

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of WITI LICENSE, INC., licensee of WITI(TV) in Milwaukee, Wisconsin, and permittee of WITI-DT (BPCDT-19991004ABL), in support of its request for Special Temporary Authority (STA) to operate with reduced antenna height and a slightly different antenna pattern.

The station is unable to construct its DTV facility at present due to structural issues associated with the tower upon which the authorized antenna will be mounted. A request to extend the Commission's "Use-it-or-lose-it" deadline has been filed, and it contains all of the facts regarding the tower issues. It is important to note that WITI-DT is presently operating under authorization from a previous STA. The new STA will increase significantly the coverage of WITI-DT beyond that which presently is being served.

Exhibit B provides antenna pattern data for the new antenna and proposed operating parameters are tabulated in Exhibit C. Exhibit D-1 is a map on which the proposed digital service contour is plotted in relation to that authorized under BPCDT-19991004ABL. It shows that the proposed STA contour is located entirely within that authorized to WITI-DT. Exhibit D-2 is a map on which the 48 dBu contour of the STA facility is plotted. From this map it is clear that the requisite service will be provided to Milwaukee, the community of license. A power density calculation is provided in Exhibit E. In all respects, the proposed facility complies with the Commission's Rules.

EXHIBIT A

Since no change in the overall height or location of the existing tower is proposed herein, the FAA has not been notified of this application. In addition, the Commission has issued Antenna Structure Registration Number 1056835 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.

A handwritten signature in black ink, appearing to read 'K.T. Fisher', with a long horizontal stroke extending to the right.

KEVIN T. FISHER

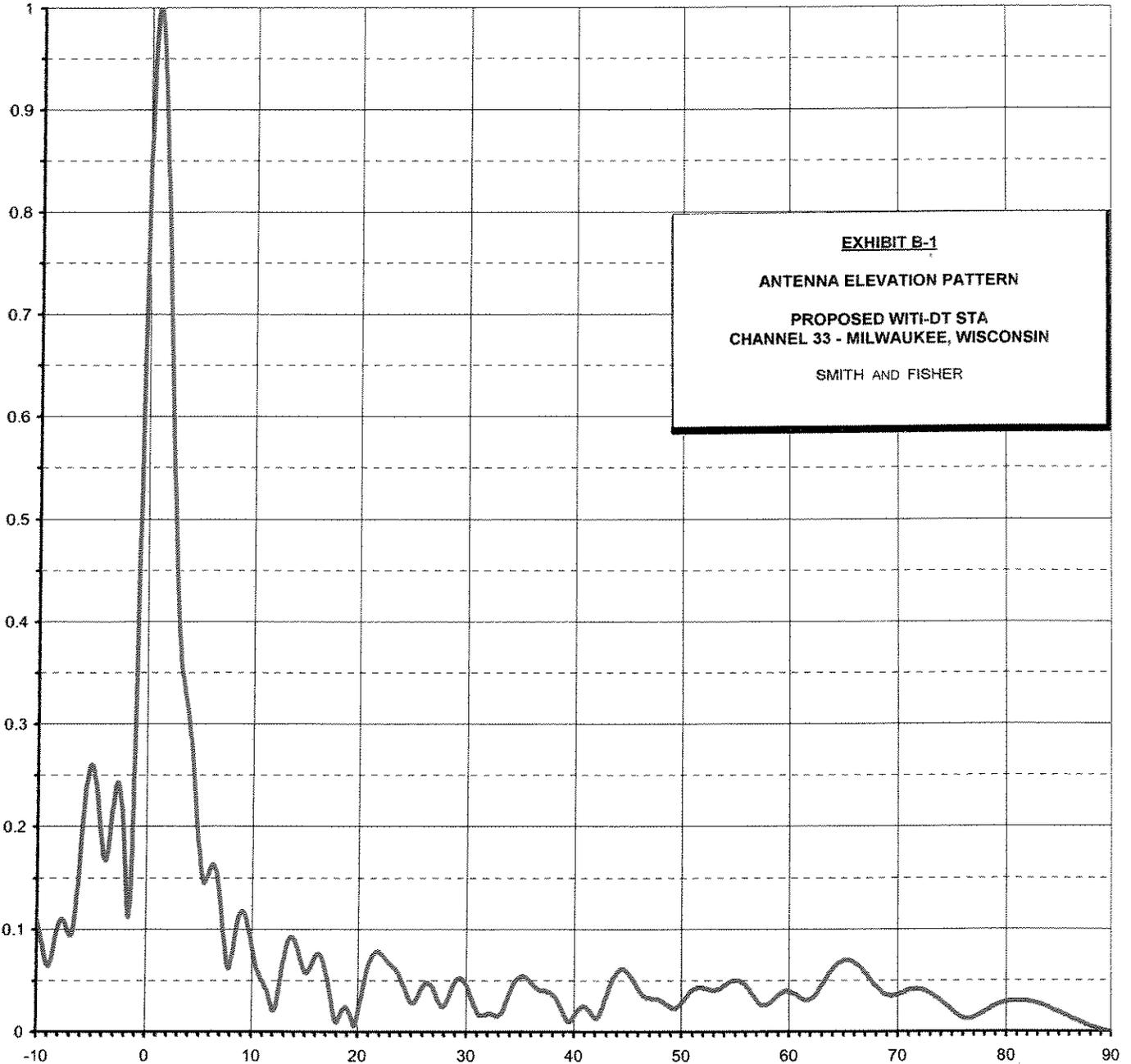
July 11, 2005



Proposal Number **DCA-10869**  
Date **28-Feb-05**  
Call Letters **WITI-DT** Channel **33**  
Location **Milwaukee, WI**  
Customer  
Antenna Type **TFU-24JSC/VP-R 4C160**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>21.00 (13.22 dB)</b>	Beam Tilt	<b>0.80 deg</b>
RMS Gain at Horizontal	<b>14.60 (11.64 dB)</b>	Frequency	<b>587.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>24Z210080-90</b>



Degrees Below Horizontal

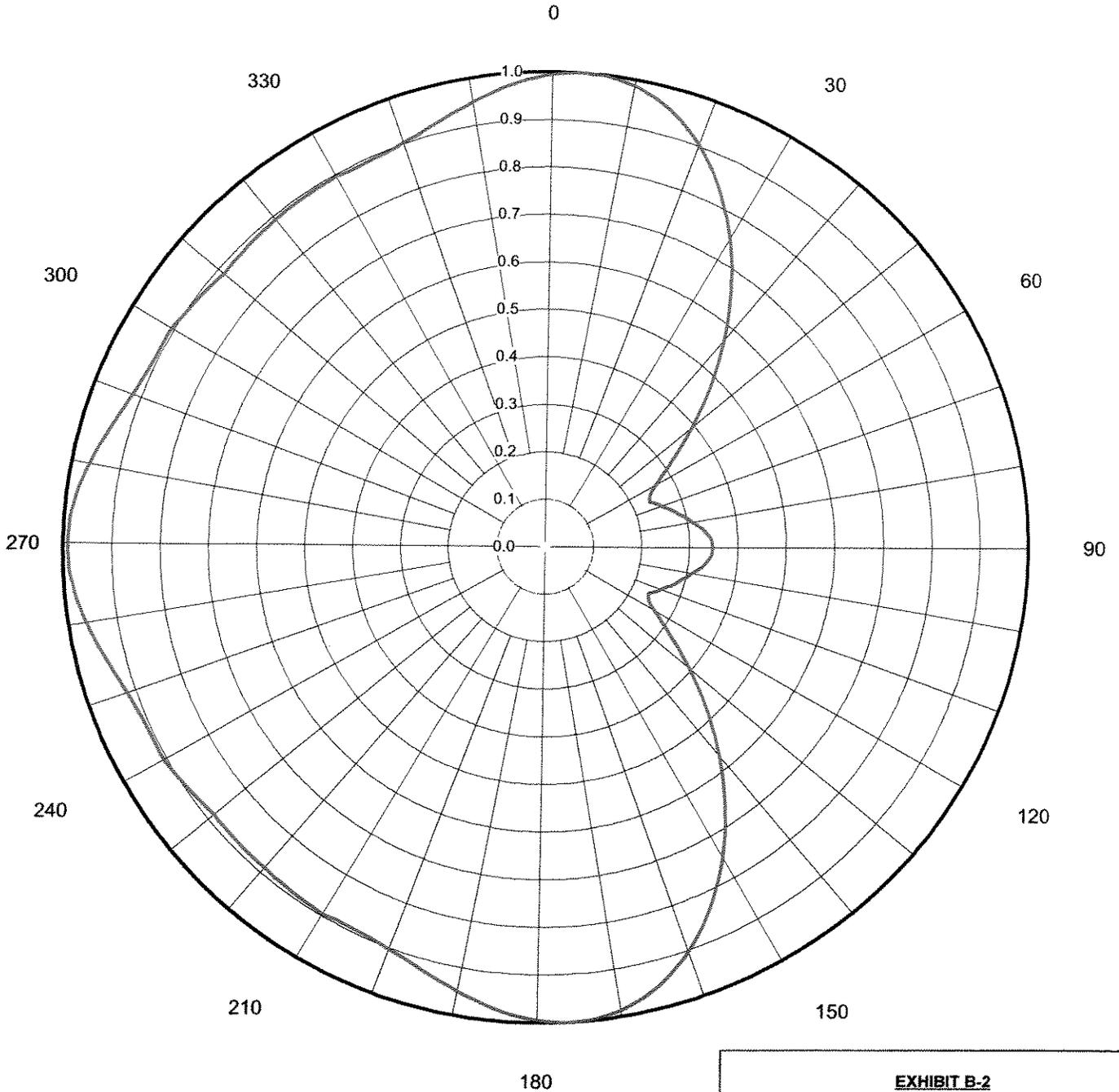


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### AZIMUTH PATTERN

Gain **1.60 (2.04 dB)**  
Calculated / Measured **Calculated**

Frequency **587.00 MHz**  
Drawing # **TFU-4C160**



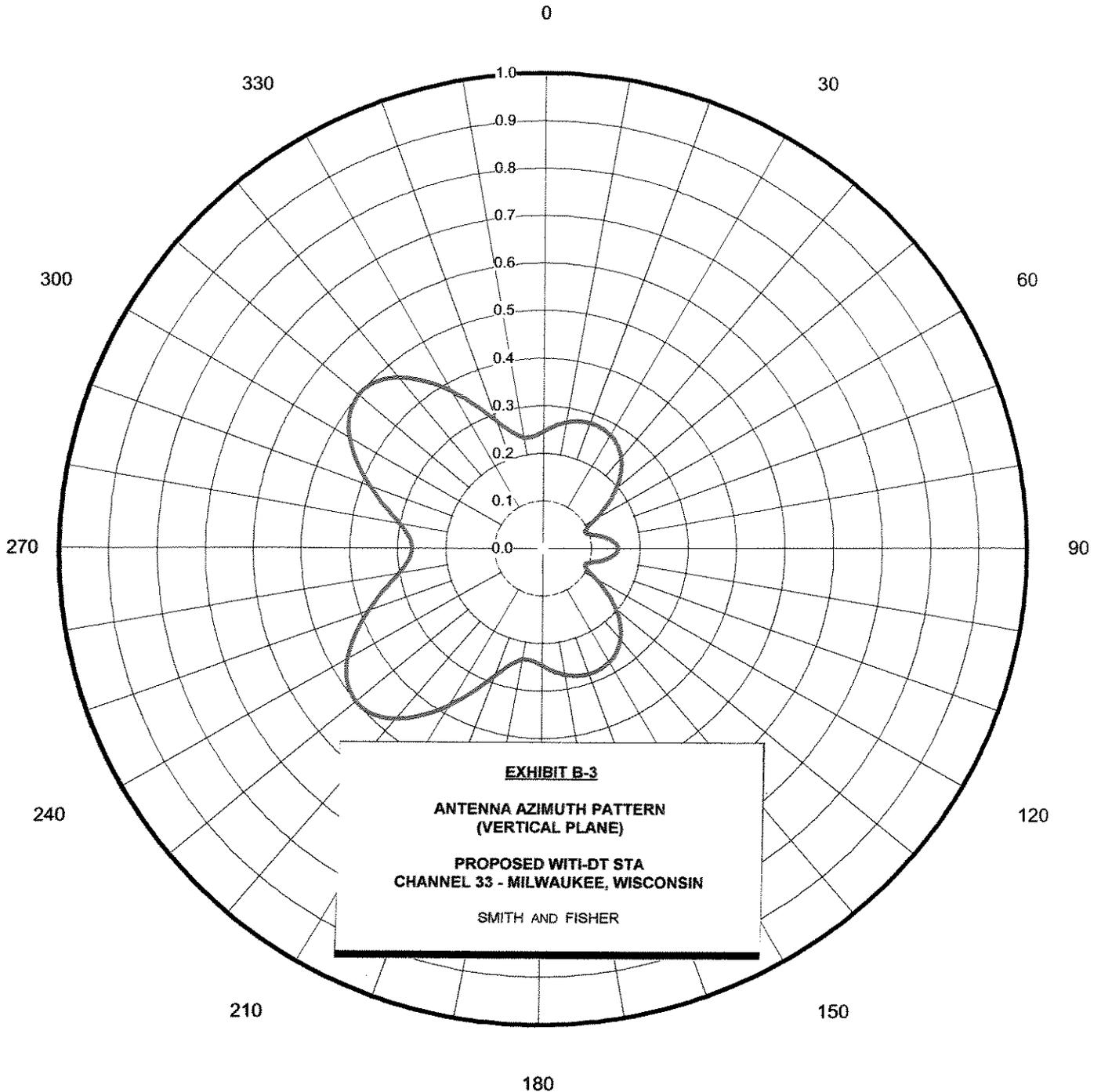
**EXHIBIT B-2**  
**ANTENNA AZIMUTH PATTERN**  
**(HORIZONTAL PLANE)**  
**PROPOSED WITI-DT STA**  
**CHANNEL 33 - MILWAUKEE, WISCONSIN**  
**SMITH AND FISHER**



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**AZIMUTH PATTERN/VERTICAL POLARIZATION**

Gain **2.70 (4.31 dB)** Frequency **587.00 MHz**  
Calculated / Measured **Calculated** Drawing # **TFU-4C270**



## ANTENNA RADIATION VALUES

PROPOSED WITI-DT  
CHANNEL 33 – MILWAUKEE, WISCONSIN

<u>Azimuth</u> <u>(° T)</u>	<u>Relative</u> <u>Field</u>	<u>ERP</u> <u>(dbk)</u>	<u>Azimuth</u> <u>(° T)</u>	<u>Relative</u> <u>Field</u>	<u>ERP</u> <u>(dbk)</u>
0	0.995	30.0	180	0.995	30.0
10	0.987	29.9	190	0.949	29.5
20	0.902	29.1	200	0.901	29.1
30	0.752	27.5	210	0.895	29.0
40	0.570	25.1	220	0.887	29.0
50	0.394	21.9	230	0.884	28.9
60	0.262	18.4	240	0.905	29.1
70	0.257	18.2	250	0.917	29.2
80	0.309	19.8	260	0.963	29.7
90	0.348	20.8	270	0.990	29.9
100	0.309	19.8	280	0.963	29.7
110	0.257	18.2	290	0.917	29.2
120	0.262	18.4	300	0.905	29.1
130	0.394	21.9	310	0.884	28.9
140	0.570	25.1	320	0.891	29.0
150	0.752	27.5	330	0.895	29.0
160	0.902	29.1	340	0.901	29.1
170	0.987	29.9	350	0.949	29.5
176	1.000	30.0			

PROPOSED OPERATING PARAMETERS

PROPOSED WITI-DT STA  
CHANNEL 33 – MILWAUKEE, WISCONSIN

ERP	1,000 kw
Site Elevation AMSL	192.2 meters
Overall Structure Height AGL	329.4 meters
Radiation Center Height AGL	264 meters
Radiation Center Height AMSL	456 meters
Radiation Center Height AAT	260 meters
Antenna Structure Registration Number	1056835
Antenna Type	DA
Geographic Coordinates	43-05-26 N 87-53-50 W

PROPOSED OPERATING PARAMETERS

PROPOSED WITI-DT STA  
CHANNEL 33 – MILWAUKEE, WISCONSIN

Transmitter power output	45.2 kw
Transmission line loss	11.1 kw
Input to antenna	34.1 kw
Antenna gain (maximum)	29.3(H), 7.3(V)
Effective radiated power (maximum)	1,000 kw (H), 250 kw (V)

Transmitter make and model: Type-accepted

Transmission line

Make and model: Dielectric EIA/DCA  
Size: 7-3/16"  
Type: rigid  
Length: 1,200 feet\*  
Efficiency: 75.5%

Antenna

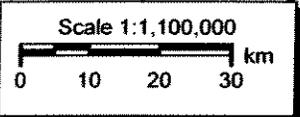
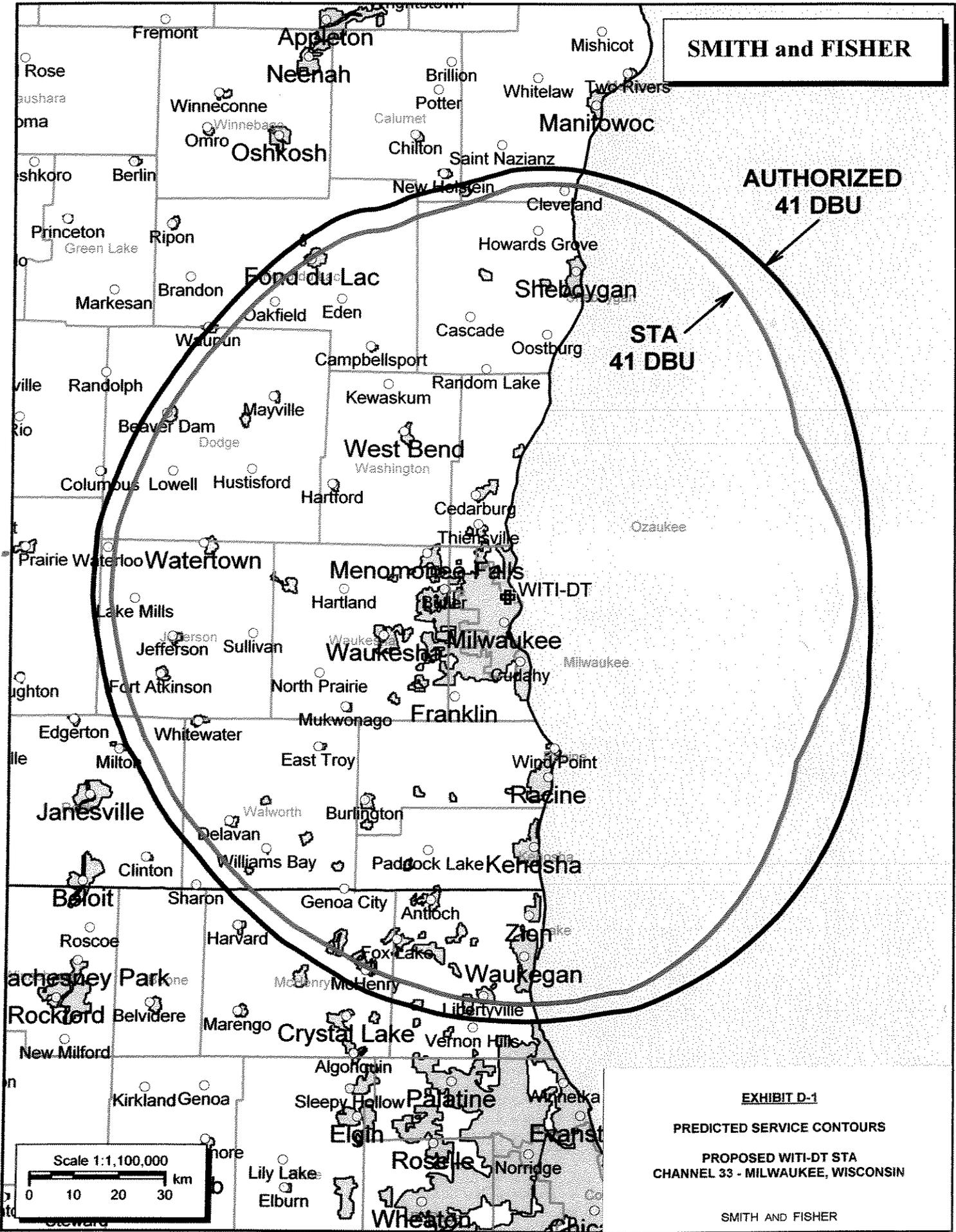
Make and model: Dielectric TFU-24JSC/VP-R 4C160  
Type: Directional, elliptically polarized  
Electrical Beam Tilt: 0.8°

\*estimated

**SMITH and FISHER**

**AUTHORIZED  
41 DBU**

**STA  
41 DBU**



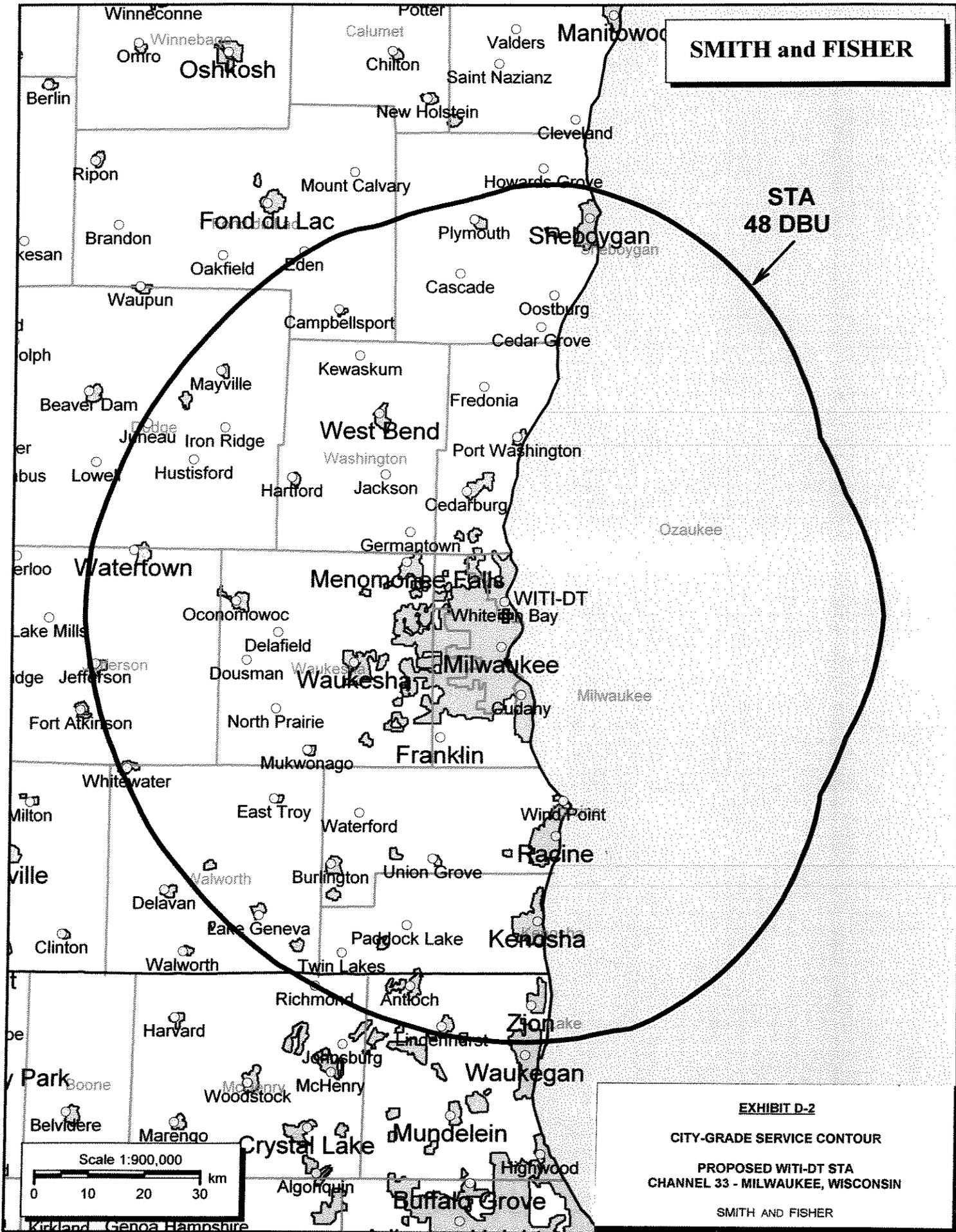
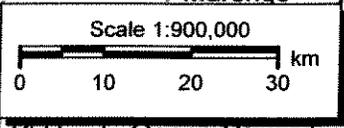
**EXHIBIT D-1**  
**PREDICTED SERVICE CONTOURS**  
**PROPOSED WITI-DT STA**  
**CHANNEL 33 - MILWAUKEE, WISCONSIN**

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**STA 48 DBU**

**EXHIBIT D-2**  
**CITY-GRADE SERVICE CONTOUR**  
**PROPOSED WITI-DT STA**  
**CHANNEL 33 - MILWAUKEE, WISCONSIN**  
**SMITH AND FISHER**



POWER DENSITY CALCULATION

PROPOSED WITI-DT STA  
CHANNEL 33 – MILWAUKEE, WISCONSIN

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Milwaukee facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1,000 kw (H) and 250 kw (V), a radiation center height of 264 meters above ground, and the elevation pattern of the Dielectric antenna, maximum power density two meters above ground of  $0.0024 \text{ mw/cm}^2$  is calculated to occur 122 meters west of the base of the tower. Since this is only 0.6 percent of the  $0.39 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 33 (584-590 MHz), a grant of this proposal may be considered a minor environmental action with respect to public and occupational ground-level 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.