

**Comprehensive Technical Exhibit**  
*Application for Construction Permit*  
KSIV-FM - St. Louis, Missouri  
Community Broadcasting, Inc.  
March, 2012

**Application for Construction Permit**

The following engineering statement and attached exhibits have been prepared for **Community Broadcasting, Inc. ("CBI")**, licensee of non-commercial educational station KSIV-FM at St. Louis, Missouri, and are in support of their application for construction permit.<sup>1</sup>

This application seeks to correct the geographic coordinates and elevation data associated with the facility. These changes have resulted from a resurvey of the site following a change in the antenna system. The change in the antenna system was previously provided to the Commission under BMLED-20070103ACL. It was subsequently learned that the geographic coordinates and elevation data were slightly in error. This application will bring the data into agreement with the antenna structure registration data for the tower, and will make the KSIV-FM data consistent with other users of the community antenna site.

The current license for KSIV-FM specifies 38-34-24 North Latitude and 90-19-30 West Longitude as the geographic coordinates. The actual coordinates of the structure as determined by the owner are 38-34-27.7 North Latitude and 90-19-31.5 West Longitude.<sup>2</sup> The change in coordinates is therefore 3.7 seconds of latitude and 1.5 seconds of longitude.

The licensed center of radiation is 325 meters above ground, which corresponds to 466 meters above mean sea level and 313 meters above average terrain. The site elevation has been determined to be 137.2 meters above mean sea level, and the center of radiation remains at 325 meters above ground level. Therefore, the center of radiation above mean sea level would be changed to 462.2 meters above mean sea level. Through the use of a 30-second linearly

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<sup>1</sup> The Facility ID for KSIV-FM at St. Louis, Missouri is 4276.

<sup>2</sup> Geographic coordinates are in NAD27, and are converted from the NAD83 coordinates of 38-34-27.9 North Latitude and 90-19-31.9 West Longitude specified on the Antenna Structure Registration data.

interpolated terrain database the height above average terrain has been determined to be 309.0 meters.<sup>3</sup>

No change in the maximum effective radiated power is proposed. In addition, no change to the antenna model or type is proposed. No actual physical changes are proposed to the facility, and the above-described data changes would be in compliance with the Commission's Rules.

The main studio for KSIV-FM is located at 1750 S. Brentwood Boulevard. This location is within the corporate limits of the city of St. Louis. The main studio is therefore in compliance with the provisions of Section 73.1125 of the Commission's Rules.

The facility would continue to comply with the provisions of Section 73.515 of the Commission's Rules. Exhibit E-1 illustrates the predicted 60 dBu service contour of the proposed facility. As this map demonstrates, the predicted 60 dBu service contour would totally encompass St. Louis, Missouri.

Compliance with Section 73.509 of the Commission's Rules would also be maintained by the facility. Exhibit E-2 is a tabular allocation study for KSIV-FM at the corrected geographic coordinates. This tabular study demonstrates that KSIV-FM would not have any prohibited contour overlap with any full-power FM facility. The tabular allocation study is demonstrated in graphical contour form in the map in Exhibit E-3.

Exhibit E-4 is a single channel spacing study for the facility. This study serves three purposes. First, it demonstrates that the required geographic spacings to stations on channel 221

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<sup>3</sup> Average terrain determined to be 153.2 meters AMSL based on a 36 radial sample.

would continue to be met by KSIV-FM. Secondly, this tabulation also demonstrates that the minimum geographic spacings to stations on channels 271 and 272 would also be met. The facility therefore complies with the provisions of Section 73.207 of the Commission's Rules. Finally, this tabulation also demonstrates that there are no television channel six facilities within the "affected distance" from KSIV-FM. KSIV-FM would therefore continue to comply with the provisions of Section 73.525.

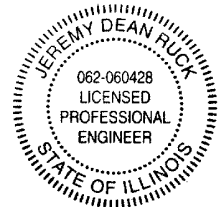
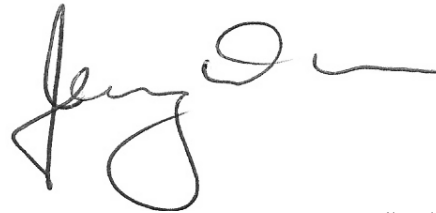
The facility is located a sufficient distance from the Canadian and Mexican borders that the international agreements are not applicable. Exhibit E-5 illustrates the location of the KSIV-FM transmitter site along with a 320 kilometer site radius circle.

This application does not propose any actual physical changes to the facility. As a result, no increase in the environmental impact already present from the facility would result. The facility would also not constitute an RF exposure hazard to persons at the site. Measured power density data at the site has previously demonstrated that the actual power density at ground level is considerably less than would be permitted under the uncontrolled environment condition of the applicable safety standards. As demonstrated in that data (see the September 2009 amendment to BPH-20081121ALQ) the maximum measured power density measured at the site was 2.25 percent.

CBI certifies that it will coordinate with all other present and future users of the site to ensure that workers having access to the site are not exposed to levels of non-ionizing radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to, a reduction in transmitter power or cessation 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, 2013

**Jeremy D. Ruck, PE**  
**March 8, 2012**

**KSIV-FM.X**

BMLED20070103ACL

Latitude: 38-34-27.70 N

Longitude: 090-19-31.50 W

ERP: 85.00 kW

Channel: 218

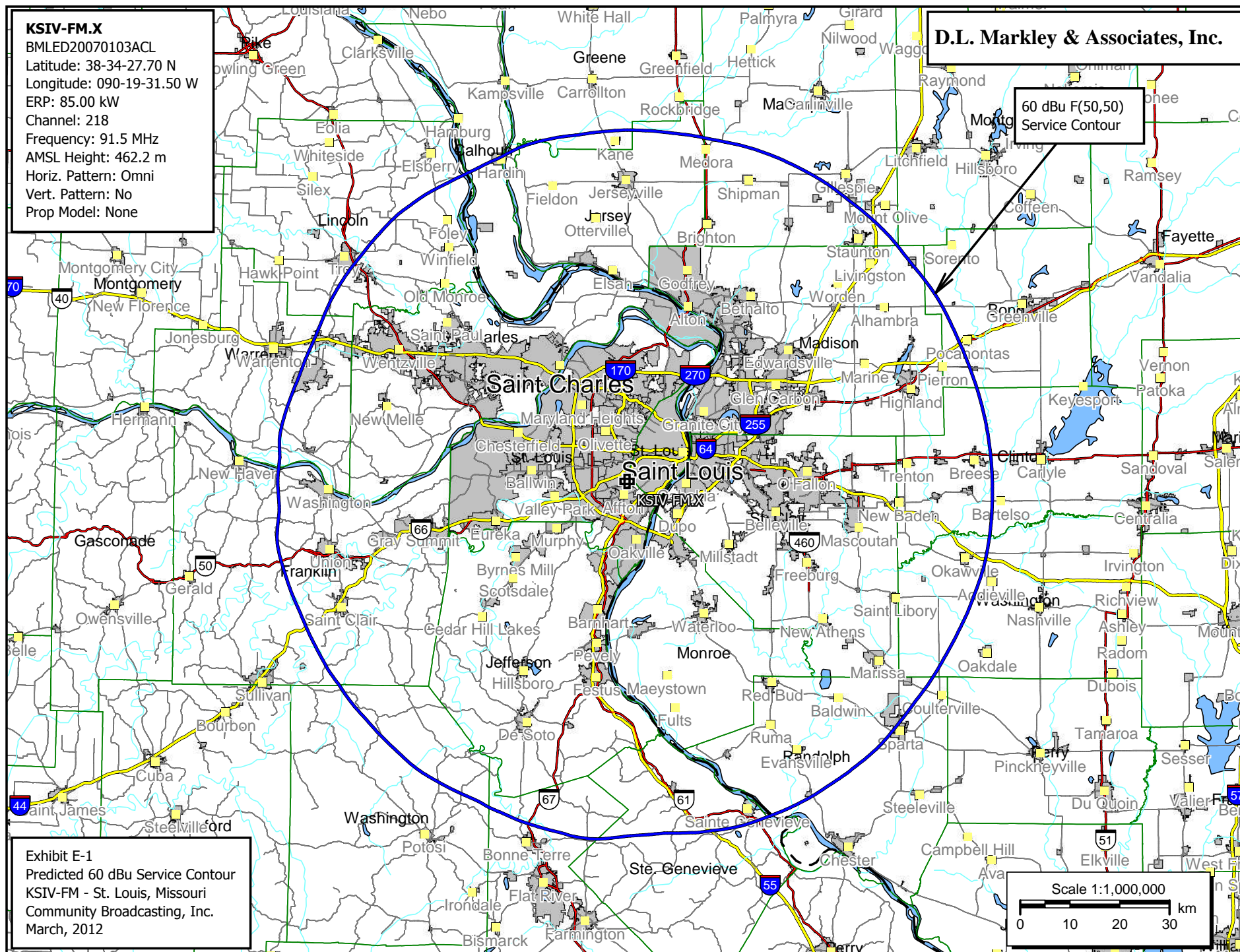
Frequency: 91.5 MHz

AMSL Height: 462.2 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

**D.L. Markley & Associates, Inc.**60 dBu F(50,50)  
Service Contour**Exhibit E-1**

Predicted 60 dBu Service Contour

KSIV-FM - St. Louis, Missouri

Community Broadcasting, Inc.

March, 2012

Scale 1:1,000,000

0 10 20 30 km

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

Exhibit E-2 - Tabular Allocation Study

KSIV-FM - St. Louis, Missouri

CH# 218C1 - 91.5 MHz, Pwr= 85 kW, HAAT= 308.8 M, COR= 462.2 M  
Average Protected F(50-50)= 71.4 km  
Omni-directional

DISPLAY DATES  
DATA 03-08-12  
SEARCH 03-08-12

REFERENCE  
38 34 27.7 N.  
90 19 31.5 W.

CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
218C1 St. Louis	KSIV-FM	LIC _CX MO	162.3 342.3	0.11 BMLD20070103ACL	38 34 24.0 90 19 30.0	85.000 313	168.1 466	70.9 Community Broadcasting, In	-240.5*	-241.5*
220D St. Louis	K220HT	LIC _C_ MO	58.7 238.8	13.19 BMLFT20080723ACO	38 38 09.0 90 11 45.0	0.099 125	0.7 263	10.9 Calvary Chapel Of Twin Fal	-59.6*	-7.7
218D Jacksonville	W218BA	LIC _C_ IL	2.7 182.8	121.34 BLFT20000204ABT	39 39 58.0 90 15 30.0	0.055 53	20.3 242	6.1 Illinois Bible Institute,	30.4	-52.4
218C2 Bloomfield	KAIA	LIC DVX MO	166.8 347.2	216.36 BLED20090717ABE	36 40 31.0 89 46 19.0	49.000 127	125.6 211	45.4 Educational Media Foundati	19.0	1.5
219A Vandalia	WVNL	LIC _CX IL	68.4 249.1	113.95 BLED20021028AAI	38 56 42.0 89 06 10.0	0.100 50	11.1 210	7.8 Illinois Bible Institute,	30.7	1.5
217A Salem	WSLE	LIC _CX IL	86.8 267.7	120.41 BLED20050815ABO	38 37 34.0 88 56 41.0	0.770 47	17.5 209	12.0 American Family Associatio	29.9	2.3
221D Coulterville	644692	APP _C_ IL	128.4 308.8	80.10 BNPFT20030317ALU	38 07 30.0 89 36 30.0	0.170 46	0.9 193	8.2 Covenant Network	6.2	61.8
217C1 Columbia	KBIA	LIC _CN MO	282.3 101.1	172.06 BLED959	38 53 16.0 92 15 48.0	100.000 186	92.6 425	62.3 The Curators Of The Univer	9.8	8.4
218B Pekin	WCIC	LIC DCN IL	16.2 196.7	229.63 BLED19981116KA	40 33 28.0 89 34 04.0	47.000 154	134.0 339	51.6 Illinois Bible Institute,	24.6	9.8
216C2 Park Hills	KBGM	LIC _C_ MO	193.7 13.6	88.34 BLED20010524AAE	37 48 04.0 90 33 51.0	8.000 189	4.2 479	43.6 American Family Associatio	12.6	34.9
219C2 Hannibal	KJIR	LIC _C_ MO	321.4 140.7	160.70 BLED20040202AQF	39 41 54.0 91 29 48.0	12.000 174	61.6 361	41.7 Believers Broadcasting Cor	28.5	16.4
271D Saint Peters	649136«	APP _C_ MO	312.0 131.8	38.02 BNPFT20030317GPQ	38 48 09.0 90 39 05.0	0.250 19	112.1 170	37.6 Kaspar Broadcasting Co. Of	21.5R	16.5M
216B Carlinville	WIBI	LIC DCX IL	27.4 207.8	97.17 BLED20031204AFJ	39 20 58.0 89 48 16.0	50.000 145	6.0 338	52.7 Illinois Bible Institute,	19.4	34.6
219C2 Salem	KCVX	LIC DC_ MO	225.1 44.4	151.84 BLED20040211ABW	37 36 16.0 91 32 46.0	40.000 64	34.4 438	22.9 Lake Area Educational Broa	46.5	25.9
218A Casey	WLHW	LIC _CX IL	67.5 249.0	219.62 BLED20060623AAV	39 18 14.0 87 58 15.0	6.000 60	80.1 247	23.2 Word Power, Inc.	67.5	26.4
220A Cuba	KNLQ	LIC ZCX MO	237.5 56.8	110.16 BLED20040203ABJ	38 02 14.0 91 23 04.0	5.000 76	2.5 353	25.6 New Life Evangelistic Cent	36.9	74.9
217C1 Van Buren	KBIY	LIC DE_ MO	199.9 19.5	173.10 BLED20010511ABG	37 06 25.0 90 59 30.0	100.000 150	45.2 379	29.3 New Life Evangelistic Cent	56.9	40.6
217A Effingham	WGMR	LIC _CX IL	68.2 249.3	166.73 BLED20110929ASV	39 07 02.0 88 32 05.0	0.620 90	24.2 268	16.2 Covenant Network	70.5	45.9

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference zone= - Zone 2, Co to 3rd adjacent.  
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.



**KSIV-FM.X**

BMLED20070103ACL

Latitude: 38-34-27.70 N

Longitude: 090-19-31.50 W

ERP: 85.00 kW

Channel: 218

Frequency: 91.5 MHz

AMSL Height: 462.2 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

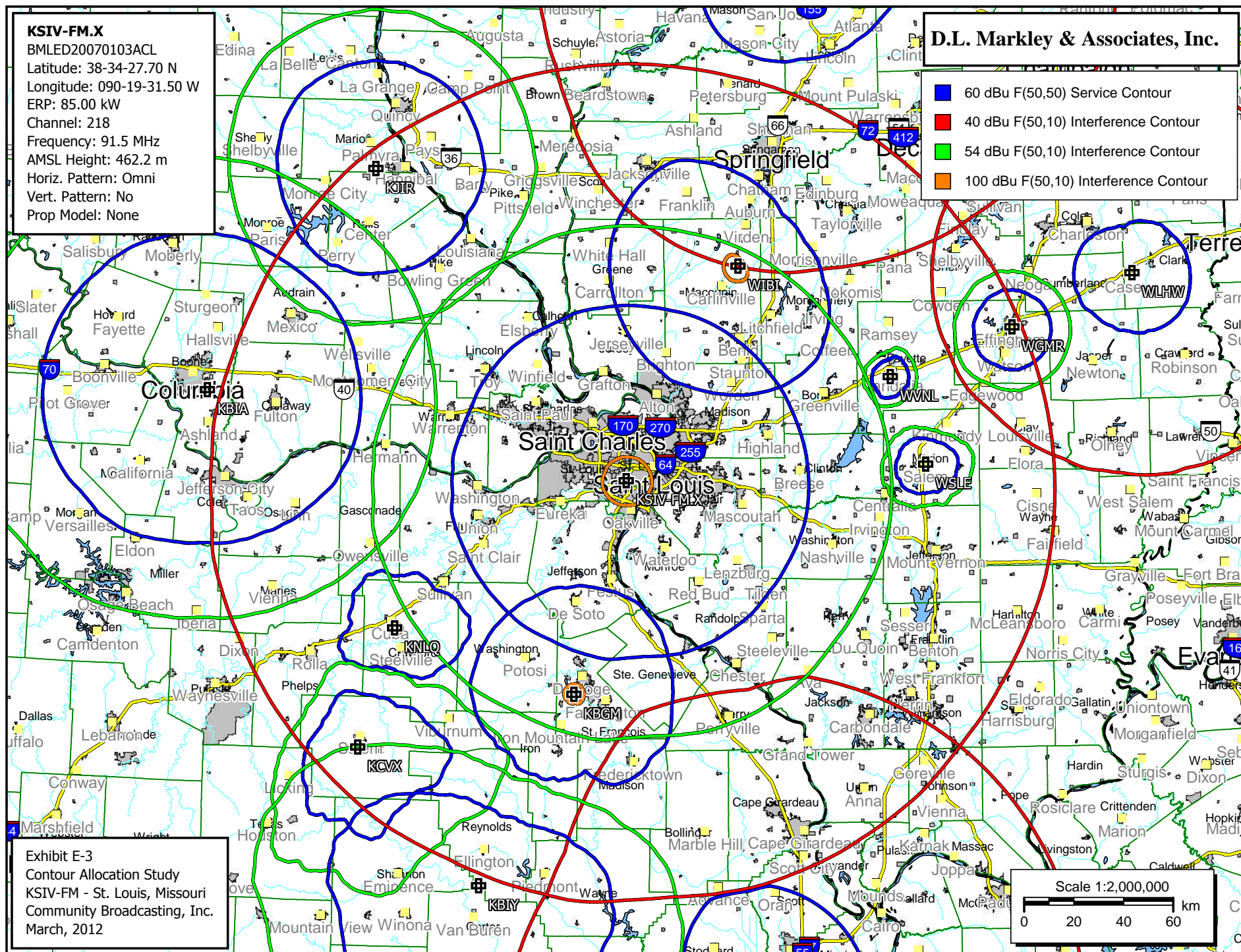
**D.L. Markley & Associates, Inc.**

60 dBu F(50,50) Service Contour

40 dBu F(50,10) Interference Contour

54 dBu F(50,10) Interference Contour

100 dBu F(50,10) Interference Contour





D.L. Markley & Associates, Inc.  
Consulting Engineers  
Exhibit E-4 - Single Channel Spacing Study  
KSIV-FM - St. Louis, Missouri

REFERENCE	CLASS = C1	DISPLAY DATES
38 34 27.7 N.		DATA 03-08-12
90 19 31.5 W.	Current Spacings to 3rd Adj.	SEARCH 03-08-12
----- Channel 218 - 91.5 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
KSIV-FM	LIC 218C1	St. Louis	MO 162.3	0.11	244.5	-244.4
K220HT	LIC 220D	St. Louis	MO 58.7	13.19	73.5	-60.3
WCIC	LIC-D 218B	Pekin	IL 16.2	229.63	269.5	-39.9
WVNL	LIC 219A	Vandalia	IL 68.4	113.95	132.5	-18.6
WSLE	LIC 217A	Salem	IL 86.8	120.41	132.5	-12.1
W218BA	LIC 218D	Jacksonville	IL 2.7	121.34	132.5	-11.2
KAIA	LIC-D 218C2	Bloomfield	MO 166.8	216.36	223.5	-7.1
KCVX	LIC-D 219C2	Salem	MO 225.1	151.84	157.5	-5.7
KBIA	LIC 217C1	Columbia	MO 282.3	172.06	176.5	-4.4
KBIY	LIC-D 217C1	Van Buren	MO 199.9	173.10	176.5	-3.4
KJIR	LIC 219C2	Hannibal	MO 321.4	160.70	157.5	3.2
644692	APP 221D	Coulterville	IL 128.4	80.10	73.5	6.6
KBGM	LIC 216C2	Park Hills	MO 193.7	88.34	78.5	9.8
WIUM	CP -D 217B	Macomb	IL 351.7	208.05	194.5	13.6
WIUM	LIC-D 217B	Macomb	IL 351.7	208.05	194.5	13.6
649136	APP 271D	Saint Peters	MO 312.0	38.02	21.5	16.5
WIBI	LIC-D 216B	Carlinville	IL 27.4	97.17	78.5	18.7
WLHW	LIC 218A	Casey	IL 67.5	219.62	199.5	20.1
WUEV	LIC 218B1	Evansville	IN 104.4	253.55	232.5	21.1
WGMR	LIC 217A	Effingham	IL 68.2	166.73	132.5	34.2
KNLQ	LIC-Z 220A	Cuba	MO 237.5	110.16	74.5	35.7

**KSIV-FM.X**

BMLED20070103ACL

Latitude: 38-34-27.70 N

Longitude: 090-19-31.50 W

ERP: 85.00 kW

Channel: 218

Frequency: 91.5 MHz

AMSL Height: 462.2 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

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

KSIV-FM 320 km  
Site Radius

KSIV-FM.X

Exhibit E-5

International Agreement

KSIV-FM - St. Louis, Missouri

Community Broadcasting, Inc.  
March, 2012

Scale 1:6,000,000

0 80 160 240 km