

TECHNICAL EXHIBIT  
APPLICATION FOR FM CONSTRUCTION PERMIT  
AUXILIARY FACILITY  
FACILITY ID: 37230  
RADIO STATION WMXB(FM)  
RICHMOND, VIRGINIA

OCTOBER 25, 2004

CH 279B    11.5 KW    232 M

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Technical Narrative

The technical exhibit of which this narrative is part was prepared on behalf of radio station WMXB at Richmond, Virginia. The WMXB main facility is presently licensed on Channel 279B with an effective radiated power of 20 kilowatts and antenna height above average terrain of 256 meters (See FCC File Number: BLH-19831117BF). By this instant application, WMXB is proposing to modify its existing auxiliary facility (See FCC File Number: BLH-19860826IN).

The proposal would not be subject to environmental processing in accordance with Section 1.1306. The FCC tower number for the existing structure is 1017637. It is believed that this proposal conforms to all applicable rules and regulations of the FCC.

Transmitter Location

The herein proposed auxiliary facility will be located on the same tower as the main facility. The antenna will be mounted at the 195-meter (640 foot) level of the 227-meter tower. A sketch showing the antenna and supporting structure is shown on Figure 1.

Blanketing Contour

The 115 dBu predicted blanketing contour of the station would extend radially 1.3 kilometers from the transmitting site. The applicant recognizes its responsibility to resolve complaints of blanketing interference as required by Section 73.318.

### Coverage Contours

The predicted 60 dBu coverage contours for the auxiliary operation and the existing main operation were calculated in accordance with the provisions of Section 73.313. In accordance with current FCC practice, the distances to the contours were calculated without consideration given to terrain roughness correction factors.

The average terrain elevations from 3 to 16 kilometers along eight radials evenly spaced at 45 degree intervals were obtained from the National Geophysical Data Center's (NGDC) 30-second terrain database. The terrain elevations were then used in combination with the effective radiated power for determining the distances to coverage contours.

Figure 2 is a map showing the predicted 60 dBu coverage contours for the licensed and proposed operations. As the map illustrates, the predicted auxiliary's 60-dBu contour is entirely encompassed by the primary station's 60-dBu contour.

### Radiofrequency Electromagnetic Field Considerations

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields<sup>1</sup>. The power density at the base of the tower was calculated using the appropriate procedures contained in the Bulletin.

The proposed antenna will be side-mounted on the existing tower with the antenna center of radiation located 195

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<sup>1</sup> OET Bulletin 65, Second Edition 97-01, August, 1997.

meters above ground level. The power density was calculated using the appropriate equation contained in the Bulletin. Using a total ERP (horizontal and vertical polarization) of 23 kilowatts and a "worst-case" vertical relative field value of 1.0, the calculated power density at 2 meters above the ground is 0.0202 milliwatts per square centimeter ( $\text{mW}/\text{cm}^2$ ), which is 10.1% of the Commission's recommended limit of  $0.2 \text{ mW}/\text{cm}^2$  for FM frequencies applicable to uncontrolled exposure areas. However, the WMXB main facility and proposed auxiliary antennas are the only high power emitters at this tower site. Therefore, as these two facilities will never be operating at the same time, it is believed that this proposed facility will comply with the FCC's RF emission rules.

Access to the tower site will be restricted and appropriately marked with warning signs. When it becomes necessary for workers to ascend the tower, appropriate measures, such as reduction or shut down of power if necessary, shall be taken to ensure that the human exposure to radiofrequency electromagnetic fields will not exceed the FCC guidelines.

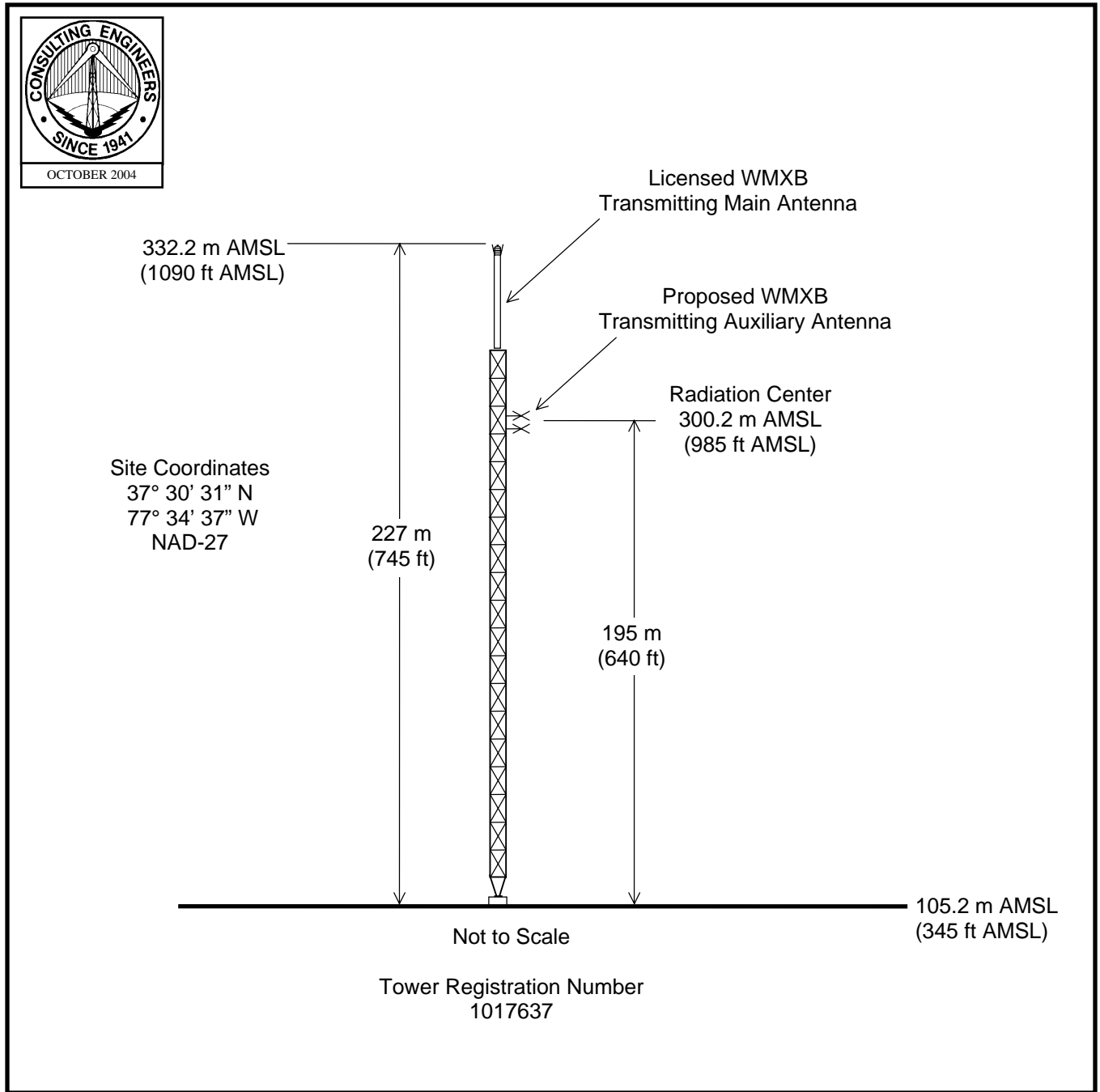
It is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be provided to the FCC by the tower owner as part of the tower registration process.

Charles A. Cooper

October 25, 2004

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Figure 1

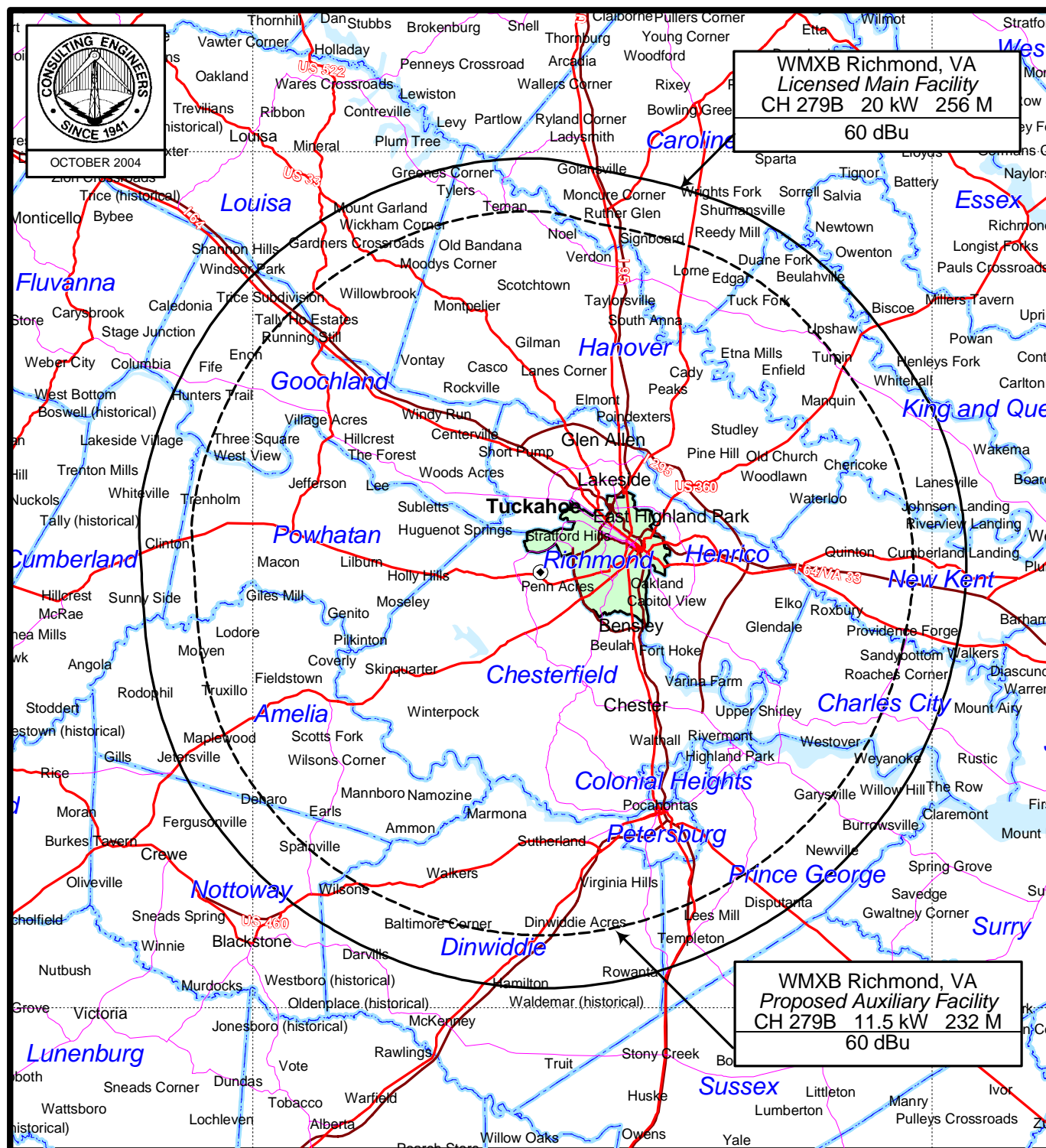


## **PROPOSED ANTENNA AND SUPPORTING STRUCTURE**

RADIO STATION WMXB  
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du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2



## PREDICTED FCC COVERAGE CONTOURS

FM STATION WMXB  
AUXILIARY FACILITY  
RICHMOND, VIRGINIA  
CH 279B 11.5 KW 256 M

du Treil, Lundin & Rackley, Inc., Sarasota, Florida