

ENGINEERING STATEMENT

This firm has been retained by Seaway Broadcasting, Inc., licensee of Radio Station WVLF(FM), Norwood, New York, (Facility ID 60470), to prepare this engineering statement in support of an Amendment to its pending Application For License, FCC Form 302, (FCC File No. BLH-20010301ABF) which was filed on March 1, 2001 to cover construction authorized in Construction Permit File No. BPH-20001024ABH issued October 3, 2001. Since the filing of the initial application the licensee has installed a replacement antenna and the Application for License is being amended to reflect the replacement of the original antenna. Construction of this facility is now complete and the permittee has complied with all conditions contained in the original Construction Permit as is more fully documented below.

The original Construction Permit (FCC File No. BPH-20021024ABH) contained 8 conditions, (a copy of the Construction Permit is attached as Exhibit E-5), 5 of which related to the installation of a Directional Antenna. Specifically, the conditions are:

1. During installation of the antenna authorized herein, AM Station(s) listed below shall determine operating power by the indirect method. Upon completion of the installation, antenna impedance measurements on the AM antenna shall be made and, prior to or simultaneous with the filing of the application for license to cover this permit, the results submitted to the Commission (along with a tower sketch of the installation) in an application for the AM station to return to the direct method of power determination.
(Revised January 28, 1983)

WMSA, MASSENA, NY

The documentation for this condition is being submitted as Exhibit E-1. WMSA(AM) is operating using indirect power pending a grant of its license to reflect the operating parameters contained in its Direct Measurement of Power request filed on December 10, 2003.

2. BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit the results of a complete proof-of-performance to establish the horizontal plane radiation patterns for both the horizontally and vertically polarized radiation components. This proof-of-performance may be accomplished using the complete full size antenna, or individual bays therefrom, mounted on a

supporting structure of identical dimensions and configuration as the proposed structure, including all braces, ladders, conduits, coaxial lines, and other appurtenances; or using a carefully manufactured scale model of the entire antenna, or individual bays therefrom, mounted on an equally scaled model of the proposed supporting structure, including all appurtenances. Engineering exhibits should include a description of the antenna testing facilities and equipment employed, including appropriate photographs or sketches and a description of the testing procedures, including scale factor, measurements frequency, and equipment calibration.

The documentation for this condition is being submitted as Exhibit E-2.

3. BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit an affidavit from a licensed surveyor to establish that the directional antenna has been oriented at the proper azimuth.

The Declaration of a surveyor licensed in the State of New York who was employed to verify that the antenna was correctly oriented on the supporting tower is attached. See Exhibit E-3.

4. BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee/licensee shall submit an affidavit that the installation of the directional antenna system was overseen by a qualified engineer. This affidavit shall include a certification by the engineer that the antenna was installed pursuant to the manufacturer's instructions and list the qualifications of the certifying engineer.

The Declaration of the President of Seaway Broadcasting, Inc., is attached as Exhibit E-4. That Declaration certifies that the directional antenna was installed in accordance with the manufacturer's installation instructions.

5. The relative field strength of neither the measured horizontally nor vertically polarized radiation component shall exceed at any azimuth the value indicated on the composite radiation pattern authorized by this construction permit.

A relative field strength of 1.0 on the composite radiation pattern herein authorized corresponds to the following effective radiated power:

25.0 kilowatts.

Principal minimum and its associated field strength limit:

56.1 degrees True: 0.497 kilowatt.

The maximum power radiated at a bearing of 56.1 degrees true does not exceed 0.497 kilowatts. See Exhibit E-2.

This engineering statement has been prepared by the undersigned and is true and correct to the best of his knowledge and belief, and is submitted in good faith. My qualifications are a matter of record before the Commission.

Dated this 24th day of December 2003.

Respectfully,

A handwritten signature in black ink, appearing to read "F. W. Hannel", written over a horizontal line.

F. W. Hannel, PE

F. W. Hannel & Associates
10733 East Butherus Drive
Scottsdale, AZ 85255
(480) 585-7475
Fax (815) 327-9559
<http://www.fwhannel.com>

EXHIBIT E-1

Direct Measurement of Power
Radio Station WMSA(AM)
Massena, New York
Facility ID 97
Filed December 10, 2003

December 2003

Federal Communications Commission
Washington, D. C. 20554

Approved by OMB
3040-0627
Expires 01/31/98

FOR
FCC
USE
ONLY

DEC 10 2003

FCC 302-AM
APPLICATION FOR AM
BROADCAST STATION LICENSE

(Please read instructions before filling out form.)

FOR COMMISSION USE ONLY
FILE NO.

SECTION I - APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)

Fred Hannel

MAILING ADDRESS (Line 1) (Maximum 35 characters)
10733 East Butherus Drive

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY
Scottsdale

STATE OR COUNTRY (if foreign address)
AZ

ZIP CODE
85255

TELEPHONE NUMBER (include area code)

CALL LETTERS

OTHER FCC IDENTIFIER (if applicable)

2. A. Is a fee submitted with this application?

☐ Yes ☒ No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

☐ Governmental Entity

☐ Noncommercial educational licensee

☒ Other (Please explain):

Direct Measurement of Power filings

C. If Yes, provide the following information:

are exempt from fee. See FN 7 of 2002 fee filing guide.

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A)		
FEE TYPE CODE		

(B)			
FEE MULTIPLE			
0	0	0	1

(C)
FEE DUE FOR FEE TYPE CODE IN COLUMN (A)
\$

FOR FCC USE ONLY

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)		

(B)			
0	0	0	1

(C)
\$

FOR FCC USE ONLY

ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.

TOTAL AMOUNT REMITTED WITH THIS APPLICATION
\$

FOR FCC USE ONLY

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Seaway Broadcasting, Inc.		
MAILING ADDRESS 1120 Mar West, Suite A		
CITY Tiburon	STATE CA	ZIP CODE 94920

2. This application is for:

☒ Commercial
 ☐ Noncommercial
☐ AM Directional
 ☒ AM Non-Directional

Call letters WMSA	Community of License Massena	Construction Permit File No. N/A	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit
-----------------------------	--	--	---	---

3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☐ Yes ☐ No

If No, explain in an Exhibit.

Exhibit No.
N/A

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☐ Yes ☐ No

If No, state exceptions in an Exhibit.

Exhibit No.
N/A

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☐ No

If Yes, explain in an Exhibit.

Exhibit No.
N/A

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☐ Yes ☐ No

If No, explain in an Exhibit.

☒ Does not apply

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☒ No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☒ No

If Yes, provide particulars as an Exhibit.

Exhibit No. _____

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

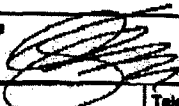
The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☒ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name	Signature 	
Timothy D. Martz	Date	Telephone Number
Title	December 9, 2003	(415) 359-1030
President		

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The collection of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Seaway Broadcasting, Inc.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☐

Station License

☒

Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
WMSA	N/A	1340	Unlimited	Night 0.91	Day 0.91

2. Station location

State	City or Town
New York	Massena

3. Transmitter location

State	County	City or Town	Street address (or other identification)
NY	St. Lawrence	Massena	State Route 420

4. Main studio location

State	County	City or Town	Street address (or other identification)
NY	St. Lawrence	Massena	State Route 420

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)

6. Has type-approved stereo generating equipment been installed?

☐

Yes

☒

No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68?

☐

Yes

☐

No

☒

Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system	RF common point or antenna current (in amperes) without modulation for day system
4.27	4.27
Measured antenna or common point resistance (in ohms) at operating frequency	Measured antenna or common point reactance (in ohms) at operating frequency
Night 50 Day 50	Night -46.3 Day -46.3

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day

Manufacturer and type of antenna monitor:

SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator Vertical Self Supporting Steel Tower	Overall height in meters of radiator above base insulator, or above base, if grounded. 113.7	Overall height in meters above ground (without obstruction lighting) 114.0	Overall height in meters above ground (include obstruction lighting) 114.9	If antenna is either top loaded or sectionalized, describe fully in an Exhibit. Exhibit No. N/A
---	---	---	---	---

Excitation ☒ Series ☐ Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	44 °	54 '	11 "	West Longitude	74 °	53 '	02 "
----------------	------	------	------	----------------	------	------	------

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits.

Exhibit No.
E-1

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system.

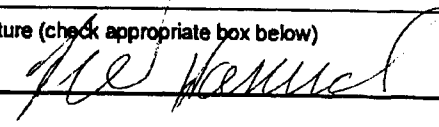
Exhibit No.

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

11. Give reasons for the change in antenna or common point resistance.

FM Antenna for WVLF(FM) was replaced.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type) Fred Hannel	Signature (check appropriate box below) 
Address (include ZIP Code) 10733 East Butherus Drive Scottsdale, AZ 85259 http://www.fwhannel.com	Date December 9, 2003
	Telephone No. (Include Area Code) (480) 585-7475

☐ Technical Director

☒ Registered Professional Engineer

☐ Chief Operator

☐ Technical Consultant

☐ Other (specify)

Exhibit E-1

**Application for Direct Measurement of Power
Radio Station WMSA(AM)
1340 kHz 0.91 kw Unlimited
Massena, New York**

**Antenna Impedance Measurements
December 2003**

D & M Electronics, Inc.

Electronics Experts

DECLARATION

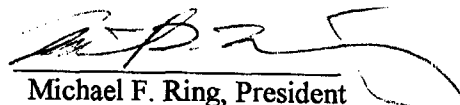
I, Michael F. Ring, declare under penalty of perjury that the following statement is true and correct.

I have been a broadcast engineer for 27 years and hold Federal Communications Commission General Radio Telephone License number PG-20-6010 and am also a senior member of the National Association of Radio and Telecommunications Engineers, with an Engineer Class 1 Certification with Master RF radiating Endorsement;

My qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by myself or under my supervision and direction and

That the facts stated herein are true of my own knowledge, except such facts as are stated to be on information and belief, and as to such facts, I believe them to be true.


Michael F. Ring, President
D & M Electronics, Inc.

11/24/03

12485 County Route 66 • Adams Center, New York 13606
Phone: (315) 583-5513 Voice-FAX • email MRingCNE@aol.com
WEB Site <http://www.electronicexperts.com>

WMSA Antenna Resistance Measurements

This engineering report is prepared on behalf on Seaway Broadcasting, Inc., licensee of AM broadcast station WMSA, Massena, New York, in support of an application for direct measurement of power.

Resistance and reactance measurements were made at the base of the non-directional antenna. The measured resistance of the tower is 50.0 ohms. The antenna base current is 4.27 amperes based on 0.910 KW non-directional unlimited time operation.

The impedance measurements for the non-directional operation were made utilizing a Delta Electronics OIB-1 impedance bridge Serial No. 974 in conjunction with a Heath Model IG1275 Function Generator. The attached diagram shows the method of connecting the bridge accessories for making the impedance measurements. The frequency calibration for the Heath was checked against a Heath IB-1103 digital frequency counter and the WMSA transmitter. The Delta OIB-1 bridge was checked against external standards prior to making series of impedance measurements and found to be well within its rated accuracy. A Potomac Instruments FIM 21 field strength meter was used as the detector for the bridge null function.

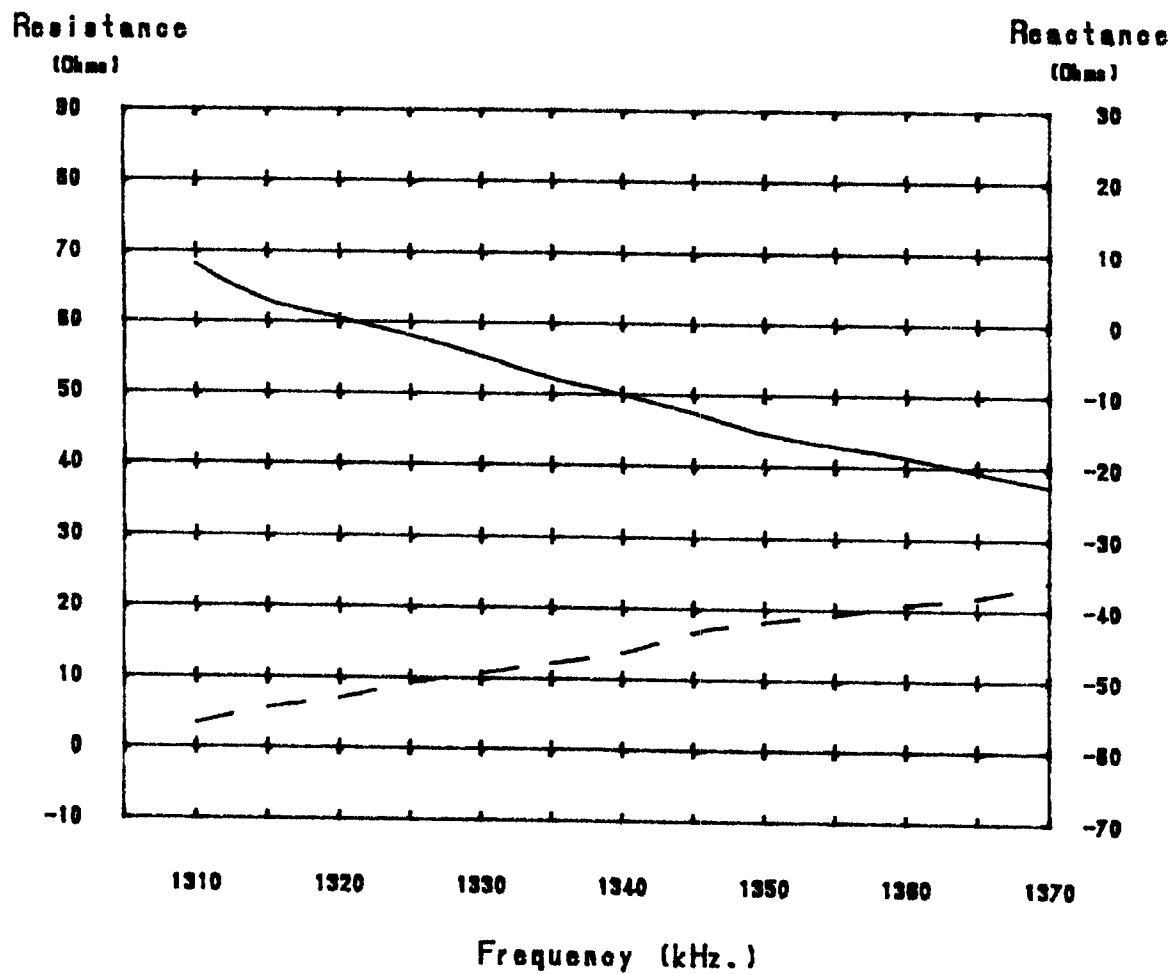
Frequency	Resistance	Reactance
1310	68	-58.0
1315	63	-55.5
1320	60.5	-53.8
1325	58.1	-51.3
1330	55.3	-49.6
1335	52.2	-47.9
* 1340	50.0	-46.3
1345	47.6	-43.1
1350	44.7	-41.5
1355	43.0	-40.2
1360	41.5	-38.6
1365	39.5	-37.4
1370	37.5	-35.0

*Operating Frequency

Measurements were taken on November 9, 2003 between 1315 and 1345 EST.

WMSA Massena, New York

Antenna Resistance and Reactance Measurements

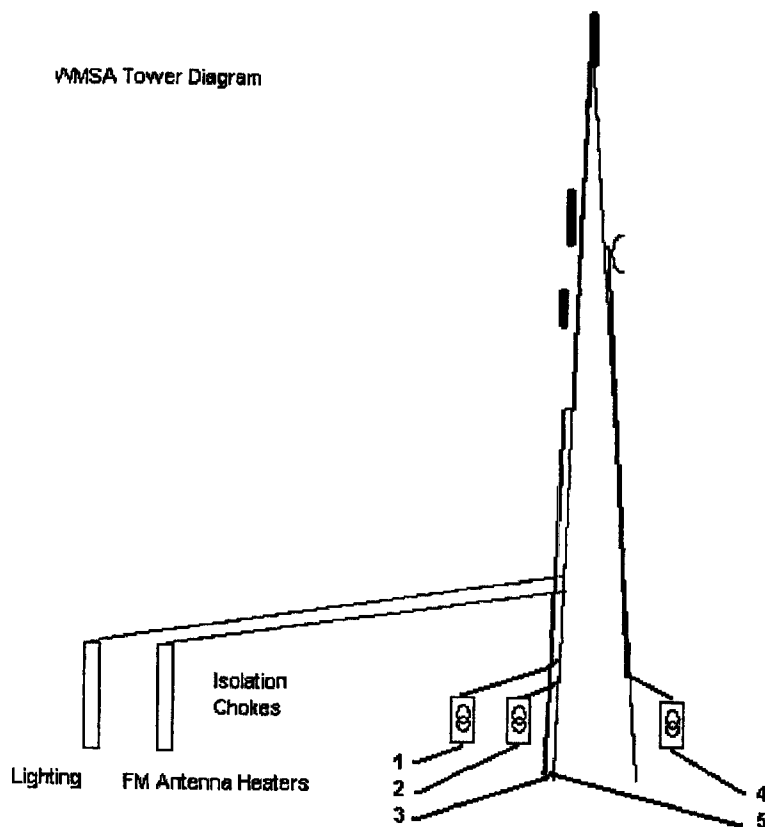


Key

Resistance _____
Reactance - - - - -

Exhibit B

WMSA Tower Diagram



Transmitters/transmitting antennas co-located with WMSA AM

Feed Number	Call Sign	Frequency(ies)	
1	KQZ790	152.090 MHz.	
2	WVFL	96.1 MHz.	
3	W28BC	TV channel 42	Shunt fed
4	WPYQ666	948.5 MHz.	
5	W20BA	TV channel 20	Shunt fed

NOTES:

All antennas connected via isocouplers at the tower base unless otherwise noted. Not drawn to scale nor shape.

Exhibit C

WMSA LTU Schematic

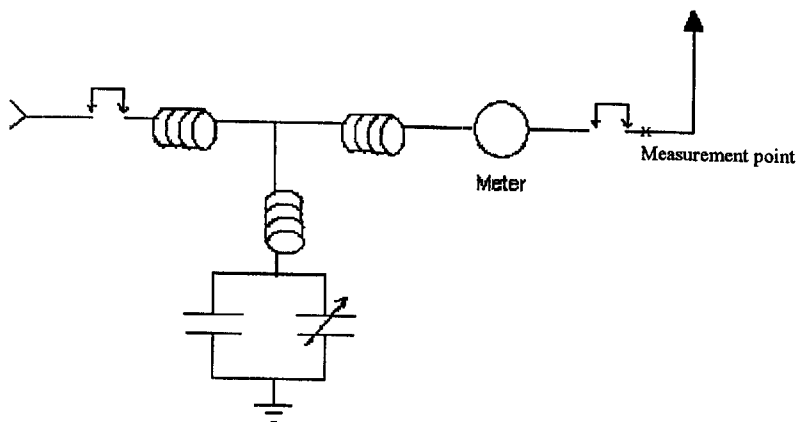
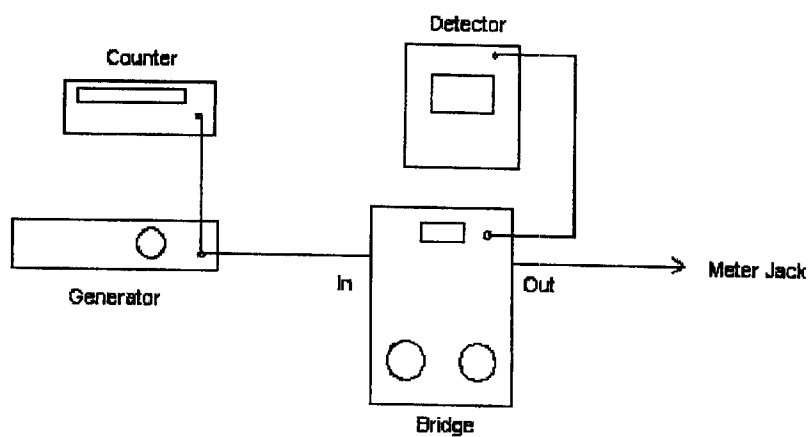


Exhibit D

Equipment Connection Diagram



F. W. HANNEL & ASSOCIATES

Internet
<http://www.fwhannel.com>
Email: fred@fwhannel.com

Registered Professional Engineers
10733 East Butherus Drive
Scottsdale, AZ 85255
(480) 585-7475
(800) 868-6592

FAX
(815)-327-9559

December 9, 2003

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
Media Bureau
Post Office Box 358190
Pittsburgh, PA 15251-5190

Re: Direct Measurement of Power
Radio Station WMSA(AM)
Facility ID. 97

Dear Ms. Dortch,

Please find enclosed an FCC Form 302 for the above captioned facility which requests direct measurement of power authority.

No filing fee is being submitted as this request is exempt from filing fees in accordance with footnote 7 of the filing guide.

Please file stamp the enclosed extra copy and return to this office in the self addressed postage prepaid envelope.

If you have any questions or comments, please give me a call.

Very truly yours,



F. W. Hannel, PE

EXHIBIT E-2

Directional Antenna Proof of Performance
Radio Station WVLF(FM)
Norwood, New York
Facility ID 60470

December 2003



SYSTEMS WITH RELIABILITY, LTD.
Broadcast Antenna and Transmission Systems

PATTERN CERTIFICATION

DIRECTIONAL FM ANTENNA
WVLF
November 7, 2003

Call Sign	:	WVLF
Location	:	Norwood, NY
Frequency	:	96.1 MHz
Channel	:	241
Antenna Model	:	FM10/4 HWS DA Illumitron
Maximum Antenna Gain	:	
Horizontal	:	1.846/ 2.6590 dB
Vertical	:	1.846/ 2.6590 dB

ANTENNA DESCRIPTION

A custom designed **FM10/4 HWS DA Illumitron** antenna was used to produce the required directional azimuth pattern. Each antenna bay consists of a circularly polarized dipole-radiating element with a vertical and horizontal parasitic system. The array is comprised of **four** bays, that are spaced a half wavelength apart, mounted to a 10.75" mast pointing **270** 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. Horizontal and 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 288.3 MHz. The antenna under test was rotated in a clockwise direction. A gain reference was taken using a dipole tuned to 288.3 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	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

TEST EQUIPMENT

Network Analyzer	:	Hewlett Packard Model # 8753C Serial Number : 08753 – 69138 Calibrated 8/26/02, SWR, Inc.
Computer	:	White Mountain 366 Computer
Plotter	:	Hewlett-Packard 7550A
Positioner	:	Orbit Positioner Calibrated 1/06/03, SWR, Inc.

Prepared by:



Jason Duncan
SWR, Inc.

TEST RESULTS

The attached calculations verify that the **RMS** value of this antenna is **95.09 %** of the **RMS** value of the pattern authorized in the related construction permit **BMPH-19990601IF**. The vertical component **RMS** value is **.759** and the horizontal component **RMS** value is **0.692**.

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

Measured horizontal polarized directivity	:	2.0901 / 3.2017 dB
Measured vertical polarized directivity	:	1.7351/ 2.3932 dB
Measured composite azimuth pattern directivity	:	2.0869 / 3.195 dB

Gain in each polarization was calculated using the following relation:

GAIN = Azimuth Directivity x Elevation Directivity x Power Ratio Between Polarizations x Antenna Efficiency

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

H-Pol. Gain = (2.0901)(2.289)(0.4536)(.85) = **1.8446 / 2.6590 dB**

V-Pol. Gain = (1.7351)(2.289)(0.5464)(.85) = **1.8446 / 2.6590 dB**

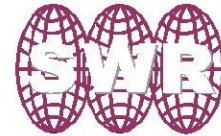
INSTALLATION AND MOUNTING

The antenna is to be mounted in accordance with the supplied drawings. The antenna center of radiation is to be **108 meters** above ground level. The antenna (parasitic system included) aperture is **15.35 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 **270 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
0694C00	ORIENTATION WITH PARASITICS
0694A13	ANTENNA ORIENTATION
0694A12	PARASITIC ASSEMBLY
2105A10	TEST RANGE SCHEMATIC

The array shall be mounted according to **DWG. 0694C00**. The parasitic assembly is shown in **DWG. 0694A12**. The antenna elements shall be aligned at the same heading as in **DWG. 0694A13**. This will ensure that the antenna is oriented properly at **270 degrees** true north.



SYSTEMS WITH RELIABILITY, INC.
Broadcast Antennas and Transmission Systems

WVLF Antenna RMS Comparison

PROPOSED ANTENNA

Azimuth Heading	Relative Field
0	0.514
10	0.408
20	0.324
30	0.258
40	0.205
50	0.163
60	0.155
70	0.195
80	0.245
90	0.308
100	0.388
110	0.489
120	0.615
130	0.774
140	0.975
150	1.000
160	1.000
170	1.000
180	1.000
190	1.000
200	1.000
210	1.000
220	1.000
230	1.000
240	1.000
250	1.000
260	1.000

DESIGNED ANTENNA

Azimuth Heading	Relative Field
0	0.5138
10	0.4078
20	0.3239
30	0.2579
40	0.2049
50	0.1629
60	0.1549
70	0.1948
80	0.2448
90	0.3077
100	0.3877
110	0.4886
120	0.6144
130	0.7733
140	0.9746
150	0.9796
160	0.9896
170	1.0000
180	0.9796
190	0.9496
200	0.9496
210	0.9296
220	0.9196
230	0.8996
240	0.8896
250	0.8697
260	0.8697

PROPOSED ANTENNA

Azimuth Heading	Relative Field
270	1.000
280	1.000
290	1.000
300	1.000
310	1.000
320	1.000
330	1.000
340	0.815
350	0.647

Sum of Relative Field Squared : 23.288

Sum Divided by 36 (Readings) : 0.647

Square Root : 0.804

Percentage of Construction Permit Antenna Filled :**DESIGNED ANTENNA**

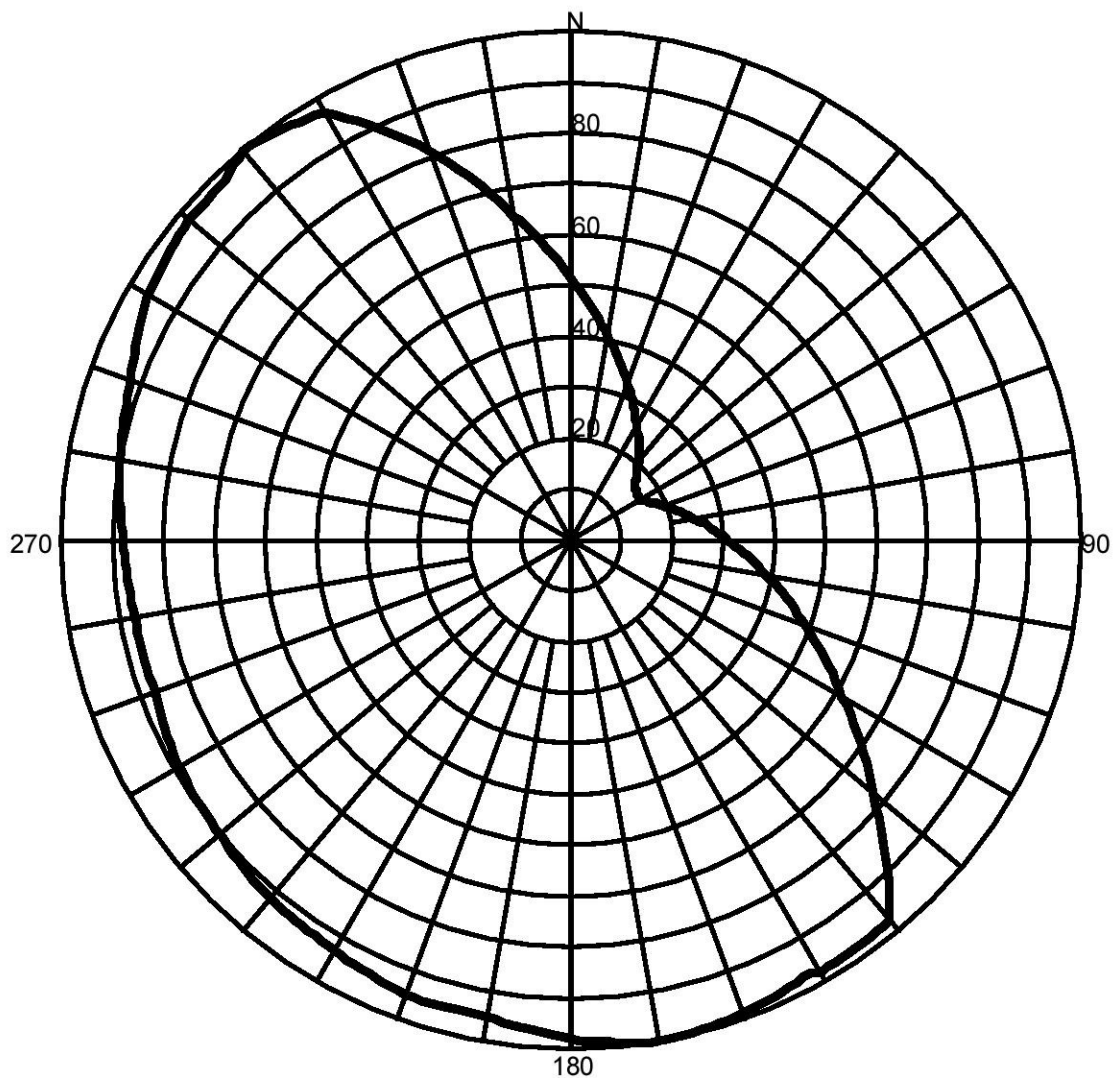
Azimuth Heading	Relative Field
270	0.8796
280	0.8996
290	0.9196
300	0.9596
310	0.9796
320	1.0000
330	0.9696
340	0.8147
350	0.6467

Sum of Relative Field Squared : 21.058

Sum Divided by 36 (Readings) : 0.585

Square Root : 0.765

95.09%



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability Inc

CLIENT: *Martz Communications, WVLF- Exhibit 1*

Date: 11/2/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

FREQUENCY: 96.1

PATTERN POL.: Circular

CIRCULARITY(+/-dB): NA

AZ. DIRECTIVITY: 2.0869 / 3.195dB

PATTERN RMS: 0.692

Relative Field Tabulation(Azimuth)

Azimuth Heading	Normalized Field(dB)	Azimuth Heading	Normalized Field(dB)
0	.5138 (-5.78)	180	.9796 (-0.18)
5	.4608 (-6.73)	185	.9646 (-0.31)
10	.4078 (-7.79)	190	.9496 (-0.45)
15	.3659 (-8.73)	195	.9496 (-0.45)
20	.3239 (-9.79)	200	.9496 (-0.45)
25	.2909 (-10.73)	205	.9396 (-0.54)
30	.2579 (-11.77)	210	.9296 (-0.63)
35	.2314 (-12.71)	215	.9246 (-0.68)
40	.2049 (-13.77)	220	.9196 (-0.73)
45	.1839 (-14.71)	225	.9096 (-0.82)
50	.1629 (-15.76)	230	.8996 (-0.92)
55	.1589 (-15.98)	235	.8946 (-0.97)
60	.1549 (-16.2)	240	.8896 (-1.02)
65	.1748 (-15.15)	245	.8796 (-1.11)
70	.1948 (-14.21)	250	.8697 (-1.21)
75	.2198 (-13.16)	255	.8697 (-1.21)
80	.2448 (-12.22)	260	.8697 (-1.21)
85	.2763 (-11.17)	265	.8747 (-1.16)
90	.3077 (-10.24)	270	.8796 (-1.11)
95	.3477 (-9.18)	275	.8896 (-1.02)
100	.3877 (-8.23)	280	.8996 (-0.92)
105	.4381 (-7.17)	285	.9096 (-0.82)
110	.4886 (-6.22)	290	.9196 (-0.73)
115	.5515 (-5.17)	295	.9396 (-0.54)
120	.6144 (-4.23)	300	.9596 (-0.36)
125	.6939 (-3.17)	305	.9696 (-0.27)
130	.7733 (-2.23)	310	.9796 (-0.18)
135	.8740 (-1.17)	315	.9796 (-0.18)
140	.9746 (-0.22)	320	1.0000 (0)
145	.9771 (-0.2)	325	.9848 (-0.13)
150	.9796 (-0.18)	330	.9696 (-0.27)
155	.9796 (-0.18)	335	.8921 (-0.99)
160	.9896 (-0.09)	340	.8147 (-1.78)
165	.9948 (-0.05)	345	.7307 (-2.73)
170	1.0000 (0)	350	.6467 (-3.79)
175	.9898 (-0.09)	355	.5803 (-4.73)

Systems With Reliability Inc

CLIENT: *Martz Communications, WVLF- Exhibit 1*

Date: 11/2/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

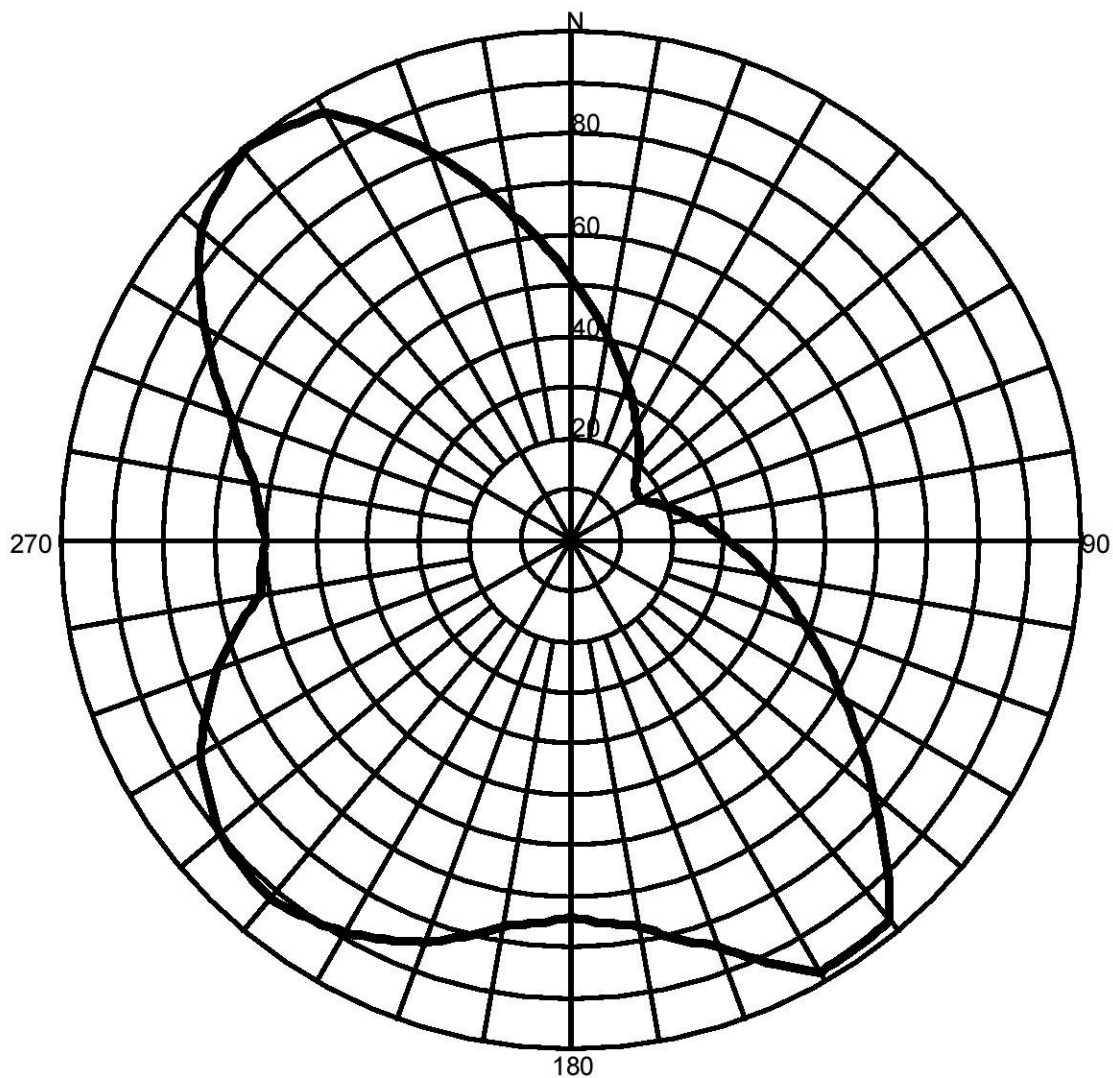
FREQUENCY: 96.1

PATTERN POL.: Circular

CIRCULARITY(+/-dB): NA

AZ. DIRECTIVITY: 2.0869 / 3.195dB

PATTERN RMS: 0.692



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability Inc

CLIENT: *Martz Communications, WVLF- Exhibit 2*

Date: 11/2/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

FREQUENCY: 96.1

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB): NA

AZ. DIRECTIVITY: 2.09012 / 3.2dB

PATTERN RMS: 0.692

Relative Field Tabulation(Azimuth)

Azimuth Heading	Normalized Field(dB)	Azimuth Heading	Normalized Field(dB)
0	.5138 (-5.78)	180	.7397 (-2.62)
5	.4608 (-6.73)	185	.7547 (-2.44)
10	.4078 (-7.79)	190	.7697 (-2.27)
15	.3659 (-8.73)	195	.8047 (-1.89)
20	.3239 (-9.79)	200	.8397 (-1.52)
25	.2909 (-10.73)	205	.8647 (-1.26)
30	.2579 (-11.77)	210	.8896 (-1.02)
35	.2314 (-12.71)	215	.9046 (-0.87)
40	.2049 (-13.77)	220	.9196 (-0.73)
45	.1839 (-14.71)	225	.9096 (-0.82)
50	.1629 (-15.76)	230	.8996 (-0.92)
55	.1589 (-15.98)	235	.8697 (-1.21)
60	.1549 (-16.2)	240	.8397 (-1.52)
65	.1748 (-15.15)	245	.7897 (-2.05)
70	.1948 (-14.21)	250	.7397 (-2.62)
75	.2198 (-13.16)	255	.6797 (-3.35)
80	.2448 (-12.22)	260	.6198 (-4.16)
85	.2763 (-11.17)	265	.6098 (-4.3)
90	.3077 (-10.24)	270	.5998 (-4.44)
95	.3477 (-9.18)	275	.6148 (-4.23)
100	.3877 (-8.23)	280	.6297 (-4.02)
105	.4381 (-7.17)	285	.6697 (-3.48)
110	.4886 (-6.22)	290	.7097 (-2.98)
115	.5515 (-5.17)	295	.7697 (-2.27)
120	.6144 (-4.23)	300	.8297 (-1.62)
125	.6939 (-3.17)	305	.8896 (-1.02)
130	.7733 (-2.23)	310	.9496 (-0.45)
135	.8740 (-1.17)	315	.9748 (-0.22)
140	.9746 (-0.22)	320	1.0000 (0)
145	.9771 (-0.2)	325	.9848 (-0.13)
150	.9796 (-0.18)	330	.9696 (-0.27)
155	.9145 (-0.78)	335	.8921 (-0.99)
160	.8493 (-1.42)	340	.8147 (-1.78)
165	.8095 (-1.84)	345	.7307 (-2.73)
170	.7697 (-2.27)	350	.6467 (-3.79)
175	.7547 (-2.44)	355	.5803 (-4.73)

Systems With Reliability Inc

CLIENT: *Martz Communications, WVLF- Exhibit 2*

Date: 11/2/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

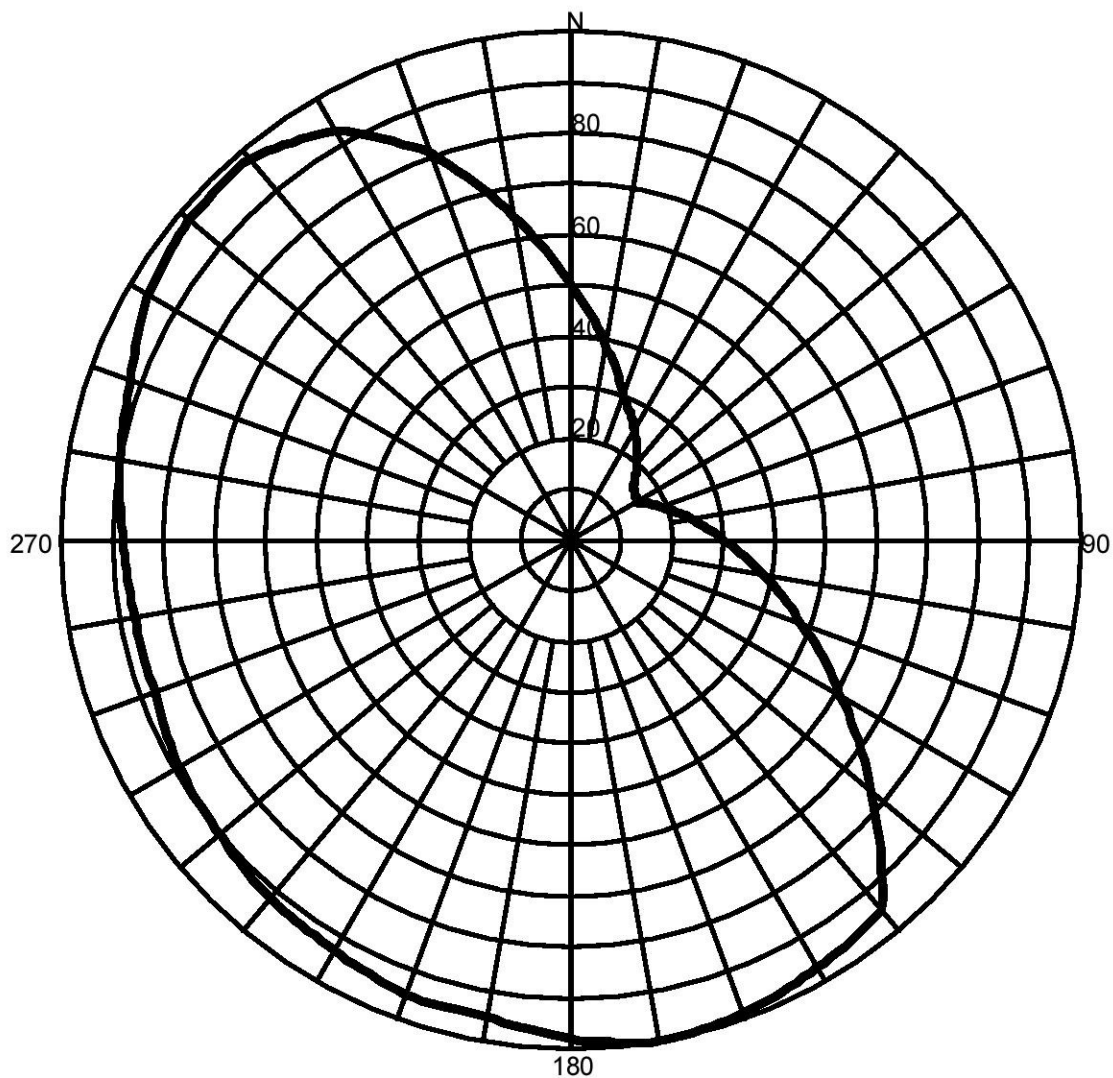
FREQUENCY: 96.1

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB): NA

AZ. DIRECTIVITY: 2.09012 / 3.2dB

PATTERN RMS: 0.692



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability Inc

CLIENT: *Martz Communications, WVLF- Exhibit 3*

Date: 11/2/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

FREQUENCY: 96.1

PATTERN POL.: Vertical

CIRCULARITY(+/-dB): NA

AZ. DIRECTIVITY: 1.73515 / 2.39dB

PATTERN RMS: 0.759

Relative Field Tabulation(Azimuth)

Azimuth Heading	Normalized Field(dB)	Azimuth Heading	Normalized Field(dB)
0	.4996 (-6.03)	180	.9796 (-0.18)
5	.4446 (-7.04)	185	.9646 (-0.31)
10	.3897 (-8.19)	190	.9496 (-0.45)
15	.3447 (-9.25)	195	.9496 (-0.45)
20	.2998 (-10.46)	200	.9496 (-0.45)
25	.2748 (-11.22)	205	.9396 (-0.54)
30	.2499 (-12.04)	210	.9296 (-0.63)
35	.2249 (-12.96)	215	.9246 (-0.68)
40	.1999 (-13.98)	220	.9196 (-0.73)
45	.1799 (-14.9)	225	.9096 (-0.82)
50	.1599 (-15.92)	230	.8996 (-0.92)
55	.1549 (-16.2)	235	.8946 (-0.97)
60	.1499 (-16.48)	240	.8896 (-1.02)
65	.1699 (-15.39)	245	.8796 (-1.11)
70	.1899 (-14.43)	250	.8697 (-1.21)
75	.2149 (-13.35)	255	.8697 (-1.21)
80	.2399 (-12.4)	260	.8697 (-1.21)
85	.2699 (-11.38)	265	.8747 (-1.16)
90	.2999 (-10.46)	270	.8796 (-1.11)
95	.3409 (-9.35)	275	.8896 (-1.02)
100	.3818 (-8.36)	280	.8996 (-0.92)
105	.4313 (-7.3)	285	.9096 (-0.82)
110	.4808 (-6.36)	290	.9196 (-0.73)
115	.5453 (-5.27)	295	.9396 (-0.54)
120	.6098 (-4.3)	300	.9596 (-0.36)
125	.6897 (-3.23)	305	.9696 (-0.27)
130	.7697 (-2.27)	310	.9796 (-0.18)
135	.8597 (-1.31)	315	.9796 (-0.18)
140	.9496 (-0.45)	320	.9796 (-0.18)
145	.9596 (-0.36)	325	.9546 (-0.4)
150	.9696 (-0.27)	330	.9296 (-0.63)
155	.9796 (-0.18)	335	.8697 (-1.21)
160	.9896 (-0.09)	340	.8097 (-1.83)
165	.9948 (-0.05)	345	.7277 (-2.76)
170	1.0000 (0)	350	.6457 (-3.8)
175	.9898 (-0.09)	355	.5727 (-4.84)

Systems With Reliability Inc

CLIENT: *Martz Communications, WVLF- Exhibit 3*

Date: 11/2/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

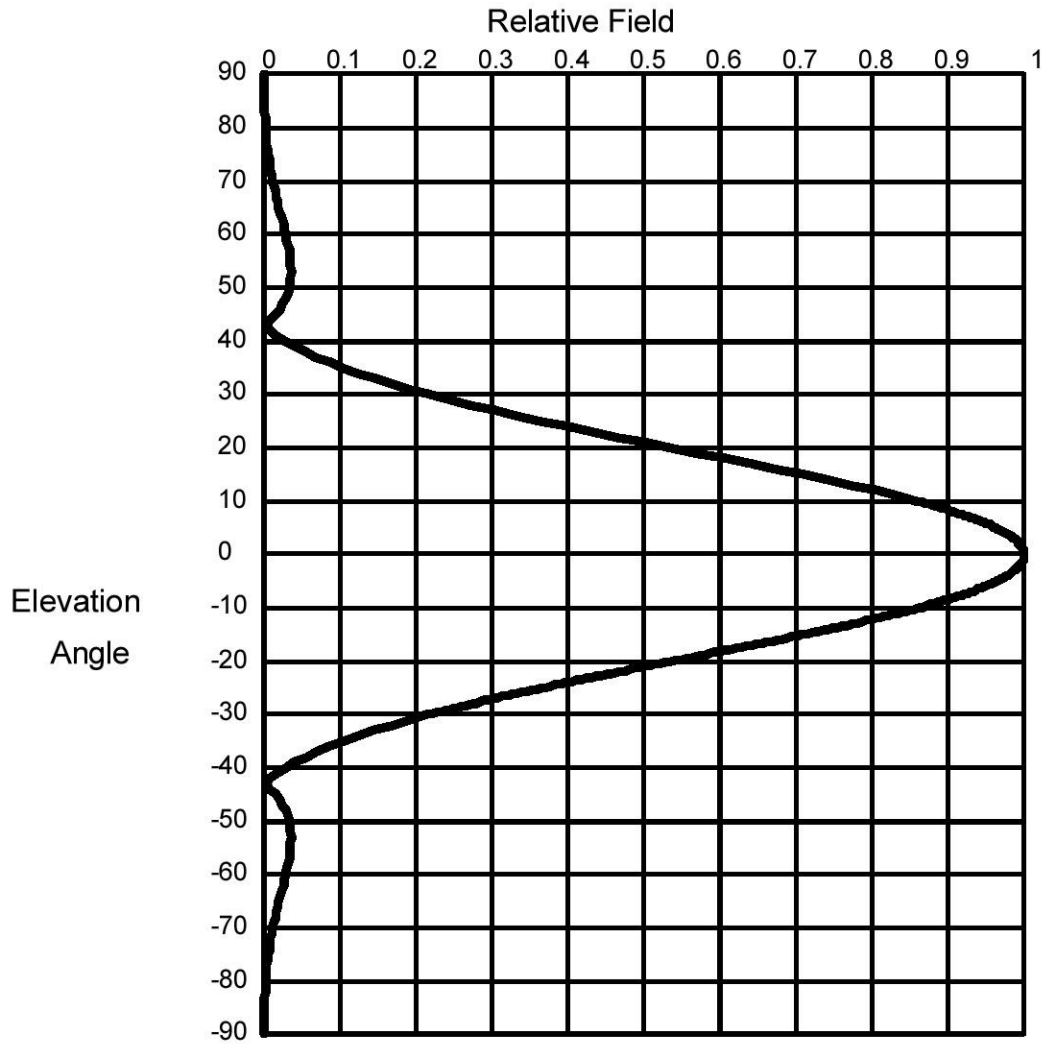
FREQUENCY: 96.1

PATTERN POL.: Vertical

CIRCULARITY(+/-dB): NA

AZ. DIRECTIVITY: 1.73515 / 2.39dB

PATTERN RMS: 0.759



Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability Inc

Date: 11/3/2003

CLIENT: *Martz Communications, WVLF- Exhibit 4*

ANTENNA TYPE: FM10/4 HWS DA Illumitron

FREQUENCY: 96.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 2.289/3.596 dBd

Beam Tilt (Deg.): 0

DIRECTIVITY(Horiz): 2.289/3.596 dBd

Null Fill(s)(%): -25, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
3.2	.985 (-0.133)	-4.4	.971 (-0.251)	-12.0	.804 (-1.895)
3.0	.987 (-0.117)	-4.6	.969 (-0.275)	-12.2	.798 (-1.96)
2.8	.988 (-0.102)	-4.8	.966 (-0.299)	-12.4	.792 (-2.026)
2.6	.99 (-0.088)	-5.0	.963 (-0.325)	-12.6	.786 (-2.093)
2.4	.991 (-0.075)	-5.2	.96 (-0.351)	-12.8	.78 (-2.161)
2.2	.993 (-0.063)	-5.4	.957 (-0.379)	-13.0	.774 (-2.23)
2.0	.994 (-0.052)	-5.6	.954 (-0.408)	-13.2	.767 (-2.301)
1.8	.995 (-0.042)	-5.8	.951 (-0.438)	-13.4	.761 (-2.372)
1.6	.996 (-0.033)	-6.0	.948 (-0.468)	-13.6	.755 (-2.445)
1.4	.997 (-0.025)	-6.2	.944 (-0.5)	-13.8	.748 (-2.519)
1.2	.998 (-0.019)	-6.4	.94 (-0.533)	-14.0	.742 (-2.594)
1.0	.999 (-0.013)	-6.6	.937 (-0.567)	-14.2	.735 (-2.671)
.8	.999 (-0.008)	-6.8	.933 (-0.602)	-14.4	.729 (-2.748)
.6	.999 (-0.005)	-7.0	.929 (-0.638)	-14.6	.722 (-2.827)
.4	1.00 (-0.002)	-7.2	.925 (-0.675)	-14.8	.716 (-2.907)
.2	1.00 (-0.001)	-7.4	.921 (-0.714)	-15.0	.709 (-2.988)
.0	1.00 (0)	-7.6	.917 (-0.753)	-15.2	.702 (-3.071)
-.2	1.00 (-0.001)	-7.8	.913 (-0.793)	-15.4	.695 (-3.154)
-.4	1.00 (-0.002)	-8.0	.908 (-0.835)	-15.6	.689 (-3.239)
-.6	.999 (-0.005)	-8.2	.904 (-0.878)	-15.8	.682 (-3.325)
-.8	.999 (-0.008)	-8.4	.899 (-0.921)	-16.0	.675 (-3.412)
-1.0	.999 (-0.013)	-8.6	.895 (-0.966)	-16.2	.668 (-3.501)
-1.2	.998 (-0.019)	-8.8	.89 (-1.012)	-16.4	.661 (-3.591)
-1.4	.997 (-0.025)	-9.0	.885 (-1.059)	-16.6	.655 (-3.682)
-1.6	.996 (-0.033)	-9.2	.88 (-1.107)	-16.8	.648 (-3.774)
-1.8	.995 (-0.042)	-9.4	.875 (-1.156)	-17.0	.641 (-3.868)
-2.0	.994 (-0.052)	-9.6	.87 (-1.206)	-17.2	.634 (-3.962)
-2.2	.993 (-0.063)	-9.8	.865 (-1.257)	-17.4	.627 (-4.059)
-2.4	.991 (-0.075)	-10.0	.86 (-1.31)	-17.6	.62 (-4.156)
-2.6	.99 (-0.088)	-10.2	.855 (-1.363)	-17.8	.613 (-4.255)
-2.8	.988 (-0.102)	-10.4	.849 (-1.418)	-18.0	.606 (-4.355)
-3.0	.987 (-0.117)	-10.6	.844 (-1.473)	-18.2	.599 (-4.456)
-3.2	.985 (-0.133)	-10.8	.838 (-1.53)	-18.4	.592 (-4.559)
-3.4	.983 (-0.15)	-11.0	.833 (-1.588)	-18.6	.585 (-4.663)
-3.6	.981 (-0.168)	-11.2	.827 (-1.647)	-18.8	.578 (-4.768)
-3.8	.979 (-0.187)	-11.4	.822 (-1.708)	-19.0	.57 (-4.875)
-4.0	.976 (-0.208)	-11.6	.816 (-1.769)	-19.2	.563 (-4.983)
-4.2	.974 (-0.229)	-11.8	.81 (-1.831)	-19.4	.556 (-5.093)

Systems With Reliability Inc

Page 1 of 2

CLIENT: *Martz Communications, WVLF- Exhibit 4*

Date: 11/3/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

FREQUENCY: 96.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 2.289/3.596 dBd

Beam Tilt (Deg.): 0

DIRECTIVITY(Horiz): 2.289/3.596 dBd

Null Fill(s)(%): -25, 0, 0

Relative Field Tabulation

Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)	Elev. Angle	Rel. Fld(dB)
-19.6	.549 (-5.203)	-27.2	.296 (-10.583)	-54.0	.035 (-29.077)
-19.8	.542 (-5.316)	-27.4	.29 (-10.76)	-55.0	.035 (-29.206)
-20.0	.535 (-5.429)	-27.6	.284 (-10.939)	-56.0	.034 (-29.418)
-20.2	.528 (-5.544)	-27.8	.278 (-11.121)	-57.0	.033 (-29.706)
-20.4	.521 (-5.661)	-28.0	.272 (-11.305)	-58.0	.031 (-30.064)
-20.6	.514 (-5.779)	-28.2	.266 (-11.492)	-59.0	.03 (-30.486)
-20.8	.507 (-5.898)	-28.4	.261 (-11.681)	-60.0	.028 (-30.971)
-21.0	.50 (-6.019)	-28.6	.255 (-11.872)	-61.0	.027 (-31.515)
-21.2	.493 (-6.142)	-28.8	.249 (-12.065)	-62.0	.025 (-32.117)
-21.4	.486 (-6.265)	-29.0	.244 (-12.262)	-63.0	.023 (-32.775)
-21.6	.479 (-6.391)	-29.2	.238 (-12.46)	-64.0	.021 (-33.488)
-21.8	.472 (-6.518)	-29.4	.233 (-12.662)	-65.0	.019 (-34.258)
-22.0	.465 (-6.646)	-29.6	.227 (-12.866)	-66.0	.018 (-35.085)
-22.2	.458 (-6.776)	-29.8	.222 (-13.072)	-67.0	.016 (-35.969)
-22.4	.451 (-6.907)	-30.0	.217 (-13.282)	-68.0	.014 (-36.912)
-22.6	.445 (-7.04)	-31.0	.191 (-14.374)	-69.0	.013 (-37.917)
-22.8	.438 (-7.175)	-32.0	.167 (-15.547)	-70.0	.011 (-38.986)
-23.0	.431 (-7.311)	-33.0	.144 (-16.813)	-71.0	.01 (-40.124)
-23.2	.424 (-7.449)	-34.0	.123 (-18.189)	-72.0	.009 (-41.335)
-23.4	.417 (-7.589)	-35.0	.104 (-19.695)	-73.0	.007 (-42.624)
-23.6	.411 (-7.73)	-36.0	.085 (-21.364)	-74.0	.006 (-43.998)
-23.8	.404 (-7.873)	-37.0	.069 (-23.24)	-75.0	.005 (-45.465)
-24.0	.397 (-8.018)	-38.0	.054 (-25.396)	-76.0	.004 (-47.037)
-24.2	.391 (-8.164)	-39.0	.04 (-27.953)	-77.0	.004 (-48.724)
-24.4	.384 (-8.312)	-40.0	.028 (-31.147)	-78.0	.003 (-50.544)
-24.6	.377 (-8.462)	-41.0	.017 (-35.529)	-79.0	.002 (-52.515)
-24.8	.371 (-8.614)	-42.0	.007 (-43.063)	-80.0	.002 (-54.665)
-25.0	.364 (-8.767)	-43.0	.001 (-56.708)	-81.0	.001 (-57.025)
-25.2	.358 (-8.922)	-44.0	.009 (-41.106)	-82.0	.001 (-59.641)
-25.4	.352 (-9.08)	-45.0	.015 (-36.436)	-83.0	.001 (-62.576)
-25.6	.345 (-9.239)	-46.0	.02 (-33.834)	-84.0	.001 (-65.92)
-25.8	.339 (-9.4)	-47.0	.025 (-32.155)	-85.0	.00 (-69.813)
-26.0	.333 (-9.563)	-48.0	.028 (-31.008)	-86.0	.00 (-74.484)
-26.2	.326 (-9.727)	-49.0	.031 (-30.212)	-87.0	.00 (-80.36)
-26.4	.32 (-9.894)	-50.0	.033 (-29.667)	-88.0	.00 (-88.382)
-26.6	.314 (-10.063)	-51.0	.034 (-29.315)	-89.0	.00 (-50)
-26.8	.308 (-10.234)	-52.0	.035 (-29.115)	-90.0	.00 (-50)
-27.0	.302 (-10.407)	-53.0	.035 (-29.042)	90.0	.00 (-50)

Systems With Reliability Inc

Page 2 of 2

CLIENT: *Martz Communications, WVLF- Exhibit 4*

Date: 11/3/2003

ANTENNA TYPE: FM10/4 HWS DA Illumitron

FREQUENCY: 96.1

PATTERN POL.: Circular

DIRECTIVITY(Peak): 2.289/3.596 dBd

Beam Tilt (Deg.): 0

DIRECTIVITY(Horiz): 2.289/3.596 dBd

Null Fill(s)(%): -25, 0, 0



SYSTEMS WITH RELIABILITY, INC.
Broadcast Antennas and Transmission Systems

ANTENNA DATA SHEET

Call Sign WWLF
Customer Martz Communications
Location Norwood, NY
Antenna Model DA Dual Frequency RSL
Channel/Frequency 96.1 MHz
Polarization Type Circular

Antenna Specifications:

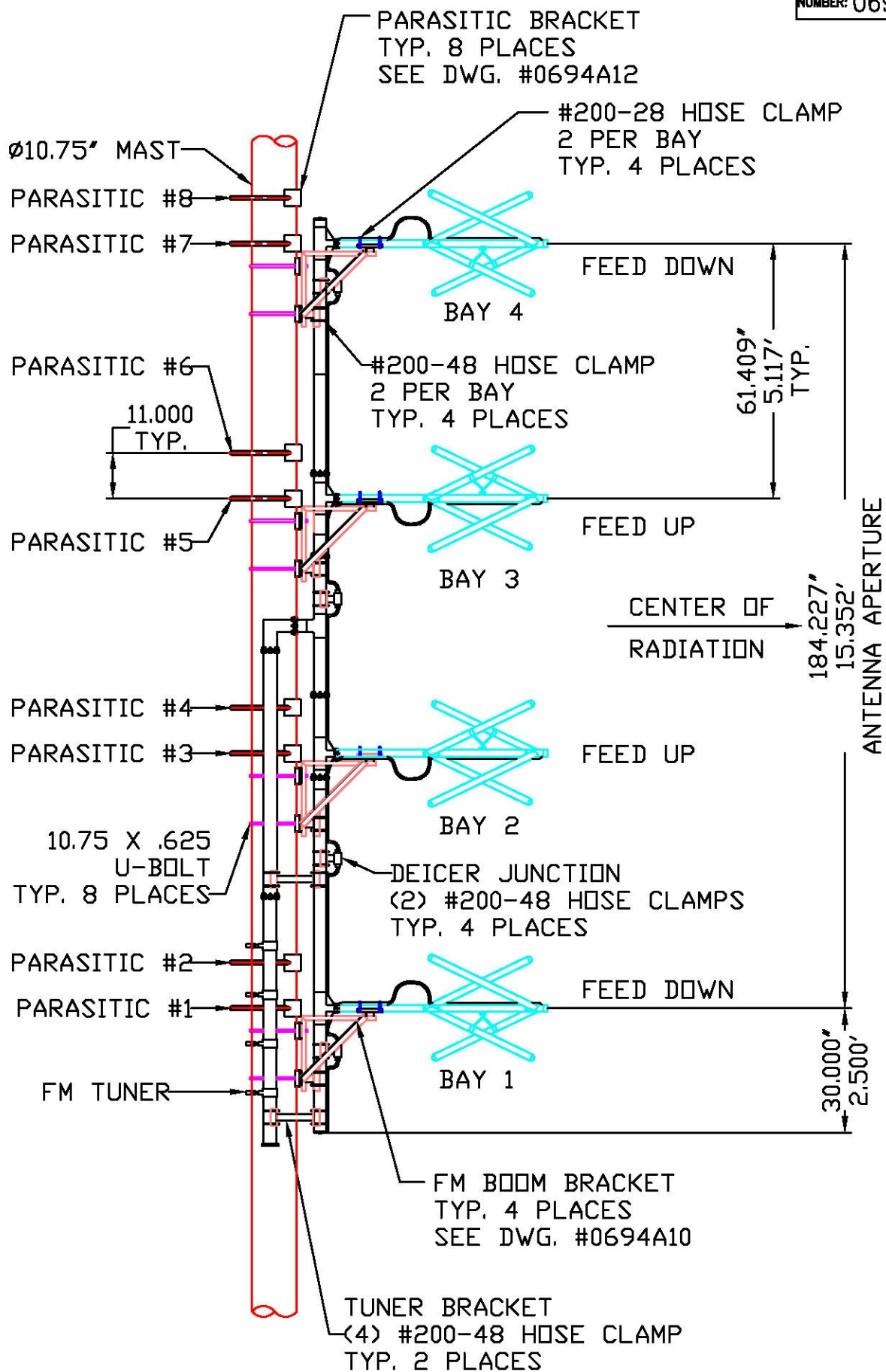
	H. Pol.	dB	V. Pol.	dB
License ERP (KW)	25.0000	13.9794	25.0000	13.9794
Elevation Directivity	2.2890	3.5965	2.2890	3.5965
Azimuth Directivity	2.0901	3.2017	1.7351	2.3932
Polarization Ratio	0.4536	-3.4333	0.5464	-2.6249
Antenna Efficiency	0.8500	-0.7058	0.8500	-0.7058
Antenna Gain	1.8446	2.6590	1.8446	2.6590
Antenna Input Power (KW)	13.5531	11.3204	13.5531	11.3204

Feed Line Specifications:

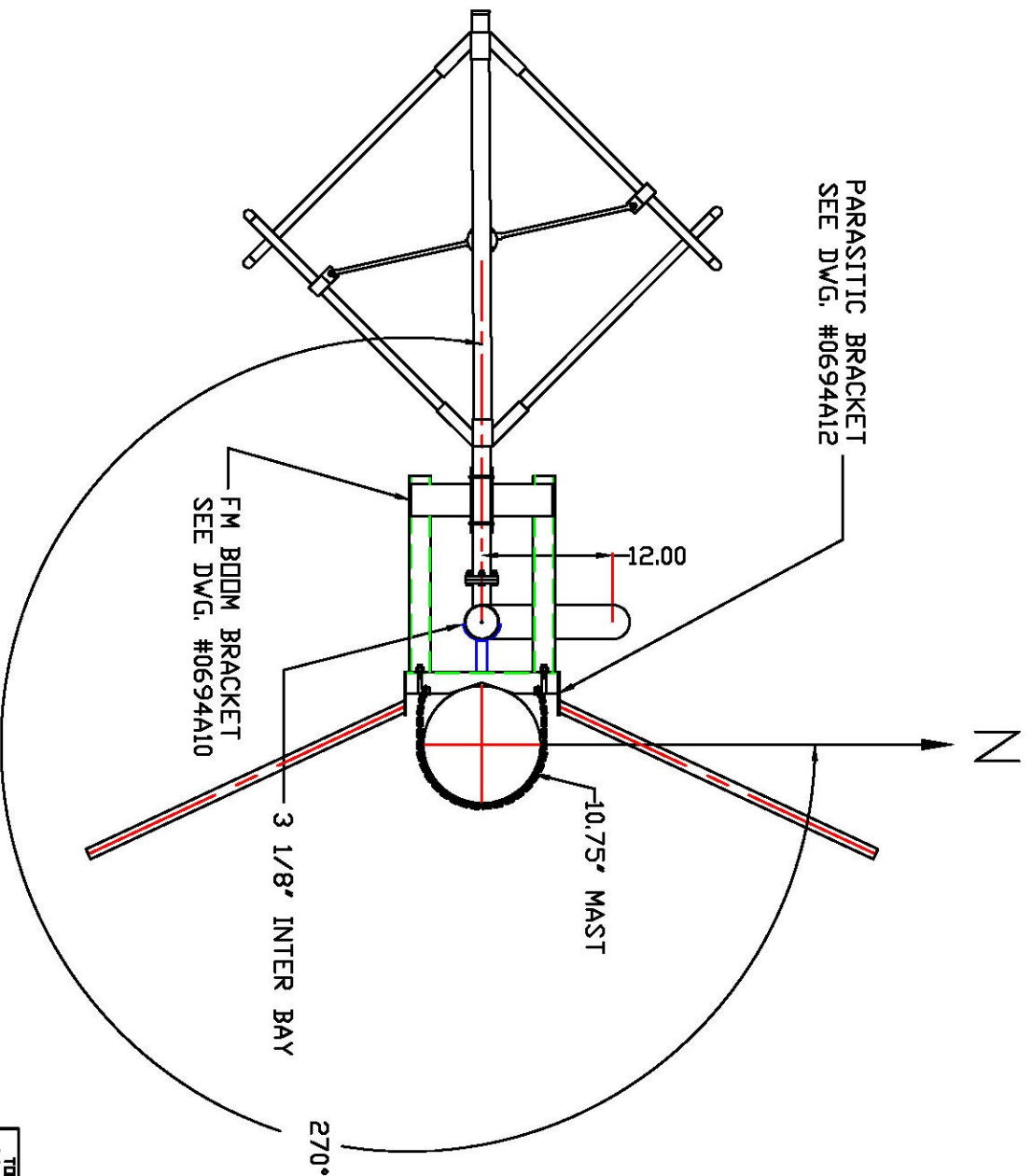
Line Type	3" Air, Cablewave	
Attenuation Per 100 ft (dB)	0.141	
Line Length (ft)	360	
Total Line Attenuation (dB)	-0.5076	
Line Efficiency	0.8897	
Input to the Line (KW)	15.2334	11.8280

Physical Specifications:

No. of Bays	4			
Antenna Aperture	15.35	ft	4.6818	m
Center of Radiation	354.33	ft	108.0707	m
Antenna Weight	189	lbs	85.9091	kg
Wind load (50/33,)	479.67	lbs	218.0318	kg
Antenna Weight with 0.5" Radial Ice	226.8	lbs	103.0909	kg
Windload (50/33) w/ 0.5" Radial Ice	889.748	lbs	404.4307	kg



NOTE:



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

TITLE:

ANTENNA ORIENTATION
FM10/4-HWS, FREQ. 96.1

MATERIAL:

SIZE

A

PARTS MADE BY THIS DRAWING

SCALE: FULL

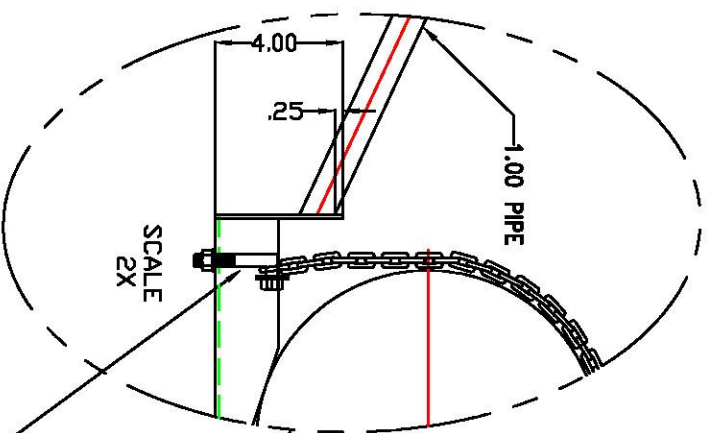
NAME: RAC

DATE: 11/7/03

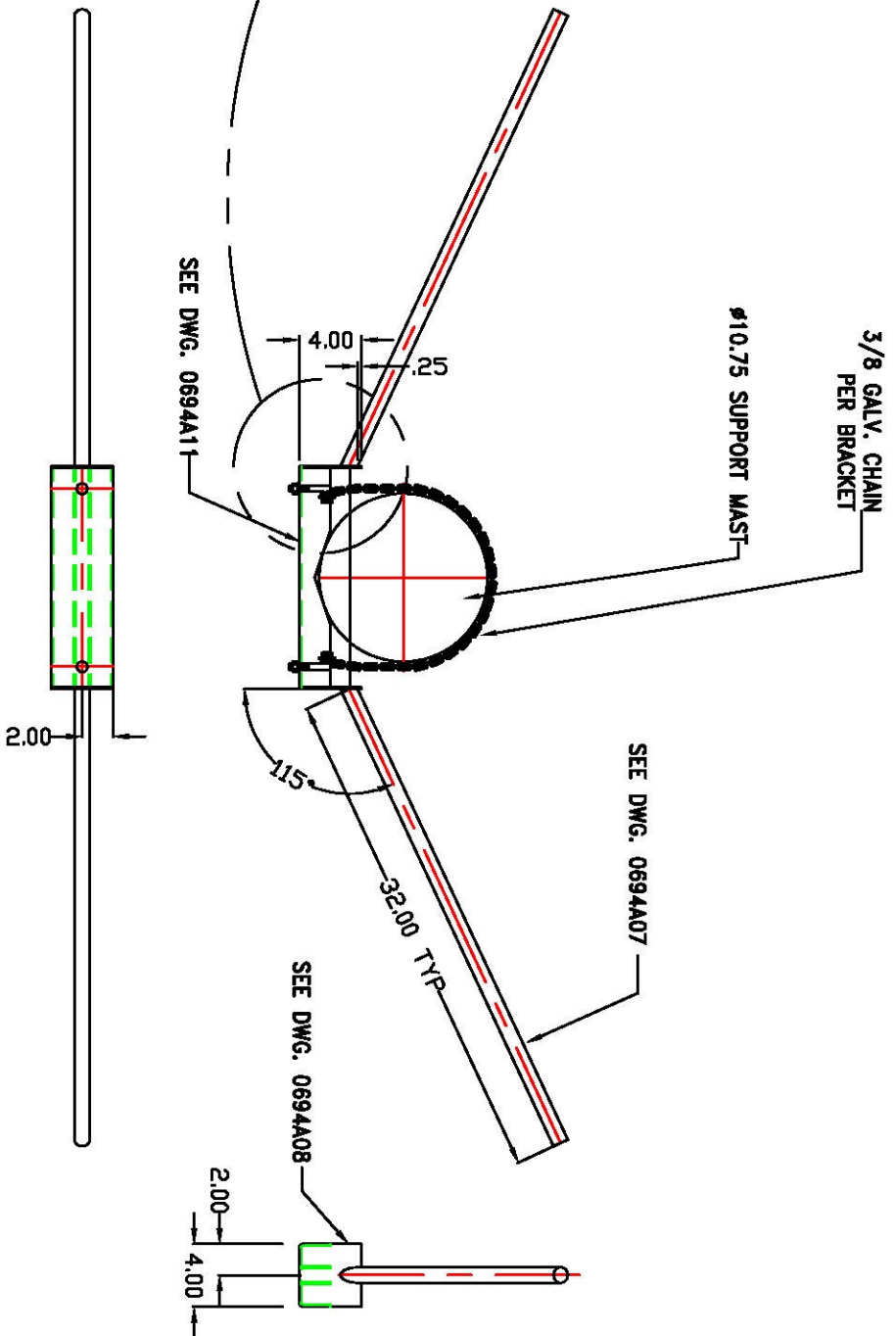
SHEET 1 OF 1

DRAWING
NUMBER
0694A13

NOTE:



- (2) 3/8-16 HHCS S.S.
- (2) 3/8 FLATWASHERS S.S.
- (2) 3/8 LOCKWASHERS S.S.
- (2) 3/8-16 HEX HEAD NUTS S.S. PER BRACKET



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

TITLE:

PARASITIC ASSEMBLY
FM10/4-HWS FREQ. 96.1

MATERIAL:

SIZE

A

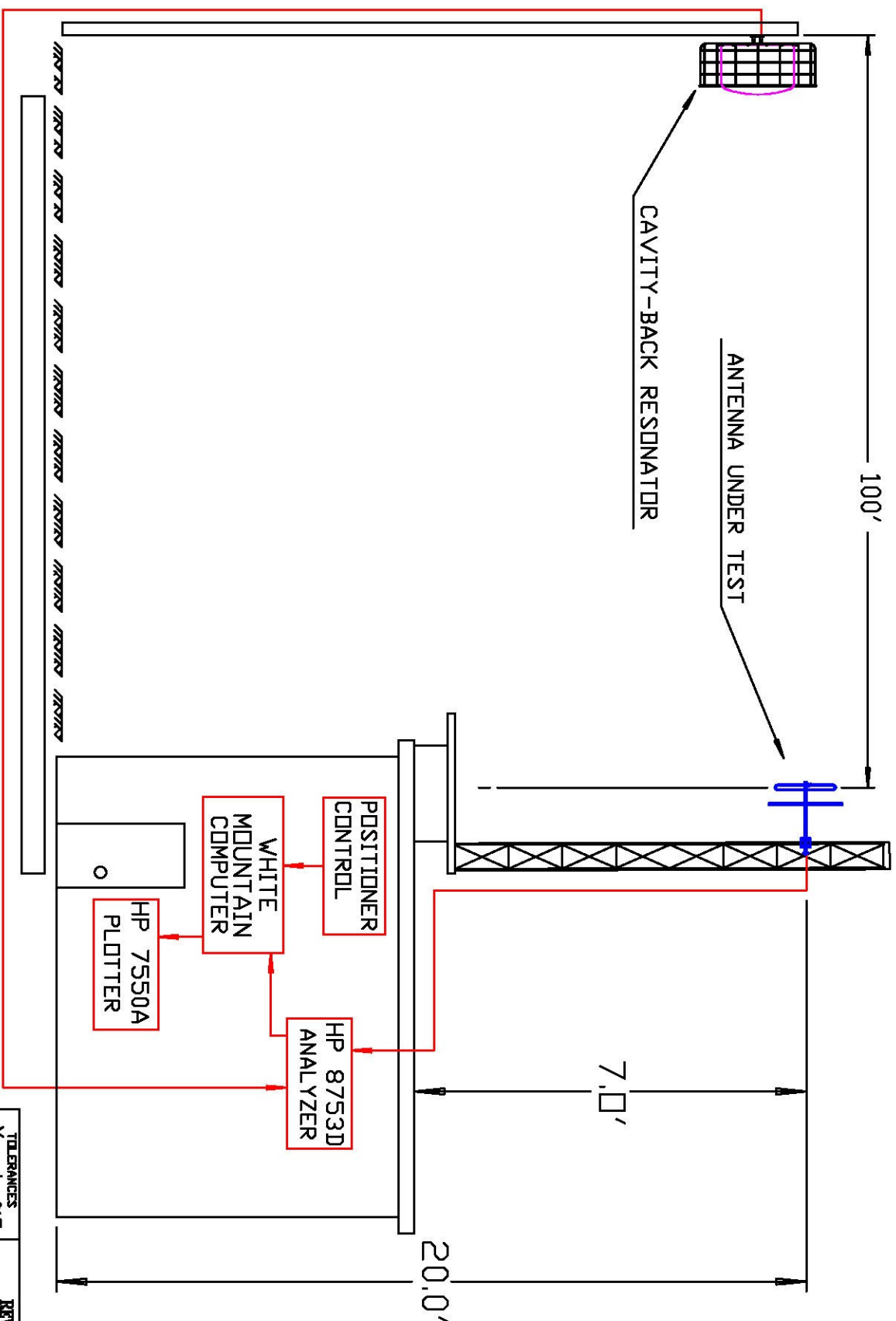
PARTS MADE BY THIS DRAWING

SCALE: FULL NAME: RAC DATE: 8/14/03 SHEET 1 OF 1

DRAWING
NUMBER
0694A12

NOTE:

DRAWING
NUMBER
2105A10



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

TEST RANGE SCHEMATIC



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

TITLE:

MATERIAL:

SIZE

A

PARTS MADE BY THIS DRAWING
SCALE: NTS NAME: JRM DATE: 11/1/98

DRAWING NUMBER: 2105A10

1 4/30/02

SHEET 1 OF 1

SURVEYOR DECLARATION

I, Stephen L. Chatelle, LS, under penalty of perjury, declare that :

1. I am a currently licensed Land Surveyor in the State of New York, License No. NYS . 050094.
2. I have provided professional services to Seaway Broadcasting, Inc., licensee of Radio Station WVLF(FM), Norwood, New York, (FCC Facility ID No. 60470), in connection with installation of a directional FM antenna located westerly of NYS Route 420 in Massena, NY, with specifications authorized under the provisions of Construction Permit BMPH-19990601IF dated July 11, 2000.
3. I certify that the antenna orientation of the antenna elements are as specified in the engineering drawings "Antenna Orientation, FM 10/4-HWS, Freq. 96.1" by SYSTEMS WITH RELIABILITY INC.", dated 11/7/03, drawing number 0694A13.
4. The directional antenna is aligned within +/- 1 degree of the azimuth of 270 degrees True as specified by the antenna manufacturer.

The undersigned is aware that this Declaration is being filed with the Federal Communications Commission in connection with a license application for Radio Station WVLF(FM) and consents to its use for that purpose.

Dated this 19th day of December 2003.

Respectfully,


Stephen L. Chatelle, Land Surveyor

Wilhelm, Chatelle & Towne Surveyors
971 Judson Street Road
Canton, NY 13617
Phone (315) 379-7630
wcts@slc.com

Exhibit E-3

**Surveyor Declaration
Seaway Broadcasting, Inc.
Radio Station WVLF(FM)
Norwood, New York
Facility ID 60470**

December 2003

ENGINEERING DECLARATION


I, Timothy D. Martz, under penalty of perjury, declare that:

1. I am the President of Seaway Broadcasting, Inc., licensee of Radio Station WVLF(FM), Norwood, New York and I have personally supervised the installation of a SWR Model FM10/8 HWS Directional Antenna as with antenna pattern as authorized by Construction Permit No. BMPH-19990601IF.
2. I am technically qualified to submit this Declaration and understand the installation issues presented in the installation of a directional FM antenna.
4. I have previously submitted engineering declarations to the Federal Communications Commission and those Declarations have been accepted.
5. I have been involved in broadcasting for a number of years, both as an employee and as an owner of Broadcast Stations..
6. That I am familiar with the terms and conditions of the Construction Permit issued to Radio Station WVLF(FM), FCC File No. BPH-19990601IF dated July 11, 2000..
7. I hereby certify that I have personally supervised the installation of the antenna and that the installation conforms, in all respects, to the manufacturers installation instructions and with the above Construction Permit issued by the FCC to Radio Station WVLF(FM).

I am aware that this declaration is being submitted to the Federal Communications Commission in connection with a license application for Radio Station WVLF(FM) and consent to its use for that purpose.

Dated this 23rd day of December 2003

Respectfully,



Timothy D. Martz

Timothy D. Martz
955 South Virginia Street
Suite 222
Reno, NV 89502
(415) 359-1030
Email tim@yesfm.com

Exhibit E-4

**Engineering Declaration
Seaway Broadcasting, Inc.
Radio Station WVLF(FM)
Norwood, New York
Facility ID 60470**

December 2003

EXHIBIT E-5

FM Construction Permit
FCC File No. BMPH-19990601IF
Radio Station WVLF(FM)
Norwood, New York
Facility ID 60470

December 2003

United States of America
FEDERAL COMMUNICATIONS COMMISSION
FM BROADCAST STATION CONSTRUCTION PERMIT

Authorizing Official:

Official Mailing Address:

SEAWAY BROADCASTING, INC.
1020 MAR WEST
SUITE A
TIBURON CA 94920

Brian J. Butler
Supervisory Engineer
Audio Division
Media Bureau

Facility ID: 60470

Grant Date: July 11, 2000

Call Sign: WVLF

The authority granted herein has
no effect on the expiration date
of the underlying construction
permit.

Permit File Number: BMPH-19990601IF

This Permit Modifies Permit No.: BPH-19930426MA

Subject to the provisions of the Communications Act of 1934, as amended, subsequent acts and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions set forth in this permit, the permittee is hereby authorized to construct the radio transmitting apparatus herein described. Installation and adjustment of equipment not specifically set forth herein shall be in accordance with representations contained in the permittee's application for construction permit except for such modifications as are presently permitted, without application, by the Commission's Rules.

Commission rules which became effective on February 16, 1999, have a bearing on this construction permit. See Report & Order, Streamlining of Mass Media Applications, MM Docket No. 98-43, 13 FCC RCD 23056, Para. 77-90 (November 25, 1998); 63 Fed. Reg. 70039 (December 18, 1998). Pursuant to these rules, this construction permit will be subject to automatic forfeiture unless construction is complete and an application for license to cover is filed prior to expiration. See Section 73.3598.

Equipment and program tests shall be conducted only pursuant to Sections 73.1610 and 73.1620 of the Commission's Rules.

Name of Permittee: SEAWAY BROADCASTING, INC.

Station Location: NY-NORWOOD

Frequency (MHz): 96.1

Channel: 241

Class: C3

Hours of Operation: Unlimited

Transmitter: Type Accepted. See Sections 73.1660, 73.1665 and 73.1670 of the Commission's Rules.

Transmitter output power: As required to achieve authorized ERP.

Antenna type: Directional

Antenna Coordinates: North Latitude: 44 deg 54 min 11 sec
West Longitude: 74 deg 53 min 02 sec

	Horizontally Polarized Antenna	Vertically Polarized Antenna
Effective radiated power in the Horizontal Plane (kW):	25.0	25.0
Height of radiation center above ground (Meters):	108	108
Height of radiation center above mean sea level (Meters):	171	171
Height of radiation center above average terrain (Meters):	100	100
Antenna structure registration number: 1006969		

Overall height of antenna structure above ground (including obstruction lighting if any) see the registration for this antenna structure.

Special operating conditions or restrictions:

- 1 During installation of the antenna authorized herein, AM Station(s) listed below shall determine operating power by the indirect method. Upon completion of the installation, antenna impedance measurements on the AM antenna shall be made and, prior to or simultaneous with the filing of the application for license to cover this permit, the results submitted to the Commission (along with a tower sketch of the installation) in an application for the AM station to return to the direct method of power determination.
(Revised January 28, 1983)

. WMSA, MASSENA, NY

- 2 BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit the results of a complete proof-of-performance to establish the horizontal plane radiation patterns for both the horizontally and vertically polarized radiation components. This proof-of-performance may be accomplished using the complete full size antenna, or individual bays therefrom, mounted on a supporting structure of identical dimensions and configuration as the proposed structure, including all braces, ladders, conduits, coaxial lines, and other appurtenances; or using a carefully manufactured scale model of the entire antenna, or individual bays therefrom, mounted on an equally scaled model of the proposed supporting structure, including all appurtenances. Engineering exhibits should include a description of the antenna testing facilities and equipment employed, including appropriate photographs or sketches and a description of the testing procedures, including scale factor, measurements frequency, and equipment calibration.

Special operating conditions or restrictions:

3 BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee shall submit an affidavit from a licensed surveyor to establish that the directional antenna has been oriented at the proper azimuth.

4 BEFORE PROGRAM TESTS ARE AUTHORIZED, permittee/licensee shall submit an affidavit that the installation of the directional antenna system was overseen by a qualified engineer. This affidavit shall include a certification by the engineer that the antenna was installed pursuant to the manufacturer's instructions and list the qualifications of the certifying engineer.

5 The relative field strength of neither the measured horizontally nor vertically polarized radiation component shall exceed at any azimuth the value indicated on the composite radiation pattern authorized by this construction permit.

A relative field strength of 1.0 on the composite radiation pattern herein authorized corresponds to the following effective radiated power:

25.0 kilowatts.

Principal minimum and its associated field strength limit:

56.1 degrees True: 0.497 kilowatt.

6 ***** This is a Section 73.215 contour protection grant *****
***** as requested by this applicant *****

7 The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

8 Pursuant to the grant of this construction permit and the authority found in Sections 4(i), 5(c)(1), 303 and 307(b) of the Communications Act of 1934, as amended, and Sections 0.61, 0.204(b), 0.283, 1.420, 73.203(b), and 73.3573 of the Commission's Rules, the FM Table of Allotments, 47 C.F.R. Section 73.202(b), IS AMENDED as follows:

Community
Norwood, NY
.

Channel No.
ADD: 241C3
DELETE: 241A

*** END OF AUTHORIZATION ***