



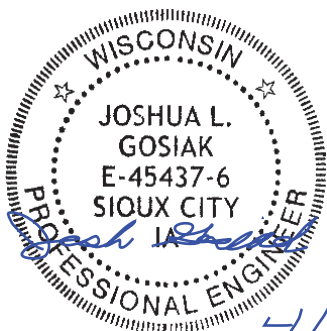
Structural Design Report
255' S3TL Series HD1 Self-Supporting Tower
Site: Platteville GF2, WI

Prepared for: RACOM CORPORATION
by: Sabre Industries™

Job Number: 501141

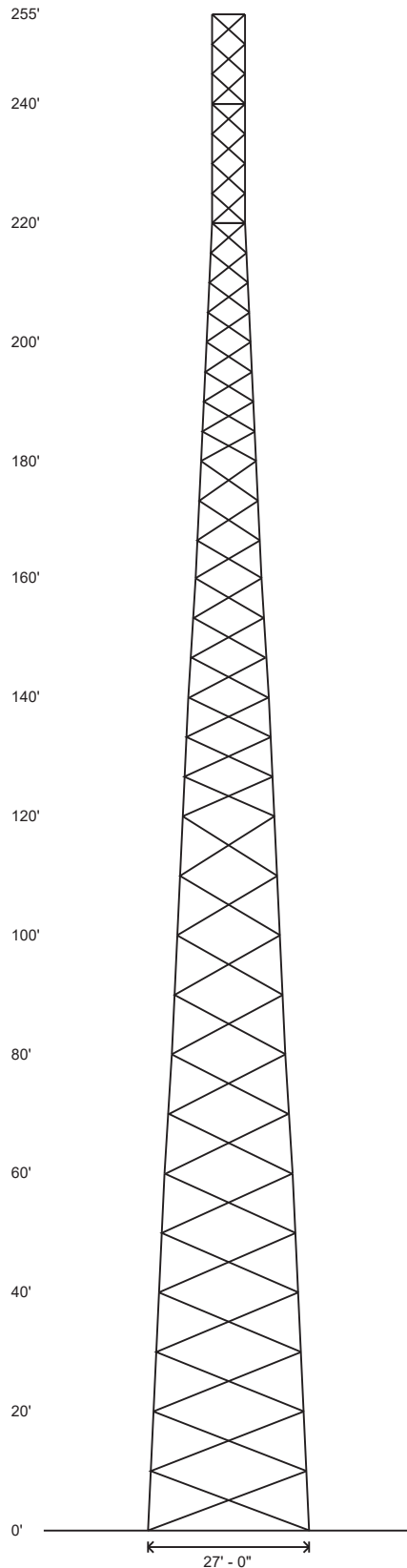
April 21, 2022

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Legs	8.625 OD X .500	8.625 OD X .322	5.563 OD X .500	A	B	C	D	E	2.375 OD X .154
Diagonals	L 4 X 4 X 1/4	L 3 1/2 X 3 1/2 X 1/4	L 3 X 3 X 1/4	L 3 X 3 X 3/16	L 2 1/2 X 2 1/2 X 3/16	L 2 X 2 X 1/8			
Horizontals			NONE						
Brace Bolts	(2) 5/8"	(1) 3/4"	(1) 3/4"				(1) 5/8"		
Top Face Width	25'	21'	17'	13'	11'	9'	7'	5'	
Panel Count/Height		12 @ 10'			9 @ 6.6667'			15 @ 5'	
Section Weight	5466	4089	3519	2572	1910	1725	1091	888	553



Design Criteria - ANSI/TIA-222-G

ASCE 7-16 Ultimate Wind Speed (No Ice)	115 mph
Wind Speed (Ice)	40 mph
Design Ice Thickness	1.50 in
Structure Class	III
Risk Category	III
Exposure Category	C
Topographic Category	1
Seismic Importance Factor, I _e	1.25
0.2-sec Spectral Response, S _s	0.071 g
1-sec Spectral Response, S ₁	0.05 g
Site Class	D (DEFAULT)
Seismic Design Category	B
Basic Seismic Force-Resisting System	Telecommunication Tower (Truss: Steel)

Base Reactions - Wind/Ice

Total Foundation		Individual Footing	
Shear (kips)	58.98	Shear (kips)	35.46
Axial (kips)	163.42	Compression (kips)	366
Moment (ft-kips)	8124	Uplift (kips)	315

Base Reactions - Seismic

Total Foundation		Individual Footing	
Shear (kips)	1.54	Shear (kips)	2.56
Axial (kips)	61.23	Compression (kips)	31
Moment (ft-kips)	255	Uplift (kips)	0

Notes

- 1) All legs are A500 (50 ksi Min. Yield).
- 2) All braces are A572 Grade 50.
- 3) All brace bolts are A325-X.
- 4) The tower model is S3TL Series HD1.
- 5) Transmission lines are to be attached to standard 12 hole waveguide ladders with stackable hangers.
- 6) Azimuths are relative (not based on true north).
- 7) Foundation loads shown are maximums.
- 8) All unequal angles are oriented with the short leg vertical.
- 9) Weights shown are estimates. Final weights may vary.
- 10) This tower design and, if applicable, the foundation design(s) shown on the following page(s) also meet or exceed the requirements of the 2015 International Building Code.
- 11) Tower Rating: 97.84%
- 12) This structure has been designed with a 50% increase in antenna and line loading.



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Job:	501141
Customer:	RACOM CORPORATION
Site Name:	Platteville GF2, WI
Description:	255' S3TL
Date:	4/21/2022
By:	JLG

Designed Appurtenance Loading

Elev	Description	Tx-Line	Elev	Description	Tx-Line
253	(1) 36 sq. ft. EPA	(2) 1 5/8"	210.62	(1) DB224A	
235.62	(2) DB224A		210	(2) SD214-SF2P2SNM(D08)	
235	(1) SD214-SF2P2SNM(D08)		200	(2) 3ft Sidearms	
225	(2) 3ft Sidearms		200	3ft Sidearm	
225	3ft Sidearm		200		(1) 7/8"
225		(2) 7/8"	200		(2) 7/8"
225		(1) 7/8"	174	(1) 40,000 sq. in. antenna loading (below top)	(2) 1 5/8"

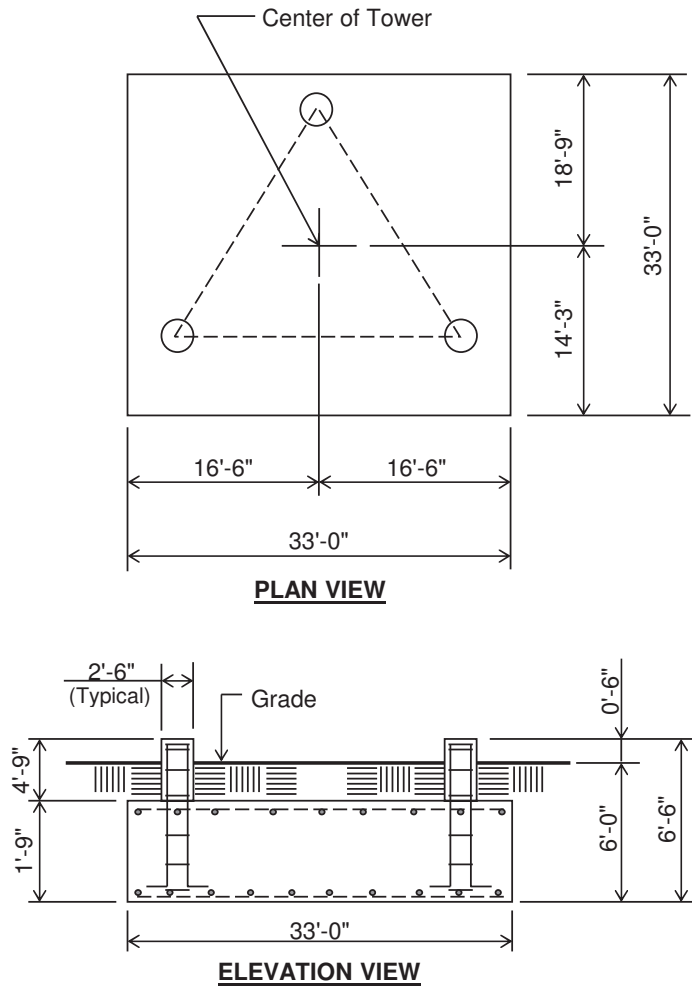
Material List

Display	Value	Display	Value
A	5.563 OD X .375	D	3.500 OD X .216
B	5.563 OD X .258	E	2.875 OD X .203
C	4.000 OD X .318	F	L 2 X 2 X 1/8

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Customer: RACOM CORPORATION
Site: Platteville GF2, WI

255 ft. Model S3TL Series HD1 Self Supporting Tower



(73.2 cu. yds.)
(1 REQD.; NOT TO SCALE)

CAUTION: Center of tower is not in center of slab.

Notes:

- 1) Concrete shall have a minimum 28-day compressive strength of 4,500 psi, in accordance with ACI 318-11.
- 2) Rebar to conform to ASTM specification A615 Grade 60.
- 3) All rebar to have a minimum of 3" concrete cover.
- 4) All exposed concrete corners to be chamfered 3/4".
- 5) The foundation design is based on the geotechnical report by Edge, Project# 31990, dated 4/15/2022.
- 6) See the geotechnical report for compaction requirements, if specified.
- 7) The foundation is based on the following factored loads:
Factored download (kips) = 55.39
Factored overturn (kip-ft) = 8,124.11
Factored shear (kips) = 58.98
- 8) 4.25' of soil cover is required over the entire area of the foundation slab.
- 9) The bottom anchor bolt template shall be positioned as closely as possible to the bottom of the anchor bolts.

Rebar Schedule per Mat and per Pier	
Pier	(12) #10 vertical rebar w/ hooks at bottom w/ #4 rebar ties, two (2) within top 5" of pier then 12" C/C
Mat	(49) #7 horizontal rebar evenly spaced each way top and bottom. (196 total)
Anchor Bolts per Leg	
(6) 1.5" dia. x 78" F1554-105 on a 13.25" B.C. w/ 9.5" max. projection above concrete.	