

TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
NEW FM STATION
BOX ELDER, SOUTH DAKOTA
CH 274C2 50 KW (MAX-DA) 64 M

Technical Narrative

The applicant was the winning bidder for vacant channel 274A at Box Elder, South Dakota (MMFM265A). Therefore, pursuant to the FCC Public Notice dated December 1, 2004 and entitled "FM Broadcast Construction Permit Auction Closes" (DA 04-3694), this technical exhibit was prepared in support of a "one-step" upgrade application for construction permit on FCC Form 301 for a new FM station to operate on channel 274C2 at Box Elder, South Dakota. Processing under Section 73.215 is requested with respect to a short-spacing with KZSD-FM on channel 273C1 at Martin, South Dakota.

Response to Paragraph 4 - Allotment

It is proposed to upgrade from channel 274A to channel 274C2 at Box Elder, South Dakota pursuant to the FCC's one-step procedures. Figure 1 is a separation study from the one-step proposal allotment coordinates. As shown, the allotment coordinates comply with the minimum distance separation requirements of Section 73.207 for a Class C2 operation on channel 274 towards all existing, authorized and proposed stations and allotments.

Response to Paragraph 5 - Antenna Structure Registration

The proposed antenna will be mounted at the 41-meter level on an authorized 115.8-meter tower. The tower registration number is 1229860.

Response to Paragraph 14 - Community Coverage

Figure 2 is a map that demonstrates that the allotment coordinates and proposed transmitter site comply with the provisions of Sections 73.203(b) and 73.315. Specifically, Figure 2 depicts the 70 dBu contours based on maximum Class C2 facilities (ERP 50 kW/HAAT 150 meters) and presuming uniform

terrain (FCC allotment stage requirement), and based on the proposed facilities (ERP 50 kW-DA/HAAT 64 meters) and actual terrain (FCC application stage requirement). As shown, operation from the proposed site will provide the requisite city grade signal to all of Box Elder. The Box Elder city limits shown on Figure 2 were obtained from a map contained in the 2000 U.S. Census of Population.

Response to Paragraph 16 - Interference

Figure 3 is a separation study from the proposed transmitter site coordinates. As shown, the proposed transmitter site complies with the minimum distance separation requirements of Section 73.207 for Class C2 operation on channel 274 towards all existing, authorized and proposed stations and allotments, with the exception of the licensed operation of KZSD-FM on channel 273C1 at Martin, South Dakota. Therefore, it is proposed to operate with a directional antenna in order to utilize the contour protection provisions of Section 73.215 with respect to this short-spacing.

Figure 4 demonstrates that the proposed Box Elder channel 274C2 operation complies with the contour protection provisions of Section 73.215 with respect to KZSD-FM. Maximum facilities have been presumed for KZSD-FM and actual facilities have been presumed for the proposed Box Elder facility, as specified in Section 73.215¹.

Environmental Considerations

The proposed Box Elder channel 274C2 facilities were evaluated in terms of potential radiofrequency radiation exposure at 2 meters above ground level in accordance with the OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation". This Bulletin provides assistance in determining whether FCC-regulated transmitting facilities, operations or devices comply with limits for human exposure to radiofrequency (RF) electromagnetic fields.

¹ The distance between the proposed transmitter site and KZSD-FM's licensed transmitter site (151.73 km) complies with the minimum distance separation requirement of Section 73.215(e) (144 km).

The proposed antenna will be mounted at the 41-meter level on the authorized tower structure. The calculated power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation contained in the Bulletin. Figure 5 contains the horizontal and vertical plane relative field patterns for the proposed ERI 8-bay, $1/2\text{-}\lambda$ spaced, directional antenna. As shown on Figure 5, the maximum vertical relative field value towards the tower base (-60° to -90° elevation) is less than 0.1. Therefore, using a "worst-case" vertical relative field value of 0.1 for the proposed directional antenna, the total ERP of 100 kW (H+V) and an antenna center of radiation height above ground level of 41 meters, the calculated power density at two meters above ground level at the base of the tower is 0.022 milliwatts per square centimeter (mW/cm^2), which is 10.98 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.2 \text{ mW}/\text{cm}^2$ for FM channel 274), and 2.2 percent of the Commission's recommended limit applicable to controlled exposure areas ($1.0 \text{ mW}/\text{cm}^2$ for FM channel 274). Therefore, it is believed that this proposal will comply with the RF emission rules. If necessary, measurements will be made to substantiate compliance.

Access to the tower site will be restricted and appropriately marked with warning signs. Furthermore, procedures will be in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such procedures 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 station is at reduced power or shut down.

It is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be provided to the FCC by the tower owner as part of the tower registration process.

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December 22, 2004

CDBS FM SEPARATION STUDY

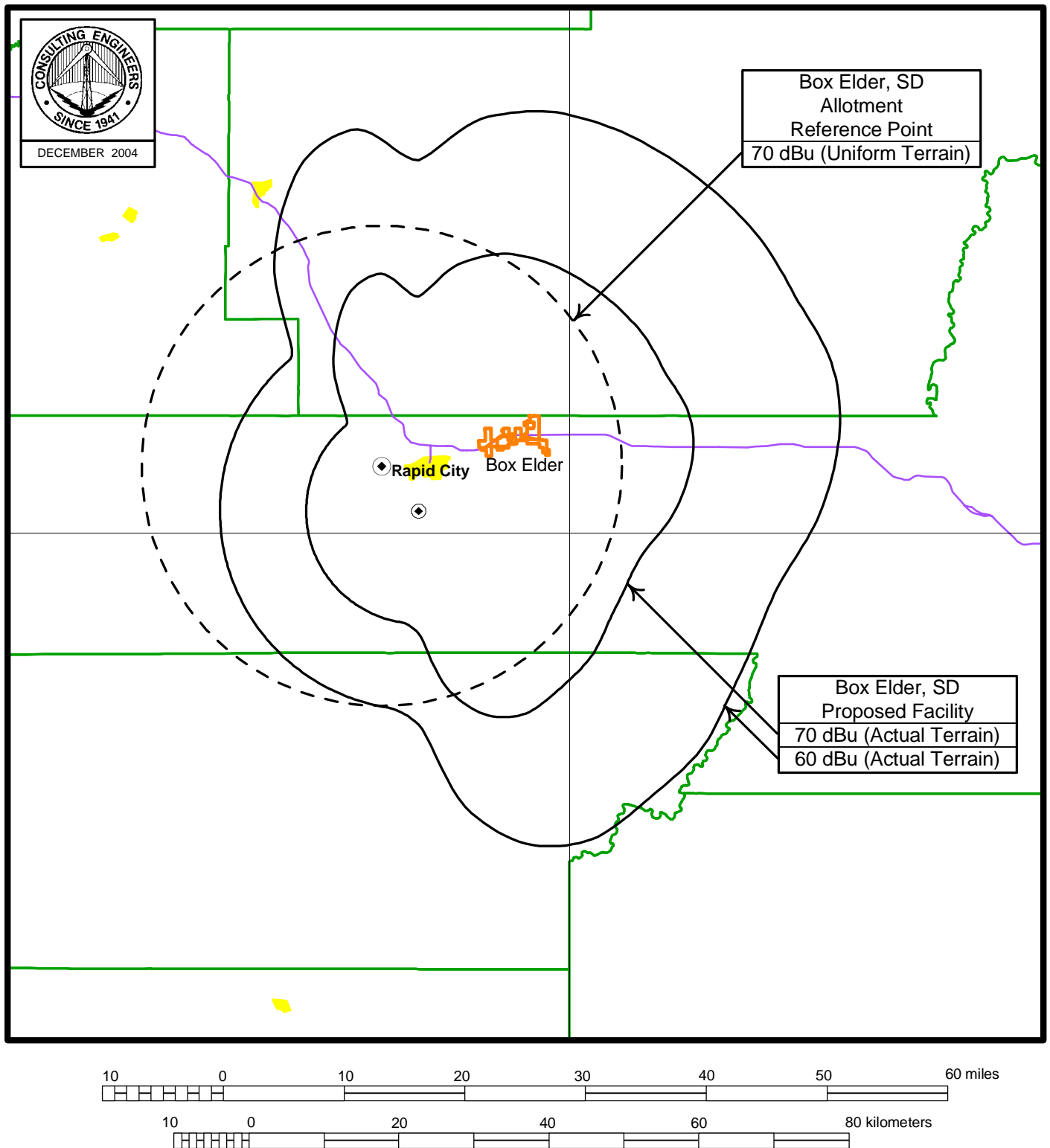
Job Title: Proposed Allotment Reference Point
Channel: 274 C2

Separation Buffer: 32 km
Coordinates: 44-04-51 103-18-48

Call Id	City St	File Status	Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km) 215	207
KFMH 40636	BELLE SD	FOURC LIC	BLH C 20030320ABC	271 C3 102.1	7.000 -3.8	N	44-39-47 103-51-26	N	326.5	77.88 21.88	50.0 Clear	56.0
KZSD-F 59466	MARTIN SD	BLD LIC	C 19910715KA	273 C1 102.5	100.000 230	N	43-26-06 101-33-14	N	116.3	158.83 0.83	144.0 Close	158.0
NEW 162430	BOX ELDER SD	BSFH APP	C 20040806AER	274 A 102.7	0.000		44-04-06 103-15-02		105.3	5.21	143.0 Short ¹	166.0
0	BOX ELDER SD	RM VAC	C 9742	274 A 102.7	0.000	N	44-06-48 103-04-12	N	79.4	19.82	143.0 Short ¹	166.0
164109	BOX ELDER SD	BSFH APP	C 20040730BIA	274 A 102.7	0.000		44-06-48 103-04-12		79.4	19.82	143.0 Short ¹	166.0
KYDT 78241	SUNDANCE WY	BLH LIC	C 19971223KE	276 C1 103.1	25.000 503	N	44-28-35 104-26-54	N	296.4	100.71 21.71	73.0 Clear	79.0

¹ Existing allotment being upgraded by the instant application.

Figure 2



PREDICTED FCC COVERAGE CONTOURS

NEW FM STATION
BOX ELDER, SOUTH DAKOTA
CH 274C2 50 KW (MAX-DA) 64 M

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

CDBS FM SEPARATION STUDY

Job Title: Proposed Transmitter Site
 Channel: 274 C2

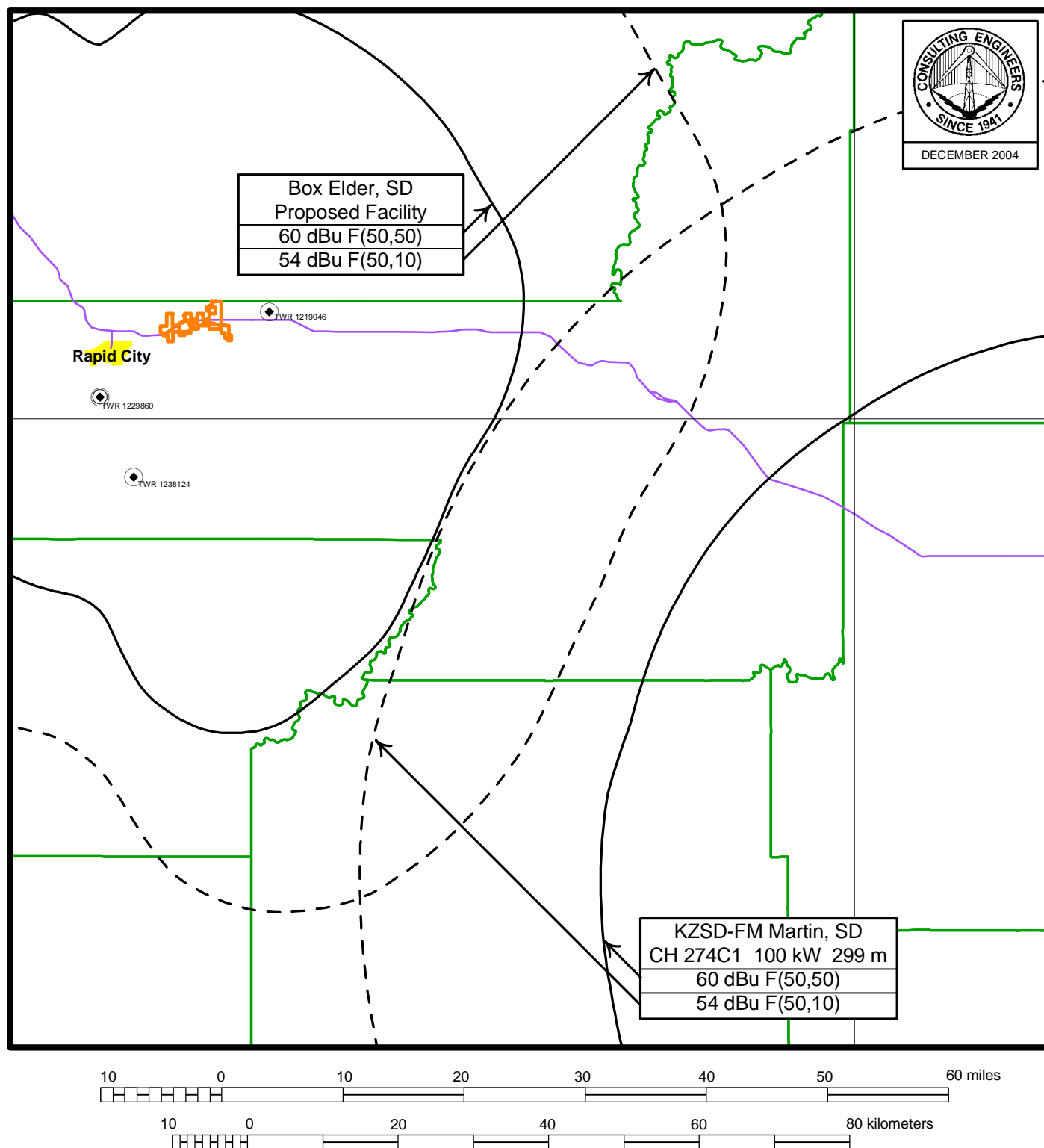
Separation Buffer: 32 km
 Coordinates: 44-01-35 103-15-05

Call Id	City St	File Status	Num	Channel Freq	ERP HAAT	DA Id	Latitude Longitude	73 215	Bear	Dist. (km)	Req. (km) 215	207
KFMH 40636	BELLE SD	FOURC LIC	BLH C 20030320ABC	271 C3 102.1	7.000 -3.8	N	44-39-47 103-51-26	N	326.0	85.67 29.67	50.0 Clear	56.0
KZSD-F 59466	MARTIN SD	BLD LIC	C 19910715KA	273 C1 102.5	100.000 230	N	43-26-06 101-33-14	N	115.2	151.73 -6.27	144.0 Short ¹	158.0
NEW 162430	BOX ELDER SD	BSFH APP	C 20040806AER	274 A 102.7	0.000		44-04-06 103-15-02		1.2	4.68	143.0 Short ²	166.0
0	BOX ELDER SD	RM VAC	C 9742	274 A 102.7	0.000	N	44-06-48 103-04-12	N	56.2	17.45	143.0 Short ²	166.0
164109	BOX ELDER SD	BSFH APP	C 20040730BIA	274 A 102.7	0.000		44-06-48 103-04-12		56.2	17.45	143.0 Short ²	166.0
KYDT 78241	SUNDANCE WY	BLH LIC	C 19971223KE	276 C1 103.1	25.000 503	N	44-28-35 104-26-54	N	298.1	107.89 28.89	73.0 Clear	79.0

¹ It is proposed to utilize the contour protection provisions of Section 73.215 with respect to this short-spacing. The proposal complies with the minimum distance requirements of Section 73.215(e). See Technical Narrative and Figure 4.

² Existing allotment being upgraded in this instant application.

Figure 4



COMPLIANCE WITH SECTION 73.215

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



HORIZONTAL RELATIVE FIELD PATTERN ENVELOPE

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