



STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

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**VIA ELECTRONIC MAIL**

August 9, 2022

Jack Andrews  
Zoning Manager  
Centerline Communications  
10130 Donleigh Drive  
Columbia, MD 21046  
[jmandrews@clinellc.com](mailto:jmandrews@clinellc.com)

**RE: TS-DISH-135-220523** – Dish Wireless, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 168 Catoona Lane, Stamford, Connecticut.

Dear Mr. Andrews:

The Connecticut Siting Council (Council) is in receipt of your correspondence of July 29, 2022 submitted in response to the Council's June 20, 2022 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request tower sharing complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman  
Executive Director

MAB/IN/emr

**From:** John Andrews <jmandrews@clinellc.com>  
**Sent:** Friday, July 29, 2022 10:59 AM  
**To:** Robidoux, Evan <Evan.Robidoux@ct.gov>  
**Cc:** CSC-DL Siting Council <Siting.Council@ct.gov>  
**Subject:** RE: Council Incomplete Letter for TS-DISH-135-220523 (168 Catoona Lane, Stamford)

EXTERNAL EMAIL: This email originated from outside of the organization. Do not click any links or open any attachments unless you trust the sender and know the content is safe.

I apologize for the delay in my reply. I have received the attached Structural Report that addresses the CSC Concerns. A hard copy of the report is mailed today. Please let me know if you need any additional materials. Thank you for patience



**John Andrews Jr.** | Project Manager  
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Centerline Communications  
750 W Center St, Suite 301 | West Bridgewater, MA 02379  
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CORPORATION



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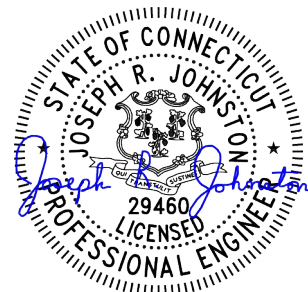
## Structural Analysis Report

**Structure** : 300 ft Self Supported Tower  
**ATC Site Name** : Stamford (Katoona), CT  
**ATC Asset Number** : 88018  
**Engineering Number** : 13683396\_C3\_04  
**Proposed Carrier** : AT&T MOBILITY  
**Carrier Site Name** : MRCTB051681  
**Carrier Site Number** : N/A  
**Site Location** : 168 Catoona Lane  
Stamford, CT 06902-4573  
41.052800, -73.563000  
**County** : Fairfield  
**Date** : November 24, 2021  
**Max Usage** : 89%  
**Result** : Pass

Prepared By:  
Brad Davenport  
AiroSmith Engineering

*Brad Davenport*

Reviewed By:



11/24/2021

**COA: PEC.0001553**



**Table of Contents**

Introduction ..... 1

Supporting Documents..... 1

Analysis..... 1

Conclusion..... 1

Existing and Reserved Equipment..... 2-4

Equipment to be Removed ..... 4

Proposed Equipment..... 4

Structure Usages.....4

Foundations .....5

Standard Conditions .....6

Calculations ..... Attached



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported tower to reflect the change in loading by AT&T MOBILITY.

## Supporting Documents

<b>Tower Drawings</b>	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
<b>Foundation Drawing</b>	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
<b>Geotechnical Report</b>	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
<b>Modifications</b>	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009
<b>Mount Analysis</b>	Maser Consulting Connecticut Project #21777443A, dated June 11, 2021
<b>Mount Modifications</b>	Maser Consulting Connecticut Job #21777443A, dated June 11, 2021

## Analysis

The tower was analyzed using Power Line Systems, Inc. tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	117 mph (3-Second Gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 1" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1

## 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](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



**Existing and Reserved Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier	
338.0	1	TX RX Systems 101-68-10-X-03N	Platform with Handrails	(1) 1 1/4" Coax	MARCUS COMMUNICATIONS LLC	
324.0	1	Generic 15' Omni-Grid		(1) 1 5/8" Coax		
320.0	1	Generic 12' Omni		-	OTHER	
311.0	1	Generic Radio/ODU		-	MARCUS COMMUNICATIONS LLC	
307.0	1	Generic Radio/ODU		Side Arm	(1) 1/2" Coax	OTHER
	1	Generic 3' HP Dish				
300.0	3	DragonWave Horizon Compact			(5) 7/8" Coax (3) 1/2" Coax	CLEARWIRE CORPORATION
	3	DragonWave A-ANT-18G-2-C				
	1	Generic 4' Std. Dish				
292.0	1	Procom CXL 900-3LW			Side Arm	(1) 7/8" Coax
	1	Generic 5" x 3" x 2" Cavity Filter				
	1	Generic Low Noise Amplifier				
275.0	1	Rohde & Schwarz ADD090	Side Arm		(2) 7/8" Coax	US DEPT OF HOMELAND SECURITY
270.0	1	Dielectric TLP-08M-2E	Side Arm		-	OTHER
268.0	2	Alive ATC-GCSXMV100-D7	Leg	(1) 1 5/8" Coax	XM SATELLITE RADIO INC.	
265.0	3	Ericsson Radio 4449 B71 B85A	Sector Frame	(3) 1 1/4" (1.25"-31.8mm) Fiber (3) 1 5/8" Hybriflex	T-MOBILE	
	3	Ericsson 4424 B25				
	3	Ericsson Air6449 B41				
	3	Ericsson Air 3246 B66				
	3	RFS APXVAARR24_43-U-NA20				
260.0	2	Til-Tek TA-2350-DAB	Side Arm	(1) EW20	XM SATELLITE RADIO INC.	
250.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US DEPT OF HOMELAND SECURITY	
245.0	1	Sinclair SC381-HL	Side Arm	(1) 7/8" Coax		
235.0	3	Powerwave Allgon TT19-08BP111-001	Sector Frame	(10) 1 5/8" Coax	AT&T MOBILITY	
	3	CCI BSA-M65R-BUU-H6 (101 lbs)				
	2	Ericsson RRUS E2 B29				
	2	Ericsson RRUS 32 B2				
	2	Ericsson RRUS 8843 B2, B66A				
	2	Ericsson RRUS 4426 B66				
	2	Ericsson RRUS 4415 B30				
	3	Ericsson RRUS 4478 B14				
	1	Ericsson RRUS 4449 B5, B12				
	2	Ericsson RRUS 32 B30 (53 lbs)				
210.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US DEPT OF HOMELAND SECURITY	
200.0	2	TX RX Systems 101-68-10-X-03N	Side Arm	(2) 1 1/4" Coax	MARCUS COMMUNICATIONS LLC	



Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
193.0	2	Antel BCD-87010	Side Arm	(3) 7/8" Coax	SPOK HOLDINGS, INC.
	1	Generic 30" x 30" Reflector			
175.0	1	Generic 12" x 12" Junction Box	Leg	(2) 2" conduit (6) 5/16" (0.31"-7.9mm) Coax	CLEARWIRE CORPORATION
171.0	-	-	-		
167.0	3	NextNet BTS-2500	T-Arm	(12) 1 5/8" Coax (1) 3/8" Coax	METRO PCS INC
	3	Argus LLPX310R			
165.0	6	Kathrein Scala 800 10504	Leg	(12) 1 5/8" Coax (1) 3/8" Coax	METRO PCS INC
	15	Generic RCU (Remote Control Unit)			
155.0	3	Alcatel-Lucent ALU 800MHz External Notch Filter	Sector Frame	(3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid	SPRINT NEXTEL
	3	Alcatel-Lucent 800 MHz RRH			
	6	Alcatel-Lucent 1900MHz RRH			
	3	Nokia 2.5G MAA - AAHC(64T64R)			
	3	RFS APXVSP18-C-A20			
142.0	1	Antel BCD-87010 4°	Stand-Off	(1) 7/8" Coax	SENSUS USA INC.
135.0	1	Generic Blank Exhibit	Stand-Off	(1) 1/2" Coax	SENET, INC.
120.0	1	Channel Master Type 120	Stand-Off	(1) 1/2" Coax	SPOK HOLDINGS, INC.
107.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	MARCUS COMMUNICATIONS LLC
92.0	3	RFS DB-T1-6Z-8AB-0Z	Sector Frame	(3) 1 5/8" Hybriflex	VERIZON WIRELESS
	4	Quintel QS6656-5D			
	2	JMA Wireless MX06FRO660-03			
	3	Samsung MT6407-77A			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung RT4401-48A			
3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna				
82.0	3	JMA Wireless MX08FRO665-21	Sector Frame	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	1	Commscope RDIDC-9181-PF-48			
	3	Fujitsu TA08025-B605			
25.0	1	Til-Tek TA-2324-LHCP	Leg	(1) 7/8" Coax	XM SATELLITE RADIO INC.
6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax (1) 1/4" Coax	SPOK HOLDINGS, INC.
	1	Channel Master Type 120			



**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
235.0	1	Raycap DC6-48-60-0-8C-EV	-	(3) 0.39" (10mm) Fiber Trunk (4) 0.74" (18.7mm) 8 AWG 7 (2) 0.78" (19.7mm) 8 AWG 6 (4) 0.96" (24.3mm) Cable	AT&T MOBILITY
	3	Raycap DC6-48-60-18-8F ("Squid")			
	1	Raycap DC6-48-60-18-8C			
	2	Ericsson RRUS 11 B5			
	2	KMW EPBQ-654L8H6-L2			
	3	Powerwave Allgon 7770.00			
	2	Andrew SBNHH-1D65A			
	2	CCI OPA-65R-LCUU-H4			
	2	Ericsson RRUS 11 B12			

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
237.0	3	Ericsson AIR 6449 n77D	Sector Frame	(2) 0.40" (10.3mm) Fiber (7) 0.82" (20.8mm) 8 AWG 6 (3) 1.15" (29.2mm) Cable	AT&T MOBILITY
235.0	2	Ericsson RRUS 4449 B5, B12			
	2	Ericsson RRUS E2 B29			
	2	Raycap DC6-48-60-18-8C-EV			
	2	Raycap DC9-48-60-24-8C-EV			
	2	CCI DMP65R-BU6DA			
	3	CCI BSA-M65R-BUU-H6 (101 lbs)			
	2	Quintel QD6616-7			
233.0	3	Ericsson AIR 6419 N77G			

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

Install proposed coax in place of the existing AT&T MOBILITY lines.

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Legs	73%	Pass
Diagonals	80%	Pass
Lower Diagonals	78%	Pass
Horizontals	59%	Pass
Lower Horizontals	89%	Pass
Anchor Bolts	47%	Pass





**Foundations**

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	318.5	82%
Axial (Kips)	452.0	5%

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.



## Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC 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:

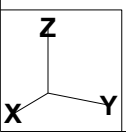
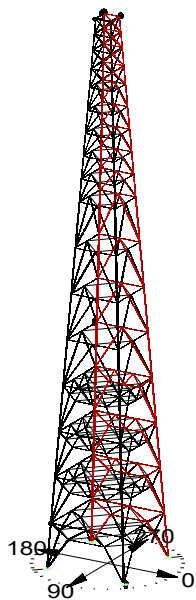
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC 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 A.T. Engineering Service, PLLC, 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. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Project Name : 88018 - Stamford (Katoona), CT  
 Project No: 1365618 CT 02 - Wireless  
 Project File : C:\Users\Brad.Davenport\Desktop\88018 - Stamford (Katoona), CT.tow  
 Date run : 12:23:16 PM Wednesday, November 24, 2021  
 by : Tower Version 16.73  
 Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

Member check option: ANSI/TIA 222-G-1  
 Connection rupture check: Not Checked  
 Crossing diagonal check: Fixed  
 Included angle check: None  
 Climbing load check: None  
 Redundant members checked with: Actual Force  
 Loads from file: C:\Users\Brad.Davenport\Desktop\88018 - Stamford (Katoona), CT.eia

\*\*\* Analysis Results:

Maximum element usage is 89.35% For Angle "LM 3X" in load case "W -45"

Foundation Design Forces For All Load Cases:

Note: loads are factored.

Load Case	Foundation Description	Axial Force (kips)	Shear Force (kips)	Bending Moment (ft-k)	Foundation Usage %
W 0	OP	27.40	48.19	0.09	0.00
W 0	OX	317.79	46.80	4.78	0.00
W 0	OXY	-194.88	35.05	5.31	0.00
W 180	OP	30.60	35.51	5.58	0.00
W 180	OX	-187.46	35.49	5.66	0.00
W 180	OXY	-188.03	34.76	5.43	0.00
W 180	OP	314.60	46.83	4.89	0.00
W 180	OX	191.50	47.71	5.16	0.00
W 45	OP	452.00	63.49	4.59	0.00
W 45	OX	62.70	22.04	5.57	0.00
W 45	OXY	-318.46	52.06	5.88	0.00
W 45	OP	63.48	21.94	5.53	0.00
W 45	OX	68.58	23.47	5.88	0.00
W 45	OXY	444.20	62.62	4.62	0.00
W 45	OP	61.04	21.32	5.31	0.00
W 45	OXY	-314.11	51.89	5.96	0.00
W 90	OP	327.84	48.49	5.14	0.00
W 90	OX	-191.06	35.71	5.64	0.00
W 90	OXY	-194.55	35.02	5.31	0.00
W 90	OP	317.48	46.80	4.77	0.00
W 90	OX	-188.16	35.92	5.69	0.00
W 90	OXY	322.06	47.91	5.21	0.00
W 90	OP	314.42	46.77	4.85	0.00
W 90	OX	-188.61	34.72	5.39	0.00
W 90	OXY	171.13	21.40	4.47	0.00
W 0 Ice	OP	165.56	20.83	1.34	0.00
W 0 Ice	OXY	21.82	3.57	3.03	0.00
W 0 Ice	OP	26.17	3.65	3.12	0.00
W 180 Ice	OP	31.01	3.86	3.20	0.00
W 180 Ice	OX	27.53	3.78	3.15	0.00
W 180 Ice	OXY	160.58	20.74	1.32	0.00
W 180 Ice	OP	61.55	21.08	1.48	0.00
W 45 Ice	OP	205.81	26.44	0.53	0.00
W 45 Ice	OX	95.95	11.15	2.43	0.00
W 45 Ice	OXY	-12.50	6.38	2.38	0.00
W 45 Ice	OP	95.40	11.14	2.41	0.00
W 45 Ice	OX	100.73	11.70	2.53	0.00
W 45 Ice	OXY	200.65	26.03	0.51	0.00
W 45 Ice	OP	91.38	11.05	2.33	0.00
W 45 Ice	OXY	-8.09	6.24	3.47	0.00
W 90 Ice	OP	171.25	21.47	1.49	0.00
W 90 Ice	OX	26.75	3.70	3.14	0.00
W 90 Ice	OXY	21.91	3.58	3.03	0.00
W 90 Ice	OP	164.75	20.79	1.32	0.00
W 90 Ice	OX	30.84	3.91	3.20	0.00
W 90 Ice	OXY	166.58	21.16	1.50	0.00
W 90 Ice	OP	160.52	20.72	1.30	0.00
W 90 Ice	OXY	26.73	3.75	3.14	0.00

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Trans. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Trans. Moment (ft-k)	Long. Bending Moment (ft-k)	Vert. Bending Moment (ft-k)	Usage %	
W 0	OP	-43.33	-21.08	-327.40	48.19	-0.86	-5.01	5.09	-2.01	0.00
W 0	OX	-41.79	46.80	0.56	4.75	4.78	2.13	0.00		
W 0	OXY	-32.20	-13.84	194.88	35.05	0.48	-5.29	5.31	1.96	0.00
W 0	OP	-33.06	12.96	190.60	35.51	-0.35	-5.57	5.58	-1.93	0.00
W 180	OP	33.14	12.70	187.46	35.49	-0.34	5.65	5.66	1.83	0.00
W 180	OX	32.09	-13.36	188.03	34.76	0.49	5.41	5.43	-1.97	0.00
W 180	OXY	41.71	21.30	-314.60	46.83	0.54	4.86	4.89	-2.14	0.00
W 180	OP	43.03	-20.61	-320.60	47.71	-0.87	5.09	5.16	2.14	0.00
W 45	OP	-44.78	45.02	-452.00	63.49	3.27	-3.21	4.59	0.13	0.00
W 45	OX	-19.16	-10.89	-62.70	22.04	4.40	-3.43	5.57	2.97	0.00
W 45	OXY	-36.82	-36.81	318.46	52.06	4.15	-4.16	5.88	-0.01	0.00
W 45	OP	-10.41	19.20	-63.49	21.94	3.43	4.33	5.64	1.92	0.00
W 45	OX	-20.39	11.61	-68.58	23.47	-4.62	-3.64	5.88	-3.03	0.00
W 45	OXY	-43.41	45.13	-444.20	62.62	-3.50	-3.02	4.62	0.01	0.00
W 45	OP	-9.94	18.63	-61.04	21.32	-3.34	-4.13	5.31	3.00	0.00
W 45	OX	-37.04	36.07	-314.11	51.89	-4.06	4.36	5.96	0.03	0.00
W 90	OP	-20.97	-43.72	-327.84	48.49	5.06	0.90	5.14	2.13	0.00
W 90	OX	12.91	-33.30	191.06	35.71	5.63	0.33	5.64	1.92	0.00
W 90	OXY	-13.14	14.94	-194.55	35.02	5.28	-0.51	5.31	-1.97	0.00
W 90	OP	21.55	-41.54	-317.48	46.80	4.74	-0.52	4.77	-2.13	0.00
W 90	OX	12.65	33.61	188.16	35.92	-5.68	0.31	5.69	-1.94	0.00
W 90	OXY	-20.55	43.27	-322.06	47.91	-5.13	0.91	5.21	-2.14	0.00
W 90	OP	21.44	41.56	-314.42	46.77	-4.82	-0.50	4.85	0.14	0.00
W 90	OX	-13.50	31.99	188.61	34.72	-5.37	-0.52	5.39	1.98	0.00
W 0 Ice	OP	-17.67	-12.07	-171.13	21.40	-1.47	-0.01	1.47	-0.51	0.00
W 0 Ice	OX	-12.12	12.12	165.56	20.83	1.34	0.82	1.34	0.52	0.00
W 0 Ice	OXY	-3.14	1.70	-21.82	3.57	1.40	-2.69	3.03	0.52	0.00
W 0 Ice	OP	-3.13	-1.87	-26.17	3.65	-1.45	-2.77	3.12	-0.50	0.00
W 180 Ice	OP	3.11	-2.29	-31.01	3.86	-1.43	2.86	3.20	0.50	0.00
W 180 Ice	OX	3.14	2.07	-27.53	3.78	1.41	-2.82	3.15	-0.54	0.00
W 180 Ice	OXY	17.00	11.88	-160.58	20.74	1.31	0.05	1.32	-0.54	0.00
W 180 Ice	OP	17.56	-11.66	-165.55	21.08	-1.48	0.10	1.48	0.55	0.00
W 45 Ice	OP	-16.63	18.74	-205.81	26.44	-4.06	0.89	0.53	0.02	0.00
W 45 Ice	OX	-10.66	3.27	-95.95	11.15	2.39	0.43	2.43	0.77	0.00
W 45 Ice	OXY	-4.51	-4.52	12.50	6.38	2.40	-2.39	3.38	-0.00	0.00
W 45 Ice	OP	3.31	-10.63	-95.40	11.14	-0.43	-2.37	2.41	0.77	0.00
W 45 Ice	OX	-11.27	18.74	-200.65	26.03	0.25	0.45	0.51	-0.01	0.00
W 45 Ice	OXY	3.32	10.54	-91.38	11.05	0.36	-2.30	2.33	0.78	0.00
W 45 Ice	OP	4.43	4.40	8.09	6.24	-2.46	-2.45	3.47	0.02	0.00
W 90 Ice	OP	-12.02	-17.79	-171.25	21.47	0.03	1.49	1.49	0.54	0.00
W 90 Ice	OX	-1.91	-3.17	-26.75	3.70	2.79	1.45	3.14	0.50	0.00
W 90 Ice	OXY	1.71	-21.91	3.58	2.69	-1.39	3.03	-0.53	0.00	
W 90 Ice	OP	12.13	-16.88	-164.75	20.79	-0.08	-1.32	1.32	-0.52	0.00
W 90 Ice	OX	-2.27	3.18	-30.84	3.91	-2.86	1.43	3.20	-0.52	0.00
W 90 Ice	OXY	-11.67	17.63	-166.58	21.16	-0.10	1.50	1.50	-0.55	0.00
W 90 Ice	OP	11.94	16.93	-160.52	20.72	-0.03	-1.30	1.30	0.54	0.00
W 90 Ice	OX	2.01	3.16	-26.73	3.75	-2.80	-1.41	3.14	0.54	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Joint	Origin Joint	Leg Member	Dir.	Perpendicular Force (kips)	Parallel Force (kips)	Residual Shear (kips)	Residual Shear (kips)	Residual Shear (kips)	Total Long. Force (kips)	Total Trans. Force (kips)	Total Vert. Force (kips)
W 0	OP	IP	L	IP	330.117	23.110	23.158	23.140	0.893	-43.33	-21.08	-327.40
W 0	OX	IX	L	IX	220.460	22.008	22.077	22.008	-1.840	-41.60	21.44	-317.79
W 0	OXY	IXY	L	IXY	-196.973	20.224	20.269	20.187	1.824	-32.20	-13.84	194.88
W 0	OP	IY	L	IY	-192.702	21.291	21.336	21.302	-1.208	-33.06	12.96	190.60
W 180	OP	IP	L	IP	-189.568	21.564	21.610	-21.580	-1.135	33.14	12.70	187.46
W 180	OX	IX	L	IX	-190.111	20.524	20.570	-20.544	-1.766	32.09	13.36	188.03
W 180	OXY	IXY	L	IXY	317.284	22.338	22.388	-22.306	-1.904	41.71	21.30	-314.60
W 180	OP	IY	L	IY	323.296	23.227	23.274	-23.259	0.835	43.03	-20.61	-320.60
W 45	OP	IP	L	IP	420.873	24.075	24.125	24.075	17.143	-44.78	-45.02	-452.00
W 45	OX	IX	L	IX	62.972	21.252	21.252	21.252	14.757	-19.16	-10.89	-62.70
W 45	OXY	IXY	L	IXY	-321.783	24.194	24.285	24.194	17.167	-36.82	-36.81	318.46
W 45	OP	IY	L	IY	63.765	21.088	21.088	21.088	15.289	-10.63	-19.20	-63.49
W 45	OX	IX	L	IX	-68.858	22.808	22.898	-22.808	-12.843	-20.39	11.61	-68.58
W 45	OXY	IXY	L	IXY	61.347	23.808	23.898	23.808	16.017	-43.41	45.13	-444.20
W 45	OP	IY	L	IY	-347.961	20.221	20.221	13.707	-14.866	-9.94	18.63	-61.04
W 90	OP	IP	L	IP	330.572	23.467	23.514	23.467	-16.703	-37.30	36.07	314.11
W 90	OX	IX	L	IX	-193.177	21.499	21.544	-21.499	21.515	12.91	-33.30	191.06
W 90	OXY	IXY	L	IXY	-196.236	20.236	20.236	1.900	20.146	-13.90	-32.14	194.55
W 90	OP	IY	L	IY	320.155	22.001	22.050	-1.974	-21.961	21.55	-41.54	-317.48
W 90	OX	IX	L	IX	-190.289	21.990	22.036	-1.048	-22.011	12.65	33.61	188.16
W 90	OXY	IXY	L	IXY	324.761	23.377	23.424	0.689	-23.413	-20.55	43.27	-322.06

W-90	OXY	1XY	L 1XY	317.102	22.268	22.267	-2.051	-22.173	21.44	41.56	-314.42
W-90	OY	L 1Y	L 1Y	190.987	7.218	20.442	1.873	-20.356	-13.50	11.99	188.61
W-90	IP	L 1P	L 1P	172.309	7.120	7.120	0.000	-1.514	-17.67	-12.07	-171.13
W-90	OX	L 1X	L 1X	166.714	6.970	6.990	6.723	-1.915	-16.93	12.12	-165.56
W-90	1XY	L 1XY	L 1XY	21.645	4.496	4.503	4.489	-0.357	-3.14	1.70	-21.82
W-90	1Y	L 1Y	L 1Y	25.989	4.746	4.746	0.000	0.252	-3.13	1.87	-26.17
W-90	1P	L 1P	L 1P	30.839	5.029	5.037	-5.023	0.373	3.11	-2.29	-31.01
W-90	1X	L 1X	L 1X	27.361	4.866	4.874	-4.859	-0.376	3.16	2.07	-27.53
W-90	1XY	L 1XY	L 1XY	11.748	7.351	7.352	-7.341	-1.920	17.00	11.88	-160.58
W-90	1Y	L 1Y	L 1Y	166.714	7.477	7.496	-7.353	1.456	17.56	-11.66	-165.55
W-90	1P	L 1P	L 1P	207.331	8.457	8.489	5.961	6.044	-18.65	-18.74	-205.81
W-90	1X	L 1X	L 1X	96.444	5.433	5.434	4.745	2.648	-10.66	3.27	-95.95
W-90	1XY	L 1XY	L 1XY	11.748	4.814	4.814	0.000	4.815	-1.91	-1.17	-26.75
W-90	1Y	L 1Y	L 1Y	95.893	5.397	5.399	2.568	4.749	3.31	-10.63	-95.40
W-90	1P	L 1P	L 1P	101.232	5.906	5.908	5.054	-3.059	-11.27	-3.15	-100.73
W-90	1X	L 1X	L 1X	202.149	8.512	8.514	8.700	6.365	-18.07	18.74	-200.65
W-90	1XY	L 1XY	L 1XY	91.889	5.419	5.422	2.316	-4.902	3.32	10.54	-91.38
W-90	1Y	L 1Y	L 1Y	-8.603	5.513	5.534	3.928	-3.899	-4.43	4.40	8.09
W-90	1P	L 1P	L 1P	172.431	7.353	7.373	1.456	7.227	-12.02	-17.79	-171.25
W-90	1X	L 1X	L 1X	166.714	4.814	4.814	0.000	4.815	-1.91	-1.17	-26.75
W-90	1XY	L 1XY	L 1XY	21.742	4.506	4.514	-0.361	4.499	1.71	-3.15	-21.91
W-90	1Y	L 1Y	L 1Y	165.911	6.985	7.006	-1.972	6.722	12.13	-16.88	-164.75
W-90	1P	L 1P	L 1P	30.864	5.090	5.098	0.371	-5.085	-2.27	3.18	-30.84
W-90	1X	L 1X	L 1X	167.754	7.490	7.510	1.397	-7.379	-11.67	17.65	-166.58
W-90	1XY	L 1XY	L 1XY	161.682	7.304	7.325	-2.039	-7.036	11.94	16.93	-160.52
W-90	1Y	L 1Y	L 1Y	26.560	4.814	4.821	-0.364	-4.808	2.01	3.16	-26.73

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	319.548	-2325.243	87.865	23707.397	150.486	259.710	0.000
W 180	151.009	-23245.933	-85.995	23246.423	-0.033	-149.965	259.710
W 45	17738.424	-17702.731	-11.178	25060.693	111.915	111.363	259.710
W -45	-17267.980	-17614.525	146.775	24666.873	-111.445	-111.048	259.710
W 90	23711.263	-318.393	112.643	23713.403	150.698	0.000	259.710
W -90	-23304.635	-186.043	116.896	23305.377	-150.436	-0.037	259.710
W 0	228.245	-6640.156	21.922	6644.078	0.106	40.883	384.666
W 180	1194.12	-154.146	-21.822	6157.607	-0.007	-40.238	384.666
W 45	5008.341	-5033.816	-3.343	7100.900	30.619	30.508	384.666
W -45	-4586.043	-5015.888	36.524	6796.391	-30.520	-30.446	384.666
W 90	6608.654	-260.757	-28.388	6613.797	40.983	0.082	384.666
W -90	-6199.194	-233.967	29.193	6203.608	-40.928	-0.008	384.666

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Adj Factor	Face Ar Factor	Dead Load (kips)
291.4-300.0	300.000	291.417	8	20	9.00	10.06	81.79	1.1220	1.1220	1.346
282.8-291.4	291.417	282.834	8	16	10.06	11.12	90.88	1.2150	1.2150	1.458
272.7-282.8	282.834	272.667	8	16	11.12	12.37	119.40	1.1970	1.1970	1.436
262.5-272.7	272.667	262.500	8	12	12.37	13.63	120.03	1.2030	1.2030	1.444
250.0-262.5	262.500	250.000	16	24	13.63	15.17	179.95	1.2010	1.2010	1.441
237.5-250.0	250.000	237.500	16	24	15.17	16.71	199.22	1.2070	1.2070	1.449
225.0-237.5	237.500	225.000	16	24	16.71	18.25	212.29	1.2140	1.2140	1.456
212.5-225.0	225.000	212.500	16	24	18.25	19.79	237.76	1.2190	1.2190	1.463
200.0-212.5	212.500	200.000	16	24	19.79	21.33	257.03	1.2250	1.2250	1.470
175.0-200.0	200.000	175.000	16	24	21.33	24.42	371.87	1.2320	1.2320	1.479
150.0-175.0	175.000	150.000	16	24	24.42	27.50	488.96	1.2370	1.2370	1.489
125.0-150.0	150.000	125.000	16	24	27.50	30.58	726.04	1.2660	1.2660	1.519
100.0-125.0	125.000	100.000	20	32	30.58	33.67	803.13	1.2790	1.2790	1.535
75.0-100.0	100.000	75.000	20	32	33.67	36.63	1020.00	1.2920	1.2920	1.551
50.0-75.0	75.000	50.000	36	76	36.67	39.83	957.29	1.2790	1.2790	1.535
25.0-50.0	50.000	25.000	32	68	39.83	42.92	1034.38	1.2820	1.2820	1.539
0.000-25.00	25.000	0.000	20	40	42.92	46.00	1111.46	1.3210	1.3210	1.586

Printed capacities do not include the strength factor entered for each load case. The Group Summary member and load case that results in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Angle Desc.	Group Type	Angle Size	Steel Strength	Max Usage	Max Usage Comp. %	Max Usage Tens. %	Max Usage Comp. %	Max Usage Tens. %	Force Control Case	Section Capacity (kips)	Comp. Capacity (kips)	Comp. Capacity (kips)	Comp. Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r	Length (ft)	No. of Bolts	No. of Holes
Leg s1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	72.67	Comp 72.67	L 1P	-397.412	W 45	546.848	0.000	0.000	0.281	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg s2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	61.86	Comp 61.86	L 2P	-338.262	W 45	546.848	0.000	0.000	0.281	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg s3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	53.54	Comp 53.54	L 3P	-292.794	W 45	546.848	0.000	0.000	0.281	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg s4	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	45.22	Comp 45.22	L 4P	-245.774	W 45	546.848	0.000	0.000	0.281	0.281	0.281	0.281	54.30	54.30	25.095	1	0	
Leg s5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	56.82	Comp 56.82	L 1P	-325.182	W 45	415.372	0.000	0.000	0.333	0.333	0.333	0.333	63.93	63.93	25.095	1	0	
Leg s6	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	47.15	Comp 47.15	L 6P	-195.835	W 45	415.372	0.000	0.000	0.333	0.333	0.333	0.333	63.93	63.93	25.095	1	0	
Leg s7	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	43.82	Comp 43.82	L 7P	-157.489	W 45	415.372	0.000	0.000	0.333	0.333	0.333	0.333	63.93	63.93	25.095	1	0	
Leg s8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	49.34	Comp 49.34	R 8P	-121.839	W 45	302.314	0.000	0.000	0.333	0.333	0.333	0.333	63.93	63.93	25.095	1	0	
Leg s9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	39.20	Comp 39.20	L 9P	-103.706	W 45	264.581	0.000	0.000	0.500	0.500	0.500	0.500	64.35	64.35	12.547	1	0	
Leg s10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	32.08	Comp 32.08	L 10P	-84.872	W 45	264.581	0.000	0.000	0.500	0.500	0.500	0.500	64.35	64.35	12.547	1	0	
Leg s11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	33.78	Comp 33.78	L 11P	-68.294	W 45	202.144	0.000	0.000	0.500	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg s12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	25.63	Comp 25.63	L 12P	-51.814	W 45	202.144	0.000	0.000	0.500	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg s13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	22.92	Comp 22.92	L 13P	-36.492	W 45	159.219	0.000	0.000	0.500	0.500	0.500	0.500	63.26	63.26	12.547	1	0	
Leg s14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	21.04	Comp 21.04	L 14P	-27.856	W 45	132.418	0.000	0.000	0.500	0.500	0.500	0.500	62.10	62.10	10.206	1	0	
Leg s15	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	13.84	Comp 13.84	L 15P	-18.324	W 45	132.418	0.000	0.000	0.500	0.500	0.500	0.500	62.10	62.10	10.206	1	0	
Leg s16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	9.88	Comp 9.88	L 16P	-9.556	W 45	96.705	0.000	0.000	0.500	0.500	0.500	0.500	52.01	52.01	8.616	1	0	
Leg s17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	4.96	Comp 4.96	L 17P	-4.798	W 45	96.705	0.000	0.000	0.500	0.500	0.500	0.500	52.01	52.01	8.616	1	0	
Diag s1	B/B L3"x3"x0.3125"	DAS	4X3X0.31	36.0	87.37	Comp 87.37	D 2X	-45.334	W -90	79.015	0.000	0.000	0.310	0.310	0.310	0.310	124.62	122.84	21.786	6	0	
Diag s2	B/B																					

Leg S2	L 8" x 8" x 1.125"	SAB	8X8X1.13	36.0	61.86	Comp	43.27	L 2XY 234.535	W 45	542.051	0.000	0.000	0.000	25.095	0.0000	0
Leg S3	L 8" x 8" x 1.125"	SAB	8X8X1.13	36.0	53.54	Comp	37.38	L 2XY 202.611	W 45	542.051	0.000	0.000	0.000	25.095	0.0000	0
Leg S4	L 8" x 8" x 1"	SAB	8X8X1	36.0	50.12	Comp	35.22	L 4XY 171.191	W 45	485.999	0.000	0.000	0.000	25.095	0.0000	0
Leg S5	L 8" x 8" x 0.875"	SAB	8X8X0.88	36.0	56.62	Comp	39.01	L 5XY 167.226	W 45	428.651	0.000	0.000	0.000	25.095	0.0000	0
Leg S6	L 8" x 8" x 0.875"	SAB	8X8X0.88	36.0	47.15	Comp	32.10	L 6XY 137.586	W 45	428.651	0.000	0.000	0.000	25.095	0.0000	0
Leg S7	L 8" x 8" x 0.75"	SAB	8X8X0.75	36.0	43.82	Comp	29.40	L 7XY 108.979	W 45	370.655	0.000	0.000	0.000	25.095	0.0000	0
Leg S8	L 8" x 8" x 0.625"	SAB	8X8X0.63	36.0	40.34	Comp	25.95	L 8XY 80.784	W 45	311.364	0.000	0.000	0.000	25.095	0.0000	0
Leg S9	L 6" x 6" x 0.75"	SAB	6X6X0.75	36.0	39.20	Comp	24.71	L 9XY 67.581	W 45	273.456	0.000	0.000	0.000	12.547	0.0000	0
Leg S10	L 6" x 6" x 0.75"	SAB	6X6X0.75	36.0	32.08	Comp	19.85	L 10XY 54.259	W 45	273.456	0.000	0.000	0.000	12.547	0.0000	0
Leg S11	L 6" x 6" x 0.5625"	SAB	6X6X0.56	36.0	33.78	Comp	19.69	L 11XY 41.014	W 45	208.332	0.000	0.000	0.000	12.547	0.0000	0
Leg S12	L 6" x 6" x 0.5625"	SAB	6X6X0.56	36.0	25.63	Comp	13.88	L 12XY 28.924	W 45	208.332	0.000	0.000	0.000	12.547	0.0000	0
Leg S13	L 6" x 6" x 0.4375"	SAB	6X6X0.44	36.0	22.92	Comp	10.56	L 13XY 17.306	W 45	163.944	0.000	0.000	0.000	12.547	0.0000	0
Leg S14	L 5" x 5" x 0.4375"	SAB	5X5X0.44	36.0	21.04	Comp	9.75	L 14XY 13.291	W 45	135.432	0.000	0.000	0.000	12.547	0.0000	0
Leg S15	L 5" x 5" x 0.4375"	SAB	5X5X0.44	36.0	13.84	Comp	4.49	L 15XY 6.086	W 45	135.432	0.000	0.000	0.000	12.547	0.0000	0
Leg S16	L 5" x 5" x 0.3125"	SAB	5X5X0.31	36.0	9.88	Comp	2.47	L 16XY 2.429	W 45	98.172	0.000	0.000	0.000	8.616	0.0000	0
Leg S17	L 5" x 5" x 0.3125"	SAB	5X5X0.31	36.0	4.96	Comp	0.00	L 17Y 0.000	W 45	98.172	0.000	0.000	0.000	8.616	0.0000	0
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	36.0	57.37	Comp	29.52	D 2P 39.974	W -90	135.432	0.000	0.000	0.000	21.786	0.0000	0
Diag S2	B/B L3"x3"x0.25"	DAS	3.5X3X0.25	36.0	62.41	Comp	42.18	D 4P 42.778	W -90	101.412	0.000	0.000	0.000	20.916	0.0000	0
Diag S3	B/B L2.5"x3"x0.25"	DAS	3.5X2.5X0.25	36.0	79.53	Comp	45.71	D 6P 42.650	W -90	93.312	0.000	0.000	0.000	20.550	0.0000	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3.5X2.5X0.25	36.0	79.42	Comp	44.25	D 8P 41.295	W -90	93.312	0.000	0.000	0.000	20.204	0.0000	0
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	54.75	Comp	25.86	D 9P 28.315	W -90	109.512	0.000	0.000	0.000	30.178	0.0000	0
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	51.36	Comp	25.28	D 11P 27.685	W -90	109.512	0.000	0.000	0.000	29.346	0.0000	0
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	45.81	Comp	23.64	D 13P 25.987	W -90	109.512	0.000	0.000	0.000	28.573	0.0000	0
Diag S8	B/B L3.5"x3.5"x0.25"	DAS	3.5X3.5X0.25	36.0	50.13	Comp	22.87	D 15P 25.043	W -90	109.512	0.000	0.000	0.000	27.864	0.0000	0
Diag S9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	26.89	Comp	18.41	D 17P 14.193	W -90	77.112	0.000	0.000	0.000	16.451	0.0000	0
Diag S10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	47.33	Comp	17.02	D 19X 13.122	W 90	77.112	0.000	0.000	0.000	15.962	0.0000	0
Diag S11	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	69.98	Comp	19.26	D 21X 13.293	W 90	69.012	0.000	0.000	0.000	15.495	0.0000	0
Diag S12	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	59.97	Comp	16.13	D 23X 11.132	W 90	69.012	0.000	0.000	0.000	15.054	0.0000	0
Diag S13	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	54.94	Comp	15.50	D 26Y 10.695	W 0	69.012	0.000	0.000	0.000	14.641	0.0000	0
Diag S14	L 3" x 3" x 0.25"	SAB	3X3X0.25	36.0	26.06	Comp	8.91	D 27Y 4.876	W 0	54.756	0.000	0.000	0.000	16.514	0.0000	0
Diag S15	L 3" x 3" x 0.25"	SAB	3X3X0.25	36.0	17.92	Comp	6.42	D 29Y 3.513	W 0	54.756	0.000	0.000	0.000	15.546	0.0000	0
Diag S16	L 3" x 3" x 0.25"	SAB	3X3X0.25	36.0	14.19	Comp	4.75	D 31Y 2.216	W 0	46.656	0.000	0.000	0.000	13.640	0.0000	0
Diag S17	L 3" x 3" x 0.25"	SAB	3X3X0.25	36.0	10.22	Comp	3.13	D 33Y 1.649	W 0	46.656	0.000	0.000	0.000	12.836	0.0000	0
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	58.71	Comp	42.14	H 1X 39.323	W -90	93.312	0.000	0.000	0.000	21.458	0.0000	0
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	44.70	Tens	44.70	H 3X 41.708	W -90	93.312	0.000	0.000	0.000	13.278	0.0000	0
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	42.05	Tens	42.05	H 5X 39.239	W -90	93.312	0.000	0.000	0.000	12.250	0.0000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	54.67	Comp	40.71	H 7P 34.691	W 90	85.212	0.000	0.000	0.000	11.222	0.0000	0
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	54.74	Comp	18.42	H 9P 15.696	W 90	85.212	0.000	0.000	0.000	15.292	0.0000	0
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	42.94	Comp	16.48	H 11P 14.040	W 90	85.212	0.000	0.000	0.000	13.750	0.0000	0
Horiz 7	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	46.00	Comp	15.40	H 13P 11.874	W 90	77.112	0.000	0.000	0.000	12.208	0.0000	0
Horiz 8	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	33.91	Comp	14.00	H 15P 10.796	W 90	77.112	0.000	0.000	0.000	10.667	0.0000	0
Horiz 9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	27.20	Comp	12.19	H 17P 9.403	W 90	77.112	0.000	0.000	0.000	9.896	0.0000	0
Horiz 10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	20.70	Comp	10.59	H 19P 8.169	W 90	77.112	0.000	0.000	0.000	9.125	0.0000	0
Horiz 11	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	6.02	Tens	6.02	H 21P 7.725	W 90	77.112	0.000	0.000	0.000	12.371	0.0000	0
Horiz 12	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	13.14	Comp	8.38	H 24P 6.463	W 0	77.112	0.000	0.000	0.000	7.583	0.0000	0
Horiz 13	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	9.32	Comp	7.65	H 26Y 5.897	W 180	77.112	0.000	0.000	0.000	6.813	0.0000	0
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	2.06	Tens	2.06	H 28P 2.553	W 45	42.444	0.000	0.000	0.000	12.371	0.0000	0
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	1.73	Tens	1.73	H 29P 1.476	W 0	85.212	0.000	0.000	0.000	11.117	0.0000	0
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	1.36	Tens	1.36	H 31P 1.003	W 0	42.444	0.000	0.000	0.000	10.059	0.0000	0
Horiz 17	CBX11.5	CHN	CBX11.5	36.0	2.30	Comp	0.48	H 33P 0.523	W 90	109.512	0.000	0.000	0.000	9.000	0.0000	0
LD 1	B/B L3"x3"x0.25"	DAL	3X3X0.25	36.0	49.97	Comp	24.52	LD 2X 18.905	W -45	77.112	0.000	0.000	0.000	12.836	0.0000	0
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	57.79	Comp	40.24	LD 3P 44.066	W -90	109.512	0.000	0.000	0.000	12.836	0.0000	0
LD 4	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	77.71	Comp	30.62	LD 7P 21.193	W -90	69.012	0.000	0.000	0.000	11.516	0.0000	0
LD 5	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	62.91	Comp	41.27	LD 9P 28.478	W -90	69.012	0.000	0.000	0.000	8.187	0.0000	0
LD 6	B/B L3"x3"x0.25"	DAS	3X3X0.25	36.0	52.62	Comp	39.39	LD 11X 36.758	W -90	93.312	0.000	0.000	0.000	9.681	0.0000	0
LD 7	B/B L3"x3"x0.25"	DAS	3X3X0.25	36.0	42.44	Comp	22.15	LD 14Y 20.671	W -45	93.312	0.000	0.000	0.000	10.941	0.0000	0
LD 8	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	62.31	Comp	41.28	LD 15P 28.489	W -90	69.012	0.000	0.000	0.000	8.044	0.0000	0
LD 9	B/B L3"x3"x0.25"	DAS	3X3X0.25	36.0	61.07	Comp	46.35	LD 17X 35.788	W -90	77.112	0.000	0.000	0.000	9.336	0.0000	0
LD 10	B/B L3"x3"x0.25"	DAS	3X3X0.25	36.0	39.91	Comp	21.88	LD 20Y 20.419	W -45	93.312	0.000	0.000	0.000	10.387	0.0000	0
LD 11	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	60.29	Comp	39.94	LD 21P 27.564	W -90	69.012	0.000	0.000	0.000	7.909	0.0000	0
LD 12	B/B L2.5"x2.5"x0.375"	DAS	2.5X2.5X0.38	36.0	49.64	Comp	30.45	LD 23X 34.233	W -90	112.428	0.000	0.000	0.000	9.008	0.0000	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	11.06	Tens	11.06	LH 1Y 9.425	W 0	85.212	0.000	0.000	0.000	21.458	0.0000	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	89.35	Comp	27.42	LH 3P 23.366	W -90	85.212	0.000	0.000	0.000	10.808	0.0000	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	51.18	Comp	17.90	LH 6P 22.275	W -45	124.416	0.000	0.000	0.000	10.005	0.0000	0
LH 4	B/B L3.5"x3.5"x0.25"	DAS	3.5X3.5X0.25	36.0	45.96	Comp	19.31	LH 8Y 21.148	W -45	109.512	0.000	0.000	0.000	9.202	0.0000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00	0.00	BR 11X	0.877	W -45	0.324	0.000	0.000	0.000	19.445	0.0000	0

\*\*\* Maximum Stress Summary For Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Element Usage	Element Label	Element Type
W 0	86.42	LH 4P	Angle
W 180	86.88	LH 4Y	Angle
W 45	86.58	LH 3P	Angle
W -45	89.35	LH 3X	Angle
W 90	87.23	LH 3P	Angle
W -90	87.55	LH 3X	Angle
W 0 Ice			



**Legs**

Site No.:	88018
Engineer:	BD
Date:	11/24/2021
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape	Diameter or Length (in)	Thickness <sup>[2]</sup> (in)	F <sub>y</sub> (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

**Notes:**

<sup>[1]</sup> Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifferized Angle. **L** = Even Leg

<sup>[2]</sup> For Solid Round Leg Shapes Thickness Equals Zero.

<sup>[3]</sup> Adjust for Bent Plate Leg Shapes.



**Diagonals**

Site No.:	88018
Engineer:	BD
Date:	11/24/2021
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape <sup>[1]</sup>	Diameter <sup>[2]</sup> (in)	Web Length <sup>[3]</sup> (in)	Flange Length <sup>[3]</sup> (in)	Thickness (in)	F <sub>y</sub> (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

**Notes:**

<sup>[1]</sup> Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

<sup>[2]</sup> Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

<sup>[3]</sup> Applies to Single-Angle and Double-Angle Shapes only.

<sup>[4]</sup> Applies to Double-Angle Shapes only.

<sup>[5]</sup> Applies to Single-Angle Shapes only.

**Horizontals**

Site No.:	88018
Engineer:	BD
Date:	11/24/2021
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape <sup>[1]</sup>	Diameter <sup>[2]</sup> (in)	Web Length <sup>[3]</sup> (in)	Flange Length <sup>[3]</sup> (in)	Thickness (in)	F <sub>y</sub> (ksi)	B/B Spacing (in.)
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

**Notes:**

<sup>[1]</sup> Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

<sup>[2]</sup> Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

<sup>[3]</sup> Applies to Single-Angle and Double-Angle Shapes only.

<sup>[4]</sup> Applies to Double-Angle Shapes only.

<sup>[5]</sup> Applies to Single-Angle Shapes only.

## Built-up Diagonals

Site No.:	88018
Engineer:	BD
Date:	11/24/2021
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape	Diameter <sup>[2]</sup> (in)	Web Length <sup>[3]</sup> (in)	Flange Length <sup>[3]</sup> (in)	Thickness (in)	F <sub>y</sub> (ksi)
1	0.000-25.00	2L		3	2	0.25	36
2	0.000-25.00	2L		4	3	0.25	36
3	25.00-50.00	2L		2.5	2	0.25	36
4	25.00-50.00	2L		2.5	2	0.25	36
5	25.00-50.00	2L		3	3	0.25	36
6	50.00-75.00	2L		3	3	0.25	36
7	50.00-75.00	2L		2.5	2	0.25	36
8	50.00-75.00	2L		3	2	0.25	36
9	75.00-100.0	2L		3	3	0.25	36
10	75.00-100.0	2L		2.5	2	0.25	36
11	75.00-100.0	2L		2.5	2.5	0.375	36

### Notes:

<sup>[1]</sup> Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

<sup>[2]</sup> Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

<sup>[3]</sup> Applies to Single-Angle and Double-Angle Shapes only.

<sup>[4]</sup> Applies to Double-Angle Shapes only.

<sup>[5]</sup> Applies to Single-Angle Shapes only.

**Built-up Horizontals**

Site No.:	88018
Engineer:	BD
Date:	11/24/2021
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape	Diameter <sup>[2]</sup> (in)	Web Length <sup>[3]</sup> (in)	Flange Length <sup>[3]</sup> (in)	Thickness (in)	F <sub>y</sub> (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

**Notes:**

- <sup>[1]</sup> Type of Horizontal Shape: R = Round, L = Single-Angle or 2L = Double-Angle.
- <sup>[2]</sup> Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.
- <sup>[3]</sup> Applies to Single-Angle and Double-Angle Shapes only.
- <sup>[4]</sup> Applies to Double-Angle Shapes only.
- <sup>[5]</sup> Applies to Single-Angle Shapes only.

Site #:	88018
Name:	AT&T Mobility

Engineer:	BD
Date:	11/24/21

Section Label	Section Color	Joint Defining Bottom Section	Dead Load Adj. Factor					Adj. Factor Flat	Adj. Factor Round	Area Multiplier	Weight Multiplier
0.000-25.00		0P	1.385721073					1.321434228	1.321434228	1	1.2
25.00-50.00		1P	1.338687147					1.282239289	1.282239289	1	1.2
50.00-75.00		2P	1.335261765					1.279384804	1.279384804	1	1.2
75.00-100.0		3P	1.330833855					1.275694879	1.275694879	1	1.2
100.0-125.0		4P	1.334826556					1.27902213	1.27902213	1	1.2
125.0-150.0		5P	1.318955429					1.265796191	1.265796191	1	1.2
150.0-175.0		6P	1.30866585					1.257221541	1.257221541	1	1.2
175.0-200.0		7P	1.278954774					1.232462312	1.232462312	1	1.2
200.0-212.5		8P	1.269986394					1.224988662	1.224988662	1	1.2
212.5-225.0		9P	1.262963002					1.219135835	1.219135835	1	1.2
225.0-237.5		10P	1.255806469					1.213172057	1.213172057	1	1.2
237.5-250.0		11P	1.24853386					1.20711155	1.20711155	1	1.2
250.0-262.5		12P	1.241165734					1.200971445	1.200971445	1	1.2
262.5-272.7		13P	1.243794654					1.203162212	1.203162212	1	1.2
272.7-282.8		14P	1.235824477					1.196520398	1.196520398	1	1.2
282.8-291.4		15P	1.257597671					1.214664726	1.214664726	1	1.2
291.4-300.0		16P	1.146016721					1.121680601	1.121680601	1	1.2

Site #:	88018
Name:	AT&T Mobility

Engineer:	BD
Date:	11/24/21

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	A 36	Beam	Leg	None
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	A 36	Beam	Leg	None
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S6	L 8" x 8" x 0.875"	SAE	8X8X0.88	A 36	Beam	Leg	None
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	A 36	Beam	Leg	None
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	A 36	Beam	Leg	None
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	A 36	Beam	Leg	None
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	A 36	Beam	Leg	None
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	A 36	Beam	Leg	None
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	A 36	Beam	Leg	None
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	A 36	Beam	Leg	None
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	A 36	Beam	Other	None
Diag S2	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	A 36	Beam	Other	None
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	A 36	Beam	Other	None
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	A 36	Beam	Other	None
Diag S8	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Diag S11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S12	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	A 36	Beam	Other	None
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	A 36	Beam	Other	None
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	A 36	Beam	Other	None
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 9	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 10	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	A 36	Beam	Other	None
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	A 36	Beam	Other	None
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	A 36	Beam	Other	None
Horiz 17	C8x11.5	CHN	C8x11.5	A 36	Beam	Other	None
LD 1	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	A 36	Beam	Other	None
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 6	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	A 36	Beam	Other	None
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	A 36	Beam	Other	None
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	A 36	Beam	Other	None
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	A 36	Beam	Other	None
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	T-Only	Other	None
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	A 36	Beam	Other	None
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	A 36	Beam	Other	None
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	A 36	Beam	Other	None
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	A 36	Beam	Fictitious	None

Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
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Group Label	Group Description	Angle Type	Angle Size	Material Type	Element Type	Group Type	Optimize Group
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Site #: 88018  
 Name: AT&T Mobility

Engineer: BD  
 Date: 11/24/21

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	
L 1	Leg S1		XY-Symmetry	0P	1P		1	4	0.28132	0.28132	0.28132
L 2	Leg S2		XY-Symmetry	1P	2P		1	4	0.28132	0.28132	0.28132
L 3	Leg S3		XY-Symmetry	2P	3P		1	4	0.28132	0.28132	0.28132
L 4	Leg S4		XY-Symmetry	3P	4P		1	4	0.28132	0.28132	0.28132
L 5	Leg S5		XY-Symmetry	4P	5P		1	4	0.33333333	0.33333333	0.33333333
L 6	Leg S6		XY-Symmetry	5P	6P		1	4	0.33333333	0.33333333	0.33333333
L 7	Leg S7		XY-Symmetry	6P	7P		1	4	0.33333333	0.33333333	0.33333333
L 8	Leg S8		XY-Symmetry	7P	8P		1	4	0.33333333	0.33333333	0.33333333
L 9	Leg S9		XY-Symmetry	8P	9P		1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P		1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P		1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P		1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P		1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P		1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P		1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P		1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P		1	4	0.5	0.5	0.5

D 1	Diag S1		XY-Symmetry	0P	H2P		1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	0P	H1P		1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P		1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P		1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P		1	6	0.33333333	0.66666667	0.33333333
D 6	Diag S3		XY-Symmetry	2P	H9P		1	6	0.33333333	0.66666667	0.33333333
D 7	Diag S4		XY-Symmetry	3P	H14P		1	6	0.33333333	0.66666667	0.33333333
D 8	Diag S4		XY-Symmetry	3P	H13P		1	6	0.33333333	0.66666667	0.33333333
D 9	Diag S5		XY-Symmetry	4P	A9P		1	6	0.33333333	0.66666667	0.33333333
D 10	Diag S5		XY-Symmetry	4P	A10P		1	6	0.33333333	0.66666667	0.33333333
D 11	Diag S6		XY-Symmetry	5P	A11P		1	6	0.33333333	0.66666667	0.33333333
D 12	Diag S6		XY-Symmetry	5P	A12P		1	6	0.33333333	0.66666667	0.33333333
D 13	Diag S7		XY-Symmetry	6P	A13P		1	6	0.33333333	0.66666667	0.33333333
D 14	Diag S7		XY-Symmetry	6P	A14P		1	6	0.33333333	0.66666667	0.33333333
D 15	Diag S8		XY-Symmetry	7P	A15P		1	6	0.33333333	0.66666667	0.33333333
D 16	Diag S8		XY-Symmetry	7P	A16P		1	6	0.33333333	0.66666667	0.33333333
D 17	Diag S9		XY-Symmetry	8P	A17P		1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P		1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P		1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P		1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P		1	6	0.48	0.96	0.48
D 22	Diag S11		XY-Symmetry	10P	A22P		1	6	0.48	0.96	0.48
D 23	Diag S12		XY-Symmetry	11P	A23P		1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P		1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P		1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P		1	6	0.5	1	0.5

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
D 27	Diag S14		XY-Symmetry	13P	14Y	2	5	0.52	0.52	0.52
D 28	Diag S14		XY-Symmetry	13P	14X	2	5	0.52	0.52	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	0.52	0.52	0.52
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	0.52	0.52	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	0.52	0.52	0.52
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	0.52	0.52	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	0.52	0.52	0.52
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	0.52	0.52	0.52

H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	1	1	1
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 17	Horiz 9		XY-Symmetry	9P	A17P		1 6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P		1 6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P		1 6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P		1 6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P		1 6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P		1 6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P		1 6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P		1 6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P		1 6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P		1 6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X		3 5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y		3 5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X		1 6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y		1 6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X		3 5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y		3 5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X		3 5	1	1	1
H 34	Horiz 17		X-Symmetry	17P	17Y		3 5	1	1	1

H 37	Horiz 2		Y-Symmetry	A3P	A3X		1 6	0.5	1	0.5
H 38	Horiz 2		X-Symmetry	A4P	A4Y		1 6	0.5	1	0.5
H 39	Horiz 3		Y-Symmetry	A5P	A5X		1 6	0.5	1	0.5
H 40	Horiz 3		X-Symmetry	A6P	A6Y		1 6	0.5	1	0.5

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 41	Horiz 4		Y-Symmetry	A7P	A7X		1 6	0.5	1	0.5
H 42	Horiz 4		X-Symmetry	A8P	A8Y		1 6	0.5	1	0.5

LH 1	LH 1		Y-Symmetry	H1P	H1X		1 6	100	100	100
LH 2	LH 1		X-Symmetry	H2P	H2Y		1 6	100	100	100
LH 3	LH 2		XY-Symmetry	H5P	H7P		1 6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P		1 6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P		1 6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P		1 6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P		1 6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P		1 6	0.998	1.995	0.998

LD 1	LD 1		XY-Symmetry	H1P	1P		1 6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P		1 6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P		1 6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P		1 6	0.82	0.82	0.82

LD 7	LD 4		XY-Symmetry	H5P	2P		1 6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P		1 6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P		1 6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P		1 6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P		1 6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P		1 6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P		1 6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P		1 6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P		1 6	0.82	0.82	0.82

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	
LD 16	LD 8		XY-Symmetry	H10P	A6P		1	6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P		1	6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P		1	6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P		1	6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P		1	6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P		1	6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P		1	6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P		1	6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P		1	6	0.85	0.85	0.85

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 1	DUM 1		XY-Symmetry	A1P	A2P		1 4	1	1	1
BR 3	DUM 1		XY-Symmetry	A3P	A4P		1 4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY		1 4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P		1 4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY		1 4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P		1 4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY		1 4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P		1 4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P		1 4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P		1 4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P		1 4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P		1 4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P		1 4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P		1 4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P		1 4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P		1 4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 61	DUM 1		XY-Symmetry	H1P	H2P		1 4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY		1 4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P		1 4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY		1 4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P		1 4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P		1 4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY		1 4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P		1 4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P		1 4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY		1 4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P		1 4	1	1	1

Site No.:	88018
Engineer:	BD
Date:	11/24/21
Carrier:	AT&T Mobility

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter** (in)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone? (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	300	1	Flat	2	8.0	6	No	Yes
2 Short Ladder	8.3333	33.3333	2	Flat	2	8.0	6	Yes	Yes
3 Short Ladder	8.3333	33.3333	2	Flat	2	8.0	6	Yes	Yes
5 WG	5	300	1	Flat	2	8.0	6	Yes	Yes
6 WG	5	272	1	Flat	2	8.0	6	Yes	Yes
7 WG	5	235	1	Flat	2	8.0	6	Yes	Yes
8 WG	5	223	1	Flat	2	8.0	6	Yes	Yes
9 WG	5	160	1	Flat	2	8.0	6	Yes	Yes
10 Marcus Communications LLC	5	300	1	Round	1.55	4.9	0.63	No	Yes
11 Marcus Communications LLC	5	300	1	Round	1.98	6.2	0.82	No	Yes
12 Marcus Communications LLC	5	300	1	Round	1.09	3.4	0.33	No	Yes
13 Other	5	300	4	Round	0.63	2.0	0.15	No	Yes
14 Clearwire Corporation	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
15 Sigfox S.A.	5	292	1	Round	1.09	3.4	0.33	Yes	Yes
16 US Dept Of Homeland Security	5	275	2	Round	1.09	3.4	0.33	Yes	Yes
17 XM Satellite Radio Inc.	5	268	1	Round	1.98	6.2	0.82	Yes	Yes
18 T-Mobile	5	265	3	Round	1.98	6.2	1.3	Yes	Yes
19 T-Mobile	5	265	1	Round	2.5	8.9	3.15	Yes	No
20 XM Satellite Radio Inc.	5	260	1	Round	5.02	15.8	1.85	Yes	No
21 US Dept Of Homeland Security	5	250	1	Round	1.09	3.4	0.33	Yes	Yes
22 US Dept Of Homeland Security	5	245	1	Round	1.09	3.4	0.33	Yes	Yes
23 AT&T Mobility	5	235	1	Flat	8.19	43.7	8.2	Yes	Yes
24 AT&T Mobility	5	235	1	Round	2.3	8.2	0.66	Yes	No
25 AT&T Mobility	5	235	2	Round	0.4	1.3	0.09	Yes	Yes
26 AT&T Mobility	5	235	1	Round	3.28	12.4	0.62	Yes	No
28 US Dept Of Homeland Security	5	210	1	Round	1.09	3.4	0.33	Yes	Yes
29 Marcus Communications LLC	5	200	2	Round	1.55	4.9	0.63	No	Yes
30 Spok Holdings, Inc.	5	193	2	Round	1.09	3.4	0.33	No	Yes
31 Spok Holdings, Inc.	5	193	1	Round	1.09	3.4	0.33	No	Yes
32 Clearwire Corporation	5	167	2	Round	2.38	7.5	3.65	Yes	Yes
33 Clearwire Corporation	5	167	6	Round	0.31	1.0	0.05	Yes	Yes
34 Metro PCS Inc	5	165	1	Flat	8.19	43.7	9.84	Yes	Yes
35 Metro PCS Inc	5	160	1	Round	0.44	1.4	0.08	Yes	Yes
37 Sprint Nextel	5	155	3	Round	1.54	4.8	1	Yes	Yes
38 Sprint Nextel	5	155	1	Round	1.7	5.3	1.78	Yes	Yes
40 Sensus USA Inc.	5	142	1	Round	1.09	3.4	0.3	No	Yes
42 Senet, Inc.	5	135	1	Round	0.63	2.0	0.2	Yes	Yes
43 Spok Holdings, Inc.	5	120	1	Round	0.63	2.0	0.2	No	Yes
44 Marcus Communications LLC	5	107	1	Round	1.55	4.9	0.6	No	Yes
46 Verizon Wireless	5	92	3	Round	1.98	6.2	1.3	Yes	Yes
47 Sirius XM Radio Inc.	5	25	1	Round	1.09	3.4	0.3	Yes	Yes
48 Spok Holdings, Inc.	0	6	1	Round	0.63	2.0	0.2	No	Yes
49 Spok Holdings, Inc.	0	6	1	Round	0.34	1.1	0.1	No	Yes
51 Dish Wireless	6	82	1	Round	1.75	5.5	2.7	Yes	Yes

\*\*Note: Actual block width multiplied by 0.75 (1.5 block drag factor actual divided by 2.0 flat





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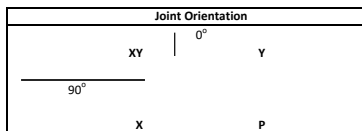
Dishes

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Site No.:	88018
Engineer:	BD
Date:	11/24/21
Carrier:	AT&T Mobility

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Staus
1	307	3	0	H	Y	
2	300	4	51.4	S	XY	
3	300	2	90	H	XY	
4	300	2	180	H	X	
5	300	2	270	H	P	
6	120	4	90	S	XY	
7	25	2	197	R	X	
8	6	4	270	S	P	
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Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
3' HP 1 @ 307'	17Y	3 ft HP Dish	0
4' STD 2 @ 300'	17XY	4 ft STD Dish	51.4
2' HP 3 @ 300'	17XY	2 ft HP Dish	90
2' HP 4 @ 300'	17X	2 ft HP Dish	180
2' HP 5 @ 300'	17P	2 ft HP Dish	270
4' STD 6 @ 120'	5XY	4 ft STD Dish	90
2' RAD 7 @ 25'	1X	2 ft RAD Dish	197
4' STD 8 @ 6'	0P	4 ft STD Dish	270







Wind Speed:	117	mph
Ice Wind Sp.	50	mph
Ice Thick.	0.5	in

FW@Base	46
Height	300
Slope	-0.1233333
Apex	372.972973

$\phi$ :	0.85
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Service Loads?	N
Seismic Loads?	N

Site No.:	88018
Engineer:	BD
Date:	44524
Carrier:	AT&T Mobility

Load Case Description	Dead Load Factor	Wind Load Factor	Strength Factor	Load Case Type	Basic Wind	Wind Dir. (deg)	Mean Wind Start El.	Mean Wind Stop El.	Ice Thick.	Ice Density	Temp.	Point Loads
					Speed*							
W 0	1.2	1	1	Regular	116.898395	0			0	56	50	
W 180	1.2	1	1	Regular	116.898395	180			0	56	50	
W 45	1.2	1	1	Regular	116.898395	45			0	56	50	
W -45	1.2	1	1	Regular	116.898395	-45			0	56	50	
W 90	1.2	1	1	Regular	116.898395	90			0	56	50	
W -90	1.2	1	1	Regular	116.898395	-90			0	56	50	

W 0 Ice	1.2	1	1	Regular	49.9565789	0			0.5	56	10	
W 180 Ice	1.2	1	1	Regular	49.9565789	180			0.5	56	10	
W 45 Ice	1.2	1	1	Regular	49.9565789	45			0.5	56	10	
W -45 Ice	1.2	1	1	Regular	49.9565789	-45			0.5	56	10	
W 90 Ice	1.2	1	1	Regular	49.9565789	90			0.5	56	10	
W -90 Ice	1.2	1	1	Regular	49.9565789	-90			0.5	56	10	

## Foundation

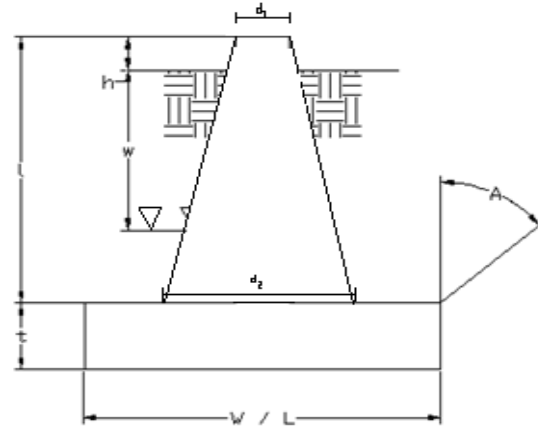
### Design Loads (Factored)

Compression/Leg:	452.00	k
Uplift/Leg:	318.50	k
Shear/Leg:	62.69	k

Face Width @ Top of Pier ( $d_1$ ):	4.00	ft
Face Width @ Bottom of Pier ( $d_2$ ):	8.00	ft
Total Length of Pier (l):	8.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	18.00	ft
Length of Pad (L):	18.00	ft
Thickness of Pad (t):	3.00	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	100.0	pcf
Unit Weight of Soil (Below Water Table):	37.6	pcf
Friction Angle of Uplift (A):	20	°
Ultimate Compressive Bearing Pressure:	40000	psf
Ultimate Skin Friction:	197	psf

Volume Pier (Total):	298.67	ft <sup>3</sup>
Volume Pad (Total):	972.00	ft <sup>3</sup>
Volume Soil (Total):	2935.41	ft <sup>3</sup>
Volume Pier (Buoyant):	0.00	ft <sup>3</sup>
Volume Pad (Buoyant):	0.00	ft <sup>3</sup>
Volume Soil (Buoyant):	0.00	ft <sup>3</sup>
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	293.54	k
Uplift Skin Friction:	31.91	k

Site No.:	88018
Engineer:	BD
Date:	11/24/21
Carrier:	AT&T Mobility



### Uplift Check

$\phi_s$ Uplift Resistance (k)	Ratio	Result
387.04	0.82	<b>OK</b>

### Axial Check

$\phi_s$ Axial Resistance (k)	Ratio	Result
9720.00	0.05	<b>OK</b>

### Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.48	<b>OK</b>