



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION TO MODIFY  
CONSTRUCTION PERMIT BPCDT-19991101AKJ  
WYZZ-DT- BLOOMINGTON, ILLINOIS  
DTV - CH. 28 - 1000 kW - 293.0 M HAAT**

Prepared for: WYZZ Licensee, Inc.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a registered Professional Engineer in the Commonwealth of Virginia, Registration No. 7418, and in the State of New York, Registration No. 63418.

**GENERAL**

This office has been authorized by WYZZ Licensee, Inc., licensee of WYZZ-TV, channel 43, Bloomington, Illinois, and permittee of the paired Digital Television Allotment for WYZZ-DT, channel 28, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of this application to modify its current authorization, construction permit BPCDT-19991028AEQ. The instant application to modify WYZZ-DT's construction permit is necessary as a component of the permittee's efforts to implement its full power digital facility on DTV channel 28 by sharing a common antenna with WYZZ-TV on channel 43. In order to physically implement WYZZ-DT and WYZZ-TV sharing the same antenna on the existing support structure the modifications proposed herein are required.

It is proposed herein to install a new Dielectric non-directional antenna, type TUA-O4-14/56H-1-R-T, to be used by both WYZZ-DT and WYZZ-TV. The new antenna is to be mounted on the existing tower support structure located at 40E 38' 45" N latitude, 89E 10' 45" W longitude. The existing structure is registered in the FCC's tower registration database, #1010146, and is the site specified in WYZZ-DT's allotment. An application for a construction permit to authorize the use of this common antenna by WYZZ-TV at this site is not required because, pursuant to Section 73.1690(c)(1), an existing non-directional antenna is being replaced with another non-directional antenna at the same HAAT, with no change in ERP. The modifications, as proposed herein, will serve to further the Commission's goals in the deployment of DTV service in the United States.

#### **PROPOSED NON-DIRECTIONAL ANTENNA**

It is proposed to install a new non-directional antenna, Dielectric TUA-O4-14/56H-1-R-T for common use by both WYZZ-DT and WYZZ-TV. Since the azimuth pattern (non-directional) of the proposed antenna differs from the azimuth pattern of the directional antenna specified in WYZZ-DT's construction permit, and the proposed HAAT is different, the instant application for modification of construction permit is required. The proposed non-directional transmitting antenna shall employ an electrical beam tilt of 0.60 degrees below the horizontal plane. The antenna manufacturer's vertical plane radiation pattern, illustrating the proposed antenna's radiation characteristics above and below the horizontal plane, is shown in Exhibit 2, and tabulated in Exhibit 3. A Vertical Plan Antenna Sketch is provided in Exhibit 1.

### **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. The predicted principal community (48 dBu) contour completely encompasses the principal community of license, shown in Exhibit 4, as required by Section 73.625(a) of the Commission's rules. The predicted 41 dBu contour is also shown in Exhibit 4.

### **ALLOCATION CONSIDERATIONS**

#### **NTSC Allocation Considerations**

An interference study was performed, using the Commission's application analysis program, tv\_process, to ensure that the proposed DTV facility is in compliance with the Commission's *de minimis* interference requirement contained in Section 73.623(c)(2) of the Commission's rules. The study showed that the DTV facility proposed herein is predicted to cause no increase in the interference population in excess of the Commission's *de minimis* criteria to any authorized NTSC television facility.

**DTV Allocation Considerations**

The same study was evaluated to determine if the proposed modification of WYZZ-DT is predicted to cause any level of new prohibited interference to other authorized DTV facilities, including other DTV stations, DTV expansion construction permits, DTV allotments or pending DTV applications. The study results indicate that the instant proposal is predicted to cause no unacceptable level of new interference to the populations served by any other relevant DTV facility, and thereby is in compliance with the *de minimis* interference criteria contained in Section 73.623(c)(2) of the Commission's Rules.

**Class A Television Allocation Considerations**

As required in Section 73.623(c)(5) of the FCC's Rules, a study of interference contour overlap was performed, based on the WYZZ-DT facility proposed herein, to establish compliance with the protection requirements contained therein. The study shows that there are no class A LPTV stations potentially affected by the instant proposal to modify WYZZ-DT's construction permit.

**BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are located within 10 km of the proposed WYZZ-DT transmitter/antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

## **ENVIRONMENTAL CONSIDERATIONS**

### **RADIO FREQUENCY IMPACT**

Effective October 15, 1997, the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986), and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines provide a maximum permissible exposure (MPE) level for occupational or "controlled" situations that apply in cases that affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance in the determination of whether FCC-regulated transmitting facilities, operations or devices comply with guideline limits for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The FCC's Maximum Permitted Exposure (MPE) level for "uncontrolled" environments is 0.2 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) when applied to broadcast facilities operating between 30 MHz and 300 MHz, and for broadcast facilities operating between 300 MHz and 1500 MHz, primarily UHF TV stations, is derived from the formula,

(frequency/1500). The MPE level for "controlled" environments is 1.0 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) for operations between 30 MHz and 300 MHz, and for broadcast stations operating between 300 MHz and 1500 MHz is derived from the formula, (frequency/300). The predicted emissions of WYZZ-DT, channel 28, must be considered, along with the predicted emissions from other proposed and existing stations at the current site. For WYZZ-DT, which will operate on television Channel 28 (554-560 MHz), the MPE is 0.371 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) in an "uncontrolled" environment and  $1.855 \text{ mW}/\text{cm}^2$  in a "controlled" environment. The proposed WYZZ-DT facility will operate with a maximum ERP of 1000 kW from a horizontally polarized non-directional transmitting antenna with a centerline height of 298.0 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the WYZZ-DT facility is predicted to produce a power density at two meters above ground level of  $0.03431 \text{ mW}/\text{cm}^2$ , which is 9.24% of the FCC guideline value for "uncontrolled" environments, and 1.85% of the FCC guideline value for "controlled" environments (see Appendix A). The total percentage of the ANSI value at the proposed site, considering the cumulative radiation of all stations at the site, is only 13.69% of the limit for "uncontrolled" environments, and 2.74% of the limit for "controlled" environments.

### **OCCUPATIONAL SAFETY**

The licensee of WYZZ-TV and permittee of WYZZ-DT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WYZZ-DT and TV antenna. The applicant is committed to reducing power and/or ceasing operation

during times of service or maintenance of the transmission systems, when necessary, to ensure protection to personnel. In light of the above, the proposed WYZZ-DT facility should be categorically excluded from RF environmental processing under Section 1.1307(b) of the Commission's Rules.

### **SUMMARY**

It is submitted that the instant proposal to modify WYZZ-DT's construction permit, BPCDT-19991028AEQ, as described herein complies with the Rules and Regulations of the Federal Communications Commission. This statement, FCC Form 301, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

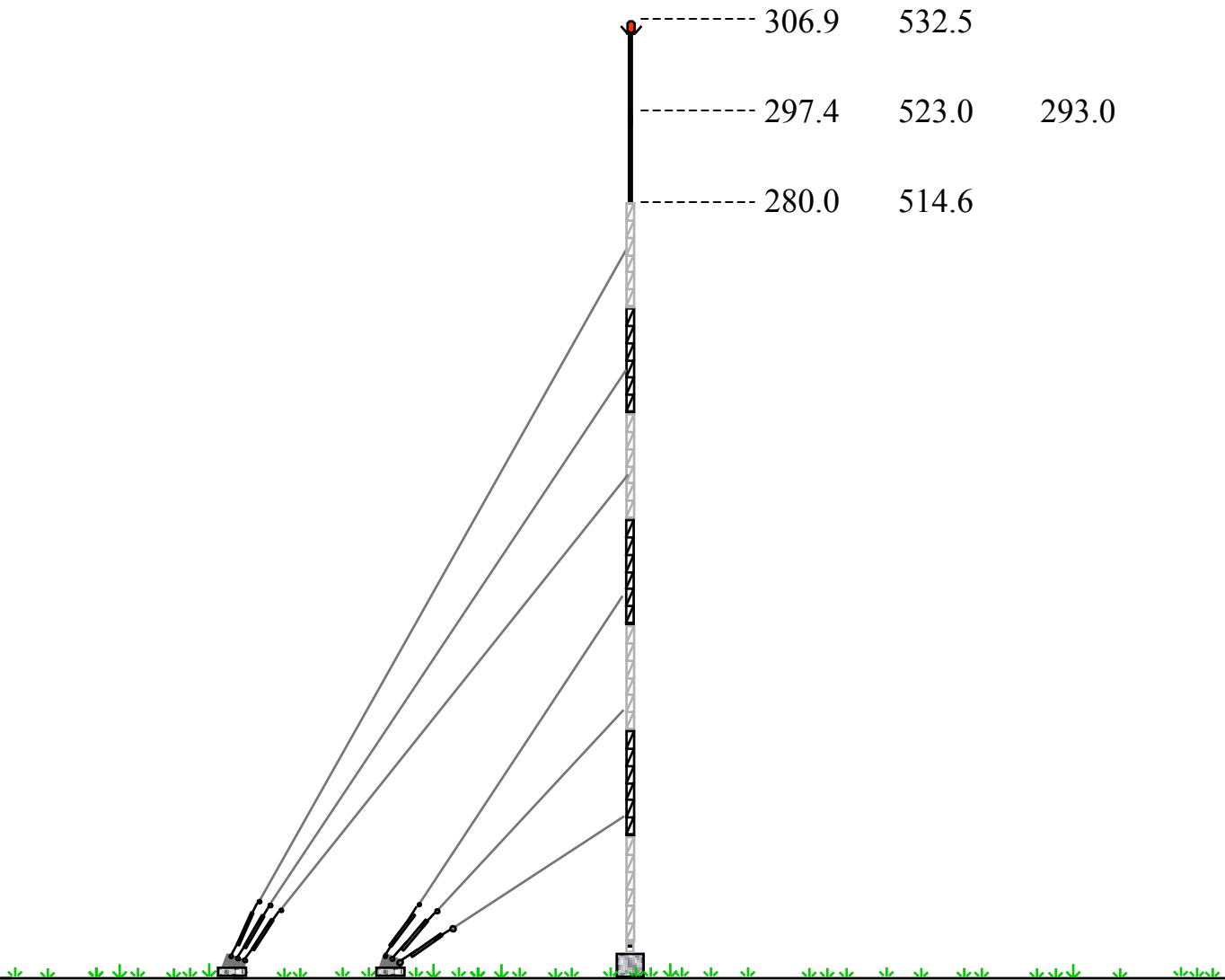
DATED: August 4, 2003

  
John E. Hidle, P.E.



COORDINATES NAD-27  
NORTH LATITUDE: 40° 38' 45"  
WEST LONGITUDE: 89° 10' 45"

AGL(m)    AMSL(m)    HAAT(m)



GROUND ELEVATION = 225.6 meters A.M.S.L. / AVERAGE TERRAIN = 230.0 meters A.M.S.L.

**VERTICAL PLAN ANTENNA SKETCH  
WYZZ-DT - BLOOMINGTON, ILLINOIS  
Ch. 28 - 1000 kW - 293.0 m HAAT  
AUGUST, 2003**

**CARL T. JONES**  
CORPORATION

NOTE : NOT DRAWN TO SCALE

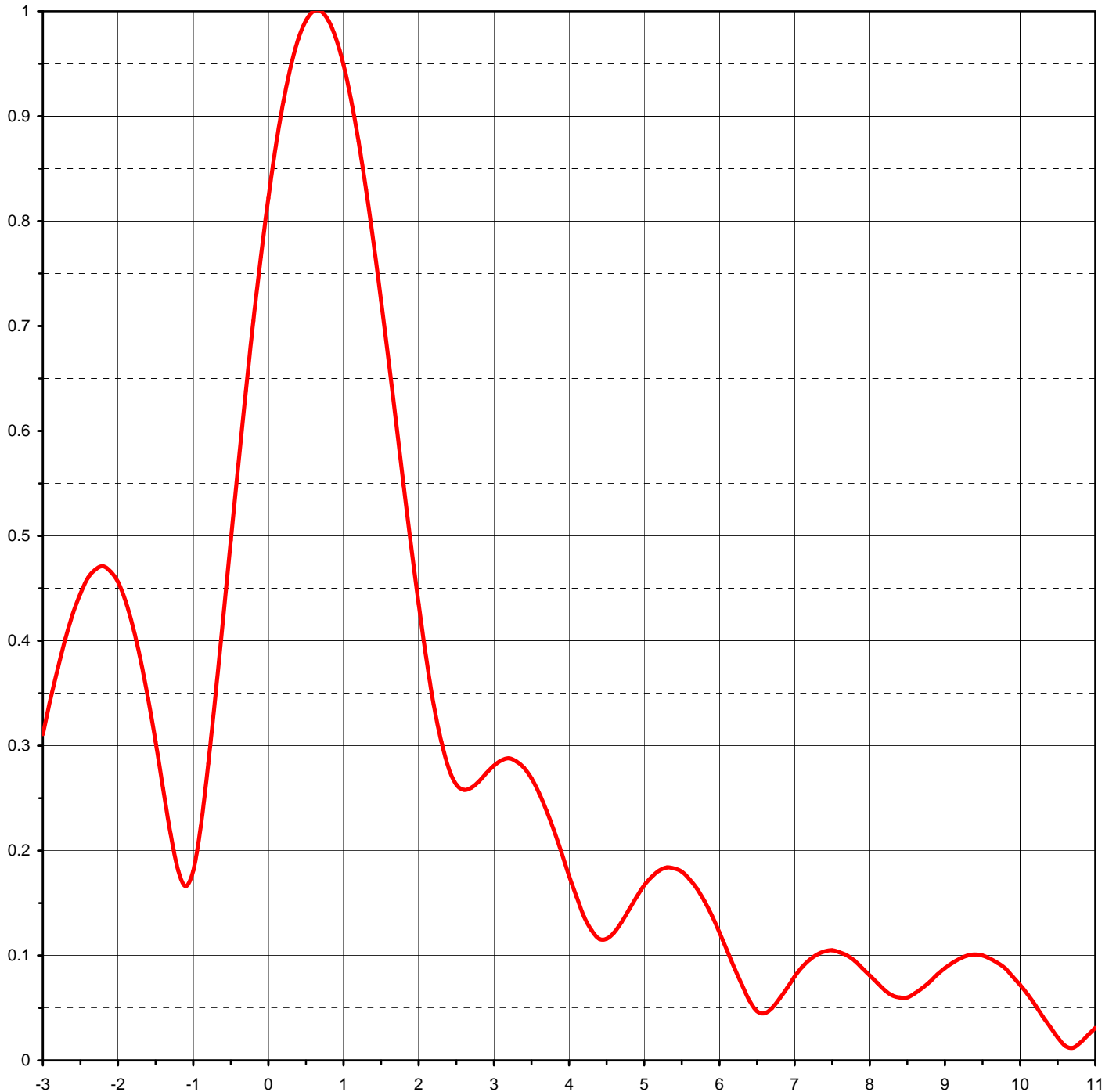


Proposal Number	<b>DCA-10079</b>	Revision:	<b>2</b>
Date	<b>4-Aug-03</b>	<b>Exhibit 2-A</b>	
Call Letters	<b>WYZZ-DT</b>	Channel	<b>28</b>
Location	<b>Bloomington, IL</b>		
Customer	<b>WYZZ , INC</b>		
Antenna Type	<b>TUA-O4-14/56H-1-R-T</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>25.30 ( 14.03 dB )</b>
RMS Gain at Horizontal	<b>17.10 ( 12.33 dB )</b>
Calculated / Measured	<b>Calculated</b>

Beam Tilt	<b>0.60 deg</b>
Frequency	<b>557.00 MHz</b>
Drawing #	<b>14U253060</b>

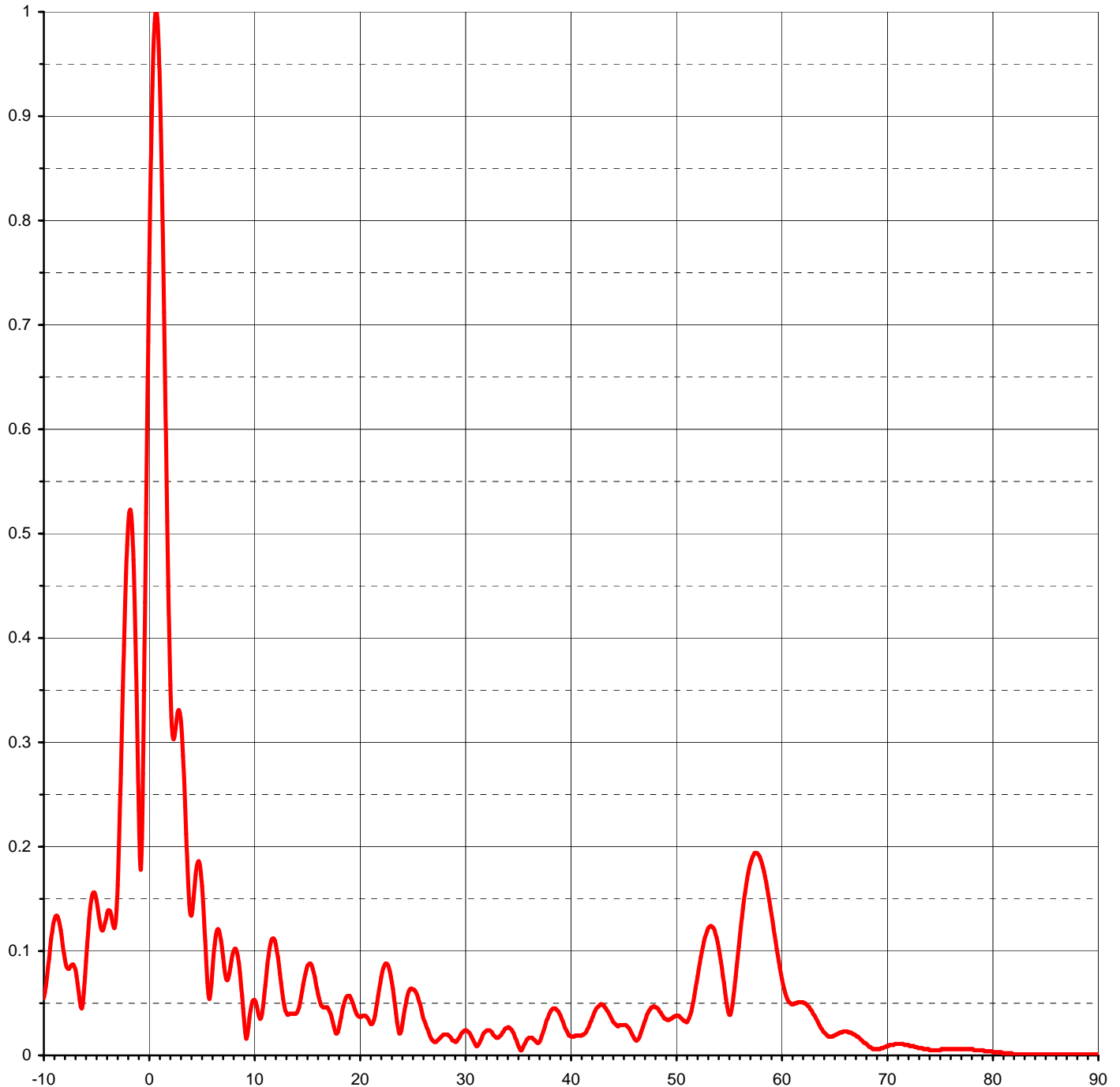




Proposal Number	<b>DCA-10079</b>	Revision:	<b>2</b>
Date	<b>4-Aug-03</b>	<b>Exhibit 2-B</b>	
Call Letters	<b>WYZZ-DT</b>	Channel	<b>28</b>
Location	<b>Bloomington, IL</b>		
Customer	<b>WYZZ , INC</b>		
Antenna Type	<b>TUA-O4-14/56H-1-R-T</b>		

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>25.30 ( 14.03 dB )</b>	Beam Tilt	<b>0.60 deg</b>
RMS Gain at Horizontal	<b>17.10 ( 12.33 dB )</b>	Frequency	<b>557.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>14U253060-90</b>



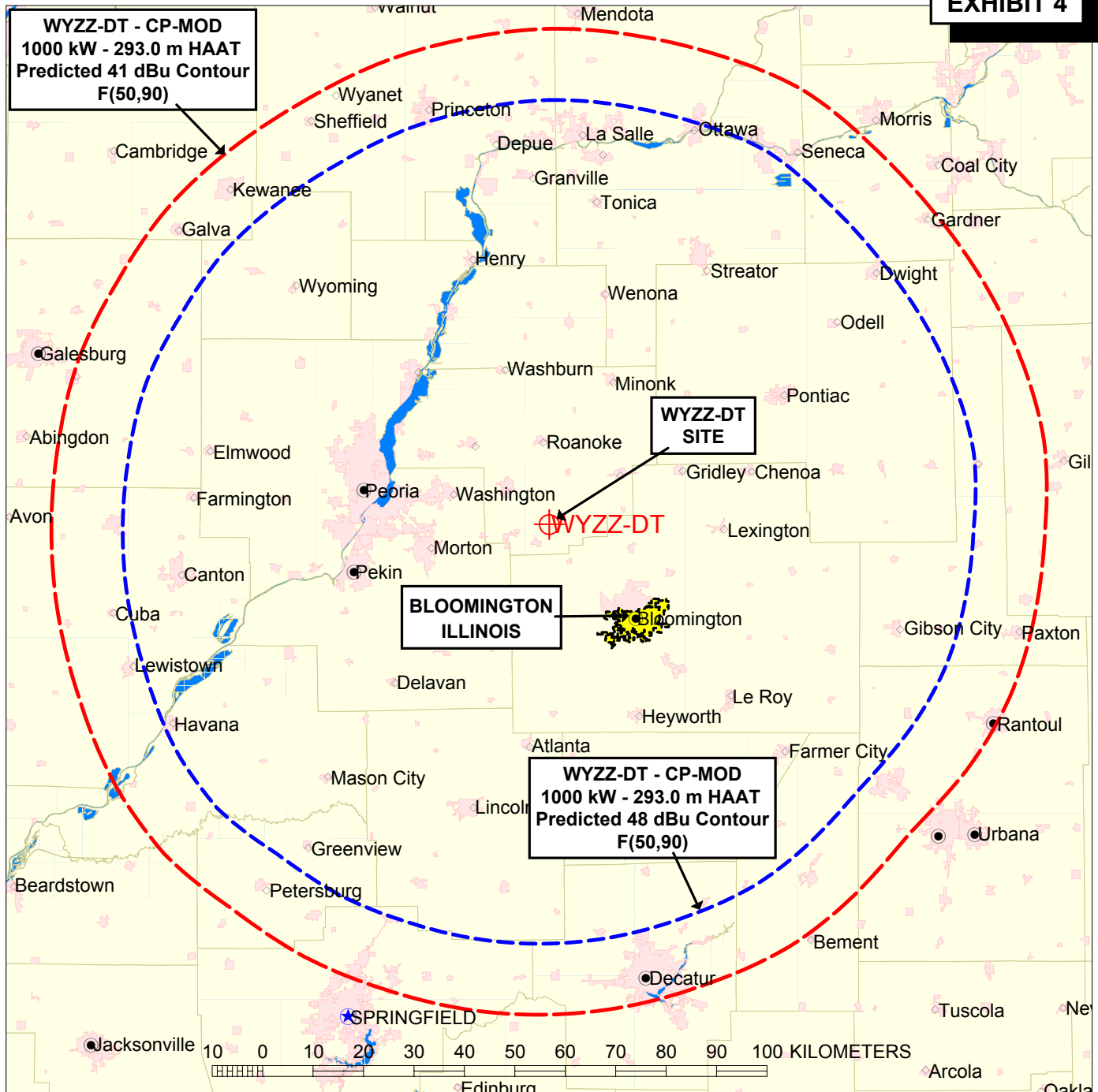


Proposal Number **DCA-10079**      Revision: **2**  
 Date **4-Aug-03**      **Exhibit 3**  
 Call Letters **WYZZ-DT**      Channel **28**  
 Location **Bloomington, IL**  
 Customer **WYZZ, INC**  
 Antenna Type **TUA-O4-14/56H-1-R-T**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **14U253060-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.112	2.4	0.278	10.6	0.022	30.5	0.077	51.0	0.030	71.5	0.022
-9.5	0.080	2.6	0.258	10.8	0.012	31.0	0.058	51.5	0.037	72.0	0.022
-9.0	0.063	2.8	0.266	11.0	0.024	31.5	0.037	52.0	0.040	72.5	0.030
-8.5	0.070	3.0	0.281	11.5	0.045	32.0	0.027	52.5	0.038	73.0	0.041
-8.0	0.054	3.2	0.288	12.0	0.034	32.5	0.031	53.0	0.033	73.5	0.051
-7.5	0.035	3.4	0.279	12.5	0.035	33.0	0.033	53.5	0.026	74.0	0.061
-7.0	0.093	3.6	0.255	13.0	0.076	33.5	0.028	54.0	0.020	74.5	0.070
-6.5	0.141	3.8	0.219	13.5	0.101	34.0	0.018	54.5	0.019	75.0	0.076
-6.0	0.141	4.0	0.176	14.0	0.096	34.5	0.018	55.0	0.020	75.5	0.082
-5.5	0.103	4.2	0.137	14.5	0.065	35.0	0.027	55.5	0.020	76.0	0.085
-5.0	0.092	4.4	0.116	15.0	0.035	35.5	0.031	56.0	0.016	76.5	0.087
-4.5	0.106	4.6	0.122	15.5	0.030	36.0	0.026	56.5	0.011	77.0	0.088
-4.0	0.085	4.8	0.144	16.0	0.030	36.5	0.015	57.0	0.009	77.5	0.088
-3.5	0.146	5.0	0.167	16.5	0.034	37.0	0.010	57.5	0.016	78.0	0.086
-3.0	0.311	5.2	0.181	17.0	0.056	37.5	0.019	58.0	0.025	78.5	0.084
-2.8	0.374	5.4	0.183	17.5	0.074	38.0	0.024	58.5	0.032	79.0	0.082
-2.6	0.426	5.6	0.173	18.0	0.073	38.5	0.022	59.0	0.035	79.5	0.078
-2.4	0.460	5.8	0.152	18.5	0.055	39.0	0.016	59.5	0.035	80.0	0.074
-2.2	0.471	6.0	0.122	19.0	0.036	39.5	0.017	60.0	0.032	80.5	0.071
-2.0	0.456	6.2	0.088	19.5	0.034	40.0	0.025	60.5	0.027	81.0	0.067
-1.8	0.413	6.4	0.057	20.0	0.032	40.5	0.028	61.0	0.022	81.5	0.062
-1.6	0.345	6.6	0.045	20.5	0.018	41.0	0.025	61.5	0.019	82.0	0.058
-1.4	0.259	6.8	0.059	21.0	0.022	41.5	0.016	62.0	0.020	82.5	0.054
-1.2	0.181	7.0	0.080	21.5	0.043	42.0	0.005	62.5	0.021	83.0	0.051
-1.0	0.181	7.2	0.096	22.0	0.053	42.5	0.009	63.0	0.021	83.5	0.047
-0.8	0.283	7.4	0.104	22.5	0.046	43.0	0.015	63.5	0.020	84.0	0.044
-0.6	0.423	7.6	0.103	23.0	0.031	43.5	0.014	64.0	0.017	84.5	0.041
-0.4	0.568	7.8	0.095	23.5	0.026	44.0	0.010	64.5	0.017	85.0	0.039
-0.2	0.705	8.0	0.081	24.0	0.027	44.5	0.014	65.0	0.023	85.5	0.036
0.0	0.822	8.2	0.067	24.5	0.021	45.0	0.026	65.5	0.033	86.0	0.034
0.2	0.914	8.4	0.060	25.0	0.024	45.5	0.036	66.0	0.044	86.5	0.032
0.4	0.974	8.6	0.064	25.5	0.048	46.0	0.041	66.5	0.055	87.0	0.030
0.6	1.000	8.8	0.075	26.0	0.069	46.5	0.039	67.0	0.063	87.5	0.029
0.8	0.991	9.0	0.088	26.5	0.074	47.0	0.032	67.5	0.069	88.0	0.027
1.0	0.949	9.2	0.097	27.0	0.060	47.5	0.022	68.0	0.072	88.5	0.026
1.2	0.876	9.4	0.101	27.5	0.032	48.0	0.015	68.5	0.071	89.0	0.025
1.4	0.779	9.6	0.097	28.0	0.024	48.5	0.013	69.0	0.067	89.5	0.024
1.6	0.667	9.8	0.093	28.5	0.054	49.0	0.014	69.5	0.060	90.0	0.024
1.8	0.548	10.0	0.080	29.0	0.077	49.5	0.014	70.0	0.050		
2.0	0.435	10.2	0.063	29.5	0.090	50.0	0.015	70.5	0.040		
2.2	0.339	10.4	0.042	30.0	0.088	50.5	0.021	71.0	0.029		



## PREDICTED COVERAGE CONTOURS

WYZZ-DT, BLOOMINGTON, ILLINOIS

MODIFICATION OF CONSTRUCTION PERMIT

1000 kW - 293.0 m HAAT

Predicted Principal Community Contour  
F(50,90) - 48 dBu

Predicted Noise Limited Contour  
F(50,90) - 41 dBu

AUGUST, 2003

**CARL T. JONES**  
CORPORATION

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
WYZZ-DT, BLOOMINGTON, ILLINOIS  
CHANNEL 28, 1000 kW ERP, 293.0 m HAAT  
AUGUST, 2003

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT ** mAGL</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>PREDICTED POWER DENSITY (mW/cm<sup>2</sup>)</u>	<u>FCC UNCONTROLLED LIMIT (mW/cm<sup>2</sup>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WYZZ-TV	TV	43	647	H	296	1120.000	0.300	0.01922	0.431	4.46%
WYZZ-DT	DT	28	557	H	296	1000.000	0.300	0.03431	0.371	9.24%

**TOTAL PERCENTAGE OF ANSI VALUE= 13.69%**

*\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights so that the predicted power densities consider the 2 meter human height allowance.*