

ENGINEERING REPORT
RE AMENDMENT OF APPLICATION (BPCDT-19991021AAT)
FOR A NEW DTV STATION
KCLO-DT, RAPID CITY, SOUTH DAKOTA
CHANNEL 16 50 KW MAX. ERP 154 METERS HAAT

JUNE 2001

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

Introduction

This engineering report has been prepared on behalf of Young Broadcasting of Rapid City, Inc. (Young), licensee of TV station KCLO-TV, Sioux Falls, South Dakota in support of an amendment of its application (BPCDT-19991021AAT) for construction permit for a new digital television (DTV) station. At present, KCLO-TV operates on analog TV Channel 15 (476-482 MHz) with 692 kW effective radiated power (ERP) and 155 meters antenna height above average terrain (HAAT).

The current analog Channel 15 operation of KCLO-TV is with a non-directional TV antenna. Station KCLO-TV has been allotted Channel 16 (482-488 MHz) for its digital TV operation with 50 kW maximum ERP and 155 meters HAAT. Young filed an application (BPCDT-19991021AAT) to operate its DTV facilities on Channel 16 with 38 kW ERP and 159 meters HAAT using a directional TV antenna. It is now proposed to operate KCLO-DT on Channel 16 with 200 kW maximum ERP and 154 meters HAAT using a directional TV antenna from the station's licensed transmitter site. Young will file an application to make changes in the KCLO-TV operation to specify a directional TV antenna.

Antenna Site

It is proposed to top-mount the new combined Channel 15 analog and Channel 16 DTV antenna on top of the existing self-supported tower. There will be no change in the overall height of the structure. The tower also supports antennas for FM stations KOUT and KFXS, and low power TV station K15AC.

The KCLO-TV antenna site is located on Skyline Drive, Rapid City, Pennington County, South Dakota. The KCLO-TV Antenna Structure Registration (1035414) indicates slightly different geographic coordinates of the antenna site. The re-determined geographic coordinates differ from the licensed coordinates by one second in latitude.

The geographic coordinates (NAD-27) of the existing tower based on the Antenna Structure Registration No. 1035414 are as follows.

North Latitude: 44° 04' 13"

West Longitude: 103° 15' 01"

The following data shows the pertinent information concerning the proposed DTV operation.

Antenna and Elevation Data*

Antenna:	Dielectric	Model No. TFU-20GTH-R CT160 DC
	Beam Tilt	0.75 degrees electrical
	Directivity	Directional
Elevation of the site above mean sea level:		1152 meters
Elevation of the top of supporting structure: above grounding including DTV antenna		122 meters
Elevation of the top of supporting structure: above mean sea level including DTV antenna		1274 meters
Height of DTV antenna radiation center: meters above ground		114 meters

Height of DTV antenna radiation center: 1266 meters
above mean sea level

Height of DTV antenna radiation center: 154 meters
above average terrain

* to the nearest meter.

Permissible Maximum & Reference ERP

The allotted maximum permissible ERP for KCLO-DT operation is 50 kW at 155 meters HAAT. Station KCLO-DT is proposing to operate with a maximum ERP of 200 kW and 154 meters HAAT using a directional TV antenna. Therefore, an electromagnetic interference study¹ has been conducted to determine any potential impact on the existing analog and allotted and proposed DTV operations. The attached Table III and III-A show the area and population of pertinent TV stations who may receive interference from the currently allotted Channel 16 DTV operation and the from the proposed KCLO-DT operations, respectively. Tables III and III-A indicate the potential interference population caused by the proposed KCLO-DT operation will not exceed the Commission's guidelines provided in its Public Notice dated August 10, 1998 (Additional Application Processing Guidelines for Digital Television (DTV)). Therefore, the proposed KCLO-DT operation would not have any adverse impact on the existing analog or proposed DTV allotments.

¹According to OET Bulletin 69 using the FCC FLR program.

Topographic Data

The average elevation data of the eight cardinal radials from 3.2 to 16.1 kilometers, has been obtained from the KCLO-TV license file at the Commission.

Contour Data

In MM Docket No. 00-83, the Commission has mandated that UHF DTV stations provide 48 dBu signal level over its principal community.

Utilizing the formula in Section 73.625(b)(2) for the effective heights shown on the attached tabulation, the depression angle A_h , for each azimuth has been calculated. The maximum radiation value has been used to calculate ERP where the vertical radiation pattern at these angles is greater than 90% of the maximum.

The distances along each radial to the limits of F(50,90) 41 dBu and 48 dBu contours were determined from reference to the propagation data for Channels 14-69, as published by the Commission in Figure 10b, Section 73.699 of its rules.

The distances along the eight cardinal radials to the predicted F(50,90) 41 dBu and 48 dBu contours, the average elevations, and the effective antenna heights are included on the attached tabulation (Table I). The attached map (Exhibit E-2) indicates the proposed KCLO-DT operation would provide 41 dBu and 48 dBu signal level over all of Rapid City, South Dakota, the principal community of the TV station.

Environmental Statement

Since the proposed DTV antenna will be installed on the existing KCLO-TV tower, it is believed the environmental concerns listed in Section 1.1307(a) of the Commission's rules are not pertinent; therefore, those issues have not been addressed.

An evaluation has been made to determine compliance with the Commission's specified standards for human exposure to RF fields as set forth in the OET Bulletin No. 65 dated August 1997. For a maximum effective radiated power of 200 kW and a radiation center of 114 meters above ground level, the proposed DTV operation would have a maximum of 21.3 microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$) RF field at 2 meters above the base of tower, conservatively assuming an antenna field factor of 0.2 in the downward direction. The Commission's guidelines for Channel 16 TV operation are 1,607 $\mu\text{W}/\text{cm}^2$ for the occupational/controlled and 321 $\mu\text{W}/\text{cm}^2$ for the general population/uncontrolled environment.

However, since other existing analog TV and FM operations are also located on the same or near the KCLO-DT tower, a combined RF field level at the DTV site has been also determined. The attached Table II lists the RF field contribution made by each operation. Table II indicates the combined RF field value would be less than the Commission's MPE guidelines.

Therefore, members of the public and personnel working around the proposed KCLO-DT, Channel 16, DTV facility would not be exposed to RF fields exceeding the Commission's guidelines. With respect to work performed on the tower, station KCLO-TV, in coordination with other stations,

will establish a procedure to ensure that workers are not exposed to RF fields above the Commission's guidelines by reducing or turning off the power, as appropriate.

For the reasons stated above, it is believed this proposal complies with Section 1.1307(a) and (b) of the Commission's Rules; therefore, under Section 1.1306, it is categorically excluded from the environmental processing.

TABLE I
COMPUTED COVERAGE DATA
FOR THE PROPOSED DTV OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

<u>Radial Bearing</u> N ° E, T	Average*	Height of R/C	Depression <u>Angle</u>	<u>ERP</u> kW	Distance to F(50,90)	
	<u>Elevation of Radial</u> <u>3.2 to 16 km</u> meters	<u>Above Average</u> <u>Elevation of Radial</u> <u>3.2 to 16.1 km</u> meters			<u>41 dBu</u> km	<u>48 dBu</u> km
0	1045	221	0.412	196.0	75.0	67.1
45	982	284	0.467	142.1	78.8	69.7
90	985	281	0.464	200.0	80.7	71.3
135	990	276	0.460	142.1	77.9	69.2
180	1148	118	0.301	196.0	65.7	58.6
225	1254	12	0.096	56.4	45.0	38.2
270	1282	-16	0.111	45.5	47.9	41.2
315	1210	56	0.207	56.4	52.8	45.8

Channel 16 (482-488 MHz)
Center of Radiation 1266 meters AMSL
Antenna Height Above Average Terrain 154 meters
Max. Effective Radiated Power 200 kW (23.0 dBk)

(NAD-27)

North Latitude: 44° 04' 13"
West Longitude: 103° 15' 01"

*Obtained from the KCLO-TV license file, rounded to nearest meter.

TABLE II
RF FIELD ANALYSIS
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

<u>Station</u>	<u>Channel</u>	Max. <u>ERP</u> kW	<u>Antenna</u>		Calculated <u>RF Field</u> μW/cm	<u>MPE</u> μW/cm ¹	% of <u>MPE</u>
			C/R <u>A.G.</u> meters	Relative <u>Field</u>			
KCLO-DT	16 (482-488 MHz)	200	114	0.2	21.3	321	6.6
KPLO-TV	15 (476-482 MHz)	692(V) 69(A)	114	0.2	36.8	317	11.6
KOUT(FM)	254C1 (98.7 MHz)	100 H&V	96	¹	44.0	200	22.0
KFXS(FM)	262C1 (100.3 MHz)	100 H&V	96	²	44.0	200	22.0
						Combined	62.2

¹See Exhibit E-5.

²See Exhibit E-6.

TABLE III
INTERFERENCE ANALYSIS
ACCORDING TO FCC OET BULLETIN 69
FOR THE PROPOSED DTV OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

Allotted KCLO-DT Operation

Analysis of: 16A ND BISMARCK (APP)

within Noise Limited Contour	113,409	31329.7
not affected by terrain losses	110,310	136.1
lost to NTSC IX	444	60.0
lost to additional IX by ATV	35	60.0
lost to ATV IX only	44	100.0
lost to all IX	479	196.1
Population/Area Served	109,831	30785.4

Analysis of: 16A NE NORTH PLATTE (ALLOT)

within Noise Limited Contour	66,299	29,132.1
not affected by terrain losses	66,157	28,806.6
lost to NTSC IX	0	0.0
lost to additional IX by ATV	227	152.7
lost to ATV IX only	227	152.7
lost to all IX	227	152.7
Population/Area Served	65,930	28,653.8

TABLE III
INTERFERENCE ANALYSIS
ACCORDING TO FCC OET BULLETIN 69
FOR THE PROPOSED DTV OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

Allotted KCLO-DT Operation
(continued)

Analysis of: 16A NE NORTH PLATTE (APP)

within Noise Limited Contour	57,859	21909.5
not affected by terrain losses	57,811	21817.1
lost to NTSC IX	0	0.0
lost to additional IX by ATV	69	60.3
lost to ATV IX only	69	60.3
lost to all IX	69	60.3
Population/Area Served	57,742	21756.9

TABLE IIIA
INTERFERENCE ANALYSIS
ACCORDING TO FCC OET BULLETIN 69
FOR THE PROPOSED DTV OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

Proposed KCLO-DT Operation

Analysis of: 16A ND BISMARCK (APP)

within Noise Limited Contour	113,409	31,329.7
not affected by terrain losses	110,310	30,981.5
lost to NTSC IX	444	136.1
lost to additional IX by ATV	38	80.0
lost to ATV IX only	47	132.1
lost to all IX	482	216.1
Population/Area Served	109,828	30,765.4

Analysis of: 16A NE NORTH PLATTE (ALLOT)

within Noise Limited Contour	66,299	29,132.1
not affected by terrain losses	66,157	28,806.6
lost to NTSC IX	0	0.0
lost to additional IX by ATV	227	152.7
lost to ATV IX only	227	152.7
lost to all IX	227	152.7
Population/Area Served	65,930	28,653.8

TABLE IIIA
INTERFERENCE ANALYSIS
ACCORDING TO FCC OET BULLETIN 69
FOR THE PROPOSED DTV OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

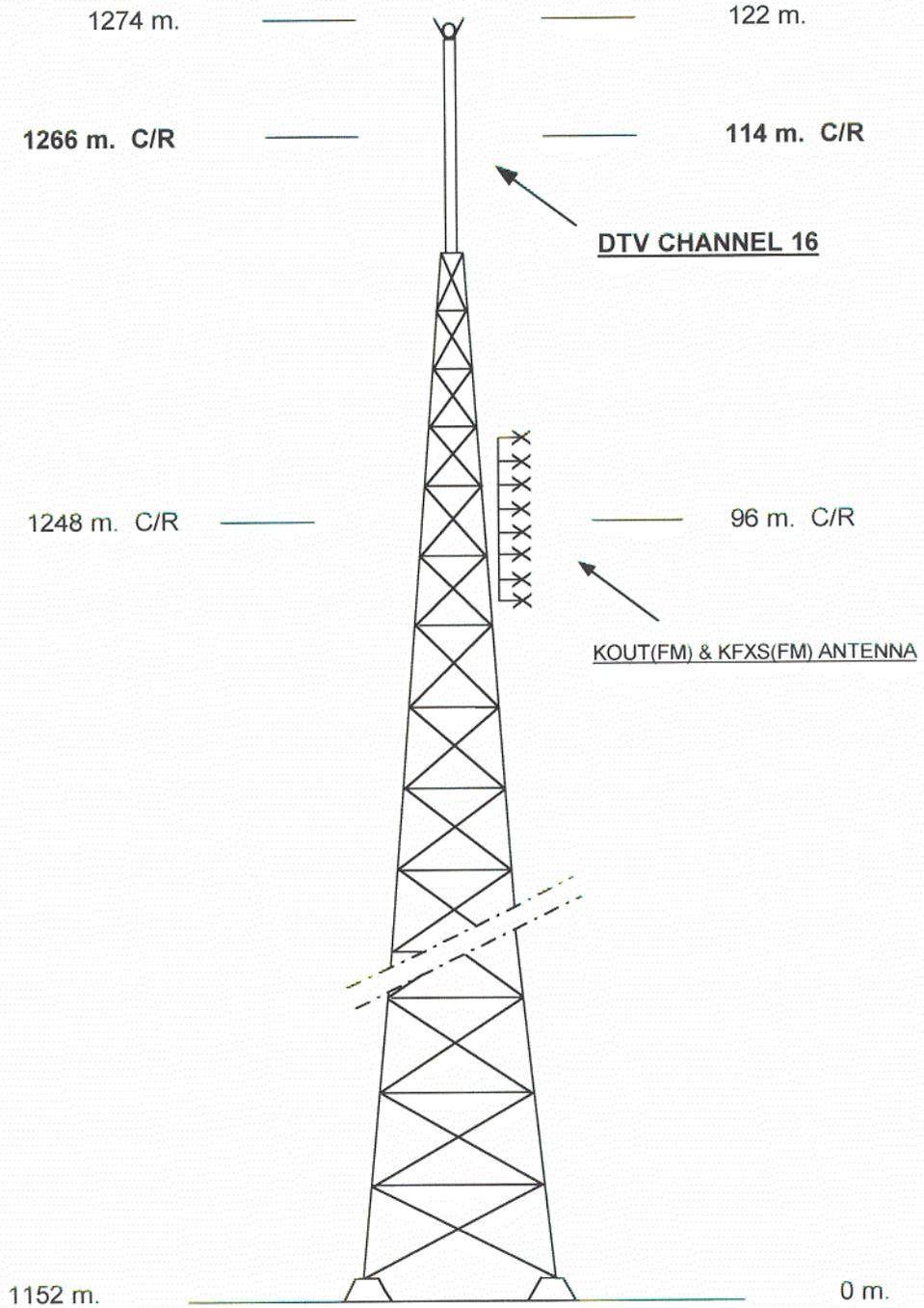
Proposed KCLO-DT Operation
(continued)

Analysis of: 16A NE NORTH PLATTE (APP)

within Noise Limited Contour	57,859	21909.5
not affected by terrain losses	57,811	21817.1
lost to NTSC IX	0	0.0
lost to additional IX by ATV	69	64.3
lost to ATV IX only	69	64.3
lost to all IX	69	64.3
Population/Area Served	57,742	21752.8

ABOVE MEAN SEA LEVEL*

ABOVE GROUND*



* TO NEAREST METER.

NOT TO SCALE

EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

**SITE COORDINATES
NAD 27**
NORTH LATITUDE: 44° 04' 13"
WEST LONGITUDE: 103° 15' 01"

SITE

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

RAPID CITY WEST, S. DAK.
 N4400-W10315/7.5
 1953
 PHOTOREVISED 1978
 AMS 5372 III SE-SERIES V873

CONTOUR INTERVAL 20 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

**EXHIBIT E-2
 TRANSMITTER SITE
 FOR THE PROPOSED OPERATION OF
 KCLO-DT, RAPID CITY, SOUTH DAKOTA
 JUNE 2001**
COHEN, DIPPELL AND EVERIST, P.C. Consulting Engineers Washington, D.C.

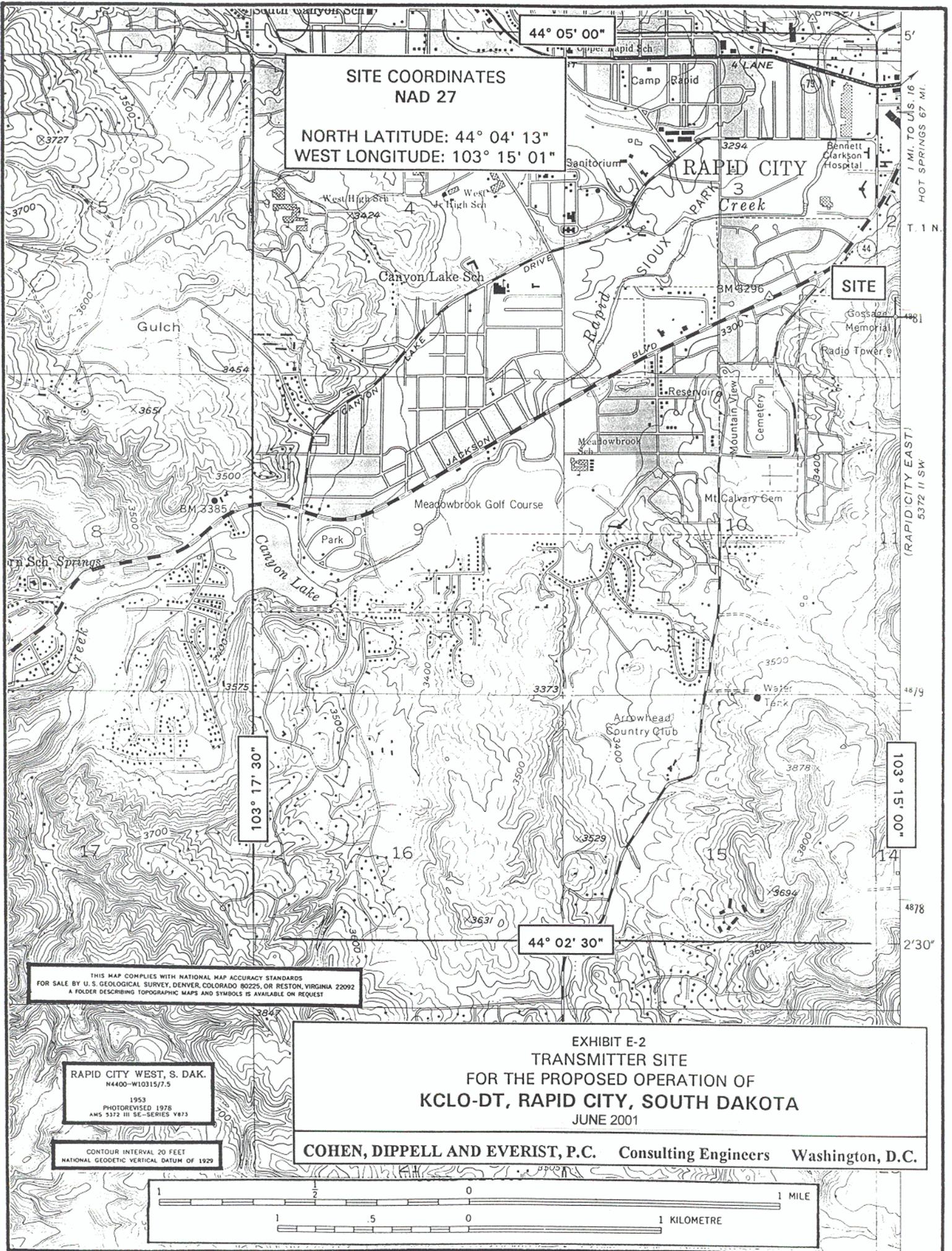
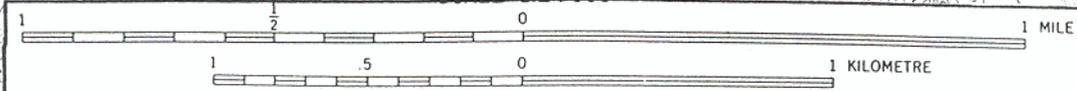


EXHIBIT E-3

DIRECTIONAL TV ANTENNA INFORMATION

KCLO-DT, RAPID CITY, SOUTH DAKOTA



Proposal Number
Date **25 May 2001**
Call Letters **KCLO-DT** Channel **16**
Location **Rapid City, SD**
Customer
Antenna Type **TFU-20GTH-R CT160 DC**

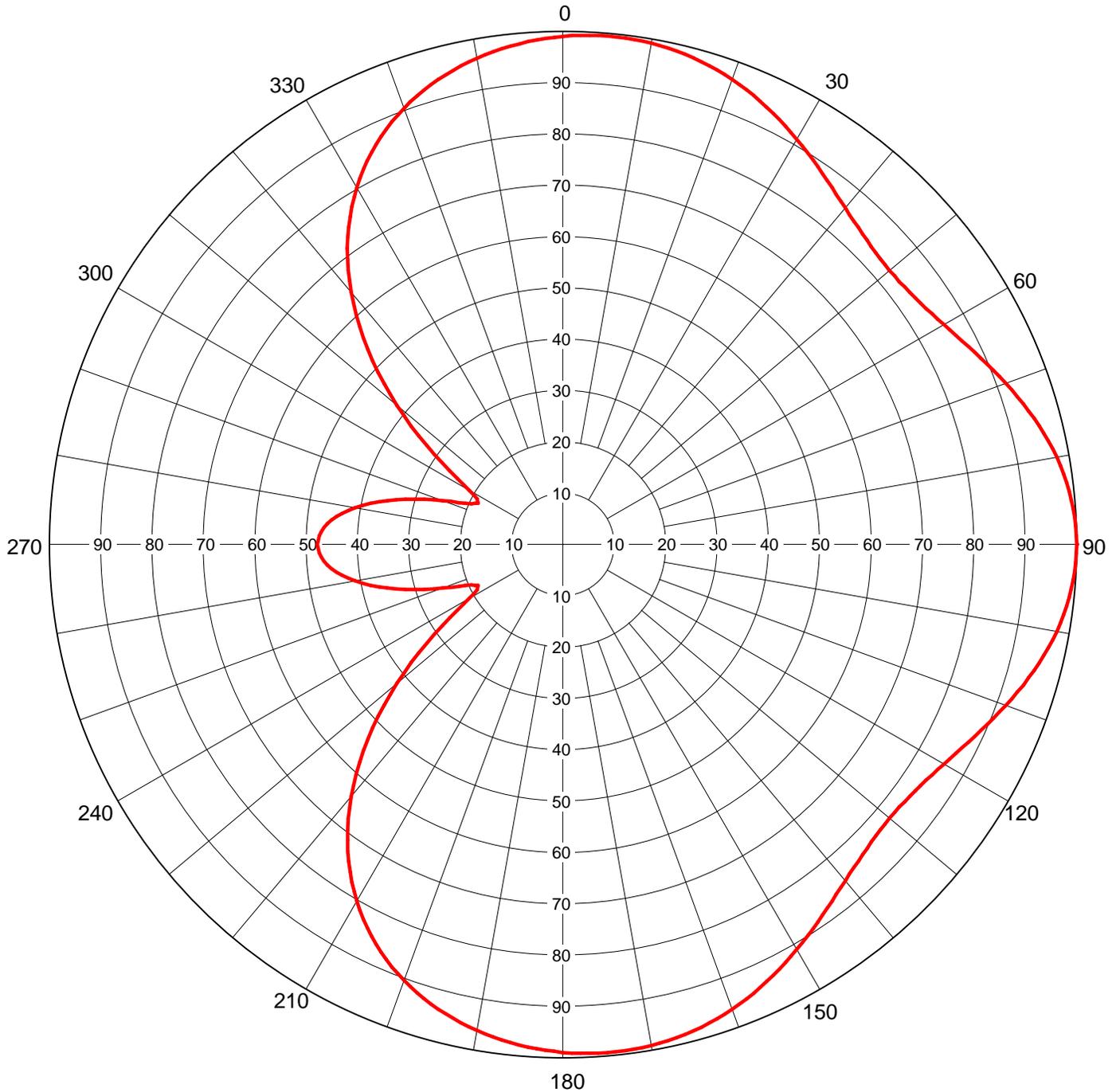
AZIMUTH PATTERN

RMS Gain at Main Lobe
Calculated / Measured

1.60 (2.04 dB)
Calculated

Frequency
Drawing #

485 MHz
TFU-CT160-15/16



Remarks:



Proposal Number _____ Revision _____
 Date **25 May 2001**
 Call Letters **KCLO-DT** Channel **16**
 Location **Rapid City, SD**
 Customer _____
 Antenna Type **TFU-20GTH-R CT160 DC**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-CT160-15/16**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.990	196.0	22.92
10	0.992	196.8	22.94
20	0.964	185.9	22.69
30	0.911	166.0	22.20
40	0.856	146.5	21.66
50	0.830	137.8	21.39
60	0.856	146.5	21.66
70	0.918	168.5	22.27
80	0.976	190.5	22.80
90	1.000	200.0	23.01
100	0.976	190.5	22.80
110	0.918	168.5	22.27
120	0.856	146.5	21.66
130	0.830	137.8	21.39
140	0.856	146.5	21.66
150	0.911	166.0	22.20
160	0.964	185.9	22.69
170	0.992	196.8	22.94
180	0.990	196.0	22.92
190	0.962	185.1	22.67
200	0.904	163.4	22.13
210	0.803	129.0	21.10
220	0.641	82.2	19.15
230	0.421	35.4	15.50
240	0.209	8.7	9.41
250	0.249	12.4	10.93
260	0.411	33.8	15.29
270	0.477	45.5	16.58
280	0.411	33.8	15.29
290	0.249	12.4	10.93
300	0.209	8.7	9.41
310	0.421	35.4	15.50
320	0.641	82.2	19.15
330	0.803	129.0	21.10
340	0.904	163.4	22.13
350	0.962	185.1	22.67

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
6	0.995	198.0	22.97
90	1.000	200.0	23.01
174	0.995	198.0	22.97
270	0.477	45.5	16.58

Minima

Angle	Field	ERP (kW)	ERP (dBk)
50	0.830	137.8	21.39
130	0.830	137.8	21.39
244	0.183	6.7	8.26
296	0.183	6.7	8.26

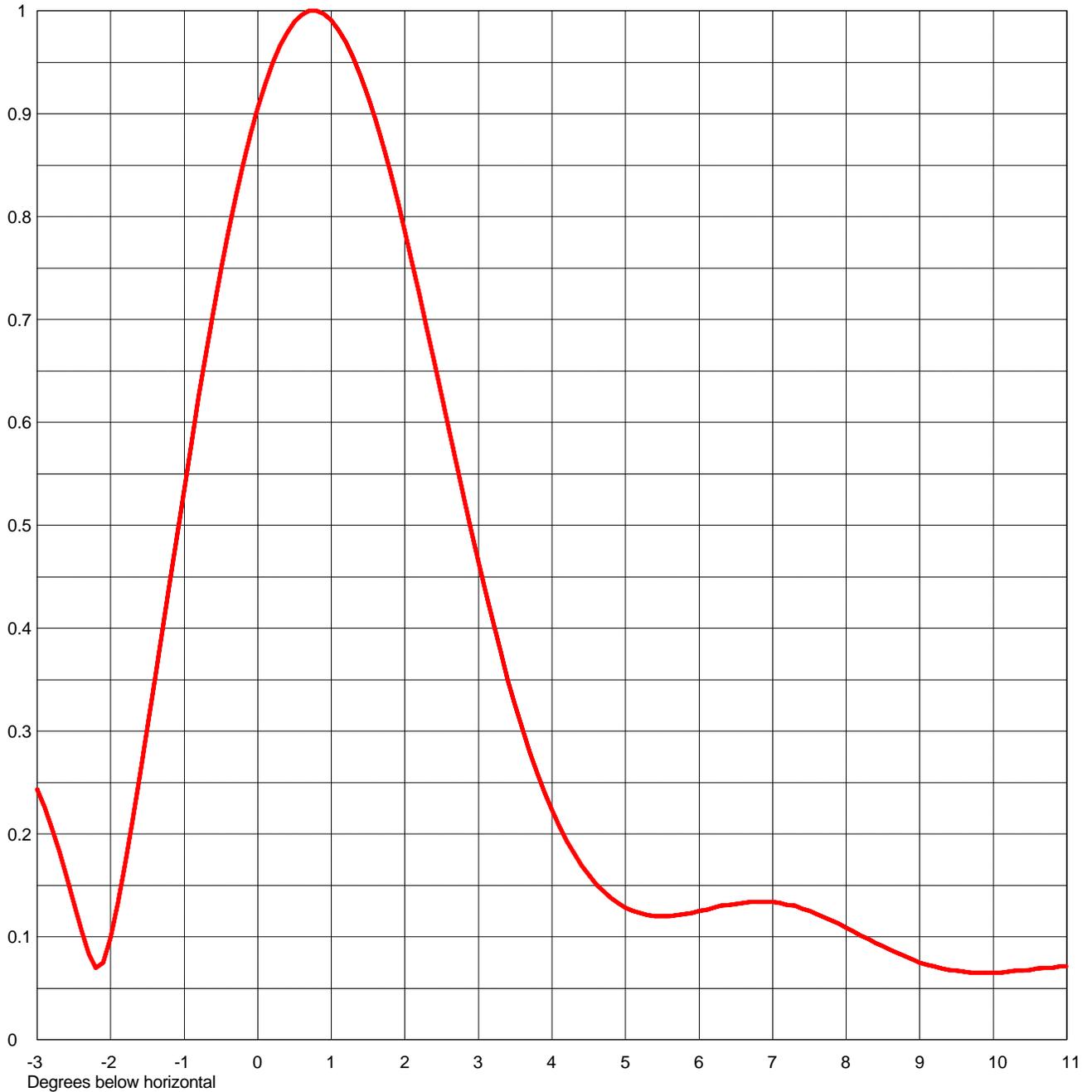
Remarks:



Proposal Number
Date **25 May 2001**
Call Letters **KCLO-DT** Channel **16**
Location **Rapid City, SD**
Customer
Antenna Type **TFU-20GTH-R CT160 DC**

ELEVATION PATTERN

RMS Gain at Main Lobe	16.5 (12.17 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	13.5 (11.30 dB)	Frequency	485.00 MHz
Calculated / Measured	Calculated	Drawing #	20G165075D



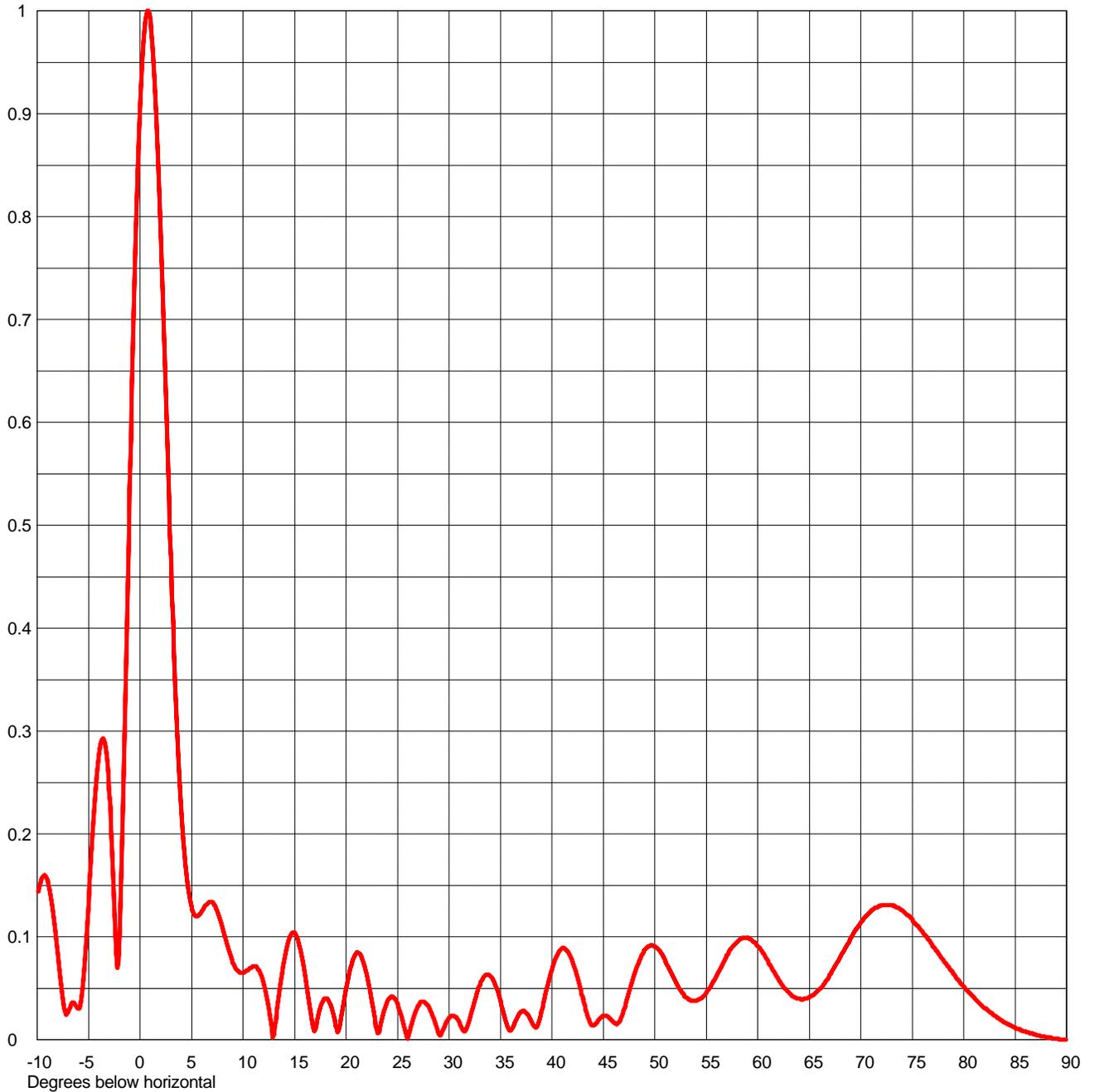
Remarks:



Proposal Number
Date **25 May 2001**
Call Letters **KCLO-DT** Channel **16**
Location **Rapid City, SD**
Customer
Antenna Type **TFU-20GTH-R CT160 DC**

ELEVATION PATTERN

RMS Gain at Main Lobe	16.5 (12.17 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	13.5 (11.30 dB)	Frequency	485.00 MHz
Calculated / Measured	Calculated	Drawing #	20G165075D-90



Remarks:



Proposal Number
 Date **25 May 2001**
 Call Letters **KCLO-DT** Channel **16**
 Location **Rapid City, SD**
 Customer
 Antenna Type **TFU-20GTH-R CT160 DC**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **20G165075D-90**

Angle	Field										
-10.0	0.138	2.4	0.659	10.6	0.069	30.5	0.023	51.0	0.077	71.5	0.128
-9.5	0.158	2.6	0.593	10.8	0.070	31.0	0.017	51.5	0.067	72.0	0.130
-9.0	0.155	2.8	0.527	11.0	0.071	31.5	0.008	52.0	0.057	72.5	0.131
-8.5	0.128	3.0	0.464	11.5	0.068	32.0	0.019	52.5	0.048	73.0	0.131
-8.0	0.084	3.2	0.405	12.0	0.055	32.5	0.038	53.0	0.041	73.5	0.129
-7.5	0.038	3.4	0.350	12.5	0.030	33.0	0.053	53.5	0.038	74.0	0.126
-7.0	0.027	3.6	0.302	13.0	0.005	33.5	0.062	54.0	0.038	74.5	0.121
-6.5	0.036	3.8	0.259	13.5	0.043	34.0	0.062	54.5	0.040	75.0	0.117
-6.0	0.030	4.0	0.223	14.0	0.077	34.5	0.053	55.0	0.046	75.5	0.111
-5.5	0.061	4.2	0.193	14.5	0.099	35.0	0.038	55.5	0.053	76.0	0.105
-5.0	0.135	4.4	0.169	15.0	0.104	35.5	0.019	56.0	0.062	76.5	0.098
-4.5	0.216	4.6	0.151	15.5	0.091	36.0	0.009	56.5	0.072	77.0	0.091
-4.0	0.277	4.8	0.138	16.0	0.065	36.5	0.019	57.0	0.082	77.5	0.085
-3.5	0.291	5.0	0.128	16.5	0.030	37.0	0.027	57.5	0.090	78.0	0.078
-3.0	0.243	5.2	0.123	17.0	0.009	37.5	0.026	58.0	0.095	78.5	0.071
-2.8	0.205	5.4	0.120	17.5	0.030	38.0	0.018	58.5	0.099	79.0	0.064
-2.6	0.158	5.6	0.120	18.0	0.040	38.5	0.012	59.0	0.099	79.5	0.058
-2.4	0.106	5.8	0.122	18.5	0.034	39.0	0.027	59.5	0.096	80.0	0.052
-2.2	0.070	6.0	0.125	19.0	0.014	39.5	0.049	60.0	0.091	80.5	0.046
-2.0	0.099	6.2	0.128	19.5	0.019	40.0	0.068	60.5	0.084	81.0	0.041
-1.8	0.172	6.4	0.131	20.0	0.049	40.5	0.082	61.0	0.076	81.5	0.036
-1.6	0.258	6.6	0.133	20.5	0.072	41.0	0.089	61.5	0.067	82.0	0.031
-1.4	0.350	6.8	0.134	21.0	0.084	41.5	0.086	62.0	0.059	82.5	0.027
-1.2	0.444	7.0	0.134	21.5	0.081	42.0	0.076	62.5	0.051	83.0	0.023
-1.0	0.536	7.2	0.131	22.0	0.064	42.5	0.060	63.0	0.046	83.5	0.020
-0.8	0.626	7.4	0.127	22.5	0.037	43.0	0.041	63.5	0.042	84.0	0.017
-0.6	0.709	7.6	0.122	23.0	0.009	43.5	0.022	64.0	0.040	84.5	0.014
-0.4	0.785	7.8	0.116	23.5	0.020	44.0	0.014	64.5	0.040	85.0	0.012
-0.2	0.851	8.0	0.109	24.0	0.037	44.5	0.019	65.0	0.041	85.5	0.010
0.0	0.906	8.2	0.101	24.5	0.042	45.0	0.023	65.5	0.044	86.0	0.008
0.2	0.949	8.4	0.094	25.0	0.035	45.5	0.022	66.0	0.049	86.5	0.006
0.4	0.979	8.6	0.087	25.5	0.019	46.0	0.017	66.5	0.055	87.0	0.005
0.6	0.996	8.8	0.081	26.0	0.001	46.5	0.017	67.0	0.063	87.5	0.003
0.8	1.000	9.0	0.075	26.5	0.020	47.0	0.029	67.5	0.071	88.0	0.002
1.0	0.991	9.2	0.071	27.0	0.033	47.5	0.046	68.0	0.080	88.5	0.002
1.2	0.969	9.4	0.068	27.5	0.037	48.0	0.063	68.5	0.089	89.0	0.001
1.4	0.936	9.6	0.066	28.0	0.033	48.5	0.077	69.0	0.098	89.5	0.000
1.6	0.894	9.8	0.065	28.5	0.021	49.0	0.087	69.5	0.106	90.0	0.000
1.8	0.843	10.0	0.065	29.0	0.006	49.5	0.091	70.0	0.114		
2.0	0.786	10.2	0.066	29.5	0.011	50.0	0.091	70.5	0.120		
2.2	0.724	10.4	0.067	30.0	0.021	50.5	0.086	71.0	0.125		

Remarks:

DIRECTIONAL DTV ANTENNA
KCLO-DT, RAPID CITY, SOUTH DAKOTA
JUNE 2001

<u>Azimuth</u> N ° E, T	Relative <u>Field</u>	<u>ERP</u>		<u>Azimuth</u> N ° E, T	Relative <u>Field</u>	<u>ERP</u>	
		kW	dBk			kW	kW
0	0.990	196.0	22.92	180	0.990	196.0	22.92
10	0.992	196.8	22.94	190	0.962	185.1	22.67
20	0.964	185.9	22.69	200	0.904	163.4	22.13
30	0.911	166.0	22.20	210	0.803	129.0	21.10
40	0.856	146.5	21.66	220	0.641	82.2	19.15
50	0.830	137.8	21.39	230	0.421	35.4	15.50
60	0.856	146.5	21.66	240	0.209	8.7	9.41
70	0.918	168.5	22.27	250	0.249	12.4	10.93
80	0.976	190.5	22.80	260	0.411	33.8	15.29
90	1.000	200.0	23.01	270	0.477	45.5	16.58
100	0.976	190.5	22.80	280	0.411	33.8	15.29
110	0.918	168.5	22.27	290	0.249	12.4	10.93
120	0.856	146.5	21.66	300	0.209	8.7	9.41
130	0.830	137.8	21.39	310	0.421	35.4	15.50
140	0.856	146.5	21.66	320	0.641	82.2	19.15
150	0.911	166.0	22.20	330	0.803	129.0	21.10
160	0.964	185.9	22.69	340	0.904	163.4	22.13
170	0.992	196.8	22.94	350	0.962	185.1	22.67

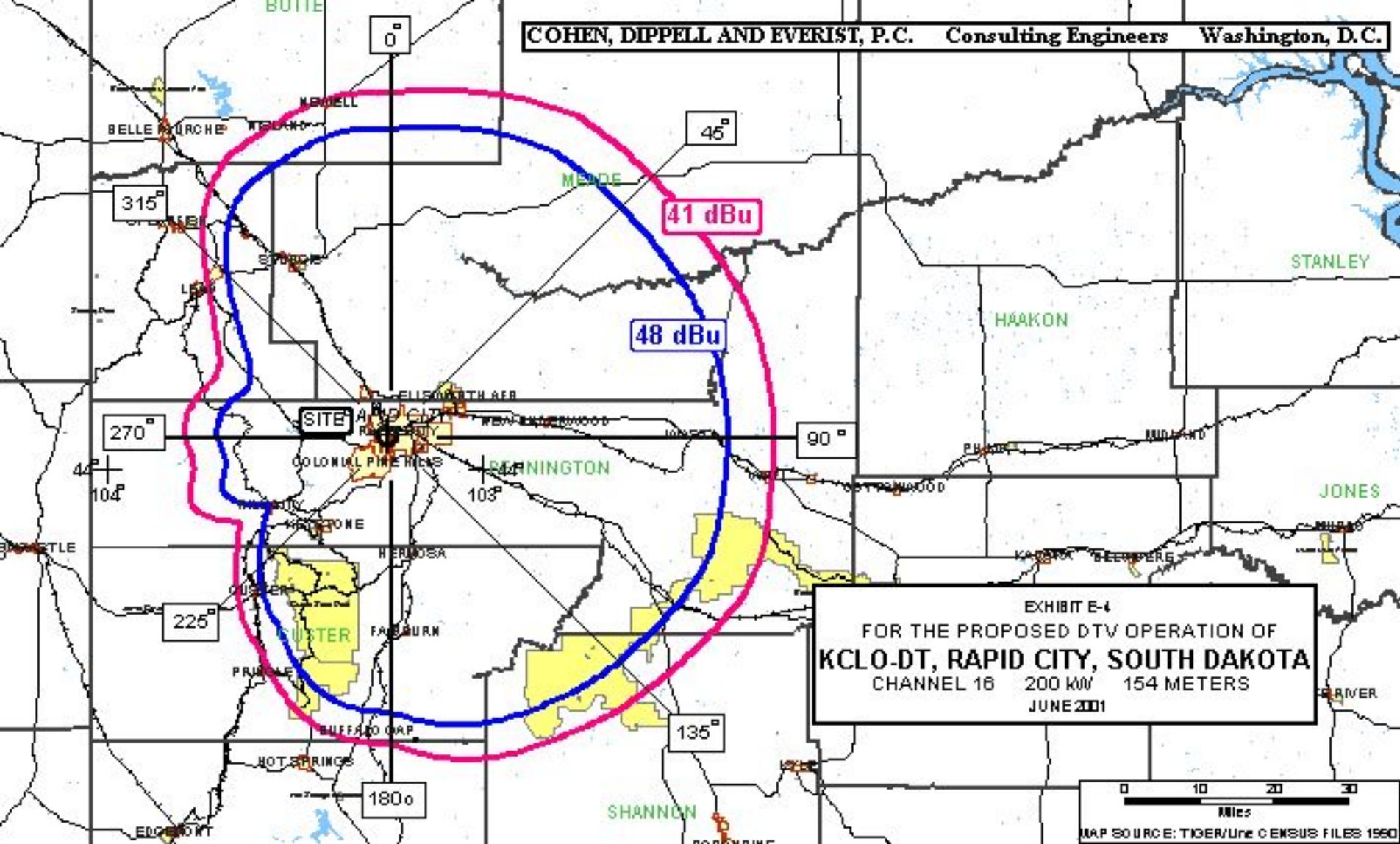
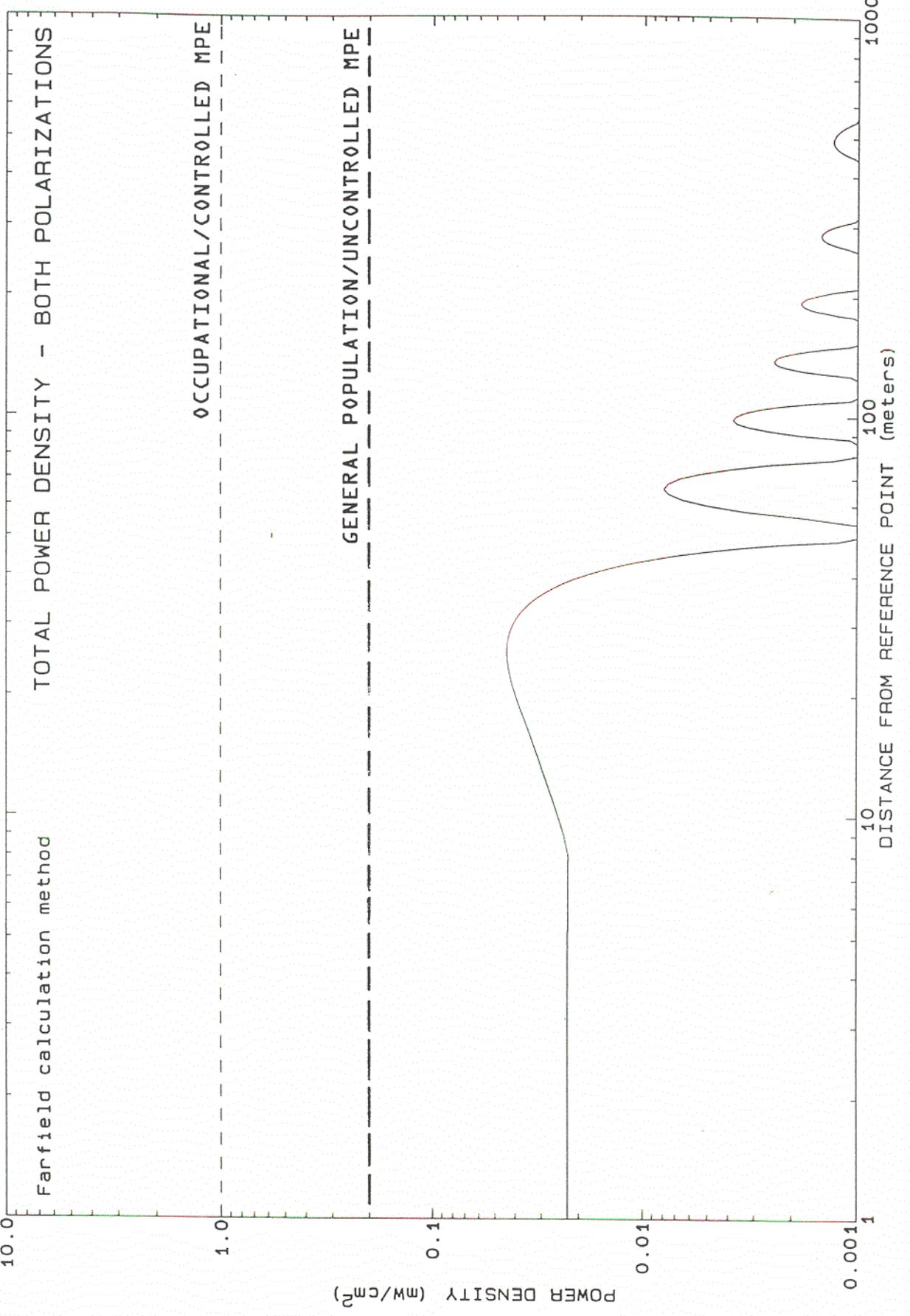


EXHIBIT E-4
FOR THE PROPOSED DTV OPERATION OF
KCLO-DT, RAPID CITY, SOUTH DAKOTA
CHANNEL 16 200 kW 154 METERS
JUNE 2001

0 10 20 30
Miles
MAP SOURCE: TIGER/Line CENSUS FILES 1990

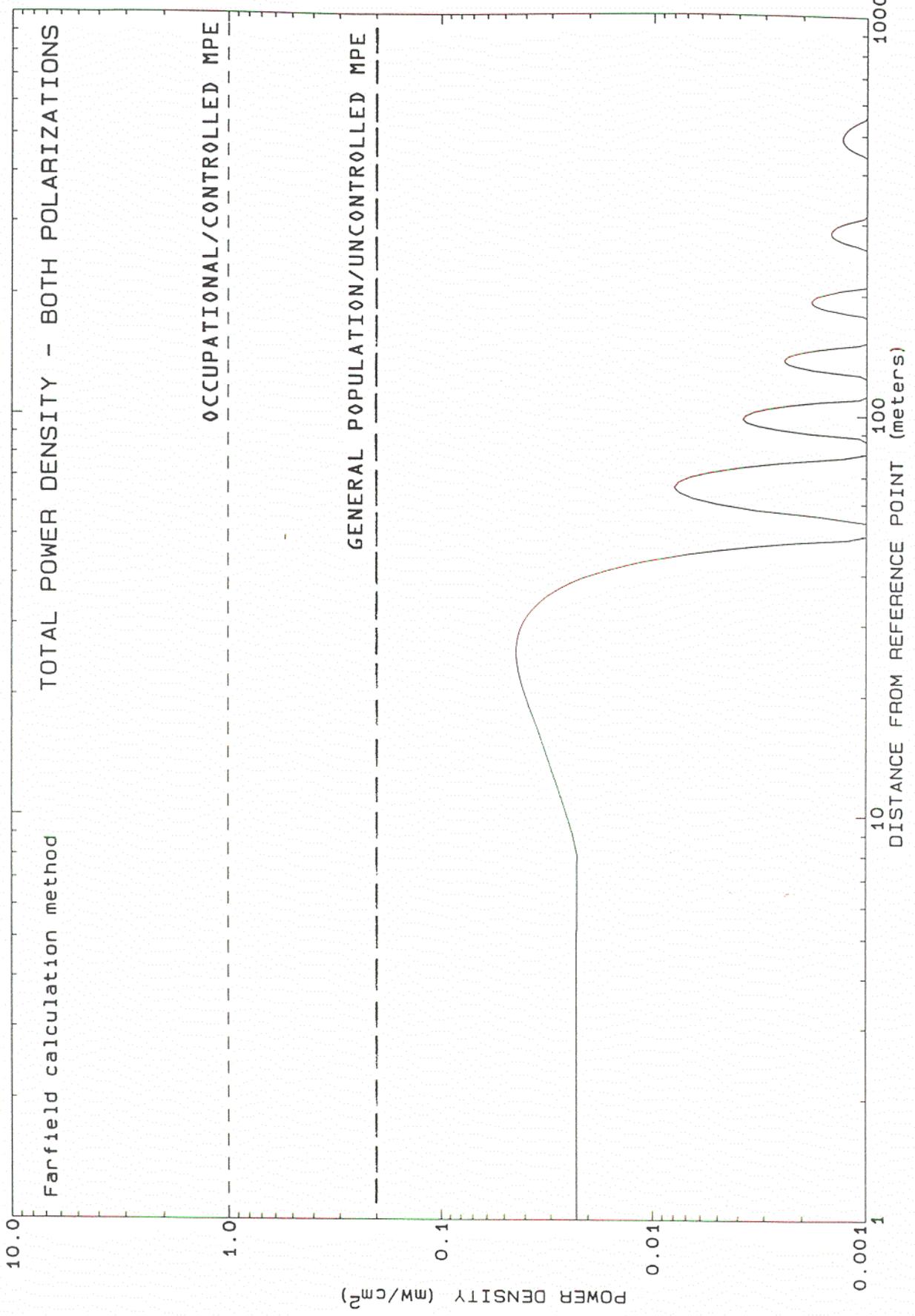
EXHIBIT E-5

Station: KOUT Frequency 98.700 MHz Height of Observer (ARP): 2.0 Meters
 No. of Elements Element Type Height of Center (ARP) Power (ERPd)
 Horizontal Polarization: 8 EPA TYPE 3 96.0 m 100.000 kW
 Vertical Polarization: 8 EPA TYPE 3 96.0 m 100.000 kW



Station: KFXS Frequency 100.300 MHz Height of Observer (ARP): 2.0 Meters
 No. of Elements 8 Element Type EPA TYPE 3 Height of Center (ARP) Power (ERPd)
 Horizontal Polarization: 8 EPA TYPE 3 100.000 kW
 Vertical Polarization: 8 EPA TYPE 3 100.000 kW

Farfield calculation method TOTAL POWER DENSITY - BOTH POLARIZATIONS



OCCUPATIONAL/CONTROLLED MPE

GENERAL POPULATION/UNCONTROLLED MPE

DISTANCE FROM REFERENCE POINT (meters)

POWER DENSITY (mW/cm²)

SECTION III-D - DTV Engineering

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

Certification Checklist: A correct answer of "Yes" to all of the questions below will ensure an expeditious grant of a construction permit. 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.

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. Yes No
- (b) It will operate 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 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

2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. 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. 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. 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. 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 _____ Analog TV, if any _____

2. Zone: I II III

3. Antenna Location Coordinates: (NAD 27)

_____ ° _____ ' _____ " N S Latitude
_____ ° _____ ' _____ " E W Longitude

4. Antenna Structure Registration Number: _____

Not applicable FAA Notification Filed with FAA

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

6. Overall Tower Height Above Ground Level: _____ meters

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

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

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

10. Antenna Specifications:

a.	Manufacturer	Model
----	--------------	-------

b. Electrical Beam Tilt: _____ 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. Polarization: Horizontal Circular Elliptical

TECH BOX

e. Directional Antenna Relative Field Values: 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 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.") Yes No

If "No," attach as an Exhibit justification therefor, 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 therefor. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

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

Exhibit No.

a. If **Certification Checklist** Item 3 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 3, 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 radiofrequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist** Item 3 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.

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 S. K. Khanna		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature <i>S.K. Khanna</i>		Date June 25, 2001	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, N.W., Suite 1100			
City Washington		State or Country (if foreign address) D.C.	ZIP Code 20005
Telephone Number (include area code) (202) 898-0111		E-Mail Address (if available) cde@bellatlantic.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).