviceability - 60 mph Wind 300 deg	200.00	0.273	0.0017	0.0227	0.0228
Serviceability - 60 mph Wind 300 deg	280.00	0.186	0.0085	0.1178	0.1181
Serviceability - 60 mph Wind 300 deg	286.33	0.173	0.0092	0.1436	0.1437
Serviceability - 60 mph Wind 330 deg	12.00	0.024	0.0428	0.1044	0.1127
Serviceability - 60 mph Wind 330 deg	20.00	0.038	0.0394	0.0954	0.1033
Serviceability - 60 mph Wind 330 deg	168.33	0.225	0.0181	0.1012	0.1028
Serviceability - 60 mph Wind 330 deg	170.00	0.228	0.0180	0.1425	0.1436
Serviceability - 60 mph Wind 330 deg	173.33	0.235	0.0183	0.1237	0.1245
Serviceability - 60 mph Wind 330 deg	184.00	0.257	0.0204	0.1030	0.1050
Serviceability - 60 mph Wind 330 deg	189.33	0.265	0.0210	0.0954	0.0971
Serviceability - 60 mph Wind 330 deg	200.00	0.271	0.0250	0.0131	0.0281
Serviceability - 60 mph Wind 330 deg	280.00	0.143	0.0568	0.1992	0.2065
Serviceability - 60 mph Wind 330 deg	286.33	0.131	0.0620	0.2246	0.2314

Site Name: Lees Summit, MO
 Site Number: 306030
 Engineering Number: 12913784
 Engineer: Brian.Davies
 Date: 02/08/19

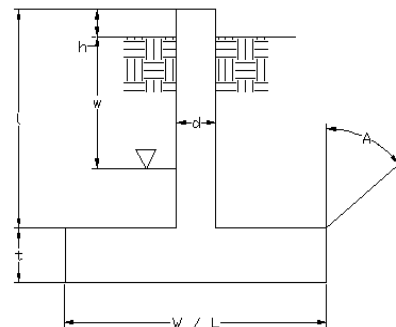
Program Last Updated: 5/13/2014
 American Tower Corporation

Design Base Loads (Factored) per TIA-222-G

Foundation Mapped:	N		
Moment (M_u):	0.0 k-ft	Concrete Compressive Strength (f'_c):	3000 psi
Shear/Leg (V_u):	0.8 k	Vertical Steel Rebar Size #:	5
Compression/Leg (P_u):	153.4 k	Vertical Steel Rebar Area:	0.31 in ²
Uplift/Leg (T_u):	0.0 k	# of Vertical Steel Rebars:	10
Tower Type (GT / SST):	GT	Vertical Steel Rebar Yield Strength (F_y):	60 ksi
Diameter of Prismatic Portion of Pier (d):	2.0 ft	Tie / Stirrup Size #:	3
Depth to Base of Foundation:	4.0 ft	Tie / Stirrup Area:	0.11 in ²
Pier Height Above Ground (h):	0.50 ft	Tie / Stirrup Spacing:	10.0 in
Length / Width of Pad (w):	6.0 ft	Tie / Stirrup Steel Yield Strength (F_y):	40 ksi
Thickness of Pad (t):	1.3 ft	Rebar Cage Diameter:	16.0 in
Depth Below Ground Surface to Water Table (w):	99.0 ft	Bending/Tension Reduction Factor (ϕ_B):	0.90
Unit Weight of Concrete:	150.0 pcf	Shear Reduction Factor (ϕ_V):	0.75
Unit Weight of Water:	62.4 pcf	Compression Reduction Factor (ϕ_C):	0.65
Unit Weight of Soil Above Water Table:	115.0 pcf	Steel Elastic Modulus:	29000 ksi
Unit Weight of Soil Below Water Table:	52.6 pcf	Pad Steel Rebar Size #:	5
Friction Angle of Uplift from Top of Pad:	30 Degrees	Pad Steel Rebar Area:	0.31 in ²
Friction Angle of Uplift from Base of Pad:	30 Degrees	Pad Steel Rebar Yield Strength (F_y):	60 ksi
Uplift Angle Started at Top or Base of Pad (T/B):	T	# of Rebar in Top of Pad:	0
Ultimate Skin Friction:	200 psf	# of Rebar in Base of Pad:	8
Ultimate Compressive Bearing Pressure:	7500 psf	Pad Clear Cover:	3 in
Capacity Increase (Due to Transient Loads):	1.00		
Bearing Strength Reduction Factor (ϕ_s):	0.60		
Uplift Strength Reduction Factor (ϕ_s):	0.75		

Axial Capacities and Design Moment

Weight of Concrete (Bouyancy Considered):	8.5 k
Weight of Soil (Bouyancy Considered):	17.0 k
Ultimate Skin Friction Resistance:	6.2 k
Controlling Failure Mode (Top / Base):	Top
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	19.2 k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	162.0 k
P_u :	156.0 k
$T_u / \phi_s T_n$:	0.00 Result: OK
$P_u / \phi_s P_n$:	0.96 Result: OK



Depth (ft)	Ultimate Lateral Bearing Pressure (psf)	Increment (psf/ft)	γ_{soil} (pcf)	Cohesion (psf)	ϕ (degree)
Top	Bottom				
0.0	2.0	0.0	100	0	0
2.0	2.7	1800.0	110	800	0

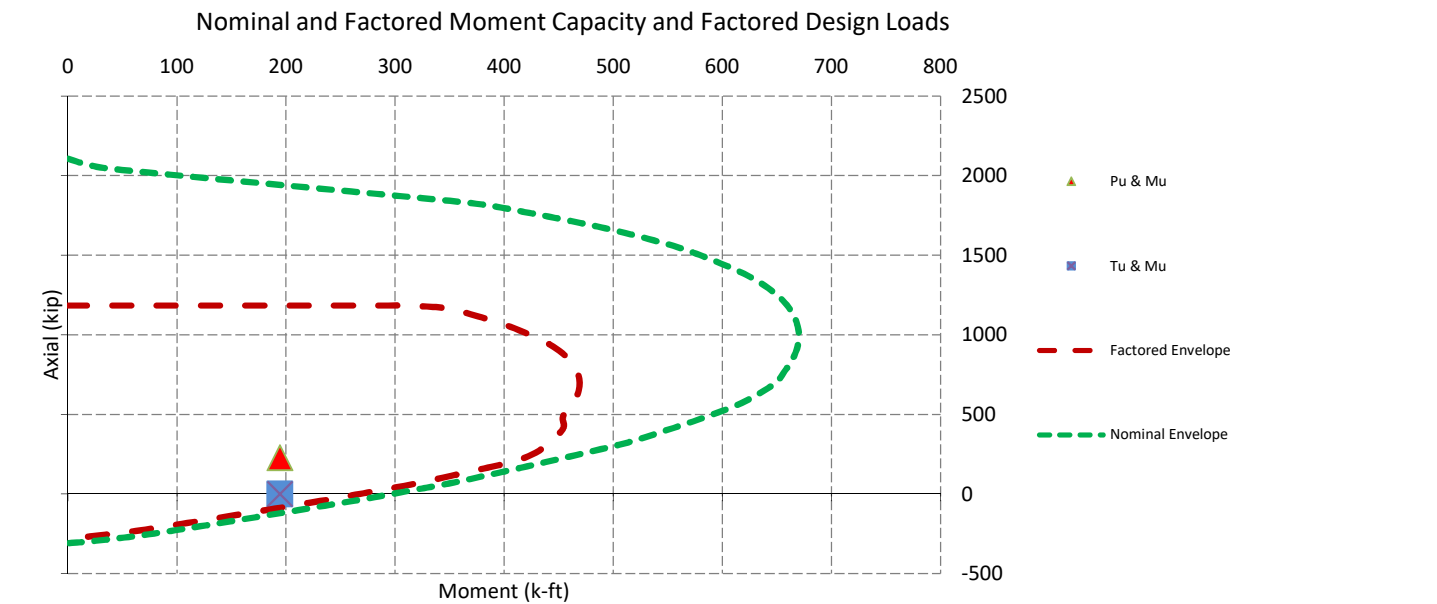
Inflection Point (Below Ground Surface): 2.1 ft
 Factored Design Moment At Inflection Point (M_u): 1.2 k-ft

Pad Strength Capacity

β :	0.85 ACI318-05 - 10.2.7.3
Upper Pad Flexural Reinforcement Spacing:	0 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
One Way Design Shear (V_u):	25.3 k
One Way Shear Capacity (ϕV_c):	74.4 k - ACI318-05 - 11.3.1.1
$V_u / \phi V_c$:	0.34 Result: OK
Punching Design Shear (V_u):	122.4 k
Nominal Punching Shear Capacity ($\phi_c V_n$):	230.2 k - ACI318-05 - 11.12.2.1
$V_u / \phi V_c$:	0.53 Result: OK
Flexural Loading Due to Soil Pressure (M_u):	51.9 k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	132.6 k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.39 Result: OK
Flexural Loading Due to Uplift (M_u):	0.0 k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	0.0 k-ft - ACI318-05 - 10.3
$M_u / \phi M_n$:	0.00 Result: OK

Pier Strength Capacity

Design Moment (M_u):	1.2 k-ft
Nominal Moment Capacity ($\phi_B M_n$):	109.6 k-ft - ACI318-005 - 10.2
$M_u / \phi_B M_n$:	0.01 Result: OK
Design Shear (V_u):	0.8 k
Nominal Shear Capacity ($\phi_V V_n$):	54.1 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u / \phi_V V_n$:	0.01 Result: OK
Design Tension (T_u):	0.0 k
Nominal Tension Capacity ($\phi_T T_n$):	167.4 k - ACI318-05 - 10.2
$T_u / \phi_T T_n$:	0.00 Result: OK
Design Compression (P_u):	153.4 k
Nominal Compression Capacity ($\phi_P P_n$):	595.8 k - ACI318-05 - 10.3.6.2
$P_u / \phi_P P_n$:	0.26 Result: OK
$M_u / \phi_B M_n + T_u / \phi_T T_n$:	0.01 Result: OK

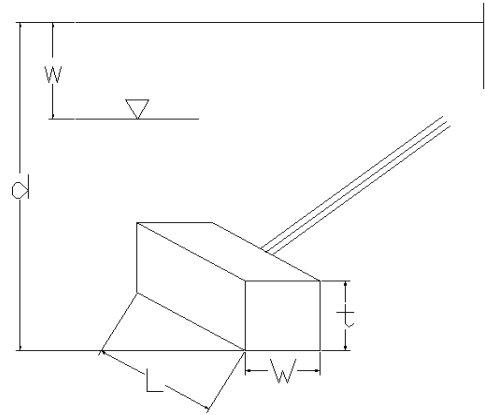


Site Name: Lees Summit, MO
 Site Number: 306030
 Engineering Number: 12913784
 Engineer: Brian.Davies
 Date: 02/08/19

Program Last Updated: 5/13/2014
 American Tower Corporation

Design Standard per TIA-222-G

Anchor Radius:	218.0 ft
Uplift (Factored - P_u):	45.6 k
Shear (Factored - V_u):	53.6 k
Berm Present:	N
Design Anchor Rod:	N
Mapped Foundation:	N
Anchor Base Depth (d):	8.0 ft
Width of Anchor (W):	4.0 ft
Length of Anchor (L):	14.0 ft
Thickness of Anchor (t):	4.0 ft
Depth Below Ground Surface to Water Table (w):	99.0 ft
Soil Uplift at Base / Top of Anchor (B/T):	T
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Soil Above Water Table:	110.0 pcf
Unit Weight of Water:	62.4 pcf
Submerged Soil Unit Weight:	47.6 pcf
Internal Angle of Friction:	0 Degrees
Cohesion:	800 psf
Ultimate Skin Friction of Pad Sides to Soil:	0 psf
Ultimate Coefficient of Shear Friction:	0.30
Maximum Top Conical Failure Angle:	30 Degrees
Maximum Base Conical Failure Angle:	30 Degrees
Allowable Capacity Increase:	1.00 (Due to Transient Loads)
Uplift Strength Reduction Factor (ϕ_u):	0.75
Shear Strength Reduction Factor (ϕ_v):	0.75
Concrete Uplift Strength Reduction Factor (ϕ_u):	0.90



Uplift

Weight of Concrete (Buoyancy Effect Considered):	33.6 k
Weight of Soil (Buoyancy Effect Considered):	45.4 k
Ultimate Uplift Resistance from Skin Friction:	0.0 k
Nominal Factored Uplift Resistance ($\phi_u P_n$):	64.3 k
$P_u / \phi_u P_n$:	0.71 Result: OK

Shear

Ultimate Shear Friction Resistance Due to Normal Force - Uplift:	7.2 k
Passive Pressure:	2260 psf
Ultimate Passive Pressure Resistance:	126.6 k
Nominal Shear Resistance ($\phi_v V_n$):	100.3 k
$V_u / \phi_v V_n$:	0.53 Result: OK

Strength Analysis of Reinforced Concrete

Concrete Compressive Srength (f'_c):	3000	psi
Longitudinal Rebar Yield Strength:	60000	psi
# Longitudinal Rebar (Top):	7	
# Longitudinal Rebar (1 Side):	7	
Rebar Size:	9	
Strength Reduction Factor for Shear (ϕ_v):	0.75	
Strength Reduction Factor for Flexure (ϕ_b):	0.9	
Compression Zone Factor (β_1):	0.85	
Area of Single Rebar:	1.00	in ²
One Way Shear due to Shear Load (V_u):	19.8	k
Nominal One Way Shear Capacity for Shear Load ($\phi_c V_n$):	173.5	k
$V_u/\phi_v V_n$:	0.11	Result: OK
One Way Shear due to Uplift (V_u):	16.8	k
Nominal One Way Shear Capacity for Uplift ($\phi_c V_n$):	173.5	k
$V_u/\phi_v V_n$:	0.10	Result: OK
Pad Flexure due to Shear Load (M_u):	93.8	k-ft
Nominal Flexural Capacity for Shear Load ($\phi_b M_n$):	1384.8	k-ft
Pad Flexure due to Uplift (M_u):	79.8	k-ft
Nominal Flexural Capacity for Uplift ($\phi_b M_n$):	1384.8	k-ft
$M_u/\phi_b M_n$ (Max.):	0.07	Result: OK