ENGINEERING EXHIBIT

APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT TO CHANGE THE
TRANSMITTER SITE OF
NCE-FM STATION KCRI
CHANNEL 201B1, 88.1 MHz
MOJAVE, CALIFORNIA

FCC FILE NO. BPED-920305ME

PREPARED FOR:

SANTA MONICA COMMUNITY COLLEGE DISTRICT
1900 PICO BOULEVARD
SANTA MONICA, CALIFORNIA 90405-1628

FEBRUARY 18, 1998

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

TABLE OF CONTENTS

TEXT:

TABLES:

TABLE OF CONTENTS

FIGURES:

1.0 INTRODUCTION

This Engineering Exhibit was prepared for SANTA MONICA COMMUNITY COLLEGE DISTRICT ("SMCCD"), permittee of non-commercial educational FM (NCE-FM) station KCRI, Mojave, California, to support its application for modification of construction permit (CP) [FCC File No. BPED-920305ME] to change the station class, transmitter site, effective radiated power (ERP) and antenna height above the average terrain (HAAT).

The change in site is necessary because the original site of Carrier Communications ("Carrier") at Oak Creek Pass is not available. Carrier had promised SMCCD that it would construct a 30-meter tower at the site but has failed to do so. It does not appear that Carrier will ever construct such a tower. SMCCD has tried to locate another facility at Oak Creek Pass on which to construct the new station but none can be found. SMCCD has located a site 17.5 kilometers (km) northeast of the location specified in the construction permit, which is controlled by GTE MobileNet. GTE MobileNet has agreed to allow SMCCD to use a portion of its tower and building for SMCCD's antenna and transmitter. SMCCD is also planning to use a non-directional antenna rather than a directional antenna as was proposed at the original site.

This application is considered a MINOR change since the area gain plus the area lost as a percentage of the original area is less than 50%.

2.0 PRELIMINARY INTERFERENCE ANALYSIS

Table I is a list of all co-channel and adjacent channel allotments and assignments and TV Channel 6 assignments, within a close enough distance to have a possible effect upon Channel 201B1 being used at the modified site. The data contained in Table I is based upon omni-directional radiation with an HAAT of -29 meters assumed to be uniform in all directions[1]. All co-channel and first adjacent channel stations listed in Table I were subjected to a detailed interference analysis (See Section 8 of this Engineering Exhibit).

There are no stations, applications or allotments on 53 or 54 channels removed from KCRI, Channel 254 or Channel 255, respectively, which are close enough to have an effect upon this application.

3.0 TRANSMITTER SITE

The modified transmitter site is 17.3 km northeast (@69.2°) from the site specified in the construction permit. The site coordinates, site elevation and tower height were obtained from GTE MobileNet. Figure 1A is a 50% reduction of the 7-1/2 Minute Mojave, California Topographic Quadrangle where the modified transmitter site is shown in relationship to the entire quadrangle. Figure 1B shows a portion of the same quadrangle with the proposed site shown in greater detail.

---

[1] This initial interference study is based upon co-channel and adjacent channel station ERP and HAAT and does not take into consideration variations in coverage due to terrain irregularities and/or directional antenna characteristics.

The person who controls the site has agreed to the use of this location by SMCCD as an FM transmitter site. The person controlling the site is:

Mr. Mike Torres
GTE MobileNet
7090 North Marks
Fresno, CA 93710
(209) 437-2045

3.1 FCC Antenna Structure Number: The FCC Antenna Structure Number for the GTE MobileNet tower is 1017686.

3.2 Stations Within 10 km of Site: There are no FM or television transmitters or any nonbroadcast radio stations within 10 km of the site. There is at the site cellular wireless telephone and microwave systems used by GTE MobileNet in their wireless communications business.

3.3 Blanketing Interference Considerations: The distance to the 115 dBu FM blanketing contour was determined to be 1.3 km. There is no population within the blanketing contour.

3.4 Summary: SMCCD believes that the modified NCE-FM station will not cause any interference to any existing user of the site. However, if the operation of the proposed transmitter does cause interference, SMCCD is prepared to take whatever steps are necessary to eliminate that interference.

4.0 MODIFIED OPERATING CONDITIONS

4.1 Maximum ERP Determination: The maximum non-directional ERP from the new site is determined by the proximity of co-channel KLON in Long Beach. A non-directional ERP of 10.5 kW is the maximum ERP which will not result in any contour overlap with KLON. As a result of the decrease in ERP from 22 kW (directional) authorized in the CP to the proposed 10.5 kW (non-directional), the station class changes from Class B to Class B1.

4.2 Modified System: It is proposed to install a 4-bay ERI non-directional antenna, Model LPX-4E, mounted at the 67-meter level of the GTE MobileNet tower. This antenna has a power gain of 2.1322. This antenna has no beam tilt or null fill. The modified antenna heights are shown in Figure 2. The modified Engineering Specifications are shown in Table II.

5.0 PROPOSED COVERAGE:

5.1 60 dBu Contour:

The distances to the 60 dBu protected field strength contour along the eight cardinal radials is tabulated in Table III. The 60 dBu field strength is plotted in Figure 3. A comparison of the 60 dBu contours from the CP site and the modified site is shown in Figure 4.

5.2 Land Area & Population:

The land area enclosed within the 60 dBu field strength contour was determined from digitized terrain data. The population within the 60 dBu field strength contour was taken from the 1990 Census of the United States.

LAND AREA:	3,615.5 Square Kilometers
POPULATION:	32,858

6.0 MAJOR/MINOR CHANGE CONSIDERATIONS

Section 73.3573(a)(1) defines a major change as any change in the 60 dBu area over 50%. The change is defined as the area gained plus the area lost as a percentage of the original area.

Original Area:	5,514 sq km
Area Gained:	402 sq km
Area Lost:	2,059 sq km
Change:	44.6%

Therefore, this application is considered a MINOR change.

7.0 FM AGREEMENT WITH MEXICO CONSIDERATIONS

The distance from the modified site to the common border between the United States and Mexico is 304 km. Since the distance is less than 320 km, this application must meet the requirements of the 1992 FM Agreement between the United States and Mexico. The separation distance between a co-channel Class B1 station (modified

KCRI) and Class C station (maximum class in Mexico) is 270 km. Since the modified site is 304 km from the border, the separation distance is considerably greater than 270 km. Therefore, this modified application is in compliance with the Agreement.

8.0 INTERFERENCE CONSIDERATIONS

The interference contours for all relevant co-channel and first adjacent channel stations are shown in the following figures:

FIGURE	CHANNEL	CALL SIGN	CITY
5	Co-Channel 201B	KLON	Long Beach
6	First Adjacent 202B1	KAXL	Greenacres
7	First Adjacent 202B1	KCLU	Thousand Oaks

It can be seen in Figures 5, 6 and 7 that there is no overlap between any protected contour by any interference contour. There are no second or third adjacent channel stations close enough to the KCRI site to require interference analysis.

9.0 TV CHANNEL 6 CONSIDERATIONS

9.1 Domestic Stations: Section 73.525(a) of the Rules specifies that an NCE-FM station operating on channel 201 must be at least 265 km from a channel 6 television station or special consideration must be taken into account. The closest channel 6 TV station to the modified KCRI site is KSBY-TV in San Luis Obispo and the distance between the two is only 224.4 km. Since KSBY-TV is less than 265 km

from the modified site, further study is necessary to show that no interference will be caused to KSBY-TV by the modified KCRI in Mojave.

KSBY-TV operates with an ERP of 100 kW at a HAAT of 543 meters. From Figure 1, of Section 73.599, the U/D ratio was determined to be 1.0 dB. The Grade B contour for Channel 6 is 47 dBu. Therefore, the interference contour for the modified KCRI with respect to KSBY-TV is the 48 dBu contour. Figure 8 shows the Grade B contour for KSBY-TV and the 48 dBu interference contour for KCRI. It can be seen that there is no contour overlap.

9.2 Mexican Stations: Although there is no formal agreement between the United States and Mexico related to NCE-FM stations interference to Channel 6 television stations, the Commission has an "understanding" with Mexico to consider the effect of any NCE-FM station located in the border area on Channel 6 television stations in Mexico. The closest Mexican Channel 6 station to KCRI is XETV in Tijuana, Baja California.

Using the criteria contained in Section 73.525(a), as long as the NCE-FM station operating on Channel 201 is more than 265 km from the TV Channel 6 station, no interference is deemed to exist. The distance from the modified KCRI site to the Mexican border is 304 km, which is considerably greater than the required 265 km. Therefore, the modified KCRI will not cause any interference to XETV in Tijuana.

10.0 ENVIRONMENTAL CONSIDERATIONS

10.1 Site Environment: The site is an existing cellular telephone communications site located in a remote desert area and is not an environmentally protected or historically significant area. SMCCD knows of no zoning or other restriction which would prohibit the site's use as an FM transmitter site.

10.2 Human Exposure to RF Radiation:

A study was made to verify that the modified KCRI operation did not exceed the guidelines set out in FCC OST Bulletin No. 65, Edition 97-01, with respect to RF radiation exposure to humans.

ERP: Horizontal: 10.5 kW
Vertical: 10.5 kW
21.0 kW or 21,000,000 mW

Antenna: 67 m or 6,700 cm AGL

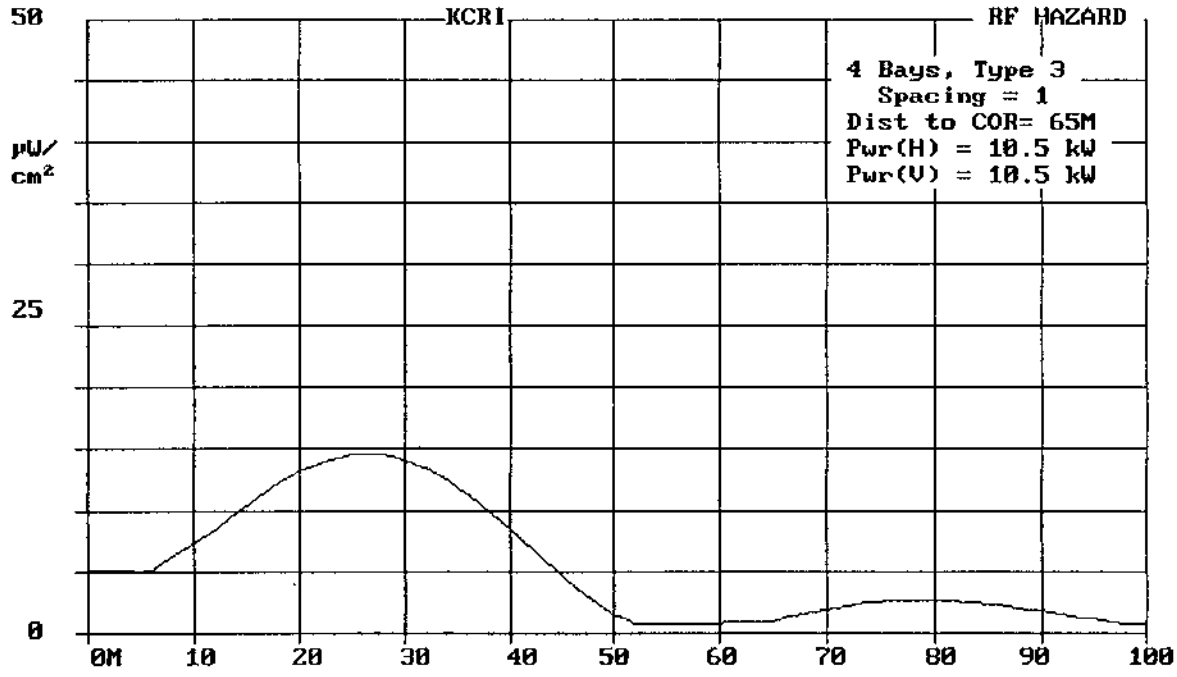
The maximum power density of total radiation in the FM band at a point 20 meters away from the base of the tower, for a controlled environment, is set at 1000 $\mu W/cm^2$ and for an uncontrolled (general population) environment is 200 $\mu W/cm^2$. The equation used to determine the maximum worst-case radiation level is equation (4) in OST Bulletin No. 65:

$$S = \frac{(0.64)ERPI}{\pi R^2}$$

Where: ERPI = Total ERP, in mW, x 1.64
R = Distance from antenna to a point 20 meters from the base of the tower, in cm.

Based upon the above formula, modified with the EPA field patterns for a one-wavelength spaced antenna, the ground level power density at 20 meters from the base of the tower, is calculated to be 12.9 $\mu W/cm^2$, while the maximum

power density is calculated to be 14.4 $\mu W/cm^2$, which occurs at a distance of 27 meters from the base of the tower. The maximum radiation is only 1.41% of the maximum level of 1000 $\mu W/cm^2$ for a controlled environment and 7.2% of the maximum level of 200 $\mu W/cm^2$ permitted for an uncontrolled environment. Therefore, this modified proposal is in compliance with the RFR guidelines defined in OST Bulletin No. 65, Edition 97-01. A plot of the RFR power density is shown below:



10.3 Protection to The General Public: There is no RFR exposure risk to the general public as the RFR power density level is well below 200 $\mu W/cm^2$ and access to the site is restricted to authorized personnel only.

10.4 Protection to Workers: SMCCD will establish the following procedures to reduce the exposure to excessive levels of RF radiation for those who will be working in the vicinity of the proposed transmitting antenna and also protection for the general population who might be in the vicinity of the transmitter site.

1. Post an approved "RF Radiation Hazard" sign at the base of the tower and on the fence surrounding the site.

2. Require workers performing work for, and at the direction of SMCCD, while working near the transmitting antenna to wear an approved radiation suit, or

3. Have the work done at times of the day when the transmitter can be shut down, or

4. Reduce the transmitter output power to such a level where a person can work safely in the vicinity of the antenna.

5. Perimeter fencing has been installed which encloses the entire site, restricting the general population from entering the transmitting site.

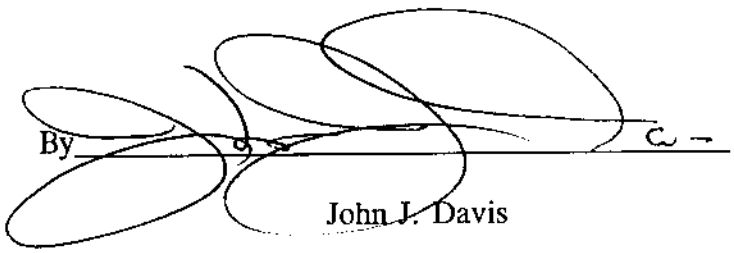
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
OF NCE-FM STATION KCRI
MOJAVE, CALIFORNIA
FCC FILE NO. BPED-920305ME

PREPARED FOR
SANTA MONICA COMMUNITY COLLEGE DISTRICT
SANTA MONICA, CALIFORNIA

11.0 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.



February 18, 1998

TABLE I

PRELIMINARY INTERFERENCE ANALYSIS

Title: KCRI
Reference City: MOJAVE, CA
Translators Are Not Included
Audit File: fms02048.A01 CHANNEL 201B1 ERP: 10.5 kW; HAAT: -29 m

Latitude: 35-07-20
Longitude: 118-12-25
FCC Database: 980203

TV CHANNEL 6 CONSTRAINTS

Call Auth	City of License, St FCC File No. Docket No.	Channel Zone	ERP (kW)	HAMSL-m HAAT-m	Latitude Longitude	Br-to -from	Dist (km)
KSBY	SAN LUIS OBISPO, CA	06	100	885	35-21-37	277.5	224.4
LIC	BLCT-1159	2		543	120-39-17	96.1	

FM CHANNEL 201B1 CONSTRAINTS

Call City of License	Auth St	Licensee Name FCC File No.	Chan Freq	ERP-kW EAH-m	Latitude Longitude	Az-to -from	Dist (km)	Req (km)
KLON	CP	California State Univ	*201B	35.*	33-48-00	178.4	146.73	145
Long Beach	CA	BPED-940713IZ	88.1	129	118-09-45	358.4	1.60	CLOSE
Proposed F(50,10)	40.0 dBu = 81.36 km; KLON				F(50,50)	60.0 dBu =	46.07	km
Proposed F(50,50)	60.0 dBu = 18.35 km; KLON				F(50,10)	40.0 dBu =	126.79	km
KLON	LIC	California State Univ	*201B1	8.	33-48-00	178.4	146.73	115
Long Beach	CA	BLED-910211KC	88.1	129	118-09-45	358.4	31.40	CLEAR
Proposed F(50,10)	40.0 dBu = 81.36 km; KLON				F(50,50)	60.0 dBu =	33.97	km
Proposed F(50,50)	60.0 dBu = 18.35 km; KLON				F(50,10)	40.0 dBu =	95.85	km
KAXL	LIC	Skyride Unlimited, In	*202B1	21.0*	35-24-55	289.6	98.91	76
Greenacres	CA	BLED-940421KA	88.3	100	119-14-01	109.0	22.51	CLEAR
Proposed F(50,10)	54.0 dBu = 27.17 km; KAXL				F(50,50)	60.0 dBu =	37.70	km
Proposed F(50,50)	60.0 dBu = 18.35 km; KAXL				F(50,10)	54.0 dBu =	58.06	km
KCLU	LIC	Calif. Lutheran Univ.	*202A	1.25*	34-13-05	214.1	120.98	55
Thousand Oaks	CA	BLED-941011KA	88.3	158	118-56-42	33.7	66.14	CLEAR
Proposed F(50,10)	54.0 dBu = 27.17 km; KCLU				F(50,50)	60.0 dBu =	24.3	km
Proposed F(50,50)	60.0 dBu = 18.35 km; KCLU				F(50,10)	54.0 dBu =	36.5	km
KCSN	LIC	State of CA, Californ	*203A	.052	34-21-13	192.6	87.38	29
Northridge	CA	BLED-870911KB	88.5	646	118-24-57	12.5	58.81	CLEAR
Proposed F(50,50)	80.0 dBu = 5.71 km; KCSN				F(50,50)	60.0 dBu =	22.87	km
Proposed F(50,50)	60.0 dBu = 18.35 km; KCSN				F(50,50)	80.0 dBu =	4.56	km
KCSN	CP	State of Ca.- Califor	*203B1	.320*	34-19-11	199.7	94.53	37
Northridge	CA	BPED-930115MB	88.5	501	118-33-14	19.5	57.97	CLEAR
Proposed F(50,50)	80.0 dBu = 5.71 km; KCSN				F(50,50)	60.0 dBu =	30.85	km
Proposed F(50,50)	60.0 dBu = 18.35 km; KCSN				F(50,50)	80.0 dBu =	8.86	km

End of Constraints Study FM Channel 201B1

TABLE II

ENGINEERING SPECIFICATIONS

NCE-FM STATION KCRI
CHANNEL 201B1, 88.1 MHz
MOJAVE, CALIFORNIA

a) TRANSMITTER LOCATION

North Latitude: 35° 07' 20"

West Longitude: 118° 12' 25"

20973 Song Bird Road, Mojave, CA

b) EQUIPMENT

Transmitter:	Type-Approved	10 kW
Transmission Line:	Andrew Type HJ7P-50A 4.13 cm (1-5/8") Air Dielectric Coaxial Cable Insertion Loss: 0.53 dB Efficiency: 88.81%	18 Meters
Tower:	Guyed Steel	89 Meters
Antenna:	Non-Directional ERI, Model LPX-4E Power Gain: 2.1322 (3.288 dB) Beam Tilt: None Null Fill: None	4 Bay

TABLE II

d) HEIGHTS

	Meters
Height of Site Above Mean Sea Level (AMSL):	1,046
Height of Tower Above Site (AGL):	89
Overall Height of Tower AMSL:	1,135
Height of Average Terrain AMSL:	1,142
Height of Site Above Average Terrain:	-96
Effective Height of Antenna AGL:	67
Effective Height of Antenna AMSL:	1,113
Effective Height of Antenna Above the Average Terrain (HAAT):	-29

e) PROPOSED OPERATION

Transmitter Power Output (TPO):	5.56 kW	7.45 dBk
Transmission Line Loss (88.51%):	0.64 kW	0.53 dB
Antenna Input Power:	4.92 kW	6.92 dBk
Antenna Gain:	2.1322	3.288 dB
Effective Radiated Power (ERP):	10.5 kW	10.212 dBk

TABLE III

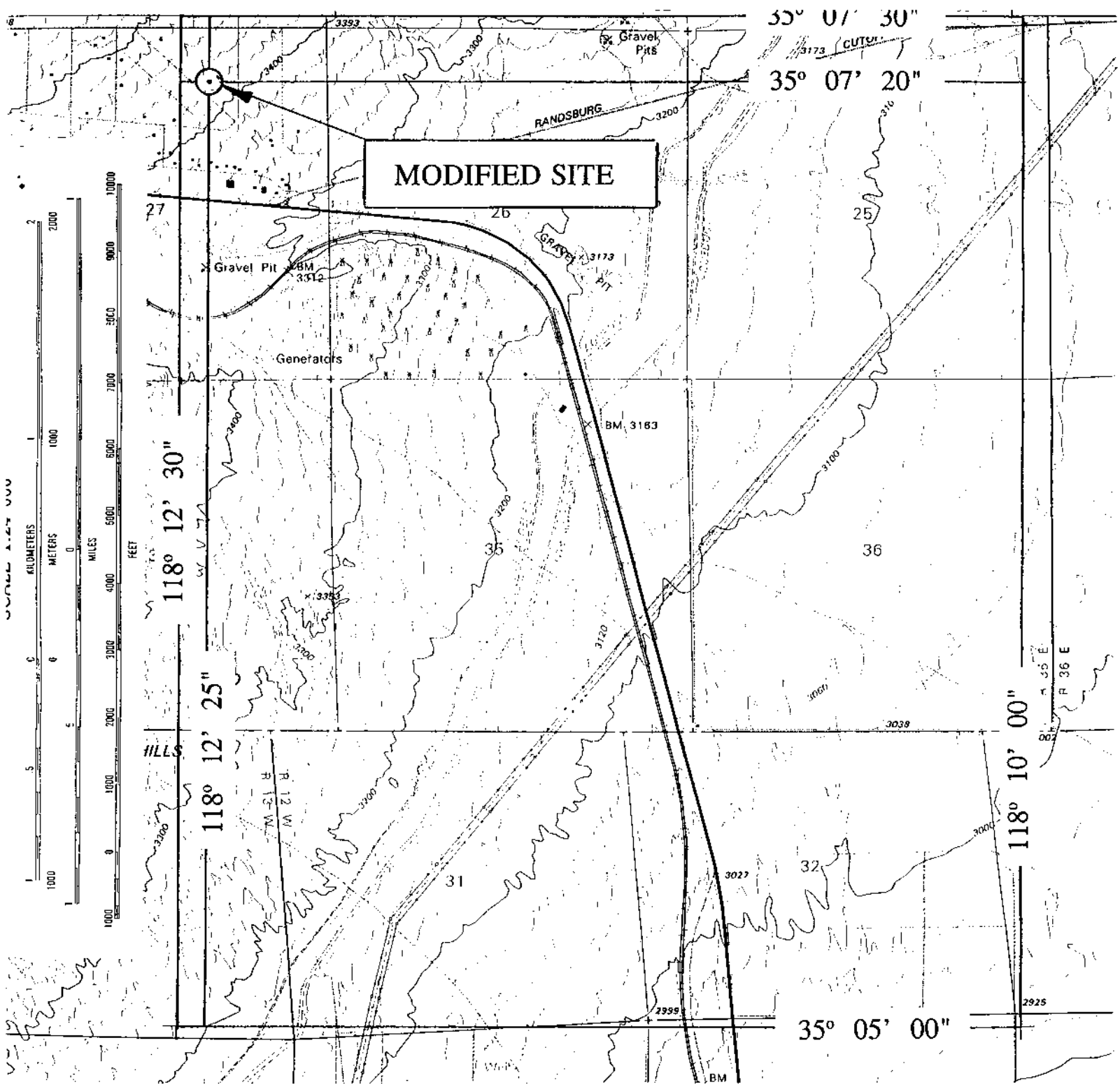
MODIFIED KCRI CONTOUR DATA

KCRI 35-07-20/118-12-25
Mojave, CA
Santa Monica Community College District
Channel 201B1 (88.1 MHz)

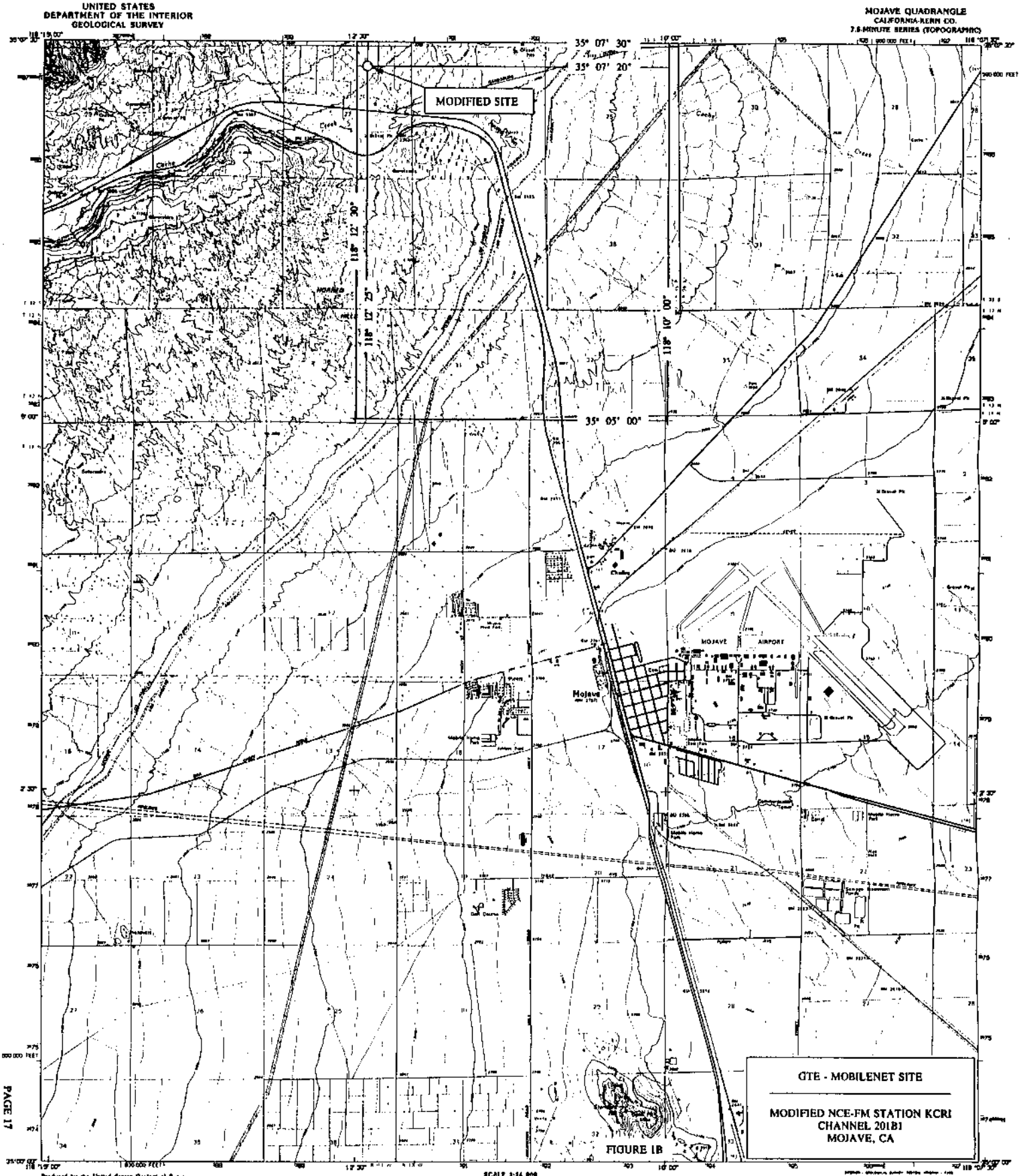
ERP = 10.5 kW (10.212 dBk)

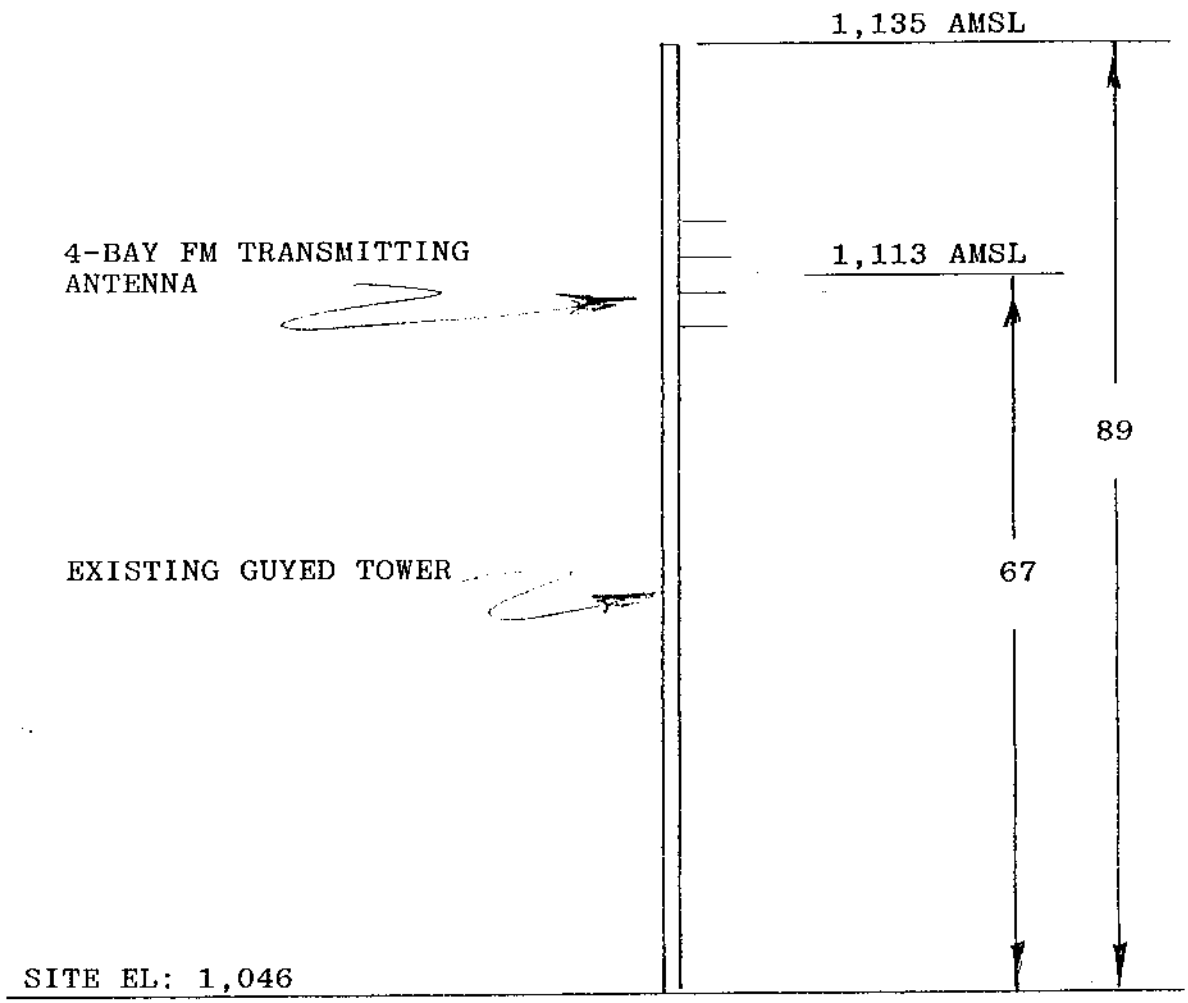
Antenna Heights = -29 Meters HAAT
1,113 Meters RCAMSL
67 Meters RCAGL

RADIAL (°)	ANTENNA HEIGHT ABOVE AVERAGE TERRAIN RADIAL (Meters)	DISTANCE TO CONTOURS F(50,50) 60 dBu (km)	F(50,10) 40 dBu (km)	F(50,10) 54 dBu (km)
0	-317	18.3	81.4	27.2
45	54	24.4	87.6	37.6
90	279	49.1	119.3	72.4
135	266	48.2	117.8	71.2
180	202	43.6	110.5	64.4
225	-32	18.3	81.4	27.2
270	-228	18.3	81.4	27.2
315	-460	18.3	81.4	27.2
AVERAGE:	-29	18.3		



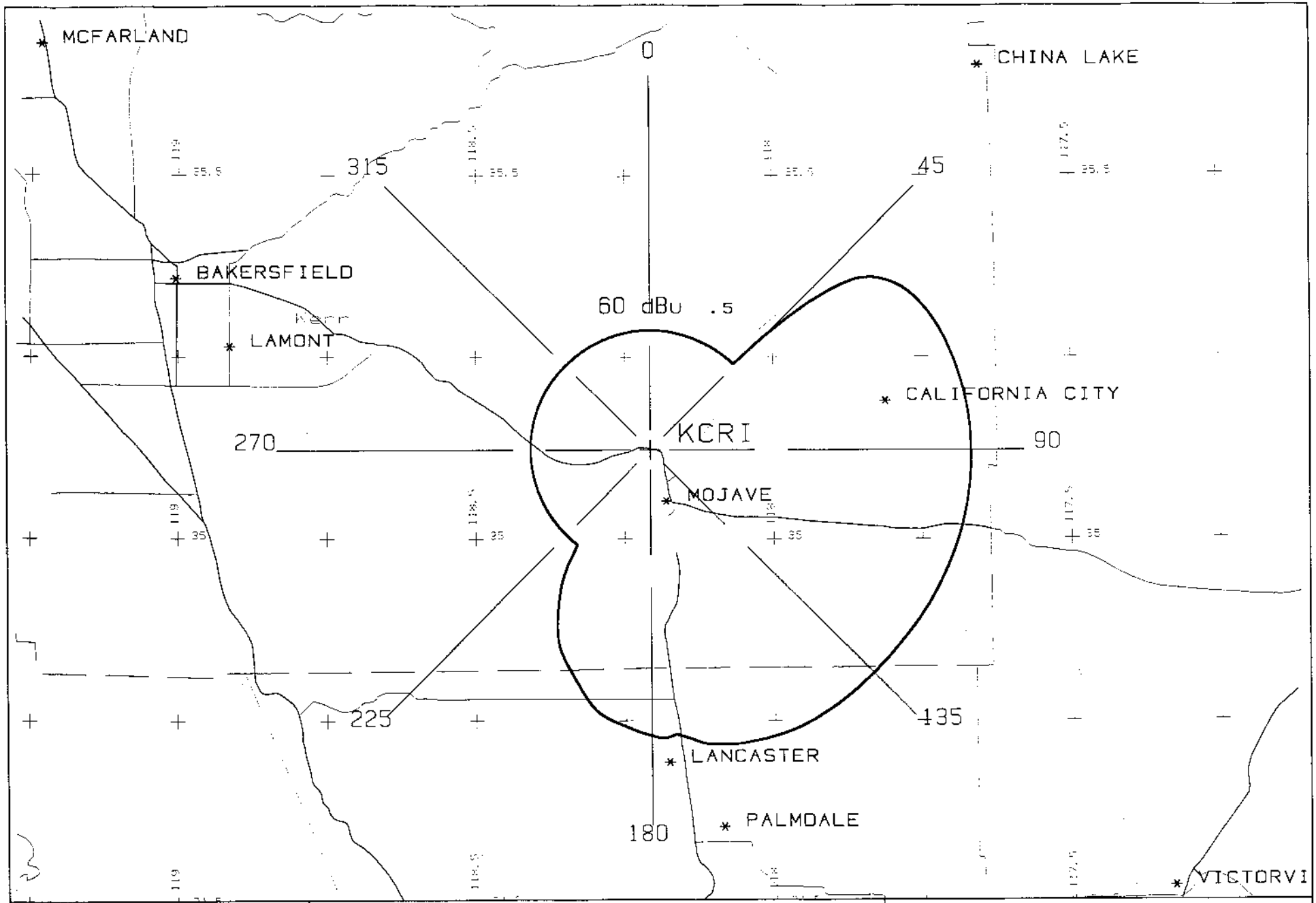
USGS TOPOGRAPHIC QUADRANGLE 7-1/2 MINUTE MOJAVE, CA	MODIFIED TRANSMITTER SITE
NCE-FM STATION KCRI CHANNEL 201B1 MOJAVE, CA	FIGURE 1A

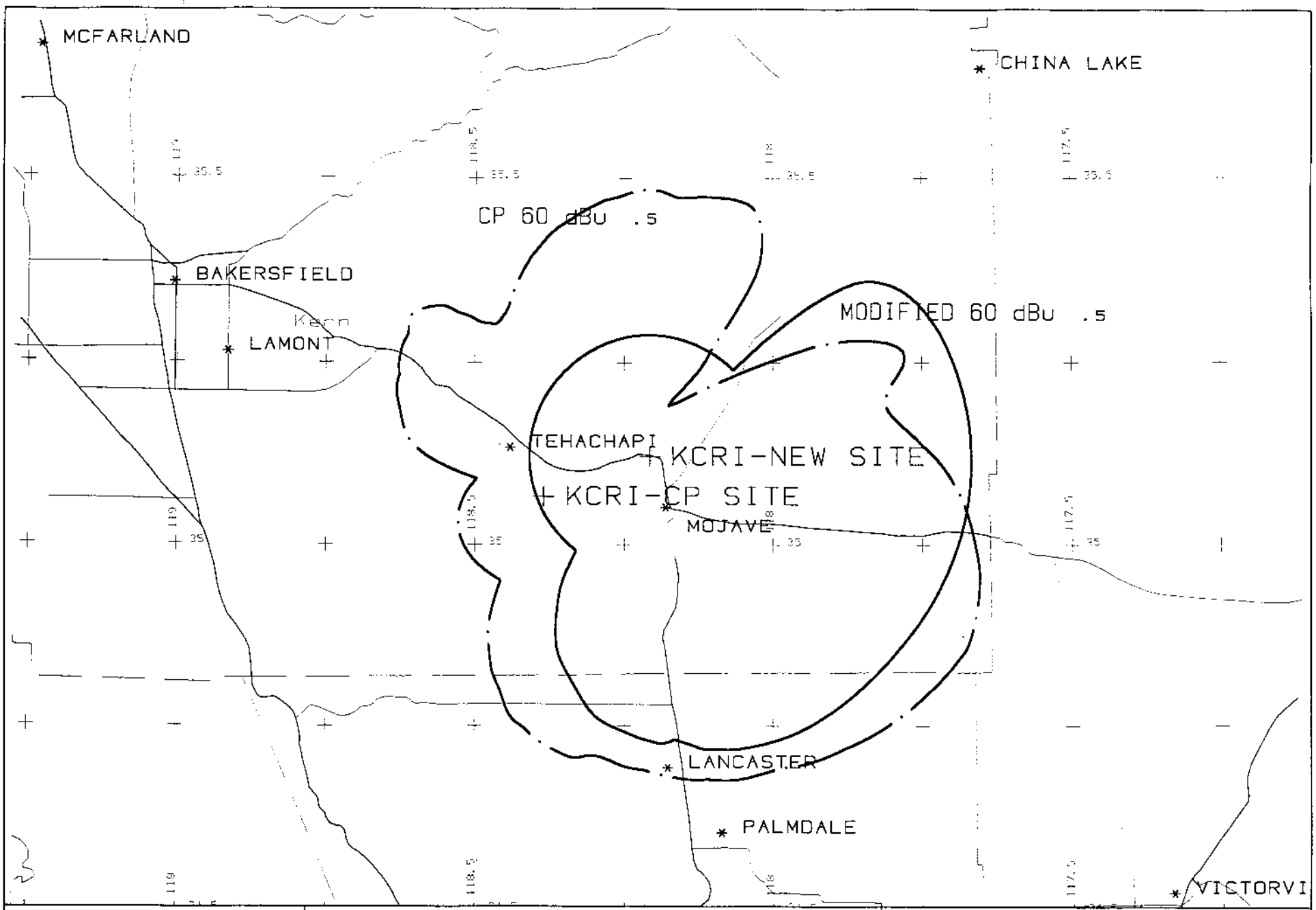

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
MOJAVE QUADRANGLE
CALIFORNIA-KERN CO.
7.5-MINUTE SERIES (TOPOGRAPHIC)
MODIFIED SITE
35° 07' 30"
35° 07' 20"
35° 05' 00"
118° 12' 30"
118° 12' 25"
118° 10' 00"
MOJAVE AIRPORT
Mojave
GTE - MOBILENET SITE
MODIFIED NCE-FM STATION KCRI
CHANNEL 201B1
MOJAVE, CA
FIGURE 1B
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
MOJAVE, CA

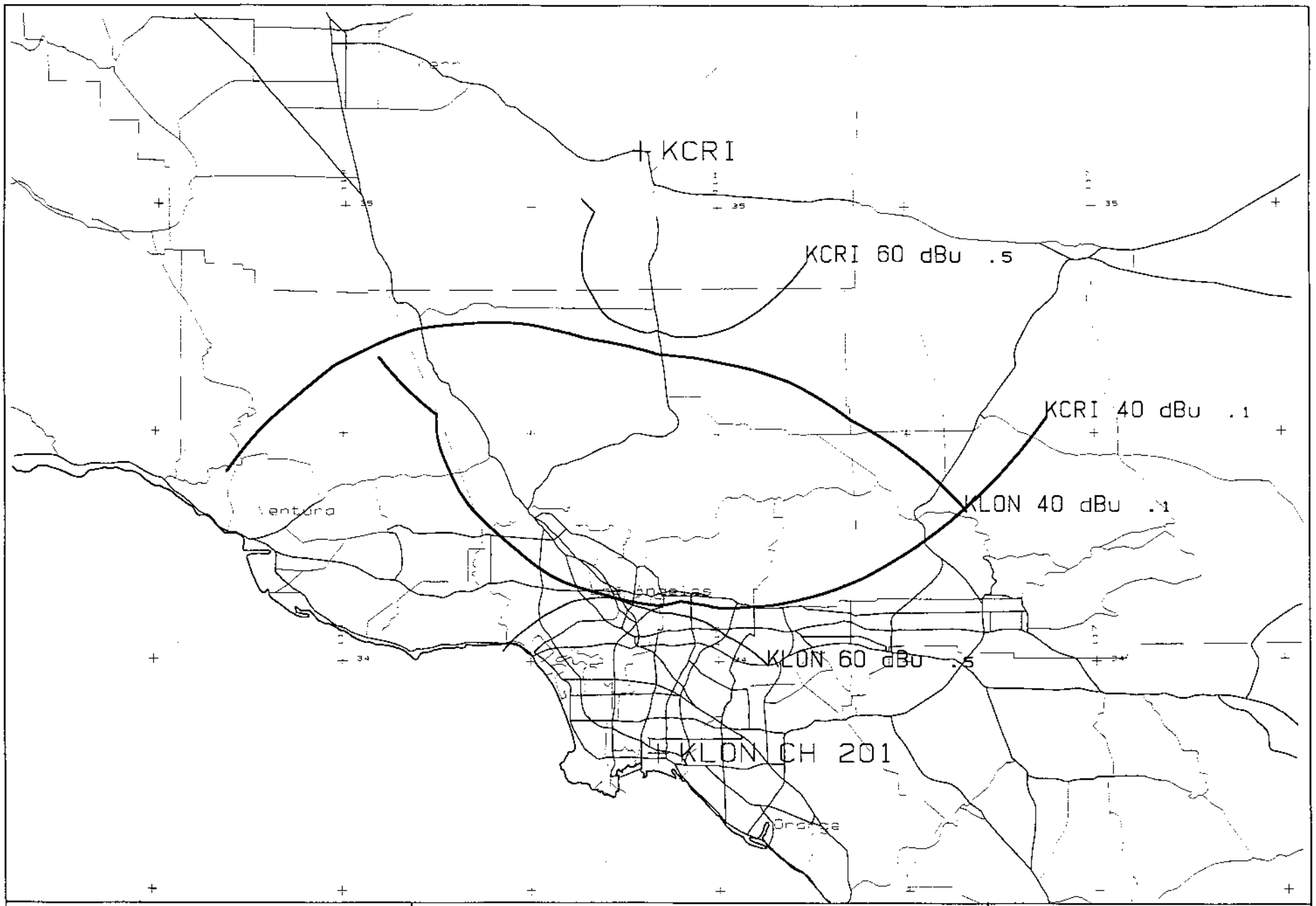


NOTES:
1. Not drawn to scale
2. Guy wires not shown
3. All heights are in meters

MODIFIED SITE 35° 07′ 20" - 118° 12′ 25"	MODIFIED ANTENNA ELEVATION
NCE-FM STATION KCRI CHANNEL 201B1 MOJAVE, CA	FIGURE 2

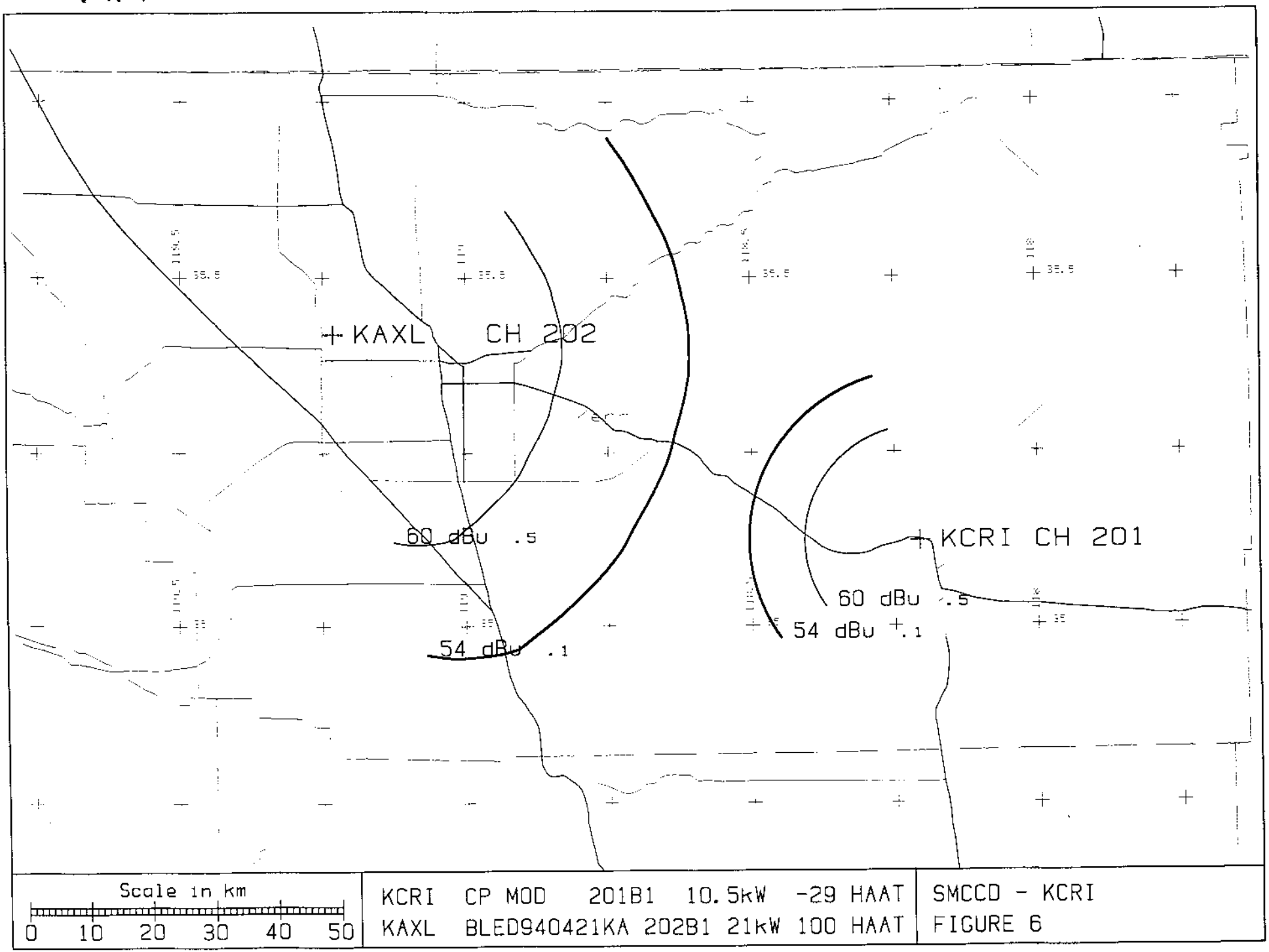

MCFARLAND
0
CHINA LAKE
315
45
BAKERSFIELD
60 dBu .5
LAMONT
CALIFORNIA CITY
270
KCRI
90
MOJAVE
225
135
LANCASTER
180
PALMDALE
VICTORVI
Scale in km
0 10 20 30 40
KCRI 201B1 10.5kW -29 HAAT
N. Lat. 35 07 20 W. Lng. 118 12 25
SMCCD - KCRI
FIGURE 3

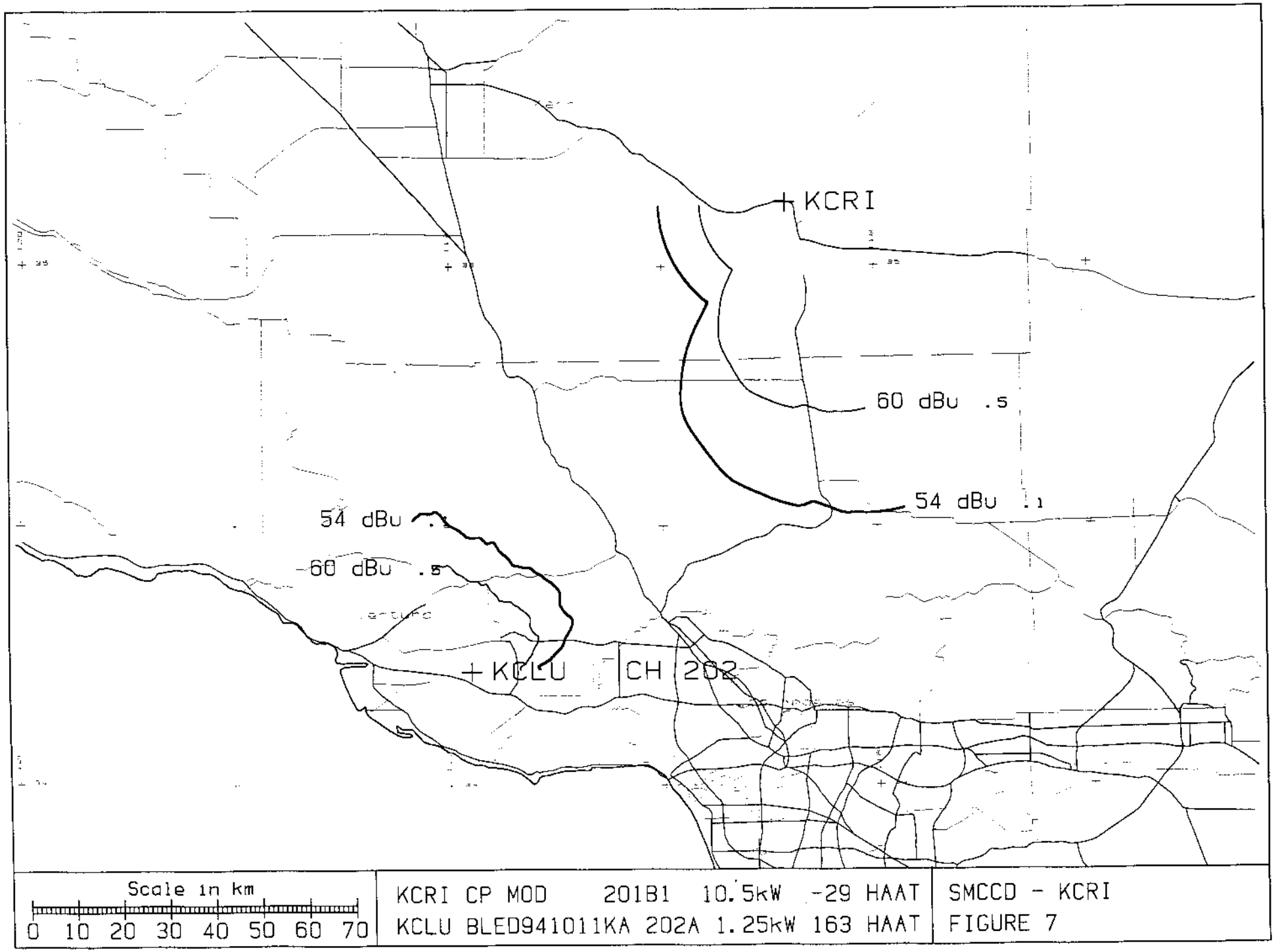

MCFARLAND
CHINA LAKE
CP 60 dBu .5
BAKERSFIELD
MODIFIED 60 dBu .5
Kern
LAMONT
TEHACHAPI
KCRI-NEW SITE
KCRI-CP SITE
MOJAVE
LANCASTER
PALMDALE
VICTORVI
Scale in km
0 10 20 30 40
KCRI CH 201 CP: 22kW MOD: 10.5kW
N. Lat. 35 07 20 W. Lng. 118 12 25
SMCCD - KCRI
FIGURE 4

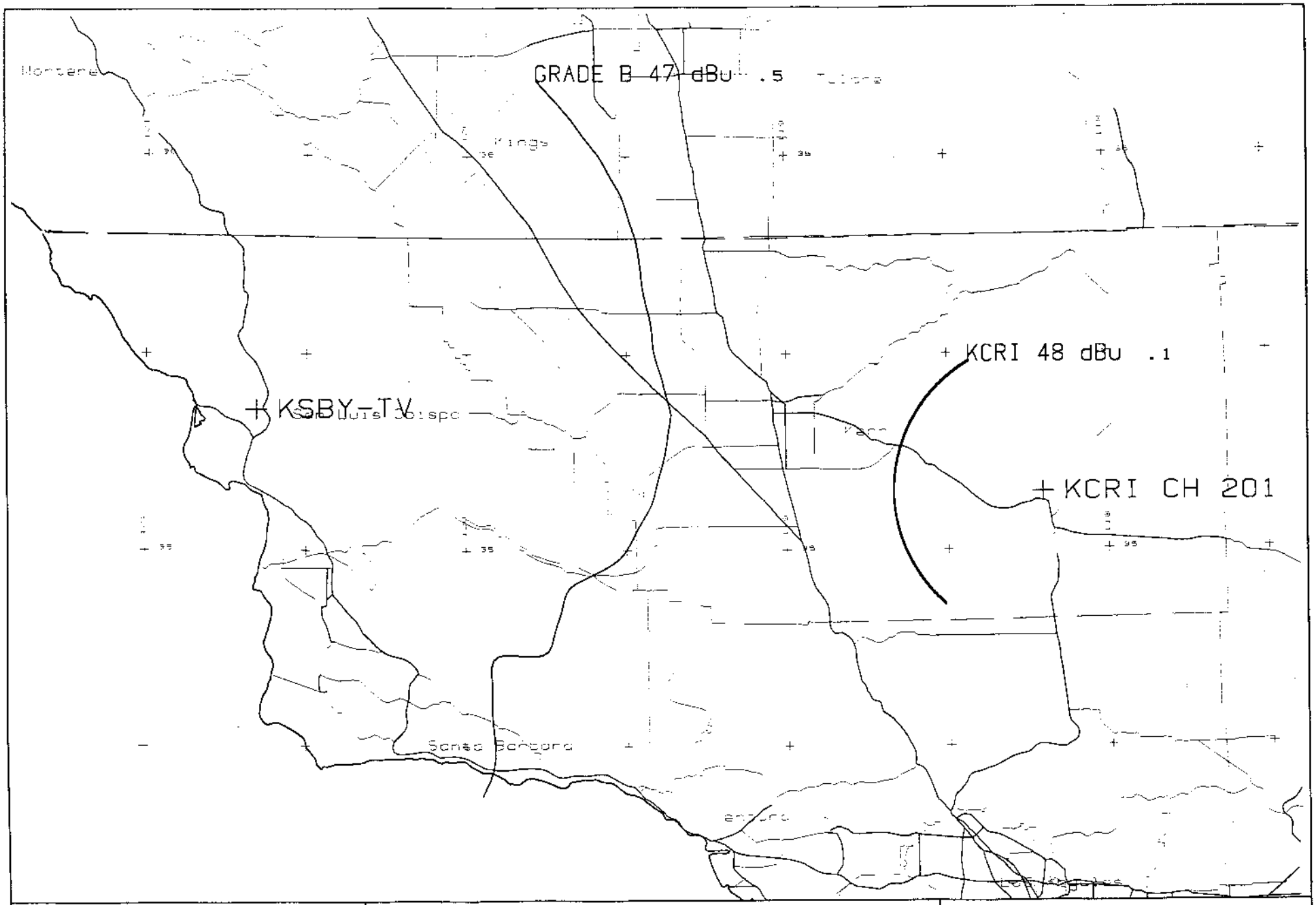


KCRI CP MOD 201B1 10.5kW -29 HAAT
KLON BPED940713IZ 201B 35kW 129 HAAT

SMCCD - KCRI
FIGURE 5


KAXL CH 202
KCRI CH 201
60 dBu .5
54 dBu .1
60 dBu .5
54 dBu .1
Scale in km
0 10 20 30 40 50
KCRI CP MOD 201B1 10.5kW -29 HAAT
KAXL BLED940421KA 202B1 21kW 100 HAAT
SMCCD - KCRI
FIGURE 6


KCRI
60 dBu .5
54 dBu .1
54 dBu .5
60 dBu .5
KCLU
CH 202
Scale in km
0 10 20 30 40 50 60 70
KCRI CP MOD 201B1 10.5kW -29 HAAT
KCLU BLED941011KA 202A 1.25kW 163 HAAT
SMCCD - KCRI
FIGURE 7


GRADE B 47 dBu .5
KCRI 48 dBu .1
KSBY-TV
KCRI CH 201
Monterey
Kings
Tulare
Santa Barbara
Scale in km
0 10 20 30 40 50 60 70 80 90
KSBY-TV 6 100kW
KCRI 201B1 10.5kW
SMCCD - KCRI
FIGURE 8