

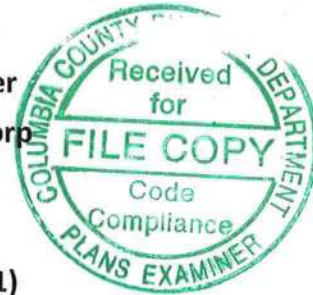


Tower Engineering Solutions

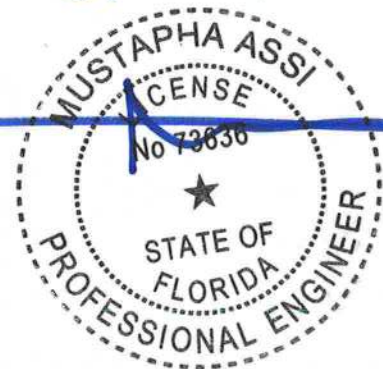
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 250 ft World Tower Guyed Tower
Customer Name: SBA Communications Corp
Customer Site Number: FL15359-A
Customer Site Name: I-10 & I-75
Carrier Name: Verizon (App#: 145752, V1)
Carrier Site ID / Name: 427192 / Tiger Bay - A
Site Location: 255 NW Serene Court
Lake City, Florida
Columbia County
Latitude: 30.263444
Longitude: -82.756167



Exp. 02/28/23



Analysis Result:

Max Structural Usage: 100.0% [Pass]

Max Foundation Usage: 71.0% [Pass]

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

09/30/21

Report Prepared By: Sital Shrestha

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

Introduction

The purpose of this report is to summarize the analysis results on the 250 ft World Tower Guyed 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

Tower Drawings	World Tower Job No. Q10-321 dated 09/02/2010.
Foundation Drawing	World Tower Job No. Q10-321 dated 09/02/2010.
Geotechnical Report	SEA Project No. 10-3124 dated 02/18/2010.
Modification Drawings	N/A
Mount Analysis	MA by MASER Consulting, Project No. 10029928, dated 01/19//2021.

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 **TESTowers**, 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.

Wind Speed Used in the Analysis:	117.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	30 mph (3-Sec. Gust) with 1/4" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2018 IBC / Florida Building Code, 7th Edition (2020)
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.086$, $S_1 = 0.051$

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	246.0	6	Andrew - DBXNH-8585B-R2M - Panel	(3) Sabre 3 C10857001C (Sector Frame)	(24) 1-5/8" Coax (3) 3/8" Fiber (3) 7/16" RET (6) 7/8" Power Cable	AT&T
2		6	Andrew - SBNHH-1D85B - Panel			
3		9	Powerwave TT08-19DB111-001 TMA			
4		9	Ericsson RRU 11 RRU			
5		3	Ericsson RRU 32 RRU			
6		3	Ericsson RRU 32 B66 RRU			
7		2	Ericsson B14 4478 RRU			
8		3	Ericsson RRU A2 RRU			
9		3	Raycap DC6-48-60-18-8F			
-	225.0	4	JMA Wireless X7CQAP-86-865-VR0- Panel	(3) V-Frame (Valmont VFA14-HD)	(12) 1-5/8" Coax (1) 1.58" Hybrid	Verizon
-		2	JMA Wireless X7CQAP-FRO-845-VR0 - Panel			
-		6	Commscope E15R05P19 - TMA			
-		3	Ericsson RRUS32- RRU			
-		2	Raycap RHSDC-6627-PF-48- ODU			

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
10	225.0	4	JMA Wireless X7CQAP-86-865-VR0- Panel	(3) V-Frame (Valmont VFA14-HD)	(12) 1-5/8" Coax (1) 1-5/8" Hybrid	Verizon
11		3	Ericsson AIR6449- Panel			
12		2	JMA Wireless X7CQAP-FRO-845-VR0- Panel			
13		6	Commscope TMAT7UC8-11V			
14		3	Ericsson 8843 B2 B66A- RRH			
15		2	Raycap RHSDC-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	Legs	Diagonals	Horizontals	Guy Wires
Max. Usage:	100.0%	73.3%	32.3%	71.6%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Base Reactions		Inner Anchors	
Reactions (kips)	Axial	Shear	Uplift	Shear
Analysis Reactions	114.3	2.6	43.9	47.1

Two foundation design options were included in the referenced foundation design document. Since it is not known which option was installed, both designs were analyzed using the supplied documents and soils report and both were found adequate. Therefore, no modification to the foundation will be required.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.1074 degrees under the operational wind speed as specified in the Analysis Criteria.

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 rigorous structural analysis.

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Type: Guyed

Height: 250.00 (ft)

Base Elev: 0.00 (ft)

Base Shape: Triangle

Base Width: 0.00

Top Width: 4.00

Code: EIA/TIA-222-H

Basic WS: 117.00

Basic Ice WS: 30.00

Operational WS: 60.00

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Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1-4	SOL 2" SOLID	SOL 1" SOLID	SOL 1" SOLID
5-7	SOL 1 3/4" SOLID	SOL 1" SOLID	SOL 1" SOLID
8	SOL 2" SOLID	SOL 1" SOLID	SOL 1" SOLID
9-10	SOL 2" SOLID	SOL 1 1/8" SOLID	SOL 1" SOLID
11	SOL 1 3/4" SOLID	SOL 1 1/8" SOLID	SOL 1" SOLID
12	SOL 1 3/4" SOLID	SOL 1 1/4" SOLID	SOL 1" SOLID
13	SOL 1 3/4" SOLID	SOL 1" SOLID	SOL 1" SOLID
14	SOL 1 3/4" SOLID	SOL 1 1/8" SOLID	SOL 1" SOLID
15	SOL 1 1/2" SOLID	SOL 1" SOLID	SOL 1" SOLID

Discrete Appurtenances

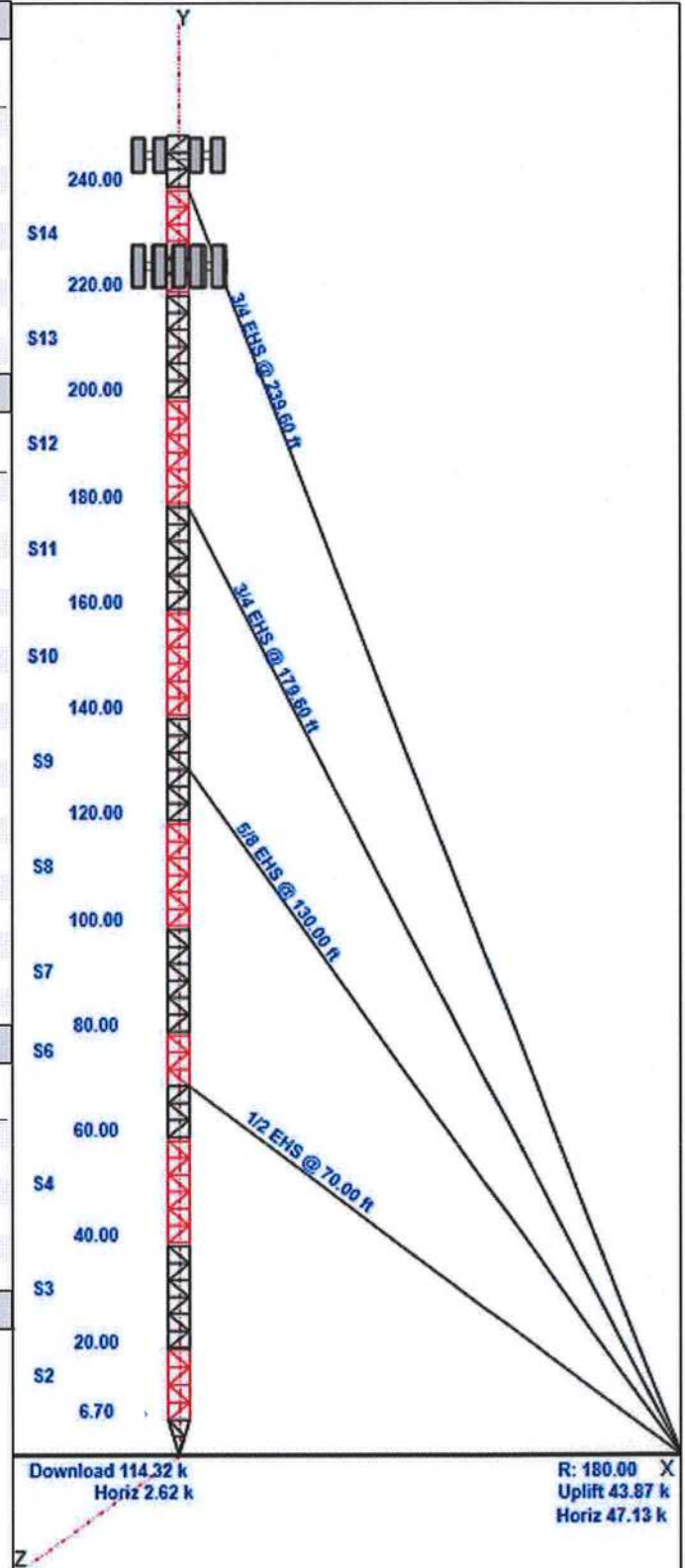
Attach Elev (ft)	Force Elev (ft)	Qty	Description
250.00	250.00	1	Lightning rod
246.00	246.00	3	Ericsson RRU 32 B66
246.00	246.00	2	Ericsson B14 4478
246.00	246.00	6	DBXNH-8585B-R2M
246.00	246.00	6	SBNHH-1D85B
246.00	246.00	9	Powerwave TT08-19DB111-001 TMA
246.00	246.00	9	Ericsson RRU 11
246.00	246.00	3	Ericsson RRU 32
246.00	246.00	3	Ericsson RRU A2
246.00	246.00	3	Raycap DC6-48-60-18-8F
246.00	246.00	3	Sabre 3 C10857001C Sector
240.00	240.00	1	20' x 2.9" Pipe Mount
225.00	225.00	4	JMA Wireless X7CQAP-86-865-VR0
225.00	225.00	3	V-Frame (Valmont VFA14-HD)
225.00	225.00	3	AIR 6449
225.00	225.00	2	X7CQAP-FRO-845-VR0
225.00	225.00	6	TMAT7UC8-11V
225.00	225.00	3	B2 B66A 8843
225.00	225.00	1	RHSDC-6627-PF-48

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	250.00	24	1-5/8" Coax
0.00	250.00	3	3/8" Fiber
0.00	250.00	3	7/16" RET
0.00	250.00	6	7/8" Power Cable
0.00	225.00	12	1-5/8" Coax
0.00	225.00	1	1-5/8" Hybrid

Max Guy Wire

71.63% @ 239.625 ft - 3/4 EHS



Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Type: Guyed

Height: 250.00 (ft)

Base Elev: 0.00 (ft)

Base Shape: Triangle

Base Width: 0.00

Top Width: 4.00

Code: EIA/TIA-222-H

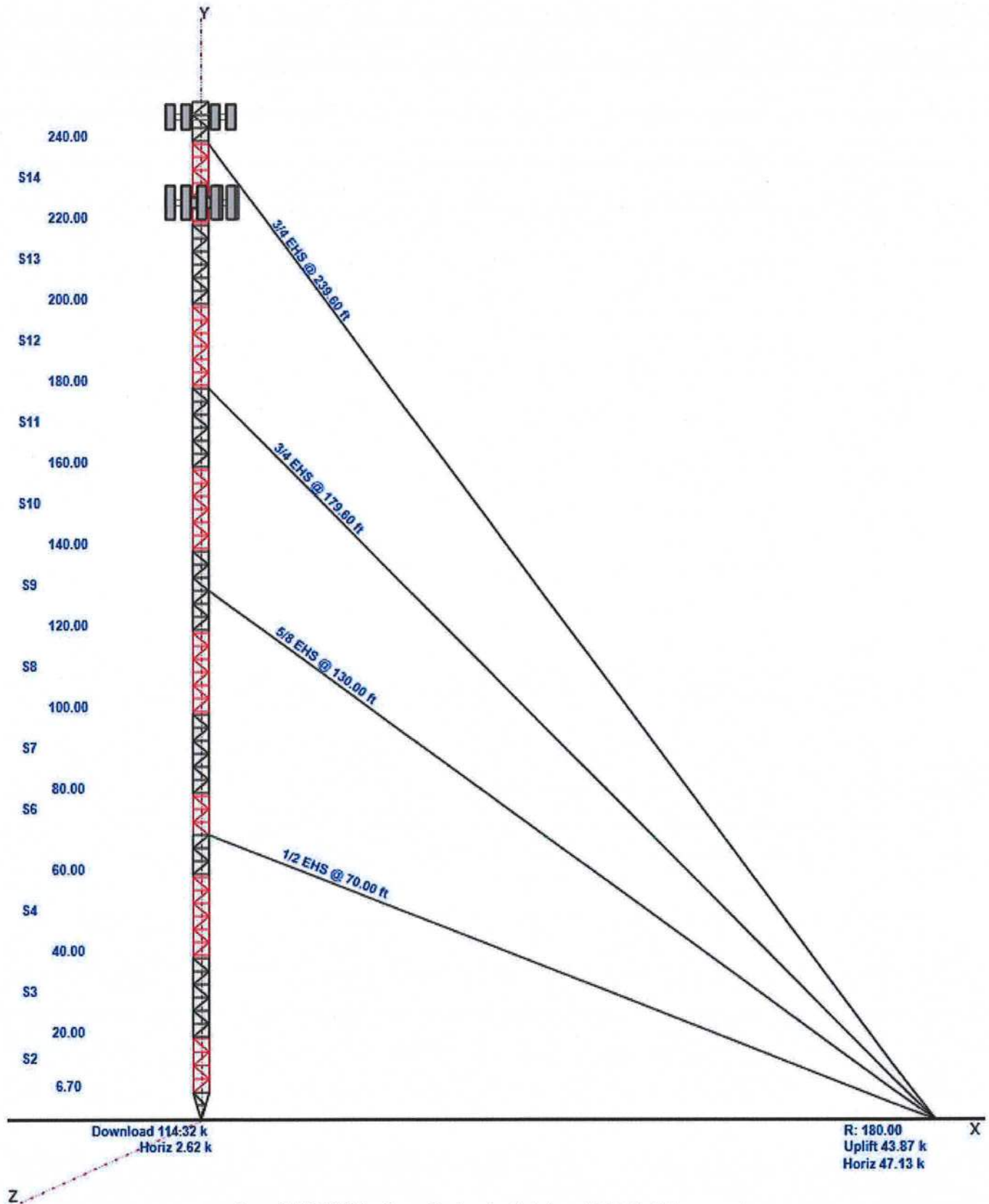
Basic WS: 117.00

Basic Ice WS: 30.00

Operational WS: 60.00

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Anchor Drops with Guy Radius - Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Type: Guyed

Height: 250.00 (ft)

Base Elev: 0.00 (ft)

Base Shape: Triangle

Base Width: 0.00

Top Width: 4.00

Code: EIA_H

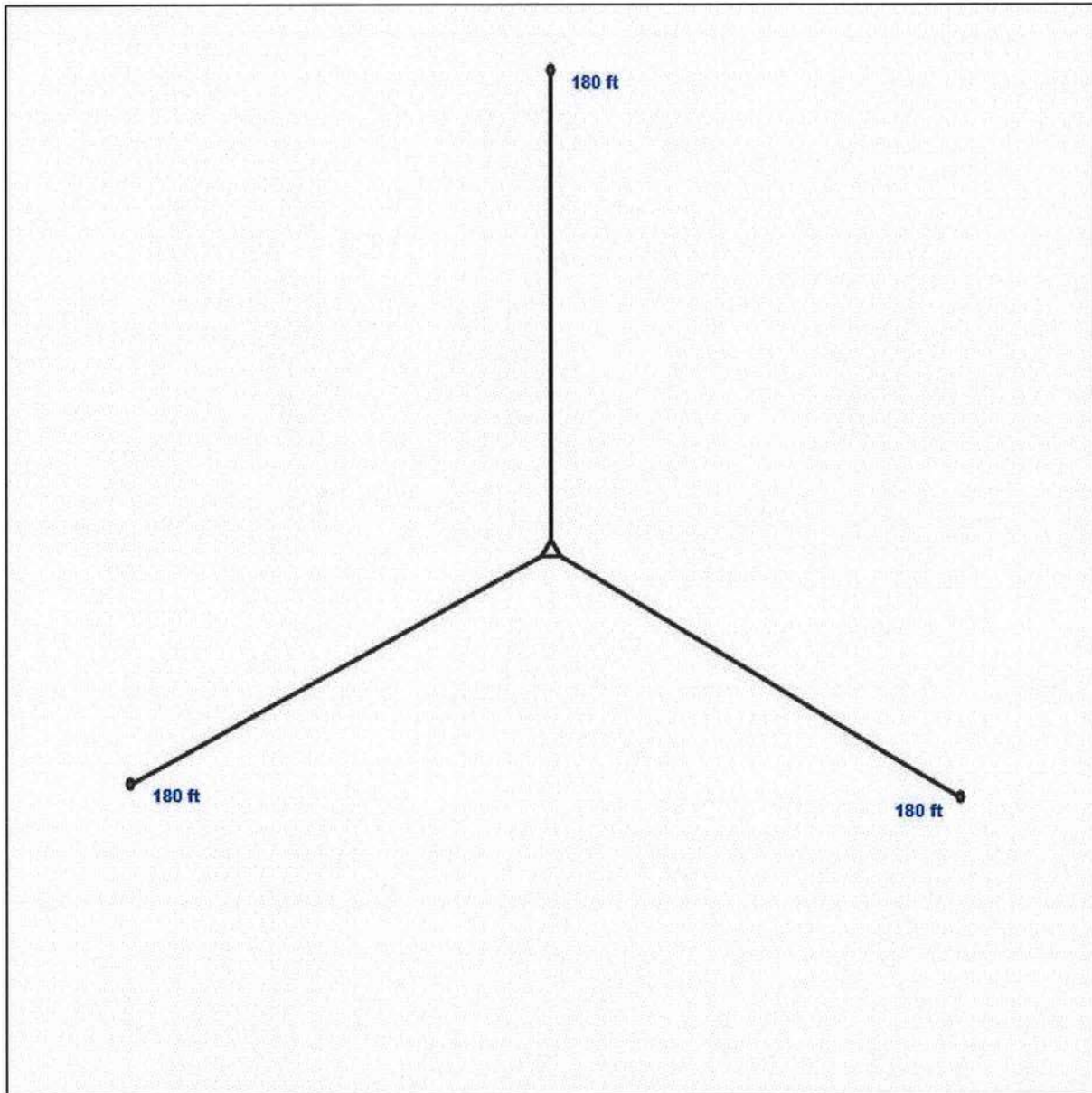
Basic WS: 117.00

Basic Ice WS: 30.00

Operational WS: 60.00

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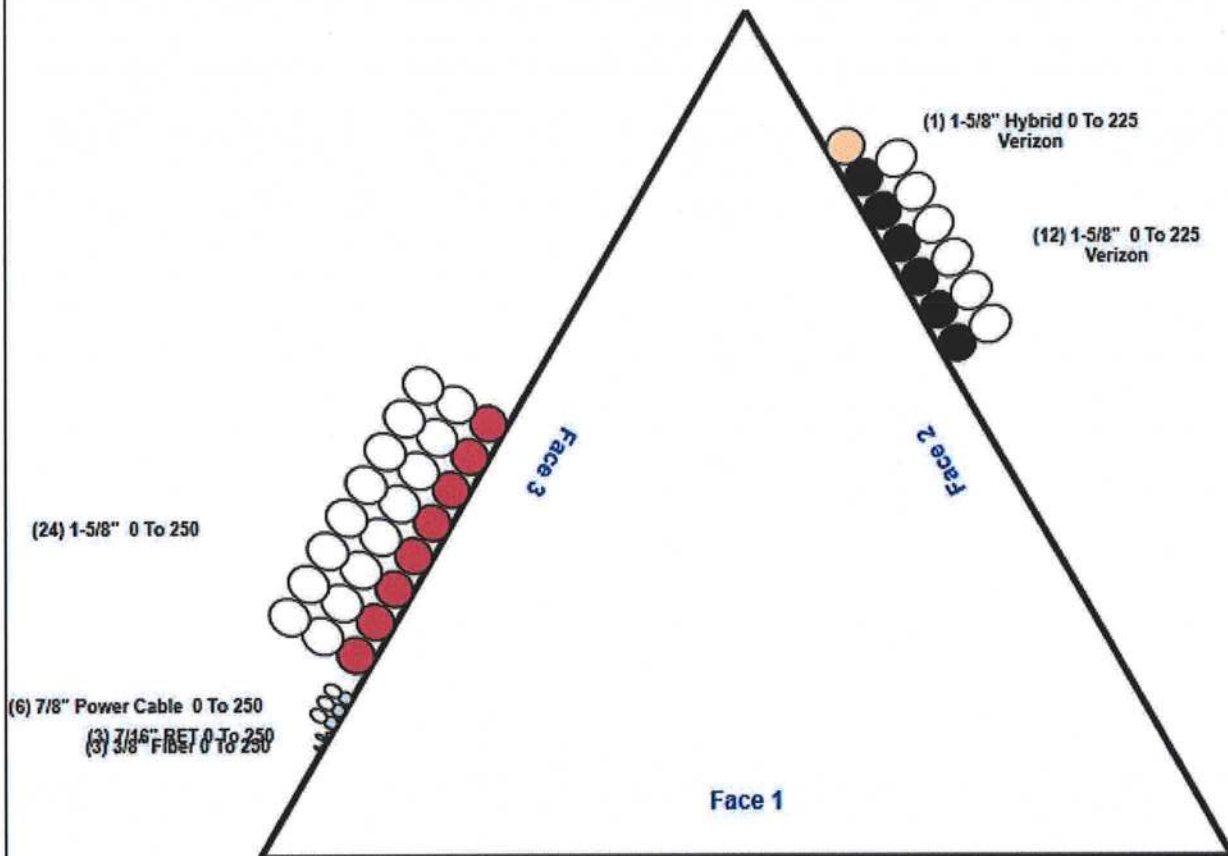


Structure: FL15359-A-SBA - Coax Line Placement

Type: Guyed
Site Name: I-10 & I-75
Height: 250.00 (ft)

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Loading Summary

Structure: FL15359-A-SBA	Code: EIA/TIA-222-H	8/26/2021
Site Name: I-10 & I-75	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



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Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
250.00	Lightning rod	1	12.00	1.250	16.40	2.014	120.000	1.000	1.000	1.00	1.00	0.000
246.00	Ericsson RRU 32 B66	3	53.00	2.740	65.53	2.861	27.200	12.100	7.000	0.80	0.67	0.000
246.00	Ericsson B14 4478	2	59.40	1.650	66.66	1.741	15.000	13.200	7.300	0.80	0.67	0.000
246.00	DBXNH-8585B-R2M	6	49.60	8.230	80.66	8.727	73.200	11.900	7.100	0.80	0.80	0.000
246.00	SBNHH-1D85B	6	47.40	8.170	77.54	8.387	72.700	11.900	7.100	0.80	0.83	0.000
246.00	Powerwave TT08-19DB111-001 TMA	9	22.00	0.920	26.66	1.049	14.200	6.700	5.400	0.80	0.50	0.000
246.00	Ericsson RRU 11	9	50.60	2.790	63.15	2.913	19.700	17.800	7.200	0.80	0.67	0.000
246.00	Ericsson RRU 32	3	53.00	2.740	65.53	2.861	27.200	12.100	7.000	0.80	0.67	0.000
246.00	Ericsson RRU A2	3	21.10	1.600	27.39	1.747	15.000	12.800	3.400	0.80	0.67	0.000
246.00	Raycap DC6-48-60-18-8F	3	32.80	0.920	43.96	0.997	24.000	11.000	18.500	0.80	1.00	0.000
246.00	Sabre 3 C10857001C Sector	3	500.00	20.000	591.65	22.933	0.000	0.000	0.000	0.75	0.75	0.000
240.00	20' x 2.9" Pipe Mount	1	87.00	4.310	110.24	5.247	0.000	0.000	0.000	1.00	1.00	0.000
225.00	JMA Wireless X7CQAP-86-865-VR0	4	53.60	13.440	98.48	13.715	96.000	14.600	7.300	0.80	0.80	0.000
225.00	V-Frame (Valmont VFA14-HD)	3	645.31	22.000	776.17	25.740	0.000	0.000	0.000	0.75	0.67	0.000
225.00	AIR 6449	3	81.60	4.130	102.02	4.272	30.800	16.100	10.800	0.80	0.85	0.000
225.00	X7CQAP-FRO-845-VR0	2	67.00	16.490	125.92	16.788	96.000	18.800	9.700	0.80	0.80	0.000
225.00	TMAT7UC8-11V	6	27.56	0.890	32.71	0.958	11.000	9.700	6.220	0.80	0.50	0.000
225.00	B2 B66A 8843	3	72.00	1.640	80.23	1.730	15.000	13.200	9.300	0.80	0.67	0.000
225.00	RHSDC-6627-PF-48	1	32.00	4.060	51.82	4.203	29.500	16.500	12.600	0.80	1.00	0.000
Totals:		71	6,375.39		8,168.73		Number of Appurtenances : 19					

Loading Summary

Structure: FL15359-A-SBA	Code: EIA/TIA-222-H	8/26/2021
Site Name: I-10 & I-75	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



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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	1-5/8" Coax	24	1.98	1.04	33.30	3	Block		N	0.25	1.00	
0.00	250.00	3/8" Fiber	3	0.38	0.06	50.00	3	Block		N	1.00	1.00	
0.00	250.00	7/16" RET	3	0.44	0.08	50.00	3	Block		N	1.00	1.00	
0.00	250.00	7/8" Power Cable	6	0.88	0.65	50.00	3	Block		N	0.50	1.00	
0.00	225.00	1-5/8" Coax	12	1.98	1.04	50.00	2	Block		N	0.25	0.48	
0.00	225.00	1-5/8" Hybrid	1	2.00	1.10	100.00	2	Individual NR		N	1.00	1.00	

Section Forces

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

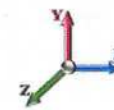
Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

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Load Case: 1.2D + 1.0W Normal Wind

1.2D + 1.0W 117 mph Wind at Normal To Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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	3.4	25.23	0.000	3.48	0.00	0.24	2.47	1.00	1.00	0.00	2.07	21.67	0.00	754.2	0.0	109.41	408.69	518.10
2	13.4	25.23	0.000	7.39	0.00	0.13	2.83	1.00	1.00	0.00	4.25	43.03	0.00	1,550.1	0.0	257.99	811.28	1,069.28
3	30.0	29.15	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	457.86	1409.79	1,867.65
4	50.0	32.46	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	509.84	1569.86	2,079.70
5	65.0	34.31	1.333	5.13	0.00	0.16	2.75	1.00	1.00	0.00	4.29	32.35	0.00	1,145.9	0.0	343.81	829.50	1,173.32
6	75.0	35.36	0.000	5.13	0.00	0.12	2.87	1.00	1.00	0.00	2.94	32.35	0.00	1,072.5	0.0	253.59	854.87	1,108.46
7	90.0	36.74	0.000	10.57	0.00	0.13	2.86	1.00	1.00	0.00	6.07	64.70	0.00	2,183.5	0.0	541.33	1776.65	2,317.98
8	110.0	38.32	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	601.90	1853.32	2,455.22
9	130.0	39.70	1.333	11.37	0.00	0.15	2.76	1.00	1.00	0.00	7.89	64.70	0.00	2,477.3	0.0	735.60	1919.66	2,655.25
10	150.0	40.91	0.000	11.69	0.00	0.14	2.81	1.00	1.00	0.00	6.73	64.70	0.00	2,442.3	0.0	657.41	1978.37	2,635.78
11	170.0	42.00	1.333	10.56	0.00	0.14	2.80	1.00	1.00	0.00	7.41	64.70	0.00	2,296.9	0.0	739.54	2031.19	2,770.73
12	190.0	43.00	0.000	11.20	0.00	0.14	2.83	1.00	1.00	0.00	6.44	64.70	0.00	2,349.9	0.0	665.32	2079.31	2,744.64
13	210.0	43.91	0.000	10.57	0.00	0.13	2.86	1.00	1.00	0.00	6.07	64.70	0.00	2,183.5	0.0	647.04	2123.59	2,770.63
14	230.0	44.76	1.333	10.56	0.00	0.14	2.80	1.00	1.00	0.00	7.41	45.79	0.00	2,052.5	0.0	788.13	1534.14	2,322.27
15	245.0	45.36	0.000	5.04	0.00	0.12	2.88	1.00	1.00	0.00	2.89	19.74	0.00	869.8	0.0	320.69	670.85	991.54
														28,469.8	0.0	29,480.56		

Load Case: 1.2D + 1.0W 60° Wind

1.2D + 1.0W 117 mph Wind at 60° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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	3.4	25.23	0.000	3.48	0.00	0.24	2.47	0.80	1.00	0.00	2.07	21.67	0.00	754.2	0.0	109.41	408.69	518.10
2	13.4	25.23	0.000	7.39	0.00	0.13	2.83	0.80	1.00	0.00	4.25	43.03	0.00	1,550.1	0.0	257.99	811.28	1,069.28
3	30.0	29.15	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	457.86	1409.79	1,867.65
4	50.0	32.46	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	509.84	1569.86	2,079.70
5	65.0	34.31	1.333	5.13	0.00	0.16	2.75	0.80	1.00	0.00	4.02	32.35	0.00	1,145.9	0.0	322.43	829.50	1,151.93
6	75.0	35.36	0.000	5.13	0.00	0.12	2.87	0.80	1.00	0.00	2.94	32.35	0.00	1,072.5	0.0	253.59	854.87	1,108.46
7	90.0	36.74	0.000	10.57	0.00	0.13	2.86	0.80	1.00	0.00	6.07	64.70	0.00	2,183.5	0.0	541.33	1776.65	2,317.98
8	110.0	38.32	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	601.90	1853.32	2,455.22
9	130.0	39.70	1.333	11.37	0.00	0.15	2.76	0.80	1.00	0.00	7.63	64.70	0.00	2,477.3	0.0	710.74	1919.66	2,630.40
10	150.0	40.91	0.000	11.69	0.00	0.14	2.81	0.80	1.00	0.00	6.73	64.70	0.00	2,442.3	0.0	657.41	1978.37	2,635.78
11	170.0	42.00	1.333	10.56	0.00	0.14	2.80	0.80	1.00	0.00	7.14	64.70	0.00	2,296.9	0.0	712.92	2031.19	2,744.11
12	190.0	43.00	0.000	11.20	0.00	0.14	2.83	0.80	1.00	0.00	6.44	64.70	0.00	2,349.9	0.0	665.32	2079.31	2,744.64
13	210.0	43.91	0.000	10.57	0.00	0.13	2.86	0.80	1.00	0.00	6.07	64.70	0.00	2,183.5	0.0	647.04	2123.59	2,770.63
14	230.0	44.76	1.333	10.56	0.00	0.14	2.80	0.80	1.00	0.00	7.14	45.79	0.00	2,052.5	0.0	759.77	1534.14	2,293.91
15	245.0	45.36	0.000	5.04	0.00	0.12	2.88	0.80	1.00	0.00	2.89	19.74	0.00	869.8	0.0	320.69	670.85	991.54
														28,469.8	0.0	29,379.34		

Section Forces

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

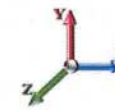
Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

8/26/2021



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Load Case: 1.2D + 1.0W 90° Wind

1.2D + 1.0W 117 mph Wind at 90° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Dead Load Factor: 0.00

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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	25.23	0.000	3.48	0.00	0.24	2.47	0.85	1.00	0.00	2.07	21.67	0.00	754.2	0.0	109.41	408.69	518.10
2	13.4	25.23	0.000	7.39	0.00	0.13	2.83	0.85	1.00	0.00	4.25	43.03	0.00	1,550.1	0.0	257.99	811.28	1,069.28
3	30.0	29.15	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	457.86	1409.79	1,867.65
4	50.0	32.46	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	509.84	1569.86	2,079.70
5	65.0	34.31	1.333	5.13	0.00	0.16	2.75	0.85	1.00	0.00	4.09	32.35	0.00	1,145.9	0.0	327.77	829.50	1,157.28
6	75.0	35.36	0.000	5.13	0.00	0.12	2.87	0.85	1.00	0.00	2.94	32.35	0.00	1,072.5	0.0	253.59	854.87	1,108.46
7	90.0	36.74	0.000	10.57	0.00	0.13	2.86	0.85	1.00	0.00	6.07	64.70	0.00	2,183.5	0.0	541.33	1776.65	2,317.98
8	110.0	38.32	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	2,363.8	0.0	601.90	1853.32	2,455.22
9	130.0	39.70	1.333	11.37	0.00	0.15	2.76	0.85	1.00	0.00	7.69	64.70	0.00	2,477.3	0.0	716.95	1919.66	2,636.61
10	150.0	40.91	0.000	11.69	0.00	0.14	2.81	0.85	1.00	0.00	6.73	64.70	0.00	2,442.3	0.0	657.41	1978.37	2,635.78
11	170.0	42.00	1.333	10.56	0.00	0.14	2.80	0.85	1.00	0.00	7.21	64.70	0.00	2,296.9	0.0	719.58	2031.19	2,750.77
12	190.0	43.00	0.000	11.20	0.00	0.14	2.83	0.85	1.00	0.00	6.44	64.70	0.00	2,349.9	0.0	665.32	2079.31	2,744.64
13	210.0	43.91	0.000	10.57	0.00	0.13	2.86	0.85	1.00	0.00	6.07	64.70	0.00	2,183.5	0.0	647.04	2123.59	2,770.63
14	230.0	44.76	1.333	10.56	0.00	0.14	2.80	0.85	1.00	0.00	7.21	45.79	0.00	2,052.5	0.0	766.86	1534.14	2,301.00
15	245.0	45.36	0.000	5.04	0.00	0.12	2.88	0.85	1.00	0.00	2.89	19.74	0.00	869.8	0.0	320.69	670.85	991.54
														28,469.8	0.0			29,404.64

Load Case: 0.9D + 1.0W Normal Wind

0.9D + 1.0W 117 mph Wind at Normal To Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 0.90

Ice Dead Load Factor: 0.00

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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	25.23	0.000	3.48	0.00	0.24	2.47	1.00	1.00	0.00	2.07	21.67	0.00	565.6	0.0	109.41	408.69	518.10
2	13.4	25.23	0.000	7.39	0.00	0.13	2.83	1.00	1.00	0.00	4.25	43.03	0.00	1,162.5	0.0	257.99	811.28	1,069.28
3	30.0	29.15	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	457.86	1409.79	1,867.65
4	50.0	32.46	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	509.84	1569.86	2,079.70
5	65.0	34.31	1.333	5.13	0.00	0.16	2.75	1.00	1.00	0.00	4.29	32.35	0.00	859.4	0.0	343.81	829.50	1,173.32
6	75.0	35.36	0.000	5.13	0.00	0.12	2.87	1.00	1.00	0.00	2.94	32.35	0.00	804.4	0.0	253.59	854.87	1,108.46
7	90.0	36.74	0.000	10.57	0.00	0.13	2.86	1.00	1.00	0.00	6.07	64.70	0.00	1,637.6	0.0	541.33	1776.65	2,317.98
8	110.0	38.32	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	601.90	1853.32	2,455.22
9	130.0	39.70	1.333	11.37	0.00	0.15	2.76	1.00	1.00	0.00	7.89	64.70	0.00	1,858.0	0.0	735.60	1919.66	2,655.25
10	150.0	40.91	0.000	11.69	0.00	0.14	2.81	1.00	1.00	0.00	6.73	64.70	0.00	1,831.8	0.0	657.41	1978.37	2,635.78
11	170.0	42.00	1.333	10.56	0.00	0.14	2.80	1.00	1.00	0.00	7.41	64.70	0.00	1,722.7	0.0	739.54	2031.19	2,770.73
12	190.0	43.00	0.000	11.20	0.00	0.14	2.83	1.00	1.00	0.00	6.44	64.70	0.00	1,762.4	0.0	665.32	2079.31	2,744.64
13	210.0	43.91	0.000	10.57	0.00	0.13	2.86	1.00	1.00	0.00	6.07	64.70	0.00	1,637.6	0.0	647.04	2123.59	2,770.63
14	230.0	44.76	1.333	10.56	0.00	0.14	2.80	1.00	1.00	0.00	7.41	45.79	0.00	1,539.4	0.0	788.13	1534.14	2,322.27
15	245.0	45.36	0.000	5.04	0.00	0.12	2.88	1.00	1.00	0.00	2.89	19.74	0.00	652.4	0.0	320.69	670.85	991.54
														21,352.4	0.0			29,480.56

Section Forces

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

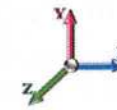
Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

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Load Case: 0.9D + 1.0W 60° Wind

0.9D + 1.0W 117 mph Wind at 60° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 0.90

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	25.23	0.000	3.48	0.00	0.24	2.47	0.80	1.00	0.00	2.07	21.67	0.00	565.6	0.0	109.41	408.69	518.10
2	13.4	25.23	0.000	7.39	0.00	0.13	2.83	0.80	1.00	0.00	4.25	43.03	0.00	1,162.5	0.0	257.99	811.28	1,069.28
3	30.0	29.15	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	457.86	1409.79	1,867.65
4	50.0	32.46	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	509.84	1569.86	2,079.70
5	65.0	34.31	1.333	5.13	0.00	0.16	2.75	0.80	1.00	0.00	4.02	32.35	0.00	859.4	0.0	322.43	829.50	1,151.93
6	75.0	35.36	0.000	5.13	0.00	0.12	2.87	0.80	1.00	0.00	2.94	32.35	0.00	804.4	0.0	253.59	854.87	1,108.46
7	90.0	36.74	0.000	10.57	0.00	0.13	2.86	0.80	1.00	0.00	6.07	64.70	0.00	1,637.6	0.0	541.33	1776.65	2,317.98
8	110.0	38.32	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	601.90	1853.32	2,455.22
9	130.0	39.70	1.333	11.37	0.00	0.15	2.76	0.80	1.00	0.00	7.63	64.70	0.00	1,858.0	0.0	710.74	1919.66	2,630.40
10	150.0	40.91	0.000	11.69	0.00	0.14	2.81	0.80	1.00	0.00	6.73	64.70	0.00	1,831.8	0.0	657.41	1978.37	2,635.78
11	170.0	42.00	1.333	10.56	0.00	0.14	2.80	0.80	1.00	0.00	7.14	64.70	0.00	1,722.7	0.0	712.92	2031.19	2,744.11
12	190.0	43.00	0.000	11.20	0.00	0.14	2.83	0.80	1.00	0.00	6.44	64.70	0.00	1,762.4	0.0	665.32	2079.31	2,744.64
13	210.0	43.91	0.000	10.57	0.00	0.13	2.86	0.80	1.00	0.00	6.07	64.70	0.00	1,637.6	0.0	647.04	2123.59	2,770.63
14	230.0	44.76	1.333	10.56	0.00	0.14	2.80	0.80	1.00	0.00	7.14	45.79	0.00	1,539.4	0.0	759.77	1534.14	2,293.91
15	245.0	45.36	0.000	5.04	0.00	0.12	2.88	0.80	1.00	0.00	2.89	19.74	0.00	652.4	0.0	320.69	670.85	991.54
														21,352.4	0.0			29,379.34

Load Case: 0.9D + 1.0W 90° Wind

0.9D + 1.0W 117 mph Wind at 90° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 0.90

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	25.23	0.000	3.48	0.00	0.24	2.47	0.85	1.00	0.00	2.07	21.67	0.00	565.6	0.0	109.41	408.69	518.10
2	13.4	25.23	0.000	7.39	0.00	0.13	2.83	0.85	1.00	0.00	4.25	43.03	0.00	1,162.5	0.0	257.99	811.28	1,069.28
3	30.0	29.15	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	457.86	1409.79	1,867.65
4	50.0	32.46	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	509.84	1569.86	2,079.70
5	65.0	34.31	1.333	5.13	0.00	0.16	2.75	0.85	1.00	0.00	4.09	32.35	0.00	859.4	0.0	327.77	829.50	1,157.28
6	75.0	35.36	0.000	5.13	0.00	0.12	2.87	0.85	1.00	0.00	2.94	32.35	0.00	804.4	0.0	253.59	854.87	1,108.46
7	90.0	36.74	0.000	10.57	0.00	0.13	2.86	0.85	1.00	0.00	6.07	64.70	0.00	1,637.6	0.0	541.33	1776.65	2,317.98
8	110.0	38.32	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	1,772.9	0.0	601.90	1853.32	2,455.22
9	130.0	39.70	1.333	11.37	0.00	0.15	2.76	0.85	1.00	0.00	7.69	64.70	0.00	1,858.0	0.0	716.95	1919.66	2,636.61
10	150.0	40.91	0.000	11.69	0.00	0.14	2.81	0.85	1.00	0.00	6.73	64.70	0.00	1,831.8	0.0	657.41	1978.37	2,635.78
11	170.0	42.00	1.333	10.56	0.00	0.14	2.80	0.85	1.00	0.00	7.21	64.70	0.00	1,722.7	0.0	719.58	2031.19	2,750.77
12	190.0	43.00	0.000	11.20	0.00	0.14	2.83	0.85	1.00	0.00	6.44	64.70	0.00	1,762.4	0.0	665.32	2079.31	2,744.64
13	210.0	43.91	0.000	10.57	0.00	0.13	2.86	0.85	1.00	0.00	6.07	64.70	0.00	1,637.6	0.0	647.04	2123.59	2,770.63
14	230.0	44.76	1.333	10.56	0.00	0.14	2.80	0.85	1.00	0.00	7.21	45.79	0.00	1,539.4	0.0	766.86	1534.14	2,301.00
15	245.0	45.36	0.000	5.04	0.00	0.12	2.88	0.85	1.00	0.00	2.89	19.74	0.00	652.4	0.0	320.69	670.85	991.54
														21,352.4	0.0			29,404.64

Section Forces

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

Exposure: C

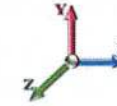
Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

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Load Case: 1.2D + 1.0Di + 1.0Wi Normal Wind

1.2D + 1.0Di + 1.0Wi 30 mph Wind at Normal From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Dead Load 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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	1.66	0.000	4.42	0.94	0.30	2.30	1.00	1.00	0.20	2.69	23.44	0.22	959.9	205.7	8.70	24.93	33.64
2	13.4	1.66	0.000	9.80	2.41	0.18	2.68	1.00	1.00	0.23	5.66	46.86	0.51	1,994.0	443.9	21.38	50.52	71.89
3	30.0	1.92	0.000	15.46	4.08	0.18	2.65	1.00	1.00	0.25	8.94	70.79	0.83	3,064.8	701.0	38.63	88.24	126.87
4	50.0	2.13	0.000	15.67	4.29	0.19	2.64	1.00	1.00	0.26	9.07	71.01	0.87	3,087.0	723.2	43.50	98.63	142.12
5	65.0	2.26	1.333	7.42	2.29	0.21	2.57	1.00	1.00	0.27	5.65	35.56	0.45	1,524.5	378.6	27.79	52.12	79.91
6	75.0	2.32	0.000	7.27	2.14	0.17	2.69	1.00	1.00	0.27	4.19	35.59	0.45	1,437.1	364.6	22.23	53.95	76.18
7	90.0	2.42	0.000	15.12	4.55	0.18	2.66	1.00	1.00	0.28	8.73	71.27	0.92	2,925.0	741.6	47.73	112.22	159.95
8	110.0	2.52	0.000	16.03	4.64	0.19	2.63	1.00	1.00	0.28	9.28	71.37	0.94	3,118.8	755.0	52.27	117.16	169.43
9	130.0	2.61	1.333	16.09	4.72	0.21	2.57	1.00	1.00	0.29	10.70	71.45	0.96	3,256.2	778.9	61.09	121.34	182.43
10	150.0	2.69	0.000	16.48	4.79	0.20	2.61	1.00	1.00	0.29	9.57	71.51	0.97	3,214.8	772.5	57.10	125.34	182.44
11	170.0	2.76	1.333	15.41	4.85	0.20	2.60	1.00	1.00	0.29	10.27	71.58	0.98	3,082.6	785.7	62.64	128.78	191.42
12	190.0	2.83	0.000	16.10	4.90	0.19	2.62	1.00	1.00	0.30	9.33	71.63	0.99	3,131.8	781.8	58.79	132.06	190.85
13	210.0	2.89	0.000	15.52	4.95	0.18	2.65	1.00	1.00	0.30	8.97	71.68	1.00	2,961.4	777.9	58.27	135.08	193.35
14	230.0	2.94	1.333	15.56	5.00	0.20	2.59	1.00	1.00	0.30	10.36	52.05	0.25	2,689.0	636.5	67.20	111.22	178.42
15	245.0	2.98	0.000	7.66	2.62	0.18	2.65	1.00	1.00	0.31	4.42	22.76	0.00	1,153.2	283.4	29.72	51.93	81.66
														37,600.1	9130.3			2,060.56

Load Case: 1.2D + 1.0Di + 1.0Wi 60° Wind

1.2D + 1.0Di + 1.0Wi 30 mph Wind at 60° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Dead Load 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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	1.66	0.000	4.42	0.94	0.30	2.30	0.80	1.00	0.20	2.69	23.44	0.22	959.9	205.7	8.70	24.93	33.64
2	13.4	1.66	0.000	9.80	2.41	0.18	2.68	0.80	1.00	0.23	5.66	46.86	0.51	1,994.0	443.9	21.38	50.52	71.89
3	30.0	1.92	0.000	15.46	4.08	0.18	2.65	0.80	1.00	0.25	8.94	70.79	0.83	3,064.8	701.0	38.63	88.24	126.87
4	50.0	2.13	0.000	15.67	4.29	0.19	2.64	0.80	1.00	0.26	9.07	71.01	0.87	3,087.0	723.2	43.50	98.63	142.12
5	65.0	2.26	1.333	7.42	2.29	0.21	2.57	0.80	1.00	0.27	5.38	35.56	0.45	1,524.5	378.6	26.48	52.12	78.60
6	75.0	2.32	0.000	7.27	2.14	0.17	2.69	0.80	1.00	0.27	4.19	35.59	0.45	1,437.1	364.6	22.23	53.95	76.18
7	90.0	2.42	0.000	15.12	4.55	0.18	2.66	0.80	1.00	0.28	8.73	71.27	0.92	2,925.0	741.6	47.73	112.22	159.95
8	110.0	2.52	0.000	16.03	4.64	0.19	2.63	0.80	1.00	0.28	9.28	71.37	0.94	3,118.8	755.0	52.27	117.16	169.43
9	130.0	2.61	1.333	16.09	4.72	0.21	2.57	0.80	1.00	0.29	10.43	71.45	0.96	3,256.2	778.9	59.57	121.34	180.91
10	150.0	2.69	0.000	16.48	4.79	0.20	2.61	0.80	1.00	0.29	9.57	71.51	0.97	3,214.8	772.5	57.10	125.34	182.44
11	170.0	2.76	1.333	15.41	4.85	0.20	2.60	0.80	1.00	0.29	10.01	71.58	0.98	3,082.6	785.7	61.02	128.78	189.79
12	190.0	2.83	0.000	16.10	4.90	0.19	2.62	0.80	1.00	0.30	9.33	71.63	0.99	3,131.8	781.8	58.79	132.06	190.85
13	210.0	2.89	0.000	15.52	4.95	0.18	2.65	0.80	1.00	0.30	8.97	71.68	1.00	2,961.4	777.9	58.27	135.08	193.35
14	230.0	2.94	1.333	15.56	5.00	0.20	2.59	0.80	1.00	0.30	10.10	52.05	0.25	2,689.0	636.5	65.47	111.22	176.69
15	245.0	2.98	0.000	7.66	2.62	0.18	2.65	0.80	1.00	0.31	4.42	22.76	0.00	1,153.2	283.4	29.72	51.93	81.66
														37,600.1	9130.3			2,054.37

Section Forces

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

Exposure: C

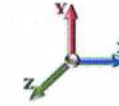
Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

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Load Case: 1.2D + 1.0Di + 1.0Wi 90° Wind

1.2D + 1.0Di + 1.0Wi 30 mph Wind at 90° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.20

Ice Importance Factor: 1.00

Ice Dead Load 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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	1.66	0.000	4.42	0.94	0.30	2.30	0.85	1.00	0.20	2.69	23.44	0.22	959.9	205.7	8.70	24.93	33.64
2	13.4	1.66	0.000	9.80	2.41	0.18	2.68	0.85	1.00	0.23	5.66	46.86	0.51	1,994.0	443.9	21.38	50.52	71.89
3	30.0	1.92	0.000	15.46	4.08	0.18	2.65	0.85	1.00	0.25	8.94	70.79	0.83	3,064.8	701.0	38.63	88.24	126.87
4	50.0	2.13	0.000	15.67	4.29	0.19	2.64	0.85	1.00	0.26	9.07	71.01	0.87	3,087.0	723.2	43.50	98.63	142.12
5	65.0	2.26	1.333	7.42	2.29	0.21	2.57	0.85	1.00	0.27	5.45	35.56	0.45	1,524.5	378.6	26.81	52.12	78.93
6	75.0	2.32	0.000	7.27	2.14	0.17	2.69	0.85	1.00	0.27	4.19	35.59	0.45	1,437.1	364.6	22.23	53.95	76.18
7	90.0	2.42	0.000	15.12	4.55	0.18	2.66	0.85	1.00	0.28	8.73	71.27	0.92	2,925.0	741.6	47.73	112.22	159.95
8	110.0	2.52	0.000	16.03	4.64	0.19	2.63	0.85	1.00	0.28	9.28	71.37	0.94	3,118.8	755.0	52.27	117.16	169.43
9	130.0	2.61	1.333	16.09	4.72	0.21	2.57	0.85	1.00	0.29	10.50	71.45	0.96	3,256.2	778.9	59.95	121.34	181.29
10	150.0	2.69	0.000	16.48	4.79	0.20	2.61	0.85	1.00	0.29	9.57	71.51	0.97	3,214.8	772.5	57.10	125.34	182.44
11	170.0	2.76	1.333	15.41	4.85	0.20	2.60	0.85	1.00	0.29	10.07	71.58	0.98	3,082.6	785.7	61.42	128.78	190.20
12	190.0	2.83	0.000	16.10	4.90	0.19	2.62	0.85	1.00	0.30	9.33	71.63	0.99	3,131.8	781.8	58.79	132.06	190.85
13	210.0	2.89	0.000	15.52	4.95	0.18	2.65	0.85	1.00	0.30	8.97	71.68	1.00	2,961.4	777.9	58.27	135.08	193.35
14	230.0	2.94	1.333	15.56	5.00	0.20	2.59	0.85	1.00	0.30	10.16	52.05	0.25	2,689.0	636.5	65.90	111.22	177.12
15	245.0	2.98	0.000	7.66	2.62	0.18	2.65	0.85	1.00	0.31	4.42	22.76	0.00	1,153.2	283.4	29.72	51.93	81.66
														37,600.1	9130.3			2,055.91

Load Case: 1.0D + 1.0W Normal Wind

1.0D + 1.0W 60 mph Wind at Normal To Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.00

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	3.4	6.63	0.000	3.48	0.00	0.24	2.47	1.00	1.00	0.00	2.07	21.67	0.00	628.5	0.0	28.77	107.48	136.25
2	13.4	6.63	0.000	7.39	0.00	0.13	2.83	1.00	1.00	0.00	4.25	43.03	0.00	1,291.7	0.0	67.85	213.36	281.20
3	30.0	7.67	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	120.41	370.75	491.16
4	50.0	8.54	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	134.08	412.85	546.93
5	65.0	9.02	1.333	5.13	0.00	0.16	2.75	1.00	1.00	0.00	4.29	32.35	0.00	954.9	0.0	90.42	218.15	308.56
6	75.0	9.30	0.000	5.13	0.00	0.12	2.87	1.00	1.00	0.00	2.94	32.35	0.00	893.7	0.0	66.69	224.82	291.51
7	90.0	9.66	0.000	10.57	0.00	0.13	2.86	1.00	1.00	0.00	6.07	64.70	0.00	1,819.5	0.0	142.36	467.23	609.59
8	110.0	10.08	0.000	11.38	0.00	0.14	2.82	1.00	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	158.29	487.39	645.68
9	130.0	10.44	1.333	11.37	0.00	0.15	2.76	1.00	1.00	0.00	7.89	64.70	0.00	2,064.4	0.0	193.45	504.84	698.29
10	150.0	10.76	0.000	11.69	0.00	0.14	2.81	1.00	1.00	0.00	6.73	64.70	0.00	2,035.3	0.0	172.89	520.28	693.17
11	170.0	11.05	1.333	10.56	0.00	0.14	2.80	1.00	1.00	0.00	7.41	64.70	0.00	1,914.1	0.0	194.49	534.17	728.66
12	190.0	11.31	0.000	11.20	0.00	0.14	2.83	1.00	1.00	0.00	6.44	64.70	0.00	1,958.3	0.0	174.97	546.83	721.80
13	210.0	11.55	0.000	10.57	0.00	0.13	2.86	1.00	1.00	0.00	6.07	64.70	0.00	1,819.5	0.0	170.16	558.47	728.63
14	230.0	11.77	1.333	10.56	0.00	0.14	2.80	1.00	1.00	0.00	7.41	45.79	0.00	1,710.4	0.0	207.27	403.46	610.72
15	245.0	11.93	0.000	5.04	0.00	0.12	2.88	1.00	1.00	0.00	2.89	19.74	0.00	724.9	0.0	84.34	176.42	260.76
														23,724.8	0.0			7,752.94

Section Forces

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

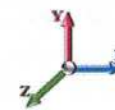
Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

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Load Case: 1.0D + 1.0W 60° Wind

1.0D + 1.0W 60 mph Wind at 60° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.00

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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	3.4	6.63	0.000	3.48	0.00	0.24	2.47	0.80	1.00	0.00	2.07	21.67	0.00	628.5	0.0	28.77	107.48	136.25
2	13.4	6.63	0.000	7.39	0.00	0.13	2.83	0.80	1.00	0.00	4.25	43.03	0.00	1,291.7	0.0	67.85	213.36	281.20
3	30.0	7.67	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	120.41	370.75	491.16
4	50.0	8.54	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	134.08	412.85	546.93
5	65.0	9.02	1.333	5.13	0.00	0.16	2.75	0.80	1.00	0.00	4.02	32.35	0.00	954.9	0.0	84.79	218.15	302.94
6	75.0	9.30	0.000	5.13	0.00	0.12	2.87	0.80	1.00	0.00	2.94	32.35	0.00	893.7	0.0	66.69	224.82	291.51
7	90.0	9.66	0.000	10.57	0.00	0.13	2.86	0.80	1.00	0.00	6.07	64.70	0.00	1,819.5	0.0	142.36	467.23	609.59
8	110.0	10.08	0.000	11.38	0.00	0.14	2.82	0.80	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	158.29	487.39	645.68
9	130.0	10.44	1.333	11.37	0.00	0.15	2.76	0.80	1.00	0.00	7.63	64.70	0.00	2,064.4	0.0	186.91	504.84	691.75
10	150.0	10.76	0.000	11.69	0.00	0.14	2.81	0.80	1.00	0.00	6.73	64.70	0.00	2,035.3	0.0	172.89	520.28	693.17
11	170.0	11.05	1.333	10.56	0.00	0.14	2.80	0.80	1.00	0.00	7.14	64.70	0.00	1,914.1	0.0	187.49	534.17	721.66
12	190.0	11.31	0.000	11.20	0.00	0.14	2.83	0.80	1.00	0.00	6.44	64.70	0.00	1,958.3	0.0	174.97	546.83	721.80
13	210.0	11.55	0.000	10.57	0.00	0.13	2.86	0.80	1.00	0.00	6.07	64.70	0.00	1,819.5	0.0	170.16	558.47	728.63
14	230.0	11.77	1.333	10.56	0.00	0.14	2.80	0.80	1.00	0.00	7.14	45.79	0.00	1,710.4	0.0	199.81	403.46	603.26
15	245.0	11.93	0.000	5.04	0.00	0.12	2.88	0.80	1.00	0.00	2.89	19.74	0.00	724.9	0.0	84.34	176.42	260.76
														23,724.8	0.0			7,726.32

Load Case: 1.0D + 1.0W 90° Wind

1.0D + 1.0W 60 mph Wind at 90° From Face

Wind Load Factor: 1.00

Wind Importance Factor: 1.00

Dead Load Factor: 1.00

Ice Importance Factor: 1.00

Ice Dead Load Factor: 0.00

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	3.4	6.63	0.000	3.48	0.00	0.24	2.47	0.85	1.00	0.00	2.07	21.67	0.00	628.5	0.0	28.77	107.48	136.25
2	13.4	6.63	0.000	7.39	0.00	0.13	2.83	0.85	1.00	0.00	4.25	43.03	0.00	1,291.7	0.0	67.85	213.36	281.20
3	30.0	7.67	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	120.41	370.75	491.16
4	50.0	8.54	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	134.08	412.85	546.93
5	65.0	9.02	1.333	5.13	0.00	0.16	2.75	0.85	1.00	0.00	4.09	32.35	0.00	954.9	0.0	86.20	218.15	304.35
6	75.0	9.30	0.000	5.13	0.00	0.12	2.87	0.85	1.00	0.00	2.94	32.35	0.00	893.7	0.0	66.69	224.82	291.51
7	90.0	9.66	0.000	10.57	0.00	0.13	2.86	0.85	1.00	0.00	6.07	64.70	0.00	1,819.5	0.0	142.36	467.23	609.59
8	110.0	10.08	0.000	11.38	0.00	0.14	2.82	0.85	1.00	0.00	6.55	64.70	0.00	1,969.8	0.0	158.29	487.39	645.68
9	130.0	10.44	1.333	11.37	0.00	0.15	2.76	0.85	1.00	0.00	7.69	64.70	0.00	2,064.4	0.0	188.55	504.84	693.39
10	150.0	10.76	0.000	11.69	0.00	0.14	2.81	0.85	1.00	0.00	6.73	64.70	0.00	2,035.3	0.0	172.89	520.28	693.17
11	170.0	11.05	1.333	10.56	0.00	0.14	2.80	0.85	1.00	0.00	7.21	64.70	0.00	1,914.1	0.0	189.24	534.17	723.41
12	190.0	11.31	0.000	11.20	0.00	0.14	2.83	0.85	1.00	0.00	6.44	64.70	0.00	1,958.3	0.0	174.97	546.83	721.80
13	210.0	11.55	0.000	10.57	0.00	0.13	2.86	0.85	1.00	0.00	6.07	64.70	0.00	1,819.5	0.0	170.16	558.47	728.63
14	230.0	11.77	1.333	10.56	0.00	0.14	2.80	0.85	1.00	0.00	7.21	45.79	0.00	1,710.4	0.0	201.67	403.46	605.13
15	245.0	11.93	0.000	5.04	0.00	0.12	2.88	0.85	1.00	0.00	2.89	19.74	0.00	724.9	0.0	84.34	176.42	260.76
														23,724.8	0.0			7,732.98

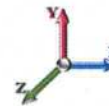
Force/Stress Compression Summary

Structure: FL15359-A-SBA
 Site Name: I-10 & I-75
 Height: 250.00 (ft)
 Base Elev: 0.000 (ft)
 Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
 Exposure: C
 Crest Height: 0.00
 Site Class: D - Stiff Soil
 Struct Class: II

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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
						X	Y	Z					
1	6.7	SOL - 2" SOLID	-43.51	1.2D + 1.0W 90° Wind	3.28	100	100	100	78.70	50.00	89.89	48.4	Member X
2	20	SOL - 2" SOLID	-47.39	1.2D + 1.0W 90° Wind	3.32	100	100	100	79.80	50.00	88.75	53.4	Member X
3	40	SOL - 2" SOLID	-51.34	1.2D + 1.0W 90° Wind	3.21	100	100	100	77.00	50.00	91.64	56.0	Member X
4	60	SOL - 2" SOLID	-50.57	1.2D + 1.0W 90° Wind	3.21	100	100	100	77.00	50.00	91.64	55.2	Member X
5	70	SOL - 1 3/4" SOLID	-41.13	1.2D + 1.0W 90° Wind	3.21	100	100	100	88.00	50.00	61.44	66.9	Member X
6	80	SOL - 1 3/4" SOLID	-35.27	1.2D + 1.0W Normal Wind	3.21	100	100	100	88.00	50.00	61.44	57.4	Member X
7	100	SOL - 1 3/4" SOLID	-36.20	1.2D + 1.0W 90° Wind	3.21	100	100	100	88.00	50.00	61.44	58.9	Member X
8	120	SOL - 2" SOLID	-46.37	1.2D + 1.0W Normal Wind	3.21	100	100	100	77.00	50.00	91.64	50.6	Member X
9	140	SOL - 2" SOLID	-60.53	1.2D + 1.0W Normal Wind	3.21	100	100	100	77.00	50.00	91.64	66.0	Member X
10	160	SOL - 2" SOLID	-53.86	1.2D + 1.0W Normal Wind	3.21	100	100	100	77.00	50.00	91.64	58.8	Member X
11	180	SOL - 1 3/4" SOLID	-61.43	1.2D + 1.0W Normal Wind	3.21	100	100	100	88.00	50.00	61.44	100.0	Member X
12	200	SOL - 1 3/4" SOLID	-57.71	1.2D + 1.0W Normal Wind	3.21	100	100	100	88.00	50.00	61.44	93.9	Member X
13	220	SOL - 1 3/4" SOLID	-26.18	1.2D + 1.0W 60° Wind	3.21	100	100	100	88.00	50.00	61.44	42.6	Member X
14	240	SOL - 1 3/4" SOLID	-27.71	1.2D + 1.0W 60° Wind	3.21	100	100	100	88.00	50.00	61.44	45.1	Member X
15	250	SOL - 1 1/2" SOLID	-9.92	1.2D + 1.0W Normal Wind	3.21	100	100	100	102.67	50.00	36.79	26.9	Member X

Splices

Top Splice								Bottom Splice					
Sect	Top Elev	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	6.7	1.2D + 1.0W 90° Wind	39.42	0.00	0.0				0.00	0.00			
2	20	1.2D + 1.0W 90° Wind	48.61	0.00	0.0			1.2D + 1.0W 90° Wind	39.42	0.00			
3	40	1.2D + 1.0W 90° Wind	51.32	0.00	0.0			1.2D + 1.0W 90° Wind	48.61	0.00			
4	60	1.2D + 1.0W 90° Wind	43.20	0.00	0.0			1.2D + 1.0W 90° Wind	51.32	0.00			
5	70	1.2D + 1.0W Normal Wind	36.20	0.00	0.0			1.2D + 1.0W 90° Wind	43.20	0.00			
6	80	1.2D + 1.0W 90° Wind	35.73	0.00	0.0			1.2D + 1.0W Normal Wind	36.20	0.00			
7	100	1.2D + 1.0W 90° Wind	34.50	0.00	0.0			1.2D + 1.0W 90° Wind	35.73	0.00			
8	120	1.2D + 1.0W Normal Wind	48.37	0.00	0.0			1.2D + 1.0W 90° Wind	34.50	0.00			
9	140	1.2D + 1.0W Normal Wind	54.79	0.00	0.0			1.2D + 1.0W Normal Wind	48.37	0.00			
10	160	1.2D + 1.0W Normal Wind	51.90	0.00	0.0			1.2D + 1.0W Normal Wind	54.79	0.00			
11	180	1.2D + 1.0W Normal Wind	61.73	0.00	0.0			1.2D + 1.0W Normal Wind	51.90	0.00			
12	200	1.2D + 1.0W Normal Wind	24.55	0.00	0.0			1.2D + 1.0W Normal Wind	61.73	0.00			
13	220	1.2D + 1.0W 60° Wind	27.26	0.00	0.0			1.2D + 1.0W Normal Wind	24.55	0.00			
14	240	1.2D + 1.0W Normal Wind	13.12	0.00	0.0			1.2D + 1.0W 60° Wind	27.26	0.00			
15	250	1.2D + 1.0Ev + 1.0Eh	0.41	0.00	0.0			1.2D + 1.0W Normal Wind	13.12	0.00			

HORIZONTAL MEMBERS

Sect	Top 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	6.7										0.00	0	0				
2	20	SOL - 1" SOLID	-0.48	1.2D + 1.0W Normal Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			4.9	Member X
3	40	SOL - 1" SOLID	-0.27	0.9D + 1.0W 60° Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			2.8	Member X
4	60	SOL - 1" SOLID	-0.85	1.2D + 1.0W 60° Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			8.7	Member X
5	70	SOL - 1" SOLID	-1.11	1.2D + 1.0W Normal Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			11.3	Member X
6	80	SOL - 1" SOLID	-0.40	0.9D + 1.0W Normal Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			4.1	Member X
7	100	SOL - 1" SOLID	-0.30	0.9D + 1.0W 60° Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			3.1	Member X
8	120	SOL - 1" SOLID	-1.17	1.2D + 1.0W 60° Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			11.9	Member X
9	140	SOL - 1" SOLID	-1.76	1.2D + 1.0W Normal Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			17.9	Member X
10	160	SOL - 1" SOLID	-0.37	0.9D + 1.0W 60° Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			3.7	Member X
11	180	SOL - 1" SOLID	-0.51	0.9D + 1.0W Normal Wind	4.00	100	100	100	134.40	36.00	9.82	0	0			5.2	Member X

Force/Stress Compression Summary

Structure: FL15359-A-SBA

Site Name: I-10 & I-75

Height: 250.00 (ft)

Base Elev: 0.000 (ft)

Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H

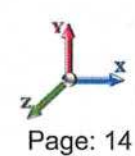
Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

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HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X Y Z	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
12	200	SOL - 1" SOLID	-2.51	1.2D + 1.0W 60° Wind	4.00	100 100 100	134.40	36.00	9.82	0	0		25.5	Member X
13	220	SOL - 1" SOLID	-1.59	1.2D + 1.0W 60° Wind	4.00	100 100 100	134.40	36.00	9.82	0	0		16.2	Member X
14	240	SOL - 1" SOLID	-1.78	1.2D + 1.0W Normal Wind	4.00	100 100 100	134.40	36.00	9.82	0	0		18.1	Member X
15	250	SOL - 1" SOLID	-2.26	1.2D + 1.0W 60° Wind	4.00	100 100 100	134.40	36.00	9.82	0	0		23.1	Member X

DIAGONAL MEMBERS

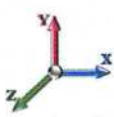
Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing % X Y Z	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls
1	6.7	SOL - 1" SOLID	-4.73	1.2D + 1.0W Normal Wind	3.38	95 95 95	107.74	36.00	13.81	0	0		34.2	Member X
2	20	SOL - 1" SOLID	-2.27	1.2D + 1.0W 90° Wind	5.20	95 95 95	166.03	36.00	6.44	0	0		35.2	Member X
3	40	SOL - 1" SOLID	-1.34	1.2D + 1.0W Normal Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		20.2	Member X
4	60	SOL - 1" SOLID	-2.13	1.2D + 1.0W Normal Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		32.1	Member X
5	70	SOL - 1" SOLID	-3.25	1.2D + 1.0W 90° Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		49.1	Member X
6	80	SOL - 1" SOLID	-1.79	0.9D + 1.0W 90° Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		27.1	Member X
7	100	SOL - 1" SOLID	-1.22	1.2D + 1.0W Normal Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		18.5	Member X
8	120	SOL - 1" SOLID	-3.37	1.2D + 1.0W Normal Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		50.9	Member X
9	140	SOL - 1 1/8" SOLID	-4.37	1.2D + 1.0W 90° Wind	5.13	95 95 95	145.46	36.00	10.61	0	0		41.1	Member X
10	160	SOL - 1 1/8" SOLID	-1.16	1.2D + 1.0W Normal Wind	5.13	95 95 95	145.46	36.00	10.61	0	0		10.9	Member X
11	180	SOL - 1 1/8" SOLID	-2.59	0.9D + 1.0W 90° Wind	5.13	95 95 95	145.46	36.00	10.61	0	0		24.4	Member X
12	200	SOL - 1 1/4" SOLID	-6.16	1.2D + 1.0W Normal Wind	5.13	95 95 95	130.94	36.00	16.12	0	0		38.2	Member X
13	220	SOL - 1" SOLID	-3.93	1.2D + 1.0W Normal Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		59.4	Member X
14	240	SOL - 1 1/8" SOLID	-3.52	1.2D + 1.0W 90° Wind	5.13	95 95 95	145.46	36.00	10.61	0	0		33.2	Member X
15	250	SOL - 1" SOLID	-4.86	1.2D + 1.0W Normal Wind	5.13	95 95 95	163.68	36.00	6.62	0	0		73.3	Member X

Force/Stress Tension Summary

Structure: FL15359-A-SBA
 Site Name: I-10 & I-75
 Height: 250.00 (ft)
 Base Elev: 0.000 (ft)
 Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
 Exposure: C
 Crest Height: 0.00
 Site Class: D - Stiff Soil
 Struct Class: II

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LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	6.7				0	0.00		
2	20				0	0.00		
3	40				0	0.00		
4	60				0	0.00		
5	70				0	0.00		
6	80				0	0.00		
7	100				0	0.00		
8	120				0	0.00		
9	140	SOL - 2" SOLID	3.19	0.9D + 1.0W 60° Wind	50	141.37	2.3	Member
10	160				0	0.00		
11	180	SOL - 1 3/4" SOLID	23.86	0.9D + 1.0W 60° Wind	50	108.24	22.0	Member
12	200	SOL - 1 3/4" SOLID	23.93	0.9D + 1.0W 60° Wind	50	108.24	22.1	Member
13	220				0	0.00		
14	240	SOL - 1 3/4" SOLID	10.08	0.9D + 1.0W 60° Wind	50	108.24	9.3	Member
15	250	SOL - 1 1/2" SOLID	10.17	0.9D + 1.0W 60° Wind	50	79.52	12.8	Member

Splices

Sect	Top Elev	Top Splice					Bottom Splice				
		Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %
1	6.7		0.00	0.00	0.0				0.00	0.00	
2	20		0.00	0.00	0.0				0.00	0.00	
3	40		0.00	0.00	0.0				0.00	0.00	
4	60		0.00	0.00	0.0				0.00	0.00	
5	70		0.00	0.00	0.0				0.00	0.00	
6	80		0.00	0.00	0.0				0.00	0.00	
7	100		0.00	0.00	0.0				0.00	0.00	
8	120		0.00	0.00	0.0				0.00	0.00	
9	140		0.00	0.00	0.0				0.00	0.00	
10	160		0.00	0.00	0.0				0.00	0.00	
11	180	0.9D + 1.0W 60° Wind	23.86	0.00	0.0				0.00	0.00	
12	200		0.00	0.00	0.0			0.9D + 1.0W 60° Wind	23.86	0.00	
13	220		0.00	0.00	0.0				0.00	0.00	
14	240	0.9D + 1.0W 60° Wind	10.08	0.00	0.0				0.00	0.00	
15	250		0.00	0.00	0.0			0.9D + 1.0W 60° Wind	10.08	0.00	

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	6.7	SOL - 1" SOLID	8.21	1.2D + 1.0W 90° Wind	36	25.45	0	0				32.3	Member
2	20	SOL - 1" SOLID	0.61	1.2D + 1.0W 60° Wind	36	25.45	0	0				2.4	Member
3	40	SOL - 1" SOLID	0.41	1.2D + 1.0W Normal Wi	36	25.45	0	0				1.6	Member
4	60	SOL - 1" SOLID	0.95	1.2D + 1.0W Normal Wi	36	25.45	0	0				3.7	Member
5	70	SOL - 1" SOLID	1.21	1.2D + 1.0W 60° Wind	36	25.45	0	0				4.8	Member
6	80	SOL - 1" SOLID	0.71	1.2D + 1.0W 60° Wind	36	25.45	0	0				2.8	Member
7	100	SOL - 1" SOLID	0.54	1.2D + 1.0W Normal Wi	36	25.45	0	0				2.1	Member
8	120	SOL - 1" SOLID	1.53	1.2D + 1.0W Normal Wi	36	25.45	0	0				6.0	Member
9	140	SOL - 1" SOLID	1.63	1.2D + 1.0W 60° Wind	36	25.45	0	0				6.4	Member
10	160	SOL - 1" SOLID	0.51	1.2D + 1.0W Normal Wi	36	25.45	0	0				2.0	Member
11	180	SOL - 1" SOLID	0.59	1.2D + 1.0W 60° Wind	36	25.45	0	0				2.3	Member
12	200	SOL - 1" SOLID	3.31	1.2D + 1.0W Normal Wi	36	25.45	0	0				13.0	Member

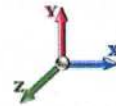
Force/Stress Tension Summary

Structure: FL15359-A-SBA
Site Name: I-10 & I-75
Height: 250.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

8/26/2021



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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
13	220	SOL - 1" SOLID	1.89	1.2D + 1.0W Normal Wi	36	25.45	0	0				7.4	Member
14	240	SOL - 1" SOLID	1.80	1.2D + 1.0W 60° Wind	36	25.45	0	0				7.1	Member
15	250	SOL - 1" SOLID	2.50	1.2D + 1.0W Normal Wi	36	25.45	0	0				9.8	Member

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	6.7	SOL - 1" SOLID	0.01	0.9D + 1.0W 90° Wind	36	25.45	0	0				0.1	Member
2	20	SOL - 1" SOLID	2.36	1.2D + 1.0W 90° Wind	36	25.45	0	0				9.3	Member
3	40	SOL - 1" SOLID	1.06	0.9D + 1.0W 90° Wind	36	25.45	0	0				4.2	Member
4	60	SOL - 1" SOLID	2.20	1.2D + 1.0W 90° Wind	36	25.45	0	0				8.6	Member
5	70	SOL - 1" SOLID	2.67	1.2D + 1.0W 90° Wind	36	25.45	0	0				10.5	Member
6	80	SOL - 1" SOLID	1.51	0.9D + 1.0W 60° Wind	36	25.45	0	0				5.9	Member
7	100	SOL - 1" SOLID	0.99	1.2D + 1.0W Normal Wi	36	25.45	0	0				3.9	Member
8	120	SOL - 1" SOLID	3.27	1.2D + 1.0W 90° Wind	36	25.45	0	0				12.9	Member
9	140	SOL - 1 1/8" SOLID	3.74	1.2D + 1.0W Normal Wi	36	32.21	0	0				11.6	Member
10	160	SOL - 1 1/8" SOLID	1.08	0.9D + 1.0W 90° Wind	36	32.21	0	0				3.4	Member
11	180	SOL - 1 1/8" SOLID	2.20	0.9D + 1.0W 60° Wind	36	32.21	0	0				6.8	Member
12	200	SOL - 1 1/4" SOLID	6.84	1.2D + 1.0W 90° Wind	36	39.76	0	0				17.2	Member
13	220	SOL - 1" SOLID	4.23	1.2D + 1.0W 90° Wind	36	25.45	0	0				16.6	Member
14	240	SOL - 1 1/8" SOLID	3.16	1.2D + 1.0W 60° Wind	36	32.21	0	0				9.8	Member
15	250	SOL - 1" SOLID	5.58	1.2D + 1.0W 90° Wind	36	25.45	0	0				21.9	Member

Seismic Section Forces

Structure: FL15359-A-SBA

Code: EIA/TIA-222-H

8/26/2021

Site Name: I-10 & I-75

Exposure: C

Height: 250.00 (ft)

Crest Height: 0.00

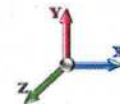
Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 0.85

Topography: 1

Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh

Dead Load Factor	1.20	Sds	0.091	Ss	0.0860	Fa	1.6000	Ke	1.0077	TL	8.0000
Seismic Load Factor	1.00	Sd1	0.081	S1	0.0510	Fv	2.4000	Kg	0.0059	Cs	0.0306
Seismic Importance Factor	1.00	W1	0.000	R	3.0000	Vs	1.0044	T	0.5153	f1	1.9405

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	3.35	628.48	0.43	11.54
2	13.35	1291.7	3.62	23.71
3	30.00	1969.8	12.51	36.16
4	50.00	1969.8	20.94	36.16
5	65.00	1098.5	15.14	20.17
6	75.00	893.74	14.21	16.41
7	90.00	1819.5	34.95	33.40
8	110.00	1969.8	46.35	36.16
9	130.00	2332.7	65.03	42.82
10	150.00	2035.2	65.47	37.36
11	170.00	2350.7	85.88	43.15
12	190.00	1958.2	79.91	35.95
13	210.00	1819.5	82.08	33.40
14	230.00	5256.1	262.01	96.48
15	245.00	4070.7	215.83	74.72

Load Case: 0.9D + 1.0Ev + 1.0Eh

Dead Load Factor	0.90	Sds	0.091	Ss	0.0860	Fa	1.6000	Ke	1.0077	TL	8.0000
Seismic Load Factor	1.00	Sd1	0.081	S1	0.0510	Fv	2.4000	Kg	0.0059	Cs	0.0306
Seismic Importance Factor	1.00	W1	0.000	R	3.0000	Vs	1.0044	T	0.5153	f1	1.9405

Sect #	Elev (ft)	Wz (lb)	Lateral Fsz (lbs)	Vertical Ev (lbs)
1	3.35	628.48	0.43	11.54
2	13.35	1291.7	3.62	23.71
3	30.00	1969.8	12.51	36.16
4	50.00	1969.8	20.94	36.16
5	65.00	1098.5	15.14	20.17
6	75.00	893.74	14.21	16.41
7	90.00	1819.5	34.95	33.40
8	110.00	1969.8	46.35	36.16
9	130.00	2332.7	65.03	42.82
10	150.00	2035.2	65.47	37.36
11	170.00	2350.7	85.88	43.15
12	190.00	1958.2	79.91	35.95
13	210.00	1819.5	82.08	33.40
14	230.00	5256.1	262.01	96.48
15	245.00	4070.7	215.83	74.72

Support Forces Summary

Structure: FL15359-A-SBA
Site Name: I-10 & I-75
Height: 250.00 (ft)
Base Elev: 0.000 (ft)
Gh: 0.85

Topography: 1

Code: EIA/TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

8/26/2021



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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal Wind	1	0.00	114.32	-2.28	
	A1	0.00	-1.19	0.87	
	A1b	33.70	-37.05	-20.73	
	A1a	-33.70	-37.05	-20.73	
1.2D + 1.0W 60° Wind	1	-2.23	96.86	-1.29	
	A1	-0.89	-7.54	8.18	
	A1b	6.64	-7.54	-4.86	
	A1a	-40.57	-43.24	-23.42	
1.2D + 1.0W 90° Wind	1	-2.36	108.50	-0.14	
	A1	-1.22	-23.26	24.74	
	A1b	1.90	-2.58	-1.57	
	A1a	-41.12	-43.87	-23.03	
0.9D + 1.0W Normal Wind	1	0.00	105.22	-2.34	
	A1	0.00	-1.20	0.88	
	A1b	33.66	-37.00	-20.71	
	A1a	-33.66	-37.00	-20.71	
0.9D + 1.0W 60° Wind	1	-2.27	87.98	-1.31	
	A1	-0.89	-7.60	8.24	
	A1b	6.69	-7.60	-4.89	
	A1a	-40.59	-43.26	-23.43	
0.9D + 1.0W 90° Wind	1	-2.41	99.45	-0.13	
	A1	-1.22	-23.24	24.72	
	A1b	1.92	-2.60	-1.59	
	A1a	-41.09	-43.83	-23.01	
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	85.35	-0.18	
	A1	0.00	-10.26	12.30	
	A1b	13.00	-12.79	-7.63	
	A1a	-13.00	-12.79	-7.63	
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.16	85.17	-0.09	
	A1	-0.10	-11.06	13.16	
	A1b	11.35	-11.06	-6.67	
	A1a	-13.79	-13.59	-7.96	
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.18	85.26	0.00	
	A1	-0.13	-11.93	14.12	
	A1b	10.79	-10.43	-6.28	
	A1a	-13.66	-13.42	-7.83	
1.2D + 1.0Ev + 1.0Eh	1	0.00	80.83	-0.01	
	A1	0.00	-12.62	15.05	
	A1b	13.83	-13.61	-7.99	
	A1a	-13.83	-13.61	-7.99	
0.9D + 1.0Ev + 1.0Eh	1	0.00	71.95	-0.01	
	A1	0.00	-12.80	15.22	
	A1b	13.98	-13.79	-8.08	
	A1a	-13.98	-13.79	-8.07	

1.0D + 1.0W Normal Wind	1	0.00	65.13	-0.74
	A1	0.00	-4.50	5.73
	A1b	13.61	-13.90	-8.13
	A1a	-13.61	-13.90	-8.13

1.0D + 1.0W 60° Wind	1	-0.63	65.61	-0.36
	A1	-0.23	-7.84	9.21
	A1b	7.86	-7.84	-4.81
	A1a	-16.74	-17.22	-9.67

1.0D + 1.0W 90° Wind	1	-0.73	65.39	0.00
	A1	-0.29	-10.87	12.52
	A1b	5.74	-5.46	-3.44
	A1a	-15.97	-16.29	-9.09

Max Reactions (kips)	Base	Anchor 1		
Vertical	114.32	43.87		
Horizontal	2.62	47.13		

Cable Forces Summary

Structure: FL15359-A-SBA

Code: EIA/TIA-222-H

8/26/2021

Site Name: I-10 & I-75

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

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Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kips)	Applied Tension (kips)	Use %
1.2D + 1.0W Normal Wind	70.00	1/2 EHS	A1	28	16.02	0.29	2
			A1b	28a	16.02	6.45	40
			A1a	28b	16.02	6.46	40
	130.00	5/8 EHS	A1	52	25.44	0.12	0
			A1b	52a	25.44	10.67	42
			A1a	52b	25.44	10.67	42
	179.63	3/4 EHS	A1	71	34.98	0.58	2
			A1b	71a	34.98	17.33	50
			A1a	71b	34.98	17.33	50
	239.63		A1	95	34.98	1.18	3
			A1b	95a	34.98	21.24	61
			A1a	95b	34.98	21.24	61
1.2D + 1.0W 60° Wind	70.00	1/2 EHS	A1	28	16.02	1.68	10
			A1b	28a	16.02	1.67	10
			A1a	28b	16.02	8.34	52
	130.00	5/8 EHS	A1	52	25.44	2.68	11
			A1b	52a	25.44	2.68	11
			A1a	52b	25.44	12.70	50
	179.63	3/4 EHS	A1	71	34.98	3.63	10
			A1b	71a	34.98	3.64	10
			A1a	71b	34.98	19.92	57
	239.63		A1	95	34.98	4.01	11
			A1b	95a	34.98	4.01	11
			A1a	95b	34.98	24.46	70
1.2D + 1.0W 90° Wind	70.00	1/2 EHS	A1	28	16.02	3.99	25
			A1b	28a	16.02	0.51	3
			A1a	28b	16.02	7.96	50
	130.00	5/8 EHS	A1	52	25.44	6.98	27
			A1b	52a	25.44	0.82	3
			A1a	52b	25.44	12.66	50
	179.63	3/4 EHS	A1	71	34.98	11.09	32
			A1b	71a	34.98	1.26	4
			A1a	71b	34.98	20.36	58
	239.63		A1	95	34.98	13.08	37
			A1b	95a	34.98	1.71	5
			A1a	95b	34.98	25.06	72
0.9D + 1.0W Normal Wind	70.00	1/2 EHS	A1	28	16.02	0.29	2
			A1b	28a	16.02	6.44	40
			A1a	28b	16.02	6.45	40
	130.00	5/8 EHS	A1	52	25.44	0.12	0
			A1b	52a	25.44	10.67	42
			A1a	52b	25.44	10.67	42
	179.63	3/4 EHS	A1	71	34.98	0.58	2
			A1b	71a	34.98	17.32	50
			A1a	71b	34.98	17.32	50
	239.63		A1	95	34.98	1.19	3
			A1b	95a	34.98	21.19	61
			A1a	95b	34.98	21.19	61
0.9D + 1.0W 60° Wind	70.00	1/2 EHS	A1	28	16.02	1.69	11
			A1b	28a	16.02	1.68	11
			A1a	28b	16.02	8.32	52
	130.00	5/8 EHS	A1	52	25.44	2.70	11
			A1b	52a	25.44	2.70	11

0.9D + 1.0W 60° Wind	130.00	5/8 EHS	A1a	52b	25.44	12.71	50
	179.63	3/4 EHS	A1	71	34.98	3.66	10
			A1b	71a	34.98	3.66	10
			A1a	71b	34.98	19.95	57
	239.63		A1	95	34.98	4.04	12
			A1b	95a	34.98	4.04	12
0.9D + 1.0W 90° Wind	70.00	1/2 EHS	A1a	95b	34.98	24.46	70
			A1	28	16.02	4.00	25
			A1b	28a	16.02	0.51	3
			A1a	28b	16.02	7.95	50
	130.00	5/8 EHS	A1	52	25.44	6.98	27
			A1b	52a	25.44	0.83	3
			A1a	52b	25.44	12.67	50
	179.63	3/4 EHS	A1	71	34.98	11.09	32
			A1b	71a	34.98	1.27	4
			A1a	71b	34.98	20.35	58
	239.63		A1	95	34.98	13.06	37
			A1b	95a	34.98	1.72	5
1.2D + 1.0Di + 1.0Wi Normal Wind	70.00	1/2 EHS	A1a	95b	34.98	25.01	72
			A1	28	16.02	2.92	18
			A1b	28a	16.02	3.39	21
			A1a	28b	16.02	3.39	21
	130.00	5/8 EHS	A1	52	25.44	4.18	16
			A1b	52a	25.44	4.87	19
			A1a	52b	25.44	4.87	19
	179.63	3/4 EHS	A1	71	34.98	5.25	15
			A1b	71a	34.98	6.37	18
			A1a	71b	34.98	6.37	18
	239.63		A1	95	34.98	4.79	14
			A1b	95a	34.98	6.32	18
1.2D + 1.0Di + 1.0Wi 60° Wind	70.00	1/2 EHS	A1a	95b	34.98	6.32	18
			A1	28	16.02	3.06	19
			A1b	28a	16.02	3.06	19
			A1a	28b	16.02	3.53	22
	130.00	5/8 EHS	A1	52	25.44	4.39	17
			A1b	52a	25.44	4.39	17
			A1a	52b	25.44	5.08	20
	179.63	3/4 EHS	A1	71	34.98	5.60	16
			A1b	71a	34.98	5.60	16
			A1a	71b	34.98	6.73	19
	239.63		A1	95	34.98	5.28	15
			A1b	95a	34.98	5.28	15
1.2D + 1.0Di + 1.0Wi 90° Wind	70.00	1/2 EHS	A1a	95b	34.98	6.81	19
			A1	28	16.02	3.23	20
			A1b	28a	16.02	2.95	18
			A1a	28b	16.02	3.50	22
	130.00	5/8 EHS	A1	52	25.44	4.63	18
			A1b	52a	25.44	4.22	17
			A1a	52b	25.44	5.04	20
	179.63	3/4 EHS	A1	71	34.98	5.98	17
			A1b	71a	34.98	5.32	15
			A1a	71b	34.98	6.66	19
	239.63		A1	95	34.98	5.80	17
			A1b	95a	34.98	4.90	14
1.2D + 1.0Ev + 1.0Eh	70.00	1/2 EHS	A1a	95b	34.98	6.70	19
			A1	28	16.02	3.69	23
			A1b	28a	16.02	3.76	23
			A1a	28b	16.02	3.76	23
	130.00	5/8 EHS	A1	52	25.44	5.07	20
			A1b	52a	25.44	5.24	21
			A1a	52b	25.44	5.24	21
	179.63	3/4 EHS	A1	71	34.98	6.25	18
			A1b	71a	34.98	6.68	19
			A1a	71b	34.98	6.68	19
	239.63		A1	95	34.98	5.62	16
			A1b	95a	34.98	6.31	18

1.2D + 1.0Ev + 1.0Eh	239.63	3/4 EHS	A1a	95b	34.98	6.31	18
0.9D + 1.0Ev + 1.0Eh	70.00	1/2 EHS	A1	28	16.02	3.70	23
			A1b	28a	16.02	3.77	24
			A1a	28b	16.02	3.77	24
	130.00	5/8 EHS	A1	52	25.44	5.12	20
			A1b	52a	25.44	5.29	21
			A1a	52b	25.44	5.29	21
	179.63	3/4 EHS	A1	71	34.98	6.34	18
			A1b	71a	34.98	6.77	19
			A1a	71b	34.98	6.77	19
	239.63		A1	95	34.98	5.72	16
			A1b	95a	34.98	6.41	18
			A1a	95b	34.98	6.41	18
1.0D + 1.0W Normal Wind	70.00	1/2 EHS	A1	28	16.02	1.49	9
			A1b	28a	16.02	3.27	20
			A1a	28b	16.02	3.27	20
	130.00	5/8 EHS	A1	52	25.44	2.25	9
			A1b	52a	25.44	4.90	19
			A1a	52b	25.44	4.90	19
	179.63	3/4 EHS	A1	71	34.98	2.60	7
			A1b	71a	34.98	6.76	19
			A1a	71b	34.98	6.76	19
	239.63		A1	95	34.98	1.70	5
			A1b	95a	34.98	7.16	20
			A1a	95b	34.98	7.16	20
1.0D + 1.0W 60° Wind	70.00	1/2 EHS	A1	28	16.02	2.06	13
			A1b	28a	16.02	2.06	13
			A1a	28b	16.02	3.84	24
	130.00	5/8 EHS	A1	52	25.44	3.14	12
			A1b	52a	25.44	3.14	12
			A1a	52b	25.44	5.75	23
	179.63	3/4 EHS	A1	71	34.98	4.00	11
			A1b	71a	34.98	4.00	11
			A1a	71b	34.98	8.23	24
	239.63		A1	95	34.98	3.75	11
			A1b	95a	34.98	3.75	11
			A1a	95b	34.98	9.15	26
1.0D + 1.0W 90° Wind	70.00	1/2 EHS	A1	28	16.02	2.66	17
			A1b	28a	16.02	1.63	10
			A1a	28b	16.02	3.68	23
	130.00	5/8 EHS	A1	52	25.44	4.01	16
			A1b	52a	25.44	2.49	10
			A1a	52b	25.44	5.51	22
	179.63	3/4 EHS	A1	71	34.98	5.38	15
			A1b	71a	34.98	2.96	8
			A1a	71b	34.98	7.82	22
	239.63		A1	95	34.98	5.47	16
			A1b	95a	34.98	2.34	7
			A1a	95b	34.98	8.59	25

Analysis Summary

Structure: FL15359-A-SBA	Code: EIA/TIA-222-H	8/26/2021
Site Name: I-10 & I-75	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: 23



Max Reactions

Base:	114.32 (Vertical)	2.62 (Horizontal)
Anchor 1:	43.87 (Vertical)	47.13 (Horizontal)

Max Usages

Max Leg: 100.0% (1.2D + 1.0W Normal Wind - Sect 11)
 Max Diag: 73.3% (1.2D + 1.0W Normal Wind - Sect 15)
 Max Horiz: 32.3% (1.2D + 1.0W 90° Wind - Sect 1)
 Max Cable: 71.6% (1.2D + 1.0W 90° Wind) - Elev: 240 ft

Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.0Ev + 1.0Eh - Normal To Face	223.58	0.0293	-0.0035	0.0167
	240.00	0.0337	-0.0117	0.0471
	246.79	0.0358	-0.0081	0.0191
	250.00	0.0368	-0.0073	0.0167
0.9D + 1.0W 117 mph Wind at 60° From Face	223.58	1.1339	0.0044	0.4683
	240.00	1.2694	0.0026	1.1955
	246.79	1.3330	-0.0026	0.5375
	250.00	1.3595	-0.0027	0.4483
0.9D + 1.0W 117 mph Wind at 90° From Face	223.58	1.6514	0.1270	0.7473
	240.00	1.8692	0.1187	1.4604
	246.79	1.9668	0.1210	0.8210
	250.00	2.0093	0.1212	0.7400
0.9D + 1.0W 117 mph Wind at Normal To Face	223.58	1.8763	0.0054	0.8655
	240.00	2.1285	-0.0058	1.5790
	246.79	2.2410	-0.0052	0.9465
	250.00	2.2904	-0.0053	0.8602
1.0D + 1.0W 60 mph Wind at 60° From Face	223.58	0.2330	-0.0075	0.0904
	240.00	0.2586	-0.0077	0.2840
	246.79	0.2713	-0.0082	0.1074
	250.00	0.2763	-0.0083	0.0829
1.0D + 1.0W 60 mph Wind at 90° From Face	223.58	0.2254	0.0873	0.0841
	240.00	0.2497	0.0891	0.2751
	246.79	0.2616	0.0885	0.1013
	250.00	0.2663	0.0884	0.0781
1.0D + 1.0W 60 mph Wind at Normal To Face	223.58	0.2073	-0.0074	0.0704
	240.00	0.2269	-0.0076	0.2502
	246.79	0.2371	-0.0081	0.0870
	250.00	0.2410	-0.0082	0.0638
1.2D + 1.0Di + 1.0Wi 30 mph Wind at 60° From Face	223.58	0.0569	-0.0060	0.0223
	240.00	0.0629	-0.0151	0.0811
	246.79	0.0661	-0.0125	0.0284
	250.00	0.0674	-0.0120	0.0211

1.2D + 1.0Di + 1.0Wi 30 mph Wind at 90° From Face	223.58	0.0561	0.0013	0.0209
	240.00	0.0618	0.0041	0.0782
	246.79	0.0648	0.0021	0.0274
	250.00	0.0660	0.0017	0.0194

1.2D + 1.0Di + 1.0Wi 30 mph Wind at Normal From Face	223.58	0.0530	-0.0061	0.0191
	240.00	0.0581	-0.0153	0.0730
	246.79	0.0609	-0.0127	0.0257
	250.00	0.0620	-0.0121	0.0183

1.2D + 1.0Ev + 1.0Eh - Normal To Face	223.58	0.0295	-0.0036	0.0169
	240.00	0.0339	-0.0125	0.0474
	246.79	0.0361	-0.0085	0.0195
	250.00	0.0371	-0.0077	0.0173

1.2D + 1.0W 117 mph Wind at 60° From Face	223.58	1.1403	0.0053	0.4722
	240.00	1.2769	0.0032	1.2021
	246.79	1.3409	0.0030	0.5416
	250.00	1.3677	0.0029	0.4518

1.2D + 1.0W 117 mph Wind at 90° From Face	223.58	1.6676	0.1265	0.7562
	240.00	1.8881	0.1178	1.4730
	246.79	1.9869	0.1201	0.8309
	250.00	2.0300	0.1204	0.7498

1.2D + 1.0W 117 mph Wind at Normal To Face	223.58	1.8946	0.0061	0.8755
	240.00	2.1498	-0.0054	1.5937
	246.79	2.2637	-0.0047	0.9578
	250.00	2.3137	-0.0048	0.8711

	Pier Foundation For Guy Anchors		Date
			8/26/2021
	Customer Name:	SBA Communications Corp	EIA/TIA Standard:
	Site Name:		Structure Height (Ft.):
	Site Number:	FL15359-A-SBA	Engineer Name:
Engr. Number:	114070	Engineer Login ID:	J. Tibbetts

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):

Uplift Force (Kips):

Foundation Geometries:

Diameter of Pier (ft.):

Pier Height A. G. (ft.):

Material Properties and Rebar Info:

Concrete Strength (psi):

Vertical bar yield (ksi)

Vertical Rebar Size #:

Qty. of Vertical Rebars:

Concrete Cover (in.):

Consider ties in concrete shear strength?

Soil Design Parameters:

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

Ratio of Uplift/Axial Skin Friction:

Skin Frictions are to be obtained from:

Drawings/Calculations

Guy Anchor

Analysis

0.0

43.9

4.0

1.00

3000

60

9

12

3

2.5

1.00

Shear Force (Kips):

Moment (Kips-ft):

Depth of Base B. G. S. :

Steel Elastic Modulus:

Tie steel yield strength:

Tie / Stirrup Size #:

Tie Spacing:

Concrete unit weight:

Yes

Unit weight of water:

Pullout failure Angle:

Soil Report

47.1

0.0

22.0 ft.

29000 ksi

40 ksi

4

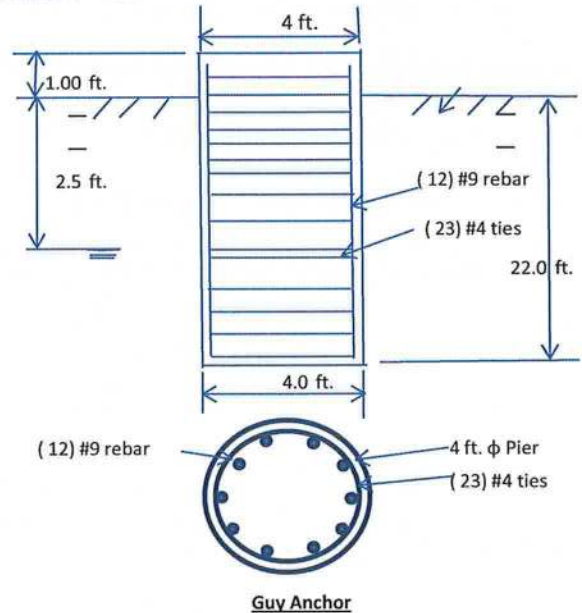
12.0 in.

150.0 pcf

62.4 psf

30 (°)

Acceptable (per ACI 318M-11) 5.10.4



Sand

Depth of Layers (ft)		γ_{soil}	ϕ	Cohesion	Ultimate Skin Friction	Ultimate Bearing	Soil Types						
Top	Bottom	(pcf)	(°)	(psf)	(psf)	(psf)							
0.0	3.0	100	0	0			Sand						
3.0	25.0	109	30	0	292.4	4000	Sand						
25.0	30.0												

Soil weight Increase Factor for bouyant soils (1.0 to 1.15):

1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:

0.75

Soil Bearing Strength Reduction Factor:

0.75

Total Dry Soil Volume from Conical Failure (cu. Ft.):

Total Buoyant Soil Volume from Conical Failure (cu. Ft.):

Total Dry Concrete Volume (cu. Ft.):

Total Buoyant Concrete Volume (cu. Ft.):

Total Effective Concrete Weight (Kips):

Total Effective Vertical Load on Base (Kips):

1492

3968

44

245

28.1

15

Dry Soil Weight from Conical Failure:

Buoyant Soil Weight from Conical Failure (Kips):

Total Dry Concrete Weight:

Total Buoyant Concrete Weight:

Total Effective Soil Weight:

149

159

6.60

21.47

308

Kips

Kips

Kips

Kips

Kips

Check Soil Capacities:

Calculated Foundation Uplift Capacity (Kips):	77.62	>	Design Factored Uplift Load (Kips):	44	0.57	OK!
Allowable Overturning Moment Resistance (Kips-ft.):	1476.7	>	Design Factored Moment (kips-ft):	671	0.45	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

Reinforcing Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.20		
Maximum Moment Location Below Grade Surface (ft.):	8.07	Max. Shear force Location B. G. S. (ft.):	8.97		
Calculated Moment Capacity (Mn,Kips-Ft):	1017	> Design Factored Moment (Mu, K-Ft):	427.5	0.42	OK!
Calculated Shear Capacity (Kips):	168.6	> Design Factored Shear (Kips):	47.1	0.28	OK!
Calculated Tension Capacity (Tn, Kips):	648.0	> Design Factored Tension (Tu Kips):	43.9	0.07	OK!
Calculated Compression Capacity (Pn, Kips):	2384	> Design Factored Axial Load (Pu Kips):	0.0	0.00	OK!
Moment & Axial Strength Combination(Tu/Tn+Mu/Mn):	0.42	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI			

Reinforce Pier Foundation by Adding Concrete Block (Yes/No ?)

No



Tower Engineering Solutions

Guyed Tower Base Design

Date

8/26/2021

Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-H
Site Name:		Structure Height (Ft.):	250
Site Number:	FL15359-A-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	114070	Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Vertical Load (Kips):	114.3	Shear Force (Kips):	2.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	

Available Overturning %:

5.4%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	3.0	Depth of Base BG (ft.):	4.0
Base Height A. G. (ft.):	0.50	Thickness of Pad (ft):	1.50
Length of Pad (ft.):	9	Width of Pad (ft.):	9

Final Length of pad (ft)	9.0	Final width of pad (ft):	9.0
--------------------------	-----	--------------------------	-----

Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	6	Tie / Stirrup Size #:	3	
No. of Vertical Rebars:	12	Tie Spacing (in):	6.0	
Design Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	6	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
No. of Rebar in Pad (L):	10	Qty. of Rebar in Pad (W):	10	

Soil Design Parameters:

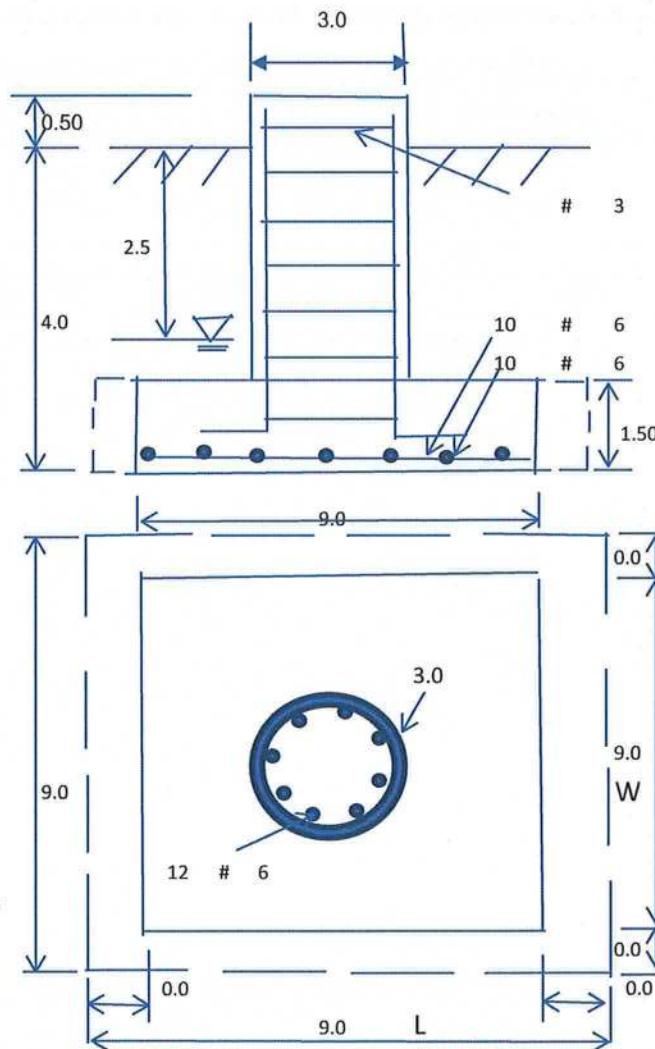
Soil Unit Weight (pcf):	109.0	Soil Buoyant Weight:	55.0	Pcf
Water Table B.G.S. (ft):	2.5	Unit Weight of Water:	62.4	pcf
Estimated Bearing Pressure (psf):	4000	Ultimate Skin Friction:	0	Psf
		Angle from Top of Pad:	30	
		Angle from Bottom of Pad:	25	
		Angle from Bottom of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.6
Total Dry Soil Volume (cu. Ft.):	184.83	Total Dry Soil Weight (Kips):	20.15
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	20.15	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	21.21	Total Dry Concrete Weight (Kips):	3.18
Total Buoyant Concrete Volume (cu. Ft.):	121.50	Total Buoyant Concrete Weight (Kips):	10.64
Total Effective Concrete Weight (Kips):	13.82	Total Vertical Load on Base (Kips):	148.29

Check Soil Capacities:

Calculated Maximum Net Soil Pressure under the base (psf):	1693.6	<	Allowable Factored Soil Bearing (psf):	2400	0.71	OK!
Calculated Foundation Allowable Axial Capacity (Kips):	194.4	>	Design Factored Axial Load (Kips):	135	0.69	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):

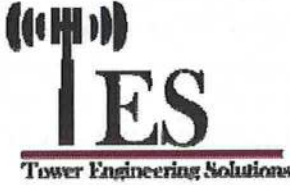
0.65 Wind Load Factor on Concrete Design: 1.00

Load/
Capacity
RatioConcrete Pier:

Vertical Steel Rebar Area (sq. in./each):	0.44	Tie / Stirrup Area (sq. in./each):	0.11		
Calculated Moment Capacity (Mn, Kips-Ft):	340.6	> Design Factored Moment (Mu, Kips-Ft)	7.9	0.02	OK!
Calculated Shear Capacity (Kips):	147.0	> Design Factored Shear (Kips):	2.6	0.02	OK!
Calculated Tension Capacity (Tn, Kips):	285.1	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	1342.7	> Design Factored Axial Load (Pu Kips):	114.3	0.09	OK!
Moment & Axial Strength Combination (Pu/Pn+Mu/Mn):	0.11	OK!			
Pier Reinforcement Ratio:	0.005				

Concrete Pad:

One-Way Design Shear Capacity (L-Dir. Kips):	129.8	> One-Way Factored Shear (L-Dir Kips):	23.7	0.18	OK!
One-Way Design Shear Capacity (W-Dir. Kips):	129.8	> One-Way Factored Shear (W-Dir Kips)	23.7	0.18	OK!
Two-Way Design Shear Capacity (Kips):	382.2	> Two-Way Factored Shear (Kips):	94.9	0.25	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0028	OK!	Lower Steel Pad Reinf. Ratio (W-Direct)	0.0028	OK!
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	280.1	> Moment at Bottom (L-Direct. K-Ft):	59.8	0.21	OK!
Lower Steel Pad Moment Capacity (W-Dir. Kips-ft):	280.1	> Moment at Bottom (W-Dir. Kips-Ft):	59.8	0.21	OK!

	Guy Anchor Analysis and Design		Date
			8/26/2021
	Customer Name:	SBA Communications Corp	EIA/TIA Standard:
	Site Name:	0	Structure Height (Ft.):
	Site Number:	FL15359-A-SBA	Engineer Name:
	Engr. Number:	114070	Engineer Login ID:

Foundation Info Obtained from:

Drawings/Calculations

Number of Anchors:

1 Set

Failure model:

New

Soil Design Parameters:

Soil Unit Weight (pcf):	109.0	Soil Buoyant Weight:	47.0	Pcf	Cohesion of Soils (psf):	0
Water Table B.G.S. (ft):	2.5	Unit Weight of Water:	62.4	pcf	Internal Angle of Friction (°)	30
Ultimate lateral pressure (psf):	0	Ultimate Skin Friction:	0	Psf	Coefficient of Shear Friction:	0.41
Conical Failure Angle from Top:	30	Failure Angle from Bottom:	20			

Material Properties:

Concrete Strength (psi):	3000	Unit Weight of Concrete:	150.0	psf	Horizontal Rebar Yield (psi):	60000
Shear Strength Reduction Factor:	0.75				Flexure Strength Reduction Factor:	0.9

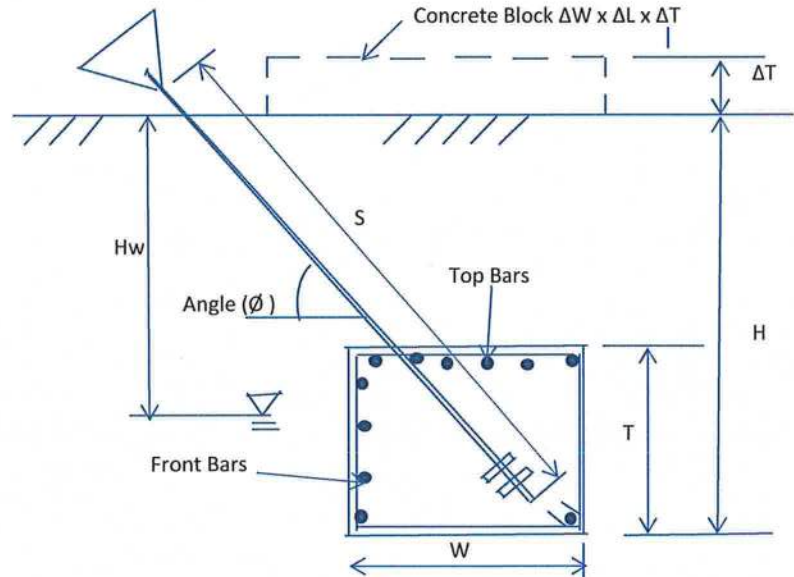
A. Inner Anchors:

Radius (ft.): 180

1. Design Reactions (Factored):Uplift (Kips): 43.9 Shear (Kips): 47.1 Angle of force resultant (ϕ): 42.9**2. Foundation Geometries:**

Block Base Depth B.G.S. (ft):	6.0	Block with/without toe?	No	Water Table below grade (ft):	2.50
Length of Anchor Block (L, ft.):	22.0	Width of Anchor Block:	6.5 ft.	Thickness of Anchor Block (ft.):	3.5
Concrete Block @ top of Anchor?	No				

<u>(1). Inner Anchors:</u>		Radius (ft.):	180
H (ft.):	6.0	Hw(ft.):	2.5
L (ft.):	22.0	W (ft.):	6.5
T (ft.):	3.5	Angle ($\emptyset$):	42.9
S (ft.):	9.54		
Top bars:	6	#	7
Front bars:	4	#	7
Concrete Volume (Cu. Yd.)/Each:			18.54



3. Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	465.79	Total Dry Soil Weight (Kips):	68.44
Total Buoyant Soil Volume (cu. Ft.):	133.02	Total Buoyant Soil Weight (Kips):	6.25
Total Effective Soil Weight (Kips):	50.77	Weight of the Concrete Block at Top (Kips):	0.00
Total Dry Concrete Volume (cu. Ft.):	0.00	Total Dry Concrete Weight (Kip):	0.00
Total Buoyant Concrete Volume (cu. Ft.):	500.50	Total Buoyant Concrete Weight (Kips):	43.84
Total Effective Concrete Weight (Kips):	43.84	Weight Reduction Factor:	0.9
Soil Uplift Strength Reduction Factor A:	0.75	Shear Strength Reduction Factor:	0.75
Soil Uplift Strength Reduction Factor B:	0.9		

4. Check Soil and Foundation Capacities:

Nominal Factored Uplift Resistance:	83.38	Kips > Design Uplift Force (Kips):	43.9	OK!
Ultimate Shear Friction Resistance at base:	22.86	Kips Ultimate Resistance Pressure:	1064.3	Psf
Factored Shear Resistance:	78.61	Kips > Design Shear Force (Kips):	47.1	OK!

5. Design Concrete Block:

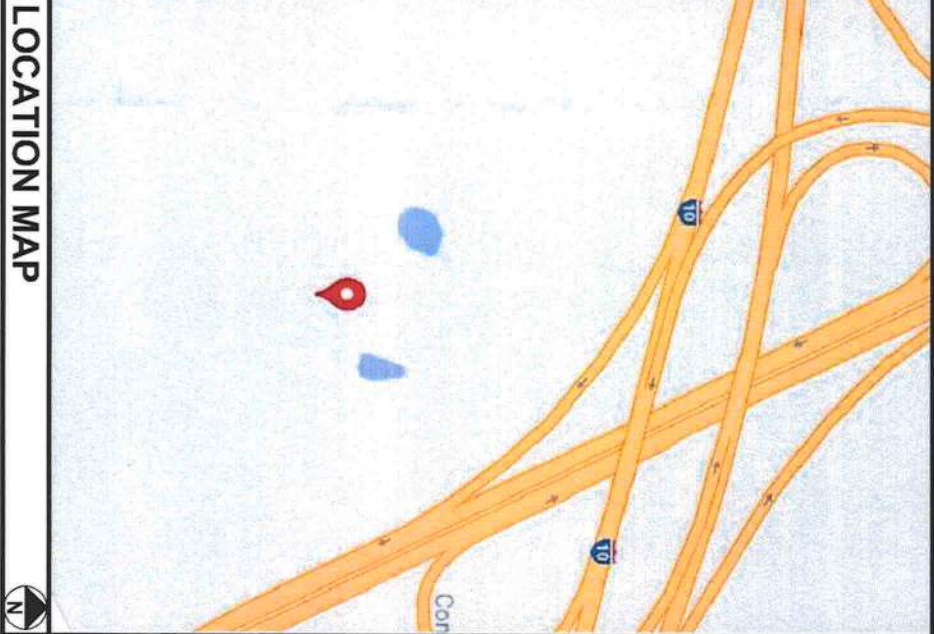
Rebar Size (#):	7	Wind Load Factor on Concrete Design:	1.00	
Qty. of the Rebar at top of the block:	6	Qty. of the Rebar in the front of the block:	4	
Area of Single Rebar (sq. in.):	0.60	Factor for concrete compression zone:	0.85	
One Way Shear due to Shear Force (Kips):	23.6	One Way Shear Capacity for shear (kips):	255.3	OK!
One Way Shear due to Uplift (Kips):	21.9	One Way Shear Capacity for uplift (kips):	243.5	OK!
Moment due to Shear Load (Kips-ft):	129.6	Flexural Capacity for Shear Load (Kips-ft):	799.1	OK!
Moment due to uplift Load (Kips-ft):	120.6	Flexural Capacity for uplift Load (Kips-ft):	615.4	OK!
Ratio of Design Moment/Moment capacity:	0.20	Minimum ratio of rebar (top & front) :	0.11	OK!
Max. Ratio of Shear Force/Shear capacity:	0.09	OK!		

0.0

0.0

VERIZON SITE NUMBER: 427192
VERIZON SITE NAME: TIGER BAY - A
PROJECT DESCRIPTION: RFDS 5G L-SUB6
TOWER TYPE: 250' GUYED
SITE ADDRESS: 255 NORTHWEST SERENE COURT, LAKE CITY, FL 33487 (COLUMBIA COUNTY)
JURISDICTION: COLUMBIA COUNTY
PRESENT OCCUPANCY TYPE: TELECOMMUNICATIONS FACILITY
CURRENT ZONING: A-3
PARCEL ID #: 06-3S-16-02009-001

PROJECT INFORMATION
LATITUDE: N 30° 15' 48.30" *
LONGITUDE: W 82° 45' 21.70" *
GROUND ELEVATION: 100± (AMSL) **
*INFORMATION PROVIDED BY RFDS
**INFORMATION PROVIDED BY GOOGLE EARTH
SITE COORDINATES

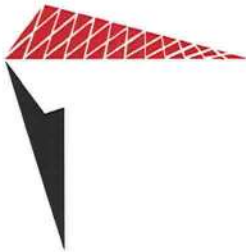


verizon
4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

VZW SITE #: 427192
VZW SITE NAME: TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487

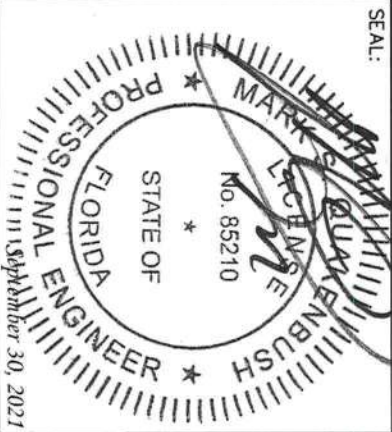
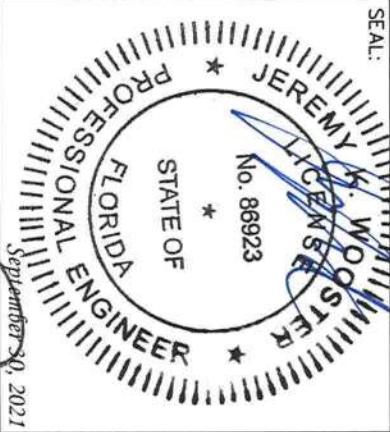


PLANS PREPARED BY:


TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011

1	09-30-21	CONSTRUCTION							
0	09-17-21	PRELIMINARY							
REV	DATE	ISSUED FOR:							

DRAWN BY: LLS CHECKED BY: JHJ



SHEET NUMBER: T-1 REVISION: 1
TEP#: 257418-405523

LESSEE:

NAME: VERIZON WIRELESS
ADDRESS: 4700 EXCHANGE COURT, SUITE 100
CITY, STATE, ZIP: BOCA RATON, FL 33431
CONTACT: MARTHA GINTIS
PHONE: (561) 995-5539

TOWER OWNER:

NAME: SBA COMMUNICATIONS CORPORATION
ADDRESS: 8051 CONGRESS AVENUE
CITY, STATE, ZIP: BOCA RATON, FL 33487
CONTACT: GENERAL INQUIRES
PHONE: (800) 487-7483

SURVEYOR:

NAME: N/A
ADDRESS: N/A
CITY, STATE, ZIP: N/A
CONTACT: N/A
PHONE: N/A

CIVIL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS
ADDRESS: 326 TRYON ROAD
CITY, STATE, ZIP: RALEIGH, NC 27603-3530
CONTACT: JEREMY K. WOOSTER, P.E.
PHONE: (919) 661-6351

ELECTRICAL ENGINEER:

NAME: TOWER ENGINEERING PROFESSIONALS
ADDRESS: 326 TRYON ROAD
CITY, STATE, ZIP: RALEIGH, NC 27603-3530
CONTACT: MARK S. QUAKENBUSH, P.E.
PHONE: (919) 661-6351

PROPERTY OWNER:

NAME: GRAHAM, CHARLES W. & JOYCE E.
ADDRESS: 255 NORTHWEST SERENE COURT
CITY, STATE, ZIP: LAKE CITY, FL 32055
CONTACT: CHARLES W. GRAHAM
PHONE: UNKNOWN

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING:

- 2020 FLORIDA BUILDING CODE
- LOCAL BUILDING CODE
- ANSI/TIA-222-H-2-2017
- 2017 NATIONAL ELECTRIC CODE
- CITY/COUNTY ORDINANCES

CODE COMPLIANCE

ULTIMATE WIND SPEED: 135 MPH
SERVICE WIND SPEED: 60 MPH
RISK CATEGORY: II
EXPOSURE CATEGORY: B
TOPOGRAPHIC CATEGORY: 1.0

INFORMATION PROVIDED BY PASSING STRUCTURAL ANALYSIS REPORT BY TOWER ENGINEERING SOLUTIONS DATED 08/28/21.

DESIGN CRITERIA

UTILITIES:

POWER COMPANY: SUWANNEE VALLEY
CONTACT: ELECTRIC COOP.
PHONE: CUSTOMER SERVICE
METER # NEAR SITE: 10 122 097

TELEPHONE COMPANY: UNKNOWN
CONTACT: UNKNOWN
PHONE: UNKNOWN
PEDESTAL # NEAR SITE: UNKNOWN

THE PURPOSE OF THIS PROJECT IS AS FOLLOWS:

TOWER SCOPE OF WORK:

- REMOVE (3) ERICSSON RRUS32 RRUS
- REMOVE (6) COMMScope E15R05P19 TMAs
- REMOVE (1) 1/2" HYBRID CABLE
- REMOVE (1) RAYCAP RC3DC-3315PF-48
- INSTALL (3) ERICSSON AIR649 ANTENNAS
- INSTALL (3) ERICSSON RRUS 8843 RRUS
- INSTALL (6) COMMScope TMATU0C-11V TMAs (AT PAD ON GROUND LEVEL)

GROUND SCOPE OF WORK:

- REMOVE (6) ERICSSON 2212 RRUS
- INSTALL (3) ERICSSON RRUS 4449 RRUS

SCOPE OF WORK

SHEET	DESCRIPTION	REV
T-1	TITLE SHEET	1
N-1	PROJECT NOTES	1
C-1	SITE PLAN	1
C-1A	EXISTING EQUIPMENT PAD LAYOUT	1
C-1B	PROPOSED EQUIPMENT PAD LAYOUT	1
C-2	TOWER ELEVATION	1
C-3A	EXISTING ANTENNA LAYOUT	1
C-3B	PROPOSED ANTENNA LAYOUT	1
C-3C	EXISTING ANTENNA & COAX SCHEDULE	1
C-3D	PROPOSED ANTENNA & COAX SCHEDULE	1
E-1	ELECTRICAL NOTES	1
E-2	POWER PANEL SCHEDULE	1
G-1	GROUNDING DETAILS	1

INDEX OF SHEETS

PROJECT NOTES:

1. ALL REFERENCES TO THE OWNER AND/OR LESSEE IN THESE DOCUMENTS SHALL BE CONSIDERED VERIZON OR ITS DESIGNATED REPRESENTATIVE.
2. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2020 FLORIDA BUILDING CODE, 7TH EDITION.
3. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
4. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
5. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
6. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
8. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
9. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
10. IF APPLICABLE, ALL CONCRETE WORK SHALL COMPLY TO LOCAL CODES AND THE ACI 318-11, "BUILDING REQUIREMENTS FOR STRUCTURAL CONCRETE".
11. ALL TOWER DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
12. ALL TOWER MODIFICATION WORK SHALL BE IN ACCORDANCE WITH TIA-1019-A STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

PLANS PREPARED FOR:



4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011

SEAL:



I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: LLS CHECKED BY: JHJ

SHEET TITLE:

PROJECT
NOTES

SHEET NUMBER: REVISION:

N-1

1

TEP#: 257418.485523

NOTES:

1. SITE PLAN SHOWN BELOW WAS REPRODUCED FROM INFORMATION PROVIDED BY COLUMBIA COUNTY GIS. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. EXISTING INFORMATION INDICATED ON THE SITE PLAN SHOWN WAS REPRODUCED FROM MAPS PROVIDED BY COLUMBIA COUNTY GIS. TEP DOES NOT GUARANTEE, OR ENSURE THE PRECISION, ACCURACY OR CORRECTNESS AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR DAMAGES, LOSS OF REVENUE, OR INJURY THAT MIGHT OCCUR.
3. THE TOWER IS LOCATED IN ZONE "X" AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO FEMA COMMUNITY PANEL #12023C0170D EFFECTIVE NOVEMBER 2, 2018.

PLANS PREPARED FOR:

verizon
4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

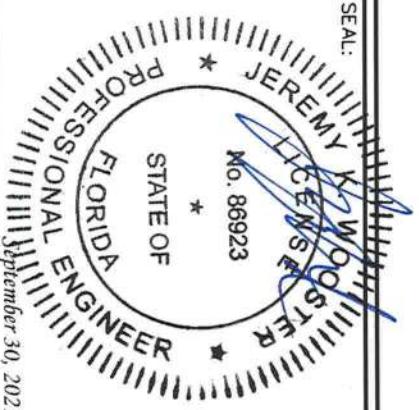
PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011

SEAL:



I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: LLS | CHECKED BY: JHU

SHEET TITLE:

SITE PLAN

SHEET NUMBER: | REVISION: **1**

C-1

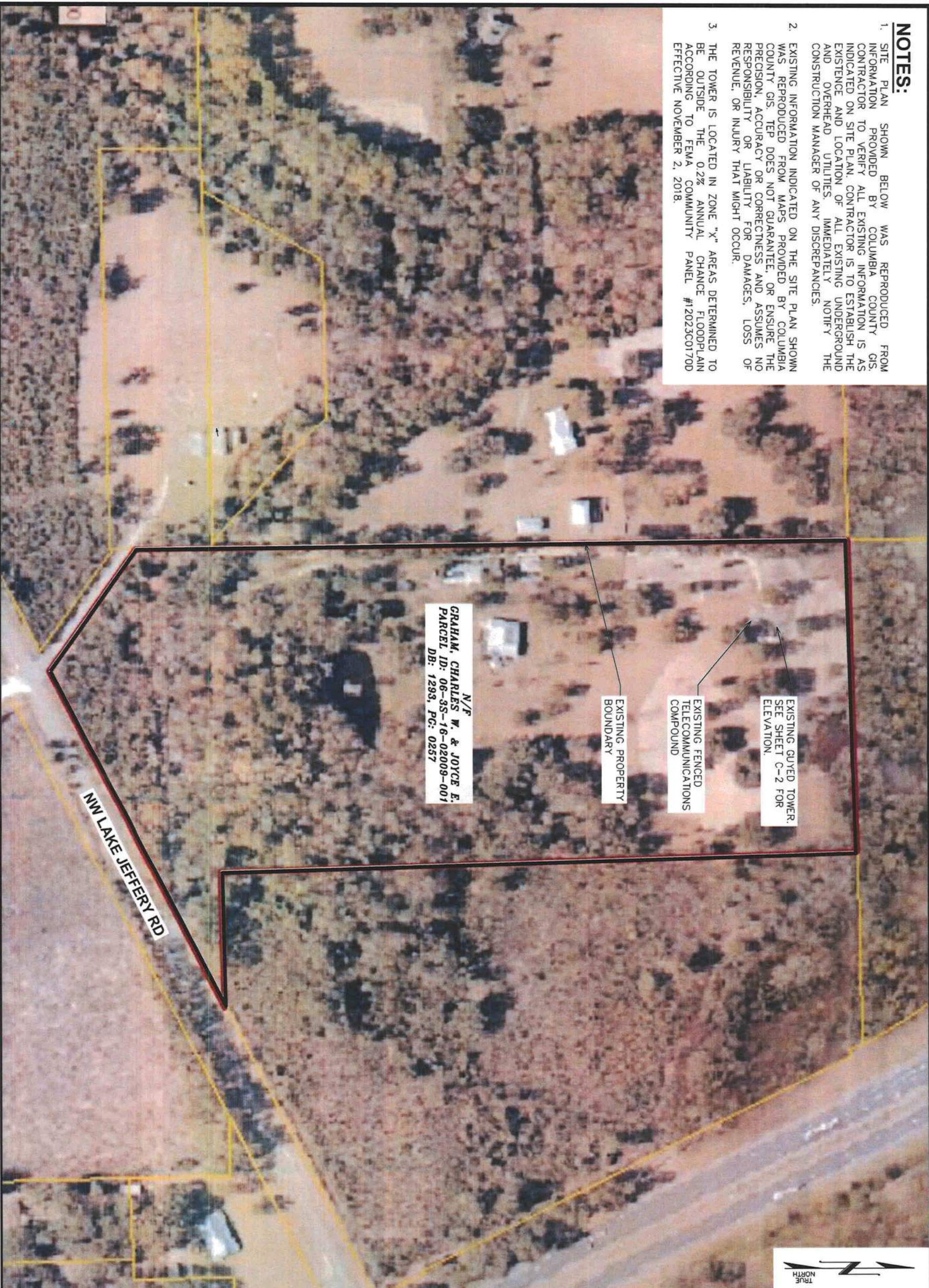
TEP#: 257418-455523

SITE PLAN

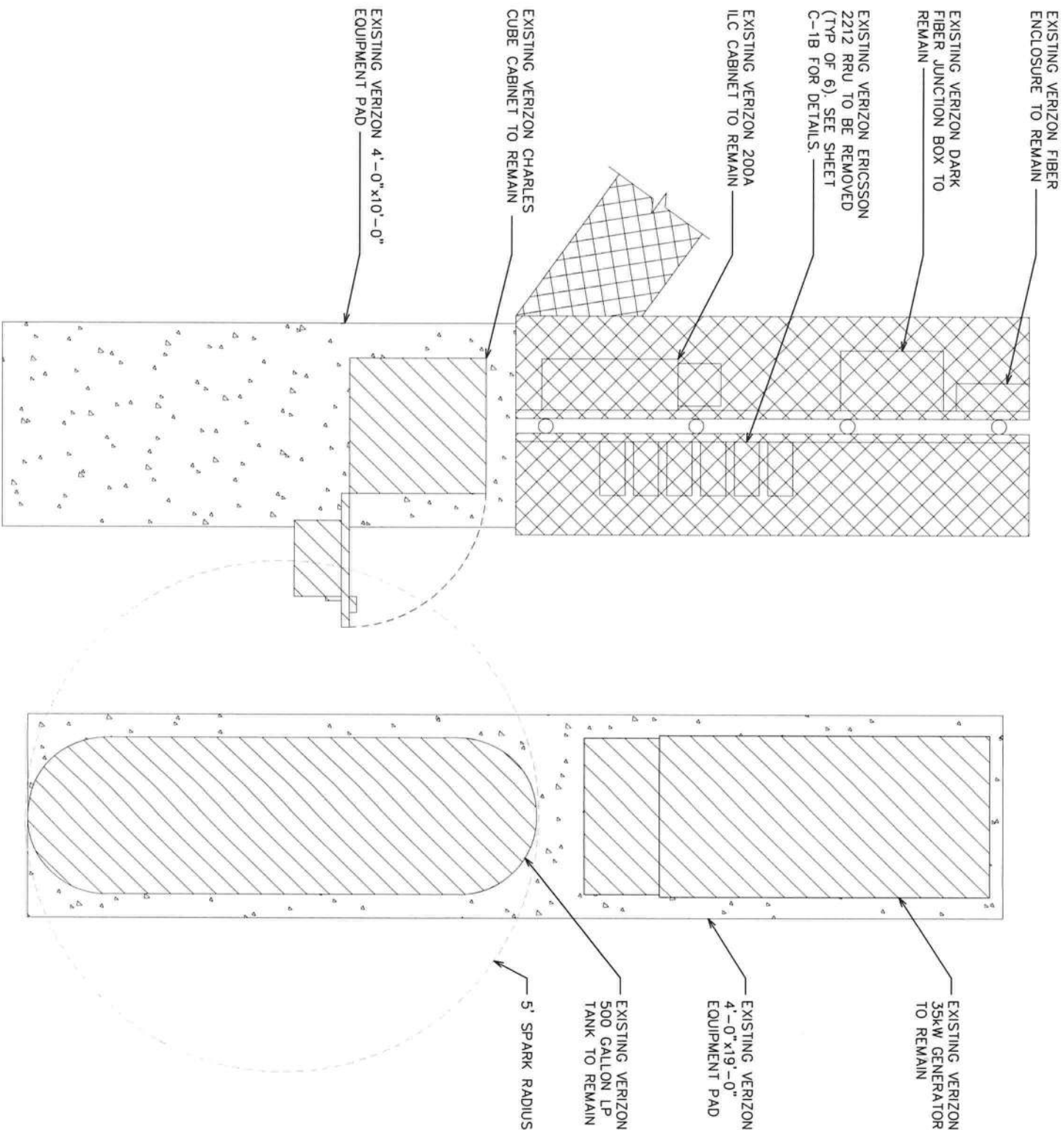
SCALE: 1" = 200'



SCALE IN FEET



NOTE:
EQUIPMENT LAYOUT SHOWN BELOW BASED ON
DOCUMENTS PROVIDED BY VERIZON WIRELESS.



PLANS PREPARED FOR:

verizon

4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011

SEAL:

JEREMY M. MOSELEY
No. 86923
STATE OF FLORIDA
PROFESSIONAL ENGINEER
September 30, 2021

I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY:	LLS	CHECKED BY: JHJ

SHEET TITLE:

**EXISTING
EQUIPMENT
PAD LAYOUT**

SHEET NUMBER: **C-1A**

REVISION: **1**

TEP#: 257418.465523

EXISTING EQUIPMENT PAD LAYOUT

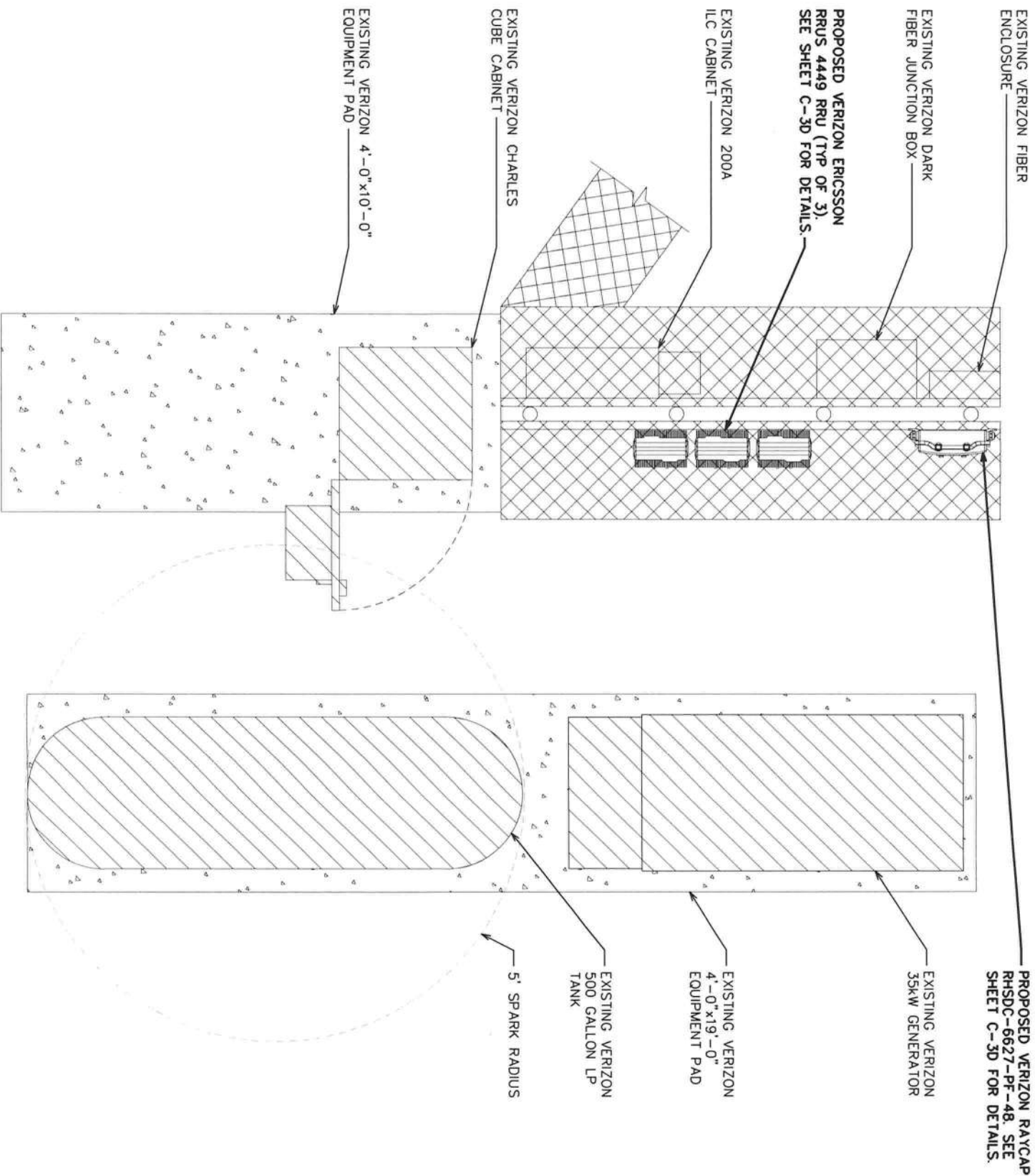
SCALE: 3/8" = 1'-0"



SCALE IN FEET

NOTES:

1. EQUIPMENT LAYOUT SHOWN BELOW BASED ON DOCUMENTS PROVIDED BY VERIZON WIRELESS.
2. CONTRACTOR TO INSTALL EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS.



PLANS PREPARED FOR:



4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

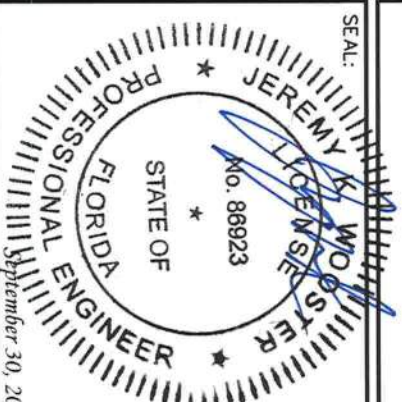
PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD
RALEIGH, NC 27603-3630
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011



SEAL:



I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY:	LLS	CHECKED BY: JHL

SHEET TITLE:

PROPOSED
EQUIPMENT
PAD LAYOUT

SHEET NUMBER: REVISION:

C-1B 1

TEP #: 257418.485523

PROPOSED EQUIPMENT PAD LAYOUT

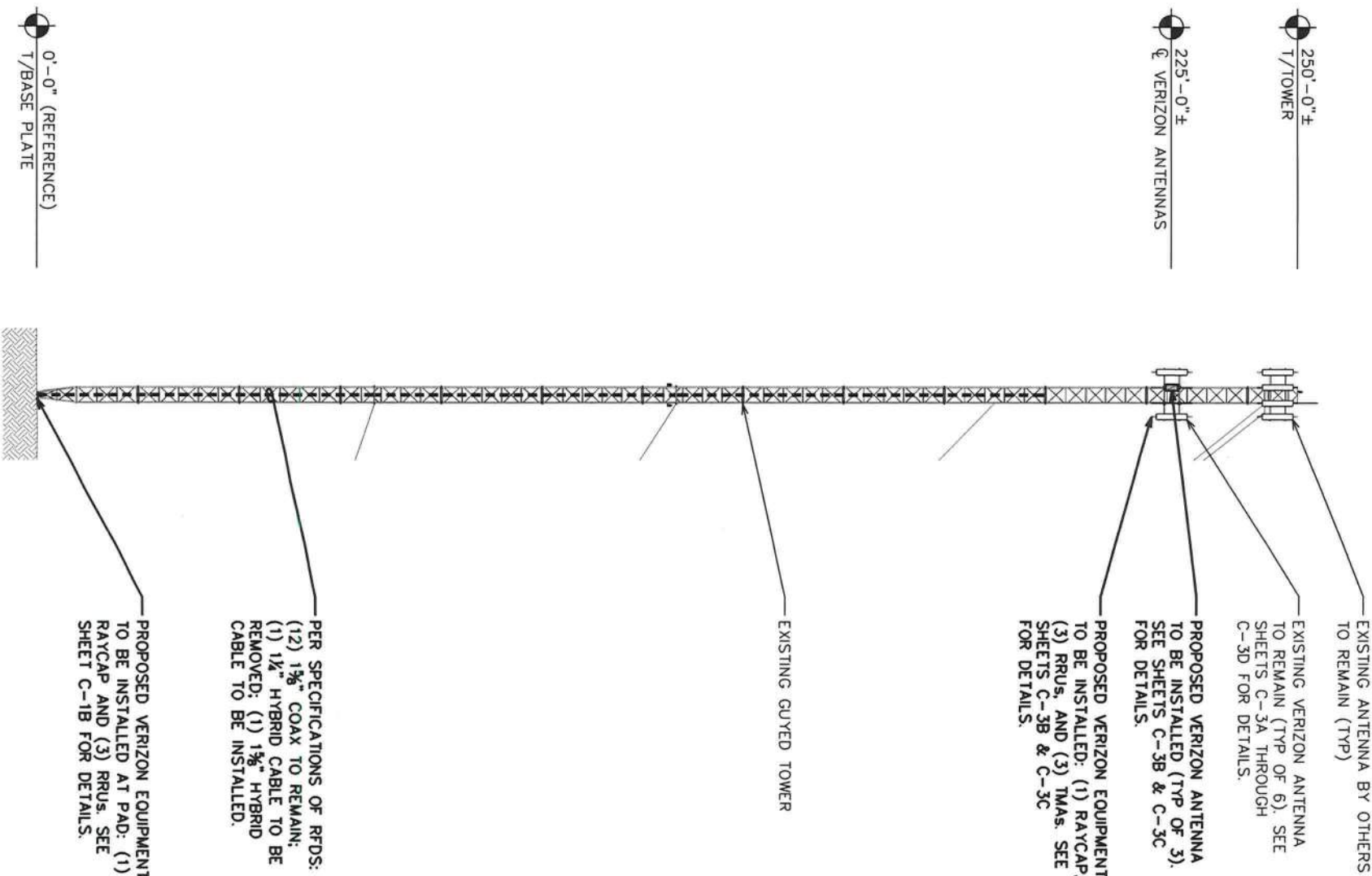
SCALE: 3/8" = 1'-0"



SCALE IN FEET

NOTES:

- EXISTING TOWER HAS SUFFICIENT CAPACITY TO HOLD PROPOSED LOADING. SEE THE STRUCTURAL ANALYSIS REPORT BY TOWER ENGINEERING SOLUTIONS DATED AUGUST 26, 2021 FOR DETAILS.
- CONTRACTOR TO INSTALL EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS.
- THE DRAWINGS IS ONLY A GRAPHIC REPRESENTATION OF THE STRUCTURE. CONDITIONS IN THE FIELD MAY VARY.
- FAA APPROVED OVERALL HEIGHT = 260'-0".



PROPOSED TOWER ELEVATION

SCALE: 1" = 30'



SCALE IN FEET

PLANS PREPARED FOR:

verizon
4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

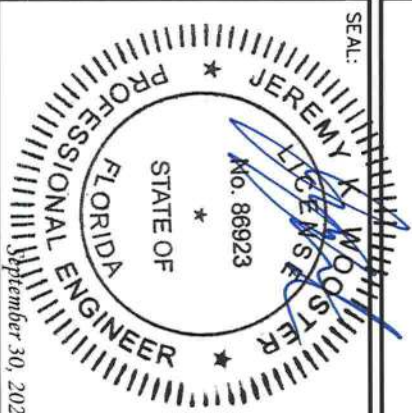
VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011

SEAL:



I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: LLS CHECKED BY: JHL

SHEET TITLE:

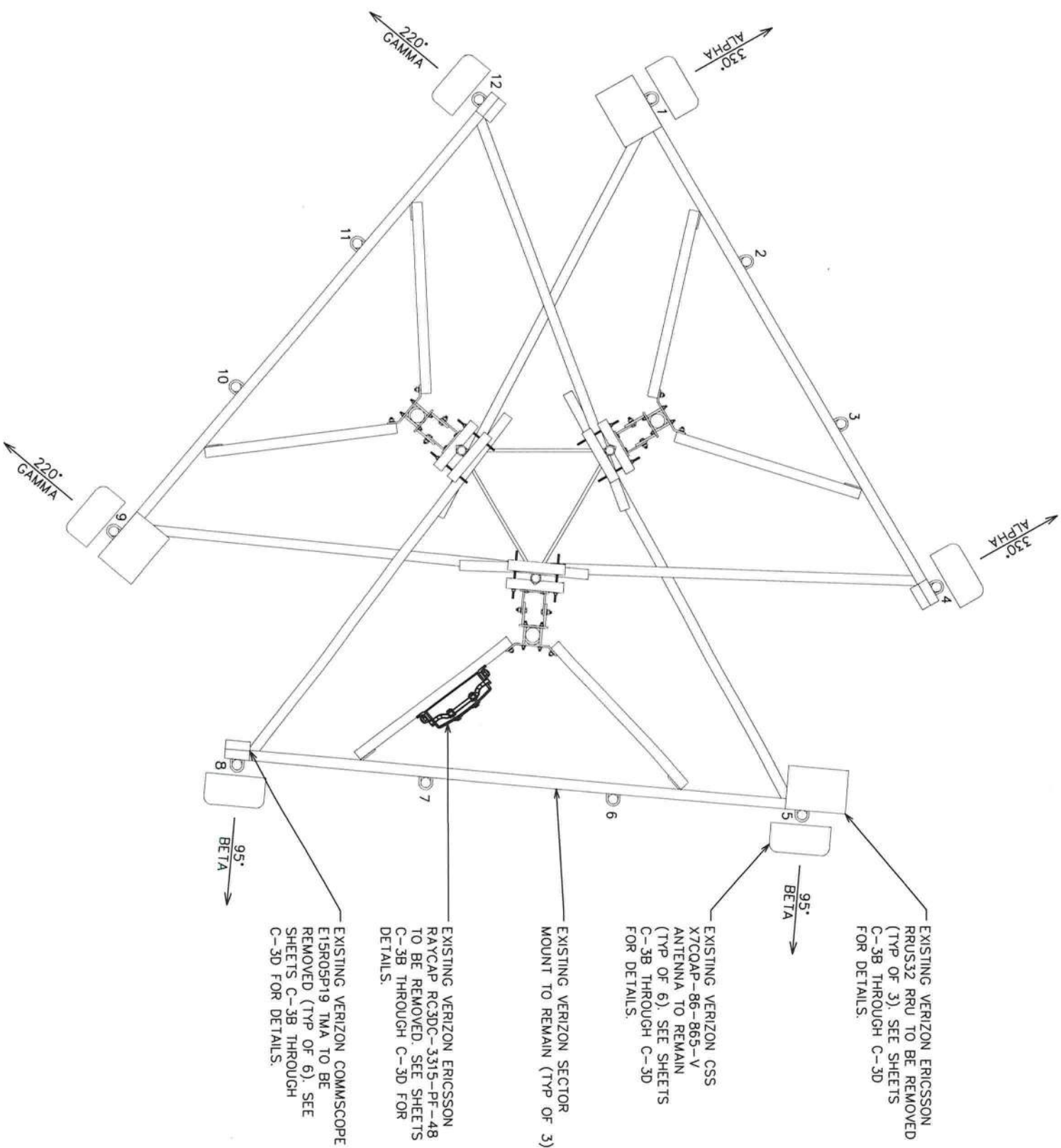
**TOWER
ELEVATION**

SHEET NUMBER: REVISION:

C-2 **1**

TEP#: 257418, 405523

NOTE:
EXISTING MOUNTS HAVE SUFFICIENT CAPACITY TO HOLD PROPOSED LOADING. SEE THE ANTENNA MOUNT ANALYSIS REPORT BY MASER DATED JANUARY 19, 2021 FOR DETAILS.



EXISTING ANTENNA LAYOUT @ 225'-0"

SCALE: $\frac{3}{8}" = 1'-0"$



PLANS PREPARED FOR:

verizon

4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A

255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6361
www.tepgroup.net
FL COA # 31011

SEAL:

JEREMY K. MOSE
No. 86923
STATE OF FLORIDA
PROFESSIONAL ENGINEER
September 30, 2021

1	09-30-21	CONSTRUCTION
0	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY: LLS CHECKED BY: JHU		

SHEET TITLE:

EXISTING ANTENNA LAYOUT

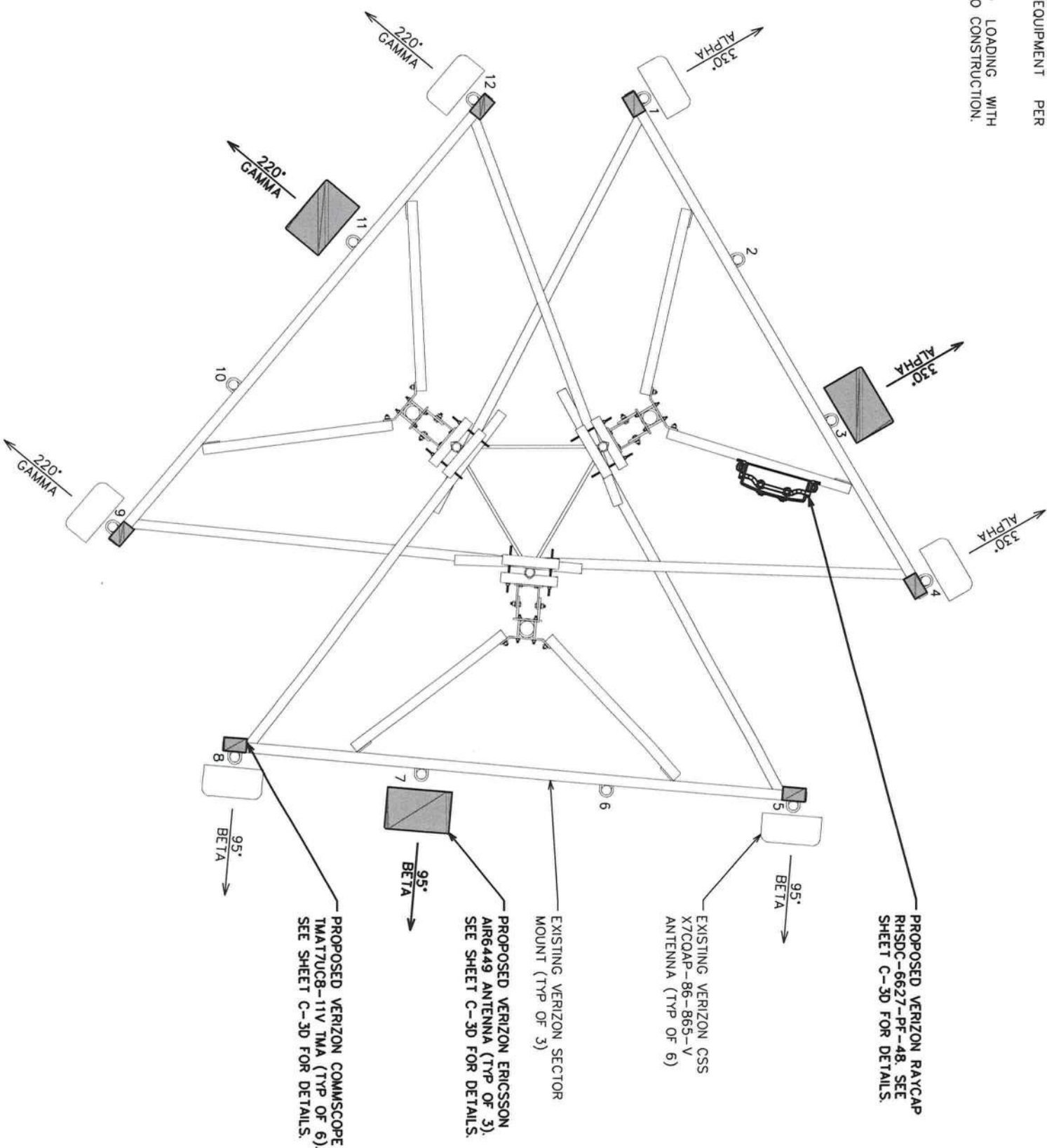
SHEET NUMBER: **C-3A**

REVISION: **1**

TEP#: 257418-485523

NOTES:

1. EXISTING MOUNTS HAVE SUFFICIENT CAPACITY TO HOLD PROPOSED LOADING. SEE THE ANTENNA MOUNT ANALYSIS REPORT BY MASER DATED JANUARY 19, 2021 FOR DETAILS.
2. CONTRACTOR TO INSTALL ALL EQUIPMENT PER MANUFACTURER'S SPECIFICATION.
3. CONTRACTOR TO VERIFY PROPOSED LOADING WITH TOWER STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION.



PROPOSED ANTENNA LAYOUT @ 225'-0"

SCALE: 3/8" = 1'-0"



SCALE IN FEET

PLANS PREPARED FOR:



4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:

TIGER BAY - A

255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

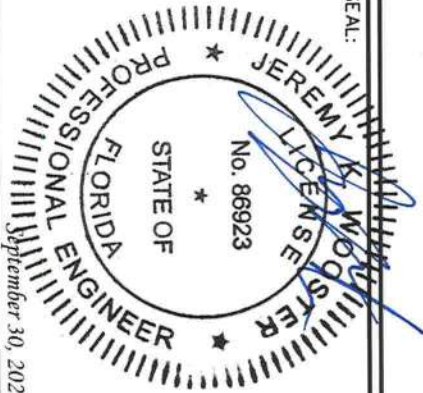
PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011



SEAL:



1 09-30-21 CONSTRUCTION

0 09-17-21 PRELIMINARY

REV DATE ISSUED FOR:

DRAWN BY: LLS CHECKED BY: JHJ

SHEET TITLE:

PROPOSED
ANTENNA LAYOUT

SHEET NUMBER: REVISION:

C-3B 1

TEP#:257418,405523

PLANS PREPARED FOR:

4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539



PROJECT INFORMATION:

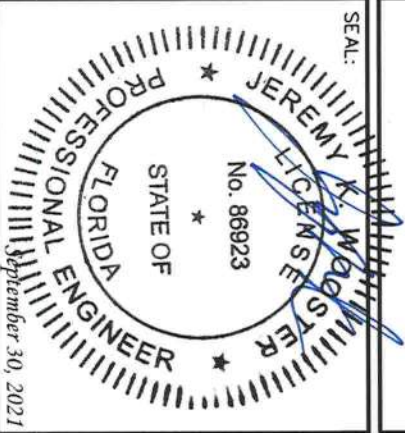
VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011



SEAL:



I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: ILS CHECKED BY: JHU

SHEET TITLE:

**EXISTING ANTENNA
& COAX SCHEDULE**

SHEET NUMBER: REVISION:

C-3C **1**
TEP #: 257418, 485523

EXISTING ANTENNA & COAX SCHEDULE

Pos.	SECTOR	USE	MANUFACTURER (MODEL #)	RAD CENTER	CABLE SIZE	AZIMUTH (TN)	CABLE LENGTH	MECH. D-TILT	ELEC. D-TILT	EQUIPMENT [MODEL #]	J-BOX (TOWER)			
1	ALPHA	700 LTE 2100 LTE	CSS X7COAP-86-865-V	℄ @ 225'-0"±	*(1) 1½"ø HYBRID (12) 1½"ø COAX	330°	265'±	0°	4°	*(1) ERICSSON RRU [RRUS32] *(2) COMMSCOPE TMA5 [E15R05P19]				
2	ALPHA		-	-		-		-	-					
3	ALPHA		-	-		-		-	-					
4	ALPHA	700 LTE 2100 LTE	CSS X7COAP-86-865-V	℄ @ 225'-0"±		330°		0°	0°	*(1) ERICSSON RRU [RRUS32] *(2) COMMSCOPE TMA5 [E15R05P19]				
5	BETA		CSS X7COAP-86-865-V	℄ @ 225'-0"±		95°		0°	4°					
6	BETA		-	-		-		-	-					
7	BETA	700 LTE 2100 LTE	-	-		*(1) 1½"ø HYBRID (12) 1½"ø COAX		-	265'±	-		-	*(1) ERICSSON RRU [RRUS32] *(2) COMMSCOPE TMA5 [E15R05P19]	*(1) RAYCAP [RC3DC-3315-PF-48]
8	BETA		CSS X7COAP-86-865-V	℄ @ 225'-0"±				95°		0°		0°		
9	GAMMA		CSS X7COAP-86-865-V	℄ @ 225'-0"±				220°		0°		4°		
10	GAMMA	700 LTE 2100 LTE	-	-				-		-		-	*(1) ERICSSON RRU [RRUS32] *(2) COMMSCOPE TMA5 [E15R05P19]	
11	GAMMA		-	-				-		-		-		
12	GAMMA		CSS X7COAP-86-865-V	℄ @ 225'-0"±				220°		0°		0°		

*NOTE - EXISTING ANTENNA/EQUIPMENT TO BE REMOVED

GROUND WORK:

CONTRACTOR TO REMOVE: (6) ERICSSON 2212 RRUS.

EXISTING ANTENNA & COAX SCHEDULE @ 225'-0"

SCALE: N.T.S.

PLANS PREPARED FOR:

4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

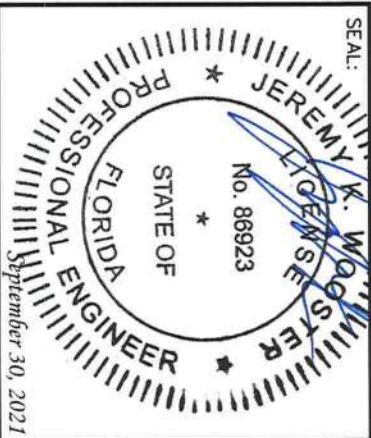
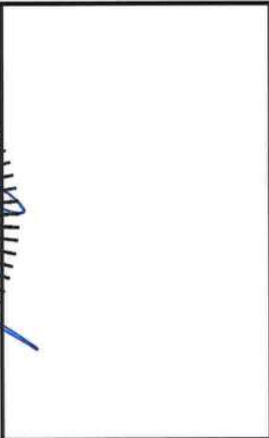


PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
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FL COA # 31011



I	09-30-21	CONSTRUCTION
O	09-17-21	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY: LLS		
CHECKED BY: JHU		

SHEET TITLE:

PROPOSED ANTENNA
& COAX SCHEDULE

SHEET NUMBER:

C-3D

REVISION:

1

TEP#:257418,485523

PROPOSED EQUIPMENT IN BOLD>

PROPOSED ANTENNA & COAX SCHEDULE

POS. SECTOR	USE	MANUFACTURER (MODEL #)	RAD CENTER	CABLE SIZE	AZIMUTH (TN)	CABLE LENGTH	MECH. D-TILT	ELEC. D-TILT	EQUIPMENT [MODEL #]	J-BOX (TOWER)
1	ALPHA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	CSS X7COAP-86-865-V	℄ @ 225'-0"±	330'	*265'±	••	••	(1) ERICSSON RRU [RRUS 8843]	(1) RAYCAP [RHSDC-6627-PF-48] *** (1) RAYCAP [RHSDC-6627-PF-48]
2	ALPHA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	-	-	-		-	-	(2) COMMSCOPE TMAas [TMA7UC8-11V]	
3	ALPHA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	ERICSSON AIR6449	℄ @ 225'-0"±	330'		••	••	(2) COMMSCOPE TMAas [TMA7UC8-11V]	
4	ALPHA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	CSS X7COAP-86-865-V	℄ @ 225'-0"±	330'		••	••	(1) ERICSSON RRU [RRUS 8843]	
5	BETA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	CSS X7COAP-86-865-V	℄ @ 225'-0"±	95'		••	••	(2) COMMSCOPE TMAas [TMA7UC8-11V]	
6	BETA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	-	-	-		-	-	(1) ERICSSON RRU [RRUS 8843]	
7	BETA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	ERICSSON AIR6449	℄ @ 225'-0"±	95'		••	••	(2) COMMSCOPE TMAas [TMA7UC8-11V]	
8	BETA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	CSS X7COAP-86-865-V	℄ @ 225'-0"±	95'		••	••	(1) ERICSSON RRU [RRUS 8843]	
9	GAMMA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	CSS X7COAP-86-865-V	℄ @ 225'-0"±	220'		••	••	(2) COMMSCOPE TMAas [TMA7UC8-11V]	
10	GAMMA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	-	-	-		-	-	(1) ERICSSON RRU [RRUS 8843]	
11	GAMMA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	ERICSSON AIR6449	℄ @ 225'-0"±	220'		••	••	(2) COMMSCOPE TMAas [TMA7UC8-11V]	
12	GAMMA	700 LTE 2100 LTE AWS3 LTE 850 5GHR 1900 LTE NL-SUB6	CSS X7COAP-86-865-V	℄ @ 225'-0"±	220'		••	••	(1) ERICSSON RRU [RRUS 8843]	

*NOTE - CONTRACTOR TO VERIFY COAX/CABLE LENGTHS PRIOR TO CONSTRUCTION

**NOTE - CONTRACTOR TO REFERENCE VERIZON ISSUED RFDS FOR MECH./ELEC. D-TILTS

***NOTE - EQUIPMENT TO BE MOUNTED AT PAD ON GROUND LEVEL

GROUND WORK:

CONTRACTOR TO INSTALL: (3) ERICSSON RRUS 4449 RRUS.

PROPOSED ANTENNA & COAX SCHEDULE @ 225'-0"

SCALE: N.T.S.

ELECTRICAL NOTES:

SCOPE:

- 1. PROVIDE LABOR, MATERIALS, INSPECTION, AND TESTING TO PROVIDE CODE COMPLIANCE FOR ELECTRIC, TELEPHONE, AND GROUNDING/LIGHTNING SYSTEMS.

CODES:

- 1. THE INSTALLATION SHALL COMPLY WITH APPLICABLE LAWS AND CODES. THESE INCLUDE BUT ARE NOT LIMITED TO THE LATEST ADOPTED EDITIONS OF:
 - A. THE NATIONAL ELECTRICAL SAFETY CODE
 - B. THE NATIONAL ELECTRIC CODE – NFPA-70
 - C. REGULATIONS OF THE SERVING UTILITY COMPANY
 - D. LOCAL AND STATE AMENDMENTS
 - E. THE INTERNATIONAL ELECTRIC CODE – IEC (WHERE APPLICABLE)

- 2. PERMITS REQUIRED SHALL BE OBTAINED BY THE CONTRACTOR.

- 3. AFTER COMPLETION AND FINAL INSPECTION OF THE WORK, THE OWNER SHALL BE FURNISHED A CERTIFICATE OF COMPLETION AND APPROVAL.

TESTING:

- 1. UPON COMPLETION OF THE INSTALLATION, OPERATE AND ADJUST THE EQUIPMENT AND SYSTEMS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS. THE TESTING SHALL BE DONE BY QUALIFIED PERSONNEL.

GUARANTEE:

- 1. IN ADDITION TO THE GUARANTEE OF THE EQUIPMENT BY THE MANUFACTURER, EACH PIECE OF EQUIPMENT SPECIFIED HEREIN SHALL ALSO BE GUARANTEED FOR DEFECTS OF MATERIAL OR WORKMANSHIP OCCURRING DURING A PERIOD OF ONE (1) YEAR FROM FINAL ACCEPTANCE OF THE WORK BY THE OWNER AND WITHOUT EXPENSE TO THE OWNER.
- 2. THE WARRANTEE CERTIFICATES & GUARANTEES FURNISHED BY THE MANUFACTURERS SHALL BE TURNED OVER TO THE OWNER.

UTILITY CO-ORDINATION:

- 1. CONTRACTOR SHALL COORDINATE WORK WITH THE POWER AND TELEPHONE COMPANIES AND SHALL COMPLY WITH THE SERVICE REQUIREMENTS OF EACH UTILITY COMPANY.

EXAMINATION OF SITE:

- 1. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VISIT THE SITE OF THE JOB AND SHALL FAMILIARIZE HIMSELF WITH THE CONDITIONS AFFECTING THE PROPOSED ELECTRICAL INSTALLATION AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. FAILURE TO COMPLY WITH THE INTENT OF THIS SECTION WILL IN NO WAY RELIEVE THE CONTRACTOR OF PERFORMING THE WORK NECESSARY FOR A COMPLETE AND WORKING SYSTEM OR SYSTEMS.

CUTTING, PATCHING AND EXCAVATION:

- 1. COORDINATION OF SLEEVES, CHASES, ETC., BETWEEN SUBCONTRACTORS WILL BE REQUIRED PRIOR TO THE CONSTRUCTION OF ANY PORTION OF THE WORK. CUTTING AND PATCHING OF WALLS, PARTITIONS, FLOORS, AND CHASES IN CONCRETE, WOOD, STEEL OR MASONRY SHALL BE DONE AS PROVIDED ON THE DRAWINGS.
- 2. NECESSARY EXCAVATIONS AND BACKFILLING INCIDENTAL TO THE ELECTRICAL WORK SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWING.
- 3. SEAL PENETRATIONS THROUGH RATED WALLS, FLOORS, ETC., WITH APPROVED METHOD AS LISTED BY UL.

RACEWAYS / CONDUITS GENERAL:

- 1. CONDUCTORS SHALL BE INSTALLED IN LISTED RACEWAYS. CONDUIT SHALL BE RIGID STEEL, EMT, SCH40 PVC, OR SCH80PVC AS INDICATED ON THE DRAWINGS. THE RACEWAY SYSTEM SHALL BE COMPLETE BEFORE INSTALLING CONDUCTORS.
- 2. EXTERIOR RACEWAYS AND GROUNDING SLEEVES SHALL BE SEALED AT POINTS OF ENTRANCE AND EXIT. THE RACEWAY SYSTEM SHALL BE BONDED PER NEC.

EXTERIOR CONDUIT:

- 1. EXPOSED CONDUIT SHALL BE NEATLY INSTALLED AND RUN PARALLEL OR PERPENDICULAR TO STRUCTURAL ELEMENTS, SUPPORTS AND MOUNTING HARDWARE SHALL BE HOT DIPPED GALVANIZED STEEL.
- 2. THE CONDUIT SHALL BE RIGID STEEL AT GRADE TRANSITIONS OR WHERE EXPOSED TO DAMAGE.
- 3. UNDERGROUND CONDUITS SHALL BE RIGID STEEL, SCH40 PVC, OR SCH80 PVC AS INDICATED ON THE DRAWINGS.
- 4. BURIAL DEPTH OF CONDUITS SHALL BE AS REQUIRED BY CODE FOR EACH SPECIFIC CONDUIT TYPE AND APPLICATION, BUT SHALL NOT BE LESS THAN THE FROST DEPTH AT THE SITE.
- 5. CONDUIT ROUTES ARE SCHEMATIC. CONTRACTOR SHALL FIELD VERIFY ROUTES BEFORE BID. COORDINATE ROUTE WITH WIRELESS CARRIER AND/OR BUILDING OWNER.

INTERIOR CONDUIT:

- 1. CONCEALED CONDUIT IN WALLS OR INTERIOR SPACES ABOVE GRADE MAY BE EMT OR PVC.
- 2. CONDUIT RUNS SHALL USE APPROVED COUPLINGS AND CONNECTORS. PROVIDE INSULATED BUSHING FOR ALL CONDUIT TERMINATIONS. CONDUIT RUNS IN A WET LOCATION SHALL HAVE WATERPROOF FITTINGS.
- 3. PROVIDE SUPPORTS FOR CONDUITS IN ACCORDANCE WITH NEC REQUIREMENTS. CONDUITS SHALL BE SIZED AS REQUIRED BY NEC.

EQUIPMENT:

- 1. DISCONNECT SWITCHES SHALL BE SERVICE ENTRANCE RATED, HEAVY DUTY TYPE.
- 2. CONTRACTOR SHALL VERIFY MAXIMUM AVAILABLE FAULT CURRENT AND COORDINATE INSTALLATION WITH THE LOCAL UTILITY BEFORE STARTING WORK. CONTRACTOR WILL VERIFY THAT EXISTING CIRCUIT BREAKERS ARE RATED FOR MORE THAN AVAILABLE FAULT CURRENT AND REPLACE AS NECESSARY.
- 3. NEW CIRCUIT BREAKERS SHALL BE RATED TO WITHSTAND THE MAXIMUM AVAILABLE FAULT CURRENT AS DETERMINED BY THE LOCAL UTILITY.

CONDUCTORS:

- 1. FURNISH AND INSTALL CONDUCTORS SPECIFIED IN THE DRAWINGS. CONDUCTORS SHALL BE COPPER AND SHALL HAVE TYPE THWN (MIN) (75° C) INSULATION, RATED FOR 600 VOLTS.
- 2. THE USE OF ALUMINUM CONDUCTORS SHALL BE LIMITED TO THE SERVICE FEEDERS INSTALLED BY THE UTILITY.
- 3. CONDUCTORS SHALL BE PROVIDED AND INSTALLED AS FOLLOWS:
 - A. MINIMUM WIRE SIZE SHALL BE #12 AWG.
 - B. CONDUCTORS SIZE #8 AND LARGER SHALL BE STRANDED. CONDUCTORS SIZED #10 AND #12 MAY BE SOLID OR STRANDED.
 - C. CONNECTION FOR #10 AWG, #12 AWG SHALL BE BY TWISTING TIGHT AND INSTALLING INSULATED PRESSURE OR WIRE NUT CONNECTIONS.
 - D. CONNECTION FOR #8 AWG AND LARGER SHALL BE BY USE OF STEEL CRIMP-ON SLEEVES WITH NYLON INSULATOR.

UL COMPLIANCE:

- 1. ELECTRICAL MATERIALS, DEVICES, CONDUCTORS, APPLIANCES, AND EQUIPMENT SHALL BE LABELED/LISTED BY UL OR ACCEPTED BY JURISDICTION (I.E., LOCAL COUNTY OR STATE) APPROVED THIRD PARTY TESTING AGENCY.

GROUNDING:

- 1. ELECTRICAL NEUTRALS, RACEWAYS AND NON-CURRENT CARRYING PARTS OF ELECTRICAL EQUIPMENT AND ASSOCIATED ENCLOSURES SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250. THIS SHALL INCLUDE NEUTRAL CONDUCTORS, CONDUITS, SUPPORTS, CABINETS, BOXES, GROUND BUSSES, ETC. THE NEUTRAL CONDUCTOR FOR EACH SYSTEM SHALL BE GROUNDED AT A SINGLE POINT.
- 2. PROVIDE GROUND CONDUCTOR IN RACEWAYS PER NEC.
- 3. PROVIDE BONDING AND GROUND TO MEET NFPA 780 – "LIGHTNING PROTECTION" AS A MINIMUM.
- 4. PROVIDE GROUNDING SYSTEM AS INDICATED ON THE DRAWINGS, AS REQUIRED BY THE NATIONAL ELECTRIC CODE, RADIO EQUIPMENT MANUFACTURERS, AND MOTOROLA R56 (AS APPLICABLE).

ABBREVIATIONS AND LEGEND

A	-	AMPERE	PNLBD	-	PANELBOARD
AFG	-	ABOVE FINISHED GRADE	PVC	-	RIGID NON-METALLIC CONDUIT
ATS	-	AUTOMATIC TRANSFER SWITCH	RGS	-	RIGID GALVANIZED STEEL CONDUIT
AWG	-	AMERICAN WIRE GAUGE	SW	-	SWITCH
BCW	-	BARE COPPER WIRE	TGB	-	TOWER GROUND BAR
BFG	-	BELOW FINISHED GRADE	UL	-	UNDERWRITERS LABORATORIES
BKR	-	BREAKER	V	-	VOLTAGE
C	-	CONDUIT	W	-	WATTS
CKT	-	CIRCUIT	XTMR	-	TRANSFORMER
DISC	-	DISCONNECT	XMTX	-	TRANSMITTER
EGR	-	EXTERNAL GROUND RING			
EMT	-	ELECTRIC METALLIC TUBING			
FSC	-	FLEXIBLE STEEL CONDUIT			
GEN	-	GENERATOR			
GPS	-	GLOBAL POSITIONING SYSTEM			
GRD	-	GROUND			
IGB	-	ISOLATED GROUND BAR			
IGR	-	INTERIOR GROUND RING (HALO)			
KW	-	KILOWATTS			
NEC	-	NATIONAL ELECTRIC CODE			
PCS	-	PERSONAL COMMUNICATION SYSTEM			
PH	-	PHASE			
PNL	-	PANEL			

-----E-----	UNDERGROUND ELECTRICAL CONDUIT
-----T-----	UNDERGROUND TELEPHONE CONDUIT
	KILOWATT-HOUR METER
-----	UNDERGROUND BONDING AND GROUNDING CONDUCTOR
Ø	GROUND ROD
●	CADWELD
	GROUND ROD WITH INSPECTION WELL

PLANS PREPARED FOR:



4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:

TIGER BAY - A

255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS

326 TRYON ROAD

RALEIGH, NC 27603-3530

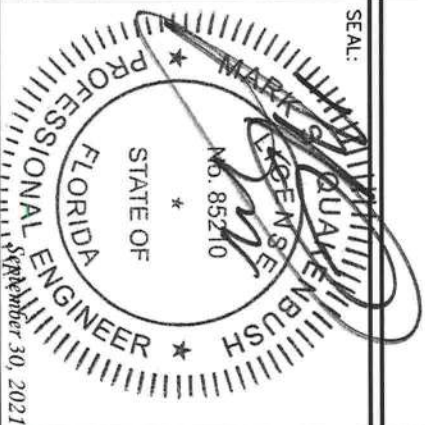
OFFICE: (919) 661-6361

www.tepgroup.net

FL COA # 31011



SEAL:



1 09-30-21 CONSTRUCTION

0 09-17-21 PRELIMINARY

REV DATE ISSUED FOR:

DRAWN BY: LLS CHECKED BY: JHL

SHEET TITLE:

ELECTRICAL
NOTES

SHEET NUMBER: REVISION:

E-1

1

TEP#: 257418-405523

NOTES:

- 1. ALL CONDUCTORS ARE TYPE THWN (75°C) COPPER.
- 2. MAXIMUM LENGTH OF RUN FOR RECTIFIER CIRCUITS IS 50-FT.
- 3. INTERSECT/GENERAC INTEGRATED LOAD CENTER INCLUDES 200A MAIN DISCONNECT AND TRANSFER SWITCH FOR PORTABLE OR PERMANENT GENERATOR.
- 4. RECTIFIER LOADS ARE CONSIDERED TO BE NON-CONTINUOUS.
- 5. IF ADDITIONAL FUTURE LOADS ARE ADDED WHICH CAUSE TOTAL DEMAND TO EXCEED GENERATOR BREAKER SIZE, BACKUP POWER SYSTEM SHALL BE EVALUATED AND UPGRADED AS NECESSARY.
- 6. LOADING WAS DETERMINED BY OTHERS DURING A POWER AUDIT.
- 7. THE RECTIFIER QUANTITY AND LOADING SHOWN ARE BASED ON CALCULATIONS PROVIDED BY VERIZON DATED 02/08/21. CHANGES TO THE DC LOADING MAY REQUIRE UPDATES TO THE AC POWER DESIGN OR OTHER EQUIPMENT CHANGES.

PROPOSED BREAKER/LOAD SHOWN IN BOLD

PANEL SCHEDULE - ILC WITH 200A MCB 120/240V												
LOAD SERVED	VOLT AMPERES (WATTS)		TRIP	CKT #	PHASE		CKT #	TRIP	VOLT AMPERES (WATTS)		LOAD SERVED	
	L1	L2							L1	L2		
RECTIFIER #3	1026	1026	30A	1	A		2	20A	180		GFCI OUTDOOR	
				3	B		4	20A		500	TECH LIGHT	
RECTIFIER #1	1026		30A	5	A		6	20A	180		GFCI IN CHARLES CUBE	
				7	B		8	20A		1200	HEATER	
RECTIFIER #2	1026		30A	9	A		10	20A	1500		CHARGER	
				11	B		12	15A		180	GFCI IN TELCO BOX	
RECTIFIER #4	1026	1026	30A	13	A		14	-	-		-	
				15	B		16	-	-		-	
RECTIFIER #5	1026	1026	30A	17	A		18	-	-		-	
				19	B		20	-	-		-	
SPARE	2280	2280	30A	21	A		22	-	-		-	
				23	B		24	-	-		-	
	-	-	-	25	A		26	-	-		-	
	-	-	-	27	B		28	-	-		-	
-	-	-	-	29	A		30	-	-		-	
VOLT AMPS	7410	7410							1860	1880	VOLT AMPS	
L1 VOLT AMPERES												
				9270	9290		L2 VOLT AMPERES					
				9270			MAX L1/L2 VOLT AMPERES					
				77.42			MAX AMPS					
				96.77			MAX AMPS x125%					

*NOTE - SPARE CIRCUITS ARE ASSUMED TO BE INTENDED FOR ADDITIONAL RECTIFIERS BASED ON PREVIOUS DRAWINGS PROVIDED BY VERIZON.

POWER PANEL SCHEDULE

SCALE: N.T.S.

PLANS PREPARED FOR:

verizon
4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

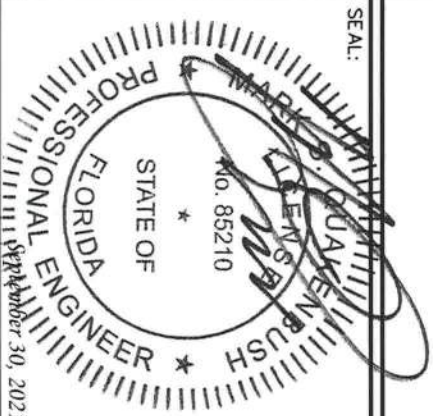
PROJECT INFORMATION:

VZW SITE #: 427192
VZW SITE NAME:
TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
(COLUMBIA COUNTY)

PLANS PREPARED BY:

TOWER ENGINEERING PROFESSIONALS
326 TRYON ROAD
RALEIGH, NC 27603-3530
OFFICE: (919) 661-6351
www.tepgroup.net
FL COA # 31011

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POWER PANEL SCHEDULE

SHEET NUMBER: REVISION:

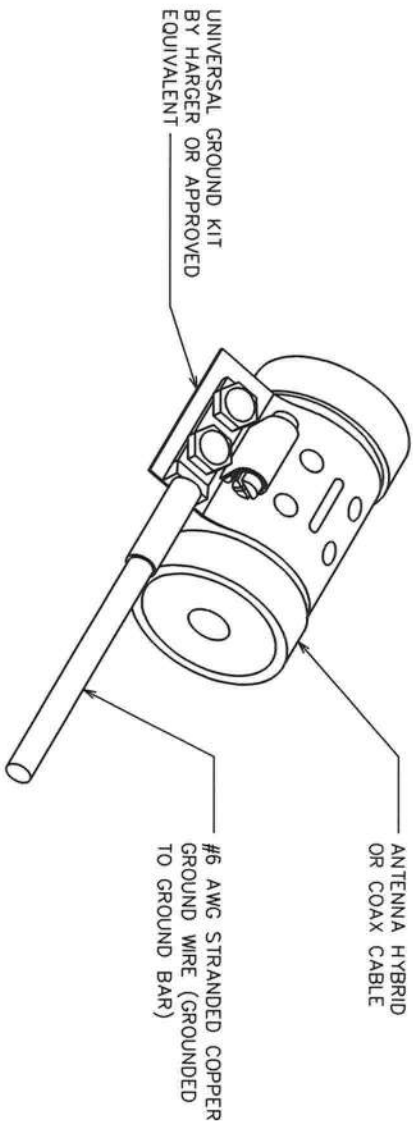
E-2

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TEP#: 257418.465523

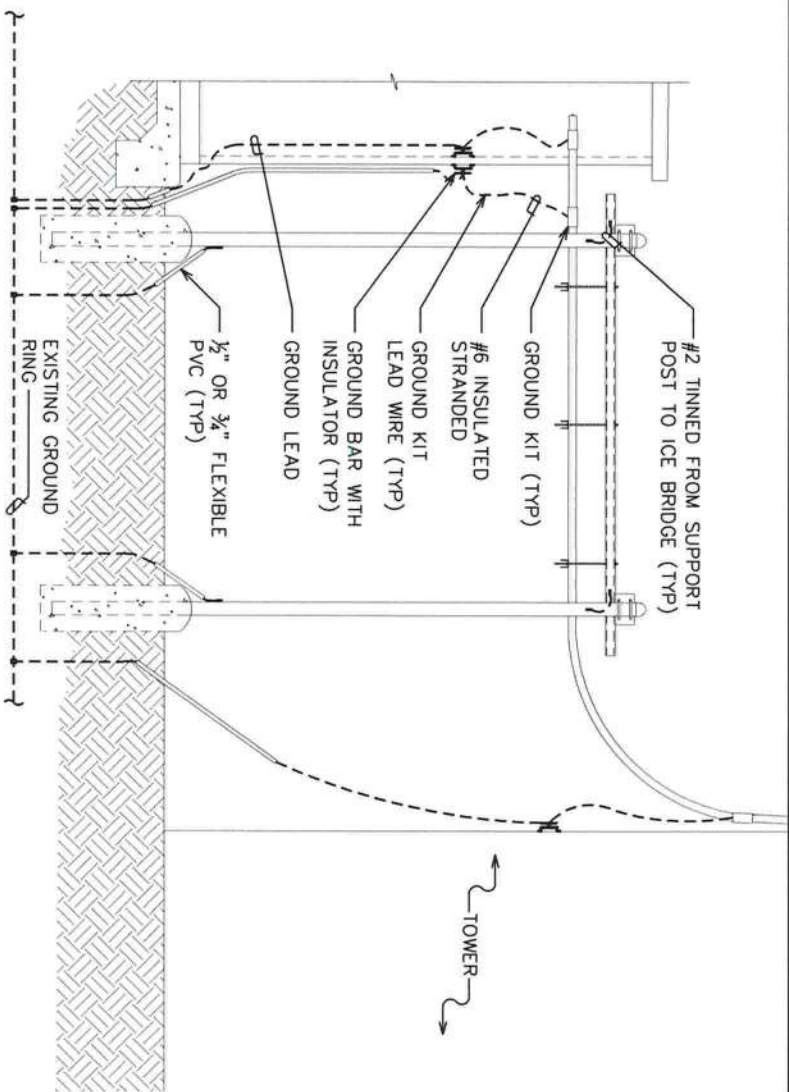
NOTES:

- 1. DO NOT INSTALL COAX GROUND KIT AT A BEND.
- 2. CONTRACTOR TO WEATHERPROOF COAX GROUND.



GROUNDING DETAILS

SCALE: N.T.S.

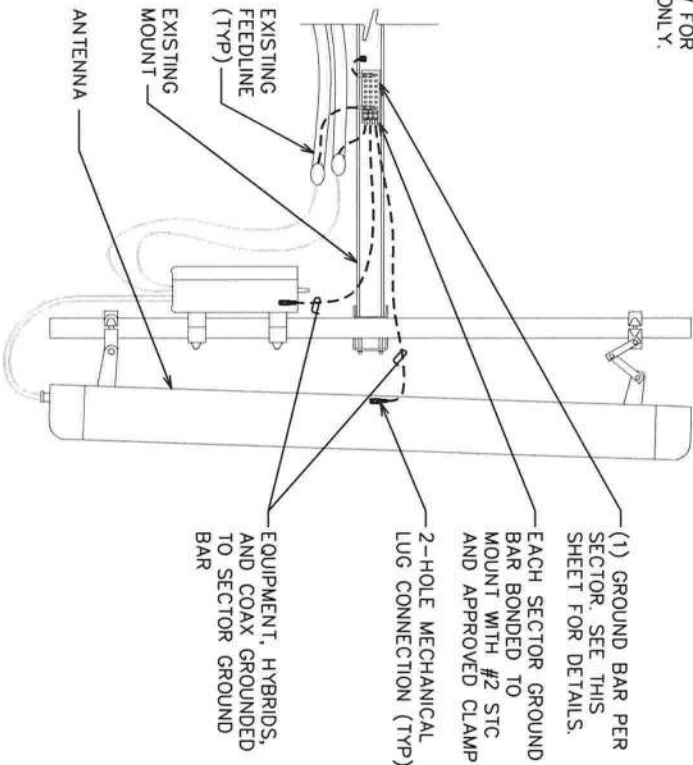


ICE BRIDGE/HYBRID/COAX/GROUNDING BAR ELEVATION

SCALE: N.T.S.

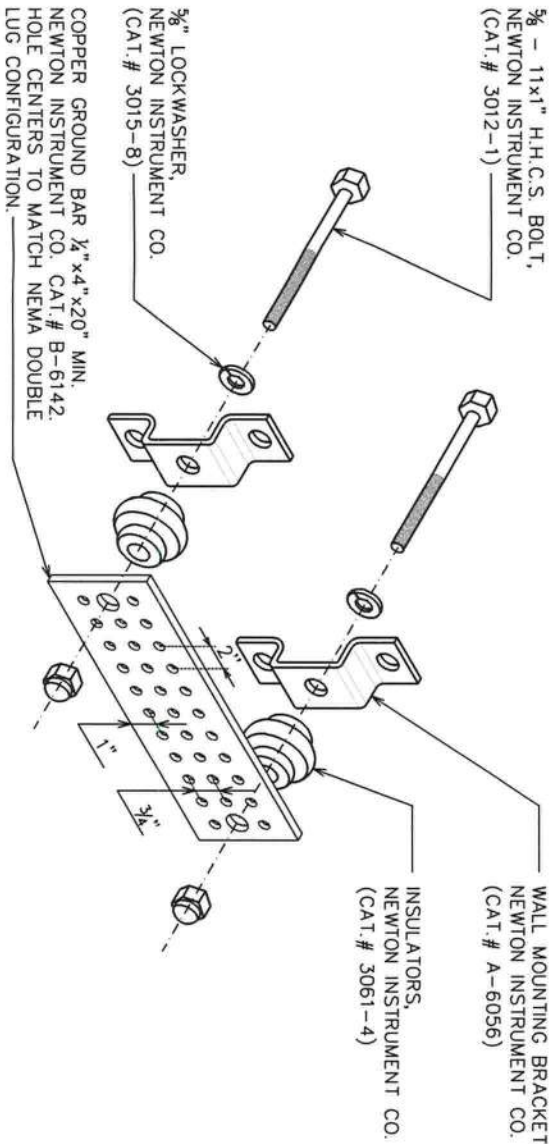
NOTE:

DRAWING SHOWN BELOW FOR SCHEMATIC PURPOSES ONLY.



ANTENNA & EQUIPMENT GROUNDING DETAIL

SCALE: N.T.S.



NOTES:

- 1. GROUND BAR SHALL BE SIZED TO ACCOMMODATE ALL GROUNDING CONNECTIONS REQUIRED AS WELL AS PROVIDE 50% SPARE CAPACITY.
- 2. ALL RACKS AND EQUIPMENT CABINETS ARE TO HAVE TWO GROUNDING LEADS. ALL EQUIPMENT INSTALLED IN RACKS MUST HAVE A CHASSIS GROUND ATTACHED TO A COMMON BUS BAR ON THE RACK. COMMON BUS BAR MUST BE GROUNDED TO MAIN GROUND BAR.

STANDARD GROUND BAR DETAILS

SCALE: N.T.S.

PLANS PREPARED FOR:

verizon
4700 EXCHANGE COURT, SUITE 100
BOCA RATON, FL 33431
(561) 995-5539

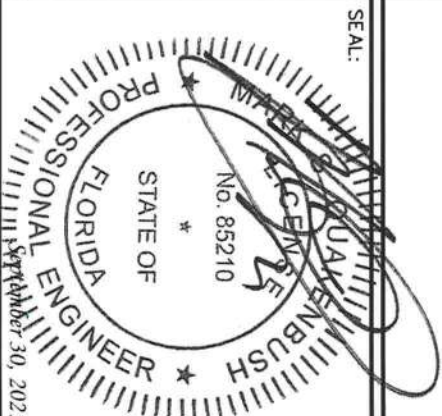
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TIGER BAY - A
255 NORTHWEST SERENE COURT
LAKE CITY, FL 33487
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**GROUNDING
DETAILS**

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