Sabre Industries™
Towers and Poles

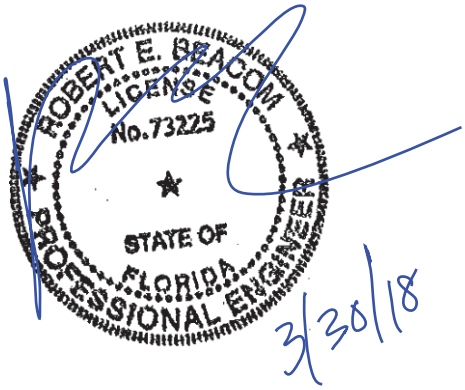
Structural Design Report

300' 3600SRWD Guyed Tower
Site: Round Lake, FL

Prepared for: MUNICIPAL COMMUNICATIONS LLC
by: Sabre Towers & Poles ™

Job Number: 400253
Revision A

March 30, 2018



Designed Appurtenance Loading

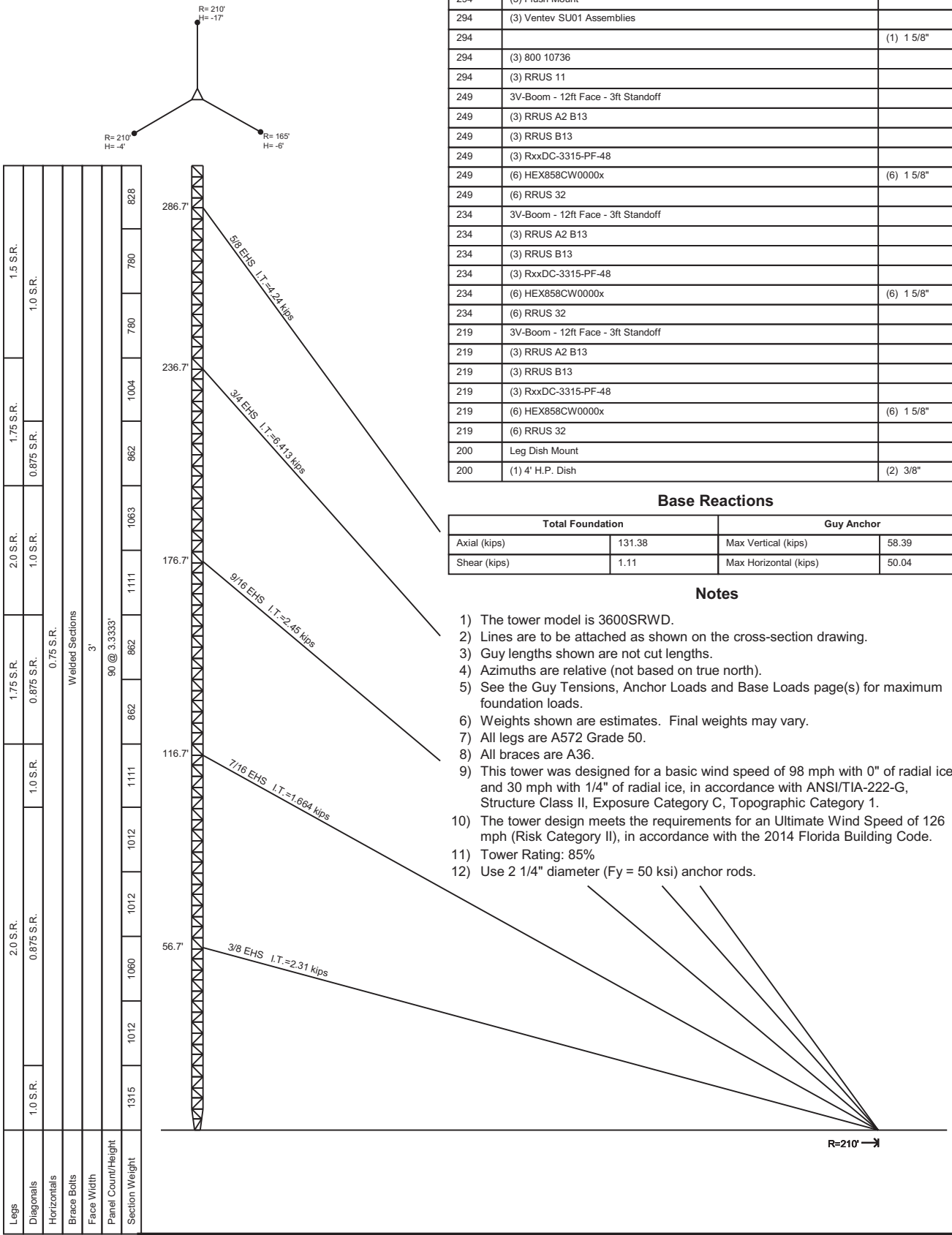
Elev	Description	Tx-Line
294	(3) Flush Mount	
294	(3) Ventev SU01 Assemblies	
294		(1) 1 5/8"
294	(3) 800 10736	
294	(3) RRUS 11	
249	3V-Boom - 12ft Face - 3ft Standoff	
249	(3) RRUS A2 B13	
249	(3) RRUS B13	
249	(3) RxxDC-3315-PF-48	
249	(6) HEX858CW0000x	(6) 1 5/8"
249	(6) RRUS 32	
234	3V-Boom - 12ft Face - 3ft Standoff	
234	(3) RRUS A2 B13	
234	(3) RRUS B13	
234	(3) RxxDC-3315-PF-48	
234	(6) HEX858CW0000x	(6) 1 5/8"
234	(6) RRUS 32	
219	3V-Boom - 12ft Face - 3ft Standoff	
219	(3) RRUS A2 B13	
219	(3) RRUS B13	
219	(3) RxxDC-3315-PF-48	
219	(6) HEX858CW0000x	(6) 1 5/8"
219	(6) RRUS 32	
200	Leg Dish Mount	
200	(1) 4' H.P. Dish	(2) 3/8"

Base Reactions

Total Foundation		Guy Anchor	
Axial (kips)	131.38	Max Vertical (kips)	58.39
Shear (kips)	1.11	Max Horizontal (kips)	50.04

Notes

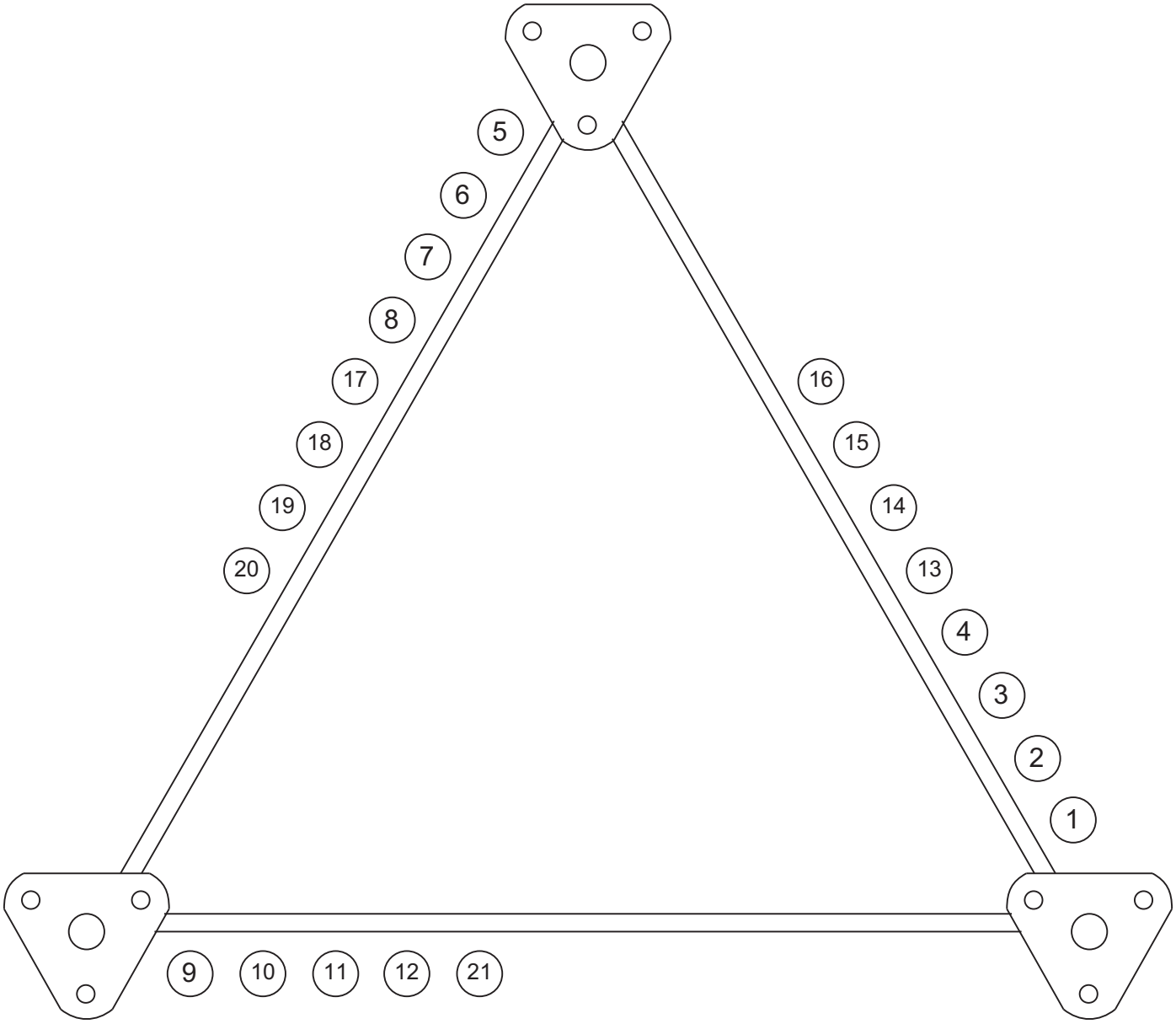
1) The tower model is 3600SRWD.
2) Lines are to be attached as shown on the cross-section drawing.
3) Guy lengths shown are not cut lengths.
4) Azimuths are relative (not based on true north).
5) See the Guy Tensions, Anchor Loads and Base Loads page(s) for maximum foundation loads.
6) Weights shown are estimates. Final weights may vary.
7) All legs are A572 Grade 50.
8) All braces are A36.
9) This tower was designed for a basic wind speed of 98 mph with 0" of radial ice, and 30 mph with 1/4" of radial ice, in accordance with ANSI/TIA-222-G, Structure Class II, Exposure Category C, Topographic Category 1.
10) The tower design meets the requirements for an Ultimate Wind Speed of 126 mph (Risk Category II), in accordance with the 2014 Florida Building Code.
11) Tower Rating: 85%
12) Use 2 1/4" diameter (Fy = 50 ksi) anchor rods.



Sabre Industries™ Towers and Poles

Sabre Communications Corporation
7101 Southbridge Drive
P.O. Box 658
Sioux City, IA 51102-0658
Phone: (712) 258-6690
Fax: (712) 279-0814

Job:	**400253A**
Customer:	MUNICIPAL COMMUNICATIONS LLC
Site Name:	Round Lake, FL
Description:	300' 3600SRWD
Date:	3/30/2018 By: REB



NOTE: THE LINES ARE NUMBERED FROM HIGHEST ELEVATION TO LOWEST ELEVATION

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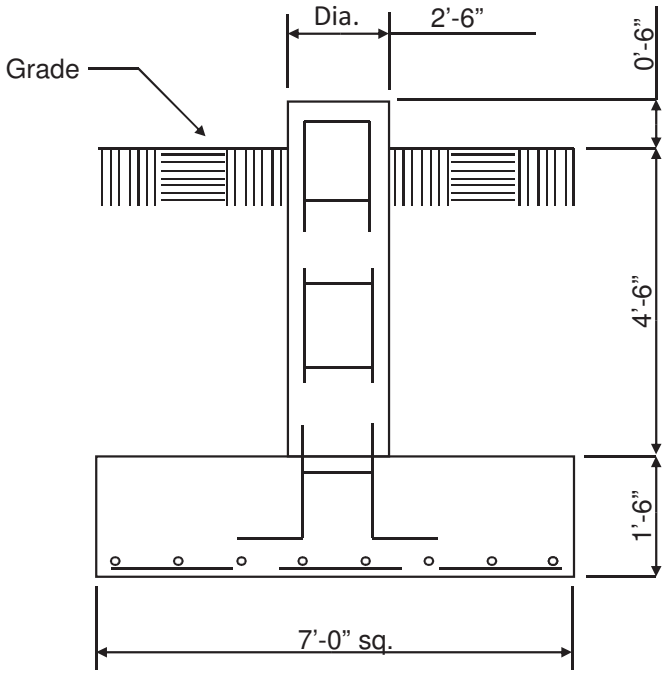
Sabre Industries™
Towers and Poles

No.: 400253

Date: 03/30/2018
By: DJH

Customer: MUNICIPAL COMMUNICATIONS LLC
Site: Round Lake, FL
300' model 3600 SRWD Guyed Tower (36" face) at
98 mph wind with 0" ice and 30 mph wind with 0.25" ice per ANSI/TIA-222-G.



TOWER BASE
(3.63 Cu. Yds.)
(NOT TO SCALE)

Rebar Schedule	
PIER	(6) #7 vertical rebar w/ #3 ties @12" spacing
PAD	(8) #7 horizontal rebar each way, evenly spaced, bottom only

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 Environmental Corporation of America; project# T1252; dated October 24, 2017.

6) The foundation is based on the following factored loads:
   Axial = 131.38 k
   Shear = 1.21 k
7) See the geotechnical report for compaction requirements, if specified.

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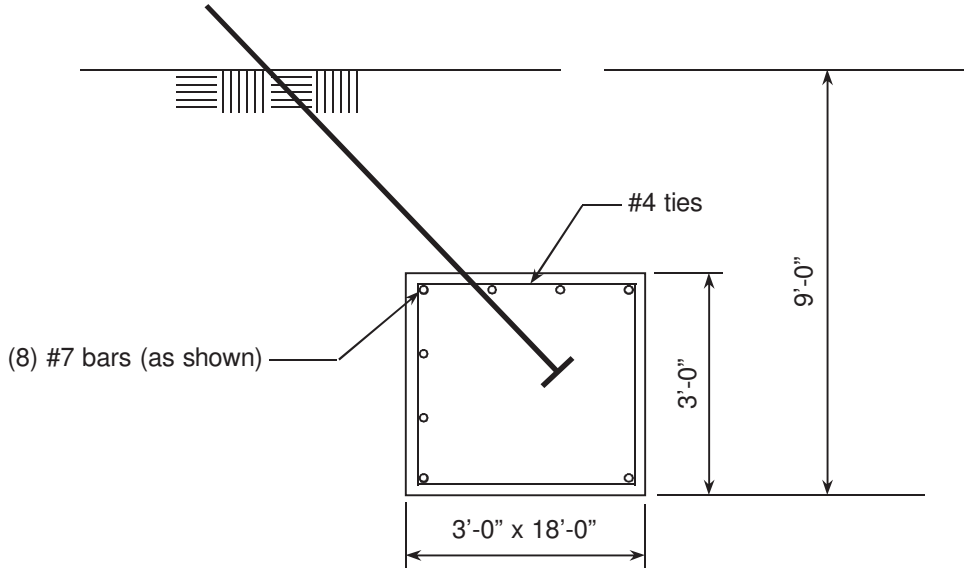

GUY ANCHOR
(6.00 Cu. Yds. Each)
(3 REQUIRED; NOT TO SCALE)

Rebar Schedule Per Anchor	
GUY	(8) #7 horizontal rebar x 17'-6"
ANCHOR	(19) #4 ties evenly spaced

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) The foundation design is based on the geotechnical report by Environmental Corporation of America; project# T1252; dated October 24, 2017.

5) The foundation is based on the following factored loads:
   Uplift = 58.40 k
   Horizontal force = 50.00 k
6) When the soil electrical resistivity is less than 50 ohm-m and/or the measured soil pH values are below 3 or greater than 9, additional corrosion control is required. See the geotechnical report for these parameters and compaction requirements, if specified.

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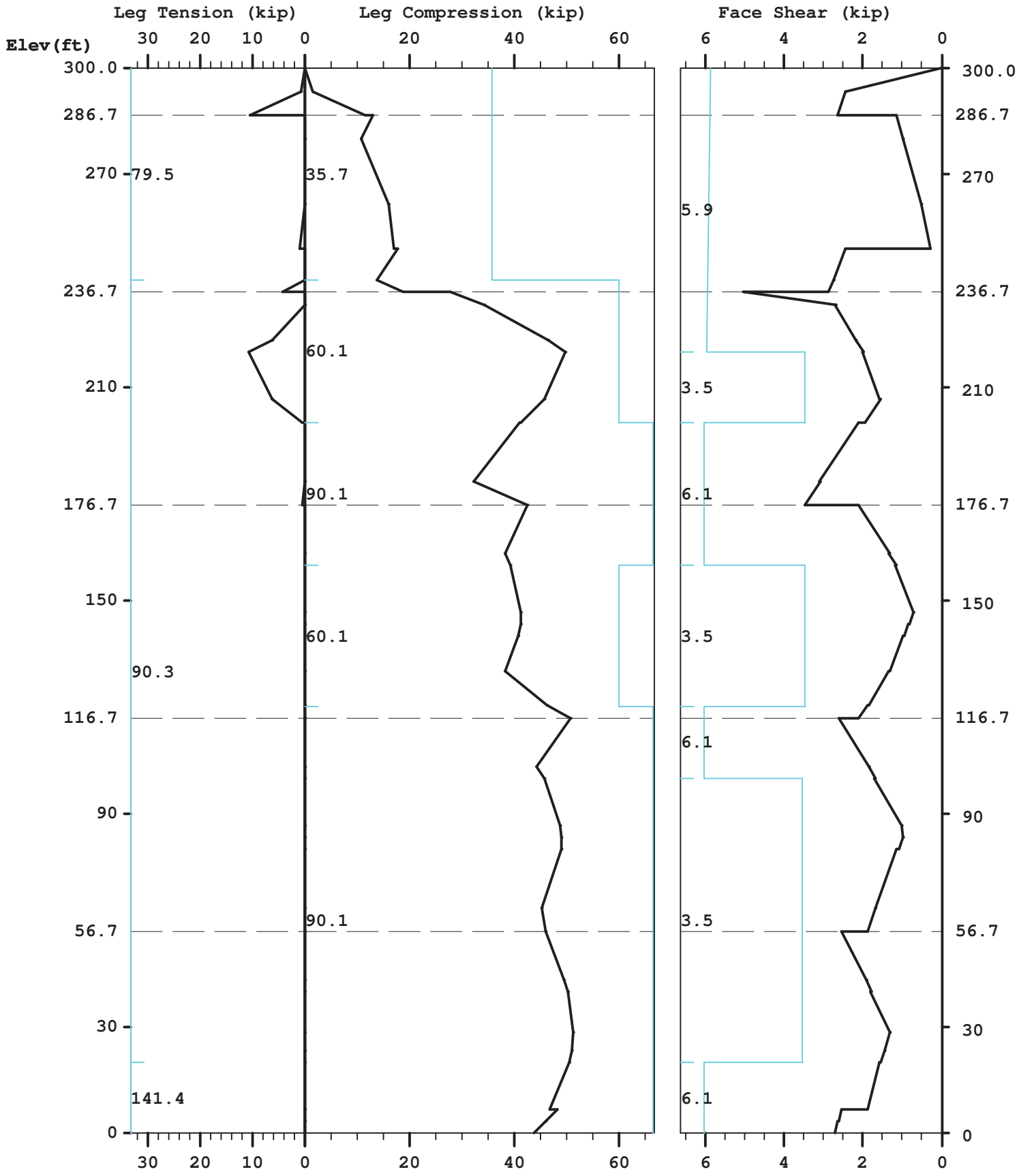
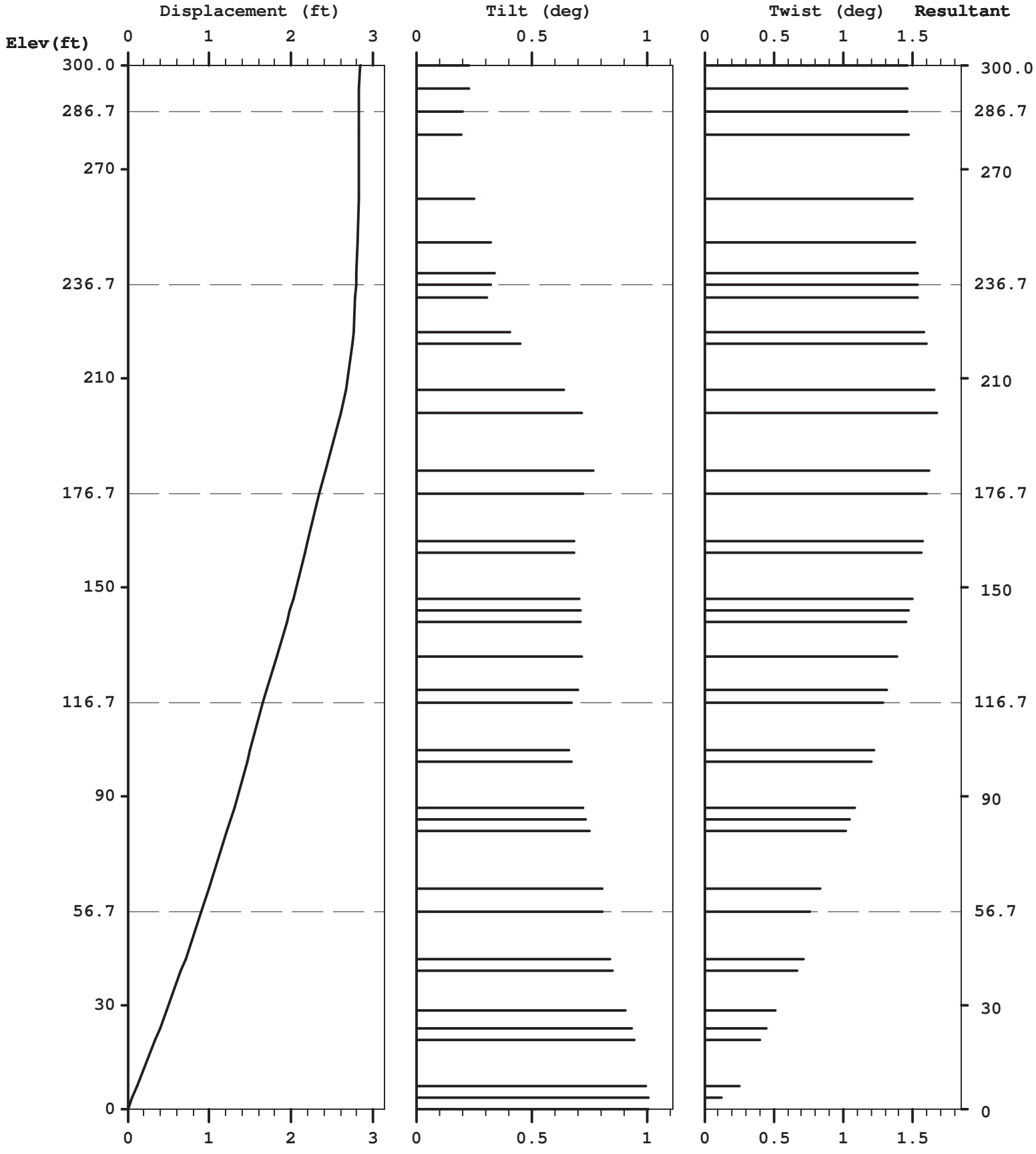
Maximum

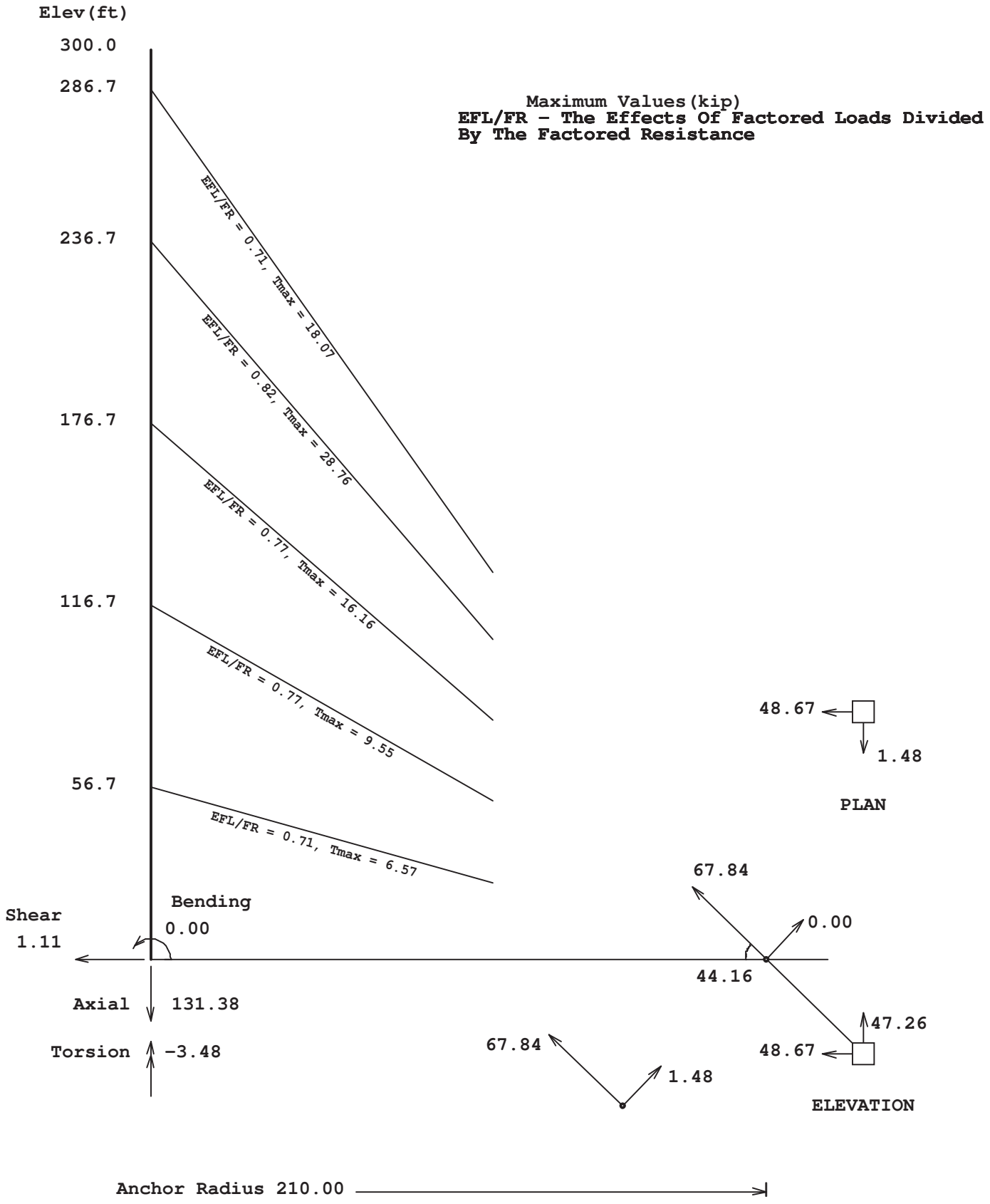

Leg Tension (kip)
Leg Compression (kip)
Face Shear (kip)
Elev(ft)
30 20 10 0
0 20 40 60
6 4 2 0
300.0
286.7
270
236.7
210
176.7
150
116.7
90
56.7
30
0
79.5
35.7
5.9
60.1
3.5
90.1
6.1
60.1
3.5
90.3
6.1
90.1
3.5
141.4
6.1

Maximum


Displacement (ft)
Tilt (deg)
Twist (deg)
Resultant
Elev(ft)
0
1
2
3
0
0.5
1
0
0.5
1
1.5
300.0
286.7
270
236.7
210
176.7
150
116.7
90
56.7
30
0

Maximum

Guy Tensions, Anchor Loads and Base Loads



GUYMAST (USA)-Guyed Tower Analysis (c)2005 Guymast Inc.

Tel:(416)736-7453 Fax:(416)736-4372 Web:www.guymast.com

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Sabre Towers and Poles on: 30 mar 2018 at: 9:29:32

MAST DATA

UPPER ELEV FT	MAST TYPE OF WEB	NO OF LEGS *	FACE WIDTH FT	PANEL HEIGHT FT *	X-SECTION-AREA ONE LEG IN.SQ.	ONE DIAG IN.SQ. *	BARE WEIGHT K/FT.	ELASTIC MODULUS KIP/IN.SQ	TEMP COEFF /DEG
300.0	4	3	3.000	3.333	1.770	0.790	0.033	29000.0	0.0000117
280.0	4	3	3.000	3.333	1.770	0.790	0.033	29000.0	0.0000117
260.0	4	3	3.000	3.333	1.770	0.790	0.033	29000.0	0.0000117
240.0	4	3	3.000	3.333	2.410	0.790	0.039	29000.0	0.0000117
220.0	4	3	3.000	3.333	2.410	0.600	0.037	29000.0	0.0000117
200.0	4	3	3.000	3.333	3.140	0.790	0.047	29000.0	0.0000117
180.0	4	3	3.000	3.333	3.140	0.790	0.047	29000.0	0.0000117
160.0	4	3	3.000	3.333	2.410	0.600	0.037	29000.0	0.0000117
140.0	4	3	3.000	3.333	2.410	0.600	0.037	29000.0	0.0000117
120.0	4	3	3.000	3.333	3.140	0.790	0.047	29000.0	0.0000117
100.0	4	3	3.000	3.333	3.140	0.600	0.044	29000.0	0.0000117
80.0	4	3	3.000	3.333	3.140	0.600	0.044	29000.0	0.0000117
60.0	4	3	3.000	3.333	3.140	0.600	0.044	29000.0	0.0000117
40.0	4	3	3.000	3.333	3.140	0.600	0.044	29000.0	0.0000117
20.0	4	3	3.000	3.333	3.140	0.790	0.047	29000.0	0.0000117
6.7	4	3	2.000	3.333	3.140	0.790	0.046	29000.0	0.0000117

* If NO OF LEGS is 1 : that part of the mast is assumed to be Cylindrical
and : FACE WIDTH = outside diameter
PANEL HEIGHT = thickness
AREA OF DIAG = Poisson ratio

GUY GEOMETRY

ELEV FT	GUY AZI DEG	DIAMETER IN.	HEIGHT FT.	RADIUS FT.	MAST ATTACH RADIUS FT.	ATTACH AZI DEG	INITIAL TENSION KIP
286.7	240.0	0.625	290.7	210.0	1.732	240.0	4.240
286.7	120.0	0.625	292.7	165.0	1.732	120.0	4.240
286.7	0.0	0.625	303.7	210.0	1.732	0.0	4.240
236.7	240.0	0.750	240.7	210.0	1.732	240.0	6.410
236.7	120.0	0.750	242.7	165.0	1.732	120.0	6.410
236.7	0.0	0.750	253.7	210.0	1.732	0.0	6.410
176.7	240.0	0.562	180.7	210.0	1.732	240.0	2.450
176.7	120.0	0.562	182.7	165.0	1.732	120.0	2.450
176.7	0.0	0.562	193.7	210.0	1.732	0.0	2.450

116.7	240.0	0.438	120.7	210.0	1.732	240.0	1.660
116.7	120.0	0.438	122.7	165.0	1.732	120.0	1.660
116.7	0.0	0.438	133.7	210.0	1.732	0.0	1.660
56.7	240.0	0.375	60.7	210.0	1.732	240.0	2.310
56.7	120.0	0.375	62.7	165.0	1.732	120.0	2.310
56.7	0.0	0.375	73.7	210.0	1.732	0.0	2.310

GUY MATERIAL PROPERTIES
=======================

ELEV FT	GUY AZI DEG	BREAKING STRENGTH KIP	GUY WEIGHT LBS/FT	GUY AREA IN.SQ	ELASTIC MODULUS KIP/IN.SQ	THERMAL COEFF /DEG	UNSTRESS LENGTH FT
286.7	240.0	42.400	0.819	0.234	20000.0	0.0000117	357.287
286.7	120.0	42.400	0.819	0.234	20000.0	0.0000117	334.848
286.7	0.0	42.400	0.819	0.234	20000.0	0.0000117	367.921
236.7	240.0	58.300	1.180	0.338	19000.0	0.0000117	317.981
236.7	120.0	58.300	1.180	0.338	19000.0	0.0000117	292.210
236.7	0.0	58.300	1.180	0.338	19000.0	0.0000117	327.913
176.7	240.0	35.000	0.665	0.190	20000.0	0.0000117	275.580
176.7	120.0	35.000	0.665	0.190	20000.0	0.0000117	244.876
176.7	0.0	35.000	0.665	0.190	20000.0	0.0000117	284.264
116.7	240.0	20.800	0.388	0.115	21000.0	0.0000117	240.569
116.7	120.0	20.800	0.388	0.115	21000.0	0.0000117	204.102
116.7	0.0	20.800	0.388	0.115	21000.0	0.0000117	247.338
56.7	240.0	15.400	0.270	0.084	21000.0	0.0000117	216.653
56.7	120.0	15.400	0.270	0.084	21000.0	0.0000117	174.666
56.7	0.0	15.400	0.270	0.084	21000.0	0.0000117	220.637

FACTORED LEG AND FACE SHEAR RESISTANCE
======================================

BOTTOM ELEV ft	TOP ELEV ft	LEG COMP kip	FACE SHEAR kip	LEG TENS kip
0.00	20.00	90.09	6.05	141.37
20.00	40.00	90.09	3.54	90.30
40.00	60.00	90.09	3.54	90.30
60.00	80.00	90.09	3.54	90.30
80.00	100.00	90.09	3.54	90.30
100.00	120.00	90.09	6.05	90.30
120.00	140.00	60.09	3.49	90.30
140.00	160.00	60.09	3.49	90.30
160.00	180.00	90.09	6.05	90.30
180.00	200.00	90.09	6.05	90.30
200.00	220.00	60.09	3.49	90.30
220.00	240.00	60.09	5.96	90.30
240.00	260.00	35.70	5.87	79.52
260.00	280.00	35.70	5.87	79.52
280.00	300.00	35.70	5.87	79.52

==========
* 12 wind directions were analyzed. Only 2 condition(s) shown in full
* RRUs/TMAs were assumed to be behind antennas

* Some wind loads may have been derived from full-scale wind tunnel testing

==========

LOADING CONDITION A ==========

98 mph wind with no ice. Wind Azimuth: 0♦

MAST LOADING
============

LOAD TYPE	ELEV FT	.FORCES (KIP & KIP/FT) N	E	DOWN	.MOMENTS(FT.K & FT.K/FT) N	E	TORSION	ANT-ORIENT AZI DEG	VERT DEG
C	294.0	-1.079	0.000	0.360	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.342	0.000	0.198	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.134	0.000	0.047	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.609	0.000	0.105	0.00	0.00	0.00	0.0	0.00

C	294.0	-0.609	0.000	0.105	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.609	0.000	0.105	0.00	0.00	0.00	0.0	0.00
C	249.0	-3.395	0.000	2.660	0.00	0.00	0.00	0.0	0.00
C	234.0	-3.351	0.000	2.660	0.00	0.00	0.00	0.0	0.00
C	219.0	-3.305	0.000	2.660	0.00	0.00	0.00	0.0	0.00
C	200.0	-0.493	-0.137	0.204	-0.33	-0.57	1.27	205.1	0.00
D	300.0	-0.042	0.000	0.051	0.00	0.00	0.00		
D	290.0	-0.047	0.000	0.053	0.00	0.00	0.00		
D	290.0	-0.047	0.000	0.053	0.00	0.00	-0.01		
D	280.0	-0.047	0.000	0.053	0.00	0.00	-0.01		
D	280.0	-0.047	0.000	0.053	0.00	0.00	-0.01		
D	260.0	-0.047	0.000	0.053	0.00	0.00	-0.01		
D	260.0	-0.046	0.000	0.053	0.00	0.00	-0.01		
D	250.0	-0.046	0.000	0.053	0.00	0.00	-0.01		
D	250.0	-0.060	0.000	0.058	0.00	0.00	0.00		
D	240.0	-0.065	0.000	0.061	0.00	0.00	0.00		
D	240.0	-0.066	0.000	0.068	0.00	0.00	0.00		
D	233.3	-0.071	0.000	0.069	0.00	0.00	0.00		
D	233.3	-0.091	0.000	0.075	0.00	0.00	0.00		
D	223.3	-0.091	0.000	0.075	0.00	0.00	0.00		
D	223.3	-0.091	0.000	0.077	0.00	0.00	0.00		
D	200.0	-0.094	0.000	0.081	0.00	0.00	0.00		
D	200.0	-0.095	0.000	0.092	0.00	0.00	0.00		
D	183.3	-0.096	0.000	0.092	0.00	0.00	0.00		
D	183.3	-0.095	0.000	0.092	0.00	0.00	0.00		
D	163.3	-0.093	0.000	0.092	0.00	0.00	0.00		
D	163.3	-0.094	0.000	0.092	0.00	0.00	0.00		
D	160.0	-0.094	0.000	0.092	0.00	0.00	0.00		
D	160.0	-0.088	0.000	0.080	0.00	0.00	0.00		
D	143.3	-0.089	0.000	0.080	0.00	0.00	0.00		
D	143.3	-0.088	0.000	0.080	0.00	0.00	0.00		
D	130.0	-0.085	0.000	0.080	0.00	0.00	0.00		
D	130.0	-0.086	0.000	0.080	0.00	0.00	0.00		
D	120.0	-0.086	0.000	0.080	0.00	0.00	0.00		
D	120.0	-0.086	0.000	0.092	0.00	0.00	0.00		
D	103.3	-0.086	0.000	0.092	0.00	0.00	0.00		
D	103.3	-0.085	0.000	0.091	0.00	0.00	0.00		
D	83.3	-0.081	0.000	0.088	0.00	0.00	0.00		
D	83.3	-0.081	0.000	0.089	0.00	0.00	0.00		
D	63.3	-0.077	0.000	0.089	0.00	0.00	0.00		
D	63.3	-0.077	0.000	0.089	0.00	0.00	0.00		
D	43.3	-0.073	0.000	0.089	0.00	0.00	0.00		
D	43.3	-0.072	0.000	0.089	0.00	0.00	0.00		
D	23.3	-0.067	0.000	0.089	0.00	0.00	0.00		
D	23.3	-0.070	0.000	0.089	0.00	0.00	0.00		
D	20.0	-0.070	0.000	0.089	0.00	0.00	0.00		
D	20.0	-0.058	0.000	0.092	0.00	0.00	0.00		
D	6.7	-0.058	0.000	0.092	0.00	0.00	0.00		
D	6.7	-0.058	0.000	0.092	0.00	0.00	0.00		
D	0.0	-0.056	0.000	0.089	0.00	0.00	0.00		

GUY LOADING
==========

.. WIND LOADING ... AZI	SPEED	REF PRESS	TEMP CHANGE	.ICE LOAD.. RAD	DENS	CONV TOL	PROFILES. CAB	WIND	.LOAD FACTORS. WIND	DEAD	ICE
DEG	MPH	PSF	DEG	IN	PCF						
0.0	98.0	0.00	0.00	0.00	56.00	0.0100	1	4	1.60	1.00	1.00

CABLE PROFILE: 1 - CATENARY 2 - PARABOLIC

WIND PROFILE: 1 - EIA 222 default
2 - Constant Kz=1, Kiz=1
3 - Step function for Kz, Kiz
(requires definition of Exposure Factor Kz, Kiz table)
4 - Special Factors
5 - Site specific wind formula, Kiz as EIA 222 default
(requires definition of Exposure Factor Qh formula table)

==========

LOADING CONDITION M ==========

30 mph wind with 0.25 ice. Wind Azimuth: 0◆

MAST LOADING
============

LOAD TYPE	ELEV FT	.FORCES (KIP & KIP/FT) N	E	DOWN	.MOMENTS(FT.K & FT.K/FT) N	E	TORSION	ANT-ORIENT AZI DEG	VERT DEG
C	294.0	-0.079	0.000	0.509	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.023	0.000	0.301	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.010	0.000	0.071	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.041	0.000	0.183	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.041	0.000	0.183	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.041	0.000	0.183	0.00	0.00	0.00	0.0	0.00
C	249.0	-0.251	0.000	3.453	0.00	0.00	0.00	0.0	0.00
C	234.0	-0.247	0.000	3.448	0.00	0.00	0.00	0.0	0.00
C	219.0	-0.243	0.000	3.443	0.00	0.00	0.00	0.0	0.00
C	200.0	-0.030	-0.008	0.396	-0.64	-1.11	0.08	205.1	0.00
D	300.0	-0.004	0.000	0.073	0.00	0.00	0.00		
D	290.0	-0.004	0.000	0.077	0.00	0.01	0.00		
D	290.0	-0.005	0.000	0.078	0.00	0.01	0.00		
D	280.0	-0.005	0.000	0.078	0.00	0.01	0.00		
D	280.0	-0.004	0.000	0.078	0.00	0.01	0.00		
D	260.0	-0.004	0.000	0.078	0.00	0.01	0.00		
D	260.0	-0.004	0.000	0.078	0.00	0.01	0.00		
D	250.0	-0.004	0.000	0.077	0.00	0.01	0.00		
D	250.0	-0.005	0.000	0.094	0.01	0.01	0.00		
D	240.0	-0.006	0.000	0.099	0.01	0.00	0.00		
D	240.0	-0.006	0.000	0.110	0.01	0.01	0.00		
D	233.3	-0.006	0.000	0.115	0.01	0.01	0.00		
D	233.3	-0.008	0.000	0.134	0.00	0.01	0.00		
D	220.0	-0.008	0.000	0.134	0.00	0.01	0.00		
D	220.0	-0.009	0.000	0.149	0.01	0.01	0.00		
D	200.0	-0.009	0.000	0.157	0.01	0.01	0.00		
D	200.0	-0.009	0.000	0.168	0.01	0.01	0.00		
D	180.0	-0.009	0.000	0.169	0.01	0.01	0.00		
D	180.0	-0.009	0.000	0.167	0.01	0.01	0.00		
D	160.0	-0.009	0.000	0.168	0.01	0.01	0.00		
D	160.0	-0.008	0.000	0.154	0.01	0.01	0.00		
D	140.0	-0.008	0.000	0.154	0.01	0.01	0.00		
D	140.0	-0.008	0.000	0.152	0.01	0.00	0.00		
D	120.0	-0.008	0.000	0.153	0.01	0.01	0.00		
D	120.0	-0.008	0.000	0.164	0.01	0.00	0.00		
D	100.0	-0.008	0.000	0.165	0.01	0.00	0.00		
D	100.0	-0.008	0.000	0.159	0.01	0.00	0.00		
D	80.0	-0.008	0.000	0.160	0.01	0.00	0.00		
D	80.0	-0.007	0.000	0.158	0.01	0.00	0.00		
D	60.0	-0.007	0.000	0.159	0.01	0.00	0.00		
D	60.0	-0.007	0.000	0.156	0.01	0.00	0.00		
D	40.0	-0.007	0.000	0.157	0.01	0.00	0.00		
D	40.0	-0.006	0.000	0.153	0.01	0.00	0.00		
D	20.0	-0.006	0.000	0.155	0.01	0.00	0.00		
D	20.0	-0.005	0.000	0.155	0.01	0.00	0.00		
D	3.3	-0.006	0.000	0.187	0.01	0.01	0.00		
D	3.3	-0.006	0.000	0.190	0.01	0.01	0.00		
D	0.0	-0.006	0.000	0.190	0.01	0.01	0.00		

GUY LOADING
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.. WIND LOADING ... AZI DEG	SPEED MPH	REF PRESS PSF	TEMP CHANGE DEG	.ICE LOAD.. RAD IN	DENS PCF	CONV TOL	PROFILES. CAB	WIND	.LOAD FACTORS. WIND	DEAD	ICE
0.0	30.0	0.00	-10.00	0.25	56.00	0.0100	1	4	1.00	1.00	1.00

CABLE PROFILE: 1 - CATENARY 2 - PARABOLIC

WIND PROFILE: 1 - EIA 222 default
2 - Constant Kz=1, Kiz=1
3 - Step function for Kz, Kiz
(requires definition of Exposure Factor Kz, Kiz table)
4 - Special Factors
5 - Site specific wind formula, Kiz as EIA 222 default
(requires definition of Exposure Factor Qh formula table)

MAXIMUM LEG LOADS AND FACE SHEARS (KIP - stress in KSI)

MAST ELEV FT	MAX LEG LOADS AXIAL	MAX LEG LOADS BENDING TENS	MAX LEG LOADS BENDING COMP	MAX LEG LOADS TOTAL TENS	MAX LEG LOADS TOTAL COMP	MAX FACE SHEARS TORSN	MAX FACE SHEARS BEAM	MAX FACE SHEARS TOTAL
300.00	0.0G	0.0G	0.0L	0.0C	0.0L	0.0A	0.0I	0.0I
	0.6V	1.2A	1.2G	0.8A	1.6G	0.0H	2.4H	2.4L
293.35	0.6V	1.2A	1.2G	0.8A	1.6G	0.0H	2.4H	2.4F
	0.8N	11.0A	11.0G	10.5A	11.6G	0.0B	-2.7B	2.6F
286.70	9.1G	5.1I	4.7K	0.0A	13.1K	0.2L	1.2B	1.1G
	9.2G	1.4I	1.7G	0.0A	10.9G	0.2L	1.0B	1.0G
280.00	9.2G	1.4I	1.7G	0.0A	10.9G	0.2L	1.0B	1.0G
	9.5G	8.7C	6.9D	0.0A	16.0D	0.2L	0.4C	0.5G
261.70	9.5G	8.7C	6.9D	0.0A	16.0D	0.2L	0.4C	0.5G
	9.8G	10.6C	7.5D	0.9C	16.9D	0.2L	0.2E	0.3L
249.00	10.6G	10.6C	7.5D	0.0C	17.8D	0.2L	2.3D	2.4F
	10.8G	7.7I	4.0I	0.0A	13.7D	0.2L	2.7D	2.8F
240.07	10.8G	7.7I	4.0I	0.0A	13.7D	0.2L	2.7D	2.8F
	10.9G	13.3I	8.5K	4.2I	18.7K	-0.1G	2.8D	2.9F
236.70	23.5C	5.5D	4.3G	0.0A	27.7C	0.5L	5.2J	5.0H
	24.5C	14.7C	10.9D	0.0A	34.3D	0.5L	2.8J	2.7G
233.33	24.5C	14.7C	10.9D	0.0A	34.3D	0.5L	2.8J	2.7H
	24.8C	31.0C	23.3E	6.3C	46.5D	0.5L	2.2J	2.2G
223.34	24.8C	31.0C	23.3E	6.3C	46.5D	0.4L	2.2J	2.2G
	24.8C	35.5C	27.0E	10.7C	49.7D	0.4L	2.0J	2.0G
220.00	24.8C	35.5C	27.0E	10.7C	49.7D	0.4L	2.0J	2.0H
	26.1C	32.3C	22.5I	6.2C	45.8D	0.3L	1.3D	1.6F
206.70	26.1C	32.3C	22.5I	6.2C	45.8D	0.3L	1.3D	1.6F
	26.3C	26.6C	17.3I	0.4C	41.2B	0.3L	1.8D	1.9F
200.00	26.3C	26.4C	17.6I	0.0C	41.2B	-0.4L	2.0D	2.1H
	26.8C	10.5E	6.5D	0.0A	32.2D	-0.4L	3.2D	3.1H
183.34	26.8C	10.5E	6.5D	0.0A	32.2D	-0.5L	3.2D	3.1H
	27.0C	23.7E	15.5G	0.5E	42.4G	-0.5L	3.6D	3.5H
176.70	33.8C	16.8E	9.6I	0.0A	42.5G	0.3F	2.0J	2.1L
	34.2C	6.0E	5.5D	0.0A	38.2C	0.4F	1.1J	1.3L
163.34	34.2C	6.0E	5.5D	0.0A	38.2C	0.4F	1.1J	1.3L
	34.3C	7.3K	5.3D	0.0A	39.4C	-0.4L	0.8J	1.1L
160.00	34.3C	7.3K	5.3D	0.0A	39.4C	-0.4L	0.8J	1.2L
	34.6C	10.8K	6.8C	0.0A	41.4C	-0.5L	0.2F	0.7F

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146.70								
	34.6C	10.8K	6.8C	0.0A	41.4C	-0.5L	0.2F	0.7F
	34.7C	10.4K	6.5C	0.0A	41.3C	-0.5L	0.4D	0.8F
143.34								
	34.7C	10.4K	6.5C	0.0A	41.3C	-0.5L	0.4D	0.8F
	34.8C	9.6K	6.1C	0.0A	40.9C	-0.5L	0.6D	0.9F
140.00								
	34.8C	9.6K	6.1C	0.0A	40.9C	-0.6L	0.6D	1.0F
	35.1C	7.2F	5.2F	0.0A	38.3C	-0.6L	1.2D	1.3F
130.00								
	35.1C	7.2F	5.2F	0.0A	38.3C	-0.7L	1.2D	1.3F
	35.3C	14.2E	12.2F	0.0A	46.4G	-0.7L	1.8D	1.9C
120.60								
	35.3C	14.2E	12.2F	0.0A	46.4G	-0.7L	1.8D	1.9C
	35.4C	18.1E	16.1G	0.0A	50.8G	-0.7L	2.1D	2.1C
116.70								
	38.8C	14.8E	13.2F	0.0A	50.8G	-0.7L	2.0J	2.6J
	39.3C	8.3K	5.0C	0.0A	44.3C	-0.7L	1.2J	1.8L
103.33								
	39.3C	8.3K	5.0C	0.0A	44.3C	-0.7L	1.2J	1.8L
	39.4C	10.7K	6.3C	0.0A	45.7C	-0.7L	1.0J	1.7L
100.00								
	39.4C	10.7K	6.3C	0.0A	45.7C	-0.8L	1.0J	1.7L
	39.8C	15.7K	11.2I	0.0A	48.8C	-0.8L	0.3I	1.0F
86.70								
	39.8C	15.7K	11.2I	0.0A	48.8C	-0.8L	0.3I	1.0F
	39.8C	15.8K	11.6I	0.0A	49.0C	-0.9L	-0.2J	1.0L
83.33								
	39.8C	15.8K	11.6I	0.0A	49.0C	-0.9L	-0.2J	1.0L
	39.9C	15.5K	11.6I	0.0A	49.0C	-0.9L	0.2J	1.1L
80.00								
	39.9C	15.5K	11.6I	0.0A	49.0C	-0.9L	0.2J	1.2L
	40.4C	7.2K	5.9I	0.0A	45.3C	-1.0L	1.1D	1.7L
63.33								
	40.4C	7.2K	5.9I	0.0A	45.3C	-1.0L	1.1D	1.7L
	40.6C	5.4H	8.4F	0.0A	45.9F	-1.0L	1.5D	1.9L
56.70								
	42.1C	5.1H	7.5F	0.0A	46.1F	-1.0L	-1.6D	2.6D
	42.5C	11.7K	10.4I	0.0A	49.5C	-1.1L	-0.9D	1.9F
43.33								
	42.5C	11.7K	10.4I	0.0A	49.5C	-1.1L	-0.9D	1.9F
	42.6C	13.1K	11.6I	0.0A	50.3C	-1.1L	-0.7D	1.8F
40.00								
	42.6C	13.1K	11.6I	0.0A	50.3C	-1.1L	-0.7D	1.8F
	42.9C	14.7K	13.1I	0.0A	51.3C	-1.2L	-0.2F	1.3F
28.35								
	42.9C	14.7K	13.1I	0.0A	51.3C	-1.2L	-0.2F	1.3F
	43.1C	14.0K	12.5I	0.0A	50.9C	-1.2L	0.3K	1.4L
23.33								
	43.1C	14.0K	12.5I	0.0A	50.9C	-1.2L	0.3K	1.4L
	43.2C	13.0K	11.6I	0.0A	50.4C	-1.2L	0.5K	1.5L
20.00								
	43.2C	13.0K	11.6I	0.0A	50.4C	-1.3L	0.5K	1.6L
	43.6C	5.6K	5.0I	0.0A	46.7C	-1.3L	-1.0J	1.9J
6.67								
	43.6C	8.4K	7.5I	0.0A	48.2C	-2.0L	-1.0J	2.5J
	43.7C	4.4K	4.0I	0.0A	46.1C	-2.0L	-1.2J	2.6J
3.33								
	43.7C	4.4K	4.0I	0.0A	46.1C	-2.0L	-1.2J	2.6J
	43.8C	0.0D	0.0D	0.0A	43.8C	-2.0L	-1.3J	2.7J

0.00 ----------

FORCE/RESISTANCE RATIO
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MAST ELEV ft	- LEG COMPRESSION - MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	--- LEG TENSION --- MAX TENS	TENS RESIST	FORCE/ RESIST RATIO	---- FACE SHEAR --- MAX FACE SHEAR	FACE SHEAR RESIST	FORCE/ RESIST RATIO
300.00									
	0.00	35.70	0.00	0.00	79.52	0.00	0.00	5.87	0.00
	1.64	35.70	0.05	0.80	79.52	0.01	2.44	5.87	0.41
293.35									
	1.64	35.70	0.05	0.80	79.52	0.01	2.43	5.87	0.41
	11.56	35.70	0.32	10.47	79.52	0.13	2.63	5.87	0.45
286.70									
	13.11	35.70	0.37	0.00	79.52	0.00	1.15	5.87	0.20
	10.88	35.70	0.30	0.00	79.52	0.00	0.97	5.87	0.16
280.00									
	10.88	35.70	0.30	0.00	79.52	0.00	0.99	5.87	0.17
	16.05	35.70	0.45	0.00	79.52	0.00	0.51	5.87	0.09
261.70									
	16.05	35.70	0.45	0.00	79.52	0.00	0.52	5.87	0.09
	16.16	35.70	0.45	0.12	79.52	0.00	0.49	5.87	0.08
260.00									
	16.16	35.70	0.45	0.12	79.52	0.00	0.49	5.87	0.08
	16.92	35.70	0.47	0.89	79.52	0.01	0.28	5.87	0.05
249.00									
	17.80	35.70	0.50	0.01	79.52	0.00	2.43	5.87	0.41
	13.68	35.70	0.38	0.00	79.52	0.00	2.76	5.87	0.47
240.07									
	13.68	60.09	0.23	0.00	90.30	0.00	2.75	5.96	0.46
	18.69	60.09	0.31	4.20	90.30	0.05	2.89	5.96	0.48
236.70									
	27.70	60.09	0.46	0.00	90.30	0.00	5.04	5.96	0.85
	34.27	60.09	0.57	0.00	90.30	0.00	2.68	5.96	0.45
233.33									
	34.27	60.09	0.57	0.00	90.30	0.00	2.71	5.96	0.46
	46.46	60.09	0.77	6.27	90.30	0.07	2.17	5.96	0.36
223.34									
	46.46	60.09	0.77	6.27	90.30	0.07	2.18	5.96	0.37
	49.73	60.09	0.83	10.68	90.30	0.12	2.00	5.96	0.33
220.00									
	49.73	60.09	0.83	10.68	90.30	0.12	2.02	3.49	0.58
	45.79	60.09	0.76	6.23	90.30	0.07	1.58	3.49	0.45
206.70									
	45.79	60.09	0.76	6.23	90.30	0.07	1.56	3.49	0.45
	41.21	60.09	0.69	0.37	90.30	0.00	1.95	3.49	0.56
200.00									
	41.15	90.09	0.46	0.05	90.30	0.00	2.13	6.05	0.35
	32.20	90.09	0.36	0.00	90.30	0.00	3.11	6.05	0.51
183.34									
	32.20	90.09	0.36	0.00	90.30	0.00	3.08	6.05	0.51
	37.33	90.09	0.41	0.27	90.30	0.00	3.28	6.05	0.54
180.00									
	37.33	90.09	0.41	0.27	90.30	0.00	3.28	6.05	0.54
	42.41	90.09	0.47	0.54	90.30	0.01	3.47	6.05	0.57
176.70									
	42.54	90.09	0.47	0.00	90.30	0.00	2.12	6.05	0.35
	38.21	90.09	0.42	0.00	90.30	0.00	1.32	6.05	0.22
163.34									
	38.21	90.09	0.42	0.00	90.30	0.00	1.33	6.05	0.22
	39.36	90.09	0.44	0.00	90.30	0.00	1.13	6.05	0.19
160.00									
	39.36	60.09	0.66	0.00	90.30	0.00	1.19	3.49	0.34
	41.39	60.09	0.69	0.00	90.30	0.00	0.70	3.49	0.20
146.70									
	41.39	60.09	0.69	0.00	90.30	0.00	0.71	3.49	0.20
	41.27	60.09	0.69	0.00	90.30	0.00	0.83	3.49	0.24
143.34									
	41.27	60.09	0.69	0.00	90.30	0.00	0.84	3.49	0.24
	40.89	60.09	0.68	0.00	90.30	0.00	0.95	3.49	0.27
140.00									
	40.89	60.09	0.68	0.00	90.30	0.00	0.99	3.49	0.28
	38.29	60.09	0.64	0.00	90.30	0.00	1.31	3.49	0.38
130.00									
	38.29	60.09	0.64	0.00	90.30	0.00	1.35	3.49	0.39
	46.38	60.09	0.77	0.00	90.30	0.00	1.86	3.49	0.53
120.60									

	46.38	60.09	0.77	0.00	90.30	0.00	1.86	3.49	0.53
	47.06	60.09	0.78	0.00	90.30	0.00	1.90	3.49	0.54
120.00									
	47.06	90.09	0.52	0.00	90.30	0.00	1.90	6.05	0.31
	50.79	90.09	0.56	0.00	90.30	0.00	2.10	6.05	0.35
116.70									
	50.76	90.09	0.56	0.00	90.30	0.00	2.60	6.05	0.43
	44.27	90.09	0.49	0.00	90.30	0.00	1.84	6.05	0.30
103.33									
	44.27	90.09	0.49	0.00	90.30	0.00	1.85	6.05	0.31
	45.66	90.09	0.51	0.00	90.30	0.00	1.67	6.05	0.28
100.00									
	45.66	90.09	0.51	0.00	90.30	0.00	1.72	3.54	0.49
	48.83	90.09	0.54	0.00	90.30	0.00	1.02	3.54	0.29
86.70									
	48.82	90.09	0.54	0.00	90.30	0.00	1.03	3.54	0.29
	49.02	90.09	0.54	0.00	90.30	0.00	0.98	3.54	0.28
83.33									
	49.02	90.09	0.54	0.00	90.30	0.00	0.99	3.54	0.28
	48.97	90.09	0.54	0.00	90.30	0.00	1.10	3.54	0.31
80.00									
	48.97	90.09	0.54	0.00	90.30	0.00	1.16	3.54	0.33
	45.26	90.09	0.50	0.00	90.30	0.00	1.66	3.54	0.47
63.33									
	45.26	90.09	0.50	0.00	90.30	0.00	1.69	3.54	0.48
	45.60	90.09	0.51	0.00	90.30	0.00	1.79	3.54	0.50
60.00									
	45.60	90.09	0.51	0.00	90.30	0.00	1.79	3.54	0.50
	45.94	90.09	0.51	0.00	90.30	0.00	1.88	3.54	0.53
56.70									
	46.08	90.09	0.51	0.00	90.30	0.00	2.55	3.54	0.72
	49.51	90.09	0.55	0.00	90.30	0.00	1.92	3.54	0.54
43.33									
	49.51	90.09	0.55	0.00	90.30	0.00	1.93	3.54	0.54
	50.26	90.09	0.56	0.00	90.30	0.00	1.78	3.54	0.50
40.00									
	50.26	90.09	0.56	0.00	90.30	0.00	1.81	3.54	0.51
	51.26	90.09	0.57	0.00	90.30	0.00	1.31	3.54	0.37
28.35									
	51.26	90.09	0.57	0.00	90.30	0.00	1.32	3.54	0.37
	50.91	90.09	0.57	0.00	90.30	0.00	1.43	3.54	0.40
23.33									
	50.91	90.09	0.57	0.00	90.30	0.00	1.44	3.54	0.41
	50.42	90.09	0.56	0.00	90.30	0.00	1.53	3.54	0.43
20.00									
	50.42	90.09	0.56	0.00	141.37	0.00	1.57	6.05	0.26
	46.67	90.09	0.52	0.00	141.37	0.00	1.88	6.05	0.31
6.67									
	48.21	90.09	0.54	0.00	141.37	0.00	2.54	6.05	0.42
	46.12	90.09	0.51	0.00	141.37	0.00	2.63	6.05	0.43
3.33									
	46.12	90.09	0.51	0.00	141.37	0.00	2.64	6.05	0.44
	43.79	90.09	0.49	0.00	141.37	0.00	2.73	6.05	0.45
0.00									

MAXIMUM MAST DEFORMATION CALCULATED

MAST ELEV FT	.....DEFLECTIONS (FT)..... HORIZONTAL ..... NORTH	EAST	TOTAL	DOWN	.....ROTATIONS (DEG)..... TILT ..... NORTH	EAST	TOTAL	TWIST
300.0	2.83G	-2.65D	2.85G	0.07P	0.15F	-0.20E	0.23E	1.46L
293.4	2.81G	-2.64D	2.83G	0.07C	0.14F	-0.20E	0.23E	1.46L
286.7	2.80G	-2.62D	2.82C	0.07C	0.12F	-0.17E	0.20E	1.46L
280.0	2.79G	-2.61D	2.83C	0.07C	0.12F	-0.17E	0.20E	1.47L
261.7	2.76G	-2.56D	2.83C	0.07C	0.18F	-0.21E	0.25F	1.50L
249.0	2.72G	-2.52C	2.82C	0.06C	0.25F	-0.27D	0.32F	1.52L
240.1	2.68G	-2.50C	2.80C	0.06C	0.27F	-0.29D	0.34F	1.53L
236.7	2.66G	-2.49C	2.79C	0.06C	0.26F	-0.28D	0.33F	1.54L

233.3	2.65G	-2.48C	2.79C	0.06C	0.25F	-0.26D	0.31F	1.54L
223.3	2.61G	-2.45C	2.76C	0.06C	0.34F	-0.36D	0.41F	1.58L
220.0	2.59G	-2.44C	2.75C	0.06C	0.38F	-0.41D	0.45F	1.59L
206.7	2.47G	-2.35C	2.66C	0.06C	0.58G	-0.61D	0.64F	1.65L
200.0	2.40G	-2.29C	2.60C	0.05C	0.67G	-0.69D	0.72F	1.68L
183.3	2.19G	-2.11C	2.42C	0.05C	0.74G	-0.74D	0.77F	1.62L
176.7	2.11G	-2.04C	2.35C	0.05C	0.70G	-0.69D	0.72F	1.59L
163.3	1.95G	-1.91C	2.21C	0.05C	0.68G	-0.65D	0.68G	1.57L
160.0	1.91G	-1.88C	2.17C	0.05C	0.68G	-0.65D	0.68G	1.56L
146.7	1.75G	-1.74C	2.02C	0.04C	0.70G	-0.65D	0.71G	1.49L
143.3	1.71G	-1.70C	1.98C	0.04C	0.71G	-0.66D	0.71G	1.47L
140.0	1.67G	-1.67C	1.94C	0.04C	0.71G	-0.66D	0.71G	1.45L
130.0	1.54G	-1.55C	1.82C	0.04C	0.71G	-0.64C	0.72C	1.39L
120.6	1.43G	-1.45C	1.70C	0.03C	0.67G	-0.62C	0.70C	1.32L
116.7	1.39G	-1.41C	1.66C	0.03C	0.65G	-0.60C	0.68C	1.28L
103.3	1.24G	-1.27C	1.50C	0.03C	0.62G	-0.59C	0.66C	1.22L
100.0	1.20G	-1.24C	1.46C	0.03C	0.62G	-0.59C	0.67C	1.20L
86.7	1.06G	-1.10C	1.30C	0.02C	0.64G	-0.62C	0.72C	1.08L
83.3	1.02G	-1.06C	1.26C	0.02C	0.65G	-0.64C	0.74C	1.05L
80.0	0.98G	-1.02C	1.22C	0.02C	0.65G	-0.65C	0.75C	1.02L
63.3	0.79G	0.83K	0.99C	0.02C	0.67G	-0.69C	0.81C	0.84L
56.7	0.71G	0.75K	0.90C	0.02C	0.66G	-0.68C	0.81C	0.76L
43.3	0.56G	0.59K	0.70C	0.01C	0.67G	-0.70C	0.84C	0.71L
40.0	0.52G	0.55K	0.66C	0.01C	0.68G	0.71K	0.85C	0.67L
28.4	0.38G	0.40K	0.48C	0.01C	0.71G	0.76K	0.91C	0.52L
23.3	0.31G	0.34K	0.40C	0.01C	0.73G	0.79K	0.93C	0.45L
20.0	0.27G	0.29K	0.34C	0.01C	0.74G	0.80K	0.95C	0.40L
6.7	0.09G	0.10K	0.12C	0.00P	0.78G	0.84K	0.99C	0.25L
3.3	0.05G	0.05K	0.06C	0.00P	0.79G	0.85K	1.00C	0.13L
0.0	0.00A	0.00A	0.00A	0.00A	0.79G	0.85K	1.01C	0.00A

MAXIMUM ANTENNA ROTATIONS

ELEV FT	ORIENTATION AZI DEG	ORIENTATION ELEV DEG	BEAM DEFLECTIONS (DEG) ROLL	YAW	PITCH	TOTAL
294.0	0.0	0.0	0.196 E	1.458 L	-0.145 F	1.458 L
294.0	0.0	0.0	0.196 E	1.458 L	-0.145 F	1.458 L
294.0	0.0	0.0	0.196 E	1.458 L	-0.145 F	1.458 L
294.0	0.0	0.0	0.196 E	1.458 L	-0.145 F	1.458 L
294.0	0.0	0.0	0.196 E	1.458 L	-0.145 F	1.458 L
294.0	0.0	0.0	0.196 E	1.458 L	-0.145 F	1.458 L
249.0	0.0	0.0	0.271 D	1.520 L	-0.247 F	1.523 L
234.0	0.0	0.0	0.265 D	1.539 L	-0.250 F	1.540 L
219.0	0.0	0.0	0.428 D	1.599 L	-0.397 F	1.616 F
200.0	205.1	0.0	-0.614 D	1.674 L	0.551 G	1.695 F

MAXIMUM INTERNAL MAST FORCES

MAST ELEV FT	TOTAL AXIAL KIP	SHEAR N - S KIP	SHEAR E - W KIP	MOMENT N - S FT-KIP	MOMENT E - W FT-KIP	TORSION FT-KIP

```
 300.0 ..........................................................................
         0.00 G      0.00 A      0.00 C      0.00 L      0.00 C      0.00 A

         1.93 V      3.68 G      3.67 J     -3.17 G     -3.16 J      0.05 H
 293.4 ..........................................................................
         1.93 V      3.68 G      3.67 J     -3.17 G     -3.16 J      0.08 H

         2.44 N      3.98 G     -3.97 D    -28.63 G    -28.54 J     -0.11 B
--------------------------------------------------------------------------------
             *           +           +           &           &           @
 286.7   25.67 G     -5.92 G      5.81 D     19.14 G    -21.66 D     -0.56 L
--------------------------------------------------------------------------------
        27.28 G     -1.84 G     -1.77 J     12.01 A    -12.69 J     -0.52 L

        27.64 G     -1.52 G     -1.46 J      2.65 F     -3.98 D     -0.52 L
 280.0 ..........................................................................
        27.64 G     -1.52 G     -1.46 J      2.65 F     -3.98 D     -0.51 L

        28.60 G     -0.66 G     -0.62 J     22.46 G    -22.74 D     -0.50 L
 261.7 ..........................................................................
        28.60 G     -0.66 G     -0.62 J     22.46 G    -22.74 D     -0.49 L

        29.28 G      0.21 D     -0.24 E     26.82 G    -26.23 D     -0.48 L
 249.0 ..........................................................................
        31.94 G     -3.55 A     -3.41 D     26.82 G    -26.23 D     -0.44 L

        32.47 G     -4.11 A     -4.02 D     18.59 A    -17.60 I     -0.41 L
 240.1 ..........................................................................
        32.47 G     -4.11 A     -4.02 D     18.59 A    -17.60 I     -0.40 L

        32.70 G     -4.34 A     -4.27 D     32.86 A    -30.00 I      0.38 G
--------------------------------------------------------------------------------
             *           +           +           &           &           @
 236.7   38.18 C    -12.49 G    -12.35 J     30.43 G    -34.41 D     -1.03 L
--------------------------------------------------------------------------------
        70.62 C     -7.71 G     -7.81 J     12.66 F    -13.51 C     -1.39 L

        73.51 C     -4.13 G     -4.21 J     35.69 G    -36.94 D     -1.37 L
 233.3 ..........................................................................
        73.51 C     -4.13 G     -4.21 J     35.69 G    -36.94 D     -1.28 L

        74.26 C     -3.22 G     -3.29 J     76.05 G    -74.60 D     -1.19 L
 223.3 ..........................................................................
        74.26 C     -3.22 G     -3.29 J     76.05 G    -74.60 D     -1.16 L

        74.51 C     -2.91 G     -2.97 J     87.10 G    -84.74 D     -1.13 L
 220.0 ..........................................................................
        74.51 C     -2.91 G     -2.97 J     87.09 G    -84.74 D     -0.99 L

        78.23 C      1.69 G     -1.98 D     77.46 G    -71.41 D     -0.85 L
 206.7 ..........................................................................
        78.23 C      1.69 G     -1.98 D     77.46 G    -71.41 D     -0.78 L

        78.76 C      2.37 G     -2.68 D     62.97 G    -57.50 C     -0.70 L
 200.0 ..........................................................................
        78.97 C      3.00 G     -3.04 D     63.30 G    -56.92 C      0.97 L

        80.51 C      4.70 G     -4.77 D     18.83 A     24.22 E      1.15 L
 183.3 ..........................................................................
        80.51 C      4.70 G     -4.77 D     18.83 A     24.22 E      1.22 L

        81.12 C      5.37 G     -5.45 D     50.87 A     53.82 E      1.30 L
--------------------------------------------------------------------------------
             *           +           +           &           &           @
 176.7   20.16 C     -8.46 G      8.46 D     15.38 G    -17.57 D     -0.65 L
--------------------------------------------------------------------------------
       101.28 C      2.77 A     -2.95 J     37.14 A     38.41 E     -0.80 F

       102.52 C      1.52 A     -1.60 J    -14.19 D     14.86 F     -0.94 F
 163.3 ..........................................................................
       102.52 C      1.52 A     -1.60 J    -14.19 D     14.86 F     -0.97 F

       102.82 C      1.21 A     -1.26 J    -13.78 D     15.38 K      1.01 L
 160.0 ..........................................................................
       102.82 C      1.21 A     -1.26 J    -13.78 D     15.38 K      1.15 L

       103.89 C      0.35 F     -0.27 D    -17.56 C     23.55 K      1.28 L
 146.7 ..........................................................................
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	103.89 C	0.35 F	-0.27 D	-17.56 C	23.55 K	1.32 L
	104.16 C	0.62 G	-0.59 D	-17.00 C	22.92 K	1.36 L
143.3						
	104.16 C	0.62 G	-0.59 D	-17.00 C	22.92 K	1.39 L
	104.43 C	0.94 G	-0.91 D	-15.79 C	21.21 K	1.43 L
140.0						
	104.43 C	0.94 G	-0.91 D	-15.79 C	21.21 K	1.53 L
	105.23 C	1.86 G	-1.85 D	-13.46 F	16.09 E	1.63 L
130.0						
	105.23 C	1.86 G	-1.85 D	-13.46 F	16.09 E	1.73 L
	105.99 C	2.73 G	-2.73 D	-31.63 F	35.90 D	1.83 L
120.6						
	105.99 C	2.73 G	-2.73 D	-31.63 F	35.90 D	1.86 L
	106.34 C	3.09 G	-3.10 D	-41.75 G	46.87 D	1.90 L
	*	+	+	&	&	@
116.7	10.18 C	-6.14 G	6.08 D	7.41 G	-8.40 D	-0.34 L
	116.52 C	-3.00 G	-3.07 J	-34.39 F	38.47 D	1.70 L
	117.75 C	1.80 A	-1.83 J	-13.05 C	18.55 K	1.83 L
103.3						
	117.75 C	1.80 A	-1.83 J	-13.05 C	18.55 K	1.87 L
	118.06 C	1.52 A	-1.52 J	-16.40 C	23.95 K	1.90 L
100.0						
	118.06 C	1.52 A	-1.52 J	-16.40 C	23.95 K	2.03 L
	119.25 C	0.42 A	-0.43 I	-25.16 A	35.34 K	2.16 L
86.7						
	119.25 C	0.42 A	-0.43 I	-25.15 A	35.34 K	2.19 L
	119.55 C	-0.25 J	0.19 L	-26.14 A	35.64 K	2.22 L
83.3						
	119.55 C	-0.25 J	0.19 L	-26.14 A	35.64 K	2.25 L
	119.85 C	0.29 G	0.32 L	-26.15 A	34.92 K	2.28 L
80.0						
	119.85 C	0.29 G	0.32 L	-26.15 A	34.92 K	2.44 L
	121.34 C	1.70 G	-1.70 D	-12.51 C	16.50 K	2.59 L
63.3						
	121.34 C	1.70 G	-1.70 D	-12.51 C	16.50 K	2.65 L
	121.93 C	2.24 G	-2.26 D	-21.94 F	17.47 D	2.71 L
	*	+	+	&	&	@
56.7	4.33 C	-4.84 G	4.84 D	2.93 G	-3.39 D	0.14 B
	126.26 C	-2.35 G	2.42 D	-19.40 F	14.08 D	2.70 L
	127.45 C	-1.29 G	1.34 D	-24.02 A	26.38 K	2.82 L
43.3						
	127.45 C	-1.29 G	1.34 D	-24.02 A	26.38 K	2.85 L
	127.75 C	-1.03 G	1.08 D	-27.09 A	29.46 K	2.87 L
40.0						
	127.75 C	-1.03 G	1.08 D	-27.09 A	29.46 K	2.97 L
	128.79 C	-0.30 F	0.20 B	-31.05 A	33.19 K	3.07 L
28.4						
	128.79 C	-0.30 F	0.20 B	-31.05 A	33.19 K	3.11 L
	129.24 C	-0.45 A	0.49 K	-29.56 A	31.47 K	3.15 L
23.3						
	129.24 C	-0.45 A	0.49 K	-29.56 A	31.47 K	3.18 L
	129.54 C	-0.68 A	0.72 K	-27.51 A	29.23 K	3.21 L
20.0						
	129.54 C	-0.68 A	0.72 K	-27.51 A	29.23 K	3.30 L
	130.77 C	-1.46 A	1.54 J	-11.96 A	12.76 J	3.39 L
6.7						
	130.77 C	-1.46 A	1.54 J	-11.96 A	12.76 J	3.41 L

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                                                    400253A
          131.08 C     -1.65 A      1.75 J     -6.31 A      6.75 J      3.44 L
    3.3   ..............................................................................
          131.08 C     -1.65 A      1.75 J     -6.31 A      6.75 J      3.46 L

          131.38 C     -1.84 A      1.95 J      0.00 A      0.00 D      3.48 L
-------------------------------------------------------------------------------
 base
 reaction 131.38 C      1.05 A     -1.11 I      0.00 H      0.00 D     -3.48 L
-------------------------------------------------------------------------------
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* VERTICAL GUY LOAD & GUY ECCENTRIC MOMENT
\+ HORIZONTAL REACTION @ TORSIONAL RESISTANCE

MAXIMUM GUY FORCES AT MAST

GUY LEVEL FT	GUY AZI	COMPONENTS AT MAST N KIP	E KIP	DOWN KIP	TOTAL KIP	EFL/FR * RATIO	GUY ANGLES VERT DEG	HORIZ DEG
286.7	0.0	8.6A	0.4J	13.1A	15.7A	0.6A	-57.9M	-8.8E
	120.0	-4.4D	7.5F	15.9F	18.1F	0.7F	-62.6Q	8.1A
	240.0	-4.4J	-7.6H	12.6I	15.3H	0.6H	-56.8T	8.7D
236.7	0.0	15.7B	0.4J	19.6B	25.2B	0.7B	-52.5O	-9.3F
	120.0	-8.0D	13.7D	24.0D	28.8D	0.8D	-57.4P	8.6L
	240.0	-8.1J	-13.9J	19.0J	24.9J	0.7J	-51.1S	9.8D
176.7	0.0	10.3B	0.2J	9.8B	14.2B	0.7B	-45.7S	-9.5F
	120.0	-5.4D	9.2D	12.1D	16.2D	0.8D	-50.2W	-9.3J
	240.0	-5.3J	-9.2J	9.4J	14.2J	0.7J	-43.8O	10.2D
116.7	0.0	7.2B	0.2J	4.7B	8.6B	0.7B	-35.5S	8.6H
	120.0	-3.8D	6.6D	5.8D	9.6D	0.8D	-39.1W	-9.3J
	240.0	-3.8J	-6.5J	4.5J	8.8J	0.7J	-33.0O	9.3D
56.7	0.0	5.7B	-0.1D	2.1B	6.1B	0.7B	-25.1G	5.3H
	120.0	-3.1E	5.3E	2.4E	6.6E	0.7E	-28.3K	-6.8J
	240.0	-3.0J	-5.1J	1.8J	6.2J	0.7J	-23.3C	-5.5B

* EFL/FR = EFFECTS OF FACTORED LOADS DIVIDED BY THE FACTORED RESISTANCE

MAXIMUM GUY FORCES AT ANCHOR

GUY LEVEL FT	GUY AZI	GUY ATT AZI	COMPONENTS AT ANCHOR RAD KIP	LAT KIP	VERT KIP	TOTAL KIP	EFL/FR * RATIO
286.7	0.0	0.0	9.1A	-0.4J	12.5A	15.4A	0.6A
	120.0	120.0	9.1F	0.4H	15.4F	17.9F	0.7F
	240.0	240.0	9.1I	0.4L	12.0H	15.1H	0.6H
236.7	0.0	0.0	16.2B	0.5D	18.9B	24.9B	0.7B
	120.0	120.0	16.3D	0.4H	23.4D	28.5D	0.8D
	240.0	240.0	16.4J	-0.4F	18.3J	24.6J	0.7J
176.7	0.0	0.0	10.4B	0.3D	9.4B	14.0B	0.7B
	120.0	120.0	10.9D	-0.2B	11.8D	16.1D	0.8D
	240.0	240.0	10.8J	-0.3F	9.0J	14.1J	0.7J
116.7	0.0	0.0	7.3B	0.2D	4.6B	8.6B	0.7B
	120.0	120.0	7.7D	-0.1B	5.6D	9.5D	0.8D
	240.0	240.0	7.6J	-0.2F	4.3J	8.7J	0.7J
56.7	0.0	0.0	5.7B	0.1D	2.0B	6.0B	0.7B
	120.0	120.0	6.1E	-0.1B	2.3E	6.6E	0.7E
	240.0	240.0	5.9J	0.1L	1.7J	6.1J	0.7J

MAXIMUM ANCHOR LOADS

AZI DEG	RADIUS FT	GUY TO ELEV FT	....ANCHOR LOADS..... HORIZ KIP	VERT KIP	LATER-AL KIP	AXIAL KIP	.....SHAFT FORCES..... ...LATERAL... VERT PLANE KIP	HORIZ PLANE KIP	ANGLE DEG
0.0	210.0	286.7	9.1A	12.5A	-0.4J	15.2A	2.6L	-0.4J	
		236.7	16.2B	18.9B	0.5D	24.8B	2.3B	0.5D	
		176.7	10.4B	9.4B	0.3D	14.0B	-0.6A	0.3D	
		116.7	7.3B	4.6B	0.2D	8.4B	-1.8B	0.2D	
		56.7	5.7B	2.0B	0.1D	5.5B	-2.6B	0.1D	
			48.7B	47.3B	1.5D	67.8B	0.0L	1.5D	44.2B
120.0	165.0	286.7	9.1F	15.4F	0.4H	17.6F	3.1D	0.4H	
		236.7	16.3D	23.4D	0.4H	28.4D	2.8D	0.4H	
		176.7	10.9D	11.8D	-0.2B	16.0D	-0.6F	-0.2B	
		116.7	7.7D	5.6D	-0.1B	9.3D	-2.2D	-0.1B	
		56.7	6.1E	2.3E	-0.1B	5.7E	-3.2E	-0.1B	
			50.0D	58.4D	1.3H	76.9D	0.0G	1.3H	49.4D
240.0	210.0	286.7	9.1I	12.0H	0.4L	14.9H	2.8J	0.4L	
		236.7	16.4J	18.3J	-0.4F	24.5J	2.5J	-0.4F	
		176.7	10.8J	9.0J	-0.3F	14.1J	-0.6H	-0.3F	
		116.7	7.6J	4.3J	-0.2F	8.5J	-1.9J	-0.2F	
		56.7	5.9J	1.7J	0.1L	5.5J	-2.7J	0.1L	
			49.8J	45.3J	-1.4F	67.3J	0.0J	-1.4F	42.3J

MAXIMUM LOADS ON TOWER PIER

AXIAL	.....SHEAR..... NORTH	EAST	TOTAL	.....MOMENT..... NORTH	EAST	TOTAL	TORSIONAL
kip	kip	kip	kip	ft-kip	ft-kip	ft-kip	ft-kip
131.3754	1.0469	-1.1125	1.2069	-0.0001	-0.0001	0.0001	-3.4844
C	A	I	I	H	D	D	L

GUYMAST (USA)-Guyed Tower Analysis (c)2005 Guymast Inc.

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Processed under license at:

Sabre Towers and Poles on: 30 mar 2018 at: 9:29:54

300' 3600SRWD / Round Lake, FL

****
********** Service Load Condition **********
****

* 12 wind directions were analyzed. Only 1 condition(s) shown in full
* RRUs/TMAs were assumed to be behind antennas

* Some wind loads may have been derived from full-scale wind tunnel testing

LOADING CONDITION A ==========

60 mph wind with no ice. Wind Azimuth: 0♦

MAST LOADING
============

LOAD TYPE	ELEV FT	.FORCES (KIP & KIP/FT) N	E	DOWN	.MOMENTS(FT.K & FT.K/FT) N	E	TORSION	ANT-ORIENT AZI DEG	VERT DEG
C	294.0	-0.253	0.000	0.300	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.080	0.000	0.165	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.031	0.000	0.039	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.143	0.000	0.087	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.143	0.000	0.087	0.00	0.00	0.00	0.0	0.00
C	294.0	-0.143	0.000	0.087	0.00	0.00	0.00	0.0	0.00
C	249.0	-0.795	0.000	2.216	0.00	0.00	0.00	0.0	0.00
C	234.0	-0.785	0.000	2.216	0.00	0.00	0.00	0.0	0.00
C	219.0	-0.774	0.000	2.216	0.00	0.00	0.00	0.0	0.00
C	200.0	-0.116	-0.032	0.170	-0.27	-0.48	0.30	205.1	0.00
D	300.0	-0.010	0.000	0.043	0.00	0.00	0.00		
D	290.0	-0.011	0.000	0.044	0.00	0.00	0.00		
D	290.0	-0.011	0.000	0.044	0.00	0.00	0.00		
D	280.0	-0.011	0.000	0.044	0.00	0.00	0.00		
D	280.0	-0.011	0.000	0.044	0.00	0.00	0.00		
D	263.3	-0.011	0.000	0.044	0.00	0.00	0.00		
D	263.3	-0.011	0.000	0.044	0.00	0.00	0.00		
D	250.0	-0.011	0.000	0.044	0.00	0.00	0.00		
D	250.0	-0.014	0.000	0.049	0.00	0.00	0.00		
D	240.0	-0.015	0.000	0.051	0.00	0.00	0.00		
D	240.0	-0.016	0.000	0.058	0.00	0.00	0.00		
D	223.3	-0.022	0.000	0.064	0.00	0.00	0.00		
D	223.3	-0.022	0.000	0.064	0.00	0.00	0.00		
D	203.3	-0.024	0.000	0.068	0.00	0.00	0.00		
D	203.3	-0.024	0.000	0.067	0.00	0.00	0.00		
D	200.0	-0.024	0.000	0.067	0.00	0.00	0.00		
D	200.0	-0.024	0.000	0.077	0.00	0.00	0.00		
D	183.3	-0.025	0.000	0.077	0.00	0.00	0.00		
D	183.3	-0.024	0.000	0.077	0.00	0.00	0.00		
D	163.3	-0.024	0.000	0.077	0.00	0.00	0.00		
D	163.3	-0.024	0.000	0.077	0.00	0.00	0.00		
D	160.0	-0.024	0.000	0.077	0.00	0.00	0.00		
D	160.0	-0.023	0.000	0.067	0.00	0.00	0.00		
D	143.3	-0.023	0.000	0.067	0.00	0.00	0.00		
D	143.3	-0.023	0.000	0.067	0.00	0.00	0.00		
D	130.0	-0.022	0.000	0.067	0.00	0.00	0.00		
D	130.0	-0.022	0.000	0.067	0.00	0.00	0.00		
D	120.0	-0.022	0.000	0.067	0.00	0.00	0.00		
D	120.0	-0.022	0.000	0.077	0.00	0.00	0.00		
D	103.3	-0.022	0.000	0.077	0.00	0.00	0.00		
D	103.3	-0.022	0.000	0.076	0.00	0.00	0.00		
D	83.3	-0.021	0.000	0.074	0.00	0.00	0.00		
D	83.3	-0.021	0.000	0.074	0.00	0.00	0.00		
D	63.3	-0.020	0.000	0.075	0.00	0.00	0.00		
D	63.3	-0.020	0.000	0.074	0.00	0.00	0.00		
D	43.3	-0.019	0.000	0.075	0.00	0.00	0.00		
D	43.3	-0.019	0.000	0.074	0.00	0.00	0.00		
D	23.3	-0.017	0.000	0.075	0.00	0.00	0.00		
D	23.3	-0.017	0.000	0.075	0.00	0.00	0.00		
D	10.0	-0.014	0.000	0.078	0.00	0.00	0.00		
D	10.0	-0.015	0.000	0.077	0.00	0.00	0.00		
D	0.0	-0.015	0.000	0.075	0.00	0.00	0.00		

GUY LOADING
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.. WIND LOADING ... AZI DEG	SPEED MPH	REF PRESS PSF	TEMP CHANGE DEG	.ICE LOAD.. RAD IN	DENS PCF	CONV TOL	PROFILES. CAB	WIND	.LOAD FACTORS. WIND	DEAD	ICE
0.0	60.0	0.00	0.00	0.00	56.00	0.0100	1	4	1.00	1.00	1.00

CABLE PROFILE: 1 - CATENARY 2 - PARABOLIC

WIND PROFILE: 1 - EIA 222 default
2 - Constant Kz=1, Kiz=1
3 - Step function for Kz, Kiz
(requires definition of Exposure Factor Kz, Kiz table)
4 - Special Factors
5 - Site specific wind formula, Kiz as EIA 222 default
(requires definition of Exposure Factor Qh formula table)

MAXIMUM LEG LOADS AND FACE SHEARS (KIP - stress in KSI)

MAST ELEV FT	AXIAL	MAX LEG LOADS --- BENDING TENS	BENDING COMP	TOTAL TENS	TOTAL COMP	MAX FACE SHEARS TORSN	BEAM	TOTAL
300.00	0.0L	0.0D	0.0D	0.0L	0.0K	0.0A	0.0K	0.0K
	0.4H	0.3A	0.3K	0.0A	0.6K	0.0H	0.6H	0.6F
293.35	0.4H	0.3A	0.3K	0.0A	0.6K	0.0B	0.6H	0.6L
	0.4E	2.6A	2.6K	2.1A	3.0K	0.0B	0.6L	0.6L
286.70	4.4E	1.4I	1.4K	0.0A	5.7K	0.0L	-0.3L	0.3K
	4.4E	1.0I	0.9K	0.0A	5.2J	0.0L	-0.3L	0.2K
283.33	4.4E	1.0I	0.9K	0.0A	5.2J	0.0L	-0.3L	0.2K
	4.5E	0.5I	0.5G	0.0A	4.9E	0.0L	-0.2L	0.2K
280.00	4.5E	0.5I	0.5G	0.0A	4.9E	0.0L	-0.2L	0.2G
	4.7E	1.7G	1.5E	0.0A	6.2E	0.0L	-0.1L	0.1L
261.70	4.7E	1.7G	1.5E	0.0A	6.2E	0.0L	-0.1L	0.1G
	4.9E	1.9G	1.5A	0.0A	6.3E	0.0L	0.1E	0.1F
249.00	5.7E	1.9G	1.5A	0.0A	7.1E	0.0L	0.6D	0.6F
	5.9E	3.3E	2.7C	0.0A	8.4C	0.0G	0.7D	0.7F
236.70	11.3E	1.2I	0.9G	0.0A	12.0G	0.1L	1.3J	1.3H
	12.2E	4.1C	3.8E	0.0A	16.0E	0.1L	0.7J	0.7H
230.00	12.2E	4.1C	3.8E	0.0A	16.0E	0.1L	0.7J	0.7H
	12.3E	6.6C	5.9E	0.0A	18.2E	0.1L	0.6J	0.6H
223.34	12.3E	6.6C	5.9E	0.0A	18.2E	0.1L	0.6J	0.6H
	12.4E	7.7C	6.8E	0.0A	19.2E	0.1L	0.5J	0.5H
220.00	12.4E	7.7C	6.8E	0.0A	19.2E	0.1L	0.5J	0.5H
	13.4E	7.1C	5.7I	0.0A	19.1E	-0.1G	-0.3F	0.3F
206.70	13.4E	7.1C	5.7I	0.0A	19.1E	-0.1G	-0.3F	0.3F
	13.5E	6.6C	5.2I	0.0A	18.6I	-0.1G	-0.3F	0.4F
203.34	13.5E	6.6C	5.2I	0.0A	18.6I	-0.1H	-0.3F	0.4F
	13.6E	6.0C	4.6I	0.0A	18.0I	-0.1H	0.4D	0.4F
200.00	13.6E	5.8C	4.8I	0.0A	18.3I	-0.1L	-0.5F	0.5E
	14.1E	2.1E	1.2D	0.0A	15.2E	-0.1L	0.8D	0.7H
183.34	14.1E	2.1E	1.2D	0.0A	15.2E	-0.1L	0.8D	0.7H
	14.2E	5.3E	4.1K	0.0A	18.1K	-0.1L	0.9D	0.8D

400253A

176.70								
	16.4E	3.4E	2.9K	0.0A	18.7K	-0.1L	0.6J	0.7J
	16.7E	1.5C	1.2C	0.0A	17.7D	-0.1L	0.3J	0.4J
163.34								
	16.7E	1.5C	1.2C	0.0A	17.7D	-0.1L	0.3J	0.4J
	16.8E	1.9C	1.4C	0.0A	18.0C	-0.2L	0.2J	0.4J
160.00								
	16.8E	1.9C	1.4C	0.0A	18.0C	-0.2L	0.2J	0.4J
	17.1E	2.5C	1.8C	0.0A	18.6C	-0.2L	0.0D	0.2F
146.70								
	17.1E	2.5C	1.8C	0.0A	18.6C	-0.2L	0.0D	0.2F
	17.2E	2.4C	1.7C	0.0A	18.7C	-0.2L	0.1D	0.2F
143.34								
	17.2E	2.4C	1.7C	0.0A	18.7C	-0.2L	0.1D	0.2F
	17.2E	2.1C	1.6C	0.0A	18.6C	-0.2L	0.2D	0.3F
140.00								
	17.2E	2.1C	1.6C	0.0A	18.6C	-0.2L	0.2D	0.3F
	17.5E	1.2E	1.0C	0.0A	18.3D	-0.2L	0.3D	0.4D
130.00								
	17.5E	1.2E	1.0C	0.0A	18.3D	-0.2L	0.3D	0.4D
	17.7E	3.0E	2.0F	0.0A	19.5F	-0.2L	0.5D	0.5D
121.19								
	17.7E	3.0E	2.0F	0.0A	19.5F	-0.2L	0.5D	0.5D
	17.8E	4.2E	3.0F	0.0A	20.6F	0.2J	0.6D	0.5C
116.70								
	18.9E	3.3E	2.4F	0.0A	21.1F	0.2J	0.6J	0.8J
	19.2E	1.3C	1.2C	0.0A	20.2C	0.3J	0.3J	0.6J
103.33								
	19.2E	1.3C	1.2C	0.0A	20.2C	0.3J	0.3J	0.6J
	19.3E	1.8C	1.7I	0.0A	20.6I	0.3J	0.3J	0.5J
100.00								
	19.3E	1.8C	1.7I	0.0A	20.6I	0.3J	0.3J	0.6J
	19.6E	2.9K	3.1I	0.0A	22.3I	0.3J	0.1F	0.4J
86.70								
	19.6E	2.9K	3.1I	0.0A	22.3I	0.3J	0.1F	0.4J
	19.7E	2.9K	3.2I	0.0A	22.4I	0.3J	0.0C	0.3J
83.33								
	19.7E	2.9K	3.2I	0.0A	22.4I	0.3J	0.0C	0.3J
	19.8E	2.8K	3.1I	0.0A	22.5I	0.3J	-0.1C	0.4J
80.00								
	19.8E	2.8K	3.1I	0.0A	22.5I	0.3J	-0.1C	0.4J
	20.2E	1.0K	1.4I	0.0A	21.2I	0.4J	0.3D	0.5J
63.33								
	20.2E	1.0K	1.4I	0.0A	21.2I	0.4J	0.3D	0.5J
	20.4E	1.0D	1.0C	0.0A	21.3D	0.4J	0.4D	0.6J
56.70								
	21.2E	0.7C	0.6C	0.0A	21.7D	0.4J	-0.4D	0.8J
	21.5E	2.2K	2.5I	0.0A	23.5I	0.4J	-0.2D	0.6J
43.33								
	21.5E	2.2K	2.5I	0.0A	23.5I	0.4J	-0.2D	0.6J
	21.6E	2.5K	2.8I	0.0A	24.0I	0.4J	-0.2D	0.6J
40.00								
	21.6E	2.5K	2.8I	0.0A	24.0I	0.4J	-0.2D	0.6J
	21.9E	3.0K	3.3I	0.0A	24.7E	0.4J	0.0B	0.4J
28.35								
	21.9E	3.0K	3.3I	0.0A	24.7E	0.4J	0.0B	0.4J
	22.0E	2.9K	3.1I	0.0A	24.8E	0.4J	-0.1J	0.5J
23.33								
	22.0E	2.9K	3.1I	0.0A	24.8E	0.4J	-0.1J	0.5J
	22.1E	2.7K	2.9I	0.0A	24.7E	0.4J	-0.1J	0.5J

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 20.00 ------------------------------------------------------------------------
       22.1E     2.7K     2.9I     0.0A    24.7E     0.4J    -0.1J     0.5J

       22.5E     1.2K     1.3I     0.0A    23.6E     0.5J    -0.3J     0.6J
  6.67 ------------------------------------------------------------------------
       22.5E     1.8K     1.9I     0.0A    24.2E     0.7J    -0.3J     0.8J

       22.6E     0.0F     0.0I     0.0A    22.6E     0.7J    -0.4J     0.9J
  0.00 ------------------------------------------------------------------------
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FORCE/RESISTANCE RATIO
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MAST ELEV ft	- LEG COMPRESSION - MAX COMP	COMP RESIST	FORCE/ RESIST RATIO	--- LEG TENSION --- MAX TENS	TENS RESIST	FORCE/ RESIST RATIO	---- FACE SHEAR --- MAX FACE SHEAR	FACE SHEAR RESIST	FORCE/ RESIST RATIO
300.00									
	0.00	35.70	0.00	0.00	79.52	0.00	0.00	5.87	0.00
	0.64	35.70	0.02	0.00	79.52	0.00	0.57	5.87	0.10
293.35									
	0.64	35.70	0.02	0.00	79.52	0.00	0.57	5.87	0.10
	3.03	35.70	0.08	2.14	79.52	0.03	0.62	5.87	0.11
286.70									
	5.68	35.70	0.16	0.00	79.52	0.00	0.25	5.87	0.04
	5.23	35.70	0.15	0.00	79.52	0.00	0.23	5.87	0.04
283.33									
	5.23	35.70	0.15	0.00	79.52	0.00	0.23	5.87	0.04
	4.92	35.70	0.14	0.00	79.52	0.00	0.21	5.87	0.04
280.00									
	4.92	35.70	0.14	0.00	79.52	0.00	0.21	5.87	0.04
	6.25	35.70	0.18	0.00	79.52	0.00	0.10	5.87	0.02
261.70									
	6.25	35.70	0.18	0.00	79.52	0.00	0.10	5.87	0.02
	6.26	35.70	0.18	0.00	79.52	0.00	0.10	5.87	0.02
260.00									
	6.26	35.70	0.18	0.00	79.52	0.00	0.10	5.87	0.02
	6.34	35.70	0.18	0.00	79.52	0.00	0.08	5.87	0.01
249.00									
	7.07	35.70	0.20	0.00	79.52	0.00	0.60	5.87	0.10
	8.06	35.70	0.23	0.00	79.52	0.00	0.69	5.87	0.12
240.00									
	8.06	60.09	0.13	0.00	90.30	0.00	0.69	5.96	0.12
	8.42	60.09	0.14	0.00	90.30	0.00	0.73	5.96	0.12
236.70									
	12.02	60.09	0.20	0.00	90.30	0.00	1.27	5.96	0.21
	15.97	60.09	0.27	0.00	90.30	0.00	0.66	5.96	0.11
230.00									
	15.97	60.09	0.27	0.00	90.30	0.00	0.67	5.96	0.11
	18.22	60.09	0.30	0.00	90.30	0.00	0.58	5.96	0.10
223.34									
	18.22	60.09	0.30	0.00	90.30	0.00	0.58	5.96	0.10
	19.20	60.09	0.32	0.00	90.30	0.00	0.53	5.96	0.09
220.00									
	19.20	60.09	0.32	0.00	90.30	0.00	0.55	3.49	0.16
	19.06	60.09	0.32	0.00	90.30	0.00	0.33	3.49	0.09
206.70									
	19.06	60.09	0.32	0.00	90.30	0.00	0.33	3.49	0.09
	18.55	60.09	0.31	0.00	90.30	0.00	0.38	3.49	0.11
203.34									
	18.55	60.09	0.31	0.00	90.30	0.00	0.38	3.49	0.11
	18.02	60.09	0.30	0.00	90.30	0.00	0.43	3.49	0.12
200.00									
	18.29	90.09	0.20	0.00	90.30	0.00	0.46	6.05	0.08
	15.22	90.09	0.17	0.00	90.30	0.00	0.73	6.05	0.12
183.34									
	15.22	90.09	0.17	0.00	90.30	0.00	0.72	6.05	0.12
	16.67	90.09	0.18	0.00	90.30	0.00	0.77	6.05	0.13
180.00									
	16.67	90.09	0.18	0.00	90.30	0.00	0.77	6.05	0.13
	18.10	90.09	0.20	0.00	90.30	0.00	0.83	6.05	0.14
176.70									
	18.69	90.09	0.21	0.00	90.30	0.00	0.65	6.05	0.11
	17.72	90.09	0.20	0.00	90.30	0.00	0.42	6.05	0.07
163.34									
	17.72	90.09	0.20	0.00	90.30	0.00	0.42	6.05	0.07
	17.98	90.09	0.20	0.00	90.30	0.00	0.36	6.05	0.06
160.00									
	17.98	60.09	0.30	0.00	90.30	0.00	0.38	3.49	0.11

	18.64	60.09	0.31	0.00	90.30	0.00	0.20	3.49	0.06
146.70									
	18.64	60.09	0.31	0.00	90.30	0.00	0.20	3.49	0.06
	18.66	60.09	0.31	0.00	90.30	0.00	0.23	3.49	0.07
143.34									
	18.66	60.09	0.31	0.00	90.30	0.00	0.24	3.49	0.07
	18.62	60.09	0.31	0.00	90.30	0.00	0.26	3.49	0.08
140.00									
	18.62	60.09	0.31	0.00	90.30	0.00	0.27	3.49	0.08
	18.32	60.09	0.30	0.00	90.30	0.00	0.36	3.49	0.10
130.00									
	18.32	60.09	0.30	0.00	90.30	0.00	0.37	3.49	0.11
	19.50	60.09	0.32	0.00	90.30	0.00	0.46	3.49	0.13
121.19									
	19.50	60.09	0.32	0.00	90.30	0.00	0.47	3.49	0.13
	19.80	60.09	0.33	0.00	90.30	0.00	0.48	3.49	0.14
120.00									
	19.80	90.09	0.22	0.00	90.30	0.00	0.48	6.05	0.08
	20.63	90.09	0.23	0.00	90.30	0.00	0.51	6.05	0.08
116.70									
	21.09	90.09	0.23	0.00	90.30	0.00	0.81	6.05	0.13
	20.17	90.09	0.22	0.00	90.30	0.00	0.59	6.05	0.10
103.33									
	20.17	90.09	0.22	0.00	90.30	0.00	0.60	6.05	0.10
	20.62	90.09	0.23	0.00	90.30	0.00	0.54	6.05	0.09
100.00									
	20.62	90.09	0.23	0.00	90.30	0.00	0.56	3.54	0.16
	22.29	90.09	0.25	0.00	90.30	0.00	0.35	3.54	0.10
86.70									
	22.29	90.09	0.25	0.00	90.30	0.00	0.35	3.54	0.10
	22.44	90.09	0.25	0.00	90.30	0.00	0.32	3.54	0.09
83.33									
	22.44	90.09	0.25	0.00	90.30	0.00	0.32	3.54	0.09
	22.49	90.09	0.25	0.00	90.30	0.00	0.36	3.54	0.10
80.00									
	22.49	90.09	0.25	0.00	90.30	0.00	0.38	3.54	0.11
	21.22	90.09	0.24	0.00	90.30	0.00	0.53	3.54	0.15
63.33									
	21.22	90.09	0.24	0.00	90.30	0.00	0.54	3.54	0.15
	21.24	90.09	0.24	0.00	90.30	0.00	0.57	3.54	0.16
60.00									
	21.24	90.09	0.24	0.00	90.30	0.00	0.57	3.54	0.16
	21.27	90.09	0.24	0.00	90.30	0.00	0.60	3.54	0.17
56.70									
	21.72	90.09	0.24	0.00	90.30	0.00	0.78	3.54	0.22
	23.54	90.09	0.26	0.00	90.30	0.00	0.60	3.54	0.17
43.33									
	23.54	90.09	0.26	0.00	90.30	0.00	0.60	3.54	0.17
	23.95	90.09	0.27	0.00	90.30	0.00	0.55	3.54	0.16
40.00									
	23.95	90.09	0.27	0.00	90.30	0.00	0.57	3.54	0.16
	24.71	90.09	0.27	0.00	90.30	0.00	0.43	3.54	0.12
28.35									
	24.71	90.09	0.27	0.00	90.30	0.00	0.43	3.54	0.12
	24.75	90.09	0.27	0.00	90.30	0.00	0.47	3.54	0.13
23.33									
	24.75	90.09	0.27	0.00	90.30	0.00	0.47	3.54	0.13
	24.67	90.09	0.27	0.00	90.30	0.00	0.50	3.54	0.14
20.00									
	24.67	90.09	0.27	0.00	141.37	0.00	0.51	6.05	0.08
	23.60	90.09	0.26	0.00	141.37	0.00	0.61	6.05	0.10
6.67									
	24.17	90.09	0.27	0.00	141.37	0.00	0.84	6.05	0.14
	22.62	90.09	0.25	0.00	141.37	0.00	0.89	6.05	0.15
0.00									

MAXIMUM MAST DEFORMATION CALCULATED
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MAST ELEV FT	.....DEFLECTIONS (FT)..... HORIZONTAL ..... NORTH	EAST	TOTAL	DOWN	.....ROTATIONS (DEG)..... TILT ..... NORTH	EAST	TOTAL	TWIST
300.0	-0.23A	-0.33E	0.38E	0.01E	0.06C	0.05C	0.08C	-0.56J
293.4	-0.23A	-0.33E	0.38E	0.01E	0.06C	0.05C	0.08C	-0.56J
286.7	-0.23A	-0.32E	0.37E	0.01E	0.07C	0.06C	0.09C	-0.56J

283.3	-0.24A	-0.32E	0.37E	0.01E	0.07C	0.06C	0.09C	-0.56J
280.0	0.24G	-0.32E	0.37E	0.01E	0.07C	0.06C	0.09C	-0.56J
261.7	0.26G	-0.33D	0.37E	0.01E	0.07C	-0.05J	0.08C	-0.57J
249.0	0.27G	-0.34D	0.37E	0.01E	0.06C	-0.04F	0.07C	-0.57J
236.7	0.28G	-0.34D	0.36E	0.01E	0.06C	-0.04J	0.07C	-0.57J
230.0	0.28G	-0.35D	0.36E	0.01E	0.06C	-0.05J	0.07C	-0.57J
223.3	0.28G	-0.35D	0.35E	0.01E	0.05C	-0.05F	0.06C	-0.57J
220.0	0.29G	-0.35D	0.35E	0.01E	0.05C	-0.05F	0.05F	-0.57J
206.7	0.28G	-0.34D	0.34D	0.01E	0.04E	-0.08E	0.09E	-0.58J
203.3	0.28G	-0.34D	0.34D	0.01E	0.05F	-0.09E	0.10E	-0.58J
200.0	0.28G	-0.33D	0.33D	0.01E	0.06F	-0.09E	0.11E	-0.57J
183.3	0.26G	-0.31D	0.31D	0.01E	0.07F	-0.10E	0.11E	-0.57J
176.7	0.25G	-0.30D	0.30D	0.01E	0.06F	-0.09E	0.10E	-0.56J
163.3	0.24G	-0.28D	0.28D	0.01E	0.06F	-0.08E	0.09E	-0.55J
160.0	0.23G	-0.28D	0.28D	0.01E	0.06F	-0.08E	0.09E	-0.55J
146.7	0.22G	-0.26D	0.26C	0.01E	0.07G	-0.08D	0.09E	-0.53J
143.3	0.22G	-0.25D	0.25C	0.01E	0.07G	-0.09D	0.09E	-0.52J
140.0	0.21G	-0.25D	0.25C	0.01E	0.07G	-0.09D	0.09E	-0.51J
130.0	0.20G	-0.23D	0.24C	0.01E	0.08G	-0.09D	0.09D	-0.49J
121.2	0.19G	-0.22D	0.22C	0.01E	0.07G	-0.09D	0.09D	-0.47J
116.7	0.18G	-0.21D	0.22C	0.01E	0.07G	-0.08D	0.08D	-0.46J
103.3	0.17G	-0.19D	0.20C	0.01E	0.06G	-0.08D	0.08C	-0.44J
100.0	0.16G	-0.19D	0.20C	0.01E	0.06G	-0.08D	0.08C	-0.43J
86.7	0.15G	-0.17D	0.18C	0.01E	0.07G	-0.09D	0.09C	-0.38J
83.3	0.14G	-0.17D	0.17C	0.00E	0.08G	-0.09D	0.09C	-0.37J
80.0	0.14G	-0.16D	0.17C	0.00E	0.08G	-0.09D	0.10C	-0.36J
63.3	0.12G	-0.13D	0.14C	0.00E	0.09G	-0.10D	0.11C	-0.30J
56.7	0.10G	-0.12D	0.12C	0.00E	0.09G	-0.10D	0.11C	-0.27J
43.3	-0.08A	-0.10D	0.10C	0.00E	0.09G	-0.11D	0.11C	-0.25J
40.0	-0.08A	-0.09D	0.09C	0.00E	0.10G	-0.11D	0.11C	-0.24J
28.4	-0.06A	-0.07D	0.07C	0.00E	0.11G	-0.12D	0.12C	-0.18J
23.3	-0.05A	-0.06D	0.06C	0.00E	-0.11A	-0.13D	0.13C	-0.16J
20.0	-0.04A	-0.05D	0.05C	0.00E	-0.11A	-0.13D	0.13C	-0.14J
6.7	-0.01A	-0.02D	0.02C	0.00E	-0.12A	-0.14D	0.14C	-0.09J
0.0	0.00A	0.00A	0.00A	0.00A	-0.13A	-0.14D	0.15C	0.00A

MAXIMUM ANTENNA ROTATIONS

ELEV FT	ORIENTATION AZI DEG	ORIENTATION ELEV DEG	BEAM DEFLECTIONS (DEG) ROLL	YAW	PITCH	TOTAL
294.0	0.0	0.0	-0.052 C	0.562 J	-0.063 C	0.562 J
294.0	0.0	0.0	-0.052 C	0.562 J	-0.063 C	0.562 J
294.0	0.0	0.0	-0.052 C	0.562 J	-0.063 C	0.562 J
294.0	0.0	0.0	-0.052 C	0.562 J	-0.063 C	0.562 J
294.0	0.0	0.0	-0.052 C	0.562 J	-0.063 C	0.562 J
294.0	0.0	0.0	-0.052 C	0.562 J	-0.063 C	0.562 J
249.0	0.0	0.0	0.041 F	0.568 J	-0.059 C	0.568 J
234.0	0.0	0.0	0.045 J	0.569 J	-0.060 C	0.569 J
219.0	0.0	0.0	0.053 F	0.574 J	-0.047 D	0.574 J

200.0 205.1 0.0 -0.106 E 0.574 J -0.054 A 0.575 J

MAXIMUM INTERNAL MAST FORCES

MAST ELEV FT	TOTAL AXIAL KIP	SHEAR N - S KIP	SHEAR E - W KIP	MOMENT N - S FT-KIP	MOMENT E - W FT-KIP	TORSION FT-KIP
300.0	0.00 L	0.00 G	0.00 K	0.00 C	0.00 D	0.00 A
	1.05 H	0.86 G	0.86 J	0.75 A	-0.74 J	0.01 H
293.4	1.05 H	0.86 G	0.86 J	0.75 A	-0.74 J	-0.02 B
	1.34 E	-0.93 A	0.93 J	6.71 A	-6.70 J	-0.02 B
	*	+	+	&	&	@
286.7	11.75 E	-1.32 G	-1.31 J	4.67 G	-5.61 D	0.10 J
	13.10 E	0.39 A	-0.40 J	3.19 A	-3.80 J	-0.09 L
	13.25 E	0.36 A	-0.36 J	1.92 A	-2.52 J	-0.09 L
283.3	13.25 E	0.36 A	-0.36 J	1.92 A	-2.52 J	-0.09 L
	13.39 E	0.32 A	-0.33 J	0.86 B	-1.49 I	-0.09 L
280.0	13.39 E	0.32 A	-0.33 J	0.86 B	-1.49 I	-0.09 L
	14.20 E	0.12 A	-0.13 K	4.29 G	-4.08 D	-0.10 L
261.7	14.20 E	0.12 A	-0.13 K	4.29 G	-4.08 D	-0.10 L
	14.76 E	0.05 I	-0.08 E	4.86 G	-4.06 D	-0.10 L
249.0	16.98 E	0.82 G	-0.87 D	4.86 G	-4.06 D	-0.09 L
	17.61 E	1.01 G	-1.09 D	7.49 A	7.97 D	0.09 G
	*	+	+	&	&	@
236.7	16.37 E	2.89 A	3.00 D	7.50 G	-9.37 D	0.17 J
	33.98 E	1.85 A	-1.94 J	1.40 A	-2.77 I	-0.24 L
	36.60 E	0.94 A	-1.02 J	10.10 G	-10.75 D	-0.23 L
230.0	36.60 E	0.94 A	-1.02 J	10.10 G	-10.75 D	-0.22 L
	37.02 E	0.80 A	-0.87 J	16.14 G	-16.94 D	-0.21 L
223.3	37.02 E	0.80 A	-0.87 J	16.14 G	-16.94 D	-0.20 L
	37.23 E	0.73 A	-0.79 J	18.78 G	-19.63 D	-0.20 L
220.0	37.23 E	0.73 A	-0.79 J	18.78 G	-19.63 D	-0.17 L
	40.32 E	0.36 G	-0.40 E	16.95 G	-17.62 D	0.13 G
206.7	40.32 E	0.36 G	-0.40 E	16.95 G	-17.62 D	0.13 G
	40.55 E	0.44 G	-0.50 D	15.57 G	-16.06 D	0.13 G
203.3	40.55 E	0.44 G	-0.50 D	15.56 G	-16.06 D	0.14 H
	40.77 E	0.52 G	-0.60 D	13.90 G	-14.16 D	0.15 H
200.0	40.94 E	0.67 G	-0.69 D	14.18 G	-13.69 D	0.30 L
	42.22 E	1.08 G	-1.17 D	-3.17 D	4.79 E	0.34 L
183.3	42.22 E	1.08 G	-1.17 D	-3.17 D	4.79 E	0.36 L
	42.74 E	1.24 G	-1.36 D	10.61 A	12.02 E	0.38 L

	*	+	+	&	&	@
176.7	6.44 D	1.92 A	-2.14 J	3.61 G	-4.69 D	0.07 F
	49.08 E	0.70 A	-0.83 J	7.34 A	7.87 E	0.35 L
	50.11 E	0.37 A	-0.45 J	-3.15 C	-2.55 C	0.38 L
163.3						
	50.11 E	0.37 A	-0.45 J	-3.15 C	-2.55 C	0.39 L
	50.36 E	0.29 A	-0.36 J	-3.76 C	-3.50 C	0.40 L
160.0						
	50.36 E	0.29 A	-0.36 J	-3.76 C	-3.50 C	0.43 L
	51.25 E	0.05 G	-0.07 D	-4.68 C	5.06 J	0.47 L
146.7						
	51.25 E	0.05 G	-0.07 D	-4.68 C	5.06 J	0.47 L
	51.48 E	0.13 G	-0.16 D	-4.54 C	4.88 J	0.48 L
143.3						
	51.48 E	0.13 G	-0.16 D	-4.54 C	4.89 J	0.49 L
	51.70 E	0.20 G	-0.25 D	-4.25 C	4.40 J	0.50 L
140.0						
	51.70 E	0.20 G	-0.25 D	-4.25 C	4.40 J	0.53 L
	52.37 E	0.42 G	-0.51 D	-2.51 C	2.68 E	0.55 L
130.0						
	52.37 E	0.42 G	-0.51 D	-2.51 C	2.68 E	0.57 L
	52.96 E	0.62 G	-0.75 D	-5.18 F	6.83 E	0.59 L
121.2						
	52.96 E	0.62 G	-0.75 D	-5.18 F	6.83 E	0.61 L
	53.29 E	0.72 G	-0.87 D	-7.82 F	9.84 D	-0.62 J
	*	+	+	&	&	@
116.7	3.45 D	-1.45 G	1.71 D	1.78 G	-2.48 D	0.04 J
	56.65 E	0.74 A	-0.85 J	-6.15 F	7.44 E	-0.63 J
	57.68 E	0.44 A	-0.50 J	-3.07 C	3.55 J	-0.67 J
103.3						
	57.68 E	0.44 A	-0.50 J	-3.07 C	3.55 J	-0.68 J
	57.93 E	0.37 A	-0.41 J	-4.15 B	5.13 J	-0.69 J
100.0						
	57.93 E	0.37 A	-0.41 J	-4.15 B	5.13 J	-0.73 J
	58.93 E	0.09 A	-0.09 I	-6.99 A	8.49 J	-0.78 J
86.7						
	58.93 E	0.09 A	-0.09 I	-6.99 A	8.49 J	-0.79 J
	59.18 E	-0.03 D	-0.04 C	-7.17 A	8.60 J	-0.80 J
83.3						
	59.18 E	-0.03 D	-0.04 C	-7.17 A	8.60 J	-0.81 J
	59.43 E	0.07 G	-0.11 C	-7.11 A	8.42 J	-0.82 J
80.0						
	59.43 E	0.07 G	-0.11 C	-7.11 A	8.42 J	-0.87 J
	60.67 E	0.41 G	-0.50 D	-3.24 A	3.40 I	-0.92 J
63.3						
	60.67 E	0.41 G	-0.50 D	-3.24 A	3.40 I	-0.94 J
	61.16 E	0.54 G	-0.66 D	-1.63 F	2.91 C	-0.96 J
	*	+	+	&	&	@
56.7	2.47 D	-1.11 G	1.34 D	-0.74 A	-1.12 D	0.03 B
	63.61 E	-0.53 G	0.64 D	-1.05 F	1.97 C	-0.97 J
	64.60 E	-0.28 G	0.34 D	-6.10 A	6.35 J	-1.01 J
43.3						
	64.60 E	-0.28 G	0.34 D	-6.10 A	6.35 J	-1.02 J
	64.85 E	-0.22 G	0.26 D	-6.85 A	7.32 J	-1.03 J
40.0						
	64.85 E	-0.22 G	0.26 D	-6.85 A	7.32 J	-1.06 J
	65.72 E	-0.03 A	0.02 I	-7.81 A	8.70 J	-1.09 J

28.4						
	65.72 E	-0.03 A	0.02 I	-7.81 A	8.70 J	-1.10 J
	66.09 E	-0.12 A	0.12 J	-7.43 A	8.34 J	-1.12 J
23.3						
	66.09 E	-0.12 A	0.12 J	-7.42 A	8.34 J	-1.12 J
	66.34 E	-0.18 A	0.18 J	-6.91 A	7.80 J	-1.13 J
20.0						
	66.34 E	-0.18 A	0.19 J	-6.91 A	7.80 J	-1.16 J
	67.37 E	-0.38 A	0.43 J	-3.01 A	3.44 J	-1.19 J
6.7						
	67.37 E	-0.38 A	0.43 J	-3.01 A	3.44 J	-1.21 J
	67.87 E	-0.48 A	0.55 J	0.00 B	0.00 F	-1.22 J
base reaction	67.87 E	0.37 A	-0.44 J	0.00 B	0.00 C	1.22 J

* VERTICAL GUY LOAD & GUY ECCENTRIC MOMENT
\+ HORIZONTAL REACTION @ TORSIONAL RESISTANCE

MAXIMUM GUY FORCES AT MAST

GUY LEVEL FT	GUY AZI	.....COMPONENTS AT MAST..... N KIP	E KIP	DOWN KIP	TOTAL KIP	EFL/FR * RATIO	...GUY ANGLES... VERT DEG	HORIZ DEG
286.7	0.0	3.4A	0.1J	5.3A	6.3A	0.2A	-57.0B	-2.6E
	120.0	-1.7E	2.9E	6.2E	7.0E	0.3E	-61.9D	2.3A
	240.0	-1.7I	-3.0I	5.0I	6.1I	0.2I	-55.8H	2.5E
236.7	0.0	6.1A	0.1J	7.7A	9.8A	0.3A	-51.8C	-1.7E
	120.0	-3.0E	5.2E	9.2E	10.9E	0.3E	-56.9C	1.4A
	240.0	-3.1I	-5.4I	7.4I	9.7I	0.3I	-50.5C	1.6E
176.7	0.0	3.3A	0.1J	3.2A	4.5A	0.2A	-45.4G	2.4I
	120.0	-1.7E	2.9E	3.9E	5.2E	0.2E	-50.0K	2.0A
	240.0	-1.7I	-2.9I	3.1I	4.6I	0.2I	-43.9C	-2.3A
116.7	0.0	2.5A	0.0J	1.6A	3.0A	0.2A	-35.1G	1.9I
	120.0	-1.3D	2.3E	2.0E	3.3E	0.3E	-38.9K	-1.5I
	240.0	-1.3I	-2.3I	1.6I	3.1I	0.2I	-32.9C	-1.8A
56.7	0.0	2.9A	0.0J	1.1A	3.1A	0.3A	-20.4G	0.7J
	120.0	-1.5D	2.6E	1.2E	3.3E	0.4E	-21.8K	0.5B
	240.0	-1.5I	-2.6I	0.9I	3.1I	0.3I	-17.3C	-0.7L

* EFL/FR = EFFECTS OF FACTORED LOADS DIVIDED BY THE FACTORED RESISTANCE

MAXIMUM GUY FORCES AT ANCHOR

GUY LEVEL FT	GUY AZI	GUY ATT AZI	.....COMPONENTS AT ANCHOR..... RAD KIP	LAT KIP	VERT KIP	TOTAL KIP	EFL/FR * RATIO
286.7	0.0	0.0	3.5A	-0.1J	4.9A	6.0A	0.2A
	120.0	120.0	3.4E	0.1H	5.9E	6.8E	0.3E
	240.0	240.0	3.5I	0.1L	4.7I	5.9I	0.2I
236.7	0.0	0.0	6.2A	-0.1J	7.2A	9.5A	0.3A
	120.0	120.0	6.1E	0.1H	8.7E	10.7E	0.3E
	240.0	240.0	6.3I	0.1L	7.0I	9.4I	0.3I
176.7	0.0	0.0	3.3A	0.1D	2.9A	4.4A	0.2A
	120.0	120.0	3.5E	0.1H	3.7E	5.1E	0.2E

	240.0	240.0	3.4I	-0.1F	2.9I	4.5I	0.2I
116.7	0.0	0.0	2.5A	0.0D	1.5A	2.9A	0.2A
	120.0	120.0	2.6E	0.0H	1.9E	3.3E	0.3E
	240.0	240.0	2.6I	0.0F	1.5I	3.0I	0.2I
56.7	0.0	0.0	2.9A	0.0D	1.0A	3.1A	0.3A
	120.0	120.0	3.1E	0.0H	1.1E	3.3E	0.4E
	240.0	240.0	3.0I	0.0F	0.8I	3.1I	0.3I

MAXIMUM ANCHOR LOADS
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AZI DEG	RADIUS FT	GUY TO ELEV FT	....ANCHOR LOADS..... HORIZ KIP	VERT KIP	LATER-AL KIP	AXIAL KIP	.....SHAFT FORCES..... ...LATERAL... VERT PLANE KIP	HORIZ PLANE KIP	ANGLE DEG
0.0	210.0	286.7	3.5A	4.9A	-0.1J	5.9A	1.1A	-0.1J	
		236.7	6.2A	7.2A	-0.1J	9.4A	1.0A	-0.1J	
		176.7	3.3A	2.9A	0.1D	4.4A	-0.2A	0.1D	
		116.7	2.5A	1.5A	0.0D	2.8A	-0.6A	0.0D	
		56.7	2.9A	1.0A	0.0D	2.8A	-1.3A	0.0D	
			18.4A	17.5A	-0.3J	25.4A	0.0A	-0.3J	43.6A
120.0	165.0	286.7	3.4E	5.9E	0.1H	6.7E	1.3E	0.1H	
		236.7	6.1E	8.7E	0.1H	10.6E	1.2E	0.1H	
		176.7	3.5E	3.7E	0.1H	5.1E	-0.1E	0.1H	
		116.7	2.6E	1.9E	0.0H	3.2E	-0.7E	0.0H	
		56.7	3.1E	1.1E	0.0H	2.9E	-1.5E	0.0H	
			18.7E	21.4E	0.3H	28.4E	0.0B	0.3H	48.9E
240.0	210.0	286.7	3.5I	4.7I	0.1L	5.8I	1.1I	0.1L	
		236.7	6.3I	7.0I	0.1L	9.3I	1.0I	0.1L	
		176.7	3.4I	2.9I	-0.1F	4.5I	-0.2I	-0.1F	
		116.7	2.6I	1.5I	0.0F	2.9I	-0.7I	0.0F	
		56.7	3.0I	0.8I	0.0F	2.8I	-1.4I	0.0F	
			18.9I	16.8I	0.3L	25.3I	0.0K	0.3L	41.7I

MAXIMUM LOADS ON TOWER PIER
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AXIAL	.....SHEAR..... NORTH	EAST	TOTAL	.....MOMENT..... NORTH	EAST	TOTAL	TORSIONAL
kip	kip	kip	kip	ft-kip	ft-kip	ft-kip	ft-kip
67.8723	0.3727	-0.4392	0.4392	0.0000	0.0000	0.0000	1.2244
E	A	J	J	B	C	C	J

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GUYED TOWER SPREAD FOOTING DESIGN BY SABRE TOWERS & POLES

300' 3600 SRWD MUNICIPAL COMMUNICATIONS LLC Round Lake, FL (400253) 2018-03-30 DJH

Factored Axial Load (kips)	131.38		
Factored Shear (kips)	1.21		
Ultimate Bearing Pressure	7.5	Allowable Bearing Pressure (ksf)	2.50
Bearing Φs	0.6	Safety Factor	3.00
Bearing Design Strength (ksf)	4.5	Maximum Factored Net Soil Bearing Pressure (ksf)	2.93
Diameter of Pier (ft)	2.5	Equivalent Square b (ft)	2.22
Ht. of Pier Above Ground (ft)	0.5		
Depth to Bottom of Slab (ft)	6		
Ht. of Pier Below Ground (ft)	4.5		
Water Table Below Grade (ft)	3.5		
Width of Pad (ft)	7		
Thickness of Pad (ft)	1.5		
Quantity of Bars in Pad	8		
Bar Diameter in Pad (in)	0.875		
Area of Bars in Pad (in^2)	4.81		
Spacing of Bars in Pad (in)	11.02	Recommended Spacing (in)	6 to 12
Quantity of Bars Pier	6		
Bar Diameter in Pier (in)	0.875		
Area of Bars in Pier (in^2)	3.61	Minimum Pier Area of Steel (in^2)	3.53
Spacing of Bars in Pier (in)	11.72	Recommended Spacing (in)	6 to 12
f'c (ksi)	4.5		
fy (ksi)	60		
Unit Wt. of Soil (kcf)	0.115		
Unit Wt. of Concrete (kcf)	0.15		
Volume of Concrete (yd^3)	3.63		
Two-Way Shear Action:			
Average d (in)	14.13		
ϕV_c (kips)	446.6	V_u (kips)	104.0
$\phi V_c = \phi(2 + 4/\beta_c)f'_c{}^{1/2}b_o d$	669.9		
$\phi V_c = \phi(\alpha_s d/b_o+2)f'_c{}^{1/2}b_o d$	678.3		
$\phi V_c = \phi\ 4f'_c{}^{1/2}b_o d$	446.6		
Shear perimeter, b_o (in)	138.62		
β_c	1		
One-Way Shear:			
ϕV_c (kips)	135.3	V_u (kips)	23.9
Flexure:			
ϕM_n (ft-kips)	296.0	M_u (ft-kips)	56.2
a (in)	0.90		
Steel Ratio	0.00405		
β_1	0.83		
Maximum Steel Ratio	0.0197		
Minimum Steel Ratio	0.0018		
Rebar Development in Pad (in)	25.71	Required Development in Pad (in)	12.00

Condition	1 is OK, 0 Fails
Two-Way Shear Action	1
One-way Shear	1
Flexure	1
Steel Ratio	1
Pier Area of Steel	1
Maximum Soil Bearing Pressure	1
Length of Development in Pad	1

GUY ANCHOR BLOCK DESIGN BY SABRE TOWERS & POLES

300' 3600 SRWD MUNICIPAL COMMUNICATIONS LLC Round Lake, FL (400253) 2018-03-30 DJH

Anchor Block Dimensions:

Length (ft)	18		
Height (ft)	3	Length/Height Ratio	6.0
Width (ft)	3	Length/Width Ratio	6.0
Longitudinal Bar Diameter (in)	0.875	Height/Width Ratio	1.00
Quantity of Bars in Top	4	Width/Height Ratio	1.00
Area of Bars in Top (in^2)	2.41	Vertical Flexure Ratio	0.38
Spacing of Bars in Top (in)	9.38	Horizontal Flexure Ratio	0.33
Quantity of Bars Front	4	Horizontal Force Ratio	0.71
Area of Bars in Front (in^2)	2.41	Vertical Force Ratio	0.92
Spacing of Bars in Front (in)	9.38		
Quantity of Bars in Bottom	1		
Spacing of Bars in Bottom (in)	29.06	Recommended Spacing (in)	6 to 30
Quantity of Bars in Back	1		
Spacing of Bars in Back (in)	29.06	Recommended Spacing (in)	6 to 30
Quantity of Ties	19		
Tie Bar Diameter (in)	0.5		
Factored Uplift (kips)	**58.40**	Angle from Horizontal (deg):	
Factored Horizontal Force (kips)	**50.00**		
Ultimate Passive Pressure	**1.733**	44 deg @ N & SW	
Horizontal Φs	**0.75**	49 deg @ SE	
Horizontal Design Strength (ksf)	**1.300**		
Angle of Internal Friction (deg.)	**30**		
Unit Wt. of Soil (kcf)	**0.095**		
Water Table Below Grade (ft)	**3.5**		
Depth to Bottom of Block (ft)	**9**		
f'c (ksi)	4.5		
fy (ksi)	60		
Unit Wt. of Concrete (kcf)	0.15		
Volume of Concrete (yd^3)	6.00		
Horizontal Force:			
Factored Horizontal Force (kips)	50.0	Horizontal Design Strength (kips)	70.2
Uplift:			
Wc, Weight of Concrete (kips)	14.2		
W_R, Soil Resistance (kips)	68.0		
Uplift Φs (kips)	0.75		
$(\Phi s)(W_R+W_C)$ (kips)	63.8		
Factored Uplift (kips)	58.4	Uplift Design Strength (kips)	63.8
Vertical Shear:			
V_u (kips)	29.2	ϕV_n(kips)	186.8
$V_c = 2\ f'_c{}^{1/2} b_w d$ (kips)	154.9		
V_s (kips)	64.9	*** V_s max = $4\ f'_c{}^{1/2} b_w d$ (kips)	309.7
Spacing of Ties (in)	11.64		
Max. Spacing (in)	13.09	(Only if Shear Ties are Required)	

*** Ref. To Spacing Requirements ACI 11.5.4.3

GUY ANCHOR BLOCK DESIGN BY SABRE TOWERS & POLES (CONTINUED)

300' 3600 SRWD MUNICIPAL COMMUNICATIONS LLC Round Lake, FL (400253) 2018-03-30 DJH

Horizontal Shear

V_u (kips)	25.0	ϕV_n (kips)	186.8
$V_c = 2\ f'_c{}^{1/2} b_w d$ (kips)	154.9		
V_s (kips)	64.9	*** V_s max = $4\ f'_c{}^{1/2} b_w d$ (kips)	309.7
Spacing of Ties (in)	11.64		
Max. Spacing (in)	13.09	(Only if Shear Ties are Required)	
$(V_u/\phi V_n)_V+(Vu/\phi V_n)_H$	0.29		<1 OK

*** Ref. To Spacing Requirements ACI 11.5.4.3

Vertical Flexure:

M_u (ft-kips)	131.4	ϕM_n (ft-kips)	341.4
a (in)	1.05		
Steel Ratio	0.0021		
β_1	0.83		
Maximum Steel Ratio	0.0233		
Minimum Steel Ratio	0.0018		
Rebar Development (in)	105.00	Required Rebar Development (in)	7.41

Horizontal Flexure:

M_u (ft-kips)	112.5	ϕM_n (ft-kips)	341.4
a (in)	1.05		
Steel Ratio	0.0021		
Maximum Steel Ratio	0.023		
Minimum Steel Ratio	0.0018		
Rebar Development (in)	105.00	Required Rebar Development (in)	6.35
$(M_u/\phi M_n)_V+(Mu/\phi M_n)_H$	0.71	$(M_u/\phi M_n)_V+(Mu/\phi M_n)_H$	<1 OK

Condition	1 is OK, 0 Fails
Uplift Force	1
Horizontal Force	1
Flexure	1
Shear	1
Length of Development in Block	1
Steel Ratio	1

Calculated Strength > Factored Load O.K.