

Exhibit 10.0

Directional Antenna Study

Upon review of the recently filed directional antenna proof of performance and license to cover application BLED-20050126AAA, it has been determined the measured pattern may actually operate at 5.0 kW while fully protecting all facilities within the allocation. Therefore no physical changes to the WBLW(FM) antenna need be made other than the resubmitting of the measured pattern as the new FCC standard pattern.

The measured pattern, as originally submitted in the recent antenna proof of performance will be identical therefore remain wholly within the new FCC standard pattern as noted in the **Exhibit 10.1** directional antenna tabulation study and the **Exhibit 10.2** polar plot of the measured and FCC submitted directional antenna patterns. In addition, the measured pattern, as originally submitted, constitutes 100.0% of the new FCC standard pattern, thereby meeting the 85% minimum requirement.

Also attached is a copy of the BLED-20050126AAA antenna proof of performance, copy of the Surveyor's Affidavit and copy of the Engineer's Affidavit. As no physical changes to the antenna or antenna mounting are proposed other than in increase in power, the Surveyor's and Engineer's affidavits remain in effect.

Likewise, as no physical changes to the antenna are proposed other than an increase in power from 3.0 kW to 5.0 kW, the antenna proof of performance remains valid. Outdated information within the antenna proof of performance pertaining to the original power level of 3.0 kW and the originally submitted FCC standard pattern have been addressed in **Exhibit(s) 10.1** and **10.2**. Information concerning the certification of the measurement procedures and the relative field calculations for the measured pattern remain unchanged. Consultation with the antenna manufacturer and data taken from the SWR™ website indicates the FM3V/2-DA antenna is rated for an input of 6.0 kW. Given the antenna gain of 3.782, the required input power for 5.0 kW ERP will be 1.322 kW, well below the rate antenna tolerance.

Immediate program test authority is requested as it is believed all information pertinent to a directional antenna operation licensing application has been supplied herein.

Exhibit 10.1

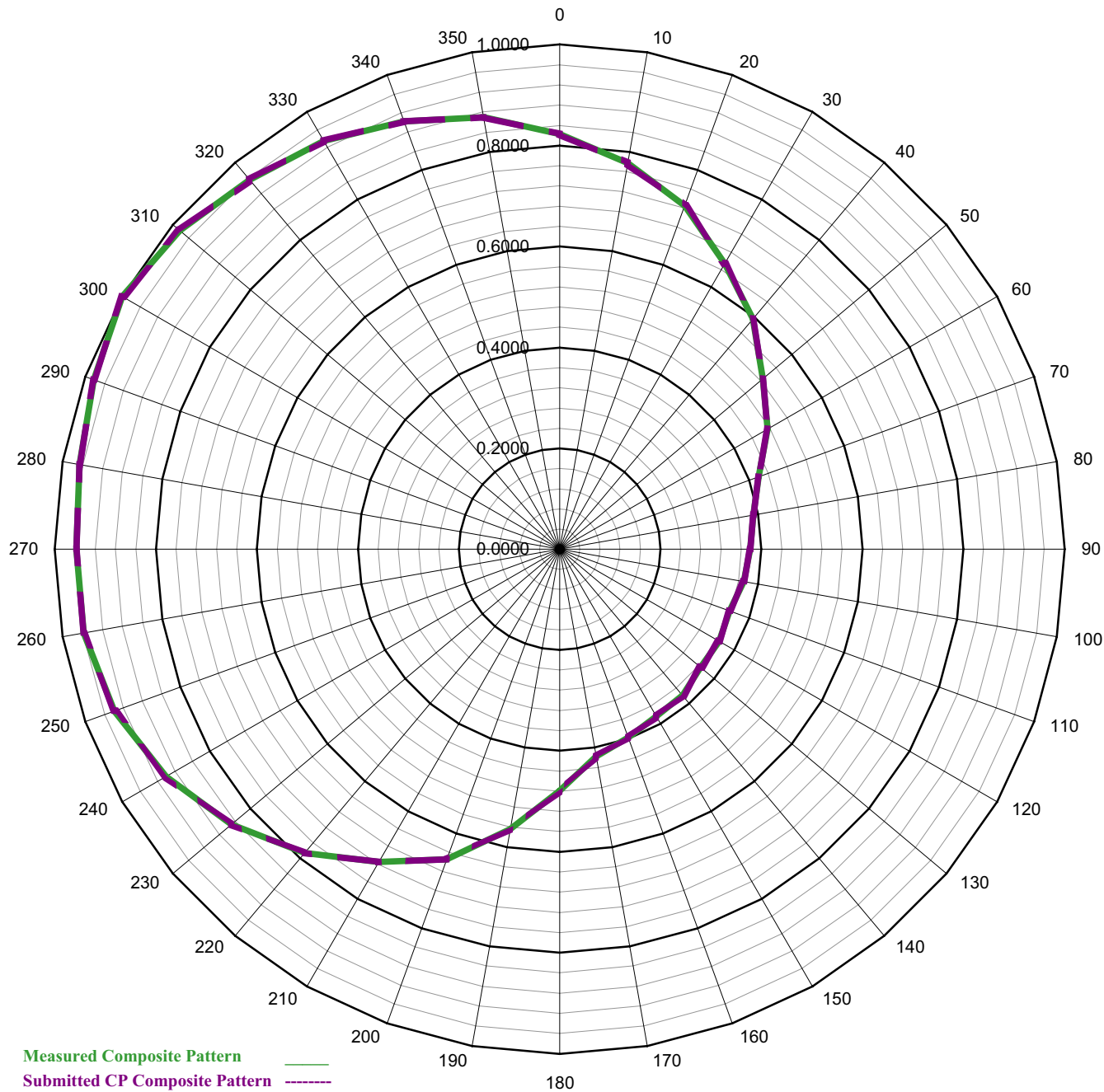
Tabulation of Directional Antenna

MEASURED PATTERN (from manufacturer)								SUBMITTED PATTERN (to FCC)							
Enter	Measured	Calculated			Measured	Relative		Enter	Submitted	Calculated			Submitted	Relative	
Max ERP	Relative	dB			Relative	Field		Max ERP	Relative	dB			Relative	Field	
(kW)	° True	Field	Change	Suppression	Equiv Power	Field ²	RMS	(kW)	° True	Field	Change	Suppression	Equiv Power	Field ²	RMS
5.00	0	0.8220	-0.49	-1.70	3.378	0.68	0.712	5.000	0	0.822	-0.49	-1.70	3.378	0.68	0.712
	10	0.7762	-0.50	-2.20	3.012	0.60			10	0.776	-0.50	-2.20	3.012	0.60	
	20	0.7244	-0.60	-2.80	2.624	0.52			20	0.724	-0.60	-2.80	2.624	0.52	
	30	0.6531	-0.90	-3.70	2.133	0.43			30	0.653	-0.90	-3.70	2.133	0.43	
	40	0.5957	-0.80	-4.50	1.774	0.35			40	0.596	-0.80	-4.50	1.774	0.35	
	50	0.5253	-1.09	-5.59	1.380	0.28			50	0.525	-1.09	-5.59	1.380	0.28	
	60	0.4756	-0.86	-6.46	1.131	0.23			60	0.476	-0.86	-6.46	1.131	0.23	
	70	0.4186	-1.11	-7.56	0.876	0.18			70	0.419	-1.11	-7.56	0.876	0.18	
	80	0.3897	-0.62	-8.19	0.759	0.15			80	0.390	-0.62	-8.19	0.759	0.15	
	90	0.3775	-0.28	-8.46	0.713	0.14			90	0.378	-0.28	-8.46	0.713	0.14	
	100	0.3699	-0.18	-8.64	0.684	0.14			100	0.370	-0.18	-8.64	0.684	0.14	
	110	0.3582	-0.28	-8.92	0.642	0.13	Percentage of Allocated Pattern: 100.00%		110	0.358	-0.28	-8.92	0.642	0.13	
	120	0.3645	0.15	-8.77	0.664	0.13			120	0.365	0.15	-8.77	0.664	0.13	
	130	0.3634	-0.03	-8.79	0.660	0.13			130	0.363	-0.03	-8.79	0.660	0.13	
	140	0.3787	0.36	-8.43	0.717	0.14			140	0.379	0.36	-8.43	0.717	0.14	
	150	0.3826	0.09	-8.35	0.732	0.15			150	0.383	0.09	-8.35	0.732	0.15	
	160	0.3968	0.32	-8.03	0.787	0.16			160	0.397	0.32	-8.03	0.787	0.16	
	170	0.4167	0.43	-7.60	0.868	0.17			170	0.417	0.43	-7.60	0.868	0.17	
	180	0.4786	1.20	-6.40	1.145	0.23			180	0.479	1.20	-6.40	1.145	0.23	
	190	0.5628	1.41	-4.99	1.584	0.32			190	0.563	1.41	-4.99	1.584	0.32	
	200	0.6537	1.30	-3.69	2.137	0.43			200	0.654	1.30	-3.69	2.137	0.43	
	210	0.7158	0.79	-2.90	2.562	0.51			210	0.716	0.79	-2.90	2.562	0.51	
	220	0.7856	0.81	-2.10	3.086	0.62			220	0.786	0.81	-2.10	3.086	0.62	
	230	0.8489	0.67	-1.42	3.603	0.72			230	0.849	0.67	-1.42	3.603	0.72	
	240	0.8997	0.50	-0.92	4.047	0.81			240	0.900	0.50	-0.92	4.047	0.81	
	250	0.9384	0.37	-0.55	4.403	0.88			250	0.938	0.37	-0.55	4.403	0.88	
	260	0.9568	0.17	-0.38	4.577	0.92			260	0.957	0.17	-0.38	4.577	0.92	
	270	0.9568	0.00	-0.38	4.577	0.92			270	0.957	0.00	-0.38	4.577	0.92	
	280	0.9657	0.08	-0.30	4.663	0.93			280	0.966	0.08	-0.30	4.663	0.93	
	290	0.9824	0.15	-0.15	4.826	0.97			290	0.982	0.15	-0.15	4.826	0.97	
	300	1.0000	0.15	0.00	5.000	1.00			300	1.000	0.15	0.00	5.000	1.00	
	310	0.9824	-0.15	-0.15	4.826	0.97			310	0.982	-0.15	-0.15	4.826	0.97	
	320	0.9550	-0.25	-0.40	4.560	0.91			320	0.955	-0.25	-0.40	4.560	0.91	
	330	0.9342	-0.19	-0.59	4.364	0.87			330	0.934	-0.19	-0.59	4.364	0.87	
	340	0.9016	-0.31	-0.90	4.064	0.81			340	0.902	-0.31	-0.90	4.064	0.81	
	350	0.8693	-0.32	-1.22	3.778	0.76			350	0.869	-0.32	-1.22	3.778	0.76	

Exhibit 10.2

Graph of Directional Antenna

Measured Composite Pattern in Relative Field



Call Sign: WBLW(FM)

Channel: 201

Max ERP: 5.0 kW (V)
-- (H)

Antenna Make: SWR

Model: FM3V/2-DA

Licensee: Grace Baptist Church

Munn-Reese, Inc.

Broadcast Engineering Consultants
Coldwater, MI 49036



SYSTEMS WITH RELIABILITY, LTD.
Broadcast Antenna and Transmission Systems

PATTERN CERTIFICATION

DIRECTIONAL FM ANTENNA
WBLW
December 3, 2004

Call Sign	:	WBLW
Location	:	Gaylord, MI
Frequency	:	88.1 MHz
Channel	:	201
Antenna Model	:	FM3V/2-DA
Maximum Antenna Gain	:	
Vertical	:	3.782/ 5.777 dB

ANTENNA DESCRIPTION

A custom designed **FM3V/2-DA** antenna was used to produce the required directional azimuth pattern. Each antenna bay consists of a vertically polarized dipole-radiating element with a vertical parasitic system. The array is comprised of **two** bays, that are spaced a full wavelength apart, mounted to a tower pointing **300** degrees true north.

DESCRIPTION OF TEST PROCEDURE

The test antenna consists of a third-scale antenna and parasitic system. This antenna was mounted to an 8-inch third-scale model tower with the use of mounting brackets supplied with the finalized antenna. The tower was 20 ft. on a platform. All feed cables are properly grounded during pattern testing. Vertical parasitic elements were used to obtain the desired directional pattern.

The source antenna, a vertical/horizontal Cavity Back Resonator antenna configuration was mounted approximately 100 feet from the test antenna. The source's height was adjusted to provide a uniform field at the test antenna location. The CBR antenna was operated in the transmit mode at a frequency of 264.3 MHz. The antenna under test was rotated in a clockwise direction. A gain reference was taken using a dipole tuned to 264.3 MHz. Nowhere does the received signal exceed a maximum to minimum ratio of 15 dB.

DOCUMENT EXHIBITS

The following exhibits are included as part of this Certificate of Compliance:

Exhibit 1	Measured Vertical Polarized Azimuth Pattern Measured Field Strength Tabulations (Vertical)
Exhibit 2	Elevation Pattern Elevation Tabulations
Exhibit 3	Antenna Data Sheet

TEST EQUIPMENT

Network Analyzer	:	Hewlett Packard Model # 8753C Serial Number : 08753 – 69138 Calibrated 4/26/04, SWR, Inc.
Computer	:	White Mountain 366 Computer
Plotter	:	Hewlett-Packard 7550A
Positioner	:	Orbit Positioner Calibrated 1/06/04, SWR, Inc.

Prepared by:



Jason Duncan
SWR, Inc.

TEST RESULTS

The attached calculations verify that the **RMS** value of this antenna is **96.62 %** of the **RMS** value of the pattern authorized in the related construction permit **BPED-20020128ABK**. The vertical component **RMS** value is **0.712**.

Azimuth and elevation plots and associated tabulations of this antenna are included with this package.

Measured vertical polarized directivity : **3.782/ 5.777 dB**

Gain was calculated using the following relation:

$$\mathbf{GAIN} = \mathbf{Azimuth\ Directivity} \times \mathbf{Elevation\ Directivity}$$

Using this relationship at our testing facilities:

$$\mathbf{V-Pol.\ Gain} = (1.972)(1.918) = \mathbf{3.782 / 5.777\ dB}$$

INSTALLATION AND MOUNTING

The antenna is to be mounted in accordance with the supplied drawings. The antenna center of radiation is to be **116 meters** above ground level. The antenna (parasitic system included) aperture is **11.17 feet**. No other antennas are to be mounted within **10 feet** of the antenna. No other obstructions other than those specified by original drawings supplied are to be mounted at the same level as the antenna. The antenna is to be oriented **300 degrees** true North.

The parasitic system is custom designed to shape and direct the antenna pattern as required. The systems orientation and the mounting details are described in the following drawings:

DRAWING NO.	TITLE
0237D02	ORIENTATION WITH PARASITICS
0237D06	ANTENNA ORIENTATION
0237D07	PARASITIC PLACEMENT BAY 1
0237D08	PARASITIC PLACEMENT BAY 2
2105A10	TEST RANGE SCHEMATIC

The array shall be mounted according to **DWG. 0237D02**. The parasitic assembly is shown in **DWG. 0237D07 and DWG. 0237D08**. The antenna elements shall be aligned at the same heading as in **DWG. 0237D06**. This will ensure that the antenna is oriented properly at **300 degrees** true north.



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Broadcast Antennas and Transmission Systems

WBLW Antenna RMS Comparison

PROPOSED ANTENNA

Azimuth Heading	Relative Field
0	0.90000
10	0.85000
20	0.80000
30	0.72000
40	0.64000
50	0.54000
60	0.49000
70	0.43000
80	0.40000
90	0.40000
100	0.40000
110	0.40000
120	0.40000
130	0.41000
140	0.39000
150	0.40000
160	0.40000
170	0.43000
180	0.49000
190	0.57000
200	0.68000
210	0.73000
220	0.80000
230	0.86000
240	0.90000
250	0.94000
260	0.97000

DESIGNED ANTENNA

Azimuth Heading	Relative Field
0	0.82200
10	0.77620
20	0.72440
30	0.65310
40	0.59570
50	0.52530
60	0.47560
70	0.41860
80	0.38970
90	0.37750
100	0.36990
110	0.35820
120	0.36450
130	0.36340
140	0.37870
150	0.38260
160	0.39680
170	0.41670
180	0.47860
190	0.56280
200	0.65370
210	0.71580
220	0.78560
230	0.84890
240	0.89970
250	0.93840
260	0.95680

PROPOSED ANTENNA

Azimuth Heading	Relative Field
270	0.98000
280	0.99000
290	0.99000
300	1.00000
310	0.99000
320	0.97000
330	0.96000
340	0.95000
350	0.94000

Sum of Relative Field Squared : 19.566
 Sum Divided by 36 (Readings) : 0.543
 Square Root : 0.737

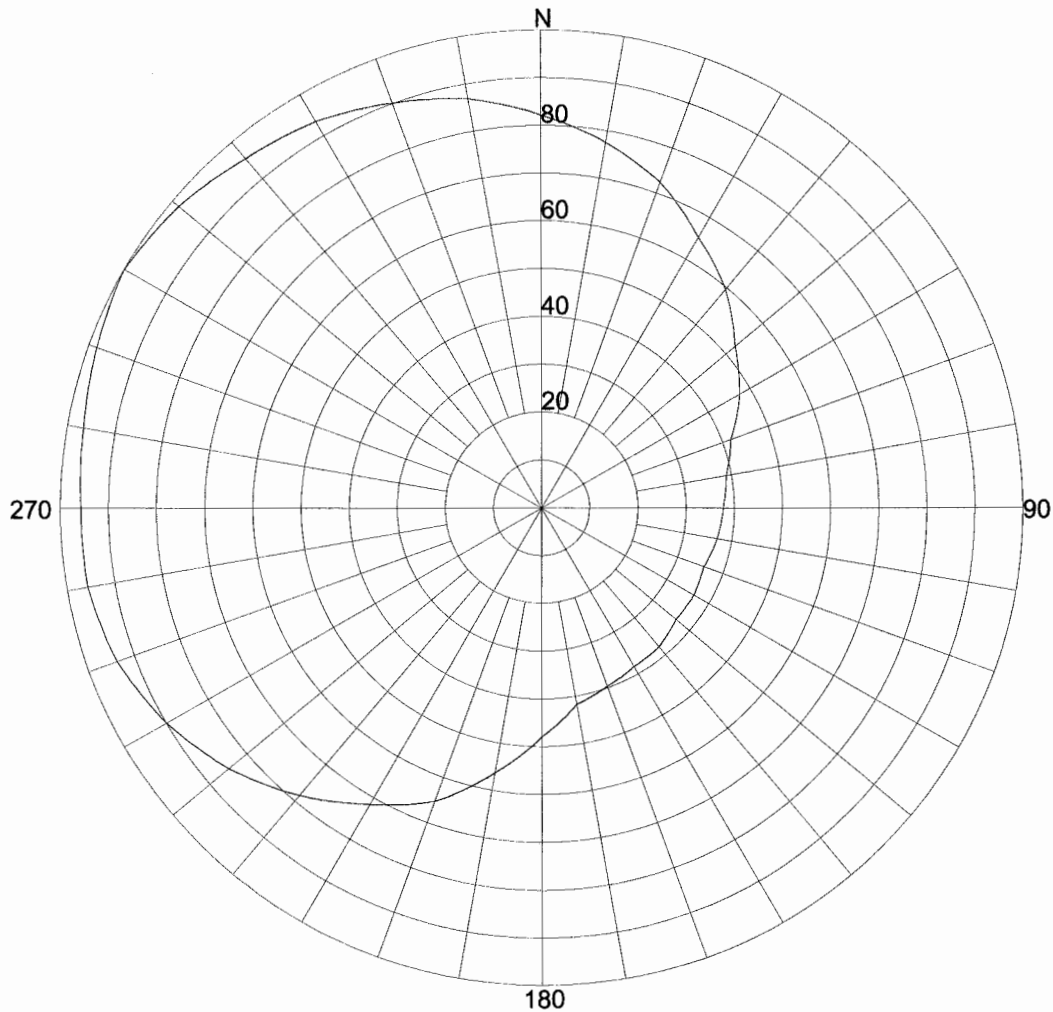
Percentage of Construction Permit Antenna Filled :

DESIGNED ANTENNA

Azimuth Heading	Relative Field
270	0.95680
280	0.96570
290	0.98240
300	1.00000
310	0.98240
320	0.95500
330	0.93420
340	0.90160
350	0.86930

Sum of Relative Field Squared : 18.267
 Sum Divided by 36 (Readings) : 0.507
 Square Root : 0.712

96.62%



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability

CLIENT: *Energy-Onix, WBLW*

Date: 11/23/2004

ANTENNA TYPE: FM3V/2-DA

FREQUENCY: 88.1

PATTERN POL.: Vertical

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 1.97191 / 2.95dB

PATTERN RMS: 0.712

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relative Field(dB)
0	.8222 (-1.69)	180	.4786 (-6.38)
5	.7992 (-1.94)	185	.5207 (-5.65)
10	.7762 (-2.19)	190	.5628 (-4.98)
15	.7503 (-2.48)	195	.6083 (-4.3)
20	.7244 (-2.79)	200	.6537 (-3.68)
25	.6888 (-3.23)	205	.6848 (-3.28)
30	.6531 (-3.69)	210	.7158 (-2.89)
35	.6244 (-4.08)	215	.7507 (-2.48)
40	.5957 (-4.48)	220	.7856 (-2.08)
45	.5605 (-5.01)	225	.8173 (-1.74)
50	.5253 (-5.58)	230	.8489 (-1.41)
55	.5005 (-6)	235	.8743 (-1.16)
60	.4756 (-6.44)	240	.8997 (-0.91)
65	.4471 (-6.97)	245	.9191 (-0.72)
70	.4186 (-7.54)	250	.9384 (-0.54)
75	.4042 (-7.85)	255	.9476 (-0.46)
80	.3897 (-8.16)	260	.9568 (-0.37)
85	.3836 (-8.3)	265	.9568 (-0.37)
90	.3775 (-8.44)	270	.9568 (-0.37)
95	.3737 (-8.53)	275	.9613 (-0.33)
100	.3699 (-8.61)	280	.9657 (-0.29)
105	.3641 (-8.75)	285	.9741 (-0.22)
110	.3582 (-8.89)	290	.9824 (-0.15)
115	.3614 (-8.82)	295	.9912 (-0.07)
120	.3645 (-8.74)	300	1.0000 (0.01)
125	.3640 (-8.76)	305	.9912 (-0.07)
130	.3634 (-8.77)	310	.9824 (-0.15)
135	.3711 (-8.59)	315	.9687 (-0.27)
140	.3787 (-8.41)	320	.9550 (-0.39)
145	.3807 (-8.37)	325	.9446 (-0.49)
150	.3826 (-8.32)	330	.9342 (-0.58)
155	.3897 (-8.16)	335	.9179 (-0.73)
160	.3968 (-8.01)	340	.9016 (-0.89)
165	.4068 (-7.79)	345	.8855 (-1.05)
170	.4167 (-7.58)	350	.8693 (-1.21)
175	.4477 (-6.96)	355	.8458 (-1.44)

Systems With Reliability

CLIENT: *Energy-Onix, WBLW*

Date: 11/23/2004

ANTENNA TYPE: FM3V/2-DA

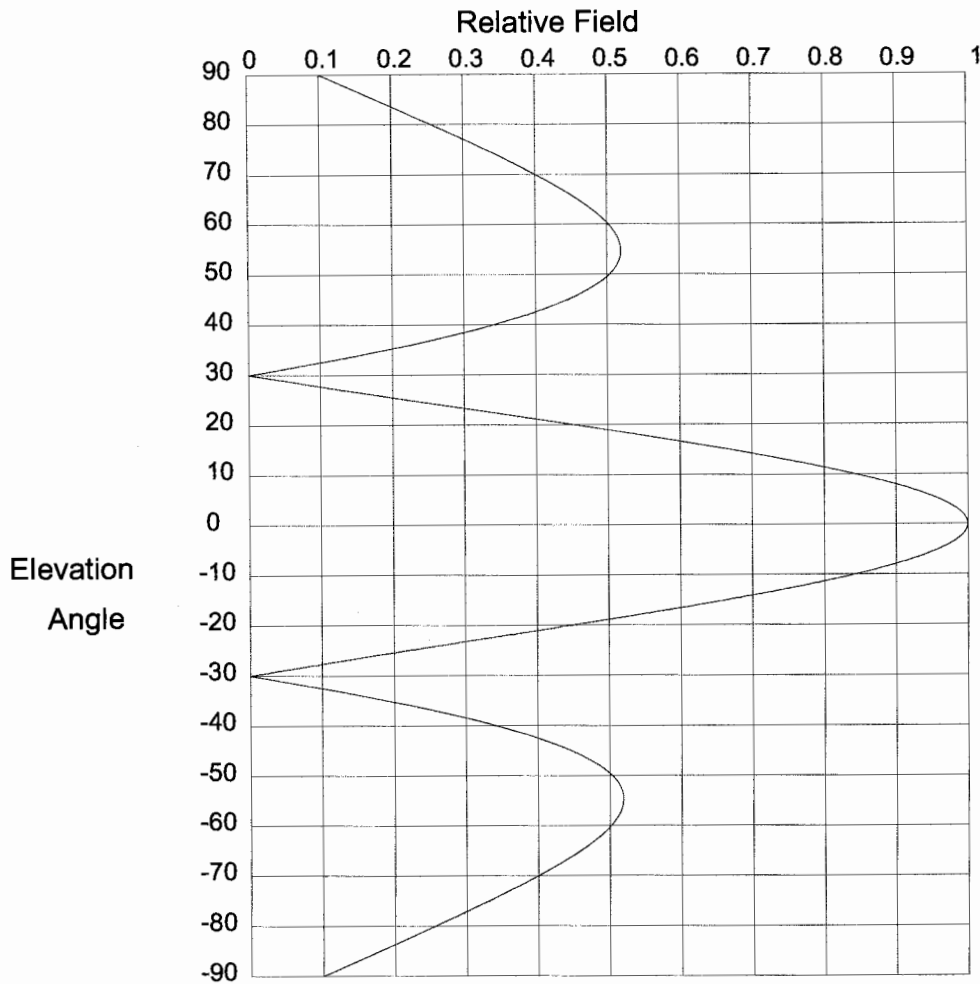
FREQUENCY: 88.1

PATTERN POL.: Vertical

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 1.97191 / 2.95dB

PATTERN RMS: 0.712



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability

CLIENT: *Energy-Onix*

Date: 9/22/2004

ANTENNA TYPE: FM3V/2-DA

FREQUENCY: 88.1

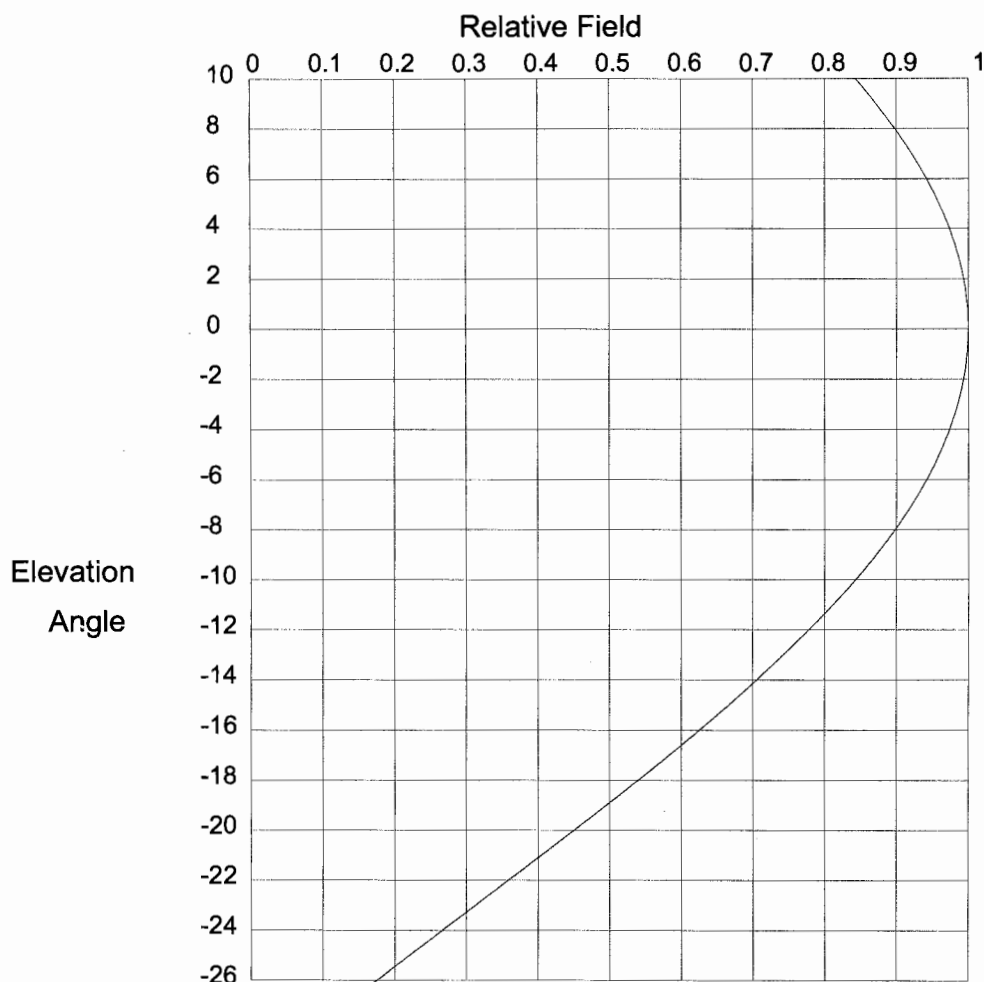
PATTERN POL.: Vertical

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.) : 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%) : 0, 0, 0



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability

Date: 9/22/2004

CLIENT: *Energy-Onix*

ANTENNA TYPE: FM3V/2-DA

FREQUENCY: 88.1

PATTERN POL.: Vertical

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.): 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%): 0, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.983 (-0.146)	-4.4	.969 (-0.278)	-12.0	.779 (-2.174)
3.0	.985 (-0.129)	-4.6	.966 (-0.304)	-12.2	.772 (-2.252)
2.8	.987 (-0.112)	-4.8	.963 (-0.331)	-12.4	.765 (-2.332)
2.6	.989 (-0.097)	-5.0	.959 (-0.36)	-12.6	.757 (-2.413)
2.4	.991 (-0.082)	-5.2	.956 (-0.389)	-12.8	.75 (-2.496)
2.2	.992 (-0.069)	-5.4	.953 (-0.42)	-13.0	.743 (-2.581)
2.0	.993 (-0.057)	-5.6	.949 (-0.452)	-13.2	.736 (-2.667)
1.8	.995 (-0.046)	-5.8	.946 (-0.485)	-13.4	.728 (-2.755)
1.6	.996 (-0.037)	-6.0	.942 (-0.52)	-13.6	.721 (-2.845)
1.4	.997 (-0.028)	-6.2	.938 (-0.556)	-13.8	.713 (-2.937)
1.2	.998 (-0.021)	-6.4	.934 (-0.593)	-14.0	.705 (-3.031)
1.0	.998 (-0.014)	-6.6	.93 (-0.631)	-14.2	.698 (-3.126)
.8	.999 (-0.009)	-6.8	.926 (-0.67)	-14.4	.69 (-3.224)
.6	.999 (-0.005)	-7.0	.921 (-0.711)	-14.6	.682 (-3.323)
.4	1.00 (-0.002)	-7.2	.917 (-0.753)	-14.8	.674 (-3.425)
.2	1.00 (-0.001)	-7.4	.912 (-0.797)	-15.0	.666 (-3.528)
.0	1.00 (0)	-7.6	.908 (-0.841)	-15.2	.658 (-3.634)
-.2	1.00 (-0.001)	-7.8	.903 (-0.887)	-15.4	.65 (-3.742)
-.4	1.00 (-0.002)	-8.0	.898 (-0.935)	-15.6	.642 (-3.851)
-.6	.999 (-0.005)	-8.2	.893 (-0.983)	-15.8	.634 (-3.963)
-.8	.999 (-0.009)	-8.4	.888 (-1.033)	-16.0	.625 (-4.078)
-1.0	.998 (-0.014)	-8.6	.883 (-1.084)	-16.2	.617 (-4.194)
-1.2	.998 (-0.021)	-8.8	.877 (-1.137)	-16.4	.609 (-4.313)
-1.4	.997 (-0.028)	-9.0	.872 (-1.191)	-16.6	.60 (-4.435)
-1.6	.996 (-0.037)	-9.2	.866 (-1.246)	-16.8	.592 (-4.558)
-1.8	.995 (-0.046)	-9.4	.861 (-1.303)	-17.0	.583 (-4.685)
-2.0	.993 (-0.057)	-9.6	.855 (-1.361)	-17.2	.575 (-4.814)
-2.2	.992 (-0.069)	-9.8	.849 (-1.421)	-17.4	.566 (-4.945)
-2.4	.991 (-0.082)	-10.0	.843 (-1.482)	-17.6	.557 (-5.079)
-2.6	.989 (-0.097)	-10.2	.837 (-1.544)	-17.8	.549 (-5.216)
-2.8	.987 (-0.112)	-10.4	.831 (-1.608)	-18.0	.54 (-5.356)
-3.0	.985 (-0.129)	-10.6	.825 (-1.674)	-18.2	.531 (-5.499)
-3.2	.983 (-0.146)	-10.8	.818 (-1.74)	-18.4	.522 (-5.644)
-3.4	.981 (-0.165)	-11.0	.812 (-1.809)	-18.6	.513 (-5.793)
-3.6	.979 (-0.186)	-11.2	.805 (-1.879)	-18.8	.504 (-5.945)
-3.8	.976 (-0.207)	-11.4	.799 (-1.95)	-19.0	.495 (-6.1)
-4.0	.974 (-0.229)	-11.6	.792 (-2.023)	-19.2	.486 (-6.259)
-4.2	.971 (-0.253)	-11.8	.785 (-2.098)	-19.4	.477 (-6.421)

Systems With Reliability

Page 1 of 2

CLIENT: *Energy-Onix*

Date: 9/22/2004

ANTENNA TYPE: FM3V/2-DA

FREQUENCY: 88.1

PATTERN POL.: Vertical

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.): 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%): 0, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.468 (-6.587)	-27.2	.121 (-18.344)	-54.0	.519 (-5.694)
-19.8	.459 (-6.756)	-27.4	.112 (-19.006)	-55.0	.519 (-5.69)
-20.0	.45 (-6.929)	-27.6	.103 (-19.721)	-56.0	.518 (-5.708)
-20.2	.441 (-7.106)	-27.8	.094 (-20.496)	-57.0	.516 (-5.747)
-20.4	.432 (-7.288)	-28.0	.086 (-21.343)	-58.0	.512 (-5.807)
-20.6	.423 (-7.473)	-28.2	.077 (-22.278)	-59.0	.508 (-5.887)
-20.8	.414 (-7.663)	-28.4	.068 (-23.322)	-60.0	.502 (-5.986)
-21.0	.405 (-7.858)	-28.6	.06 (-24.503)	-61.0	.495 (-6.103)
-21.2	.396 (-8.057)	-28.8	.051 (-25.863)	-62.0	.488 (-6.239)
-21.4	.386 (-8.261)	-29.0	.042 (-27.469)	-63.0	.479 (-6.392)
-21.6	.377 (-8.471)	-29.2	.034 (-29.429)	-64.0	.47 (-6.563)
-21.8	.368 (-8.686)	-29.4	.025 (-31.951)	-65.0	.46 (-6.751)
-22.0	.359 (-8.906)	-29.6	.017 (-35.496)	-66.0	.449 (-6.956)
-22.2	.349 (-9.132)	-29.8	.008 (-41.54)	-67.0	.438 (-7.178)
-22.4	.34 (-9.365)	-30.0	.00 (-50)	-68.0	.426 (-7.417)
-22.6	.331 (-9.604)	-31.0	.041 (-27.712)	-69.0	.413 (-7.673)
-22.8	.322 (-9.85)	-32.0	.081 (-21.828)	-70.0	.401 (-7.948)
-23.0	.312 (-10.103)	-33.0	.119 (-18.454)	-71.0	.387 (-8.24)
-23.2	.303 (-10.364)	-34.0	.156 (-16.113)	-72.0	.374 (-8.551)
-23.4	.294 (-10.632)	-35.0	.192 (-14.343)	-73.0	.36 (-8.881)
-23.6	.285 (-10.909)	-36.0	.225 (-12.937)	-74.0	.345 (-9.231)
-23.8	.276 (-11.195)	-37.0	.257 (-11.786)	-75.0	.331 (-9.603)
-24.0	.266 (-11.491)	-38.0	.288 (-10.824)	-76.0	.316 (-9.997)
-24.2	.257 (-11.797)	-39.0	.316 (-10.008)	-77.0	.301 (-10.415)
-24.4	.248 (-12.113)	-40.0	.342 (-9.31)	-78.0	.286 (-10.859)
-24.6	.239 (-12.441)	-41.0	.367 (-8.709)	-79.0	.271 (-11.332)
-24.8	.23 (-12.781)	-42.0	.39 (-8.189)	-80.0	.256 (-11.836)
-25.0	.22 (-13.135)	-43.0	.41 (-7.738)	-81.0	.241 (-12.374)
-25.2	.211 (-13.503)	-44.0	.429 (-7.349)	-82.0	.225 (-12.951)
-25.4	.202 (-13.887)	-45.0	.446 (-7.013)	-83.0	.21 (-13.571)
-25.6	.193 (-14.287)	-46.0	.461 (-6.724)	-84.0	.194 (-14.242)
-25.8	.184 (-14.706)	-47.0	.474 (-6.479)	-85.0	.178 (-14.971)
-26.0	.175 (-15.145)	-48.0	.486 (-6.272)	-86.0	.163 (-15.768)
-26.2	.166 (-15.606)	-49.0	.495 (-6.101)	-87.0	.147 (-16.648)
-26.4	.157 (-16.092)	-50.0	.503 (-5.963)	-88.0	.131 (-17.627)
-26.6	.148 (-16.605)	-51.0	.51 (-5.855)	-89.0	.116 (-18.733)
-26.8	.139 (-17.149)	-52.0	.514 (-5.775)	-90.0	.10 (-20)
-27.0	.13 (-17.727)	-53.0	.517 (-5.722)	90.0	.00 (-50)

Systems With Reliability

Page 2 of 2

CLIENT: *Energy-Onix*

Date: 9/22/2004

ANTENNA TYPE: FM3V/2-DA

FREQUENCY: 88.1

PATTERN POL.: Vertical

DIRECTIVITY(Peak): 1.918/2.828 dBd

Beam Tilt (Deg.): 0

DIRECTIVITY(Horiz): 1.918/2.828 dBd

Null Fill(s)(%): 0, 0, 0

(800) 762-7743

(814) 472-5436

Fax: (814) 472-5552



SYSTEMS WITH RELIABILITY, Inc.
Broadcast Antenna & Transmission Systems

SYSTEM DATA SHEET

Customer	Energy-Onix, WBLW
Contact	Bernie Wise
Location	Gaylord, MI
Antenna Model	FM3V/2-DA
Channel / Frequency	88.1 MHz

Polarization Type	Vertical
Polarization Ratio	
V-Pol. (PRV)	100.0000 %

Elevation Directivity (ED)	1.918
Azimuth Directivity (AD) V-Pol.	1.972

Antenna Gain (GH)	
V-Pol. (GV)	3.782

dB Gain (AG)	
V-Pol. (AGV)	5.777

ERP	
V-Pol. (ERPV)	3.000 kW

Line Type	1 5/8" 50 Ohm Air	HJ7-50A
Attenuation per 100 ft.	0.193	dB/100ft
Line Length (LL)	410.00	ft.
Total Line Attenuation	0.79	dB
Line Efficiency (LE)	83.34	%
Line Loss (LPL)	0.16	kW
Antenna Input Power (AIP)	0.79	kW
Req'd. Transmitter Output Power	0.95	kW

No. Of Bays	2		
Antenna Aperture	11.17	ft.	3.41 m
Center of Radiation AGL	380.58	ft.	116.00 m
Antenna Weight	75.00	lbs.	34.09 kg
Windload (50/33)	150.00	lbs.	68.18 kg

Mechanical Specifications will be certified upon final construction and testing.

Note: Given values can be used for planning system.

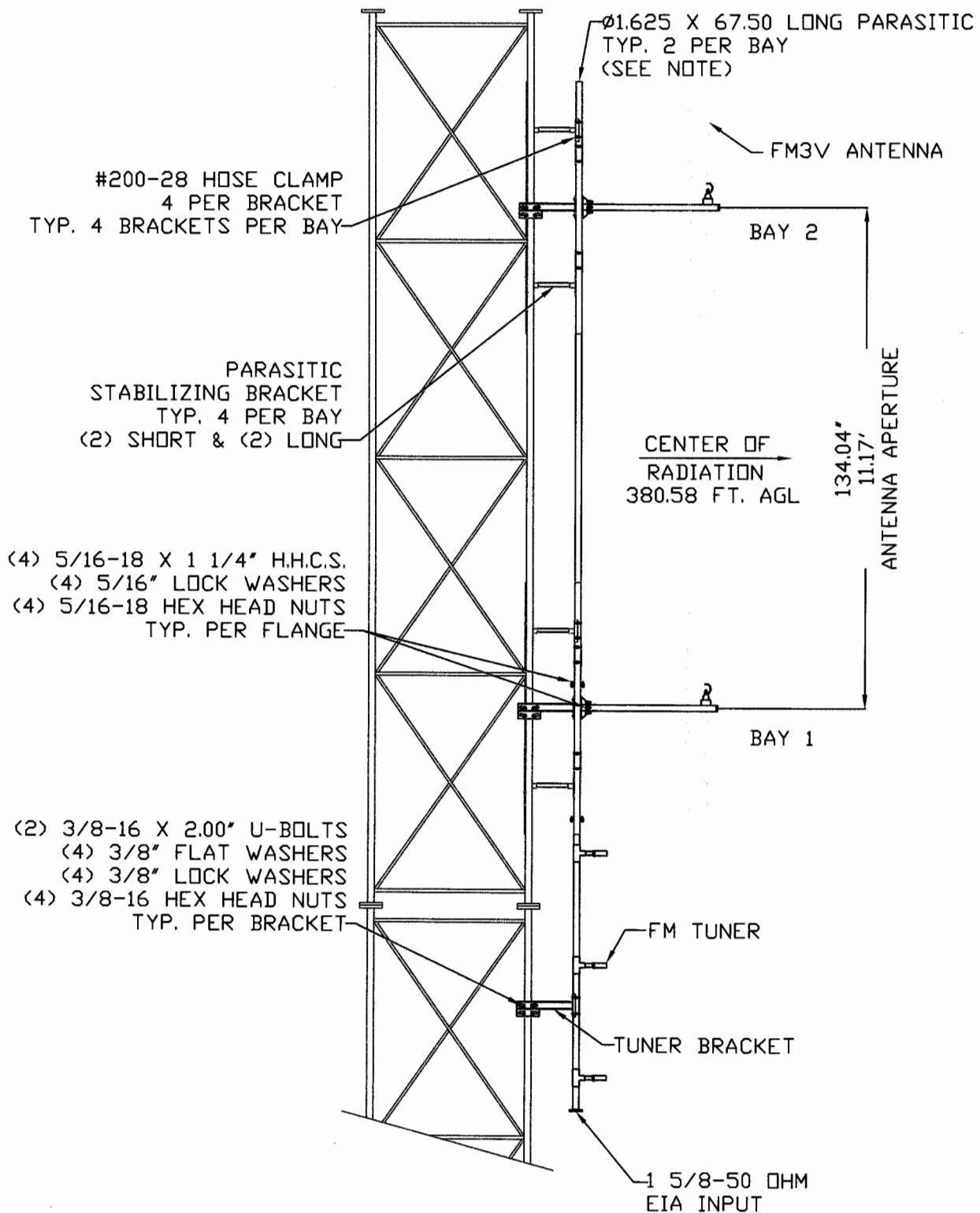
Prepared by:

Jason P Duncan

DRAWING
NUMBER: 0237D02

NOTE:

REFERENCE DWGS. #0237D06, #0237D07, #0237D08
FOR ANTENNA ORIENTATION & PARASITIC PLACEMENT.



SYSTEMS WITH RELIABILITY, INC.
619 INDUSTRIAL PARK ROAD
EBensburg, PENNSYLVANIA 15931

TITLE:
MATERIAL:

FM3V/2-DA, FREQ. 88.1
WBLW, GAYLORD, MI

SIZE/REV/APPR. DATE

C 1 2 3

ENGINEER:

SCALE: NTS

NAME: RAC

DATE: 12/6/04

SHEET 1 OF 1

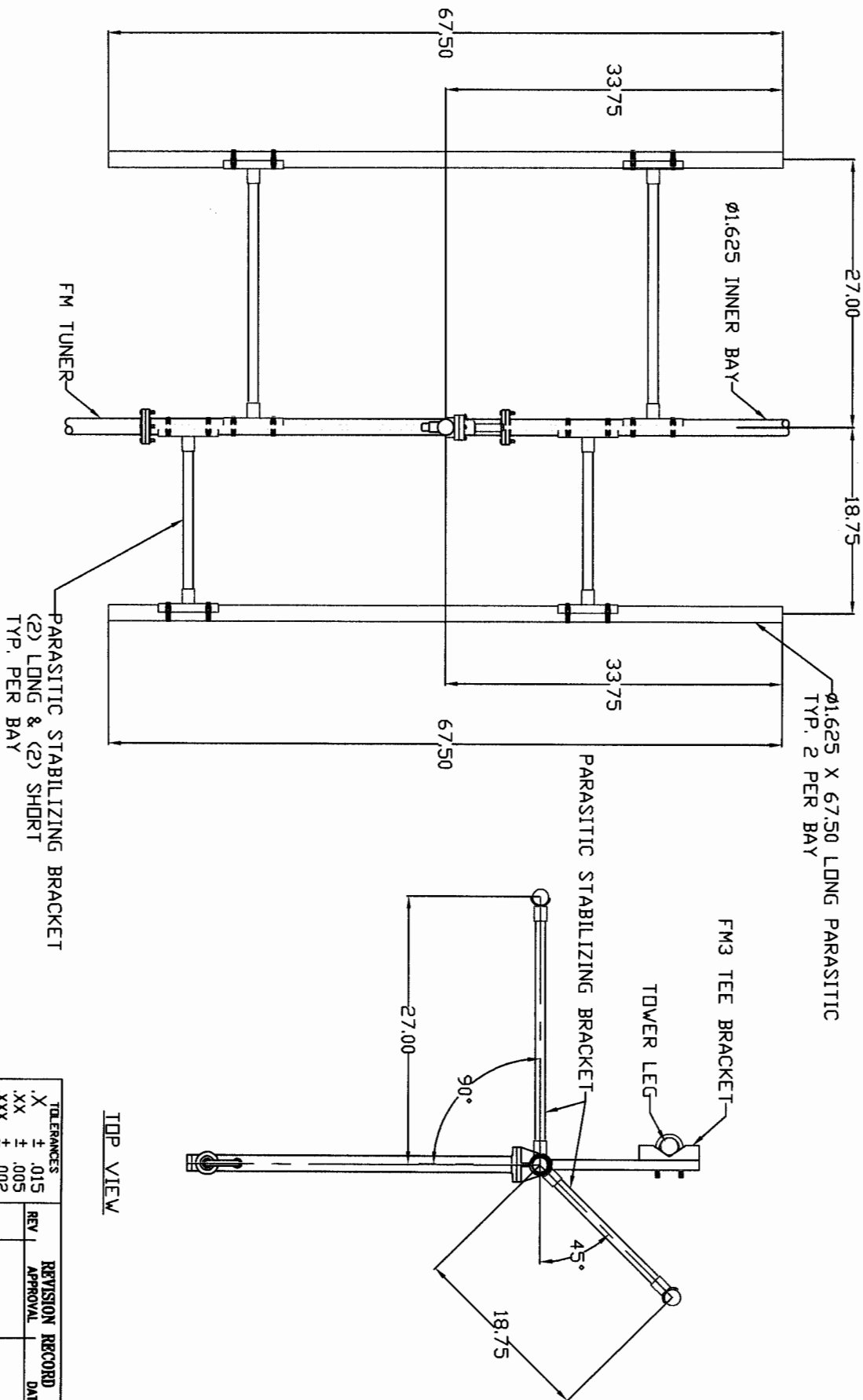
DRAWING
NUMBER: 0237D02

SCALE: NTS	NAME: RAC	DATE: 12/6/04	SHEET 1 OF 1
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NOTE:

REFERENCE DWG. #0237D06 FOR ANTENNA ORIENTATION

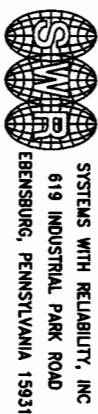
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NUMBER: 0237D07



FRONT VIEW

TOP VIEW

TOLERANCES	REV	REVISION RECORD
.X ± .015		APPROVAL
.XX ± .005		DATE
.XXX ± .002		
X/X ± 1/32		
DEG. ± 1/2		
UNLESS OTHERWISE SPECIFIED		



SYSTEMS WITH RELIABILITY, INC.
619 INDUSTRIAL PARK ROAD
EBENSBURG, PENNSYLVANIA 15931

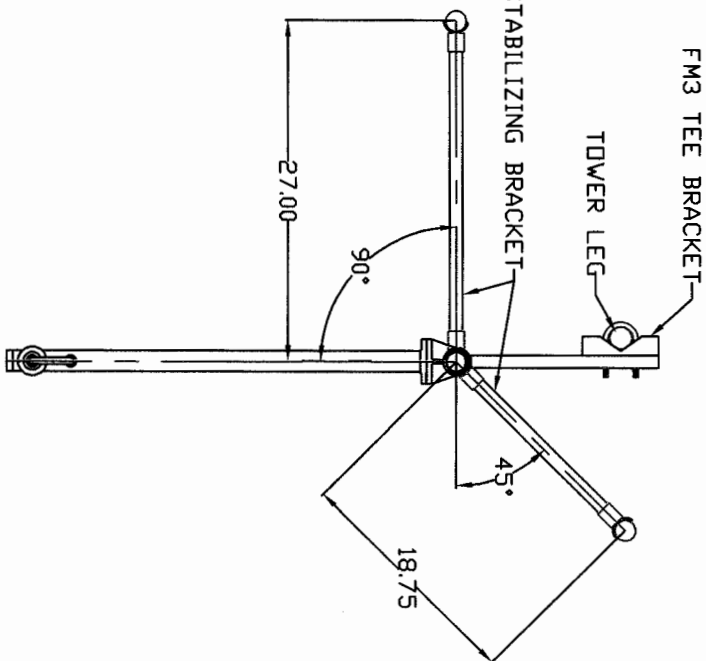
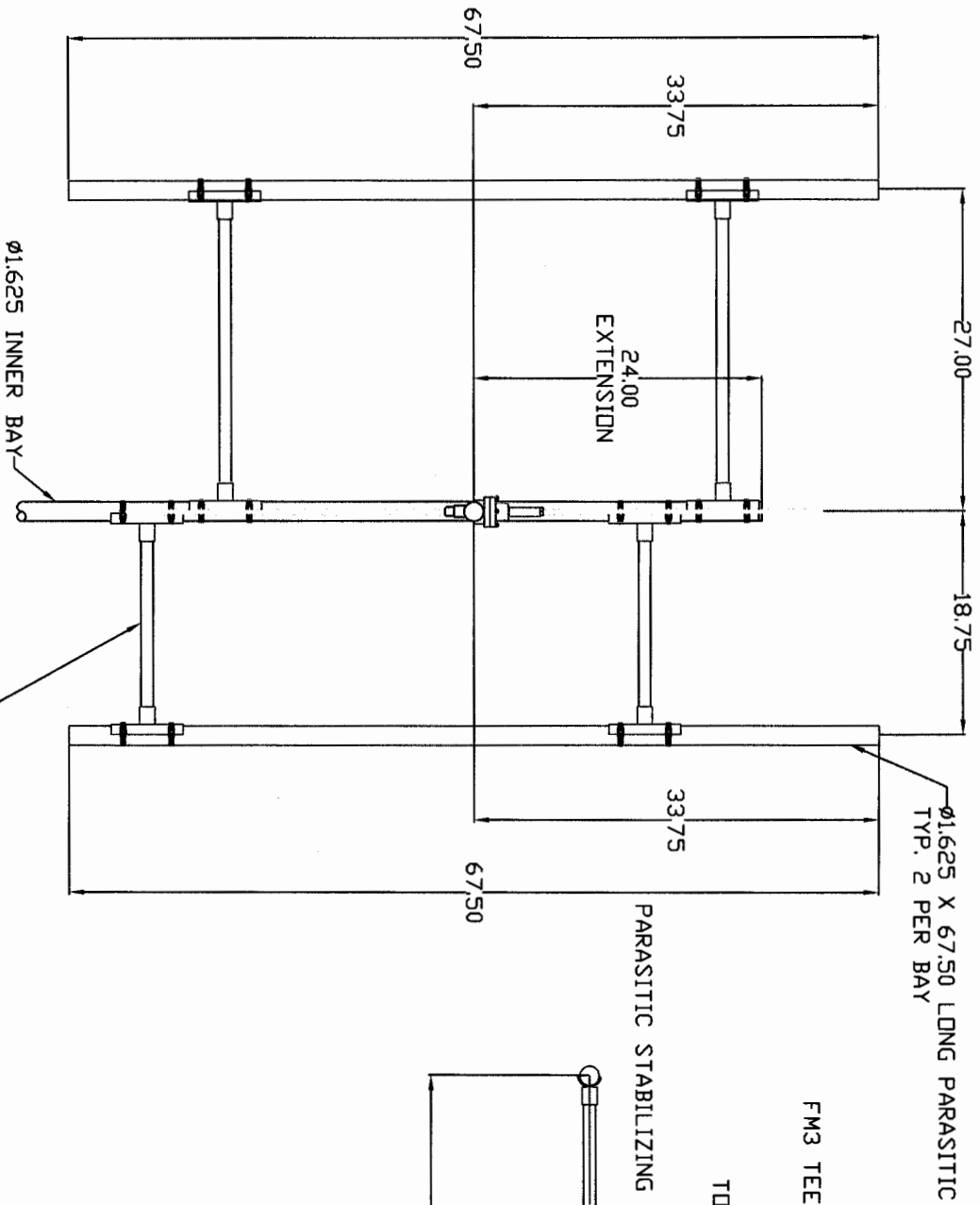
TITLE:		FM3V/2-DA, FREQ. 88.1, WBLW	
MATERIAL:		PARASITIC PLACEMENT BAY 1	
SIZE:		A	
SCALE:	PARTS MADE BY THIS DRAWING	DATE:	12/6/04
NTS	RAC		
DRAWING NUMBER:		0237D07	
SHEET:		1 OF 1	

NOTE:

REFERENCE DWG. #0237D06 FOR ANTENNA ORIENTATION

DRAWING
NUMBER:

0237D08



FRONT VIEW

TOP VIEW

TOLERANCES		REVISION RECORD	
REV	DATE	APPROVAL	DATE
.X	± .015		
.XX	± .005		
.XXX	± .002		
X/X	± 1/32		
DEG.	± 1/2		
UNLESS OTHERWISE SPECIFIED			

TITLE:

FM3V/2-DA, FREQ. 88.1, WBLW
PARASITIC PLACEMENT BAY 2

MATERIAL:



SYSTEMS WITH RELIABILITY, INC
619 INDUSTRIAL PARK ROAD
EBENSBURG, PENNSYLVANIA 15931

SIZE

A

SCALE: PARTS MADE BY THIS DRAWING

NTS

NAME: RAC

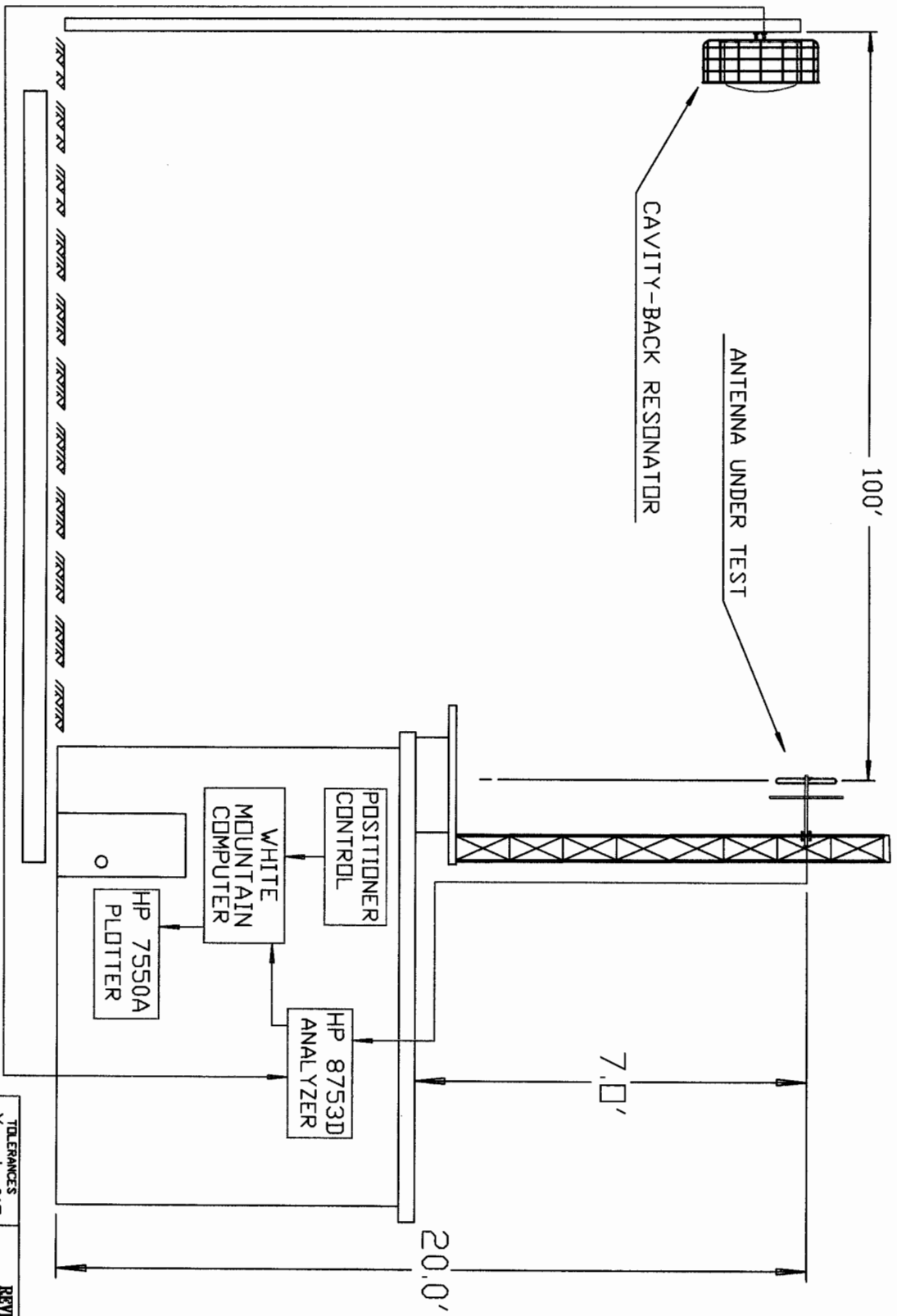
DATE: 12/6/04

SHEET 1 OF 1

DRAWING
NUMBER:

0237D08

NOTE:



DRAWING NUMBER: 2105A10

TOLERANCES			REVISION RECORD	
REV	APPROVAL	DATE		
.X	± .015			
.XX	± .005			
.XXX	± .002			
X/X	± 1/32			
DEG.	± 1/2			
UNLESS OTHERWISE SPECIFIED				

TEST RANGE SCHEMATIC

TITLE:

MATERIAL:



SYSTEMS WITH RELIABILITY, INC
619 INDUSTRIAL PARK ROAD
EBENSBURG, PENNSYLVANIA 15931

SIZE: A

SCALE: NTS
NAME: JRM
DATE: 11/1/98

PARTS MADE BY THIS DRAWING
DRAWING NUMBER: 2105A10
SHEET 1 OF 1

Surveyor's Declaration

I, Ronald C. Brand, subject to the penalties of perjury, do declare the following:

- 1.) I am a licensed surveyor in the state(s) of Michigan,
_____ and _____.
- 2.) I have provided professional services to Grace Baptist Church (permit tee
name), permit tee of WBLW 88.1 FM, Gaylord (city of license),
MI (state), during the installation of the WBLW 88.1-FM directional antenna.
- 3.) I certify that the WBLW 88.1-FM directional antenna has been oriented at the
proper azimuth as authorized in the construction permit (FCC File
Number BPED-20020128ABK).

Dated: 1/17/05 mm/dd/yy



Mitchell and Associates, P.C.
Ronald C. Brand, P.S. 43046

ENGINEER'S DECLARATION

I, Del Reynolds, subject to the penalties of perjury, do declare the following:

- (1) I have been retained as a technical consultant by Grace Baptist Church of Gaylord licensee of WBLW-FM radio.
- (2) I am familiar with the terms and conditions of the WBLW-FM construction permit.
- (3) I certify that I have overseen the installation of the WBLW-FM directional antenna and the installation was completed according to the manufacturers instructions.

(4) Del Reynolds January 3, 2005
Del Reynolds