

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of SOUTH CENTRAL COMMUNICATIONS CORPORATION, permittee of WAZE-DT, Channel 20 in Madisonville, Kentucky, in support of its application for modification of Construction Permit BPCDT-19991101AHC, to specify a change in transmitter site.

It is proposed to mount an Andrew omnidirectional antenna at the 239-meter level of an existing 300-meter communications tower. Exhibit B provides directional antenna pattern data, and proposed operating parameters are tabulated in Exhibit C. Exhibit D is a map upon which the predicted service contours are plotted. As shown, the city of license is completely contained within the proposed 48 dBu service contour. Since the proposed ERP is greater than that specified in the allotment, and since the proposed site is not within 5 kilometers of the allotment site, an interference study is included in Exhibit E. A power density calculation is provided in Exhibit F.

It is not expected that the proposed facility would cause objectionable interference to any other broadcast or non-broadcast station authorized to operate at or near the new WAZE-DT site. However, if such should occur, the owner of WAZE-DT recognizes its obligation to take whatever corrective actions are necessary.

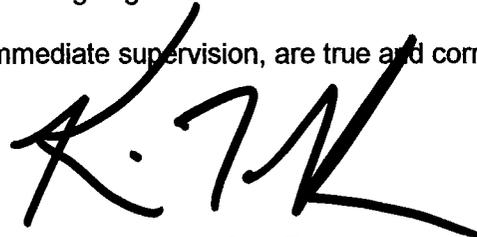
Since no change in the overall height or location of the existing tower is proposed herein, the FAA has not been notified of this application. In addition, the FCC issued Antenna Structure Registration Number 1228652 to this tower.

EXHIBIT A

WAZE-DT and Madisonville, its city of license, are located in the Evansville, Indiana, DMA. Based on the land area within the service contours of the other DTV authorizations in the market, the facility proposed herein does not exceed the largest of these service areas, as shown in the following tabulation:

<u>Call</u>	<u>City State</u>	<u>CH.</u>	<u>File Number</u>	<u>41 dBu Land Area (sq. km.)</u>
WTWW-DT	Evansville, IN	28	Allotment	27,859
WAZE-DT	Madisonville, KY	20	Proposed	26,085

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.



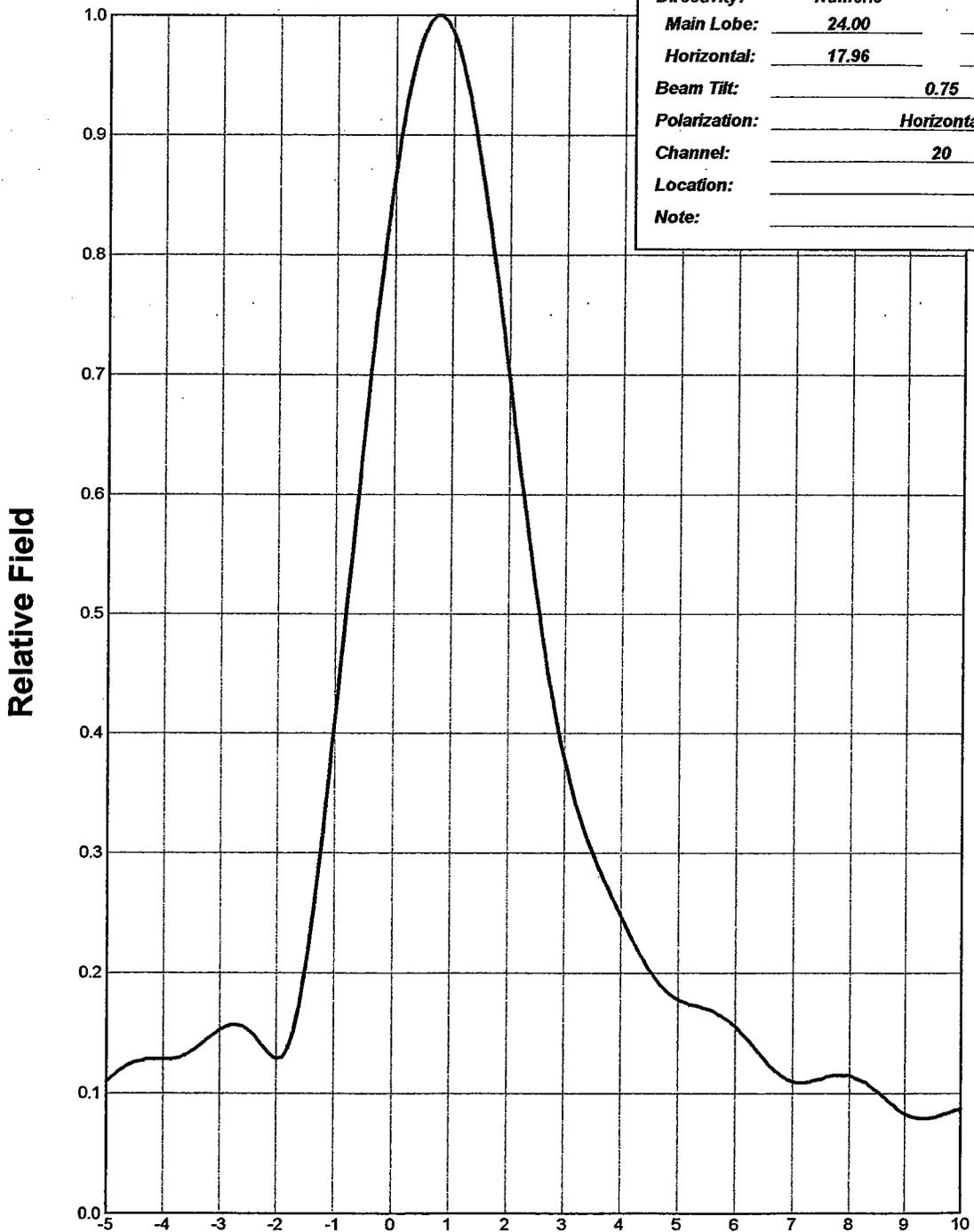
KEVIN T. FISHER

March 26, 2004



### ELEVATION PATTERN

Type:	ATW24HS3H	
Directivity:	Numeric	dBd
Main Lobe:	24.00	13.80
Horizontal:	17.96	12.54
Beam Tilt:	0.75	
Polarization:	Horizontal	
Channel:	20	
Location:		
Note:		



ANDREW CORPORATION  
10500 W. 153rd Street  
Orland Park, Illinois U.S.A 60462

### EXHIBIT B

### ANTENNA ELEVATION PATTERN

PROPOSED WAZE-DT  
CHANNEL 20 - MADISONVILLE, KENTUCKY  
[MODIFICATION OF BPCDT-19991101AHC]

SMITH AND FISHER

EXHIBIT C

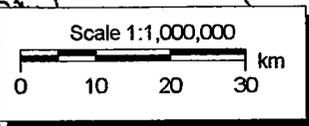
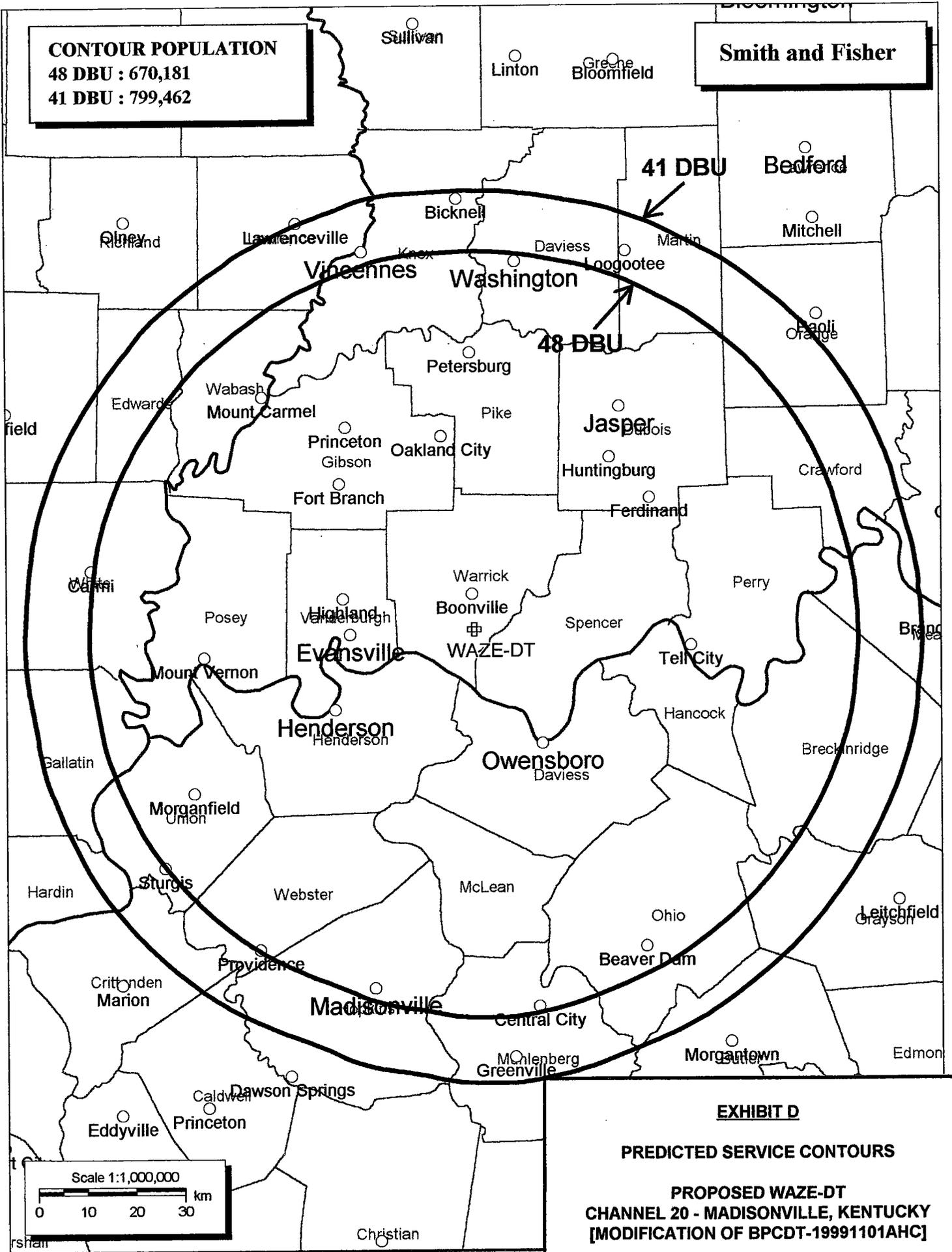
PROPOSED OPERATING PARAMETERS

PROPOSED WAZE-DT  
CHANNEL 20 – MADISONVILLE, KENTUCKY  
[MODIFICATION OF BPCDT-19991101AHC]

Transmitter Power Output:	51.6 kw
Transmission Line Efficiency:	80.8%
Antenna Power Gain – Main Lobe:	24.0
Effective Radiated Power – Main Lobe:	1000 kw
Transmitter Make and Model:	Type-accepted
Rated Output	60 kw
Transmission Line Make and Model:	Andrew MACX675
Size and Type:	6 1/8" rigid
Length:	830 feet
Antenna Make and Model:	Andrew ATW24HS3-HSO-20H
Orientation	Omnidirectional
Beam Tilt	0.75 degrees
Effective Height Above Ground:	239 meters
Effective Height Above Mean Sea Level:	381 meters

**Smith and Fisher**

**CONTOUR POPULATION**  
48 DBU : 670,181  
41 DBU : 799,462



**EXHIBIT D**

**PREDICTED SERVICE CONTOURS**

**PROPOSED WAZE-DT**  
**CHANNEL 20 - MADISONVILLE, KENTUCKY**  
**[MODIFICATION OF BPCDT-19991101AHC]**

SMITH AND FISHER

INTERFERENCE STUDY

PROPOSED WAZE-DT  
CHANNEL 20 – MADISONVILLE, KENTUCKY  
[MODIFICATION OF BPCDT-19991101AHC]

The Commission allotted Channel 20 to WAZE-DT with a nominal ERP of 81 kw at 241 meters above average terrain. The instant application specifies an ERP of 1000 kw at 258 meters, which we have determined to be allowable under the FCC's *de minimis* standards with respect to various NTSC and DTV facilities.

In evaluating the interference effect of this proposal, we have relied upon the V-Soft Communications "Probe II" computer program, which has been found generally to mimic the FCC's program. In conducting our studies, we employed a signal resolution of 2 kilometers and an increment spacing of 1.0 kilometer along each radial, unless otherwise noted. In addition, we utilized the 1990 U.S. Census to count population within cells. Changes in interference caused by proposed WAZE-DT to other pertinent stations are tabulated in Exhibit E-2.

With respect to interference to WAZE-TV in Madisonville, Indiana, that station is the analog pairing to the facility proposed herein. The applicant is aware of the issue and agrees to accept interference to analog WAZE-TV from proposed WAZE-DT.

As far as the other facilities are concerned, the proposed WAZE-DT facility would not contribute more than two percent DTV interference to the service population of any affected NTSC or DTV station. In addition, this proposal does not result in any NTSC or DTV station receiving more than ten percent total DTV interference to viewers living within its authorized service area.

EXHIBIT E-1

In addition, a Longley-Rice interference study reveals that the proposed WAZE-DT facility does not cause interference within the protected 74 dBu contour of any potentially affected Class A low power television station, including WAZE-LP, Channel 17 in Evansville, Indiana; W23BV, Channel 23 in Evansville, Indiana; and, WJTS-LP, Channel 27 in Jasper, Indiana.

Therefore, this proposal meets the FCC's *de minimis* interference standards for DTV operations.

EXHIBIT E-2

INTERFERENCE STUDY SUMMARY  
 PROPOSED WAZE-DT  
 CHANNEL 20 – MADISONVILLE, KENTUCKY  
 [MODIFICATION OF BPCDT-19991101AHC]

<u>Call Sign</u>	<u>City, State</u>	<u>CH.</u>	<u>Coverage Population</u>	<u>Interference Population From WAZE-DT</u>	<u>%</u>	<u>Total DTV Interference</u>	<u>%</u>
WAZE-TV BLCT-19921030KF	Madisonville, KY	19	551,251	145,940	26.7*	174,882	31.7*
WBXX-TV BLCT-19971028KE	Crossville, TN	20	1,242,281	11,919	1.0	13,111	1.1
WFYI(TV) BLET-19810825KE	Indianapolis, IN	20	1,634,989	12,452	0.8	12,452	0.8
NEW BPRM-20000717ADO	Lexington, KY	20	617,443	902	0.1	2,104	0.3
WUSI-DT BMPEDT-20030605ABR	Olney, IL	19	314,213	93	<0.1	93	<0.1
WUSI-DT BDSTA-20030605AEW	Olney, IL	19	295,211	27	<0.1	27	<0.1
WUSI-DT (Allotment)	Olney, IL	19	297,451	27	<0.1	27	<0.1
WICS(TV) BLCT-2187	Springfield, IL	20	667,583	2,845	0.4	2,845	0.4
WWUT(TV) BLET-344	Vincennes, IN	22	249,509	3,480	1.4	5,605	2.2

\*See Exhibit E-1 for explanation.

EXHIBIT F

POWER DENSITY CALCULATION  
PROPOSED WAZE-DT  
CHANNEL 20 – MADISONVILLE, KENTUCKY  
[MODIFICATION OF BPCDT-19991101AHC]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Madisonville facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1000 kw, an effective antenna height of 239 meters above ground, and the elevation pattern of the Andrew antenna, maximum power density two meters above ground of  $0.00061 \text{ mw/cm}^2$  is calculated to occur 86 meters from the base of the tower. Since this is only 0.2 percent of the  $0.34 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 20 (506-512 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.