

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

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

CATHOLIC DIOCESE OF DODGE CITY

JULY, 2015

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7.8.2015

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.¹ 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.²

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

¹ The Facility ID for K234CG at Dodge City, Kansas is 148878.

² 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.³

Azimuth	Average Elevation (m)	COR HAAT (m)
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.

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

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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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K234CG.C
BNPFT20130830ABQ
Latitude: 37-47-20 N
Longitude: 100-06-15 W
ERP: 0.25 kW
Channel: 234
Frequency: 94.7 MHz
AMSL Height: 845.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K234CG.X
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

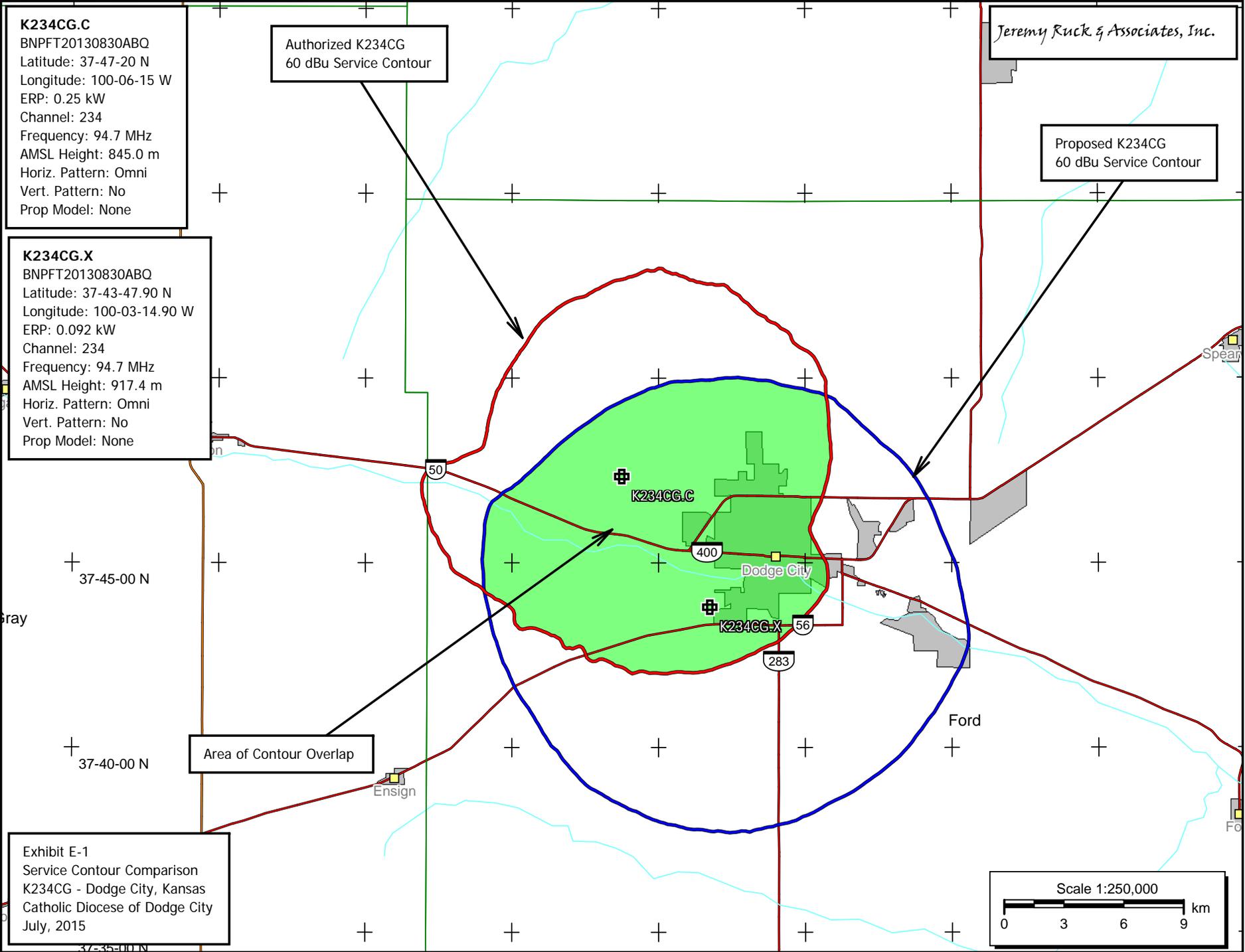
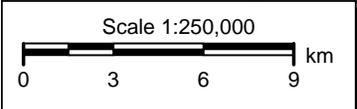
Authorized K234CG
60 dBu Service Contour

Jeremy Ruck & Associates, Inc.

Proposed K234CG
60 dBu Service Contour

Area of Contour Overlap

Exhibit E-1
Service Contour Comparison
K234CG - Dodge City, Kansas
Catholic Diocese of Dodge City
July, 2015



K234CG.X
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

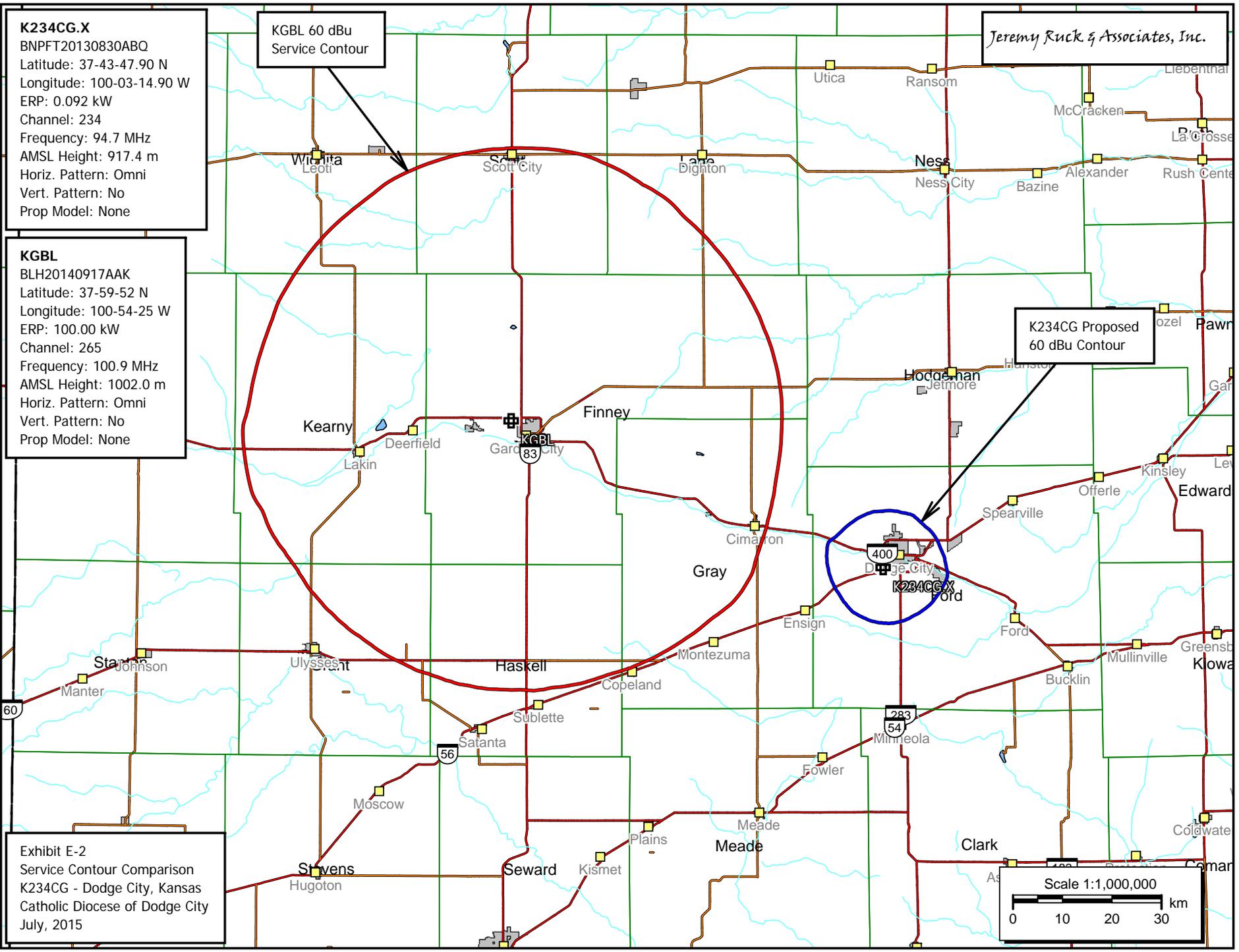
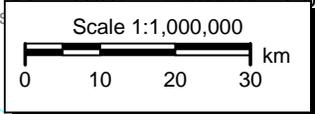
KGBL
BLH20140917AAK
Latitude: 37-59-52 N
Longitude: 100-54-25 W
ERP: 100.00 kW
Channel: 265
Frequency: 100.9 MHz
AMSL Height: 1002.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KGBL 60 dBu
Service Contour

Jeremy Ruck & Associates, Inc.

K234CG Proposed
60 dBu Contour

Exhibit E-2
Service Contour Comparison
K234CG - Dodge City, Kansas
Catholic Diocese of Dodge City
July, 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 CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
234D Dodge City	K234CG	CP KS	C	326.1 146.1	7.88 BNPFT20130830ABQ	37 47 20.0 100 06 15.0	0.250 64	37.2 845	10.9 Diocese Of Dodge City	-40.4*	-40.7*
234C2 Sterling	KSKU	LIC KS	NCX	69.4 250.5	162.27 BLH20060629AET	38 13 50.0 98 18 53.0	50.000 148	136.3 666	50.8 Ad Astra Per Aspera Broadc	13.7	70.5
234D Ashland	K234AG	LIC KS	VN	157.3 337.5	66.58 BLFT19980929TB	37 10 37.0 99 45 52.0	0.232 12	23.3 624	7.0 Great Plains Christian Rad	31.8	20.7
233C1 Scott City	KSKL	CP KS	CX	320.1 139.6	115.72 BPH20130716ACR	38 31 31.0 100 54 28.0	100.000 111	82.8 1020	53.4 Western Kansas Wi rel ess, I	21.9	46.3
233C1 Scott City	KSKL	LIC KS	CX	320.0 139.5	116.03 BMLH20110621ABS	38 31 35.0 100 54 42.0	100.000 107	82.0 1015	52.6 Western Kansas Wi rel ess, 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.

