ENGINEERING STATEMENT
RE DTV BROADCAST ENGINEERING DATA
APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
ON BEHALF OF
RED RIVER BROADCAST CO., LLC
KBRR-DT, THIEF RIVER FALLS, MINNESOTA
CHANNEL 10 9.3 KW ERP 198.1 METERS HAAT

JUNE 2008

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington)
) ss
District of Columbia)

Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 18th day of June, 2008.

CAROLYN L. LYONS NOTARY PUBLIC DISTRICT OF COLUMBIA

Notary Public

My Commission Expires: 2/28/2013

Introduction

This engineering statement has been prepared on behalf of Red River Broadcast Co., LLC, ("Red River"), licensee of KBRR(TV), Thief River Falls, Minnesota, in support of its maximization request for post-transition DTV operation. KBRR-DT has received a post-transition authorization, FCC File No. BPCDT-20080430ACA.[1]

KBRR(TV) is licensed to operate on NTSC television Channel 10 with a maximum visual directional ERP of 123 kW and an antenna height above average terrain ("HAAT") of 183 meters (600.4 feet). In Appendix B of the revised DTV Table of Allotments[2], Red River has been allocated a post-transition DTV operation of 9.7 kW directional ERP and HAAT of 113 meters.

Maximization

The proposed KBRR-DT post-transition facilities will expand the noise-limited service contour beyond that established by Appendix B of the *Memorandum Opinion and Order*[3] as permitted by the FCC Public Notice dated May 30, 2008.[4] The KBRR-DT post-transition operation will be from a new transmitting site located approximately 18.2 km (11.3 miles) at 254.2° True

---

[1]Engineering Statement Re DTV Broadcast Engineering Data Application for Construction Permit on Behalf of Red River Broadcast Co., LLC, KBRR-DT, Thief River Falls, Minnesota, Channel 10, 0.59 kW ERP, 192 Meters HAAT April 2008".

[2]"In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service", MM Docket 87-268, Memorandum Opinion and Order on Reconsideration of the Seventh Report and Order and Eighth Report and Oder (FCC 08-72) Released March 6, 2008.

[3]Ibid .

[4]"Commission Lifts the Freeze on the Filing of Maximization Applications and Petitions for Digital Channel Substitutions Effective Immediately", DA 08-1213, Released May 30, 2008.

North from the Appendix B DTV allotment site. The existing tower structure at the KBRR-DT Appendix B Allotment site cannot accommodate a replacement of the current top-mounted directional antenna. Therefore, Red River proposes to relocate to an existing tower structure which can accommodate an additional side-mounted DTV antenna. An interference study is included (Table I) and does not exceed the 0.5 percent new interference criteria to any other potentially affected station in Appendix B of the DTV Table. KBRR-DT proposes to construct DTV facilities of 9.3 kW non-directional ERP at a height above average terrain of 198.1 meters.

Proposed Parameters

The KBRR-DT post-transition DTV antenna will be side-mounted on an existing tower. The existing tower has a total overall structure height above ground of 228.6 meters (750 feet). The existing transmitter is located 0.6 km North and 2.6 km East of Euclid, Minnesota.

There is no proposed change in overall height and therefore an FAA aeronautical study is not required. The FCC antenna structure registration number of the existing tower is 1227695. Exhibit E-1 is a vertical sketch of the existing tower and top-mounted transmitting antenna.

The geographic coordinates of the proposed site are as follows:

North Latitude: 47° 58' 38"

West Longitude: 96° 36' 18"

NAD-27

Equipment Data

Antenna: Dielectric, Model THV6A10-R-04 SM, (or equivalent) with 1.5° electrical beam tilt. The antenna elevation pattern and the associated tabulated data per Section 73.625 of the FCC Rules are included as Exhibits E-2.

Transmission Line: 201.2 meters (660 ft) of rigid MACXLine, Type MACX350, 3-1/8", 50 ohm or equivalent (attenuation: 0.134 dB/100 ft)

Power Data

Transmitter Output	1.90 kW	2.788 dBk
Transmission Line Efficiency/Loss	81.6%	0.884 dB
Input Power to the Antenna	1.55 kW	1.904 dBk
Antenna Gain	6	7.78 dB
Effective Radiated Power	9.3 kW	9.69 dBk

Elevation Data

Elevation of site above mean sea level	275.8 meters 904.9 feet
Center of radiation of Channel 10 antenna above ground	201.2 meters 660 feet
Overall height above ground of antenna structure (including appurtenances)	228.6 meters 750 feet
Center of radiation of Channel 10 antenna above mean sea level	477 meters 1564.9 feet
Overall height above mean sea level of tower (including beacon)	504.4 meters 1654.9 feet

Antenna height above average terrain 198.1 meters

Note: Slight height differences may result due to conversion to metric.

Interference Analysis

A study of predicted interference (Table I) caused by the proposed KBRR-DT post-transition has been performed using a version of the Longley-Rice program as described in OET Bulletin No. 69 (February 6, 2004) and the Public Notice, "Additional Application Processing Guidelines for Digital Television (DTV)" (August 1998). The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output handling) for the program to run on a Windows XP platform. Comparison of service/interference areas and populations indicates that this model closely matches the FCC's evaluation program. Best efforts have been made to use data and calculations identical to the FCC's program. Any slight differences are attributable to compiler, operating system and/or processor characteristics. The effect of any variance in calculated population values versus the FCC's program is minimized when differencing a given model's results, such as calculating new interference as total interference less baseline interference. Any variance effect is further reduced when using ratios of calculated population values such as measuring the incremental population affected as a percent of the total population served. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 4 km^2 using 3-second terrain data sampled approximately every 1.0 km at one degree azimuth intervals with 2000 census centroids. The Longley-Rice analysis considers all post-transition DTV allotments as listed in Appendix B of the *7th Report & Order*. The results of the analysis predict that the proposed nondirectional post-transition operation of KBRR-DT will not

cause any new interference to other potentially affected stations as listed in Appendix B of the *7th Report & Order*.

Coverage

The average elevation data for 3.2 to 16.1 km along each radial has been determined from the NGDC 3-second computerized terrain database. The F(50,90) DTV coverage contours have been computed from reference to the propagation data for Channels 7-13, as published by the FCC in Figure 10 and Figure 10a, Section 73.699 of the FCC Rules and Regulations. Utilizing the formula in Section 73.625(b)(2) of the Rules for the effective heights, it is found that the depression angle, A_h, varies from 0.365 to 0.400 degrees.

Table II includes the distances to the F(50,90) 43 and 36 dBu coverage contours, the average elevation 3 to 16 km, and the antenna effective heights for each radial spaced 45 degrees in azimuth. Exhibit E-3 provides a map of the computed coverage contours.

Additional Broadcast Facilities

There are no AM stations located within 3.22 km of the existing tower site. There are three FM stations and one DTV station, other than the proposed post-transition KBRR-DT facilities, located within 0.5 km of the transmitting site.

FCC Rule, Section 1.1307

The proposed operation based upon the current OET Bulletin No. 65, Edition No. 97-01, dated August 1997 and Supplement A meets the provisions of the FCC radio frequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules. Provisions will be

made to reduce power or to terminate the transmitter emissions, as appropriate, when it is necessary for authorized personnel to be on the tower.

The following equations from OET Bulletin No. 65 have been used to calculate the predicted radiofrequency fields at 2 meters above ground at the base of the tower:

Digital Television Broadcast Stations
$S = [(33.4)(F^2)(ERP^2)]/R^2$

S = Power Density in Microwatts/sq. cm ($\mu W/cm^2$)
F = Relative Field Factor in the downward direction of interest (-60° to -90° elevation)
ERP_V = Total Peak Visual ERP in Watts
ERP_A = Total Aural ERP in Watts
ERP = Power in Watts
R = Distance from 2 meters above ground to center of radiation in meters

Station	Status	ERP (kW)	Frequency (MHz)	Ch	RCAGL (m)	Relative Field	S ($\mu W/cm^2$)	RFF (%)
KCGE-DT	Licensed	105	482-488	16	219.4	0.15	1.67	0.52
KBRR-DT	**Proposed**	9.3	192-198	10	201.2	0.15	<0.01	0.01
						Total		**0.53%**

For the post-transition operation, KBRR-DT proposes to use a side-mounted Dielectric, Model THV6A10-R-04 SM antenna (or equivalent). Using a relative field factor of 0.15 based on the manufacturer's antenna elevation pattern and the procedures outlined in OET Bulletin 65, the maximum RFF resulting from the proposed operation is less than 0.01 $\mu W/cm^2$. This is less than 0.01% of the 200 $\mu W/cm^2$ maximum human exposure to RFF recommended by the current FCC guidelines for the general population.

The total contribution by all post-transition broadcast facilities and the addition of the proposed post-transition operation of KBRR-DT at 2 meters above ground level is less than 0.53% of the current FCC guidelines for maximum permissible exposure ("MPE") for the general population/uncontrolled exposure.

Authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the licensee indicates:

(a)(1) The existing tower is not located in an officially designated wilderness area.

(a)(2) The existing tower is not located in an officially designated wildlife preserve.

(a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.

(a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.

(a)(4) The proposed facilities are located on a tower which was built prior to the adoption of WT Docket No. 03-128 and therefore grandfathered, and have not affected any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.

(a)(5) The existing tower is not located near any known Indian religious sites.

(a)(6) The existing tower is not located in a flood plain.

(a)(7) The installation of the DTV facilities on an existing guyed tower will not involve a significant change in surface features of the ground in the vicinity of the tower.

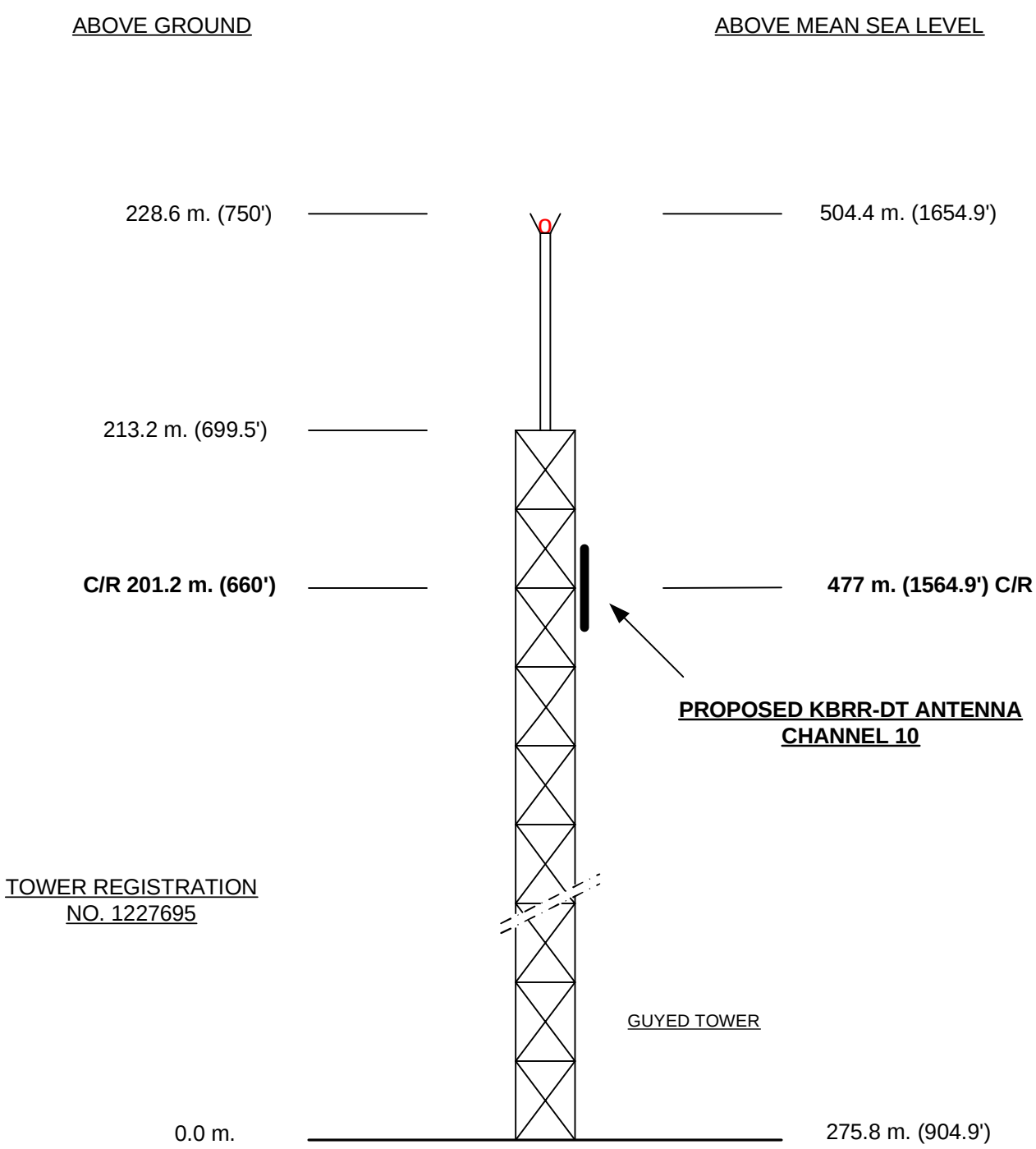
(a)(8) No lighting changes are proposed unless required by the FAA.

(b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I
LONGLEY-RICE ANALYSIS
FOR THE POST-TRANSITION MAXIMIZATION OPERATION OF
KBRR-DT, THIEF RIVER FALLS, MINNESOTA
CH 10 9.3 KW ND ERP 198.1 METERS HAAT
JUNE 2008

Station	City	State	Channel	Distance km	Status	FCC File No.	Interference From KBRR-DT Appendix B Allotment	**Additional** Interference From KBRR-DT Proposed Operation
KAWE	Bemidji	MN	9	160.9	7th R&O	BPEDT-20000203AAF	New Interference	No New Interference
KWCM-TV	Appleton	MN	10	315.7	7th R&O	BPEDT-20000501AIK	0.0%	No New Interference
WDIO-TV	Duluth	MN	10	362.3	7th R&O	BPCDT-19991027ABA	0.0%	No New Interference
KMOT	Minot	ND	10	350.8	7th R&O	BPCDT-19991015AAW	New Interference	No New Interference



(NOT TO SCALE)

EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED DTV OPERATION OF
KBRR-DT, THIEF RIVER FALLS, MINNESOTA
JUNE 2008

COHEN, DIPPELL and EVERIST, P.C. Consulting Engineers Washington, D.C.

EXHIBIT E-2

ANTENNA DATA

KBRR-DT, THIEF RIVER FALLS, MINNESOTA

Dielectric

Proposal #: **C-02593** Antenna Type: **THV-6A10-R O4 SM** Channel: **10 DTV**

Call Letters: **KBRR-DT** Location: **Thief River Falls, MN**

Electrical Specifications		**Value** Ratio	dBd	**Remarks**
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	6.0	7.78	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	5.5	7.40	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol			
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol			
	Vpol			
Circularity		+/- 1.0 dB		In free space
Axial Ratio		dB		
Beam Tilt		1.50 deg		
Average Power		25 kW	13.98 dBk	
Antenna Input: T/L		3-1/8 in	50.0 ohm	Type: EIA/DCA
Maximum Antenna Input VSWR		Channel	1.15 : 1	Notes:
Patterns	Azimuth	THV-O4		
	Elevation	06V060150	06V060150-90	

Mechanical Specifications		**Metric**	**English**		**Preliminary**
Height with Lightning Protector	H4	m	ft	**Side mounted**	
Height Less Lightning Protector	H2	12.2 m	40.1 ft	TIA/EIA-222-F.	
Height of Center of Radiation	H3	6.0 m	20.1 ft		
Basic Wind Speed	V	128.7 km/h	80 mi/h		
Force Coeff. x Projected Area	CaAc	9.4 m²	101.3 ft²	Excludes Mounts & input	
Moment Arm	D1	m	ft		
Force Coeff. x Projected Area	CaAc	m²	ft²		
Moment Arm	D3	m	ft		
Pole Bury Length	D2	m	ft		
Weight	W	0.7 t	1,610 lbs	Excludes Mounts & input	
Radome					

Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F. **Mechanical Loads Exclude Mounts**

NOTE:

Prepared By : SWB Approved By : JLS

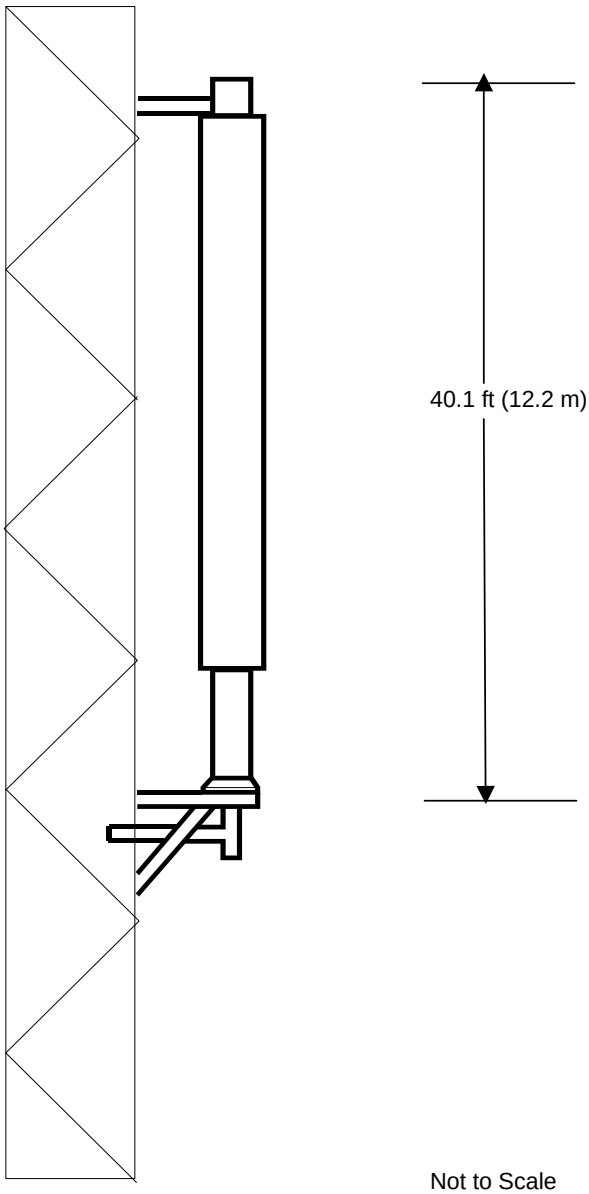
Original Date : 8-May-08

Dielectric

Proposal #:	C-02593	Antenna Type:	THV-6A10-R O4 SM	Channel:	10 DTV
Call Letters:	KBRR-DT	Location:	Thief River Falls, MN		

Mechanical Specifications
TIA/EIA-222-F. @ 80 mi/h (128.7 km/h)

CaAc = 101.3 ft²(9.4 m²)
W = 1610 lbs(0.7 t)



THV-6A10-R O4 SM
Channel: D10

XXX-00000-1

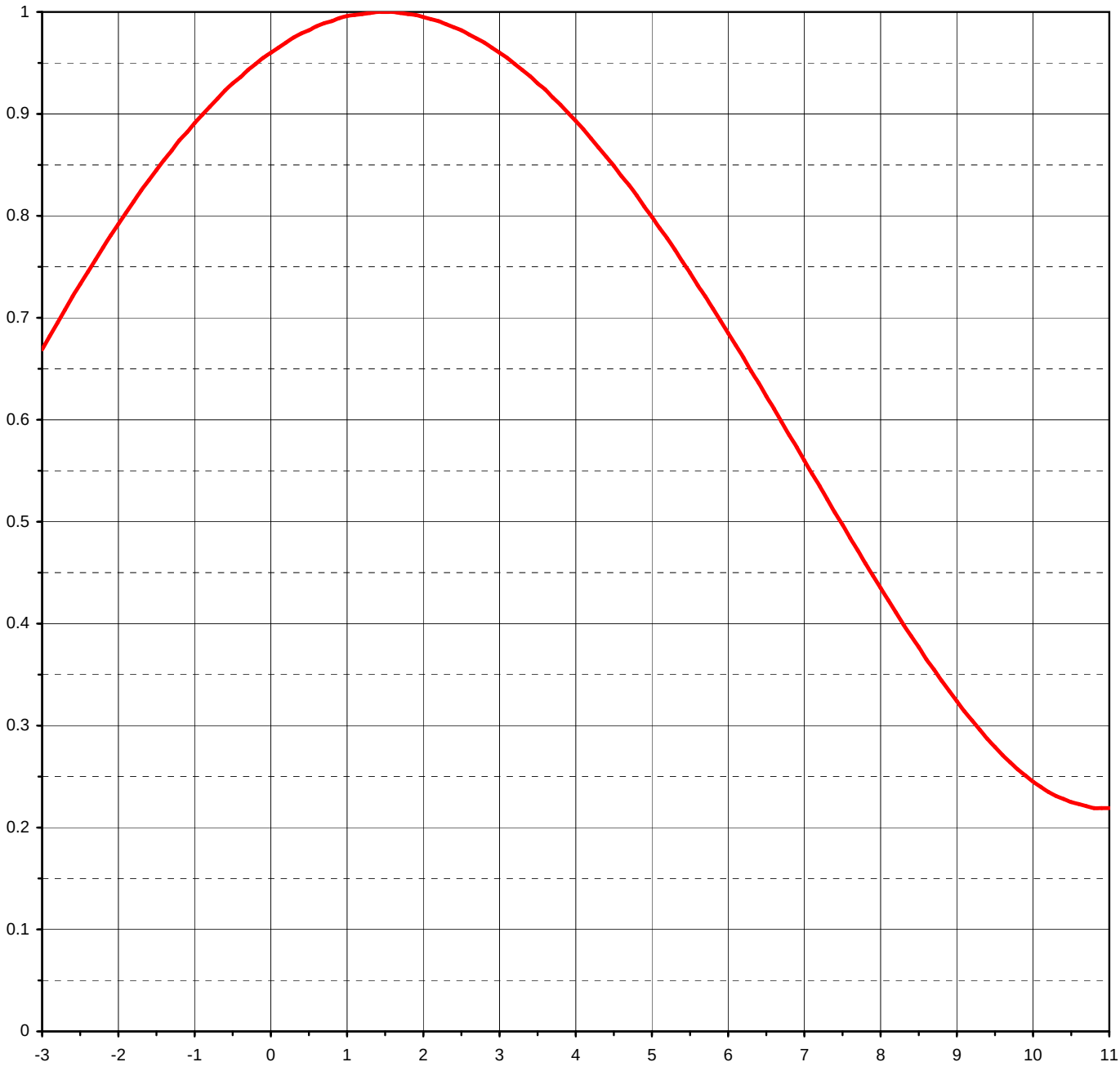
Not to Scale

Proposal Number	**C-02593**		
Date	**8-May-08**		
Call Letters	**KBRR-DT**	Channel	**10**
Location	**Thief River Falls, MN**		
Customer	**Red River Broadcasting**		
Antenna Type	**THV-6A10-R O4 SM**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**6.00**	**(7.78 dB)**	
RMS Gain at Horizontal	**5.50**	**(7.40 dB)**	
Calculated / Measured	**Calculated**		

Beam Tilt	**1.50 deg**
Frequency	**195.00 MHz**
Drawing #	**06V060150**

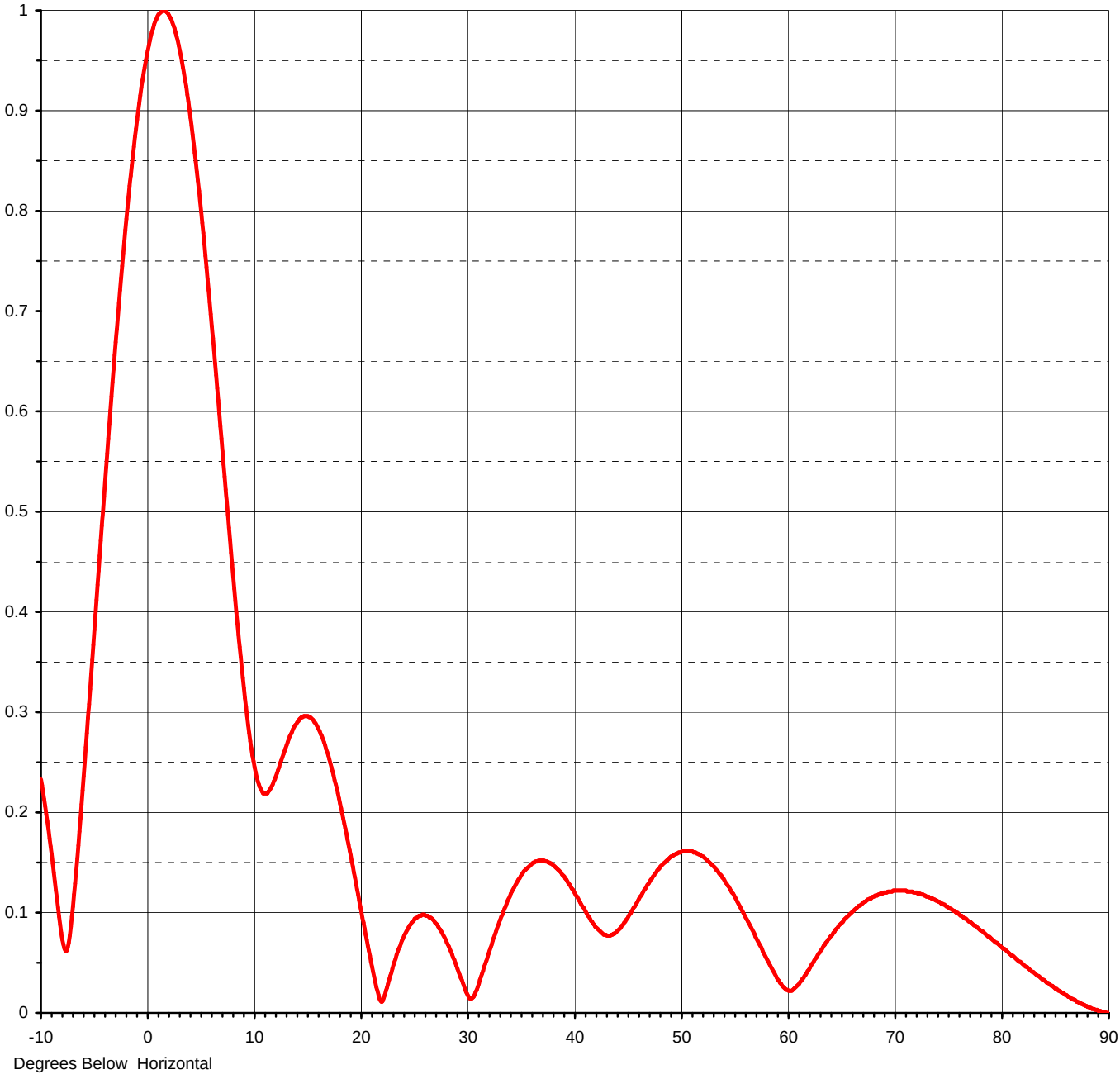


Proposal Number	**C-02593**		
Date	**8-May-08**		
Call Letters	**KBRR-DT**	Channel	**10**
Location	**Thief River Falls, MN**		
Customer	**Red River Broadcasting**		
Antenna Type	**THV-6A10-R O4 SM**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**6.00**	**(7.78 dB)**	
RMS Gain at Horizontal	**5.50**	**(7.40 dB)**	
Calculated / Measured	**Calculated**		

Beam Tilt	**1.50 deg**
Frequency	**195.00 MHz**
Drawing #	**06V060150-90**



Dielectric

Proposal Number	**C-02593**
Date	**8-May-08**
Call Letters	**KBRR-DT** Channel **10**
Location	**Thief River Falls, MN**
Customer	**Red River Broadcasting**
Antenna Type	**THV-6A10-R O4 SM**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **06V060150-90**

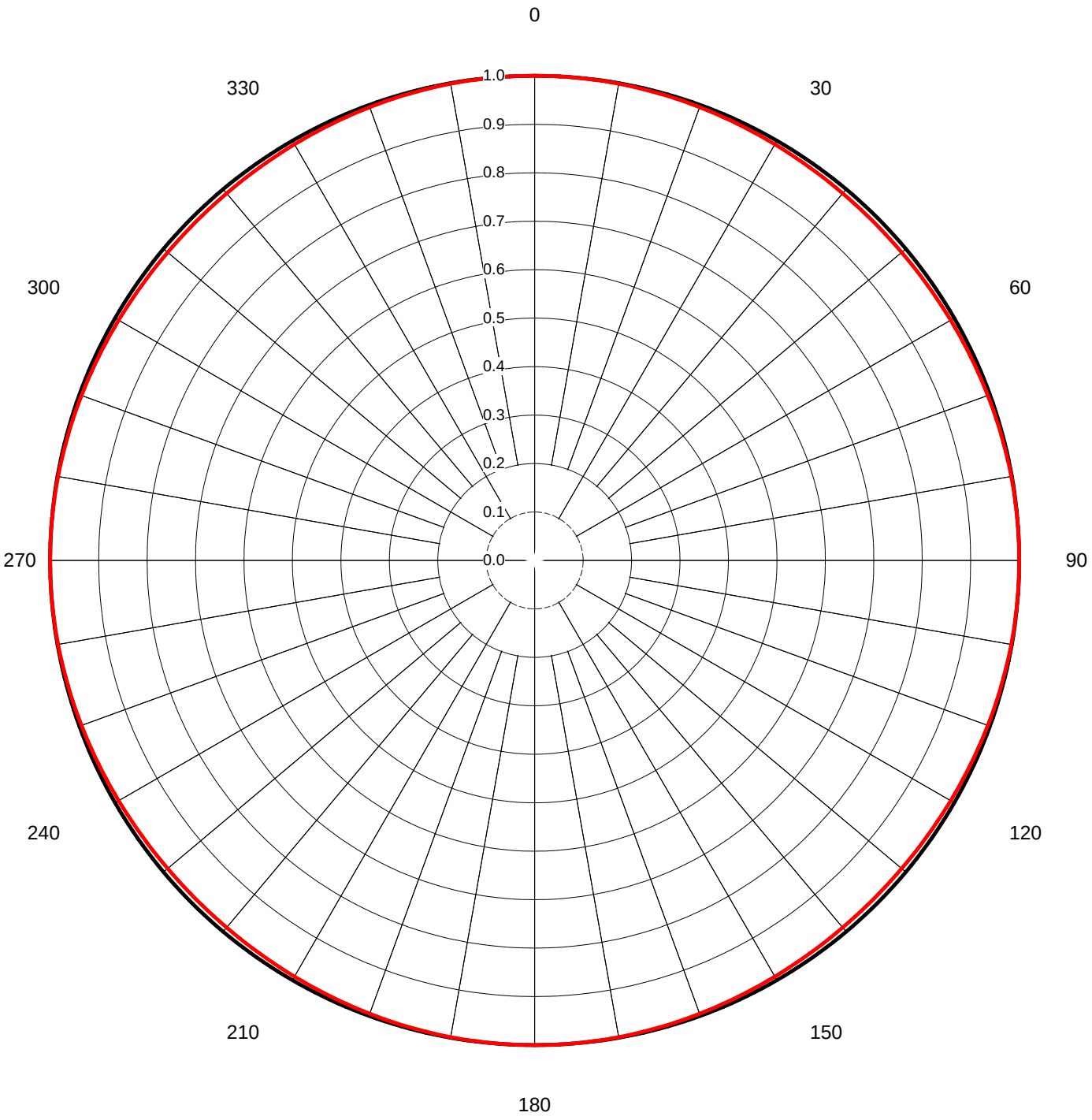
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.233	2.4	0.985	10.6	0.225	30.5	0.015	51.0	0.161	71.5	0.121
-9.5	0.198	2.6	0.978	10.8	0.221	31.0	0.026	51.5	0.159	72.0	0.120
-9.0	0.158	2.8	0.970	11.0	0.219	31.5	0.042	52.0	0.156	72.5	0.118
-8.5	0.114	3.0	0.960	11.5	0.222	32.0	0.059	52.5	0.152	73.0	0.116
-8.0	0.073	3.2	0.949	12.0	0.233	32.5	0.075	53.0	0.147	73.5	0.114
-7.5	0.065	3.4	0.937	12.5	0.249	33.0	0.090	53.5	0.141	74.0	0.111
-7.0	0.106	3.6	0.924	13.0	0.264	33.5	0.104	54.0	0.134	74.5	0.108
-6.5	0.167	3.8	0.909	13.5	0.278	34.0	0.116	54.5	0.126	75.0	0.105
-6.0	0.236	4.0	0.893	14.0	0.288	34.5	0.127	55.0	0.117	75.5	0.102
-5.5	0.308	4.2	0.876	14.5	0.295	35.0	0.136	55.5	0.107	76.0	0.098
-5.0	0.382	4.4	0.858	15.0	0.296	35.5	0.143	56.0	0.097	76.5	0.094
-4.5	0.456	4.6	0.839	15.5	0.293	36.0	0.148	56.5	0.087	77.0	0.091
-4.0	0.530	4.8	0.820	16.0	0.285	36.5	0.151	57.0	0.076	77.5	0.087
-3.5	0.601	5.0	0.799	16.5	0.273	37.0	0.152	57.5	0.066	78.0	0.082
-3.0	0.669	5.2	0.778	17.0	0.257	37.5	0.151	58.0	0.055	78.5	0.078
-2.8	0.695	5.4	0.755	17.5	0.237	38.0	0.148	58.5	0.045	79.0	0.074
-2.6	0.721	5.6	0.732	18.0	0.214	38.5	0.143	59.0	0.035	79.5	0.070
-2.4	0.745	5.8	0.709	18.5	0.189	39.0	0.137	59.5	0.027	80.0	0.065
-2.2	0.769	6.0	0.685	19.0	0.162	39.5	0.129	60.0	0.023	80.5	0.061
-2.0	0.792	6.2	0.661	19.5	0.135	40.0	0.121	60.5	0.023	81.0	0.057
-1.8	0.814	6.4	0.636	20.0	0.106	40.5	0.112	61.0	0.028	81.5	0.052
-1.6	0.835	6.6	0.611	20.5	0.078	41.0	0.103	61.5	0.035	82.0	0.048
-1.4	0.855	6.8	0.585	21.0	0.051	41.5	0.094	62.0	0.043	82.5	0.044
-1.2	0.874	7.0	0.560	21.5	0.026	42.0	0.086	62.5	0.052	83.0	0.040
-1.0	0.891	7.2	0.535	22.0	0.011	42.5	0.081	63.0	0.060	83.5	0.036
-0.8	0.907	7.4	0.509	22.5	0.025	43.0	0.078	63.5	0.068	84.0	0.032
-0.6	0.923	7.6	0.484	23.0	0.044	43.5	0.078	64.0	0.076	84.5	0.028
-0.4	0.936	7.8	0.459	23.5	0.061	44.0	0.081	64.5	0.084	85.0	0.024
-0.2	0.949	8.0	0.435	24.0	0.074	44.5	0.087	65.0	0.090	85.5	0.021
0.0	0.960	8.2	0.411	24.5	0.085	45.0	0.094	65.5	0.096	86.0	0.018
0.2	0.970	8.4	0.388	25.0	0.092	45.5	0.103	66.0	0.101	86.5	0.014
0.4	0.979	8.6	0.365	25.5	0.097	46.0	0.112	66.5	0.106	87.0	0.011
0.6	0.986	8.8	0.344	26.0	0.098	46.5	0.121	67.0	0.110	87.5	0.009
0.8	0.991	9.0	0.324	26.5	0.095	47.0	0.129	67.5	0.113	88.0	0.006
1.0	0.996	9.2	0.305	27.0	0.090	47.5	0.137	68.0	0.116	88.5	0.004
1.2	0.998	9.4	0.287	27.5	0.083	48.0	0.144	68.5	0.118	89.0	0.002
1.4	1.000	9.6	0.271	28.0	0.073	48.5	0.150	69.0	0.120	89.5	0.001
1.6	1.000	9.8	0.264	28.5	0.061	49.0	0.155	69.5	0.121	90.0	0.000
1.8	0.998	10.0	0.251	29.0	0.047	49.5	0.158	70.0	0.122		
2.0	0.995	10.2	0.240	29.5	0.033	50.0	0.160	70.5	0.122		
2.2	0.991	10.4	0.231	30.0	0.019	50.5	0.161	71.0	0.122		

Dielectric

Proposal Number	**C-02593**		
Date	**8-May-08**		
Call Letters	**KBRR-DT**	Channel	**10**
Location	**Thief River Falls, MN**		
Customer	**Red River Broadcasting**		
Antenna Type	**THV-6A10-R O4 SM**		

AZIMUTH PATTERN

Gain	**1.00**	**(0.00 dB)**	Frequency	**195.00 MHz**	
Calculated / Measured		**Calculated**	Drawing #	**THV-O4**	



Dielectric

Proposal Number	**C-02593**
Date	**8-May-08**
Call Letters	**KBRR-DT** Channel **10**
Location	**Thief River Falls, MN**
Customer	**Red River Broadcasting**
Antenna Type	**THV-6A10-R O4 SM**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **THV-O4**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	1.000	45	0.989	90	1.000	135	0.989	180	1.000	225	0.989	270	1.000	315	0.989
1	1.000	46	0.989	91	1.000	136	0.989	181	1.000	226	0.989	271	1.000	316	0.989
2	1.000	47	0.989	92	1.000	137	0.989	182	1.000	227	0.989	272	1.000	317	0.989
3	1.000	48	0.989	93	1.000	138	0.989	183	1.000	228	0.989	273	1.000	318	0.989
4	1.000	49	0.989	94	1.000	139	0.989	184	1.000	229	0.989	274	1.000	319	0.989
5	1.000	50	0.989	95	1.000	140	0.989	185	1.000	230	0.989	275	1.000	320	0.989
6	1.000	51	0.989	96	1.000	141	0.989	186	1.000	231	0.989	276	1.000	321	0.989
7	0.999	52	0.989	97	0.999	142	0.989	187	0.999	232	0.989	277	0.999	322	0.989
8	0.999	53	0.989	98	0.999	143	0.989	188	0.999	233	0.989	278	0.999	323	0.989
9	0.999	54	0.990	99	0.999	144	0.990	189	0.999	234	0.990	279	0.999	324	0.990
10	0.999	55	0.990	100	0.999	145	0.990	190	0.999	235	0.990	280	0.999	325	0.990
11	0.998	56	0.990	101	0.998	146	0.990	191	0.998	236	0.990	281	0.998	326	0.990
12	0.998	57	0.990	102	0.998	147	0.990	192	0.998	237	0.990	282	0.998	327	0.990
13	0.998	58	0.991	103	0.998	148	0.991	193	0.998	238	0.991	283	0.998	328	0.991
14	0.997	59	0.991	104	0.997	149	0.991	194	0.997	239	0.991	284	0.997	329	0.991
15	0.997	60	0.991	105	0.997	150	0.991	195	0.997	240	0.991	285	0.997	330	0.991
16	0.997	61	0.992	106	0.997	151	0.992	196	0.997	241	0.992	286	0.997	331	0.992
17	0.996	62	0.992	107	0.996	152	0.992	197	0.996	242	0.992	287	0.996	332	0.992
18	0.996	63	0.993	108	0.996	153	0.992	198	0.996	243	0.992	288	0.996	333	0.993
19	0.996	64	0.993	109	0.996	154	0.993	199	0.996	244	0.993	289	0.996	334	0.993
20	0.995	65	0.993	110	0.995	155	0.993	200	0.995	245	0.993	290	0.995	335	0.993
21	0.995	66	0.994	111	0.995	156	0.994	201	0.995	246	0.994	291	0.995	336	0.994
22	0.994	67	0.994	112	0.994	157	0.994	202	0.994	247	0.994	292	0.994	337	0.994
23	0.994	68	0.994	113	0.994	158	0.994	203	0.994	248	0.994	293	0.994	338	0.994
24	0.994	69	0.995	114	0.994	159	0.995	204	0.994	249	0.995	294	0.994	339	0.995
25	0.993	70	0.995	115	0.993	160	0.995	205	0.993	250	0.995	295	0.993	340	0.995
26	0.993	71	0.996	116	0.993	161	0.996	206	0.993	251	0.996	296	0.993	341	0.996
27	0.993	72	0.996	117	0.992	162	0.996	207	0.992	252	0.996	297	0.993	342	0.996
28	0.992	73	0.996	118	0.992	163	0.996	208	0.992	253	0.996	298	0.992	343	0.996
29	0.992	74	0.997	119	0.992	164	0.997	209	0.992	254	0.997	299	0.992	344	0.997
30	0.991	75	0.997	120	0.991	165	0.997	210	0.991	255	0.997	300	0.991	345	0.997
31	0.991	76	0.997	121	0.991	166	0.997	211	0.991	256	0.997	301	0.991	346	0.997
32	0.991	77	0.998	122	0.991	167	0.998	212	0.991	257	0.998	302	0.991	347	0.998
33	0.990	78	0.998	123	0.990	168	0.998	213	0.990	258	0.998	303	0.990	348	0.998
34	0.990	79	0.998	124	0.990	169	0.998	214	0.990	259	0.998	304	0.990	349	0.998
35	0.990	80	0.999	125	0.990	170	0.999	215	0.990	260	0.999	305	0.990	350	0.999
36	0.990	81	0.999	126	0.990	171	0.999	216	0.990	261	0.999	306	0.990	351	0.999
37	0.989	82	0.999	127	0.989	172	0.999	217	0.989	262	0.999	307	0.989	352	0.999
38	0.989	83	0.999	128	0.989	173	0.999	218	0.989	263	0.999	308	0.989	353	0.999
39	0.989	84	1.000	129	0.989	174	1.000	219	0.989	264	1.000	309	0.989	354	1.000
40	0.989	85	1.000	130	0.989	175	1.000	220	0.989	265	1.000	310	0.989	355	1.000
41	0.989	86	1.000	131	0.989	176	1.000	221	0.989	266	1.000	311	0.989	356	1.000
42	0.989	87	1.000	132	0.989	177	1.000	222	0.989	267	1.000	312	0.989	357	1.000
43	0.989	88	1.000	133	0.989	178	1.000	223	0.989	268	1.000	313	0.989	358	1.000
44	0.989	89	1.000	134	0.989	179	1.000	224	0.989	269	1.000	314	0.989	359	1.000

COHEN, DIPPELL AND EVERIST, P.C.

TABLE II
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
KBRR-DT, THIEF RIVER FALLS, MINNESOTA
CHANNEL 10 9.3 KW ERP 198.1 METERS HAAT
JUNE 2008

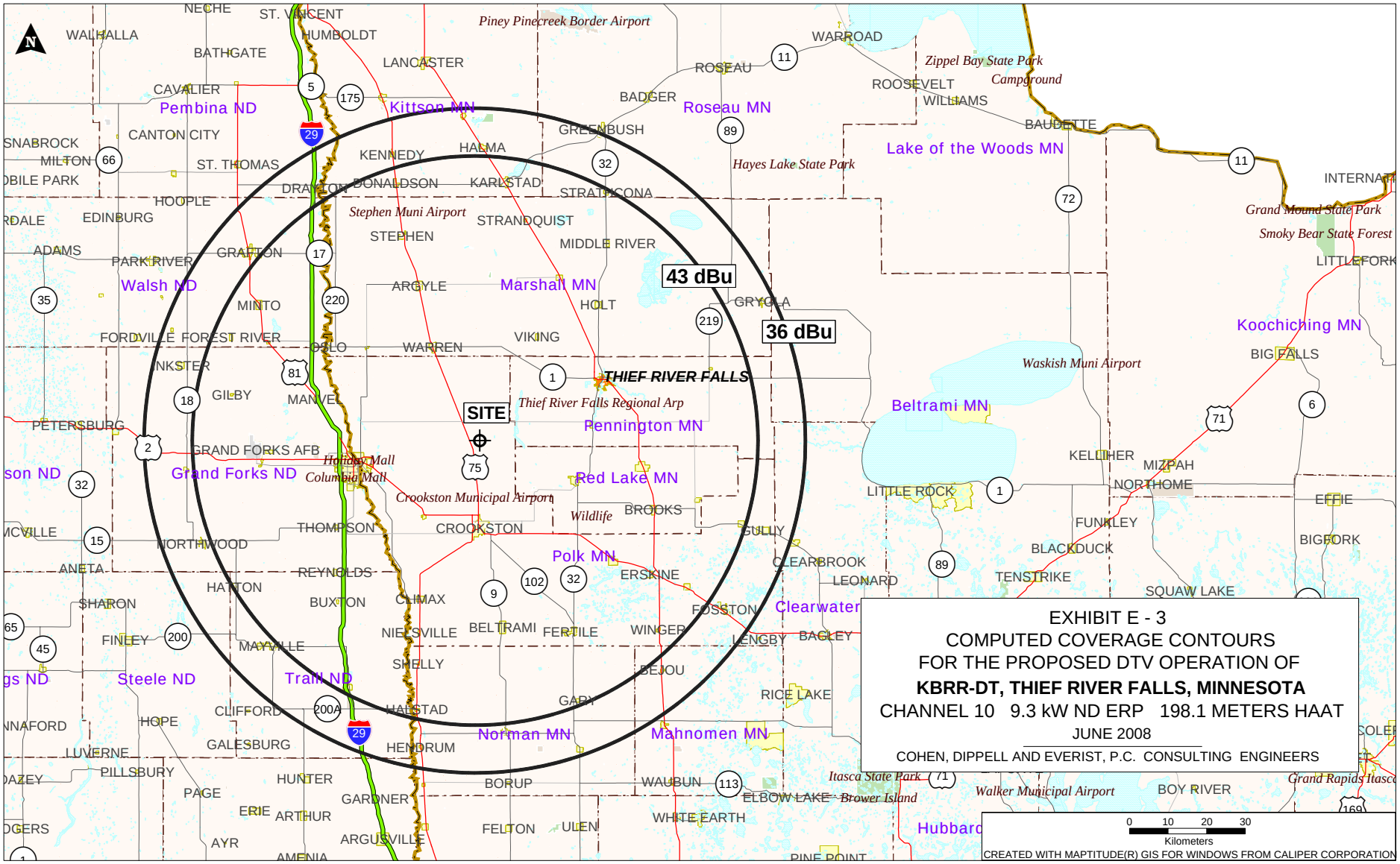
Radial Bearing N ° E, T	Average* Elevation 3.2 to 16.1 km meters	Effective Height meters	Depression Angle	ERP At Radio Horizon kW	Distance to Contour F(50,90) 43 dBu City Grade km	36 dBu Noise-Limited km
0	277.7	199.3	0.391	9.3	73.6	85.9
45	293.1	183.9	0.376	9.3	72.4	84.7
90	297.5	179.5	0.371	9.3	72.1	84.4
135	289.4	187.6	0.379	9.3	72.7	85.0
180	277.3	199.7	0.391	9.3	73.6	86.0
225	266.4	210.6	0.402	9.3	74.4	86.8
270	262.4	214.6	0.406	9.3	74.7	87.1
315	266.4	210.6	0.402	9.3	74.4	86.8
Average	278.8	198.2				

*Based on data from FCC 3-second data base

DTV Channel 10 (192-198 MHz)
Average Elevation 3.2 to16.1 km 278.8 meters AMSL
Center of Radiation 477 meters AMSL
Antenna Height Above Average Terrain 198.2 meters
Effective Radiated Power 9.3 kW (9.68 dBk)

North Latitude: 47° 58' 38"
West Longitude: 96° 36' 18"

(NAD-27)


43 dBu
36 dBu
SITE
THIEF RIVER FALLS
Thief River Falls Regional Arp
Stephen Muni Airport
Piney Pinecreek Border Airport
Hayes Lake State Park
Zippel Bay State Park
Campground
Waskish Muni Airport
Grand Mound State Park
Smoky Bear State Forest
Crookston Municipal Airport
Wildlife
Holiday Mall
Columbia Mall
Itasca State Park
Brower Island
Walker Municipal Airport
Grand Rapids Itasca
Pembina ND
Walsh ND
Grand Forks ND
Steele ND
Traill ND
Kittson MN
Roseau MN
Lake of the Woods MN
Marshall MN
Pennington MN
Red Lake MN
Polk MN
Norman MN
Mahnomen MN
Beltrami MN
Koochiching MN
Clearwater
Hubbard
EXHIBIT E - 3
COMPUTED COVERAGE CONTOURS
FOR THE PROPOSED DTV OPERATION OF
KBRR-DT, THIEF RIVER FALLS, MINNESOTA
CHANNEL 10 9.3 kW ND ERP 198.1 METERS HAAT
JUNE 2008
COHEN, DIPPELL AND EVERIST, P.C. CONSULTING ENGINEERS
0 10 20 30
Kilometers
CREATED WITH MAPTITUDE(R) GIS FOR WINDOWS FROM CALIPER CORPORATION

SECTION III - D - DTV Engineering

Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction pen-nit application to modify pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed within 45 days of the effective date of Section 73.616 of the rules adopted in the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91.

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:

   (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. [X] Yes [ ] No

   (b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. [ ] Yes [ ] No

   (c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. [ ] Yes [ ] No

   (d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"). [ ] Yes [X] No [ ] N/A

   (e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B. [X] Yes [ ] No [ ] N/A

2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RIF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1. 1307. [X] Yes [ ] No

   Applicant must **submit the Exhibit** called for in Item 13.

3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. [X] Yes [ ] No

4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. [X] Yes [ ] No

5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. [X] Yes [ ] No

SECTION III - D DTV Engineering

TECHNICAL SPECIFICATIONS Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV 10 Analog TV, if any 10

2. Zone: ☐ I ☒ II ☐ III

3. Antenna Location Coordinates: (NAD 27)

47 ° 58 ' 38 " ☒ N ☐ S Latitude
96 ° 36 ' 18 " ☐ E ☒ W Longitude

4. Antenna Structure Registration Number: 1227695

☐ Not applicable ☐ FAA Notification Filed with FAA

5. Antenna Location Site Elevation Above Mean Sea Level: 275.8 meters

6. Overall Tower Height Above Ground Level: 228.6 meters

7. Height of Radiation Center Above Ground Level: 201.2 meters

8. Height of Radiation Center Above Average Terrain: 198.1 meters

9. Maximum Effective Radiated Power (average power): 9.3 kW

10. Antenna Specifications:

a. Manufacturer: DIELECTRIC | Model: THV-6A10-R 04 SM

b. Electrical Beam Tilt: 1.5 degrees ☐ Not Applicable

c. Mechanical Beam Tilt: _____ degrees toward azimuth _____ degrees True ☒ Not Applicable

Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). Exhibit No.

d. Polorization: ☒ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

e. Directional Antenna Relative Field Values: [X] Not applicable (Nondirectional)

Rotation: _____ ° [ ] No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616?

[X] Yes [ ] No

If "No," attach as an Exhibit justification therefore, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No. E

a. If **Certification Checklist Item** 2 is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist** Item 2, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radio frequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 2 is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

PREPARER'S CERTIFICATION IN SECTION III MUST BE COMPLETED AND SIGNED.

KBRR-DT
maximization

13. **Petition for Rulemaking/Counterproposal to Add New FM Channel to FM Table of Allotments.** If the application is being submitted concurrently with a Petition for Rulemaking or Counterproposal to Amend the I'M Table of Allotments (47 C.F.R. Section 73.202) to add a new FM channel allotment, petitioner/counter-proponent certifies that, if the FM channel allotment requested is allotted, petitioner/counter- proponent will apply to participate in the auction of the channel allotment requested and specified in this application.

☐ Yes ☐ No ☐ N/A

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in 'good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing	Typed or Printed Title of Person Signing
Signature	Date

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name: Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer): Consulting Engineer
Signature: *Donald G. Everist*		Date: June 18, 2008
Mailing Address: Cohen, Dippell and Everist, P.C, 1300 L Street, NW Suite 1100		
City: Washington	State or Country (if foreign address): DC	ZIP Code: 20005
Telephone Number (include area code): (202) 898-0111	E-Mail Address (if available): cde@attglobal.net	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18. SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).