

**Comprehensive Technical Exhibit**

*Application for Modification of Construction Permit*

KRKR(FM) – Valley, Nebraska

FM Channel 235A – 94.9 MHz

Chapin Enterprises, LLC

June, 2008

**Application for Modification of Construction Permit**

The following engineering statement and attached exhibits have been prepared for **Chapin Enterprises, LLC** ("Chapin"), licensee of FM broadcast station KRKR(FM) at Valley, Nebraska, and are in support of their application for modification of construction permit.<sup>1</sup>

Chapin currently holds a construction permit for KRKR(FM) under FCC File Number BPH-20070419ADV. Under that construction permit, the city of license for KRKR(FM) was changed from Lincoln, Nebraska to Valley, Nebraska. In addition, the channel of operation and station class of KRKR(FM) were changed from 236C2 to 235A. This construction permit also authorized a change in the transmitter site utilized by KRKR(FM).

Subsequent to the submission of the referenced construction permit application, Chapin determined that the use of the proposed site was no longer feasible due to structural considerations. As a result, this application seeks to modify the outstanding construction permit by specifying a different site location. Since this site location would comply with Section 73.215 but not Section 73.207 of the Commission's Rules, the proposed facility would employ a directional antenna to provide requisite contour protection. Although no change in the channel, class, or maximum effective radiated power is proposed, the change in the transmitter location will result in different geographic coordinates and height parameters for the facility.

As indicated on the form pages, the proposed KRKR facility would operate from a site located at geographic coordinates of 41-18-07 North Latitude and 96-18-44 West Longitude.<sup>2</sup> At this location is a tower registered with the Commission bearing ASR Number 1026223. The agent

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<sup>1</sup> The facility ID for KRKR(FM) is 54707.

<sup>2</sup> Coordinates specified in NAD27 datum.

for the tower, American Tower Corporation has been contacted about utilizing the tower, and has provided the applicant with reasonable assurance that the site is available for the proposed use.

The installation of the proposed facility at the registered tower would not result in the necessity of any modifications or changes to the height or location of the registered structure. The proposed facility would operate with a maximum effective radiated power of 6 kW at a center of radiation at 100.0 meters above average terrain.<sup>3</sup> Terrain values were obtained through sampling of a standard 30 second linearly interpolated terrain database.

As previously mentioned a directional antenna would be utilized to provide requisite contour protection to facilities with which Section 73.207 spacings are not fully met. The proposed directional pattern envelope has been tabulated under the appropriate section on the form pages. This proposed envelope is in compliance with Section 73.316(b) as the front-to-back ratio of the antenna does not exceed 15 dB and the slope of the relative field change does not exceed 2 dB per 10 degrees of azimuth.<sup>4</sup>

The proposed facility would be in compliance with the provisions of Section 73.203 of the Commission's Rules. Under BPH-20070419ADV, a change in the KRKR(FM) allocation was made from channel 236C2 at Lincoln, Nebraska to channel 235A at Valley, Nebraska.<sup>5</sup> This application proposes no changes in the channel or class of operation.

The proposed site location would comply fully with the community coverage provisions of Section 73.315 of the Commission's Rules. Exhibit E-1 contains a computer generated contour

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<sup>3</sup> Center of radiation located at 459.9 meters AMSL or 115.5 meters AGL.

<sup>4</sup> Actual maximum to minimum ratio is 5.43 dB.

<sup>5</sup> See special operating condition or restriction #1 on BPH-20070419ADV.

map illustrating the predicted 70 dBu and 60 dBu service contours. As this map demonstrates, the proposed 70 dBu service contour would totally encompass the community of license. The area within each contour along with the population totals as determined by applying the centroid method to the 2000 Census data are indicated on the Exhibit E-1 map.

The main studio for the proposed facility will comply with the provision of Section 73.1125 of the Commission's Rules. Although the final location for the main studio has not yet been determined, it will be located either within the predicted 70 dBu service contour or within twenty-five miles of the reference coordinates of Valley, Nebraska. The actual physical location of the main studio will be provided on FCC Form 302-FM as part of the submission for license following facility construction.

The proposed facility would comply with applicable interference provisions of the Commission's Rules. In this particular instance, Sections 73.207 and 73.215 are applicable to the proposed facility. Sections 73.213(a)-(c) are not applicable to the proposed KRKR(FM) facility.

Exhibit E-2 provides a single channel spacing study for the proposed facility. As this study demonstrates, the proposed facility would comply with all IF related spacing requirements. In addition, spacing requirements under Section 73.207 would be met to all facilities with the exception of KNEN(FM) at Norfolk, Nebraska.<sup>6</sup> Although the minimum spacings under Section 73.207 to KNEN(FM) would not be met, the proposed facility would comply with the Section 73.215 minimum spacings. Authorization pursuant to that section is therefore requested.

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<sup>6</sup> The facility ID for KNEN(FM) is 9954.

The contour based allocation situation relative to KNEN(FM) is depicted in Exhibits E-3a and E-3b. Under BLH-20060420ABO, KNEN(FM) is specified as operating with an effective radiated power of 100 kW at a center of radiation of 164.2 meters above average terrain. Since that facility is not authorized pursuant to Section 73.215, the center of radiation has been increased to 299 meters above average terrain pursuant to Section 73.215 for analysis.<sup>7</sup> These two maps demonstrate that the proposed facility would not have prohibited contour overlap with KNEN(FM). Exhibit E-4 provides a tabular based allocation study and also demonstrates that prohibited contour overlap with KNEN(FM) would not exist.

The proposed facility is excluded from environmental processing under Section 1.1306 of the Commission's Rules. This exclusion is based on the fact that the proposed facility would be located on an existing structure for which no additional environmental impact would result. In addition, the proposed facility would not constitute an RF exposure hazard to persons at the site.

Based on the Commission's FM Model software package and the presumed use of a 3-bay full wave spaced roto-tiller style antenna, the predicted maximum power density at ground level is  $3.26 \mu\text{W}/\text{cm}^2$  at 58 meters from the tower base. Since this power density, is less than the upper limit of 200 mW/cm<sup>2</sup> permissible under the uncontrolled environment condition of the applicable safety standard, it is evident that the proposed facility would not constitute an RF exposure hazard. No other broadcast facilities utilize the tower, however, the applicant will coordinate with other present and future users of the site to ensure that workers are not exposed to levels of non-

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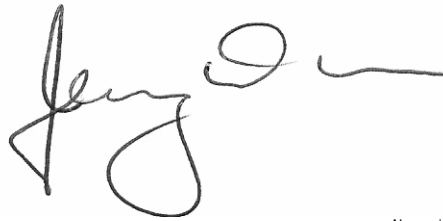
<sup>7</sup> KNEN(FM) center of radiation at 299 meters above average terrain corresponds to 817.4 meters AMSL as determined from BLH-20060420ABO data.

ionizing radiation hazard which may exceed the applicable standards. Such coordination will include, but is not necessarily limited to, a reduction in power or cessation of operation.

This application does not propose a change in the community of license. As previously discussed, this application is to modify an existing construction permit with no change in the community of license, channel of operation, or class of operation.

**Affidavit**

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature  
License Expires November 30, 2009

**Jeremy D. Ruck, PE**  
**June 11, 2008**

**KRKR.PRO**  
PROPOSED  
Latitude: 41-18-07 N  
Longitude: 096-18-44 W  
ERP: 6.00 kW  
Channel: 235  
Frequency: 94.9 MHz  
AMSL Height: 459.9 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: FCC Method

City of License  
Valley, Nebraska

**D.L. Markley & Associates, Inc.**

■ Proposed 70 dBu Service Contour  
■ Proposed 60 dBu Service Contour

70 dBu Contour Population: 78,602  
60 dBu Contour Population: 399,397

70 dBu Contour Area: 766.4 sq. km  
60 dBu Contour Area: 2364 sq. km

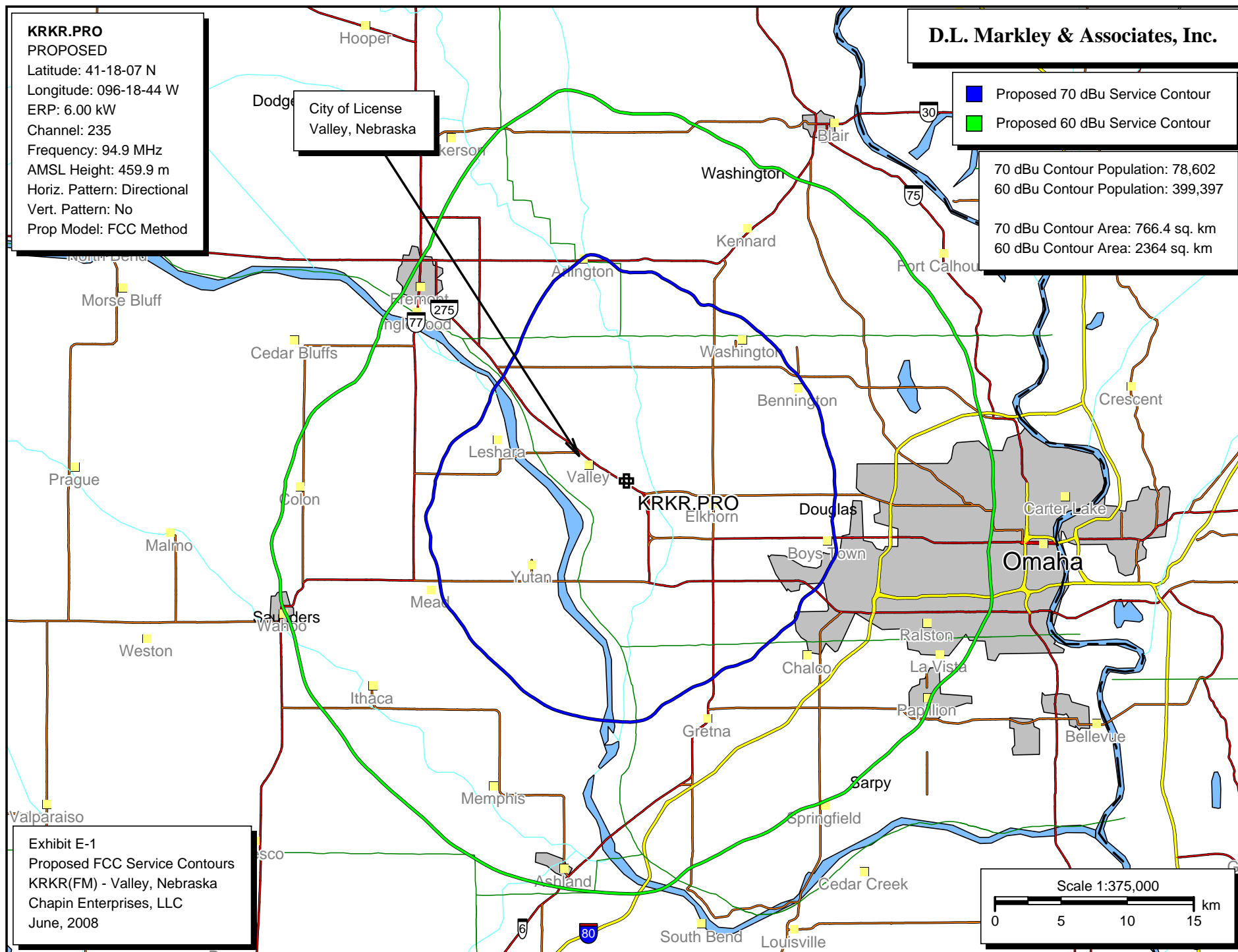


Exhibit E-1  
Proposed FCC Service Contours  
KRKR(FM) - Valley, Nebraska  
Chapin Enterprises, LLC  
June, 2008

Scale 1:375,000

0 5 10 15 km

D.L. Markley & Associates, Inc.  
Consulting Engineers  
Exhibit E-2 - Single Channel Spacing Study  
KRKR(FM) - Valley, Nebraska





REFERENCE		DISPLAY DATES
41 18 07.0 N.	CLASS = A	DATA 06-11-08
96 18 44.0 W.	Current Spacings	SEARCH 06-11-08
----- Channel 235 - 94.9 MHz -----		

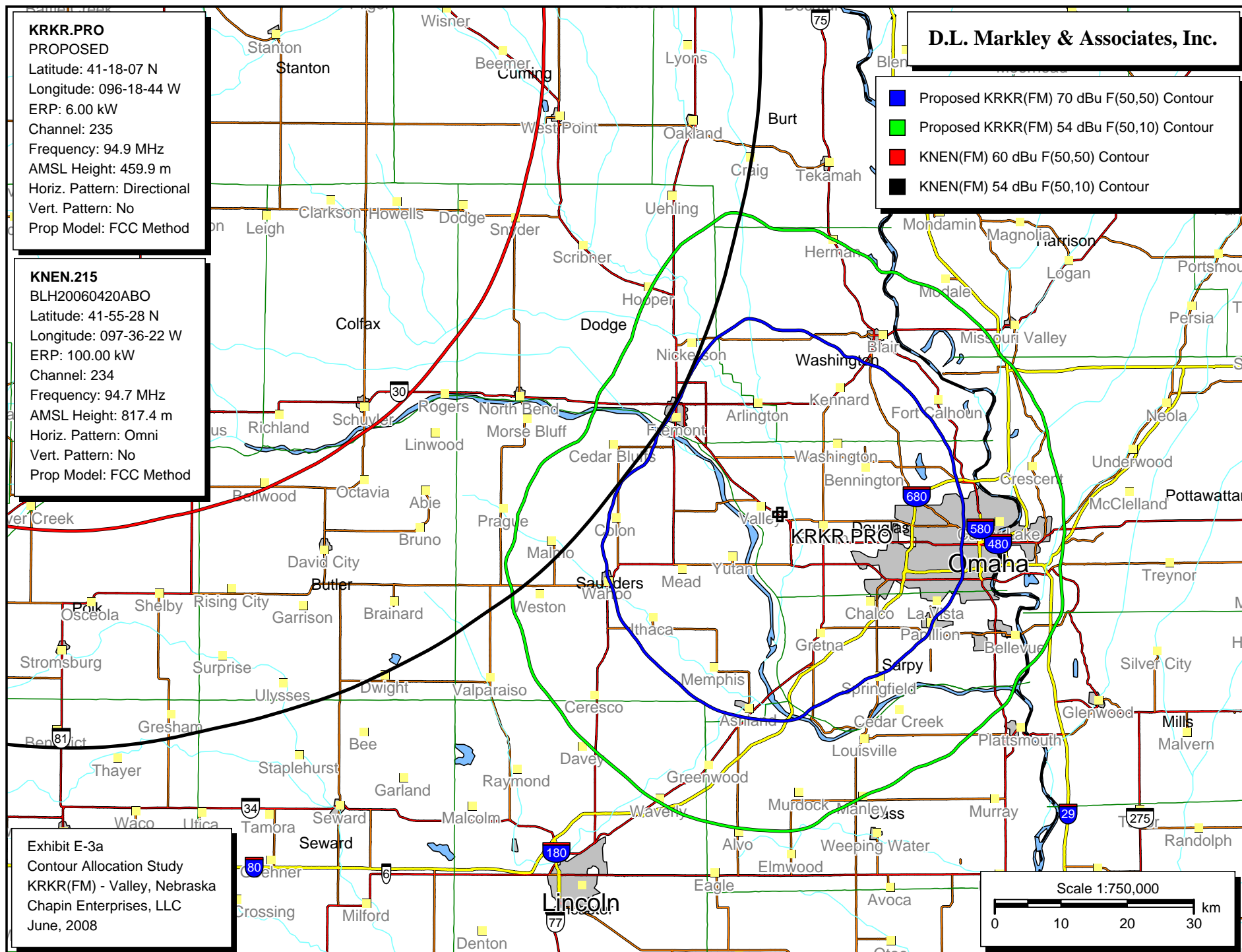
Call	Channel	Location	Azi	Dist	FCC	Margin
KRKR.C	CP	235A	Valley	NE 110.8	10.55	114.5 -103.95
KRKR	LIC	236C2	Lincoln	NE 222.1	48.09	105.5 -57.41
KNEN	LIC	234C1	Norfolk	NE 303.2	128.10	132.5 -4.40
KCSI.C	CP	237C3	Treynor	IA 96.7	52.32	41.5 10.82
KFMT-FM	LIC	288A	Fremont	NE 303.6	21.98	9.5 12.48
KGGO	LIC	235C	Des Moines	IA 80.3	241.35	225.5 15.85
RDEL	DEL	235C	Des Moines	IA 80.3	241.35	225.5 15.85
RADD	ADD	235C0	Des Moines	IA 80.3	241.35	214.5 26.85
KCKS.A	APP-N	235C1	Concordia	KS 210.2	237.97	199.5 38.47
KCKS	LIC-N	235C1	Concordia	KS 210.1	238.30	199.5 38.80
KCSI	LIC	237C3	Red Oak	IA 107.9	98.12	41.5 56.62
KGLI	LIC	238C1	Sioux City	IA 0.3	134.70	74.5 60.20
KCMO-FM	LIC	235C0	Kansas City	MO 147.0	291.29	214.5 76.79
KCMO-FM.C	CP	235C0	Shawnee	KS 147.0	291.29	214.5 76.79
KSUX	LIC-N	289C2	Winnebago	NE 351.6	116.85	14.5 102.35
KNDY-FM	LIC	238C3	Marysville	KS 193.6	153.24	41.5 111.74
AL7169	VAC	232C2	Hartington	NE 329.6	175.81	54.5 121.31
KWOA-FM	LIC	236C1	Worthington	MN 11.2	263.85	132.5 131.35
KKEZ	LIC	233C1	Fort Dodge	IA 52.0	219.14	74.5 144.64
KLIQ	LIC-N	233C1	Hastings	NE 250.7	226.50	74.5 152.00
KAAN-FM	LIC	238C2	Bethany	MO 121.9	215.87	54.5 161.37
WIBW-FM.C	CP	233C0	Topeka	KS 172.3	254.93	85.5 169.43
WIBW-FM	LIC	233C0	Topeka	KS 174.9	255.90	85.5 170.40
KKJO-FM	LIC	288C1	St. Joseph	MO 148.4	206.98	21.5 185.48
KDLS-FM	LIC	288A	Perry	IA 71.9	198.79	9.5 189.29
KDLS-FM.C	CP -Z	288C3	Perry	IA 76.2	210.02	11.5 198.52
KHCA	LIC	237A	Wamego	KS 180.8	232.33	30.5 201.83
KCFS.C	CP	233A	Sioux Falls	SD 352.1	250.21	30.5 219.71
KCFS	LIC	233A	Sioux Falls	SD 352.1	250.24	30.5 219.74

PROPOSED

**KNEN.215**

Exhibit E-3a  
Contour Allocation Study  
KRKR(FM) - Valley, Nebraska  
Chapin Enterprises, LLC  
June, 2008

-  Proposed KRKR(FM) 70 dBu F(50,50) Contour
-  Proposed KRKR(FM) 54 dBu F(50,10) Contour
-  KNEN(FM) 60 dBu F(50,50) Contour
-  KNEN(FM) 54 dBu F(50,10) Contour



**KRKR.PRO****PROPOSED**

Latitude: 41-18-07 N  
Longitude: 096-18-44 W  
ERP: 6.00 kW  
Channel: 235  
Frequency: 94.9 MHz  
AMSL Height: 459.9 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: FCC Method

**KNEN.215**

BLH20060420ABO

Latitude: 41-55-28 N  
Longitude: 097-36-22 W  
ERP: 100.00 kW  
Channel: 234  
Frequency: 94.7 MHz  
AMSL Height: 817.4 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: FCC Method

**Exhibit E-3b**

Contour Allocation Study  
KRKR(FM) - Valley, Nebraska  
Chapin Enterprises, LLC  
June, 2008

**D.L. Markley & Associates, Inc.**

- Proposed KRKR(FM) 70 dBu F(50,50) Contour
- Proposed KRKR(FM) 54 dBu F(50,10) Contour
- KNEN(FM) 60 dBu F(50,50) Contour
- KNEN(FM) 54 dBu F(50,10) Contour

Scale 1:175,000

0 2 4 6 km

D. L. Markley & Associates, Inc.  
Consulting Engineers

Exhibit E-4 - Tabular Allocation Study

KRKR(FM) - Valley, Nebraska

CH# 235A - 94.9 MHz, Pwr= 6 kW, HAAT= 100.0 M, COR= 459.9 M  
Average Protected F(50-50)= 28.29 km

DISPLAY DATES  
DATA 06-11-08  
SEARCH 06-11-08

CH CITY	CALL	TYPE STATE	ANT CX	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
235A Valley	KRKR	CP	_CX	110.8 290.8	10.55 BPH20070419ADV	41 16 06.0 96 11 39.9	6.000 100	50.6 457	33.7 Chapin Enterprises, Llc	91.5R	-80.9M
236C2 Lincoln	KRKR	LIC	_CN	222.1 41.8	48.10 BLH19880609KA	40 58 49.0 96 41 45.0	50.000 87	50.6 469	33.7 Chapin Enterprises, Llc	88.5R	-40.4M
234C1 Norfolk	KNEN^	LIC	_CX	303.2 122.3	128.11 BLH20060420ABO	41 55 28.0 97 36 22.0	100.000 299	106.0 817	73.1 Red Beacon Communications,	0.19	22.44
237C3 Treyner	KCSI«	CP	_CX	96.7 277.1	52.32 BPH20070419ADT	41 14 43.0 95 41 32.2	22.500 105	4.4 451	42.0 Hawkeye Communications, In	41.5R	10.8M
288A Fremont	KFMT-FM«	LIC	_CN	303.6 123.5	21.99 BLH19800416AB	41 24 40.0 96 31 53.0	1.200 137	50.6 516	33.7 Nrg License Sub, Llc	9.5R	12.5M
237C3 Red Oak	KCSI«	LIC	_CN	107.9 288.6	98.12 BLH19970625KB	41 01 35.0 95 12 05.0	20.500 111	4.3 463	41.6 Hawkeye Communications, In	41.5R	56.6M
238C1 Sioux City	KGLI«	LIC	_CN	0.3 180.3	134.70 BMLH19891211KC	42 30 53.0 96 18 13.0	100.000 274	10.0 646	71.9 Amfm Radio Licenses, L. l. c	74.5R	60.2M
289C2 Winnebago	KSUX«	LIC	NCN	351.6 171.5	116.86 BLH19910327KA	42 20 33.0 96 31 13.0	50.000 141	50.6 516	33.7 Ksux/kscj Radio Broadcasti	14.5R	102.4M
238C3 Marysville	KNDY-FM«	LIC	_CX	193.6 13.3	153.24 BLH20020918AAC	39 57 36.0 96 44 05.0	25.000 100	4.0 498	39.0 Dierring Communications, I	41.5R	111.7M
232C2 Hartington	AL7169«	VAC	___	329.6 148.9	175.81 RM*dd007	42 39 40.0 97 23 58.0	50.000 150	5.7 612	50.4 Pierce Radio, L. l. c	54.5R	121.3M
233C1 Hastings	KLIQ«	LIC	NC_	250.7 69.0	226.51 BMLH20020430AAK	40 36 08.0 98 50 21.0	100.000 289	10.1 925	72.2 Platte River Radio, Inc.	74.5R	152.0M
233C1 Fort Dodge	KKEZ«	LIC	_CN	52.0 233.4	219.15 BLH7723	42 29 43.0 94 12 33.0	100.000 183	7.8 521	61.8 Three Eagles Of Lincoln, I	74.5R	144.6M
238C2 Bethany	KAAN-FM«	LIC	_CN	121.9 303.3	215.87 BLH19890313KD	40 15 23.0 94 09 23.0	50.000 108	4.8 396	44.0 Cameron/ Bethany License C	54.5R	161.4M
288C1 St. Joseph	KKJO-FM«	LIC	_CN	148.4 329.2	206.99 BLH20000509AAQ	39 42 35.0 95 02 33.0	100.000 299	50.6 588	33.7 Eagle Communications, Inc.	21.5R	185.5M
288A Perry	KDLS-FM«	LIC	_CN	71.9 253.4	198.80 BLH19950727KG	41 50 03.0 94 02 12.0	6.000 93	50.6 393	33.7 Perry Broadcasting Company	9.5R	189.3M
288C3 Perry	KDLS-FM«	CP	ZCX	76.2 257.8	210.02 BPH20040721AME	41 43 35.0 93 51 38.0	10.000 157	50.6 449	33.7 Perry Broadcasting Company	11.5R	198.5M
237A Wamego	KHCA«	LIC	_CN	180.8 0.8	232.34 BLH19860425KC	39 12 35.0 96 21 05.0	6.000 99	2.7 426	27.8 Khca, Inc.	30.5R	201.8M

Terrain database is NGDC 30 SEC Distance + R = FCC Required Spacings in KM, Distance + M = Margin in KM  
ERP and HAAT are on direct line to and from reference station.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"«"affixed to 'IN' or 'OUT' values = site inside protected contour.  
"«" = Station meets FCC minimum distance spacing for its class.  
^ = Power and antenna height 'Max classed' as per Sec 73.215 protection requirements