



## Engineering Statement

### Section 7, Exhibit 10-A

Chisholm Trail Broadcasting Co. has retained this firm to modify their construction permit BP-19970616BI for radio station KMKZ (AM). Chisholm hereby requests a site change and the utilization of a simple directional pattern to facilitate improvements in population served for station KMKZ (AM).

### Background

Construction permit BP-19970616BI specifies an expanded band facility for KMKZ (AM) at 1640 kHz. With Chisholm's proposed daytime 1000 mV/m and 25 mV/m contours, 1,767 and 55,038 persons reside, respectively. The rules place a maximum of 300 persons or 1% of the population within the 25 mV/m contour, whichever is greater. Chisholm's proposal amounts to 3.2% of the population within the 25 mV/m that reside within the 1000 mV/m blanketing contour. The Commission granted a waiver of this rule with the stipulation that Chisholm agreed to resolve any legitimate complaint of blanketing interference and to comply fully with the requirements of §73.88 and §73.318 of the Rules.

### Purpose

This firm has determined that a substantial increase in persons served could be achieved with a simple two-tower directional system located at N 36°-06'-55 and W97°-45'-23". The proposed site is an excellent location for the new antenna system, as it consists of rural farmland and pasture. This preferred site is 35.5 km distant from the authorized site on a bearing of 162.8°. The proposed daytime 1000 mV/m contour contains a population of zero persons, according to the 2000 U.S. Census. Thus, any potential for blanketing interference would be completely eliminated. Chisholm hereby requests a waiver of the Model 1 facility requirement for the transmitter to be within 20 km of the allotment coordinates.

### Gain/Loss Area

The proposed directional pattern would serve 1,415,404 persons in the 0.5 mV/m service contour, and 357,272 persons in the 5.0 mV/m city grade contour. The site authorized in the construction permit would serve 1,409,281 persons in the 0.5 mV/m service contour, and 86,043 persons in the 5.0 mV/m city grade



contour. While the 0.5 mV/m service contour population would remain roughly equal from both sites, the preferred site would increase persons served in the 5.0 mV/m city grade contour by 415%.

When comparing the authorized non-directional 0.5 mV/m to the proposed directional 0.5 mV/m contour, the loss area comprises an area of 16,682.36 sq km. The persons residing in this area are 194,801 as determined by the 2000 U.S. Census. The loss area includes 126,832 persons in southern Kansas, most notably in the Wichita, KS market. The Wichita area is not served by the parent station KCRC (AM) license, and is not considered to be part of the listening audience by any station licensed to Enid, OK. In all instances, the loss area would continue to be served by at least 5 full-time services. If the Wichita population was omitted from the loss area, persons served would fall to 67,696.

When comparing the authorized non-directional 0.5 mV/m to the proposed directional 0.5 mV/m contour, the gain area comprises an area of 6,665 sq km. The persons residing in this area are 202,230 as determined by the 2000 U.S. Census. This area is primarily contained within Cleveland, Pottawatomie, and Grady counties in central Oklahoma. Parent station KCRC (AM) currently garners a portion of its advertising revenues from the Oklahoma City market. Numerous stations licensed to the Oklahoma City area serve the Enid, OK community, thus the areas are inter-related in government, interests and commerce.

### **Compliance**

The Commission defines a "Model 1" facility as follows in §73.14 of the Rules: "**Model 1 facility:** A station operating in the 1605-1705 kHz band featuring fulltime operation with stereo, competitive technical quality, 10 kW daytime power, 1 kW nighttime power, nondirectional antenna (or a simple directional antenna system), and separated by 400-800 km from other co-channel stations."

The Commission's Rules require separation between allocation reference points for expanded band allocations of 800 km for co-channels, 200 km for first adjacent, and 53 km for second adjacent allocations. The closest co-channel station to the proposed coordinates for KMKZ (AM) is construction permit BMP-20020822AAO at Biloxi, MS. It is 1,038.6 km distant on a bearing of 309.54°. The closest first adjacent station to the proposed coordinates for KMKZ (AM) is KWHN (AM), Ft. Smith, AR. It is 312.37 km distant on a bearing of 106.46°. The



closest second adjacent station to the proposed coordinates for KMKZ (AM) is KXTR (AM) at Kansas City, KS. It is 427.31 km distant on a bearing of 39.47°

KMKZ (AM) will continue to serve 96% of the community of license with a 5.0 mV/m nighttime contour, well in excess of the 50% coverage required by §73.182 of the Commission's Rules.

The proposed towers will be vertically guyed, triangular steel series fed towers. The electrical height of the radiators will be 45.73 meters, or 90.0°. The ground system will consist of 120 buried copper wires, 45.73 meters or 90.0° in length. The ground wires will be spaced every three degrees around the base of each tower base. The theoretical efficiency of the antenna system will be 903.78 mV/m at 1 km. This value was calculated using the William Ball, Figure 8, §73.190 program from the Commission's Rules.

### **RF Exposure**

The new antenna system will be in compliance with respect to exposure to harmful radio frequency exposure. Access to the tower will be restricted with a fence with locked gate. The fence will be spaced a minimum of 6 meters distant from the radiating structures. The transmitter power will be reduced or turned off to protect workers who must climb the tower. Signs will be posted warning of the radiation danger.

This proposed KMKZ site change, as proposed, will be in full compliance with the Commission's Rules. The facility will be constructed as authorized by the Commission under the standards of good engineering practice.

Respectfully Submitted,

William H. Nolan  
Managing Member  
Broadcast Technical Associates, LLC