

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
FCC FILE NO. BPCDT-19991227AAW
STATION WOOD-DT
FACILITY ID 36838
GRAND RAPIDS, MICHIGAN
CH 7 30 KW 288 M

Technical Narrative

This Technical Exhibit supports an application for modification of the construction permit for WOOD-DT at Grand Rapids, Michigan. Station WOOD-DT is presently authorized by outstanding construction permit (BPCDT-19991227AAW, Facility ID 36838) to operate on DTV channel 7 with a nondirectional antenna effective radiated power (ERP) of 30 kilowatts (kW) and a antenna radiation center height above average terrain (HAAT) of 273 meters. By means of this instant application it is proposed to modify the WOOD-DT construction permit to increase the HAAT from 273 meters to 288 meters. No other changes are proposed.

Specifically, WOOD-DT proposes operation at the WOOD-DT authorized site (NAD27 coordinates: 42-41-14 N, 85-30-34 W) with a nondirectional antenna ERP of 30 kW and an antenna HAAT of 288 meters. It is proposed to use a Dielectric TW-7B7-R (S) nondirectional antenna mounted at the 279 meter level on the authorized tower structure. The proposed antenna radiation center height above mean sea level is 530 meters. Figure 1 provides the vertical plane radiation pattern for the proposed Dielectric type TW-7B7-R (S), horizontally polarized, nondirectional antenna system.

The FAA has issued a Determination of No Hazard in Aeronautical Study No. 2002-AGL-3009-OE. The FCC will be notified of the tower registration number upon registration of the authorized tower.

Response to Paragraph 11 - NTSC/DTV Allocation Considerations

Figure 2 is the separation study for DTV channel 7 from the proposed WOOD-DT site. The study has been used to determine the assignments requiring interference studies using the procedures outlined in the FCC's OET-69 bulletin.

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin and a 1 km grid resolution which demonstrates that the proposal complies with the interference protection provisions of Section 73.623(c)(2).¹ Interference calculations for the proposed WOOD-DT DTV operation are summarized below. It is noted that the summary only includes stations with which interference (masked or unmasked) is calculated.

Protected NTSC/DTV Station	FCC Service Population	Current Interference	Proposed Unique Interference Population*
WLS-TV, NTSC Ch. 7 Chicago, IL (Lic.)	8,449,418	4.8%	19,189 (0.23%)
WXYZ-TV, NTSC Ch. 7 Detroit, MI (Lic.)	5,607,716	2.9%	93,011 (1.66%)
WPBN-TV, NTSC Ch. 7 Traverse City, MI (Lic.)	411,777	5.0%	5,862 (1.42%)
WHIO-TV, NTSC Ch. 7 Dayton, OH (Lic.)	3,286,144	0.0%	63 (0.00%)

*Considers interference "masking" from other NTSC and DTV assignments.

From the above, it is apparent that the proposed WOOD-DT DTV operation on channel 7 complies with the FCC's 2%/10% interference standard towards all authorized NTSC (analog) and DTV assignments.

Class A Allocation Considerations

A study has been conducted which indicates that the WOOD-DT proposal will not create prohibited interference to other existing, authorized or proposed Class A stations.

Response to Paragraph 12 - City Coverage

Figure 3 is a map showing the predicted 36 dBu and 43 dBu, F(50,90), coverage contours. The Grand Rapids city limits were derived from information contained in the 2000 U.S. Census for Michigan. As indicated, all of Grand Rapids

¹ The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. **A nominal grid size resolution of 1km was employed.** A Sun based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

is located within the proposed 43 dBu contour. The distances to the predicted contours were determined in accordance with the provisions of Section 73.625. The average elevations from 3.2 to 16.1 kilometers from the transmitter site, were obtained from the NGDC 30-second terrain database and were used for determining the distances to coverage contours.

US-Canadian LOU Compliance

The proposed transmitter site is located 201.7 kilometers from the closest point of the Canadian border, or 198.3 kilometers within the US/Canadian border area. Hence, coordination of the proposed WOOD-DT operation on channel 7 with Canada may be necessary. It is noted that the proposed WOOD-DT operation complies with the requirements of the distance tables in Appendix 2 of the Letter of Understanding (LOU) between the FCC and Industry Canada.²

Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figure 4 provides a tabulation of all known authorized full service FM and TV stations within 16 kilometers (10 miles) of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed operation.

The existing site is more than 2016 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is located at Allegan, MI more than 37 kilometers to the west. The closest point of the National Radio Quiet Zone (VA/WV) is more than 568 kilometers to the southeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1663 kilometers to the west. The closest radio astronomy site operating on TV channel 37 is at North Liberty, Iowa, located more than 509 kilometers to the

² See Letter of "Understanding Between the Federal Communications Commission of the United States of American and Industry Canada Related to the Use of the 54-72 MHz, 76-88 MHz, 174-216 MHz and 470-806 MHz Bands for the Digital Television Broadcasting Service Along the Common Border".

west. It is believed that these separations are sufficient to not be a concern for coordination purposes.

Response to Paragraph 13 - Environmental Protection Act

The proposed facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 279 meters above ground level. The maximum DTV ERP is 30 kW (horizontal polarization). As shown on Figure 1, the vertical plane relative field values for the proposed antenna do not exceed 0.1 towards the tower base (-60° to -90° elevation). Therefore, presuming a "worst case" vertical plane relative field value of 0.1 for angles towards the tower base, the calculated power density at a point 2 meters above ground level is 0.0001 mW/cm^2 . This is less than 0.1% of the FCC's recommended limit of 0.2 mW/cm^2 for TV channel 7 for an "uncontrolled" environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in effect with the other stations in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing or scheduling work when the stations are at reduced power or shut down.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

W. Jeffrey Reynolds

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237-6019
(941) 329-6000
JEFF@DLR.COM

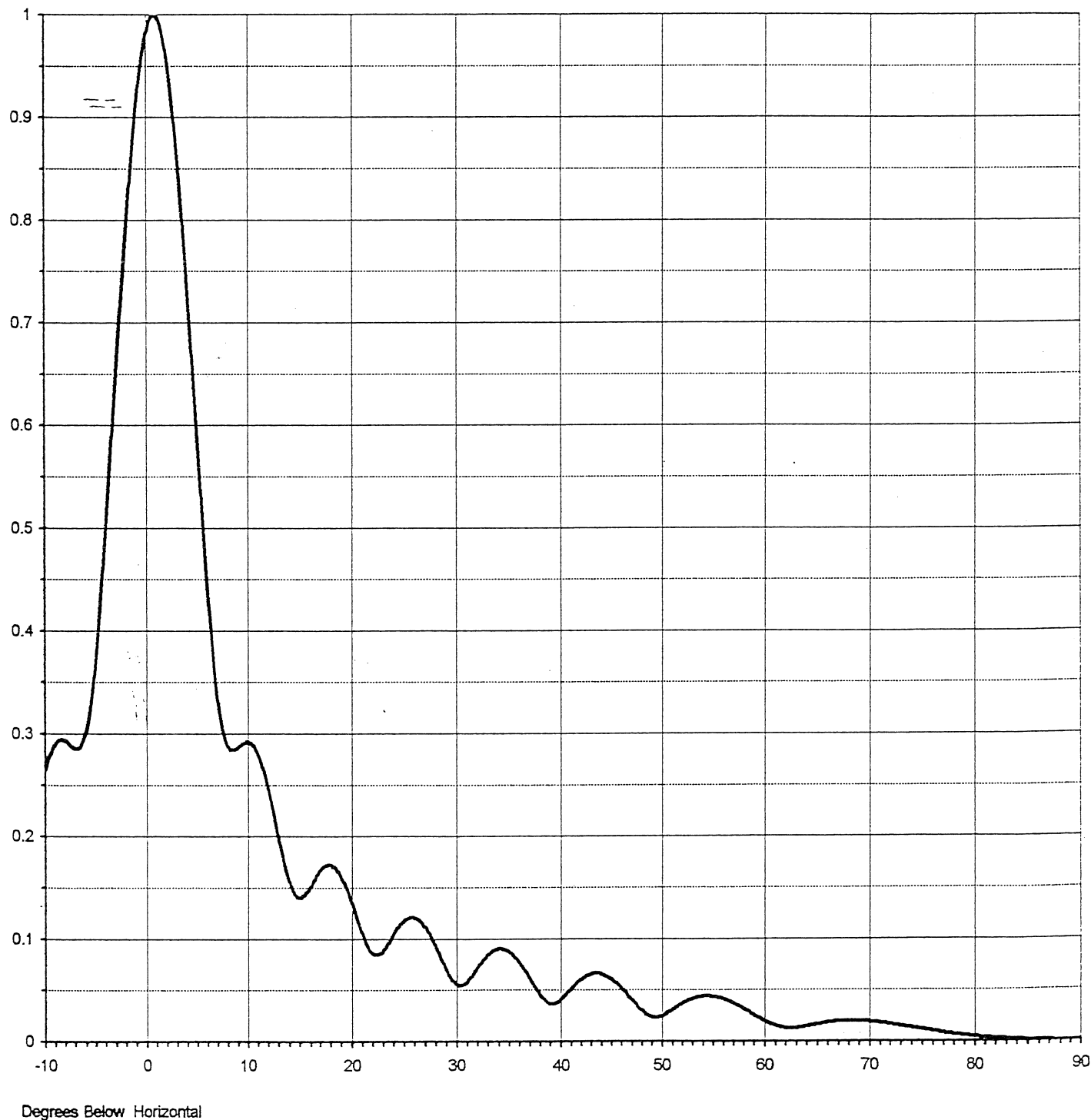
November 13, 2002

Proposal Number	DCA-7755	Revision:	1
Date	8-Nov-01		
Call Letters	WOOD-DT	Channel	7
Location	Grand Rapids, MI		
Customer			
Antenna Type	TW-7B7-R (S)		

Figure 1
Sheet 1 of 2

ELEVATION PATTERN

RMS Gain at Main Lobe	7.00 (8.45 dB)	Beam Tilt	0.75 deg
RMS Gain at Horizontal	6.80 (8.33 dB)	Frequency	177.00 MHz
Calculated / Measured	Calculated	Drawing #	16W070075-90





Proposal Number **DCA-7755** Revision: **1**
Date **8-Nov-01**
Call Letters **WOOD-DT** Channel **7**
Location **Grand Rapids, MI**
Customer
Antenna Type **TW-7B7-R (S)**

Figure 1
Sheet 2 of 2

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **16W070075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.266	2.4	0.921	10.6	0.289	30.5	0.055	51.0	0.031	71.5	0.018
-9.5	0.281	2.6	0.902	10.8	0.285	31.0	0.058	51.5	0.034	72.0	0.017
-9.0	0.291	2.8	0.881	11.0	0.281	31.5	0.064	52.0	0.037	72.5	0.016
-8.5	0.294	3.0	0.859	11.5	0.267	32.0	0.072	52.5	0.040	73.0	0.015
-8.0	0.293	3.2	0.835	12.0	0.248	32.5	0.079	53.0	0.042	73.5	0.014
-7.5	0.289	3.4	0.809	12.5	0.226	33.0	0.085	53.5	0.044	74.0	0.014
-7.0	0.286	3.6	0.782	13.0	0.202	33.5	0.089	54.0	0.044	74.5	0.013
-6.5	0.289	3.8	0.755	13.5	0.178	34.0	0.091	54.5	0.045	75.0	0.012
-6.0	0.303	4.0	0.726	14.0	0.159	34.5	0.090	55.0	0.044	75.5	0.011
-5.5	0.333	4.2	0.696	14.5	0.146	35.0	0.088	55.5	0.043	76.0	0.010
-5.0	0.378	4.4	0.667	15.0	0.141	35.5	0.084	56.0	0.042	76.5	0.010
-4.5	0.437	4.6	0.636	15.5	0.143	36.0	0.078	56.5	0.040	77.0	0.009
-4.0	0.505	4.8	0.606	16.0	0.151	36.5	0.071	57.0	0.038	77.5	0.008
-3.5	0.579	5.0	0.576	16.5	0.159	37.0	0.063	57.5	0.035	78.0	0.007
-3.0	0.655	5.2	0.546	17.0	0.167	37.5	0.054	58.0	0.032	78.5	0.007
-2.8	0.685	5.4	0.516	17.5	0.172	38.0	0.047	58.5	0.030	79.0	0.006
-2.6	0.715	5.6	0.488	18.0	0.173	38.5	0.041	59.0	0.027	79.5	0.005
-2.4	0.744	5.8	0.460	18.5	0.170	39.0	0.037	59.5	0.024	80.0	0.005
-2.2	0.772	6.0	0.434	19.0	0.162	39.5	0.038	60.0	0.021	80.5	0.004
-2.0	0.800	6.2	0.409	19.5	0.151	40.0	0.041	60.5	0.018	81.0	0.004
-1.8	0.826	6.4	0.386	20.0	0.138	40.5	0.046	61.0	0.016	81.5	0.004
-1.6	0.850	6.6	0.366	20.5	0.122	41.0	0.051	61.5	0.015	82.0	0.003
-1.4	0.874	6.8	0.347	21.0	0.107	41.5	0.056	62.0	0.013	82.5	0.003
-1.2	0.895	7.0	0.331	21.5	0.095	42.0	0.061	62.5	0.013	83.0	0.002
-1.0	0.915	7.2	0.317	22.0	0.087	42.5	0.064	63.0	0.013	83.5	0.002
-0.8	0.933	7.4	0.306	22.5	0.085	43.0	0.066	63.5	0.014	84.0	0.002
-0.6	0.949	7.6	0.298	23.0	0.088	43.5	0.067	64.0	0.015	84.5	0.002
-0.4	0.963	7.8	0.292	23.5	0.096	44.0	0.066	64.5	0.016	85.0	0.001
-0.2	0.975	8.0	0.288	24.0	0.104	44.5	0.064	65.0	0.017	85.5	0.001
0.0	0.984	8.2	0.285	24.5	0.112	45.0	0.062	65.5	0.018	86.0	0.001
0.2	0.992	8.4	0.285	25.0	0.118	45.5	0.058	66.0	0.019	86.5	0.001
0.4	0.997	8.6	0.285	25.5	0.121	46.0	0.053	66.5	0.019	87.0	0.001
0.6	1.000	8.8	0.286	26.0	0.122	46.5	0.048	67.0	0.020	87.5	0.000
0.8	1.000	9.0	0.288	26.5	0.119	47.0	0.042	67.5	0.020	88.0	0.000
1.0	0.998	9.2	0.289	27.0	0.113	47.5	0.037	68.0	0.020	88.5	0.000
1.2	0.994	9.4	0.291	27.5	0.105	48.0	0.031	68.5	0.020	89.0	0.000
1.4	0.987	9.6	0.292	28.0	0.095	48.5	0.027	69.0	0.020	89.5	0.000
1.6	0.978	9.8	0.292	28.5	0.083	49.0	0.025	69.5	0.020	90.0	0.000
1.8	0.967	10.0	0.293	29.0	0.072	49.5	0.024	70.0	0.019		
2.0	0.954	10.2	0.292	29.5	0.063	50.0	0.025	70.5	0.019		
2.2	0.939	10.4	0.291	30.0	0.057	50.5	0.028	71.0	0.018		

DTV to NTSC Separation Study

Job Title : Proposed WOOD-DT, Grand Rapids, MI Separation Buffer 32 km
 Zone : 1 FCC TV DB Date : 11/13/02
 Channel 7 (174-180 MHz) Coordinates : 42-41-14 85-30-34

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)	Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
WPBN-T LIC	TRAVERSE CITY MI BLCT	-1578	7(+) II	316 411	44-16-33 85-42-49	354.7	177.28 -67.32	244.6 SHORT
WXYZ-T LIC	DETROIT MI BLCT	-2184	7(-) I	316 305	42-28-15 83-15-00	96.6	187.06 -57.54	244.6 SHORT
WLS-TV LIC	CHICAGO IL BLCT	-19980309	7(o) I	81.3 457	41-52-44 87-38-08	243.5	197.03 -47.57	244.6 SHORT
WMKE-L LIC	MILWAUKEE WI BLTVL	-20000630	7(+) 0	3 0	43-02-20 87-55-04	282.1	200.67 -43.93	244.6 SHORT
WOOD-T LIC	GRAND RAPIDS MI BLCT	-19891121	8(+) I	316 302	42-41-13 85-30-35	215.8	0.05 8.95	9.0/125.0 CLOSE

** End of TV Separation Study for Channel 7 **

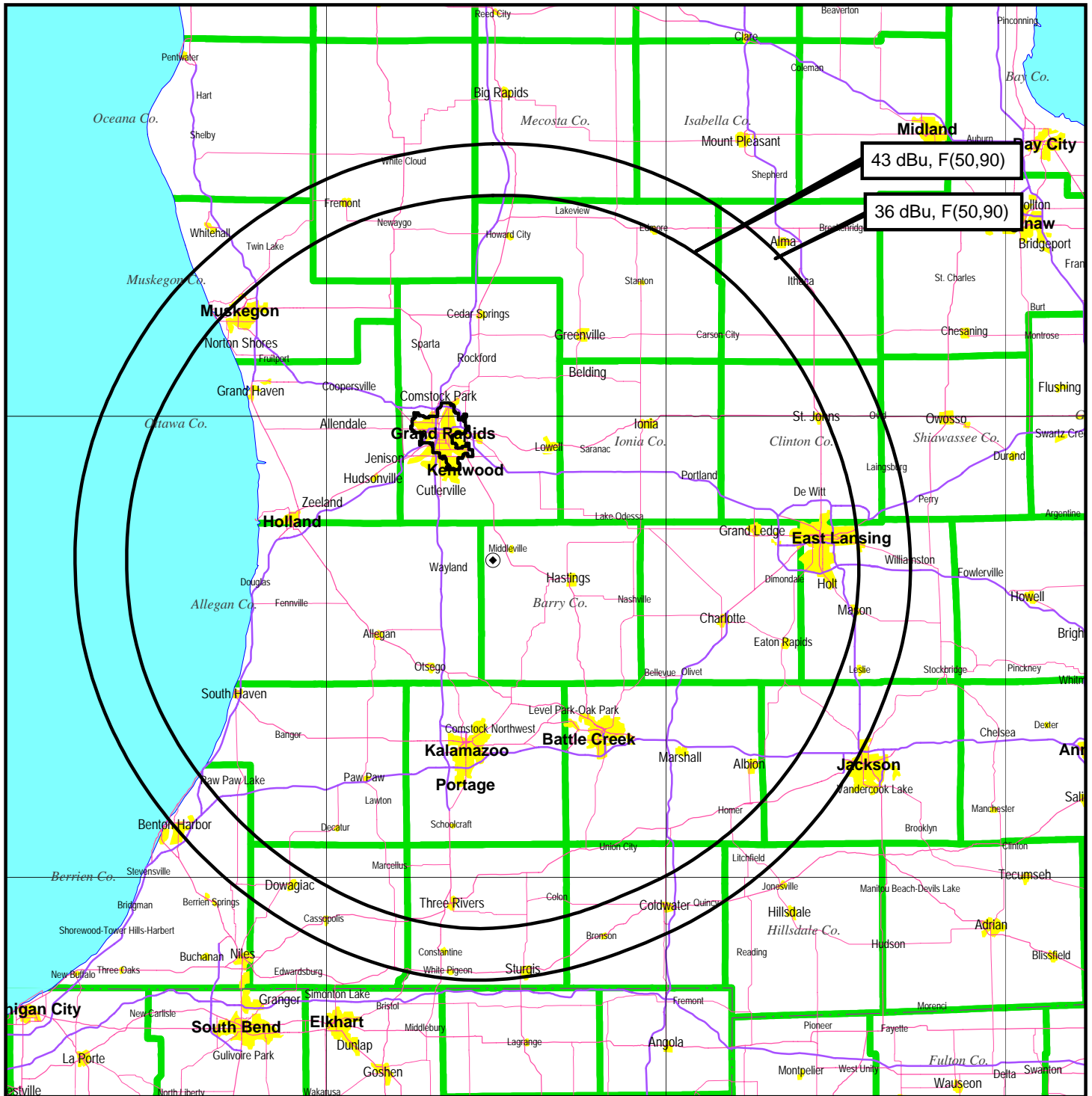
DTV to DTV Separation Study

Job Title : Proposed WOOD-DT, Grand Rapids, MI Separation Buffer 32 km
 Zone : 1 FCC DTV DB Date: 11/13/02
 Channel 7 (174-180 MHz) Coordinates : 42-41-14 85-30-34

Call Status	City St	FCC File No.	Channel Zone	ERP(kW) HAAT(m)	Latitude Longitude	Bear. True	Dist. (km)	Req. (km)
WOOD-D CP	GRAND RAPIDS MI BPCDT	-19991227	7 I	30 273	42-41-14 85-30-34	0.0	0.00	
DWOOD DTVALT	GRAND RAPIDS MI		7 I	15.1 302	42-41-14 85-30-34	0.0	0.00	

** End of DTV Separation Study for Channel 7 **

Figure 2



-30 0 30 60 90



Kilometres

PREDICTED COVERAGE CONTOURS
DTV STATION WOOD-DT
GRAND RAPIDS, MICHIGAN
CH 7 30 KW 288 M

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

du Treil, Lundin, and Rackley

Figure 4, Sheet 1 of 2

Proposed WOOD-DT, Grand Rapids, MI

Coordinates: 424114 853034

Channel Range: 2-69

Range: 16

Date: 11/13/2002

CDBS Tv Inquiry List

Page: 1

Rec Type	Facility Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bearing	Dist. (km)
C	36838	WOOD-T	CP	7	DT		GRAND RAPIDS	MI	N	42-41-14	085-30-34	30.000	273	515	0	0
C	36838	WOOD-T	LIC	8	TV		GRAND RAPIDS	MI	N	42-41-13	085-30-35	316.000	302	546	215.7	0.04
C	68433	WXMI	STA	19	DS		GRAND RAPIDS	MI	D	42-41-15	085-31-57	70.000	306	546	270.9	1.89
C	68433	WXMI	CP	19	DT		GRAND RAPIDS	MI	D	42-41-15	085-31-57	725.000	306	546	270.9	1.89
C	68433	WXMI	APP	17	TV		GRAND RAPIDS	MI	N	42-41-15	085-31-57	1700.00	334	574	270.9	1.89
C	68433	WXMI	LIC	17	TV		GRAND RAPIDS	MI	N	42-41-15	085-31-57	1290.00	334	574	270.9	1.89
C	74195	WWMT	CP	2	DT		KALAMAZOO	MI	N	42-37-56	085-32-16	6.900	305	553	200.7	6.54
C	74195	WWMT	LIC	3	TV		KALAMAZOO	MI	N	42-37-56	085-32-16	100.000	305	553	200.7	6.54
C	10212	WOTV	CP	20	DT		BATTLE CREEK	MI	N	42-34-15	085-28-07	270.000	311	569	165.5	13.36
C	10212	WOTV	LIC	41	TV		BATTLE CREEK	MI	N	42-34-15	085-28-07	5000.00	329	587	165.5	13.36
C	11033	WLLA	APP	45	DT		KALAMAZOO	MI	D	42-33-52	085-27-31	1000.00	330.8	591	163.0	14.26
C	11033	WLLA	LIC	64	TV		KALAMAZOO	MI	D	42-33-52	085-27-31	2510.00	319	578	163.0	14.26

du Treil, Lundin, and Rackley**Figure 4, Sheet 2 of 2****Proposed WOOD-DT, Grand Rapids, MI****Coordinates: 424114 853034 Frequency Range: 200-300****Range: 16**

Date: 11/13/2002

CDBS FM Inquiry List

Page: 1

Rec Type	Fac Id	Call	Status	Chan	Svc Class	Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bear	Dist. (km)
C	66309	WVGR	LIC	281	FM	B	GRAND RAPIDS	MI		42-41-13	085-30-35	108.000	183.0	427.0	215.7	0.0
C	73605	WOOD-F	LIC	289	FM	B	GRAND RAPIDS	MI	N	42-41-13	085-30-35	265.000	247.0	492.0	215.7	0.0
C	73606	WBCT	LIC	229	FM	B	GRAND RAPIDS	MI		42-37-56	085-32-16	320.000	238.0	486.0	200.8	6.5
C	121788	None	APP	206	FM	A	HOPE	MI	N	42-37-20	085-25-00	0.650			133.6	10.5
C	73605	WOOD-F	APP	289	FM	B	GRAND RAPIDS	MI	D	42-47-57	085-28-47	50.000	136.0	375.0	11.0	12.7