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CONSULTING ENGINEER
KENSINGTON, MARYLAND

ENGINEERING EXHIBIT
APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
OHIO/OKLAHOMA HEARST-ARGYLE TELEVISION, INC.
STATION KOCO-DT, OKLAHOMA CITY, OKLAHOMA
CHANNEL 7 47 KW (MAX-DA) 370 METERS

Ohio/Oklahoma Hearst-Argyle Television, Inc. (hereafter, Hearst-Argyle) is the permittee in BPCDT-20010904ABG for the construction of a new DTV facility for Station KOCO-DT, Oklahoma City, Oklahoma. The construction authorization is for operation on Channel 7 with maximum effective radiated power of 34 kW. A directional antenna is authorized and the specified antenna radiation center height above average terrain is 430 meters. This mode of operation has been allotted for KOCO-DT operation in Appendix B of the Seventh Report and Order and Eighth Further Notice of Proposed Rule Making in MB Docket No. 87-268.

Currently, Station KOCO-DT is operating pursuant to Special Temporary Authorization (STA) BMDSTA-20030604ACT. The STA specifies operation for Station KOCO-DT on Channel 7 with maximum effective radiated power of 47 kW and antenna radiation center height above average terrain of 370 meters. The same tower as in the outstanding construction permit is employed to support the antenna for the STA operation. The tower Antenna Structure Registration Number (ASRN) is 1009951.The same directional radiation pattern as authorized in the construction permit is employed.

The STA facility's noise-limited, 36 dBu, F(50,90), contour is almost contiguous with the CP facility's noise-limited, 36 dBu, F(50,90), contour, as shown in the accompanying Figure 5. The population within the STA's noise-limited service area is 1,400,772 persons. The population within the CP's noise-limited contour is 1,411,803 persons. The STA noise-limited contour encompasses 99.2 % of the population that resides within the noise-limited contour for the CP facility.

In accordance with the policies set forth in the Third Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television in MB Docket No. 07-91, Hearst-Argyle, now, seeks to modify the outstanding construction permit to specify the facilities authorized in the STA. This application qualifies for expedited action as explained elsewhere.

The instant proposal is, effectively, a check-list proposal and new interference studies are not required. For the sakes of completeness and convenience, the radiation patterns for the Dielectric, type THV-6A7-R C170SP antenna that will be employed, are provided herein. Figure 1 is the horizontal plane pattern for the proposed modified CP operation. Figure 2 is a tabulation of relative field data for the pattern of Figure 1. The elevation pattern for the antenna is provided in Figure 3. The tabulation of relative field data for the pattern of Figure 3 is included as Figure 4.

Figure 5 is a map which shows the predicted principal city, 43 dBu, F(50,90), and noise-limited, 36 dBu, F(50,90), contours for both the CP authorized facility and the CP modification proposed herein. The map demonstrates that the 36 dBu, F(50,90) contour that is proposed for the modified CP operation does not extend beyond that authorized pursuant to the outstanding construction permit. Also, the principal community, Oklahoma City, will be encompassed by the proposed modified CP 43 dBu, F(50,90), contour, as is the case for the outstanding construction permit operation. Figure 6 provides the underlying supporting information for the contours for the proposed modified CP operation. The supporting data for the contours for the outstanding construction permit contours are provided in Figure 7.

As to environmental impact concerns, only the question relating to compliance with the FCC's adopted guidelines regarding radio-frequency radiation (rfr) to the public and to workers needs to be addressed for this existing broadcast use facility.

The tower that supports the proposed modified CP antenna, with the radiation center at a level of 366 meters above the ground, also, supports the Channel 5 (76 MHz) antenna for station KOCO-TV. This latter antenna is a Harris, 6-bay , so-called, Batwing. The antenna radiation center is 462 meters above ground level. The maximum peak visual effective radiated power is 100 kW. The maximum aural effective radiated power is 10 % of the peak visual effective radiated power.

Figure 8 is the vertical plane radiation pattern for a Harris, model TAB-6L, antenna that was extracted from an old catalog. The pattern of Figure 8 is for a beam tilt of 0.7 °, whereas the KOCO-TV antenna has a beam tilt of 0.75 °. The pattern of Figure 8 reasonably represents the radiation characteristic for the KOCO-TV antenna despite the small difference in the electrical beam tilt, and demonstrates that for depression angles that exceed 8.7 ° below the horizontal plane, the relative field does not exceed 26 % of the maximum that occurs at the 0.7(5) ° electrical beam tilt angle.

The relative field in the vertical plane for steep depression angles (8°-90° below the horizontal plane) for the proposed modified CP antenna does not exceed 27% of the maximum radiation occurring in the vertical plane. (See Figure 3.)

A test calculation for the modified CP operation, using OET Bulletin 65, Edition 97-01, procedures, results in a prediction of an equivalent plane wave power density of 0.00086 $mW/cm^2$, corresponding to 0.4 % of the maximum permissible exposure (MPE) of 0.2 $mW/cm^2$ at uncontrolled (public access) locations at a target that is located 2 meters above ground level at the tower base. This is the maximum exposure that could occur from the modified CP operation at any point within a radius of 2590 meters from

the tower base. The 2590 meter distance was determined as the earth impingement distance for a ray from the antenna center at a depression angle of 8 ° below the horizontal plane, assuming flat earth.

For distances beyond 2590 meters from the tower base, another test calculation, using the maximum radiation of 47.0 kW at a distance of 2590 meters, yields a contribution of 0.1 % of the MPE. This latter figure represents the greatest contribution that could result at any location beyond 2590 meters from the tower.

Similar test calculations were performed for the KOCO-TV facility. The KOCO-TV contribution to the MPE at the target at the tower base was determined to be 0.3 %. This contribution to the MPE is not exceeded anywhere within a radius of 3,746 meters from the tower base. Beyond 3,746 meters from the tower, the KOCO-TV contribution to the MPE is too small to warrant further consideration. The cumulative effect of the KOCO-TV and KOCO-DT modified CP operations is well below the MPE. The foregoing demonstrates that the KOCO-TV and KOCO-DT modified CP operations are in compliance with the FCC's adopted guidelines regarding rfr exposure to the public.

Insofar as controlled location worker protection to rfr overexposure is concerned, the following is germane. The KOCO-TV/KOCO-DT modified CP supporting tower is girded by a fence with a gate that is kept locked at all times. Entry within the fenced area is available only to authorized persons. Radiation hazard warning signs are posted on the fence (one on each fence side) to alert workers of the prospect for excessive radiation exposure. The fenced area qualifies as a controlled location work area. Procedures that currently are in place regarding power reduction, or the termination of excitation to an antenna, according to the work effort that is involved to avoid worker over exposure to rfr, will continue to be observed. In this manner, avoidance of overexposure of workers to rfr will continue to be achieved.

In determining the distances to contours for the KOCO-DT CP and proposed modified CP operations, use was made of the U.S.G.S. 30" terrain elevation database to determine the terrain elevation averages from 3.2 to 16.1 kilometers along specified radials.

I declare under penalty of perjury that the foregoing is true and correct. Executed on February 12, 2008.

Bernard R. Segal, P.E.

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Maryland Registration # 25811

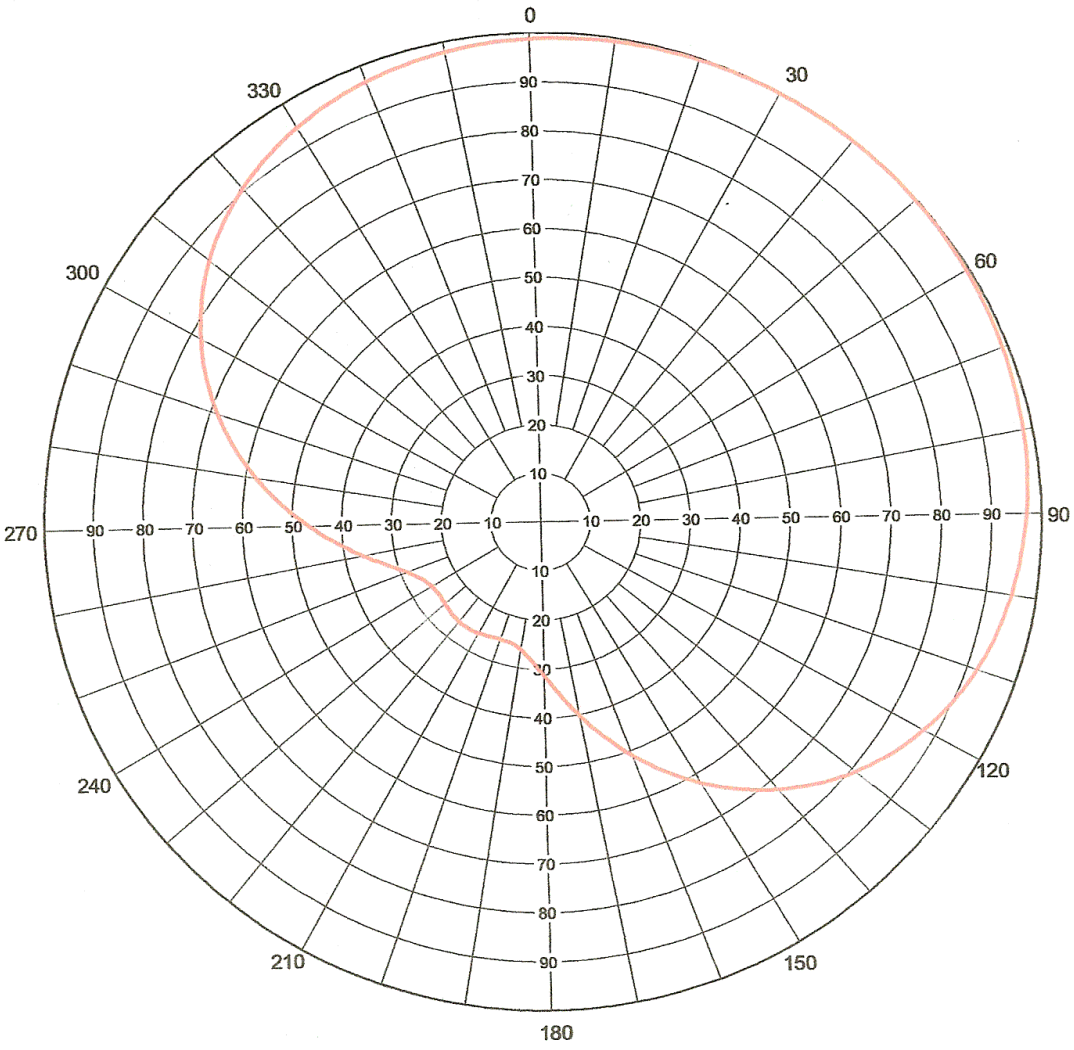
Dielectric

FIGURE 1

| | |
|---|---|
| Proposal Number | |
| Date | 08 Aug 2001 |
| Call Letters | KOCO-DT Channel 7 |
| Location | Oklahoma City, OK |
| Customer | |
| Antenna Type | THV-6A7-R C170SP |

## AZIMUTH PATTERN

| | | | |
|---|---|---|---|
| RMS Gain at Main Lobe | 1.70 (2.30 dB) | Frequency | 177 MHz |
| Calculated / Measured | Calculated | Drawing # | THV-C170SP-7 |




Remarks:

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FIGURE 2

TABULATION OF AZIMUTH PATTERN DATA
KOCO-DT, OKLAHOMA CITY CITY, OKLAHOMA
CP MOD: CHANNEL 7 47.0 KW (MAX-DA) 370 METERS

| Azimuth (Degrees T.) | Relative Field |
|---|---|
| 0 | 0.988 |
| 10 | 0.993 |
| 20 | 0.997 |
| 30 | 1.000 |
| 37+ | 1.000 |
| 40 | 1.000 |
| 50 | 0.998 |
| 60 | 0.995 |
| 70 | 0.990 |
| 80 | 0.983 |
| 90 | 0.971 |
| 100 | 0.952 |
| 110 | 0.922 |
| 120 | 0.875 |
| 130 | 0.809 |
| 140 | 0.723 |
| 150 | 0.621 |
| 160 | 0.509 |
| 170 | 0.401 |
| 180 | 0.312 |
| 190 | 0.262 |
| 200- | 0.252 |
| 210 | 0.259 |
| 217+ | 0.261 |
| 220 | 0.261 |
| 230 | 0.254 |
| 235- | 0.252 |
| 240 | 0.254 |
| 250 | 0.287 |
| 260 | 0.362 |
| 270 | 0.465 |
| 280 | 0.577 |
| 290 | 0.684 |
| 300 | 0.777 |
| 310 | 0.851 |
| 320 | 0.905 |
| 330 | 0.942 |
| 340 | 0.965 |
| 350 | 0.979 |

+ denotes a local maximum; - denotes a local minimum

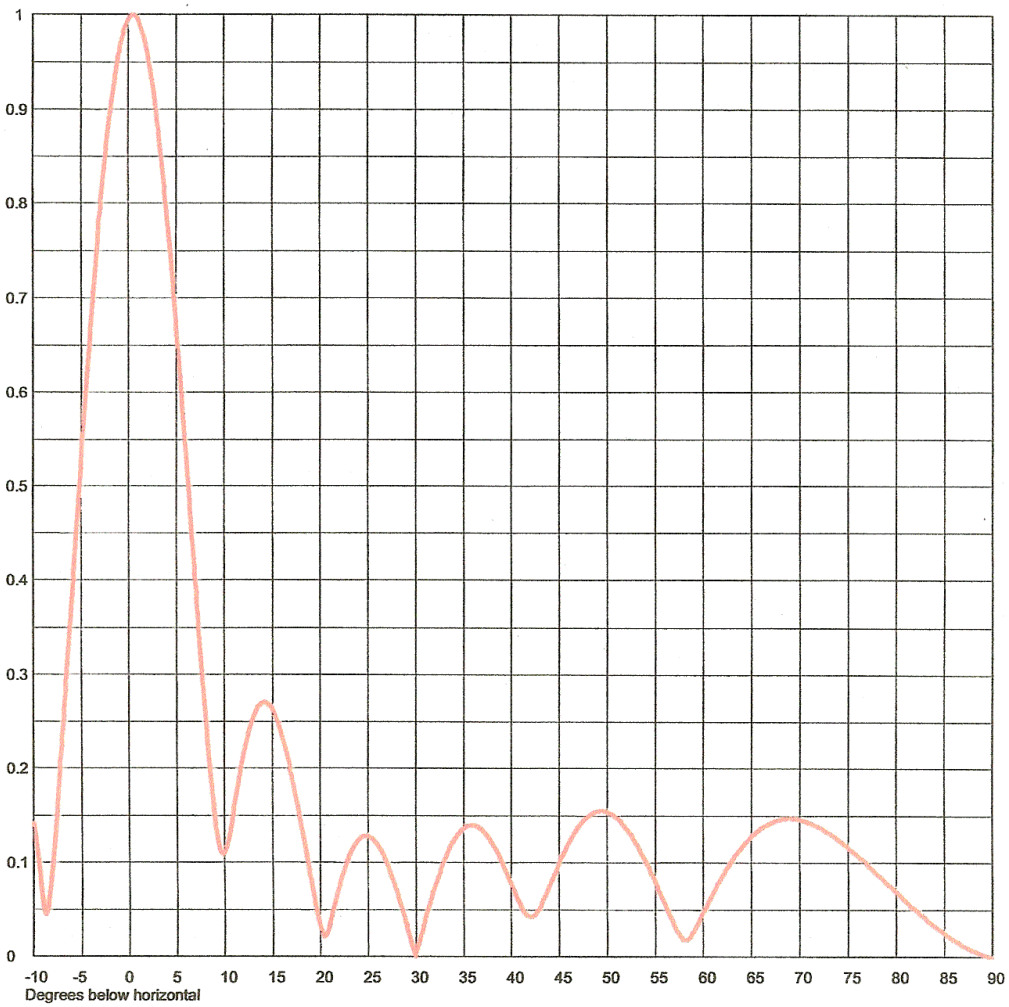
Dielectric

FIGURE 3

| | | | |
|---|---|---|---|
| Proposal Number | | | |
| Date | 08 Aug 2001 | | |
| Call Letters | KOCO-DT | Channel | 7 |
| Location | Oklahoma City, OK | | |
| Customer | | | |
| Antenna Type | THV-6A7-R C170SP | | |

## ELEVATION PATTERN

| | | | |
|---|---|---|---|
| RMS Gain at Main Lobe | 6.0 (7.78 dB) | Beam Tilt | 0.50 Degrees |
| RMS Gain at Horizontal | 5.9 (7.71 dB) | Frequency | 177.00 MHz |
| Calculated / Measured | Calculated | Drawing # | 06V060050 |




Remarks:

Dielectric

FIGURE 4

Proposal Number
Date 08 Aug 2001
Call Letters KOCO-DT Channel 7
Location Oklahoma City, OK
Customer
Antenna Type THV-6A7-R C170SP

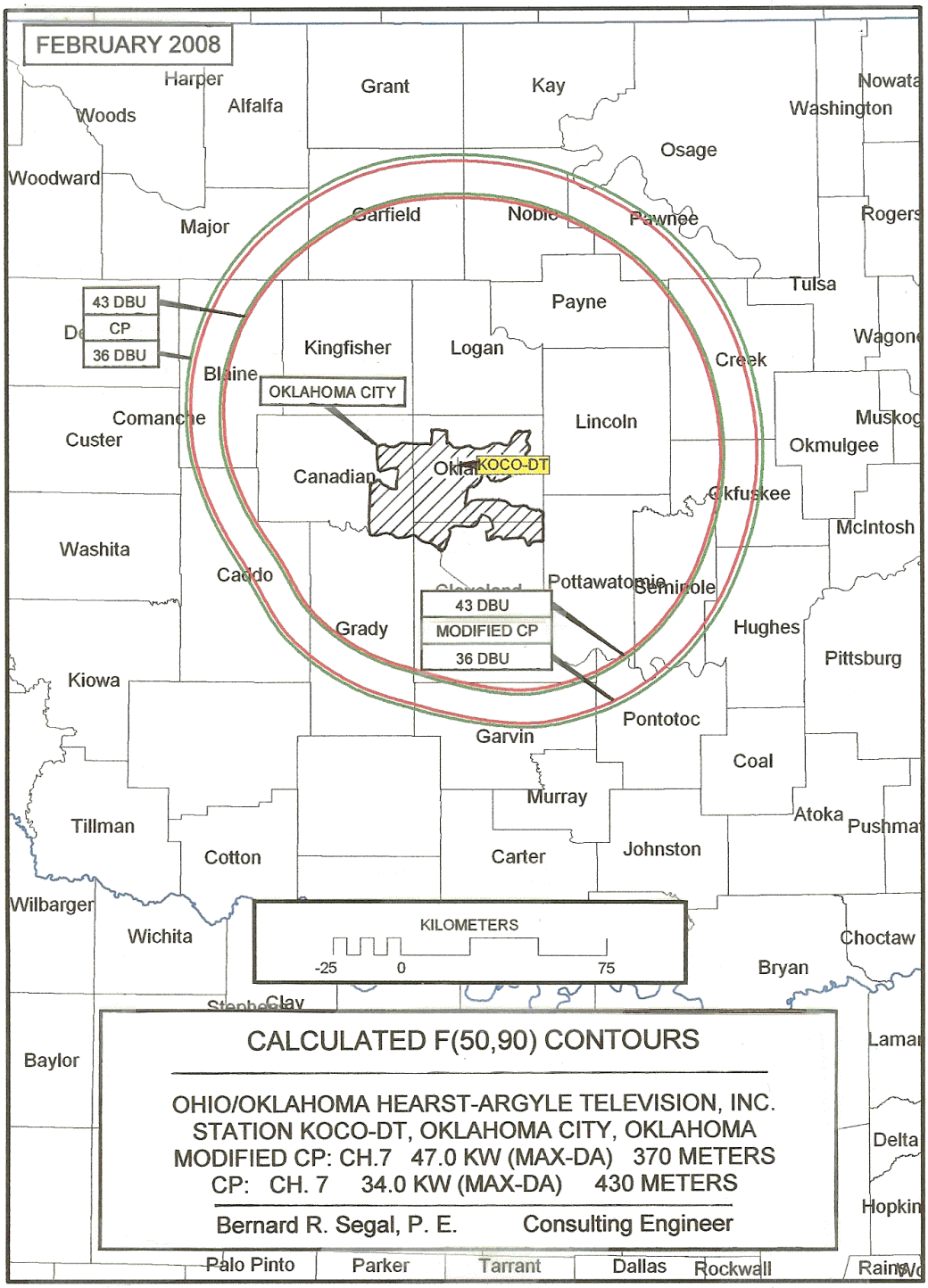
## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # 06V060050

| Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field | Angle | Field |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -10.0 | 0.150 | 2.4 | 0.939 | 10.6 | 0.130 | 30.5 | 0.019 | 51.0 | 0.148 | 71.5 | 0.141 |
| -9.5 | 0.106 | 2.6 | 0.926 | 10.8 | 0.142 | 31.0 | 0.037 | 51.5 | 0.144 | 72.0 | 0.138 |
| -9.0 | 0.062 | 2.8 | 0.911 | 11.0 | 0.154 | 31.5 | 0.055 | 52.0 | 0.137 | 72.5 | 0.135 |
| -8.5 | 0.048 | 3.0 | 0.895 | 11.5 | 0.184 | 32.0 | 0.072 | 52.5 | 0.130 | 73.0 | 0.132 |
| -8.0 | 0.091 | 3.2 | 0.878 | 12.0 | 0.212 | 32.5 | 0.087 | 53.0 | 0.122 | 73.5 | 0.129 |
| -7.5 | 0.153 | 3.4 | 0.859 | 12.5 | 0.235 | 33.0 | 0.101 | 53.5 | 0.113 | 74.0 | 0.125 |
| -7.0 | 0.222 | 3.6 | 0.840 | 13.0 | 0.252 | 33.5 | 0.113 | 54.0 | 0.103 | 74.5 | 0.121 |
| -6.5 | 0.294 | 3.8 | 0.820 | 13.5 | 0.264 | 34.0 | 0.122 | 54.5 | 0.093 | 75.0 | 0.117 |
| -6.0 | 0.367 | 4.0 | 0.798 | 14.0 | 0.270 | 34.5 | 0.130 | 55.0 | 0.082 | 75.5 | 0.113 |
| -5.5 | 0.441 | 4.2 | 0.776 | 14.5 | 0.270 | 35.0 | 0.136 | 55.5 | 0.070 | 76.0 | 0.108 |
| -5.0 | 0.515 | 4.4 | 0.753 | 15.0 | 0.265 | 35.5 | 0.139 | 56.0 | 0.058 | 76.5 | 0.104 |
| -4.5 | 0.587 | 4.6 | 0.729 | 15.5 | 0.254 | 36.0 | 0.140 | 56.5 | 0.047 | 77.0 | 0.099 |
| -4.0 | 0.656 | 4.8 | 0.704 | 16.0 | 0.239 | 36.5 | 0.138 | 57.0 | 0.035 | 77.5 | 0.094 |
| -3.5 | 0.721 | 5.0 | 0.678 | 16.5 | 0.220 | 37.0 | 0.135 | 57.5 | 0.025 | 78.0 | 0.089 |
| -3.0 | 0.781 | 5.2 | 0.652 | 17.0 | 0.197 | 37.5 | 0.129 | 58.0 | 0.018 | 78.5 | 0.084 |
| -2.8 | 0.804 | 5.4 | 0.626 | 17.5 | 0.172 | 38.0 | 0.122 | 58.5 | 0.019 | 79.0 | 0.079 |
| -2.6 | 0.825 | 5.6 | 0.599 | 18.0 | 0.145 | 38.5 | 0.113 | 59.0 | 0.026 | 79.5 | 0.075 |
| -2.4 | 0.846 | 5.8 | 0.571 | 18.5 | 0.117 | 39.0 | 0.102 | 59.5 | 0.035 | 80.0 | 0.070 |
| -2.2 | 0.865 | 6.0 | 0.544 | 19.0 | 0.088 | 39.5 | 0.091 | 60.0 | 0.046 | 80.5 | 0.065 |
| -2.0 | 0.883 | 6.2 | 0.516 | 19.5 | 0.060 | 40.0 | 0.079 | 60.5 | 0.056 | 81.0 | 0.060 |
| -1.8 | 0.900 | 6.4 | 0.487 | 20.0 | 0.035 | 40.5 | 0.067 | 61.0 | 0.066 | 81.5 | 0.055 |
| -1.6 | 0.916 | 6.6 | 0.459 | 20.5 | 0.021 | 41.0 | 0.056 | 61.5 | 0.076 | 82.0 | 0.051 |
| -1.4 | 0.930 | 6.8 | 0.431 | 21.0 | 0.033 | 41.5 | 0.047 | 62.0 | 0.085 | 82.5 | 0.046 |
| -1.2 | 0.944 | 7.0 | 0.403 | 21.5 | 0.053 | 42.0 | 0.043 | 62.5 | 0.094 | 83.0 | 0.042 |
| -1.0 | 0.956 | 7.2 | 0.375 | 22.0 | 0.073 | 42.5 | 0.044 | 63.0 | 0.102 | 83.5 | 0.037 |
| -0.8 | 0.966 | 7.4 | 0.347 | 22.5 | 0.090 | 43.0 | 0.051 | 63.5 | 0.109 | 84.0 | 0.033 |
| -0.6 | 0.975 | 7.6 | 0.320 | 23.0 | 0.104 | 43.5 | 0.062 | 64.0 | 0.116 | 84.5 | 0.029 |
| -0.4 | 0.983 | 7.8 | 0.293 | 23.5 | 0.115 | 44.0 | 0.074 | 64.5 | 0.122 | 85.0 | 0.025 |
| -0.2 | 0.989 | 8.0 | 0.267 | 24.0 | 0.123 | 44.5 | 0.086 | 65.0 | 0.127 | 85.5 | 0.022 |
| 0.0 | 0.994 | 8.2 | 0.242 | 24.5 | 0.127 | 45.0 | 0.098 | 65.5 | 0.132 | 86.0 | 0.018 |
| 0.2 | 0.998 | 8.4 | 0.218 | 25.0 | 0.128 | 45.5 | 0.109 | 66.0 | 0.136 | 86.5 | 0.015 |
| 0.4 | 1.000 | 8.6 | 0.195 | 25.5 | 0.126 | 46.0 | 0.119 | 66.5 | 0.139 | 87.0 | 0.012 |
| 0.6 | 1.000 | 8.8 | 0.173 | 26.0 | 0.120 | 46.5 | 0.129 | 67.0 | 0.142 | 87.5 | 0.009 |
| 0.8 | 0.999 | 9.0 | 0.154 | 26.5 | 0.112 | 47.0 | 0.137 | 67.5 | 0.144 | 88.0 | 0.006 |
| 1.0 | 0.997 | 9.2 | 0.137 | 27.0 | 0.101 | 47.5 | 0.143 | 68.0 | 0.145 | 88.5 | 0.004 |
| 1.2 | 0.993 | 9.4 | 0.124 | 27.5 | 0.087 | 48.0 | 0.148 | 68.5 | 0.146 | 89.0 | 0.002 |
| 1.4 | 0.987 | 9.6 | 0.114 | 28.0 | 0.072 | 48.5 | 0.152 | 69.0 | 0.147 | 89.5 | 0.001 |
| 1.6 | 0.980 | 9.8 | 0.110 | 28.5 | 0.055 | 49.0 | 0.154 | 69.5 | 0.146 | 90.0 | 0.000 |
| 1.8 | 0.972 | 10.0 | 0.109 | 29.0 | 0.038 | 49.5 | 0.155 | 70.0 | 0.146 | | |
| 2.0 | 0.963 | 10.2 | 0.113 | 29.5 | 0.019 | 50.0 | 0.154 | 70.5 | 0.144 | | |
| 2.2 | 0.952 | 10.4 | 0.121 | 30.0 | 0.000 | 50.5 | 0.152 | 71.0 | 0.143 | | |

Remarks:

FIGURE 5


FEBRUARY 2008
Harper
Grant
Kay
Nowata
Woods
Alfalfa
Washington
Osage
Woodward
Major
Garfield
Noble
Pawnee
Rogers
Tulsa
43 DBU
CP
36 DBU
Payne
Kingfisher
Logan
Creek
Blaine
OKLAHOMA CITY
Comanche
Custer
Lincoln
Okmulgee
Canadian
KOCO-DT
Okfuskee
McIntosh
Washita
Caddo
Pottawatomie
Seminole
43 DBU
MODIFIED CP
36 DBU
Grady
Hughes
Pittsburg
Kiowa
Pontotoc
Garvin
Coal
Murray
Tillman
Atoka
Cotton
Carter
Johnston
Wilbarger
KILOMETERS
-25
0
75
Wichita
Choctaw
Bryan
Clay
Baylor
CALCULATED F(50,90) CONTOURS
OHIO/OKLAHOMA HEARST-ARGYLE TELEVISION, INC.
STATION KOCO-DT, OKLAHOMA CITY, OKLAHOMA
MODIFIED CP: CH.7 47.0 KW (MAX-DA) 370 METERS
CP: CH. 7 34.0 KW (MAX-DA) 430 METERS
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Delta
Palo Pinto
Parker
Tarrant
Dallas
Rockwall

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Figure 6

KOCO-DT, OKLAHOMA CITY, OKLAHOMA
CP MOD: CH. 7 47.0 KW (MAX-DA) 370 METERS

Tabulation of Average Elevations, ERP's Employed, and Distances to F(50,90) Contours

Site Coordinates: 35° 33' 45" North Latitude
97° 29' 24" West Longitude

Antenna Radiation Center: 721 m AMSL

| Azimuth | Radiation Center Above 3.2-16.1 km Terrain Avg. | ERP | Distance to 43 dBu Contour | Distance to 36 dBu Contour |
|---|---|---|---|---|
| (Deg. T.) | (meters) | (kW) | (km) | (km) |
| 0 | 368 | 45.9 | 96.7 | 110.0 |
| 15 | 374 | 46.5 | 97.3 | 110.6 |
| 30 | 382 | 47.0 | 97.9 | 111.3 |
| 45 | 395 | 46.9 | 98.8 | 112.4 |
| 60 | 395 | 46.5 | 98.7 | 112.3 |
| 75 | 384 | 45.7 | 97.8 | 111.2 |
| 90 | 374 | 44.3 | 96.9 | 110.2 |
| 105 | 361 | 41.3 | 95.4 | 108.5 |
| 120 | 363 | 36.0 | 94.5 | 107.5 |
| 135 | 365 | 27.6 | 92.6 | 105.4 |
| 150 | 362 | 18.1 | 89.0 | 101.6 |
| 165 | 362 | 9.73 | 84.2 | 96.7 |
| 180 | 357 | 4.58 | 78.2 | 90.5 |
| 195 | 360 | 3.10 | 75.5 | 87.7 |
| 210 | 361 | 3.15 | 75.6 | 87.9 |
| 225 | 362 | 3.13 | 75.6 | 87.9 |
| 240 | 341 | 3.03 | 73.9 | 86.1 |
| 255 | 341 | 4.93 | 77.6 | 89.9 |
| 270 | 354 | 10.2 | 84.0 | 96.5 |
| 285 | 365 | 18.7 | 89.5 | 102.1 |
| 300 | 376 | 28.4 | 93.6 | 106.4 |
| 315 | 381 | 36.2 | 95.8 | 109.0 |
| 330 | 378 | 41.7 | 96.7 | 110.0 |
| 345 | 381 | 44.4 | 97.4 | 110.7 |
| Average* | 370 | | | |

* The average is for the eight standard radials.

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Figure 7

KOCO-DT, OKLAHOMA CITY, OKLAHOMA
CP: CH. 7 34.0 KW AVG. (MAX-DA) 430 METERS

Tabulation of Average Elevations, ERP's Employed, and Distances to F(50,90) Contours

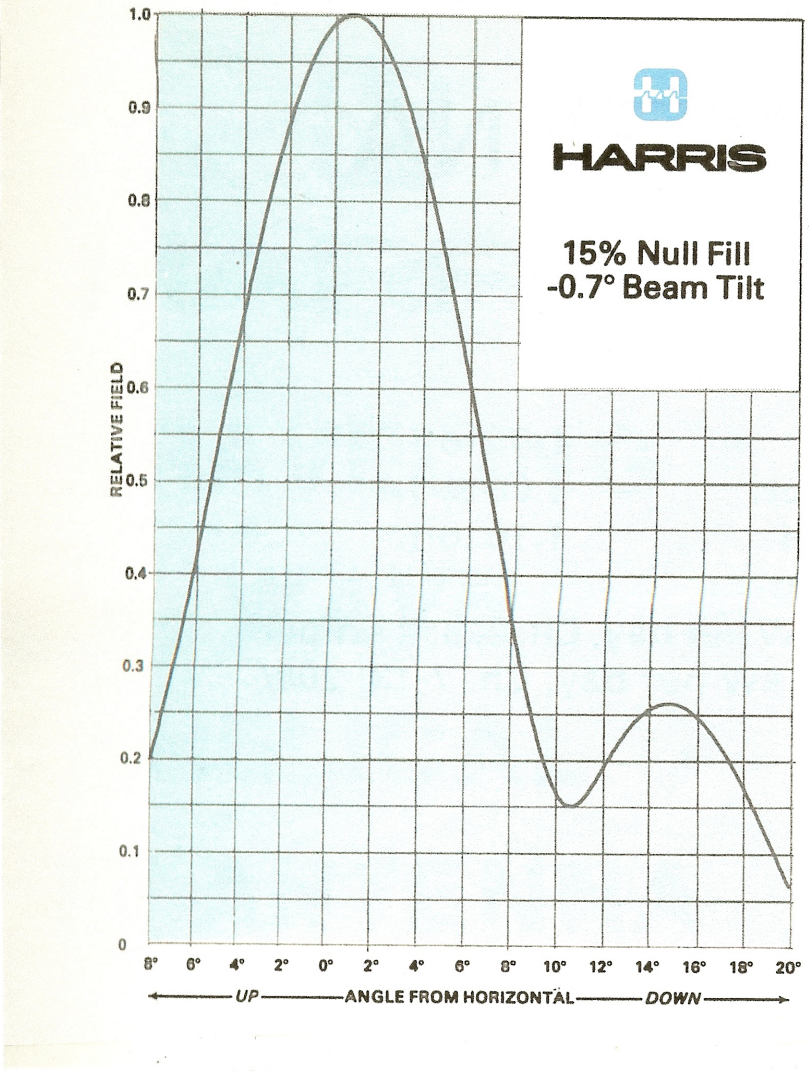
Site Coordinates: 35° 33' 45" North Latitude
97° 29' 24" West Longitude

Antenna Radiation Center: 781 m AMSL

| Azimuth | Radiation Center Above 3.2-16.1 km Terrain Avg. | ERP | Distance to 43 dBu Contour | Distance to 36 dBu Contour |
|---|---|---|---|---|
| (Deg. T.) | (meters) | (kW) | (km) | (km) |
| 0 | 428 | 33.2 | 98.0 | 112.2 |
| 15 | 434 | 33.7 | 98.5 | 112.9 |
| 30 | 442 | 34.0 | 99.1 | 113.6 |
| 45 | 455 | 33.9 | 100.1 | 114.9 |
| 60 | 455 | 33.7 | 99.9 | 114.7 |
| 75 | 444 | 33.1 | 99.0 | 113.6 |
| 90 | 424 | 32.1 | 98.1 | 112.4 |
| 105 | 421 | 29.9 | 96.8 | 110.6 |
| 120 | 423 | 26.0 | 95.8 | 109.5 |
| 135 | 425 | 20.0 | 93.9 | 107.3 |
| 150 | 422 | 13.1 | 90.5 | 103.3 |
| 165 | 422 | 7.04 | 85.8 | 98.1 |
| 180 | 417 | 3.31 | 79.6 | 92.0 |
| 195 | 420 | 2.25 | 76.7 | 89.3 |
| 210 | 421 | 2.28 | 76.8 | 89.4 |
| 225 | 422 | 2.26 | 76.8 | 89.4 |
| 240 | 401 | 2.19 | 75.3 | 87.9 |
| 255 | 401 | 3.57 | 79.1 | 91.6 |
| 270 | 414 | 7.35 | 85.6 | 98.0 |
| 285 | 425 | 13.5 | 90.9 | 103.8 |
| 300 | 436 | 20.5 | 94.7 | 108.5 |
| 315 | 441 | 26.2 | 96.9 | 111.2 |
| 330 | 438 | 30.2 | 97.9 | 112.2 |
| 345 | 441 | 32.1 | 98.5 | 113.0 |
| Average* | 430 | | | |

* The average is for the eight standard radials.

FIGURE 8




TAB-6L

ANTENNA ELEVATION PATTERN

OHIO/OKLAHOMA HEARST-ARGYLE TELEVISION, INC.
STATION KOCO-TV, OKLAHOMA CITY, OKLAHOMA
CH. 5 100 KW (MAX-DA) 464 METERS

Bernard R. Segal, P. E. Consulting Engineer