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ENGINEERING EXHIBIT EE-1:

**GERALD LOCKLEAR
WPEM-LP - LOW POWER TELEVISION STATION
LUMBERTON, NORTH CAROLINA**

DIGITAL DISPLACEMENT APPLICATION

**FCC FACILITY NUMBER
24090**

**HAS: CHANNEL 47, LUMBERTON, NC (ANALOG)
REQ: CHANNEL 42, LUMBERTON, NC (DIGITAL)**

**APPLICATION FOR AUTHORITY TO MAKE
CHANGES IN A LOW POWER TELEVISION BROADCAST
OR TELEVISION TRANSLATOR STATION**

MARCH 2010

**ENGINEERING EXHIBIT
IN SUPPORT OF
AN APPLICATION FOR AUTHORITY TO MAKE
CHANGES IN A LOW POWER TELEVISION BROADCAST
OR TELEVISION TRANSLATOR STATION**

**LOW POWER DIGITAL TELEVISION STATION WPEM-LP
LUMBERTON, NORTH CAROLINA**

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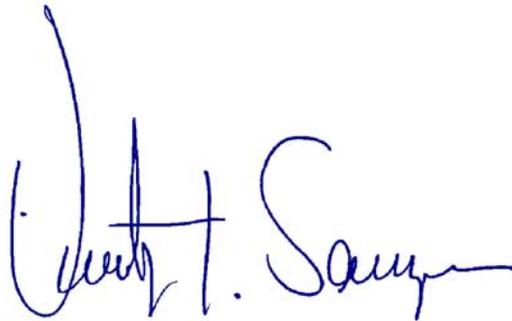
1. F.C.C. Form 346, Section III
2. F.C.C. Form 346, Section III (certification)
3. Declaration of Engineer
4. Narrative Statement
5. Figure 1, Predicted Service Contours
6. Figure 2, Directional Antenna Details
7. Figure 3, Allocation Study

DECLARATION

I, Timothy Z. Sawyer, declare and that I have provided engineering services in the area of telecommunications since 1969. My qualifications are a matter of record with the Federal Communications Commission. I am a senior engineer with the firm of Mullaney Engineering, Inc., consulting radio telecommunications engineers with offices in Gaithersburg, Maryland.

The firm of Mullaney Engineering, Inc., has been retained by GERALD LOCKLEAR, to prepare the instant engineering exhibit in support of **an application for authority to make changes in a Low Power Television Broadcast Translator Station WPEM-LP, Lumberton, North Carolina (FCC FACILITY ID NUMBER: 24090).**

All facts contained herein are true of my own knowledge except those stated to be on information and belief, and as to those facts, I believe them to be true. I declare under the penalty of perjury that the foregoing is true and correct.



Timothy Z. Sawyer

Executed on the 3rd day of March 2010

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NARRATIVE STATEMENT:

I. GENERAL:

This engineering statement and the instant engineering exhibit of which it is part has been prepared on behalf of GERALD LOCKLEAR, (hereinafter "LOCKLEAR").

LOCKLEAR is the licensee of Low-Power Television Station WPEM-LP, Lumberton, North Carolina, FCC facility identification number 24090.

Displacement Application

By means of the instant application, LOCKLEAR seeks authorization to change its authorized television channel from analog Television Channel 47 to digital Television Channel 42.

LOCKLEAR's authorized operation on channel 47 has been displaced, as it is within 265 kilometers of three (3) co-channel full-service digital television facilities or allotments. A displacement statement, as required by the

Commission's Rules and Regulations, has been prepared and is being filed within this application, in the appropriate section of the application/form.

The facilities will be built to comply with the *FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields* and the instant proposal is categorically excluded from environmental processing pursuant to the provisions of Section 1.1306 of the Commission's Rules. A more detailed discussion of environmental factors is included under the heading Environmental Considerations below.

Information requested by exhibits in response to questions on Section III of FCC Form 346-III is incorporated in the following paragraphs, figures, and tables.

Processing of this application is requested under the rules currently in effect at the time of filing.

II. ENGINEERING DISCUSSION:

A. Transmitter/Antenna Location:

LOCKLEAR proposes to side-mount its directional antenna on an existing communications tower (**FCC tower registration number: 1007489**) which has an overall height above ground (structure/tower height) of 154.2 meters. The ground elevation at the site is 43.9 meters above mean sea level.

The antenna will be side-mounted on the existing tower with a center of radiation at 147.8 meters above ground level (RCAGL), 191.7 meters above mean sea level (RCAMSL).

B. Coverage & Service Contours:

Figure 1, is a map showing the location of the present analog Channel 47 and the proposed digital Channel 42 service contours of WPEM-LP. As can be seen on the map, the service contours of the present and proposed facilities overlap, therefore the proposed changes are minor.

C. Proposed Antenna:

The proposed antenna is An ERI "ALP12L1-HSW-42" directional UHF slot antenna. This antenna employs 0.5 degrees of electrical beam tilt.

The maximum power at any angle (i.e., below or above the horizon will not exceed 15-kilowatts (15,000 watts).

Information regarding the antenna directional pattern is included in Figure 2.

C. Allocation Study:

Relocation of the WPEM-LP operation from Channel 47 analog to Channel 42 digital will not result in an increase in interference to any full service analog or digital television stations, Class A television stations or any existing DTV allotments or full-service applications or permits.

Pending applications for low-power television secondary services (analog or digital) have been superceded by this application as a qualified priority displacement application.

The Commission's LP-1 computer program and the Longley Rice propagation method described in OET Bulletin No. 69 were used in this

determination. The results of the OET styled study are contained within Figure 3.

D. Environmental Considerations:

The applicant believes its proposal will not significantly affect the environment for the following reasons.

The proposal does not meet any of the criteria specified in Section 1.1307 of the FCC Rules. More specifically, the proposed facilities are not known to fall within any of the categories enumerated in Sections 1.1307(a)(1)-(7) and will not involve the use of high intensity white lights. Furthermore, operation of the proposed facility will not involve the exposure of workers or the general public to levels of radio frequency electromagnetic fields exceeding guidelines adopted by the Federal Communications Commission. (The current FCC guidelines are based upon criteria contained in the National Council of Radiation Protection and Measurements (NCRP) Report No.86 (1986) and ANSI/IEEE C95.1-1992.)

With regard to the last item, the WPEM-LP/LD antenna is to be side-mounted on an existing tower 147.8 meters above ground level.

Based upon a worst case downward relative field value of 0.25 for all angles greater than 15 degrees below the horizon and a maximum horizontal power of 15-kilowatts, and an antenna height of 147.8 meters above ground. The power density level 2 meters above ground is predicted to be 0.0006 mW/cm² or less. The computed power density is 0.028 percent of the Commission's guidelines for a controlled area and 0.14 percent of an uncontrolled area. No further study is required.

The applicant will fully-cooperate and coordinate with all site users as required by the Commission's rules.

III. SUMMARY:

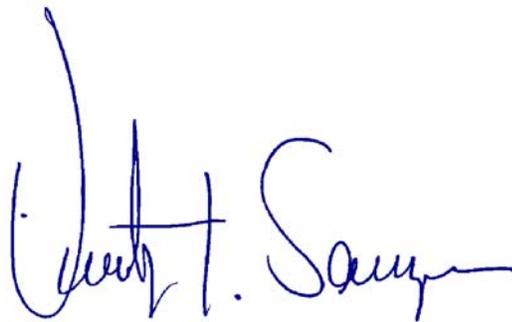
LOCKLEAR proposes to MODIFY the facilities of Low Power Television Station WPEM-LP to specify operation on digital television channel 42 as a result of displacement of its authorized analog operation on Channel 47.

Operation as proposed herein would not cause/increase any normally prohibited contour overlap, and would not have any significant impact on the environment.

The proposed operation will not create any new interference to other facilities or receive any new interference.

The proposed operation is fully in compliance with all other areas of the Commission's rules and applicable international agreements.

3 March 2010

A handwritten signature in blue ink, reading "Timothy Z. Sawyer". The signature is written in a cursive style with a large initial 'T' and 'S'.

Timothy Z. Sawyer

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PRESENT AND PROPOSED SERVICE CONTOURS

CHANNEL 47 - ANALOG 74 DBU FCC CONTOUR
 CHANNEL 42 - DIGITAL 51 DBU FCC CONTOUR

FIGURE 1

WPEM-LP
 ANALOG LICENSE
 BLTTL19960530JB
 Latitude: 34-40-27 N
 Longitude: 079-02-29 W
 Channel: 47Z
 Frequency: 671.0 MHz
 ERP: 6.66 kW
 Antenna HAAT: 158.0 m
 Antenna AMSL Height: 192.0 m
 Antenna AGL Height: 148.0 m
 Site Elevation AMSL: 44.0 m
 Horiz. Pattern: Omni

WPEM- DIGITAL APP
 DIGITAL APPLICATION
 Latitude: 34-40-26 N
 Longitude: 079-02-21 W
 Channel: 42
 Frequency: 641.0 MHz
 ERP: 15.00 kW
 Antenna HAAT: 158.0 m
 Antenna AMSL Height: 192.0 m
 Antenna AGL Height: 148.0 m
 Site Elevation AMSL: 44.0 m
 Horiz. Pattern: Directional

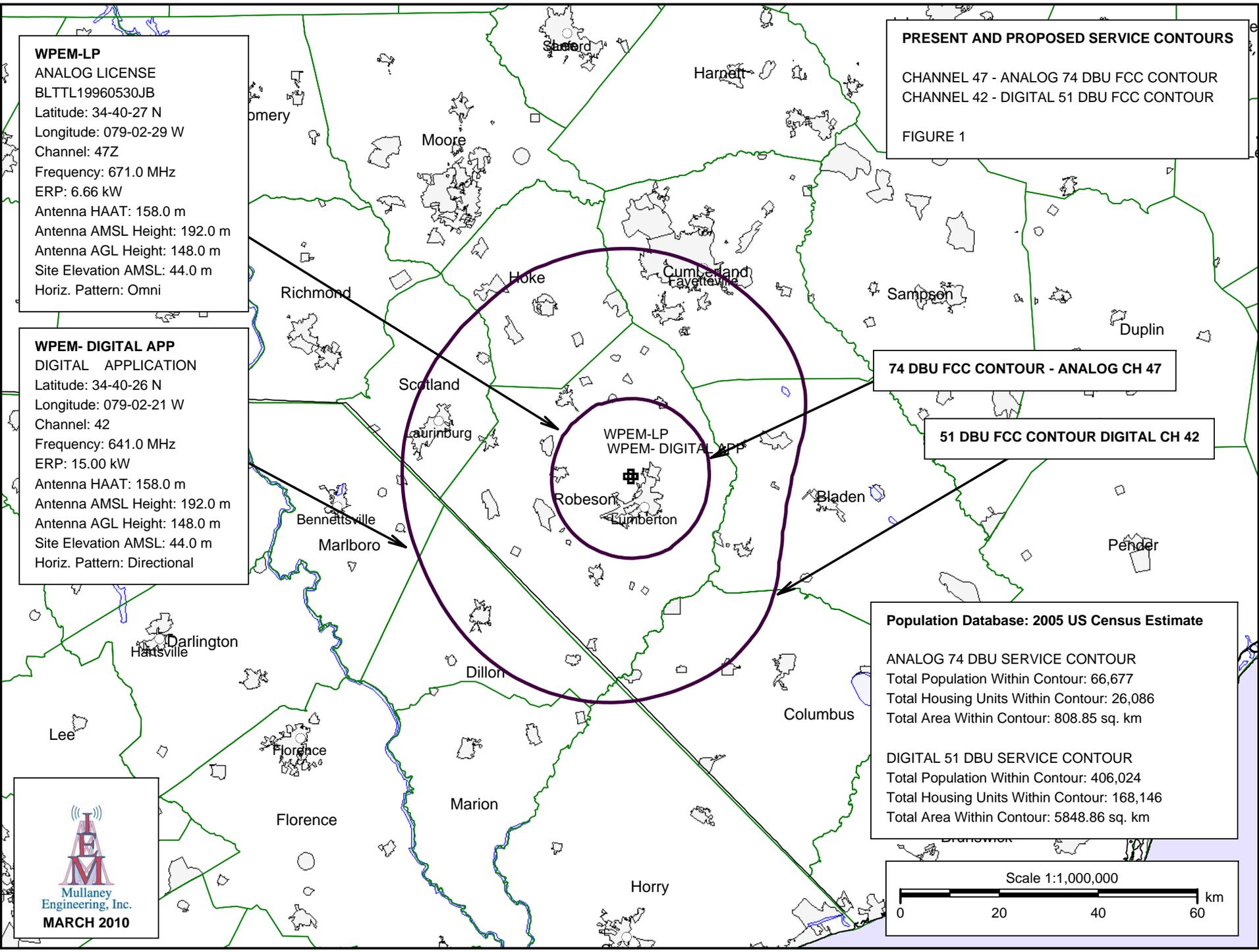
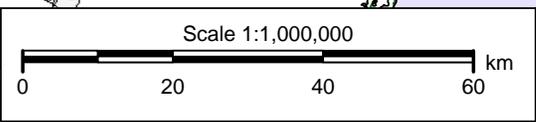
74 DBU FCC CONTOUR - ANALOG CH 47

51 DBU FCC CONTOUR DIGITAL CH 42

Population Database: 2005 US Census Estimate

ANALOG 74 DBU SERVICE CONTOUR
 Total Population Within Contour: 66,677
 Total Housing Units Within Contour: 26,086
 Total Area Within Contour: 808.85 sq. km

DIGITAL 51 DBU SERVICE CONTOUR
 Total Population Within Contour: 406,024
 Total Housing Units Within Contour: 168,146
 Total Area Within Contour: 5848.86 sq. km



WPEM DIGITAL DIRECTIONAL ANTENNA
PATTERN

FIGURE 2

| Azimuth (deg) | Relative Field |
|---------------|----------------|
| 0.0 | 0.975 |
| 10.0 | 0.922 |
| 20.0 | 0.845 |
| 30.0 | 0.758 |
| 40.0 | 0.680 |
| 50.0 | 0.605 |
| 60.0 | 0.510 |
| 70.0 | 0.397 |
| 80.0 | 0.302 |
| 90.0 | 0.253 |
| 100.0 | 0.241 <- MIN |
| 110.0 | 0.253 |
| 120.0 | 0.302 |
| 130.0 | 0.397 |
| 140.0 | 0.510 |
| 150.0 | 0.605 |
| 160.0 | 0.680 |
| 170.0 | 0.758 |
| 180.0 | 0.845 |
| 190.0 | 0.922 |
| 200.0 | 0.975 |
| 210.0 | 0.997 |
| 220.0 | 0.990 |
| 230.0 | 0.959 |
| 240.0 | 0.929 |
| 250.0 | 0.925 |
| 260.0 | 0.951 |
| 270.0 | 0.985 |
| 280.0 | 1.000 <--MAX |
| 290.0 | 0.985 |
| 300.0 | 0.951 |
| 310.0 | 0.925 |
| 320.0 | 0.929 |
| 330.0 | 0.959 |
| 340.0 | 0.990 |
| 350.0 | 0.997 |

