

***COMPREHENSIVE TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT***

NCE FM STATION KSIV-FM
ST. LOUIS, MISSOURI
91.5 MHz / CHANNEL 218C1 / FACILITY ID: 4726

COMMUNITY BROADCASTING, INC.

OCTOBER 2021

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Community Broadcasting, Inc.** ("CBI"), licensee of NCE FM station KSIV-FM at St. Louis, Missouri, and are in support of their application for construction permit.¹ This application proposes an increase in the effective radiated power of the facility at the current location.

KSIV-FM is licensed to operate on FM channel 218 as a class C1 facility with a maximum effective radiated power of 85 kW at a center of radiation of 462.2 meters above mean sea level, 325 meters above ground level, utilizing a combined non-directional antenna. This center of radiation elevation above mean sea level corresponds to an elevation of 309 meters above average terrain. No change in the location is proposed under this application, which seeks merely to increase the KSIV-FM effective radiated power to 90 kW.

Since no actual change in the site location or channel of operation is proposed under this application, the specified technical parameters constitute a minor change to the current license. Exhibit E-1 is a map depicting the both the licensed and proposed 60 dBu service contours. This map also demonstrates that the facility would continue to comply with the provisions of Section 73.315 of the Commission's Rules, as the entire community of St. Louis, Missouri is located within the proposed 60 dBu service contour.

KSIV-FM complies with the provisions of Section 73.1125 of the Commission's Rules, and would continue to do so under the proposed technical parameters. Not only do residents of the

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

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region, including those within the community of license, enjoy toll-free telephone access to the main studio for KSIV-FM, but the main studio is located both within the principal community coverage contour of KSIV-FM, and within twenty-five miles of the reference coordinates of St. Louis.

The KSIV-FM technical parameters proposed under this application comply with the provisions of Section 73.207, 73.509, and 73.525 of the Commission's Rules. Exhibit E-2 is a single channel spacing study for the proposed technical parameters. This study demonstrates no failures of the intermediate frequency spacing requirements under Section 73.207 of the Commission's Rules to facilities on channels 221, 271, or 272. Additionally, this study does not list any broadcast television channel six facilities within the "affected" distance as described under Section 73.525 of the Commission's Rules.

Exhibit E-3 is the tabular contour overlap study for the proposed technical parameters. This study demonstrates that the proposed technical parameters would not result in any prohibited contour overlap under Section 73.509 of the Commission's Rules to any other proposed or authorized facility. This tabular contour overlap study is graphically depicted in the contour maps that comprise Exhibits E-4 and E-5.

The proposed facility is not located within 320 kilometers of either the border with Canada, or the border with Mexico. Exhibit E-6 illustrates the proposed site location along with a 320-kilometer circle, and demonstrates this radius falls well short of the either of the international borders.

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The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. There is no change to the existing site, and this application merely seeks to increase the maximum effective radiated power of KSIV-FM. A grant of this application will not increase the existing environmental impact already present from the facility. Additionally, the proposed increase in the maximum ERP will not result in a radiofrequency radiation exposure hazard to persons at the site.

The antenna utilized by the facility is a Dielectric FMV-03-8FM/24U-2 combined panel antenna. This antenna has eight levels, spaced one wavelength apart. This is not an antenna described in *FM Model*, and so, it would normally be required to specify this as a type-1 antenna. If this methodology is utilized, then the calculated power density at ground level, by the time all stations are considered, exceeds $200 \mu\text{W}/\text{cm}^2$. This, however, is not the case at the site. Previous RFR measurements performed by the undersigned engineer, and by other engineers, have determined that the contribution from the Dielectric combined antenna is significantly less than that indicated by *FM Model*. CBI will perform power density measurements at the site to demonstrate that the actual power density is significantly below the upper value of the uncontrolled environment condition of the Commission's safety standard. These measurements will be submitted with the application for license.

CBI certifies that it will coordinate with all other users of the site to ensure that workers and other persons are not exposed to levels of radiofrequency radiation in excess of applicable safety standards. Such coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

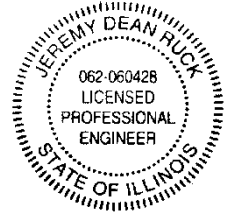
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10.02.2021

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, 2021

Jeremy D. Ruck, PE
October 2, 2021

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KSIV-FM

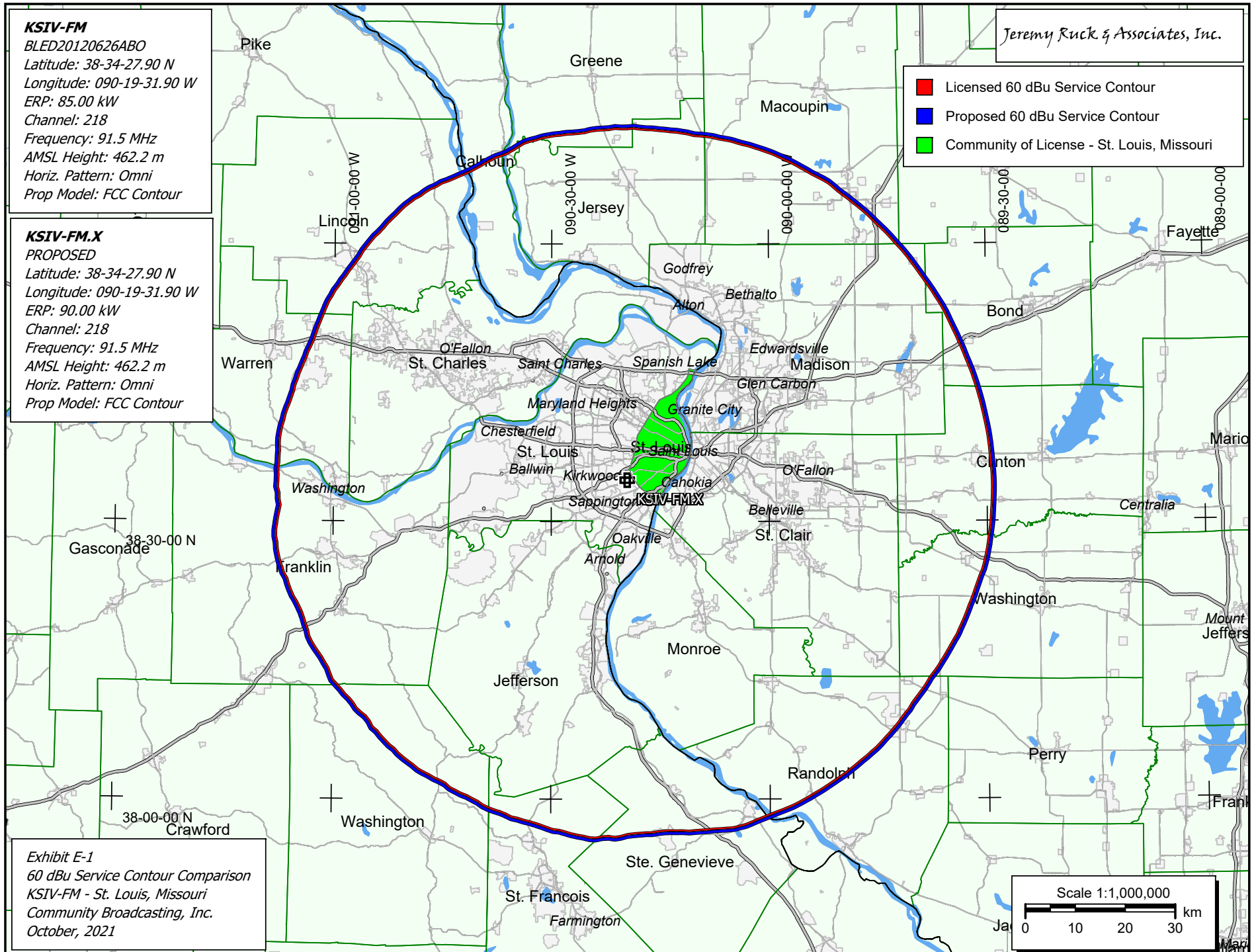
BLD20120626ABO
Latitude: 38-34-27.90 N
Longitude: 090-19-31.90 W
ERP: 85.00 kW
Channel: 218
Frequency: 91.5 MHz
AMSL Height: 462.2 m
Horiz. Pattern: Omni
Prop Model: FCC Contour

KSIV-FM.X

PROPOSED
Latitude: 38-34-27.90 N
Longitude: 090-19-31.90 W
ERP: 90.00 kW
Channel: 218
Frequency: 91.5 MHz
AMSL Height: 462.2 m
Horiz. Pattern: Omni
Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

- Licensed 60 dBu Service Contour
- Proposed 60 dBu Service Contour
- Community of License - St. Louis, Missouri



Jeremy Ruck & Associates, Inc.
Consulting Engineers
Exhibit E-2 - Single Channel Spacing Study
KSIV-FM - St. Louis, Missouri

REFERENCE		DISPLAY DATES
38 34 27.90 N.	CLASS = C1	DATA 10-01-21
90 19 31.90 W.	Current Spacings to 3rd Adj.	SEARCH 10-02-21
----- Channel 218 - 91.5 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
KSIV-FM	LIC 218C1	St. Louis	MO 0.0	0.00	244.5	-244.5
KSIV-FM	LIC 218C1	St. Louis	MO 0.0	0.00	244.5	-244.5
WCIC	LIC-D 218B	Pekin	IL 16.2	229.62	269.5	-39.9
NEW	CP 06 --	Rolla	MO 242.4	144.44	165.5	-21.1
WVNL	LIC 219A	Vandalia	IL 68.4	113.96	132.5	-18.5
WSLE	LIC 217A	Salem	IL 86.8	120.41	132.5	-12.1
KAIA	LIC-D 218C2	Bloomfield	MO 166.8	216.36	223.5	-7.1
KCVX	LIC-D 219C2	Salem	MO 225.1	151.85	157.5	-5.7
KBIA	LIC 217C1	Columbia	MO 282.3	172.07	176.5	-4.4
KJIR	LIC 219C2	Hannibal	MO 321.4	160.70	157.5	3.2
KBGM	LIC 216C2	Park Hills	MO 193.7	88.34	78.5	9.8
WIUM	LIC-D 217B	Macomb	IL 351.7	208.05	194.5	13.6
K06PT-D	CP 06 --	Columbia	MO 283.7	179.16	165.5	13.7
WIBI	LIC-D 216B	Carlinville	IL 27.4	97.17	78.5	18.7
WLHW	LIC 218A	Casey	IL 67.5	219.63	199.5	20.1
WJWA	CP 218B1	Evansville	IN 104.5	253.47	232.5	21.0
WGMR	LIC 217A	Effingham	IL 68.2	166.73	132.5	34.2
KCKF	LIC-Z 220A	Cuba	MO 237.5	110.16	74.5	35.7

All separation margins include rounding

Jeremy Ruck & Associates, Inc.
Consulting Engineers

Exhibit E-3 - Tabular Contour Overlap Study

KSIV-FM - St. Louis, Missouri

REFERENCE CH# 218C1 - 91.5 MHZ, Pwr= 90 kW, HAAT= 309.2 M, COR= 462.2 M
38 34 27.90 N. Average Protected F(50-50)= 72.01 km
90 19 31.90 W. Omni-directional

DISPLAY DATES
DATA 10-01-21
SEARCH 10-02-21

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
218C1	KSIV-FM	LIC	_CN	0.0	0.00	38 34 27.90	85.000		---Reference---		
St. Louis		MO		0.0	BLED20120626ABO	90 19 31.90	309	462	Community Broadcasting, In		
218C1	KSIV-FM	LIC	_CN	0.0	0.00	38 34 27.90	85.000		---Reference---		
St. Louis		MO		0.0	BLED20120626ABO	90 19 31.90	309	462	Community Broadcasting, In		
219A	WVNL	LIC	_CN	68.4	113.72	38 56 42.20	0.100	11.2	7.8 29.7	0.2	
Vandalia		IL		249.1	BLED20021028AAI	89 06 10.20	50	210	University Of Northwestern		
217A	WSLE	LIC	_CN	86.8	120.10	38 37 34.20	0.770	18.0	12.3 28.3	0.5	
Salem		IL		267.7	BLED20050815ABO	88 56 41.20	47	209	American Family Associatio		
218C2	KAIA	LIC	DVN	166.8	216.69	36 40 31.20	49.000	124.8	44.7 19.3	0.7	
Bloomfield		MO		347.2	BLED20170822AAD	89 46 19.30	127	211	Educational Media Foundati		
217C1	KBIA	LIC	_CN	282.3	171.65	38 53 16.10	100.000	92.5	62.2 8.8	7.1	
Columbia		MO		101.1	BLED959	92 15 48.60	186	425	The Curators Of The Univer		
218B	WCIC	LIC	DCN	16.2	229.87	40 33 28.10	47.000	134.2	51.8 24.2	8.6	
Pekin		IL		196.7	BLED19981116KA	89 34 04.40	154	339	University Of Northwestern		
216C2	KBGM	LIC	_CN	193.7	88.46	37 48 04.10	8.000	4.3	43.9 12.1	34.6	
Park Hills		MO		13.6	BLED20010524AAE	90 33 51.40	189	479	American Family Associatio		
219C2	KJIR	LIC	_CN	321.4	160.67	39 41 54.20	12.000	62.1	42.0 27.6	15.4	
Hannibal		MO		140.7	BLED20040202AQF	91 29 48.60	174	361	Believers Broadcasting Cor		
216B	WIBI	LIC	DCN	27.4	97.23	39 20 58.20	50.000	6.0	52.7 19.0	34.5	
Carlinville		IL		207.8	BLED20031204AFJ	89 48 16.30	145	338	University Of Northwestern		
218A	WLHW	LIC	_CN	67.5	219.17	39 18 14.10	6.000	80.2	23.3 66.1	24.1	
Casey		IL		249.0	BLED20060623AAV	87 58 15.10	60	247	Word Power, Inc.		
219C2	KCVX	LIC	DEN	225.1	151.78	37 36 16.10	30.000	31.1	21.1 49.1	26.7	
Salem		MO		44.4	BLED20130403AAK	91 32 46.50	64	438	Lake Area Educational Broa		
220A	KCKF	LIC	ZCN	237.5	110.01	38 02 14.20	5.000	2.5	25.8 35.8	74.3	
Cuba		MO		56.8	BLED20040203ABJ	91 23 04.50	76	353	Lake Area Educational Broa		
217A	WGMR	LIC	_CN	68.2	166.38	39 07 02.10	0.620	24.2	16.2 69.3	44.5	
Effingham		IL		249.3	BLED20110929ASV	88 32 05.20	90	268	Covenant Network		
06 -- NEW«		CP	_N	242.4	144.20	37 57 53.70	0.300	33.8	15.0 48.8R	95.4M	
Rolla		MO		61.5	BNPDVL-20090825BJS	91 47 01.89		470			

Terrain database is FCC 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.
All separation margins (if shown) include rounding.
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 restricted contour.
« = Station meets FCC minimum distance spacing for its class.

KSIV-FM.X

PROPOSED

Latitude: 38-34-27.90 N

Longitude: 090-19-31.90 W

ERP: 90.00 kW

Channel: 218

Frequency: 91.5 MHz

AMSL Height: 462.2 m

Horiz. Pattern: Omni

Prop Model: FCC Contour

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- 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

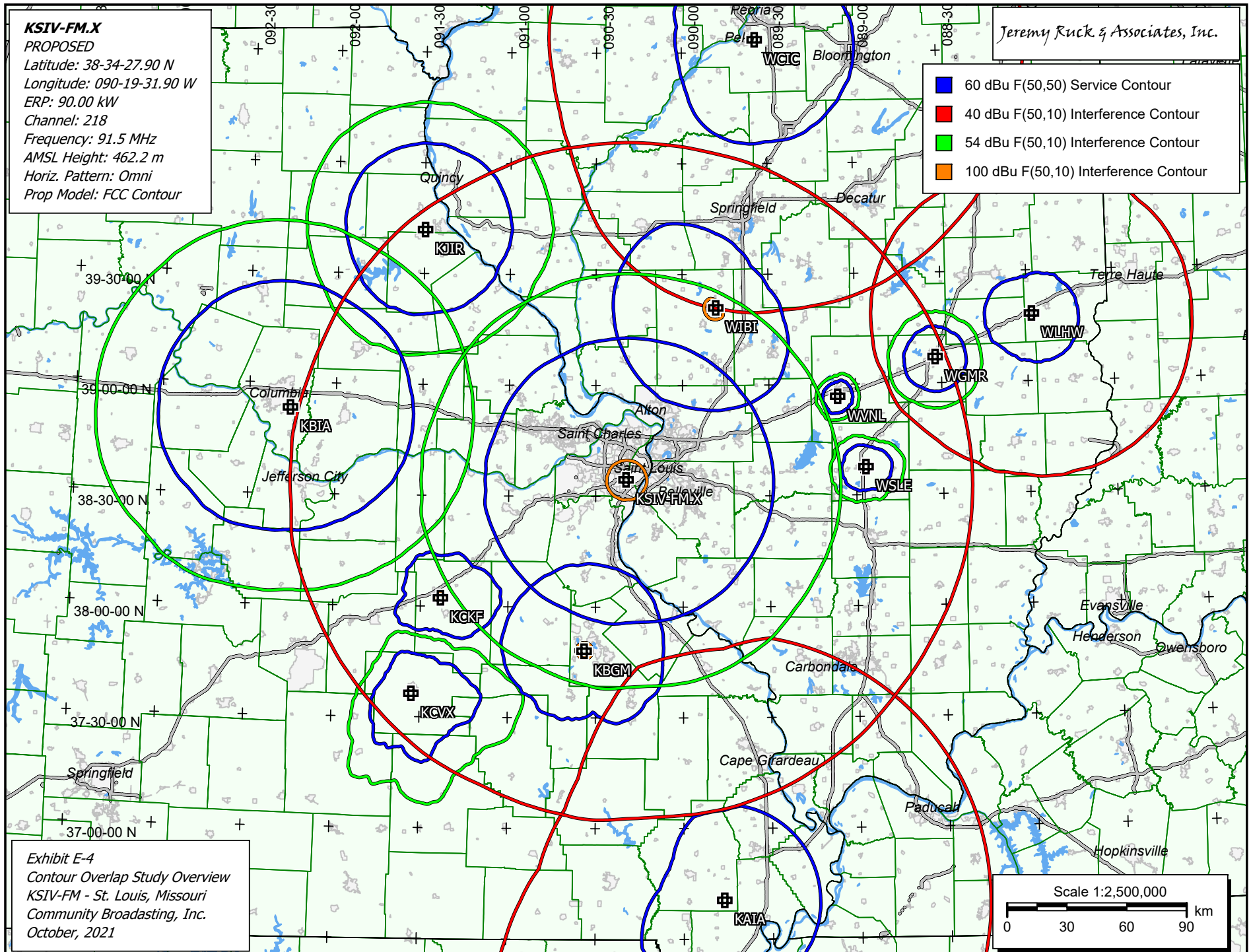


Exhibit E-4
Contour Overlap Study Overview
KSIV-FM - St. Louis, Missouri
Community Broadcasting, Inc.
October, 2021

KSIV-FM.X

PROPOSED

Latitude: 38-34-27.90 N

Longitude: 090-19-31.90 W

ERP: 90.00 kW

Channel: 218

Frequency: 91.5 MHz

AMSL Height: 462.2 m

Horiz. Pattern: Omni

Prop Model: FCC Contour

Jeremy Ruck & 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

KSIV-FM 40 dBu
F(50,10) Contour

KAIA 60 dBu
F(50,50) Contour

Exhibit E-5
Contour Overlap Study KAIA Detail
KSIV-FM - St. Louis, Missouri
Community Broadcasting, Inc.
October, 2021

Scale 1:250,000

0 3 6 9 km

KSIV-FM.X

PROPOSED

Latitude: 38-34-27.90 N

Longitude: 090-19-31.90 W

ERP: 90.00 kW

Channel: 218

Frequency: 91.5 MHz

AMSL Height: 462.2 m

Horiz. Pattern: Omni

Vert. Pattern: No284324441

Prop Model: FCC Contour

Jeremy Ruck & Associates, Inc.

KSIV-FM 320 kilometer
Site Radius

KSIV-FM.X

Exhibit E-6

International Agreement Compliance

KSIV-FM - St. Louis, Missouri

Community Broadcasting, Inc.

October, 2021

Scale 1:7,000,000

0 90 180 270 km