

TECHNICAL STATEMENT
MINOR CHANGE APPLICATION
K256CT DENVER, CO
MOUNTAIN COMMUNITY TRANSLATORS, LLC
FEBRUARY 2022

This Technical Statement is made in support of a minor change application for FM translator station K256CT Denver, Colorado, facility ID 155203. K256CT is a fill-in translator for KGNU(AM) Denver, Colorado, facility ID 31349. K256CT seeks to relocate to an existing communications site located on Lookout Mountain near Denver, Colorado. K256CT is proposing to operate on channel 256 (99.1 mhz), with 99 watts Effective Radiated Power (“ERP”) with a directional composite antenna system comprised a Nicom BLK 8-E (slant 45) yagi type antennas with dual polarization. The antenna will be oriented at 85 degrees. The center of radiation will be 12.8 meters above the ground and 2256 meters Above Mean Sea Level.

Figure 1 is a detailed channel interference study conducted on channel 256D with these new proposed facilities. It shows that the new operation of K256CT will not cause any interference to any existing or proposed FM stations on any of the pertinent same channel or adjacent channels to channel 256 with the exception of 2nd adjacent channel station KQMT(FM) Denver, CO, facility ID 26929 on channel 258C, and 3rd adjacent channel station KYGO-FM Denver, CO, facility ID 30829 operating on channel 253C0.

Figure 2 shows that KQMT(FM) places a 144.6 dBμ contour at the new K256CT site. Figure 3 shows that KYGO-FM places a 102.7 dBμ contour at the new K256CT site. Since KYGO-FM produces a lower signal at the proposed site, it was studied further. The calculated worst case interference contour for K256CT would be 142.7 dBμ. This contour would only extend 5.1 meters from the antenna in any direction. Thus, with a COR of 12.8 meters above ground, it would not reach the ground at any point. This was also verified by a Vertical Pattern

study conducted utilizing the proposed Nicom BLK 8-E antenna systems vertical pattern. Figure 5 shows the results of that study. It shows that the interference contour will be no less than 12 meters about the ground in any azimuth. Lastly, figure 4 shows the predicted worst case 142.7 dBμ contour showing there will be no population within this contour.

The Community Translators, LLC, respectfully requests a waiver of C.F.R. 74.1204(d) of the Commission's rules based on the fact that there is no population within the area of predicted interference. There are no homes nearby the proposed existing tower site, which is a privately owned with private gated access applicant. K256CT will be located at a communications site known as "Lookout Mountain". The transmitter building is uninhabited and does not have indoor plumbing. Should any unforeseen actual interference be caused, the licensee will immediately cease broadcasting with K256CT until such interference can be eliminated.

Figure 6 shows a detailed contour study with KKMFG(FM) Pueblo, Colorado, facility ID 11229 on Channel 255C.

Figure 7 shows a detailed contour study with KUAD-FM Windsor, Colorado, facility ID 49538 on Channel 256C1.

Figure 8 is the directional antenna data for the proposed Nicom antenna system to be used.

Figure 9 shows the present and proposed 60 dBμ contours for K256CT.

The proposed operation of K256CT Denver will remain a "Fill-In" operation for Class D AM station KGNU Denver, Colorado. KGNU(AM) is licensed to operate with 5 kilowatts daytime with a non-directional antenna system on 1390 kHz. Figure 10 shows that the proposed 60 dBμ contour for the proposed K256CT will not extend beyond the 2 mv/m daytime contour of

KGNU(AM). Since this is a “Fill-In” translator, the maximum ERP will not exceed the maximum permissible ERP of 250 watts in any azimuth.

It was found that the new proposed operation of K256CT on channel 256D, will satisfy all of the required commission rules and regulations for an FM translator station.

FIGURE 1 - DETAILED CHANNEL INTERFERENCE STUDY

REFERENCE 39 43 46.00 N.
105 14 10.00 W.

CH# 256D - 99.1 MHz, Pwr= 0.099 kW DA, HAAT= 205.7 M, COR= 2256 M
Average Protected F(50-50)= 14.7 km
Standard Directional

K256CT DENVER, CO, CH. 256D

DISPLAY DATES
DATA 02-01-22
SEARCH 02-01-22

| CH CITY | CALL | TYPE STATE | ANT STATE | AZI <-- | DIST FILE # | LAT LNG | PWR(kw) HAAT(M) | INT(km) COR(M) | PRO(km) LICENSEE | *OUT* (Overlap in km) |
|----------------------------|---------|---------------|--------------|----------------|----------------------------|-----------------------------|--------------------|-------------------|---|--------------------------|
| 258C Denver | KQMT | LIC DCN CO | | 177.9 357.9 | 0.06 BLH20150622AFQ | 39 43 43.90 105 14 09.90 | 100.000 513 | 7.4 2280 | 63.8 Audacy License, LLC | -63.8* |
| 256D Denver | K256CT | LIC DCN CO | | 112.6 292.8 | 20.62 BLFT20180109ABW | 39 39 29.00 105 00 50.90 | 0.060 | 1691 | ---Reference--- Mountain Community Transla | |
| 253C0 Denver | KYGO-FM | LIC DCN CO | | 166.0 346.0 | 6.41 BLH20180912ABA | 39 40 24.30 105 13 04.50 | 100.000 341 | 7.7 2364 | 61.9 Bonneville International C | -55.6* |
| 255C Pueblo | KKMG | LIC _CN CO | | 163.5 343.7 | 113.93 BLH19951005KA | 38 44 42.90 104 51 42.90 | 72.000 695 | 145.9 2946 | 96.7 Radio License Holding cbc, | 0.3 |
| 256C1 Windsor | KUAD-FM | LIC _CN CO | | 19.2 199.4 | 107.39 BLH20031223ACH | 40 38 30.90 104 49 04.90 | 100.000 255 | 170.9 1816 | 71.4 Townsquare Media Of Fort C | 0.9 |
| 256D Dillon | K256BM | LIC _CN CO | | 260.0 79.5 | 72.50 BMLFT20131217DOV | 39 36 49.90 106 04 04.00 | 0.082 | 17.5 2861 | 5.4 Alwaysmountaintime, LLC | 61.5 |
| 258D Estes Park | K258BE | LIC _CN CO | | 341.1 160.9 | 74.15 BLFT20060630AIH | 40 21 37.90 105 31 13.90 | 0.013 20 | 0.3 2737 | 7.0 Educational Media Foundati | 65.3 |
| 258D Breckenridge | K258AS | LIC DCN CO | | 249.3 68.8 | 72.91 BLFT20071009ALB | 39 29 43.90 106 01 46.00 | 0.099 -58 | 0.1 3225 | 2.2 Krayon's wild Basin, LLC | 67.1 |
| 257D Colorado Springs | K257FO | LIC DCN CO | | 163.5 343.7 | 114.02 BLFT20150112AAM | 38 44 40.00 104 51 42.90 | 0.072 | 30.2 2910 | 12.2 way Media , Inc. | 83.6 |
| 254D Laporte | K254CH | LIC DCN CO | | 2.0 182.0 | 90.76 BLFT20150813ACD | 40 32 46.90 105 11 54.90 | 0.007 | 0.0 2188 | 2.8 Boulder Community Broadcas | 86.8 |
| 253D Colorado Springs | K253AH | LIC DCN CO | | 162.8 343.1 | 111.36 BMLFT20120312AAD | 38 46 14.90 104 51 21.90 | 0.180 -85 | 0.1 2142 | 2.4 Power 98.5, LLC | 104.6 |
| 255C2 Steamboat Springs | KCOQ | LIC NCN CO | | 302.6 121.7 | 151.66 BLH20181210ABR | 40 27 15.90 106 44 36.10 | 2.100 543 | 49.6 3186 | 33.0 Radio Partners LLC | 115.8 |
| 256C3 Glenwood Springs | KMTS | LIC _CN CO | | 263.7 82.4 | 182.14 BMLH20170313ABE | 39 31 56.90 107 20 32.20 | 10.000 -69 | 80.3 2295 | 18.1 Colorado West Broadcasting | 128.1 |

Terrain database is GLOBE 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.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
Incoming contour overlap is ignored.
*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

* No actual interference will be caused to either KQMT(FM) or KYGO-FM since the worse case 142.7 dbu contour will not cover any population. See the Technical Statement for more Details.

K256CT

BLFT20180109ABW

Latitude: 39-43-46 N

Longitude: 105-14-10 W

ERP: 0.099 kW

Channel: 256

Frequency: 99.1 MHz

AMSL Height: 1691.0 m

Elevation: 1631.0 m

Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 311.0

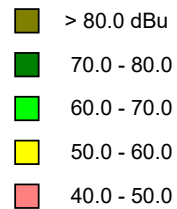
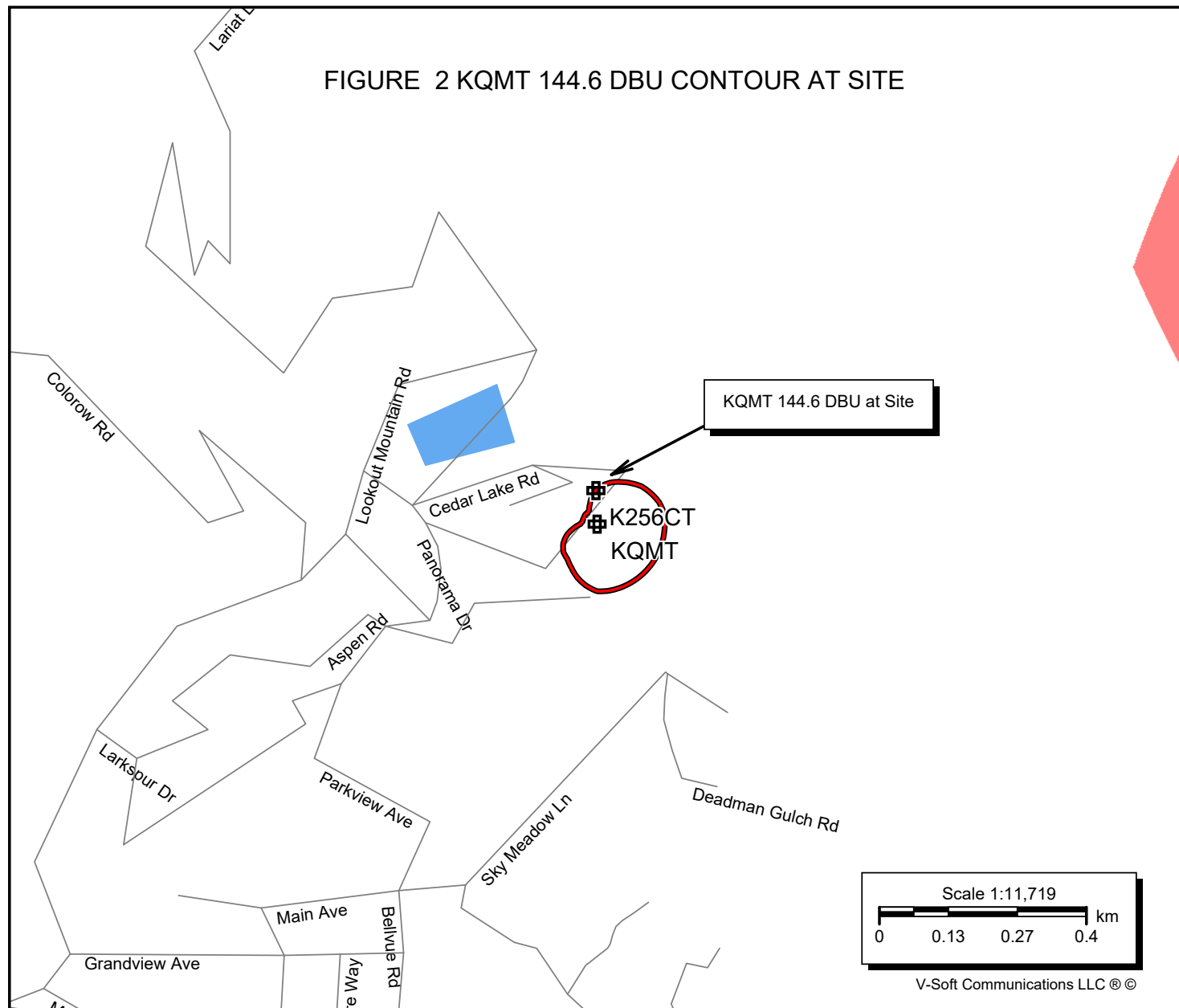
Receiver Ht AG: 9.1 m

Receiver Gain: 0 dB

Time Variability: 50.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

**FIGURE 2 KQMT 144.6 DBU CONTOUR AT SITE**

K256CT

BLFT20180109ABW

Latitude: 39-43-46 N

Longitude: 105-14-10 W

ERP: 0.099 kW

Channel: 256

Frequency: 99.1 MHz

AMSL Height: 2256.0 m

Elevation: 2177.206 m

Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model: Longley/Rice

Climate: Cont temperate

Conductivity: 0.0050

Dielec Const: 15.0

Refractivity: 311.0

Receiver Ht AG: 9.1 m

Receiver Gain: 0 dB

Time Variability: 50.0%

Sit. Variability: 50.0%

ITM Mode: Broadcast

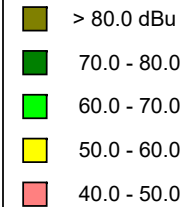
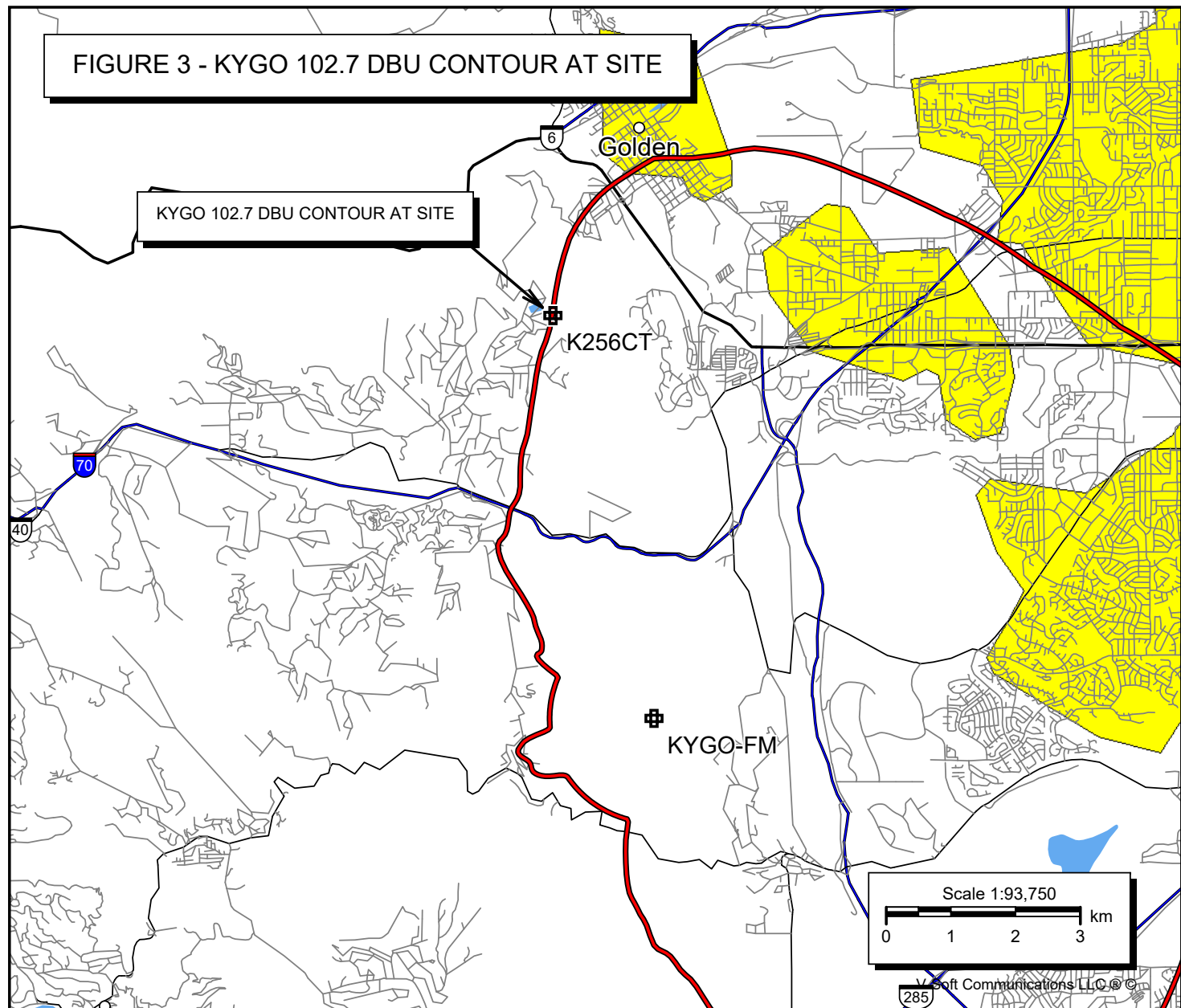
**FIGURE 3 - KYGO 102.7 DBU CONTOUR AT SITE**

FIGURE 4 - PREDICTED 142.7 DBU CONTOUR
K256CT DENVER, CO, CH. 256D

Coverage Study - GLOBE 30 Sec
02-01-2022

K256CT CH256 D , 0.099 kW, 205.7m HAAT, 2256.0m COR AMSL
Service Contour = 143 dBu.

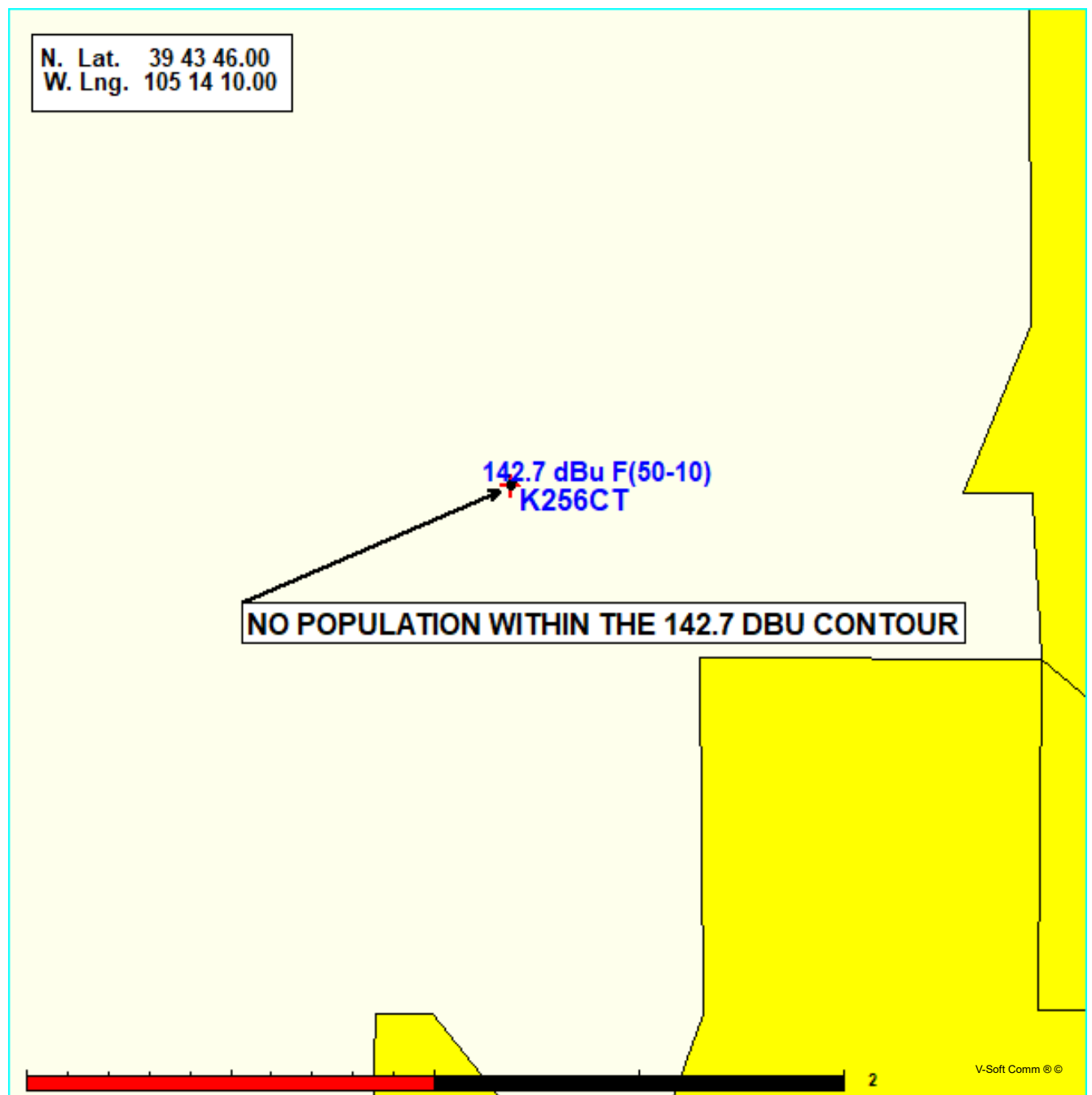


FIGURE 5 - VERTICAL PATTERN STUDY WITH KYGO-FM

K256CT Denver, CO, Showing Protection to KYGO-FM , Channel: 253
 Geographic Coordinates: N. 394346.00 W. 1051410.00
 74.1204(d) Study - Using NGDC 30 SEC Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.099 kW, Channel: 256
 Translator or LPFM Antenna Height AG = 12.8 meters
 K256CT Antenna Azimuth Model = Vertical Model Name = NICOMBLK8

Protected Station's Contour = 102.7324 dBu
 Translator's or LPFM's full Interference contour 142.7324

Review Azimuth = 0 Degrees True
 Horizontal Relative Field at Review Azimuth = 0.100
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.001 kW
 Distance between stations = 6.4 km
 Protected Station= KYGO-FM, 100 kW, 2364 M meters COR AMSL

| Depression Angle From Degree(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 | 0.1 | 0.0099 | 001.4361 | 001.4361 | 012.800 |
| 05.00 | 0.99 | 0.1 | 0.0097 | 001.4218 | 001.4164 | 012.676 |
| 10.00 | 0.979 | 0.1 | 0.0095 | 001.4063 | 001.3849 | 012.556 |
| 15.00 | 0.953 | 0.1 | 0.0090 | 001.3679 | 001.3213 | 012.446 |
| 20.00 | 0.92 | 0.1 | 0.0084 | 001.3213 | 001.2416 | 012.348 |
| 25.00 | 0.877 | 0.1 | 0.0076 | 001.2591 | 001.1411 | 012.268 |
| 30.00 | 0.829 | 0.1 | 0.0068 | 001.1908 | 001.0313 | 012.205 |
| 35.00 | 0.772 | 0.1 | 0.0059 | 001.1083 | 000.9078 | 012.164 |
| 40.00 | 0.715 | 0.1 | 0.0051 | 001.0268 | 000.7866 | 012.140 |
| 45.00 | 0.647 | 0.1 | 0.0041 | 000.9288 | 000.6567 | 012.143 |
| 50.00 | 0.57 | 0.1 | 0.0032 | 000.8186 | 000.5262 | 012.173 |
| 55.00 | 0.487 | 0.1 | 0.0023 | 000.6990 | 000.4009 | 012.227 |
| 60.00 | 0.388 | 0.1 | 0.0015 | 000.5577 | 000.2788 | 012.317 |
| 65.00 | 0.292 | 0.1 | 0.0008 | 000.4189 | 000.1770 | 012.420 |
| 70.00 | 0.187 | 0.1 | 0.0003 | 000.2681 | 000.0917 | 012.548 |
| 75.00 | 0.095 | 0.1 | 0.0001 | 000.1364 | 000.0353 | 012.668 |
| 80.00 | 0.045 | 0.1 | 0.0000 | 000.0646 | 000.0112 | 012.736 |
| 85.00 | 0.032 | 0.1 | 0.0000 | 000.0455 | 000.0040 | 012.755 |
| 90.00 | 0.03 | 0.1 | 0.0000 | 000.0431 | 000.0000 | 012.757 |

FIGURE 6 - CONTOUR STUDY WITH KKMGM(FM)
K256CT DENVER, CO, CH. 256D

FMCommander Single Allocation Study - 02-01-2022 - GLOBE 30 Sec
K256CT's Overlaps (In= -40.31 km, Out= 0.31 km)

K256CT CH 256 D DA
Lat= 39 43 46.00, Lng= 105 14 10.00
0.099 kW 205.7 m HAAT, 2256 m COR
Prot.= 60 dBu, Intef.= 54 dBu

KKMG CH 255 C BLH19951005KA
Lat= 38 44 42.90, Lng= 104 51 42.90
72.0 kW 695 m HAAT, 2946 m COR
Prot.= 60 dBu, Intef.= 54 dBu

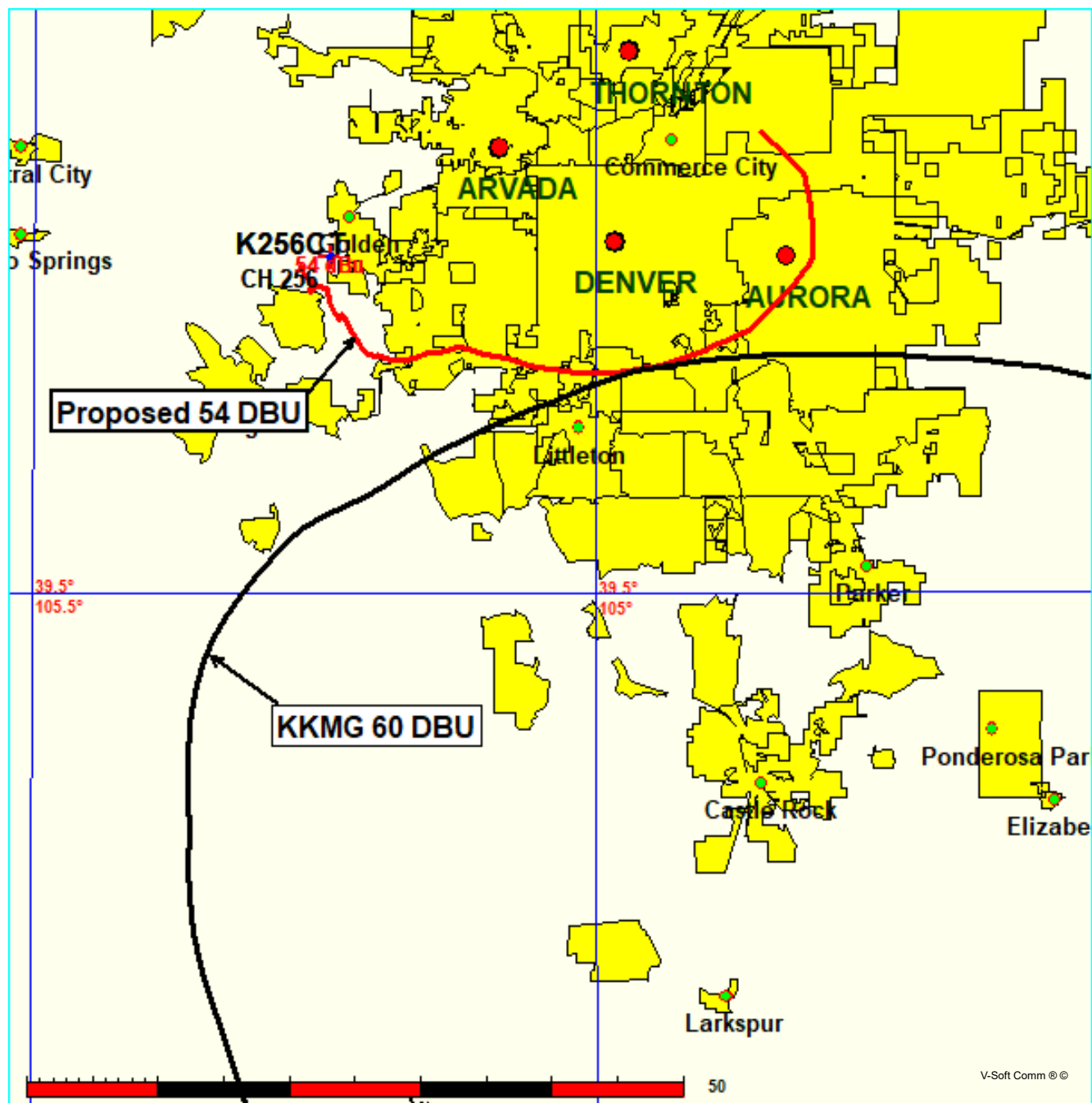


FIGURE 7 - CONTOUR STUDY WITH KUAD-FM
K256CT DENVER, CO, CH. 256D

FMCommander Single Allocation Study - 02-01-2022 - GLOBE 30 Sec
K256CT's Overlaps (In= -76.08 km, Out= 0.87 km)

K256CT CH 256 D DA
Lat= 39 43 46.00, Lng= 105 14 10.00
0.099 kW 205.7 m HAAT, 2256 m COR
Prot.= 60 dBu, Intef.= 40 dBu

KUAD-FM CH 256 C1 BLH20031223ACH
Lat= 40 38 30.90, Lng= 104 49 04.90
100.0 kW 255 m HAAT, 1816 m COR
Prot.= 60 dBu, Intef.= 40 dBu

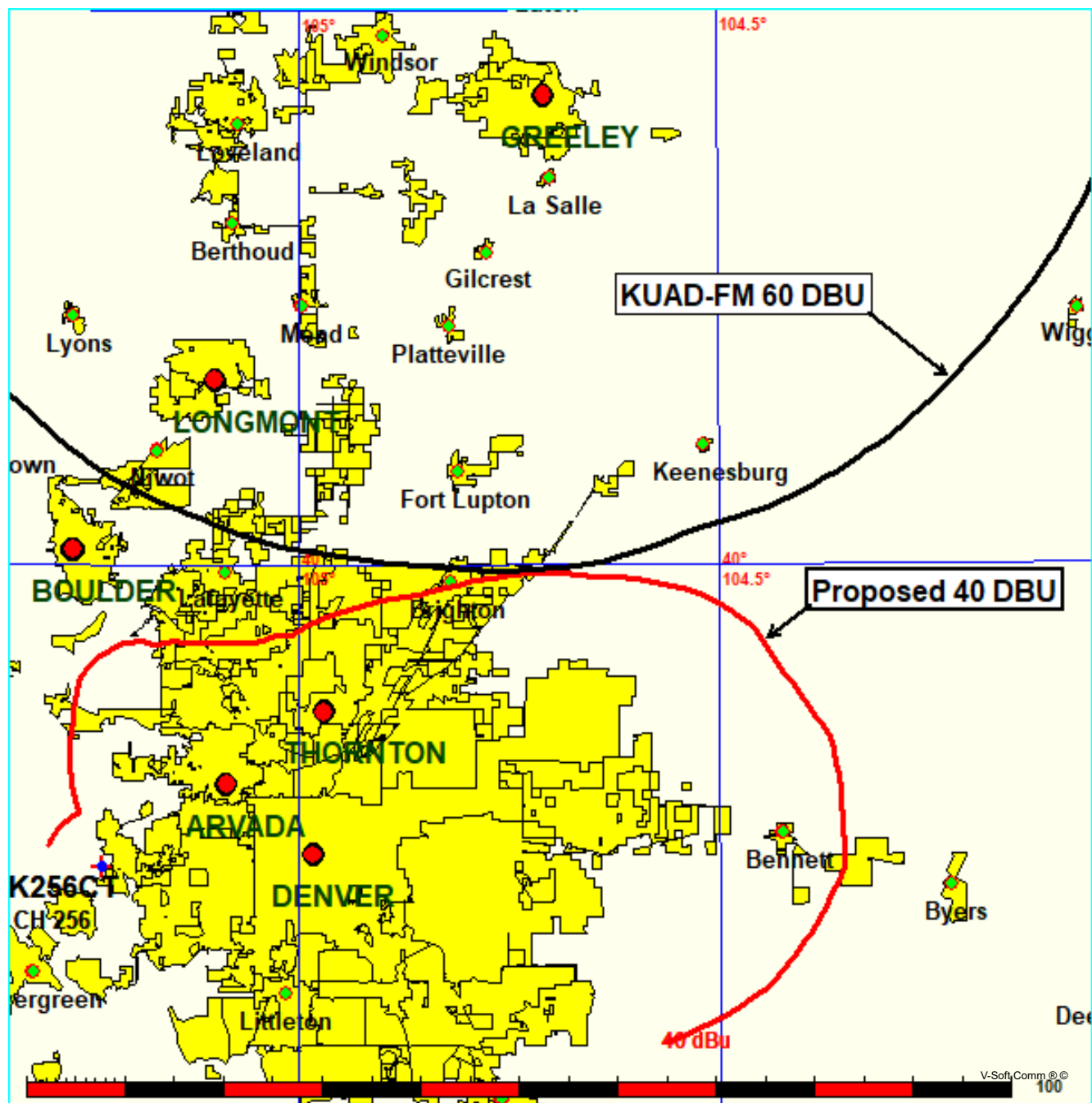


FIGURE 8 - DIRECTIONAL ANTENNA DATA

K256CT

02-01-2022

RMS(V)= .343

Graph is Relative Field

NICOM BLK-8 SLANT 45
oriented at 85
degrees

| Azi | Field | dBk | kw |
|-----|-------|---------|-------|
| 000 | 0.100 | -30.044 | 0.001 |
| 010 | 0.100 | -30.044 | 0.001 |
| 020 | 0.105 | -29.620 | 0.001 |
| 030 | 0.115 | -28.830 | 0.001 |
| 040 | 0.140 | -27.121 | 0.002 |
| 050 | 0.255 | -21.913 | 0.006 |
| 060 | 0.475 | -16.510 | 0.022 |
| 070 | 0.805 | -11.928 | 0.064 |
| 080 | 1.000 | -10.044 | 0.099 |
| 090 | 1.000 | -10.044 | 0.099 |
| 100 | 0.835 | -11.610 | 0.069 |
| 110 | 0.550 | -15.236 | 0.030 |
| 120 | 0.260 | -21.744 | 0.007 |
| 130 | 0.140 | -27.121 | 0.002 |
| 140 | 0.115 | -28.830 | 0.001 |
| 150 | 0.105 | -29.620 | 0.001 |
| 160 | 0.100 | -30.044 | 0.001 |
| 170 | 0.100 | -30.044 | 0.001 |
| 180 | 0.100 | -30.044 | 0.001 |
| 190 | 0.100 | -30.044 | 0.001 |
| 200 | 0.100 | -30.044 | 0.001 |
| 210 | 0.100 | -30.044 | 0.001 |
| 220 | 0.100 | -30.044 | 0.001 |
| 230 | 0.100 | -30.044 | 0.001 |
| 240 | 0.100 | -30.044 | 0.001 |
| 250 | 0.100 | -30.044 | 0.001 |
| 260 | 0.100 | -30.044 | 0.001 |
| 270 | 0.100 | -30.044 | 0.001 |
| 280 | 0.100 | -30.044 | 0.001 |
| 290 | 0.100 | -30.044 | 0.001 |
| 300 | 0.100 | -30.044 | 0.001 |
| 310 | 0.100 | -30.044 | 0.001 |
| 320 | 0.100 | -30.044 | 0.001 |
| 330 | 0.100 | -30.044 | 0.001 |
| 340 | 0.100 | -30.044 | 0.001 |
| 350 | 0.100 | -30.044 | 0.001 |
| 85 | 1.000 | -10.044 | 0.099 |

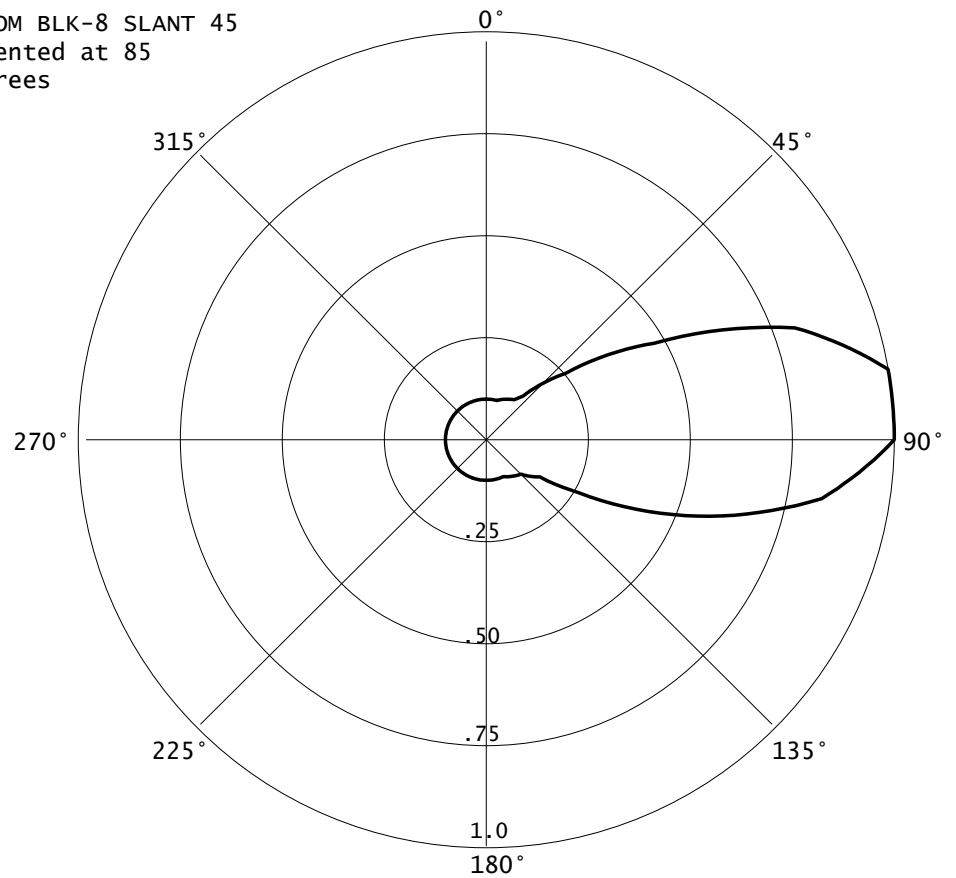


FIGURE 9 - PRESENT AND PROPOSED 60 DBU CONTOURS
K256CT DENVER, CO, CH. 256D

Coverage Study - GLOBE 30 Sec
02-01-2022

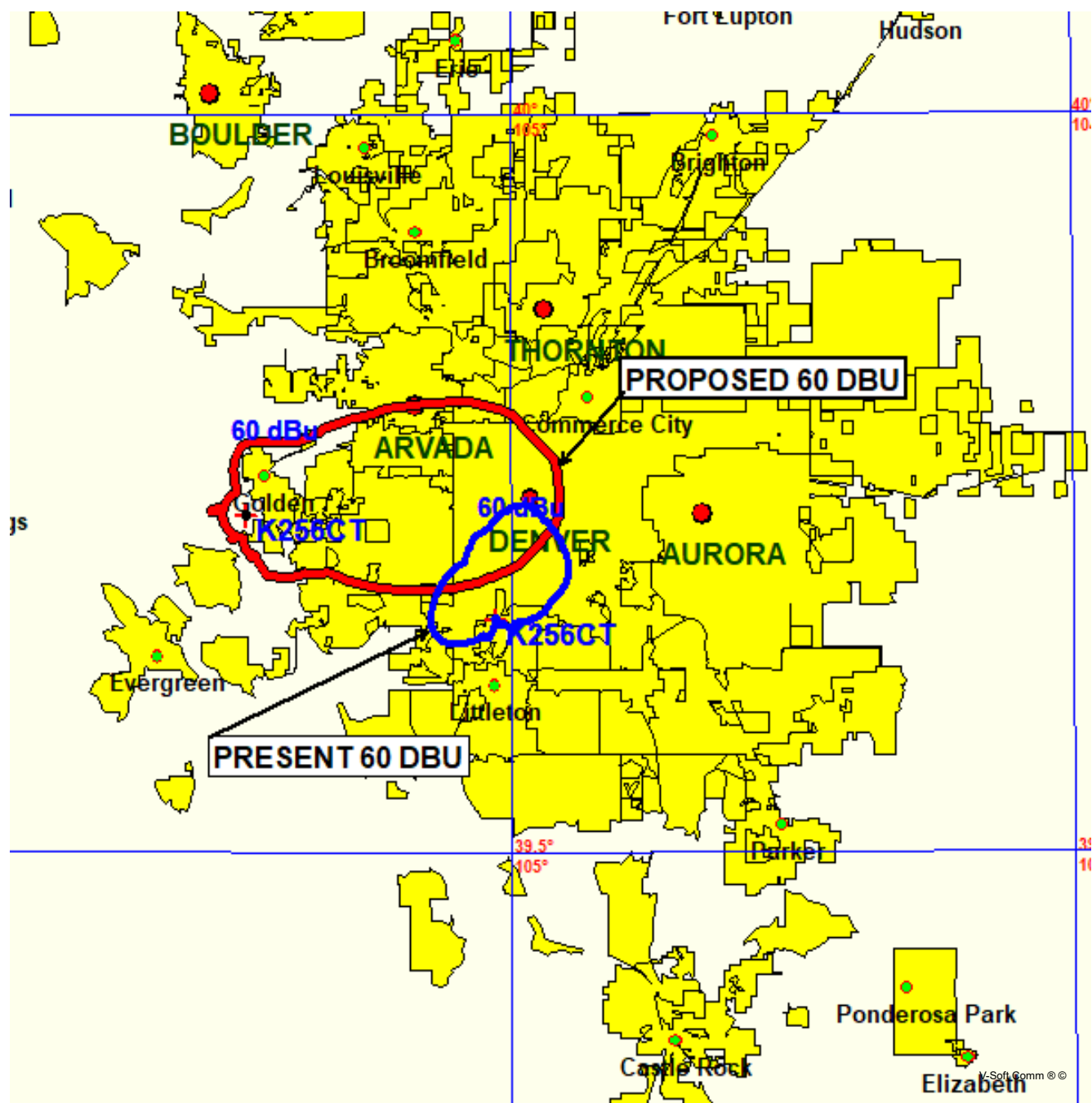


FIGURE 10 FILL-IN MAP WITH KGNU(AM)
K256CT DENVER, CO, CH. 256D

Coverage Study - GLOBE 30 Sec
02-01-2022

K256CT CH256 D , 0.099 kW, 205.7m HAAT, 2256.0m COR AMSL
Service Contour = 60 dBu.

