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ENGINEERING EXHIBIT  
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
SARKES TARZIAN, INC.  
STATION WRCB-DT, CHATTANOOGA, TENNESSEE  
CHANNEL 13 111 KW (MAX-DA) 370 METERS

INTRODUCTION

Sarkes Tarzian, Inc. (hereafter, STI) is the permittee in BPCDT-20080618ABW for Station WRCB-DT, Chattanooga, Tennessee. This construction permit is for operation on Channel 13, with maximum ERP of 100 kW, and antenna radiation center height of 370 meters above average terrain. STI now seeks to substitute an elliptically polarized antenna for the horizontally polarized antenna that is specified in BPCDT-20080618ABW. With the new elliptically polarized antenna, the maximum horizontally polarized ERP will be increased to 111 kW. The maximum vertically polarized ERP will be 39 kW. The antenna radiation center height of 370 meters above average terrain will remain unchanged. As established herein, no new interference concerns are raised by this modification application.

INTERFERENCE CONSIDERATIONS

This modification proposal does not cause interference in excess of 0.5 % to any allotment, construction permit, or pending application. Figure 1 is a recap of the results of an interference analysis study that was made using the William Meintel implementation of the FCC's program. Mr. Meintel is the contractor who developed the FCC's program. A Sunblade processor was used. The post transition Appendix B DTV facilities that are set forth in the Memorandum Opinion and Order on Reconsideration of the Seventh Report and Order and Eighth Report and Order in MB Docket No. 87-268 were reviewed, as well as the construction permits and pending applications in the FCC's database. No changes were made to any of the FCC's default values. The 2000 Census was employed.

Figure 1 lists the worst case interference percentage prediction from the instant WRCB-DT modification proposal that could occur for the various scenarios that can

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prevail for each station, or application of interest. Figure 1 demonstrates that no Appendix B allotment, outstanding construction permit, or pending application will receive interference exceeding 0.5 %.

#### PROPOSED OPERATION DETAILS

The antenna that will be employed is a Dielectric Model DCBR-C3SP-4H/10H-1. This antenna will replace the antenna currently employed for analog Station WRCB-TV, Channel 3. The ASRN for the antenna supporting tower is 1212122. Due to the shorter length of the new digital antenna, the overall structure height will be reduced from 777 meters above mean sea level to 754 meters above mean sea level. Following a grant of this application, the ASRN will be modified accordingly. The NAD '27 geographic coordinates for the site are 35° 09' 40" N. Latitude; 85° 18' 51" W. Longitude.

The proposed antenna has a maximum power gain of 11.9 (10.76 dBd), horizontally polarized, and 4.1 (6.17 dBd), vertically polarized. Horizontally polarized maximum radiation of 111 kW will occur along an azimuth bearing of 87° True at the electrical beam tilt angle of 0.5 ° below the horizontal plane. Figure 2 is the horizontally polarized azimuth relative field radiation pattern for the antenna, and Figure 3 is the tabulation of relative field values for the pattern of Figure 2. Figure 4 is the elevation relative field pattern for the antenna. Figure 5 is a tabulation of relative field data for the pattern of Figure 4.

Energy from the transmitter will be transferred to the antenna by means of a 153 meter length of 50 ohm, rigid coaxial transmission line having a nominal diameter of 7.9 centimeters. The transmission line loss at Channel 13, for the given length, is 0.72 dB. With the transmitter power output level set at 11.0 kW (10.41 dBk), the antenna input power will be 9.3 kW. A horizontally polarized maximum effective radiated power of

111 kW will be achieved. The maximum vertically polarized effective radiated power will be 39 kW.

Figure 6 is a map that shows the calculated noise-limited, 36 dBu, F(50,90), and principal community service, 43 dBu, F(50,90), contours for the proposed operation. All of Chattanooga is encompassed by the 43 dBu contour, as required by the Rules. The interference-free population that will be served within the 36 dBu contour is 1,151,276 persons (rounded to 1,151,000 persons) within an area of 23,866 square kilometers. The foregoing population and area values are based on Scenario 87 which contemplates that all the contributing stations to the interference are operating in accordance with the latest outstanding construction permit, or license. The results represent an increase of more than 8 % over the 1,065,000 persons who are projected to be served within an area of 22,294 square kilometers by the Appendix B allotment facilities for WRCB-DT. Figure 7 provides the underlying supporting information for the contours of Figure 6. Calculations were made at 10° intervals, as required by the FCC's Rules. The antenna center height above average terrain values that are listed are based on elevation data from the FCC's NGDC 30" terrain elevation database.

#### ENVIRONMENTAL IMPACT CONSIDERATIONS

Environmental impact considerations are addressed for the proposed operation. Since the site that is to be employed is already used for broadcasting purposes, only the environmental impact concern relating to radiofrequency radiation (rfr) exposure of humans is germane from among the list of environmentally sensitive conditions listed in Section 1.1307 of the FCC Rules.

Commencement of the WRCB-DT operation, that is proposed herein, will occur after the cessation of the WRCB-TV, Channel 3, analog, operation. Since the analog operation for WRCB-TV, Channel 3, will cease before the implementation of the

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maximized digital operation for WRCB-DT, Channel 13, the impact of the analog operation of WRCB-TV is ignored in the rfr exposure analysis that is presented.

Consideration of prospective exposure levels to the general public at uncontrolled locations is discussed first. This is then followed by a discussion related to worker exposure at controlled locations.

In the interest of using conservative criteria for determining the rfr exposure levels from the post-transition WRCB-DT, Channel 13, antenna, a target for uncontrolled location calculations has been chosen to be a point that is 2 meters above ground level as the touchstone for evaluating if overexposure occurs, rather than by evaluating for average whole body exposure, as set forth in the FCC's adopted standard. This procedure simplifies the calculation and adds a safety factor, as well. Also, additional safety factors are built-in by assuming that all the radiation emanates from the bottom of the antenna, and that the maximum relative field radiation within the recited depression angle range prevails throughout the depression angle range.

Calculations of equivalent plane wave power density have been made for various target distances from the tower base, with the distances corresponding to the target touchdown points for various specified depression angles.

For the initial calculation to the target at the tower base, a relative field value in the vertical plane of 0.1 was used, although the pattern of Figure 4 shows the relative field value at 90° to be 0.0. A relative field of 0.1 is obtained at a depression angle of 73.5°. A depression angle of 73.5° corresponds to a target touchdown point at a horizontal distance of 34 meters from the tower base.

Thus, this initial calculation result for a depression angle of 90° represents the maximum power density level that could occur from the WRCB-DT, Channel 13, antenna within a radius 34 meters from the tower base, assuming flat earth. Within this 34-meter range, the greatest level of equivalent plane wave power density that could occur would be at the 2-meter above ground level target at the tower base.

The calculations were made using OET Bulletin 65, Edition 97-01, procedures. In each instance, the horizontal and slant range distances to the target from the antenna bottom were determined. The calculations of power density included a 1.6 ground reflection coefficient. The maximum ERP used was 150 kW. The elevation pattern relative field values that were used were determined from Figure 5. Figure 8 presents the calculation results.

Figure 8 demonstrates that the proposed operation will not result in a power density level at any uncontrolled area that exceeds the maximum permissible exposure (MPE) of 0.2 mW/cm<sup>2</sup> for Channel 13 (210-216 MHz.).

As to worker, or controlled location exposure concerns, the WRCB-DT tower is within a fenced enclosure, and the gate entranceway is kept locked at all times. Access within the fence is available only to authorized personnel. Those workers who have activities that require tower climbing, are aware of the procedures to follow to avoid rfr over-exposure. A radiation hazard warning sign is posted on the fence. The fenced area qualifies as a controlled location work area.

Procedures that are now in place regarding power reduction or termination of excitation to the antenna, according to the work effort location that is involved in order to

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avoid worker overexposure to rfr, will continue to be observed. In this manner, avoidance of overexposure of workers to rfr will continue to be achieved.

The proposal does not require the preparation of an "Environmental Assessment".

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 20, 2009.

*Bernard R. Segal, P.E.*

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Figure 1  
Sheet 1 of 2

SUMMARY OF WORST CASE  
INTERFERENCE ANALYSIS RESULTS  
WRCB-DT, CHATTANOOGA, TENNESSEE  
CHANNEL 13 111 KW (MAX-DA) 370 METERS

<u>Station</u>	<u>Net Served Population Without Prop. WRCB-DT</u>	<u>New IX From Prop. WRCB-DT</u>	<u>Percent IX From Proposed WRCB-DT</u>
WDEF-DT, CHATTANOOGA, TN CH. 12 (DTVP0404) [1/16]	1,164,204	2,592	0.223
WDEF-DT, CHATTANOOGA, TN CP, BMPCDT20080617ADC [1/16]	1,316,698	1,034	0.079
WVTM, BIRMINGHAM, AL CH. 13 (DTVP0416) [9/64]	1,647,374	5,040	0.306
WVTM, BIRMINGHAM, AL CP, BMPCDT20080410AAY [4/16]	1,651,399	5,184	0.314
WMAZ-DT, MACON, GA CH.13 (DTVP0428) [13/36]	817,060	2,843	0.348
WMAZ-DT, MACON, GA CP, BMPCDT20080620AMS [31/36]	882,687	3,864	0.438
WBKO-DT, BOWLING GREEN, KY CP, BMPCDT20080611AAQ [1/36]	693,397	-21	-0.003
WBKO-DT, BOWLING GREEN, KY CH. 13 (DTVP0438) [1/36]	602,190	-3,034	-0.504
WKYT-DT, LEXINGTON, KY CH. 13 (DTVP0439)/ and LIC., BLCDT-20021025AAO [194/288]	916,176	190	0.021

See Sheet 2 for a note pertaining to this study

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Figure 1  
Sheet 2 of 2

SUMMARY OF WORST CASE  
INTERFERENCE ANALYSIS RESULTS  
WRCB-DT, CHATTANOOGA, TENNESSEE  
CHANNEL 13 111 KW (MAX-DA) 370 METERS  
(CONTINUED)

<u>Station</u>	<u>Net Served Population Without Prop. WRCB-DT</u>	<u>New IX From Prop. WRCB-DT</u>	<u>Percent IX From Proposed WRCB-DT</u>
WLOS-DT, ASHEVILLE, NC CH 13 (DTVP0451) and CP,BPCDT20080317AGL [25/48]	2,344,599	11,365	0.485
WLOS-DT, ASHEVILLE, NC CP, BMPCDT20080620AKA [49/96]	2,472,881	11,544	0.467

Note: The numbers in the square brackets under the "Station" heading signify the worst case scenario and the number of scenarios in the study, respectively.





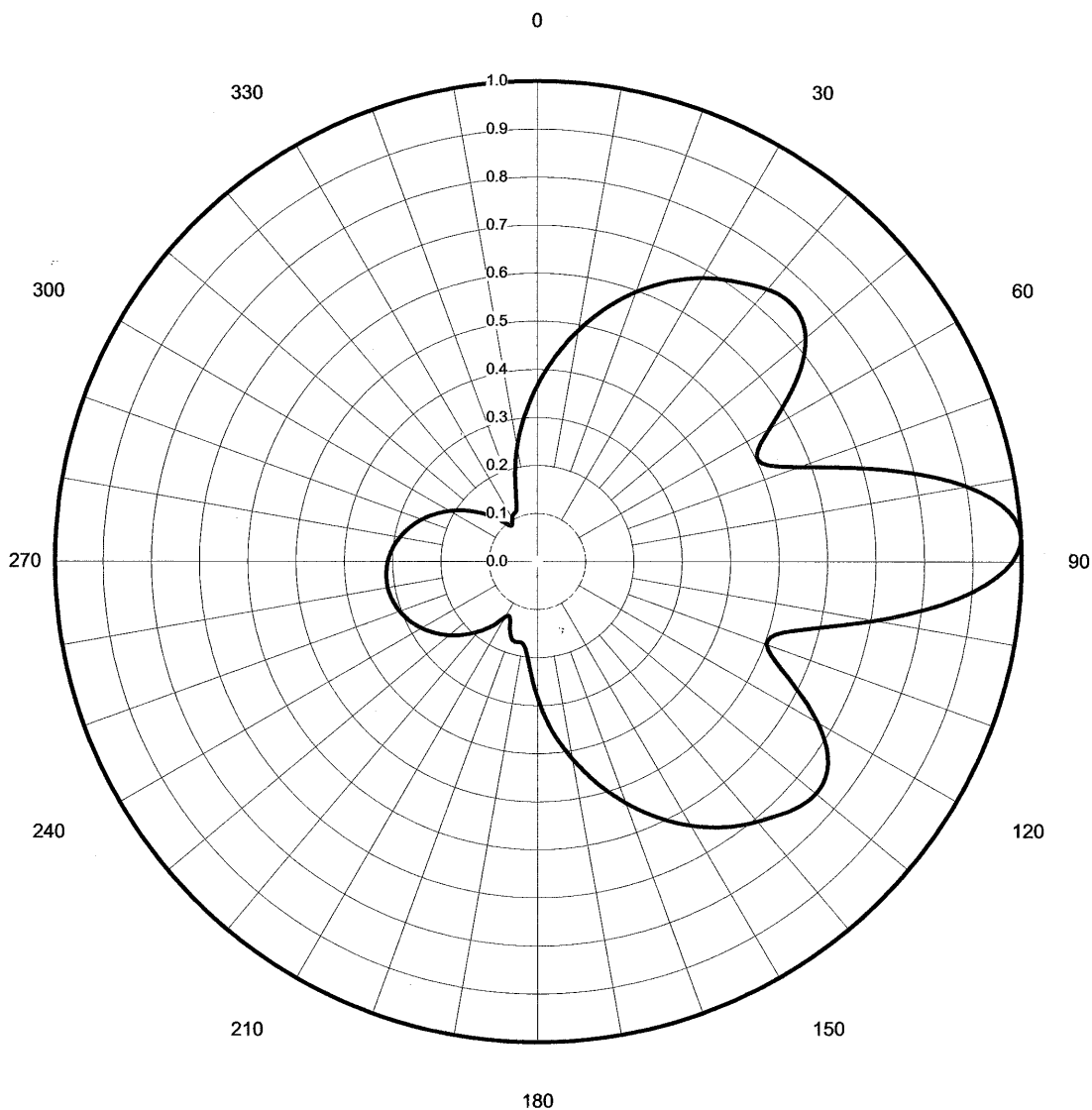
FIGURE 2

Proposal Number	<b>C-03332</b>	
Date	<b>25-Feb-09</b>	
Call Letters	<b>WRCB-DT</b>	Channel <b>13</b>
Location	<b>Chattanooga, TN</b>	
Customer		
Antenna Type	<b>DCBR-C3SP-4H/10H-1</b>	

**AZIMUTH PATTERN**

Gain	<b>4.13</b>	<b>( 6.16 dB)</b>
Calculated / Measured		<b>Calculated</b>

Frequency	<b>213.00 MHz</b>
Drawing #	<b>DCBR-C3SP H</b>



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Proposal Number

C-03332

FIGURE 3

Date

25-Feb-09

Call Letters

WRCB-DT

Channel

13

Location

Chattanooga, TN

Customer

Antenna Type

DCBR-C3SP-4H/10H-1

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: DCBR-C3SP H

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.366	45	0.751	90	0.981	135	0.735	180	0.281	225	0.215	270	0.310	315	0.133
1	0.379	46	0.749	91	0.967	136	0.730	181	0.266	226	0.220	271	0.308	316	0.128
2	0.391	47	0.746	92	0.949	137	0.724	182	0.251	227	0.224	272	0.307	317	0.122
3	0.404	48	0.741	93	0.927	138	0.718	183	0.236	228	0.229	273	0.305	318	0.117
4	0.416	49	0.733	94	0.902	139	0.712	184	0.222	229	0.233	274	0.303	319	0.112
5	0.428	50	0.724	95	0.874	140	0.707	185	0.209	230	0.238	275	0.301	320	0.107
6	0.440	51	0.713	96	0.843	141	0.701	186	0.198	231	0.242	276	0.299	321	0.101
7	0.453	52	0.701	97	0.811	142	0.695	187	0.188	232	0.247	277	0.297	322	0.097
8	0.465	53	0.686	98	0.777	143	0.688	188	0.181	233	0.251	278	0.294	323	0.094
9	0.477	54	0.670	99	0.742	144	0.682	189	0.176	234	0.255	279	0.292	324	0.092
10	0.488	55	0.652	100	0.706	145	0.674	190	0.173	235	0.259	280	0.289	325	0.092
11	0.500	56	0.633	101	0.671	146	0.667	191	0.171	236	0.263	281	0.286	326	0.093
12	0.512	57	0.613	102	0.638	147	0.659	192	0.171	237	0.266	282	0.283	327	0.096
13	0.523	58	0.593	103	0.606	148	0.651	193	0.172	238	0.270	283	0.280	328	0.098
14	0.534	59	0.574	104	0.577	149	0.643	194	0.172	239	0.274	284	0.277	329	0.101
15	0.545	60	0.555	105	0.552	150	0.634	195	0.173	240	0.277	285	0.274	330	0.104
16	0.556	61	0.538	106	0.532	151	0.625	196	0.173	241	0.280	286	0.270	331	0.107
17	0.566	62	0.523	107	0.517	152	0.616	197	0.172	242	0.283	287	0.266	332	0.108
18	0.577	63	0.512	108	0.507	153	0.607	198	0.169	243	0.286	288	0.263	333	0.110
19	0.587	64	0.505	109	0.503	154	0.597	199	0.166	244	0.289	289	0.259	334	0.110
20	0.597	65	0.503	110	0.505	155	0.587	200	0.162	245	0.292	290	0.255	335	0.111
21	0.607	66	0.507	111	0.512	156	0.577	201	0.156	246	0.294	291	0.251	336	0.112
22	0.616	67	0.517	112	0.523	157	0.566	202	0.151	247	0.297	292	0.247	337	0.113
23	0.625	68	0.532	113	0.538	158	0.556	203	0.144	248	0.299	293	0.242	338	0.116
24	0.634	69	0.552	114	0.555	159	0.545	204	0.138	249	0.301	294	0.238	339	0.120
25	0.643	70	0.577	115	0.574	160	0.534	205	0.133	250	0.303	295	0.233	340	0.125
26	0.651	71	0.606	116	0.593	161	0.523	206	0.129	251	0.305	296	0.229	341	0.132
27	0.659	72	0.638	117	0.613	162	0.512	207	0.127	252	0.307	297	0.224	342	0.141
28	0.667	73	0.671	118	0.633	163	0.500	208	0.127	253	0.308	298	0.220	343	0.152
29	0.674	74	0.706	119	0.652	164	0.488	209	0.129	254	0.310	299	0.215	344	0.163
30	0.682	75	0.742	120	0.670	165	0.477	210	0.133	255	0.311	300	0.210	345	0.176
31	0.688	76	0.777	121	0.686	166	0.465	211	0.139	256	0.312	301	0.205	346	0.189
32	0.695	77	0.811	122	0.701	167	0.453	212	0.145	257	0.313	302	0.200	347	0.202
33	0.701	78	0.843	123	0.713	168	0.440	213	0.152	258	0.314	303	0.195	348	0.216
34	0.707	79	0.874	124	0.724	169	0.428	214	0.158	259	0.314	304	0.190	349	0.229
35	0.712	80	0.902	125	0.733	170	0.416	215	0.164	260	0.315	305	0.185	350	0.242
36	0.718	81	0.927	126	0.741	171	0.404	216	0.169	261	0.315	306	0.180	351	0.254
37	0.724	82	0.949	127	0.746	172	0.391	217	0.175	262	0.315	307	0.175	352	0.267
38	0.730	83	0.967	128	0.749	173	0.379	218	0.180	263	0.315	308	0.169	353	0.279
39	0.735	84	0.981	129	0.751	174	0.366	219	0.185	264	0.315	309	0.164	354	0.291
40	0.740	85	0.992	130	0.751	175	0.353	220	0.190	265	0.314	310	0.159	355	0.304
41	0.745	86	0.998	131	0.750	176	0.340	221	0.195	266	0.314	311	0.154	356	0.316
42	0.748	87	1.000	132	0.748	177	0.326	222	0.200	267	0.313	312	0.149	357	0.329
43	0.750	88	0.998	133	0.745	178	0.312	223	0.205	268	0.312	313	0.143	358	0.341
44	0.751	89	0.992	134	0.740	179	0.297	224	0.210	269	0.311	314	0.138	359	0.354

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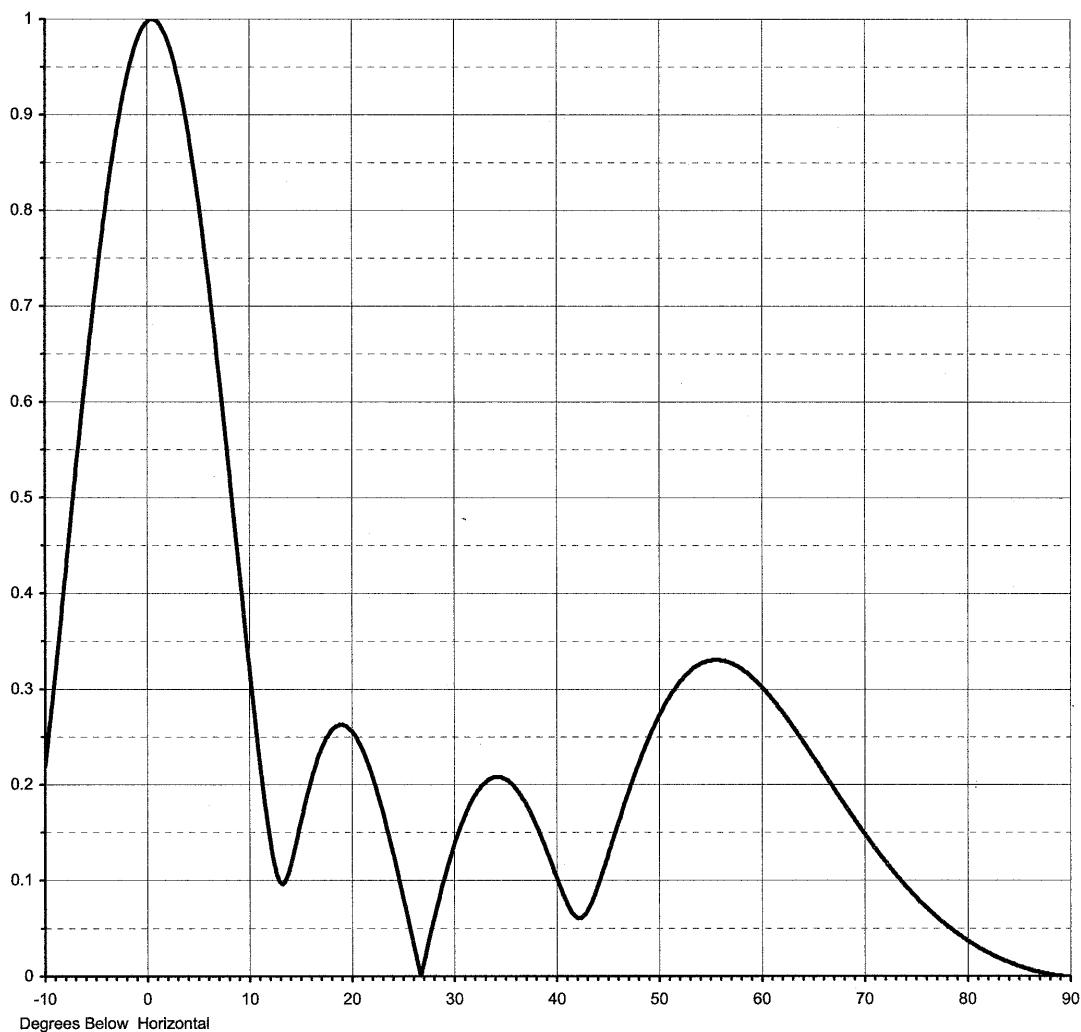


Proposal Number **C-03332**  
Date **25-Feb-09**  
Call Letters **WRCB-DT** Channel **13**  
Location **Chattanooga, TN**  
Customer  
Antenna Type **DCBR-C3SP-4H/10H-1**

FIGURE 4

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>4.20 (6.23 dB)</b>	Beam Tilt	<b>0.50 deg</b>
RMS Gain at Horizontal	<b>4.20 (6.23 dB)</b>	Frequency	<b>213.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>04C042050-90</b>



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FIGURE 5

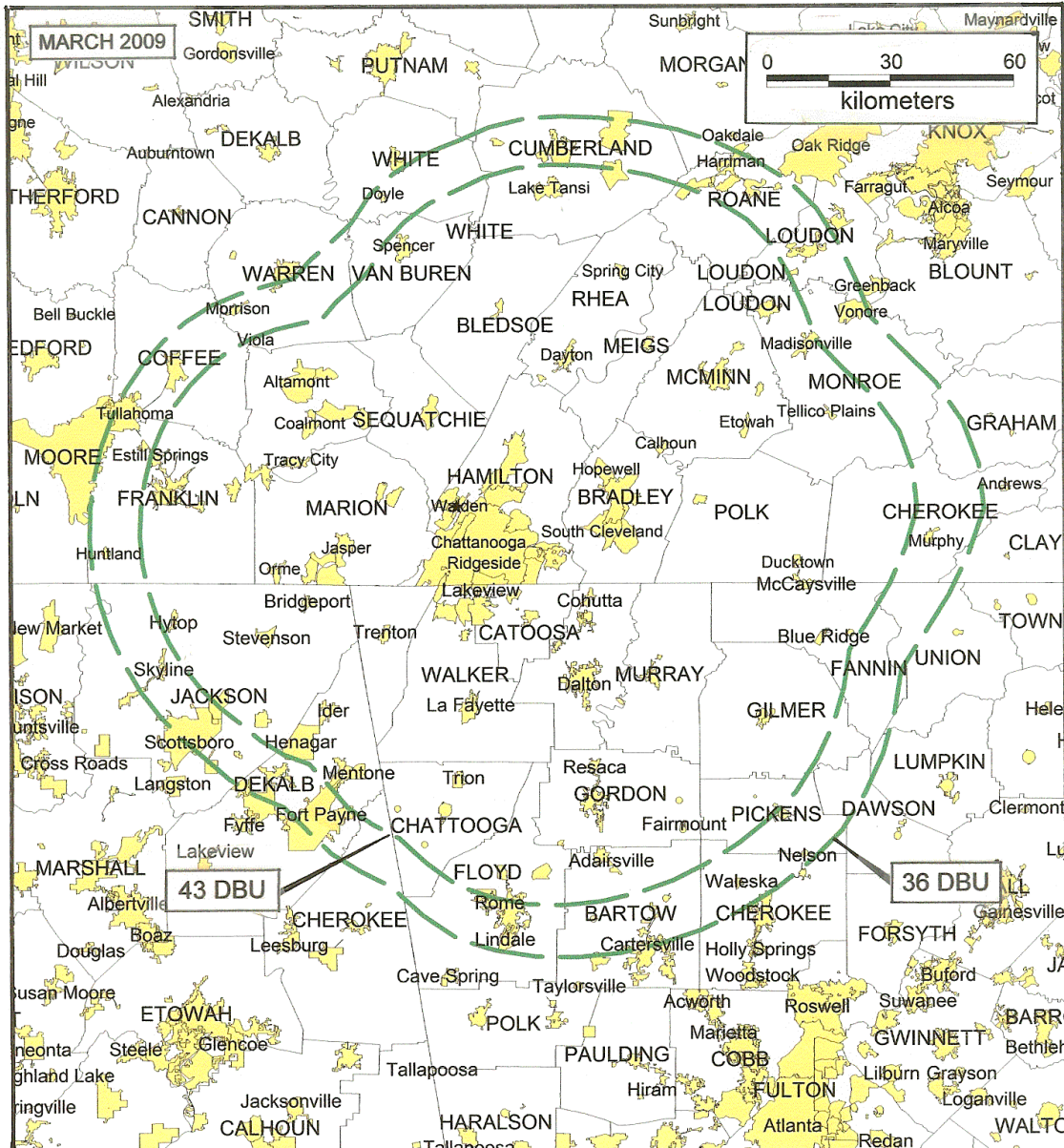
# TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **04C042050-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.219	2.4	0.965	10.6	0.272	30.5	0.150	51.0	0.290	71.5	0.127
-9.5	0.266	2.6	0.957	10.8	0.252	31.0	0.164	51.5	0.299	72.0	0.120
-9.0	0.316	2.8	0.949	11.0	0.234	31.5	0.176	52.0	0.306	72.5	0.113
-8.5	0.368	3.0	0.940	11.5	0.189	32.0	0.187	52.5	0.313	73.0	0.107
-8.0	0.420	3.2	0.930	12.0	0.149	32.5	0.195	53.0	0.318	73.5	0.100
-7.5	0.473	3.4	0.919	12.5	0.118	33.0	0.201	53.5	0.323	74.0	0.094
-7.0	0.525	3.6	0.908	13.0	0.099	33.5	0.206	54.0	0.326	74.5	0.088
-6.5	0.577	3.8	0.896	13.5	0.098	34.0	0.208	54.5	0.328	75.0	0.083
-6.0	0.628	4.0	0.883	14.0	0.112	34.5	0.208	55.0	0.330	75.5	0.077
-5.5	0.676	4.2	0.870	14.5	0.133	35.0	0.206	55.5	0.331	76.0	0.072
-5.0	0.723	4.4	0.856	15.0	0.156	35.5	0.203	56.0	0.331	76.5	0.067
-4.5	0.768	4.6	0.842	15.5	0.179	36.0	0.197	56.5	0.330	77.0	0.062
-4.0	0.809	4.8	0.827	16.0	0.200	36.5	0.190	57.0	0.328	77.5	0.057
-3.5	0.847	5.0	0.812	16.5	0.219	37.0	0.182	57.5	0.325	78.0	0.053
-3.0	0.881	5.2	0.796	17.0	0.234	37.5	0.172	58.0	0.322	78.5	0.049
-2.8	0.894	5.4	0.779	17.5	0.247	38.0	0.160	58.5	0.318	79.0	0.045
-2.6	0.906	5.6	0.762	18.0	0.255	38.5	0.148	59.0	0.314	79.5	0.041
-2.4	0.917	5.8	0.745	18.5	0.261	39.0	0.134	59.5	0.309	80.0	0.037
-2.2	0.928	6.0	0.727	19.0	0.263	39.5	0.120	60.0	0.304	80.5	0.034
-2.0	0.938	6.2	0.708	19.5	0.262	40.0	0.106	60.5	0.298	81.0	0.031
-1.8	0.947	6.4	0.690	20.0	0.257	40.5	0.092	61.0	0.291	81.5	0.028
-1.6	0.956	6.6	0.671	20.5	0.250	41.0	0.079	61.5	0.285	82.0	0.025
-1.4	0.964	6.8	0.651	21.0	0.240	41.5	0.068	62.0	0.278	82.5	0.022
-1.2	0.971	7.0	0.632	21.5	0.227	42.0	0.062	62.5	0.270	83.0	0.019
-1.0	0.977	7.2	0.612	22.0	0.212	42.5	0.061	63.0	0.263	83.5	0.017
-0.8	0.983	7.4	0.592	22.5	0.195	43.0	0.067	63.5	0.255	84.0	0.015
-0.6	0.988	7.6	0.571	23.0	0.176	43.5	0.077	64.0	0.247	84.5	0.013
-0.4	0.992	7.8	0.551	23.5	0.155	44.0	0.091	64.5	0.237	85.0	0.011
-0.2	0.995	8.0	0.530	24.0	0.134	44.5	0.107	65.0	0.229	85.5	0.009
0.0	0.997	8.2	0.509	24.5	0.111	45.0	0.123	65.5	0.221	86.0	0.007
0.2	0.999	8.4	0.488	25.0	0.087	45.5	0.140	66.0	0.213	86.5	0.006
0.4	1.000	8.6	0.467	25.5	0.063	46.0	0.157	66.5	0.204	87.0	0.004
0.6	1.000	8.8	0.446	26.0	0.039	46.5	0.173	67.0	0.196	87.5	0.003
0.8	0.999	9.0	0.425	26.5	0.014	47.0	0.189	67.5	0.188	88.0	0.002
1.0	0.998	9.2	0.404	27.0	0.010	47.5	0.205	68.0	0.180	88.5	0.001
1.2	0.995	9.4	0.383	27.5	0.033	48.0	0.219	68.5	0.172	89.0	0.001
1.4	0.992	9.6	0.363	28.0	0.056	48.5	0.234	69.0	0.164	89.5	0.000
1.6	0.988	9.8	0.352	28.5	0.077	49.0	0.247	69.5	0.156	90.0	0.000
1.8	0.984	10.0	0.332	29.0	0.098	49.5	0.259	70.0	0.149		
2.0	0.978	10.2	0.312	29.5	0.117	50.0	0.271	70.5	0.141		
2.2	0.972	10.4	0.292	30.0	0.134	50.5	0.281	71.0	0.134		

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FIGURE 6



### CALCULATED F(50,90) CONTOURS

SARKES TARZIAN, INC.  
 STATION WRCB-DT, CHATTANOOGA, TENNESSEE  
 CH. 13 111 KW (MAX-DA) 370 METERS  
 Bernard R. Segal, P. E. Consulting Engineer

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FIGURE 7

ELEVATION DATA AND  
DISTANCES TO SERVICE CONTOURS  
PROPOSED WRCB-DT, CHATTANOOGA, TENNESSEE  
CH. 13 111 KW (MAX-DA) 370 METERS

NAD '27 Site Coordinates: 35° 09' 40" N; 85° 18' 51" W  
Antenna Radiation Center: 749 meters AMSL

Azimuth (Deg. True)	HAAT (meters)	Depression Angle To Radio Horizon (degrees)	ERP (kW)	Distance To	
				43 dBu Contour (km)	36 dBu Contour (km)
0	216	0.4	14.9	78.5	90.8
10	225	0.4	26.4	83.6	95.8
20	227	0.4	39.6	86.9	99.1
30	232	0.4	51.6	89.3	101.6
40	277	0.5	60.8	92.8	105.6
50	493	0.6	58.2	107.8	122.6
60	507	0.6	34.2	104.1	118.1
70	518	0.6	37.0	105.5	119.4
80	529	0.6	90.3	113.5	130.0
90	514	0.6	107	114.2	130.9
100	523	0.6	55.3	109.1	123.7
110	522	0.6	28.3	103.2	116.9
120	518	0.6	49.8	108.0	122.3
130	525	0.6	62.6	110.3	125.3
140	531	0.6	55.5	109.6	124.3
150	524	0.6	44.6	107.4	121.6
160	518	0.6	31.7	104.2	117.9
170	528	0.6	19.2	100.7	114.0
180	527	0.6	8.8	94.3	107.5
190	515	0.6	3.3	85.7	98.6
200	470	0.6	2.9	82.1	94.3
210	307	0.5	2.0	67.8	80.5
220	370	0.5	4.0	78.1	90.5
230	310	0.5	6.3	77.3	89.5
240	371	0.5	8.5	83.8	96.4
250	245	0.4	10.2	77.4	90.1
260	221	0.4	11.0	76.5	88.9
270	255	0.4	10.7	78.3	91.0
280	255	0.4	9.3	77.2	89.8
290	265	0.5	7.2	75.7	88.3
300	244	0.4	4.9	71.4	84.3
310	216	0.4	2.8	65.3	78.1
320	201	0.4	1.3	58.5	70.7
330	173	0.4	1.2	56.4	68.1
340	169	0.4	1.7	58.6	70.6
350	193	0.4	6.5	70.3	82.8

Note: In each direction, the relative field at the depression angle to the radio horizon exceeds 90 % of the maximum in the vertical plane. Therefore, the maximum ERP was used to determine the contour distance.

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Figure 8

RADIOFREQUENCY RADIATION EXPOSURE ANALYSIS  
RESULTS FOR UNCONTROLLED LOCATIONS  
WRCB-DT, CHATTANOOGA, TENNESSEE  
CHANNEL 13 111 KW (MAX-DA) 370 METERS

Depression Angle to Target (Degrees)	Distance To Target		Relative Field At Depression Angle	Power Density At Target (mW/cm <sup>2</sup> )	Percent Of MPE
	Horizontal (Meters)	Slant (Meters)			
90.0	0.0	114	0.100	0.0039	2.0
67.0	48.4	124	0.200	0.0130	6.5
56.0	76.9	138	0.331	0.0288	14.4
34.5	166	201	0.208	0.0054	2.7
19.0	331	350	0.263	0.0028	1.4
10.0	646	656	0.332	0.0013	0.7
8.0	811	819	0.530	0.0021	1.1
6.0	1085	1091	0.727	0.0022	1.1
4.0	1630	1634	0.883	0.0015	0.8
2.0	3265	3267	0.978	0.0004	0.2

Notes: 1) The calculations made are from the antenna bottom to a target located 2 meters above ground level at the horizontal distance from the tower base for the designated depression angle below the horizontal plane. The total of the maximum horizontally and vertically polarized radiations of 150 kW was used for the calculations.

2) The calculations assume flat earth.

3) The calculations include a 1.6 ground reflection factor.

4) The maximum permissible exposure (MPE) for Channel 13 (210-216 MHz) is 0.2 mW/cm<sup>2</sup>.