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Contour-to-Contour Study
University Of Kansas

REFERENCE CH# 229D - 93.7 MHz, Pwr= 0.045 kW, HAAT= 134.6 M, COR= 495 M DISPLAY DATES
39 13 33.8 N. Average Protected F(50-50)= 9.79 km DATA 04-30-15
96 37 00.5 W. Omni-directional SEARCH 04-30-15

| 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* |
|---------------------|-------------------|---------------|-----|----------------|---------------------------|--------------------------|----------------------|---------------------|------------------------------------|-------------------------|----------|
| 229C1 Salina | KYEZ | LIC KS | CN | 250.8 70.2 | 90.73 BLH6686 | 38 57 14.0 97 36 29.0 | 100.000 155 | 156.6 538 | 59.7 Mcc Radio, Llc | -74.9* | 0.2 |
| 229D Manhattan | 634410 | APP KS | C_ | 62.7 242.7 | 2.57 BNPFT20030317KVF | 39 14 12.0 96 35 25.0 | 0.250 75 | 32.8 431 | 9.8 University Of Kansas | -39.9* | -39.8* |
| 227D Manhattan | 634035 | APP KS | C_ | 111.5 291.6 | 2.84 BNPFT20030311AGF | 39 13 00.0 96 35 10.0 | 0.170 45 | 0.9 399 | 6.4 Great Plains Christian Rad | -9.9* | -4.1*<-- |
| 229C3 Horton | KAIR-FM | LIC KS | CN | 67.8 248.6 | 120.44 BLH19950206KE | 39 37 43.0 95 18 53.0 | 25.000 100 | 115.0 429 | 40.2 Knza Inc. | -4.6 | 47.5 |
| 229D Emporia | K229CG | CP KS | C_ | 156.6 336.9 | 99.69 BNPFT20130328ATN | 38 24 08.0 96 09 45.0 | 0.250 69 | 36.5 420 | 10.8 E-string Wireless, Ltd | 52.5 | 53.2 |
| 231D Marysville | K231AX | LIC KS | C_ | 358.8 178.8 | 65.61 BLFT20070525AJI | 39 48 58.0 96 37 58.0 | 0.250 65 | 1.1 456 | 11.0 Dierking Communications, I | 54.4 | 54.0 |
| 229C3 Pleasanton | KPIO-FM | LIC KS | C_ | 126.5 307.6 | 181.90 BLED20090424AAI | 38 14 23.0 94 56 36.0 | 25.000 100 | 112.4 389 | 37.8 Catholic Radio Network, In | 57.9 | 105.7 |
| 231D Marysville | K231AX | CP KS | C_ | 357.8 177.8 | 69.48 BPFT20121101AAG | 39 51 02.0 96 38 52.0 | 0.250 28 | 1.1 422 | 7.1 Dierking Communications, I | 58.2 | 58.6 |
| 229A Firth | KNTK | LIC NE | NCX | 359.9 179.9 | 150.82 BLH20110826AAK | 40 34 57.4 96 37 15.2 | 6.000 71 | 79.6 486 | 22.9 Home Field Communications, | 61.1 | 95.2 |

Terrain database is FCC NGDC 30 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.
<-- Protected by U/D, see attachments

HOW TO READ THE FM COMPUTER PRINT-OUT

The computer printout should be self-explanatory for the most part. The parameters of the station being checked, (reference station) are printed in the heading. Contour distances are in kilometers and are predicted using the Commission's TVFMINT FORTRAN subroutine. When interference contour distances are less than 16 kilometers the F(50-50) tables are used. If signal contour distances are less than 1.6 km the free-space equation is used.

The column listed "IN " is the difference in kilometers between of the reference station's protected contour and the data file station's interference contour at the closest point between the contours. (All distances are derived by the method detailed in Sec. 73.208 of the Rules and Regulations as amended in Docket 80-90.) Therefore, "IN" column is a measure of incoming interference. Negative distances in this column indicate the presence of contour overlap. Listed antenna heights and power are those given in the FCC database. The column labeled "OUT " shows the greatest distance in kilometers of overlap or smallest of clearance between the reference station's interference contour and the database station's protected contour. Negative distance figures in this column indicate outgoing contour overlap.

Under the "AZI" column, the first row of numbers indicate the True North bearings from the reference station toward the database stations, while the numbers in the second row indicate the reverse bearings from the database stations to the reference station.

The columns labeled "INT" and "PRO" contain the distance in kilometers of the appropriate interference contour and the protected contour of a data base station.

For I.F. relationships, some channel-six TV relationships and relationships with commercial channel stations providing clearance the minimum spacings values the "IN" and "OUT" columns can change their significance. The letter "R" stands for the minimum **required** distance in kilometers, while the letter "M" in the next column follows the **available clear space** (or lack of it) in kilometers. Minimum separation distances when displayed are taken from Sec 73.207 of the rules as amended. Canadian and Mexican separation distances, U/D ratios and protected contour values are from the US/Mexican Working Agreement and the US/Canada Working Agreement".

The call letters of stations meeting the minimum separation distances under the rules will be flagged by the characters "<<" appended to the right-hand side of the call sign. The "^" character appended to the call sign means the station has been "max-classed" according to the provisions of section 73.525 of the Rules.

The first three letters of the "TYPE" column identify the current FCC status of the stations. The fourth letter will be a "D" if the facility is directional. "Z" indicates a 73.215 directional. An "N" indicates it is a 73.215 station that operates with an omni-directional antenna. The fifth letter will be an E, H or V depending on the type of antenna polarization. The sixth letter will be a "Y" if the antenna uses beam tilt or an "X" if the commission is not sure, otherwise it will be an "N" or left blank.

Contour-to-Contour Map Study - KYEZ
University Of Kansas

FMCommander Single Allocation Study - 04-30-2015 - FCC NGDC 30 Sec
634410's Overlaps (In= -74.91 km, Out= 0.17 km)

634410 CH 229 D

Lat= 39 13 33.8, Lng= 96 37 00.5

0.045 kW 134.6 M HAAT, 495 M COR

Prot.= 60 dBu, Intef.= 40 dBu

KYEZ CH 229 C1 BLH6686

Lat= 38 57 14.0, Lng= 97 36 29.0

100.0 kW 155 M HAAT, 538 M COR

Prot.= 60 dBu, Intef.= 40 dBu



04-30-2015

Terrain Data: FCC NGDC 30 Sec

FMOver Analysis

KYEZ BLH6686

634410

Channel = 229C1

Max ERP = 100 kW

RCAMSL = 538 M

N. Lat. 38 57 14.0

W. Lng. 97 36 29.0

Protected

60 dBu

Channel = 229D

Max ERP = 0.045 kW

RCAMSL = 495 M

N. Lat. 39 13 33.8

W. Lng. 96 37 00.5

Interfering

40 dBu

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) | IX (km) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|------------|
| 010.0 | 100.0000 | 0154.0 | 059.0 | 290.6 | 000.0450 | 0101.5 | 080.0 | 20.70 | |
| 011.0 | 100.0000 | 0154.7 | 059.1 | 290.8 | 000.0450 | 0101.3 | 079.0 | 20.97 | |
| 012.0 | 100.0000 | 0154.3 | 059.0 | 290.9 | 000.0450 | 0101.2 | 077.9 | 21.25 | |
| 013.0 | 100.0000 | 0153.4 | 058.9 | 290.9 | 000.0450 | 0101.2 | 076.9 | 21.54 | |
| 014.0 | 100.0000 | 0152.7 | 058.8 | 290.9 | 000.0450 | 0101.1 | 075.9 | 21.83 | |
| 015.0 | 100.0000 | 0152.2 | 058.8 | 291.0 | 000.0450 | 0101.1 | 074.8 | 22.13 | |
| 016.0 | 100.0000 | 0151.6 | 058.7 | 291.0 | 000.0450 | 0101.1 | 073.8 | 22.42 | |
| 017.0 | 100.0000 | 0150.5 | 058.5 | 290.9 | 000.0450 | 0101.2 | 072.8 | 22.72 | |
| 018.0 | 100.0000 | 0149.3 | 058.4 | 290.8 | 000.0450 | 0101.3 | 071.8 | 23.03 | |
| 019.0 | 100.0000 | 0148.1 | 058.2 | 290.7 | 000.0450 | 0101.4 | 070.7 | 23.34 | |
| 020.0 | 100.0000 | 0147.8 | 058.2 | 290.7 | 000.0450 | 0101.4 | 069.7 | 23.64 | |
| 021.0 | 100.0000 | 0148.0 | 058.2 | 290.7 | 000.0450 | 0101.4 | 068.7 | 23.94 | |
| 022.0 | 100.0000 | 0148.6 | 058.3 | 290.8 | 000.0450 | 0101.4 | 067.7 | 24.24 | |
| 023.0 | 100.0000 | 0149.0 | 058.3 | 290.8 | 000.0450 | 0101.3 | 066.7 | 24.55 | |
| 024.0 | 100.0000 | 0149.5 | 058.4 | 290.8 | 000.0450 | 0101.3 | 065.6 | 24.86 | |
| 025.0 | 100.0000 | 0150.1 | 058.5 | 290.8 | 000.0450 | 0101.3 | 064.6 | 25.17 | |
| 026.0 | 100.0000 | 0150.9 | 058.6 | 290.8 | 000.0450 | 0101.3 | 063.6 | 25.49 | |
| 027.0 | 100.0000 | 0151.7 | 058.7 | 290.8 | 000.0450 | 0101.3 | 062.6 | 25.83 | |
| 028.0 | 100.0000 | 0152.4 | 058.8 | 290.8 | 000.0450 | 0101.4 | 061.5 | 26.17 | |
| 029.0 | 100.0000 | 0152.8 | 058.8 | 290.7 | 000.0450 | 0101.5 | 060.5 | 26.53 | |
| 030.0 | 100.0000 | 0153.0 | 058.9 | 290.5 | 000.0450 | 0101.7 | 059.5 | 26.90 | |
| 031.0 | 100.0000 | 0153.0 | 058.9 | 290.3 | 000.0450 | 0101.9 | 058.5 | 27.28 | |
| 032.0 | 100.0000 | 0152.7 | 058.8 | 290.1 | 000.0450 | 0102.2 | 057.5 | 27.67 | |
| 033.0 | 100.0000 | 0152.2 | 058.8 | 289.8 | 000.0450 | 0102.6 | 056.5 | 28.06 | |
| 034.0 | 100.0000 | 0151.9 | 058.7 | 289.5 | 000.0450 | 0103.0 | 055.5 | 28.46 | |
| 035.0 | 100.0000 | 0152.1 | 058.7 | 289.2 | 000.0450 | 0103.4 | 054.5 | 28.86 | |
| 036.0 | 100.0000 | 0152.7 | 058.8 | 289.0 | 000.0450 | 0103.8 | 053.5 | 29.27 | |
| 037.0 | 100.0000 | 0153.7 | 058.9 | 288.8 | 000.0450 | 0104.1 | 052.5 | 29.69 | |
| 038.0 | 100.0000 | 0155.0 | 059.1 | 288.6 | 000.0450 | 0104.4 | 051.5 | 30.10 | |
| 039.0 | 100.0000 | 0156.3 | 059.3 | 288.3 | 000.0450 | 0104.8 | 050.5 | 30.52 | |
| 040.0 | 100.0000 | 0157.3 | 059.4 | 288.0 | 000.0450 | 0105.3 | 049.4 | 30.95 | |
| 041.0 | 100.0000 | 0158.2 | 059.5 | 287.7 | 000.0450 | 0105.9 | 048.4 | 31.37 | |
| 042.0 | 100.0000 | 0159.3 | 059.6 | 287.3 | 000.0450 | 0106.5 | 047.4 | 31.79 | |
| 043.0 | 100.0000 | 0160.4 | 059.8 | 286.9 | 000.0450 | 0107.1 | 046.5 | 32.21 | |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|----------------------|-------------|-------------|--------------|-----------------|
| 044.0 | 100.0000 | 0161.3 | 059.9 | 286.4 | 000.0450 | 0107.6 | 045.5 | 32.64 |
| 045.0 | 100.0000 | 0161.9 | 060.0 | 285.8 | 000.0450 | 0108.2 | 044.5 | 33.06 |
| 046.0 | 100.0000 | 0162.6 | 060.0 | 285.2 | 000.0450 | 0108.8 | 043.6 | 33.48 |
| 047.0 | 100.0000 | 0163.5 | 060.1 | 284.6 | 000.0450 | 0109.3 | 042.6 | 33.91 |
| 048.0 | 100.0000 | 0164.6 | 060.3 | 283.9 | 000.0450 | 0109.9 | 041.7 | 34.35 |
| 049.0 | 100.0000 | 0165.8 | 060.4 | 283.2 | 000.0450 | 0110.6 | 040.8 | 34.80 |
| 050.0 | 100.0000 | 0166.7 | 060.5 | 282.5 | 000.0450 | 0111.6 | 039.9 | 35.25 |
| 051.0 | 100.0000 | 0167.2 | 060.6 | 281.6 | 000.0450 | 0112.8 | 039.0 | 35.72 |
| 052.0 | 100.0000 | 0167.3 | 060.6 | 280.5 | 000.0450 | 0114.0 | 038.2 | 36.16 |
| 053.0 | 100.0000 | 0166.9 | 060.5 | 279.4 | 000.0450 | 0114.8 | 037.5 | 36.55 |
| 054.0 | 100.0000 | 0166.4 | 060.5 | 278.2 | 000.0450 | 0115.4 | 036.8 | 36.91 |
| 055.0 | 100.0000 | 0166.0 | 060.4 | 276.9 | 000.0450 | 0116.6 | 036.1 | 37.31 |
| 056.0 | 100.0000 | 0165.7 | 060.4 | 275.6 | 000.0450 | 0118.4 | 035.4 | 37.73 |
| 057.0 | 100.0000 | 0165.5 | 060.4 | 274.2 | 000.0450 | 0121.2 | 034.8 | 38.22 |
| 058.0 | 100.0000 | 0165.5 | 060.4 | 272.7 | 000.0450 | 0123.3 | 034.2 | 38.64 |
| 059.0 | 100.0000 | 0165.5 | 060.4 | 271.3 | 000.0450 | 0124.5 | 033.6 | 38.99 |
| 060.0 | 100.0000 | 0165.4 | 060.4 | 269.7 | 000.0450 | 0125.8 | 033.1 | 39.33 |
| 061.0 | 100.0000 | 0164.7 | 060.3 | 268.0 | 000.0450 | 0123.6 | 032.7 | 39.40 |
| 062.0 | 100.0000 | 0163.8 | 060.2 | 266.2 | 000.0450 | 0120.9 | 032.3 | 39.39 |
| 063.0 | 100.0000 | 0163.0 | 060.1 | 264.4 | 000.0450 | 0120.0 | 032.0 | 39.49 |
| 064.0 | 100.0000 | 0162.5 | 060.0 | 262.6 | 000.0450 | 0119.5 | 031.7 | 39.61 |
| 065.0 | 100.0000 | 0162.1 | 060.0 | 260.8 | 000.0450 | 0117.2 | 031.5 | 39.58 |
| 066.0 | 100.0000 | 0161.5 | 059.9 | 258.9 | 000.0450 | 0115.3 | 031.3 | 39.54 |
| 067.0 | 100.0000 | 0160.8 | 059.8 | 257.0 | 000.0450 | 0114.2 | 031.2 | 39.51 |
| 068.0 | 100.0000 | 0160.0 | 059.7 | 255.1 | 000.0450 | 0114.9 | 031.1 | 39.59 |
| 069.0 | 100.0000 | 0159.5 | 059.7 | 253.1 | 000.0450 | 0115.9 | 031.1 | 39.68 |
| 070.0 | 100.0000 | 0159.4 | 059.7 | 251.2 | 000.0450 | 0116.6 | 031.1 | 39.75 |
| 071.0 | 100.0000 | 0159.8 | 059.7 | 249.3 | 000.0450 | 0117.9 | 031.0 | 39.86 |
| 072.0 | 100.0000 | 0160.4 | 059.8 | 247.4 | 000.0450 | 0118.6 | 031.0 | 39.91 |
| 073.0 | 100.0000 | 0161.0 | 059.9 | 245.4 | 000.0450 | 0118.5 | 031.1 | 39.87 |
| 074.0 | 100.0000 | 0161.4 | 059.9 | 243.5 | 000.0450 | 0119.0 | 031.2 | 39.84 |
| 075.0 | 100.0000 | 0161.6 | 059.9 | 241.7 | 000.0450 | 0119.6 | 031.4 | 39.77 |
| 076.0 | 100.0000 | 0161.7 | 059.9 | 239.8 | 000.0450 | 0120.6 | 031.7 | 39.70 |
| 077.0 | 100.0000 | 0161.9 | 060.0 | 238.0 | 000.0450 | 0122.1 | 032.0 | 39.64 |
| 078.0 | 100.0000 | 0162.0 | 060.0 | 236.3 | 000.0450 | 0123.8 | 032.4 | 39.57 |
| 079.0 | 100.0000 | 0162.3 | 060.0 | 234.6 | 000.0450 | 0126.1 | 032.7 | 39.52 |
| 080.0 | 100.0000 | 0162.7 | 060.1 | 232.9 | 000.0450 | 0128.3 | 033.2 | 39.45 |
| 081.0 | 100.0000 | 0163.4 | 060.1 | 231.2 | 000.0450 | 0129.8 | 033.6 | 39.34 |
| 082.0 | 100.0000 | 0164.4 | 060.2 | 229.6 | 000.0450 | 0131.3 | 034.1 | 39.20 |
| 083.0 | 100.0000 | 0165.3 | 060.4 | 228.1 | 000.0450 | 0133.5 | 034.6 | 39.09 |
| 084.0 | 100.0000 | 0165.9 | 060.4 | 226.6 | 000.0450 | 0134.9 | 035.1 | 38.90 |
| 085.0 | 100.0000 | 0166.2 | 060.5 | 225.3 | 000.0450 | 0134.8 | 035.8 | 38.58 |
| 086.0 | 100.0000 | 0166.4 | 060.5 | 224.0 | 000.0450 | 0135.0 | 036.5 | 38.27 |
| 087.0 | 100.0000 | 0166.6 | 060.5 | 222.8 | 000.0450 | 0136.2 | 037.2 | 38.00 |
| 088.0 | 100.0000 | 0166.6 | 060.5 | 221.7 | 000.0450 | 0137.7 | 037.9 | 37.73 |
| 089.0 | 100.0000 | 0166.7 | 060.5 | 220.6 | 000.0450 | 0139.2 | 038.7 | 37.45 |
| 090.0 | 100.0000 | 0166.8 | 060.5 | 219.6 | 000.0450 | 0140.6 | 039.5 | 37.16 |
| 091.0 | 100.0000 | 0167.0 | 060.5 | 218.6 | 000.0450 | 0142.2 | 040.3 | 36.87 |
| 092.0 | 100.0000 | 0167.1 | 060.6 | 217.7 | 000.0450 | 0143.9 | 041.2 | 36.58 |
| 093.0 | 100.0000 | 0167.3 | 060.6 | 216.9 | 000.0450 | 0145.4 | 042.0 | 36.28 |
| 094.0 | 100.0000 | 0167.4 | 060.6 | 216.1 | 000.0450 | 0146.9 | 042.9 | 35.97 |

| Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | | Azimuth (degrees) | ERP (kW) | HAAT (m) | Dist (km) | Actual (dBu) |
|----------------------|-------------|-------------|--------------|--|----------------------|-------------|-------------|--------------|-----------------|
| 095.0 | 100.0000 | 0167.4 | 060.6 | | 215.4 | 000.0450 | 0148.1 | 043.8 | 35.64 |
| 096.0 | 100.0000 | 0167.4 | 060.6 | | 214.7 | 000.0450 | 0149.1 | 044.8 | 35.29 |
| 097.0 | 100.0000 | 0167.2 | 060.6 | | 214.2 | 000.0450 | 0149.9 | 045.7 | 34.94 |
| 098.0 | 100.0000 | 0166.9 | 060.5 | | 213.6 | 000.0450 | 0150.4 | 046.7 | 34.57 |
| 099.0 | 100.0000 | 0166.1 | 060.4 | | 213.2 | 000.0450 | 0150.9 | 047.7 | 34.20 |
| 100.0 | 100.0000 | 0164.7 | 060.3 | | 212.9 | 000.0450 | 0151.2 | 048.7 | 33.81 |
| 101.0 | 100.0000 | 0163.4 | 060.1 | | 212.6 | 000.0450 | 0151.4 | 049.7 | 33.42 |
| 102.0 | 100.0000 | 0162.2 | 060.0 | | 212.3 | 000.0450 | 0151.7 | 050.8 | 33.04 |
| 103.0 | 100.0000 | 0161.3 | 059.9 | | 212.1 | 000.0450 | 0152.0 | 051.8 | 32.66 |
| 104.0 | 100.0000 | 0160.6 | 059.8 | | 211.8 | 000.0450 | 0152.4 | 052.8 | 32.28 |
| 105.0 | 100.0000 | 0160.0 | 059.7 | | 211.6 | 000.0450 | 0152.7 | 053.8 | 31.91 |
| 106.0 | 100.0000 | 0159.3 | 059.6 | | 211.4 | 000.0450 | 0153.0 | 054.9 | 31.53 |
| 107.0 | 100.0000 | 0158.3 | 059.5 | | 211.2 | 000.0450 | 0153.2 | 055.9 | 31.15 |
| 108.0 | 100.0000 | 0157.1 | 059.4 | | 211.1 | 000.0450 | 0153.4 | 057.0 | 30.76 |
| 109.0 | 100.0000 | 0155.7 | 059.2 | | 211.1 | 000.0450 | 0153.4 | 058.0 | 30.37 |
| 110.0 | 100.0000 | 0154.0 | 059.0 | | 211.1 | 000.0450 | 0153.4 | 059.1 | 29.99 |
| 111.0 | 100.0000 | 0152.2 | 058.8 | | 211.1 | 000.0450 | 0153.3 | 060.1 | 29.60 |
| 112.0 | 100.0000 | 0150.6 | 058.5 | | 211.2 | 000.0450 | 0153.2 | 061.1 | 29.22 |
| 113.0 | 100.0000 | 0149.3 | 058.4 | | 211.2 | 000.0450 | 0153.2 | 062.2 | 28.86 |
| 114.0 | 100.0000 | 0148.5 | 058.3 | | 211.2 | 000.0450 | 0153.2 | 063.2 | 28.51 |
| 115.0 | 100.0000 | 0148.2 | 058.2 | | 211.1 | 000.0450 | 0153.3 | 064.2 | 28.17 |
| 116.0 | 100.0000 | 0148.2 | 058.2 | | 211.0 | 000.0450 | 0153.5 | 065.2 | 27.84 |
| 117.0 | 100.0000 | 0148.6 | 058.3 | | 210.9 | 000.0450 | 0153.7 | 066.2 | 27.52 |
| 118.0 | 100.0000 | 0149.0 | 058.3 | | 210.9 | 000.0450 | 0153.8 | 067.3 | 27.19 |
| 119.0 | 100.0000 | 0149.3 | 058.4 | | 210.8 | 000.0450 | 0153.9 | 068.3 | 26.86 |
| 120.0 | 100.0000 | 0149.4 | 058.4 | | 210.8 | 000.0450 | 0154.0 | 069.3 | 26.53 |
| 121.0 | 100.0000 | 0149.6 | 058.4 | | 210.8 | 000.0450 | 0154.0 | 070.3 | 26.20 |
| 122.0 | 100.0000 | 0150.0 | 058.5 | | 210.7 | 000.0450 | 0154.0 | 071.3 | 25.87 |
| 123.0 | 100.0000 | 0150.8 | 058.6 | | 210.7 | 000.0450 | 0154.1 | 072.4 | 25.55 |
| 124.0 | 100.0000 | 0151.7 | 058.7 | | 210.6 | 000.0450 | 0154.2 | 073.4 | 25.22 |
| 125.0 | 100.0000 | 0152.5 | 058.8 | | 210.6 | 000.0450 | 0154.2 | 074.4 | 24.90 |
| 126.0 | 100.0000 | 0153.2 | 058.9 | | 210.6 | 000.0450 | 0154.2 | 075.4 | 24.57 |
| 127.0 | 100.0000 | 0154.1 | 059.0 | | 210.6 | 000.0450 | 0154.2 | 076.5 | 24.24 |
| 128.0 | 100.0000 | 0154.7 | 059.1 | | 210.7 | 000.0450 | 0154.1 | 077.5 | 23.92 |
| 129.0 | 100.0000 | 0155.2 | 059.1 | | 210.7 | 000.0450 | 0154.0 | 078.5 | 23.59 |

634410 Manhattan, KS
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.045
 Translator or LPFM Antenna Height AG = 105 Meters
 634410 Antenna Model = SHPX1F

Protected Station's Contour = 74.12222 dBu
 Translator's or LPFM's full Interference contour 114.12222

Review Azimuth = 0 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.045 kw
 Distance between stations = 2.8 km
 Protected Station= 634035, .17 kw, 399 M Meters COR AMSL

| Depression Angle From Horizon(Deg) | Vertical Relative Field | Horizontal Relative Field | ERP (kw) | Dist to IX Contour Along Dep. Angle(m) | Dist to IX Contour From Tower Base(m) | Height IX Above Ground (m) |
|--|-------------------------------|---------------------------------|----------|--|---|----------------------------------|
| 00.00 | 1.0 | 1.0 | 0.0450 | 092.5753 | 092.5753 | 105.000 |
| 05.00 | 0.993 | 1.0 | 0.0444 | 091.9273 | 091.5775 | 096.988 |
| 10.00 | 0.974 | 1.0 | 0.0427 | 090.1684 | 088.7985 | 089.342 |
| 15.00 | 0.941 | 1.0 | 0.0398 | 087.1134 | 084.1451 | 082.453 |
| 20.00 | 0.897 | 1.0 | 0.0362 | 083.0401 | 078.0321 | 076.599 |
| 25.00 | 0.843 | 1.0 | 0.0320 | 078.0410 | 070.7292 | 072.018 |
| 30.00 | 0.78 | 1.0 | 0.0274 | 072.2088 | 062.5346 | 068.896 |
| 35.00 | 0.709 | 1.0 | 0.0226 | 065.6359 | 053.7658 | 067.353 |
| 40.00 | 0.633 | 1.0 | 0.0180 | 058.6002 | 044.8903 | 067.333 |
| 45.00 | 0.554 | 1.0 | 0.0138 | 051.2867 | 036.2652 | 068.735 |
| 50.00 | 0.473 | 1.0 | 0.0101 | 043.7881 | 028.1465 | 071.456 |
| 55.00 | 0.394 | 1.0 | 0.0070 | 036.4747 | 020.9210 | 075.122 |
| 60.00 | 0.317 | 1.0 | 0.0045 | 029.3464 | 014.6732 | 079.585 |
| 65.00 | 0.245 | 1.0 | 0.0027 | 022.6810 | 009.5854 | 084.444 |
| 70.00 | 0.181 | 1.0 | 0.0015 | 016.7561 | 005.7309 | 089.254 |
| 75.00 | 0.124 | 1.0 | 0.0007 | 011.4793 | 002.9711 | 093.912 |
| 80.00 | 0.077 | 1.0 | 0.0003 | 007.1283 | 001.2378 | 097.980 |
| 85.00 | 0.041 | 1.0 | 0.0001 | 003.7956 | 000.3308 | 101.219 |
| 90.00 | 0.016 | 1.0 | 0.0000 | 001.4812 | 000.0000 | 103.519 |

Protected Application Site, BNPFT 20030317KVF



634035 Manhattan, KS
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.17
 Translator or LPFM Antenna Height AG = 76 Meters
 634035 Antenna Model = SHPX1F

Protected Station's Contour = 81.76421 dBu
 Translator's or LPFM's full Interference contour 121.76421

Review Azimuth = 0 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.17 kw
 Distance between stations = 2.8 km
 Protected Station= 634410, 0.05, 495 Meters COR AMSL

| Depression Angle From Horizon(Deg) | Vertical Relative Field | Horizontal Relative Field | ERP (kw) | Dist to IX Contour Along Dep. Angle(m) | Dist to IX Contour From Tower Base(m) | Height IX Above Ground (m) |
|--|-------------------------------|---------------------------------|----------|--|---|----------------------------------|
| 00.00 | 1.0 | 1.0 | 0.1700 | 074.6473 | 074.6473 | 076.000 |
| 05.00 | 0.993 | 1.0 | 0.1676 | 074.1247 | 073.8427 | 069.540 |
| 10.00 | 0.974 | 1.0 | 0.1613 | 072.7064 | 071.6019 | 063.375 |
| 15.00 | 0.941 | 1.0 | 0.1505 | 070.2431 | 067.8496 | 057.820 |
| 20.00 | 0.897 | 1.0 | 0.1368 | 066.9586 | 062.9205 | 053.099 |
| 25.00 | 0.843 | 1.0 | 0.1208 | 062.9277 | 057.0318 | 049.406 |
| 30.00 | 0.78 | 1.0 | 0.1034 | 058.2249 | 050.4242 | 046.888 |
| 35.00 | 0.709 | 1.0 | 0.0855 | 052.9249 | 043.3536 | 045.644 |
| 40.00 | 0.633 | 1.0 | 0.0681 | 047.2517 | 036.1969 | 045.627 |
| 45.00 | 0.554 | 1.0 | 0.0522 | 041.3546 | 029.2421 | 046.758 |
| 50.00 | 0.473 | 1.0 | 0.0380 | 035.3082 | 022.6956 | 048.952 |
| 55.00 | 0.394 | 1.0 | 0.0264 | 029.4110 | 016.8695 | 051.908 |
| 60.00 | 0.317 | 1.0 | 0.0171 | 023.6632 | 011.8316 | 055.507 |
| 65.00 | 0.245 | 1.0 | 0.0102 | 018.2886 | 007.7291 | 059.425 |
| 70.00 | 0.181 | 1.0 | 0.0056 | 013.5112 | 004.6211 | 063.304 |
| 75.00 | 0.124 | 1.0 | 0.0026 | 009.2563 | 002.3957 | 067.059 |
| 80.00 | 0.077 | 1.0 | 0.0010 | 005.7478 | 000.9981 | 070.339 |
| 85.00 | 0.041 | 1.0 | 0.0003 | 003.0605 | 000.2667 | 072.951 |
| 90.00 | 0.016 | 1.0 | 0.0000 | 001.1944 | 000.0000 | 074.806 |

Protected Application Site, BNPFT 20030311AGF

