

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
TELEVISION STATION WTTV-DT
BLOOMINGTON, INDIANA

February 16, 2006

CHANNEL 48 870 KW (MAX-DA) 318 M

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
TELEVISION STATION WTTV-DT
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Technical Statement

This Technical Exhibit was prepared on behalf of digital television broadcast station WTTV-DT, Bloomington, Indiana, in support of an application for modification of construction permit (See FCC File No. BMPCDT-10040519ADD). WTTV-DT is paired with analog NTSC TV station WTTV(TV), Channel 4. Pursuant to the *Report and Order* in MM Docket No. 03-230^{*}, WTTV-DT was allotted Channel 48, with a maximum effective radiated power (ERP) of 840 kW and antenna height above average terrain (HAAT) of 357 m, as its transitional DTV allotment channel. The instant application proposes operation of the WTTV-DT facility using an existing antenna structure located at the WTTV-DT allotment reference point, but with a lower antenna radiation center HAAT. The proposal complies with the DTV application “checklist” filing requirements.[†]

The proposed facility will not result in any extension of the predicted 41 dBu noise-limited contour relative to the WTTV-DT allotment facility.[‡] Therefore, the proposal meets the terms of the FCC Filing Freeze for television stations.[§]

^{*} See *Report and Order*, MM Docket No. 03-230, RM-10816, In the Matter of Amendment of Section 73.622(b), Table of Allotments, Digital Television Broadcast Stations (Bloomington, Indiana), Adopted: April 20, 2004, Released: April 26, 2004, DA 04-1057.

[†] See FCC *Public Notice*, “Commission Details Application Filing Procedures Digital Television (DTV)”, Released: October 16, 1997; and, FCC *Public Notice*, “Additional Application Processing Guidelines for Digital Television (DTV)”, Released: August 10, 1998.

[‡] See Figure 1.

[§] See *August 2004 Filing Freeze PN*, DA 04-2446 (MB rel. Aug. 3, 2004).

Proposed Facilities

The proposed transmitting antenna will employ a Dielectric, model TFU-24DSB-C260(C) antenna, which will be side-mounted on the existing WTTV(TV) tower structure. The transmitter site elevation is 265 m AMSL. The antenna center of radiation will be located at 293 m above ground level and 558 m AMSL. The proposed WTTV-DT facility will operate on Channel 48 with a maximum directional average ERP of 870 dBk (29.4 kW) and antenna radiation center HAAT of 318 m.

The proposed WTTV-DT facility meets the requirements of Section 73.622(f)(3) of the FCC Rules concerning the maximum permissible ERP adjustment for a proposed HAAT differing from the allotment facility. An analysis of the permissible effective radiated power for the proposed facility is included herein at Figure 2. As indicated therein, appropriate ERP adjustments were made in consideration of the decrease in antenna HAAT of greater than 25 m and the use of a directional antenna pattern that differs slightly from the allotment pattern.

The proposed facility is located in the Canadian border area. The proposed transmitter site is located 376 km from the closest point on the U.S./Canadian border.** The closest FCC Monitoring station is located at Allegan, Michigan, at distance of 356 km at a bearing of 3°True. The closest Radio Astronomy site conducting research on Channel 37 is located at North Liberty, Iowa, at distance of 528 km at a bearing of 302°True. There are no AM broadcast stations located within 3.2 km of the proposed transmitter site.

** Canadian concurrence of the proposal was obtained at the allotment stage. See *Report and Order* in MM Docket No. 03-230 referenced above. Canadian notification of the instant proposal is not believed to be necessary.

The proposed facility provides minimum 48 dBu, f(50,90), coverage of Bloomington in compliance with Section 73.625(a)(1) of the FCC Rules. Figure 1 herein is a map depicting the predicted coverage contours of the proposed facility.

Tower Registration

The existing antenna structure has been registered with the FCC. The FCC antenna structure registration number is 1026127. The overall antenna structure height above ground is 345 m. This overall structure height will not change as a result of the proposal.

Allocation Considerations

The proposed WTTV-DT facility meets the criteria of Section 73.622(f)(2) of the FCC Rules. Therefore, pursuant to that section, the application shall not be subject to further consideration of electromagnetic interference to other DTV or analog TV broadcast stations.^{††}

Environmental Considerations

An evaluation was conducted for the proposed facility concerning compliance with Section 1.1307(b) of the FCC Rules regarding human exposure to radio frequency (RF) energy.^{‡‡} Calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF radiation at ground level in excess of FCC standards. Power density calculations

^{††} This is presumed to include consideration of electromagnetic interference with respect to Class A television stations.

^{‡‡} See FCC Office of Engineering and Technology Bulletin No. 56 for background information on non-ionizing RF energy of the type discussed here. Internet web reference:
http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

were conducted at 2-m above ground based on the following conservative assumptions, with the following results:

Call Sign	Channel	Average ERP (kW)	Radiation Center Height Above Ground (m)	Relative Field Factor^{§§}	FCC Limit^{***} (mW/cm²)	Percentage of Limit
WTTV-DT	48	870	293	0.20	0.451	3.0%

As indicated above, the total exposure to RF radiation at 2-m above ground level will not 3.0% of the FCC limit for general population / uncontrolled exposure. Therefore, the proposal complies with the FCC limits for human exposure to RF energy and it is categorically excluded from environmental processing. The applicant, in coordination with other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the WTTV-DT tower or antenna from radio frequency radiation in excess of the FCC guidelines.

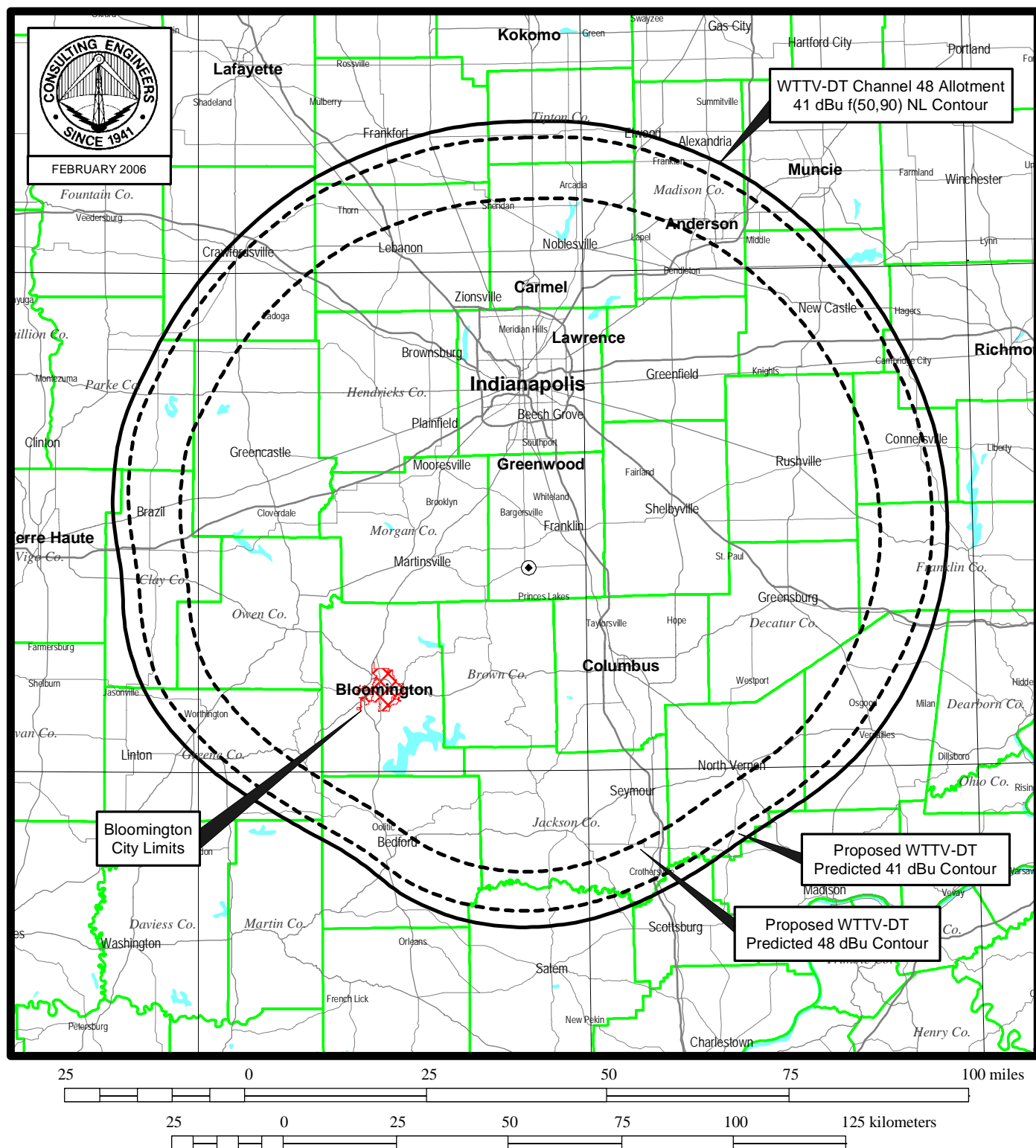


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February 16, 2006

^{§§} This is a conservative estimate of the relative field factor in the downward direction.
^{***} for general population/uncontrolled environments



PREDICTED COVERAGE CONTOURS

TELEVISION STATION WTTV-DT
BLOOMINGTON, INDIANA
CHANNEL 48 870 KW (MAX-DA) 318 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

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Analysis of Permissible Effective Radiated Power

Azimuth (deg. True)	FCC Allotment Pattern (relative field)	FCC Allotment Permissible ERP (kW)	FCC Allotment Permissible ERP (dBk)	Permissible ERP Adjustment for 25-m Decrease in HAAT (dB)	Adjusted Permissible ERP (dBk)	Proposed Antenna Pattern (relative field)	Proposed ERP (dBk)
0	1.000	840.0	29.24	0.60	29.84	1.000	29.40
10	0.988	820.0	29.14	0.60	29.74	0.989	29.30
20	0.954	764.5	28.83	0.60	29.43	0.957	29.02
30	0.907	691.0	28.39	0.60	29.00	0.911	28.59
40	0.848	604.0	27.81	0.60	28.41	0.854	28.03
50	0.784	516.3	27.13	0.60	27.73	0.793	27.39
60	0.723	439.1	26.43	0.60	27.03	0.731	26.68
70	0.667	373.7	25.73	0.60	26.33	0.670	25.92
80	0.612	314.6	24.98	0.60	25.58	0.608	25.08
90	0.553	256.9	24.10	0.60	24.70	0.544	24.11
100	0.488	200.0	23.01	0.60	23.61	0.475	22.93
110	0.414	144.0	21.58	0.60	22.18	0.400	21.44
120	0.327	89.8	19.53	0.60	20.13	0.321	19.53
130	0.246	50.8	17.06	0.60	17.66	0.250	17.36

Azimuth (deg. True)	FCC Allotment Pattern (relative field)	FCC Allotment Permissible ERP (kW)	FCC Allotment Permissible ERP (dBk)	Permissible ERP Adjustment for 25-m Decrease in HAAT (dB)	Adjusted Permissible ERP (dBk)	Proposed Antenna Pattern (relative field)	Proposed ERP (dBk)
140	0.203	34.6	15.39	0.60	15.99	0.209	15.80
150	0.215	38.8	15.89	0.60	16.49	0.220	16.25
160	0.261	57.2	17.58	0.60	18.18	0.262	17.77
170	0.305	78.1	18.93	0.60	19.53	0.301	18.97
180	0.322	87.1	19.40	0.60	20.00	0.317	19.42
190	0.305	78.1	18.93	0.60	19.53	0.301	18.97
200	0.261	57.2	17.58	0.60	18.18	0.262	17.77
210	0.215	38.8	15.89	0.60	16.49	0.220	16.25
220	0.203	34.6	15.39	0.60	15.99	0.209	15.80
230	0.246	50.8	17.06	0.60	17.66	0.250	17.36
240	0.327	89.8	19.53	0.60	20.13	0.321	19.53
250	0.414	144.0	21.58	0.60	22.18	0.400	21.44
260	0.488	200.0	23.01	0.60	23.61	0.475	22.93
270	0.533	238.6	23.78	0.60	24.38	0.544	24.11
280	0.612	314.6	24.98	0.60	25.58	0.608	25.08
290	0.667	373.7	25.73	0.60	26.33	0.670	25.92
300	0.723	439.1	26.43	0.60	27.03	0.731	26.68
310	0.784	516.3	27.13	0.60	27.73	0.793	27.39
320	0.848	604.0	27.81	0.60	28.41	0.854	28.03
330	0.907	691.0	28.39	0.60	29.00	0.910	28.58
340	0.954	764.5	28.83	0.60	29.43	0.957	29.02
350	0.988	820.0	29.14	0.60	29.74	0.989	29.30

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Transmitting Antenna Manufacturer's Pattern Data

(four pages follow)

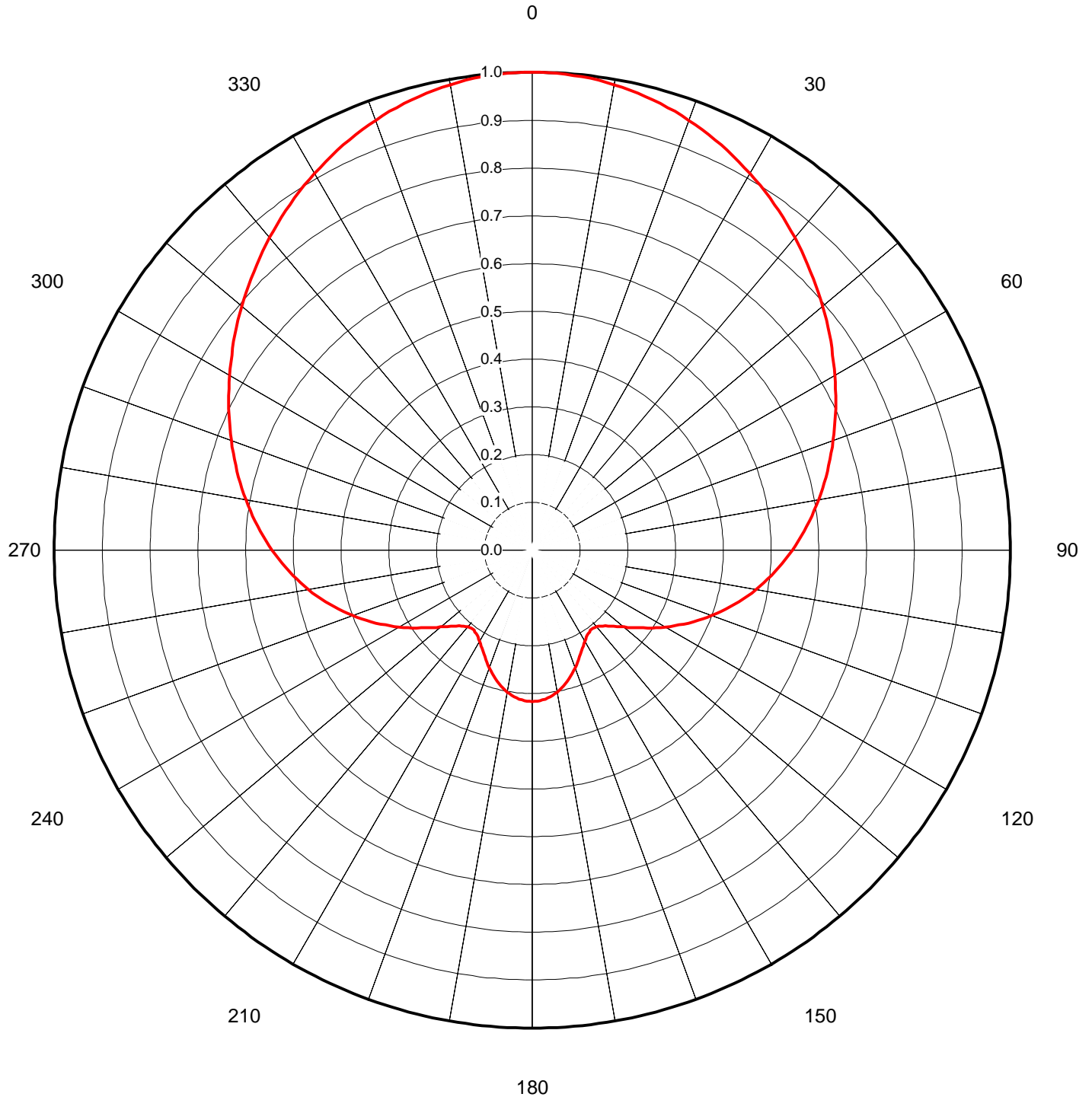


Proposal Number	DCA-10984	Revision:	3
Date	15-Feb-06		
Call Letters	WTTV-DT	Channel	48
Location	Bloomington, IN		
Customer	Tribune		
Antenna Type	TFU-24DSB-C260-R (C)		

AZIMUTH PATTERN

Gain	2.60	(4.15 dB)
Calculated / Measured	Calculated	

Frequency	677.00 MHz
Drawing #	TFU-C260-48





Proposal Number	DCA-10984	Revision:	3
Date	15-Feb-06		
Call Letters	WTTV-DT	Channel	48
Location	Bloomington, IN		
Customer	Tribune		
Antenna Type	TFU-24DSB-C260-R (C)		

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-C260-48**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.824	90	0.544	135	0.224	180	0.317	225	0.224	270	0.544	315	0.824
1	1.000	46	0.818	91	0.537	136	0.220	181	0.316	226	0.228	271	0.550	316	0.830
2	1.000	47	0.811	92	0.531	137	0.217	182	0.316	227	0.234	272	0.557	317	0.836
3	0.999	48	0.805	93	0.524	138	0.214	183	0.315	228	0.239	273	0.564	318	0.842
4	0.998	49	0.799	94	0.517	139	0.212	184	0.314	229	0.244	274	0.570	319	0.848
5	0.997	50	0.793	95	0.510	140	0.209	185	0.312	230	0.250	275	0.576	320	0.854
6	0.996	51	0.787	96	0.503	141	0.208	186	0.311	231	0.257	276	0.583	321	0.860
7	0.994	52	0.781	97	0.496	142	0.207	187	0.309	232	0.263	277	0.589	322	0.866
8	0.993	53	0.774	98	0.489	143	0.207	188	0.307	233	0.270	278	0.595	323	0.872
9	0.991	54	0.768	99	0.482	144	0.207	189	0.304	234	0.277	279	0.602	324	0.877
10	0.989	55	0.762	100	0.475	145	0.209	190	0.301	235	0.284	280	0.608	325	0.883
11	0.987	56	0.756	101	0.468	146	0.210	191	0.298	236	0.291	281	0.614	326	0.889
12	0.984	57	0.750	102	0.460	147	0.212	192	0.295	237	0.299	282	0.621	327	0.894
13	0.981	58	0.744	103	0.453	148	0.214	193	0.291	238	0.306	283	0.627	328	0.900
14	0.979	59	0.737	104	0.446	149	0.217	194	0.288	239	0.314	284	0.633	329	0.905
15	0.975	60	0.731	105	0.438	150	0.220	195	0.284	240	0.321	285	0.639	330	0.910
16	0.972	61	0.725	106	0.431	151	0.223	196	0.280	241	0.329	286	0.645	331	0.916
17	0.969	62	0.719	107	0.423	152	0.227	197	0.275	242	0.337	287	0.651	332	0.921
18	0.965	63	0.713	108	0.415	153	0.231	198	0.271	243	0.345	288	0.658	333	0.926
19	0.961	64	0.707	109	0.408	154	0.235	199	0.267	244	0.353	289	0.664	334	0.931
20	0.957	65	0.700	110	0.400	155	0.239	200	0.262	245	0.361	290	0.670	335	0.936
21	0.953	66	0.694	111	0.392	156	0.244	201	0.257	246	0.369	291	0.676	336	0.940
22	0.949	67	0.688	112	0.384	157	0.248	202	0.253	247	0.376	292	0.682	337	0.945
23	0.945	68	0.682	113	0.376	158	0.253	203	0.248	248	0.384	293	0.688	338	0.949
24	0.940	69	0.676	114	0.369	159	0.257	204	0.244	249	0.392	294	0.694	339	0.953
25	0.936	70	0.670	115	0.361	160	0.262	205	0.239	250	0.400	295	0.700	340	0.957
26	0.931	71	0.664	116	0.353	161	0.267	206	0.235	251	0.408	296	0.707	341	0.961
27	0.926	72	0.658	117	0.345	162	0.271	207	0.231	252	0.415	297	0.713	342	0.965
28	0.921	73	0.651	118	0.337	163	0.275	208	0.227	253	0.423	298	0.719	343	0.969
29	0.916	74	0.645	119	0.329	164	0.280	209	0.223	254	0.431	299	0.725	344	0.972
30	0.911	75	0.639	120	0.321	165	0.284	210	0.220	255	0.438	300	0.731	345	0.975
31	0.905	76	0.633	121	0.314	166	0.288	211	0.217	256	0.446	301	0.737	346	0.979
32	0.900	77	0.627	122	0.306	167	0.291	212	0.214	257	0.453	302	0.744	347	0.981
33	0.894	78	0.621	123	0.299	168	0.295	213	0.212	258	0.460	303	0.750	348	0.984
34	0.889	79	0.614	124	0.291	169	0.298	214	0.210	259	0.468	304	0.756	349	0.987
35	0.883	80	0.608	125	0.284	170	0.301	215	0.209	260	0.475	305	0.762	350	0.989
36	0.877	81	0.602	126	0.277	171	0.304	216	0.207	261	0.482	306	0.768	351	0.991
37	0.872	82	0.595	127	0.270	172	0.307	217	0.207	262	0.489	307	0.774	352	0.993
38	0.866	83	0.589	128	0.263	173	0.309	218	0.207	263	0.496	308	0.781	353	0.994
39	0.860	84	0.583	129	0.257	174	0.311	219	0.208	264	0.503	309	0.787	354	0.996
40	0.854	85	0.576	130	0.250	175	0.312	220	0.209	265	0.510	310	0.793	355	0.997
41	0.848	86	0.570	131	0.244	176	0.314	221	0.212	266	0.517	311	0.799	356	0.998
42	0.842	87	0.564	132	0.239	177	0.315	222	0.214	267	0.524	312	0.805	357	0.999
43	0.836	88	0.557	133	0.234	178	0.316	223	0.217	268	0.531	313	0.811	358	1.000
44	0.830	89	0.550	134	0.228	179	0.316	224	0.220	269	0.537	314	0.818	359	1.000

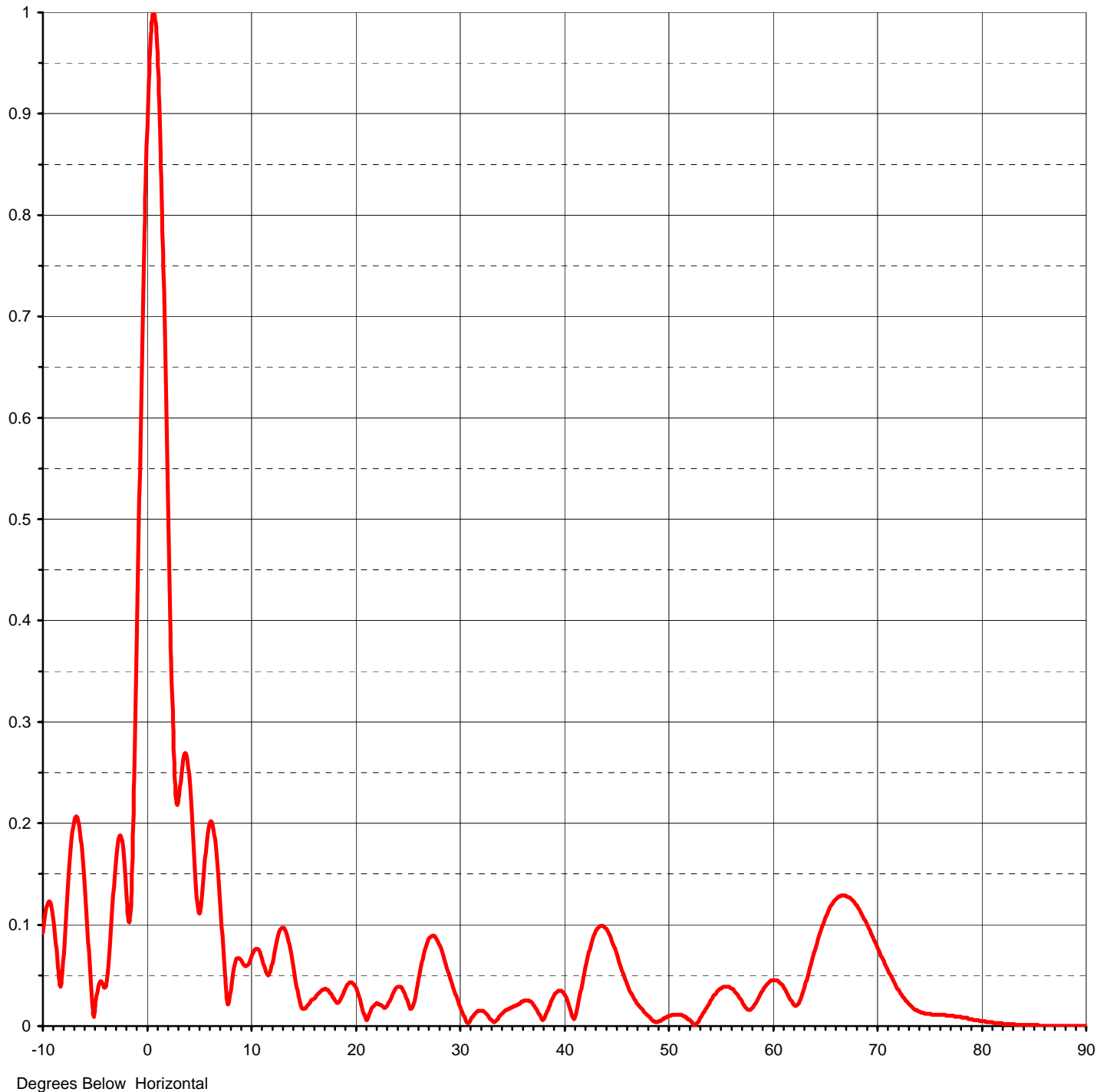


Proposal Number	DCA-10984	Revision:	3
Date	15-Feb-06		
Call Letters	WTTV-DT	Channel	48
Location	Bloomington, IN		
Customer	Tribune		
Antenna Type	TFU-24DSB-C260-R (C)		

ELEVATION PATTERN

RMS Gain at Main Lobe	24.00 (13.80 dB)
RMS Gain at Horizontal	18.80 (12.74 dB)
Calculated / Measured	Calculated

Beam Tilt	0.60 deg
Frequency	677.00 MHz
Drawing #	24B240060-90





Proposal Number **DCA-10984** Revision: **3**
 Date **15-Feb-06**
 Call Letters **WTTV-DT** Channel **48**
 Location **Bloomington, IN**
 Customer **Tribune**
 Antenna Type **TFU-24DSB-C260-R (C)**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **24B240060-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.092	2.4	0.320	10.6	0.076	30.5	0.009	51.0	0.011	71.5	0.045
-9.5	0.122	2.6	0.253	10.8	0.075	31.0	0.004	51.5	0.010	72.0	0.036
-9.0	0.106	2.8	0.220	11.0	0.070	31.5	0.012	52.0	0.007	72.5	0.028
-8.5	0.051	3.0	0.222	11.5	0.053	32.0	0.015	52.5	0.001	73.0	0.022
-8.0	0.071	3.2	0.241	12.0	0.058	32.5	0.013	53.0	0.006	73.5	0.017
-7.5	0.153	3.4	0.260	12.5	0.083	33.0	0.007	53.5	0.014	74.0	0.014
-7.0	0.202	3.6	0.269	13.0	0.097	33.5	0.005	54.0	0.023	74.5	0.012
-6.5	0.197	3.8	0.266	13.5	0.090	34.0	0.011	54.5	0.031	75.0	0.012
-6.0	0.140	4.0	0.249	14.0	0.065	34.5	0.016	55.0	0.037	75.5	0.011
-5.5	0.057	4.2	0.222	14.5	0.035	35.0	0.018	55.5	0.039	76.0	0.011
-5.0	0.017	4.4	0.187	15.0	0.017	35.5	0.021	56.0	0.038	76.5	0.011
-4.5	0.044	4.6	0.150	15.5	0.021	36.0	0.024	56.5	0.033	77.0	0.010
-4.0	0.039	4.8	0.121	16.0	0.026	36.5	0.025	57.0	0.026	77.5	0.009
-3.5	0.091	5.0	0.111	16.5	0.032	37.0	0.023	57.5	0.018	78.0	0.009
-3.0	0.163	5.2	0.123	17.0	0.036	37.5	0.015	58.0	0.017	78.5	0.008
-2.8	0.181	5.4	0.146	17.5	0.035	38.0	0.006	58.5	0.024	79.0	0.007
-2.6	0.188	5.6	0.171	18.0	0.027	38.5	0.016	59.0	0.034	79.5	0.006
-2.4	0.182	5.8	0.190	18.5	0.024	39.0	0.028	59.5	0.041	80.0	0.005
-2.2	0.162	6.0	0.200	19.0	0.035	39.5	0.035	60.0	0.045	80.5	0.004
-2.0	0.132	6.2	0.201	19.5	0.043	40.0	0.033	60.5	0.045	81.0	0.004
-1.8	0.104	6.4	0.192	20.0	0.040	40.5	0.021	61.0	0.040	81.5	0.003
-1.6	0.114	6.6	0.174	20.5	0.026	41.0	0.007	61.5	0.031	82.0	0.002
-1.4	0.177	6.8	0.150	21.0	0.008	41.5	0.027	62.0	0.022	82.5	0.002
-1.2	0.270	7.0	0.121	21.5	0.014	42.0	0.053	62.5	0.022	83.0	0.002
-1.0	0.377	7.2	0.089	22.0	0.022	42.5	0.075	63.0	0.035	83.5	0.001
-0.8	0.490	7.4	0.058	22.5	0.021	43.0	0.091	63.5	0.053	84.0	0.001
-0.6	0.602	7.6	0.031	23.0	0.019	43.5	0.099	64.0	0.071	84.5	0.001
-0.4	0.710	7.8	0.022	23.5	0.028	44.0	0.097	64.5	0.092	85.0	0.001
-0.2	0.806	8.0	0.035	24.0	0.038	44.5	0.088	65.0	0.107	85.5	0.000
0.0	0.886	8.2	0.051	24.5	0.038	45.0	0.074	65.5	0.118	86.0	0.000
0.2	0.947	8.4	0.061	25.0	0.026	45.5	0.058	66.0	0.125	86.5	0.000
0.4	0.986	8.6	0.067	25.5	0.018	46.0	0.044	66.5	0.129	87.0	0.000
0.6	1.000	8.8	0.067	26.0	0.040	46.5	0.032	67.0	0.128	87.5	0.000
0.8	0.989	9.0	0.065	26.5	0.066	47.0	0.023	67.5	0.125	88.0	0.000
1.0	0.954	9.2	0.061	27.0	0.084	47.5	0.017	68.0	0.119	88.5	0.000
1.2	0.896	9.4	0.059	27.5	0.089	48.0	0.011	68.5	0.110	89.0	0.000
1.4	0.818	9.6	0.060	28.0	0.083	48.5	0.006	69.0	0.100	89.5	0.000
1.6	0.726	9.8	0.061	28.5	0.069	49.0	0.004	69.5	0.089	90.0	0.000
1.8	0.623	10.0	0.066	29.0	0.052	49.5	0.007	70.0	0.077		
2.0	0.515	10.2	0.071	29.5	0.036	50.0	0.009	70.5	0.066		
2.2	0.411	10.4	0.075	30.0	0.021	50.5	0.011	71.0	0.055		