

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING NETWORK, licensee of television translator K56ET in Fargo, North Dakota, in support of this application for modification of Construction Permit BPTT-20050615ACB to specify digital operation on Channel 35 (its authorized displacement channel) from the licensed K56ET site, as a "flashcut" proposal.

It is proposed to utilize the authorized Andrew omnidirectional antenna at the authorized height on the side of the existing 214-meter communications tower. Exhibit B is a map upon which the predicted service contours are plotted. It is important to note that the newly proposed 51 dBu contour encompasses a significant portion of the Grade A contour that obtains from the licensed K56ET facility. Operating parameters for the proposed facility are tabulated in Exhibit C. An interference study is provided in Exhibit D, and a power density calculation follows as Exhibit E.

Because no change in the overall height or location of the existing tower is proposed, the FAA has not been notified of this application. The FCC issued Antenna Structure Registration Number 1024630 to this tower.

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.



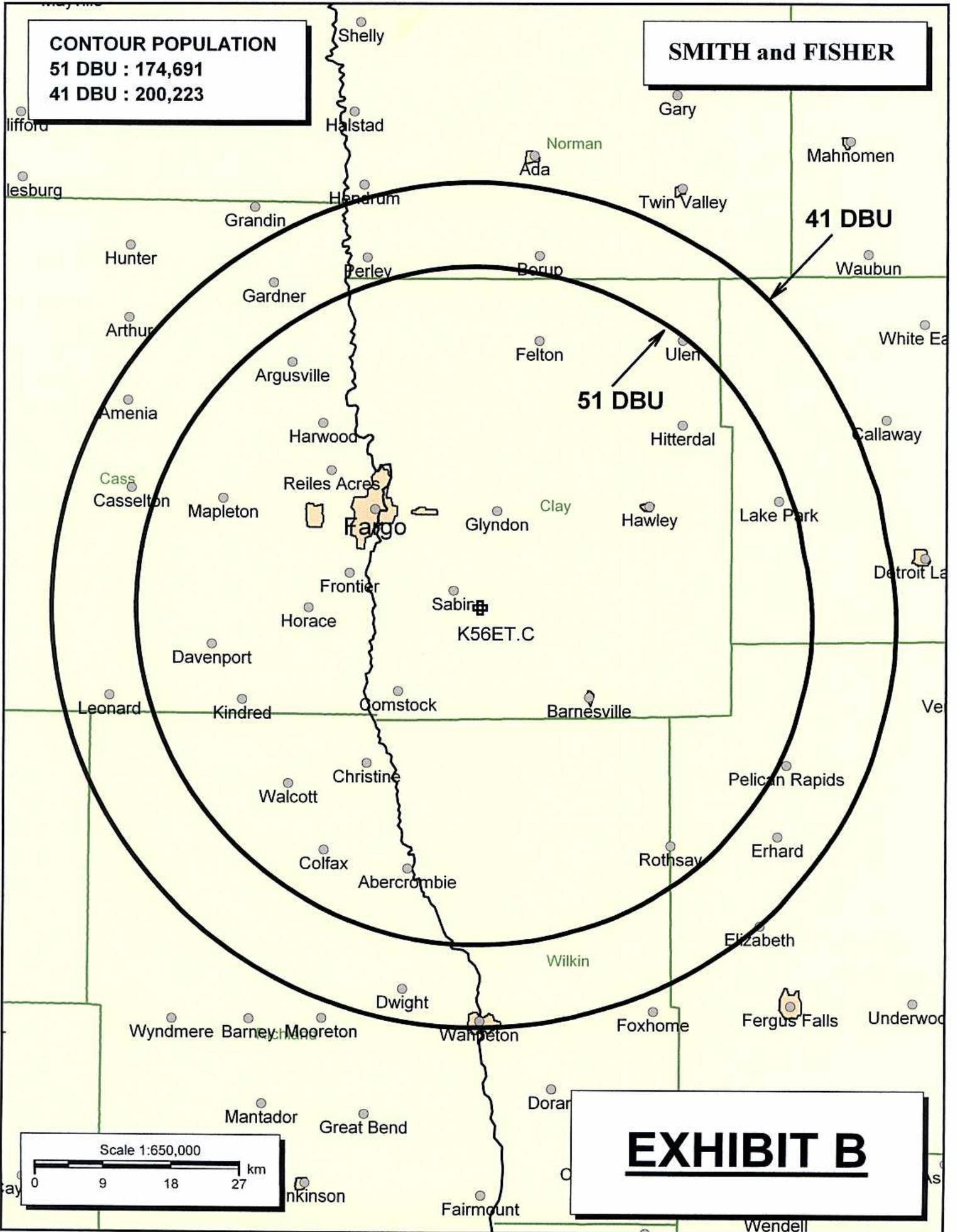
KEVIN T. FISHER

**CONTOUR POPULATION**

**51 DBU : 174,691**

**41 DBU : 200,223**

**SMITH and FISHER**



**41 DBU**

**51 DBU**

**EXHIBIT B**

Scale 1:650,000



PROPOSED OPERATING PARAMETERS

PROPOSED K56ET-D  
CHANNEL 35 – FARGO, NORTH DAKOTA  
[MODIFICATION OF BPTT-20050615ACB]

|  |                     |
|--|---------------------|
| Transmitter Power Output:                  | 0.92 kw             |
| Transmission Line Efficiency:              | 57.9%               |
| Antenna Power Gain – Toward Horizon:       | 28.2                |
| Antenna Power Gain – Main Lobe:            | 28.2                |
| Effective Radiated Power – Toward Horizon: | 15.0 kw             |
| Effective Radiated Power – Main Lobe:      | 15.0 kw             |
| Transmitter Make and Model:                | Type-accepted       |
| Rated Output                               | 1.0 kw              |
| Transmission Line Make and Model:          | Andrew HJ7-50A      |
| Size and Type:                             | 1-5/8" air heliax   |
| Length:                                    | 450 feet            |
| Antenna Make and Model:                    | Andrew ALP16L2-HSOC |
| Orientation                                | Omnidirectional     |
| Beam Tilt                                  | 0.5 degrees         |
| Radiation Center Above Ground:             | 126 meters          |
| Radiation Center Above Mean Sea Level:     | 407 meters          |

LONGLEY-RICE INTERFERENCE STUDIES  
PROPOSED K56ET-D  
CHANNEL 35 – FARGO, NORTH DAKOTA  
[MODIFICATION OF BPTT-20050615ACB]

We conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to all facilities of concern. The software utilizes a 1-square kilometer cell size, calculates signal strength at 0.1 kilometer increments along each radial studied, and employs the 1990 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within the protected contour of the station under study where interference from another source (other than proposed K56ET-D) already is predicted to exist (also known as "masking"). The results of these studies are provided in Exhibit D-2. They conclude that the facility proposed herein causes no significant new interference to any of the potentially affected stations.

As a result, it is believed that the proposed K56ET-D facility complies with the requirements of Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030 of the Commission's Rules.

INTERFERENCE SUMMARY

PROPOSED K56ET-D  
CHANNEL 35 – FARGO, NORTH DAKOTA  
[MODIFICATION OF BPTT-20050615ACB]

| <u>Call Sign</u> | <u>Status</u> | <u>City, State</u> | <u>Ch.</u> | <u>Longley-Rice<br/>Service<br/>Population</u> | <u>Unmasked<br/>Interference From<br/>Proposed Facility</u> | <u>%</u> | <u>.</u> |
|------------------|---------------|--------------------|------------|--|---|----------|----------|
|------------------|---------------|--------------------|------------|--|---|----------|----------|

[NO STATIONS AFFECTED]

POWER DENSITY CALCULATION

PROPOSED K56ET-D  
CHANNEL 35 – FARGO, NORTH DAKOTA  
[MODIFICATION OF BPTT-20050615ACB]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Fargo facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 15.0 kw, an antenna radiation center 126 meters above ground, and the vertical pattern of the ERI antenna, maximum power density two meters above ground of  $0.0017 \text{ mw/cm}^2$  is calculated to occur 40 meters from the base of the tower. Since this is only 0.4 percent of the  $0.40 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 35 (596-602 MHz), this proposal may be excluded from consideration with respect to public exposure to nonionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive nonionizing radiation.