

ENGINEERING STUDY

KTBG (FM)

Requesting a Minor Modification to
Construction Permit BPED20110510AAS

Channel 215 (90.9MHz)

Warrensburg, MO.

Facility ID 9928

March, 2013



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TECHNICAL STATEMENT

This technical statement and attached exhibits were prepared on behalf of the University of Central Missouri, (“UCM”), licensee of radio station KTBG (FM), Channel 215, 90.9MHz, Warrensburg, MO. Although reasonable assurance was received on the tower for which UCM originally filed and received a construction permit, UCM and the tower owner were unable to reach agreement on leasing or purchasing that tower. This proposal is to modify the existing Construction Permit to allow UCM to relocate KTBG instead to another nearby tower for which a lease agreement has been reached. KTBG will remain a class C1 station as the HAAT will remain under 300m HAAT. A letter of “reasonable assurance” is attached to this exhibit as Exhibit A.

ALLOCATION

The proposed operation will utilize a directional antenna and will meet all contour protection requirements toward other stations. The directional antenna pattern is shown as Exhibit 17. The allocation study attached as Exhibit 18.1 indicates that four facilities are close enough to warrant close examination, KSJI, KJHK, APP BNPED20071019BCP, and KNLN. Those maps are attached as Exhibits 18.2 through 18.4. Each is discussed in detail below:

KSJI- As shown in exhibit 18.2, the proposed directional antenna for KTBG (215) will protect first adjacent KSJI (216) at 316 degrees from the proposed KTBG site.

KJHK – As shown in exhibit 18.3, the proposed directional antenna for KTBG (215) will protect first adjacent station KJHK (214) at 100 degrees from the proposed KTBG site.

APP BNPED20071019BCP, and KNLN As demonstrated in exhibit 18.4, there is no prohibited overlap to either of these stations from the proposed KTBG facility and it is not necessary to protect these stations with a directional antenna.

The proposed facility is not within 320km of any common border between the US and Mexico or Canada. There is no impact to any full power TV Channel 6 operation.

Exhibit 14.1 indicates that the proposed 60dBu noncommercial station's contour will completely encompass the Warrensburg, MO. Community of License.

The main studio location for the proposed assignee will continue to be located at Wood 11, Warrensburg, MO. 64093. The studio is in the community of license, Warrensburg MO. thus satisfying 73.1125 concerning Main Studio location.

ENVIRONMENTAL CONSIDERATIONS

The proposed antenna will be attached to an existing tower. The tower is owned by American Tower Corporation which has filed with the FAA to slightly extend the existing tower (ASR 1005503) by 90ft.(plus 4ft. lightning rod) to allow the mounting of the KTBG antenna. That FAA application #2013-ACE-368-OE is attached as Exhibit B.

The proposed antenna and tower extension for KTBG will not significantly alter the existing proposed tower structure for purposes of the Nationwide Programmatic Agreement and the NHPA Section 106. There are no other non-excluded RF sources located on or near the tower supporting the proposed KTBG antenna. The proposed KTBG antenna will operate at a maximum power level of 100kW and will operate at 127m AGL. The proposal is to operate with an eight-bay, 0.50 wavelength spaced antenna.

Based upon the FCC "FM Model for Windows" Power Density vs. Distance calculator using a "ERI or Jampro rototiller (EPA)" type antenna setting, the maximum power density at 2m AGL is expected to be 2.75 $\mu\text{W}/\text{cm}^2$ or 1.38% of the permitted 200 $\mu\text{W}/\text{cm}^2$ limit for uncontrolled exposure. The output of the FCC program "FM Model for Windows" is shown as figure 19. There are no tall buildings within 1,000m of the proposed tower.

Because the expected emission from the KTBG antenna is under 5% of the permitted 200 $\mu\text{W}/\text{cm}^2$ limit for uncontrolled exposure, and because the existing tower planned for use is on an established tower the proposed KTBG antenna and mounting structure are categorically excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307.

Radio station KTBG along with other users at the site will maintain an occupational safety policy and agrees to reduce power or cease operation during periods of maintenance to avoid potentially harmful exposure of personnel to non-ionizing RF radiation.

Respectfully Submitted

A handwritten signature in cursive script, reading "Bert Goldman". The signature is written in dark ink and is positioned above the printed name and title.

Bert Goldman
Technical Consultant

EXHIBIT A- LETTER OF REASONABLE ASSURANCE



VIA Electronic Mail

February 19, 2013

Mr. Bert Goldman
Goldman Engineering Management, LLC
7219 Highland Heather Lane
Dallas, TX 75248

Re: Proposed KTBG-FM CP application at American Tower Site #87897
Oak Grove, MO; FCC ASR #1005503

To Whom It May Concern:


American Tower Corporation, owner of the above referenced tower, hereby grants you permission to represent in any applications it files with the Federal Communications Commission ("FCC") that you have reasonable assurances from American Tower Corporation that it will enter into good faith tower space lease negotiations for the new FM station Construction Permit.

Regards,

Peter A. Starke

Peter A. Starke
Vice President

EXHIBIT B- FAA APPLICATION DATA



Federal Aviation
Administration

« OE/AAA

Obstruction Evaluation
Version 2012.4.2

Home

FAA OE/AAA Offices

View Determined Cases

View Interim Cases

View Proposed Cases

View Supplemental Notices
(Form 7460-2)

View Circularized Cases

Search Archives

Download Archives

Circle Search for Cases

Circle Search for Airports

General FAQs

Wind Turbine FAQs

Discretionary Review FAQs

Notice Criteria Tool

DoD Preliminary Screening
Tool

Wind Turbine Build Out

Distance Calculation Tool

OE/AAA Account

Portal Page

My Cases (Off Airport)

My Cases (On Airport)

My Sponsors

My Circ Comments

Add New Case (Off Airport)

Add New Case (On Airport)

Add Supplemental Notice
(7460-2 Form)

My Case Transfer History

Update User Account

What's New

Change Password

Logout

Information Resources

FAA Acronyms

Forms


Regulatory Policy

Relevant Advisory Circulars

Survey Accuracy

Light Outage Reporting

Notice of Proposed Construction or Alteration - Off Airport

faa.gov Tools:  Print this page

Project Name: AMERI-000230252-13Sponsor: American Tower Corporation

Details for Case : OAK GROVE MO (087897)

Show Project Summary

Case Status

ASN: 2013-ACE-368-OE

Status: Accepted

Public Comments: None

Date Accepted: 02/12/2013

Date Determined:

Letters: None

Documents: None

Project Documents: None

Construction / Alteration Information

Notice Of: Alteration

Duration: Permanent

If Temporary : Months: Days:

Work Schedule - Start:

Work Schedule - End:

*For temporary cranes-Does the permanent structure require separate notice to the FAA?
To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed.
If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type: Antenna - Top Mount

Structure Name: OAK GROVE MO (087897)

NOTAM Number:

FCC Number: 1005503
FCC ASR Registration

Prior ASN: 2003-ACE-1796-OE

Structure Details

Latitude: 38° 57' 29.76" N

Longitude: 94° 6' 43.50" W

Horizontal Datum: NAD83

Site Elevation (SE): 1010 (nearest foot)

Structure Height (AGL): 449 (nearest foot)

Current Height (AGL): 361 (nearest foot)

* For notice of alteration or existing provide the current
AGL height of the existing structure.
Include details in the Description of Proposal

Nacelle Height (AGL): (nearest foot)

* For Wind Turbines 500ft AGL or greater

Requested Marking/Lighting: White-medium intensity

Other :

Recommended Marking/Lighting:

Current Marking/Lighting: White-medium intensity

Other :

Nearest City: Oak Grove

Nearest State: Missouri

Description of Location: 35 Highway TT
Oak Grove, MO 64011-8028

On the Project Summary page upload any certified survey.

Description of Proposal: Requesting additional height to
accommodate structural steel extension
(90 ft extension) then add 4 ft
lightning rod. Also requesting freq
review. If extended study is required,
please review under extended study.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
698	806	MHz	1000	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1850	1910	MHz	1640	W
1930	1990	MHz	1640	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W

Specific Frequencies

Low Freq	High Freq	Freq Unit	ERP	ERP Unit
90.9	90.9	MHz	100	kW
950	950	MHz	30	W

EXHIBIT 14

KTBG Community of License Coverage

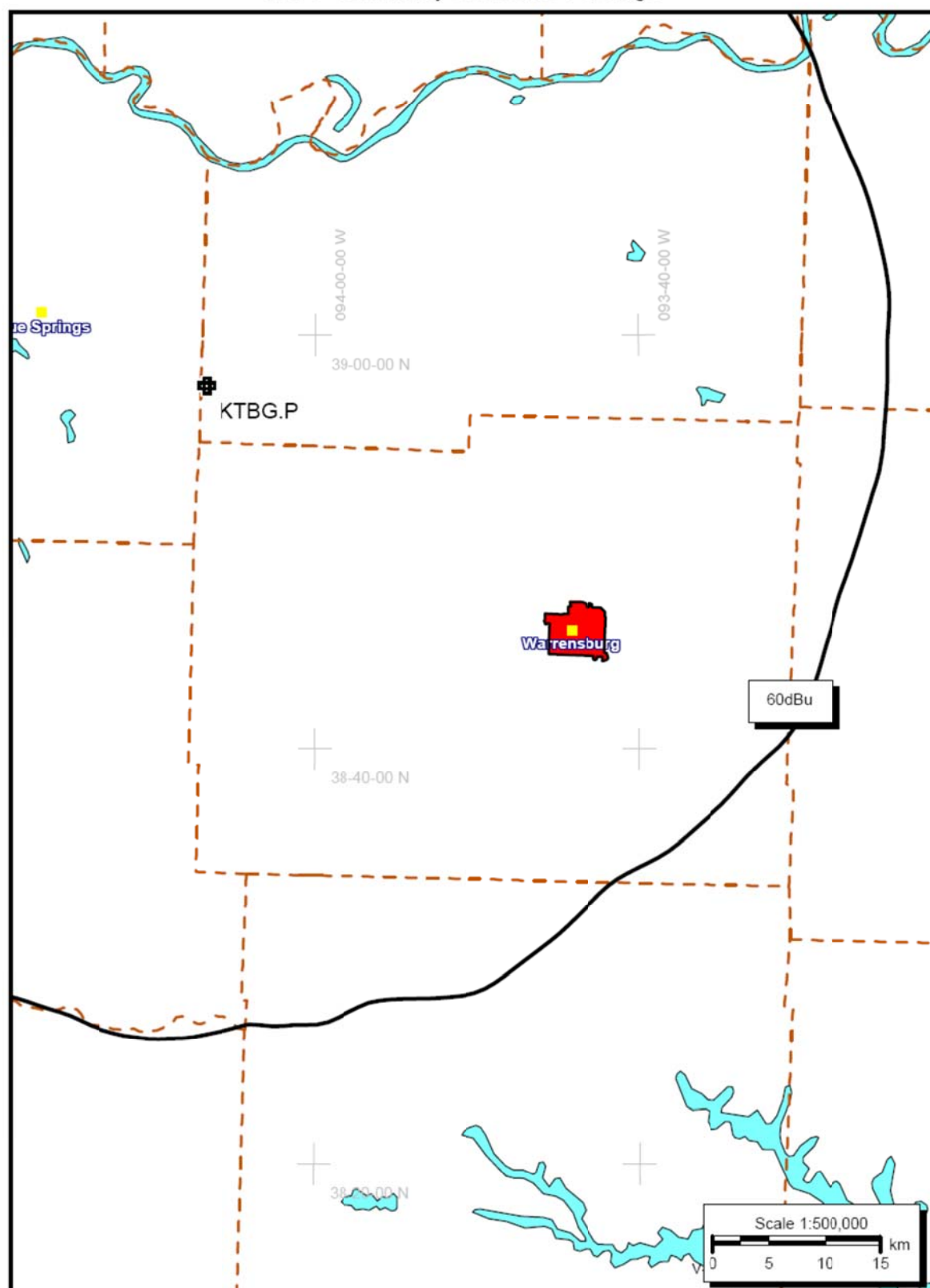


EXHIBIT 17 – Proposed KTBG Antenna Pattern

KTBG PROPOSED DIRECTIONAL PATTERN

Pre-Rotation Antenna Pattern....

Azimuth (deg)	Relative Field
0.0	0.7
10.0	0.87
20.0	1.0
30.0	1.0
40.0	1.0
50.0	1.0
60.0	1.0
70.0	1.0
80.0	1.0
90.0	1.0
100.0	1.0
110.0	1.0
120.0	1.0
130.0	1.0
140.0	1.0
150.0	1.0
160.0	1.0
170.0	1.0
180.0	1.0
190.0	1.0
200.0	1.0
210.0	1.0
220.0	1.0
230.0	1.0
240.0	1.0
250.0	0.933
260.0	0.749
270.0	0.6
280.0	0.64
290.0	0.672
300.0	0.581
310.0	0.463
320.0	0.371
330.0	0.371
340.0	0.451
350.0	0.562

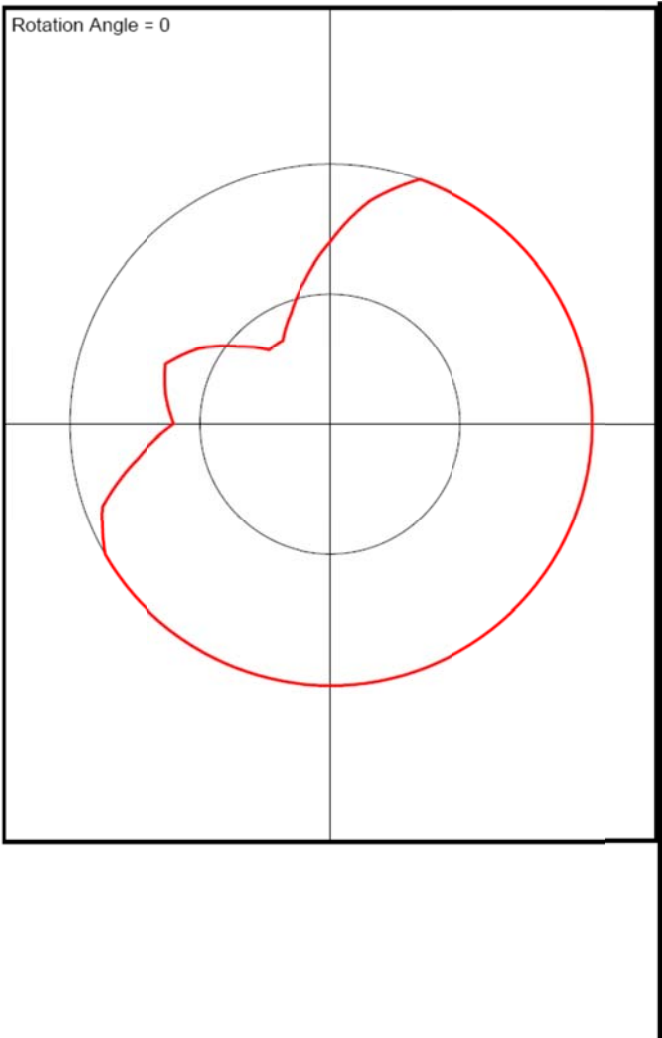


EXHIBIT 18.1 – Allocation Study

ComStudy 2.2 search of channel 215 (90.9 MHz Class A) at 38-57-29.8 N, 94-06-42.7 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
KSJI	ST. JOSEPH	MO 216 C3	104.10	89.00	326.2	0.26 dB
KJHK	LAWRENCE	KS 214 A	100.37	72.00	270.1	0.20 dB
KJHK	LAWRENCE	KS 214 A	100.37	72.00	270.1	0.53 dB
NEW	HARRISONVILLE	MO 213 C1	69.62	75.00	192.7	2.45 dB
KNLN	VIENNA	MO 215 C3	193.14	142.00	115.6	3.56 dB
KVSR	KIRKSVILLE	MO 214 C1	195.09	133.00	43.0	9.98 dB
KANU	LAWRENCE	KS 218 C1	100.37	75.00	270.1	11.24 dB
KTTK	LEBANON	MO 214 C3	188.98	89.00	140.8	12.67 dB
KJGC	CLINTON	MO 213 C2	92.22	55.00	159.5	13.03 dB
KOBC	JOPLIN	MO 214 C1	212.96	133.00	186.6	14.40 dB
KLOX	CRESTON	IA 215 A	234.19	115.00	354.7	15.57 dB
KSMU	SPRINGFIELD	MO 216 C2	210.14	106.00	160.6	15.47 dB
KLOX	CRESTON	IA 215 A	233.91	115.00	354.7	15.56 dB
KPOR	EMPORIA	KS 214 A	184.36	72.00	252.6	16.07 dB
KSMU	SPRINGFIELD	MO 216 C2	210.06	106.00	160.6	18.56 dB
KMDY	KEOKUK	IA 215 B1	294.25	143.00	53.1	19.31 dB
KLAB	TAHLEQUAH	OK 215 C1	311.68	200.00	189.6	19.12 dB
KCKE	CHILLICOTHE	MO 212 C2	114.94	55.00	37.0	19.49 dB
KRBW	OTTAWA	KS 213 A	108.51	31.00	247.8	20.11 dB

* FCC CDBS Database as of 3/05/13

EXHIBIT 18.2 – Contour protection to KSJI 1st Adjacent

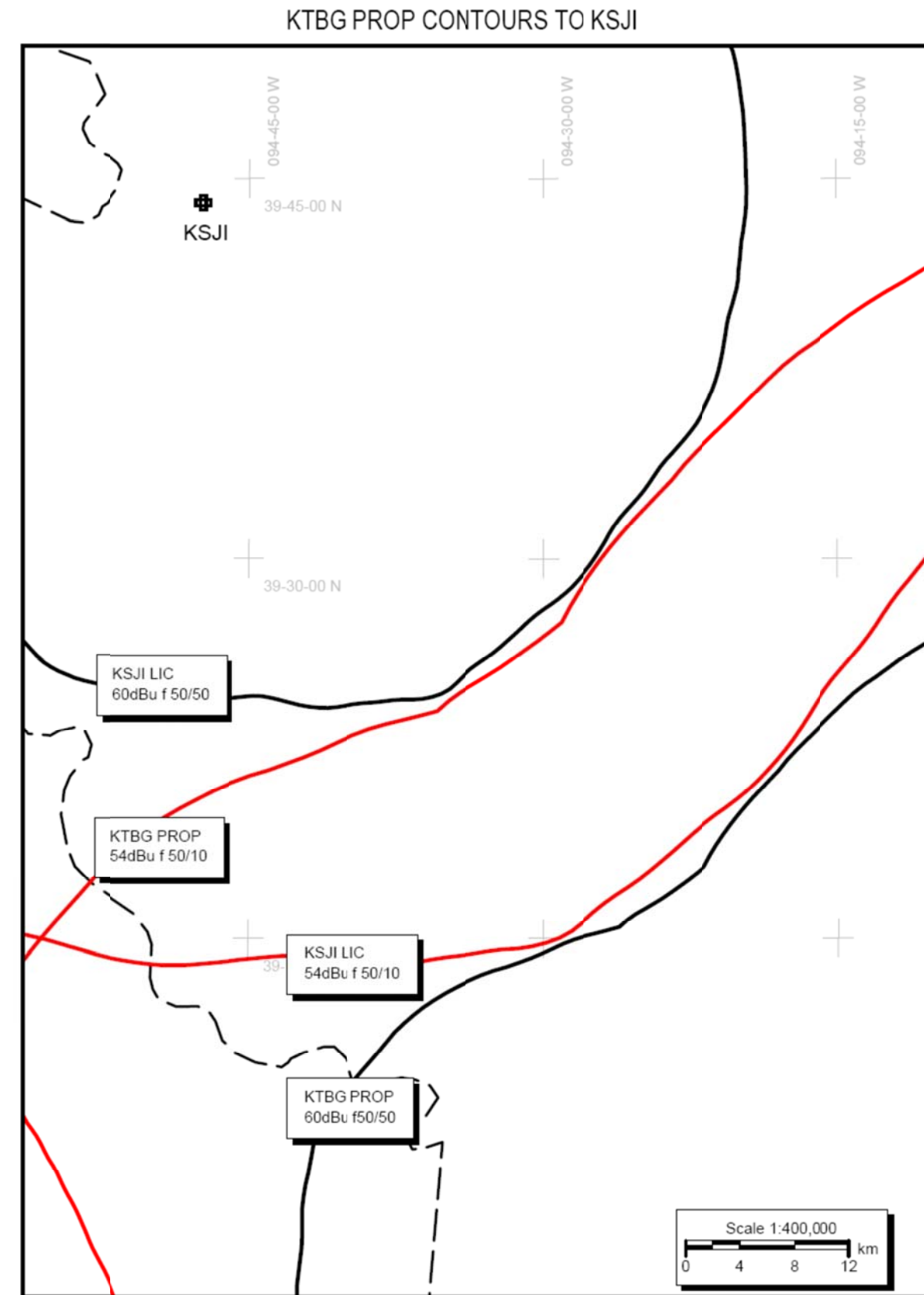


EXHIBIT 18.3 – Contour protection to KJHK (1st Adjacent)

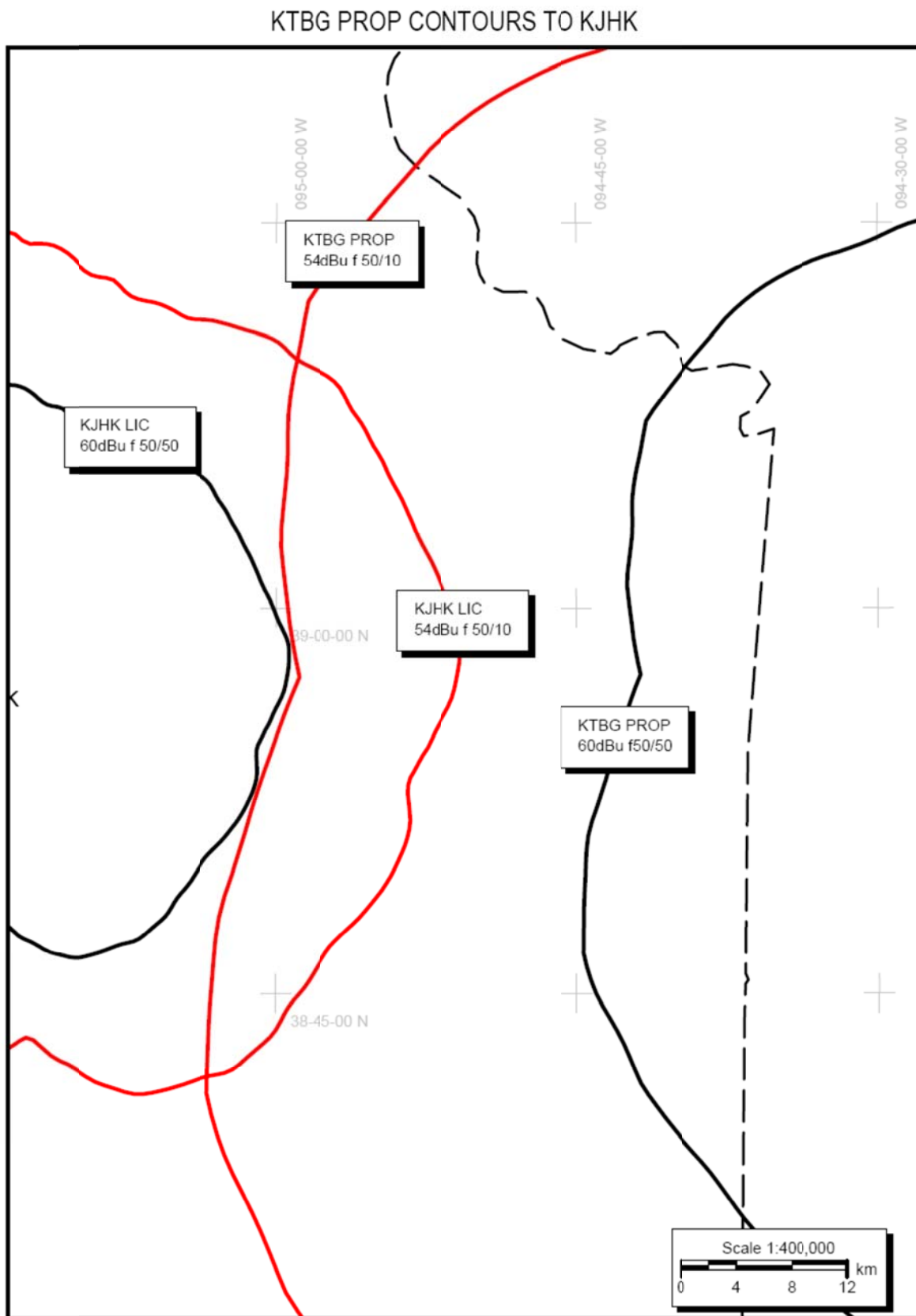


EXHIBIT 18.4 – Contour protection to NEW 213C1 and KNLN

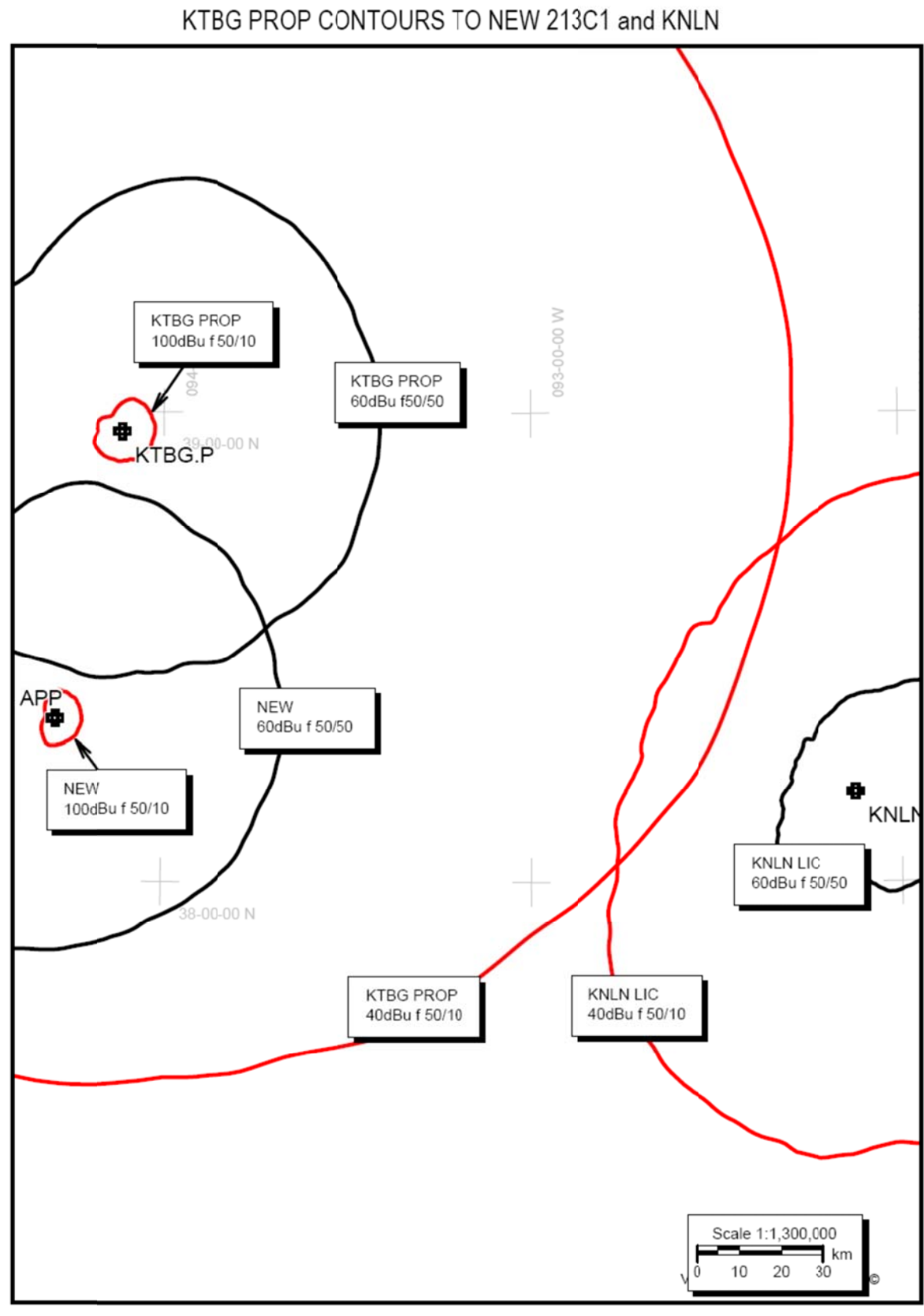
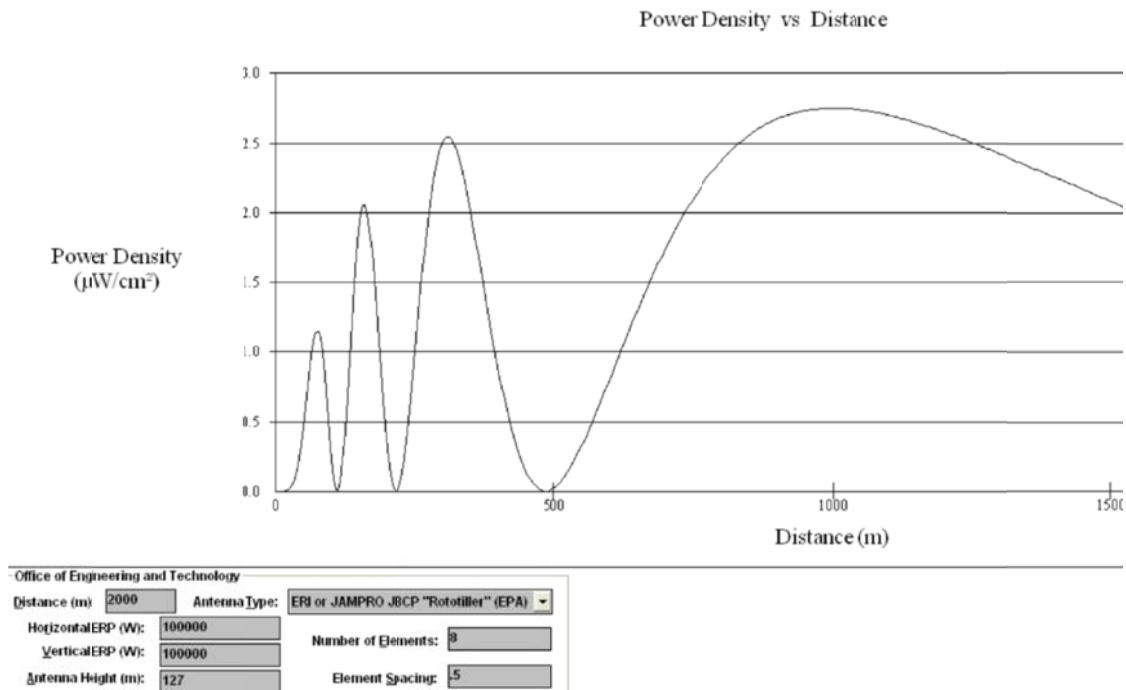


Figure 19, Power Density, KTBG PROPOSED



Maximum RFR @ 2m AGL, 1000m from tower base = 2.75 $\mu\text{W}/\text{cm}^2$, or 1.38% of the 200 $\mu\text{W}/\text{cm}^2$ limit