

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY CHRISTIAN CENTER OF SANTA ANA, INC., licensee of television station WELF-DT, Channel 16 in Dalton, Georgia, in support of its application for modification of Construction Permit BPCDT-20080617ADR to specify a change in its transmitter site.

It is proposed to mount the licensed ERI directional antenna at the 129-meter level of an authorized 137-meter tower. Exhibit B provides elevation and azimuth patterns for the proposed antenna. Exhibit C 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. An interference study is included in Exhibit D, and it is important to note that the study utilized a cell size of 1.0 kilometers and an increment spacing of 2.0 kilometers. A power density calculation is provided in Exhibit E.

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 WELF-DT site. However, if such should occur, the owner of this station recognizes its obligation to take whatever corrective actions are necessary.

Since construction of a new tower is proposed herein, the FAA was notified and subsequently issued a Determination of No Hazard under Aeronautical Study Number 2010-ASO-5954-OE. Once the determination was finalized, the licensee applied for FCC Antenna Structure Registration. The Commission issued ASR number 1276951 to this tower.

EXHIBIT A

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.



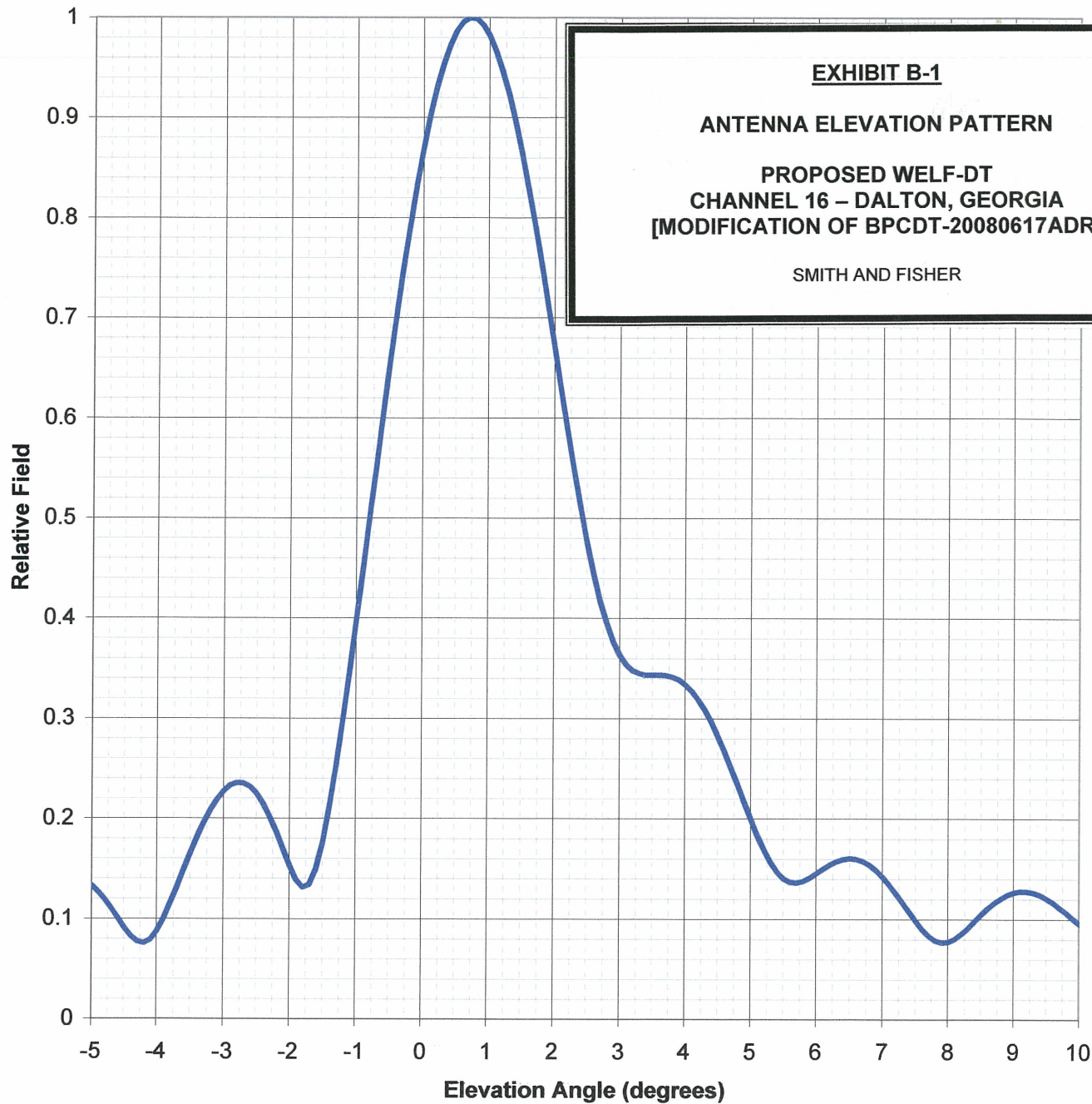
KYLE T. FISHER

December 13, 2010

## ELEVATION PATTERN

TYPE: CH16ELH  
Directivity: Numeric dBd  
Main Lobe:  
Horizontal:

Beam Tilt: \_\_\_\_\_  
Polarization: Horizontal  
Channel: 16 (DTV)  
Location: DALTON, GA

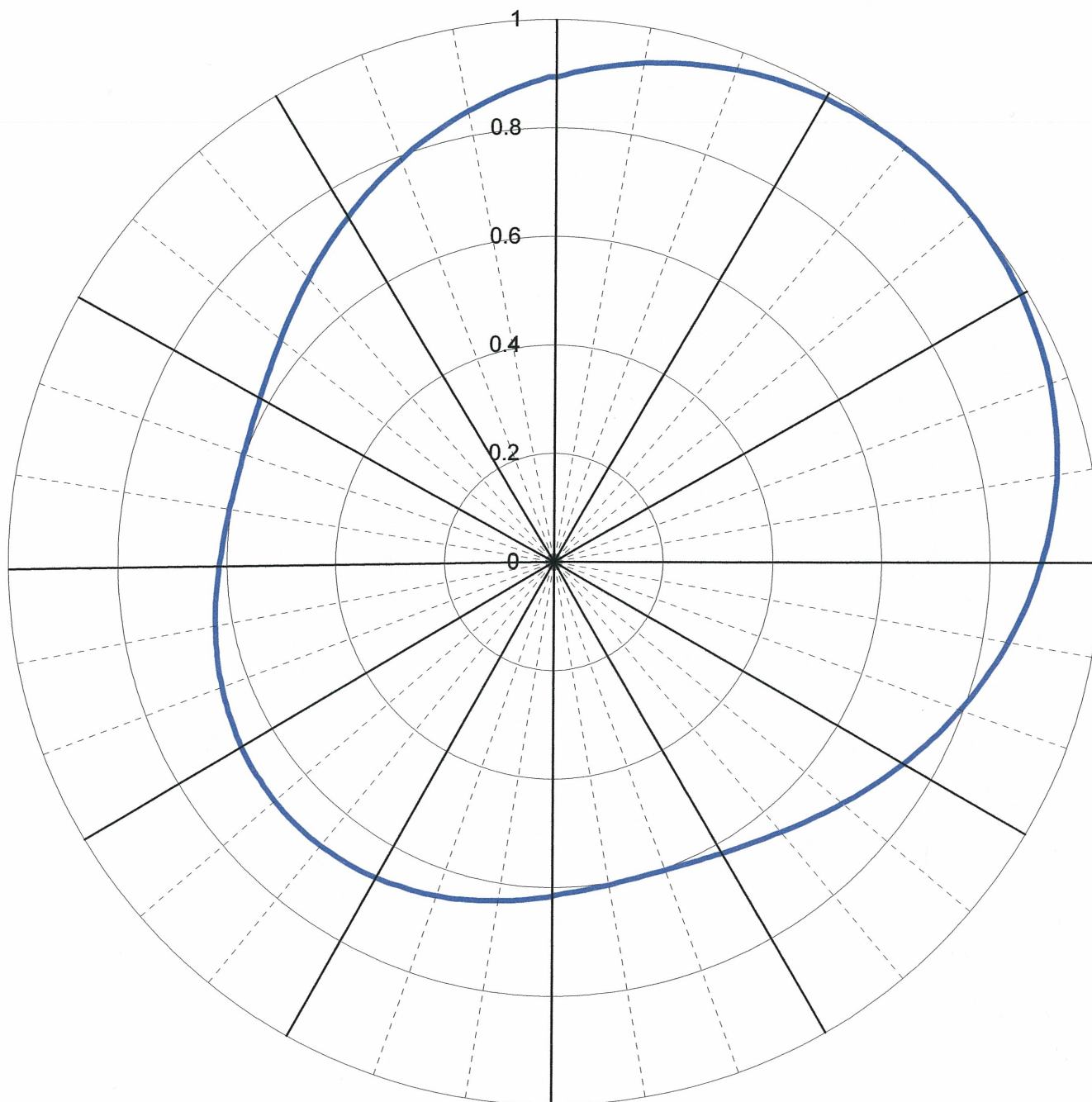


Electronics Research, Inc.  
10500 W. 153rd Street  
Orland Park, Illinois U.S.A. 60462

## AZIMUTH PATTERN

TYPE: CH16AZH  
Numeric dB  
Directivity:

Polarization: Horizontal  
Channel: 16 (DTV)  
Location: DALTON, GA



Note: Pattern shape and directivity may vary with channel and mounting configuration.



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### EXHIBIT B-2

#### ANTENNA AZIMUTH PATTERN

PROPOSED WELF-DT  
CHANNEL 16 – DALTON, GEORGIA  
[MODIFICATION OF BPCDT-20080617ADR]

SMITH AND FISHER



## ANTENNA RADIATION VALUES

PROPOSED WELF-DT  
CHANNEL 16 - DALTON, GEORGIA  
[MODIFICATION OF BPCDT-20080617ADR]

<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	0.89	24.6	180	0.62	21.4
10	0.94	25.0	190	0.63	21.5
20	0.97	25.3	200	0.65	21.8
30	0.99	25.5	210	0.67	22.1
40	1.00	25.6	220	0.68	22.2
50	1.00	25.6	230	0.68	22.2
60	0.99	25.5	240	0.67	22.1
70	0.97	25.3	250	0.65	21.8
80	0.94	25.0	260	0.63	21.5
90	0.89	24.6	270	0.62	21.4
100	0.85	24.2	280	0.60	21.1
110	0.79	23.5	290	0.60	21.1
120	0.74	22.9	300	0.62	21.4
130	0.69	22.3	310	0.65	21.8
140	0.65	21.8	320	0.69	22.3
150	0.62	21.4	330	0.74	22.9
160	0.60	21.1	340	0.79	23.5
170	0.60	21.1	350	0.85	24.2

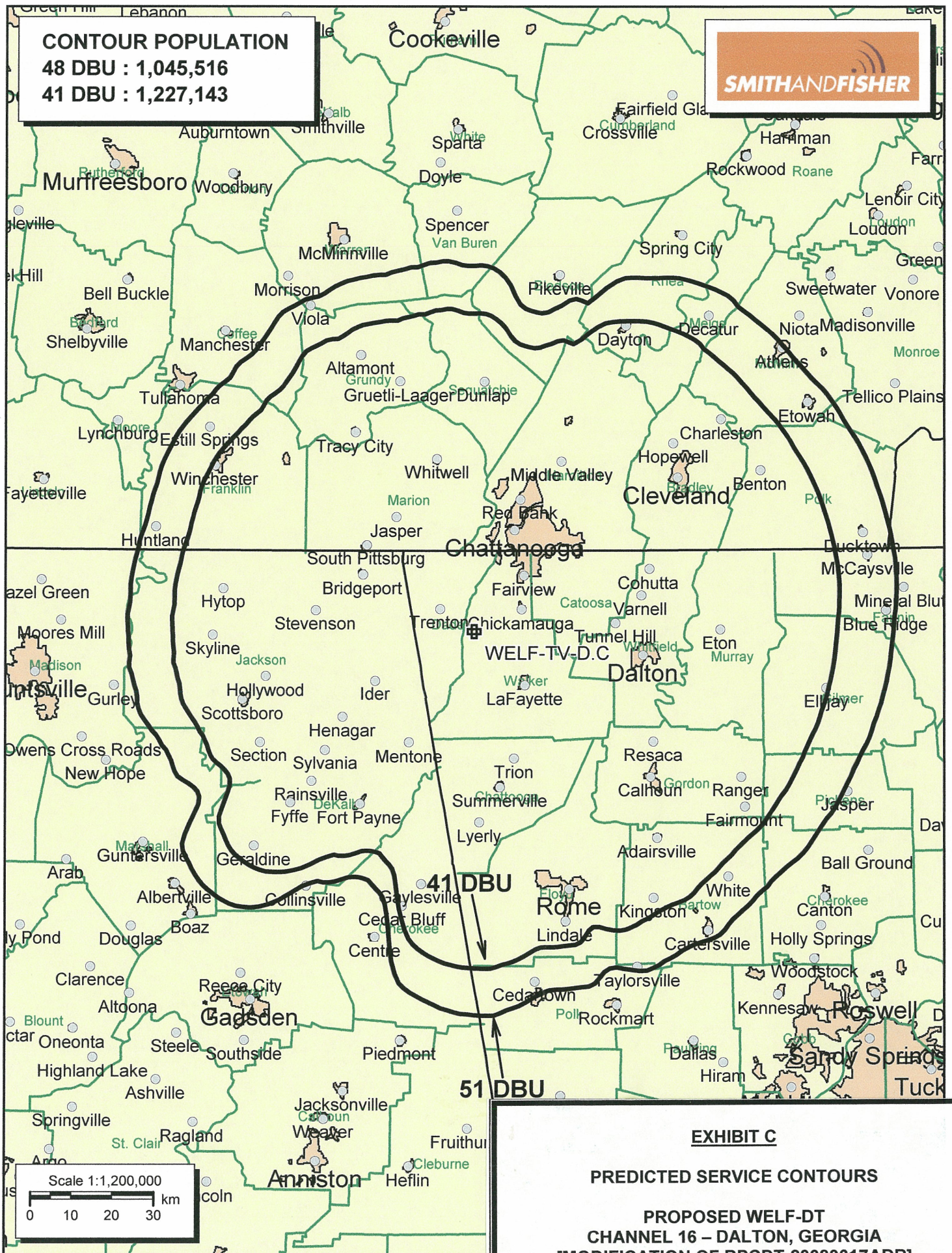


**CONTOUR POPULATION**

**48 DBU : 1,045,516**

**41 DBU : 1,227,143**

**SMITHANDFISHER**



**EXHIBIT C**

**PREDICTED SERVICE CONTOURS**

**PROPOSED WELF-DT  
CHANNEL 16 - DALTON, GEORGIA  
[MODIFICATION OF BPCDT-20080617ADR]**

SMITH AND FISHER



INTERFERENCE STUDY

PROPOSED WELF-DT  
CHANNEL 16 – DALTON, GEORGIA

[MODIFICATION OF BPCDT-20080617ADR]

The instant application specifies an ERP of 360 kw (directional) at 413 meters above average terrain, which we have determined to be allowable under the FCC's interference standards with respect to various digital television facilities of concern.

In evaluating the interference effect of this proposal, we have relied upon the V-Soft Communications "SunDTV" computer program, which mimics the FCC's interference program. In conducting our studies, we employed a cell size of 2.0 kilometers and an increment spacing of 1.0 kilometer along each radial. In addition, we utilized the 2000 U.S. Census.

As shown in the study's summary in Exhibit D-2, the proposed WELF-DT facility would not contribute more than 0.5% interference (beyond that which is caused by the allotted WELF-DT facility) to the service population of any potentially affected post-transition DTV station.

The same Longley-Rice interference study also reveals that the proposed WELF-DT facility does not cause significant (0.5%) interference within the protected service contour of any potentially affected Class A low power television station.

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

## Summary Study

Percent allowed new interference: 0.500  
 Percent allowed new interference to non Class A LPTV: 2.000  
 Census data selected 2000  
 Data Base Selected  
 ./data\_files/pt\_tvdb.sff  
 TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 09-29-2010 Time: 09:47:53

## Record Selected for Analysis

NEW SITE USERRECORD-01 DALTON GA US  
 Channel 16 ERP 1000. kW HAAT 434. m RCAMSL 00777 m  
 Latitude 034-49-21 Longitude 0085-25-06  
 Status APP Zone 2 Border Site number: 01  
 Dir Antenna Make usr Model USRPAT01 Beam tilt N Ref Azimuth  
 315.  
 Last update Cutoff date Docket  
 Comments  
 Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility (site # 01) does not meet maximum height/power limits  
 Channel 16 ERP = 1000.00 HAAT = 434.

Site number	1			
Azimuth	ERP	HAAT	41.0 dBu F(50,90)	
(Deg)	(kW)	(m)	(km)	
0.0	835.396	347.6	100.0	
45.0	996.004	498.1	114.3	
90.0	756.030	514.7	112.9	
135.0	419.904	486.8	105.1	
180.0	388.752	493.1	104.9	
225.0	454.276	412.9	99.7	
270.0	371.490	358.3	94.1	
315.0	477.481	363.2	96.5	

Evaluation toward Class A Stations from site # 01

No Spacing violations or contour overlap  
 to Class A stations from site # 01

Class A Evaluation Complete



## SPACING VIOLATION FOUND BETWEEN STATION

NEW SITE 16 DALTON

GA USERRECORD01

Site # 01

and station

SHORT TO: WELF-TV 16 DALTON

GA DTVPLN

DTVP0545

34 -57-07 85 -22-58

Req. separation 223.7 Actual separation 14.7 Short 209.0 km

SHORT TO: W38BQ 17 HUNTSVILLE

AL BDISDTA

20090812AAS

034-44-12 0086-31-59

Req. separation =&gt; 24.0 &lt;= 110.0 Actual separation 102.5 Short 7.5 (78.5) km

## LANDMOBILE SPACING VIOLATIONS FOUND

NONE from Site # 01

## Checks to Site Number 01

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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## Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
16	NEW SITE	DALTON GA	USERRECORD01

## Stations Potentially Affected by Proposed Station

Chan No.	Call	City/State	Dist(km)	Status	Application	Ref.
15	WZTV	NASHVILLE TN	202.9	LIC	BLCDT	
20050309ACM						
16	WJYL-CD		395.9	APP	BSTA	
20081210AAZ						
16	WBEK-CA	AUGUSTA GA	345.4	CP	BDFCDTA	
20080805AAU						
16	WBEK-CA	AUGUSTA GA	345.4	LIC	BLTTL	

20001215AAV						
16	WYBU-CD	COLUMBUS GA	264.0	LIC	BLDTA	
20091228ACN						
16	WGXA	MACON GA	287.3	LIC	BLCDT	
20070501AAI						
16	WJYL-CD	JEFFERSONVILLE IN	395.9	LIC	BLDTA	
20090630ADK						
16	WNKY	BOWLING GREEN KY	255.2	LIC	BLCDT	
20071220AAY						
16	WKHA	HAZARD KY	331.1	LIC	BLEDT	
20020205AAW						
16	WLOV-TV	WEST POINT MS	355.7	CP MOD	BMPCDT	
20070323AOK						
16	WGGS-TV	GREENVILLE SC	274.5	LIC	BLCDT	
20090612ABO						
16	WGGS-TV	GREENVILLE SC	274.5	APP	BMPCDT	
20080619AAM						
17	W38BQ	HUNTSVILLE AL	102.2	CP	BDISDTA	
20090812AAS						
17	WKOP-TV	KNOXVILLE TN	185.8	LIC	BLEDT	
20040405ACC						
24	WJXS-CA	SYLACAUGA AL	139.8	LIC	BLTTL	
19970508JF						
%%%						
Study of this proposal found the following interference problem(s): NONE						

EXHIBIT E

POWER DENSITY CALCULATION

PROPOSED WELF-DT  
CHANNEL 16 – DALTON, GEORGIA

[MODIFICIATION OF BPCDT-20080617ADR]

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Dalton facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 360 kw, an antenna radiation center 129 meters above ground, and the elevation pattern of the ERI antenna, maximum power density two meters above ground of  $0.0051 \text{ mw/cm}^2$  is calculated to occur 34 meters northeast of the base of the tower. Since this is only 1.6 percent of the  $0.33 \text{ mw/cm}^2$  reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 16 (482-488 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.