

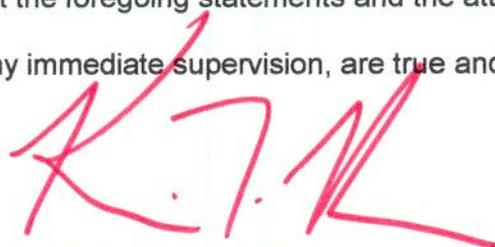
ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING NETWORK, permittee of television translator W51DT, Channel 51 in Galesburg, Illinois, in support of this application for modification of Construction Permit BPTT-20030617ABG to specify a reduction in effective radiated power. No change in site location or effective antenna height is proposed herein.

It is proposed to mount a standard ERI omnidirectional antenna at the 98-meter level of the existing 148-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 W50BY facility. Operating parameters for the newly 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 1010144 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.

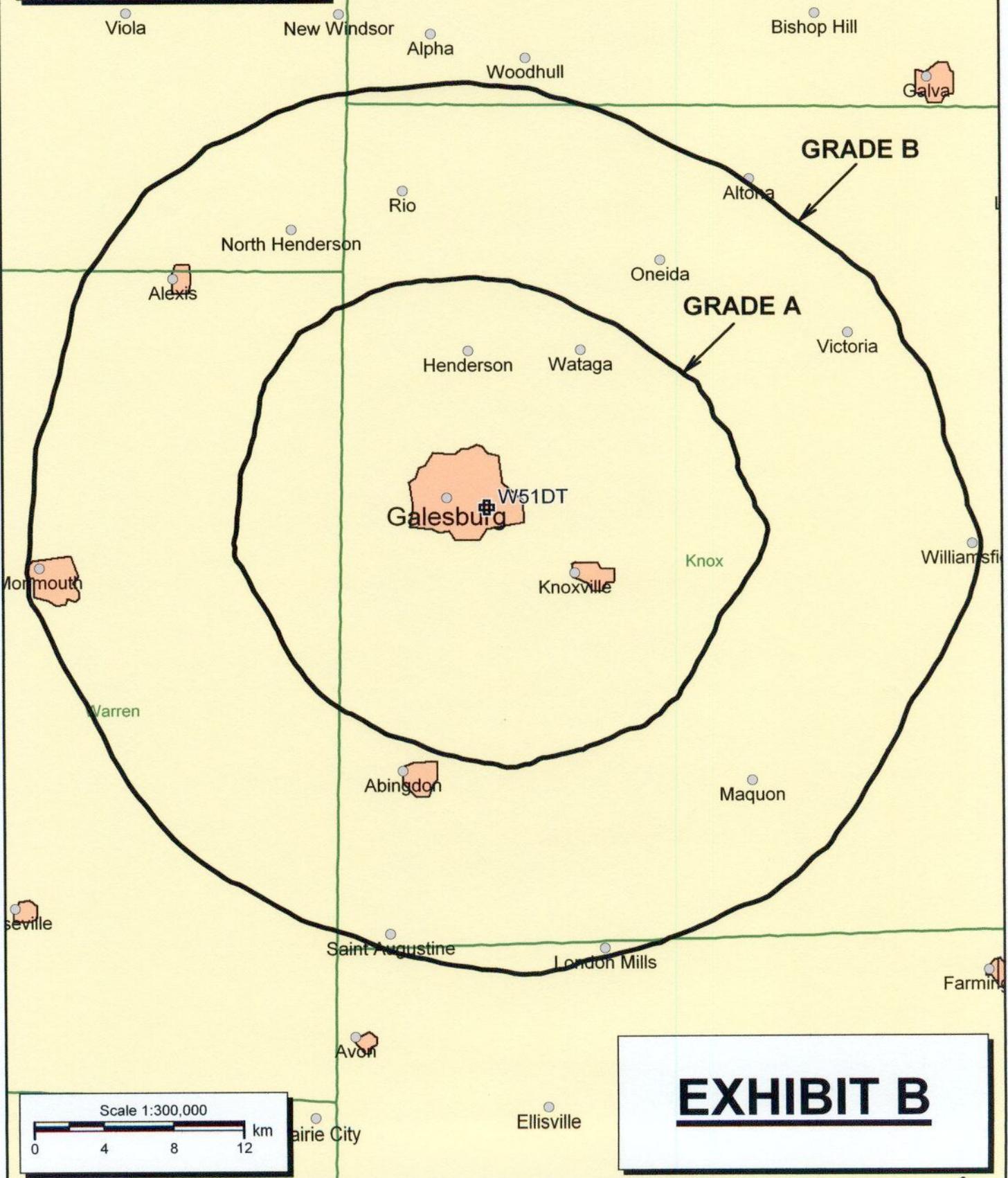


KEVIN T. FISHER

December 19, 2005

**CONTOUR POPULATION**  
**GRADE A (74 DBU) : 44,116**  
**GRADE B (64 DBU) : 66,772**

**SMITH and FISHER**



**EXHIBIT B**

## PROPOSED OPERATING PARAMETERS

PROPOSED W51DT  
CHANNEL 51 - GALESBURG, ILLINOIS  
[MODIFICATION OF BPTT-20030617ABG]

Transmitter Power Output:	1.0 kw
Transmission Line Efficiency:	63.1%
Antenna Power Gain – Toward Horizon:	14.06
Antenna Power Gain – Main Lobe:	14.06
Effective Radiated Power – Toward Horizon:	8.9 kw
Effective Radiated Power – Main Lobe:	8.9 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:	350 feet
Antenna Make and Model:	ERI AL8
Orientation	Omnidirectional (290° T)
Beam Tilt	1.75 degrees
Effective Height Above Ground:	98 meters
Effective Height Above Mean Sea Level:	334 meters

CONTOUR OVERLAP AND  
LONGLY-RICE INTERFERENCE STUDIES  
PROPOSED W51DT  
CHANNEL 51 - GALESBURG, ILLINOIS  
[MODIFICATION OF BPTT-20030617ABG]

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, 74.707, 74.708, 74.709, and 74.710 of the FCC's Rules with respect to analog and digital full-power facilities, analog and digital low power television stations, and Land Mobile assignments. It concludes that the facility proposed herein meets these requirements except to four stations: KGAN-DT, Channel 51 in Cedar Rapids, Iowa; WPWR-DT, Channel 51 in Gary, Indiana; WEIU-TV, Channel 51 in Charleston, Illinois; and, KQIN(TV), Channel 36 in Davenport, Iowa.

We then conducted detailed interference studies using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to these facilities of concern. 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 W51DT) already is predicted to exist (also known as "masking"). The results of these studies are provided in Exhibit D-3. They conclude that

EXHIBIT D-1

the facility proposed herein causes no significant new interference to any of the potentially affected stations.

As a result, waivers of Section 74.705 of the Commission's Rules with respect to interference to WEIU-TV and KQIN and Section 74.706 with regard to KGAN-DT and WPWR-DT are requested and believed to be justified based on the aforementioned Longley-Rice studies.

SMITH AND FISHER

EXHIBIT D-2

PROPOSED W51DT  
CH. 51 - GALESBURG, IL

REFERENCE  
40 56 34 N  
90 20 39 W

LPTV Pwr = 17.8 kW, HANSL COR= 334 M

DISPLAY DATES  
DATA 12-17-05  
SEARCH 12-19-05

..... Channel 51+, 692 MHz .....

Call	Channel	Location	Dist	Azi	FCC	Margin
KGAN-D CPM	51	Cedar Rapids	IA 197.98	321.0	> 317.83	-119.85
WPWR-D CP	51	Gary	IN 249.16	64.4	> 318.34	-69.18
WEIUTV CP	51+	Charleston	IL 248.54	130.4	> 254.50	-5.96
KQIN CP	36+	Davenport	IA 59.69	351.9	> 064.19	-4.50
WEIUTV LI	51+	Charleston	IL 246.20	130.7	> 243.11	3.09
KQIN LI	36+	Davenport	IA 68.39	343.5	> 031.67	36.72
W51CT LI	51-	Bloomington	IL 124.89	113.8	> 082.21	42.68
W51CT CPM	51-	Bloomington	IL 124.89	113.8	> 082.04	42.85
W50DD LI	50-	Peoria	IL 78.24	122.9	> 030.84	47.40
AL899 AL	51Z	Highland	WI 233.61	359.3	> 161.39	72.22

## INTERFERENCE SUMMARY

PROPOSED W51DT  
CHANNEL 51 - GALESBURG, ILLINOIS  
[MODIFICATION OF BPTT-20030617ABG]

<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>
KGAN-DT BMPCDT-20020911AAM	CP	Cedar Rapids, IA	51	853,908	14	< 0.1
WPWR-DT BPCDT-19991101ALA	CP	Gary, IN	51	8,689,903	0	0
WEIU-TV BPET-20030212ABF	CP	Charleston, IL	51	103,933	0	0
KQIN(TV) BPET-20020328AAE	CP	Davenport, IA	36	393,181	66	<0.1

EXHIBIT E

POWER DENSITY CALCULATION  
PROPOSED W51DT  
CHANNEL 51 – GALESBURG, ILLINOIS  
[MODIFICATION OF BPTT-20030617ABG]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Galesburg facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 8.9 kw, an antenna radiation center 98 meters above ground, and the vertical pattern of the ERI antenna, maximum power density two meters above ground of 0.00015 mw/cm<sup>2</sup> is calculated to occur 86 meters from the base of the tower. Since this is significantly less than 0.1 percent of the 0.46 mw/cm<sup>2</sup> reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 51 (692-698 MHz), this proposal may be excluded from consideration with respect to the 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.