

TECHNICAL EXHIBIT
MINOR MODIFICATION APPLICATION
STATION KPXC-DT (FACILITY ID 68695)
DENVER, COLORADO

MARCH 14, 2008

CH 43 1000 KW (MAX-DA) 362 M

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Technical Narrative

This Technical Exhibit supports a minor modification application to the construction permit for digital television station KPXC-DT at Denver, Colorado. Station KPXC is authorized to operate on digital channel 43 with a directional antenna maximum effective radiated power (ERP) of 1000 kilowatts (kW) and an antenna height above average terrain (HAAT) of 356 meters (BPCDT-19990923AAM).

Proposed Facilities

This application proposes to operate at a site shared with station KDEN-DT (NAD27 coordinates: 40-05-59 N, 104-54-02 W). KPXC-DT proposes to use a Dielectric TUD-C5-14/70H-2-B directional antenna, with maximum ERP of 1000 kW at an antenna HAAT of 362 meters (see Figure 1). The antenna structure registration number is 1254146. The proposed antenna radiation center above mean sea level is 1879 meters (see Figure 2).

KPXC-DT's Appendix B facilities were recently modified to reflect its currently authorized operation as noted below:

Facility ID	State and City		NTSC	DTV								
			Chan	Chan	ERP (kW)	HAAT (m)	Antenna ID	Latitude (DDMMSS)	Longitude (DDMMSS)	Area (sq km)	Population (thousand)	% Interference Received
68695	CO	DENVER	59	43	1000	356	27960	394024	105130 3	24751	2922	2.9

Figure 3 is a map indicating that the proposed City-Grade contour will encompass all of the city limits of Denver (derived from 2000 U.S. Census information for Colorado).

Allocation Considerations

The proposed KPXC-DT operation does expand coverage beyond the Appendix B facility, but does meet the FCC's post-transition interference standards to pertinent Class A and DTV allotments using the procedures outlined in the FCC's OET-69 Bulletin and a 2 kilometer grid cell size. The only allocation station of concern in the post-transition allotment for KOAA-DT, Ch 42 at Pueblo, Colorado. Specifically, the proposal will reduce the interference caused to station KOAA-DT by 2.0%, as compared to the Appendix B facility for KPXC-DT (see Figure 4).

The proposal appears to meet the Table Mountain protection requirements based on the OET-69 (tv process) program (see Sheet 1 of Figure 4).

Radiofrequency Electromagnetic Field Exposure

The proposed KPXC-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 DTV antenna is located 327 meters above ground level with a maximum ERP of 1000 kW. A conservative relative field value of 0.25 was assumed for the calculation (see Figure 1). The calculated power density at a point 2 meters above ground level will not exceed 0.0195 mW/cm^2 . This is less than 5% of the FCC's recommended limit of 0.43 mW/cm^2 for channel 43 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. As this will be a multi-user site and agreement between the stations will control site access. 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 KPXC-DT operation appears to be otherwise categorically excluded from environmental processing.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner.



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March 14, 2008

Proposal Number

C-2328

Figure 1

Revision:

1

Date

25-Feb-08

Call Letters

KPXC-DT

Channel

43

Location

Denver, CO

Customer

Richland

Antenna Type

TUD-C5-14/70H-2-B

AZIMUTH PATTERN

Gain

1.67

(2.23 dB)

Frequency

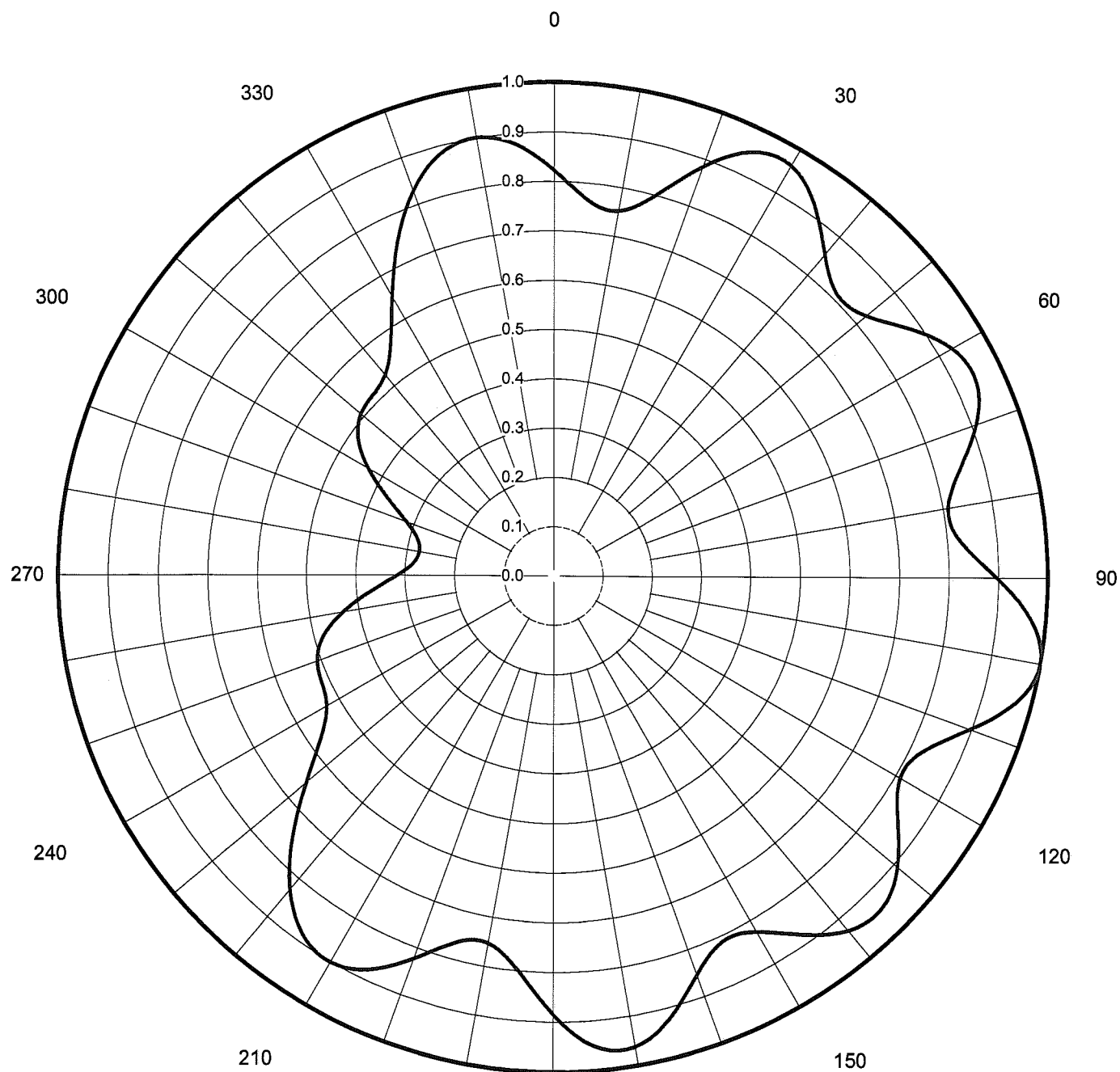
647.00 MHz

Calculated / Measured

Calculated

Drawing #

TUD-C5-6470



ELEVATION PATTERN

RMS Gain at Main Lobe **28.10 (14.49 dB)**
RMS Gain at Horizontal **10.00 (10.00 dB)**
Calculated / Measured **Calculated**

Beam Tilt **0.80 deg**
Frequency **647.00 MHz**
Drawing # **14U280080-90**

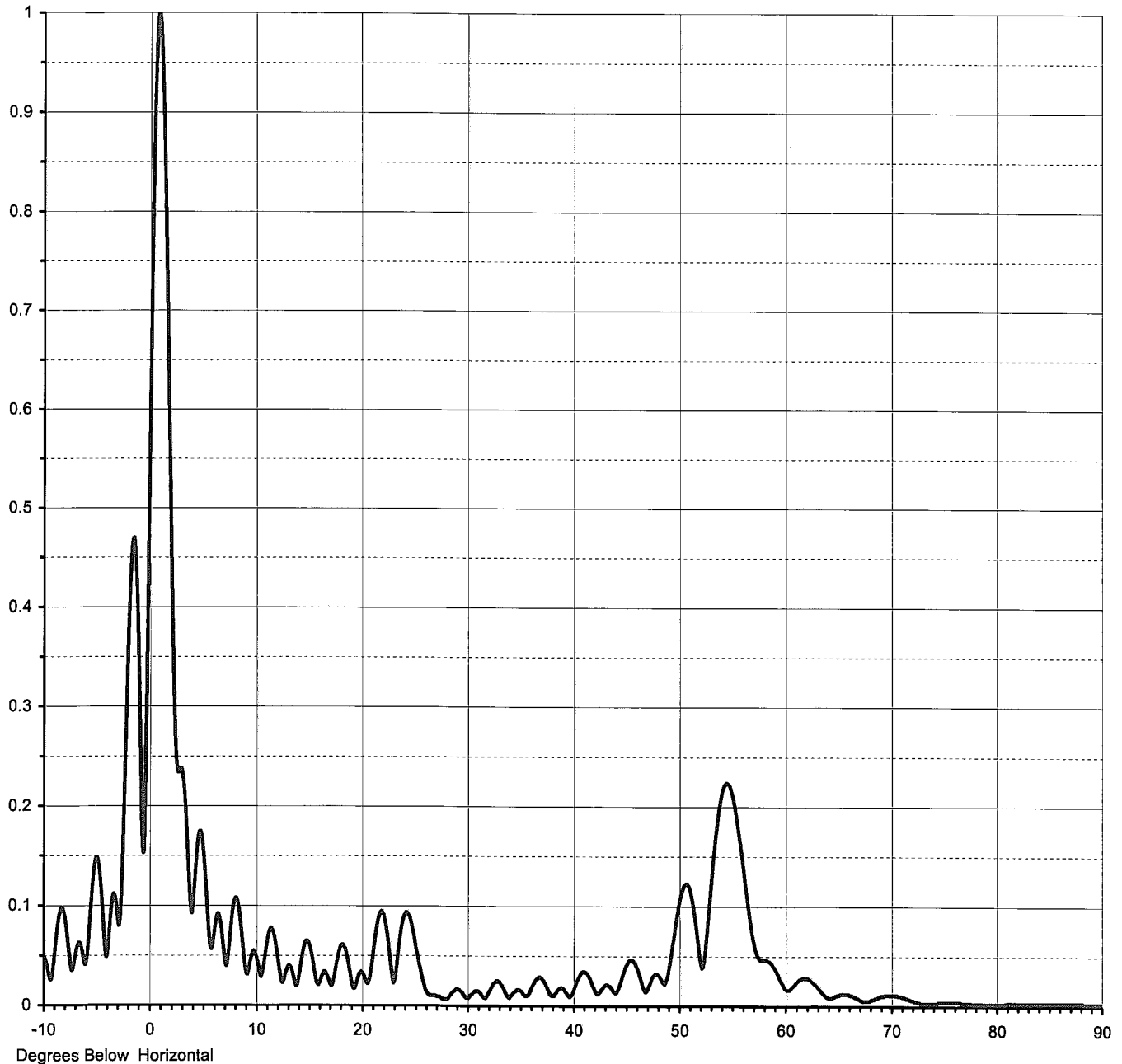
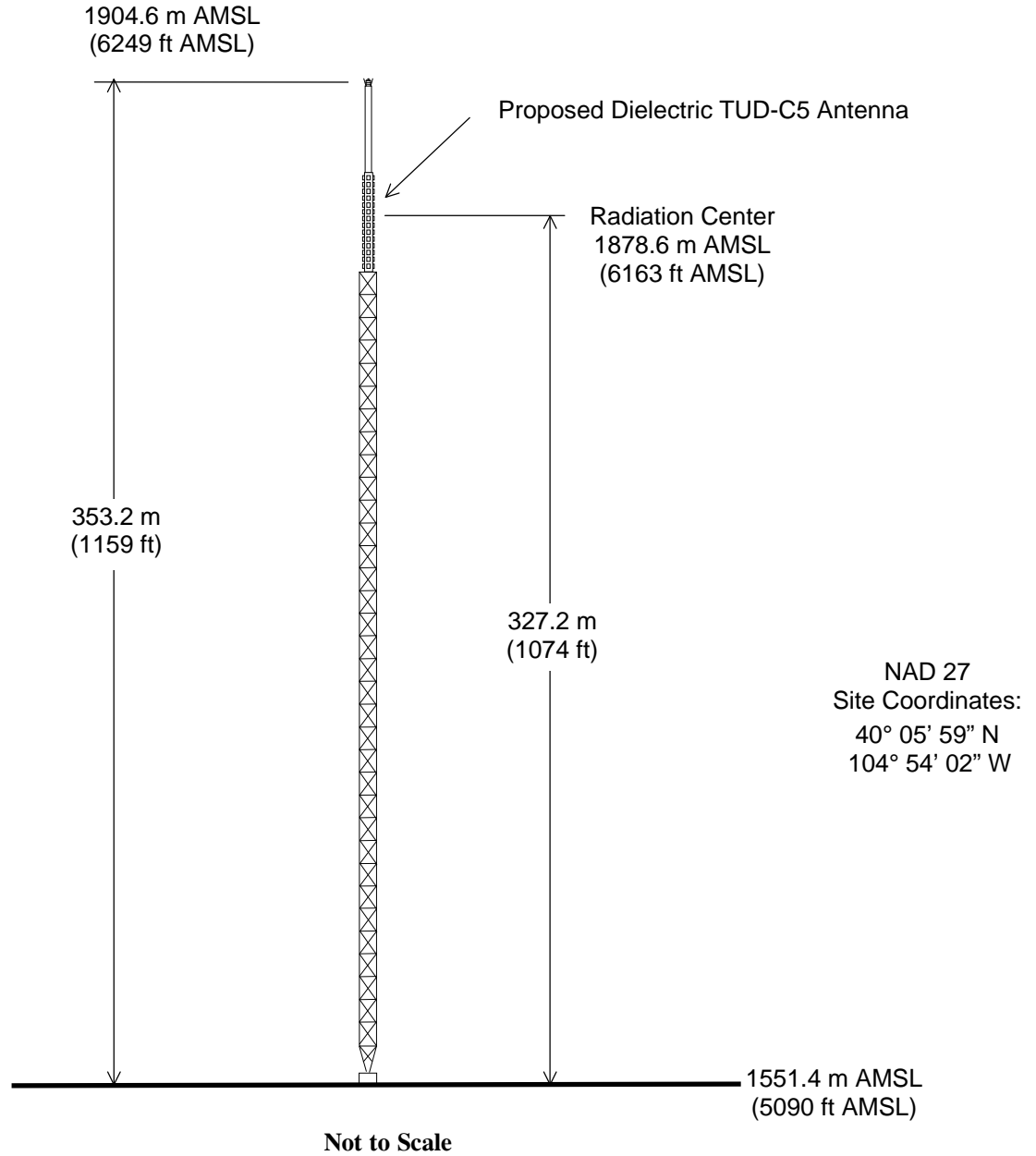


Figure 2



Registration No. 1254146



ANTENNA AND SUPPORTING STRUCTURE

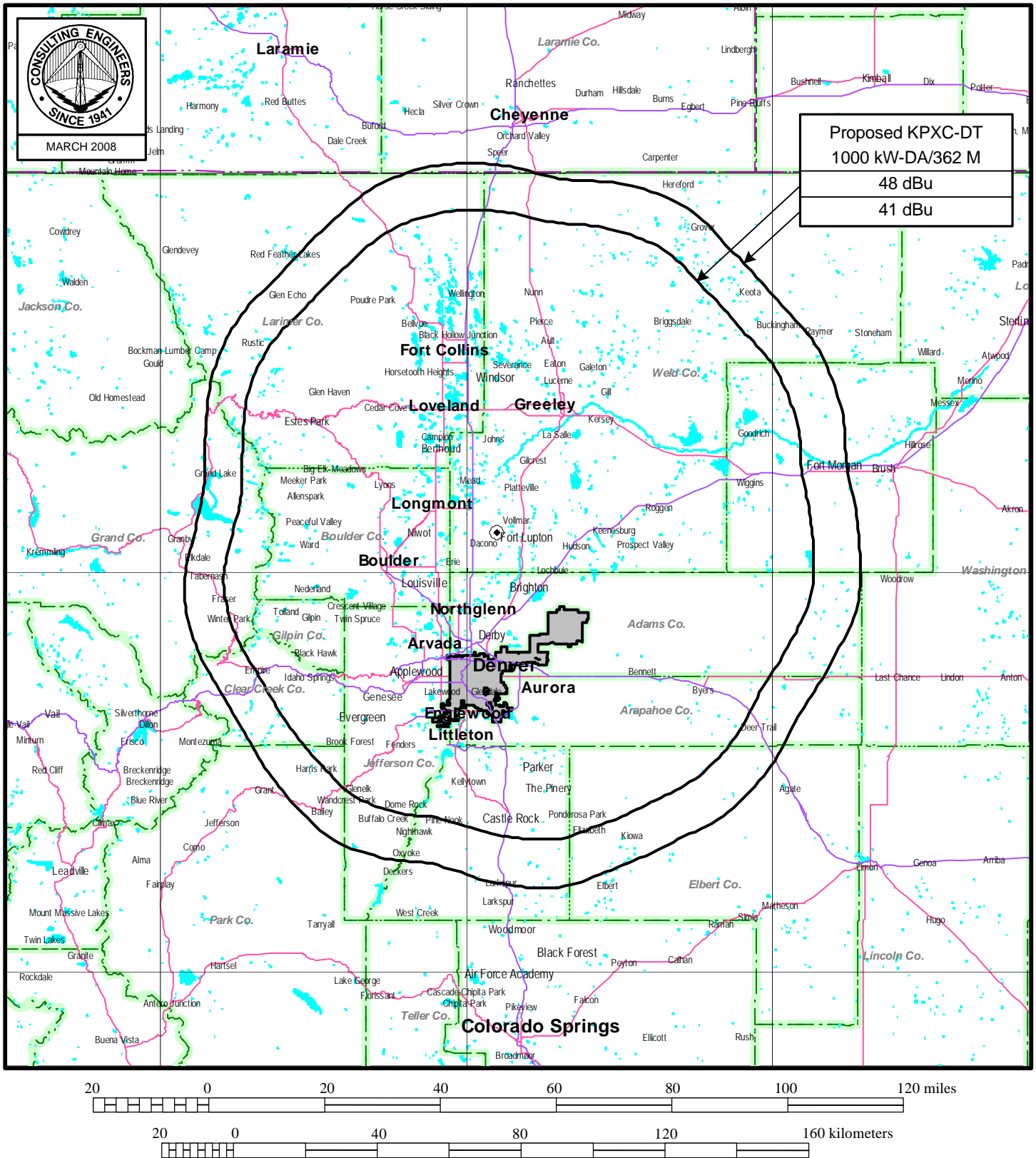
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Figure 3



PREDICTED COVERAGE CONTOURS

STATION KPXC-DT

DENVER, COLORADO

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du Treil, Lundin & Rackley, Inc Sarasota, Florida

Census data selected 2000

Post Transition Data Base Selected

/export/home/cdbs/tvdb.sff_G

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: Time:

Record Selected for Analysis

KPXC USERRECORD-01 DENVER CO US
Channel 43 ERP 1000. kW HAAT 359. m RCAMSL 01879 m
Latitude 040-05-59 Longitude 0104-54-02
Status APP Zone 2 Border
Dir Antenna Make usr Model 0000000KPXCfin Beam tilt N Ref Azimuth 0.
Last update Cutoff date Docket

Cell Size for Service Analysis 2.0 km/side
Distance Increments for Longley-Rice Analysis 1.00 km
Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	677.329	399.6	102.3
45.0	705.600	385.8	101.6
90.0	802.816	362.3	100.8
135.0	880.157	357.7	101.3
180.0	781.456	325.6	97.4
225.0	547.600	303.5	91.7
270.0	99.225	356.1	84.0
315.0	268.842	383.0	93.5

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quite zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Call	City/State	ARN
43	KPXC	DENVER CO	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
42	KOAA-TV	PUEBLO CO	150.6	CP	BPCDT	-19991029AGS

%%%

Analysis of Interference to Affected Station 1

Analysis of current record

Channel	Call	City/State	Application	Ref. No.
42	KOAA-TV	PUEBLO CO	BPCDT	-19991029AGS

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
42	KLUZ-TV	ALBUQUERQUE NM	417.3	CP MOD	BMPCDT	-20000501AET
43	KPXC	DENVER CO	150.6	APP	USERRECORD-01	

Total scenarios = 1

Result key: 1

Scenario 1 Affected station 1

Before Analysis

Results for: 42A CO PUEBLO BPCDT 19991029AGS CP
HAAT 660.0 m, ATV ERP 880.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1111970	35109.7
not affected by terrain losses	885371	31663.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	132800	935.9
lost to ATV IX only	132800	935.9
lost to all IX	132800	935.9

Potential Interfering Stations Included in above Scenario 1

43A CO DENVER APPENDIX B FACILITY

After Analysis

Results for: 42A CO PUEBLO BPCDT 19991029AGS CP
HAAT 660.0 m, ATV ERP 880.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1111970	35109.7
not affected by terrain losses	885371	31663.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	115167	578.4
lost to ATV IX only	115167	578.4
lost to all IX	115167	578.4

Potential Interfering Stations Included in above Scenario 1

43A CO DENVER USERRECORD01 APP

Percent new IX: -2.343

Worst case new IX -2.343% Scenario 1

Analysis of Interference to Affected Station 2

Analysis of current record

Channel	Call	City/State	Application Ref. No.
43	KPXC	DENVER CO	USERRECORD-01

Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
42	KOAA-TV	PUEBLO CO	150.6	CP	BPCDT -19991029AGS

Total scenarios = 1

Result key: 2
Scenario 1 Affected station 2
Before Analysis

Results for: 43A CO DENVER USERRECORD01 APP
HAAT 359.0 m, ATV ERP 1000.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	2890861	29030.5
not affected by terrain losses	2854520	26622.0
lost to NTSC IX	0	0.0
lost to additional IX by ATV	0	0.0
lost to ATV IX only	0	0.0
lost to all IX	0	0.0

Potential Interfering Stations Included in above Scenario 1

FINISHED FINISHED FINISHED FINISHED FINISHED FINISHED

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Technical Specifications

Channel	43
Frequency	644-650 MHz
Proposed Site Coordinates (NAD 27)	40° 05' 59" North Latitude 104° 54' 02" West Longitude
Site Elevation above mean sea level	1551.4 m
Average elevation above mean sea level of 8 equally spaced radials, 3-16 kilometers	1517 m
Overall height of antenna structure	
Above ground	353.2 m
Above mean sea level	1904.6 m
Height of antenna radiation center	
Above ground	327.2 m
Above mean sea level	1878.6 m
Above average terrain	362 m
Transmission line	Dielectric 7" (75Ω)
Length	(1200 ft) 366 m
Efficiency (1.07 dB loss)	74.3%
Antenna	Dielectric TUD-C5-14/70H-2-B
Polarization	Horizontal
Peak Power Gain	46.9
Beam Tilt (electrical)	0.8°
Orientation	100° T

Proposed Operation

Required transmitter output power (average)	28.7 kW
Transmission line loss	7.4 kW
Antenna input power	21.3 kW
Effective Radiated Power (MAX-DA)	1000 kW