

***APPLICATION FOR  
MODIFICATION OF CONSTRUCTION PERMIT***

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**FM TRANSLATOR STATION K234CG  
DODGE CITY, KANSAS  
94.7 MHz / 0.092 kW ERP**

**CATHOLIC DIOCESE OF DODGE CITY**

**JULY, 2015**

## **APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT**

The following engineering statement and attached exhibits have been prepared for **Catholic Diocese of Dodge City** ("CDODC"), permittee of new FM translator station K234CG at Dodge City, Kansas, and are in support of their application for modification of construction permit.<sup>1</sup> This application seeks to modify the current construction permit for the facility, which is under FCC File No. BNPFT-20130830ABQ.

K234CG is authorized to operate with an effective radiated power of 250 Watts at a center of radiation of 845 meters above mean sea level utilizing a non-directional antenna. The proposed facility would be relocated to the tower assigned Antenna Structure Registration Number 1231348. At this location, the proposed center of radiation would be 917 meters above mean sea level. The effective radiated power would be reduced to 92 Watts, and although no change in the channel of operation or directionality of the antenna is proposed, the primary station would be changed to KGBL(FM) at Lakin, Kansas.<sup>2</sup>

The proposed relocation of K234CG would constitute a minor change to the existing construction permit. Exhibit E-1 illustrates the authorized and proposed 60 dBu service contours for K234CG. As this map demonstrates, there is a substantial area where overlap exists between these two contours.

The proposed facility would not function as a fill-in translator for KGBL(FM). Exhibit E-2 provides a comparison between the 60 dBu service contour of that facility, and the proposed 60

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<sup>1</sup> The Facility ID for K234CG at Dodge City, Kansas is 148878.

<sup>2</sup> The Facility ID for KGBL(FM) at Lakin, Kansas is 170960.

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dBu service contour for K234CG. This map demonstrates that the 60 dBu contour of the translator would be located outside of the 60 dBu service contour of KGBL. As a result, the effective radiated power proposed for K234CG has been reduced accordingly. The following table lists the average terrain values on the twelve translator cardinal radials, and confirms that a maximum effective radiated power of 92 Watts is consistent with the requirements of Section 74.1235 of the Commission's Rules.<sup>3</sup>

| <b>Azimuth</b> | <b>Average Elevation (m)</b> | <b>COR HAAT (m)</b> |
|----------------|------------------------------|---------------------|
| 0              | 788.9                        | 128.5               |
| 30             | 771.8                        | 145.6               |
| 60             | 770.6                        | 146.8               |
| 90             | 757.7                        | 159.7               |
| 120            | 769.2                        | 148.2               |
| 150            | 786.3                        | 131.1               |
| 180            | 792.3                        | 124.8               |
| 210            | 802.2                        | 115.2               |
| 240            | 811.4                        | 106.0               |
| 270            | 794.9                        | 122.5               |
| 300            | 780.6                        | 136.8               |
| 330            | 794.7                        | 122.7               |

The proposed facility would comply with the provisions of Section 74.1204 of the Commission's Rules. Exhibit E-3 is a tabular interference study for K234CG at the new parameters. This study, combined with its graphical depiction in Exhibit E-4, demonstrate that the contour overlap provisions of Section 74.1204 would be met with regard to all relevant facilities.

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

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<sup>3</sup> Average terrain elevations determined through the use of the NED 3-second linearly interpolated terrain database.

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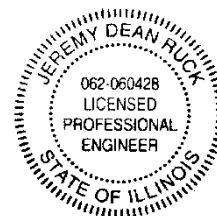
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Additionally the proposed facility would not result in a radiofrequency radiation exposure hazard to persons at the site. Under a worst-case analysis pursuant to the equations in Appendix A of *OET Bulletin 65*, the calculated power density at two meters above ground is  $0.43 \mu\text{W}/\text{cm}^2$ . This value is considerably less than the upper limit permissible under the uncontrolled environment condition. This value is also substantially small enough to categorically exclude the facility.

CDODC 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

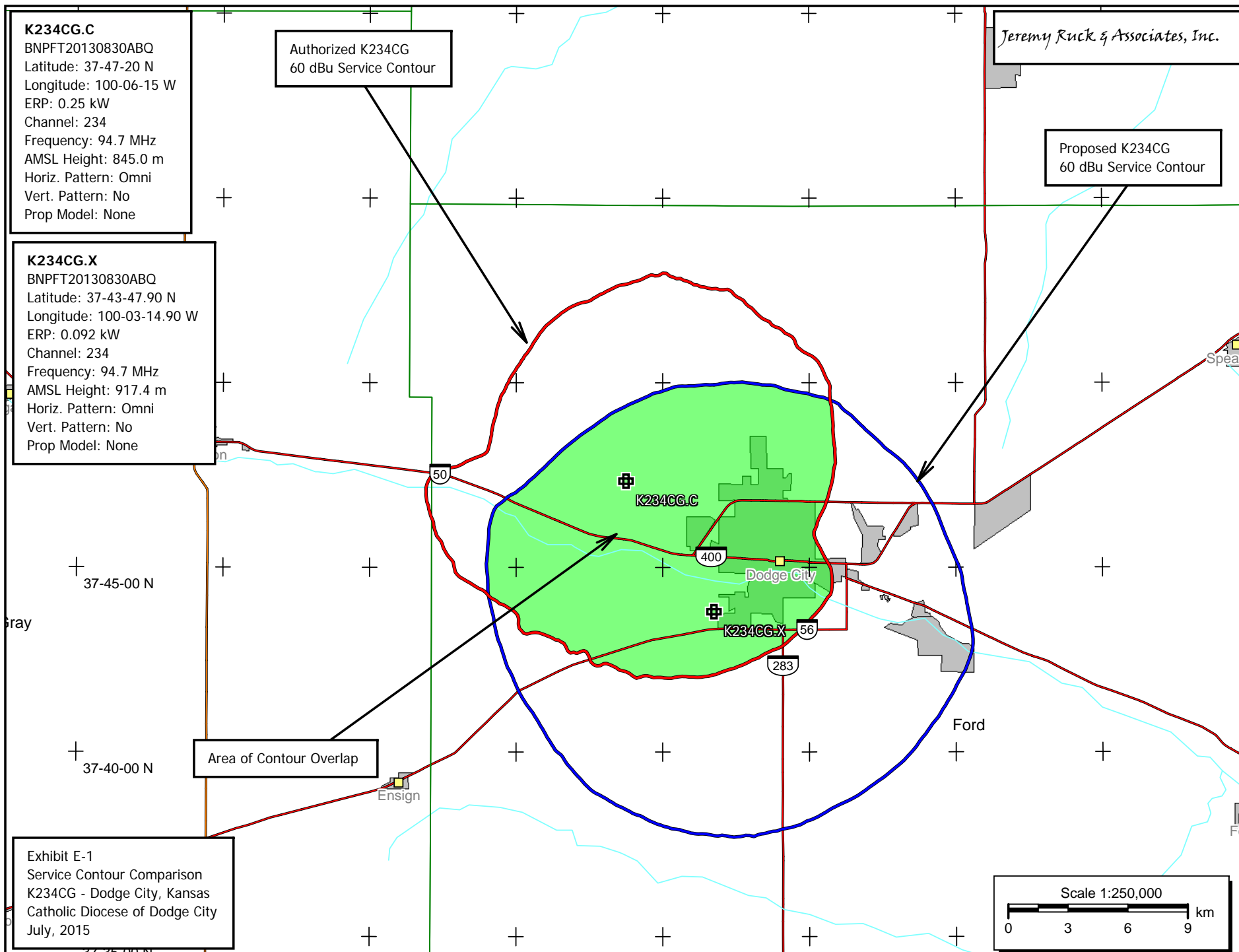
Jeremy D. Ruck, PE  
July 8, 2015

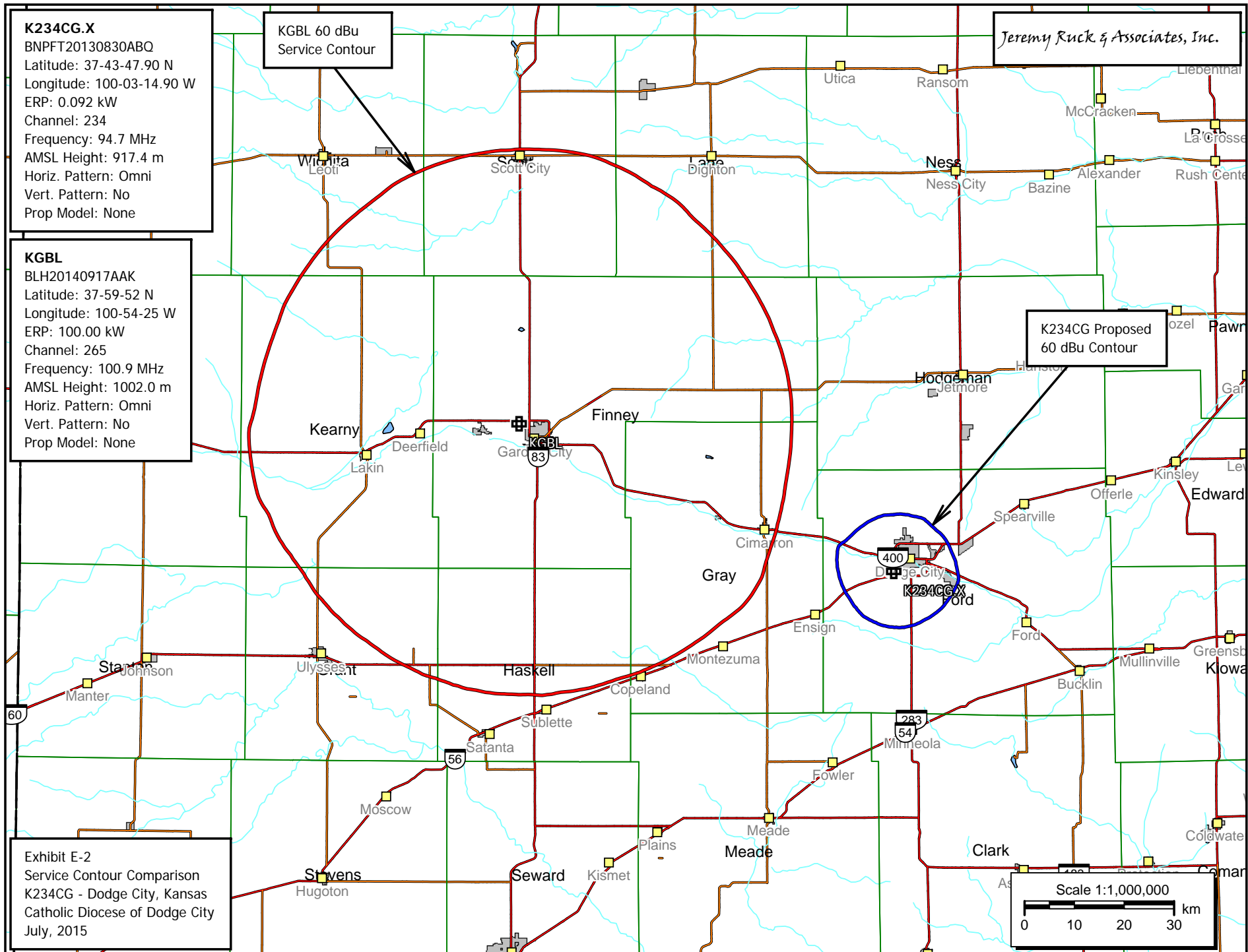
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7.8.2015





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

Exhibit E-3 - Tabular Interference Study

K234CG - Dodge City, Kansas

REFERENCE  
37 43 47.9 N.  
100 03 14.9 W.





CH# 234D - 94.7 MHz, Pwr= 0.092 kW, HAAT= 132.3 M, COR= 917.4 M  
Average Protected F(50-50)= 11.53 km  
Omni-directional

DISPLAY DATES  
DATA 07-07-15  
SEARCH 07-08-15

| CH<br>CITY          | CALL              | TYPE<br>STATE | ANT<br>STATE | AZI<br><--     | DI ST<br>FILE #           | LAT<br>LNG                | PWR(kW)<br>HAAT(M) | INT(km)<br>COR(M) | PRO(km)<br>LICENSEE                | *IN*<br>(Overlap in km) | *OUT*  |
|---------------------|-------------------|---------------|--------------|----------------|---------------------------|---------------------------|--------------------|-------------------|------------------------------------|-------------------------|--------|
| 234D<br>Dodge City  | <del>K234CG</del> | CP<br>KS      | C<br>--      | 326.1<br>146.1 | 7.88<br>BNPFT20130830ABQ  | 37 47 20.0<br>100 06 15.0 | 0.250<br>64        | 37.2<br>845       | 10.9<br>Diocese Of Dodge City      | -40.4*                  | -40.7* |
| 234C2<br>Sterling   | KSKU              | LIC<br>KS     | NCX<br>--    | 69.4<br>250.5  | 162.27<br>BLH20060629AET  | 38 13 50.0<br>98 18 53.0  | 50.000<br>148      | 136.3<br>666      | 50.8<br>Ad Astra Per Aspera Broadc | 13.7                    | 70.5   |
| 234D<br>Ashland     | K234AG            | LIC<br>KS     | VN<br>--     | 157.3<br>337.5 | 66.58<br>BLFT19980929TB   | 37 10 37.0<br>99 45 52.0  | 0.232<br>12        | 23.3<br>624       | 7.0<br>Great Plains Christian Rad  | 31.8                    | 20.7   |
| 233C1<br>Scott City | KSKL              | CP<br>KS      | CX<br>--     | 320.1<br>139.6 | 115.72<br>BPH20130716ACR  | 38 31 31.0<br>100 54 28.0 | 100.000<br>111     | 82.8<br>1020      | 53.4<br>Western Kansas Wireless, I | 21.9                    | 46.3   |
| 233C1<br>Scott City | KSKL              | LIC<br>KS     | CX<br>--     | 320.0<br>139.5 | 116.03<br>BMLH20110621ABS | 38 31 35.0<br>100 54 42.0 | 100.000<br>107     | 82.0<br>1015      | 52.6<br>Western Kansas Wireless, I | 23.0                    | 47.4   |

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. Call signs with strikeout need not be protected.  
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.

BNPFT20130830ABQ  
Latitude: 37-43-47.90 N  
Longitude: 100-03-14.90 W  
ERP: 0.092 kW  
Channel: 234  
Frequency: 94.7 MHz  
AMSL Height: 917.4 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: None

-  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

