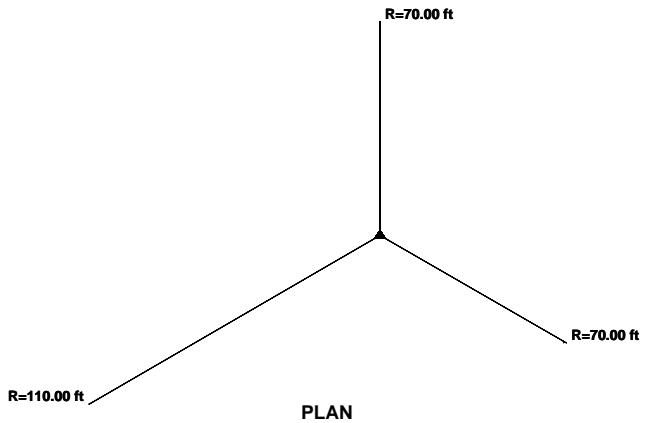
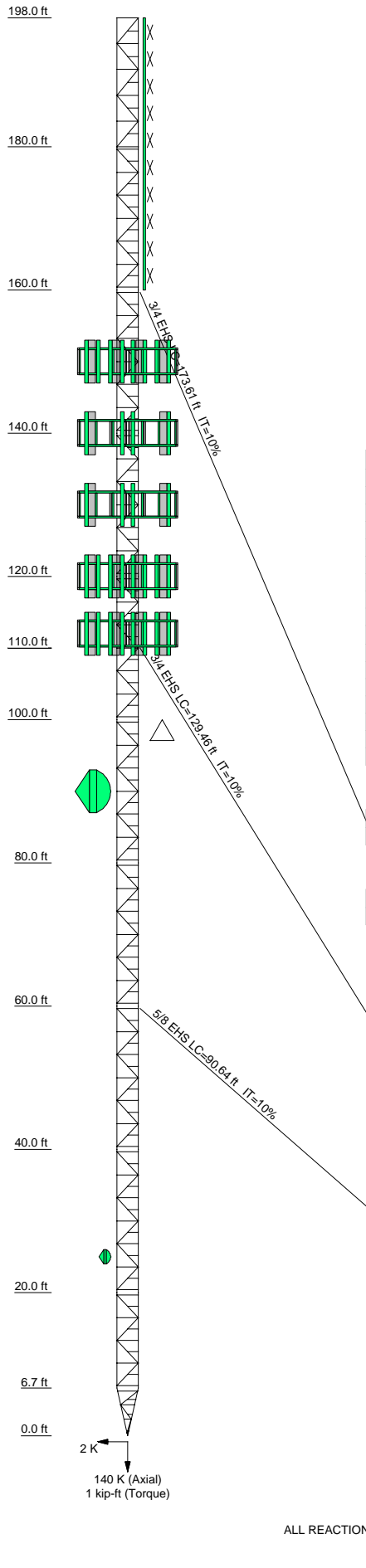


Section	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	SR 2	SR 2	SR 1	SR 1	SR 2	SR 1 1/4	SR 1 1/4	SR 1 1/4	SR 1	SR 1 3/4	SR 1 1/2
Leg Grade											
Diagonals											
Diagonal Grade											
Top Girts	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8	SR 7/8
Bottom Girts											
Horizontals											
Sec. Horizontals											
Top Guy Pull-Offs											
Face Width (ft)	A	4 @ 3.14583									5 @ 3.6
Weight (K)	10.3	0.3	0.7	1.0	1.2	1.0	1.2	1.1	1.2	0.8	0.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Shively 4-Bay NO Radomes	198 - 160	WD13X53 Antenna Mounting Frame	130
WD13X53 Antenna Mounting Frame	150	WD13X53 Antenna Mounting Frame	130
WD13X53 Antenna Mounting Frame	150	(4) Panel 8' x 1' x 3' w/ mnt. pipes*	120
WD13X53 Antenna Mounting Frame	150	(4) Panel 8' x 1' x 3' w/ mnt. pipes*	120
(4) Panel 8' x 1' x 3' w/ mnt. pipes*	150	(4) Panel 8' x 1' x 3' w/ mnt. pipes*	120
(4) Panel 8' x 1' x 3' w/ mnt. pipes*	150	WD13X53 Antenna Mounting Frame	120
(4) Panel 8' x 1' x 3' w/ mnt. pipes*	150	WD13X53 Antenna Mounting Frame	120
WD13X53 Antenna Mounting Frame	140	WD13X53 Antenna Mounting Frame	120
WD13X53 Antenna Mounting Frame	140	WD13X53 Antenna Mounting Frame	112
WD13X53 Antenna Mounting Frame	140	WD13X53 Antenna Mounting Frame	112
(2) Panel 8' x 2' max w/ mt pipe	140	WD13X53 Antenna Mounting Frame	112
(2) Panel 8' x 2' max w/ mt pipe	140	(4) Panel 8' x 1' x 3' w/ mnt. pipes*	112
(2) Panel 8' x 2' max w/ mt pipe	140	(4) Panel 8' x 1' x 3' w/ mnt. pipes*	112
(2) Panel 8' x 2' max w/ mt pipe	130	(4) Panel 8' x 1' x 3' w/ mnt. pipes*	112
(2) Panel 8' x 2' max w/ mt pipe	130	6 FT DISH	90
(2) Panel 8' x 2' max w/ mt pipe	130	2 FT DISH	25
WD13X53 Antenna Mounting Frame	130		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	3 @ 1.97222		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Gunnison County, Colorado.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 90.00 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower Structure Class II.
5. Topographic Category 1 with Crest Height of 0.00 ft
6. TOWER RATING: 86.8%

ALL REACTIONS ARE FACTORED

World Tower Company 1213 Compressor Drive Mayfield, Kentucky 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job: 198' Type 36SR / Job Q13-940 R1		
	Project: Gunnison, CO Client: KVLE-FM Code: TIA-222-G Path: C:\Tower\PE Runs\2013\Q13-940 Gunnison CO\Q13-940 R1.eri	Drawn by: Kirk Hall Date: 10/10/13	App'd: Scale: NTS Dwg No. E-1

RISATower World Tower Company 1213 Compressor Drive Mayfield, Kentucky 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job 198' Type 36SR / Job Q13-940 R1	Page 1 of 11
	Project Gunnison, CO	Date 13:08:48 10/16/13
	Client KVLE-FM	Designed by Kirk Hall

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 198.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 3.00 ft at the top and tapered at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Tower is located in Gunnison County, Colorado.

Basic wind speed of 90.00 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Pressures are calculated between guys.

Safety factor used in guy design is 1.

Stress ratio used in tower member design is 1.

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	198.00-180.00			3.00	1	18.00
T2	180.00-160.00			3.00	1	20.00
T3	160.00-140.00			3.00	1	20.00
T4	140.00-120.00			3.00	1	20.00
T5	120.00-100.00			3.00	1	20.00
T6	100.00-80.00			3.00	1	20.00
T7	80.00-60.00			3.00	1	20.00
T8	60.00-40.00			3.00	1	20.00
T9	40.00-20.00			3.00	1	20.00
T10	20.00-6.67			3.00	1	13.33
T11	6.67-0.00			3.00	1	6.67

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	198.00-180.00	3.60	K Brace Left	No	Yes+Steps	0.00	0.00
T2	180.00-160.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T3	160.00-140.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T4	140.00-120.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T5	120.00-100.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T6	100.00-80.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T7	80.00-60.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T8	60.00-40.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T9	40.00-20.00	3.21	K Brace Left	No	Yes+Steps	4.50	4.50
T10	20.00-6.67	3.15	K Brace Left	No	Yes+Steps	4.50	4.50
T11	6.67-0.00	1.97	K Brace Left	No	Yes+Steps	4.50	4.50

RISATower World Tower Company 1213 Compressor Drive Mayfield, Kentucky 42066 Phone: (270) 247-3642 FAX: (270) 247-0909	Job	198' Type 36SR / Job Q13-940 R1	Page	2 of 11
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	Client	KVLE-FM	Designed by	Kirk Hall

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 198.00-180.00	Solid Round	1 1/2	A36M-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T2 180.00-160.00	Solid Round	1 3/4	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T3 160.00-140.00	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T4 140.00-120.00	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T5 120.00-100.00	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1 1/4	A36 (36 ksi)
T6 100.00-80.00	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T7 80.00-60.00	Solid Round	2 1/4	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T8 60.00-40.00	Solid Round	2 1/4	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T9 40.00-20.00	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T10 20.00-6.67	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)
T11 6.67-0.00	Solid Round	2	A36M-50 (50 ksi)	Solid Round	1	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 198.00-180.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 180.00-160.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T3 160.00-140.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 140.00-120.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T5 120.00-100.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T6 100.00-80.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T7 80.00-60.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T8 60.00-40.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 40.00-20.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T10 20.00-6.67	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T11 6.67-0.00	Solid Round	7/8	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>RISATower</i> <i>World Tower Company</i> <i>1213 Compressor Drive</i> <i>Mayfield, Kentucky 42066</i> <i>Phone: (270) 247-3642</i> <i>FAX: (270) 247-0909</i>	Job	198' Type 36SR / Job Q13-940 R1	Page	3 of 11
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	Client	KVLE-FM	Designed by	Kirk Hall

<i>Tower Elevation</i>	<i>No. of Mid Girts</i>	<i>Mid Girt Type</i>	<i>Mid Girt Size</i>	<i>Mid Girt Grade</i>	<i>Horizontal Type</i>	<i>Horizontal Size</i>	<i>Horizontal Grade</i>
T1 198.00-180.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T2 180.00-160.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T3 160.00-140.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T4 140.00-120.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T5 120.00-100.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T6 100.00-80.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T7 80.00-60.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T8 60.00-40.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 40.00-20.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T10 20.00-6.67	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T11 6.67-0.00	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)

Tower Section Geometry (*cont'd*)

<i>Tower Elevation</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
T1 198.00-180.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 180.00-160.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 160.00-140.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 140.00-120.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T5 120.00-100.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T6 100.00-80.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T7 80.00-60.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T8 60.00-40.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T9 40.00-20.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T10 20.00-6.67	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T11 6.67-0.00	Solid Round	3/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)

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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 198.00-180.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T2 180.00-160.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T3 160.00-140.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T4 140.00-120.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T5 120.00-100.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T6 100.00-80.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T7 80.00-60.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T8 60.00-40.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T9 40.00-20.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T10 20.00-6.67	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0
T11 6.67-0.00	Flange	0.75 A325X	4	0.00 A325X	0	0.00 A325X	0	0.00 A325X	0	0.63 A325N	0	0.00 A325X	0	0.00 A325X	0

Guy Data

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L _u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
159.625	EHS	A 3/4	5.83	10%	19000	1.16	173.45	70.00	0.000	0	100%
		B 3/4	5.83	10%	19000	1.16	173.45	70.00	0.000	0	100%
		C 3/4	5.83	10%	19000	1.16	192.70	110.00	0.000	0	100%
110	EHS	A 3/4	5.83	10%	19000	1.16	129.34	70.00	0.000	0	100%
		B 3/4	5.83	10%	19000	1.16	129.34	70.00	0.000	0	100%
		C 3/4	5.83	10%	19000	1.16	154.20	110.00	0.000	0	100%
59.625	EHS	A 5/8	4.24	10%	21000	0.81	90.56	70.00	0.000	0	100%
		B 5/8	4.24	10%	21000	0.81	90.56	70.00	0.000	0	100%
		C 5/8	4.24	10%	21000	0.81	123.50	110.00	0.000	0	100%

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	No	Ar (CaAa)	5.00 - 198.00	1	1	0.38	0.38		0.22
1 5/8	A	No	Ar (CaAa)	5.00 - 198.00	1	1	0.00	1.98		1.04
7/8	A	No	Ar (CaAa)	5.00 - 90.00	1	1	0.00	1.11		0.54
7/8	A	No	Ar (CaAa)	5.00 - 25.00	1	1	0.00	1.11		0.54
1 5/8	B	No	Ar (CaAa)	5.00 - 120.00	12	6	0.52	1.98		1.04

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8	C	No	Ar (CaAa)	5.00 - 150.00	12	6	0.25 0.52	1.98		1.04
1 1/4	A	No	Ar (CaAa)	5.00 - 140.00	6	6	0.25 0.95	1.55		0.66
1 1/4	B	No	Ar (CaAa)	5.00 - 130.00	6	6	0.25 0.95	1.55		0.66
1 5/8	A	No	Ar (CaAa)	5.00 - 112.00	12	6	0.25 0.52	1.98		1.04

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front	CAAA Side	Weight K	
						ft ²	ft ²		
Shively 4-Bay NO Radomes	B	From Leg	1.00 0 0	0.000	160.00 - 198.00	No Ice	25.00	25.00	0.45
WD13X53 Antenna Mounting Frame	A	From Leg	2.00 0 0	0.000	140.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	B	From Leg	2.00 0 0	0.000	140.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	C	From Leg	2.00 0 0	0.000	140.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	A	From Leg	2.00 0 0	0.000	130.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	B	From Leg	2.00 0 0	0.000	130.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	C	From Leg	2.00 0 0	0.000	130.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	A	From Leg	2.00 0 0	0.000	120.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	B	From Leg	2.00 0 0	0.000	120.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	C	From Leg	2.00 0 0	0.000	120.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	A	From Leg	2.00 0 0	0.000	150.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	B	From Leg	2.00 0 0	0.000	150.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	C	From Leg	2.00 0 0	0.000	150.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	A	From Leg	2.00 0 0	0.000	112.00	No Ice	9.50	5.18	0.40

RISATower

World Tower Company
1213 Compressor Drive
Mayfield, Kentucky 42066
Phone: (270) 247-3642
FAX: (270) 247-0909

Job	198' Type 36SR / Job Q13-940 R1	Page	6 of 11
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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAA Front	CAA Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
Frame			0	0					
WD13X53 Antenna Mounting Frame	B	From Leg	2.00	0.000	112.00	No Ice	9.50	5.18	0.40
WD13X53 Antenna Mounting Frame	C	From Leg	2.00	0.000	112.00	No Ice	9.50	5.18	0.40
(2) Panel 8' x 2' max w/ mt pipe	A	From Leg	2.00	0.000	140.00	No Ice	22.40	5.68	0.07
(2) Panel 8' x 2' max w/ mt pipe	B	From Leg	2.00	0.000	140.00	No Ice	22.40	5.68	0.07
(2) Panel 8' x 2' max w/ mt pipe	C	From Leg	2.00	0.000	140.00	No Ice	22.40	5.68	0.07
(2) Panel 8' x 2' max w/ mt pipe	A	From Leg	2.00	0.000	130.00	No Ice	22.40	5.68	0.07
(2) Panel 8' x 2' max w/ mt pipe	B	From Leg	2.00	0.000	130.00	No Ice	22.40	5.68	0.07
(2) Panel 8' x 2' max w/ mt pipe	C	From Leg	2.00	0.000	130.00	No Ice	22.40	5.68	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	A	From Leg	2.00	0.000	120.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	B	From Leg	2.00	0.000	120.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	C	From Leg	2.00	0.000	120.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	A	From Leg	2.00	0.000	150.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	B	From Leg	2.00	0.000	150.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	C	From Leg	2.00	0.000	150.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	A	From Leg	2.00	0.000	112.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	B	From Leg	2.00	0.000	112.00	No Ice	11.47	5.90	0.07
(4) Panel 8' x 1' x 3" w/ mnt. pipes*	C	From Leg	2.00	0.000	112.00	No Ice	11.47	5.90	0.07

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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
6 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		90.00	6.00	No Ice 28.27	0.14
2 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0 0	0.000		25.00	2.00	No Ice 3.14	0.03

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	198	Leg	A325X	0.75	4	0.72	29.82	0.024 ✓	1	Bolt Tension
T2	180	Leg	A325X	0.75	4	3.47	29.82	0.116 ✓	1	Bolt Tension
T3	160	Leg	A325X	0.75	4	4.76	29.82	0.160 ✓	1	Bolt Tension
T4	140	Leg	A325X	0.75	4	2.59	29.82	0.087 ✓	1	Bolt Tension
T5	120	Leg	A325X	0.75	4	4.24	29.82	0.142 ✓	1	Bolt Tension
T6	100	Leg	A325X	0.75	4	5.93	29.82	0.199 ✓	1	Bolt Tension
T7	80	Leg	A325X	0.75	4	9.08	29.82	0.304 ✓	1	Bolt Tension
T8	60	Leg	A325X	0.75	4	6.45	29.82	0.216 ✓	1	Bolt Tension
T9	40	Leg	A325X	0.75	4	4.62	29.82	0.155 ✓	1	Bolt Tension
T10	20	Leg	A325X	0.75	4	4.03	29.82	0.135 ✓	1	Bolt Tension
T11	6.66667	Leg	A325X	0.75	4	4.10	29.82	0.138 ✓	1	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T _u K	Allowable φT _n K	Required S.F.	Actual S.F.
T3	159.63 (A) (489)	3/4 EHS	5.83	58.30	28.23	34.98	1.000	1.239 ✓
	159.63 (B) (488)	3/4 EHS	5.83	58.30	28.14	34.98	1.000	1.243 ✓
	159.63 (C) (487)	3/4 EHS	5.83	58.30	20.94	34.98	1.000	1.670 ✓
T5	110.00 (A) (492)	3/4 EHS	5.83	58.30	30.32	34.98	1.000	1.154 ✓
	110.00 (B)	3/4 EHS	5.83	58.30	30.35	34.98	1.000	1.152 ✓

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Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
	(491) 110.00 (C)	3/4 EHS	5.83	58.30	23.13	34.98	1.000	1.512 ✓
T8	(490) 59.63 (A) (495)	5/8 EHS	4.24	42.40	17.01	25.44	1.000	1.496 ✓
	59.63 (B) (494)	5/8 EHS	4.24	42.40	17.03	25.44	1.000	1.494 ✓
	59.63 (C) (493)	5/8 EHS	4.24	42.40	12.99	25.44	1.000	1.959 ✓

Compression Checks Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	198 - 180	1 1/2	18.00	3.60	115.2 K=1.00	1.77	1.00	-3.29	30.08	0.109 ¹ ✓
T2	180 - 160	1 3/4	20.00	3.21	88.0 K=1.00	2.41	1.00	-15.73	61.44	0.256 ¹ ✓
T3	160 - 140	2	20.00	3.21	77.0 K=1.00	3.14	1.00	-44.98	91.64	0.491 ¹ ✓
T4	140 - 120	2	20.00	3.21	77.0 K=1.00	3.14	1.00	-45.56	91.64	0.497 ¹ ✓
T5	120 - 100	2	20.00	3.21	77.0 K=1.00	3.14	1.00	-50.90	91.64	0.555 ¹ ✓
T6	100 - 80	2	20.00	3.21	77.0 K=1.00	3.14	1.00	-71.17	91.64	0.777 ¹ ✓
T7	80 - 60	2 1/4	20.00	3.21	68.4 K=1.00	3.98	1.00	-108.95	127.03	0.858 ¹ ✓
T8	60 - 40	2 1/4	20.00	3.21	68.4 K=1.00	3.98	1.00	-108.95	127.03	0.858 ¹ ✓
T9	40 - 20	2	20.00	3.21	77.0 K=1.00	3.14	1.00	-77.34	91.64	0.844 ¹ ✓
T10	20 - 6.66667	2	13.33	3.15	75.5 K=1.00	3.14	1.00	-55.42	93.19	0.595 ¹ ✓
T11	6.66667 - 0	2	6.89	2.04	48.9 K=1.00	3.14	1.00	-49.76	118.23	0.421 ¹ ✓

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	198 - 180	7/8	4.69	4.49	172.4 K=0.70	0.60	-1.35	4.57	0.295 ¹ ✓
T2	180 - 160	1	4.39	4.18	140.4 K=0.70	0.79	-3.05	9.00	0.339 ¹ ✓
T3	160 - 140	1 1/4	4.39	4.15	111.5	1.23	-7.98	20.66	0.386 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T4	140 - 120	1 1/4	4.39	4.15	K=0.70 111.5	1.23	-6.59	20.66	0.319 ¹ ✓
T5	120 - 100	1 1/4	4.39	4.15	K=0.70 111.5	1.23	-11.76	20.66	0.569 ¹ ✓
T6	100 - 80	1	4.39	4.15	K=0.70 139.4	0.79	-4.70	9.13	0.515 ¹ ✓
T7	80 - 60	1	4.39	4.12	K=0.70 138.4	0.79	-7.18	9.27	0.775 ¹ ✓
T8	60 - 40	1	4.39	4.12	K=0.70 138.4	0.79	-5.55	9.27	0.598 ¹ ✓
T9	40 - 20	1	4.39	4.15	K=0.70 139.4	0.79	-3.83	9.13	0.420 ¹ ✓
T10	20 - 6.66667	1	4.35	4.11	K=0.70 137.9	0.79	-2.03	9.32	0.217 ¹ ✓
T11	6.66667 - 0	1	2.08	1.56	K=1.00 74.8	0.79	-9.83	18.95	0.519 ¹ ✓

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	198 - 180	1 1/2	18.00	3.60	115.2	1.77	2.89	79.52	0.036 ¹ ✓
T2	180 - 160	1 3/4	20.00	0.38	10.3	2.41	13.89	108.24	0.128 ¹ ✓
T3	160 - 140	2	20.00	0.38	9.0	3.14	19.05	141.37	0.135 ¹ ✓
T4	140 - 120	2	20.00	3.21	77.0	3.14	19.32	141.37	0.137 ¹ ✓
T5	120 - 100	2	20.00	3.21	77.0	3.14	2.58	141.37	0.018 ¹ ✓
T7	80 - 60	2 1/4	20.00	0.38	8.0	3.98	25.56	178.92	0.143 ¹ ✓
T8	60 - 40	2 1/4	20.00	3.21	68.4	3.98	25.55	178.92	0.143 ¹ ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	198 - 180	Leg	1 1/2	2	-3.29	30.08	10.9	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T2	180 - 160	Leg	1 3/4	43	-15.73	61.44	25.6	Pass
T3	160 - 140	Leg	2	91	-44.98	91.64	49.1	Pass
T4	140 - 120	Leg	2	140	-45.56	91.64	49.7	Pass
T5	120 - 100	Leg	2	186	-50.90	91.64	55.5	Pass
T6	100 - 80	Leg	2	234	-71.17	91.64	77.7	Pass
T7	80 - 60	Leg	2 1/4	282	-108.95	127.03	85.8	Pass
T8	60 - 40	Leg	2 1/4	330	-108.95	127.03	85.8	Pass
T9	40 - 20	Leg	2	378	-77.34	91.64	84.4	Pass
T10	20 - 6.66667	Leg	2	426	-55.42	93.19	59.5	Pass
T11	6.66667 - 0	Leg	2	460	-49.76	118.23	42.1	Pass
T1	198 - 180	Diagonal	7/8	10	-1.35	4.57	29.5	Pass
T2	180 - 160	Diagonal	1	51	-3.05	9.00	33.9	Pass
T3	160 - 140	Diagonal	1 1/4	136	-7.98	20.66	38.6	Pass
T4	140 - 120	Diagonal	1 1/4	148	-6.59	20.66	31.9	Pass
T5	120 - 100	Diagonal	1 1/4	217	-11.76	20.66	56.9	Pass
T6	100 - 80	Diagonal	1	243	-4.70	9.13	51.5	Pass
T7	80 - 60	Diagonal	1	291	-7.18	9.27	77.5	Pass
T8	60 - 40	Diagonal	1	369	-5.55	9.27	59.8	Pass
T9	40 - 20	Diagonal	1	423	-3.83	9.13	42.0	Pass
T10	20 - 6.66667	Diagonal	1	451	-2.03	9.32	21.7	Pass
T11	6.66667 - 0	Diagonal	1	471	-9.83	18.95	51.9	Pass
T1	198 - 180	Horizontal	3/4	15	-0.14	5.98	2.4	Pass
T2	180 - 160	Horizontal	3/4	62	-0.27	6.05	4.5	Pass
T3	160 - 140	Horizontal	3/4	119	-1.22	6.13	19.9	Pass
T4	140 - 120	Horizontal	3/4	166	-1.10	6.13	17.9	Pass
T5	120 - 100	Horizontal	3/4	220	-0.99	6.13	16.1	Pass
T6	100 - 80	Horizontal	3/4	247	-1.23	6.13	20.1	Pass
T7	80 - 60	Horizontal	3/4	295	-1.89	6.21	30.4	Pass
T8	60 - 40	Horizontal	3/4	345	-1.89	6.21	30.4	Pass
T9	40 - 20	Horizontal	3/4	398	-1.34	6.13	21.9	Pass
T10	20 - 6.66667	Horizontal	3/4	441	-0.96	6.13	15.7	Pass
T11	6.66667 - 0	Horizontal	3/4	480	-0.88	9.79	9.0	Pass
T1	198 - 180	Secondary Horizontal	3/4	20	-0.00	9.90	0.0	Pass
T2	180 - 160	Secondary Horizontal	3/4	89	-0.00	9.91	0.0	Pass
T3	160 - 140	Secondary Horizontal	3/4	109	-0.00	9.92	0.0	Pass
T4	140 - 120	Secondary Horizontal	3/4	157	-0.00	9.92	0.0	Pass
T5	120 - 100	Secondary Horizontal	3/4	205	-0.00	9.92	0.0	Pass
T6	100 - 80	Secondary Horizontal	3/4	267	-0.00	9.92	0.0	Pass
T7	80 - 60	Secondary Horizontal	3/4	329	-0.00	9.94	0.0	Pass
T8	60 - 40	Secondary Horizontal	3/4	363	-0.00	9.94	0.0	Pass
T9	40 - 20	Secondary Horizontal	3/4	411	-0.00	9.92	0.0	Pass
T10	20 - 6.66667	Secondary Horizontal	3/4	459	-0.00	9.92	0.0	Pass
T11	6.66667 - 0	Secondary Horizontal	3/4	472	0.00	14.31	0.0	Pass
T1	198 - 180	Top Girt	7/8	5	-0.05	10.26	0.4	Pass
T2	180 - 160	Top Girt	7/8	45	-0.54	10.35	5.2	Pass
T4	140 - 120	Top Girt	7/8	141	-0.62	10.45	5.9	Pass
T5	120 - 100	Top Girt	7/8	189	-3.52	10.45	33.7	Pass
T6	100 - 80	Top Girt	7/8	237	-0.63	10.45	6.0	Pass
T7	80 - 60	Top Girt	7/8	285	-1.62	10.54	15.4	Pass
T9	40 - 20	Top Girt	7/8	382	-1.04	10.45	9.9	Pass
T10	20 - 6.66667	Top Girt	7/8	430	-0.45	10.45	4.3	Pass
T11	6.66667 - 0	Top Girt	7/8	465	4.15	19.48	21.3	Pass
T1	198 - 180	Bottom Girt	3/4	7	-0.39	5.98	6.6	Pass
T2	180 - 160	Bottom Girt	3/4	48	-1.09	6.05	18.0	Pass
T3	160 - 140	Bottom Girt	3/4	98	-1.29	6.13	21.0	Pass
T4	140 - 120	Bottom Girt	3/4	145	-1.96	6.13	31.9	Pass
T5	120 - 100	Bottom Girt	3/4	193	-0.49	6.13	8.0	Pass
T6	100 - 80	Bottom Girt	3/4	242	-0.92	6.13	15.0	Pass
T7	80 - 60	Bottom Girt	3/4	288	-1.62	6.21	26.1	Pass
T8	60 - 40	Bottom Girt	3/4	337	-1.25	6.21	20.2	Pass
T9	40 - 20	Bottom Girt	3/4	384	-0.60	6.13	9.8	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
T10	20 - 6.66667	Bottom Girt	3/4	434	3.88	14.31	27.1	Pass	
T11	6.66667 - 0	Bottom Girt	3/4	468	2.02	14.31	14.1	Pass	
T3	160 - 140	Guy A@159.625	3/4	489	28.23	34.98	80.7	Pass	
T5	120 - 100	Guy A@110	3/4	492	30.32	34.98	86.7	Pass	
T8	60 - 40	Guy A@59.625	5/8	495	17.01	25.44	66.9	Pass	
T3	160 - 140	Guy B@159.625	3/4	488	28.14	34.98	80.5	Pass	
T5	120 - 100	Guy B@110	3/4	491	30.35	34.98	86.8	Pass	
T8	60 - 40	Guy B@59.625	5/8	494	17.03	25.44	66.9	Pass	
T3	160 - 140	Guy C@159.625	3/4	487	20.94	34.98	59.9	Pass	
T5	120 - 100	Guy C@110	3/4	490	23.13	34.98	66.1	Pass	
T8	60 - 40	Guy C@59.625	5/8	493	12.99	25.44	51.1	Pass	
T3	160 - 140	Top Guy	4 X 3/8	95	6.79	48.60	14.0	Pass	
		Pull-Off@159.625							
T5	120 - 100	Top Guy	4 X 3/8	213	9.72	48.60	20.0	Pass	
		Pull-Off@110							
T8	60 - 40	Top Guy	4 X 3/8	334	7.34	48.60	15.1	Pass	
		Pull-Off@59.625							
							Summary		
							Leg (T8)	85.8	Pass
							Diagonal (T7)	77.5	Pass
							Horizontal (T8)	30.4	Pass
							Secondary Horizontal (T11)	0.0	Pass
							Top Girt (T5)	33.7	Pass
							Bottom Girt (T4)	31.9	Pass
							Guy A (T5)	86.7	Pass
							Guy B (T5)	86.8	Pass
							Guy C (T5)	66.1	Pass
							Top Guy Pull-Off (T5)	20.0	Pass
							Bolt Checks	30.4	Pass
							RATING =	86.8	Pass