

TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT

FM BROADCAST STATION KKBS(FM)
GUYMON, OKLAHOMA
FM CHANNEL 224C1
FACILITY ID: 43279

MLS COMMUNICATIONS, INC.

FEBRUARY, 2014

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **MLS Communications, Inc.** ("MLS"), licensee of FM broadcast station KKBS(FM) at Guymon, Oklahoma, and are in support of their application for construction permit to modify that facility.¹

This application seeks to upgrade the KKBS facility by changing the class of operation. It is proposed that the channel remain as channel 224. In addition, the proposed facility does not specify a change in the site location for the facility. The center of radiation above mean sea level would remain unchanged, however, due to more accurate terrain sampling; the center of radiation relative to average terrain would change.

KKBS(FM) currently operates as a C3 facility on FM channel 224, with an effective radiated power of 11.5 kW at a center of radiation of 148 meters above average terrain. The proposed facility would operate as a C1 facility on FM channel 224. The proposed effective radiated power is 51 kW, and the center of radiation would be 148 meters above average terrain. A non-directional antenna is proposed for use with the facility.

The facility operates on an allocation assigned to Guymon, Oklahoma. The proposed change in the class of operation would result in a short spacing to both the construction permit and licensed facilities of KGRQ(FM) at Lakin, Kansas.² Exhibit E-1 is a single channel spacing study for the proposed KKBS(FM) facilities, and demonstrates the short-spacing issue to both KGRQ facilities.

¹ The Facility ID for KKBS(FM) at Guymon, Oklahoma is 43279.

² The Facility ID for KGRQ(FM) at Lakin, Kansas is 170960.

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MLS has discussed the proposed upgrade with both JSM Broadcasting, LLC ("JSM"), the licensee of KGRQ(FM), and Steckline Communications, Inc. ("Steckline"). Both entities are agreeable to the upgrade, and are cognizant of the fact that it will require a channel change for KGRQ(FM) to comply with the provisions of Section 73.207 of the Commission's Rules. JSM has agreed to allow Steckline to submit an application concurrent with this application to modify the existing KGRQ(FM) construction permit to change the channel of operation, and relocate the facility.

The proposed change in the Guymon allocation to class C1 would be consistent with the applicable sections of the Commission's Rules when the proposed channel change to KGRQ(FM) is taken into account. Exhibit E-2 illustrates the predicted 70 dBu service contour for the KKBS(FM) allocation as a C1 utilizing reference height and power at the allocation site. As this map demonstrates, the predicted 70 dBu service contour by the Commission's standard method would fully encompass the community of license, which is reasonable considering the proximal location of the site to the Guymon, Oklahoma. Since the allocation coordinates specified are those of the current site, the allocation site is suitable for use.

The proposed facility would comply with the provisions of Section 73.315 of the Commission's Rules. Exhibit E-3 depicts the predicted 70 dBu and 60 dBu service contours for the proposed facility. As this map demonstrates, the entire community of Guymon would be encompassed by the predicted 70 dBu service contour.

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The main studio for KKBS would continue to be in compliance with the provisions of Section 73.1125 of the Commission's Rules. The main studio is located at 3001 N. Hwy 64 in Guymon, Oklahoma. This location is within the corporate boundaries of the community of license.

The proposed facility would comply with Section 73.207 of the Commission's Rules. Sections 73.213(a)-(c) and 73.215 are not applicable to the facility. Exhibit E-4 is a single channel spacing study for the proposed facility. This study demonstrates that all of the spacing requirements to relevant facilities would be met. It should be noted that in the creation of this study, the KGRQ(FM) facilities at Lakin, Kansas have been deleted due to the change to their channel of operation proposed.

The proposed facility would not have a significant environmental impact, and is excluded from environmental processing. KKBS would continue to utilize a tower that is registered with the Commission. The upgrade to the facility would not require any excavation, and would not increase the existing environmental impact already present from the facility.

In addition, the proposed facility would not result in a radiofrequency radiation hazard to the general public. Modeling the antenna as an isotropic point source creates a worst-case situation for the proposed facility. The calculated power density for KKBS(FM) is then calculated by the equations in Appendix A of *OET Bulletin 65* as follows.

$$S = \frac{33.4 (E^2)(ERP_H + ERP_V)}{h^2}$$

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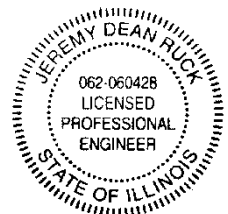
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In this equation, the "E" variable is the relative field for the antenna, which in this case is assumed to have 1.0 as a value. The "ERP" values are the sum of the effective radiated power in watts for each polarization. Since the antenna would be circularly polarized, the value of 51,000 is assigned to each polarization, and 102,000 is the resulting sum within the parentheses. The "h" variable in the denominator is the center of radiation above ground in meters less two meters, or 139 meters. After substitution and solving, the equation becomes the following:

$$S = \frac{(33.4)(1)(102,000)}{19321} = 176.3 \frac{\mu W}{cm^2}$$

This value is less than the upper limit permissible under the uncontrolled environment condition of the safety standard. MLS certifies that it will coordinate with all other users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency 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.

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, 2015

Jeremy D. Ruck, PE
February 20, 2014

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2.20.2014

Jeremy Ruck & Associates, Inc.
Consulting Engineers - Canton, Illinois
Exhibit E-1 - Single Channel Spacing Study
KKBS(FM) - Guymon, Oklahoma

REFERENCE		DISPLAY DATES
36 40 13.0 N.	CLASS = C1	DATA 02-19-14
101 28 48.0 W.	Current Spacings to 3rd Adj.	SEARCH 02-19-14
----- Channel 224 - 92.7 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
KKBS	LIC 224C3	Guymon	OK 0.0	0.00	211.0	-211.0
KGRQ_	CP -N 223C1	Lakin	KS 3.8	135.73	177.0	-41.3
K226BX	CP 226D	Spearman	TX 153.2	58.70	74.0	-15.3
K222AK	LIC 222D	Hugoton	KS 12.7	59.46	74.0	-14.5
KGRQ	LIC 223C3	Lakin	KS 3.8	135.73	144.0	-8.3
K223AU	LIC 223D	Dumas	TX 207.6	93.84	84.0	9.8
KMML	LIC 225C2	Cimarron	KS 35.8	174.99	158.0	17.0
K224EF	CP 224D	Amarillo, North	TX 190.5	165.95	133.0	33.0
K222BE	LIC 222D	Borger	TX 173.4	113.75	74.0	39.8

% = Station Fails minimum 73.215 spacings

KKBS.ALLOC

BLH19921208KD

Latitude: 36-40-13 N

Longitude: 101-28-48 W

ERP: 100.00 kW

Channel: 224

Frequency: 92.7 MHz

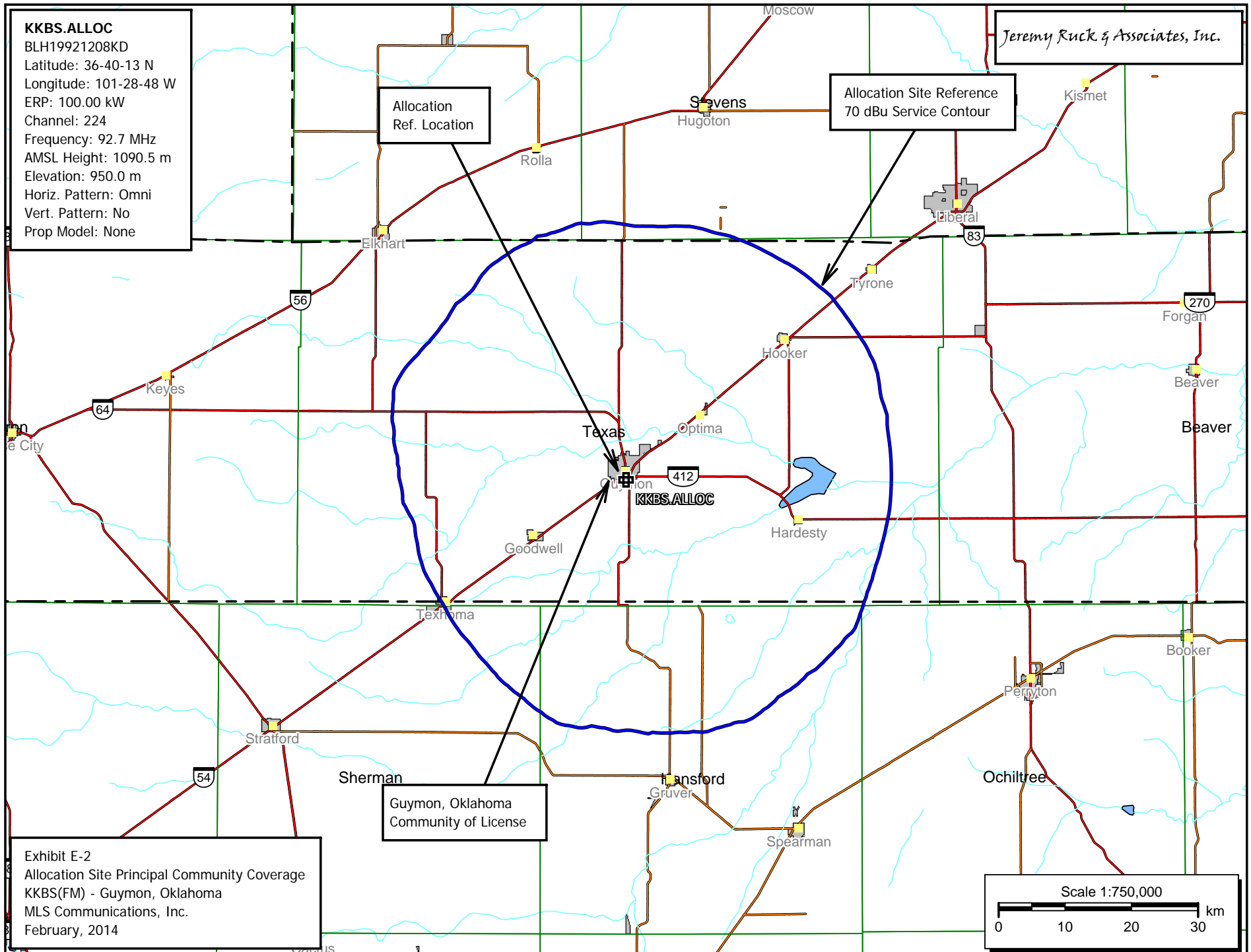
AMSL Height: 1090.5 m

Elevation: 950.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

Allocation
Ref. LocationAllocation Site Reference
70 dBu Service Contour*Jeremy Ruck & Associates, Inc.*

KKBS.X

BLH19921208KD

Latitude: 36-40-13 N

Longitude: 101-28-48 W

ERP: 51.00 kW

Channel: 224

Frequency: 92.7 MHz

AMSL Height: 1090.5 m

Elevation: 950.0 m

Horiz. Pattern: Omni

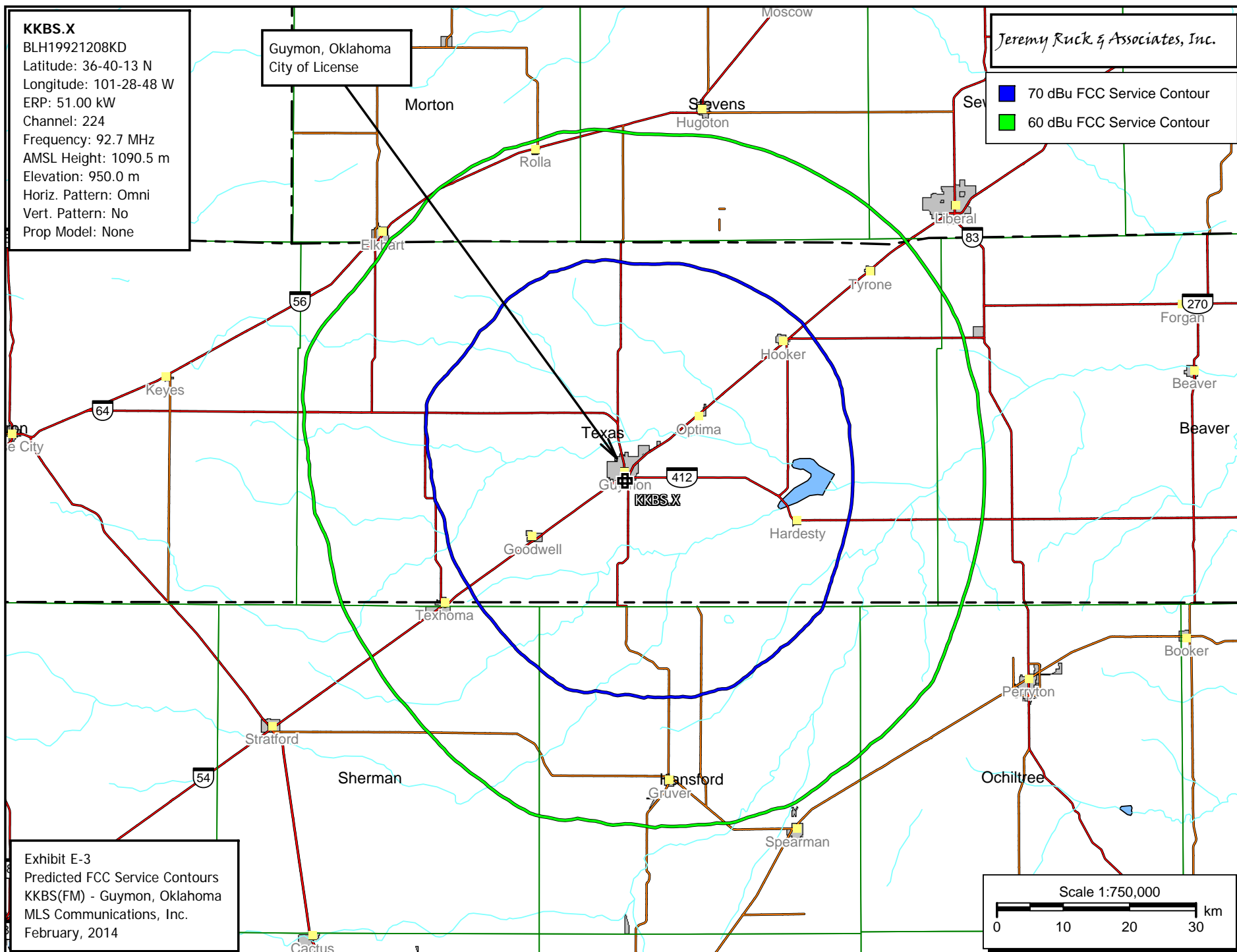
Vert. Pattern: No

Prop Model: None

Guymon, Oklahoma
City of License*Jeremy Ruck & Associates, Inc.*

70 dBu FCC Service Contour

60 dBu FCC Service Contour



Jeremy Ruck & Associates, Inc.
Consulting Engineers - Canton, Illinois
Exhibit E-4 - Single Channel Spacing Study
KKBS(FM) - Guymon, Oklahoma

REFERENCE		DISPLAY DATES
36 40 13.0 N.	CLASS = C1	DATA 02-19-14
101 28 48.0 W.	Current Spacings to 3rd Adj.	SEARCH 02-19-14
----- Channel 224 - 92.7 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
KKBS	LIC 224C3	Guymon	OK 0.0	0.00	211.0	-211.0
K226BX	CP 226D	Spearman	TX 153.2	58.70	74.0	-15.3
K222AK	LIC 222D	Hugoton	KS 12.7	59.46	74.0	-14.5
K223AU	LIC 223D	Dumas	TX 207.6	93.84	84.0	9.8
KMML	LIC 225C2	Cimarron	KS 35.8	174.99	158.0	17.0
K224EF	CP 224D	Amarillo, North	TX 190.5	165.95	133.0	33.0
K222BE	LIC 222D	Borger	TX 173.4	113.75	74.0	39.8