

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING OF TEXAS, INC., licensee of full-power digital television station WWRS-DT, Channel 43 in Mayville, Wisconsin, in support of its request for Special Temporary Authority to use an interim facility for its operation on Channel 43 (pre-repack) while the new repack antenna on Channel 34 is installed on the same tower.

It is proposed to mount an SWR directional, horizontally-polarized antenna at the 106.7-meter level of the existing 149.7-meter tower on which the WWRS-DT repack antenna is authorized to be located (LMS-0000026658). The proposed effective radiated power for the interim facility is 244.4 kW in the horizontal plane. Exhibit B is a map upon which the predicted service contours are plotted. As shown, the community of Mayville is completely encompassed by the proposed STA 48 dBu city-grade service contour. In Exhibit C, we have plotted the service contours of the main licensed WWRS-DT facility (authorized in BLCDT-20130109AFE) and that from the proposed STA interim operation. As shown, the service contour of the STA facility is completely contained within that licensed to WWRS-DT on Channel 43.

Elevation and azimuth pattern information for the proposed antenna are provided in Exhibit D. Since the STA facility proposed herein has a service contour contained completely within that licensed to WWRS-DT, no interference study is included herein. A power density calculation appears as Exhibit E.

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application.

EXHIBIT A

In addition, the Federal Communications Commission issued Antenna Structure Registration Number 1219139 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 blue ink, appearing to read "K. T. Fisher". The signature is stylized with a large "K" and "F" and a smaller "T".

KEVIN T. FISHER

September 23, 2019

CONTOUR POPULATION
2015 U.S. CENSUS DATA
48 DBU : 1,252,436 (531,309 HH)
N/L : 1,809,191 (771,857 HH)

Smith and Fisher, LLC

**Proposed STA
N/L Contour**

**Proposed STA
48 dBu Contour**

WWR5-DT

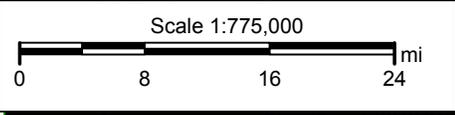
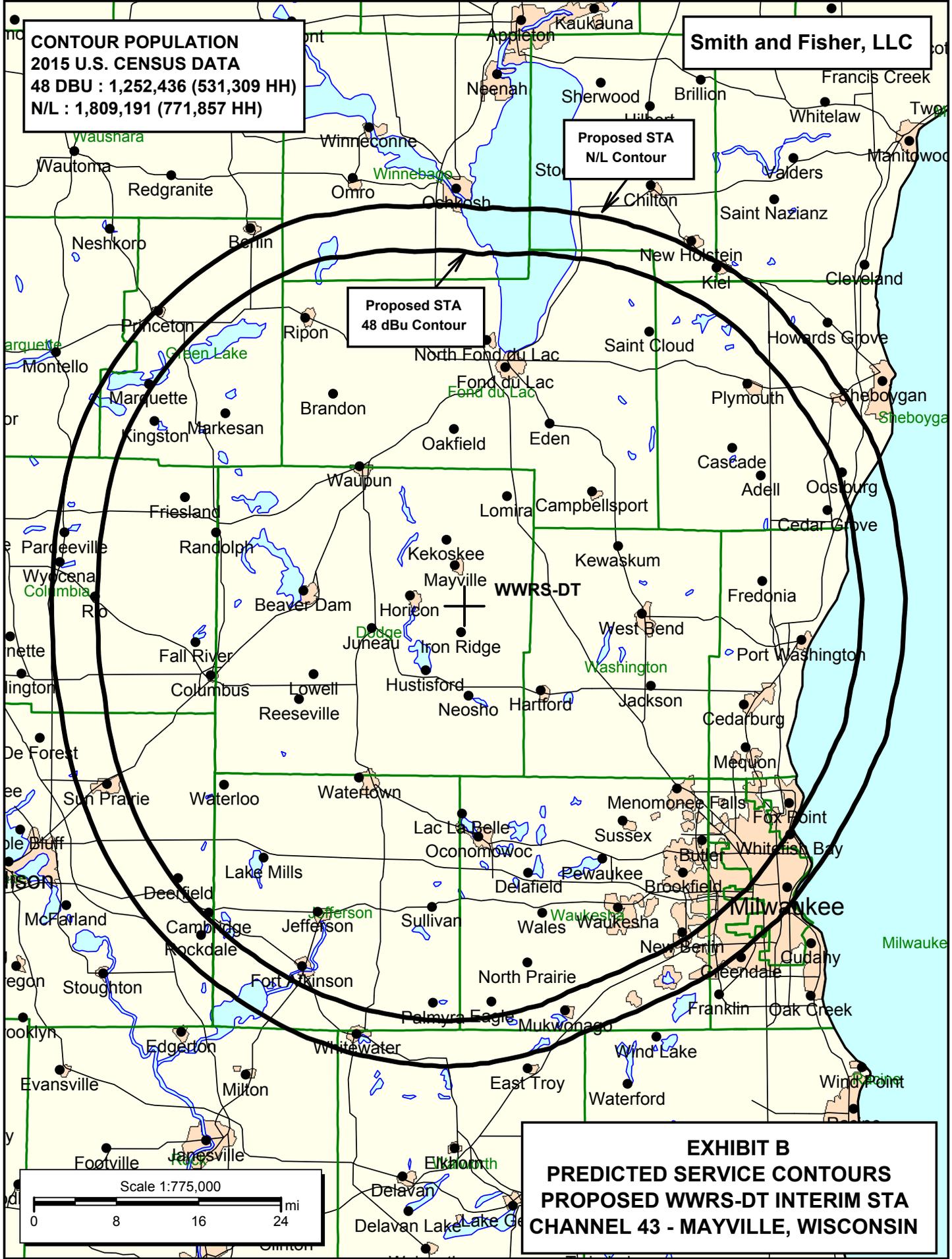
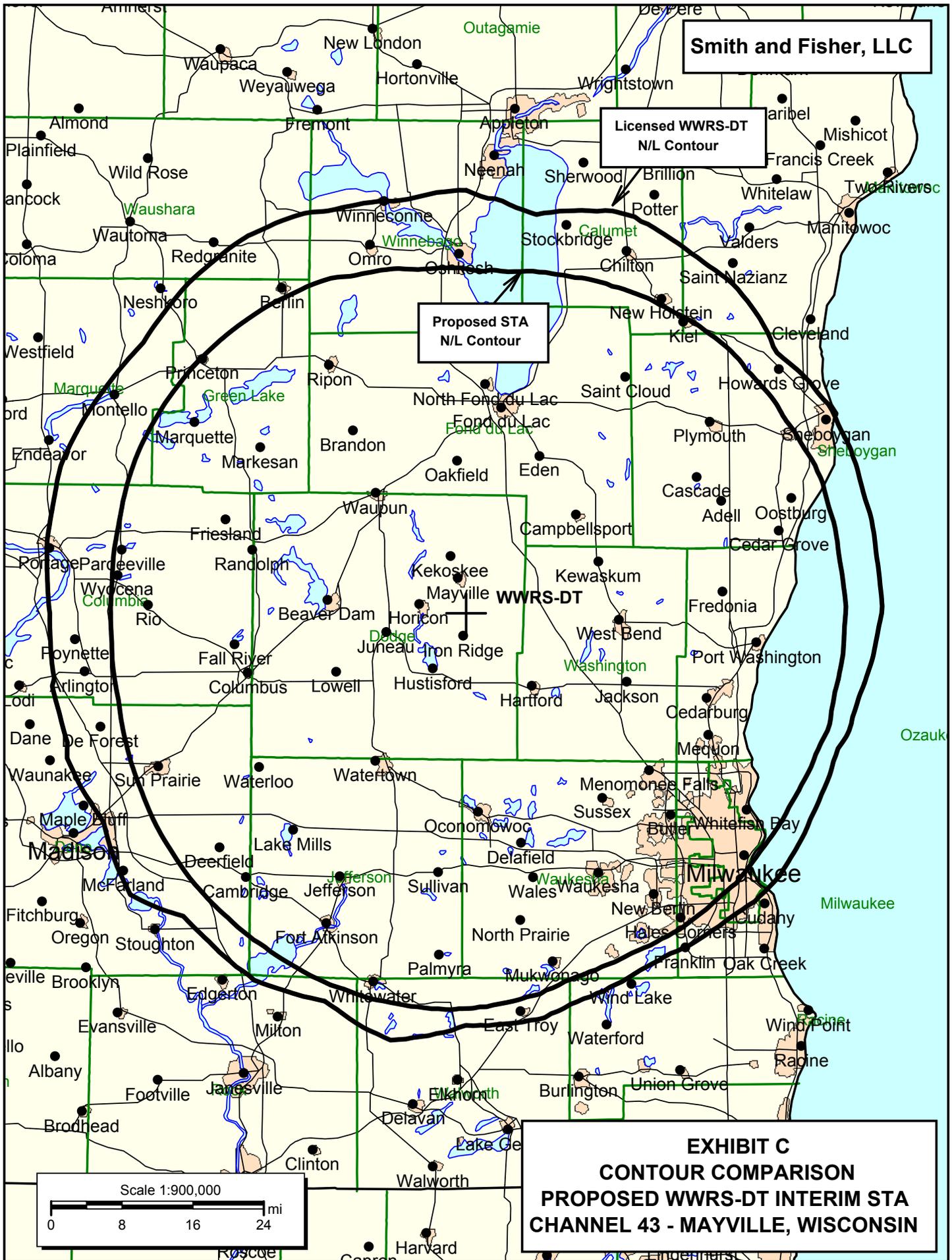
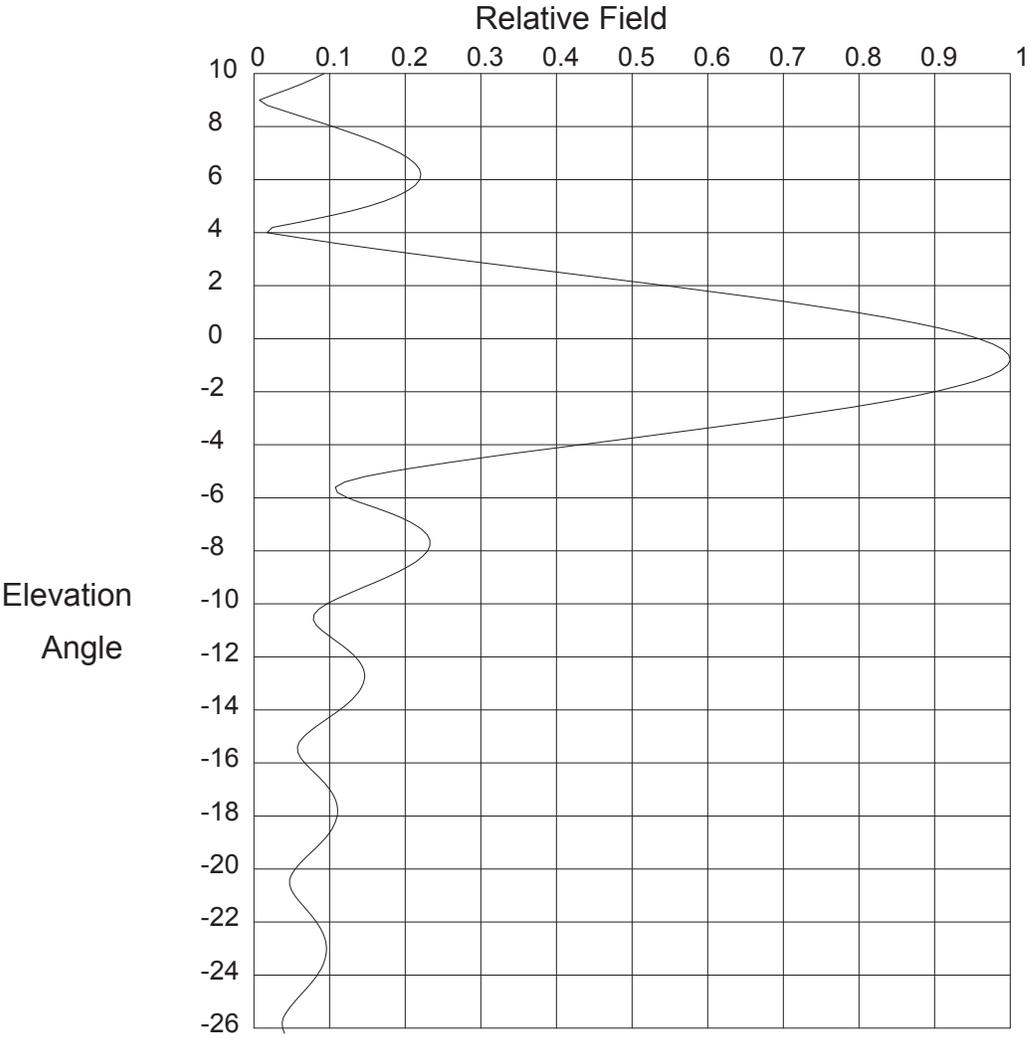


EXHIBIT B
PREDICTED SERVICE CONTOURS
PROPOSED WWR5-DT INTERIM STA
CHANNEL 43 - MAYVILLE, WISCONSIN







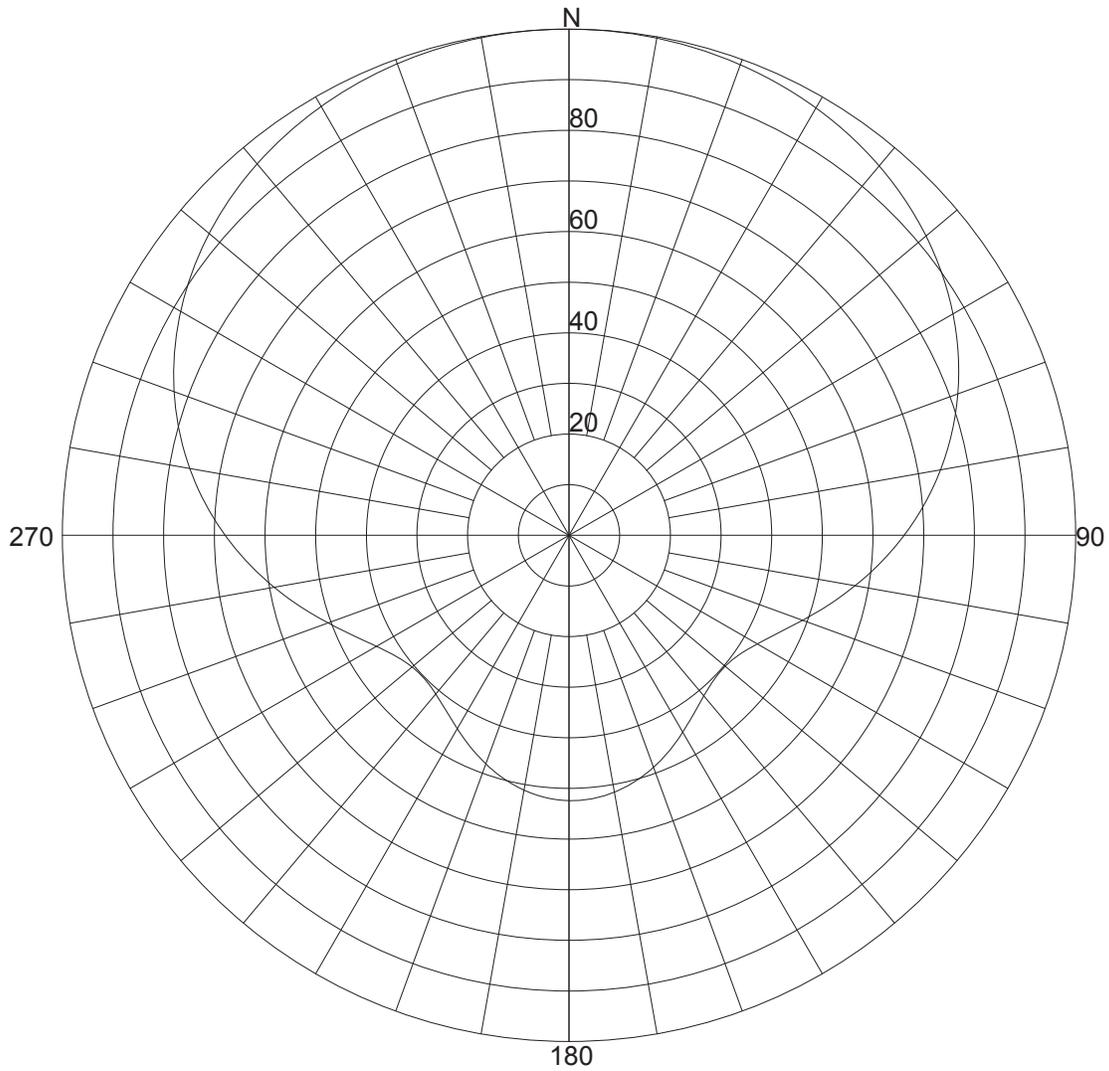
Elevation Pattern

Scale: Linear

Units: Field, Relative

Systems With Reliability

CLIENT: <i>WWRS interim antenna</i>	Date: 2/7/2019
ANTENNA TYPE: SWEDM120I/43	
FREQUENCY: 647 MHz	
PATTERN POL.: Horizontal	
DIRECTIVITY(Peak): 13.002/11.14 dBd	Beam Tilt (Deg.) : -0.75
DIRECTIVITY(Horiz): 11.95/10.774 dBd	Null Fill(s)(%) : 10, 7, 5



Azimuth Pattern

Scale: Linear

Unit: Relative Field

Systems With Reliability

CLIENT: *WWRS interim antenna*

Date: 2/7/2019

ANTENNA TYPE: SWEDM120I/43

FREQUENCY: 647 MHz

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 1.87443 / 2.73dB

PATTERN RMS: 0.730

Relative Field Tabulation(Azimuth)

Azimuth Heading	Normalized Field(dB)	Azimuth Heading	Normalized Field(dB)
0	1.0000 (0)	180	.5240 (-5.61)
5	.9992 (-0.01)	185	.5202 (-5.68)
10	.9971 (-0.02)	190	.5112 (-5.83)
15	.9938 (-0.05)	195	.4977 (-6.06)
20	.9892 (-0.09)	200	.4805 (-6.37)
25	.9829 (-0.15)	205	.4610 (-6.73)
30	.9748 (-0.22)	210	.4411 (-7.11)
35	.9648 (-0.31)	215	.4229 (-7.47)
40	.9525 (-0.42)	220	.4091 (-7.76)
45	.9376 (-0.56)	225	.4023 (-7.91)
50	.9199 (-0.73)	230	.4045 (-7.86)
55	.8991 (-0.92)	235	.4167 (-7.6)
60	.8751 (-1.16)	240	.4387 (-7.16)
65	.8476 (-1.44)	245	.4692 (-6.57)
70	.8166 (-1.76)	250	.5061 (-5.91)
75	.7822 (-2.13)	255	.5474 (-5.23)
80	.7446 (-2.56)	260	.5910 (-4.57)
85	.7042 (-3.05)	265	.6352 (-3.94)
90	.6615 (-3.59)	270	.6788 (-3.37)
95	.6175 (-4.19)	275	.7206 (-2.85)
100	.5734 (-4.83)	280	.7600 (-2.38)
105	.5305 (-5.51)	285	.7964 (-1.98)
110	.4907 (-6.18)	290	.8294 (-1.62)
115	.4561 (-6.82)	295	.8590 (-1.32)
120	.4288 (-7.35)	300	.8851 (-1.06)
125	.4106 (-7.73)	305	.9078 (-0.84)
130	.4024 (-7.91)	310	.9273 (-0.66)
135	.4040 (-7.87)	315	.9439 (-0.5)
140	.4140 (-7.66)	320	.9577 (-0.38)
145	.4298 (-7.33)	325	.9691 (-0.27)
150	.4490 (-6.96)	330	.9783 (-0.19)
155	.4689 (-6.58)	335	.9856 (-0.13)
160	.4877 (-6.24)	340	.9912 (-0.08)
165	.5036 (-5.96)	345	.9953 (-0.04)
170	.5154 (-5.76)	350	.9981 (-0.02)
175	.5223 (-5.64)	355	.9996 (0)

Systems With Reliability

CLIENT: *WWRS interim antenna*

Date: 2/7/2019

ANTENNA TYPE: SWEDM120I/43

FREQUENCY: 647 MHz

PATTERN POL.: Horizontal

CIRCULARITY(+/-dB):

AZ. DIRECTIVITY: 1.87443 / 2.73dB

PATTERN RMS: 0.730

POWER DENSITY CALCULATION

PROPOSED WWRS-DT STA REQUEST FOR INTERIM FACILITY
CHANNEL 43 – MAYVILLE, 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 Mayville facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 244.4 kW (H), an antenna radiation center 106.7 meters above ground, and the specific elevation pattern of the proposed SWR antenna, maximum power density two meters above ground of 0.019 mW/cm^2 is calculated to occur 17 meters southeast of the base of the tower. Since this is only 4.4 percent of the 0.43 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 43 (644-650 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing 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 non-ionizing radiation.