

ENGINEERING DEPARTMENT Fax:7147300661

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SMITH AND FISHER

EXHIBIT A


## ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING NETWORK, licensee of television translator K56ET, Channel 56 in Fargo, North Dakota, in support of this Application for Construction Permit to specify operation on Channel 35 from the licensed K56ET site. This proposal is being submitted in response to the Commission's reclamation of Channel 56 spectrum for future auction, thereby placing this translator in a displacement situation.

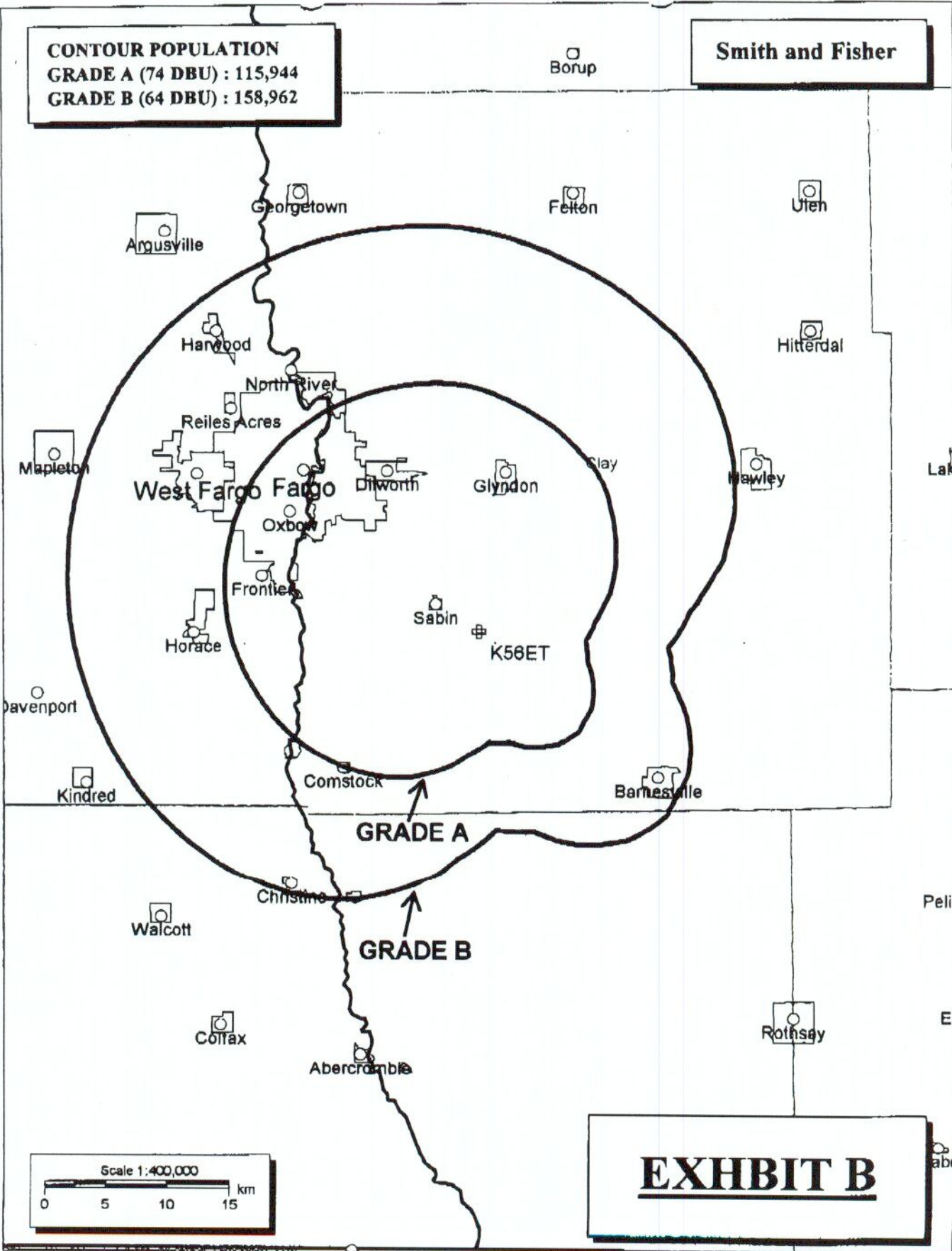
It is proposed to mount a standard Andrew directional antenna at the authorized height on the side of an existing 214-meter communications tower. Exhibit B is a map upon which the predicted service contours are plotted. It is important to note that the newly proposed 74 dBu contour encompasses a significant portion of that which obtains from the licensed K56ET facility. Operating parameters for the proposed facility are tabulated in Exhibit C. A contour overlap analysis and interference study are 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.

  
KYLE T. FISHER

July 25, 2003



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**EXHIBIT C**

**PROPOSED OPERATING PARAMETERS**

**PROPOSED K56ET  
CHANNEL 35 - FARGO, NORTH DAKOTA**

Transmitter Power Output:	1.0 kw
Transmission Line Efficiency:	57.9%
Antenna Power Gain – Toward Horizon:	42.14
Antenna Power Gain – Main Lobe:	42.14
Effective Radiated Power – Toward Horizon:	24.4 kw
Effective Radiated Power – Main Lobe:	24.4 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-HSM
Orientation	315 degrees true
Beam Tilt	0.5 degrees
Effective Height Above Ground:	126 meters
Effective Height Above Mean Sea Level:	407 meters



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**EXHIBIT D-1**

**CONTOUR OVERLAP AND  
LONGLEY-RICE INTERFERENCE STUDIES  
PROPOSED K56ET  
CHANNEL 35 - FARGO, NORTH DAKOTA**

We conducted a computer analysis of the interference situation for the proposed facility, the results of which are shown in Exhibit D-2. The study is based on contour protection requirements of Sections 74.705, 74.706, and 74.707 of the FCC's Rules with respect to analog full-power, digital full-power, and low power television stations, respectively. It concludes that the facility proposed herein meets these requirements except to one station: KARE-DT, Channel 35 in Minneapolis, Minnesota.

We then conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to KARE-DT. The software utilizes a 2-square kilometer cell size (except where noted), calculates signal strength at 1.0 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 Trinity's proposed K56ET) already is predicted to exist (also known as "masking"). The results of these studies are provided in Exhibit D-3. They conclude that the facility proposed herein causes no significant new interference to KARE-DT.

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**EXHIBIT D-1**

As a result, waiver of Section 74.706 of the Commission's Rules with respect to interference to KARE-DT is requested and believed to be justified based on the aforementioned Longley-Rice studies.

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EXHIBIT D-2

PROPOSED K56ET  
CH. 35 - FARGO ND  
REFERENCE  
46 45 35 N LPTV Pwr = 27.2 kW, HAMS L COR= 407 M DISPLAY DATES  
96 36 26 W DATA 07-22-03  
SEARCH 07-24-03  
..... Channel 35-, 596 MHz .....

Call	Channel	Location	Dist	Azi	FCC	Margin
KARE-D LI	35	Minneapolis	MN	328.64	123.9	> 331.53 -2.89
KARE-D ST	35	Minneapolis	MN	328.64	123.9	> 324.53 4.11
K25GD LI	35N	Aitkin	MN	210.43	95.9	> 186.92 23.51
DKXJC- AP	35+	Grand Forks	ND	128.49	345.2	> 104.79 23.70
DKXJC- LI	35+	Grand Forks	ND	128.47	345.2	> 094.45 34.02
KSAX-D GRR	36	Alexandria	MN	161.45	136.4	> 110.53 50.92
KSAX-D CPM	36	Alexandria	MN	161.45	136.4	> 110.53 50.92
KSAX LI	42Z	Alexandria	MN	161.44	136.4	> 100.00 61.44

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EXHIBIT D-3

INTERFERENCE SUMMARY

PROPOSED K56ET  
CHANNEL 35 - FARGO, NORTH DAKOTA

<u>Call Sign</u>	<u>Status</u>	<u>City, State</u>	<u>Ch.</u>	<u>Longley-Rice Service Population</u>	<u>Unmasked Interference From Proposed Facility</u>	<u>%</u>
KARE-DT BLC DT-20010917ABZ	Lic.	Minneapolis, MN	35	2,977,947	0	0



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**EXHIBIT E**

**POWER DENSITY CALCULATION**

**PROPOSED K56ET  
CHANNEL 35 - FARGO, NORTH DAKOTA**

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 24.4 kw, an effective antenna height of 126 meters above ground, and the vertical pattern of the Andrew antenna, maximum power density two meters above ground of  $0.00051 \text{ mw/cm}^2$  is calculated to occur 29 meters northwest of the base of the tower. Since this is only 0.1 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.