



D Squared Broadcast Technologies, Inc.
P.O. Box 6421
Athens, GA 30604



EXHIBIT EE-1

Contents

Antenna Proof of Performance

Land Surveyor's Affidavit

Broadcast Engineer's Affidavit



D Squared Broadcast Technologies, Inc.
P.O. Box 6421
Athens, GA 30604



ANTENNA PROOF OF PERFORMANCE

Voice: 706-543-3313 Fax: 706-546-6313 E-Mail: negava@negia.net

S.O. 21,482

Report of Test 6810-6D-CF-DA

for

PRINCE AVE. BAPTIST CHRISTIAN SCHOOL

WMSL ATHENS, GA

(207) 647-3327

888-SHIVELY

FAX: (207) 647-8273

E-mail: sales@shively.com

Web site: www.shively.com

OBJECTIVE:

The objective of this test was to demonstrate the directional characteristics of a 6810-6D-CF-DA to meet the needs of WMSL and to comply with the requirements of the FCC construction permit, file number BPED-19990810IB.

RESULTS:

The measured azimuth pattern for the 6810-6D-CF-DA is shown in Figure 1. Figure 1A shows the Tabulation of the Horizontal Polarization. Figure 1B shows the Tabulation of the Vertical Polarization. The calculated elevation pattern of the antenna is shown in Figure 3. Construction permit file number BPED-19990810IB indicates that the Horizontal radiation component shall not exceed 20 kW at any azimuth and is restricted to the following values at the azimuths specified:

180-190 Degrees T: 12.45 kW

220-230 Degrees T: 13.0 kW

290-300 Degrees T: 1.55 kW

310-330 Degrees T: 1.35 kW

From Figure 1, the maximum radiation of the Horizontal component occurs at 050 Degrees T to 059 Degrees T and at 108 Degrees T to 152 Degrees T. At the restricted azimuth of 180-190 Degrees T the Vertical component is 2.16 dB down from the maximum of 20 kW, or 12.17 kW. At the restricted azimuth of 220-230 Degrees T the Horizontal component is 2.10 dB down from the maximum of 20 kW, or 12.3 kW.

MEMBER:



At the restricted azimuth of 290-300 Degrees T, the Horizontal component is 12.77 dB down from the maximum of 20 kW, or 1.06 kW. At the restricted azimuth of 310-330 Degrees T, the Horizontal component is 12.22 dB down from the maximum of 20 kW, or 1.20 kW. The R.M.S. of the Horizontal component is 0.735. The total Horizontal power gain is 6.197. The R.M.S. of the Vertical component is 0.720. The total Vertical power gain is 6.076. See Figure Four for calculations. The R.M.S. of the FCC composite pattern is 0.780. Therefore this Pattern complies with the FCC requirement of 73.316(c)(2)(ix)(A).

METHOD OF DIRECTIONALIZATION:

One bay of the 6810-6D-CF-DA was mounted on a tower of exact scale to a Pirod 24" face tower. The spacing of the antenna to the tower was varied to achieve the vertical pattern shown in Figure 1. A horizontal parasitic element was placed directly under the bay. The position of this horizontal parasitic element was changed until the horizontal pattern shown in Figure 1 was achieved. See Figure 2 for mechanical details.

METHOD OF MEASUREMENT:

As allowed by the construction permit, file number BPED-19990810IB, a single level of the 6810-6D-CF-DA was set up on the Howell Laboratories scale model antenna pattern measuring range. A scale of 4.5:1 was used.

SUPERVISION:

The tests were carried out under the direction of Robert A. Surette, Manager of RF Engineering. Mr. Surette was graduated from Lowell Technological Institute, Lowell, Massachusetts in 1973 with the degree of Bachelor of Science in Electrical Engineering. He has been directly involved with both full size and scale model pattern measurements since 1974 as an RF Engineer with Shively Labs and with Dielectric Communications (a unit of General Signal). He is currently an Associate Member of the Association of Federal Communications Consulting Engineers and a Member of IEEE.

EQUIPMENT:

The scale model pattern range consists of a wooden rotating pedestal equipped with a position indicator. The scale model bay is placed on the top of this pedestal and is used in the transmission mode at approximately 20 feet above ground level. The receiving corner reflector is spaced 50 feet away from the rotating pedestal at the same level above ground as the transmitting model. The transmitting and receiving signals are carried to a control building by means of RG-9/U double shielded coax cable.

The control building is equipped with:

Hewlett Packard Model 8505 Network Analyzer
PC Based Controller
Hewlett Packard 7550A Graphics Plotter

The test equipment is calibrated to MIL-STD-45662.

TEST PROCEDURES:

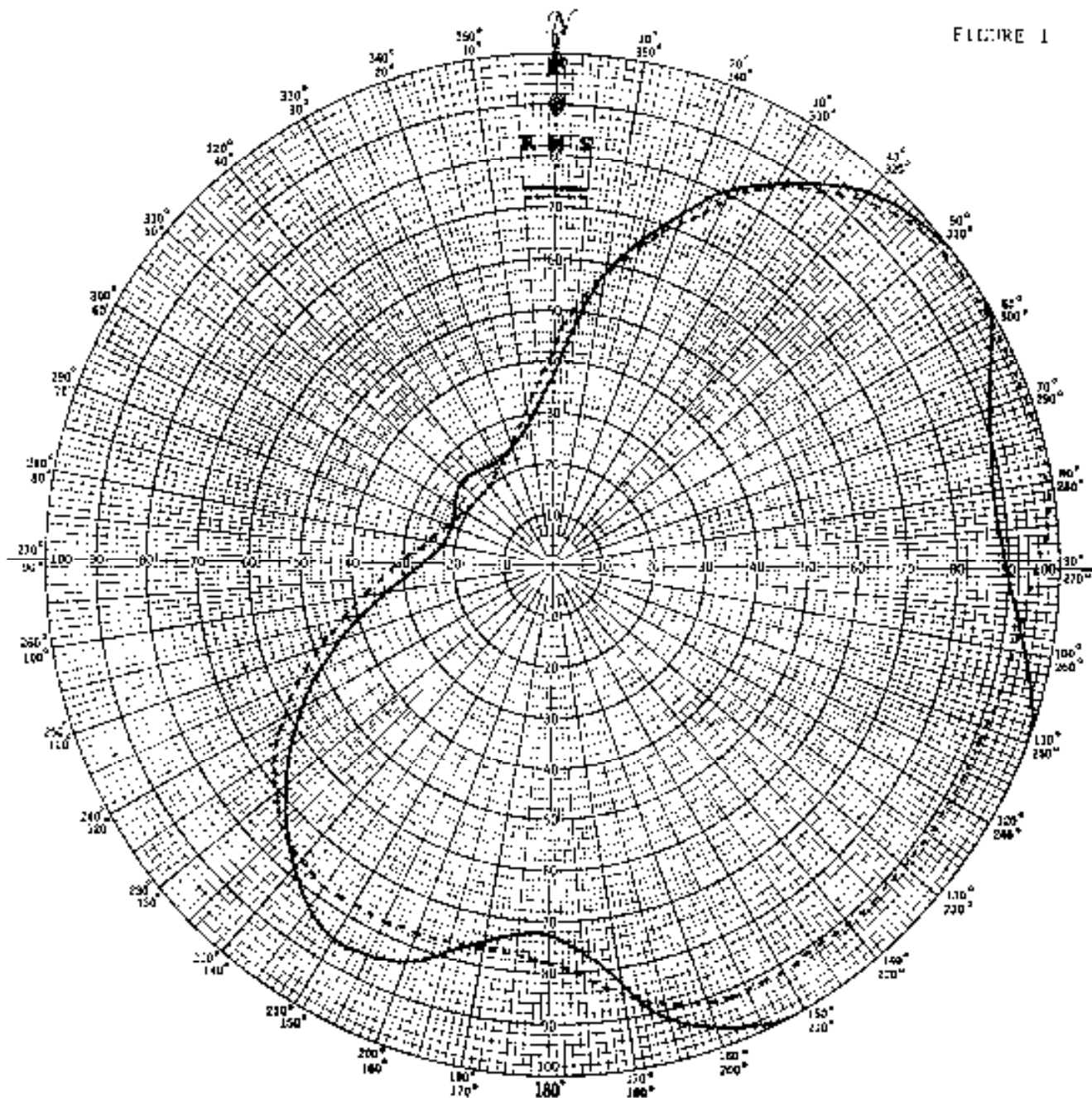
The corner reflector is mounted so that the horizontal and vertical azimuth patterns are measured independently by rotating the corner reflector by 90 degrees. The network analyzer was set to 400.05 MHz. Calibrated pads are used to check the linearity of the measuring system. For example, 6 dB padding yields a scale reading of 50 from an unpadded reading of 100 in voltage. From the recorded patterns, the R.M.S. values are calculated and recorded as shown in Figure 1.

Respectfully submitted by:



Robert A. Surette
Manager of RF Engineering
S/O 21,482
October 25, 2000

FIGURE 1



Shively Labs

PROJECT NAME WMST. ATHENS, CA
 PROJECT NUMBER 21,482 DATE 9/11/00
 MODEL X FULL SCALE 1 FREQUENCY 400.05/88.9 MHz
 POLARIZATION HORIZ (—); VERT (----)
 CURVE PLOTTED IN VOLTAGE X POWER () DBI
 OBSERVER RAS

ANTENNA TYPE 6810-6D-CF-DA
 PATTERN TYPE DIRECTIONAL AZIMUTH
 REMARKS SEE FIGURE 2 FOR MECHANICAL
DETAILS

Figure 1A

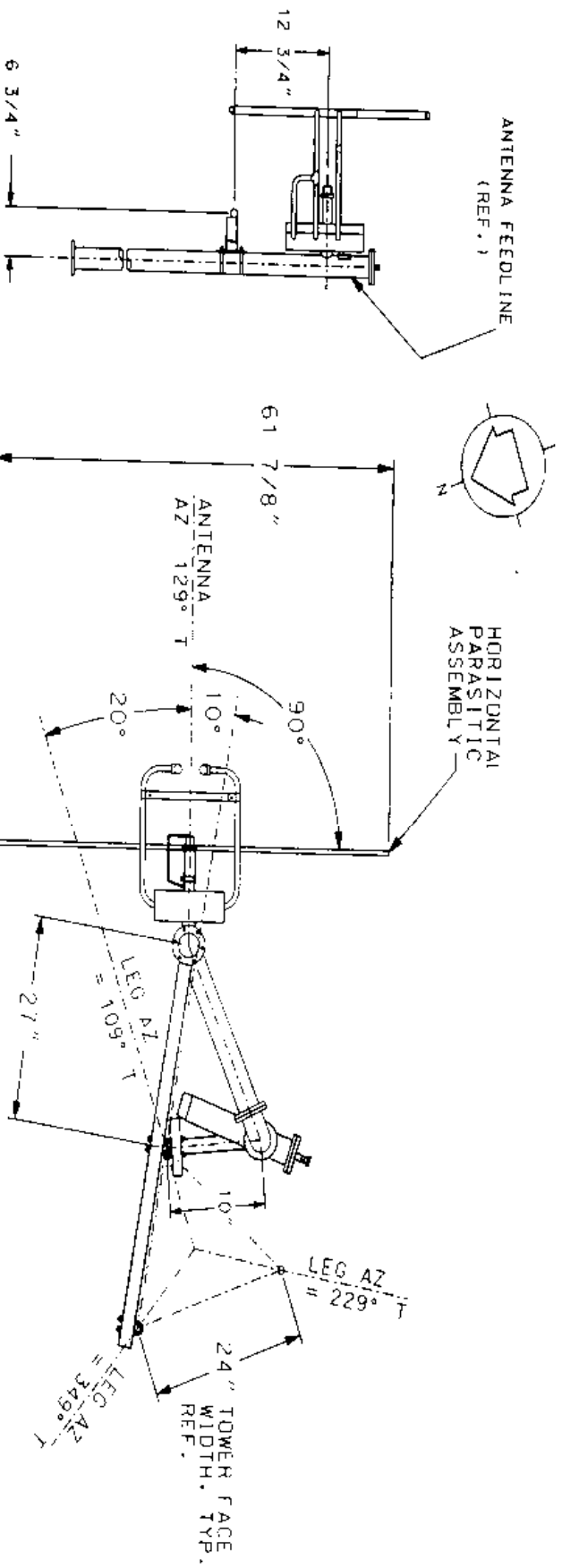
S/O 21,482
TABULATION OF HORIZONTAL POLARIZATION
NMSL ATHENS, GA

DEGREE	RELATIVE FIELD	DEGREE	RELATIVE FIELD
0	0.370	180	0.725
10	0.580	190	0.750
20	0.735	200	0.830
30	0.860	210	0.855
40	0.955	220	0.785
45	0.980	225	0.735
50	1.000	230	0.680
60	0.995	240	0.570
70	0.920	250	0.450
80	0.880	260	0.340
90	0.895	270	0.260
100	0.950	280	0.225
110	1.000	290	0.220
120	1.000	300	0.230
130	1.000	310	0.245
135	1.000	315	0.245
140	1.000	320	0.240
150	1.000	330	0.235
160	0.960	340	0.245
170	0.830	350	0.280

Figure 1B

S/O 21,482
TABULATION OF VERTICAL POLARIZATION
WMGL ATHENS, GA

DEGREE	RELATIVE FIELD	DEGREE	RELATIVE FIELD
0	0.430	180	0.780
10	0.580	190	0.765
20	0.710	200	0.775
30	0.855	210	0.775
40	0.935	220	0.765
45	0.965	225	0.740
50	0.980	230	0.710
60	0.990	240	0.610
70	0.990	250	0.490
80	0.990	260	0.380
90	0.960	270	0.310
100	0.925	280	0.255
110	0.915	290	0.225
120	0.910	300	0.210
130	0.910	310	0.200
135	0.910	315	0.200
140	0.910	320	0.200
150	0.915	330	0.220
160	0.910	340	0.250
170	0.850	350	0.310



SIDE VIEW

TOP VIEW

TOWER: PIRRD
ANTENNA IS MOUNTED ON A 24" FACE
TOWER SECTION WHICH IS MOUNTED
TO A 30" TO 24" TAPERED TOWER SECTION

SHIVELY LABS				
A DIVISION OF HOWELL LABORATORIES INC., BRIDGTON, MAINE, USA				
DATE: 10-4-00	PROJECT: 21482	SCALE: 88.9 MHz.	DRAWN BY: N.T.S.	APPROVED BY: NMS
TITLE: MODEL 6810-6D-CF-DIRECTIONAL ANTENNA				

FIGURE 2

FIELD ELEVATION PATTERN

ANT. MFG.: SHIVELY LABS

ANT. TYPE: 6810-60-DA

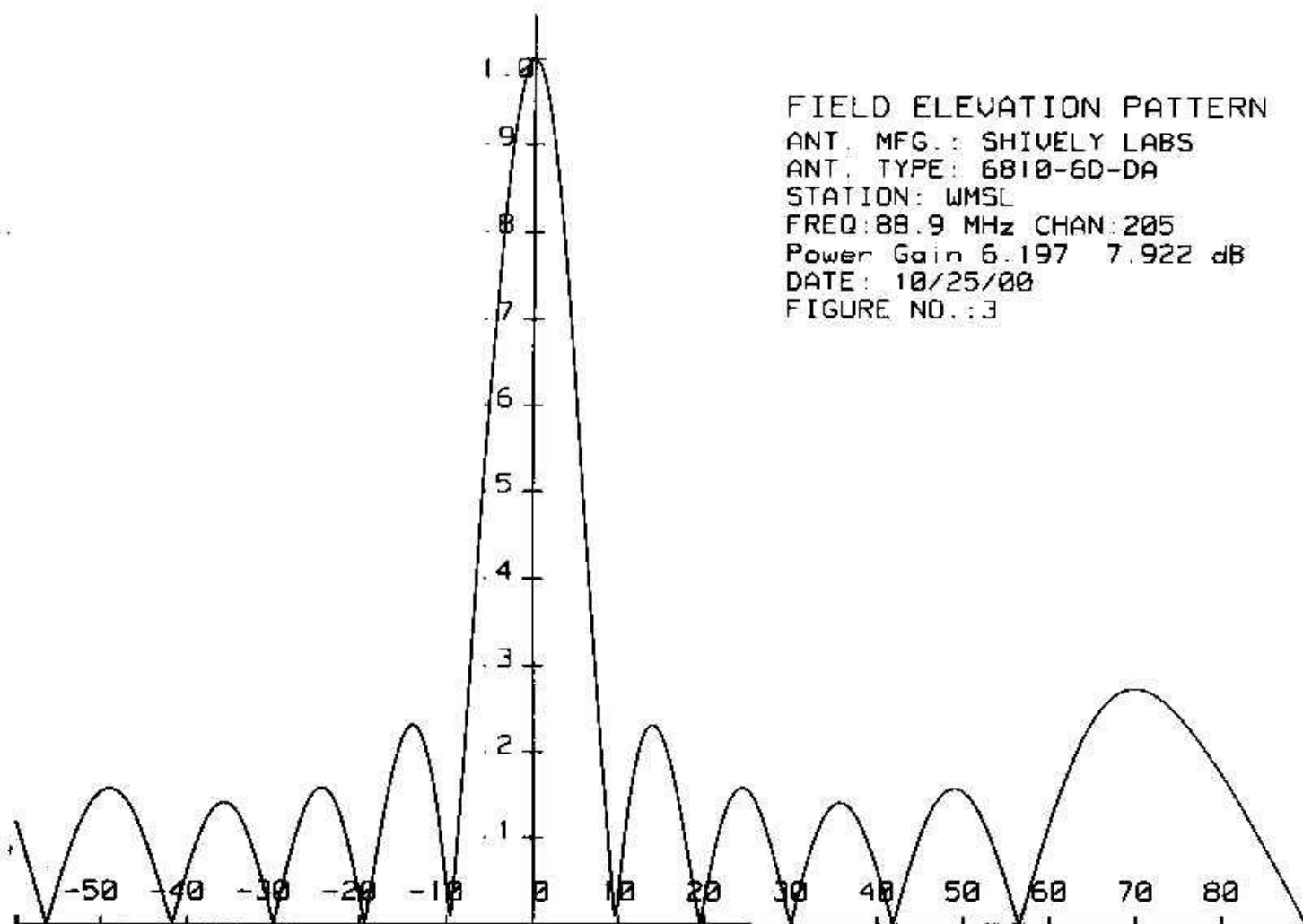
STATION: WMSL

FREQ: 88.9 MHz CHAN: 205

Power Gain 6.197 7.922 dB

DATE: 10/25/00

FIGURE NO.: 3



S.O. 21,482

VALIDATION OF GAIN CALCULATION

NMSL ATHENS, GA

MODEL 6810-6D-CF-DA

Elevation Gain of 6810-6D-CF-DA equals 3.28

The RMS values are calculated utilizing the data of a planimeter.

Horizontal RMS divided by Vertical RMS equals
 $0.735 \div 0.720 = 1.0208$

Elevation Gain of Horizontal Component equals
 $3.28 \times 1.0208 = 3.348$

Elevation Gain of Vertical Component equals
 $3.28 \times 0.9796 = 3.213$

Horizontal Azimuth Gain equals $1/(\text{RMS})^2$
 $1/(0.735)^2 = 1.851$

Vertical Azimuth Gain equals $1/(\text{RMS} + \text{Max Vert})^2$
 $1/(0.720 + 0.990)^2 = 1.891$

* Total Horizontal Gain is Elevation Gain times Azimuth Gain
 $3.348 \times 1.851 = 6.197$

* Total Vertical Gain is Elevation Gain times Azimuth Gain
 $3.213 \times 1.891 = 6.076$

ERP divided by Horizontal Gain equals Antenna Input Power
 $20 \text{ kW} \div 6.197 = 3.227 \text{ kW}$

Antenna Input Power times Vertical Gain equals Vertical ERP
 $3.227 \text{ kW} \times 6.076 = 19.607$

Maximum Value of the Vertical Component squared times the Maximum
 ERP equals the Vertical ERP
 $(0.99)^2 \times 20 \text{ kW} = 19.602$

NOTE: Calculating the ERP of the Vertical Component by two
 methods validates the total antenna gain calculations



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LAND SURVEYOR'S AFFIDAVIT

BEN McLEROY & ASSOCIATES, INC.

3993 ATLANTA HWY.
P.O. BOX 5516
ATHENS, GEORGIA 30604
PHONE (706) 548-5673
FAX (706) 546-5420

February 27, 2001

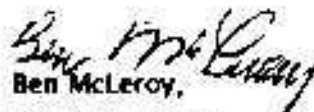
Mr. Jim Hutto
W.M.S.L. Radio
P.O. Box 1987
Athens, Georgia 30603

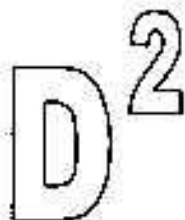
Dear Jim,

Re: Radio Tower at BriarLakes Subdivision, Oconee County, Georgia.

This is to certify that on February 9, 2001 I checked the alignment of the second antennae down from the top of the tower at the above location and found that the true azimuth from North was 109 degrees 00 minutes. The true azimuth was determined from a solar shot taken on August 12, 1998. Reference stakes were set on the line going out from the center of the antennae pivot point on an azimuth of 109 degrees 00 minutes. Considering sighting errors on the antennae, I believe that the antennae is with ± 10 minutes of the desired direction.

Sincerely,


Ben McLeroy,
R.L.S. No. 1184



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BROADCAST ENGINEER'S AFFIDAVIT



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Athens, GA 30604



Qualifications

Daniel L. Davis deposes and says:

That he prepared the attached exhibit and that all work contained in that exhibit is true of his knowledge and belief, and as to such statements made on belief, they are believed to be true.

That he currently holds a F.C.C. General Class Radiotelephone License and had held a FCC First Class Radiotelephone License for ten years prior to receiving the General Class License in 1985. He also holds Professional Broadcast Engineer certification through the Society of Broadcast Engineers, and has been a member of the SBE since 1983.

That he received the degree of Master of Education from the University of Georgia in 1978, and that his undergraduate program of study was strong in Mathematics and Physics.

That he has been involved in the technical aspects of broadcasting since 1975, and has performed design, installation, project management, troubleshooting, and maintenance of broadcast facilities, including compliance measurements in connection with this work.

Daniel L. Davis
FCC Lic. No. PG-6-14509
SBE CPBE No. 50651

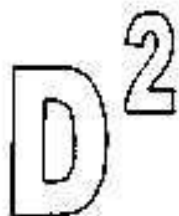
Subscribed and sworn before me

This 6 day of March, 2001

Notary Public

My Commission Expires 10.6.04

SEAL:



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This statement certifies that I oversaw the assembly and installation of the directional antenna. The installation contractor, Continental Tower Service, followed the antenna manufacturer's installation instructions and drawings. All elements were positioned precisely, using factory provided alignment marks and numbering. The antenna azimuth was verified by a licensed land surveyor, as indicated elsewhere in this exhibit.

Date: 3/6/01

Daniel L. Davis, CPBE