

KFAC - FM

Engineering Copy

3725 CHESAPEAKE

ENGINEERING SUPPLEMENT

AMENDED APPLICATION

KFAC-FM

BY

LOS ANGELES BROADCASTING COMPANY, INC.

OF

LOS ANGELES, CALIFORNIA

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Exhibit No. 1 pertains to FCC Form 301, Section V-B

Exhibit No. 2 pertains to FCC Form 301, Section V-G

ENGINEERING STATEMENT

The engineering data contained in this supplement refers to the application by the Los Angeles Broadcasting Co., Inc. for a modification of Construction Permit, File No. BMPH-3097, call letters KFAC-FM.

It is requested that permission be granted to change the transmitter location from:

34 Degrees, 13 minutes, 47 seconds  
North Latitude

118 Degrees, 04 minutes, 06 seconds  
West Longitude

to

34 Degrees, 01 minute, 10 seconds  
North Latitude

118 Degrees, 20 minutes, 48 seconds  
West Longitude

The coverage requested in this application is for 3009 square miles within the fifty microvolt contour and an effective antenna height of 191.6 feet.

It is proposed to utilize a 3000 watt transmitter operating at full output. The coaxial transmission line will be 619 feet long. The manufacturer's rated efficiency for 619 feet of 1 5/8 inch line is 73.5%. A four section Collins ring antenna having a rated power gain of 4.1 will be used. The effective rated power is then  $(3.0)(.735)(4.1)$  or 9.0405 kilowatts.

It is proposed to use the 370 foot high west tower of the present KFAC directional antenna to support the FM antenna. The center of the FM antenna will be 355 feet above ground level and 455 feet above mean sea-level.

The preceding figures of 9.04 KW at 455 feet above sea-level were used in determining the location of the contours shown as Figure 1. The contours were located using the method outlined in the Commission's Standards of Good Engineering Practice Concerning FM Broadcast Stations. It should be pointed out that the contours on radials A and H are shown to be at zero distance since the terrain rises to give negative effective elevation. In the present interim operation of KFAC-FM from the same site as proposed in this application, good service is supplied to the crest of the Hollywood Hills, a distance of about seven miles and all within line of sight from the transmitter.

The FM line is taken across the base insulator and carried up the inside of the tower for a quarter-wave at the AM frequency to isolate the line at 1330 KC. The complete FM installation has been made and is in 24 hour operation for interim FM service. The adjustment of the directional antenna has been approved by the Commission.

The profile graphs shown as Figure 2 were drawn using elevations obtained from U.S.G.S. Quadrangle Sheets, Scale 1/24,000.

METHOD OF DETERMINING AREA AND POPULATION SERVED

The areas within the 1000 and 50 uv/m contours were measured with a planimeter.

The areas are as follows:

1000 uv/m contour - 720 square miles

50 uv/m contour - 3009 square miles

The population to be served within the predicted contours was estimated by drawing the contours on a U.S. Minor Civil Division Map, census of 1940. When a contour cut through a Minor Civil Division, the population within the division was assumed to be uniform. Cities having populations in excess of 10,000 persons and were within the 50 uv/m contour but outside the 1000 uv/m contour were not considered as receiving service. The number of persons receiving service as determined by the above method is as follows:

1000 uv/m contour - 2,196,529

50 uv/m contour - 2,329,420

1950 3,296,604 1954 3,495,607 4,100,000

The actual number of houses was determined within 0.5 and 0.25 miles of the transmitter. Using a factor of 3.2 persons per house the population is as follows:

Within 0.25 miles - 272 persons

Within 0.5 miles - 1772 persons

a

QUALIFICATION SHEET

The engineering material herein contained, and the engineering information contained in the accompanying F.C.C. Form 301, were prepared under the direction of Mr. Ron Oakley, 2785 Cedar Avenue, Long Beach, California. Mr. Oakley is Chief Engineer of the Los Angeles Broadcasting Company, Inc., and is California Registered Electrical Engineer No. 3196.

Mr. Oakley's qualifications are a matter of record with your Commission, having been accepted in many previous AM and FM applications, sky wave and ground wave field intensity measurements, antenna resistance measurements, and directional antenna proof of performance reports.

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

Ron Oakley, being duly sworn, upon his oath deposes and says that the facts stated in the foregoing, together with the exhibits attached thereto, are true of his own knowledge, except as to such statements as therein stated to be on information and belief, and as to such statements he believes them to be true.

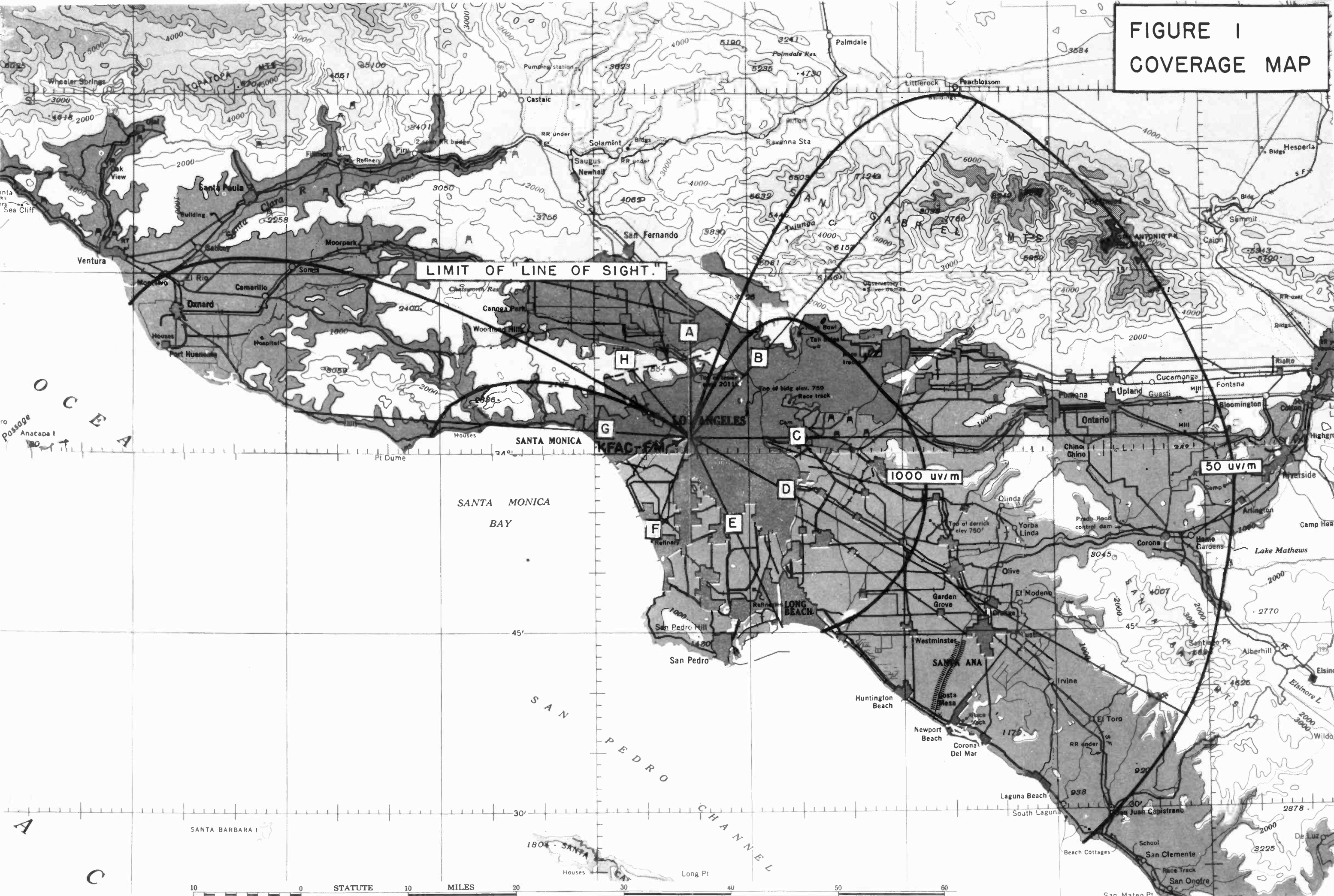
\_\_\_\_\_  
Ron Oakley (Affiant)

Sworn and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 1949.

\_\_\_\_\_  
Notary Public



FIGURE I  
COVERAGE MAP

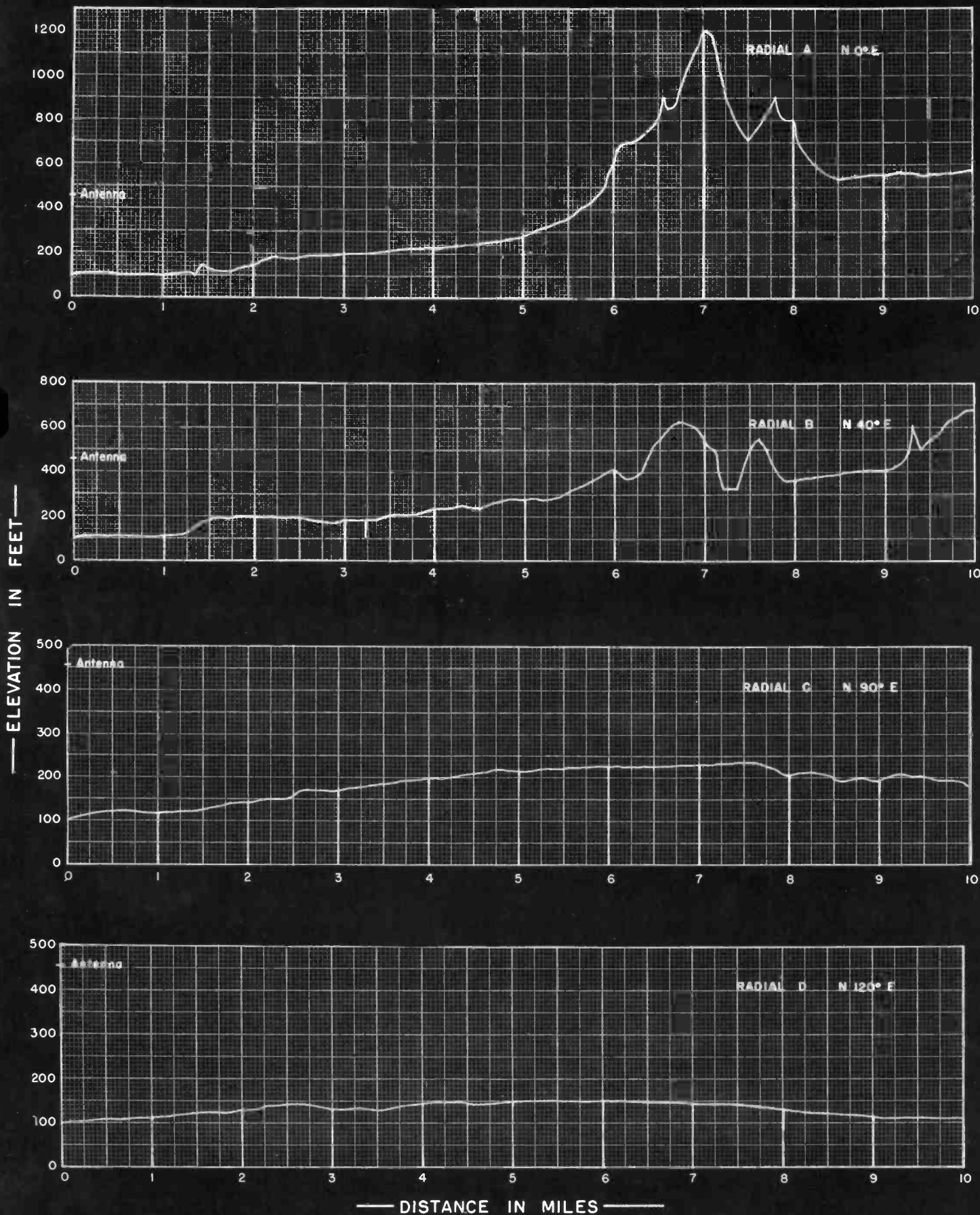


LIMIT OF "LINE OF SIGHT."

1000 uv/m

50 uv/m

10 0 10 20 30 40 50 60 STATUTE MILES



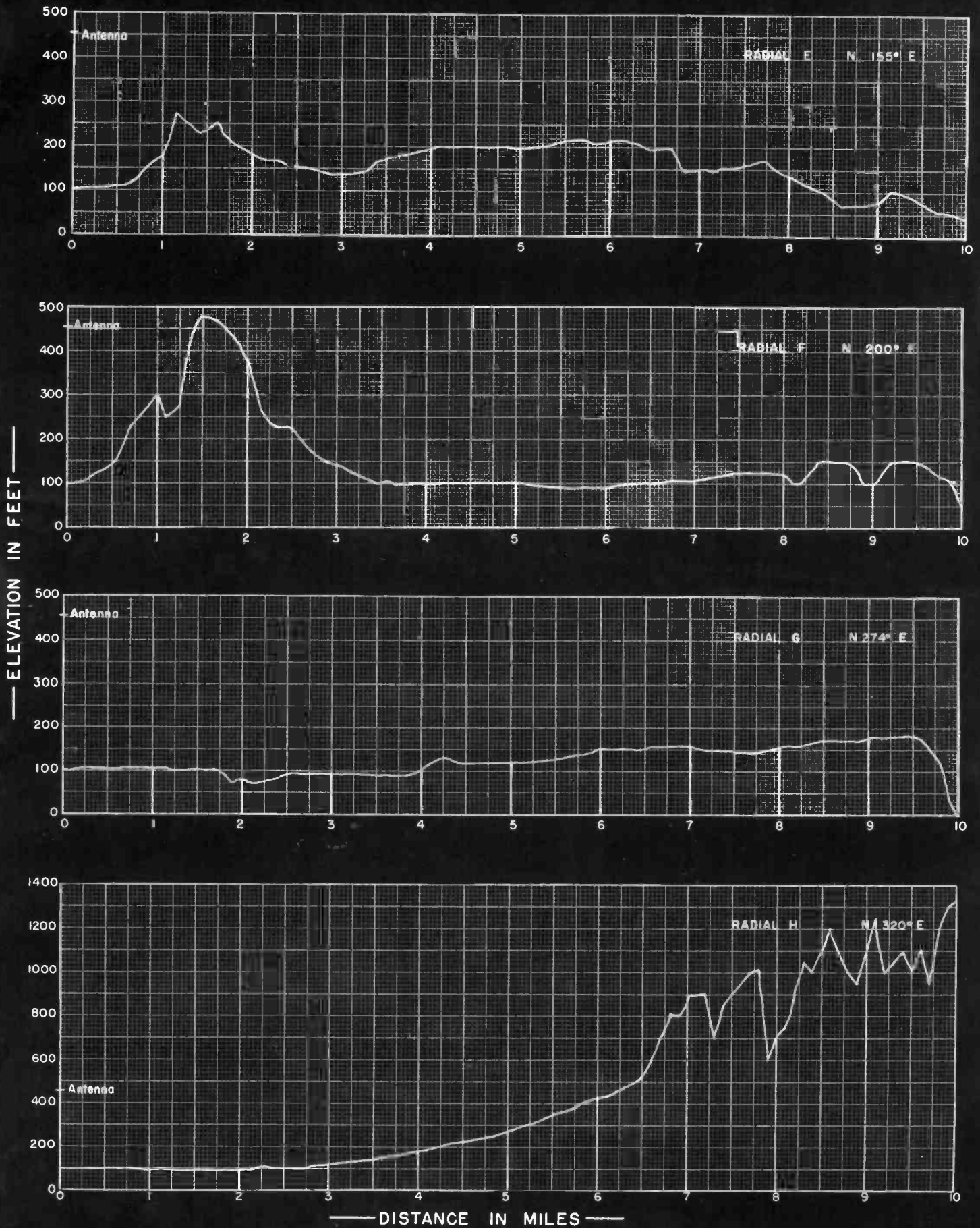
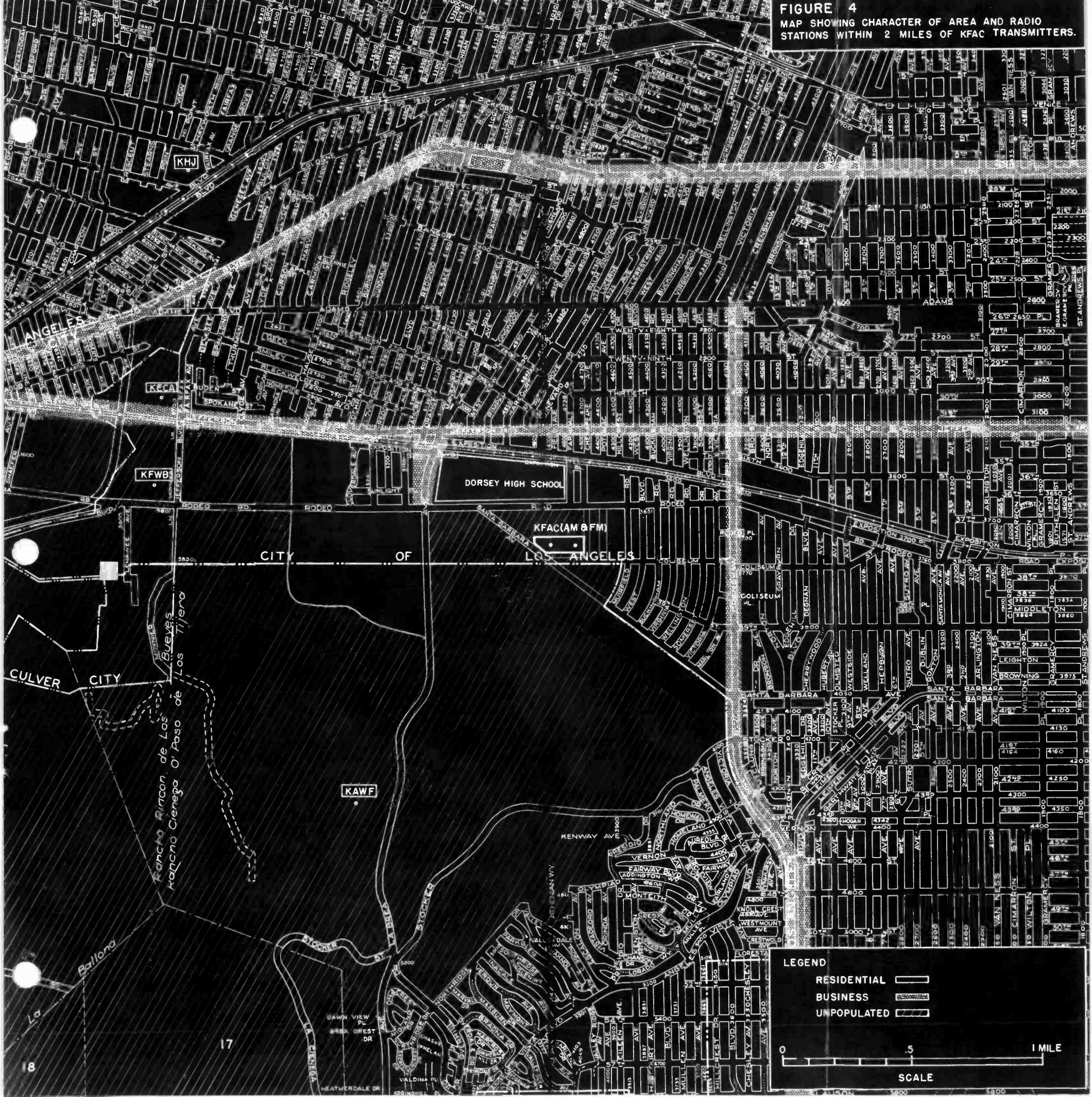


FIGURE 3

MAP SHOWING TOPOGRAPHY  
WITHIN 15 MILES OF THE  
TRANSMITTER SITE.



**FIGURE 4**  
**MAP SHOWING CHARACTER OF AREA AND RADIO STATIONS WITHIN 2 MILES OF KFAC TRANSMITTERS.**



**LEGEND**

- RESIDENTIAL
- BUSINESS
- UNPOPULATED

**SCALE**

0 5 1 MILE

FIGURE 5  
MAP SHOWING LOCATION OF  
KFAC MAIN STUDIO AND TRANSMITTERS.



Los Angeles  
and Vicinity

SCALE OF MILES

ONE INCH EQUALS APPROXIMATELY 3 MILES

FIGURE 6

COLLINS 4 RING  
FM ANTENNA

FM LINE CONNECTED  
TO TOWER

FM TRANSMISSION LINE

GROUND LEVEL (EL. 100')

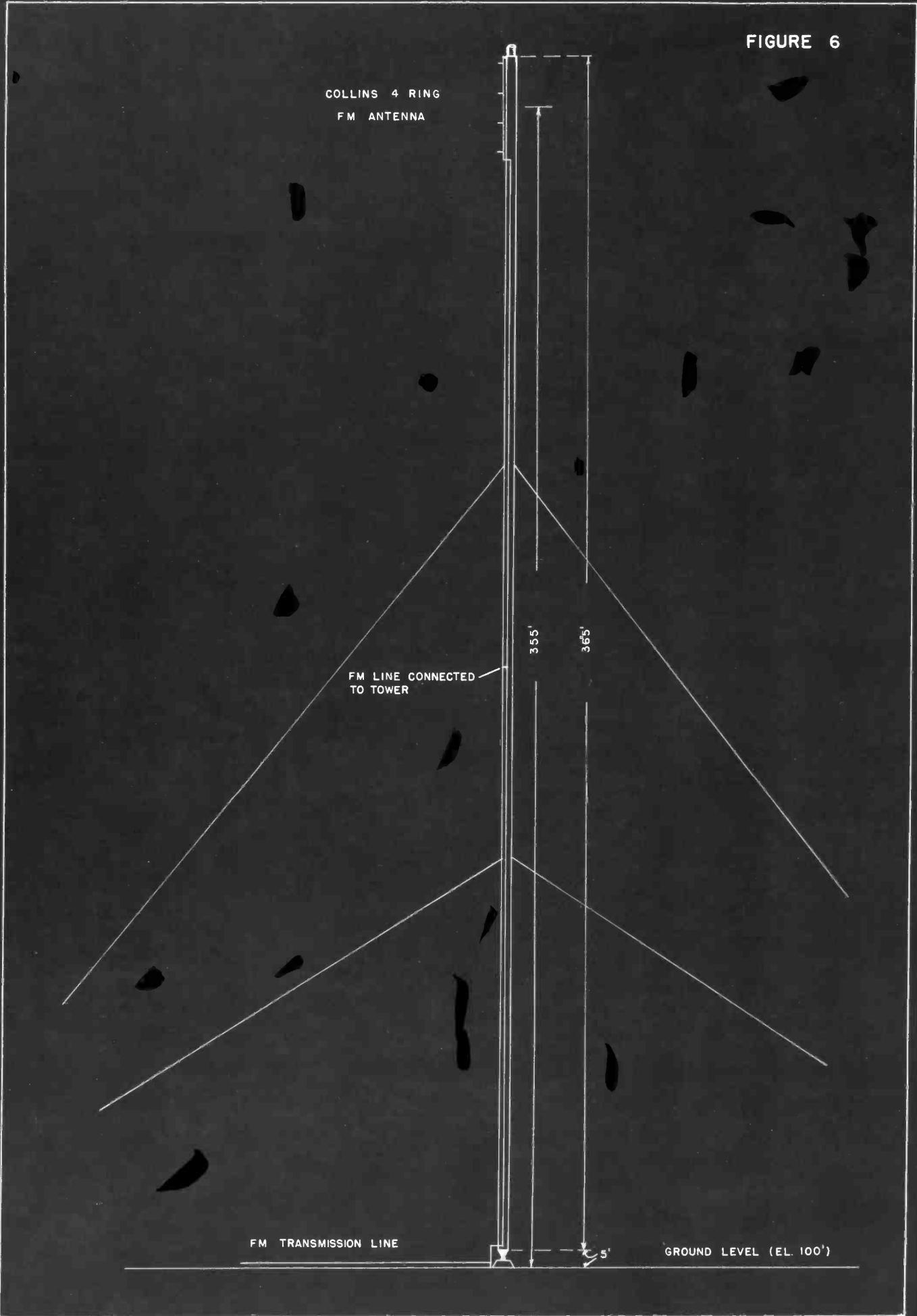


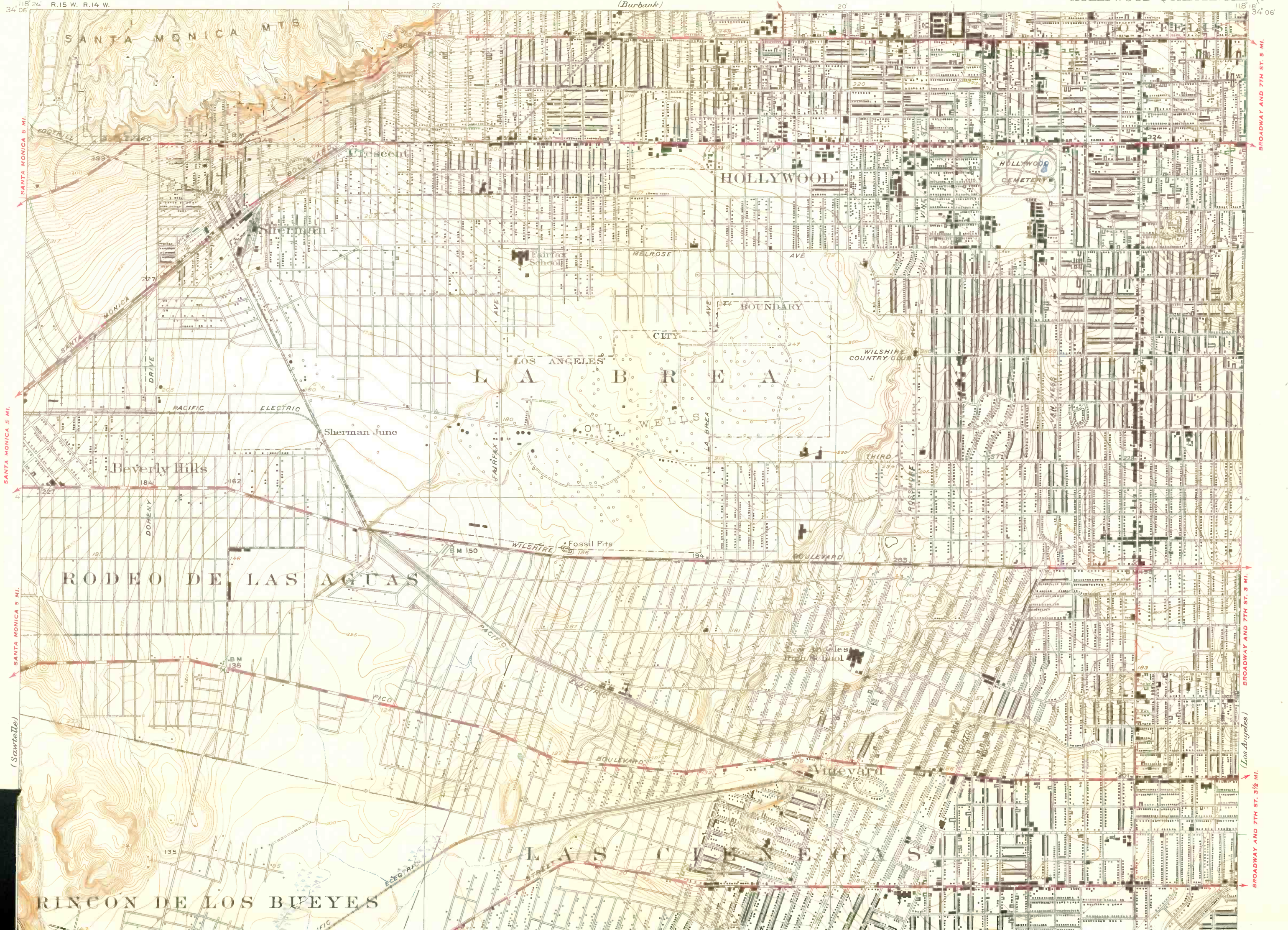
FIGURE 7  
AERIAL PHOTOGRAPH - AUGUST 1947  
SCALE: ONE INCH EQUALS 1530 FEET





MAP # C-11351 INDEX # 4-11
SCALE 1" 1530'
IDENTIFICATION W. O. 16513
DATE 1947
FAIRCHILD SURVEYING, INC. 224 E. 11th STREET LOS ANGELES, CALIF.

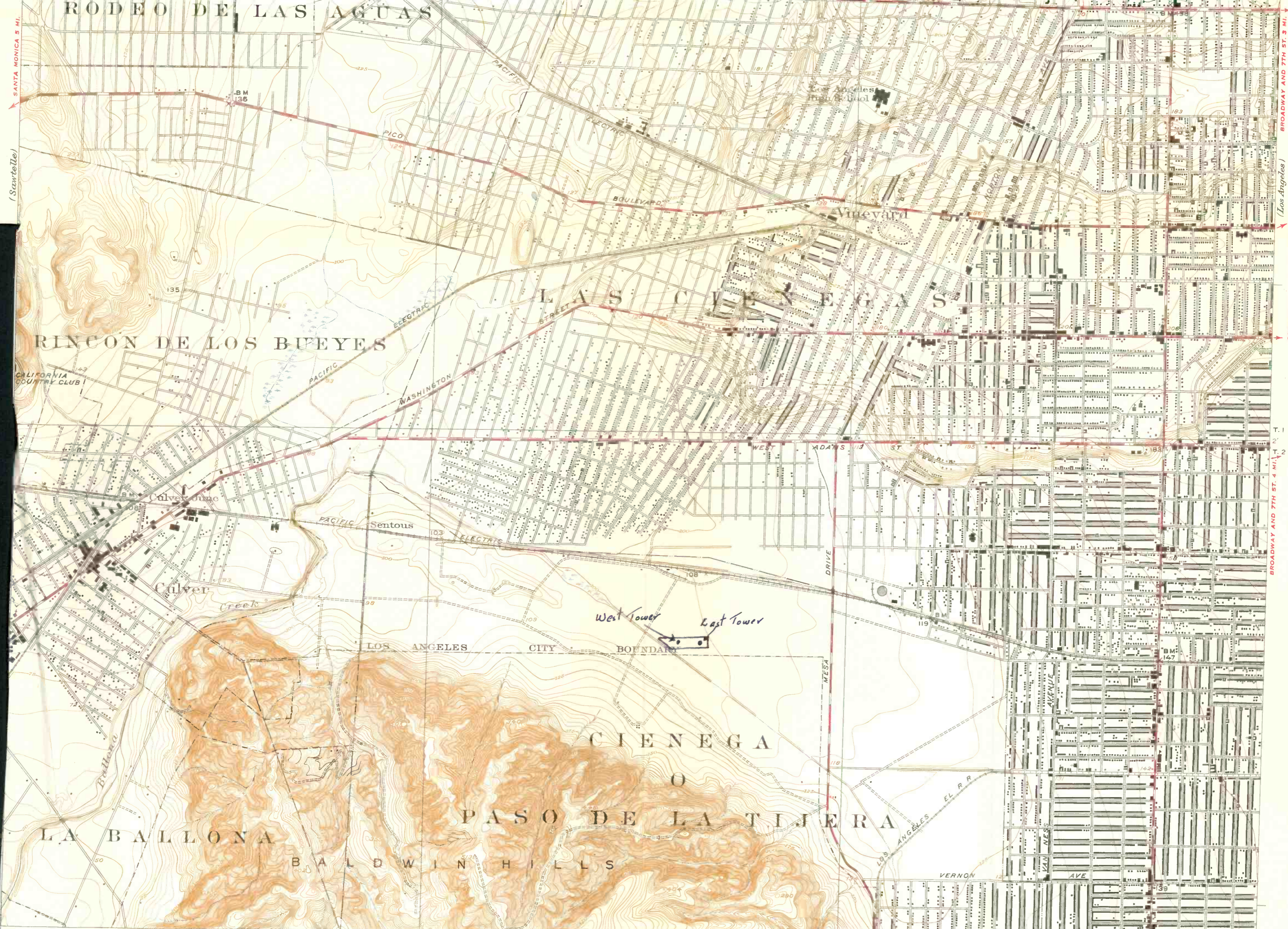
Figure 8



(Van Nuys)  
118 24' R.15 W. R.14 W.  
34 06  
SANTA MONICA 5 MI.  
SANTA MONICA 5 MI.  
SANTA MONICA 5 MI.  
(Sawtelle)

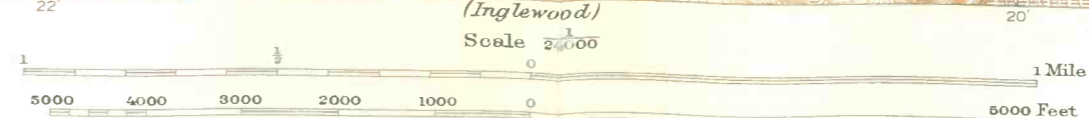
118 18' 34 06  
SAN FRANCISCO 425 MI.  
BROADWAY AND 7TH ST. 5 MI. (Glendale)  
BROADWAY AND 7TH ST. 3 MI. (Los Angeles)  
BROADWAY AND 7TH ST. 3 1/2 MI. (Los Angeles)

1:62,500



Topography by E.P. Davis  
 Control in part by City of Los Angeles  
 Surveyed in 1923-1924.

TRUE NORTH  
 MAGNETIC NORTH  
 APPROXIMATE MEAN  
 DECLINATION 1924



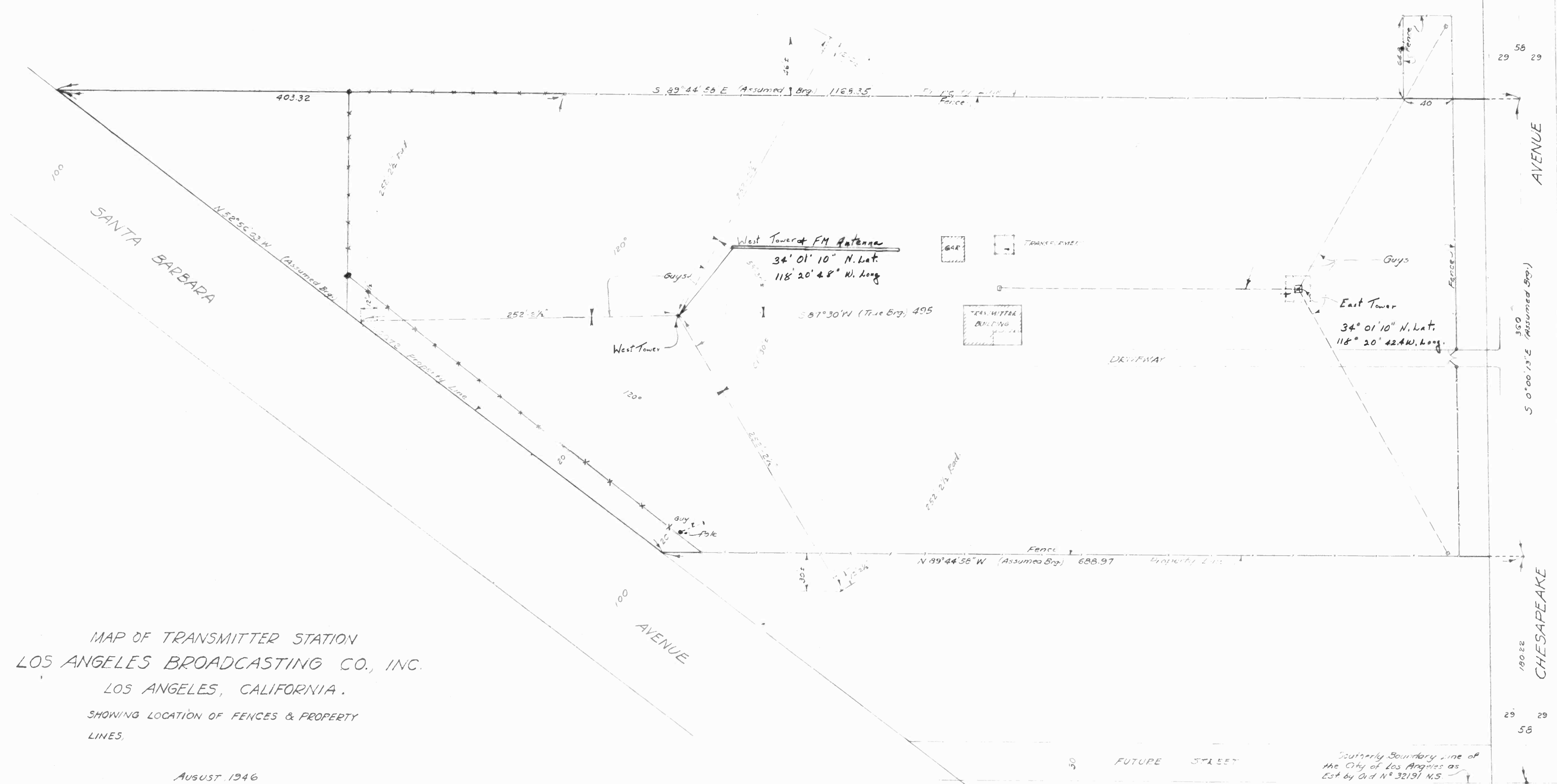
Contour interval 5 and 25 feet,  
 changing on the 500 foot contour.

INGLEWOOD 3 MI.  
 REDONDO BEACH 14 MI.

Polyconic projection. North American datum  
 5000 yard grid based upon U.S. zone system, G

THROUGH ROUTES  
 SECONDARY ROUTES

FIGURE 9



MAP OF TRANSMITTER STATION  
 LOS ANGELES BROADCASTING CO., INC.  
 LOS ANGELES, CALIFORNIA.  
 SHOWING LOCATION OF FENCES & PROPERTY  
 LINES.

AUGUST, 1946  
 HAROLD M. TEGART, CIVIL ENGINEER

Southerly Boundary line of  
 the City of Los Angeles as  
 Est. by Ord. N° 32191 N.S.

SCALE  
 1" = 40'