

North-Central Christian Broadcasting (NCCB) / WNCB 89.5 FM

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Great Music, Encouraging Your Heart

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Exhibit 9 **Constructed Facility**

The underlying Construction Permit specifies a different antenna than what is actually being used. The original antenna specified is a Celwave ECFM-2 2 bay circular polarized. The actual antenna is a Jampro JLPC-1 single bay circular polarized. The specified TPO is correct for the Jampro JLPC-1 antenna.

Calculation of ERP:

$$\text{ERP} = \text{TPO} * \text{Pg} * \text{Ef}$$

$$96 \text{ watts} * 0.46 * 0.8604 = \mathbf{38 \text{ watts}}$$

Where ERP = Effective Radiated Power, TPO = Transmitter Power Output, Pg = Power gain of antenna in both horizontal and vertical polarities, Ef = efficiency of length of cable used.

The main cable is 130 feet of LDF7-50A, efficiency rating = .9326

Jumpers from transmitter to main cable and main cable to antenna are Belden 9913 (RG8) consisting of 25 feet total, efficiency rating = .9226

$$\mathbf{\text{Total cable efficiency} = .8604}$$