

EXHIBIT #E4
Inter-modulation Interference
October 26, 1998

Concerning the Application of
Minnesota Public Radio
Brainerd, Minnesota

The 115 dBu blanketing contour of the proposed facility travels 881 meters from the proposed 5 kW ERP antenna. There are no population centers within this distance.

There are two FM stations within ten kilometers. There is also a TV station and a LPTV station. Page #2 of this exhibit lists pertinent information as to the facilities and locations of the broadcast stations.

Since the applicant proposes to add another FM signal in duplex with the existing FM signal, it is possible for a signal mix of 2.4 MHz to exist. Without proper filtering, this signal mix could be introduced to the IPA's of the two transmitters resulting in a mix of the original transmitter frequencies plus or minus the mix frequency. The applicant is aware of such a possibility and will use proper filtering to assure that inter-modulation will be effectively limited.

Minnesota Public Radio is aware of its responsibility under the rules relating to inter-modulation and objectionable blanketing interference. It will correct any such interference, at its own expense, within a period of one year from commencement of broadcasting at the proposed transmitter site. Corrections shall employ traditional means such as filters, traps and tuning adjustments.

ID Stations Study at 46 25 21 N, 94 27 41 W, Search Distance = 10 km

Call	Dist-km	Azimuth	City	State	Chan. File Number	Power	Coordinates
AM	----- None Found -----						
FM	-----						
KBPR	000.0	000.0	Brainerd	MN	214C1	0034.000kw	462521N 942741W
				BLED880222KG	FM		
WJJYFM	006.5	068.9	Brainerd	MN	294C1	0100.000kw	462636N 942258W
				BLH780710AV	FM		
TV	-----						
KAWB	000.0	000.0	BRAINERD	MN	22E	0214.000kw	462521N 942741W
				BLET880304KG	TV		
K54AT	000.0	000.0	BRAINERD	MN	54C	0019.500kw	462521N 942741W
				BLTTL880405IC	TV		

EXHIBIT #E5

94° 27' 30"

46° 27' 30"

5146

T 135 N

T 131 N

5145

5144

5143

5142

46° 25'

5141

5140

7076 / NE
(CASINO)

Hardy
Lake
1283

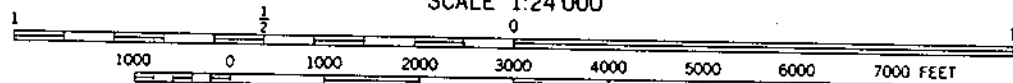
Little
Long Lake
1275

Rock
Lake
1275

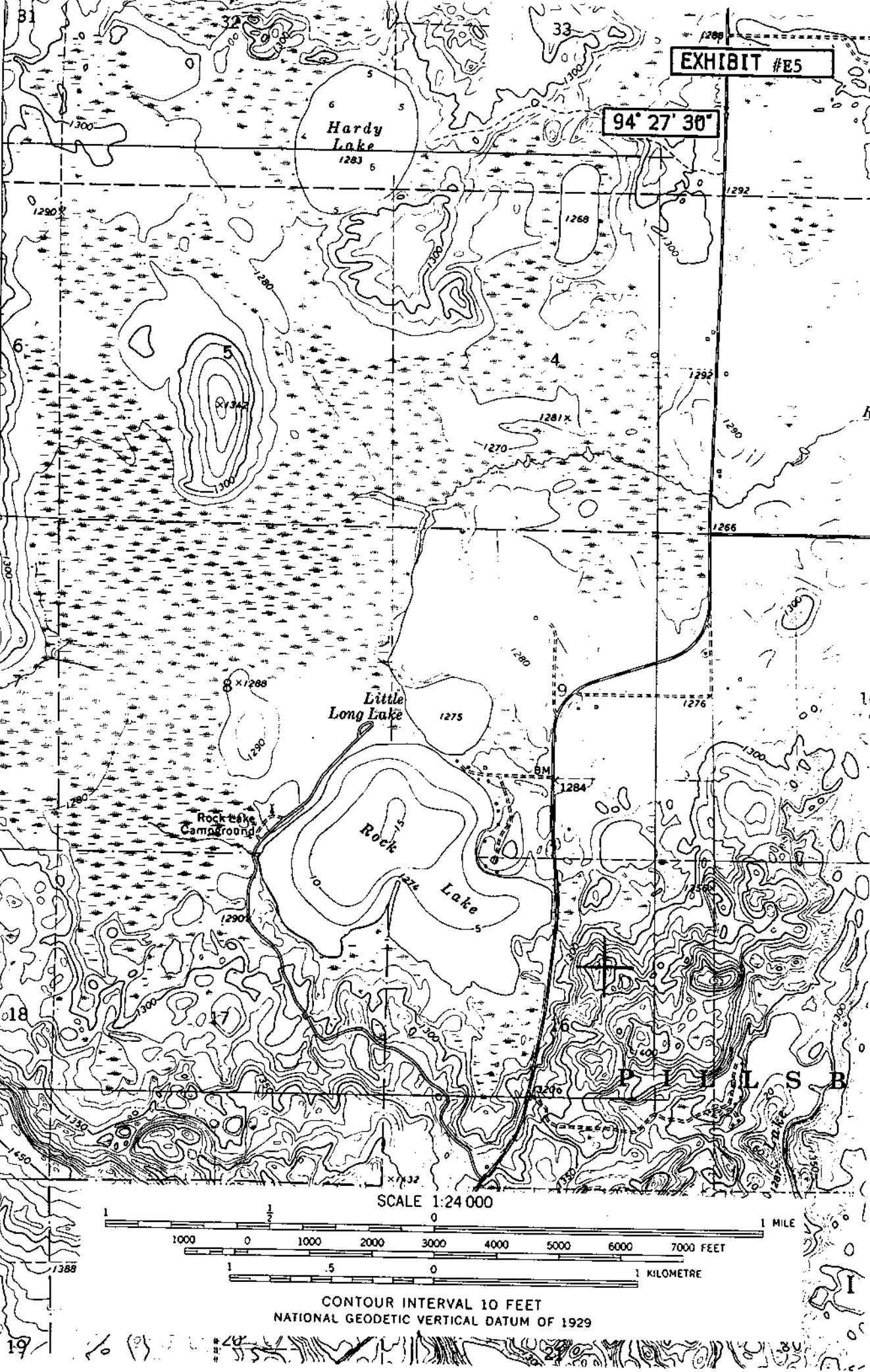
Rock Lake
Campground

P H I L S B

SCALE 1:24 000



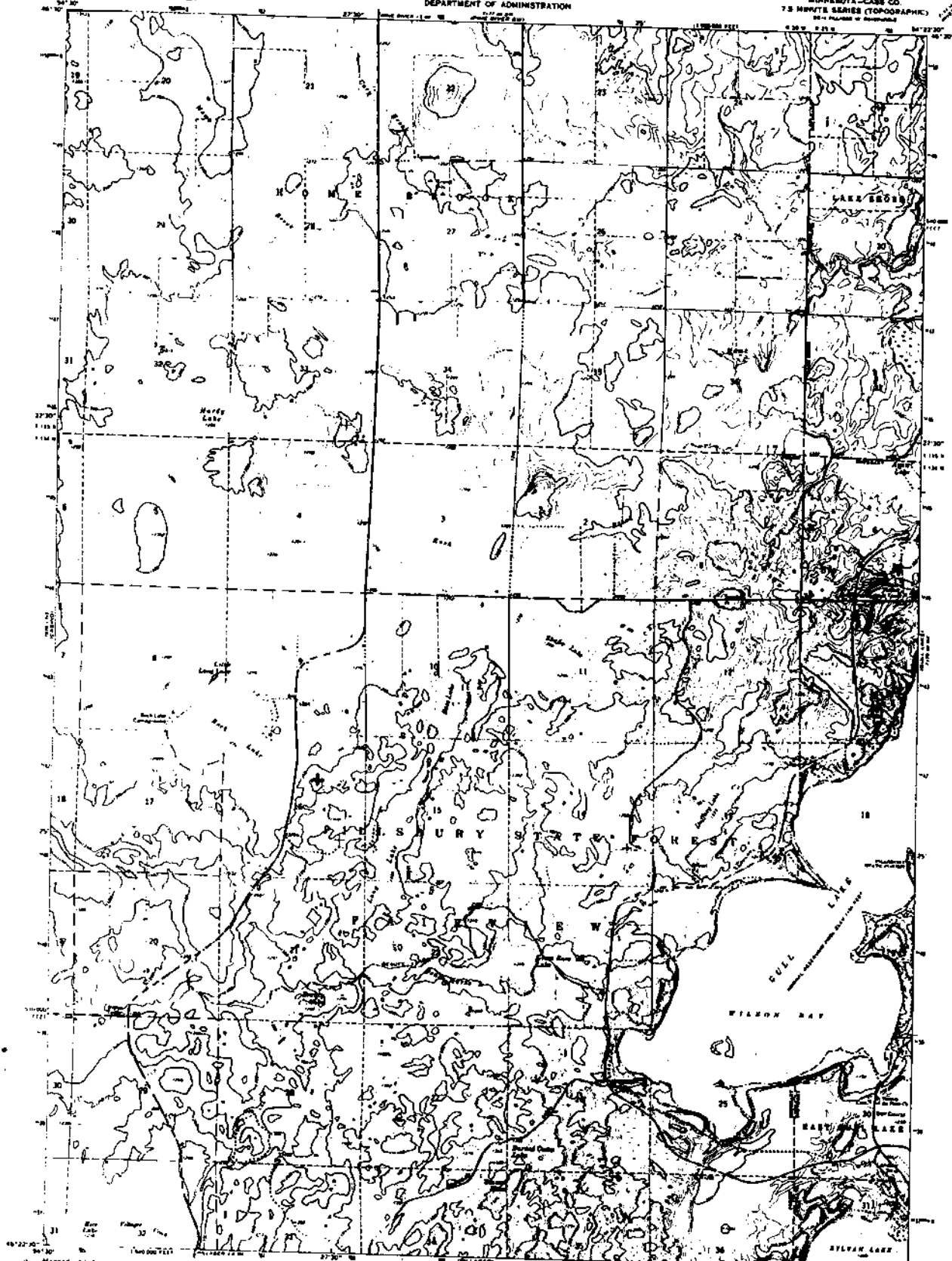
CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



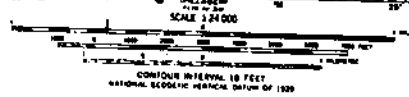
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF MINNESOTA
DEPARTMENT OF ADMINISTRATION

WILSON BAY QUADRANGLE
MINNESOTA—CAMP CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
DATA PROVIDED BY PHOTOGRAPHY



Map, printed, and published by the Geological Survey
Control by GCS and NGS/NOAA
Topography by photogrammetric methods from aerial
photographs taken 1973. Field checked 1973.
Hydrography published from information furnished by
Minnesota Department of Natural Resources.
Projection and 10,000-foot grid from Minnesota State Plane
System. Contour lines shown on map are of 10-foot
1,000-foot interval. Elevation in feet above sea level.
The 15 sheets of the 1973 North American Datum
and the 15 sheets of the 1983 North American Datum
are generally available in separate sheets and field lines
are generally available in separate sheets.
The information is unclassified.



ROAD CLASSIFICATION
Primary highway: Light duty road, hard or
hard surface
Secondary highway: Unimproved road
Hard surface
State Route: U.S. Route
State Route

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 20192
A PUBLIC RECORDS INFORMATION SHEET AND SYMBOLS IS AVAILABLE ON REQUEST

D. Vernier 10/98

WILSON BAY, MINN.
DATA PROVIDED BY PHOTOGRAPHY
1973
ANN 7126 BY 10-10-1973

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University of Northern Iowa

10-26-1998

DOUG VERNIER TELECOMM CONSULTANTS

319 266-8402

CH# 202C3 - 88.3 MHz

Minnesota Public Radio

INTERFERENCE CHECKS WITH NEW, BRAINERD, MN at N. LAT. 46 25 21 W. LNG. 94 27 41

PWR = 5 kW H.A.A.T. = 204 M C.O.R. = 597 M AMSL

Protected F(50-50) 60 dBu = 37.24 km

F(50-10) 40 dBu = 98.44 54 dBu = 55.88 80 dBu = 12.7 100 dBu = 3.43

CH#	CALL	TYPE	* IN *	* OUT *	BEARING	DISTANCE	LAT.	PWR(kW)	INT(km)	PRO(km)
CITY	STATE	LICENSEE			<---		LNG.	HAAT(M)	COR(M)	FILE #
201C2	AP201	AP VN	86.1	89.3	87.5	185.24 km	46 28 14	25.00	61.86	40.02
Wentworth	WI	American Family Associatio			267.5	115.10 Mi	92 03 06	109.0	460	BPED971211MN
FCC Comment > Accepted as Class B by Canada 980525										
201C2	KVSC *	LI VN	4.4	7.0	169.9	102.25 km	45 31 00	16.50	61.41	40.56
St. Cloud	MN	St. Cloud State University			349.9	63.54 Mi	94 13 52	138.2*	463	BLED921103KB
FCC Comment > Vertical Polarization Only										
> Reference HAAT at 169.9 degrees = 194.1 M, Pwr. = 5 kW, Pro. Dist. = 36.45 km, Int. Dist. = 54.7 km										
202C2	AP202	AP VN	90.6	108.7	179.2	233.56 km	44 19 16	30.00	105.77	26.44
New Ulm	MN	Broadcasting for the Chall			359.2	145.13 Mi	94 25 21	39.0	335	BPED980729MG
FCC Comment > Vertical Polarization Only										
202C1	WHWC	LI DCY	50.2	84.8	126.2	253.53 km	45 02 49	71.00	166.05	70.33
Menomonie	WI	State of Wisconsin-Educati			306.2	157.54 Mi	91 51 47	320.0	625	BLED980904KB
202D	K202CH	CP CN	124.0	79.8	171.9	185.12 km	44 46 23	0.22	23.88	6.92
Glencoe	MN	North-Central Christian Br			351.9	115.03 Mi	94 07 54	0.0	351	BPFT960805TC
FCC Comment > Translator for WNCB, Duluth, MN.										
203C1	KCRBFM*	LI CN	1.1	15.3	359.2	142.13 km	47 42 03	95.00	104.08	71.39
Bemidji	MN	Minnesota Public Radio, In			179.2	88.32 Mi	94 29 15	295.1*	717	BLED940711KA
> Reference HAAT at 359.2 degrees = 200.4 M, Pwr. = 5 kW, Pro. Dist. = 36.95 km, Int. Dist. = 55.46 km										
203C2	KNCM	LI CN	70.6	76.5	221.1	183.79 km	45 10 03	34.00	75.90	51.39
Appleton	MN	Minnesota Public Radio			41.1	114.20 Mi	96 00 02	172.0	479	BLED970131KC
205C1	KNSR	LI CN	57.0	33.7	183.3	102.95 km	45 29 52	100.00	8.71	65.84
Collegetown	MN	Minnesota Public Radio			3.3	63.97 Mi	94 32 14	222.0	581	BLED880907KA
I.F. RELATIONSHIPS:										
256C1	KLLZFM	LI CN	24.0 R	70.4 M	338.6	94.37 km	47 12 42	100.00	7.10	58.52
Walker	MN	Kommerstad Communications			158.6	58.64 Mi	94 55 02	150.0	592	BLH940302KA
255C2	KZPK	LI CN	17.0 R	78.1 M	182.4	95.11 km	45 34 03	47.00	5.89	51.95
Paynesville	MN	Ronald J. Linder			2.4	59.10 Mi	94 30 43	152.0	510	BLH951201KA

Nearest CH 6 Grade B =KBJRTV at 88.84 km, Distance= 184.4 Azimuth = 76.3 Deg. T.

* Uses actual antenna radial HAAT and power toward reference

HOW TO READ THE FM COMPUTER PRINT-OUT

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. The 60 dBu protected contour is predicted from the Commission's F(50-50) table, while the 40, 54, 80 and 100 dBu contours are interference contours derived from the Commission's F(50-10) table. Contour distances are in kilometers and are predicted using spline interpolation from data points identical to those published in Report No. RS 76-01 by Gary C. Kalagian.

Critical contour distances are determined using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

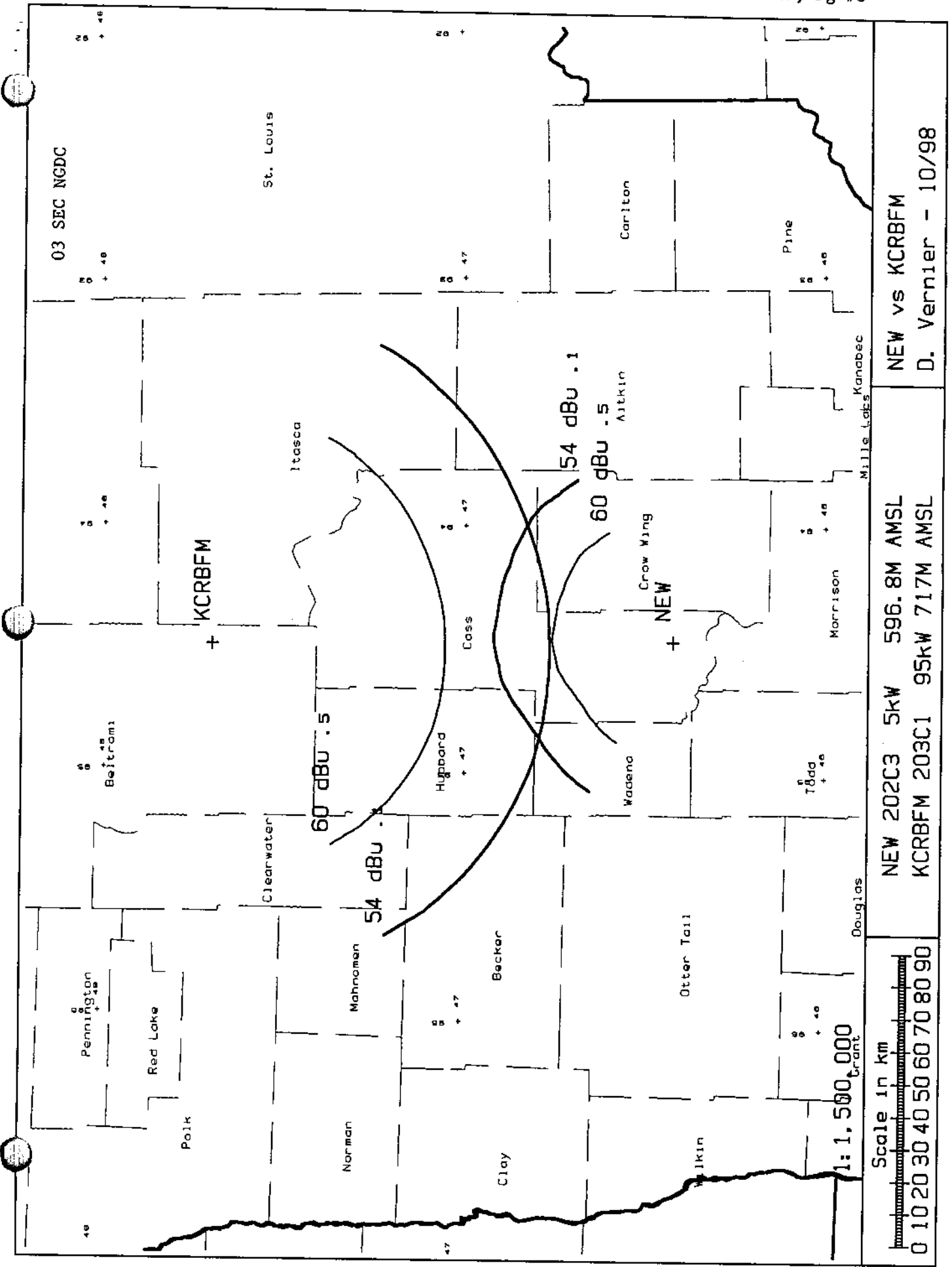
The column listed **"* IN ***" is the sum of the reference station's 60 dBu protected contour and the data file station's interference contour subtracted from the distance between the stations. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, the column is a measure of incoming interference. Negative distances in this column indicate the presence of interference. Listed antenna heights are the average heights of eight standard radials as found in the Commission's records unless otherwise noted, in which case the specific antenna heights along the azimuths between the reference station and the database station are used and visa versa. The column labeled **"* OUT ***" shows the distance of kilometers of overlap or clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing interference.

Under the **"BEARING"** column, the first row of numbers indicate the bearings from true north of the data base stations in relationship with the reference station, while the numbers in the second row indicate the reverse bearings from the database station to the reference station.

The columns labeled **"INT"** and **"PRO"** hold the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships the **"IN"** and **"OUT"** columns change their significance. The letter **"R"** stands for the minimum **required** distance in kilometers, while the letter **"M"** in the next column follows the **available clear space** separation in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The first three letters of the **"TYPE"** column identify the current F.C.C. status of the stations. The fourth letter will be a **"D"** or **"Z"** (Sec. 73.215) if the facility is directional. The fifth letter will be an **E, H** or **V** depending on the type of antenna polarization. The sixth letter will be a **"Y"** if the antenna uses beam tilt.



NEW vs KCRBFM
D. Vernier - 10/98

NEW 202C3 5kW 596.8M AMSL
KCRBFM 203C1 95kW 717M AMSL

Scale in km
0 10 20 30 40 50 60 70 80 90

Doug Vernier Telecommunications Consultants
10-26-1998 03 Sec. Terrain Data

NEW BLED880222KG
Channel = 202C3
Max ERP = 5 kW
RCAMSL = 597 M
N. Lat = 46 25 21
W. Lng = 94 27 41

KCRBFM BLED940711KA
Channel = 203C1
Max ERP = 95 kW
RCAMSL = 717 M
N. Lat = 47 42 03
W. Lng = 94 29 15

Protected
60 dBu

Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
345.0	005.0000	0187.8	036.4	184.0	095.0000	0297.5	107.3	53.1
346.0	005.0000	0189.3	036.5	183.7	095.0000	0297.3	106.9	53.1
347.0	005.0000	0190.1	036.5	183.4	095.0000	0297.0	106.7	53.2
348.0	005.0000	0191.1	036.6	183.1	095.0000	0296.6	106.4	53.3
349.0	005.0000	0191.3	036.6	182.7	095.0000	0296.2	106.3	53.3
350.0	005.0000	0190.7	036.6	182.4	095.0000	0296.0	106.2	53.3
351.0	005.0000	0190.7	036.6	182.0	095.0000	0295.8	106.0	53.4
352.0	005.0000	0191.4	036.7	181.7	095.0000	0295.7	105.9	53.4
353.0	005.0000	0192.8	036.8	181.4	095.0000	0295.6	105.7	53.5
354.0	005.0000	0194.0	036.9	181.0	095.0000	0295.6	105.5	53.5
355.0	005.0000	0195.2	037.0	180.7	095.0000	0295.5	105.3	53.6
356.0	005.0000	0196.4	037.1	180.3	095.0000	0295.3	105.2	53.6
357.0	005.0000	0197.5	037.1	180.0	095.0000	0295.2	105.0	53.7
358.0	005.0000	0198.6	037.2	179.6	095.0000	0295.1	104.9	53.7
359.0	005.0000	0200.1	037.4	179.3	095.0000	0295.1	104.8	53.7
000.0	005.0000	0200.9	037.4	178.9	095.0000	0295.2	104.7	53.7
001.0	005.0000	0201.3	037.4	178.6	095.0000	0295.4	104.7	53.8
002.0	005.0000	0200.9	037.4	178.2	095.0000	0295.5	104.8	53.7
003.0	005.0000	0200.5	037.4	177.8	095.0000	0295.7	104.9	53.7
004.0	005.0000	0199.3	037.3	177.5	095.0000	0295.7	105.0	53.7
005.0	005.0000	0198.5	037.2	177.1	095.0000	0295.7	105.2	53.6
006.0	005.0000	0197.7	037.2	176.8	095.0000	0295.8	105.3	53.6
007.0	005.0000	0196.6	037.1	176.4	095.0000	0295.9	105.5	53.5
008.0	005.0000	0196.2	037.0	176.1	095.0000	0296.0	105.7	53.5
009.0	005.0000	0196.6	037.1	175.8	095.0000	0296.1	105.8	53.5
010.0	005.0000	0197.0	037.1	175.4	095.0000	0296.2	105.9	53.4
011.0	005.0000	0197.2	037.1	175.1	095.0000	0296.3	106.1	53.4
012.0	005.0000	0197.6	037.2	174.7	095.0000	0296.5	106.2	53.3
013.0	005.0000	0198.1	037.2	174.4	095.0000	0296.7	106.4	53.3
014.0	005.0000	0198.5	037.2	174.0	095.0000	0296.7	106.6	53.2
015.0	005.0000	0199.0	037.3	173.7	095.0000	0296.8	106.8	53.2

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10-26-1998 03 Sec. Terrain Data

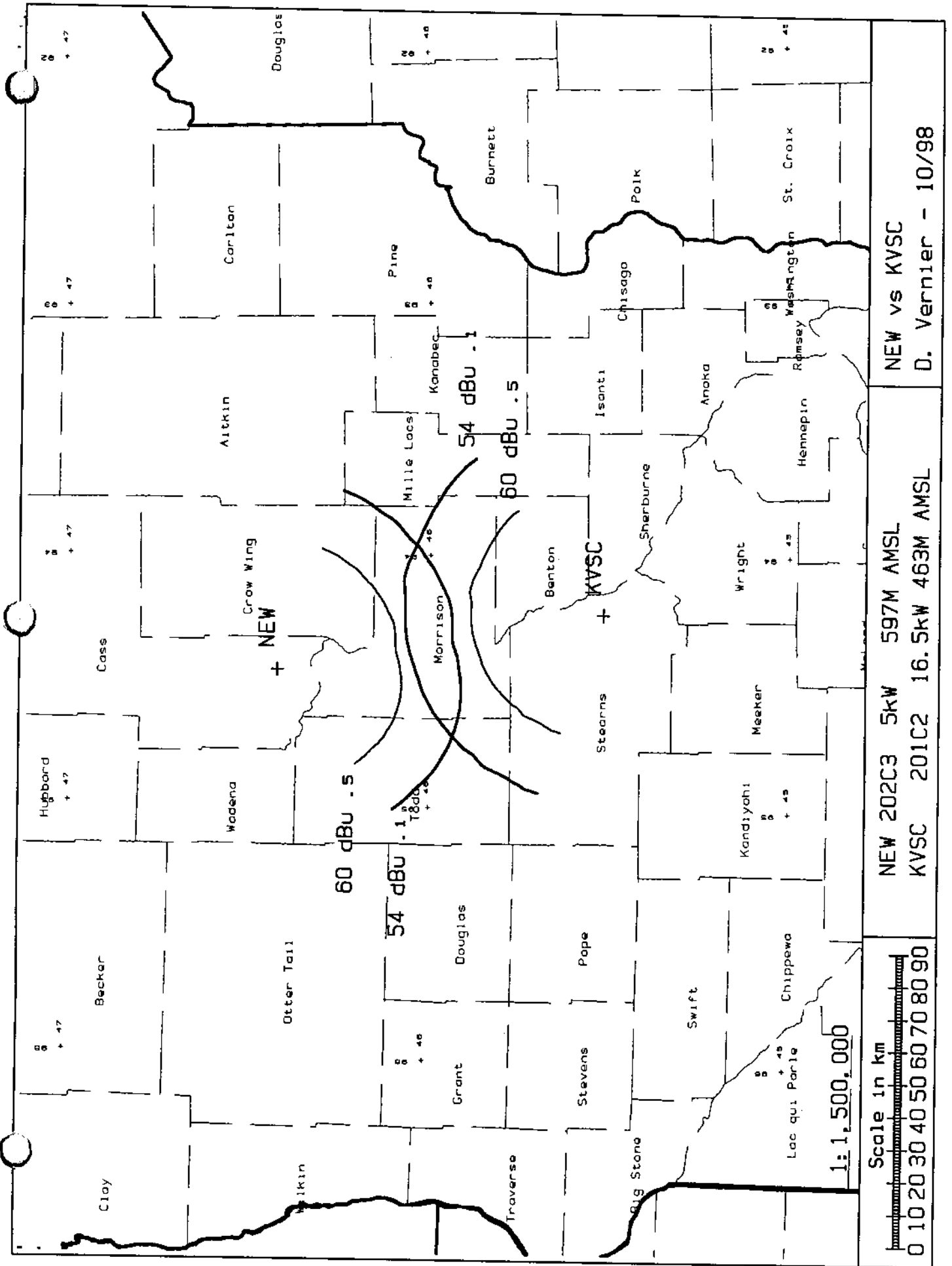
KCRBFM BLED940711KA
Channel = 203C1
Max ERP = 95 kW
RCAMSL = 717 M
N. Lat = 47 42 03
W. Lng = 94 29 15

NEW BLED880222KG
Channel = 202C3
Max ERP = 5 kW
RCAMSL = 597 M
N. Lat = 46 25 21
W. Lng = 94 27 41

Protected
60 dBu

Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
165.0	095.0000	0294.4	071.4	012.7	005.0000	0197.9	075.0	47.1
166.0	095.0000	0294.5	071.4	011.7	005.0000	0197.4	074.4	47.3
167.0	095.0000	0294.9	071.5	010.9	005.0000	0197.2	073.8	47.4
168.0	095.0000	0295.3	071.5	010.0	005.0000	0197.0	073.3	47.6
169.0	095.0000	0295.7	071.5	009.1	005.0000	0196.6	072.8	47.7
170.0	095.0000	0296.1	071.6	008.2	005.0000	0196.3	072.4	47.9
171.0	095.0000	0296.4	071.6	007.3	005.0000	0196.5	072.0	48.0
172.0	095.0000	0296.5	071.6	006.3	005.0000	0197.3	071.7	48.1
173.0	095.0000	0296.8	071.6	005.4	005.0000	0198.2	071.3	48.3
174.0	095.0000	0296.8	071.6	004.4	005.0000	0199.0	071.1	48.4
175.0	095.0000	0296.4	071.6	003.4	005.0000	0199.8	070.9	48.5
176.0	095.0000	0296.0	071.6	002.4	005.0000	0200.8	070.8	48.6
177.0	095.0000	0295.7	071.5	001.4	005.0000	0201.2	070.7	48.6
178.0	095.0000	0295.6	071.5	000.4	005.0000	0201.1	070.6	48.6
179.0	095.0000	0295.2	071.5	359.4	005.0000	0200.6	070.6	48.6
180.0	095.0000	0295.2	071.5	358.4	005.0000	0199.1	070.6	48.6
181.0	095.0000	0295.6	071.5	357.4	005.0000	0197.9	070.7	48.5
182.0	095.0000	0295.7	071.5	356.4	005.0000	0196.8	070.8	48.4
183.0	095.0000	0296.5	071.6	355.4	005.0000	0195.7	070.8	48.4
184.0	095.0000	0297.5	071.7	354.4	005.0000	0194.5	071.0	48.3
185.0	095.0000	0297.9	071.7	353.4	005.0000	0193.2	071.2	48.1
186.0	095.0000	0298.1	071.7	352.4	005.0000	0191.9	071.4	48.0
187.0	095.0000	0298.5	071.7	351.5	005.0000	0191.0	071.7	47.9
188.0	095.0000	0299.2	071.8	350.5	005.0000	0190.5	072.0	47.8
189.0	095.0000	0299.9	071.9	349.6	005.0000	0191.0	072.4	47.7
190.0	095.0000	0300.4	071.9	348.6	005.0000	0191.4	072.8	47.5
191.0	095.0000	0300.8	071.9	347.7	005.0000	0190.8	073.2	47.4
192.0	095.0000	0301.4	072.0	346.8	005.0000	0190.0	073.7	47.2
193.0	095.0000	0302.5	072.1	345.9	005.0000	0189.2	074.2	47.0
194.0	095.0000	0303.4	072.1	345.1	005.0000	0187.9	074.7	46.8
195.0	095.0000	0303.8	072.2	344.2	005.0000	0185.7	075.3	46.5



NEW vs KVSC
D. Vernier - 10/98

NEW 202C3 5kW 597M AMSL
KVSC 201C2 16.5kW 463M AMSL

Scale in km
0 10 20 30 40 50 60 70 80 90

Doug Vernier Telecommunications Consultants
10-24-1998 03 Sec. Terrain Data

NEW BLED880222KG
Channel = 202C3
Max ERP = 5 kW
RCAMSL = 597 M
N. Lat = 46 25 21
W. Lng = 94 27 41

KVSC BLED921103KB
Channel = 201C2
Max ERP = 16.5 kW
RCAMSL = 463 M
N. Lat = 45 31 00
W. Lng = 94 13 52

Protected
60 dBu

Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
160.0	005.0000	0211.9	038.3	355.8	016.5000	0139.8	064.9	52.9
161.0	005.0000	0209.8	038.1	355.2	016.5000	0139.7	064.9	52.9
162.0	005.0000	0208.4	038.0	354.6	016.5000	0139.6	064.8	52.9
163.0	005.0000	0206.8	037.9	354.0	016.5000	0139.5	064.8	52.9
164.0	005.0000	0204.5	037.7	353.4	016.5000	0139.5	064.9	52.9
165.0	005.0000	0201.7	037.5	352.8	016.5000	0139.5	065.0	52.8
166.0	005.0000	0200.0	037.3	352.2	016.5000	0139.4	065.1	52.8
167.0	005.0000	0198.9	037.3	351.7	016.5000	0139.2	065.1	52.8
168.0	005.0000	0196.8	037.1	351.1	016.5000	0139.0	065.2	52.7
169.0	005.0000	0195.6	037.0	350.5	016.5000	0138.6	065.3	52.7
170.0	005.0000	0194.0	036.9	350.0	016.5000	0138.3	065.4	52.6
171.0	005.0000	0193.8	036.8	349.4	016.5000	0137.9	065.4	52.6
172.0	005.0000	0194.9	036.9	348.8	016.5000	0137.6	065.4	52.6
173.0	005.0000	0196.8	037.1	348.3	016.5000	0137.3	065.3	52.6
174.0	005.0000	0198.5	037.2	347.7	016.5000	0137.0	065.2	52.6
175.0	005.0000	0200.4	037.4	347.1	016.5000	0136.8	065.1	52.6
176.0	005.0000	0201.9	037.5	346.5	016.5000	0136.5	065.1	52.6
177.0	005.0000	0203.1	037.6	346.0	016.5000	0136.2	065.1	52.6
178.0	005.0000	0204.0	037.7	345.4	016.5000	0135.9	065.2	52.6
179.0	005.0000	0204.3	037.7	344.8	016.5000	0135.6	065.3	52.5
180.0	005.0000	0205.5	037.8	344.2	016.5000	0135.3	065.4	52.5
181.0	005.0000	0206.9	037.9	343.7	016.5000	0135.1	065.5	52.4
182.0	005.0000	0209.3	038.1	343.1	016.5000	0134.8	065.5	52.4
183.0	005.0000	0210.4	038.2	342.5	016.5000	0134.6	065.7	52.3
184.0	005.0000	0211.1	038.2	342.0	016.5000	0134.5	065.9	52.3
185.0	005.0000	0212.4	038.3	341.4	016.5000	0134.7	066.0	52.2
186.0	005.0000	0214.6	038.5	340.8	016.5000	0134.7	066.2	52.2
187.0	005.0000	0215.7	038.5	340.3	016.5000	0134.6	066.4	52.1
188.0	005.0000	0216.5	038.6	339.7	016.5000	0134.5	066.6	52.0
189.0	005.0000	0216.9	038.6	339.2	016.5000	0134.6	067.0	51.9
190.0	005.0000	0217.7	038.7	338.7	016.5000	0134.8	067.2	51.8

Doug Vernier Telecommunications Consultants
10-24-1998 03 Sec. Terrain Data

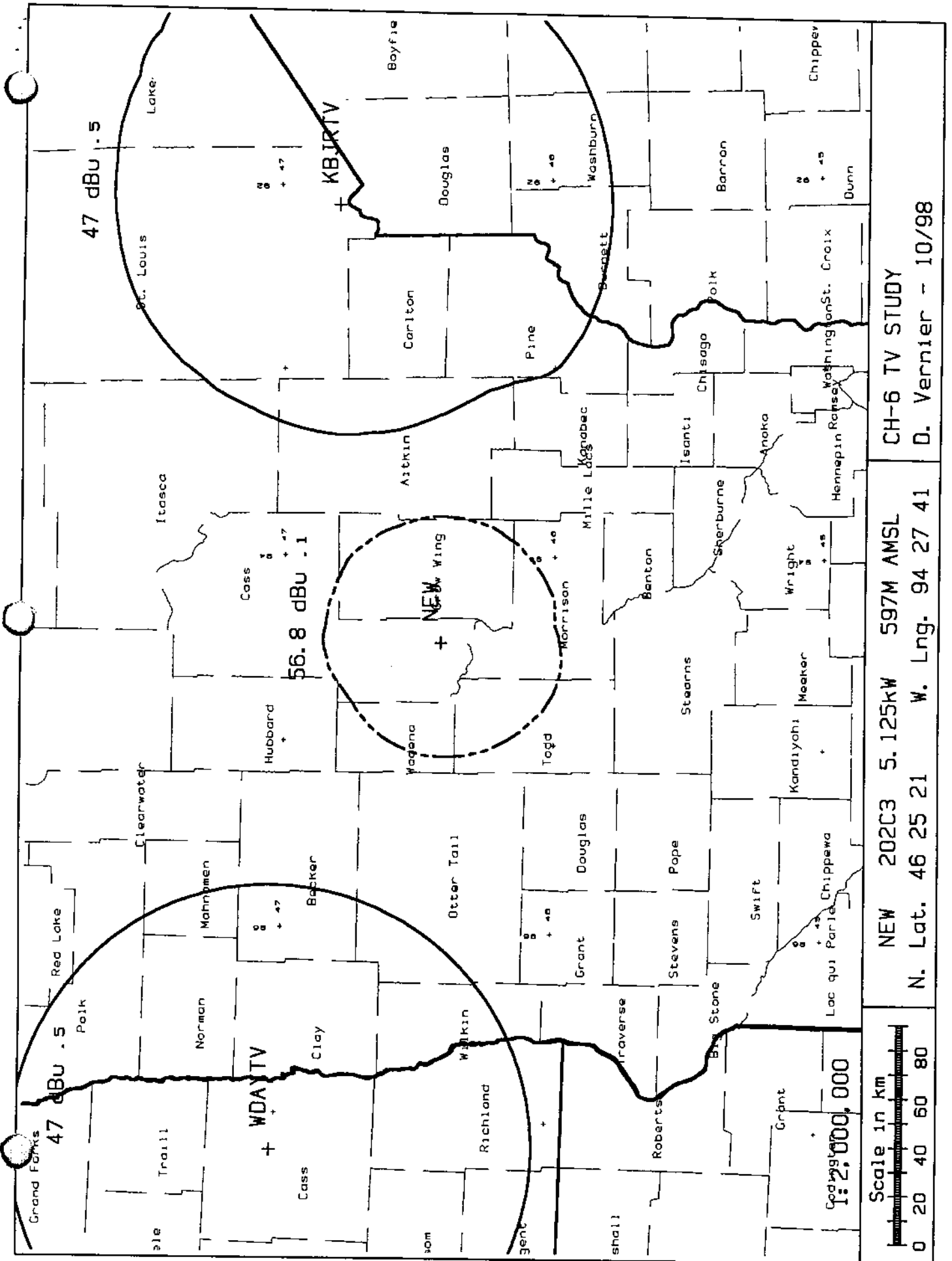
KVSC BLED921103KB
Channel = 201C2
Max ERP = 16.5 kW
RCAMSL = 463 M
N. Lat = 45 31 00
W. Lng = 94 13 52

NEW BLED880222KG
Channel = 202C3
Max ERP = 5 kW
RCAMSL = 597 M
N. Lat = 46 25 21
W. Lng = 94 27 41

Protected
60 dBu

Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
340.0	016.5000	0134.5	040.5	176.3	005.0000	0202.2	062.8	51.3
341.0	016.5000	0134.7	040.5	175.8	005.0000	0201.6	062.6	51.4
342.0	016.5000	0134.5	040.5	175.1	005.0000	0200.6	062.4	51.4
343.0	016.5000	0134.8	040.5	174.5	005.0000	0199.4	062.2	51.4
344.0	016.5000	0135.2	040.5	173.9	005.0000	0198.2	062.1	51.4
345.0	016.5000	0135.7	040.6	173.2	005.0000	0197.2	061.9	51.5
346.0	016.5000	0136.2	040.7	172.6	005.0000	0196.0	061.7	51.5
347.0	016.5000	0136.7	040.7	171.9	005.0000	0194.8	061.6	51.5
348.0	016.5000	0137.2	040.8	171.3	005.0000	0194.1	061.5	51.5
349.0	016.5000	0137.6	040.8	170.6	005.0000	0193.6	061.4	51.5
350.0	016.5000	0138.3	040.9	169.9	005.0000	0194.1	061.3	51.5
351.0	016.5000	0138.9	041.0	169.3	005.0000	0195.2	061.2	51.6
352.0	016.5000	0139.3	041.1	168.6	005.0000	0196.0	061.2	51.6
353.0	016.5000	0139.5	041.1	167.9	005.0000	0196.9	061.3	51.7
354.0	016.5000	0139.5	041.1	167.3	005.0000	0198.3	061.3	51.7
355.0	016.5000	0139.7	041.1	166.6	005.0000	0199.4	061.4	51.7
356.0	016.5000	0139.8	041.1	165.9	005.0000	0200.1	061.5	51.7
357.0	016.5000	0139.6	041.1	165.3	005.0000	0201.1	061.7	51.7
358.0	016.5000	0139.4	041.1	164.6	005.0000	0202.7	061.8	51.7
359.0	016.5000	0139.2	041.1	164.0	005.0000	0204.5	062.0	51.7
000.0	016.5000	0138.9	041.0	163.4	005.0000	0206.1	062.3	51.7
001.0	016.5000	0139.0	041.0	162.7	005.0000	0207.2	062.5	51.7
002.0	016.5000	0139.5	041.1	162.1	005.0000	0208.2	062.6	51.6
003.0	016.5000	0140.0	041.2	161.5	005.0000	0209.2	062.8	51.6
004.0	016.5000	0140.4	041.2	160.8	005.0000	0210.1	063.1	51.6
005.0	016.5000	0141.0	041.3	160.2	005.0000	0211.5	063.3	51.6
006.0	016.5000	0142.2	041.4	159.6	005.0000	0212.8	063.5	51.5
007.0	016.5000	0143.8	041.6	158.9	005.0000	0213.5	063.6	51.5
008.0	016.5000	0145.4	041.8	158.2	005.0000	0214.1	063.8	51.5
009.0	016.5000	0147.1	042.1	157.6	005.0000	0214.7	064.0	51.4
010.0	016.5000	0147.6	042.1	157.0	005.0000	0215.0	064.3	51.3



Doug Vernier, Telecommunications Consultants

Minnesota Public Radio

ERP = 5.125 kW

Channel = 202

Azimuth Deg.T.	Ave. Elev. 3 to 16 km Meters AMSL	Effective Antenna Height Meters AAT	ERP (dBk)	F(50-10) Distance to 56.8 dBu Contour km
0	396.1	200.9	7.097	48.64
10	400.0	197.0	7.097	48.17
20	394.5	202.5	7.097	48.83
30	387.2	209.8	7.097	49.69
40	374.6	222.4	7.097	51.10
50	376.9	220.1	7.097	50.85
60	374.5	222.5	7.097	51.11
70	378.0	219.0	7.097	50.73
80	372.7	224.3	7.097	51.30
90	369.0	228.0	7.097	51.68
100	367.7	229.3	7.097	51.82
110	368.0	229.0	7.097	51.79
120	371.1	225.9	7.097	51.47
130	372.8	224.2	7.097	51.29
140	377.2	219.8	7.097	50.82
150	381.4	215.6	7.097	50.35
160	385.1	211.9	7.097	49.93
170	403.0	194.0	7.097	47.81
180	391.5	205.5	7.097	49.19
190	379.3	217.7	7.097	50.59
200	376.8	220.2	7.097	50.86
210	380.2	216.8	7.097	50.49
220	390.9	206.1	7.097	49.26
230	395.9	201.1	7.097	48.67
240	401.2	195.8	7.097	48.03
250	403.6	193.4	7.097	47.74
260	408.6	188.4	7.097	47.15
270	412.1	184.9	7.097	46.74
280	411.0	186.0	7.097	46.87
290	416.5	180.5	7.097	46.24
300	420.2	176.8	7.097	45.81
310	425.0	172.0	7.097	45.26
320	431.0	166.0	7.097	44.57
330	431.9	165.1	7.097	44.46
340	418.0	179.0	7.097	46.06
350	406.3	190.7	7.097	47.42
Ave. =	393.1 M	204. M		

Antenna Radiation Center AMSL =597 M
 NGDC 03 Arc Sec.

Geographic Coordinates:

N. Lat. 462521
 W. Lng. 942741

Doug Vernier, Telecommunications Consultants
 KBJRTV, KBJR LICENSE, INC. , BLCT2419

ERP = 100 kW
 Channel = 06+

Azimuth Deg.T.	Ave. Elev. 3 to 16 km Meters AMSL	Effective Antenna Height Meters AAT	ERP (dBk)	F(50-50) Distance to 47 dBu Contour km
0	421.5	188.5	20.000	92.93
10	412.6	197.4	20.000	93.83
20	390.8	219.2	20.000	95.98
30	375.1	234.9	20.000	97.50
40	324.9	285.1	20.000	102.27
50	251.4	358.6	20.000	107.92
60	189.0	421.0	20.000	113.24
70	183.3	426.7	20.000	113.75
80	183.0	427.0	20.000	113.78
90	183.0	427.0	20.000	113.78
100	183.0	427.0	20.000	113.78
110	183.0	427.0	20.000	113.78
120	183.0	427.0	20.000	113.78
130	183.0	427.0	20.000	113.78
140	183.3	426.7	20.000	113.75
150	186.1	423.9	20.000	113.50
160	192.5	417.5	20.000	112.93
170	195.4	414.6	20.000	112.67
180	196.4	413.6	20.000	112.58
190	197.1	412.9	20.000	112.52
200	189.6	420.4	20.000	113.19
210	191.4	418.6	20.000	113.02
220	240.4	369.6	20.000	108.78
230	365.0	245.0	20.000	98.48
240	386.6	223.4	20.000	96.39
250	391.9	218.1	20.000	95.87
260	399.0	211.0	20.000	95.18
270	403.6	206.4	20.000	94.73
280	417.6	192.4	20.000	93.33
290	431.5	178.5	20.000	91.89
300	432.3	177.7	20.000	91.81
310	436.3	173.7	20.000	91.38
320	428.4	181.6	20.000	92.22
330	424.0	186.0	20.000	92.67
340	424.1	185.9	20.000	92.66
350	427.5	182.5	20.000	92.31
Ave. =	299.6 M	310.4 M		

Antenna Radiation Center AMSL =610 M
 NGDC 03 Arc Sec.

Geographic Coordinates:

N. Lat. 46 47 21
 W. Lng. 92 06 51

Doug Vernier, Telecommunications Consultants
 WDAYTV, FORUM COMMUNICATIONS COMPANY , BMLCT624
 ERP = 100 kW
 Channel = 06Z

Azimuth Deg.T.	Ave. Elev. 3 to 16 km Meters AMSL	Effective Antenna Height Meters AAT	ERP (dBk)	F(50-50) Distance to 47 dBu Contour km
0	297.7	345.3	20.000	106.95
10	294.9	348.1	20.000	107.15
20	292.4	350.6	20.000	107.33
30	290.7	352.3	20.000	107.46
40	290.3	352.7	20.000	107.49
50	287.2	355.8	20.000	107.71
60	285.4	357.6	20.000	107.85
70	283.4	359.6	20.000	108.00
80	282.0	361.0	20.000	108.11
90	281.1	361.9	20.000	108.17
100	280.2	362.8	20.000	108.24
110	279.4	363.6	20.000	108.31
120	279.2	363.8	20.000	108.32
130	279.2	363.8	20.000	108.32
140	279.8	363.2	20.000	108.27
150	281.0	362.0	20.000	108.18
160	281.8	361.2	20.000	108.12
170	282.8	360.2	20.000	108.04
180	284.1	358.9	20.000	107.95
190	285.3	357.7	20.000	107.86
200	286.7	356.3	20.000	107.75
210	288.9	354.1	20.000	107.59
220	291.4	351.6	20.000	107.41
230	294.1	348.9	20.000	107.21
240	298.3	344.7	20.000	106.91
250	303.1	339.9	20.000	106.56
260	307.8	335.2	20.000	106.23
270	308.1	334.9	20.000	106.21
280	308.8	334.2	20.000	106.16
290	308.7	334.3	20.000	106.17
300	307.5	335.5	20.000	106.25
310	307.8	335.2	20.000	106.23
320	307.9	335.1	20.000	106.22
330	307.0	336.0	20.000	106.29
340	304.6	338.4	20.000	106.46
350	301.0	342.0	20.000	106.71
Ave. =	292.5 M	350.5 M		

Antenna Radiation Center AMSL =643 M
 NGDC 03 Arc Sec.

Geographic Coordinates:

N. Lat. 47 00 43
 W. Lng. 97 11 58

EXHIBIT # E9

R.F. RADIATION COMPLIANCE STATEMENT Channel 202 – 5.0 kW H & V Brainerd, Minnesota Minnesota Public Radio

October 1998

Based on the formulas expressed in the OET Bulletin, No. 65, August 1997, "Evaluating Compliance with F.C.C. Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", published by the Federal Communication Commission's Office of Engineering and Technology, when applying a combination of the element and array pattern as defined in E.P.A study PB85-245868 ("**Engineering Assessment of the Potential Impact of the Federal Radiation Protection Guidance on the AM, FM and TV Broadcast Services**") while using an eight-bay Shively 6810 model antenna and applying the formulas described in OET-65, it can be shown that the proposed antenna will produce a non-ionization radiation level of .053 microwatts per square centimeter at a position of two meters above the ground. This value amounts to only .0053 percent of the maximum A.N.S.I. standard for a controlled environment and .0267 percent for an uncontrolled environment.

Even though the proposed tower supports the antennas of KBJR (34 kW), KAWB, CH 22, 214 kW, and K54AT, 19.5 kW, further study was deemed unnecessary since the proposed antenna's contribution is under one percent of the maximum for both controlled and uncontrolled environments.

Page # 2-3 of this exhibit is a tabulation of the power density and percent contribution of the proposed antenna at points 2 meters above the ground at increasing horizontal distances from the base of the tower.

The applicant is confident that there will be no exposure at the transmitter site greater than the maximum. The applicant will protect workers on the tower by either reducing ERP or terminating transmission. An agreement is in effect with the other station owners at this location to reduce power or to terminate operations to protect workers from receiving in excess of the Commission's standard.

Consequently, it appears that the proposed FM station will be in full compliance with the Commission's human exposure to radiofrequency electromagnetic field rules and regulations.

Environment = Uncontrolled, Maximum = 200 μ W/sq cm

HORZ. DISTANCE FROM FM RADIATOR Vs POWER DENSITY (Microwatt/Square cm)

Shively 6800, 8 Spc.= 1 W, Pwr H.=5 Pwr V.=5 COR= 177M

Dist (Meters) PD (H) PD (V) Total (uW/cm2) Percent Max.

Dist (Meters)	PD (H)	PD (V)	Total (uW/cm2)	Percent Max.
1	0.03	0.02	0.05	0.0
2	0.03	0.02	0.05	0.0
3	0.03	0.02	0.06	0.0
4	0.04	0.02	0.06	0.0
5	0.04	0.02	0.06	0.0
6	0.04	0.02	0.06	0.0
7	0.04	0.02	0.06	0.0
8	0.04	0.02	0.06	0.0
9	0.04	0.02	0.06	0.0
10	0.04	0.02	0.07	0.0
11	0.05	0.02	0.07	0.0
12	0.05	0.02	0.07	0.0
13	0.05	0.02	0.07	0.0
14	0.05	0.02	0.07	0.0
15	0.05	0.02	0.07	0.0
16	0.06	0.02	0.08	0.0
17	0.06	0.03	0.09	0.0
18	0.07	0.03	0.10	0.0
19	0.07	0.03	0.11	0.1
20	0.08	0.04	0.12	0.1
21	0.08	0.04	0.13	0.1
22	0.09	0.05	0.14	0.1
23	0.09	0.05	0.15	0.1
24	0.10	0.06	0.16	0.1
25	0.11	0.06	0.17	0.1
26	0.11	0.07	0.18	0.1
27	0.12	0.07	0.19	0.1
28	0.13	0.08	0.21	0.1
29	0.13	0.09	0.22	0.1
30	0.14	0.09	0.23	0.1
31	0.15	0.10	0.24	0.1
32	0.15	0.11	0.26	0.1
33	0.16	0.11	0.27	0.1
34	0.16	0.12	0.28	0.1
35	0.16	0.13	0.29	0.1
36	0.17	0.14	0.31	0.2
37	0.17	0.15	0.32	0.2
38	0.17	0.16	0.33	0.2
39	0.18	0.17	0.34	0.2
40	0.18	0.18	0.36	0.2
41	0.18	0.18	0.37	0.2
42	0.19	0.19	0.38	0.2
43	0.19	0.20	0.39	0.2
44	0.19	0.21	0.40	0.2
45	0.19	0.22	0.41	0.2
46	0.19	0.22	0.42	0.2
47	0.19	0.23	0.42	0.2

48	0.20	0.23	0.43	0.2
49	0.20	0.23	0.43	0.2
50	0.20	0.23	0.43	0.2
51	0.20	0.23	0.43	0.2
52	0.20	0.23	0.43	0.2
53	0.20	0.23	0.43	0.2
54	0.20	0.23	0.43	0.2
55	0.20	0.23	0.43	0.2
56	0.19	0.23	0.42	0.2
57	0.19	0.22	0.42	0.2
58	0.19	0.22	0.41	0.2
59	0.19	0.21	0.40	0.2
60	0.18	0.21	0.39	0.2
61	0.18	0.21	0.39	0.2
62	0.18	0.20	0.38	0.2
63	0.17	0.19	0.37	0.2
64	0.17	0.19	0.36	0.2
65	0.16	0.18	0.35	0.2
66	0.16	0.18	0.34	0.2
67	0.16	0.17	0.33	0.2
68	0.15	0.17	0.32	0.2
69	0.15	0.16	0.31	0.2
70	0.14	0.15	0.29	0.1
71	0.14	0.15	0.28	0.1
72	0.13	0.14	0.27	0.1
73	0.12	0.13	0.25	0.1
74	0.12	0.12	0.24	0.1
75	0.11	0.11	0.22	0.1
76	0.10	0.11	0.21	0.1
77	0.10	0.10	0.19	0.1
78	0.09	0.09	0.18	0.1
79	0.08	0.08	0.16	0.1
80	0.07	0.08	0.15	0.1
81	0.07	0.07	0.14	0.1
82	0.06	0.06	0.12	0.1
83	0.05	0.05	0.11	0.1
84	0.05	0.05	0.09	0.0
85	0.04	0.04	0.08	0.0
86	0.03	0.03	0.07	0.0
87	0.03	0.03	0.06	0.0
88	0.02	0.02	0.05	0.0
89	0.02	0.02	0.04	0.0
90	0.02	0.02	0.03	0.0
91	0.01	0.01	0.02	0.0
92	0.01	0.01	0.02	0.0
93	0.01	0.01	0.01	0.0
94	0.00	0.00	0.01	0.0
95	0.00	0.00	0.00	0.0
96	0.00	0.00	0.00	0.0
97	0.00	0.00	0.00	0.0
98	0.00	0.00	0.00	0.0
99	0.00	0.00	0.00	0.0
100	0.00	0.00	0.00	0.0