

EXHIBIT _____

RIO GRANDE BROADCASTING CO., INC.
EL PASO, TEXAS

APPLICATION FOR CONSTRUCTION PERMIT
RADIO STATION KSET
1340 KC, 250 W, ND-U
TO CHANGE TRANSMITTER LOCATION

A. EARL CULLUM, JR.
CONSULTING ENGINEERS
620515

ENGINEERING STATEMENT OF D. A. PETERSON OF THE FIRM OF A. EARL CULLUM, JR., CONSULTING ENGINEERS,
IN CONNECTION WITH THE APPLICATION OF RIO GRANDE BROADCASTING CO., INC., FOR CONSTRUCTION
PERMIT TO CHANGE THE KSET TRANSMITTER SITE AND MAKE JOINT USE OF ONE TOWER OF
THE KELP THREE-ELEMENT DIRECTIONAL ARRAY

* * * * *

I, D. A. Peterson, am an engineer associated with the firm of A. Earl Cullum, Jr., Consulting Engineers, with offices located in Dallas, Texas. I graduated from Southern Methodist University in 1934 with a Bachelor of Science Degree in Electrical Engineering. I have been employed in an engineering capacity by broadcast stations since 1933. I have been a partner in the firm of A. Earl Cullum, Jr. since 1940. My qualifications have been accepted by the Federal Communications Commission. This statement has been prepared on behalf of Rio Grande Broadcasting Co., Inc.

Radio Station KSET is presently authorized to operate on 1340 kilocycles with a power of 250 watts and a nondirectional antenna unlimited time at El Paso, Texas. The existing transmitter site is immediately adjacent to the main business district and industrial area of old El Paso. The transmitter site is leased, but since January 1, 1962, the lease has been renewed on a monthly basis, and KSET must relocate the transmitter site in order to assure continued operation.

A search has been conducted by the applicant for a suitable site adjacent to the main business district of El Paso. We are advised that none is available; however, an agreement has been made with the licensee of Radio Station KELP to make joint use of one of the KELP towers. KELP is located only 2.0 miles on a bearing of 71 degrees true from the existing KSET site. KELP is authorized to operate on 920 kilocycles with 1000 watts of power nondirectional daytime and 500 watts of power directional nighttime, File No. BL-5574. The daytime operation uses the middle tower of a three-tower array, and the nighttime operation uses all three towers. Studies have been made which indicate that the southeast tower of the KELP array could be used jointly by KELP and KSET by the use of suitable filters to prevent interaction between the two operations.

This firm has been employed by Rio Grande Broadcasting Co., Inc., to prepare the engineering portion of an application for construction permit for Radio Station KSET to change transmitter site and make joint use of one tower of the KELP directional array.

ATTACHED PARTS

The following attached material has been prepared under my direction in connection with this proposal and is true and correct to the best of my knowledge and belief:

- PART I. Existing operation of KSET
- PART II. Proposed operation of KSET
- PART III. Joint use of towers by KELP and KSET

DETERMINATION OF FIELD INTENSITY AND INTERFERENCE

The unattenuated field for each station studied was determined from directional antenna patterns on file with the Federal Communications Commission or, in the case of nondirectional antennas, from Figure 8 of Section 3.190 of the Rules for domestic stations, or in accordance with the 1957 Agreement with Mexico for Mexican stations. The projection of groundwave and skywave signals and the determination of primary service contours were carried out in accordance with the provisions of Sections 3.182 and 3.183 of the Rules of the Commission.

DETERMINATION OF AREAS AND POPULATIONS

The areas within the various contours were determined by using a polar planimeter on the original coverage maps. The population within the proposed blanket contour was determined from a count of the dwellings within the contour as shown on the attached aerial photograph and by assuming that four persons resided within each dwelling. The populations residing within the coverage contours were determined by using United States 1960 Census figures and maps of minor civil divisions and census tracts. Uniform distribution of rural population within each minor civil division was assumed. Cities having a population of 2500 or greater and not located within the 2-mv/m contours were deducted from the total population enclosed.

REQUEST FOR WAIVER

The attached material indicates that the proposed operation of KSET at the KLP site would provide better service to El Paso and the surrounding area, particularly at night, due to the site being more centrally located in El Paso and due to the better ground conductivity east of the present site. The proposed operation, however, would not place 25 mv/m over the entire main business district of El Paso, although it would place a signal greater than 15 mv/m over the main business district. A waiver of Section 3.188(b)(1) is requested in view of the fact that the applicant has been unable to find a suitable site closer to the business district so that a field intensity of 25 mv/m could be placed over the entire main business district. In support of this request, it should be noted that this proposed move would result in improved service from KSET as follows:

POPULATION SERVED


<u>Contour</u>	<u>Present</u>	<u>Proposed</u>	<u>Gain</u>
10.9 mv/m*	167,896	194,342	26,446
5.0	235,869	255,775	19,906
2.0	284,768	290,638	5,870
0.5	303,145	306,964	3,819

*Nighttime interference free contour.

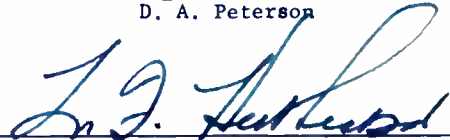
It should also be noted that the proposed move would not result in objectionable interference to any other existing station or proposed operation.

Subscribed and sworn to before me
on this 5th day of June, 1962.

My Commission expires June 1, 1963.



D. A. Peterson



Notary Public, Dallas County, Texas

PART I

EXISTING OPERATION OF KSET

Part I contains four figures identified as follows:

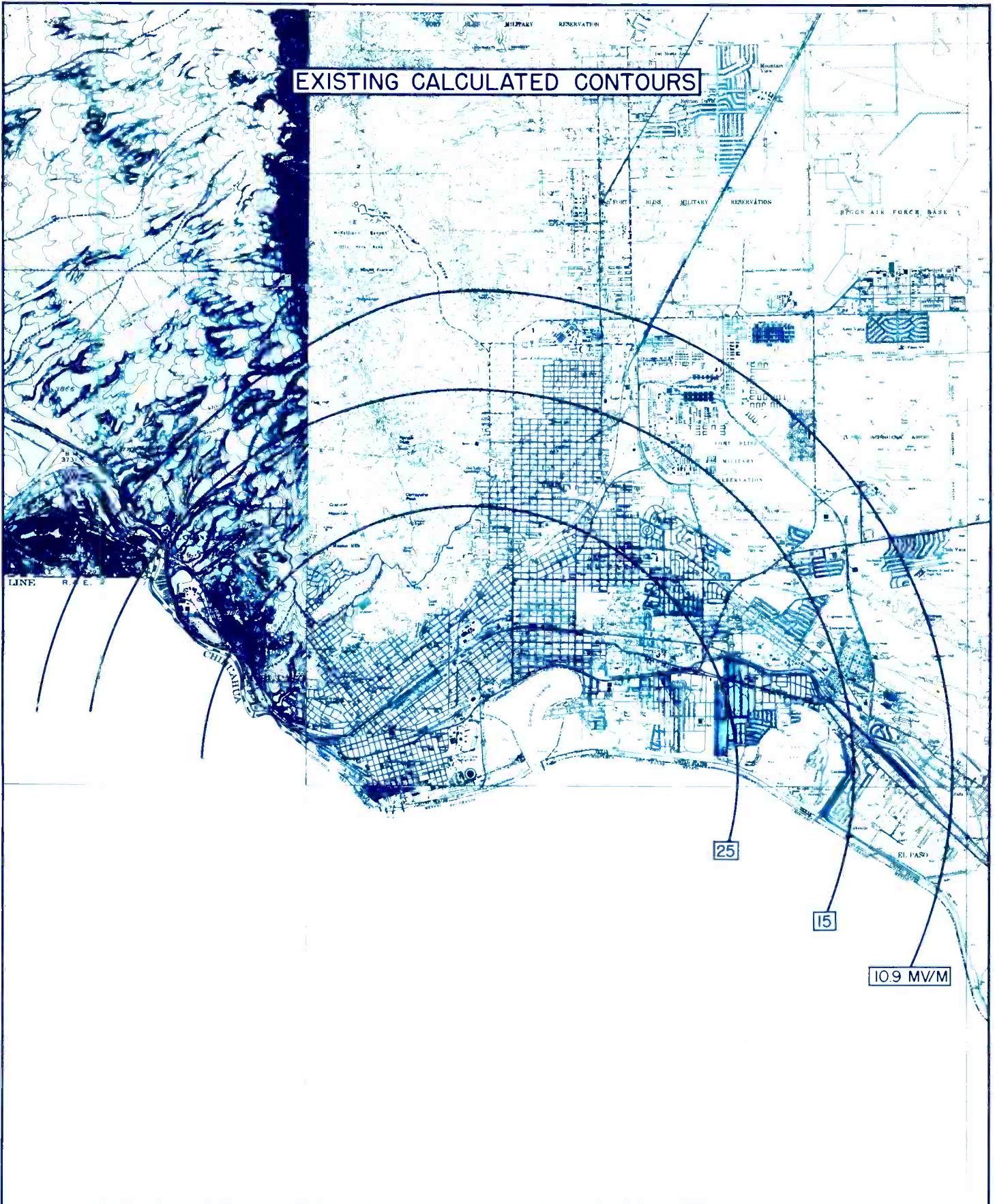
1. Conditions for existing operation
- 2A. Map showing existing 25-, 15-, and 10.9-mv/m contours
- 2B. Map showing existing 5-, 2-, and 0.5-mv/m contours
- 2C. Area and population analysis of existing contours

RADIO STATION KSET
EL PASO, TEXAS

CONDITIONS FOR EXISTING OPERATION

Frequency	1340 kilocycles
Power	250 watts nondirectional
Type of tower	Uniform cross-section, guyed, series-fed, vertical tower
Tower height above insulator	300' without lighting
Tower height above ground	306' without lighting
Ground system	120 radials 300' long and 120 radials 45' long
Assumed antenna efficiency	215 mv/m per kilowatt
Geographic coordinates	31° 45' 07" North 106° 28' 11" West

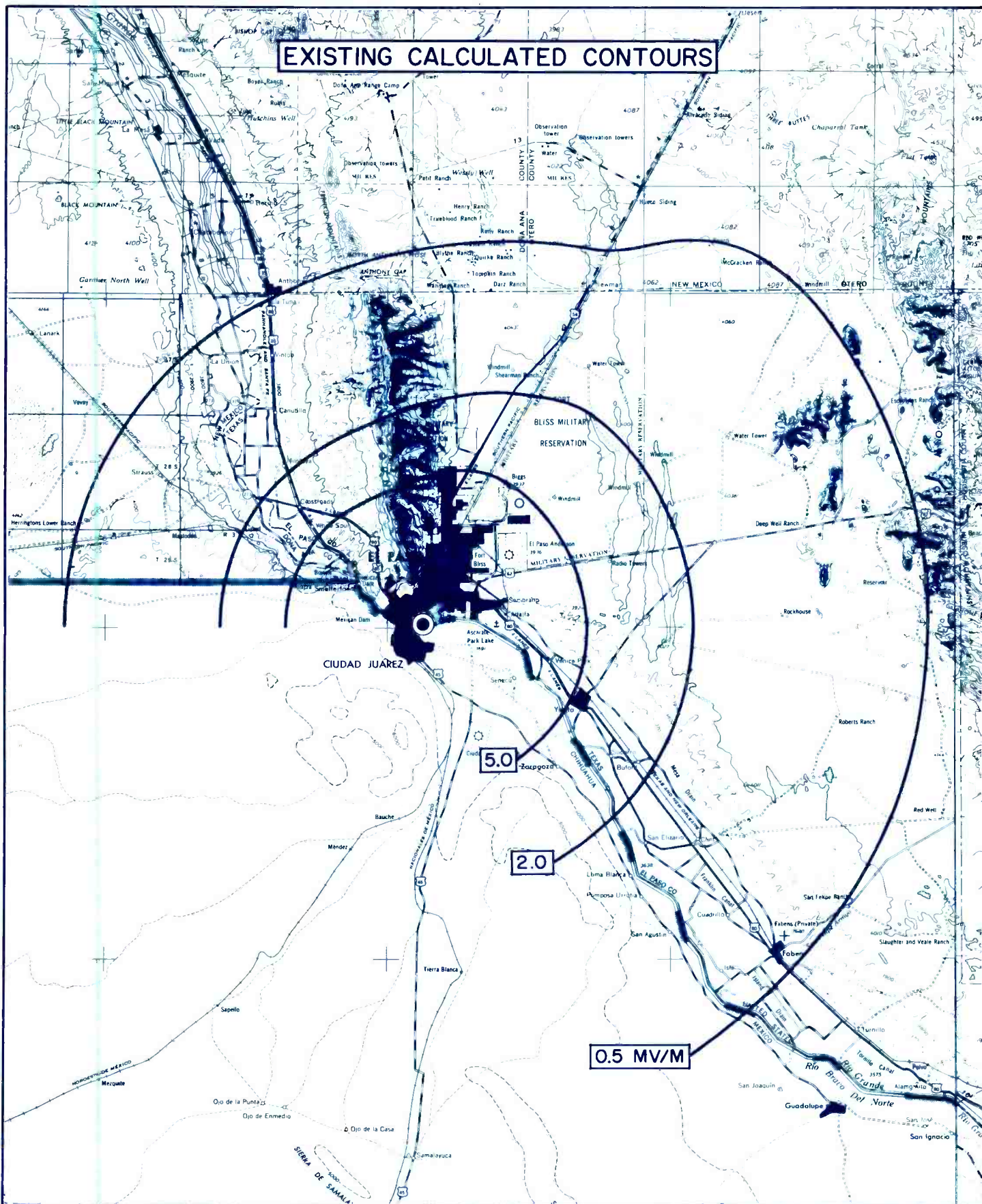
EXISTING CALCULATED CONTOURS



PREPARED BY
THE FIRM OF A. EARL CULLUM, JR.
CONSULTING ENGINEERS

RADIO STATION KSET
EL PASO, TEXAS
620515.1
FIGURE 2A

EXISTING CALCULATED CONTOURS



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CONSULTING ENGINEERS

RADIO STATION KSET
EL PASO, TEXAS
620515.1
FIGURE 2B

RADIO STATION KSET
EL PASO, TEXAS

ANALYSES OF AREAS AND POPULATIONS EXISTING OPERATION

<u>CONTOUR</u>	<u>AREA-SQ. MI.</u>	<u>POPULATION SERVED</u>
1000. mv/m	0.05	
25.	13.	105,919
15.	26.	146,541
10.9*	39.	167,896
5.0	98.	235,869
2.0	270.	284,768
0.5	970.	303,145

*Nighttime interference limited contour.

PART II

PROPOSED OPERATION OF KSET

Part II contains eleven figures identified as follows:

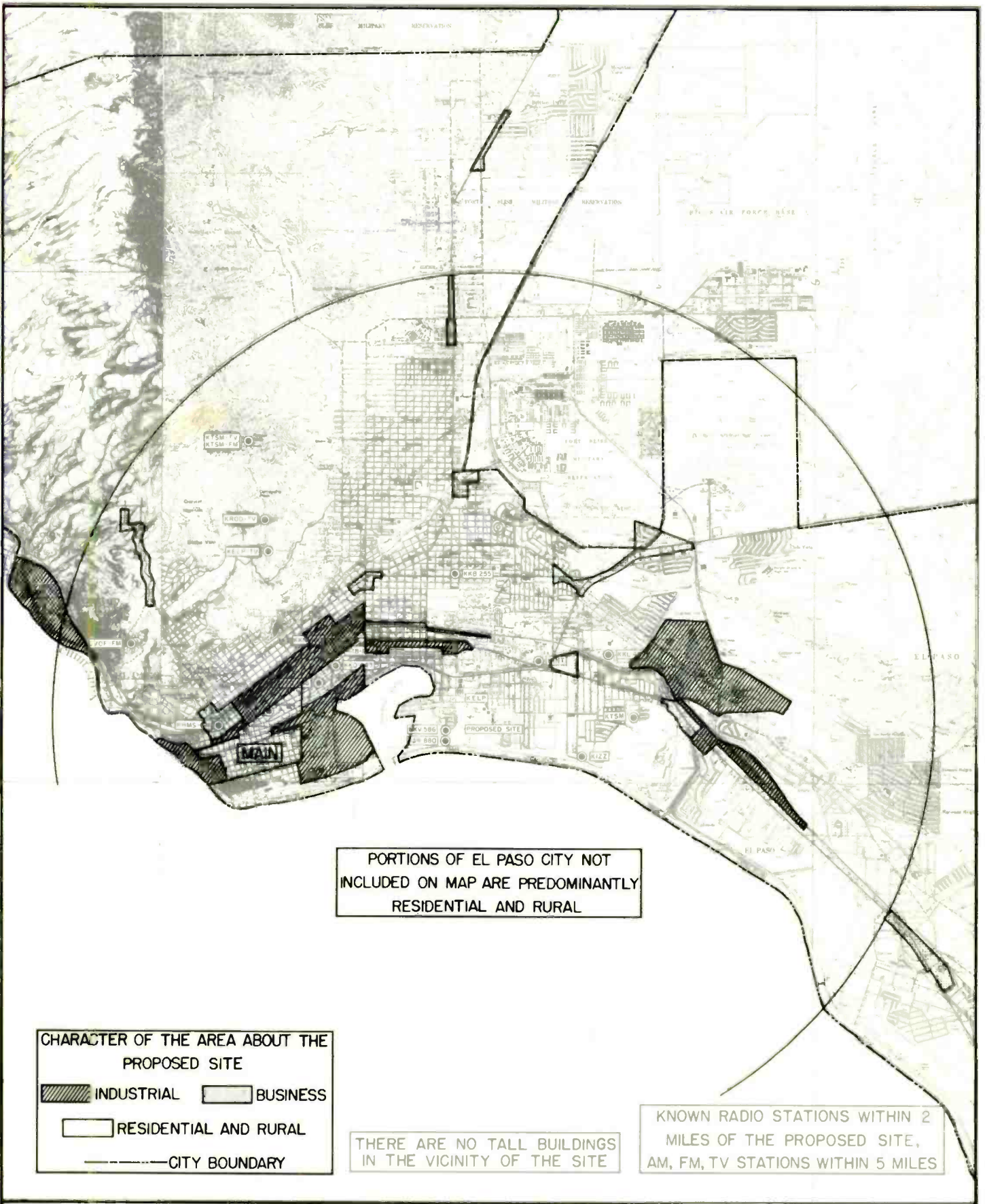
1. Conditions for proposed operation
2. Topographic map showing the terrain and other radio stations in the vicinity of the proposed site, together with an overlay showing use zoning of the City of El Paso, Texas
3. Plat of the property and elevation view showing the locations of towers, extent of the ground system, and nearby streets
- 4A. Map showing proposed 1-v/m contour
- 4B. Map showing proposed 25-, 15-, and 10.9-mv/m contours
- 4C. Map showing proposed 5-, 2-, and 0.5-mv/m contours
- 4D. Area and population analysis of proposed contours
5. Aerial photograph of the proposed site showing property lines, towers, and proposed 1-v/m contour
- 6A. Portion of full scale M3 allocation map
- 6B. Tabulation of unattenuated fields and conductivities used.
7. Aeronautical chart showing the proposed site.

RADIO STATION KSET
EL PASO, TEXAS

CONDITIONS FOR PROPOSED OPERATION





Frequency	1340 kilocycles
Power	250 watts nondirectional
Type of tower*	Uniform cross-section, guyed, series-fed tower
Tower height above insulator	250' without lighting 253' with lighting
Tower height above ground	255' without lighting 258' with lighting
Tower height above mean sea level	3960' without lighting 3963' with lighting
Ground system*	32' x 32' ground screen plus 120 radials 250' long except as extended west as part of existing KELP ground system.
Assumed antenna efficiency	203 mv/m per kilowatt
Geographic coordinates	31° 45' 40" North 106° 26' 11" West

*Tower is southeast (#3) tower of existing KELP array. Ground system is existing KELP ground system.



PORTIONS OF EL PASO CITY NOT INCLUDED ON MAP ARE PREDOMINANTLY RESIDENTIAL AND RURAL

CHARACTER OF THE AREA ABOUT THE PROPOSED SITE

	INDUSTRIAL		BUSINESS
	RESIDENTIAL AND RURAL		CITY BOUNDARY

THERE ARE NO TALL BUILDINGS IN THE VICINITY OF THE SITE

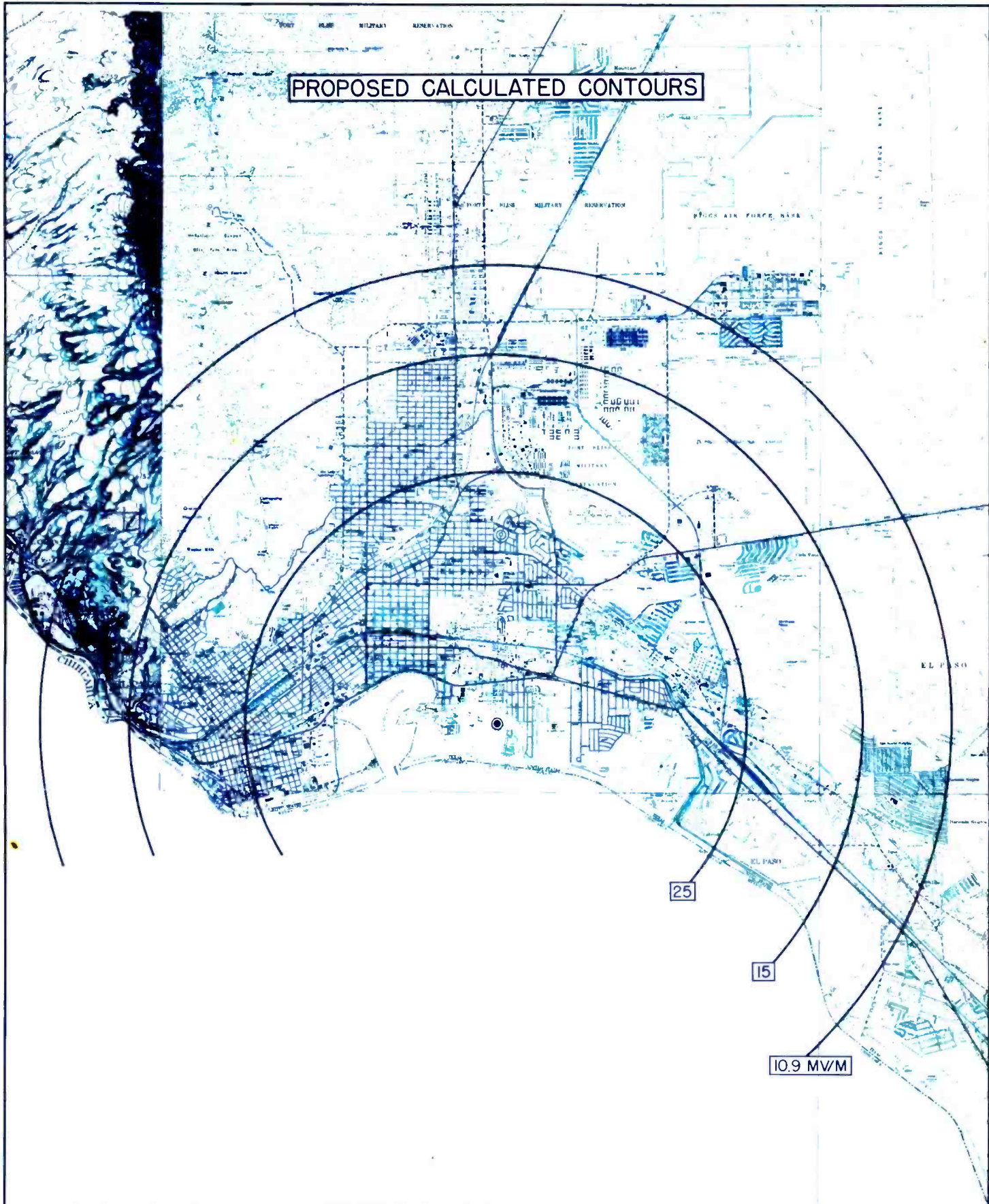
KNOWN RADIO STATIONS WITHIN 2 MILES OF THE PROPOSED SITE, AM, FM, TV STATIONS WITHIN 5 MILES



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RADIO STATION KSET
EL PASO, TEXAS
620515.2 FIGURE 2

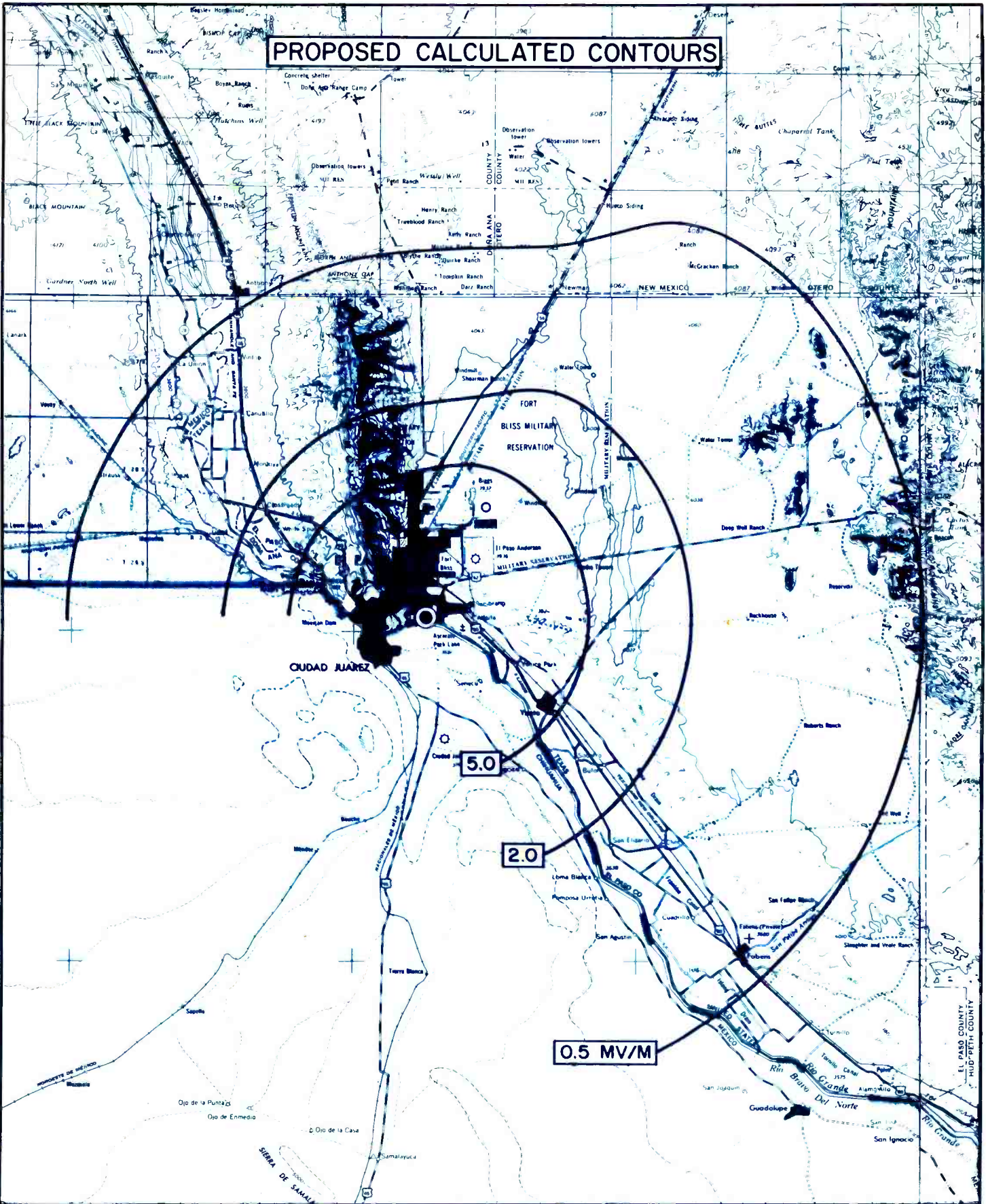
PROPOSED CALCULATED CONTOURS



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RADIO STATION KSET
EL PASO, TEXAS
620515.2
FIGURE 4B

PROPOSED CALCULATED CONTOURS



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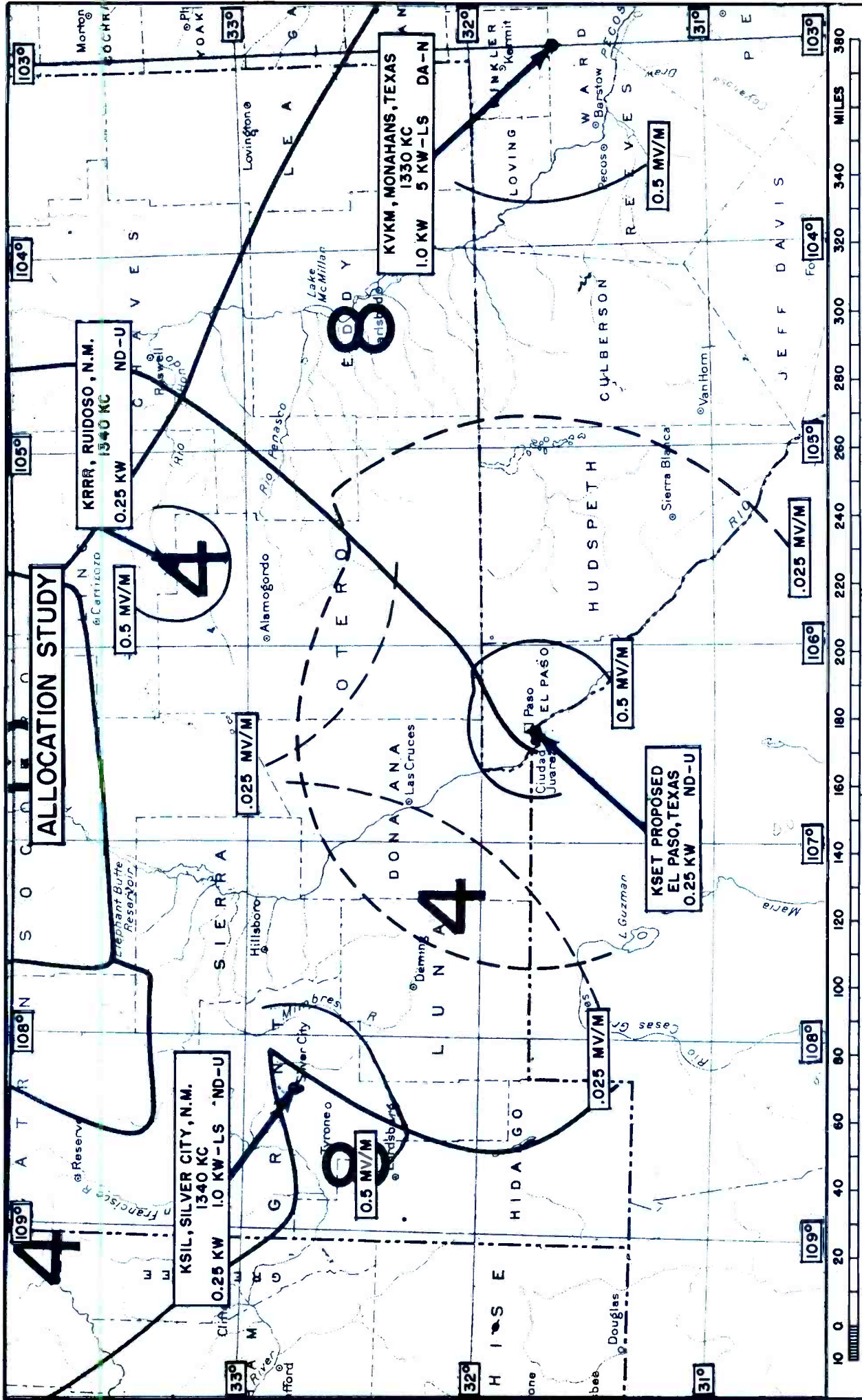
RADIO STATION KSET
EL PASO, TEXAS
620515.2
FIGURE 4C

RADIO STATION KSET
EL PASO, TEXAS

ANALYSES OF AREAS AND POPULATIONS PROPOSED OPERATION

<u>CONTOUR</u>	<u>AREA-SQ. MI.</u>	<u>POPULATION SERVED</u>
1000. mv/m	0.05	12
25.	16.	95,916
15.	33.5	155,902
10.9*	50.5	194,342
5.0	110.	255,775
2.0	295.	290,638
0.5	1030.	306,964

*Nighttime interference limited contour.



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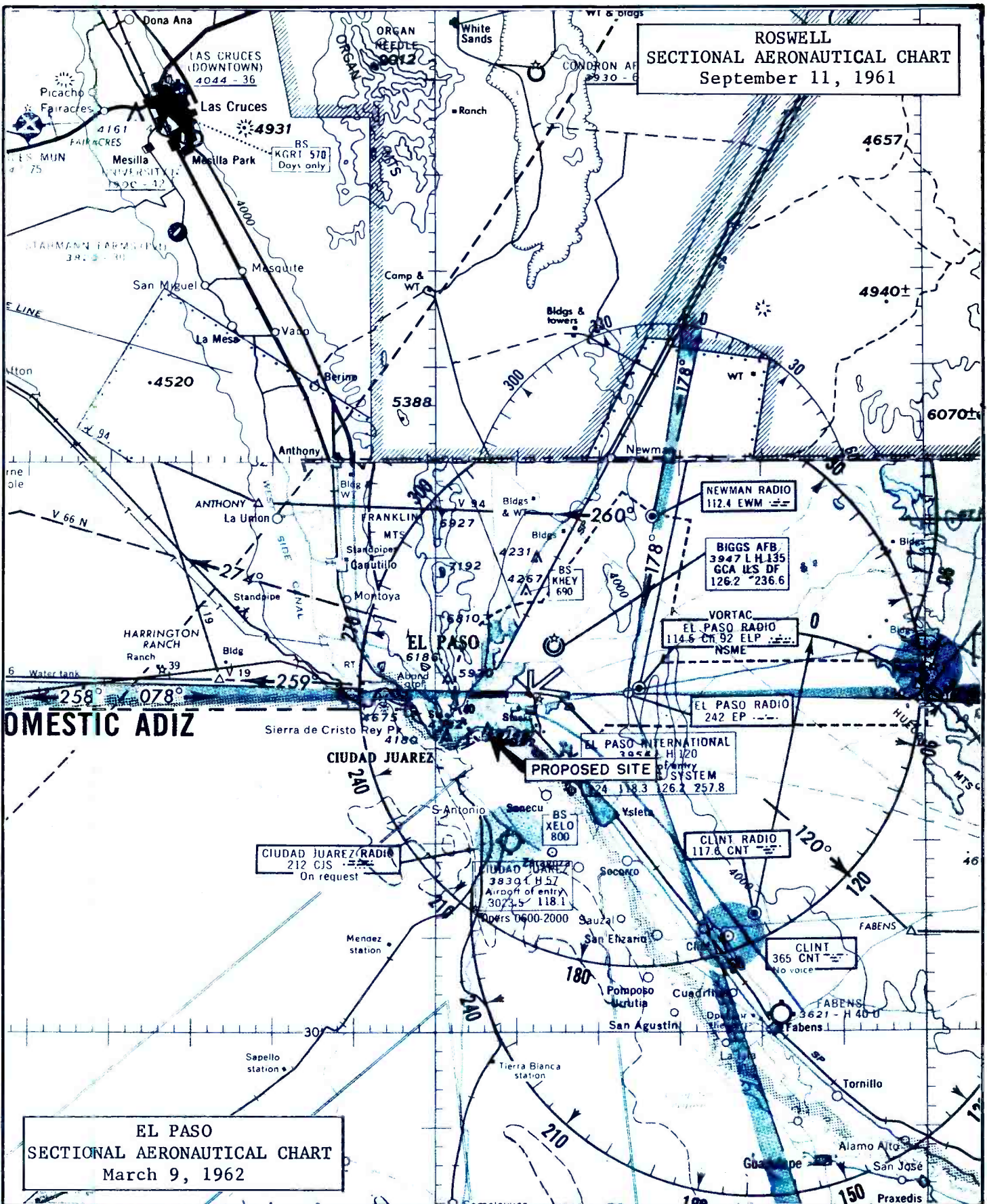
RADIO STATION KSET
 EL PASO, TEXAS

620515.2 FIGURE 6A

TABULATION OF UNATTENUATED FIELDS AND CONDUCTIVITIES USED

<u>Radio Station</u>	<u>Azimuth Studied</u>	<u>Inverse Distance Field</u>	<u>Basis For Ground Conductivity</u>
KRRR	N 180° E	93 mv/m	M-3
	N 225° E	93	M-3
KSIL	N 90° E	194	M-3
	N 110° E	194	M-3
	N 145° E	194	M-3
	N 180° E	194	M-3
KVKM	N 250° E	490 (Proof)	Proof 0-20 miles M-3 beyond 20 miles
	N 292° E	500 (Proof)	Proof 0-20 miles M-3 beyond 20 miles
KSET(Existing)	N 00° E	102	M-3
	N 18° E	102	M-3
	N 43.5° E	102	M-3
	N 49.5° E	102	M-3
	N 280° E	102	M-3
	N 330° E	102	M-3
KSET(Proposed)	N 00° E	108	M-3
	N 19.1° E	108	M-3
	N 44.7° E	108	M-3
	N 50.8° E	108	M-3
	N 280° E	108	M-3
	N 334° E	108	M-3

ROSWELL
SECTIONAL AERONAUTICAL CHART
September 11, 1961

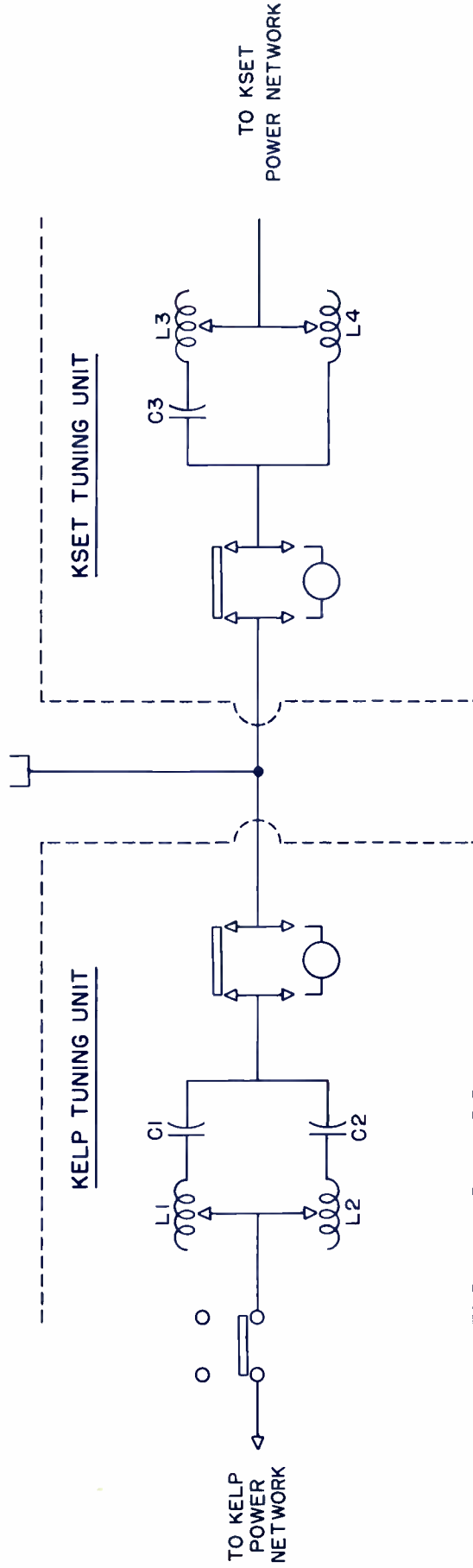


EL PASO
SECTIONAL AERONAUTICAL CHART
March 9, 1962

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RADIO STATION KSET
EL PASO, TEXAS
620515 **FIGURE 7**

ISOLATION FILTERS AT SOUTHEAST TOWER



L1, C1 SERIES RESONANT AT 920 KC
 L1, C1 & L2, C2 PARALLEL RESONANT AT 1340 KC

L3, C3 SERIES RESONANT AT 1340 KC
 L3, C3 & L4 PARALLEL RESONANT AT 920 KC

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RADIO STATION KSET
 EL PASO, TEXAS
 620515.3 FIGURE 2A

PART III

JOINT USE OF TOWERS BY KELP AND KSET

Part III contains three figures identified as follows:

1. Discussion of proposed filters and coupling system
- 2A. Schematic diagram of isolation filters proposed for the southeast tower
- 2B. Schematic diagram of isolation filters for the center and northwest towers

RADIO STATION KSET
EL PASO, TEXAS

DISCUSSION OF PROPOSED FILTERS AND COUPLING SYSTEM

KELP operates on 920 kilocycles and KSET operates on 1340 kilocycles. The frequency separation of 420 kilocycles permits the use of relatively simple filters to isolate one operation from the other operation.

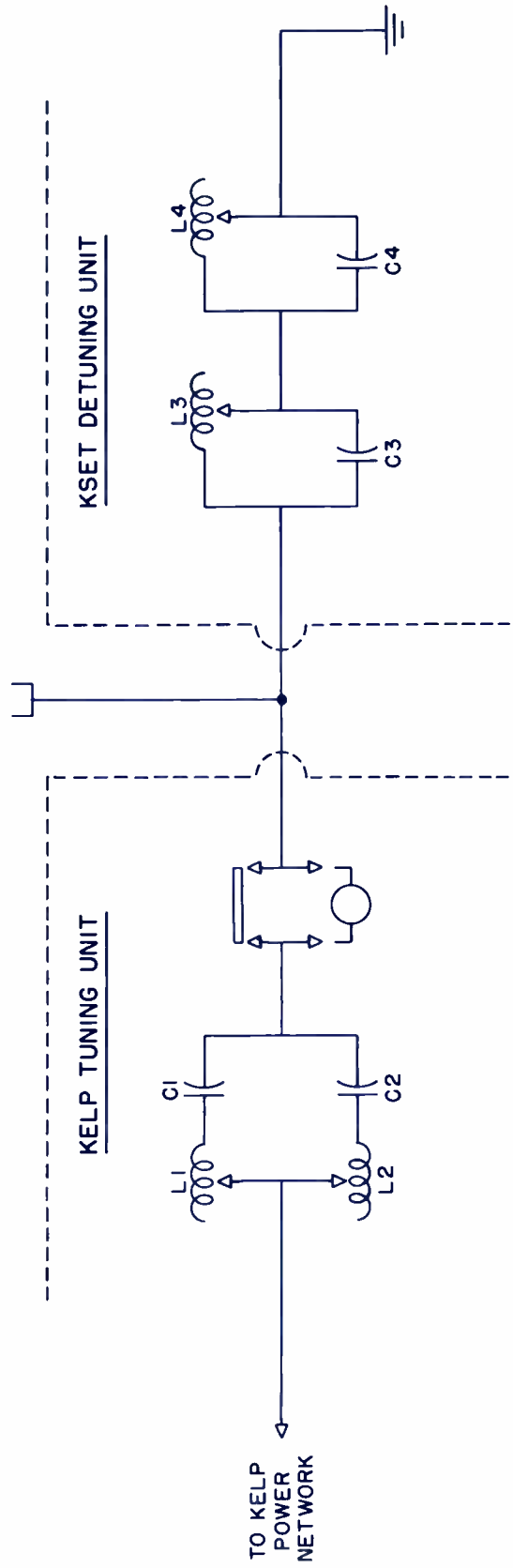
It is proposed to install a 920-kc pass, 1340-kc reject filter in the antenna lead in each KELP antenna tuning unit. The insertion of such units is not expected to affect the present operating parameters of the KELP antenna system, or to effect substantially the present KELP antenna coupling system. These filters will isolate the KELP antenna coupling equipment and transmitter from the KSET signal.

It is proposed to install an additional tuning unit at the base of each tower to house KSET equipment. It is proposed to install a 1340-kc pass, 920-kc reject filter at the southeast tower and to feed that tower from the KSET transmitter. It is proposed to install a 920-kc reject filter at the center and northwest towers and to install an additional circuit to detune these towers at 1340 kilocycles through the 920-kc reject filters to ground. These filters will isolate the KSET antenna coupling equipment and transmitter from the KELP signal.

Components for the filters at the tower bases will be adequate to permit the filters to have a "Q" of at least 50. Schematic diagrams of the proposed filters are attached.

The KELP current and phase monitoring system consists of sampling loops on the towers feeding a phase monitor through coaxial transmission lines. It is planned to install suitable filters across the sampling lines at the input to the phase monitor, to prevent the KSET signal from entering the phase monitor. These filters will be designed so as to have a minimum effect upon the KELP current and phase monitoring system.

ISOLATION FILTERS AT CENTER & NORTHWEST TOWER



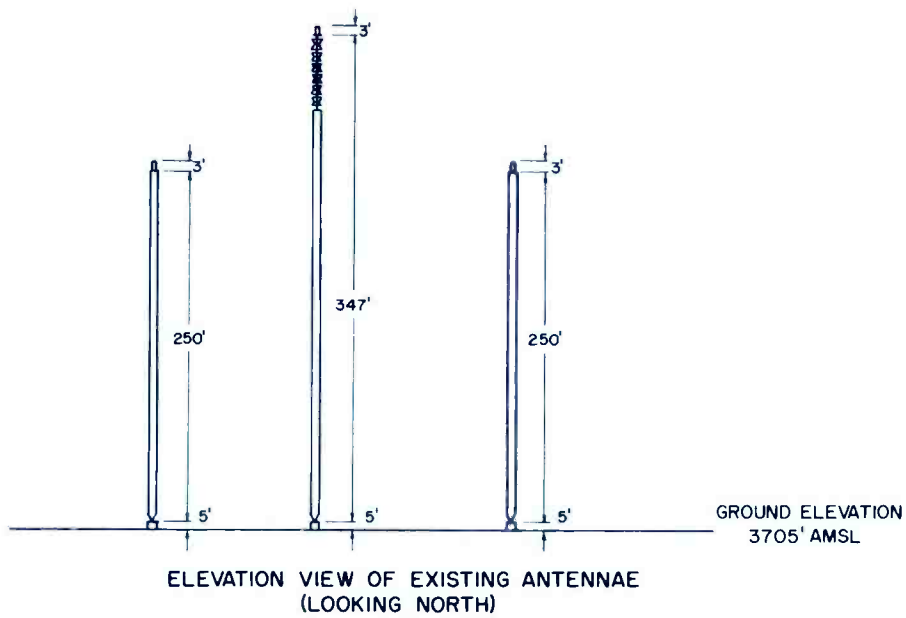
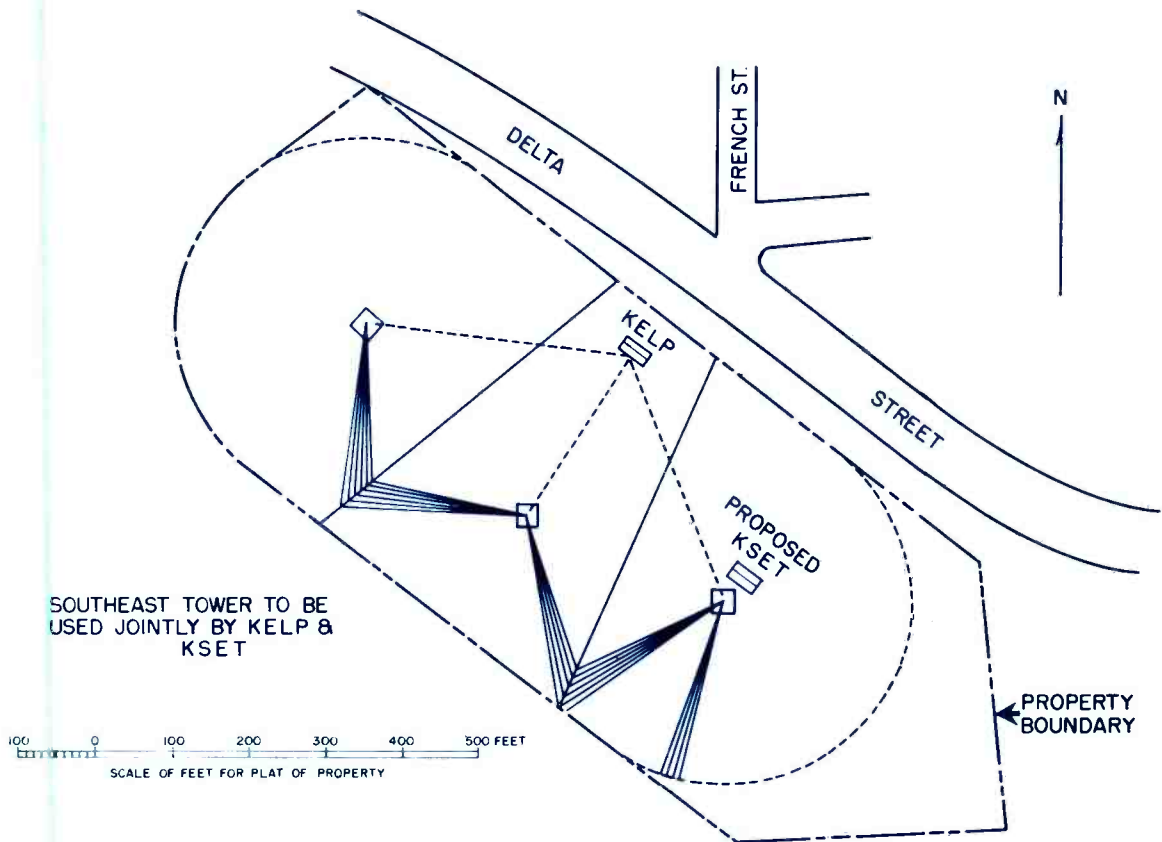
L1,C1 SERIES RESONANT AT 920 KC
 L1,C1 & L2,C2 PARALLEL RESONANT AT 1340 KC
 Q GREATER THAN 50

L3,C3 PARALLEL RESONANT AT 920 KC
 L4,C4 ADJUSTED TO DETUNE TOWER AT 1340 KC

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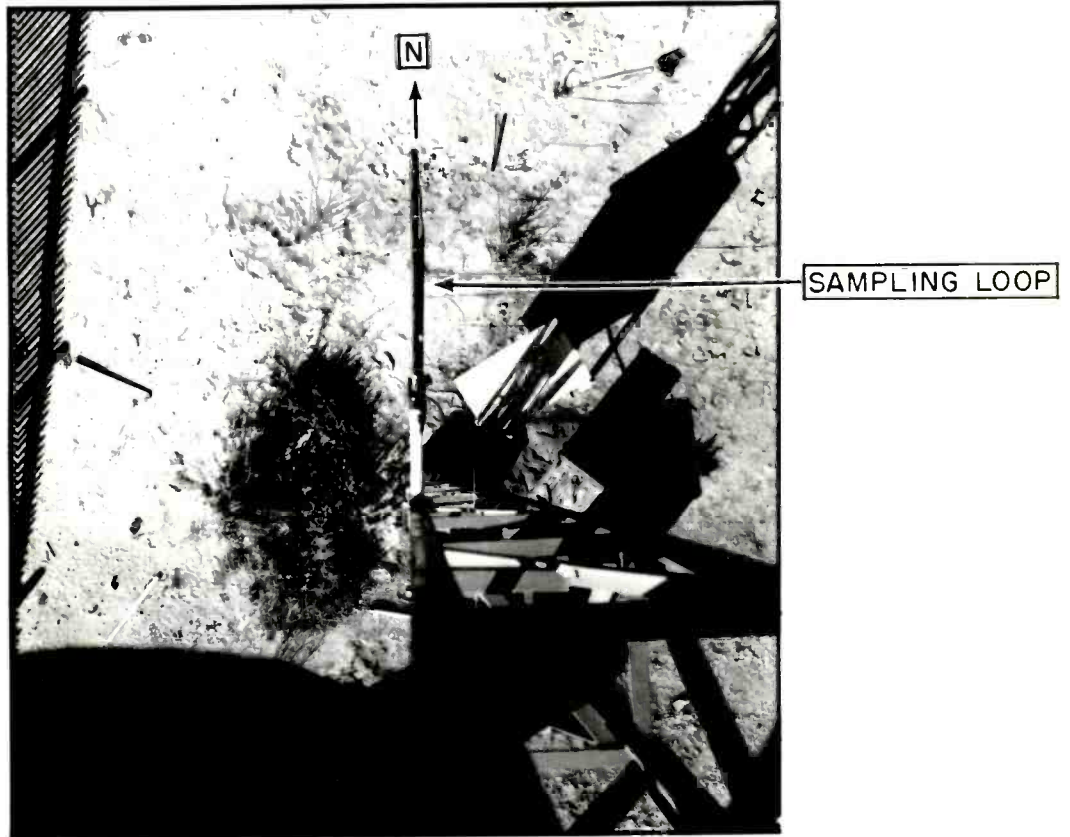
RADIO STATION KSET
 EL PASO, TEXAS
 620515.3 FIGURE 2B

PLAT OF PROPERTY

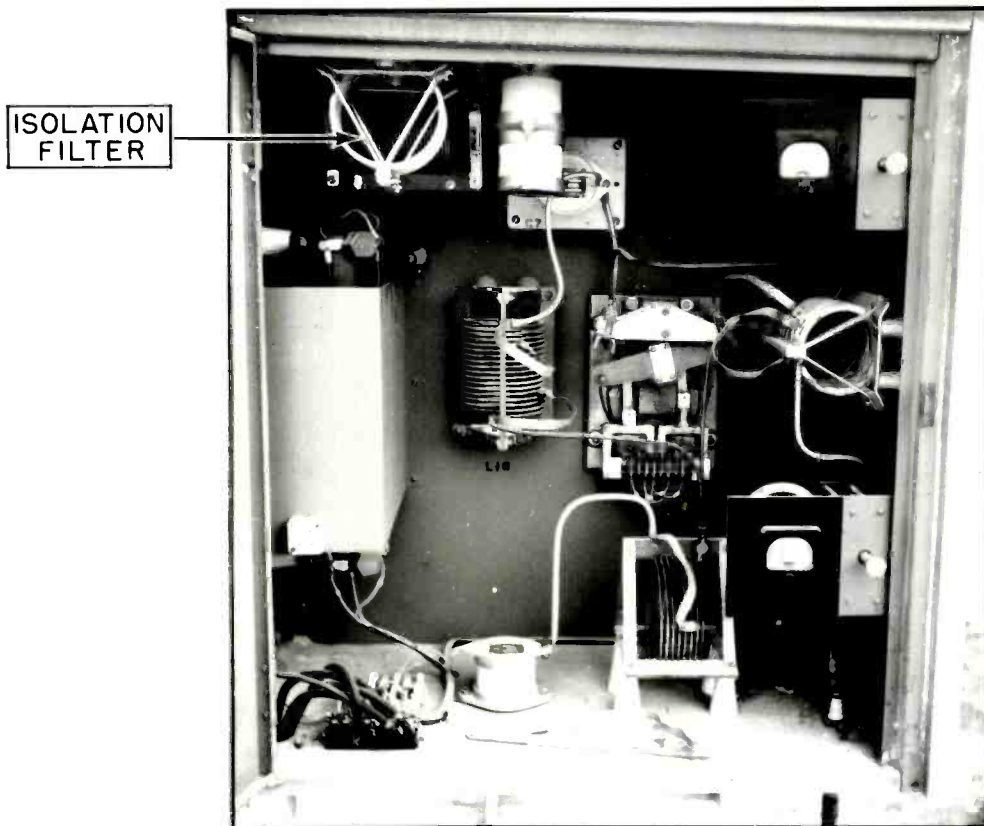


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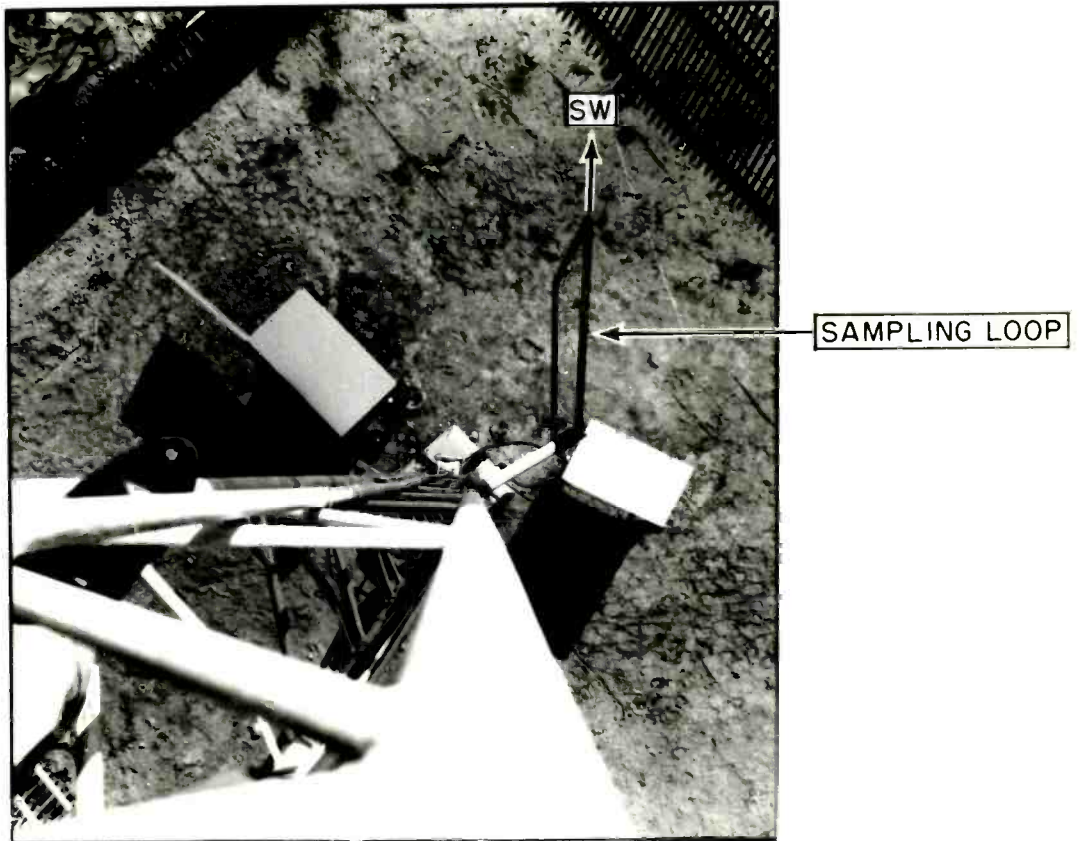
RADIO STATION K S E T
EL PASO, TEXAS
620515.2 FIGURE 3



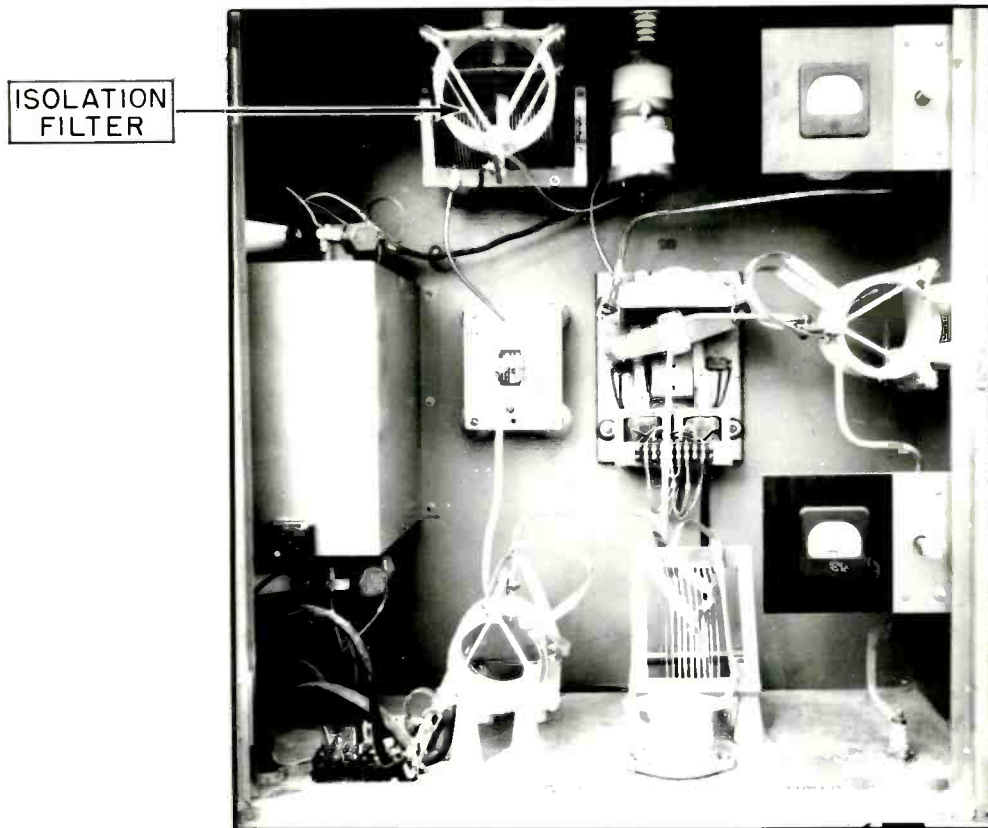
PHOTOGRAPH SHOWING SAMPLING LOOP ORIENTATION



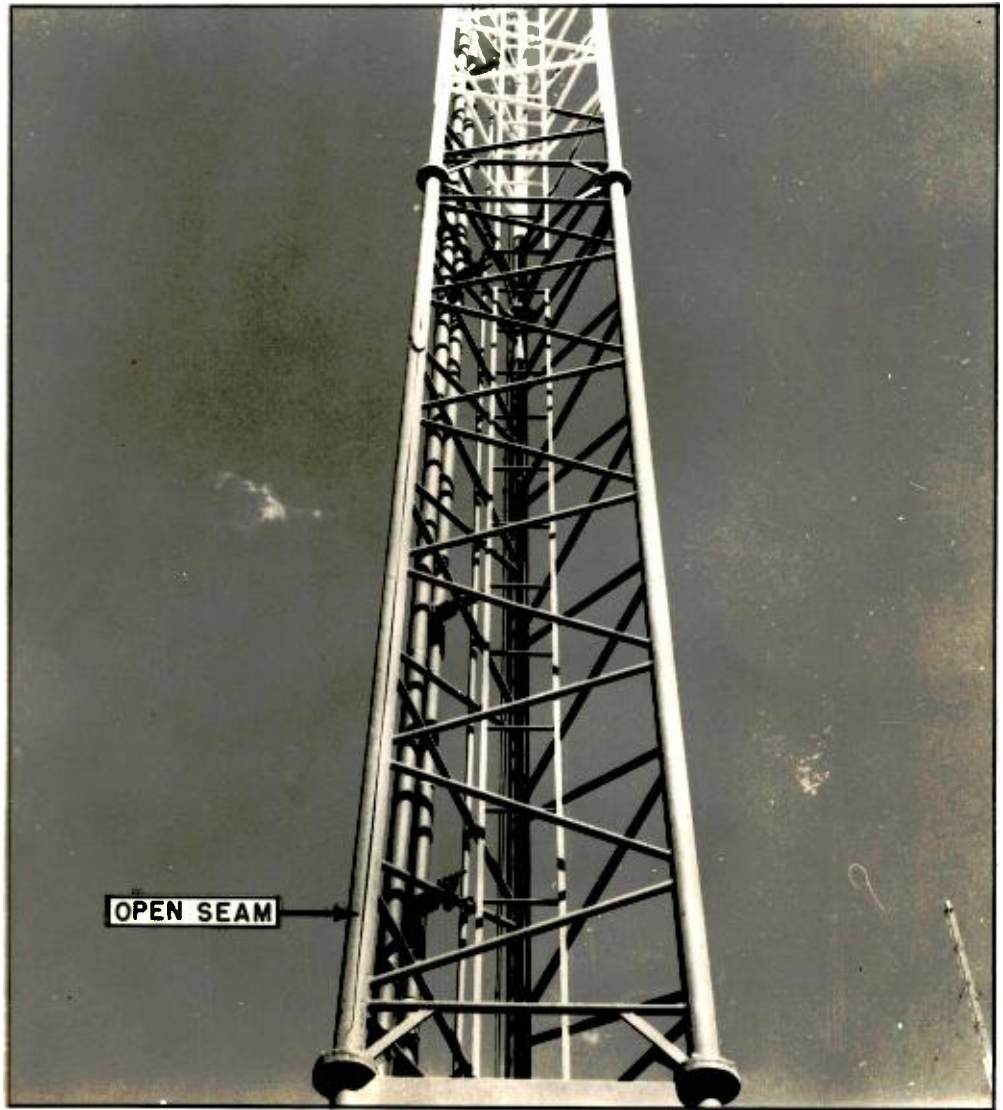
PHOTOGRAPH SHOWING ANTENNA COUPLING EQUIPMENT



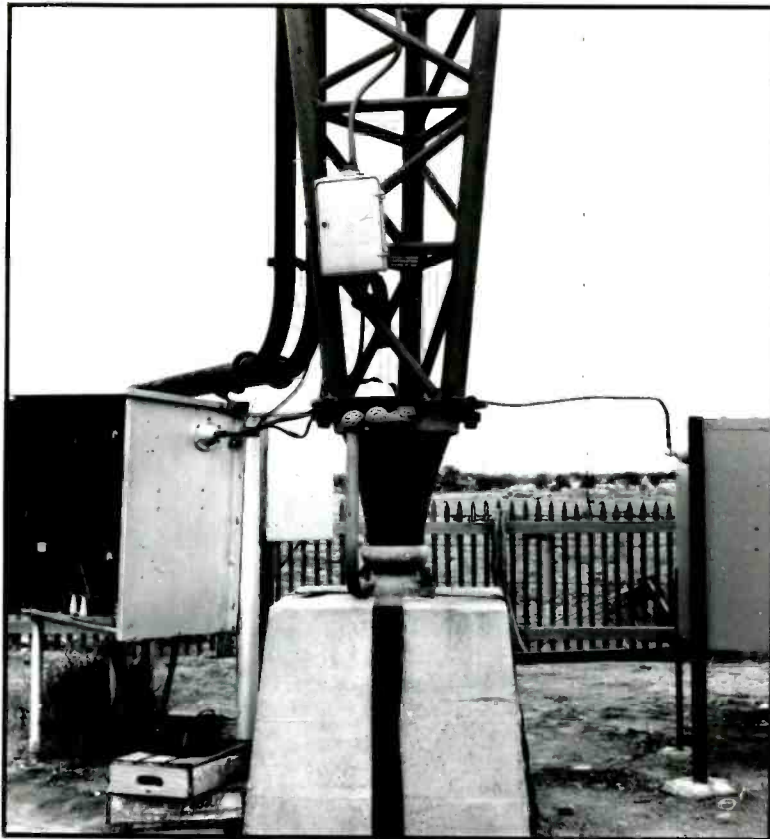
PHOTOGRAPH SHOWING SAMPLING LOOP ORIENTATION



PHOTOGRAPH SHOWING ANTENNA COUPLING EQUIPMENT

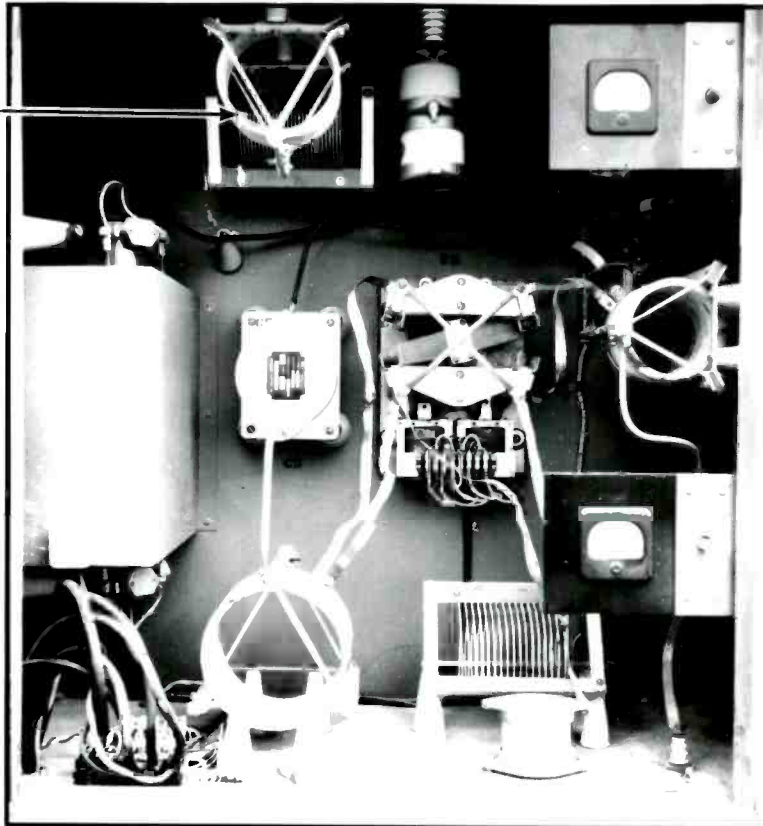


PHOTOGRAPH SHOWING STRUCTURAL FAULT IN NW LEG OF TOWER



PHOTOGRAPH SHOWING TOWER BASE

ISOLATION
FILTER



PHOTOGRAPH SHOWING ANTENNA COUPLING EQUIPMENT