

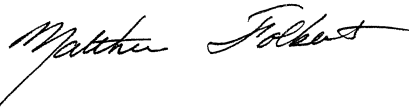
TECHNICAL EXHIBIT
CONCERNING APPLICATION FOR LICENSE
RADIO STATION WJLS-FM
JACKSONVILLE, ALABAMA

This Engineering Statement was prepared on behalf of WJLS-FM, Jacksonville, Alabama (Facility ID 4300) in support of an application for license. This application covers FCC Construction Permit File No. BPED-20000622AFQ.

In compliance with the special operating conditions of WJLS-FM construction permit, the following exhibits are included herewith:

1. Before/After partial proof-of-performance for WNSI (AM)
2. A complete antenna proof-of-performance prepared by ERI.
3. An affidavit from licensed surveyor Shane Traffanstedt establishing the azimuth of the WJLS-FM transmitting antenna.
4. An affidavit from engineer Randall L. Mullinax concerning oversight of the WJLS-FM transmitting antenna installation.

Concerning the calculation of the transmitter power output (TPO), the 0.502 kW (-2.99 dBk) figure is based on consideration of a transmission line attenuation of 0.6206 dB. Given an antenna gain of 1.469 dB, a TPO of -2.99 dBk produces an ERP of -2.14 dBk or 0.61 kW.



Matthew Folkert
du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237

(941) 329-6000

November 25, 2002

TECHNICAL EXHIBIT
BEFORE/AFTER PARTIAL PROOF-OF-PERFORMANCE
BOARD OF TRUSTEES/JACKSONVILLE STATE UNIVERSITY
RADIO STATION WJLS-FM
JACKSONVILLE, ALABAMA

Engineering Statement

The technical exhibit of which this narrative is part was prepared on behalf of The Board of Trustees/Jacksonville State University, licensee of FM broadcast station WJLS-FM, Jacksonville, Alabama. WJLS-FM is a Class A station operating on 91.9 MHz (Channel 220). It operates with a directional antenna with a horizontal and vertical ERP of 0.61 kilowatts. WJLS-FM has been issued a Construction Permit to relocate its transmitter site under number BPED-20000622AFQ. As a special condition to this authorization, before and after partial proof-of-performance measurements are required on nearby AM station WNSI, Jacksonville, Alabama 810 kHz. Included as Figure 1, this report details the results of before and after partial proof-of-performance measurements of the WNSI daytime and nighttime directional antennas. The differences in radial field strength values indicated by the ratio analysis method fall within the range that may be expected with environmental variation and directional antenna parameter drift occurring over time.

Field Strength Measurements

Field strength measurements were made by Mr. Randall L. Mullinax, Mr. Michael Golchert, Mr. Steve Tunwall and Mr. Paul G. McCain. The following Potomac Instruments FIM-41 field strength meters were used for the measurements:

<u>Meter Type</u>	<u>Serial Number</u>	<u>Most Recent Calibration Date</u>
FIM-41	2111	12/19/2001
FIM-41	2038	As Compared
FIM-21	1112	As Compared
FIM-21	309	3/8/2002



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November 25, 2002

TECHNICAL EXHIBIT
DIRECT MEASUREMENT OF POWER
RADIO STATION WNSI
JACKSONVILLE, ALABAMA

Tabulation of Measured Field Strength Data

20.1 Degree True Radial - Day

Point Desig.	Distance (km)	2002 DAD		2002 DAD		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/17/02		11/16/02		
9	1.71	1543	81.0	1515	64.0	0.790
10	1.87	1534	30.0	1510	38.0	1.267
16	2.51	1529	44.0	1508	50.1	1.139
18MP	3.36	1359	18.9	1504	20.8	1.101
19	4.57	1407	7.60	1459	7.60	1.000
20	4.94	1412	3.95	1456	4.20	1.063
21	5.70	1417	4.45	1453	4.40	0.989
22	7.87	1425	1.75	1448	1.89	1.080
23	9.40	1432	1.90	1442	2.10	1.105
25	12.60	1445	0.810	1436	1.20	1.481
26	13.49	1450	0.650	1433	0.930	1.431
Average Log Ratio						1.116

222.5 Degree True Radial - Day

Point Desig.	Distance (km)	2002 DAD		2002 DAD		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/17/02		11/17/02		
7	1.34	1423	1150	924	1130	0.983
12	2.30	1428	650	920	665	1.023
17	4.14	1435	345	914	362	1.049
18	4.43	1441	308	911	328	1.065
19	7.18	1453	164	939	176	1.073
20	8.11	1501	133	945	137	1.030
21	10.19	1514	77.0	1005	90.0	1.169
22	11.56	1519	67.0	1010	78.0	1.164
23	13.91	1526	46.0	1015	52.5	1.141
24	15.00	1533	38.0	1026	44.5	1.171
Average Log Ratio						1.085

251.4 Degree True Radial - Day

Point Desig.	Distance (km)	2002 DAD		2002 DAD		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/17/02		11/16/02		
10	2.43	1012	542	1557	545	1.006
16MP	3.83	1004	311	1551	315	1.013
17	3.98	1024	241	1549	250	1.037
18	4.73	1030	192	1546	187	0.974
19	5.47	1038	129	1542	132	1.023
20	5.76	1043	121	1539	130	1.074
21	7.23	1055	99.0	1534	103	1.040
22	8.24	1105	91.0	1522	93.0	1.022
23	10.78	1115	53.0	1516	55.5	1.047
24	12.38	1123	36.0	1507	39.0	1.083
25	13.78	1132	36.8	1457	38.5	1.046
Average Log Ratio						1.033

335.7 Degree True Radial - Day

Point Desig.	Distance (km)	2002 DAD		2002 DAD		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/17/02		6/25/01		
12MP	2.06	1020	139	1551	132	0.950
21	4.28	1029	28.5	1546	28.3	0.993
22	6.29	1054	18.5	1542	18.6	1.005
24	9.74	1112	7.30	1535	7.30	1.000
25	10.72	1121	7.20	1525	7.60	1.056
26	11.73	1126	6.30	1529	6.40	1.016
27	14.29	1153	2.82	1513	2.90	1.028
28	16.58	1205	2.05	1507	2.15	1.049
Average Log Ratio						1.012

20.1 Degree True Radial - Night

Point Desig.	Distance (km)	2002 DAN		2002 DAN		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/19/02		11/16/02		
9MP	1.71	1027	1.81	945	1.20	0.663
10	1.87	1030	1.86	950	1.19	0.640
16	2.51	1033	0.89	953	1.00	1.124
18	3.36	1036	2.68	1000	2.19	0.817
19	4.57	1041	1.06	1004	0.770	0.726
20	4.94	1044	0.880	1007	0.620	0.705
21	5.70	1047	0.720	1011	0.560	0.778
22	7.87	1051	0.460	1017	0.360	0.783
23	9.40	1056	0.460	1022	0.390	0.848
25	12.60	1102	0.213	1030	0.212	0.995
26	13.49	1107	0.199	1032	0.179	0.899
Average Log Ratio						0.805

64.9 Degree True Radial - Night

Point Desig.	Distance (km)	2002 DAN		2002 DAN		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/19/02		11/16/02		
4	1.27	1035	3.30	957	3.60	1.091
5MP	1.42	1025	1.30	950	1.80	1.385
15	4.04	1333	0.44	1009	0.38	0.864
22	14.92	1055	0.070	1032	0.062	0.886
23	15.64	1225	0.042	1214	0.044	1.048
24	16.42	1245	0.060	1204	0.062	1.033
25	18.35	1140	0.060	1156	0.065	1.083
26	19.63	1131	0.056	1151	0.058	1.036
Average Log Ratio						1.043

90.8 Degree True Radial - Night

Point Desig.	Distance (km)	2002 DAN		2002 DAN		Ratio (Aft/Bef)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/19/02		11/16/02		
2MP	0.76	1025	8.60	946	8.8	1.023
20	6.42	1119	0.253	1050	0.217	0.858
21	7.47	1122	0.490	1053	0.430	0.878
22	8.13	1125	0.310	1057	0.255	0.823
23	8.82	1130	0.222	1100	0.218	0.982
24	9.25	1132	0.192	1102	0.195	1.016
25	9.93	1135	0.201	1104	0.210	1.045
26	15.58	1152	0.056	1123	0.055	0.982
Average Log Ratio						0.947

354.2 Degree True Radial - Night

Point Desig.	Distance (km)	2002 DAN		2002 DAN		Ratio (DA/NDA)
		Date & Time (local)	Field Strength (mV/m)	Date & Time (local)	Field Strength (mV/m)	
		10/19/02		11/16/02		
14MP	2.51	1029	1.26	950	1.65	1.310
20	5.52	1040	0.840	1001	0.830	0.988
21	6.05	1044	2.21	1005	1.05	0.475
22	7.44	1048	0.470	1009	0.360	0.766
23	8.03	1051	0.134	1013	0.120	0.896
24	8.53	1053	0.248	1016	0.205	0.827
25	9.08	1055	0.435	1018	0.380	0.874
26	11.23	1106	0.090	1028	0.095	1.056
27	13.60	1114	0.095	1043	0.110	1.158
28	14.13	1118	0.162	1048	0.160	0.988
Average Log Ratio						0.905

***Directional Antenna System
for
WLJS, Jacksonville, Alabama***

October 16, 2002

Electronics Research Inc. is providing a custom fabricated antenna system that is specially designed to meet the FCC requirements and the general needs of radio station WLJS.

The antenna is the ERI model LP-2E-DA-HW configuration. The circular polarized system consists of two half-wavelength spaced bays using one driven circular polarized radiating element per bay, two horizontal parasitic elements per bay and two vertical parasitic elements centered between the bays. The antenna was tested on a 6 5/8" o.d. pole, which is the structure the station plans to use to support the array. All tests were performed on a frequency of 91.9 megahertz, which is the center of the FM broadcast channel assigned to WLJS.

Pattern measurements were made on a sixty-acre antenna pattern range that is owned and operated by Electronics Research, Inc. The tests were performed under the direction of Thomas B. Silliman, president of Electronics Research, Inc. Mr. Silliman has the Bachelor of Electrical Engineering and the Master of Electrical Engineering degrees from Cornell University and is a registered professional engineer in the states of Indiana, Maryland and Minnesota.

Directional Antenna System For WLJS, Jacksonville, Alabama

(Continued)

DESCRIPTION OF THE TEST PROCEDURE

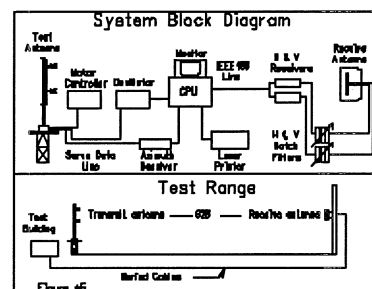
The test antenna consisted of a full scale model of the complete circular polarized system with the associated horizontal and vertical parasitic elements. The elements and brackets that were used in this test are electrically equivalent to those that will be supplied with the antenna. A section of 1 5/8 inch o.d. rigid coaxial line was used to feed the test antenna, and a section of 1 5/8 inch o.d. rigid outer conductor only was attached above the test antenna. The lines were properly grounded during all tests.

The power distribution and phase relationship to the antenna elements was adjusted in order to achieve the directional radiation patterns for both horizontal and vertical polarization components.

The proof-of-performance was accomplished using a 6 5/8" o.d. pole with identical dimension and configuration including all braces, ladders, conduits, coaxial lines and other appurtenances that are included in the actual aperture at which the antenna will be installed. The structure was erected vertically on a turntable mounted on a non-metallic building with the antenna centered vertically on the structure, making the center of radiation of the test approximately 30 feet above ground. The turntable is equipped with a motor drive and azimuth indicating mechanism, resolution of this azimuth measuring device is one-tenth of a degree.

The antenna under test was operated in the transmitting mode and fed from a Wavetek Model 3000 signal generator. The frequency of the signal source was set at 91.9 MHz and was constantly monitored by an Anritsu Model ML521B measuring receiver.

A broad-band horizontal and vertical dipole system, located approximately 628 feet from the test antenna, was used to receive the emitted test signals. The dipole system was mounted at the same height above terrain as the center of the antenna under test. The signals received by the dipole system were fed to the test building by way of two buried Heliax cables to an Anritsu Model ML521B measuring receiver.



Directional Antenna System
For
WLJS, Jacksonville, Alabama

(Continued)

This data was interfaced to a Hewlett-Packard Laser Jet 4P printer by means of a Pentium computer system. Relative field strength was plotted as a function of azimuth.

The measurements were performed by rotating the test antenna in a counter-clockwise direction and plotting the received signal on polar co-ordinated graph paper in a clockwise direction. Both horizontal and vertical components were recorded separately.

CONCLUSIONS

The circular polarized system consists of two half-wavelength spaced bays using one driven circular polarized radiating element per bay, two horizontal parasitic elements per bay and two vertical parasitic elements centered between the bays. The power distribution and phase relationship will be fixed when antenna is manufactured. Proper maintenance of the elements should be all that is required to maintain the pattern in adjustment.

The LP-2E-DA-HW array is to be mounted on the 6 5/8" o.d. pole at a bearing of North 335 degrees East. Blue prints provided with the antenna will show the proper antenna orientation alignment. The antenna alignment procedure should be directed by a licensed surveyor as prescribed by the FCC.

Figure #1 represents the maximum value of either the horizontal or vertical component at any azimuth. The measured horizontal plane relative field pattern, for both the horizontal and vertical polarization components, is shown on Figure #2 attached. The actual measured pattern does not exceed the authorized FCC composite pattern at any azimuth. A calculated vertical plane relative field pattern is shown on Figure #3 attached. The power in the maximum will reach 0.610 kilowatts (-2.147 dBk).

The power at North 130-140 degrees East does not exceed .033 kilowatts (-14.815 dBk).

The power at North 230-240 degrees East does not exceed .193 kilowatts (-7.144 dBk).

The RMS of the vertically polarized horizontal plane component does not exceed the RMS of the horizontally polarized horizontal plane component.

Directional Antenna System
For
WLJS, Jacksonville, Alabama

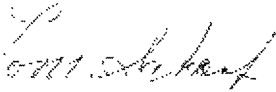
(Continued)

The composite horizontal and vertical maximum relative field pattern obtained from the measured data as shown on Figure #1 has an RMS that is greater than 85% of the filed composite pattern.

The clear vertical length of the structure required to support the antenna is 20 feet.

The directional antenna should not be mounted on the top of an antenna tower that includes a top-mounted platform larger than the cross-sectional area of the tower in the horizontal plane. No obstructions other than those that are specified by the blue prints supplied with the antenna are to be mounted within 75 ft. horizontally of the system. The vertical distance to the nearest obstruction should be a minimum of 10 ft. from the directional antenna. Metallic guy wires should be a minimum distance of forty feet horizontally from the antenna.

ELECTRONICS RESEARCH, INC.

A handwritten signature in dark ink, appearing to read "J. M. Smith", is located below the company name.

ERI[®] Horizontal Plane Relative Field Pattern

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 <http://www.eriinc.com/>

FIGURE: 1

STATION: WLJS

LOCATION: JACKSONVILLE AL.

ANTENNA TYPE: LP-2E-DA-HW

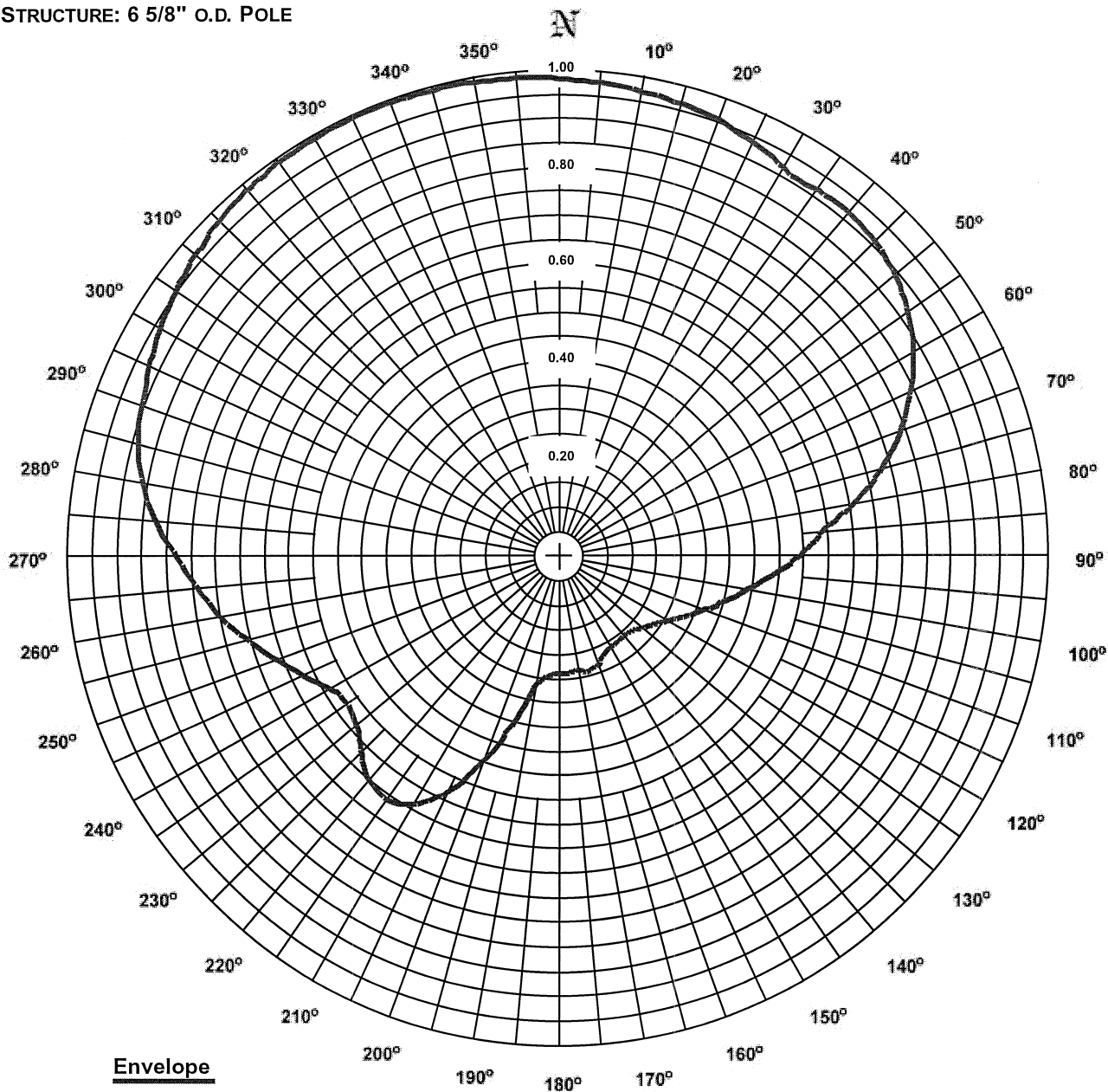
STRUCTURE: 6 5/8" O.D. POLE

DATE: 10/16/02

FREQUENCY: 91.9 MHz

ORIENTATION: 335° TRUE

MOUNTING: STANDARD



RMS: 0.709

Maximum: 1.000 @ 333° True

Minimum: 0.206 @ 140° True

COMMENTS: COMPOSITE PATTERN: THIS PATTERN SHOWS THE MAXIMUM OF EITHER THE H OR V AZIMUTH VALUES. THIS PATTERN DOES NOT EXCEED THE FCC FILED COMPOSITE PATTERN AT ANY AZIMUTH. THE RMS OF THIS PATTERN IS GREATER THAN 85% OF THE FILED FCC COMPOSITE PATTERN BMPED-20011113ADY.

ERI[®] Horizontal Plane Relative Field List

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 <http://www.eriinc.com/>

Station: WLJS
Location: Jacksonville AL
Frequency: 91.9 MHz

Antenna: LP-2E-DA-HW
Orientation: 335° True
Tower: 6 5/8" o.d. Pole

Figure: 1
Date: 10/16/02
Reference: wljs1m.fig

Angle	Envelope			Polarization	Angle	Envelope			Polarization
	Field	kW	dBk			Field	kW	dBk	
0°	0.987	0.59	-2.26	Vertical	180°	0.234	0.03	-14.75	Vertical
5°	0.982	0.59	-2.31	Vertical	185°	0.240	0.04	-14.54	Vertical
10°	0.975	0.58	-2.37	Vertical	190°	0.258	0.04	-13.92	Horizontal
15°	0.967	0.57	-2.44	Vertical	195°	0.337	0.07	-11.60	Horizontal
20°	0.957	0.56	-2.53	Vertical	200°	0.441	0.12	-9.26	Horizontal
25°	0.940	0.54	-2.68	Vertical	205°	0.526	0.17	-7.73	Horizontal
30°	0.922	0.52	-2.85	Vertical	210°	0.581	0.21	-6.87	Horizontal
35°	0.920	0.52	-2.87	Horizontal	215°	0.605	0.22	-6.51	Horizontal
40°	0.921	0.52	-2.86	Horizontal	220°	0.598	0.22	-6.62	Horizontal
45°	0.912	0.51	-2.95	Horizontal	225°	0.569	0.20	-7.04	Horizontal
50°	0.895	0.49	-3.11	Horizontal	230°	0.536	0.18	-7.56	Horizontal
55°	0.868	0.46	-3.38	Horizontal	235°	0.524	0.17	-7.76	Horizontal
60°	0.833	0.42	-3.74	Horizontal	240°	0.533	0.17	-7.61	Vertical
65°	0.789	0.38	-4.21	Horizontal	245°	0.569	0.20	-7.04	Vertical
70°	0.736	0.33	-4.81	Horizontal	250°	0.609	0.23	-6.45	Vertical
75°	0.674	0.28	-5.57	Horizontal	255°	0.652	0.26	-5.86	Vertical
80°	0.604	0.22	-6.53	Horizontal	260°	0.698	0.30	-5.27	Vertical
85°	0.532	0.17	-7.62	Vertical	265°	0.737	0.33	-4.80	Vertical
90°	0.484	0.14	-8.45	Vertical	270°	0.778	0.37	-4.33	Vertical
95°	0.431	0.11	-9.45	Vertical	275°	0.824	0.41	-3.82	Horizontal
100°	0.383	0.09	-10.48	Vertical	280°	0.862	0.45	-3.44	Horizontal
105°	0.344	0.07	-11.43	Vertical	285°	0.889	0.48	-3.17	Horizontal
110°	0.309	0.06	-12.35	Vertical	290°	0.906	0.50	-3.01	Horizontal
115°	0.278	0.05	-13.26	Vertical	295°	0.923	0.52	-2.85	Vertical
120°	0.253	0.04	-14.09	Vertical	300°	0.940	0.54	-2.68	Vertical
125°	0.233	0.03	-14.80	Vertical	305°	0.955	0.56	-2.54	Vertical
130°	0.219	0.03	-15.36	Vertical	310°	0.968	0.57	-2.43	Vertical
135°	0.210	0.03	-15.71	Vertical	315°	0.979	0.58	-2.33	Vertical
140°	0.206	0.03	-15.85	Vertical	320°	0.988	0.60	-2.25	Vertical
145°	0.207	0.03	-15.81	Vertical	325°	0.994	0.60	-2.20	Vertical
150°	0.210	0.03	-15.70	Vertical	330°	0.999	0.61	-2.16	Horizontal
155°	0.214	0.03	-15.52	Vertical	335°	1.000	0.61	-2.15	Horizontal
160°	0.229	0.03	-14.93	Horizontal	340°	1.000	0.61	-2.15	Horizontal
165°	0.237	0.03	-14.66	Horizontal	345°	0.998	0.61	-2.16	Vertical
170°	0.231	0.03	-14.88	Vertical	350°	0.996	0.60	-2.19	Vertical
175°	0.233	0.03	-14.78	Vertical	355°	0.992	0.60	-2.22	Vertical

Polarization:
Maximum Field: 1.000 @ 333° True
Minimum Field: 0.206 @ 140° True
RMS: 0.709
Maximum ERP: 0.610 kW
Maximum Power Gain: 1.403 (1.469 dB)

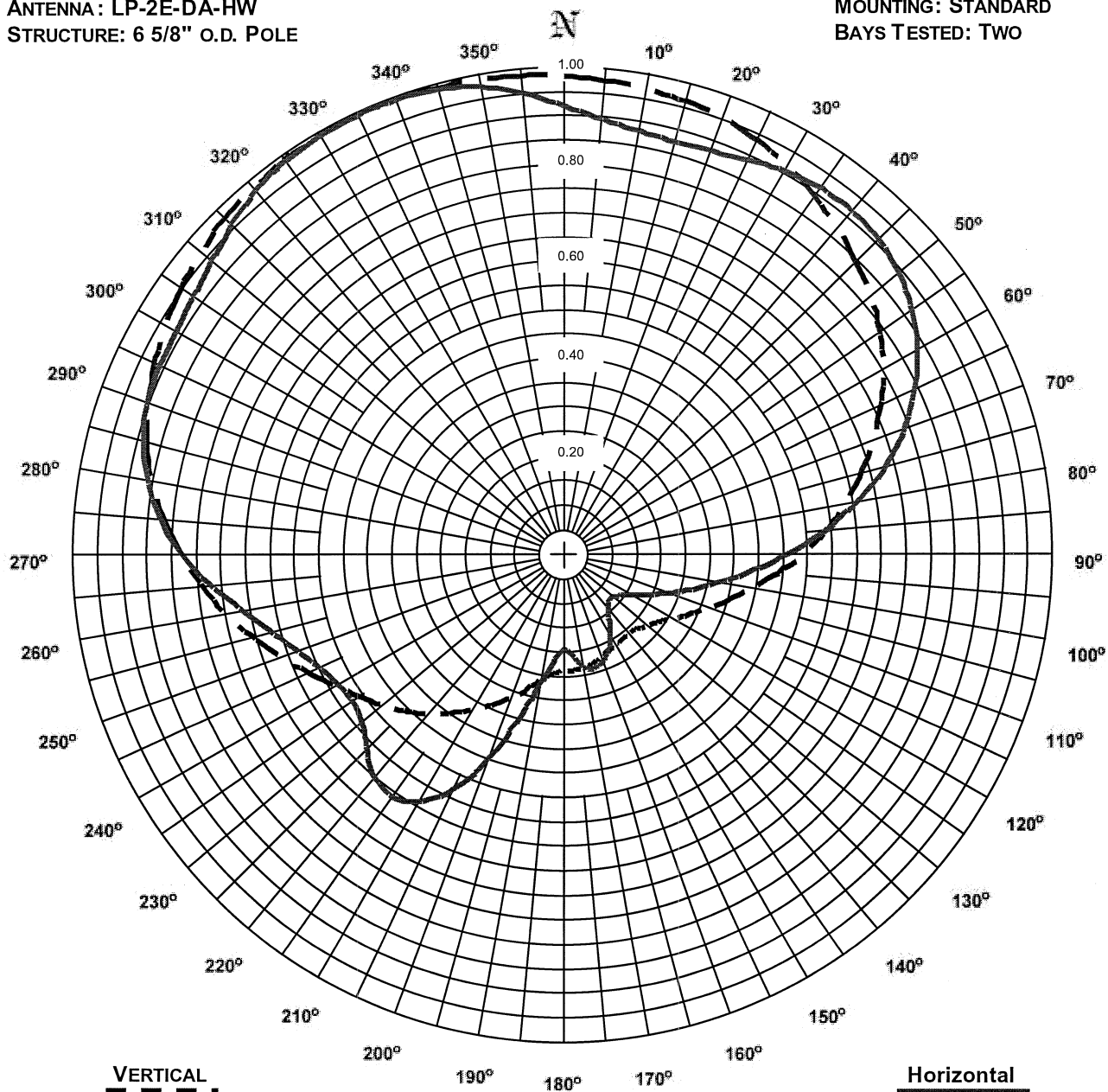
Total Input Power: 0.435 kW

ERI[®] Horizontal Plane Relative Field Pattern

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 <http://www.eriinc.com/>

FIGURE NO: 2
STATION: WLJS
LOCATION: JACKSONVILLE AL.
ANTENNA: LP-2E-DA-HW
STRUCTURE: 6 5/8" O.D. POLE

DATE: 10/16/02
FREQUENCY: 91.9 MHZ
ORIENTATION: 335° TRUE
MOUNTING: STANDARD
BAYS TESTED: TWO



VERTICAL
RMS: 0.689
MAXIMUM: 1.000 @ 336° TRUE
MINIMUM: 0.206 @ 140° TRUE

Horizontal
RMS: 0.691
Maximum: 1.000 @ 333° True
Minimum: 0.127 @ 132° True

COMMENTS: MEASURED PATTERNS OF THE HORIZONTAL AND VERTICAL COMPONENTS.

ERI[®] Horizontal Plane Relative Field List

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 <http://www.eriinc.com/>

Station: WLJS
Location: Jacksonville AL
Frequency: 91.9 MHz

Antenna: LP-2E-DA-HW
Orientation: 335° True
Tower: 6 5/8" o.d. Pole

Figure: 2
Date: 10/16/02
Reference: wljs1m.fig

Angle	Horizontal			Vertical			Angle	Horizontal			Vertical		
	Field	kW	dBk	Field	kW	dBk		Field	kW	dBk	Field	kW	dBk
0°	0.925	0.52	-2.82	0.987	0.59	-2.26	180°	0.191	0.02	-16.53	0.234	0.03	-14.75
5°	0.901	0.50	-3.05	0.982	0.59	-2.31	185°	0.209	0.03	-15.74	0.240	0.04	-14.54
10°	0.887	0.48	-3.19	0.975	0.58	-2.37	190°	0.258	0.04	-13.92	0.255	0.04	-14.02
15°	0.881	0.47	-3.25	0.967	0.57	-2.44	195°	0.337	0.07	-11.60	0.279	0.05	-13.23
20°	0.885	0.48	-3.21	0.957	0.56	-2.53	200°	0.441	0.12	-9.26	0.306	0.06	-12.44
25°	0.897	0.49	-3.09	0.940	0.54	-2.68	205°	0.526	0.17	-7.73	0.332	0.07	-11.72
30°	0.912	0.51	-2.95	0.922	0.52	-2.85	210°	0.581	0.21	-6.87	0.361	0.08	-11.00
35°	0.920	0.52	-2.87	0.898	0.49	-3.08	215°	0.605	0.22	-6.51	0.391	0.09	-10.30
40°	0.921	0.52	-2.86	0.873	0.46	-3.33	220°	0.598	0.22	-6.62	0.423	0.11	-9.62
45°	0.912	0.51	-2.95	0.847	0.44	-3.59	225°	0.569	0.20	-7.04	0.450	0.12	-9.09
50°	0.895	0.49	-3.11	0.820	0.41	-3.87	230°	0.536	0.18	-7.56	0.477	0.14	-8.58
55°	0.868	0.46	-3.38	0.788	0.38	-4.21	235°	0.524	0.17	-7.76	0.504	0.15	-8.10
60°	0.833	0.42	-3.74	0.753	0.35	-4.61	240°	0.530	0.17	-7.66	0.533	0.17	-7.61
65°	0.789	0.38	-4.21	0.712	0.31	-5.09	245°	0.547	0.18	-7.39	0.569	0.20	-7.04
70°	0.736	0.33	-4.81	0.670	0.27	-5.62	250°	0.574	0.20	-6.97	0.609	0.23	-6.45
75°	0.674	0.28	-5.57	0.625	0.24	-6.23	255°	0.612	0.23	-6.42	0.652	0.26	-5.86
80°	0.604	0.22	-6.53	0.581	0.21	-6.86	260°	0.660	0.27	-5.76	0.698	0.30	-5.27
85°	0.525	0.17	-7.75	0.532	0.17	-7.62	265°	0.718	0.31	-5.02	0.737	0.33	-4.80
90°	0.445	0.12	-9.17	0.484	0.14	-8.45	270°	0.776	0.37	-4.34	0.778	0.37	-4.33
95°	0.375	0.09	-10.67	0.431	0.11	-9.45	275°	0.824	0.41	-3.82	0.816	0.41	-3.91
100°	0.313	0.06	-12.23	0.383	0.09	-10.48	280°	0.862	0.45	-3.44	0.853	0.44	-3.53
105°	0.260	0.04	-13.83	0.344	0.07	-11.43	285°	0.889	0.48	-3.17	0.881	0.47	-3.25
110°	0.216	0.03	-15.44	0.309	0.06	-12.35	290°	0.906	0.50	-3.01	0.903	0.50	-3.04
115°	0.181	0.02	-16.98	0.278	0.05	-13.26	295°	0.912	0.51	-2.95	0.923	0.52	-2.85
120°	0.155	0.01	-18.35	0.253	0.04	-14.09	300°	0.915	0.51	-2.91	0.940	0.54	-2.68
125°	0.137	0.01	-19.40	0.233	0.03	-14.80	305°	0.925	0.52	-2.83	0.955	0.56	-2.54
130°	0.128	0.01	-19.98	0.219	0.03	-15.36	310°	0.940	0.54	-2.69	0.968	0.57	-2.43
135°	0.129	0.01	-19.90	0.210	0.03	-15.71	315°	0.960	0.56	-2.50	0.979	0.58	-2.33
140°	0.140	0.01	-19.21	0.206	0.03	-15.85	320°	0.979	0.58	-2.33	0.988	0.60	-2.25
145°	0.160	0.02	-18.07	0.207	0.03	-15.81	325°	0.992	0.60	-2.22	0.994	0.60	-2.20
150°	0.188	0.02	-16.65	0.210	0.03	-15.70	330°	0.999	0.61	-2.16	0.998	0.61	-2.16
155°	0.213	0.03	-15.57	0.214	0.03	-15.52	335°	1.000	0.61	-2.15	1.000	0.61	-2.15
160°	0.229	0.03	-14.93	0.220	0.03	-15.28	340°	1.000	0.61	-2.15	1.000	0.61	-2.15
165°	0.237	0.03	-14.66	0.226	0.03	-15.05	345°	0.994	0.60	-2.19	0.998	0.61	-2.16
170°	0.229	0.03	-14.96	0.231	0.03	-14.88	350°	0.980	0.59	-2.32	0.996	0.60	-2.19
175°	0.203	0.03	-15.98	0.233	0.03	-14.78	355°	0.956	0.56	-2.54	0.992	0.60	-2.22

Polarization:	Horizontal	Vertical
Maximum Field:	1.000 @ 333° True	1.000 @ 336° True
Minimum Field:	0.127 @ 132° True	0.206 @ 140° True
RMS:	0.691	0.689
Maximum ERP:	0.610 kW	0.610 kW
Maximum Power Gain:	1.403 (1.469 dB)	1.403 (1.469 dB)

Total Input Power: 0.435 kW



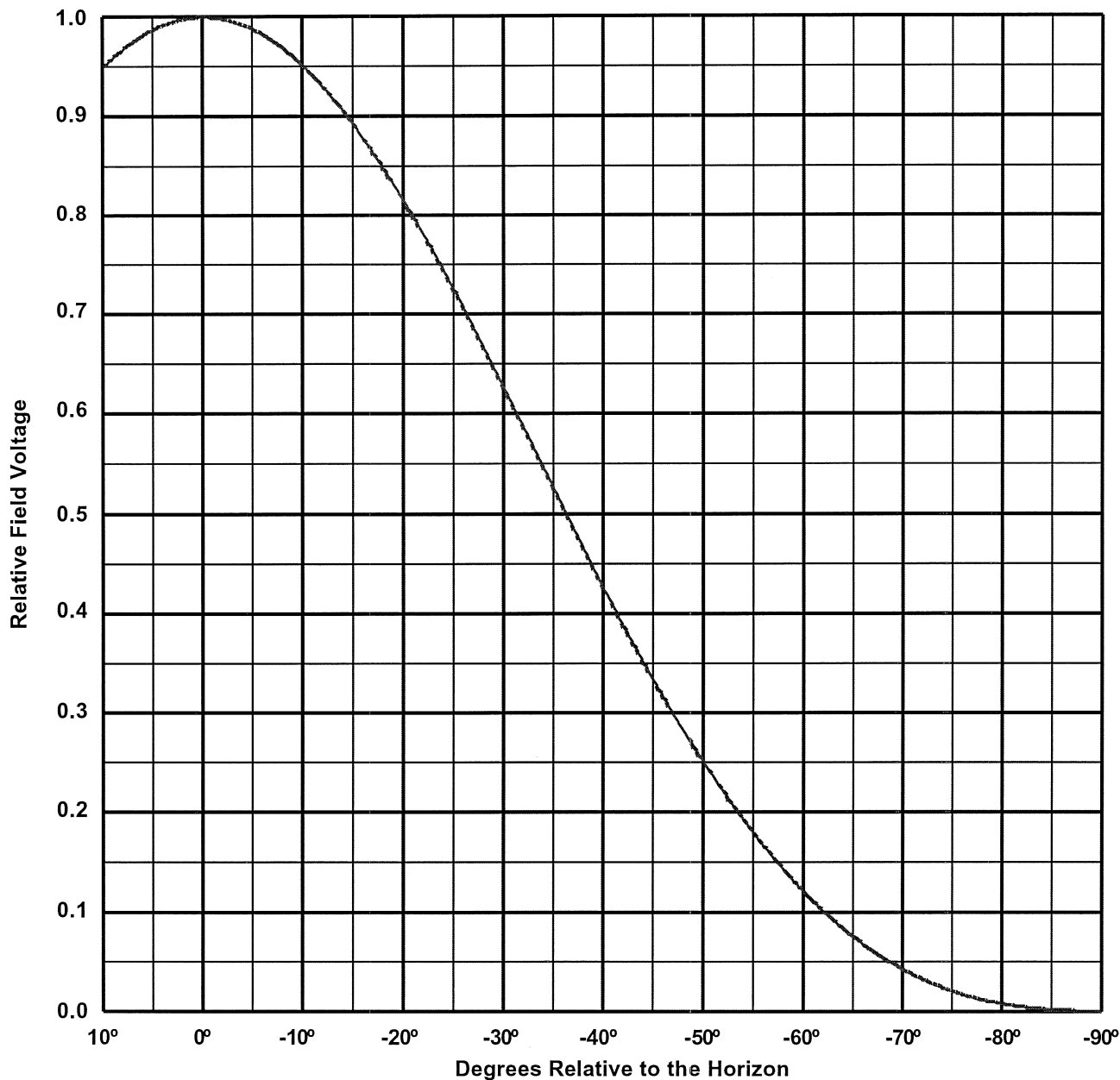
Vertical Plane Relative Field Pattern

WLJS, Jacksonville Al., 91.9 MHz

Figure#: 3

Date: 10/16/02

A 2 level, .5 wave-length spaced LP-2E-DA-HW directional antenna with 0° beam tilt, 0% null fill and a HIV maximum power ratio of 1.000



Vertical Polarization Gain:

Maximum: 1.403 (1.469 dB)

Horizontal Plane: 1.403 (1.469 dB)

Horizontal Polarization Gain:

Maximum: 1.403 (1.469 dB)

Horizontal Plane: 1.403 (1.469 dB)

Directional Antenna System
for
WLJS, Jacksonville, Alabama

(Continued)

ANTENNA SPECIFICATIONS

Antenna Type:	LP-2E-DA-HW
Frequency:	91.9 MHz
Number of Bays:	2

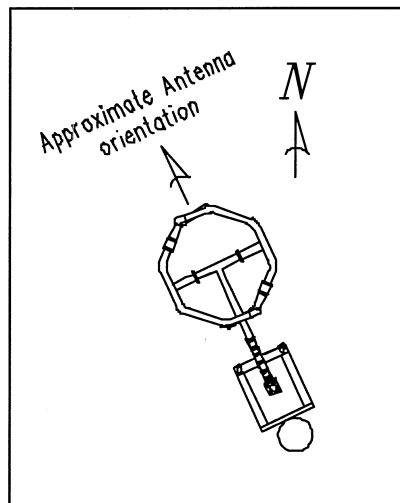
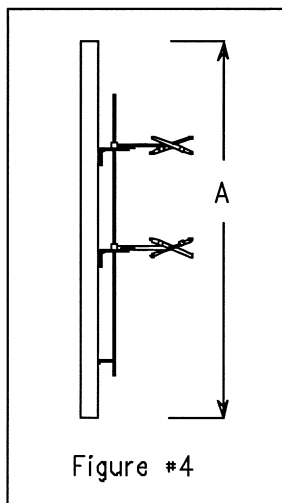
MECHANICAL SPECIFICATIONS

Mounting:	Standard
System length:	14 ft 1 in
Aperture length required:	20 ft.
Orientation:	335° true
Input flange to the antenna 1 5/8 inch female	

ELECTRICAL SPECIFICATIONS

(For directional use)

Maximum horizontal ERP:	0.610 kW (-2.147 dBk)
Horizontal maximum power gain:	1.403 (1.469 dB)
Maximum vertical ERP:	0.610 kW (-2.147 dBk)
Vertical maximum power gain:	1.403 (1.469 dB)
Total input power:	0.435 kW (-3.615 dBk)





Sain Associates, Inc./Consulting Engineers/Surveyors

November 21, 2002

Mr. Michael Golchert
Chief Engineer
Clear Channel Radio
530 Beacon Parkway West
Suite 600
Birmingham, AL 35209

**SUBJECT: Radio Tower Alignment - Jacksonville State University
Jacksonville, Alabama - SA# 02-149-P**

Dear Michael,

This letter is to state that the antenna installed at WLJS Radio Station in Jacksonville, Alabama was oriented to 335° true north per factory documentation. The 335° measurement was rounded from the actual measurement of 334° 54' 32".

Sincerely,

Shane Traffanstedt, P.L.S.
Division Manager
Alabama Reg. #20363





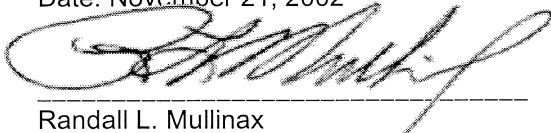
Randy Mullinax
Regional Engineering Services

Directional Antenna Installation Certification

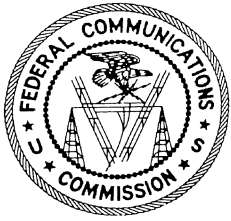
In compliance with FCC Regulation 73.316, section (c), paragraph (2)(vii), and to satisfy condition #5 of the WLJS-FM Construction Permit (BMPED-20011113ADYJ), this is to certify that the ERI model LP-2E-DA-HW directional antenna for Radio Station WLJS-FM operating at 91.9 MHz and licensed to Jacksonville, Alabama, has been erected according to design and installation instructions provided by Electronic Research, Incorporated (ERI) of Chandler, Indiana

The installation was supervised by Randall L. Mullinax, Regional Engineering Services Manager of Clear Channel Radio who was retained by the licensee of WLJS-FM to supervise the installation of the directional antenna. Mr. Mullinax is a graduate of the Southern College of Technology with a degree in Electrical Engineering Technology, has been actively engaged in Broadcast Engineering for more than thirty years, and his works are a matter of record with the Federal Communications Commission.

Date: November 21, 2002



Randall L. Mullinax
Regional Engineering Services Manager



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

Authorizing Official:

Official Mailing Address:

BD. OF TRUSTEES/JACKSONVILLE ST. U.
700 NORTH PELHAM ROAD
JACKSONVILLE AL 36265

Rodolfo F. Bonacci
Supervisory Engineer
Audio Division
Media Bureau

Facility ID: 4300

Grant Date: September 30, 2002

Call Sign: WLJS-FM

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

Permit File Number: BMPED-20011113ADY

This Permit Modifies Permit No.: BPED-20000622AFQ

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: BD. OF TRUSTEES/JACKSONVILLE ST. U.

Station Location: AL-JACKSONVILLE

Frequency (MHz): 91.9

Channel: 220

Class: A

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 or non-directional): Directional

Antenna Coordinates: North Latitude: 33 deg 50 min 12 sec
West Longitude: 85 deg 43 min 59 sec

	Horizontally Polarized Antenna	Vertically Polarized Antenna
Effective radiated power in the Horizontal Plane (kW):	.61	.61
Height of radiation center above ground (Meters):	54	54
Height of radiation center above mean sea level (Meters):	572	572
Height of radiation center above average terrain (Meters):	312	312
Antenna structure registration number:	Not Required	
Overall height of antenna structure above ground:	58 Meters	

Obstruction marking and lighting specifications for antenna structure:

It is to be expressly understood that the issuance of these specifications is in no way to be considered as precluding additional or modified marking or lighting as may hereafter be required under the provisions of Section 303(q) of the Communications Act of 1934, as amended.

None Required

Special operating conditions or restrictions:

- 1 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.
- 2 Prior to construction of the tower authorized herein, permittee shall notify AM Station(s) listed below so that, if necessary, the AM station(s) may determine operating power by the indirect method and request temporary authority from the Commission in Washington, D.C. to operate with parameters at variance in order to maintain monitoring point field strengths within authorized limits. Permittee shall be responsible for the installation and continued maintenance of detuning apparatus necessary to prevent adverse effects upon the radiation pattern of the AM station(s). Both prior to construction of the tower and subsequent to the installation of all appurtenances thereon, a partial proof of performance, as defined by Section 73.154(a) of the Commission's Rules, shall be conducted to establish that the AM array has not been adversely affected and, prior to or simultaneous with the filing of the application for license to cover this permit, the results submitted to the Commission.
(Revised March 14, 1983)

.WNSI (AM), Jacksonville, AL 810 kHz.

Special operating conditions or restrictions:

- 3 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.
- 4 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.
- 5 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.
- 6 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:

0.610 kilowatt (H&V).

Principal minima and their associated field strength limits:

130-140 degrees True:	0.033 kilowatt
230-240 degrees True:	0.193 kilowatt

*** END OF AUTHORIZATION ***