

**ENGINEERING STATEMENT**

**Exhibit #1**

Concerning the Application of

**Winona State University**

To Change the Transmitter Site, Antenna Height, ERP and the Directional Pattern

KQAL, Winona, Minnesota

April 22, 2010

This engineering statement supports the application of Winona State University to move the transmitter site, increase the ERP and change the directional pattern of the antenna.

**Existing facilities:**

ERP= 1.8 kW H & V

Directional Antenna HAAT = 191 Meters

Antenna COR AMSL = 476 Meters

Licensed coordinates:

N. Lat. 44 01 52

W. Long. 91 38 31

**Proposed Facilities:**

ERP = 2.5 kW H & V, directional

Antenna COR AMSL = 480 Meters

Elevation = 353.6 Meters

Antenna HAAT = 210.3 Meters\*

(\*Based on USGS 3 arc-second terrain elevation database)

Proposed NAD 27 coordinates:

N. Lat. 44 04 26

W. Long. 91 34 38

**Exhibit 14, Community Coverage:** This exhibit contains a map of the proposed 60 dBu service contour showing 100% coverage to Winona, the principal city. The reader will also find a distance to contour /HAAT table defining the eight cardinal radials.

**Exhibit 16** is an allocation study showing KQAL's relationship with station licenses, construction permits, applications and reservations. Page # 1 of this exhibit is a tabular study showing the proposed facility's relationship to all stations, construction permits, applications and reservations having a frequency and distance relationship. The USGS 3 arc-second terrain elevation database was used in the calculation of the interference and protected signal contours. Page # 2 of this study is a narrative explaining the abbreviations and conventions used in the channel printout. Pages # 3-51 of this exhibit are maps and distance-to-contour (FMOver) printouts defining the proposed contour relationships. It should be noted that the instant proposal neither causes nor receives contour overlap.

This exhibit also contains the directional antenna exhibit that provides an azimuth pattern graph and table of the proposed composite pattern, a vertical elevation field graph, a statement on how the directional pattern will be achieved and a declaration made by the engineering consultant.

**Exhibit 22** is an RF hazard statement showing that workers and the general public are protected from excess radio frequency emissions.

The proposed station is not within 320 kilometers of the US border with Mexico or Canada. It is not within the specific critical distances to AM broadcast towers and the proposed facility is okay with respect to FCC monitoring stations, Table Mountain and the West Virginia Quiet Zone. The applicant is aware of its responsibility under the rules to correct any blanketing interference it may cause within the period of one year from commencement of transmissions of newly authorized facilities.

Doug Vernier