

***COMPREHENSIVE TECHNICAL EXHIBIT  
APPLICATION FOR LICENSE***

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**FM Translator Station K293BO  
0.170 kW ERP / 106.5 MHz  
Lawton, Oklahoma**

**Community Broadcasting, Inc.**

**June, 2016**

## **APPLICATION FOR LICENSE**

The following engineering statement has been prepared for **Community Broadcasting, Inc.** ("CBI"), licensee of FM translator station K293BO at Lawton, Oklahoma, and is in support of their application for license to cover changes authorized to the facility under FCC File No. BPFT-20160510ABC. This construction permit was requested in order to relocate the facility due to issues with the reception of the primary station, KQCV-FM at Shawnee, Oklahoma.<sup>1</sup>

K293BO is authorized under the current construction permit to operate with a maximum effective radiated power of 170 Watts at a center of radiation of 458 meters above mean sea level, 83 meters above ground, utilizing a non-directional antenna. The particular antenna specified, and utilized for construction, is a Systems With Reliability (SWR) FM1/2 two-bay antenna. Construction of the facility pursuant to the terms of the underlying construction permit has been completed.

The construction permit as issued by the Commission listed two (2) special conditions. CBI is in compliance with both of these special conditions. Each condition will be specifically discussed.

The first of the special conditions pertains to radiofrequency radiation safety at the site. Under this condition, CBI is required to coordinate with other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. CBI certifies that it will undertake necessary coordination activities

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<sup>1</sup> The Facility ID for K293BO at Lawton, Oklahoma is 141929. The Facility ID for KQCV-FM at Shawnee, Oklahoma is 6488.

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under this condition, which may include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

The second special condition requires this license application to be on file prior to the commencement of program tests. Upon submission of this application for license, CBI will commence program test operations of the facility.

The specified transmitter power output achieves the authorized effective radiated power. The power gain of the antenna, as specified by the manufacturer, is 0.959. The input power to the antenna to achieve the authorized effective radiated power is 177.3 Watts.

Ahead of the antenna is the main run of transmission line. This run consists of 279 feet of Andrew/Commscope LDF5-50A, which is a semi-flexible foam-dielctric coaxial cable with a nominal diameter of 7/8 inches. The insertion loss of this run of line, as specified in data from the manufacturer, is 1.08 dB. This value corresponds to an efficiency of 77.98 percent. The input power to the transmission line to achieve the authorized effective radiated power is 227.3 Watts.

Preceding the main run of transmission line is a Polyphaser lightning protection device. The nominal insertion loss for this device is 0.1 dB, which corresponds to an efficiency of 97.72 percent. The input power to the Polyphaser to achieve the authorized effective radiated power is 232.6 Watts.

Between the transmitter and the Polyphaser is a jumper, which consists of six feet of Andrew/Commscope FSJ4-50B, which has a nominal diameter of one-half inch. The insertion loss

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of this run of this jumper at the frequency of operation is also 0.1 dB, corresponding to an efficiency of 97.72 percent. The input power to the jumper to achieve the authorized effective radiated power is 238 Watts. The input to the jumper is the output of the transmitter. It is therefore demonstrated that the specified transmitter power output achieves the authorized effective radiated power.

The facility utilizes a non-directional antenna. This antenna has been installed in accordance with the instructions of the manufacturer.

The preceding statement has been prepared by me, or under my direction, and is true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature  
License Expires November 30, 2017

Jeremy D. Ruck, PE  
June 21, 2016

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