SYSTEMS WITH RELIABILITY, LLP
BROADCAST ANTENNAS AND TRANSMISSION LINE

PATTERN CERTIFICATION

DIRECTIONAL FM ANTENNA
WBLH
June 2, 2008

Station	:	WBLH
Location	:	Black River, NY
Frequency	:	92.5 MHz
Channel	:	223A
Antenna Model	:	FM3R/3 DAS
Maximum Antenna Gain		
Vertical	:	3.674 / 5.652 dB
Horizontal	:	3.674 / 5.652 dB

ANTENNA DESCRIPTION

A custom designed FM3R/3 DAS antenna was used to produce the required directional azimuth pattern. Each antenna bay consists of a circularly polarized dipole-radiating element with a horizontal and vertical parasitic system. The array is comprised of three bays, that are spaced a full wavelength apart, mounted to a tower pointing **70** degrees true north.

DESCRIPTION OF TEST PROCEDURE

The test antenna consists of a third-scale model antenna and parasitic system. This antenna was mounted to a 10-inch 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. Horizontal and vertical parasitic elements were used to obtain the desired directional pattern.

The source antenna, a vertical/horizontal dipole 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 277.5 MHz. The antenna under test was rotated in a clockwise direction. A gain reference was taken using a dipole tuned to 277.5 MHz. Nowhere, does the received signal exceed a maximum to minimum ratio of 15 dB.

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TEST RESULTS

The attached calculations verify that the **RMS** value of this antenna is ***93.34 %*** of the **RMS** value of the pattern authorized in the related construction permit **BMPH-20060802AXO**. The vertical component **RMS** value is ***0.605***. The horizontal component **RMS** value is **0.670**. The circular polarized component **RMS** value is **0.747**.

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

Measured vertical polarized directivity:	**2.733 / 4.367 dB**
Measured horizontal polarized directivity:	**2.231 / 3.485 dB**
Measured circular polarized pattern directivity:	**1.794 / 2.539 dB**

Gain in each polarization was calculated using the following relation:

GAIN = *Azimuth Directivity x Elevation Directivity x Power Ratio Between Polarizations*

Using this relationship along with ratio measured at our testing facilities:

V-Pol. Gain = (2.733)(.449)(2.991) **= 3.674 / 5.652 dB**
H-Pol. Gain = (2.231)(.551)(2.991) **= 3.674 / 5.652 dB**

INSTALLATION AND MOUNTING

The antenna is to be mounted in accordance with the supplied drawings. The antenna center of radiation is to be ***90 meters*** above ground level. The antenna (parasitic system included) aperture is **21.27 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 ***70 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**
1163D00	ELEVATION
1163D01	ANTENNA ORENTATION WITH PARASITICS
1163D02	PARASITIC MOUNTING BRACKET
2105A10	TEST RANGE SCHEMATIC

The array shall be mounted according to **DWG. 1163D00**. The parasitic assembly is shown in **DWG. 1163D01** and **DWG. 1163D02**. The antenna elements shall be aligned at the same heading as in **DWG. 1163D01**. This will ensure that the antenna is oriented properly at 70 degrees true north.

DOCUMENT EXHIBITS

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

Exhibit 1	Circular Polarized Azimuth Pattern Field Strength Tabulations (Composite)
Exhibit 2	Measured Horizontal Polarized Azimuth Pattern Measured Field Strength Tabulations (Horizontal)
Exhibit 3	Measured Vertical Polarized Azimuth Pattern Measured Field Strength Tabulations (Vertical)
Exhibit 4	Elevation Pattern Elevation Tabulations
Exhibit 5	Antenna Data Sheet
Exhibit 6	RMS Calculations
Exhibit 7	Drawings

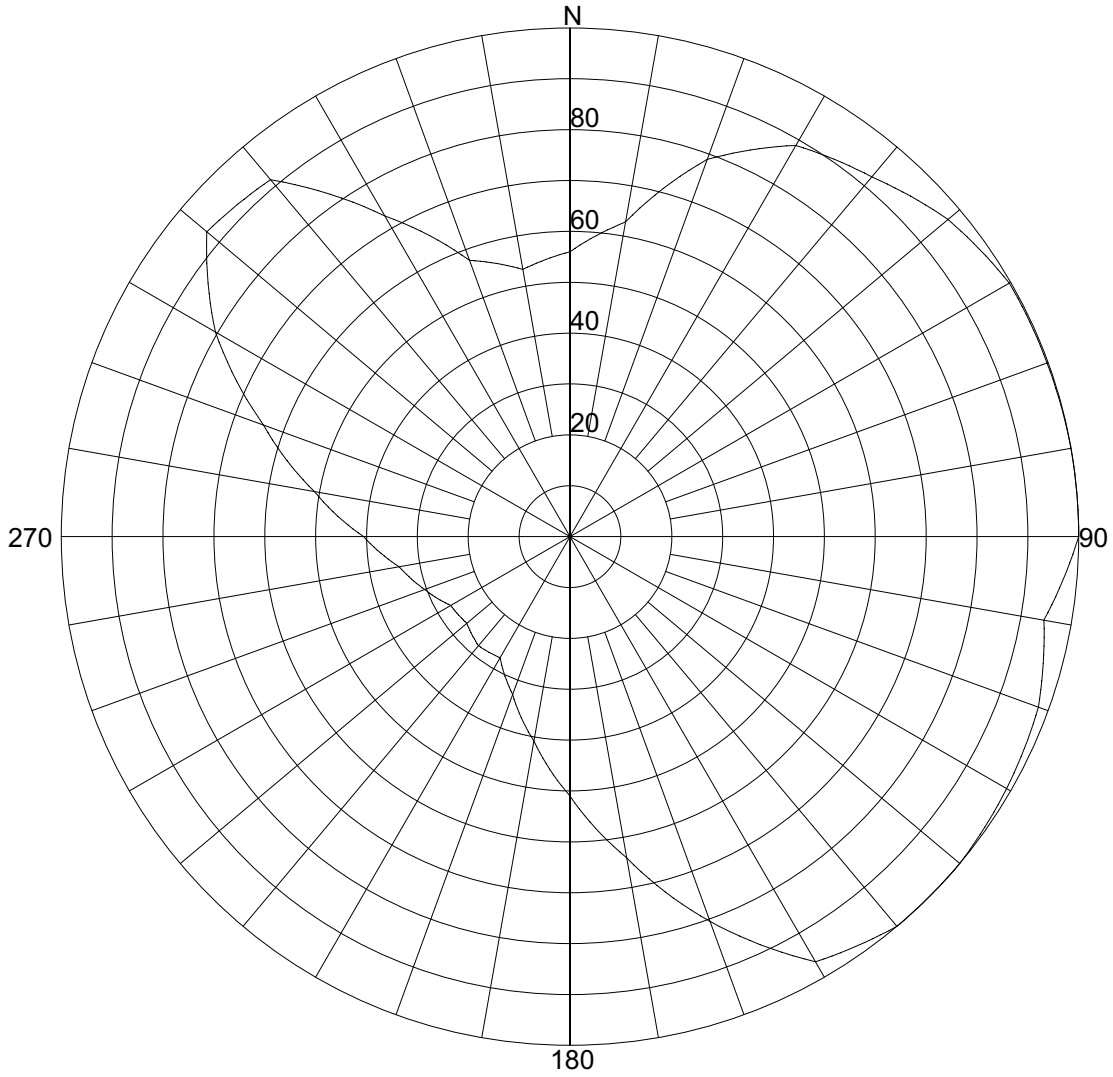
TEST EQUIPMENT

Network Analyzer	:	Hewlett Packard Model # 8753C Serial Number : 08753 – 69138 Calibrated 4/26/08, SWR, Inc.
Computer	:	Pentium 3, 450 MHz, Range Program
Printer	:	Hewlett-Packard Laser Jet 6L
Positioner	:	Orbit Positioner Calibrated 1/10/08, SWR, Inc.

Prepared by:

Mark A. Gergely
Electrical Engineer
Systems With Reliability LLP

Exhibit 1:



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability INC.

CLIENT: *WBLH-FM*

Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

FREQUENCY: 92.5 MHz

PATTERN POL.: Circular

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 1.79423 / 2.54dB

PATTERN RMS: *0.747*

Micro-Tek Eng. Ver. 2.5.1

Exhibit 1:

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relatve Field(dB)
0	.5600 (-5.02)	180	.5100 (-5.83)
5	.5940 (-4.51)	185	.4590 (-6.74)
10	.6280 (-4.03)	190	.4080 (-7.77)
15	.7085 (-2.98)	195	.3690 (-8.64)
20	.7890 (-2.05)	200	.3300 (-9.6)
25	.8385 (-1.52)	205	.3025 (-10.36)
30	.8880 (-1.02)	210	.2750 (-11.18)
35	.9055 (-0.85)	215	.2775 (-11.1)
40	.9230 (-0.69)	220	.2800 (-11.03)
45	.9465 (-0.47)	225	.2725 (-11.26)
50	.9700 (-0.26)	230	.2650 (-11.5)
55	.9835 (-0.14)	235	.2679 (-11.41)
60	.9970 (-0.02)	240	.2708 (-11.32)
65	.9975 (-0.01)	245	.2874 (-10.8)
70	.9980 (-0.01)	250	.3040 (-10.31)
75	.9990 (0)	255	.3226 (-9.8)
80	1.0000 (0.01)	260	.3411 (-9.32)
85	1.0000 (0.01)	265	.3734 (-8.53)
90	1.0000 (0.01)	270	.4057 (-7.81)
95	.9730 (-0.23)	275	.4579 (-6.77)
100	.9460 (-0.47)	280	.5100 (-5.83)
105	.9630 (-0.32)	285	.5755 (-4.78)
110	.9800 (-0.17)	290	.6410 (-3.85)
115	.9855 (-0.12)	295	.7230 (-2.81)
120	.9910 (-0.07)	300	.8050 (-1.87)
125	.9955 (-0.03)	305	.8685 (-1.21)
130	1.0000 (0.01)	310	.9320 (-0.6)
135	1.0000 (0.01)	315	.9239 (-0.68)
140	1.0000 (0.01)	320	.9158 (-0.75)
145	.9825 (-0.14)	325	.8217 (-1.7)
150	.9650 (-0.3)	330	.7275 (-2.75)
155	.8850 (-1.05)	335	.6528 (-3.69)
160	.8050 (-1.87)	340	.5781 (-4.74)
165	.7230 (-2.81)	345	.5558 (-5.09)
170	.6410 (-3.85)	350	.5335 (-5.44)
175	.5755 (-4.78)	355	.5468 (-5.23)

Systems With Reliability INC.

CLIENT: *WBLH-FM*

Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

FREQUENCY: 92.5 MHz

PATTERN POL.: Circular

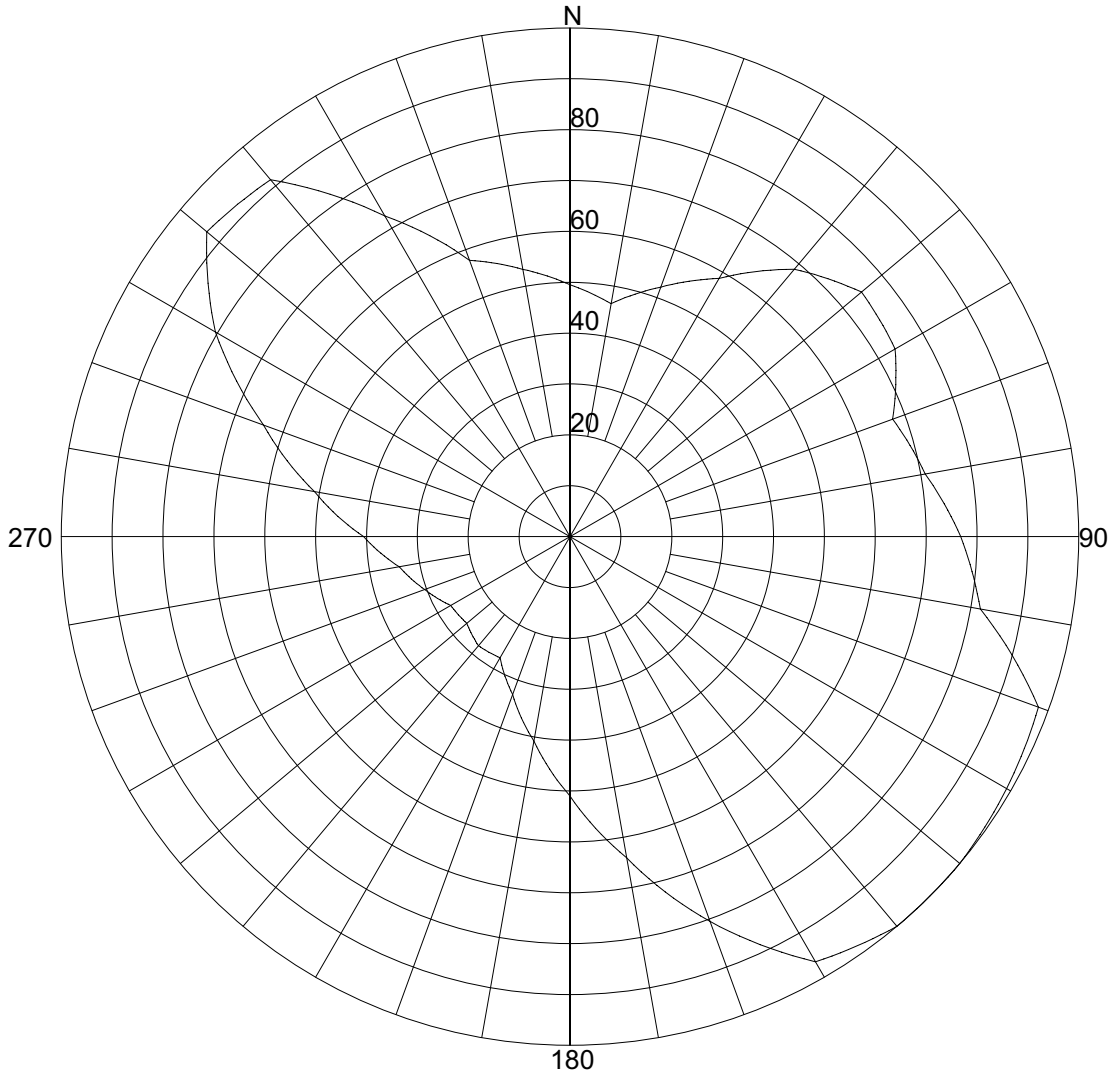
CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 1.79423 / 2.54dB

PATTERN RMS: *0.747*

Micro-Tek Eng. Ver. 2.5.1

Exhibit 2:



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability INC.

CLIENT: *WBLH-FM*

Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

FREQUENCY: 92.5 MHz

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 2.23098 / 3.48dB

PATTERN RMS: *0.670*

Micro-Tek Eng. Ver. 2.5.1

Exhibit 2:

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relatve Field(dB)
0	.4950 (-6.09)	180	.5100 (-5.83)
5	.4800 (-6.36)	185	.4590 (-6.74)
10	.4650 (-6.63)	190	.4080 (-7.77)
15	.4935 (-6.12)	195	.3690 (-8.64)
20	.5220 (-5.63)	200	.3300 (-9.6)
25	.5540 (-5.11)	205	.3025 (-10.36)
30	.5860 (-4.63)	210	.2750 (-11.18)
35	.6360 (-3.92)	215	.2775 (-11.1)
40	.6860 (-3.26)	220	.2800 (-11.03)
45	.7170 (-2.88)	225	.2725 (-11.26)
50	.7480 (-2.51)	230	.2650 (-11.5)
55	.7430 (-2.57)	235	.2679 (-11.41)
60	.7380 (-2.63)	240	.2708 (-11.32)
65	.7066 (-3)	245	.2874 (-10.8)
70	.6751 (-3.4)	250	.3040 (-10.31)
75	.6921 (-3.18)	255	.3225 (-9.8)
80	.7090 (-2.97)	260	.3411 (-9.32)
85	.7385 (-2.62)	265	.3734 (-8.53)
90	.7680 (-2.28)	270	.4057 (-7.82)
95	.7935 (-2)	275	.4578 (-6.77)
100	.8190 (-1.72)	280	.5100 (-5.83)
105	.8995 (-0.91)	285	.5755 (-4.78)
110	.9800 (-0.17)	290	.6410 (-3.85)
115	.9855 (-0.12)	295	.7230 (-2.81)
120	.9910 (-0.07)	300	.8050 (-1.87)
125	.9955 (-0.03)	305	.8685 (-1.21)
130	1.0000 (0.01)	310	.9320 (-0.6)
135	1.0000 (0.01)	315	.9239 (-0.68)
140	1.0000 (0.01)	320	.9158 (-0.75)
145	.9825 (-0.14)	325	.8216 (-1.7)
150	.9650 (-0.3)	330	.7275 (-2.75)
155	.8850 (-1.05)	335	.6528 (-3.69)
160	.8050 (-1.87)	340	.5781 (-4.74)
165	.7230 (-2.81)	345	.5558 (-5.09)
170	.6410 (-3.85)	350	.5335 (-5.44)
175	.5755 (-4.78)	355	.5143 (-5.76)

Systems With Reliability INC.

CLIENT: *WBLH-FM* Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

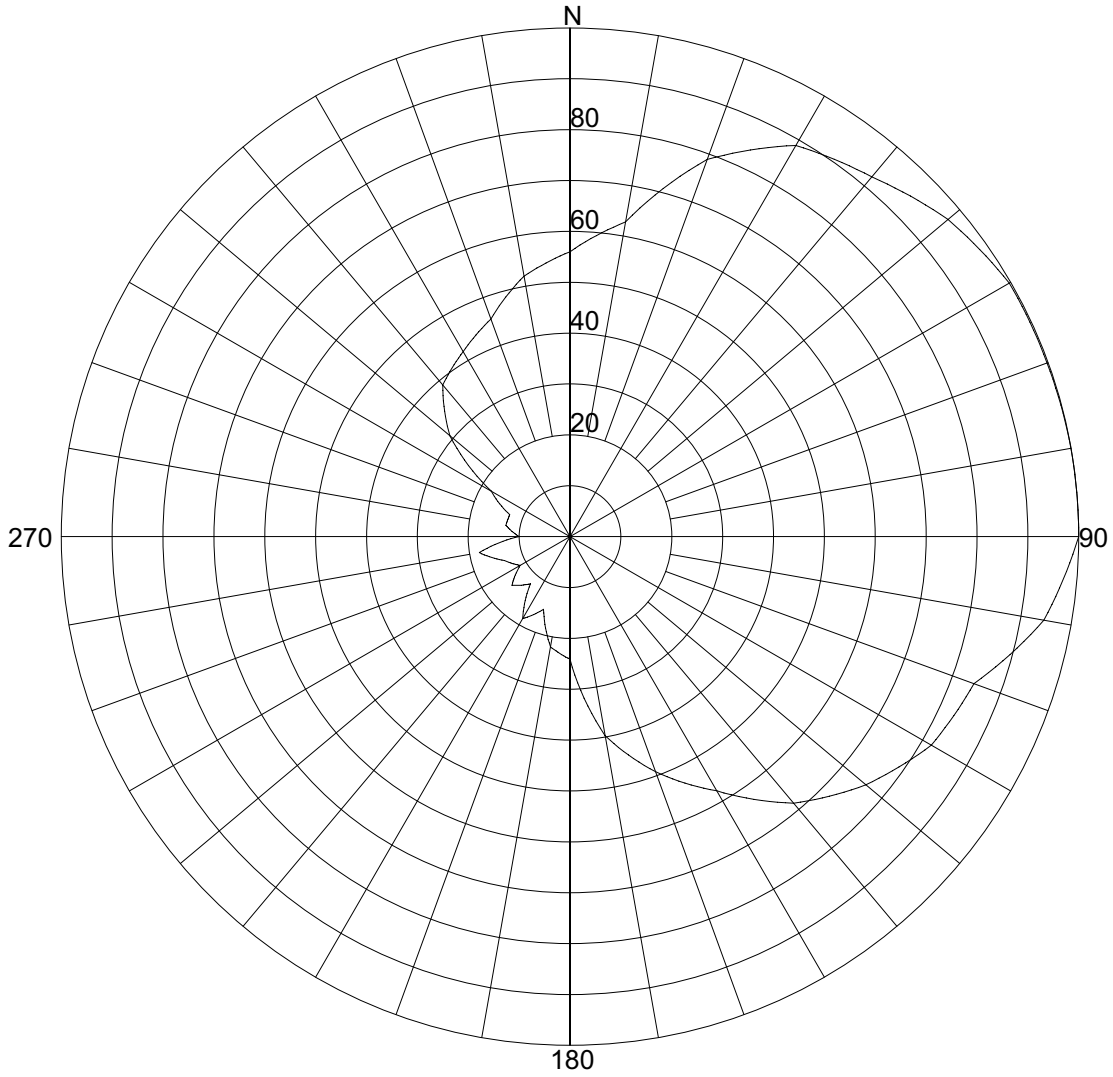
FREQUENCY: 92.5 MHz

PATTERN POL.: Horizontal CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 2.23098 / 3.48dB PATTERN RMS: *0.670*

Micro-Tek Eng. Ver. 2.5.1

Exhibit 3:



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability INC.

CLIENT: *WBLH-FM*

Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

FREQUENCY: 92.5 MHz

PATTERN POL.: Vertical

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 2.73341 / 4.37dB

PATTERN RMS: *0.605*

Micro-Tek Eng. Ver. 2.5.1

Exhibit 3:

Relative Field Tabulation(Azimuth)

Azimuth Heading	Relative Field(dB)	Azimuth Heading	Relatve Field(dB)
0	.5600 (-5.02)	180	.2410 (-12.32)
5	.5940 (-4.51)	185	.2305 (-12.71)
10	.6280 (-4.03)	190	.2200 (-13.11)
15	.7085 (-2.98)	195	.1860 (-14.56)
20	.7890 (-2.05)	200	.1520 (-16.31)
25	.8385 (-1.52)	205	.1690 (-15.39)
30	.8880 (-1.02)	210	.1860 (-14.56)
35	.9055 (-0.85)	215	.1535 (-16.22)
40	.9230 (-0.69)	220	.1210 (-18.27)
45	.9465 (-0.47)	225	.1350 (-17.33)
50	.9700 (-0.26)	230	.1490 (-16.48)
55	.9835 (-0.14)	235	.1310 (-17.59)
60	.9970 (-0.02)	240	.1130 (-18.86)
65	.9975 (-0.01)	245	.1250 (-17.99)
70	.9980 (-0.01)	250	.1370 (-17.2)
75	.9990 (0)	255	.1590 (-15.92)
80	1.0000 (0.01)	260	.1810 (-14.8)
85	1.0000 (0.01)	265	.1405 (-16.98)
90	1.0000 (0.01)	270	.1000 (-19.91)
95	.9730 (-0.23)	275	.1140 (-18.79)
100	.9460 (-0.47)	280	.1280 (-17.79)
105	.8955 (-0.95)	285	.1270 (-17.86)
110	.8450 (-1.45)	290	.1260 (-17.92)
115	.8325 (-1.58)	295	.1525 (-16.28)
120	.8200 (-1.71)	300	.1790 (-14.89)
125	.7895 (-2.04)	305	.2435 (-12.23)
130	.7590 (-2.38)	310	.3080 (-10.2)
135	.7215 (-2.82)	315	.3485 (-9.13)
140	.6840 (-3.29)	320	.3890 (-8.18)
145	.6305 (-3.99)	325	.4045 (-7.84)
150	.5770 (-4.76)	330	.4200 (-7.51)
155	.5345 (-5.42)	335	.4375 (-7.16)
160	.4920 (-6.14)	340	.4550 (-6.82)
165	.4445 (-7.02)	345	.4875 (-6.22)
170	.3970 (-8)	350	.5200 (-5.66)
175	.3190 (-9.9)	355	.5400 (-5.34)

Systems With Reliability INC.

CLIENT: *WBLH-FM*

Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

FREQUENCY: 92.5 MHz

PATTERN POL.: Vertical

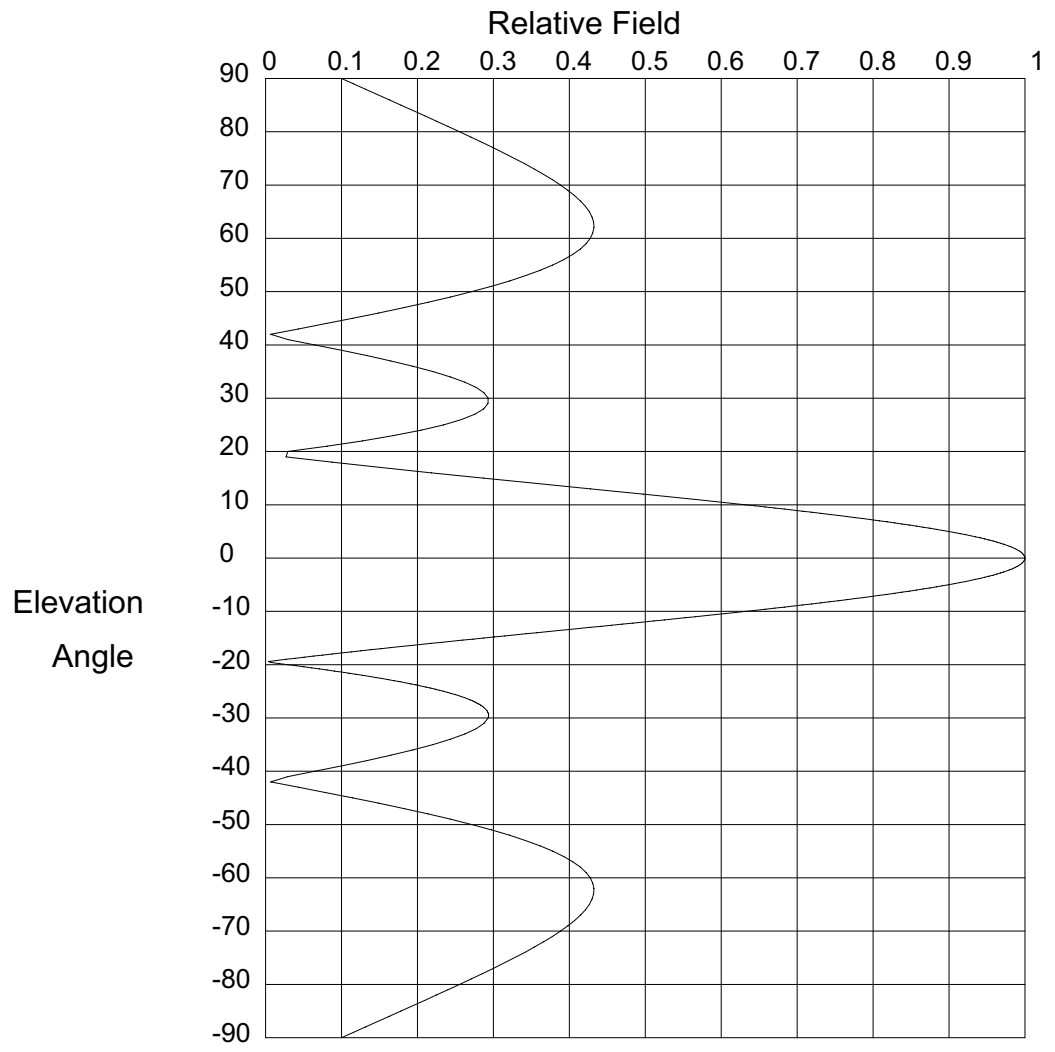
CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 2.73341 / 4.37dB

PATTERN RMS: *0.605*

Micro-Tek Eng. Ver. 2.5.1

Exhibit 4:



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability INC.

CLIENT: *WBLH-FM*

Date: 6/2/2008

ANTENNA TYPE: FM3R/3 DAS

FREQUENCY: 92.5 MHz

PATTERN POL.: Circular

DIRECTIVITY(Peak): 2.991/4.758 dBd

Beam Tilt (Deg.) : *0*

DIRECTIVITY(Horiz): 2.991/4.758 dBd

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

Micro-Tek Eng. Ver. 2.5.1

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
90.0	.10 (-20)	52.0	.321 (-9.865)	14.0	.357 (-8.938)
89.0	.116 (-18.733)	51.0	.298 (-10.529)	13.0	.428 (-7.377)
88.0	.131 (-17.628)	50.0	.272 (-11.318)	12.0	.498 (-6.062)
87.0	.147 (-16.648)	49.0	.244 (-12.26)	11.0	.566 (-4.942)
86.0	.163 (-15.769)	48.0	.214 (-13.395)	10.0	.632 (-3.982)
85.0	.178 (-14.972)	47.0	.182 (-14.784)	9.8	.645 (-3.807)
84.0	.194 (-14.244)	46.0	.149 (-16.526)	9.6	.658 (-3.637)
83.0	.21 (-13.575)	45.0	.115 (-18.805)	9.4	.671 (-3.472)
82.0	.225 (-12.957)	44.0	.079 (-22.01)	9.2	.683 (-3.312)
81.0	.24 (-12.385)	43.0	.043 (-27.275)	9.0	.695 (-3.157)
80.0	.256 (-11.852)	42.0	.007 (-43.22)	8.8	.707 (-3.006)
79.0	.271 (-11.356)	41.0	.029 (-30.637)	8.6	.719 (-2.86)
78.0	.285 (-10.893)	40.0	.065 (-23.719)	8.4	.731 (-2.719)
77.0	.30 (-10.462)	39.0	.10 (-19.999)	8.2	.743 (-2.582)
76.0	.314 (-10.06)	38.0	.133 (-17.494)	8.0	.754 (-2.449)
75.0	.328 (-9.686)	37.0	.165 (-15.651)	7.8	.766 (-2.321)
74.0	.341 (-9.339)	36.0	.194 (-14.237)	7.6	.777 (-2.196)
73.0	.354 (-9.018)	35.0	.22 (-13.132)	7.4	.787 (-2.076)
72.0	.366 (-8.724)	34.0	.243 (-12.271)	7.2	.798 (-1.959)
71.0	.378 (-8.455)	33.0	.263 (-11.612)	7.0	.808 (-1.847)
70.0	.389 (-8.211)	32.0	.278 (-11.131)	6.8	.819 (-1.738)
69.0	.398 (-7.995)	31.0	.288 (-10.815)	6.6	.829 (-1.633)
68.0	.407 (-7.804)	30.0	.293 (-10.658)	6.4	.838 (-1.532)
67.0	.415 (-7.642)	29.0	.293 (-10.662)	6.2	.848 (-1.434)
66.0	.421 (-7.507)	28.0	.287 (-10.834)	6.0	.857 (-1.34)
65.0	.426 (-7.403)	27.0	.276 (-11.192)	5.8	.866 (-1.249)
64.0	.43 (-7.329)	26.0	.258 (-11.764)	5.6	.875 (-1.162)
63.0	.432 (-7.287)	25.0	.234 (-12.598)	5.4	.883 (-1.078)
62.0	.432 (-7.281)	24.0	.205 (-13.772)	5.2	.891 (-0.998)
61.0	.431 (-7.31)	23.0	.169 (-15.43)	5.0	.899 (-0.921)
60.0	.428 (-7.38)	22.0	.128 (-17.86)	4.8	.907 (-0.847)
59.0	.422 (-7.491)	21.0	.081 (-21.813)	4.6	.914 (-0.777)
58.0	.415 (-7.648)	20.0	.029 (-30.657)	4.4	.922 (-0.709)
57.0	.405 (-7.856)	19.0	.027 (-31.323)	4.2	.928 (-0.645)
56.0	.393 (-8.119)	18.0	.088 (-21.139)	4.0	.935 (-0.584)
55.0	.378 (-8.442)	17.0	.152 (-16.379)	3.8	.941 (-0.527)
54.0	.362 (-8.835)	16.0	.219 (-13.21)	3.6	.947 (-0.472)
53.0	.343 (-9.305)	15.0	.287 (-10.833)	3.4	.953 (-0.421)

Systems With Reliability INC.

CLIENT: *WBLH-FM*
Date: 6/2/2008
ANTENNA TYPE: FM3R/3 DAS
FREQUENCY: 92.5 MHz
PATTERN POL.: Circular
DIRECTIVITY(Peak): 2.991/4.758 dBd
Beam Tilt (Deg.) : *0*
DIRECTIVITY(Horiz): 2.991/4.758 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	.958 (-0.372)	-4.4	.922 (-0.709)	-12.0	.498 (-6.062)
3.0	.963 (-0.327)	-4.6	.914 (-0.777)	-12.2	.484 (-6.308)
2.8	.968 (-0.284)	-4.8	.907 (-0.847)	-12.4	.47 (-6.562)
2.6	.972 (-0.245)	-5.0	.899 (-0.921)	-12.6	.456 (-6.825)
2.4	.976 (-0.208)	-5.2	.891 (-0.998)	-12.8	.442 (-7.096)
2.2	.98 (-0.175)	-5.4	.883 (-1.078)	-13.0	.428 (-7.377)
2.0	.983 (-0.145)	-5.6	.875 (-1.162)	-13.2	.414 (-7.667)
1.8	.987 (-0.117)	-5.8	.866 (-1.249)	-13.4	.40 (-7.968)
1.6	.989 (-0.092)	-6.0	.857 (-1.34)	-13.6	.385 (-8.28)
1.4	.992 (-0.071)	-6.2	.848 (-1.434)	-13.8	.371 (-8.603)
1.2	.994 (-0.052)	-6.4	.838 (-1.532)	-14.0	.357 (-8.938)
1.0	.996 (-0.036)	-6.6	.829 (-1.633)	-14.2	.343 (-9.287)
.8	.997 (-0.023)	-6.8	.819 (-1.738)	-14.4	.329 (-9.65)
.6	.999 (-0.013)	-7.0	.808 (-1.847)	-14.6	.315 (-10.027)
.4	.999 (-0.006)	-7.2	.798 (-1.959)	-14.8	.301 (-10.421)
.2	1.00 (-0.001)	-7.4	.787 (-2.076)	-15.0	.287 (-10.833)
.0	1.00 (0)	-7.6	.777 (-2.196)	-15.2	.273 (-11.263)
-.2	1.00 (-0.001)	-7.8	.766 (-2.321)	-15.4	.26 (-11.714)
-.4	.999 (-0.006)	-8.0	.754 (-2.449)	-15.6	.246 (-12.187)
-.6	.999 (-0.013)	-8.2	.743 (-2.582)	-15.8	.232 (-12.685)
-.8	.997 (-0.023)	-8.4	.731 (-2.719)	-16.0	.219 (-13.21)
-1.0	.996 (-0.036)	-8.6	.719 (-2.86)	-16.2	.205 (-13.766)
-1.2	.994 (-0.052)	-8.8	.707 (-3.006)	-16.4	.192 (-14.356)
-1.4	.992 (-0.071)	-9.0	.695 (-3.157)	-16.6	.178 (-14.984)
-1.6	.989 (-0.092)	-9.2	.683 (-3.312)	-16.8	.165 (-15.656)
-1.8	.987 (-0.117)	-9.4	.671 (-3.472)	-17.0	.152 (-16.379)
-2.0	.983 (-0.145)	-9.6	.658 (-3.637)	-17.2	.139 (-17.16)
-2.2	.98 (-0.175)	-9.8	.645 (-3.807)	-17.4	.126 (-18.01)
-2.4	.976 (-0.208)	-10.0	.632 (-3.982)	-17.6	.113 (-18.943)
-2.6	.972 (-0.245)	-10.2	.619 (-4.163)	-17.8	.10 (-19.978)
-2.8	.968 (-0.284)	-10.4	.606 (-4.349)	-18.0	.088 (-21.139)
-3.0	.963 (-0.327)	-10.6	.593 (-4.541)	-18.2	.075 (-22.464)
-3.2	.958 (-0.372)	-10.8	.58 (-4.739)	-18.4	.063 (-24.008)
-3.4	.953 (-0.421)	-11.0	.566 (-4.942)	-18.6	.051 (-25.862)
-3.6	.947 (-0.472)	-11.2	.553 (-5.153)	-18.8	.039 (-28.188)
-3.8	.941 (-0.527)	-11.4	.539 (-5.37)	-19.0	.027 (-31.323)
-4.0	.935 (-0.584)	-11.6	.525 (-5.593)	-19.2	.016 (-36.185)
-4.2	.928 (-0.645)	-11.8	.511 (-5.824)	-19.4	.004 (-47.865)

Systems With Reliability INC.

CLIENT: *WBLH-FM*
Date: 6/2/2008
ANTENNA TYPE: FM3R/3 DAS
FREQUENCY: 92.5 MHz
PATTERN POL.: Circular
DIRECTIVITY(Peak): 2.991/4.758 dBd
Beam Tilt (Deg.) : *0*
DIRECTIVITY(Horiz): 2.991/4.758 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	.007 (-42.787)	-27.2	.278 (-11.104)	-54.0	.362 (-8.835)
-19.8	.018 (-34.715)	-27.4	.281 (-11.025)	-55.0	.378 (-8.442)
-20.0	.029 (-30.657)	-27.6	.283 (-10.953)	-56.0	.393 (-8.119)
-20.2	.04 (-27.943)	-27.8	.285 (-10.89)	-57.0	.405 (-7.856)
-20.4	.051 (-25.91)	-28.0	.287 (-10.834)	-58.0	.415 (-7.648)
-20.6	.061 (-24.292)	-28.2	.289 (-10.785)	-59.0	.422 (-7.491)
-20.8	.071 (-22.952)	-28.4	.29 (-10.744)	-60.0	.428 (-7.38)
-21.0	.081 (-21.813)	-28.6	.291 (-10.71)	-61.0	.431 (-7.31)
-21.2	.091 (-20.825)	-28.8	.292 (-10.682)	-62.0	.432 (-7.281)
-21.4	.101 (-19.956)	-29.0	.293 (-10.662)	-63.0	.432 (-7.287)
-21.6	.11 (-19.183)	-29.2	.293 (-10.648)	-64.0	.43 (-7.329)
-21.8	.119 (-18.489)	-29.4	.294 (-10.641)	-65.0	.426 (-7.403)
-22.0	.128 (-17.86)	-29.6	.294 (-10.64)	-66.0	.421 (-7.507)
-22.2	.137 (-17.288)	-29.8	.294 (-10.646)	-67.0	.415 (-7.642)
-22.4	.145 (-16.765)	-30.0	.293 (-10.658)	-68.0	.407 (-7.804)
-22.6	.153 (-16.284)	-31.0	.288 (-10.815)	-69.0	.398 (-7.995)
-22.8	.161 (-15.84)	-32.0	.278 (-11.131)	-70.0	.389 (-8.211)
-23.0	.169 (-15.43)	-33.0	.263 (-11.612)	-71.0	.378 (-8.455)
-23.2	.177 (-15.049)	-34.0	.243 (-12.271)	-72.0	.366 (-8.724)
-23.4	.184 (-14.695)	-35.0	.22 (-13.132)	-73.0	.354 (-9.018)
-23.6	.191 (-14.366)	-36.0	.194 (-14.237)	-74.0	.341 (-9.339)
-23.8	.198 (-14.059)	-37.0	.165 (-15.651)	-75.0	.328 (-9.686)
-24.0	.205 (-13.772)	-38.0	.133 (-17.494)	-76.0	.314 (-10.06)
-24.2	.211 (-13.505)	-39.0	.10 (-19.999)	-77.0	.30 (-10.462)
-24.4	.217 (-13.254)	-40.0	.065 (-23.719)	-78.0	.285 (-10.893)
-24.6	.223 (-13.021)	-41.0	.029 (-30.637)	-79.0	.271 (-11.356)
-24.8	.229 (-12.802)	-42.0	.007 (-43.22)	-80.0	.256 (-11.852)
-25.0	.234 (-12.598)	-43.0	.043 (-27.275)	-81.0	.24 (-12.385)
-25.2	.24 (-12.407)	-44.0	.079 (-22.01)	-82.0	.225 (-12.957)
-25.4	.245 (-12.229)	-45.0	.115 (-18.805)	-83.0	.21 (-13.575)
-25.6	.249 (-12.063)	-46.0	.149 (-16.526)	-84.0	.194 (-14.244)
-25.8	.254 (-11.908)	-47.0	.182 (-14.784)	-85.0	.178 (-14.972)
-26.0	.258 (-11.764)	-48.0	.214 (-13.395)	-86.0	.163 (-15.769)
-26.2	.262 (-11.63)	-49.0	.244 (-12.26)	-87.0	.147 (-16.648)
-26.4	.266 (-11.507)	-50.0	.272 (-11.318)	-88.0	.131 (-17.628)
-26.6	.269 (-11.393)	-51.0	.298 (-10.529)	-89.0	.116 (-18.733)
-26.8	.273 (-11.288)	-52.0	.321 (-9.865)	-90.0	.10 (-20)
-27.0	.276 (-11.192)	-53.0	.343 (-9.305)	90.0	.00 (-50)

Systems With Reliability INC.

CLIENT: *WBLH-FM*
Date: 6/2/2008
ANTENNA TYPE: FM3R/3 DAS
FREQUENCY: 92.5 MHz
PATTERN POL.: Circular
DIRECTIVITY(Peak): 2.991/4.758 dBd
Beam Tilt (Deg.) : *0*
DIRECTIVITY(Horiz): 2.991/4.758 dBd
Null Fill(s)(%) : *0, 0, 0*

Exhibit 5:

SYSTEMS WITH RELIABILITY, LLP

BROADCAST ANTENNAS AND TRANSMISSION LINE

SYSTEM DATA SHEET

Customer	WBLH
Contact	Michael Stapleford
Location	Black River, NY
Antenna Model	FM3R/3 DAS
Channel / Frequenc	92.5 MHz

ELECTRICAL SPECIFICATIONS

Antenna Specifications:

		H. Pol.	dB		V. Pol.	dB
License ERP (KW)		6	7.782		6	7.782
FCC Limit Pattern Directivity		1.565	1.946		1.565	1.946
Elevation Directivity		2.991	4.758		2.991	4.758
Azimuth Directivity		2.231	3.485		2.733	4.367
Composit Pattern		1.794	2.539		1.794	2.539
Polarization Ratio		0.551	-2.592		0.449	-3.474
RMS Comp./RMS Limit	0.934					
Antenna Efficiency %		100	0.000		100	0
Power Ratio (Pol. Ratio X Efficiency)		0.551	0.000		0.449	0.000
Antenna Gain		3.674	5.652		3.674	5.652
Antenna Input Power (KW)		1.633	2.130	(dBK)		

Feed Line Specifications:

Line Type	1 5/8"	50 OHM	
Attinuation Per 100 ft (dB)	0.198		
Line Length (ft)	320		
Total Line Attinuation (dB)	-0.634		
Line Efficiency	0.864		
Power Input to the Line (KW)	1.89	2.764	(dBK)

MECHANICAL SPECIFICATIONS

No. Of Bays	3			
Antenna Aperture	21.27	**ft.**	6.48	**meter**
Center of Radiation AGL	295.29	**ft.**	90.03	**meter**
Antenna Weight with Radomes	475.00	**lbs.**	215.91	**kg**
Windload (50/33) with Radomes	1170.00	**lbs.**	32.50	**ft^2**

Prepared by: David K Edmiston Jr.

David K. Edmiston Jr.
SWR,LLP

Exhibit 6:

SYSTEMS WITH RELIABILITY, INC.

Broadcast Antennas and Transmission Systems

WBLH Antenna RMS Comparison

PROPOSED ANTENNA	
Azimuth Heading	Relative Field
0	0.562
10	0.631
20	0.794
30	1.000
40	1.000
50	1.000
60	1.000
70	1.000
80	1.000
90	1.000
100	1.000
110	1.000
120	1.000
130	1.000
140	1.000
150	1.000
160	1.000
170	1.000
180	0.804
190	0.638
200	0.507
210	0.403
220	0.320
230	0.269
240	0.285
250	0.320
260	0.359

DESIGNED ANTENNA	
Azimuth Heading	Relative Field
0	0.560
10	0.628
20	0.789
30	0.880
40	0.923
50	0.970
60	0.997
70	0.998
80	1.000
90	1.000
100	0.946
110	0.980
120	0.991
130	1.000
140	1.000
150	0.965
160	0.805
170	0.641
180	0.510
190	0.408
200	0.330
210	0.275
220	0.280
230	0.265
240	0.271
250	0.304
260	0.341

Exhibit 6:

PROPOSED ANTENNA	
Azimuth Heading	**Relative Field**
270	0.427
280	0.537
290	0.676
300	0.851
310	1.000
320	0.944
330	0.750
340	0.596
350	0.550
Sum of Relative Field Squared :	23.068
Sum Divided by 36 (Readings) :	0.641
Square Root :	0.800

DESIGNED ANTENNA	
Azimuth Heading	**Relative Field**
270	0.406
280	0.510
290	0.641
300	0.805
310	0.932
320	0.916
330	0.728
340	0.578
350	0.534
Sum of Relative Field Squared :	20.096
Sum Divided by 36 (Readings) :	0.558
Square Root :	0.747

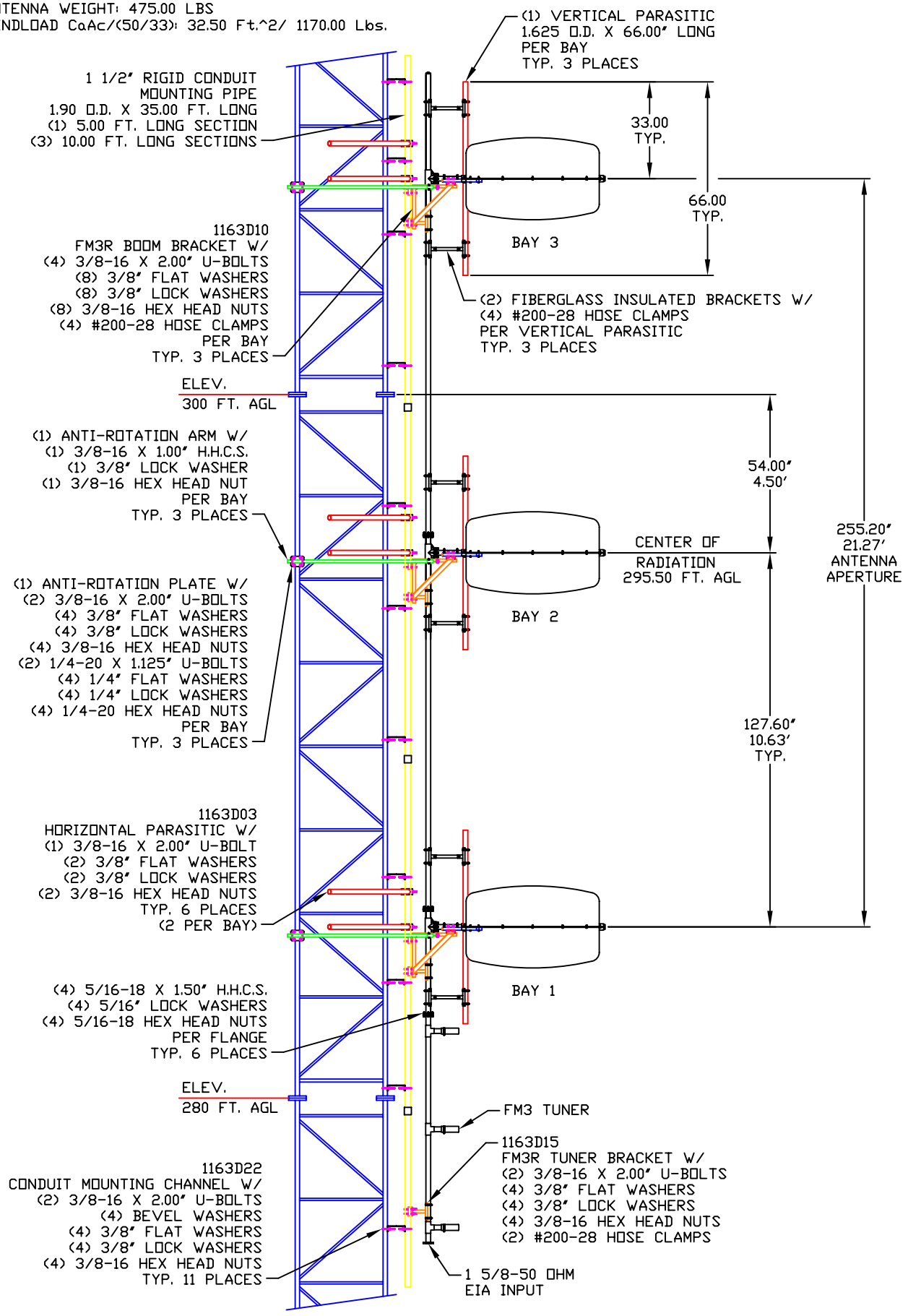
Percentage of Construction Permit Antenna Filled : 93.34%

Exhibit 7

DRAWING NUMBER: 1163D00

NOTES:
1. REFERENCE DWG. 1163D01 FOR ANTENNA ORIENTATION.
2. REFERENCE DWG. 1163D02 FOR PARASITIC PLACEMENT.

ANTENNA WEIGHT: 475.00 LBS
WINDLOAD CaAc/(50/33): 32.50 Ft.^2/ 1170.00 Lbs.

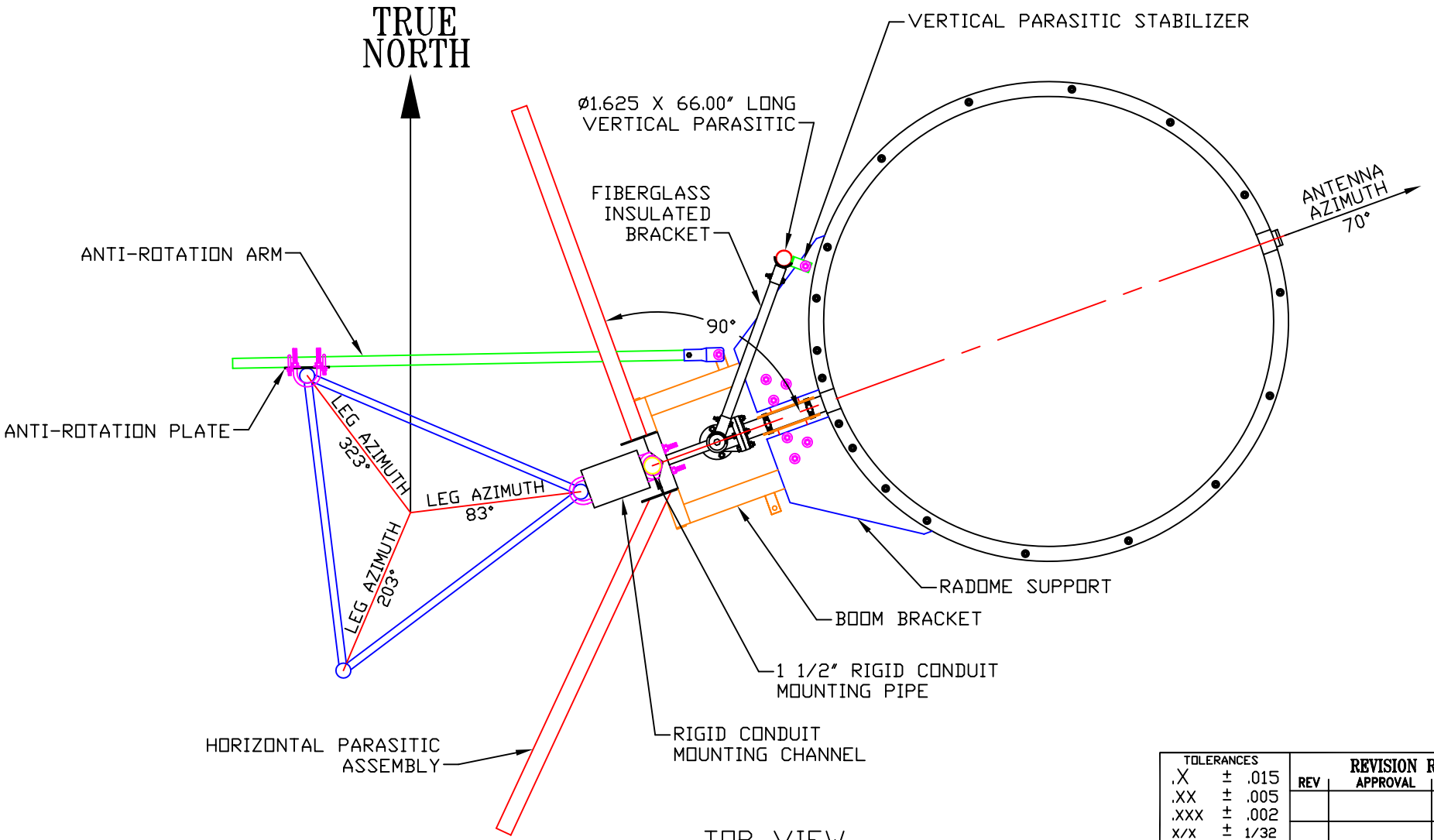


SYSTEMS WITH RELIABILITY, INC 619 INDUSTRIAL PARK ROAD EBENSBURG, PENNSYLVANIA 15931	TITLE: FM3R/3-DAS, FREQ. 92.5 WBLH, BLACK RIVER, NY MATERIAL:	SIZE C	REV 1 2 3	APPR.	DATE	ENGINEER:	DRAWING NUMBER: 1163D00	
						SCALE: NTS	NAME: RAC	DATE: 5/28/08 SHEET 1 OF 1

DRAWING NUMBER: 1163D01

NOTE:

1. REFERENCE DWG. 1163D00 FOR ELEVATION.
2. REFERENCE DWG. 1163D02 FOR PARASITIC PLACEMENT.



TOP VIEW

TOLERANCES	
.X	± .015
.XX	± .005
.XXX	± .002
X/X	± 1/32
DEG.	± 1/2

UNLESS OTHERWISE SPECIFIED

REVISION RECORD

REV	APPROVAL	DATE

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

TITLE: FM3R/3-DAS, FREQ. 92.5
WBLH, BLACK RIVER, NY

MATERIAL: ANTENNA ORIENTATION
FROM TRUE NORTH

SIZE A

PARTS MADE BY THIS DRAWING

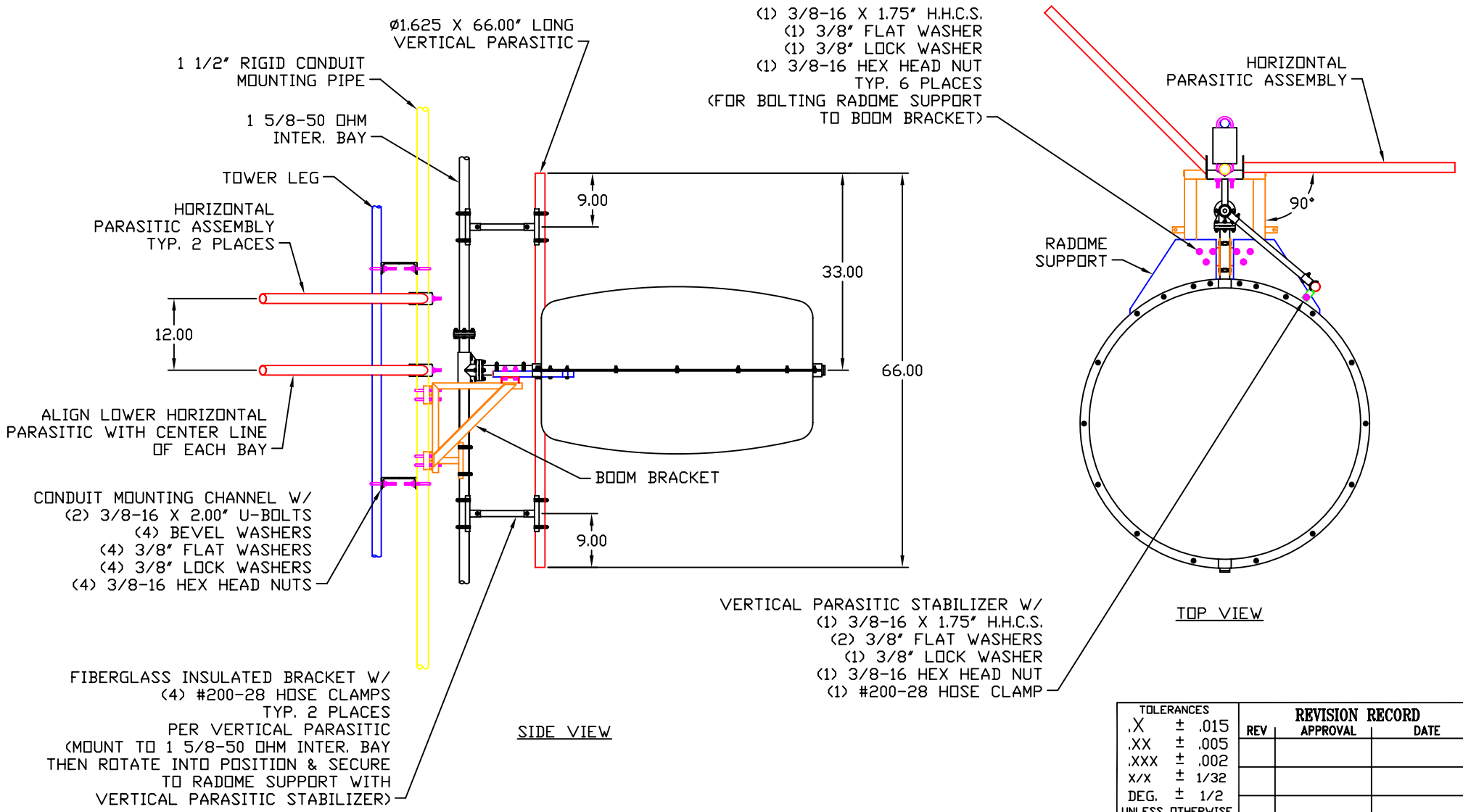
DRAWING NUMBER: 1163D01

SCALE: NTS | NAME: RAC | DATE: 5/28/08 | SHEET 1 OF 1

DRAWING NUMBER: 1163D02

NOTE:

1. REFERENCE DWG. 1163D00 FOR ELEVATION.
2. REFERENCE DWG. 1163D01 FOR ANTENNA ORIENTATION.



TOLERANCES	
.X	± .015
.XX	± .005
.XXX	± .002
X/X	± 1/32
DEG.	± 1/2

UNLESS OTHERWISE SPECIFIED

REVISION RECORD

REV	APPROVAL	DATE

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

TITLE: FM3R/3-DAS, FREQ. 92.5
WBLH, BLACK RIVER, NY

MATERIAL: PARASITIC PLACEMENT

SIZE: A

PARTS MADE BY THIS DRAWING

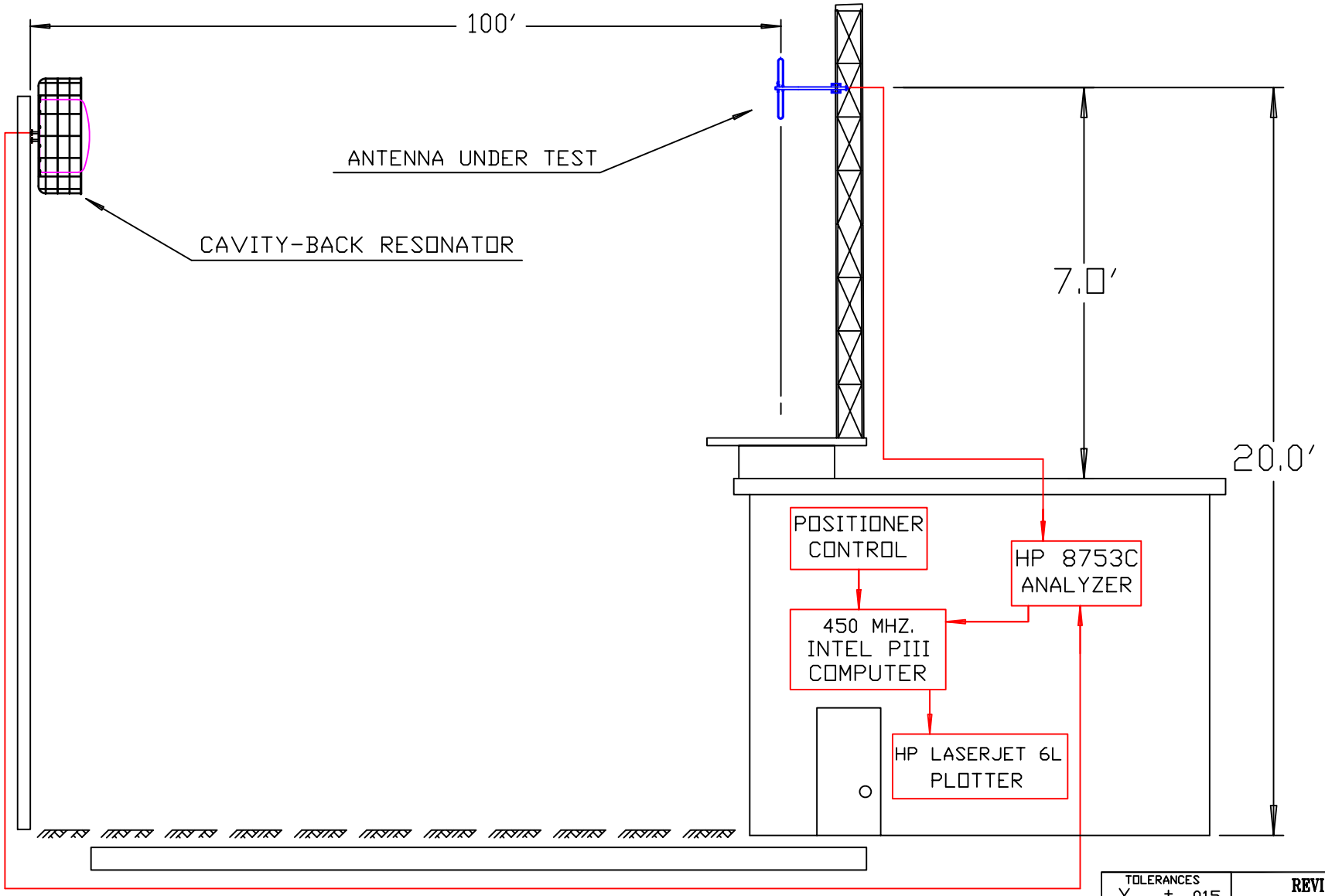
DRAWING NUMBER: 1163D02

SCALE: NTS | NAME: RAC | DATE: 5/28/08 | SHEET 1 OF 1

NOTE:

Exhibit 7

DRAWING NUMBER: 2105A10



TOLERANCES	
.X	± .015
.XX	± .005
.XXX	± .002
X/X	± 1/32
DEG.	± 1/2

UNLESS OTHERWISE SPECIFIED

REVISION RECORD

REV	APPROVAL	DATE
2		10/7/05
1		4/30/02

DRAWING NUMBER: 2105A10

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

TITLE: TEST RANGE SCHEMATIC

MATERIAL:

SIZE A

PARTS MADE BY THIS DRAWING

SCALE: NTS | NAME: JRM | DATE: 11/1/98 | SHEET 1 OF 1

Surveyor's Declaration

I, GREGORY F. ASHLEY subject to the penalties of perjury, do declare the following:

1.) I am a licensed surveyor in the sate(s) of NEW YORK, _____ and _____.

2.) I have provided professional services to RADIOACTIVE LLC (permit tee name), permit tee of WBLH -FM, BLACK RIVER (city of license), NY (state), during the installation of the WBLH -FM directional antenna.

3.) I certify that the WBLH -FM directional antenna has been oriented at the proper azimuth as authorized in the construction permit (FCC File Number BMPH-20060802AXO).

Dated: 5/28/2008 mm/dd/yy

619 Industrial Park Road, Ebensburg, PA 15931 ♦ Tel. 800 762 7743 / 814 472 5436 ♦ Fax 814 472 5552 ♦ davide@swr-rf.com

Engineer's Declaration

I, Joseph P. Portelli, subject to the penalties of perjury, do declare the following:

1.) I am the holder of a valid General Radio Telephone Operators License, Number _____(FCC License No.)

2.) I have been a member of the Society of Broadcast Engineer's since DX 2001

3.) That I have been employed as a technical consultant with the firm of:

Joseph P. Portelli, CBRE (firm name), of

State College, PA (city state)

4.) That Intrepid Broadcasting (Firm's Name) was retained by

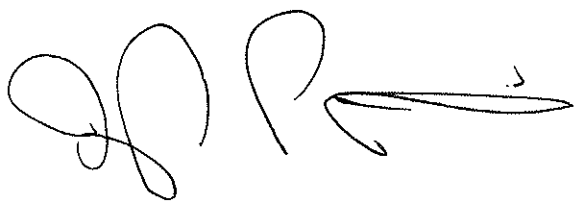
Radioactive, LLC (Permittee's Name) for the purpose of preparing its application for the construction permit of WBLH -FM

Watertown (City), NY (State), from which the underlying Construction Permit (FCC File Number BMPH-20060802AXO) was granted by the Commission.

5.) That I am familiar with the terms and conditions of the WBLH -FM Construction Permit.

6.) I hereby certify that I have overseen the installation of the WBLH -FM directional antenna and that the installation was complete to the manufacturer's instructions.

Dated: 6/3/2008 mm/dd/yy



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