

ENGINEERING STATEMENT
RE DTV BROADCAST ENGINEERING DATA
ON BEHALF OF
YOUNG BROADCASTING OF SIOUX FALLS, INC.
KDLO-DT, FLORENCE, SOUTH DAKOTA
CHANNEL 2 3.7 KW ERP MAX 240.6 METERS

DECEMBER 2002

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CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

Introduction

This engineering statement has been prepared on behalf of Young Broadcasting of Sioux Falls, Inc. ("Young"), licensee of KDLO(TV). The purpose of this engineering statement is to accompany its request for maximization of digital television ("DTV") facilities. Included with this report are the exhibits referred to in this text along with FCC Form 301, Section III-D.

Young operates Station KDLO(TV) on NTSC television Channel 3 with a maximum visual effective radiated power (ERP) of 100 kW (horizontal polarization) and an antenna height above average terrain (HAAT) of 512 meters (1680 feet). Young has been allotted DTV Channel 25 with facilities of 1000 kW and an HAAT of 512 meters in the revised DTV Table of Allotments.¹ Young has been authorized in Report and Order, MM Docket No. 02-102 (RM-10430) to substitute DTV Channel 2 in lieu of DTV Channel 25.

KDLO-DT Tower

The DTV antenna will be top-mounted on an existing tower having a total overall structure height above ground of 248.0 meters (813.6 feet). The existing transmitter site is located 0.5 miles north of Garden City, South Dakota. The tower (Exhibit E-1) has been registered under the number 1035407.

North Latitude: 44E 57' 53"

West Longitude: 97E 34' 50"

NAD-27

¹"In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service", MM Docket No. 87-286, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order. (FCC 98-24), 2/12/98, DTV Table of Allotments.

Equipment Data

General Electric, TY-50F (equivalent to Dielectric, Type TAB 6L) antenna with no electrical beam tilt will be installed.² The horizontal and the elevation radiation patterns and other exhibits required by Section 73.625(c) are attached (exhibits E-2a through E-2c).

Elevation Data

(Existing Tower; No Change in Overall Height)

Elevation of site above mean sea level	563.0 meters (1847 feet)
Overall height above ground of the existing antenna structure (including beacon)	248 meters (813.6 feet)
Overall height above mean sea level of existing tower (including beacon)	811 meters (2661 feet)
Center of radiation of Channel 2 antenna above ground	231 meters (759 feet)
Center of radiation of Channel 2 antenna above mean sea level	794 meters (2605 feet)
Antenna height above average terrain	240.6 meters

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

²The antenna that will be implemented is a GE, Type TY-50F. The successor antenna manufacturer indicates that this antenna's performance is almost identical to a Harris, Type TAB 6L. Dielectric now is the successor to both of the previous manufacturers, and therefore, has supplied the attached information.

Allocation

An allocation study from the proposed site has not been performed since the proposed DTV facilities will radiate the equivalent effective radiated power in every direction that is either less than or equal to the effective radiated power authorized for the KDLO-DT facilities in the Report and Order, MM Docket No. 02-102 (RM-10007). The actual transmitter site is less than 0.8 km from the rule making previously mentioned.

Interference Analysis

A study of predicted interference caused by the proposed Channel 2 DTV service was performed using a version of the Longley-Rice program in the Petition for Rule Making dated February 2002. It is proposed to operate with similar facilities as that specified and authorized in the rule making except there is a slight change in transmitter site of well within the 5.0 km criteria specified in Section 73.622.

Coverage

The map in Exhibit E-3 shows the proposed 35 and 28 dBu F(50,90) coverage contours. This illustrates the principal community, Florence, South Dakota, is well within the proposed 35 dBu F(50,90) contour.

Other Licensed and Broadcast Facilities

There are no AM stations within 3.2 km of the existing KDLO-DT tower site. There are no FM broadcast stations, and no other television broadcasting stations within 100 meters of the proposed KDLO-DT transmitter site.

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the licensee of KDLO-DT will install filters or take other measures as necessary to resolve the problem.

Environment Statement

There are no other transmitters operating within 100 meters of the proposed KDLO-DT site. The radiofrequency field level ("RFF") contribution of KDLO-DT is shown below. The proposed operation based upon the current OET Bulletin No.65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radio frequency field guidelines, and thus, complies with Section 1.1307 of the FCC Rules.

<u>Station</u>	<u>Frequency</u>	<u>Channel</u>	<u>ERP (kW)</u>	<u>RCAGL(m)¹</u>	<u>F²</u>	<u>S (μW/cm²)</u>	<u>RFF %³</u>
KDLO-DT	57 MHz	2	3.7	246	0.2	0.08	0.04

1. Radiation Center - 2 m
2. F = Relative Downward Field
3. Limit for an uncontrolled environment

The contribution of the KDLO-DT proposed operation, 2 meters above the ground at the base of the tower, will be less than 0.2 percent of the current FCC guidelines for general population exposure. Authorized personnel and rigging contractors will be alerted to the potential zone of high radiation 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 since the permittee indicates:

- (a)(1) The proposed facilities on an existing communications site are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities on an existing communications site are 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 will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities are not located near any known Indian religious sites.
- (a)(6) The proposed facilities are not located in a flood plain.
- (a)(7) The installation of the antenna on the existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights 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 in accordance with OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

ABOVE MEAN SEA LEVEL

ABOVE GROUND

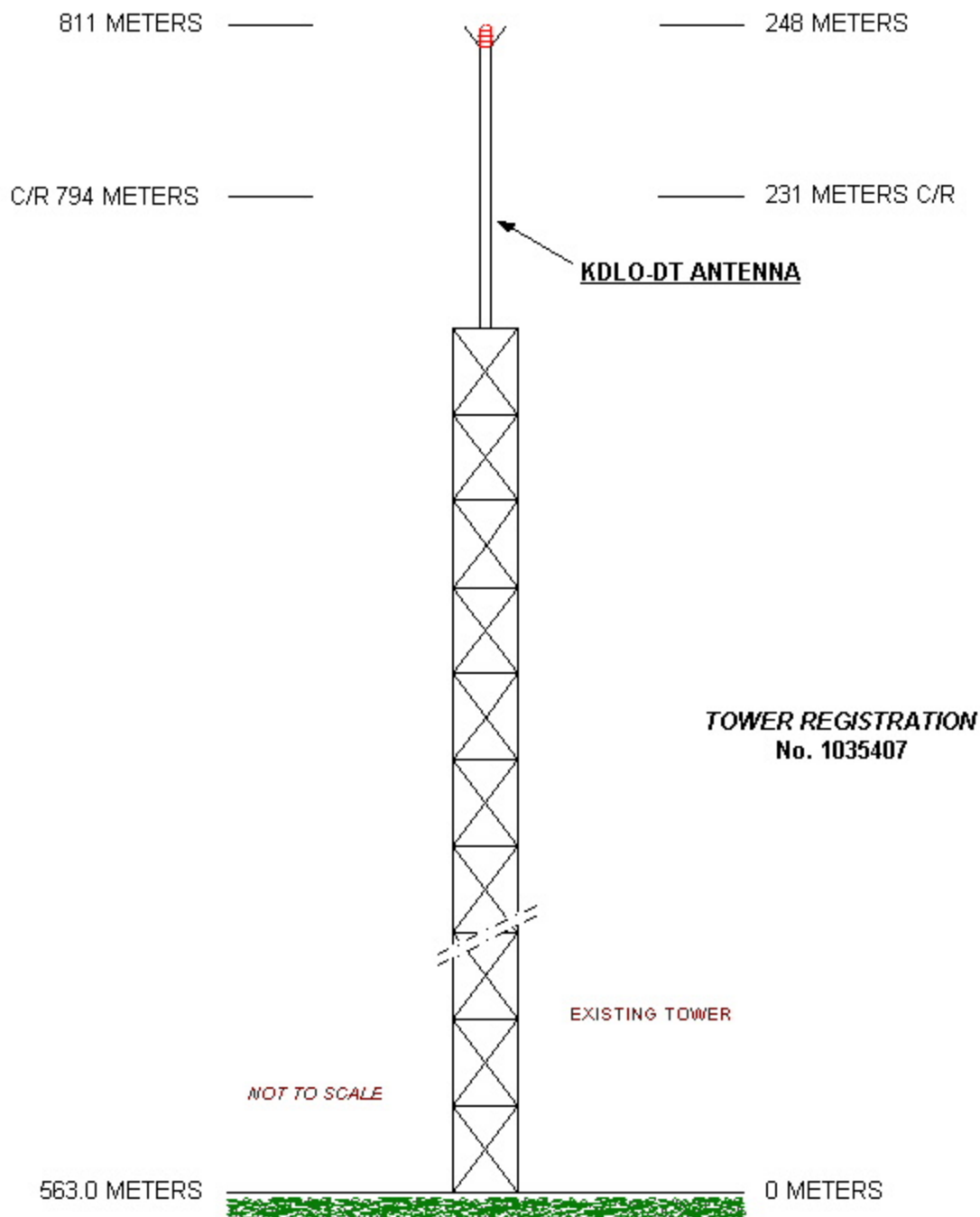


EXHIBIT E-1
VERTICAL SKETCH
FOR THE PROPOSED OPERATION OF
KDLO-DT, FLORENCE, SOUTH DAKOTA
DECEMBER 2002



Proposal Number

Revision

Date

06 Dec 2002

Call Letters

KDLO

Channel

2

Location

Florence, SD

Customer

Antenna Type

TAB-6L

ELEVATION PATTERN

RMS Gain at Main Lobe

6.0 (7.78 dB)

Beam Tilt

0.00 Degrees

RMS Gain at Horizontal

6.0 (7.78 dB)

Frequency

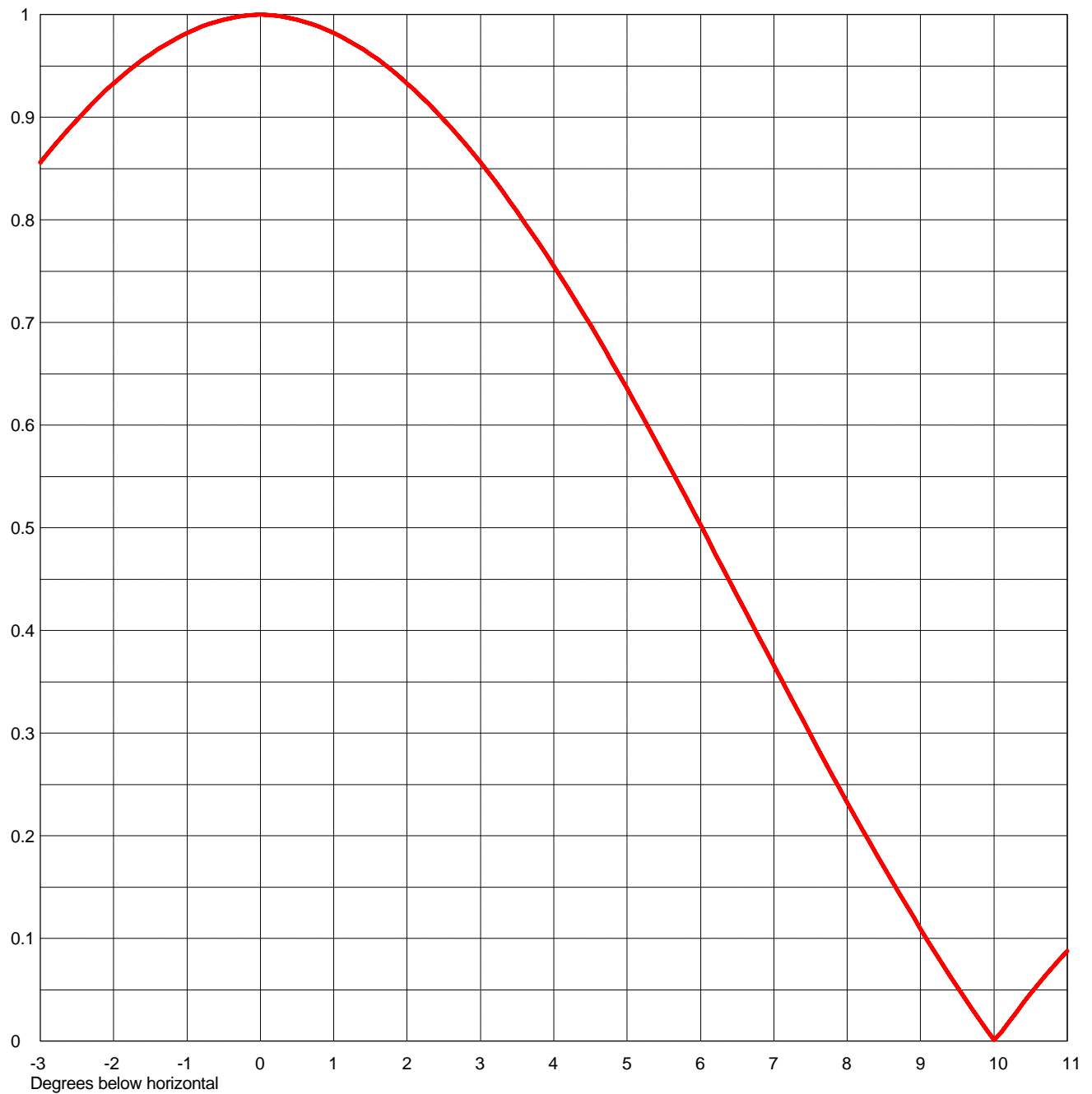
57.00 MHz

Calculated / Measured

Calculated

Drawing #

TAB-6L000



Remarks:



Proposal Number

Revision

Date

06 Dec 2002

Call Letters

KDLO

Channel

2

Location

Florence, SD

Customer

Antenna Type

TAB-6L

ELEVATION PATTERN

RMS Gain at Main Lobe

6.0 (7.78 dB)

Beam Tilt

0.00 Degrees

RMS Gain at Horizontal

6.0 (7.78 dB)

Frequency

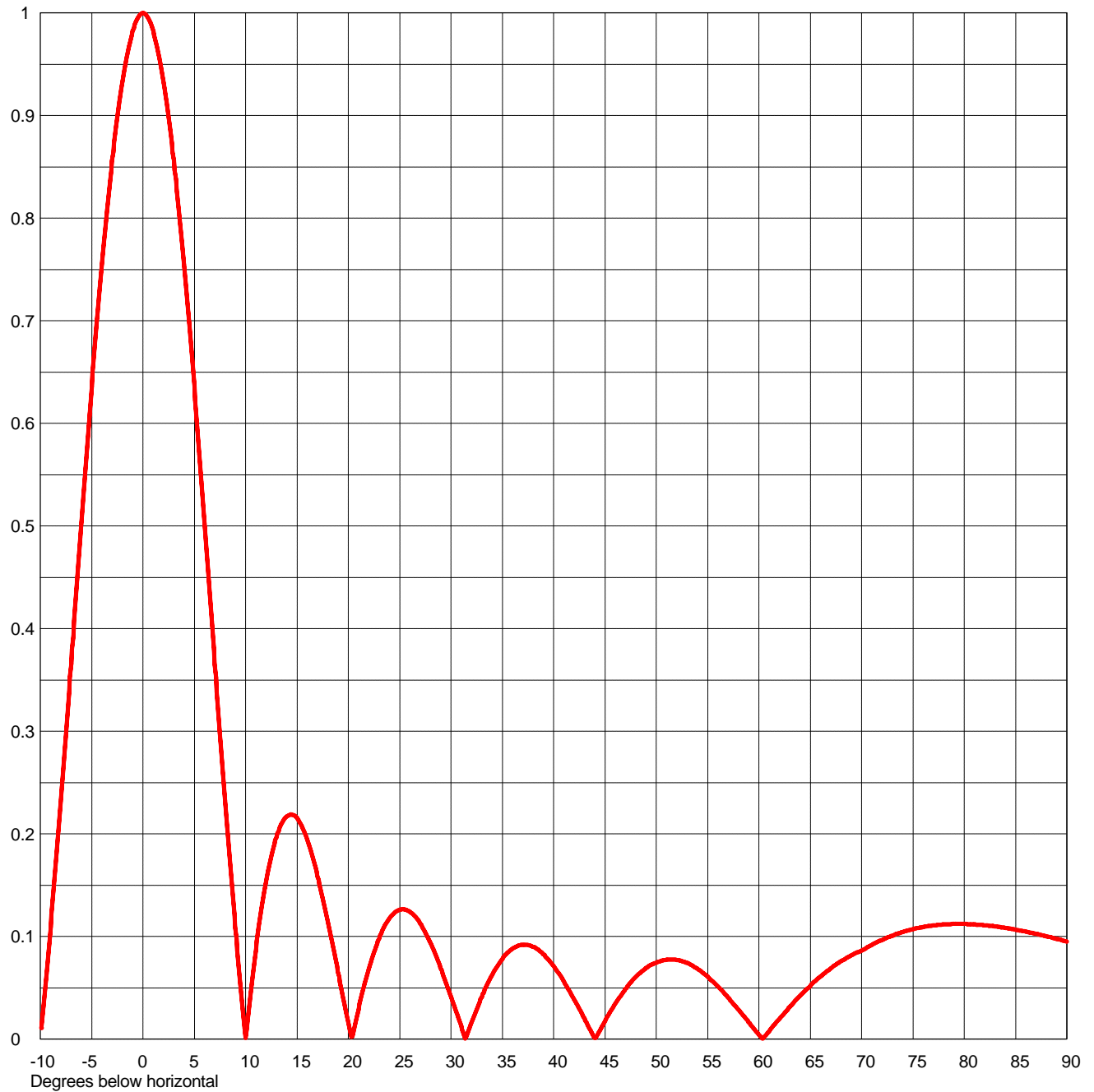
57.00 MHz

Calculated / Measured

Calculated

Drawing #

TAB-6L000-90



Remarks:



Proposal Number
 Date **06 Dec 2002**
 Call Letters **KDLO**
 Location **Florence, SD**
 Customer
 Antenna Type **TAB-6L**

Revision
 Channel **2**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **TAB-6L000-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.001	2.4	0.905	10.6	0.055	30.5	0.027	51.0	0.077	71.5	0.094
-9.5	0.053	2.6	0.890	10.8	0.072	31.0	0.012	51.5	0.078	72.0	0.097
-9.0	0.109	2.8	0.873	11.0	0.088	31.5	0.002	52.0	0.077	72.5	0.099
-8.5	0.169	3.0	0.856	11.5	0.124	32.0	0.016	52.5	0.076	73.0	0.101
-8.0	0.233	3.2	0.837	12.0	0.154	32.5	0.029	53.0	0.074	73.5	0.103
-7.5	0.298	3.4	0.818	12.5	0.178	33.0	0.041	53.5	0.072	74.0	0.104
-7.0	0.366	3.6	0.798	13.0	0.197	33.5	0.052	54.0	0.069	74.5	0.106
-6.5	0.434	3.8	0.777	13.5	0.210	34.0	0.062	54.5	0.065	75.0	0.107
-6.0	0.502	4.0	0.755	14.0	0.217	34.5	0.071	55.0	0.061	75.5	0.108
-5.5	0.570	4.2	0.732	14.5	0.219	35.0	0.078	55.5	0.056	76.0	0.109
-5.0	0.636	4.4	0.709	15.0	0.216	35.5	0.084	56.0	0.051	76.5	0.110
-4.5	0.697	4.6	0.685	15.5	0.207	36.0	0.088	56.5	0.046	77.0	0.111
-4.0	0.755	4.8	0.661	16.0	0.194	36.5	0.091	57.0	0.040	77.5	0.111
-3.5	0.808	5.0	0.636	16.5	0.178	37.0	0.092	57.5	0.035	78.0	0.112
-3.0	0.856	5.2	0.610	17.0	0.159	37.5	0.092	58.0	0.029	78.5	0.112
-2.8	0.873	5.4	0.583	17.5	0.138	38.0	0.090	58.5	0.023	79.0	0.112
-2.6	0.890	5.6	0.557	18.0	0.115	38.5	0.087	59.0	0.017	79.5	0.112
-2.4	0.905	5.8	0.530	18.5	0.090	39.0	0.083	59.5	0.010	80.0	0.112
-2.2	0.920	6.0	0.502	19.0	0.066	39.5	0.077	60.0	0.004	80.5	0.112
-2.0	0.933	6.2	0.475	19.5	0.041	40.0	0.071	60.5	0.002	81.0	0.112
-1.8	0.945	6.4	0.448	20.0	0.016	40.5	0.064	61.0	0.008	81.5	0.111
-1.6	0.956	6.6	0.420	20.5	0.007	41.0	0.056	61.5	0.014	82.0	0.111
-1.4	0.966	6.8	0.393	21.0	0.030	41.5	0.048	62.0	0.020	82.5	0.110
-1.2	0.975	7.0	0.366	21.5	0.050	42.0	0.039	62.5	0.026	83.0	0.110
-1.0	0.982	7.2	0.339	22.0	0.068	42.5	0.029	63.0	0.031	83.5	0.109
-0.8	0.988	7.4	0.312	22.5	0.085	43.0	0.020	63.5	0.037	84.0	0.108
-0.6	0.993	7.6	0.285	23.0	0.098	43.5	0.010	64.0	0.042	84.5	0.108
-0.4	0.997	7.8	0.259	23.5	0.109	44.0	0.001	64.5	0.047	85.0	0.107
-0.2	0.999	8.0	0.233	24.0	0.118	44.5	0.008	65.0	0.052	85.5	0.106
0.0	1.000	8.2	0.207	24.5	0.123	45.0	0.017	65.5	0.057	86.0	0.105
0.2	0.999	8.4	0.182	25.0	0.126	45.5	0.026	66.0	0.061	86.5	0.104
0.4	0.997	8.6	0.157	25.5	0.126	46.0	0.034	66.5	0.065	87.0	0.103
0.6	0.993	8.8	0.133	26.0	0.124	46.5	0.042	67.0	0.069	87.5	0.101
0.8	0.988	9.0	0.109	26.5	0.120	47.0	0.049	67.5	0.073	88.0	0.100
1.0	0.982	9.2	0.086	27.0	0.113	47.5	0.055	68.0	0.076	88.5	0.099
1.2	0.975	9.4	0.064	27.5	0.104	48.0	0.061	68.5	0.079	89.0	0.098
1.4	0.966	9.6	0.042	28.0	0.094	48.5	0.065	69.0	0.082	89.5	0.096
1.6	0.956	9.8	0.021	28.5	0.082	49.0	0.069	69.5	0.084	90.0	0.095
1.8	0.945	10.0	0.001	29.0	0.069	49.5	0.072	70.0	0.086		
2.0	0.933	10.2	0.019	29.5	0.056	50.0	0.074	70.5	0.089		
2.2	0.920	10.4	0.037	30.0	0.041	50.5	0.076	71.0	0.092		

Remarks:

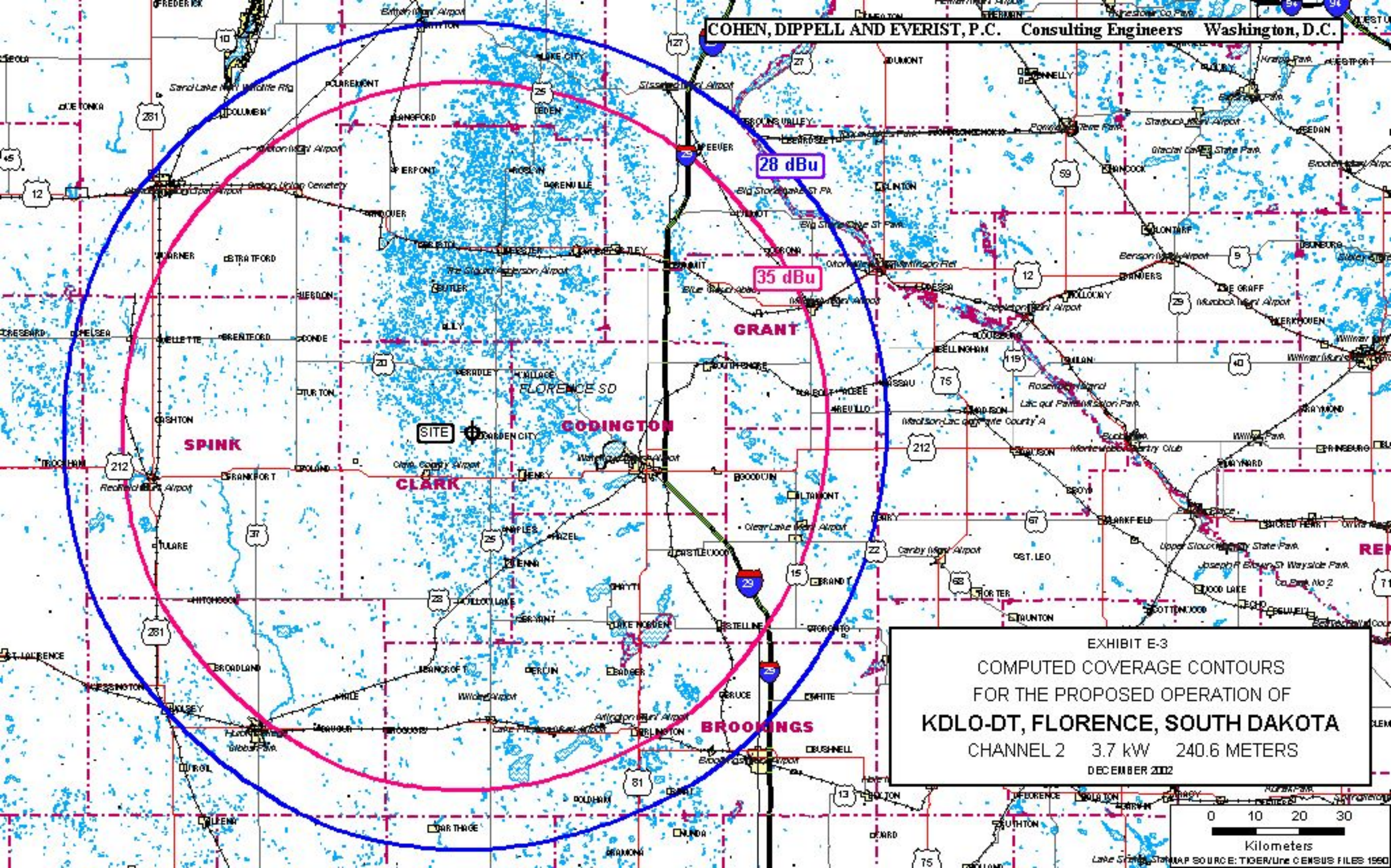
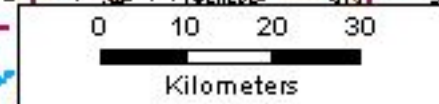


EXHIBIT E-3
COMPUTED COVERAGE CONTOURS
FOR THE PROPOSED OPERATION OF
KDLO-DT, FLORENCE, SOUTH DAKOTA
CHANNEL 2 3.7 KW 240.6 METERS
DECEMBER 2002



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.

- ☐ Yes ☐ No
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 _____ 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 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 radiofrequency 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.

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	Relationship to Applicant (e.g., Consulting Engineer)	
Signature	Date	
Mailing Address		
City	State or Country (if foreign address)	ZIP Code
Telephone Number (include area code)	E-Mail Address (if available)	

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).