

ENGINEERING EXHIBIT

APPLICATION FOR CONSTRUCTION PERMIT  
FOR MINOR CHANGE TO FM TRANSLATOR STATION  
K215BA  
BEAUMONT/CABAZON, CALIFORNIA

CHANNEL 215D, 90.9 MHz

PREPARED FOR:

SANTA MONICA COMMUNITY COLLEGE DISTRICT  
1900 PICO BOULEVARD  
SANTA MONICA, CALIFORNIA 90405

FEBRUARY 20, 2001

PREPARED BY:

JOHN J. DAVIS  
CONSULTING ENGINEER  
POST OFFICE BOX 128  
SIERRA MADRE, CALIFORNIA 91025-0128  
(626) 355-6909  
FAX: (626) 355-4890  
E-Mail: [jjdavis@CompuServe.com](mailto:jjdavis@CompuServe.com)

## 1.0 INTRODUCTION

This Engineering Exhibit was prepared for SANTA MONICA COMMUNITY COLLEGE DISTRICT ("SMCCD"), licensee of FM translator station K215BA, Beaumont/Cabazon/Yucca Valley, California, for modification of station license to change the antenna serving Beaumont/Cabazon. The two Scala HDCA-5 (horizontal and vertical) antennas pointing at 75 degrees, toward Yucca Valley, remain unchanged. It is also proposed to increase the effective radiated power from seven watts to 10 watts, consistent with the current FM Translator Rules.

## 2.0 ANTENNA CHANGE

It is proposed to replace the antenna array pointing toward Beaumont and Cabazon with a single Scala, Model CA-2CP, circularly polarized dipole/reflector antenna, oriented at 195 degrees. The present antenna array is pole-mounted only a few feet above the ground, and the landlord has requested that all pole mounted antennas be moved to one of the self-supporting towers. This will also be beneficial since these antennas are usually damaged during the winter months by the heavy snows that accumulate at the 8,000 feet elevation site. It is proposed to mount the new Scala CA-2CP antenna at 18 meters AGL. There will be no change to the existing Scala HDCA-5H/V 5-element Yagi antennas, pointing toward Yucca Valley. Figure 1 shows the proposed antenna elevation.

Table II is a tabulation of the composite antenna pattern, and Figure 2 is a polar plot of the composite azimuth pattern.

### 3.0 INTERFERENCE CONSIDERATIONS

Table I lists all of the co-channel and adjacent channel stations which might have an effect upon the modified FM translator. No new interference contour overlaps will be created as a result of the proposed changes. There are currently two existing overlap situations:

- (1) There is a second adjacent channel interference contour overlap with K217BJ. K217BJ and K215BA are co-located, and the interference area is confined to an area immediately around the translator site, which is unpopulated. This interference condition has existed for many years without any problems.
- (2) There is interference contour overlap with a proposed co-channel Class A application for Coachella, California. This application was filed in 1997 (BPED-19970725MH) and amended in 1999 as a result of a settlement agreement. It is quite likely that K215BA will have to terminate its operation once the Coachella station commences operation, whether the proposed antenna change is made or not.

Figure 3 shows the 60 dBu coverage contour of the modified translator. Figure 4 shows the interference contour overlap to the proposed co-channel NCE-FM station construction permit for Coachella, California.

APPLICATION FOR MODIFICATION OF  
FM TRANSLATOR K215BA  
BEAUMONT/CABAZON, CALIFORNIA  
PREPARED FOR:

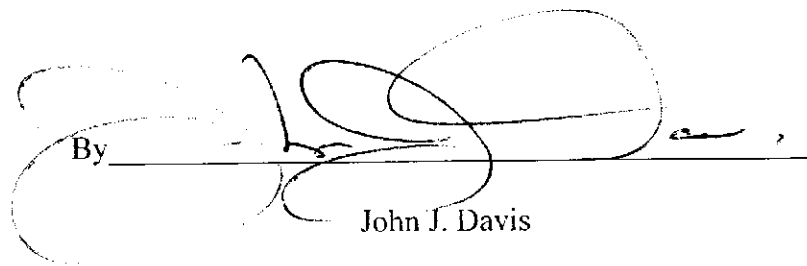
SANTA MONICA COMMUNITY COLLEGE DISTRICT  
1900 PICO BOULEVARD  
SANTA MONICA, CALIFORNIA

4.0

AFFIDAVIT

STATE OF CALIFORNIA        )  
  )     ss:  
COUNTY OF LOS ANGELES    )

JOHN J. DAVIS, does hereby swear that he is a consulting electronics engineer with offices in Sierra Madre, California; that he is a Registered Professional Engineer in the State of California; that his qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission; that the foregoing engineering statement was prepared by him or under his direction; and that the statements contained therein are true of his own knowledge and belief, and as to those statements, he verily believes them to be true and correct.

By  \_\_\_\_\_  
John J. Davis

February 20, 2001

TABLE I

MODIFIED K215BA  
SANTA MONICA COMMUNITY COLLEGE DISTRICT

| REFERENCE       | CH#       | 215D - 90.9 MHz, Pwr= 0.01 kW, HAAT=751.0M, COR= 2432 M         |          |                  |           |                   |                  | DISPLAY DATES              |                      |        |  |
|-----------------|-----------|---|----------|------------------|-----------|-------------------|------------------|----------------------------|----------------------|--------|--|
| 34 02 17 N      |           | Average Protected F(50-50)= 15.3 km                             |          |                  |           |                   |                  | DATA 02-10-01              |                      |        |  |
| 116 48 49 W     |           | Ave. F(50-10) 40 dBu= 55.8 54 dBu= 24.4 80 dBu= 2.2 100 dBu= .2 |          |                  |           |                   |                  | SEARCH 02-15-01            |                      |        |  |
| CH CITY         | CALL CITY | TYPE STATE  | AZI. <-- | DIST FILE #      | LAT. LNG. | Pwr (kW) HAAT (M) | COR (M) INT (km) | PRO (km) LICENSEE          | *IN* (Overlap in km) | *OUT*  |  |
| 215D            | K215BA    | LIC DHN   | 0.0      | 0.00             | 34 02 17  | 0.007             | 2414             | 13.4                       | -66.83               | -69.22 |  |
| Beaumont        |           | CA  | 180.0    | BLFT19910702TA   | 116 48 49 | 751               | 51.6             | Santa Monica Community Col |                      |        |  |
| 215A            | 970725    | APP C   | 108.8    | 57.31            | 33 52 15  | 0.190             | 818              | 11.7                       | 2.01                 | -10.19 |  |
| Coachella       |           | CA  | 288.8    | BPED19970725MH   | 116 13 37 | 94                | 40.0             | Shepherd Communications In |                      |        |  |
| 217D            | K217BJ    | LIC DHN   | 0.0      | 0.00             | 34 02 17  | 0.010             | 2434             | 15.4                       | -15.47               | -15.63 |  |
| Banning, Etc.   |           | CA  | 180.0    | BLFT19911004TB   | 116 48 49 | 771               | 0.2              | Family Stations, Inc.,     |                      |        |  |
| 269A            | KXSB      | LIC CN  | 346.0    | 20.01            | 34 12 47  | 0.300             | 2616             | 28.0                       | 5.5R                 | 14.5M  |  |
| Big Bear Lake   |           | CA  | 166.0    | BLH19951010KB    | 116 51 59 | 431               | 0.0              | Lazer Broadcasting Corpora |                      |        |  |
| 216C            | XETRAF    | OPE HN  | 186.5    | 170.12           | 32 31 03  | 100.000           | 0                | 56.5                       | 68.81                | 89.20  |  |
| Tijuana         |           | BN  | 6.5      |                  | 117 01 05 | 136               | 86.1             |                            |                      |        |  |
| 216C            | XETRAF    | USE N   | 186.5    | 170.12           | 32 31 03  | 100.000           | 0                | 91.8                       | 18.30                | 53.93  |  |
| Tijuana         |           | BN  | 6.5      |                  | 117 01 05 | 600               | 136.6            |                            |                      |        |  |
| 217B            | 970609    | APP CX  | 14.2     | 69.39            | 34 38 39  | 1.550             | 1836             | 52.3                       | 51.49                | 16.84  |  |
| Barstow         |           | CA  | 194.2    | BPED19970609MG   | 116 37 38 | 698               | 2.6              | Living Proof Inc           |                      |        |  |
| 217B            | 970609    | APP CN  | 14.2     | 69.39            | 34 38 39  | 1.550             | 1836             | 52.3                       | 51.49                | 16.84  |  |
| Barstow         |           | CA  | 194.2    | BPED19970609MG   | 116 37 38 | 698               | 2.6              | Living Proof Inc           |                      |        |  |
| 212D            | K212DF    | CP C  | 343.5    | 23.89            | 34 14 40  | 0.010             | 2110             | 3.2                        | 8.42                 | 20.52  |  |
| Big Bear        |           | CA  | 163.5    | BNPFT19991117AAE | 116 53 16 | 14                | 0.2              | Educational Media Foundati |                      |        |  |
| 216D            | K216CX    | LIC DVN   | 73.8     | 31.00            | 34 06 55  | 0.056             | 1223             | 6.3                        | 6.65                 | 0.28   |  |
| Yucca Valley    |           | CA  | 253.8    | BLFT19950426TG   | 116 29 27 | 51                | 9.1              | Calvary Chapel Of Twin Fal |                      |        |  |
| 216D            | K216DZ    | CP DCN  | 308.6    | 32.95            | 34 13 21  | 0.001             | 2041             | 5.8                        | 8.15                 | 2.82   |  |
| Running Springs |           | CA  | 128.6    | BPFT19970319TB   | 117 05 37 | 505               | 9.6              | Calvary Chapel Of Twin Fal |                      |        |  |
| 215D            | K215DF    | LIC V   | 119.0    | 87.13            | 33 39 23  | 0.010             | 578              | 3.2                        | 61.72                | 28.16  |  |
| Coachella       |           | CA  | 299.0    | BLFT19991129AAY  | 115 59 27 |                   | 10.2             | The Assn. For Community Ed |                      |        |  |
| 216D            | K216DW    | LIC CN  | 118.3    | 39.96            | 33 52 03  | 0.010             | 498              | 7.7                        | 13.69                | 7.83   |  |
| Cathedral City  |           | CA  | 298.3    | BLFT19981009TF   | 116 25 58 | 178               | 11.0             | Educational Media Foundati |                      |        |  |
| 216D            | K216EJ    | CP DVN  | 258.8    | 43.81            | 33 57 38  | 0.007             | 959              | 11.4                       | 11.07                | 8.02   |  |
| Riverside       |           | CA  | 78.8     | BPFT19971022TE   | 117 16 43 | 510               | 17.5             | Pensacola Christian Colleg |                      |        |  |
| 212D            | K212EP    | APP V   | 69.7     | 37.82            | 34 09 18  | 0.010             | 1193             | 3.2                        | 22.35                | 34.45  |  |
| Landers         |           | CA  | 249.7    | BPFT20010108AAK  | 116 25 43 |                   | 0.2              | Calvary Chapel Of Twin Fal |                      |        |  |
| 212A            | 970725    | APP DCN   | 108.8    | 57.31            | 33 52 15  | 0.370             | 818              | 13.8                       | 40.71                | 43.28  |  |
| Coachella       |           | CA  | 288.8    | BPED19970725MH   | 116 13 37 | 95                | 1.3              | Shepherd Communications In |                      |        |  |
| 212D            | K212EP    | LIC CN  | 70.9     | 39.78            | 34 09 16  | 0.010             | 1161             | 3.2                        | 24.31                | 36.41  |  |
| Landers         |           | CA  | 250.9    | BLFT19970605TC   | 116 24 21 |                   | 0.2              | Calvary Chapel Of Twin Fal |                      |        |  |
| 213D            | K213AB    | LIC DHN   | 118.5    | 39.93            | 33 51 58  | 0.015             | 480              | 8.6                        | 24.41                | 31.25  |  |
| Palm Springs    |           | CA  | 298.5    | BLFT19980624TI   | 116 26 03 | 175               | 0.3              | Educational Media Foundati |                      |        |  |
| 212A            | 970324    | APP DCN   | 115.6    | 60.43            | 33 48 07  | 0.320             | 552              | 19.0                       | 43.92                | 41.24  |  |
| Coachella       |           | CA  | 295.6    | BPED19970324MA   | 116 13 29 | 184               | 1.3              | Creative Educa. Media Corp |                      |        |  |
| 06NT            | K06MB     | AP D N  | 115.6    | 60.47            | 33 48 07  | 3.000             | 547              | 83.8                       | 26.0R                | 34.5M  |  |
| Indio           |           | CA  | 295.6    | BPTVL20010122ABE | 116 13 27 | 539               | 0.0              |                            |                      |        |  |

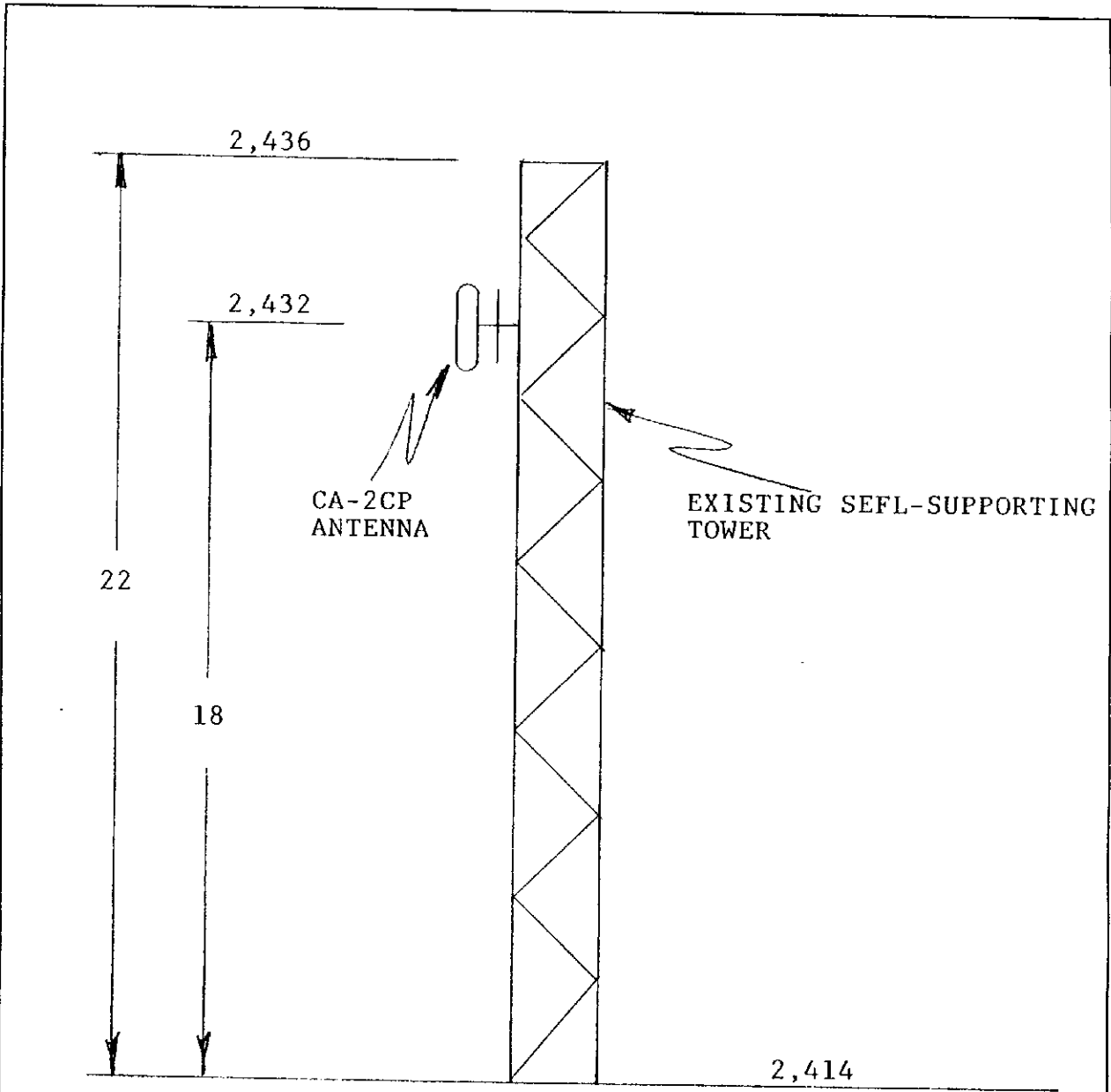
TABLE II

AZIMUTH PATTERN

COMPOSITE ANTENNA CONSISTING OF A SCALA  
CA-2CP CIRCULARLY POLARIZED ANTENNA @ 195°  
AND HDCA-5H/V ANTENNA PAIR @75°

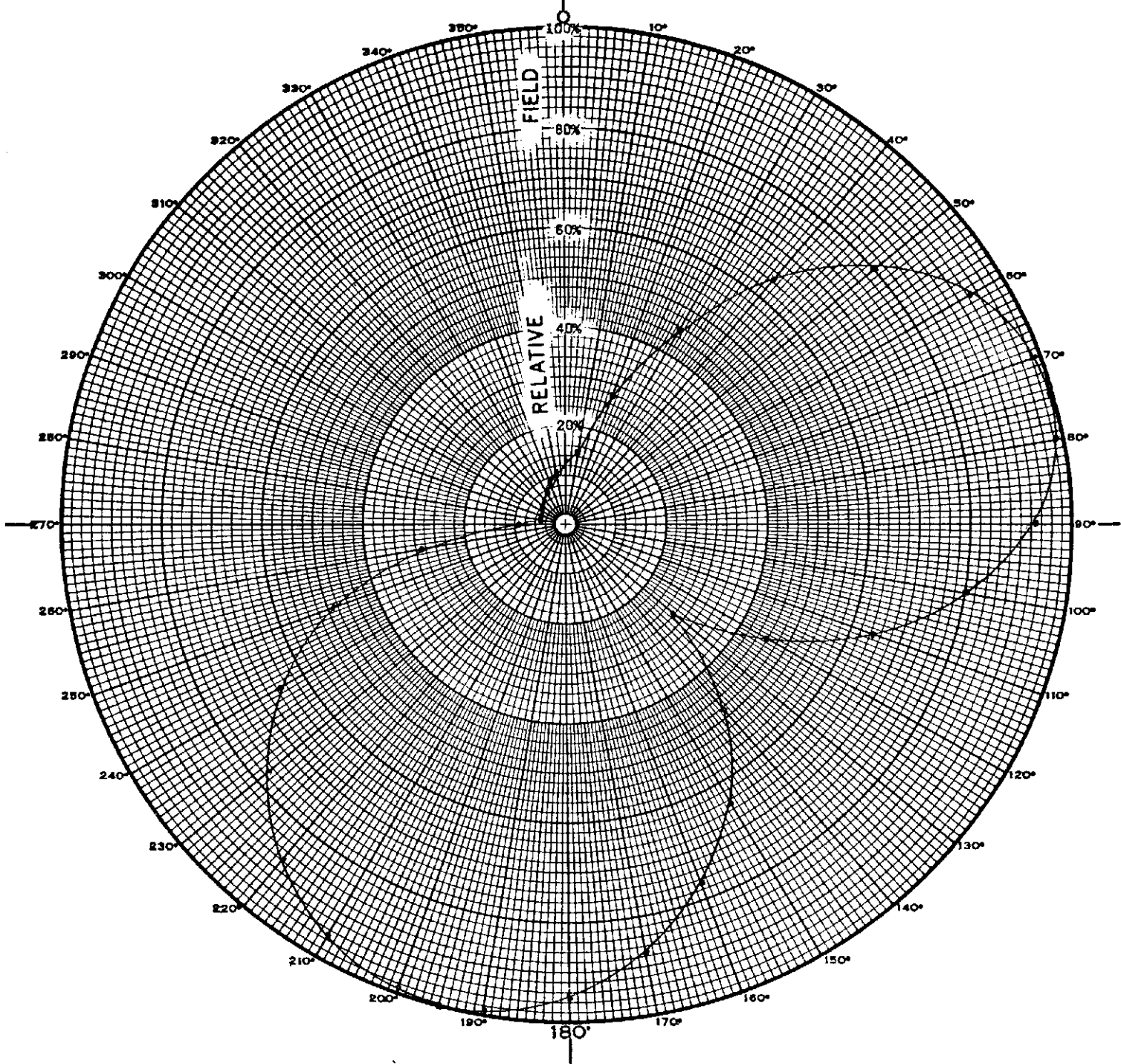
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| <u>AZIMUTH</u> | <u>FIELD</u> |
|----------------|--------------|
| 0              | 0.134        |
| 10             | 0.150        |
| 20             | 0.278        |
| 30             | 0.458        |
| 40             | 0.643        |
| 50             | 0.802        |
| 60             | 0.928        |
| 70             | 0.986        |
| 80             | 0.986        |
| 90             | 0.928        |
| 100            | 0.802        |
| 110            | 0.643        |
| 120            | 0.458        |
| 130            | 0.278        |
| 140            | 0.487        |
| 150            | 0.647        |
| 160            | 0.772        |
| 170            | 0.877        |
| 180            | 0.952        |
| 190            | 0.990        |
| 200            | 0.990        |
| 210            | 0.952        |
| 220            | 0.877        |
| 230            | 0.772        |
| 240            | 0.647        |
| 250            | 0.487        |
| 260            | 0.292        |
| 270            | 0.095        |
| 280            | 0.032        |
| 290            | 0.031        |
| 300            | 0.033        |
| 310            | 0.042        |
| 320            | 0.053        |
| 330            | 0.093        |
| 340            | 0.179        |
| 350            | 0.221        |



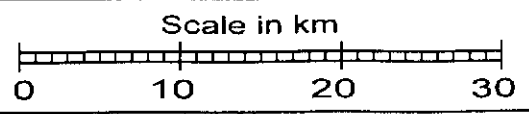
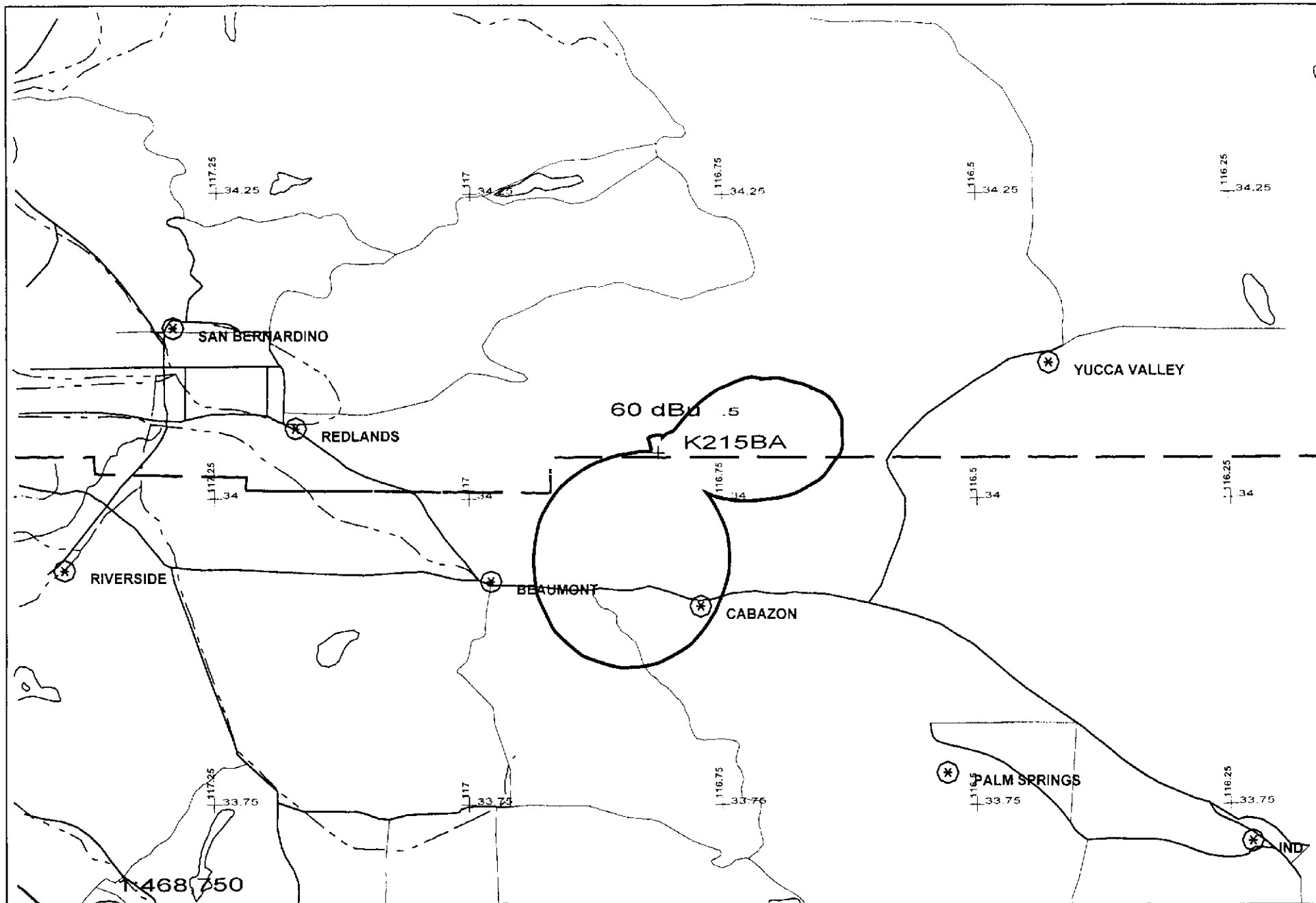
- NOTES: 1. Not drawn to scale.  
 2. Heights are in meters.

|   |   |
|---|---|
| <u>SNOW PEAK</u><br>34° 02' 17" - 116° 48' 49"                      | <u>MODIFIED ANTENNA ELEVATION</u><br><br>FIGURE 1 |
| FM TRANSLATOR STATION K215BA<br>CHANNEL 215<br>BEAUMONT/CABAZON, CA |   |



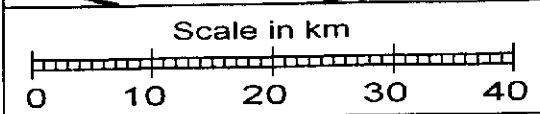
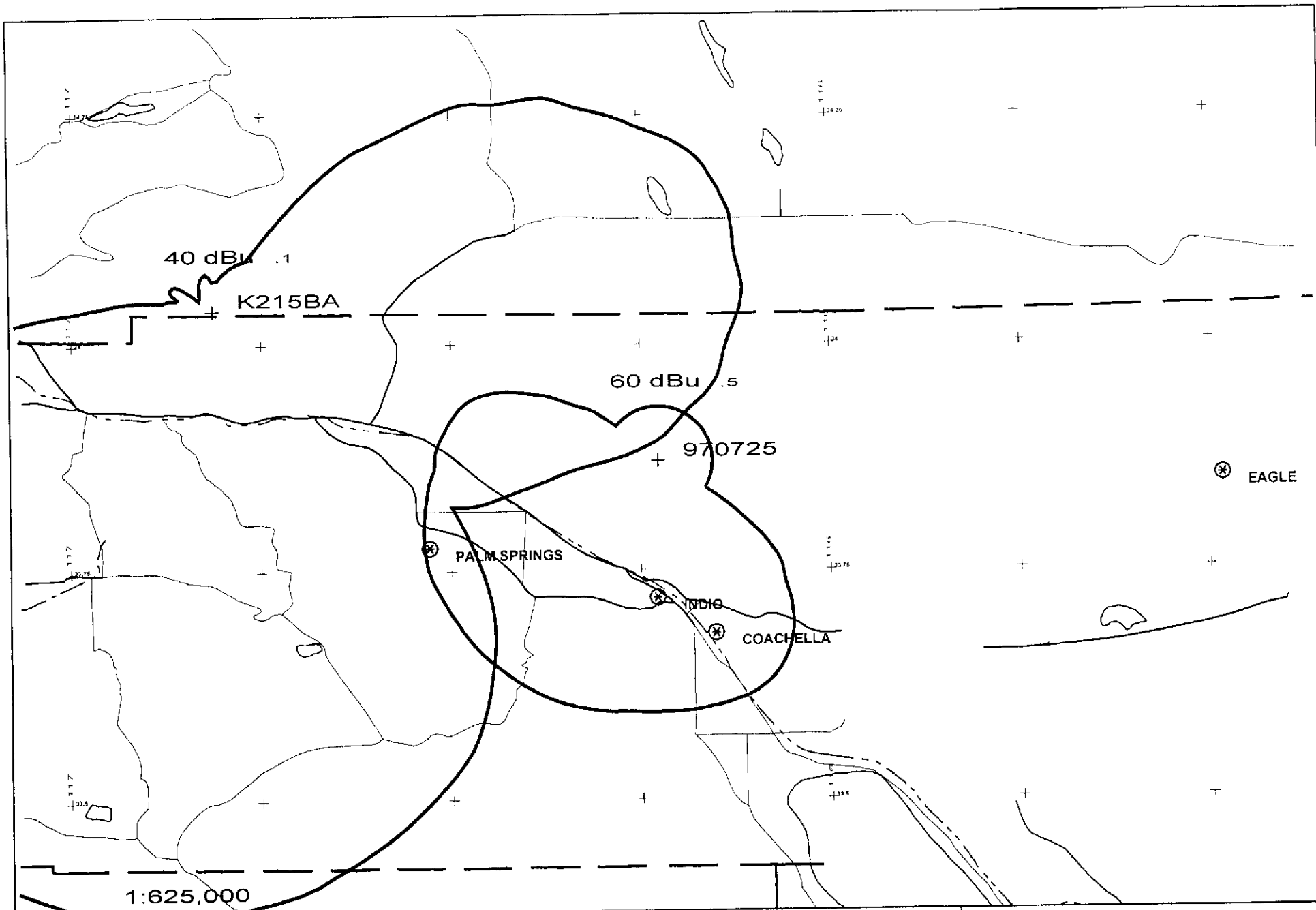
|  |  |
|--|--|
| <p>COMPOSITE ANTENNA PATTERN<br/>CA-2CP &amp; HDCA-5</p> <hr/> <p>MODIFIED K215BA<br/>CHANNEL 215<br/>BEAUMONT/CABAZON, CA</p> | <p>ANTENNA AZIMUTH POLAR PATTERN</p> <p>FIGURE 2</p> |
|--|--|





K215BA 215D .01kW 2432M AMSL  
 N. Lat. 34 02 17 W. Lng. 116 48 49

MODIFIED K215BA  
 FIGURE 3 - SMCCD



970725 215A .19kW 818M AMSL  
 N. Lat. 33 52 15 W. Lng. 116 13 37

MODIFIED K215BA  
 FIGURE 4 - SMCCD