

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

**FM TRANSLATOR STATION K274CP
FREDERICKSBURG, TEXAS
102.1 MHz / 0.250 kW ND**

RADIO RANCH, LTD.

NOVEMBER, 2014

APPLICATION FOR CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Radio Ranch, Ltd.** ("Ranch"), licensee of FM translator station K274CP at Kerrville, Texas, and are in support of their application for construction permit.¹ K274CP is currently operating pursuant to the provisions of automatic program test authority pending a grant of the license application submitted to cover initial construction.²

This application seeks to relocate the facility from the current location to a new location in Fredericksburg, Texas. This change in the physical location of the translator would constitute a minor change to the facility. Due to the change in the physical location, the technical parameters associated with the translator, including the channel of operation and community of license will necessarily be modified. No change in the primary station is proposed under this application.

The proposed facility would operate on FM channel 271 with a maximum effective radiated power of 250 Watts at a center of radiation of 647.7 meters AMSL. The site elevation at the tower to be utilized is 536.4 meters AMSL, thus the proposed center of radiation is 111.3 meters AGL. A non-directional antenna is proposed for use by the facility.

This proposed change in technical parameters constitutes a minor change to the facility. Exhibit E-1 is a map illustrating the licensed 60 dBu service contour of K274CP and the proposed 60 dBu service contour. As this map demonstrates, these two contours overlap.

¹ The Facility ID for K274CP at Kerrville, Texas is 140636.

² See FCC File No. BLFT-20141024ACQ

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

The proposed facility would continue to serve as a fill-in translator for FM station KRNH(FM) at Kerrville, Texas.³ KRNH operates with multiple streams using IBOC HD radio. The translator is intended, therefore, to serve as fill-in translator for the HD-2 stream of KRNH. Exhibit E-2 illustrates the predicted 60 dBu service contour of KRNH, and demonstrates that the 60 dBu service contour of the proposed translator is wholly contained within the 60 dBu service contour of KRNH(FM).

The proposed facility complies with the provisions of Section 74.1204 of the Commission's Rules to relevant facilities in the region. Section 74.1205 of the Commission's Rules is not applicable to the facility due to the channel of operation.

Exhibit E-3 is a tabular interference study for the proposed facility. As this study demonstrates, the proposed facility would comply with the contour overlap provisions of Section 74.1204 of the Commission's Rules. This tabular study is graphically illustrated in the contour map that is Exhibit E-4.

Additionally, the proposed facility would comply with the intermediate frequency spacing requirements under Section 73.207 of the Commission's Rules. KBLC at Fredericksburg, Texas operates on channel 218, and is located 24.89 kilometers from the proposed facility. KBLC is a class A station, and as such must be located at least 9.5 kilometers from the translator. The proposed translator complies with these spacing requirements.

³ The Facility ID for KRNH(FM) at Kerrville, Texas is 41061.

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

The proposed translator would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed facility would utilize an existing tower that is registered with the Commission. The addition of the translator antenna to this tower would not increase the environmental impact already present from the structure.

Additionally, the proposed translator would not constitute a radiofrequency radiation exposure hazard to the general public. Using the equations from Appendix A of *OET Bulletin 65*, the predicted power density at two meters above ground is $1.40 \mu\text{W}/\text{cm}^2$ for a worst-case point source. This value is considerably less than the upper limit permissible under the uncontrolled environment condition. In fact, the calculated power density is sufficiently low that the facility is categorically excluded.

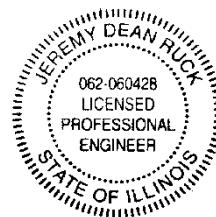
Ranch certifies that it will coordinate with all other users of the structure to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Such coordination will include, but is not necessarily limited to, a reduction in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

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

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
November 3, 2014

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

11.3.2014

K274CP.X

Latitude: 30-15-35 N
Longitude: 098-53-13 W
ERP: 0.25 kW
Channel: 274
Frequency: 102.7 MHz
AMSL Height: 647.7 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

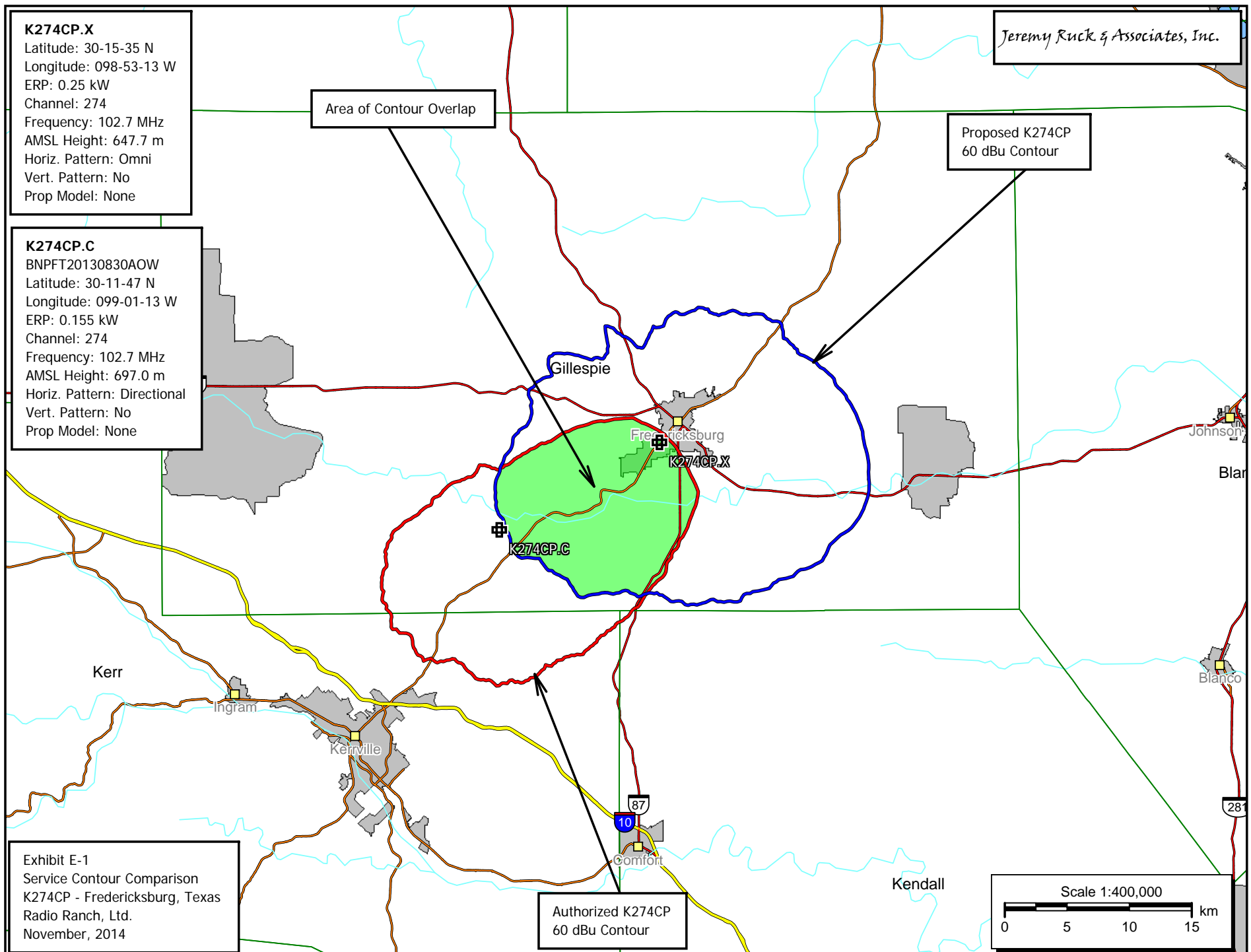
K274CP.C

BNPFT20130830AOW
Latitude: 30-11-47 N
Longitude: 099-01-13 W
ERP: 0.155 kW
Channel: 274
Frequency: 102.7 MHz
AMSL Height: 697.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model: None

Jeremy Ruck & Associates, Inc.

Area of Contour Overlap

Proposed K274CP
60 dBu Contour

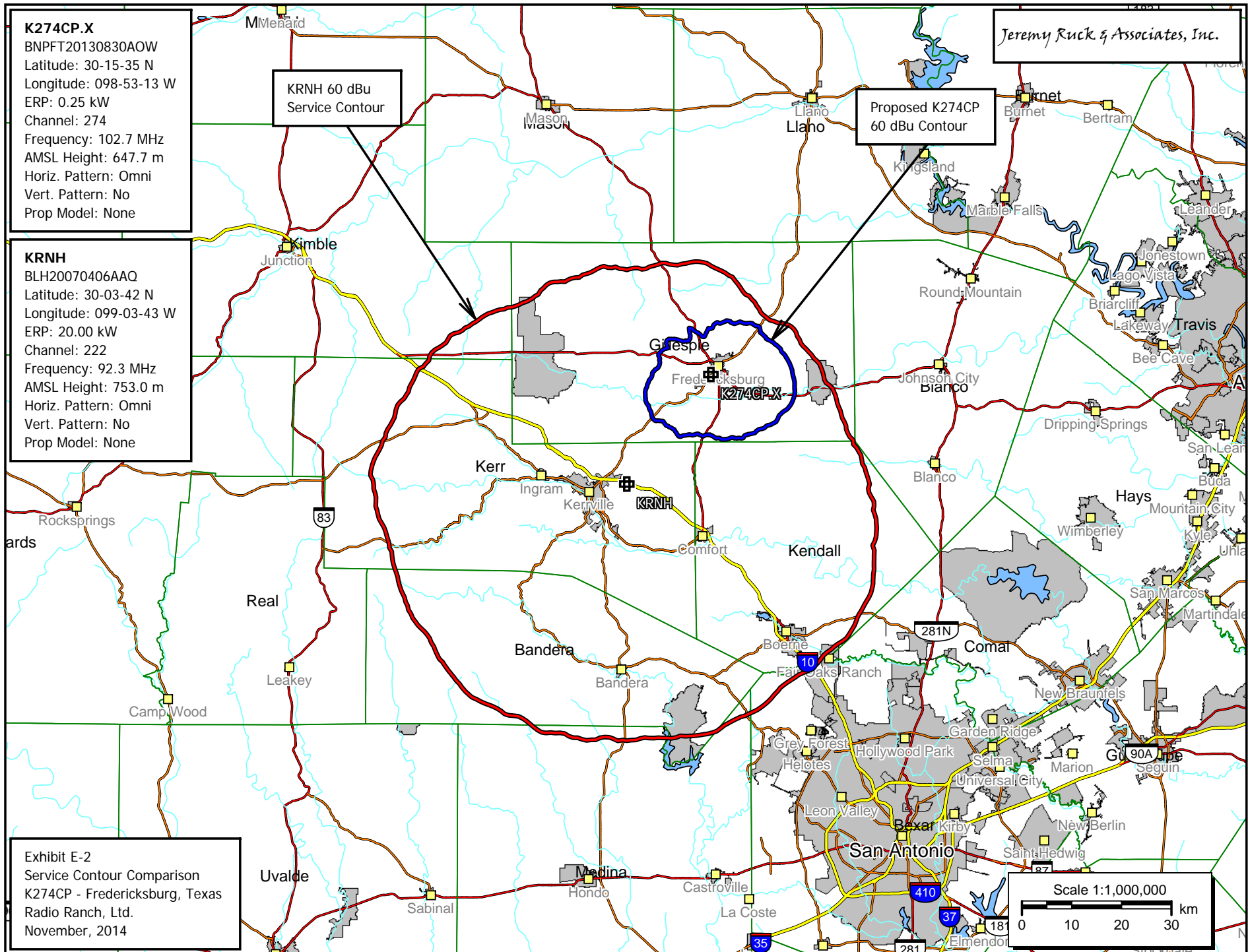
**Exhibit E-1**

Service Contour Comparison
K274CP - Fredericksburg, Texas
Radio Ranch, Ltd.
November, 2014

Authorized K274CP
60 dBu Contour

Scale 1:400,000

0 5 10 15 km



Jeremy Ruck & Associates, Inc.
Consulting Engineers - Canton, Illinois

Exhibit E-3 - Tabular Interference Study
K274CP - Fredericksburg, Texas
CH# 271D - 102.1 MHz, Pwr= 0.25 kW, HAAT= 99.4 M, COR= 647.7 M
Average Protected F(50-50)= 12.83 km
Omni-directional

DISPLAY DATES
DATA 11-03-14
SEARCH 11-03-14

REFERENCE
30 15 35.3 N.
98 53 12.9 W.

CH CITY	CALL	TYPE ANT STATE	AZI <--	DI ST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
270C1 San Antonio	KQXT-FM	LIC _CX TX	157.3 337.5	101.31 BLH20070817ACA	29 25 06.0 98 29 01.0	100.000 202	91.2 408	61.1 Cc Li censes, LI c	-4.1	19.1
274D Kerrville	K274CP	CP _DC_ TX	241.2 61.1	14.62 BNPFT20130830AOW	30 11 47.0 99 01 13.0	0.155 125	0.9 697	15.3 Radio Ranch, Ltd.	-0.4	-1.8*
272D Kerrville	K272FJ	CP _C_ TX	223.2 43.1	32.95 BNPFT20130829ACM	30 02 37.0 99 07 17.0	0.170 59	9.2 611	6.4 Houston Christian Broadcas	9.4	5.8
273C2 Mason	KHLB	LIC _NCX TX	326.0 145.8	59.19 BLH20050310ADT	30 42 03.0 99 13 59.0	26.000 192	5.8 661	51.7 Iii & W Broadcasting, LI c	42.9	6.2
218A Fredericksburg	KBLC	LIC _CX TX	106.3 286.4	24.85 BLED20081003ABF	30 11 49.0 98 38 19.0	3.100 120	69.7 615	46.2 Houston Christian Broadcas	9.5R	15.4M
269C3 Mason	KZZM	LIC _CX TX	326.0 145.8	59.19 BLH20100524ABN	30 42 03.0 99 13 59.0	8.200 172	3.9 641	40.1 Iii & W Broadcasting, LI c	44.7	17.6
272C2 Austin	KPEZ	LIC _CN TX	92.0 272.5	101.83 BMLH19980327KA	30 13 24.0 97 49 39.0	26.000 209	65.3 433	42.9 Cc Li censes, LI c	19.7	33.3
271D Burnet	K271BC	LIC _DC_ TX	47.3 227.6	82.74 BLFT20060127AFQ	30 45 48.0 98 15 03.0	0.250 96	12.5 484	3.9 Big Bend Broadcasting	56.6	29.2
274C1 San Antonio	KJXK	LIC _CX TX	157.3 337.5	101.31 BMLH20070814ABA	29 25 06.0 98 29 01.0	100.000 202	7.6 408	61.1 Al pha Medi a Li censee LI c	79.5	39.0
270L1 Marble Falls	KFGG-LP	LIC ____ TX	57.7 238.0	69.47 BLL20040206AAY	30 35 31.0 98 16 23.0	0.100 24	302	46.6 Burnet Bible Church		43.0

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= West Zone, 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 protected contour.
Reference station has protected zone issue:

K274CP.X

BNPFT20130830AOW
Latitude: 30-15-35 N
Longitude: 098-53-13 W
ERP: 0.25 kW
Channel: 274
Frequency: 102.7 MHz
AMSL Height: 647.7 m
Elevation: 548.933 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

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

