



Tower Engineering Solutions, LLC
1320 Greenway Drive, Suite 600, Irving, Texas 75038
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Structural Analysis Report

Structure Information Tower Type Existing 250 ft Cellxion Self Supporting Tower

Customer Information Name SBA Communications Corp
Site Number FL10961-A
Site Name Bass

Carrier Information Name Verizon
Site ID / Name 5000965682 / BIRLEY AVE
App # 267379, v1

Site Information Address: 4741 Sw Birley Avenue
Lake City, Florida 32024, Columbia County
Latitude: 30.126085°
Longitude: -82.732994°

Analysis Result:

Max Structural Usage: **84.4% [Pass]**

Max Foundation Usage: **80.0% [Pass]**

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Cesar Rojas

Jarryd
Tibbetts Digitally signed
by Jarryd Tibbetts
Date: 2024.11.21
15:58:38 -06'00'



11/21/2024

TOWER ENGINEERING
SOLUTIONS, LLC
1320 Greenway Drive Ste 600
Irving, TX 75038
CA# 30690

This item has been digitally signed and sealed by Jarryd Tibbetts on the date adjacent to the seal.

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

Introduction

The purpose of this report is to summarize the analysis results on the 250 ft Cellxion Self Supporting Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Document Type	Remarks
Tower Drawings	CellXion, Dwg # TNXPO2122, dated 4/27/05
Foundation Drawing	CellXion, Dwg # TNXPO2122, dated 4/27/05
Geotechnical Report	Terracon, Project # 49048313G, dated 3/18/05
Modification Drawings	N/A
Mount Analysis	TES Project #: 10264108, dated 11/10/2024

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using TES Towers, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Codes and Standards	ANSI/TIA-222-H / 2021 IBC / Florida Building Code, 8th Edition (2023)	
Wind Parameters	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} :	119.0 mph
	Ice Wind Speed (3-sec. Gust):	0.0
	Design Ice Thickness:	No Ice
	Service Load Wind Speed:	60 mph + 0" Radial ice
	Exposure Category:	C
	Risk Category:	II
	Ground Elevation Factor (K_e):	0.996
Topographic Parameters	Method:	Method 1
	Feature Type:	Flat
	Crest Height (H):	0 ft
	Length of Feature (L):	0.0 ft
	Distance to crest (x):	0.0 ft
Seismic Parameters:	S_s	0.12 g
	S_1	0.058 g

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	244.0	3	Ericsson 840590966 - Panel	(3) Sector Frame (Site Pro1 VFA12HD)	(1) 0.275" DC Power (1) 0.315" DC Power (2) 1.996" Hybrid (2) 55 mm Fiber	T-Mobile*
2		3	Ericsson AIR 6419 B41 - Panel			
3		3	Ericsson 4460 B25 + B66 RRU			
4		3	Ericsson 4480 B71 + B85 RRU			
5		1	Commscope (Andrew) VHLP3-11W/A - Dish			
6		2	Ceragon IP20D-HP - ODU			
7	228.0	3	Andrew - DBXNH-8585B-R2M - Panel	(3) Sector Frame (Sabre C10857007C)	(18) 1 5/8" (3) 3/8" Fiber (3) 3/8" RET (6) 7/8" DC	AT&T
8		9	Commscope - SBNHH-1D85B - Panel			
9		9	Andrew - E15Z01P13 - TMA/TTA			
10		6	Ericsson - RRUS 11- RRU			
11		3	Ericsson - RRUS 32 - RRU			
12		3	Ericsson - RRUS 4478 B5 - RRU			
13		2	Ericsson - RRUS 4478 B14 - RRU			
14		3	Ericsson - RRUS 4426 B66 - RRU			
15		3	Ericsson - RRUS A2 - RRU			
16		2	Raycap - DC6-48-60-18-8F - COVP			
17		4	Raycap - DC2-48-60-0-9E - COVP			
18		1	Raycap - DC6-48-60-18-8C - COVP			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
19	200.0	10	Ericsson AIR6419 - Panel	(3) Sector Frames- SitePro1 VFA10-HD-S w/ (1) SitePro1 MSFAA (12) SitePro1 P296 (1) SitePro1 P272	(12) 1 5/8" Hybrid	Verizon
20		10	JMA Wireless MX06FHG865-HG - Panel			
21		12	Commscope CBC426T-DS-43 - Diplexer			
22		8	Ericsson 4490 - RRU			
23		8	Ericsson 4890 - RRU			
24		6	RCMDC-6627-PF-48 - OVP			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

Tower Component	Utilization %	Pass / Fail
Max Leg	71.1%	Pass
Max Diagonal	84.4%	Pass
Max Horizontal	7.7%	Pass
Structure Rating – (Controlling Utilization of all Components)		84.4%

Foundations

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	586.1	501.2	51.4

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Service Load Condition (Rigidity)

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
244.0	Commscope (Andrew) VHLP3-11W/A - Dish	T-Mobile	0.007	0.288

It is recommended that the carriers review the twist and sway values of the microwave dishes.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a comprehensive structural analysis.

Structure: FL10961-A-SBA

Site Name: Bass **Code:** TIA-222-H 11/21/2024
Type: Self Support **Base Shape:** Triangle **Basic WS:** 119.00
Height: 250.00 (ft) **Base Width:** 24.30 **Basic Ice WS:** 0.00
Base Elev: 0.00 (ft) **Top Width:** 4.50 **Operational WS:** 60.00 Page: 1



Section Properties

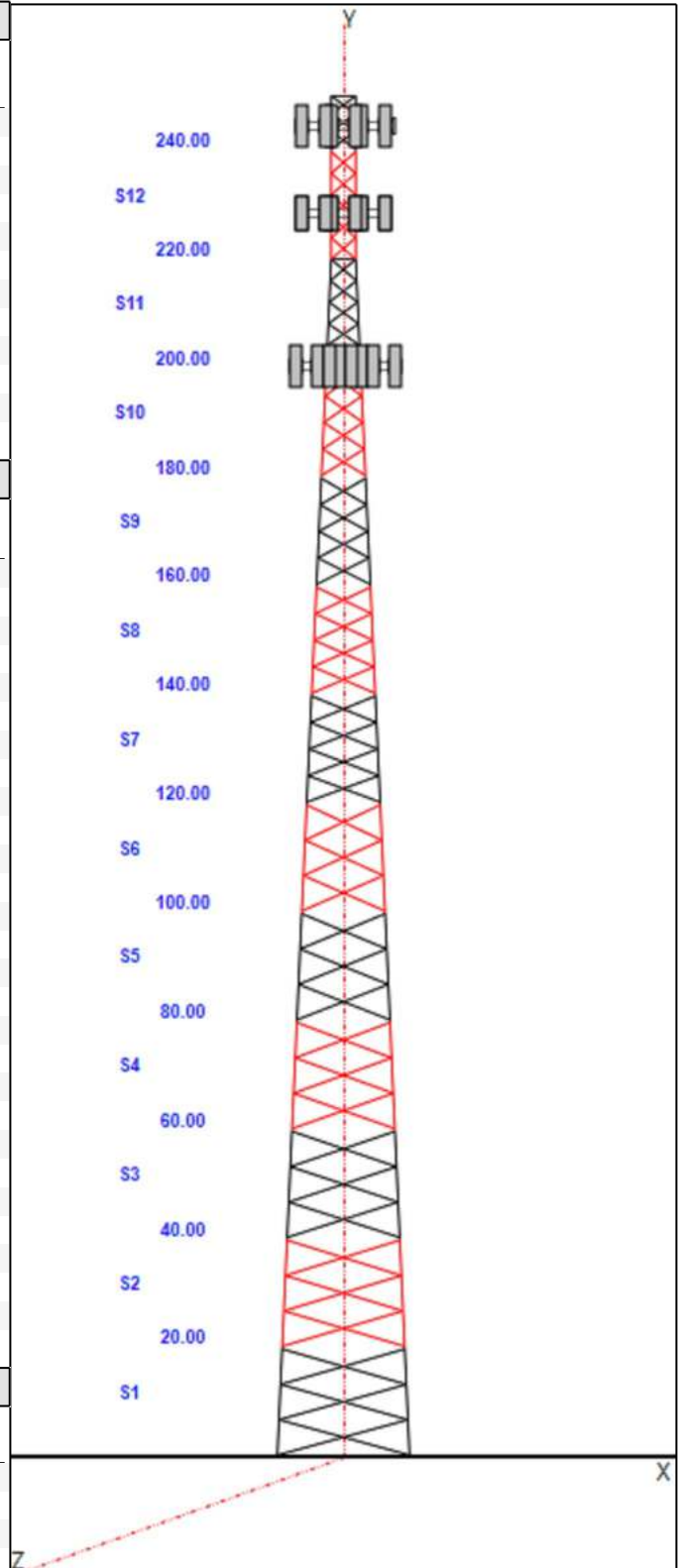
Sect	Leg Members	Diagonal Members	Horizontal Members
1	SOL 5 1/2" SOLID	SAE 4X4X0.375	
2-3	SOL 5 1/4" SOLID	SAE 4X4X0.25	
4	SOL 5" SOLID	SAE 3.5X3.5X0.25	
5	SOL 4 3/4" SOLID	SAE 3.5X3.5X0.25	
6	SOL 4 1/2" SOLID	SAE 3X3X0.25	
7	SOL 4 1/4" SOLID	SAE 3X3X0.1875	
8	SOL 4" SOLID	SAE 2.5X2.5X0.25	
9	SOL 3 3/4" SOLID	SAE 2.5X2.5X0.1875	
10	SOL 3 1/4" SOLID	SAE 2.5X2.5X0.1875	
11	SOL 2 3/4" SOLID	SAE 2.5X2.5X0.1875	SAE 2.5X2.5X0.1875
12	SOL 2 1/4" SOLID	SAE 2.5X2.5X0.1875	
13	SOL 1 3/4" SOLID	SAE 2X2X0.1875	SAE 2X2X0.1875

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
250.00	250.00	1	Beacon
244.00	244.00	3	Sector Frame Site Pro1 VFA12HD
244.00	244.00	3	Ericsson 840590966
244.00	244.00	3	Ericsson AIR 6419 B41
244.00	244.00	3	Ericsson 4460 B25 + B66
244.00	244.00	3	Ericsson 4480 B71 + B85
244.00	244.00	1	Commscope (Andrew) VHLP3-11W/A
244.00	244.00	2	Ceragon IP20D-HP
228.00	228.00	6	Ericsson - RRUS 11- RRU
228.00	228.00	9	SBNHH-1D85B
228.00	228.00	9	E15Z01P13
228.00	228.00	3	Ericsson - RRUS 32 - RRU
228.00	228.00	3	Ericsson - RRUS A2 - RRU
228.00	228.00	2	Raycap - DC6-48-60-18-8F - COVP
228.00	228.00	4	Raycap - DC2-48-60-0-9E - COVP
228.00	228.00	3	DBXNH-8585B-R2M
228.00	228.00	1	Raycap - DC6-48-60-18-8C - COVP
228.00	228.00	3	Ericsson - RRUS 4478 B5 - RRU
228.00	228.00	2	Ericsson - RRUS 4478 B14 - RRU
228.00	228.00	3	Ericsson - RRUS 4426 B66 - RRU
228.00	228.00	3	Sector Frame Sabre C10857007C
200.00	200.00	10	Ericsson AIR6419
200.00	200.00	10	JMA Wireless MX06FHG865-HG
200.00	200.00	1	(3) SitePro1 VFA10-HD-S w/pipes
200.00	200.00	12	Commscope CBC426T-DS-43
200.00	200.00	8	Ericsson 4490
200.00	200.00	8	Ericsson 4890
200.00	200.00	6	RCMDC-6627-PF-48

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	250.00	1	Climbing Ladder
0.00	250.00	1	Safety Cable
0.00	244.00	1	0.275" DC
0.00	244.00	1	0.315" DC Power
0.00	244.00	2	1.996" Hybrid
0.00	244.00	2	55 mm Fiber



Structure: FL10961-A-SBA

Site Name: Bass	Code: TIA-222-H	11/21/2024
Type: Self Support	Base Shape: Triangle	Basic WS: 119.00
Height: 250.00 (ft)	Base Width: 24.30	Basic Ice WS: 0.00
Base Elev: 0.00 (ft)	Top Width: 4.50	Operational WS: 60.00



Page: 2

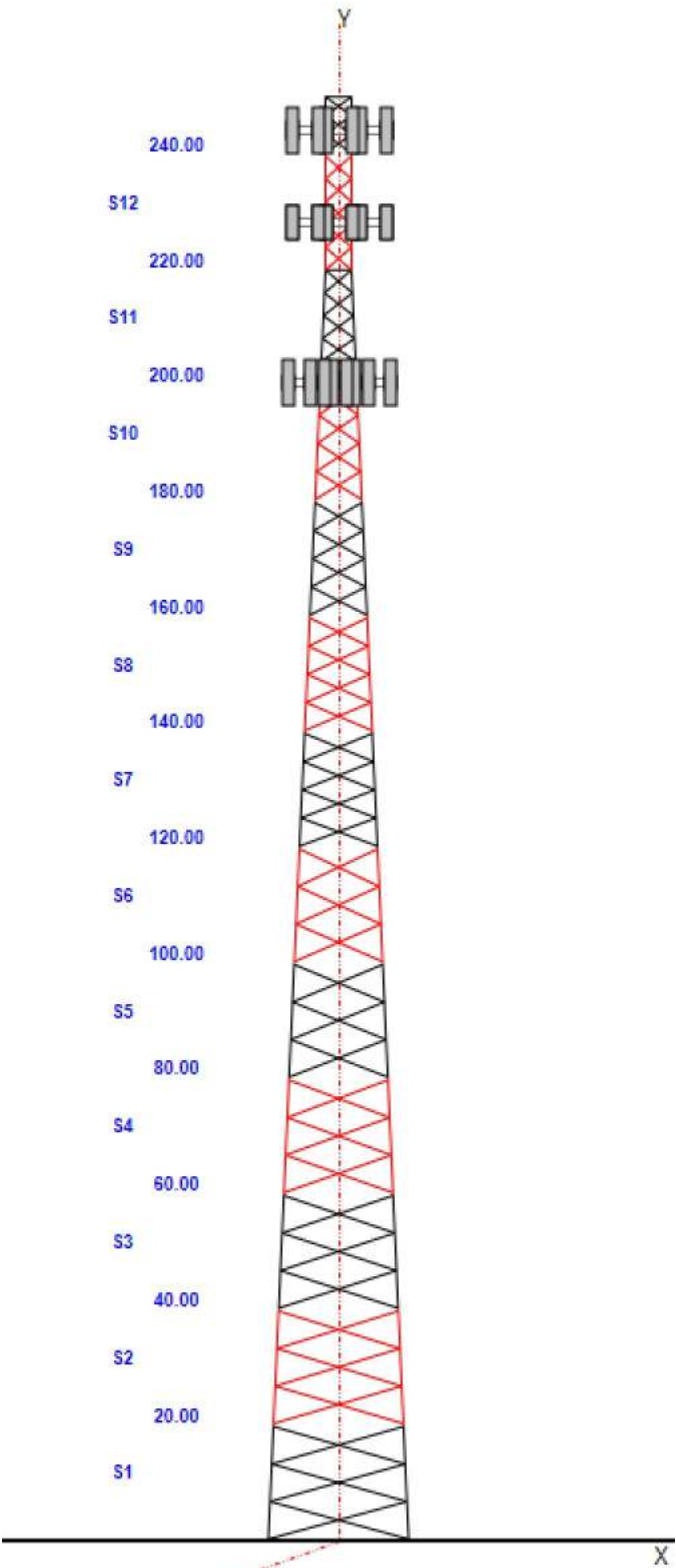
0.00	244.00	1	W/G Ladder
0.00	228.00	18	1 5/8" Coax
0.00	228.00	3	3/8" Fiber
0.00	228.00	3	3/8" RET
0.00	228.00	6	7/8" DC
0.00	228.00	1	W/G Ladder
0.00	200.00	12	1 5/8" Hybrid

Base Reactions

Leg	Overturning
Max Uplift: -501.22 (kips)	Moment: 11659.93 (ft-kips)
Max Down: 586.14 (kips)	Total Down: 96.37 (kips)
Max Shear: 51.45 (kips)	Total Shear: 85.66 (kips)

Structure: FL10961-A-SBA

Site Name:	Bass	Code:	TIA-222-H	11/21/2024
Type:	Self Support	Base Shape:	Triangle	Basic WS: 119.00
Height:	250.00 (ft)	Base Width:	24.30	Basic Ice WS: 0.00
Base Elev:	0.00 (ft)	Top Width:	4.50	Operational WS: 60.00
				Page: 3

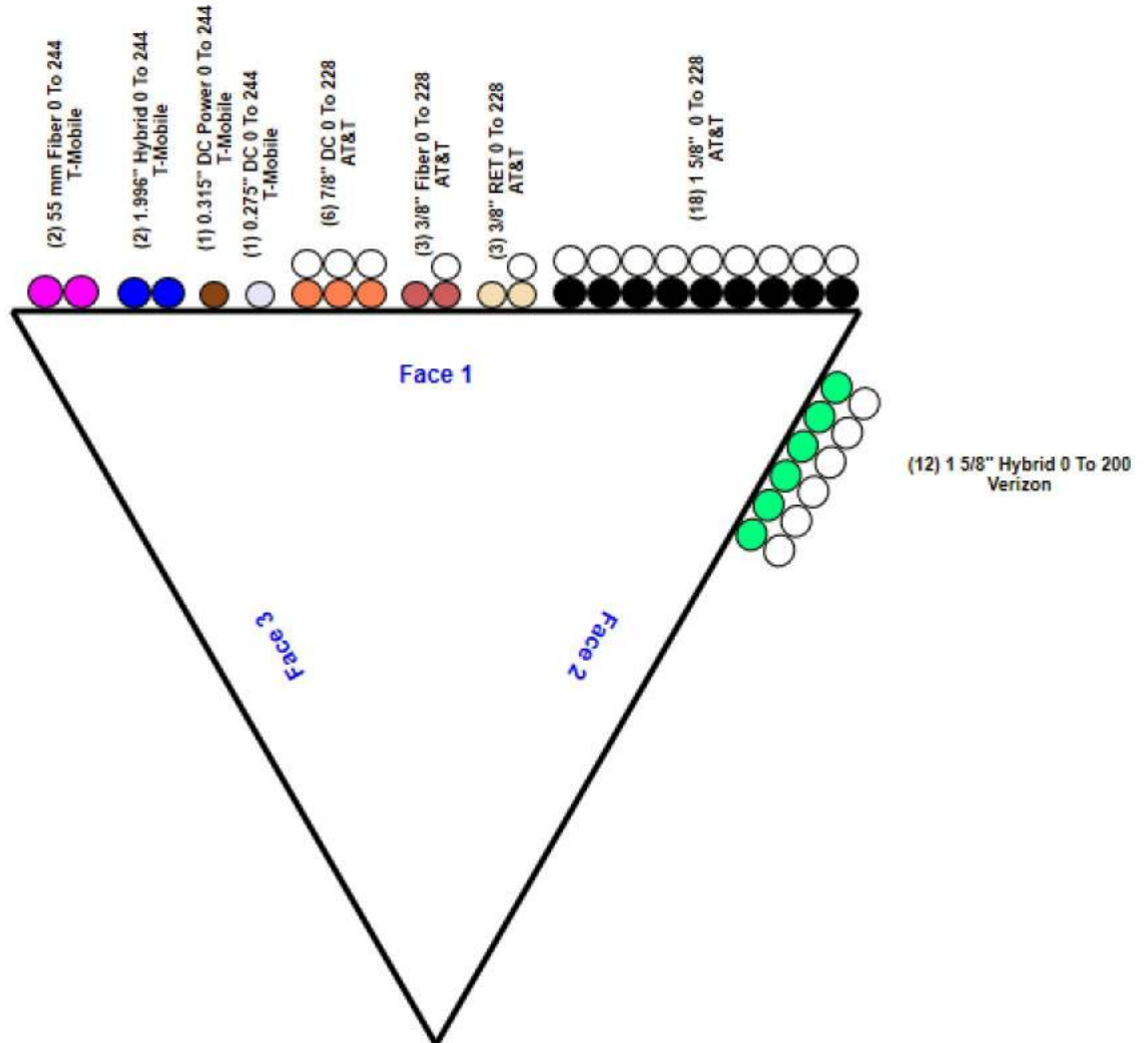


Structure: FL10961-A-SBA - Coax Line Placement

Type: Self Support
Site Name: Bass
Height: 250.00 (ft)

11/21/2024

Page: 4



Loading Summary

Structure: FL10961-A-SBA	Code: TIA-222-H	11/21/2024
Site Name: Bass	Exposure: C	
Height: 250.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



Page: 5

Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice					Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)	Len (in)	Width (in)	Depth (in)			
250.00	Beacon	1	36.00	2.720	75.00	3.000	28.000	17.500	17.500	1.00	1.00	0.000
244.00	Sector Frame Site Pro1 VFA12HD	3	630.79	18.900	900.00	20.925	0.000	0.000	0.000	0.75	0.75	0.000
244.00	Ericsson 840590966	3	101.40	19.880	0.00	0.000	95.900	23.500	7.100	0.80	0.70	0.000
244.00	Ericsson AIR 6419 B41	3	68.50	5.750	0.00	0.000	34.500	20.000	8.000	0.80	0.71	0.000
244.00	Ericsson 4460 B25 + B66	3	104.00	2.140	0.00	0.000	15.100	17.000	11.900	0.80	0.67	0.000
244.00	Ericsson 4480 B71 + B85	3	93.00	2.420	0.00	0.000	19.200	15.100	7.500	0.80	0.67	0.000
244.00	Commscope (Andrew)	1	110.00	8.920	159.48	9.420	36.000	36.000	0.000	1.00	1.00	0.000
244.00	Ceragon IP20D-HP	2	26.50	2.140	0.00	0.000	12.500	11.200	4.210	0.80	0.50	0.000
228.00	Ericsson - RRUS 11- RRU	6	50.60	2.520	0.00	0.000	19.700	17.000	7.200	0.80	0.67	0.000
228.00	SBNHH-1D85B	9	41.90	8.080	0.00	0.000	72.000	11.900	7.100	0.80	0.83	0.000
228.00	E15Z01P13	9	22.00	0.910	0.00	0.000	13.000	7.200	5.500	0.80	0.67	0.000
228.00	Ericsson - RRUS 32 - RRU	3	53.00	2.740	0.00	0.000	27.200	12.100	7.000	0.80	0.67	0.000
228.00	Ericsson - RRUS A2 - RRU	3	21.20	1.860	0.00	0.000	16.400	15.200	3.400	0.80	0.67	0.000
228.00	Raycap - DC6-48-60-18-8F - COVP	2	32.80	0.920	0.00	0.000	24.000	11.000	18.500	0.90	0.75	0.000
228.00	Raycap - DC2-48-60-0-9E - COVP	4	16.00	1.020	0.00	0.000	10.400	10.750	6.300	0.80	0.67	0.000
228.00	DBXNH-8585B-R2M	3	46.20	8.230	0.00	0.000	73.200	11.900	7.100	0.80	0.80	0.000
228.00	Raycap - DC6-48-60-18-8C - COVP	1	16.00	1.260	0.00	0.000	20.100	18.200	6.400	1.00	1.00	0.000
228.00	Ericsson - RRUS 4478 B5 - RRU	3	59.90	1.840	0.00	0.000	16.500	13.400	7.700	0.80	0.67	0.000
228.00	Ericsson - RRUS 4478 B14 - RRU	2	59.40	1.650	0.00	0.000	18.100	13.400	8.260	0.90	0.75	0.000
228.00	Ericsson - RRUS 4426 B66 - RRU	3	48.40	1.650	0.00	0.000	14.900	13.200	5.800	0.80	0.67	0.000
228.00	Sector Frame Sabre C10857007C	3	482.00	18.500	700.00	21.500	0.000	0.000	0.000	0.75	0.75	0.000
200.00	Ericsson AIR6419	10	66.10	3.800	0.00	0.000	28.300	16.100	7.900	0.80	0.76	0.000
200.00	JMA Wireless MX06FHG865-HG	10	50.00	11.610	0.00	0.000	95.900	12.200	10.700	0.80	0.95	0.000
200.00	(3) SitePro1 VFA10-HD-S w/pipes	1	2007.0	49.050	2304.00	60.000	0.000	0.000	0.000	0.75	1.00	0.000
200.00	Commscope CBC426T-DS-43	12	7.90	0.320	0.00	0.000	4.600	8.300	3.300	0.80	0.00	0.000
200.00	Ericsson 4490	8	55.00	2.940	0.00	0.000	17.800	17.000	7.200	0.80	0.67	0.000
200.00	Ericsson 4890	8	69.50	2.700	0.00	0.000	20.600	15.700	7.200	0.80	0.67	0.000
200.00	RCMDC-6627-PF-48	6	32.00	4.060	0.00	0.000	29.500	16.500	12.600	0.80	0.67	0.000
Totals:		125	10,918.07		7,338.48		Number of Appurtenances :					28

Loading Summary

Structure: FL10961-A-SBA	Code: TIA-222-H	11/21/2024
Site Name: Bass	Exposure: C	
Height: 250.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II



Page: 6

Linear Appurtenances 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	250.00	Climbing Ladder	1	3.00	6.90	100.00	3	Individual NR		N	1.00	1.00	
0.00	250.00	Safety Cable	1	0.38	0.27	100.00	3	Individual NR		N	1.00	1.00	
0.00	244.00	0.275" DC	1	0.27	0.30	100.00	1	Individual NR		N	1.00	1.00	
0.00	244.00	0.315" DC Power	1	0.32	0.03	100.00	1	Individual NR		N	1.00	1.00	
0.00	244.00	1.996" Hybrid	2	1.99	1.99	100.00	1	Individual NR		N	1.00	1.00	
0.00	244.00	55 mm Fiber	2	2.16	0.50	100.00	1	Individual NR		N	1.00	1.00	
0.00	244.00	W/G Ladder	1	3.00	6.00	100.00	1	Individual NR		N	1.00	1.00	
0.00	228.00	1 5/8" Coax	18	1.98	1.04	50.00	1	Block		N	0.50	1.00	
0.00	228.00	3/8" Fiber	3	0.38	0.06	50.00	1	Block		N	1.00	1.00	
0.00	228.00	3/8" RET	3	0.44	0.08	50.00	1	Block		N	1.00	1.00	
0.00	228.00	7/8" DC	6	0.88	0.65	50.00	1	Block		N	1.00	1.00	
0.00	228.00	W/G Ladder	1	2.00	6.00	100.00	1	Individual NR		N	1.00	1.00	
0.00	200.00	1 5/8" Hybrid	12	1.98	1.04	50.00	2	Block		N	0.50	1.00	

Section Forces

Structure: FL10961-A-SBA

Code: EIA_H

11/21/2024

Site Name: Bass

Exposure: C

Height: 250.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 0.85

Topography: 1

Struct Class: II

Page: 7



Wind Loads

Wind Load Factor: 1.00
Dead Load Factor: 1.20
Ice Dead Load Factor: 0.00

Wind Importance Factor: 1.00

Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	26.09	47.659	18.36	0.00	0.14	2.81	1.00	1.00	0.00	57.25	102.00	0.00	12,364.	0.0	3574.21	2011.70	5,585.90
								0.85	1.00	0.00	50.10	102.00	0.00	12,364.	0.0	3127.88	2011.70	5,139.58
								0.80	1.00	0.00	47.72	102.00	0.00	12,364.	0.0	2979.11	2011.70	4,990.81
2	30.0	30.15	44.239	17.52	0.00	0.14	2.81	1.00	1.00	0.00	53.31	102.00	0.00	9,920.9	0.0	3836.89	2324.70	6,161.59
								0.85	1.00	0.00	46.67	102.00	0.00	9,920.9	0.0	3359.28	2324.70	5,683.99
								0.80	1.00	0.00	44.46	102.00	0.00	9,920.9	0.0	3200.08	2324.70	5,524.78
3	50.0	33.58	40.806	17.52	0.00	0.14	2.79	1.00	1.00	0.00	49.70	102.00	0.00	9,676.2	0.0	3962.04	2588.64	6,550.68
								0.85	1.00	0.00	43.58	102.00	0.00	9,676.2	0.0	3474.07	2588.64	6,062.71
								0.80	1.00	0.00	41.54	102.00	0.00	9,676.2	0.0	3311.41	2588.64	5,900.06
4	70.0	36.04	32.764	16.69	0.00	0.13	2.83	1.00	1.00	0.00	41.24	102.00	0.00	8,609.1	0.0	3575.87	2778.66	6,354.53
								0.85	1.00	0.00	36.33	102.00	0.00	8,609.1	0.0	3149.73	2778.66	5,928.40
								0.80	1.00	0.00	34.69	102.00	0.00	8,609.1	0.0	3007.69	2778.66	5,786.35
5	90.0	38.00	29.858	15.85	0.00	0.14	2.82	1.00	1.00	0.00	38.01	102.00	0.00	7,929.0	0.0	3458.40	2929.64	6,388.03
								0.85	1.00	0.00	33.53	102.00	0.00	7,929.0	0.0	3050.85	2929.64	5,980.49
								0.80	1.00	0.00	32.03	102.00	0.00	7,929.0	0.0	2915.00	2929.64	5,844.64
6	110.0	39.64	23.141	15.02	0.00	0.13	2.85	1.00	1.00	0.00	30.93	102.00	0.00	6,968.9	0.0	2970.35	3056.06	6,026.41
								0.85	1.00	0.00	27.46	102.00	0.00	6,968.9	0.0	2637.05	3056.06	5,693.11
								0.80	1.00	0.00	26.31	102.00	0.00	6,968.9	0.0	2525.95	3056.06	5,582.01
7	130.0	41.06	26.314	14.19	0.00	0.16	2.75	1.00	1.00	0.00	33.86	102.00	0.00	6,318.3	0.0	3247.86	3165.45	6,413.30
								0.85	1.00	0.00	29.91	102.00	0.00	6,318.3	0.0	2869.26	3165.45	6,034.71
								0.80	1.00	0.00	28.60	102.00	0.00	6,318.3	0.0	2743.07	3165.45	5,908.51
8	150.0	42.31	19.196	13.35	0.00	0.15	2.79	1.00	1.00	0.00	26.38	102.00	0.00	5,876.8	0.0	2643.41	3262.26	5,905.68
								0.85	1.00	0.00	23.50	102.00	0.00	5,876.8	0.0	2354.91	3262.26	5,617.18
								0.80	1.00	0.00	22.54	102.00	0.00	5,876.8	0.0	2258.75	3262.26	5,521.01
9	170.0	43.44	16.544	12.52	0.00	0.16	2.75	1.00	1.00	0.00	23.41	102.00	0.00	5,009.2	0.0	2377.21	3349.37	5,726.58
								0.85	1.00	0.00	20.93	102.00	0.00	5,009.2	0.0	2125.25	3349.37	5,474.62
								0.80	1.00	0.00	20.10	102.00	0.00	5,009.2	0.0	2041.27	3349.37	5,390.63
10	190.0	44.47	14.050	10.85	0.00	0.17	2.71	1.00	1.00	0.00	20.23	102.00	0.00	4,199.1	0.0	2073.16	3428.72	5,501.88
								0.85	1.00	0.00	18.12	102.00	0.00	4,199.1	0.0	1857.16	3428.72	5,285.88
								0.80	1.00	0.00	17.42	102.00	0.00	4,199.1	0.0	1785.15	3428.72	5,213.87
11	210.0	45.42	14.349	9.18	0.00	0.21	2.57	1.00	1.00	0.00	19.64	78.03	0.00	3,341.2	0.0	1945.71	2668.96	4,614.67
								0.85	1.00	0.00	17.48	78.03	0.00	3,341.2	0.0	1732.44	2668.96	4,401.40
								0.80	1.00	0.00	16.77	78.03	0.00	3,341.2	0.0	1661.36	2668.96	4,330.32
12	230.0	46.30	12.075	7.50	0.00	0.21	2.57	1.00	1.00	0.00	16.40	46.47	0.00	2,312.7	0.0	1656.25	1633.96	3,290.21
								0.85	1.00	0.00	14.58	46.47	0.00	2,312.7	0.0	1473.28	1633.96	3,107.24
								0.80	1.00	0.00	13.98	46.47	0.00	2,312.7	0.0	1412.29	1633.96	3,046.25
13	245.0	46.92	6.131	2.92	0.00	0.19	2.61	1.00	1.00	0.00	7.80	6.77	0.00	744.3	0.0	813.43	261.52	1,074.94
								0.85	1.00	0.00	6.88	6.77	0.00	744.3	0.0	717.57	261.52	979.09
								0.80	1.00	0.00	6.58	6.77	0.00	744.3	0.0	685.62	261.52	947.13

Section Forces

Structure: FL10961-A-SBA

Code: EIA_H

11/21/2024

Site Name: Bass

Exposure: C

Height: 250.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 0.85

Topography: 1

Struct Class: II

Page: 8



Service Loads

Wind Load Factor: 1.00
Dead Load Factor: 1.00
Ice Dead Load Factor: 0.00

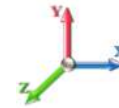
Wind Importance Factor: 1.00

Ice Importance Factor: 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	6.63	47.659	18.36	0.00	0.14	2.81	1.00	1.00	0.00	58.06	102.00	0.00	10,303.	0.0	921.47	511.41	1,432.89
								0.85	1.00	0.00	50.91	102.00	0.00	10,303.	0.0	808.01	511.41	1,319.42
								0.80	1.00	0.00	48.53	102.00	0.00	10,303.	0.0	770.19	511.41	1,281.60
2	30.0	7.67	44.239	17.52	0.00	0.14	2.81	1.00	1.00	0.00	54.17	102.00	0.00	8,267.4	0.0	991.12	590.98	1,582.11
								0.85	1.00	0.00	47.53	102.00	0.00	8,267.4	0.0	869.71	590.98	1,460.69
								0.80	1.00	0.00	45.32	102.00	0.00	8,267.4	0.0	829.23	590.98	1,420.22
3	50.0	8.54	40.806	17.52	0.00	0.14	2.79	1.00	1.00	0.00	50.74	102.00	0.00	8,063.5	0.0	1028.36	658.08	1,686.45
								0.85	1.00	0.00	44.62	102.00	0.00	8,063.5	0.0	904.31	658.08	1,562.39
								0.80	1.00	0.00	42.58	102.00	0.00	8,063.5	0.0	862.96	658.08	1,521.04
4	70.0	9.16	32.764	16.69	0.00	0.13	2.83	1.00	1.00	0.00	42.21	102.00	0.00	7,174.2	0.0	930.47	706.39	1,636.86
								0.85	1.00	0.00	37.30	102.00	0.00	7,174.2	0.0	822.14	706.39	1,528.53
								0.80	1.00	0.00	35.66	102.00	0.00	7,174.2	0.0	786.03	706.39	1,492.42
5	90.0	9.66	29.858	15.85	0.00	0.14	2.82	1.00	1.00	0.00	38.84	102.00	0.00	6,607.5	0.0	898.45	744.77	1,643.22
								0.85	1.00	0.00	34.36	102.00	0.00	6,607.5	0.0	794.84	744.77	1,539.61
								0.80	1.00	0.00	32.87	102.00	0.00	6,607.5	0.0	760.30	744.77	1,505.08
6	110.0	10.08	23.141	15.02	0.00	0.13	2.85	1.00	1.00	0.00	31.64	102.00	0.00	5,807.4	0.0	772.30	776.91	1,549.21
								0.85	1.00	0.00	28.17	102.00	0.00	5,807.4	0.0	687.57	776.91	1,464.48
								0.80	1.00	0.00	27.01	102.00	0.00	5,807.4	0.0	659.33	776.91	1,436.24
7	130.0	10.44	26.314	14.19	0.00	0.16	2.75	1.00	1.00	0.00	34.37	102.00	0.00	5,265.2	0.0	838.19	804.72	1,642.90
								0.85	1.00	0.00	30.43	102.00	0.00	5,265.2	0.0	741.94	804.72	1,546.66
								0.80	1.00	0.00	29.11	102.00	0.00	5,265.2	0.0	709.86	804.72	1,514.58
8	150.0	10.76	19.196	13.35	0.00	0.15	2.79	1.00	1.00	0.00	26.77	102.00	0.00	4,897.3	0.0	681.82	829.33	1,511.15
								0.85	1.00	0.00	23.89	102.00	0.00	4,897.3	0.0	608.48	829.33	1,437.81
								0.80	1.00	0.00	22.93	102.00	0.00	4,897.3	0.0	584.03	829.33	1,413.36
9	170.0	11.04	16.544	12.52	0.00	0.16	2.75	1.00	1.00	0.00	23.66	102.00	0.00	4,174.4	0.0	610.59	851.47	1,462.06
								0.85	1.00	0.00	21.17	102.00	0.00	4,174.4	0.0	546.53	851.47	1,398.01
								0.80	1.00	0.00	20.35	102.00	0.00	4,174.4	0.0	525.18	851.47	1,376.66
10	190.0	11.31	14.050	10.85	0.00	0.17	2.71	1.00	1.00	0.00	20.23	102.00	0.00	3,499.3	0.0	527.04	871.65	1,398.68
								0.85	1.00	0.00	18.12	102.00	0.00	3,499.3	0.0	472.13	871.65	1,343.77
								0.80	1.00	0.00	17.42	102.00	0.00	3,499.3	0.0	453.82	871.65	1,325.47
11	210.0	11.55	14.349	9.18	0.00	0.21	2.57	1.00	1.00	0.00	19.64	78.03	0.00	2,784.4	0.0	494.64	678.50	1,173.14
								0.85	1.00	0.00	17.48	78.03	0.00	2,784.4	0.0	440.42	678.50	1,118.92
								0.80	1.00	0.00	16.77	78.03	0.00	2,784.4	0.0	422.35	678.50	1,100.85
12	230.0	11.77	12.075	7.50	0.00	0.21	2.57	1.00	1.00	0.00	16.40	46.47	0.00	1,927.3	0.0	421.05	415.38	836.43
								0.85	1.00	0.00	14.58	46.47	0.00	1,927.3	0.0	374.54	415.38	789.92
								0.80	1.00	0.00	13.98	46.47	0.00	1,927.3	0.0	359.03	415.38	774.42
13	245.0	11.93	6.131	2.92	0.00	0.19	2.61	1.00	1.00	0.00	7.80	6.77	0.00	620.3	0.0	206.79	66.48	273.27
								0.85	1.00	0.00	6.88	6.77	0.00	620.3	0.0	182.42	66.48	248.90
								0.80	1.00	0.00	6.58	6.77	0.00	620.3	0.0	174.30	66.48	240.78

Force/Stress Compression Summary

Structure: FL10961-A-SBA	Code: EIA/TIA-222-H	11/21/2024	
Site Name: Bass	Exposure: C		
Height: 250.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 0.85	Topography: 1	Struct Class: II	Page: 9



LEG MEMBERS

Top Sect	Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
						X	Y	Z					
1	20	SOL - 5 1/2" SOLID	-579.06	1.2D + 1.0W 240° Wind	6.51	100	100	100	56.80	50.00	844.42	68.6	Member X
2	40	SOL - 5 1/4" SOLID	-534.91	1.2D + 1.0W 240° Wind	6.51	100	100	100	59.51	50.00	751.93	71.1	Member X
3	60	SOL - 5 1/4" SOLID	-489.41	1.2D + 1.0W 240° Wind	6.51	100	100	100	59.51	50.00	751.93	65.1	Member X
4	80	SOL - 5" SOLID	-443.61	1.2D + 1.0W 240° Wind	6.51	100	100	100	62.48	50.00	664.15	66.8	Member X
5	100	SOL - 4 3/4" SOLID	-397.95	1.2D + 1.0W 240° Wind	6.51	100	100	100	65.77	50.00	581.21	68.5	Member X
6	120	SOL - 4 1/2" SOLID	-351.90	1.2D + 1.0W 240° Wind	6.51	100	100	100	69.43	50.00	503.11	69.9	Member X
7	140	SOL - 4 1/4" SOLID	-307.32	1.2D + 1.0W 240° Wind	4.88	100	100	100	55.13	50.00	511.15	60.1	Member X
8	160	SOL - 4" SOLID	-259.79	1.2D + 1.0W 240° Wind	4.88	100	100	100	58.58	50.00	439.99	59.0	Member X
9	180	SOL - 3 3/4" SOLID	-210.09	1.2D + 1.0W 240° Wind	4.88	100	100	100	62.48	50.00	373.59	56.2	Member X
10	200	SOL - 3 1/4" SOLID	-156.09	1.2D + 1.0W 240° Wind	4.88	100	100	100	72.10	50.00	255.28	61.1	Member X
11	220	SOL - 2 3/4" SOLID	-95.09	1.2D + 1.0W 240° Wind	3.96	100	100	100	69.04	50.00	188.63	50.4	Member X
12	240	SOL - 2 1/4" SOLID	-49.06	1.2D + 1.0W 240° Wind	3.95	100	100	100	84.27	50.00	106.46	46.1	Member X
13	250	SOL - 1 3/4" SOLID	-4.45	1.2D + 1.0W 240° Wind	3.25	100	100	100	89.14	50.00	60.54	7.3	Member X

HORIZONTAL MEMBERS

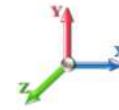
Top Sect	Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
						X	Y	Z									
1	20										0.00	0	0				
2	40										0.00	0	0				
3	60										0.00	0	0				
4	80										0.00	0	0				
5	100										0.00	0	0				
6	120										0.00	0	0				
7	140										0.00	0	0				
8	160										0.00	0	0				
9	180										0.00	0	0				
10	200										0.00	0	0				
11	220	SAE - 2.5X2.5X0.1875	-0.46	1.2D + 1.0W 300° Wind	4.50	100	100	100	109.09	36.00	20.32	1	1	27.05	18.27	2.5	Bolt Bear
12	240										0.00	0	0				
13	250	SAE - 2X2X0.1875	-0.65	1.2D + 1.0W 300° Wind	4.50	100	100	100	137.06	36.00	10.82	1	1	13.81	13.05	6.0	Member Z

DIAGONAL MEMBERS

Top Sect	Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
						X	Y	Z									
1	20	SAE - 4X4X0.375	-14.4	1.2D + 1.0W 30° Wind	23.72	48	48	48	173.41	36.00	27.22	1	1	27.05	36.5	53.5	Bolt Shear
2	40	SAE - 4X4X0.25	-13.5	0.9D + 1.0W 210° Wind	23.12	48	48	48	167.50	36.00	19.79	1	1	27.05	24.3	68.5	Member Z
3	60	SAE - 4X4X0.25	-12.8	1.2D + 1.0W 90° Wind	21.40	48	48	48	155.02	36.00	23.11	1	1	27.05	24.3	55.6	Member Z
4	80	SAE - 3.5X3.5X0.25	-11.8	1.2D + 1.0W 30° Wind	19.69	49	49	49	166.83	36.00	17.38	1	1	27.05	24.3	68.0	Member Z
5	100	SAE - 3.5X3.5X0.25	-10.9	1.2D + 1.0W 30° Wind	18.00	49	49	49	152.51	36.00	20.80	1	1	27.05	24.3	52.8	Member Z
6	120	SAE - 3X3X0.25	-10.1	1.2D + 1.0W 90° Wind	16.34	49	49	49	162.26	36.00	15.65	1	1	27.05	24.3	64.6	Member Z
7	140	SAE - 3X3X0.1875	-9.10	1.2D + 1.0W 210° Wind	14.13	49	49	49	139.37	36.00	16.06	1	1	27.05	18.2	56.6	Member Z
8	160	SAE - 2.5X2.5X0.25	-8.33	1.2D + 1.0W 30° Wind	12.45	49	49	49	149.11	36.00	15.32	1	1	27.05	24.3	54.4	Member Z
9	180	SAE - 2.5X2.5X0.1875	-7.74	1.2D + 1.0W 30° Wind	10.82	49	49	49	128.53	36.00	15.63	1	1	27.05	18.2	49.5	Member Z
10	200	SAE - 2.5X2.5X0.1875	-8.31	1.2D + 1.0W 30° Wind	8.16	49	49	49	96.94	36.00	22.88	1	1	27.05	18.2	45.5	Bolt Bear
11	220	SAE - 2.5X2.5X0.1875	-4.41	1.2D + 1.0W 90° Wind	7.27	49	49	49	86.35	36.00	24.86	1	1	27.05	18.2	24.1	Bolt Bear
12	240	SAE - 2.5X2.5X0.1875	-5.98	1.2D + 1.0W 210° Wind	5.99	49	49	49	71.13	36.00	27.31	1	1	27.05	18.2	32.8	Bolt Bear
13	250	SAE - 2X2X0.1875	-2.14	1.2D + 1.0W 30° Wind	5.55	49	49	49	82.84	36.00	20.04	1	1	13.81	13.0	16.4	Bolt Bear

Force/Stress Tension Summary

Structure: FL10961-A-SBA	Code: EIA/TIA-222-H	11/21/2024
Site Name: Bass	Exposure: C	
Height: 250.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 10



LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	SOL - 5 1/2" SOLID	503.44	0.9D + 1.0W 300° Wind	50	1069.1	47.1	Member
2	40	SOL - 5 1/4" SOLID	469.09	0.9D + 1.0W 300° Wind	50	974.16	48.2	Member
3	60	SOL - 5 1/4" SOLID	432.70	0.9D + 1.0W 180° Wind	50	974.16	44.4	Member
4	80	SOL - 5" SOLID	395.39	0.9D + 1.0W 300° Wind	50	883.58	44.7	Member
5	100	SOL - 4 3/4" SOLID	357.58	0.9D + 1.0W 180° Wind	50	797.45	44.8	Member
6	120	SOL - 4 1/2" SOLID	318.78	0.9D + 1.0W 300° Wind	50	715.68	44.5	Member
7	140	SOL - 4 1/4" SOLID	278.84	0.9D + 1.0W 300° Wind	50	638.37	43.7	Member
8	160	SOL - 4" SOLID	237.40	0.9D + 1.0W 180° Wind	50	565.47	42.0	Member
9	180	SOL - 3 3/4" SOLID	193.45	0.9D + 1.0W 300° Wind	50	497.03	38.9	Member
10	200	SOL - 3 1/4" SOLID	144.92	0.9D + 1.0W 180° Wind	50	373.32	38.8	Member
11	220	SOL - 2 3/4" SOLID	88.69	0.9D + 1.0W 300° Wind	50	267.28	33.2	Member
12	240	SOL - 2 1/4" SOLID	41.36	0.9D + 1.0W 180° Wind	50	178.92	23.1	Member
13	250	SOL - 1 3/4" SOLID	3.72	0.9D + 1.0W 180° Wind	50	108.24	3.4	Member

HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	100	-			36	0.00	0	0					
6	120	-			36	0.00	0	0					
7	140	-			36	0.00	0	0					
8	160	-			36	0.00	0	0					
9	180	-			36	0.00	0	0					
10	200	-			36	0.00	0	0					
11	220	SAE - 2.5X2.5X0.1875	0.35	0.9D + 1.0W 120° Wind	36	23.31	1	1	27.05	13.05	10.67	3.3	Blck Shear
12	240	-			36	0.00	0	0					
13	250	SAE - 2X2X0.1875	0.65	1.2D + 1.0W 120° Wind	36	18.58	1	1	13.81	9.79	8.51	7.7	Blck Shear

DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	SAE - 4X4X0.375	14.09	0.9D + 1.0W 210° Wind	36	81.07	1	1	27.05	26.10	25.42	55.4	Blck Shear
2	40	SAE - 4X4X0.25	13.38	0.9D + 1.0W 90° Wind	36	55.14	1	1	27.05	17.40	16.95	78.9	Blck Shear
3	60	SAE - 4X4X0.25	12.76	0.9D + 1.0W 90° Wind	36	55.14	1	1	27.05	17.40	16.95	75.3	Blck Shear
4	80	SAE - 3.5X3.5X0.25	11.70	0.9D + 1.0W 210° Wind	36	46.98	1	1	27.05	17.40	16.95	69.0	Blck Shear
5	100	SAE - 3.5X3.5X0.25	10.88	0.9D + 1.0W 210° Wind	36	46.98	1	1	27.05	17.40	16.95	64.2	Blck Shear
6	120	SAE - 3X3X0.25	10.02	1.2D + 1.0W 90° Wind	36	38.82	1	1	27.05	17.40	14.23	70.4	Blck Shear
7	140	SAE - 3X3X0.1875	8.99	1.2D + 1.0W 30° Wind	36	29.44	1	1	27.05	13.05	10.67	84.2	Blck Shear
8	160	SAE - 2.5X2.5X0.25	8.35	1.2D + 1.0W 30° Wind	36	30.67	1	1	27.05	17.40	12.87	64.9	Blck Shear
9	180	SAE - 2.5X2.5X0.1875	8.08	1.2D + 1.0W 30° Wind	36	23.31	1	1	27.05	13.05	9.65	83.7	Blck Shear
10	200	SAE - 2.5X2.5X0.1875	8.15	1.2D + 1.0W 90° Wind	36	23.31	1	1	27.05	13.05	9.65	84.4	Blck Shear
11	220	SAE - 2.5X2.5X0.1875	4.39	1.2D + 1.0W 30° Wind	36	23.31	1	1	27.05	13.05	9.65	45.5	Blck Shear
12	240	SAE - 2.5X2.5X0.1875	5.88	1.2D + 1.0W 30° Wind	36	23.31	1	1	27.05	13.05	9.65	60.9	Blck Shear
13	250	SAE - 2X2X0.1875	2.14	1.2D + 1.0W 210° Wind	36	18.58	1	1	13.81	9.79	7.50	28.5	Blck Shear

Seismic Section Forces

Structure: FL10961-A-SBA

Code: TIA-222-H

11/21/2024

Site Name: Bass

Exposure: C

Height: 250.00 (ft)

Crest Height: 0.00

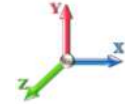
Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 0.85

Topography: 1

Struct Class: II



Page: 11

Load Case: 1.2D + 1.0Ev + 1.0Eh

Dead Load Factor	1.20	Sds	0.128	Ss	0.1200	Fa	1.6000	Ke	1.2983	TL	8.0000
Seismic Load Factor	1.00	Sd1	0.092	S1	0.0580	Fv	2.4000	Kg	0.0000	Cs	0.0300
Seismic Importance Factor	1.00	W1	35.78	R	3.0000	Vs	2.4093	T	1.0967	f1	0.9118

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	10.00	10303.	15.17	263.90
2	30.00	8267.4	47.46	211.75
3	50.00	8063.4	89.18	206.53
4	70.00	7174.2	118.61	183.75
5	90.00	6607.5	147.71	169.24
6	110.00	5807.4	162.10	148.74
7	130.00	5265.2	177.30	134.86
8	150.00	4897.3	194.34	125.43
9	170.00	4174.3	185.81	106.92
10	190.00	7950.0	495.49	203.62
11	210.00	2784.3	144.51	71.32
12	230.00	5202.4	366.15	133.25
13	245.00	3812.3	265.45	97.64

Load Case: 0.9D + 1.0Ev + 1.0Eh

Dead Load Factor	0.90	Sds	0.128	Ss	0.1200	Fa	1.6000	Ke	1.2983	TL	8.0000
Seismic Load Factor	1.00	Sd1	0.092	S1	0.0580	Fv	2.4000	Kg	0.0000	Cs	0.0300
Seismic Importance Factor	1.00	W1	35.78	R	3.0000	Vs	2.4093	T	1.0967	f1	0.9118

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	10.00	10303.	15.17	263.90
2	30.00	8267.4	47.46	211.75
3	50.00	8063.4	89.18	206.53
4	70.00	7174.2	118.61	183.75
5	90.00	6607.5	147.71	169.24
6	110.00	5807.4	162.10	148.74
7	130.00	5265.2	177.30	134.86
8	150.00	4897.3	194.34	125.43
9	170.00	4174.3	185.81	106.92
10	190.00	7950.0	495.49	203.62
11	210.00	2784.3	144.51	71.32
12	230.00	5202.4	366.15	133.25
13	245.00	3812.3	265.45	97.64

Support Forces Summary

Structure: FL10961-A-SBA

Code: TIA-222-H

11/21/2024

Site Name: Bass

Exposure: C

Height: 250.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 0.85

Topography: 1

Struct Class: II

Page: 12



Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal Wind	1	-0.02	586.12	-51.45	
	1a	17.19	-244.88	-17.09	
	1b	-17.17	-244.87	-17.12	
1.2D + 1.0W 30° Wind	1	-3.17	493.76	-42.80	
	1a	-4.75	32.12	-4.84	
	1b	-32.81	-429.51	-22.90	
1.2D + 1.0W 60° Wind	1	-5.44	295.16	-25.09	
	1a	-24.45	295.16	7.84	
	1b	-39.44	-493.94	-22.77	
1.2D + 1.0W 90° Wind	1	-6.56	32.12	-1.70	
	1a	-38.65	493.76	18.66	
	1b	-36.24	-429.51	-16.97	
1.2D + 1.0W 120° Wind	1	-6.20	-244.88	23.43	
	1a	-44.56	586.12	25.71	
	1b	-23.42	-244.87	-6.31	
1.2D + 1.0W 150° Wind	1	-3.40	-429.52	39.86	
	1a	-35.50	493.76	24.12	
	1b	-1.83	32.14	6.56	
1.2D + 1.0W 180° Wind	1	0.02	-493.96	45.54	
	1a	-19.02	295.16	17.24	
	1b	19.00	295.17	17.27	
1.2D + 1.0W 210° Wind	1	3.43	-429.52	39.86	
	1a	1.82	32.12	6.53	
	1b	35.48	493.78	24.14	
1.2D + 1.0W 240° Wind	1	6.22	-244.88	23.43	
	1a	23.41	-244.89	-6.33	
	1b	44.55	586.14	25.73	
1.2D + 1.0W 270° Wind	1	6.56	32.12	-1.70	
	1a	36.24	-429.53	-16.97	
	1b	38.65	493.78	18.66	
1.2D + 1.0W 300° Wind	1	5.42	295.16	-25.09	
	1a	39.45	-493.96	-22.76	
	1b	24.46	295.18	7.82	
1.2D + 1.0W 330° Wind	1	3.14	493.76	-42.80	
	1a	32.82	-429.52	-22.87	
	1b	4.77	32.14	-4.86	
0.9D + 1.0W Normal Wind	1	-0.02	577.29	-51.00	
	1a	17.55	-252.51	-17.31	
	1b	-17.53	-252.50	-17.34	
0.9D + 1.0W 30° Wind	1	-3.17	485.06	-42.36	
	1a	-4.39	24.09	-5.06	
	1b	-33.17	-436.87	-23.12	

0.9D + 1.0W 60° Wind	1	-5.45	286.74	-24.66
	1a	-24.08	286.75	7.61
	1b	-39.80	-501.21	-22.98
0.9D + 1.0W 90° Wind	1	-6.57	24.09	-1.26
	1a	-38.27	485.06	18.43
	1b	-36.61	-436.87	-17.17
0.9D + 1.0W 120° Wind	1	-6.22	-252.51	23.86
	1a	-44.18	577.30	25.49
	1b	-23.79	-252.50	-6.52
0.9D + 1.0W 150° Wind	1	-3.40	-436.88	40.28
	1a	-35.11	485.06	23.90
	1b	-2.21	24.10	6.35
0.9D + 1.0W 180° Wind	1	0.02	-501.22	45.96
	1a	-18.63	286.74	17.03
	1b	18.61	286.76	17.06
0.9D + 1.0W 210° Wind	1	3.43	-436.88	40.28
	1a	2.20	24.09	6.33
	1b	35.10	485.07	23.93
0.9D + 1.0W 240° Wind	1	6.23	-252.51	23.86
	1a	23.78	-252.52	-6.53
	1b	44.17	577.31	25.50
0.9D + 1.0W 270° Wind	1	6.57	24.09	-1.26
	1a	36.61	-436.89	-17.17
	1b	38.27	485.07	18.44
0.9D + 1.0W 300° Wind	1	5.43	286.74	-24.66
	1a	39.81	-501.22	-22.96
	1b	24.09	286.76	7.60
0.9D + 1.0W 330° Wind	1	3.14	485.06	-42.36
	1a	33.18	-436.89	-23.09
	1b	4.40	24.11	-5.09
1.0D + 1.0W Normal Wind	1	0.00	167.85	-14.21
	1a	3.52	-43.78	-3.84
	1b	-3.51	-43.76	-3.85
1.0D + 1.0W 30° Wind	1	-0.84	144.19	-11.97
	1a	-2.09	26.77	-0.74
	1b	-7.48	-90.65	-5.31
1.0D + 1.0W 60° Wind	1	-1.42	93.68	-7.42
	1a	-7.14	93.68	2.48
	1b	-9.15	-107.04	-5.28
1.0D + 1.0W 90° Wind	1	-1.69	26.76	-1.44
	1a	-10.79	144.19	5.26
	1b	-8.34	-90.65	-3.83
1.0D + 1.0W 120° Wind	1	-1.57	-43.78	4.97
	1a	-12.31	167.85	7.10
	1b	-5.09	-43.76	-1.12
1.0D + 1.0W 150° Wind	1	-0.85	-90.81	9.14
	1a	-9.96	144.34	6.71
	1b	0.39	26.78	2.18
1.0D + 1.0W 180° Wind	1	0.00	-107.23	10.58
	1a	-5.72	93.76	4.94
	1b	5.72	93.78	4.95
1.0D + 1.0W 210° Wind	1	0.85	-90.66	9.13
	1a	-0.40	26.76	2.18
	1b	9.95	144.21	6.71

1.0D + 1.0W 240° Wind	1	1.57	-43.69	4.96
	1a	5.08	-43.69	-1.12
	1b	12.29	167.69	7.10

1.0D + 1.0W 270° Wind	1	1.69	26.76	-1.44
	1a	8.34	-90.66	-3.83
	1b	10.79	144.21	5.26

1.0D + 1.0W 300° Wind	1	1.42	93.68	-7.42
	1a	9.15	-107.06	-5.28
	1b	7.14	93.69	2.48

1.0D + 1.0W 330° Wind	1	0.83	144.34	-11.98
	1a	7.49	-90.81	-5.31
	1b	2.09	26.78	-0.75

1.2D + 1.0Ev + 1.0Eh	1	0.00	51.90	9.37
	1a	9.96	23.27	-5.87
	1b	-9.96	23.27	-5.87

0.9D + 1.0Ev + 1.0Eh	1	0.00	43.84	9.83
	1a	10.36	15.25	-6.10
	1b	-10.36	15.25	-6.10

Max Reactions

Leg			Overturning		
Max Uplift:	-501.22	(kips)	Moment:	11659.93	(ft-kips)
Max Down:	586.14	(kips)	Total Down:	96.37	(kips)
Max Shear:	51.45	(kips)	Total Shear:	85.66	(kips)

Analysis Summary

Structure: FL10961-A-SBA	Code: TIA-222-H	11/21/2024
Site Name: Bass	Exposure: C	
Height: 250.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 0.85	Topography: 1	Struct Class: II
		Page: 15



Max Reactions

Leg		Overturning	
Max Uplift:	-501.22 (kips)	Moment:	11659.93 (ft-kips)
Max Down:	586.14 (kips)	Total Down:	96.37 (kips)
Max Shear:	51.45 (kips)	Total Shear:	85.66 (kips)

Anchor Bolts

Bolt Size (in.): 2.00	Number Bolts: 6	Type: UnGrouted
Yield Strength (Ksi): 50.00	Tensile Strength (Ksi): 65.00	
	Length: 1.00	

Interaction Ratios:

Tensile: **0.686** Compression: **0.709** Shear: **0.135**

Max Usages

Max Leg: 71.1% (1.2D + 1.0W 240° Wind - Sect 2)
 Max Diag: 84.4% (1.2D + 1.0W 90° Wind - Sect 10)
 Max Horiz: 7.7% (1.2D + 1.0W 120° Wind - Sect 13)

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0Ev + 1.0Eh - Normal To Face	200.00	0.0578	-0.0007	0.0426
	227.90	0.0786	-0.0001	0.0495
	243.50	0.0924	-0.0001	0.0488
	250.00	0.0982	0.0000	0.0507
0.9D + 1.0W 119 mph Wind at 120° From Face	200.00	1.5160	-0.0283	1.1154
	227.90	2.0216	-0.0243	1.1375
	243.50	2.3383	-0.0290	1.1341
	250.00	2.4686	-0.0320	1.1740
0.9D + 1.0W 119 mph Wind at 150° From Face	200.00	1.4687	-0.0225	1.0614
	227.90	1.9608	-0.0258	1.1094
	243.50	2.2693	-0.0321	1.1138
	250.00	2.3958	-0.0366	1.1505
0.9D + 1.0W 119 mph Wind at 180° From Face	200.00	1.4525	-0.0249	1.0670
	227.90	1.9400	-0.0196	1.0967
	243.50	2.2455	-0.0279	1.0937
	250.00	2.3712	-0.0341	1.1301
0.9D + 1.0W 119 mph Wind at 210° From Face	200.00	1.4679	-0.0251	1.0635
	227.90	1.9598	-0.0130	1.1086
	243.50	2.2675	-0.0182	1.1150
	250.00	2.3952	-0.0218	1.1465
0.9D + 1.0W 119 mph Wind at 240° From Face	200.00	1.5155	-0.0190	1.1154
	227.90	2.0210	-0.0065	1.1378
	243.50	2.3372	-0.0056	1.1324
	250.00	2.4679	-0.0042	1.1690

0.9D + 1.0W 119 mph Wind at 270° From Face	200.00	1.4679	0.0243	1.0635
	227.90	1.9598	0.0130	1.1087
	243.50	2.2675	0.0182	1.1151
	250.00	2.3952	0.0218	1.1465
0.9D + 1.0W 119 mph Wind at 30° From Face	200.00	1.4678	0.0251	1.0637
	227.90	1.9596	0.0130	1.1082
	243.50	2.2673	0.0181	1.1144
	250.00	2.3948	0.0215	1.1464
0.9D + 1.0W 119 mph Wind at 300° From Face	200.00	1.4525	0.0243	1.0667
	227.90	1.9400	0.0196	1.0967
	243.50	2.2454	0.0279	1.0937
	250.00	2.3712	0.0341	1.1301
0.9D + 1.0W 119 mph Wind at 330° From Face	200.00	1.4687	0.0227	1.0617
	227.90	1.9608	0.0258	1.1094
	243.50	2.2693	0.0321	1.1138
	250.00	2.3958	0.0366	1.1505
0.9D + 1.0W 119 mph Wind at 60° From Face	200.00	1.4518	0.0151	1.0666
	227.90	1.9390	0.0018	1.0963
	243.50	2.2438	0.0044	1.0907
	250.00	2.3703	0.0058	1.1245
0.9D + 1.0W 119 mph Wind at 90° From Face	200.00	1.4678	-0.0243	1.0635
	227.90	1.9596	-0.0130	1.1083
	243.50	2.2673	-0.0180	1.1144
	250.00	2.3948	-0.0215	1.1464
0.9D + 1.0W 119 mph Wind at Normal To Face	200.00	1.5160	0.0289	1.1157
	227.90	2.0216	0.0243	1.1375
	243.50	2.3383	0.0290	1.1341
	250.00	2.4686	0.0320	1.1740
1.0D + 1.0W 60 mph Wind at 120° From Face	200.00	0.3860	-0.0070	0.2821
	227.90	0.5145	-0.0054	0.2894
	243.50	0.5950	-0.0064	0.2884
	250.00	0.6282	-0.0072	0.2981
1.0D + 1.0W 60 mph Wind at 150° From Face	200.00	0.3740	-0.0055	0.2693
	227.90	0.4991	-0.0058	0.2821
	243.50	0.5776	-0.0072	0.2832
	250.00	0.6098	-0.0087	0.2926
1.0D + 1.0W 60 mph Wind at 180° From Face	200.00	0.3699	-0.0068	0.2727
	227.90	0.4939	-0.0049	0.2787
	243.50	0.5716	-0.0062	0.2781
	250.00	0.6036	-0.0078	0.2878
1.0D + 1.0W 60 mph Wind at 210° From Face	200.00	0.3732	-0.0067	0.2694
	227.90	0.4981	-0.0033	0.2816
	243.50	0.5763	-0.0037	0.2833
	250.00	0.6087	-0.0046	0.2914
1.0D + 1.0W 60 mph Wind at 240° From Face	200.00	0.3853	-0.0048	0.2817
	227.90	0.5137	-0.0009	0.2893
	243.50	0.5941	-0.0004	0.2880
	250.00	0.6273	0.0000	0.2969
1.0D + 1.0W 60 mph Wind at 270° From Face	200.00	0.3732	0.0065	0.2694
	227.90	0.4981	0.0033	0.2816
	243.50	0.5763	0.0037	0.2833
	250.00	0.6087	0.0046	0.2914
1.0D + 1.0W 60 mph Wind at 30° From Face	200.00	0.3731	0.0067	0.2693
	227.90	0.4978	0.0033	0.2811
	243.50	0.5759	0.0037	0.2825
	250.00	0.6082	0.0046	0.2906
1.0D + 1.0W 60 mph Wind at 300° From Face	200.00	0.3693	0.0067	0.2722
	227.90	0.4931	0.0049	0.2781
	243.50	0.5707	0.0062	0.2775
	250.00	0.6026	0.0078	0.2872

1.0D + 1.0W 60 mph Wind at 330° From Face	200.00	0.3740	0.0055	0.2693
	227.90	0.4991	0.0058	0.2821
	243.50	0.5776	0.0072	0.2832
	250.00	0.6098	0.0087	0.2926
1.0D + 1.0W 60 mph Wind at 60° From Face	200.00	0.3691	0.0044	0.2721
	227.90	0.4927	0.0004	0.2777
	243.50	0.5699	0.0002	0.2762
	250.00	0.6019	0.0006	0.2852
1.0D + 1.0W 60 mph Wind at 90° From Face	200.00	0.3731	-0.0065	0.2693
	227.90	0.4978	-0.0033	0.2811
	243.50	0.5759	-0.0037	0.2825
	250.00	0.6082	-0.0046	0.2906
1.0D + 1.0W 60 mph Wind at Normal To Face	200.00	0.3860	0.0072	0.2822
	227.90	0.5145	0.0054	0.2895
	243.50	0.5950	0.0064	0.2884
	250.00	0.6282	0.0072	0.2981
1.2D + 1.0Ev + 1.0Eh - Normal To Face	200.00	0.0579	-0.0007	0.0427
	227.90	0.0788	-0.0001	0.0497
	243.50	0.0926	-0.0001	0.0490
	250.00	0.0984	0.0000	0.0509
1.2D + 1.0W 119 mph Wind at 120° From Face	200.00	1.5192	-0.0283	1.1183
	227.90	2.0262	-0.0243	1.1409
	243.50	2.3438	-0.0290	1.1374
	250.00	2.4746	-0.0321	1.1775
1.2D + 1.0W 119 mph Wind at 150° From Face	200.00	1.4718	-0.0225	1.0642
	227.90	1.9653	-0.0259	1.1127
	243.50	2.2747	-0.0322	1.1171
	250.00	2.4017	-0.0366	1.1541
1.2D + 1.0W 119 mph Wind at 180° From Face	200.00	1.4556	-0.0249	1.0701
	227.90	1.9445	-0.0197	1.0999
	243.50	2.2509	-0.0280	1.0970
	250.00	2.3770	-0.0342	1.1336
1.2D + 1.0W 119 mph Wind at 210° From Face	200.00	1.4710	-0.0251	1.0664
	227.90	1.9643	-0.0130	1.1120
	243.50	2.2730	-0.0183	1.1185
	250.00	2.4011	-0.0218	1.1501
1.2D + 1.0W 119 mph Wind at 240° From Face	200.00	1.5187	-0.0191	1.1184
	227.90	2.0257	-0.0065	1.1414
	243.50	2.3429	-0.0056	1.1359
	250.00	2.4739	-0.0042	1.1727
1.2D + 1.0W 119 mph Wind at 270° From Face	200.00	1.4710	0.0243	1.0664
	227.90	1.9643	0.0130	1.1120
	243.50	2.2730	0.0183	1.1185
	250.00	2.4011	0.0218	1.1502
1.2D + 1.0W 119 mph Wind at 30° From Face	200.00	1.4709	0.0251	1.0665
	227.90	1.9641	0.0131	1.1114
	243.50	2.2727	0.0181	1.1176
	250.00	2.4005	0.0216	1.1498
1.2D + 1.0W 119 mph Wind at 300° From Face	200.00	1.4556	0.0243	1.0698
	227.90	1.9445	0.0197	1.0999
	243.50	2.2509	0.0280	1.0969
	250.00	2.3770	0.0342	1.1335
1.2D + 1.0W 119 mph Wind at 330° From Face	200.00	1.4719	0.0227	1.0645
	227.90	1.9653	0.0259	1.1127
	243.50	2.2747	0.0322	1.1171
	250.00	2.4017	0.0366	1.1541
1.2D + 1.0W 119 mph Wind at 60° From Face	200.00	1.4549	0.0151	1.0697
	227.90	1.9434	0.0018	1.0993
	243.50	2.2491	0.0044	1.0936
	250.00	2.3760	0.0059	1.1278

1.2D + 1.0W 119 mph Wind at 90° From Face	200.00	1.4709	-0.0243	1.0663
	227.90	1.9641	-0.0130	1.1115
	243.50	2.2727	-0.0181	1.1176
	250.00	2.4005	-0.0216	1.1498

1.2D + 1.0W 119 mph Wind at Normal To Face	200.00	1.5192	0.0289	1.1187
	227.90	2.0262	0.0244	1.1410
	243.50	2.3438	0.0290	1.1374
	250.00	2.4746	0.0321	1.1775

	Mat Foundation Design for Self Supporting Tower			Date
	Customer Name:	SBA Communications Corp	TIA Standard:	11/20/2024
	Site Name:		Structure Height (Ft.):	TIA-222-H
	Site Nmber:	FL10961-A-SBA	Engineer Name:	250
	Engr. Number:	153858	Engineer Login ID:	C. Rojas

Foundation Info Obtained from:

Analysis or Design?

Number of Tower Legs:

Base Reactions (Factored):

(1). Individual Leg:

Axial Load (Kips):

586.1

Uplift Force (Kips):

501.2

Shear Force (Kips):

51.4

(2). Tower Base:

Total Vertical Load (Kips):

96.4

Total Shear Force (Kips):

85.7

Moment (Kips-ft):

11659.9

Foundation Geometries:

Leg distance (Center-to-Center ft.):

24.3

Mods required -Yes/No ?:

No

Diameter of Pier (ft.):

Round 4.0

Pier Height A. G. (ft.):

0.50

Tower center to mat center (ft):

0

Depth of Base BG (ft.):

6.0

Length of Pad (ft.):

36.5

Width of Pad (ft.):

36.5

Thickness of Pad (ft):

2.50

Material Properties and Reabr Info:

Concrete Strength (psi):

3000

Steel Elastic Modulus:

29000 ksi

Vertical bar yield (ksi)

60

Tie steel yield (ksi):

60

Vertical Rebar Size #:

9

Tie / Stirrup Size #:

4

Qty. of Vertical Rebars:

24

Tie Spacing (in):

6.0

Pad Rebar Yield (Ksi):

60

Pad Steel Rebar Size (#):

9

Concrete Cover (in.):

3

Unit Weight of Concrete:

150.0 pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):

39

Qty. of Rebar in Pad (W):

39

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):

39

Qty. of Rebar in Pad (W):

39

Soil Design Parameters:

Soil Unit Weight (pcf):

100.0

Soil Buoyant Weight:

50.0

Pcf

Water Table B.G.S. (ft):

6.5

Unit Weight of Water:

62.4

pcf

Ultimate Bearing Pressure (psf):

9000

Consider ties in concrete shear strength:

Yes

Consider Soil Lateral Resistance ?

No

500.0

psf

1

Angle from Top of Pad:

0

Angle from Bottm of Pad:

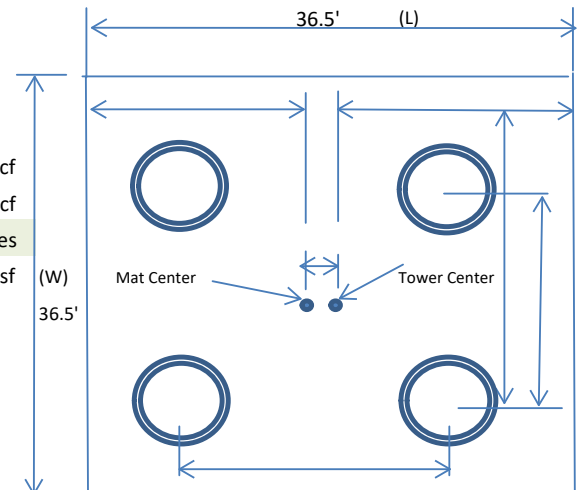
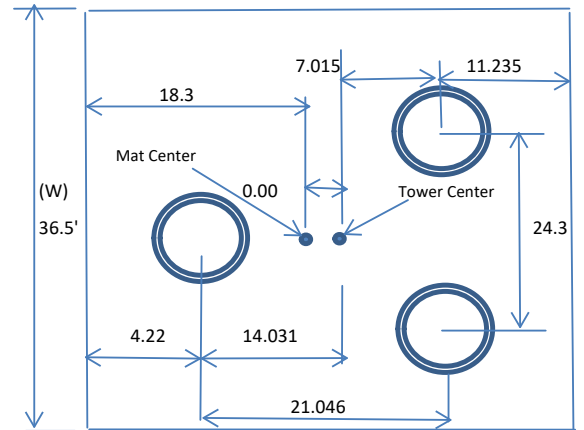
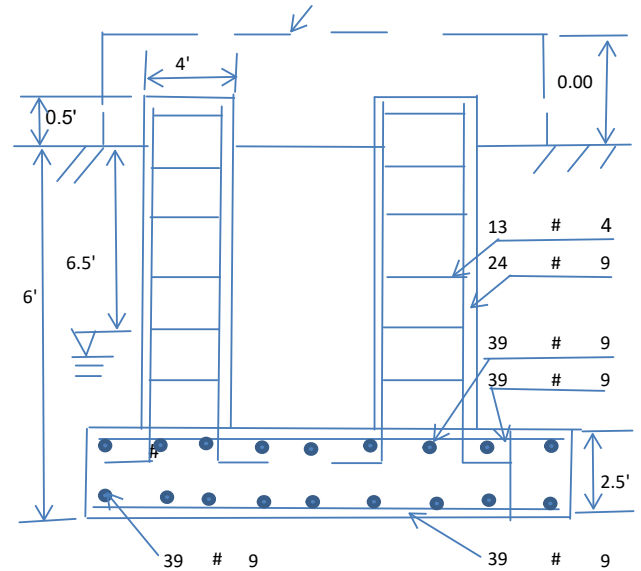
0

Final Length of pad (ft)

36.5

Final width of pad (ft):

36.5



Angle from Bottm of Pad:

0

Allowable overstress %: 5.00%

TES Engr. Number:

153858

Page 2/2

Date:

11/20/2024

Apply 1.35 for e/w per G/H: 1.35

Foundation Analysis and Design:

Uplift Strength Reduction Factor:

0.75

Compression Strength Reduction Factor:

0.75

Total Dry Soil Volume (cu. Ft.):

4530.93

Total Dry Soil Weight (Kips):

453.09

Total Buoyant Soil Volume (cu. Ft.):

0.00

Total Buoyant Soil Weight (Kips):

0.00

Total Effective Soil Weight (Kips):

453.09

Weight from the Concrete Block at Top (K):

0.00

Total Dry Concrete Volume (cu. Ft.):

3481.42

Total Dry Concrete Weight (Kips):

522.21

Total Buoyant Concrete Volume (cu. Ft.):

0.00

Total Buoyant Concrete Weight (Kips):

0.00

Total Effective Concrete Weight (Kips):

522.21

Total Vertical Load on Base (Kips):

1071.68

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):

2831.62

<

Allowable Factored Soil Bearing (psf):

6750

Load/
Capacity
Ratio

0.42

OK!

Allowable Foundation Overturning Resistance (kips-ft.):

17778.2

>

Design Factored Momont (kips-ft):

12217

0.69

OK!

Factor of Safety Against Overturning (O. R. Moment/Design Moment):

1.46

OK!

Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):

0.90

Strength reduction factor (Shear):

0.75

Strength reduction factor (Axial compression):

0.65

Wind Load Factor on Concrete Design:

1.00

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):

1.00

Tie / Stirrup Area (sq. in./each):

0.20

Calculated Moment Capacity (Mn,Kips-Ft):

1277.4

>

Design Factored Moment (Mu, Kips-Ft):

205.8

0.16

OK!

Calculated Shear Capacity (Kips):

177.7

>

Design Factored Shear (Kips):

51.4

0.29

OK!

Calculated Tension Capacity (Tn, Kips):

1296.0

>

Design Factored Tension (Tu Kips):

501.2

0.39

OK!

Calculated Compression Capacity (Pn, Kips):

2367.6

>

Design Factored Axial Load (Pu Kips):

586.1

0.25

OK!

Moment & Tension Strength Combination:

0.16

OK!

Check Tie Spacing (Design/Req'd):

0.50

Pier Reinforcement Ratio:

0.013

Reinforcement Ratio is satisfied per ACI

(2).Concrete Pad:

One-Way Design Shear Capacity (L or W Direction, Kips):

951.4

>

One-Way Factored Shear (L/W-Dir Kips)

511.7

0.54

OK!

One-Way Design Shear Capacity (Diagonal Dir., Kips):

825.3

>

One-Way Factored Shear (Dia. Dir, Kips)

393.7

0.48

OK!

Lower Steel Pad Reinforcement Ratio (L or W-Direct.):

0.0034

Lower Steel Reinf. Ratio (Dia. Dir.):

0.0031

Lower Steel Pad Moment Capacity (L or W-Dir. Kips-ft):

4455.9

>

Moment at Bottom (L-Direct. K-Ft):

3162.2

0.71

OK!

Lower Steel Pad Moment Capacity (Dia. Direction,K-ft):

4182.9

>

Moment at Bottom (Dia. Dir. K-Ft):

3330.4

0.80

OK!

Upper Steel Pad Reinforcement Ratio (L or W -Direction):

0.0034

Upper Steel Reinf. Ratio (Dia. Dir.):

0.0031

Upper Steel Pad Moment Capacity (L or W-Dir., Kips-ft):

4455.9

>

Moment at the top (L-Dir Kips-Ft):

1306.3

0.29

OK!

Upper Steel Pad Moment Capacity (Dia. Direction, K-ft):

4182.9

>

Moment at the top (Dia. Dir., K-Ft):

933.7

0.22

OK!

Punching Failure Capacity From Down Load (Kips):

947.8

>

Punch. Failure Factored Shear (K):

586.1

0.62

OK!

Punching Failure Capacity From Uplift (Kips):

899.2

>

Punch. Failure Factored Shear (K):

501.2

0.56

OK!

(3). Check Max. eccentricity of Loading:

The maximum eccentricity of Loading:

11.40

ft.

Allowable eccentricity (0.45 W, ft.):

16.425

OK!

Reinforce Concrete Pad by enlarging the size of pier (Yes/No):

No