

TECHNICAL EXHIBIT  
MINOR MODIFICATION OF CONSTRUCTION PERMIT  
STATION KPRY-DT (FACILITY ID 48660)  
PIERRE, SOUTH DAKOTA

JULY 29, 2002

CH 19 61 KW (MAX-DA) 347 M

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Table of Contents

	Technical Narrative
Figure 1	Antenna and Supporting Structure
Figure 2	Antenna Patterns
Figure 3	Predicted F(50,90) Coverage Contours

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Technical Narrative

This Technical Exhibit was prepared on behalf of digital television broadcast station KPRY-DT at Pierre, South Dakota. Station KPRY-DT is authorized for operation on channel 19 with a directional antenna maximum effective radiated power (ERP) of 955 kW and an antenna height above average terrain (HAAT) of 349 meters (BPCDT-19991025ACV). This “checklist” application proposes to reduce ERP and antenna HAAT and change to a directional antenna. There is no proposed change in site, channel (19) or city of license (Pierre).

Proposed Facilities

The proposed site coordinates remain (NAD27): 44-03-07 N, 100-05-03 W. A directional antenna maximum ERP of 61 kW and antenna HAAT of 347 meters are proposed. The FCC antenna structure registration number remains 1041931.

The FCC assigned an ERP of 1000 kilowatts (kW) with a directional antenna (DA) envelope and an antenna height above average terrain (HAAT) of 378 meters for the KPRY DTV allotment. The proposed ERP (61 kW-DA) will not exceed the allotted ERP in any azimuth and the proposed antenna HAAT is less than the allotted HAAT. Therefore, this

application is considered “checklist” and no allocation studies are necessary. The proposal would not be subject to environmental processing in accordance with Section 1.1306.

The proposed transmitter site is more than 500 kilometers from the closest point of the Canadian border. The site is more than 1,400 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is at Grand Island, Nebraska, approximately 171 kilometers to the north. The closest point of the National Radio Quiet Zone (VA/WV) is more than 300 kilometers to the south-southeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 600 kilometers to the southwest. The closest radio astronomy site operating on TV channel 37 is at North Liberty Iowa, more than 700 kilometers to the east-southeast. These separations are sufficient to not be a concern for coordination purposes.

#### Nearby Broadcast Facilities

There are no AM stations within 16 kilometers of the proposed transmitter site. There are no other full service FM or TV stations within 16 kilometers of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems that may result from its proposed operation.

#### Radiofrequency Electromagnetic Field Exposure

The proposed KPRY-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed antenna is located 294 meters above ground level with a maximum ERP of 61 kW. A relative field value of 0.2 was assumed for the antenna’s downward radiation (see Figure 2C). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0010 mW/cm<sup>2</sup>. This is less than 0.2% of the FCC’s recommended limit of 0.50 mW/cm<sup>2</sup> for channel 19 for an “uncontrolled” environment.

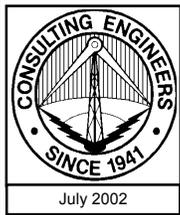
Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KPRY-DT operation appears to be otherwise categorically excluded from environmental processing.



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July 29, 2002



Tower Reg. No. 1041931

953.7 m AMSL  
(3129 ft AMSL)

331.9 m  
(1089 ft)

Proposed KPRY DTV-19 Antenna

Radiation Center  
915.8 m AMSL  
(3005 ft AMSL)

294.0 m  
(965 ft)

Site Coordinates:  
44° 03' 07" N  
100° 05' 03" W  
(NAD 27)

621.8 m AMSL  
(2040 ft AMSL)

Not to Scale

## ANTENNA AND SUPPORTING STRUCTURE

STATION KPRY-DT

PIERRE, SOUTH DAKOTA

CH 19    61 KW (MAX-DA)    347 M

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

Date **29 Jul 2002**  
Call Letters **KPRY-DT** Channel **61**  
Location **Pierre, SD**  
Customer  
Antenna Type **TLP-24M (C)**

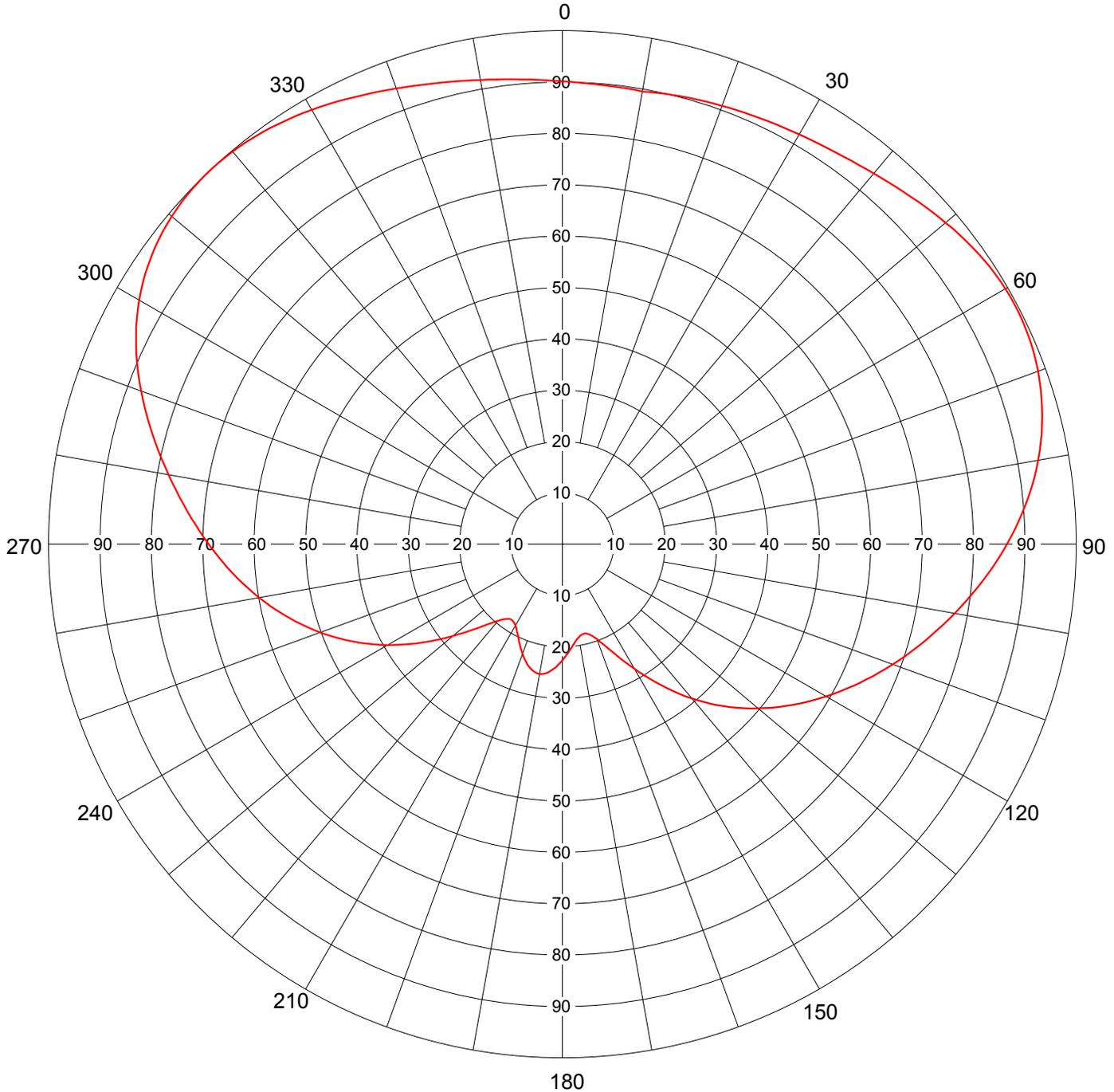
### AZIMUTH PATTERN

RMS Gain at Main Lobe  
Calculated / Measured

**1.90 (2.79 dB)**  
**Calculated**

Frequency  
Drawing #

**755 MHz**  
**TLP-M**

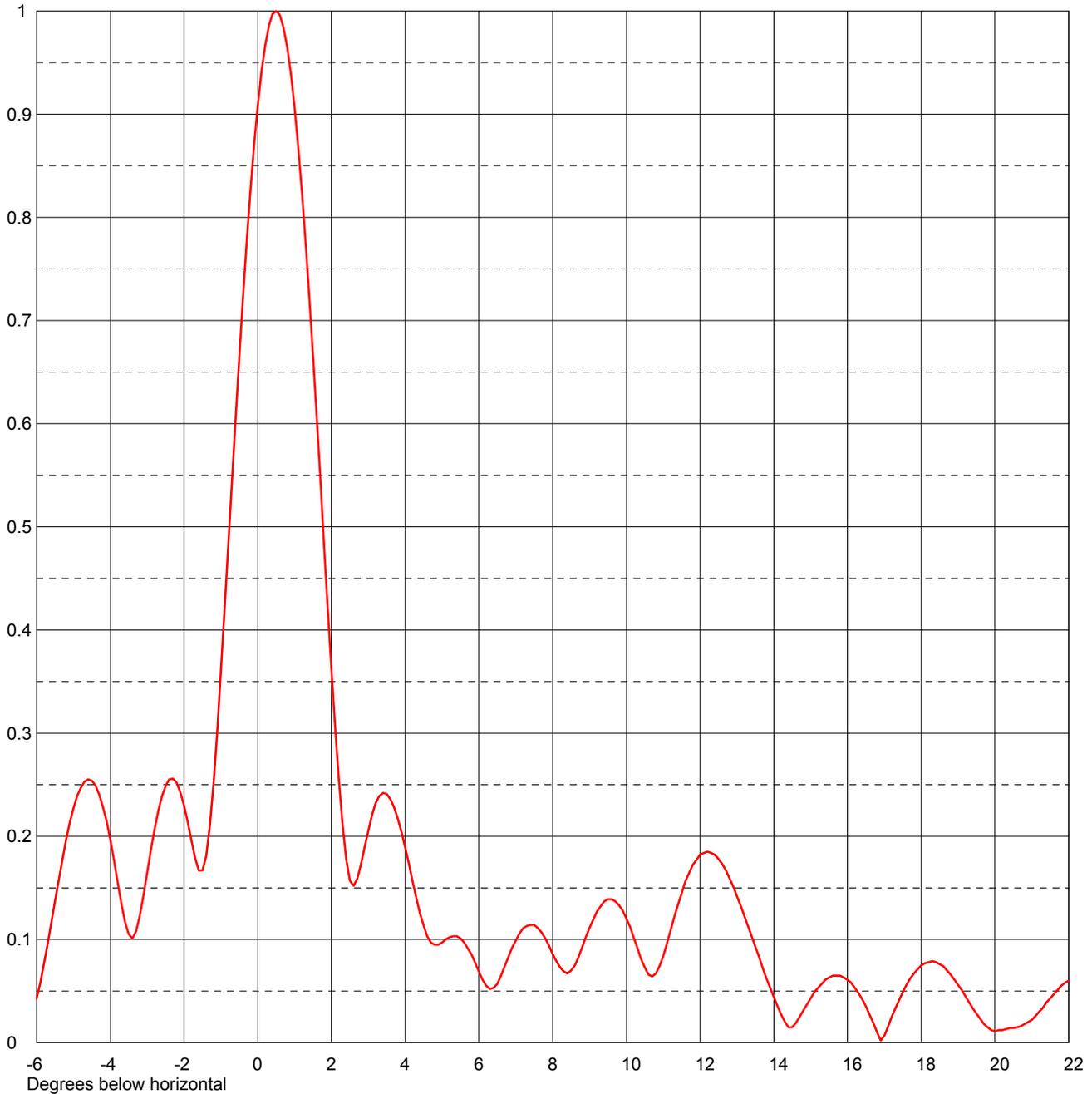


Remarks:

Date **29 Jul 2002**  
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Customer  
Antenna Type **TLP-24M (C)**

### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>23.0 (13.62 dB)</b>	Beam Tilt	<b>0.50 Degrees</b>
RMS Gain at Horizontal	<b>19.0 (12.79 dB)</b>	Frequency	<b>755.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>24L230050</b>

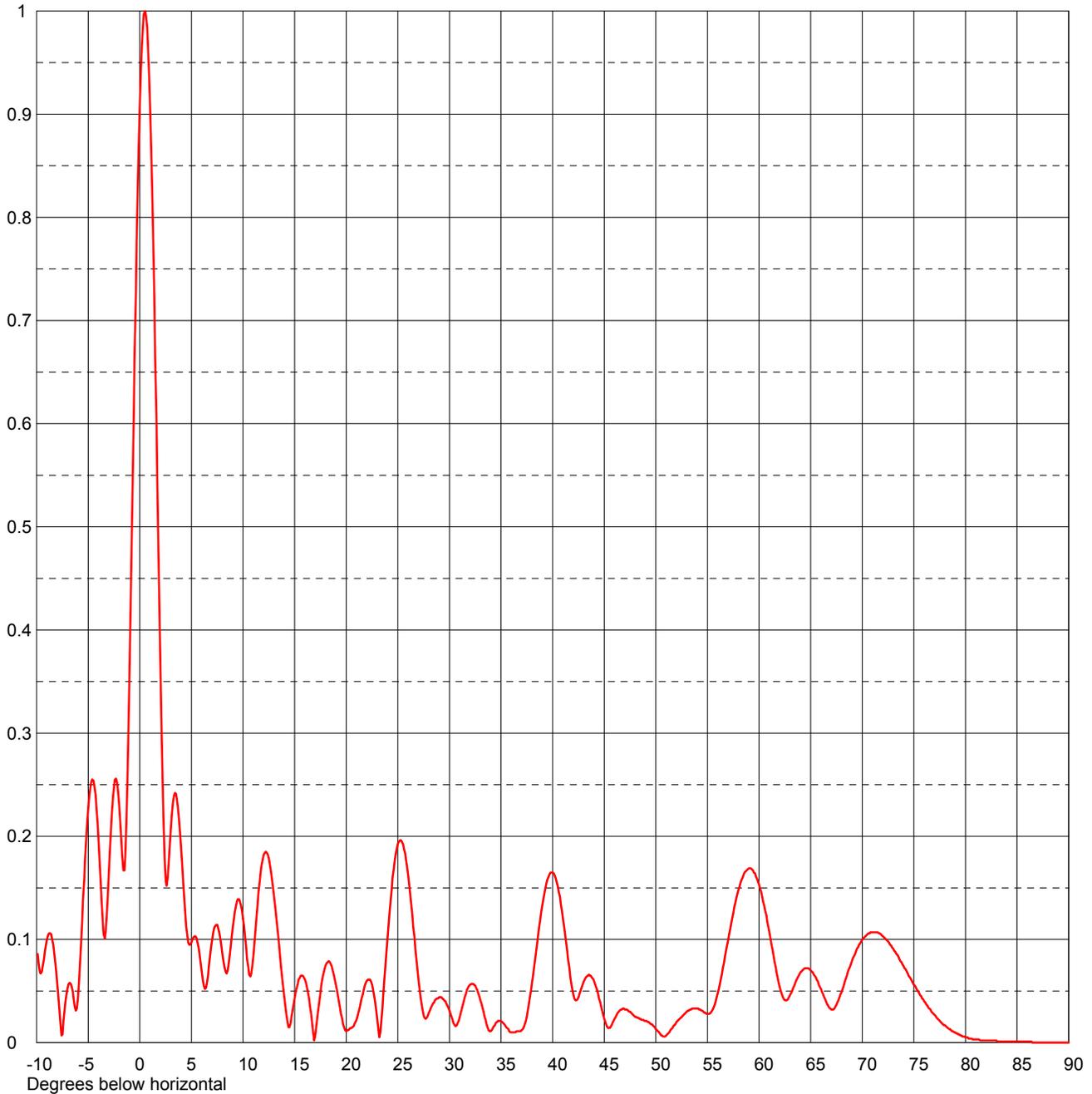


Remarks:

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Location **Pierre, SD**  
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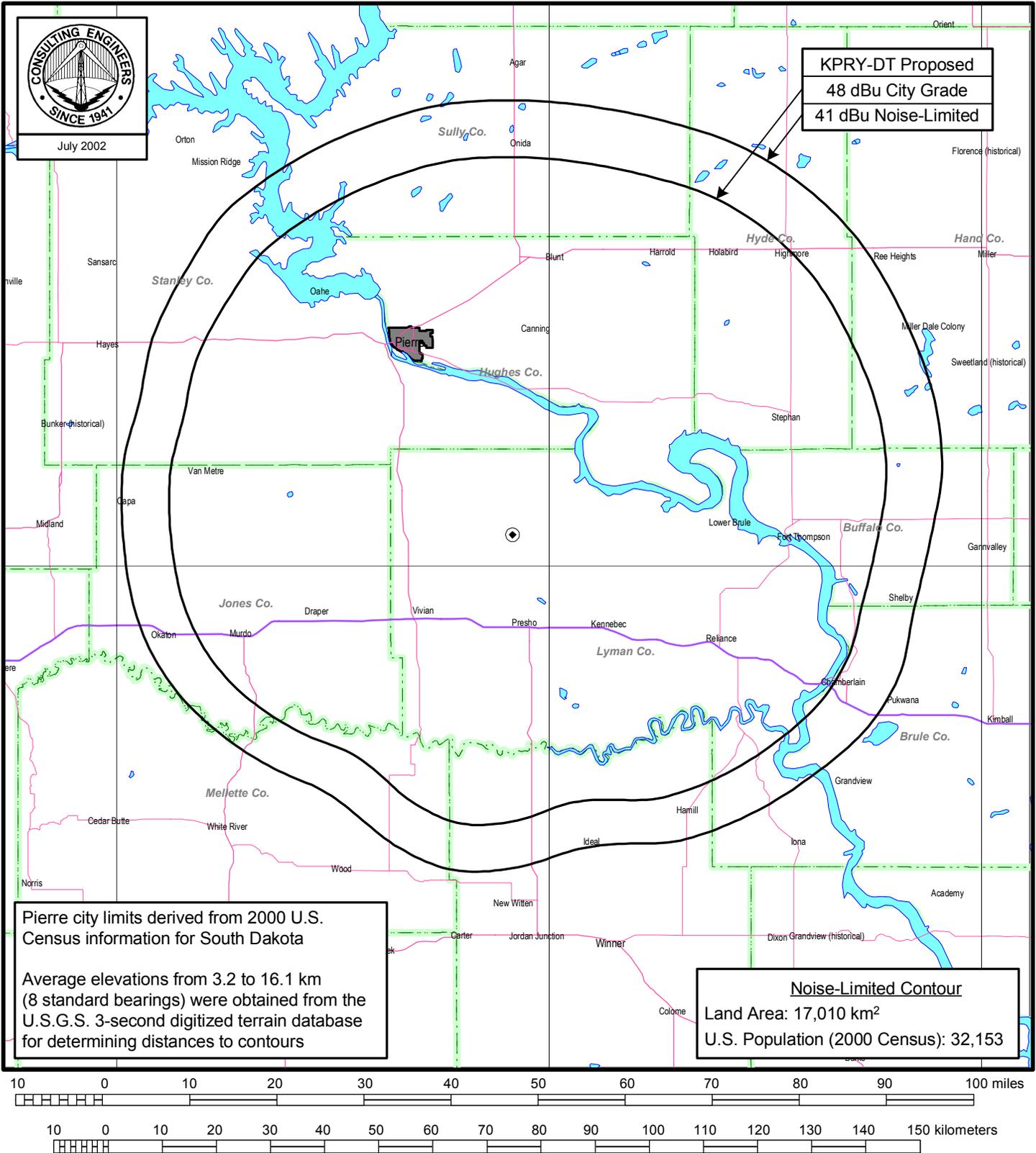
### ELEVATION PATTERN

RMS Gain at Main Lobe	<b>23.0 (13.62 dB)</b>	Beam Tilt	<b>0.50 Degrees</b>
RMS Gain at Horizontal	<b>19.0 (12.79 dB)</b>	Frequency	<b>755.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>24L230050-90</b>



Remarks:

Figure 3



# PREDICTED F(50,90) COVERAGE CONTOURS

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du Treil, Lundin & Rackley, Inc Sarasota, Florida