1403 Rec'd QSB 2/3/56 Engineering Bmpct-3747. Trip.

Broadcast Application — FEDERAL COMMUNICATIONS COMMISSION — Section V-C

TELEVISION BROADCAST ENGINEERING DATA

Name of applicant: **Moritz Zenoff**

FEB 1956

1. Purpose of authorization applied for: (Indicate by check mark)

(If application is for a new station or for any of the changes numbered B through D, complete all paragraphs of this form; if change E is of a character which will change coverage or increase the overall height of the antenna structure more than 20 feet, answer all paragraphs, otherwise complete only paragraphs 2 and 7 and the appropriate other paragraphs; for changes F through I, complete only paragraph 2 and the appropriate other paragraphs; for change J, complete only paragraphs 2, 5 and 16(b).

A. ☐ Construct a new station
B. ☒ Change effective radiated power or antenna height above average terrain
C. ☐ Change transmitter location
D. ☐ Change frequency
E. ☒ Change antenna system
F. ☐ Construct or change auxiliary antenna system
G. ☒ Change transmitter
H. ☐ Install auxiliary or alternate main transmitter
I. ☒ Other changes (specify) **visual monitor**
J. ☐ Change studio location

BROADCAST FACILITIES DIVISION (TV) FEB 3 1956 BROADCAST BUREAU

2. Facilities requested

Frequency: 210 — 216 Mc. Channel No. 13

Effective Radiated Power (visual)	Effective Radiated Power (aural)	Antenna height above average terrain
In dbk: -2.38 In kw: 0.578	In dbk: -5.4 In kw: 0.288	139.6 feet

3. Station location (principal community)

State: **Nevada** City or town: **Las Vegas**

4. Transmitter location

State: **Nevada** County: **Clark**

City or town: **Las Vegas** Street Address (or other identification): **Fremont Hotel 2nd and Fremont**

5. Main studio location

State: **Nevada** County: **Clark**

City or town: **Las Vegas** Street address: **Fremont Hotel 2nd and Fremont**

6. Transmitters

Visual

Make	Type No.	Rated power
Adler	WST-200	In dbk: -6.98 In kw: 0.2

Aural

Make	Type No.	Rated Power
Adler	WST-200	In dbk: -10.0 In kw: 0.10

If the above transmitters are composite or of types for which data have not been filed with the F.C.C., attach as Exhibit No. ON FILE - FCC* a complete showing of transmitter details in accordance with the Commission's Rules. The showing should include schematic diagrams, makes and types of tubes, operating constants of the last radio stages, full details of frequency control, vestigial sideband filter (if used), multiplex networks and isolation networks. If changes are to be made in a licensed transmitter, include a schematic diagram and give full details of the changes.

(a) Describe in Exhibit No. (A - ON FILE)* means which will be used for determining and maintaining power output of the transmitters to the values specified in this application.

(b) Multiplexer: Make **None required** Type No. ____

Rated input power ____ dbk

Rated loss: Visual ____ db Aural ____ db

7. (a) Antenna structure

Is the proposed construction in the immediate vicinity of any other radio station or will the proposed transmitting antenna be supported by the antenna struotore of any other radio station? If "Yes", attach as Exhibit No. complete engineering data showing details and effect upon other station. Yes ☐ No ☒

Will proposed structure be constructed on the top of a building? If "Yes", state height 215 of building (distance from ground to base of proposed struotore) in feet. Yes ☒ No ☐

Overall height in feet above ground. (Do not include the height of any obstruction lighting which may be required.)	Overall height in feet above mean sea level. (Do not include the height of any obstruction lighting which may be required.)
240.5	2256.5

Height of antenna radiation center in feet above mean sea level. **2246.5** feet

Geographical coordinates of antenna (to nearest second)

North latitude **36° 10' 12.5"** West longitude **115° 8' 34"**

How were coordinates determined? **From 1/62,500 topo map**

Indicate by check mark the zone in which structure is located. 1 ☐ 2 ☒ 3 ☐

(b) Antenna data

Visual

Make	Type No.
Prodelin	ETV-4

Number of sections	Rated input power in dbk	Power gain in db
4	8.9	6.00

Aural (if separate) **Same as for visual**

Make	Type No.

Number of sections	Rated input power in dbk	Power gain in db

If directional antenna is proposed, give full details including horizontal and vertical plane radiation patterns, as Exhibit No. **No**

Is electrical or mechanical beam tilting proposed? If so, describe fully in Exhibit No. including horizontal and pertinent vertical radiation patterns. Yes ☐ No ☒

Will antenna be altered to provide null fill-in? Yes ☐ No ☒

If yes, describe fully in Exhibit No.

*ON FILE - SEE ORIGINAL APPLICATION FILED MAY, 1955, (ENGINEERING REPORT)

8. Transmission line proposed to supply power to the antenna from the transmitter

(a) Visual

Make	Type No.	Rated input power in dbk
Styroflex (or equivalent)	1 5/8	9.0

Size (nominal inside transverse dimensions) in inches	Length in feet	Power loss in db for this length
1.472	400	1.4

(b) Aural (if separate) Same as visual

Make	Type No.	Rated input power in dbk

Size (nominal inside transverse dimension) in inches	Length in feet	Power loss in db for this length

9. Proposed operation

(a) Visual

Transmitter power output (after vestigial sideband filter, if used)	Multiplexer loss in db:	Input to transmission line in dbk:
In dbk: -6.98 In kw: 0.2	0	-6.98

Transmission line power loss in db:	Antenna input power in dbk:	Antenna power gain in db:	Effective radiated power
-1.4	-8.38	6.00	In dbk: -2.38 In kw: 0.578

(b) Aural

Transmitter power output	Multiplexer loss in db:	Input to transmission line in dbk:
In dbk: -10.0 In kw: 0.1	0	-10.0

Transmission line power loss in db:	Antenna input power in dbk:	Antenna power gain in db:	Effective radiated power
-1.4	-11.4	6.00	In dbk: -5.4 In kw: 0.288

10. Modulation monitors

(a) Visual monitor or monitoring equipment

Make	Type No.
Kay Lab	ARM-13A

(b) Aural monitor

Make	Type No.
Hewlitt Packard	335 ER

11. Frequency monitors

(a) Visual monitor

Make	Type No.	Accuracy
Hewlitt Packard	335 ER	±500 cps

(b) Aural monitor

Make	Type No.	Accuracy
Hewlitt Packard	335 ER	±1000 cps

12. If the above monitors or monitoring equipment have not been approved by the F.C.C., include as Exhibit No. a brief technical description of each. FCC approved

13. Will the studios, cameras, microphones, and other equipment proposed for transmission of programs be designed for compliance with the Commission's Rules? Yes [X] No [ ]

14. (a) Attach as Exhibit No. (B and C - ON FILE)* map (or maps) (U. S. Coast and Geodetic Survey preferred, where obtainable, such as U. S. Geological Survey quadrangles) for the area within 15 miles of the proposed transmitter location and show drawn thereon the following data:

1. Proposed transmitter location--accurately plotted;
2. Transmitter location and call letters of all known radio stations (except amateur) and the location of known commercial and government receiving stations within 2 miles of the proposed transmitter location;
3. Character of the area within 2 miles of proposed transmitter location, suitably designated as to residential, business, industrial, and rural nature;
4. At least eight radials each extending to a distance of ten or more miles from the proposed transmitter location, one or more of which must extend through the principal city to be served.

ON FILE*

(b) Attach as Exhibit No. (D - ON FILE)* profile graphs with reasonably large scales for the radials in (a) (5) above. Each graph shall show the elevation of the antenna radiation center. Identify each graph by its bearing from the proposed transmitter location. Direction of true north shall be zero azimuth, with angles measured clockwise. Show source of topographical data on each.

15. From the profile graphs in 14(b), for the eight mile distance between two and ten miles from the proposed transmitter location, and in accordance with the procedure prescribed in the Commission's Rules, supply the following tabulation of data:

Radial bearing (degrees true)	Average elevation of radial (2-10 mi.) in feet above mean sea level	Height in feet of antenna radiation center above average elevation of radial (2-10 mi.)	Effective radiated power in radial direction	Predicted distance in miles to the Grade A contour 77 db	Predicted distance in miles to the Grade A contour 71 db	Predicted distance in miles to the Grade B contour 56 db
0 (0)	2064 feet	182.5 feet	-2.38 dbk	3.2	4.5 mi.	10.5 mi.
45	1885	361.5	-2.38	4.5	6.3	16.0
90	2070	176.5	-2.38	3.1	4.4	10.4
135	1755	491.5	-2.38	5.0	7.5	19.0
180	2076	170.5	-2.38	3.05	4.4	10.4
225	2296	-49.5	-2.38	3.0	4.0	10.0
270	2462	-215.5	-2.38	3.0	4.0	10.0
315	2247	- 0.5	-2.38	3.0	4.0	10.0
(*)						
Average	2107					

NOTE: 225°-315° radials assumed to produce coverage equal to minimum in other directions or line of sight from antenna structure

*Radial over principal community if not included above. Do not include in average.

Antenna height above average terrain 139.6 feet (Must be identical with Paragraph 2)

*ON FILE - SEE ORIGINAL APPLICATION FILED MAY, 1955, (ENGINEERING REPORT)

16. Attach as Exhibit No. I and II map(s) (Sectional Aeronautical charts where obtainable, preferably without aeronautical overlay) of the area proposed to be served and shown drawn thereon:

(a) Proposed transmitter location and the radials along which the profile graphs have been prepared;

(b) The studio location and boundaries of the principal community; **Studio in lower part of hotel.**

(c) The predicted Grade A and Grade B contours from 12 above;

(d) The required minimum field strength contour;

(e) Scale of miles.

17. Attach as Exhibit No. (F THRU P - ON FILE)* a sufficient number of aerial photographs taken in clear weather at appropriate altitudes and angles to show the nature of the surrounding terrain in the vicinity of the proposed transmitter site. The photographs must be marked so as to show compass directions. Photographs taken in eight different directions from an elevated position on the ground will be acceptable in lieu of the aerial photographs if the area can be clearly shown.

Give date photographs were taken.

ON FILE*

18. Will the minimum required value of field strength predicted in accordance with the method prescribed in the Commission's Rules, be provided over the entire principal community proposed to be served?

Areas will have signal of 77 db or more, see Exh. IV. Yes [X] No [ ]

19. Will the main studio be located within the limits of the principal community proposed to be served. Yes [X] No [ ]

20. (a) Does the proposed transmitter location comply with the minimum separation requirements of the Commission's Rules? Yes [X] No [ ]

(b) If any co-channel separations are proposed that are less than the applicable minimum separation requirement plus 20 miles, or if other channel separations are proposed that are less than the applicable minimum separations plus 10 miles, list such separations below. (Include existing stations, proposed stations and cities which appear in the table of assignments; the location and geographical coordinates of each antenna, proposed antenna or reference point as appropriate; the distance to each from the proposed transmitter location; and the method used in each instance to measure the distance.) If none, so state.

None

21. If this is an application for modification of construction permit state briefly as Exhibit No. the present status of construction and indicate when it is expected that construction will be completed.

Contracts with hotel and equipment suppliers being entered into. To be filed later. Applicant expects to begin broadcasting by February 15, 1956.

STATE OF CALIFORNIA)
COUNTY OF SANTA CRUZ) S S

Subscribed and sworn to before me this 10th day of January, 1956.

Notary _____ **My Commission Expires** _____

I certify that I am the Technical Director, Chief Engineer, or Consulting Engineer of the radio station for which this application is submitted and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief. (This signature may be omitted provided the engineer's original signed report of the data from which the information contained herein has been obtained is attached hereto.)

Date January 10, 1956

Grant R. Wrathall

XXXXXXXXXXXXXXXXXX Technical Director, Chief Engineer or Consulting Engineer

*ON FILE - SEE ORIGINAL APPLICATION FILED MAY, 1955 (ENGINEERING REPORT)

Broadcast Application

FEDERAL COMMUNICATIONS COMMISSION

Section V-G (Antenna)

ANTENNA AND SITE INFORMATION
(see instruction B
Section I)

Name of applicant: **Moritz Zenoff**

Address where applicant can be reached in person: **343 Desert Inn Road, Las Vegas, Nevada**

1956

Since this Section is submitted to the Regional Airspace Subcommittee of the Air Coordinating Committee for clearance in connection with obstructions to air navigation, it is necessary that all the data called for be supplied. Previously and separately filed data must not be incorporated by reference.

Legal Counsel: **David Zenoff**

Address: **Freidman Building, Las Vegas, Nevada**

Consulting Engineer: **Grant R. Wrathall**

Address: **Aptos, California**

Class of station: **TV**

Facilities requested: **Channel 13**

Purpose of application (Check appropriate box) (Increase height of authorized structure.)

a. New antenna construction
b. Alteration of existing antenna structures [X]
c. Change in location

1. Location of antenna

State: **Nevada** | County: **Clark** | City or Town: **Las Vegas**

Exact antenna location (street address) (If outside city limits, give distance and direction from, and name of nearest town)

Fremont Hotel, 2nd and Fremont in downtown Las Vegas.

Geographic coordinates (to be determined to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North latitude: **36° 10' 12.5"** | West longitude: **115° 8' 34"**

2. Features of surrounding terrain

List any natural formations or existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna.

Tower will be highest structure within 2.0 miles of proposed site.

Submit as Exhibit No. R a chart on which is plotted the exact location of the antenna site, and also the relative location of the natural formations and/or the existing man-made structures listed above.
The chart used shall be an Instrument Approach Chart (or the landing chart on reverse side thereof), or a Sectional Aeronautical Chart, choice depending upon proximity of the antenna site to landing areas. 1/ In general, the Sectional Aeronautical Chart should be used only when the antenna site is more than 10 miles from a landing area or when an Instrument Approach Chart is unobtainable. 1/ These charts may be purchased from the U. S. Coast and Geodetic Survey, Washington 25, D. C.
1/ Exception - Where the proposed antenna site is within the boundary of a landing area for which no Instrument Approach Chart is available, submit a self-made, large scale map showing antenna site, runway(s) and existing man-made structures listed above.

3. Designation, distance, and bearing to center line of nearest established airway within 5 miles: **1.5 miles SE to 203°-023° leg.**

4. List all landing areas within 10 miles of antenna site. Give distance and direction to the nearest boundary of each landing area from the antenna site.

Landing Area

(a) **Sky Haven - 4 Mi. - NW**
(b) **Vegas Sky Corral - 35 Mi. - SW**
(c) **DC4 Ranch - 5.5 Mi. - SW**
(d) **McCarran - 5.5 Mi. - SSW**
(e) **Nellis - 8.5 Mi. - NE**

5. Description of antenna system (If directional, give spacing and orientation of towers).

Antenna is steel lattice structure and has overall height of 25' 6 1/2", this will be mounted on top 45-foot sign atop new Fremont Hotel building.

Type: **Prodelin, Inc.**

Description of tower(s): **Lattice Steel**

Self-supporting: **Yes** | Guyed | Tubular (Pole): **In part**

Tower (height figures should not include obstruction lighting)	#1	#2	#3	#4	#5	#6
Height of radiating elements	20' 6 1/2"					
Overall height above ground	240.5'					
Overall height above mean sea level	2256.5'					

If a combination of Standard, FM, or TV operation is proposed on the same multi-element array (either existing or proposed) submit as Exhibit No. a horizontal plan for the proposed antenna system, giving heights of the elements above ground and showing their orientation and spacing in feet. Clearly indicate if any towers are existing. **TV only**

Submit as Exhibit No. III a vertical plan sketch for the proposed total structure (including supporting building if any) giving heights above ground in feet for all significant features. Clearly indicate existing portions, noting painting and lighting.

Is the proposed antenna system designed so that obstruction lights may be installed and maintained at the uppermost point(s)? Yes [X] No [ ]

6. Is the proposed site the same or immediately adjoining the transmitter-antenna site of other stations authorized by the Commission or specified in another application pending before the Commission? Yes [X] No [ ]

Site approved for 207'3" tower

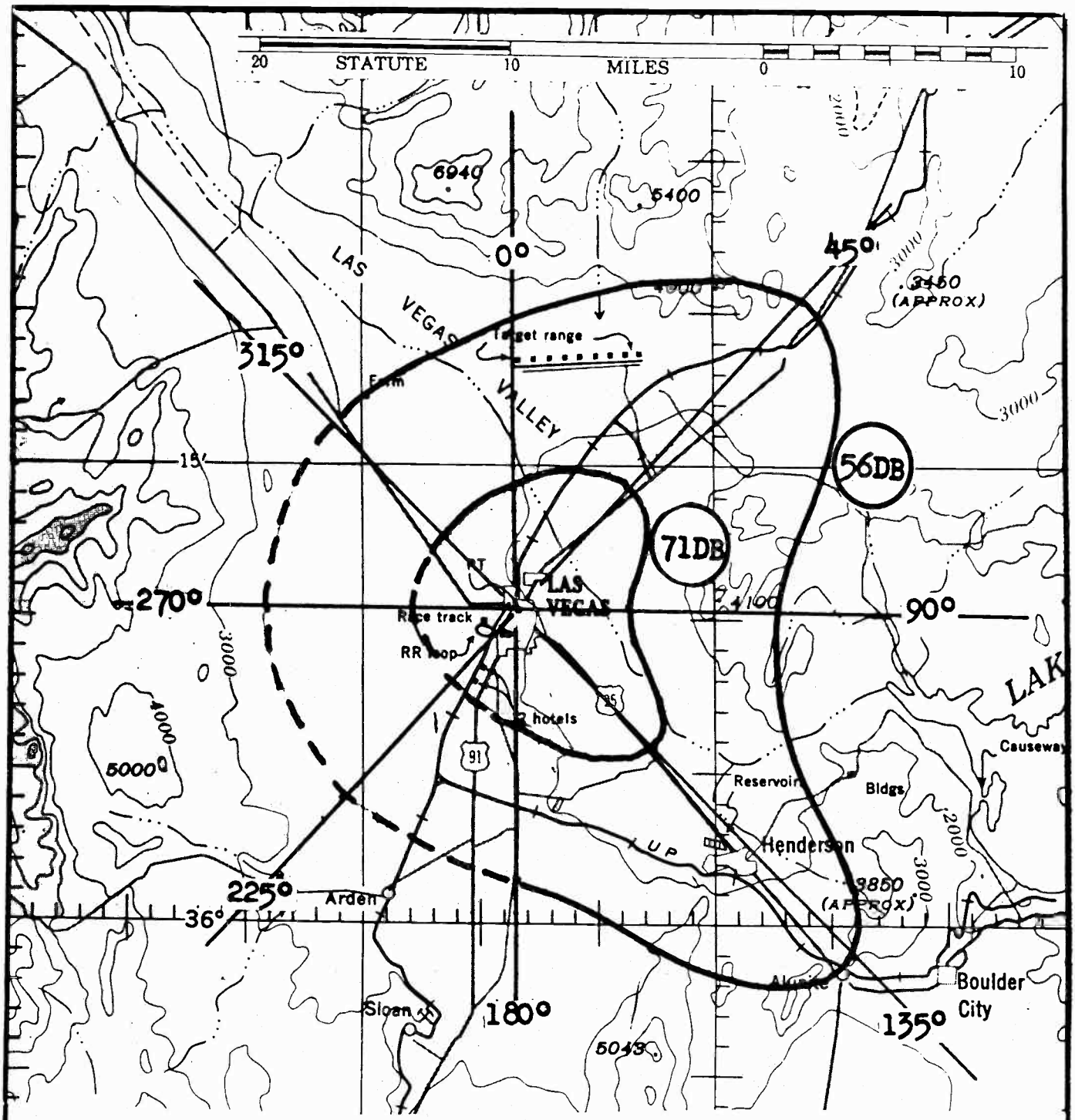
If the answer is "Yes", give

Call letters: **KSHO-TV** | File numbers: **BPCT-1987**

Date: **January 10, 1956**

Grant R. Wrathall
Signature of Engineer preparing data

U. S. GOVERNMENT PRINTING OFFICE 1955 O



KSHO-TV , LAS VEGAS , NEVADA

COMPUTED FIELD INTENSITY CONTOURS

JANUARY 1956

Exhibit I

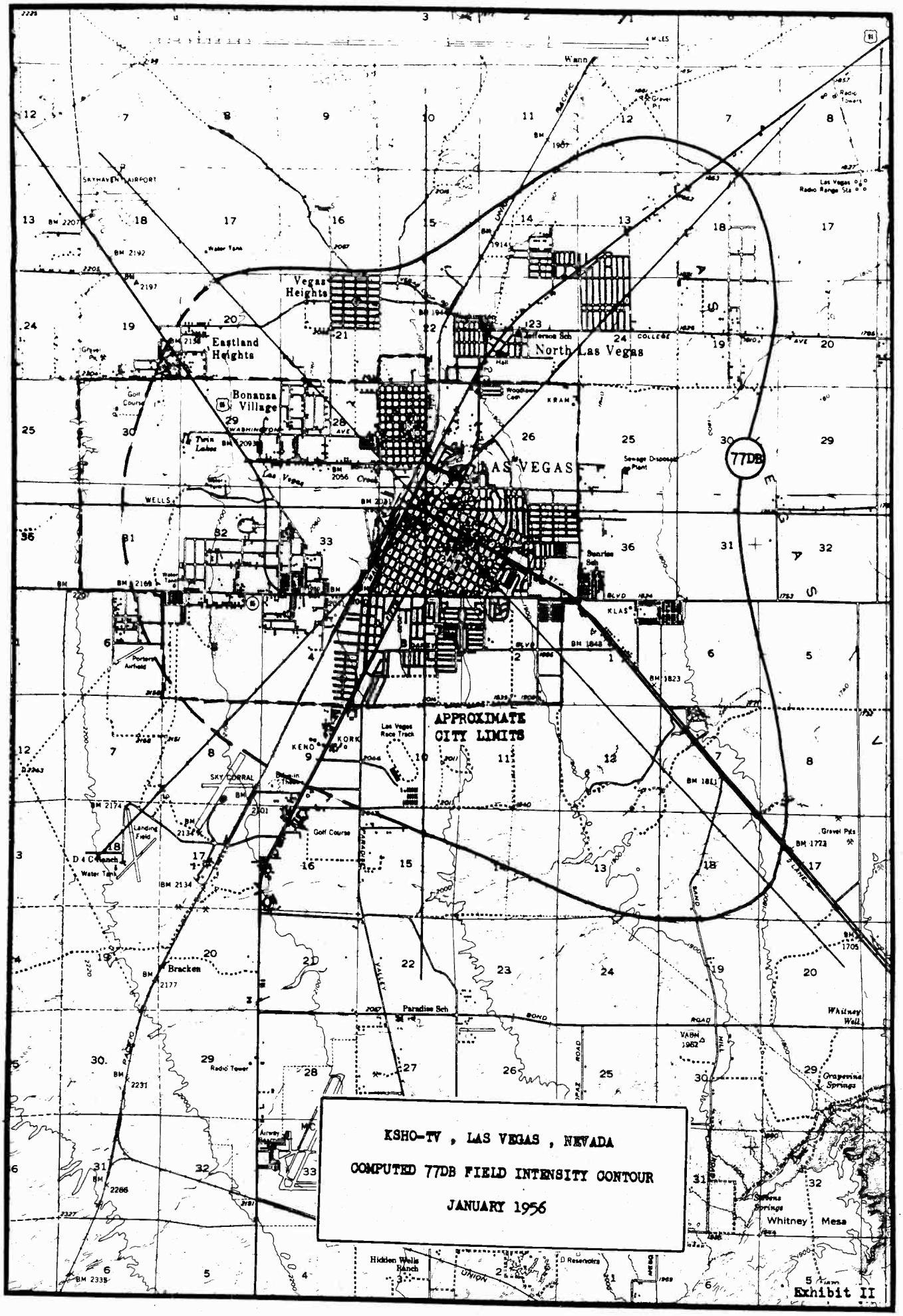
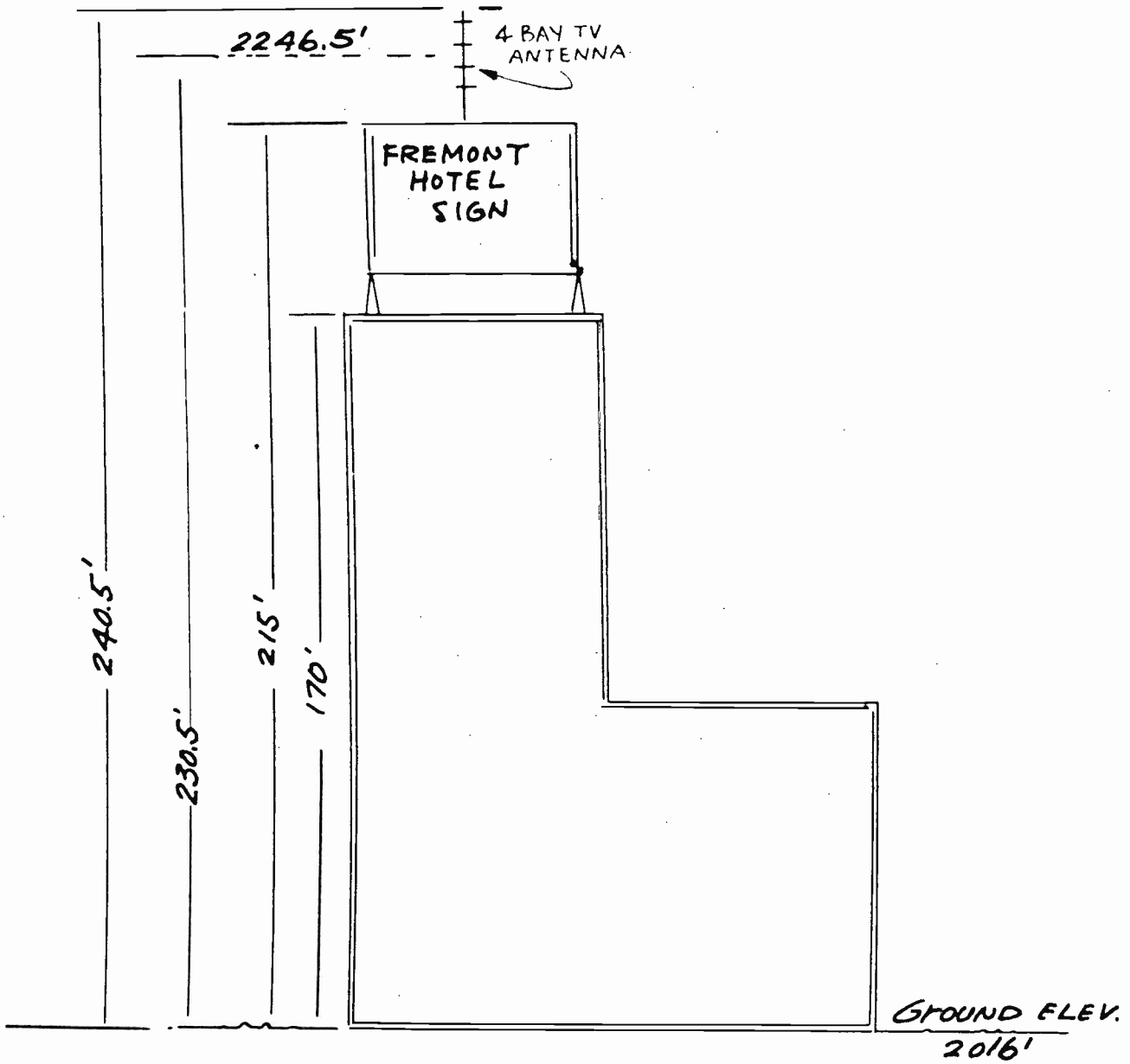

Vegas Heights
Eastland Heights
North Las Vegas
Bonanza Village
LAS VEGAS
77DB
APPROXIMATE CITY LIMITS
Bracken
Whitney Mesa
KSHO-TV , LAS VEGAS , NEVADA
COMPUTED 77DB FIELD INTENSITY CONTOUR
JANUARY 1956

Exhibit II



KSHO-TV , LAS VEGAS , NEVADA

VERTICAL PLAN SKETCH

TV ANTENNA AND SUPPORTING

HOTEL AND SIGN

Exhibit II

Minimum Field Over City

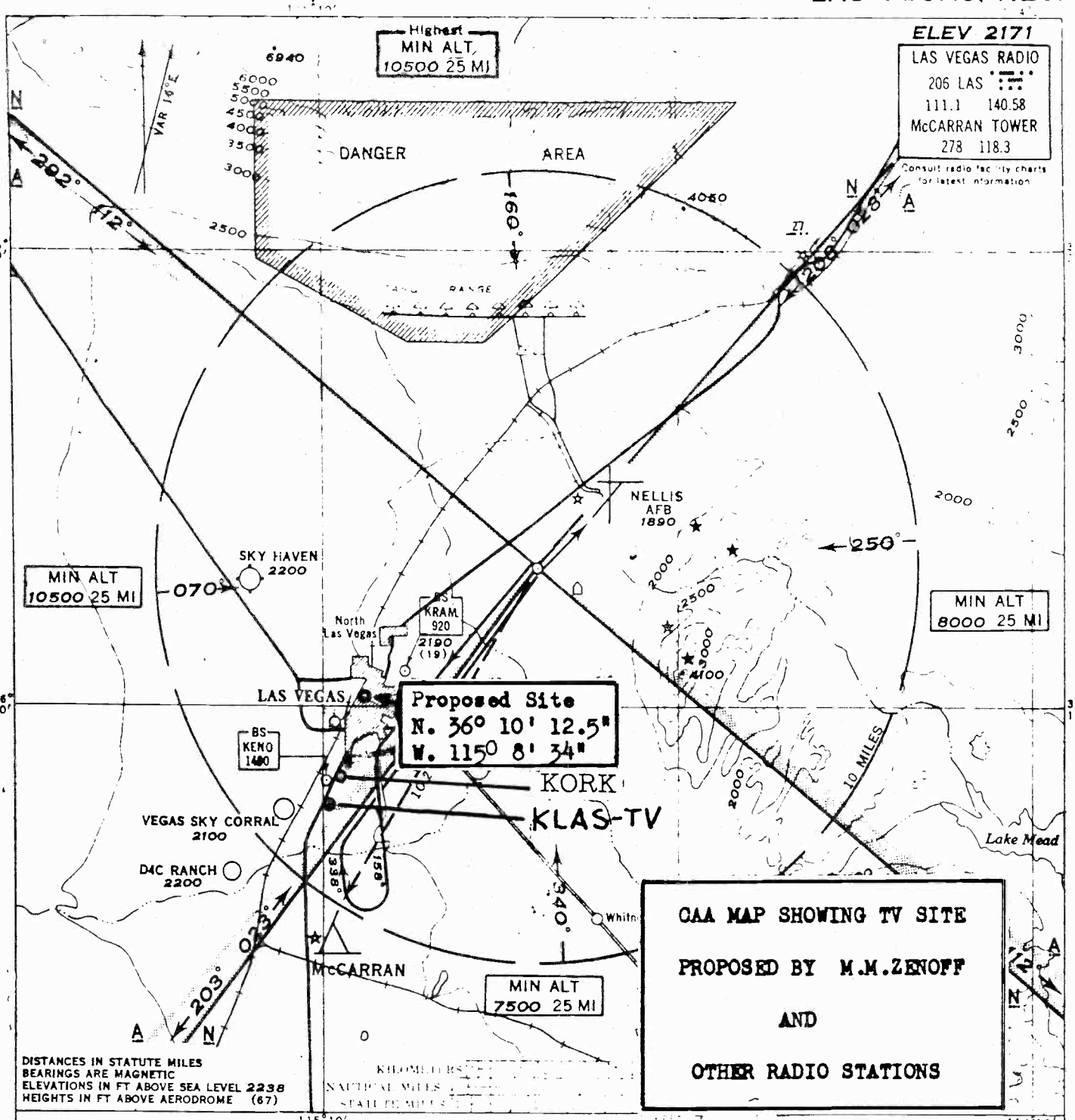
For Channels 7-13, FCC Rules provide a median field intensity of 77 db shall be provided over the entire principal city to be served.

Because of rough mountains approximately 18 miles distant from the site and the resulting general rise in ground elevation, "negative" antenna heights are computed for 225, 270 and 315 degree radial directions. Actually the proposed KSHO-TV antenna is visible from any point in the 225°-315° sector to, and in most locations, beyond approximately 12 miles. Based upon free-space radiation conditions the 77 db contour for proposed KSHO-TV operation will be radiated to approximately 12 miles. In order not to show greater coverage for "negative" antenna heights than for "positive" height computations, coverage in the 225°-315° sector was assumed to equal the minimum computed in the "positive" height directions. With this assumption approximately one square mile of city area west of the site is outside the computed 77 db signal contour (See Exhibit II). Most distant part of the city is 3.7 miles west of the proposed site. Since the proposed site is visible from any ground point in the western part of the city minimum fields should be computed in a realistic manner. Assuming free-space radiation the minimum field over the western sections of the city will be approximately 89 db. In my opinion, such a field is to be expected and signal service exceeding 77 db level will be radiated over all parts of Las Vegas with the proposed modified KSHO-TV operation.

EXHIBIT IV

INSTRUMENT APPROACH
CHART-RANGE

McCARRAN FIELD
LAS VEGAS, NEV.



CAA MAP SHOWING TV SITE
PROPOSED BY M.M.ZENOFF
AND
OTHER RADIO STATIONS

STANDARD INSTRUMENT APPROACH PROCEDURE

For USAF use:
Min Alt over Aerodrome 3671
Ceiling over Aerodrome (1500)

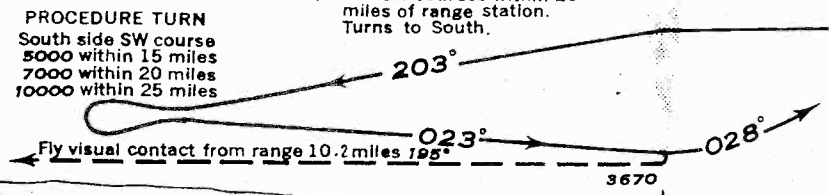
"Z" MARKER

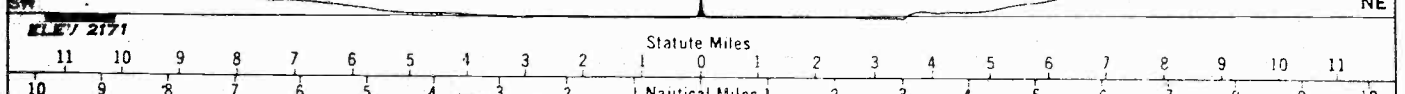
SHUTTLE to 7000 on NE and SW courses within 20 miles of range station. Turns to South.

INITIAL APPROACH
NE course 10000 from ENP Range
7000 from Crystal FM
SE course 8000 from int N course EED Range
SW course 9500 from SIL Range
7500 from Goodsprings RBn
NW course min enroute altitude

PROCEDURE TURN
South side SW course
5000 within 15 miles
7000 within 20 miles
10000 within 25 miles

If visual contact not established at authorized landing minimums within 0.0 miles after passing Las Vegas Range, or if landing not accomplished, climb to 7000 on NE course within 20 miles





CEILING AND VISIBILITY MINIMA			TIME IN MINUTES AND SECONDS TO AERODROME - DISTANCE 10.2 STAT. 8.9 NAUT. MILES								
TAKE-OFF:	DAY	NIGHT	100 M. P. H.	120 M. P. H.	140 M. P. H.	160 M. P. H.		90 KNOTS	100 KNOTS	110 KNOTS	120 KNOTS	130 KNOTS
LANDING:	DAY	NIGHT	06:07	05:06	04:22	03:50		05:56	05:20	04:51	04:27	04:07

PRICE FIVE CENTS

Compiled and printed to ICAO standards by the U. S. Coast and Geodetic Survey under authority of the Secretary of Commerce

26 JAN. 1951 AL-662

FRANK ROBERSON
FRANK U. FLETCHER
RUSSELL ROWELL

COUNSEL
PAUL D. P. SPEARMAN

SPEARMAN AND ROBERSON
ATTORNEYS AT LAW
MUNSEY BUILDING
WASHINGTON 4, D. C.

TELEPHONE
METROPOLITAN 8-0023

August 14, 1956

Miss Mary Jane Morris, Secretary
Federal Communications Commission
Washington 25, D. C.

Re: KSHO-TV, Las Vegas, Nevada

Dear Miss Morris:

There is filed herewith an application in triplicate on FCC Form 301, in behalf of Moritz Zenoff, operator of Station KSHO-TV at Las Vegas, Nevada in which construction permit is requested for the installation of a duplicate main transmitter.

In the event that any additional information is desired in connection with the enclosed application, it will be furnished promptly upon request.

Very truly yours,

SPEARMAN AND ROBERSON

By
Russell Rowell
Attorneys for
KSHO-TV

Enc.
RR:bjv

Trip. ltr. Main Transmitter

~~For Duplicate Main Transmitter~~

FCC Form 301
February 1956

Form Approved
Budget Bureau No. 52-R014.13

Section I

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

APPLICATION FOR AUTHORITY TO CONSTRUCT A NEW BROADCAST STATION OR MAKE CHANGES IN AN EXISTING BROADCAST STATION

File No. BPCT-2182

Name and post office address of applicant (See Instruction D)

MORITZ ZENOFF
FREMONT HOTEL
LAS VEGAS, NEVADA

Send notices and communications to the following-named person at the post office address indicated if different than above
Moritz Zenoff - above; cy to Spearman & Roberson, Munsey Bldg, Wash 4 D.C.

INSTRUCTIONS

A. This form is to be used in applying for authority to construct a new AM (standard), commercial FM (frequency modulation), or television broadcast station, or to make changes in existing broadcast stations. This form consists of this part, Section I, and the following sections:

Section II, Legal Qualifications of Broadcast Applicant

Section III, Financial Qualifications of Broadcast Applicant

Section IV, Statement of Program Service of Broadcast Applicant

Section V-A, Standard Broadcast Engineering Data

Section V-B, FM Broadcast Engineering Data

Section V-C, Television Broadcast Engineering Data

Section V-G, Antenna and Site Information

RECEIVED AUG 15 1956 F.C.C. MAIL & FILES

B. Prepare three copies of this form and all exhibits. Sworn to one copy of Section I. Prepare two additional copies (a total of five) of Section V-G and associated exhibits. File all the above with Federal Communications Commission, Washington 25, D. C.

C. Number exhibits serially in the space provided in the body of the form and list each exhibit in the space provided on page 2 of this Section. Show date of preparation of each exhibit, antenna pattern, and map, and show date when each photograph was taken.

D. The name of the applicant stated in Section I hereof shall be the exact corporate name, if a corporation; if a partnership, the names of all partners and the name under which the partnership does business; if an unincorporated association, the name of an executive officer, his office; and the name of the association. In other Sections of the form the name need be only sufficient for identification of the applicant.

E. Information called for by this application which is already on file with the Commission *(except that called for in Section V-G)* need not be refiled in this application provided (1) the information is now on file in another application or FCC Form filed by or on behalf of this applicant; (2) the information is identified fully by reference to the file number (if any, the FCC form number, and the filing date of the application or other form containing the information and the page of paragraph referred to, and (3) after making the reference, the applicant states: "No change since date of filing." Any such reference will be considered to incorporate into this application all information, confidential or otherwise, contained in the application or other form referred to. The incorporated application or other form will thereafter, in its entirety, be open to the public.

F. This application must be executed by applicant, if an individual; by a partner of applicant, if a partnership; by an officer of applicant, if a corporation or association; or by attorney of applicant only under conditions shown in Section 1.303, Rules Relating to Practice and Procedure, in which event satisfactory evidence of disability of applicant or his absence from the Continental United States and authority of attorney to act must be submitted with application.

G. Before filling out this application, the applicant should familiarize himself with the Communications Act of 1934, as amended, Parts 1, 2, 3 and 17 of the Commission's Rules and Regulations and the Standards of Good Engineering Practice.

H. BE SURE ALL NECESSARY INFORMATION IS FURNISHED AND ALL PARAGRAPHS ARE FULLY ANSWERED. IF ANY PORTIONS OF THE APPLICATION ARE NOT APPLICABLE, SPECIFICALLY SO STATE. DEFECTIVE OR INCOMPLETE APPLICATIONS MAY BE RETURNED WITHOUT CONSIDERATION.

1. Requested facilities

Frequency	Channel No.	Power in kilowatts		Minimum hours operation daily
		Night	Day	
210-216 MC	13	0.430	0.430	18 plus

Hours of operation

Unlimited X / Daytime only / Limited	Sharing with (Specify Stations)	Other (Specify)

Type of station (as Standard, FM, Television)
TV

Station location

City	State
Las Vegas	Nevada

2. If authority to make changes in an existing station is requested

(a) Present facilities same as above

Frequency	Call	Channel No.	Power in kilowatts		Minimum hours operation daily
			Night	Day	

Hours of operation

Unlimited / Daytime only / Limited	Sharing with (Specify Stations)	Other (Specify)

Station location

City	State

(b) If this application is for changes in an existing authorization, complete Section I and any other sections necessary to show all substantial changes in information filed with the Commission in prior applications or reports. In the spaces below check Sections submitted herewith and as to Sections not submitted herewith refer to the prior application or report containing the requested information in accordance with Instruction E. (If contemplated expenditures are less than $5,000, complete paragraph 1 of Section III only. Section IV is not required for applications for minor changes not involving change in power, change in frequency, change in hours of operation, or moving from city to city.)

Section No. Para. No. Reference (File or Form No. and Date)

- ☐ Section II - on file -
- ☐ Section III - on file - See BPCT-1987
- ☐ Section IV - on file -
- ☐ Section V -C - Herewith

Have there been any substantial changes in the information incorporated in this application by reference in this paragraph? Yes ☐ No ☒

3. If this application is contingent on the grant of another pending application, state name of other applicant and file number of other application.

Not Contingent

The applicant hereby waives any claim to the use of any particular frequency or of the ether as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934).

The applicant represents that this application is not filed for the purpose of impeding, obstructing, or delaying determination on any other application with which it may be in conflict.

All the statements made in the application and attached exhibits are considered material representations, and all the exhibits are a material part hereof and are incorporated herein as if set out in full in the application.

The applicant, or the undersigned on the applicant's behalf, states that he has endeavored to supply full and correct information as to all matters which are relevant to this application and that he has done so as to all matters within his own knowledge.

Dated this 13th day of August, 19 56. MORITZ ZENOFF

/s/ Moritz Zenoff
(Name of Applicant)

By Moritz Zenoff - Self

Title

Subscribed and sworn to

before me this 13th day of August, 19 .... /s/ Betty Beebe
Notary Public

(SEAL)

(Notary public's seal must be affixed where the law of jurisdiction requires, otherwise state that law does not require seal.)

My commission expires 6-9-60

If applicant is represented by legal or engineering counsel, state name and post office address: Eng. Grant R. Wrathall, Aptos, Calif.
Legal: Spearman and Roberson, Washington, D. C. Munsey Bldg.

EXHIBITS furnished as required by this form:

Exhibit No.	Section and Para. No. of Form	Name of officer or employee (1) by whom or (2) under whose direction exhibit was prepared (show which)	Official title
		This application is for duplicate main transmitter. It is the same as the one presently in use. It is to be leased from Kay Labs, San Diego, California, as is other technical equipment.	

Engr Copy NTC-2182 KSHO-TV

Broadcast Application | FEDERAL COMMUNICATIONS COMMISSION | Section V-C

TELEVISION BROADCAST ENGINEERING DATA

Name of applicant: **Moritz Zenoff**

ALT. MAIN TRANS.

1. Purpose of authorization applied for: (Indicate by check mark)

(If application is for a new station or for any of the changes numbered B through D, complete all paragraphs of this form; if change E is of a character which will change coverage or increase the overall height of the antenna structure more than 20 feet, answer all paragraphs, otherwise complete only paragraphs 2 and 7 and the appropriate other paragraphs; for changes F through I, complete only paragraph 2 and the appropriate other paragraphs; for change J, complete only paragraphs 2, 5 and 16(b).

A. ☐ Construct a new station
B. ☐ Change effective radiated power or antenna height above average terrain
C. ☐ Change transmitter location
D. ☐ Change frequency
E. ☐ Change antenna system
F. ☐ Construct or change auxiliary antenna system
G. ☐ Change transmitter
H. ☒ Install ~~XXXXXXXX~~ alternate main transmitter
I. ☐ Other changes (specify)
J. ☐ Change studio location

BROADCAST RECEIVED AUG 1 1956 BROADCAST BUREAU DIVISION TV

2. Facilities requested

Frequency: 210 — 216 Mc. | Channel No. 13

Effective Radiated Power (visual)	Effective Radiated Power (aural)	Antenna height above average terrain
-3.66	-6.65	139.6
In dbk: 0.430	In dbk: 0.215	feet
In kw:	In kw:	

3. Station location (principal community)

State	City or town
Nevada	Las Vegas

4. Transmitter location

State	County
Nevada	Clark
City or town	**Street Address (or other identification)**
Las Vegas	Fremont Hotel 2nd and Fremont

5. Main studio location

State	County
Nevada	Clark
City or town	**Street address**
Las Vegas	Fremont Hotel 2nd and Fremont

6. Transmitters

Visual

Make	Type No.	Rated power
Adler	VST-150A	In dbk: -8.26 In kw: 0.15

Aural

Make	Type No.	Rated Power
Adler	VST-150A	In dbk: -11.25 In kw: 0.75

If the above transmitters are composite or of types for which data have not been filed with the F.C.C., attach as Exhibit No. a complete showing of transmitter details in accordance with the Commission's Rules. The showing should include schematic diagrams, makes and types of tubes, operating constants of the last radio stages, full details of frequency control, vestigial sideband filter (if used), multiplex networks and isolation networks. If changes are to be made in a licensed transmitter, include a schematic diagram and give full details of the changes. FCC approved

(a) Describe in Exhibit No. means which will be used for determining and maintaining power output of the transmitters to the values specified in this application. See specs on file FCC

(b) Multiplexer: Make none required Type No.

Rated input power ____ dbk

Rated loss: Visual ____ db Aural ____ db

7. (a) Antenna structure

Is the proposed construction in the immediate vicinity of any other radio station or will the proposed transmitting antenna be supported by the antenna structure of any other radio station? If "Yes", attach as Exhibit No. complete engineering data showing details and effect upon other station. Yes ☐ No ☒

Will proposed structure be constructed on the top of a building? If "Yes", state height 215 ft of building (distance from ground to base of proposed structure) in feet. Yes ☒ No ☐

Overall height in feet above ground. (Do not include the height of any obstruction lighting which may be required.)	Overall height in feet above mean sea level. (Do not include the height of any obstruction lighting which may be required.)
240.5	2256.5'

Height of antenna radiation center in feet above mean sea level. 2246.5' feet

Geographical coordinates of antenna (to nearest second)

North latitude 36 ° 10 ' 12.5 " West longitude 115 ° 08 ' 34 "

How were coordinates determined? From 1/62,500 topo map

Indicate by check mark the zone in which structure is located. 1 ☐ 2 ☒ 3 ☐

(b) Antenna data

Visual

Make	Type No.
Prodelin	ETV 4

Number of sections	Rated input power in dbk	Power gain in db
4	8.9	6.00

Aural (if separate) same as for visual

Make	Type No.

Number of sections	Rated input power in dbk	Power gain in db

If directional antenna is proposed, give full details including horizontal and vertical plane radiation patterns, as Exhibit No. nondirectional

Is electrical or mechanical beam tilting proposed? If so, describe fully in Exhibit No. including horizontal and pertinent vertical radiation patterns. Yes ☐ No ☒

Will antenna be altered to provide null fill-in? Yes ☐ No ☒

If yes, describe fully in Exhibit No.

8. Transmission line proposed to supply power to the antenna from the transmitter

(a) Visual

Make	Type No.	Rated input power in dbk
Styroflex or equivalent	1 5/8	9.0

Size (nominal inside transverse dimensions) in inches	Length in feet	Power loss in db for this length
1.472	400	1.4

(b) Aural (if separate)

Make	Type No.	Rated input power in dbk

Size (nominal inside transverse dimension) in inches	Length in feet	Power loss in db for this length

9. Proposed operation

(a) Visual

Transmitter power output (after vestigial sideband filter, if used)	Multiplexer loss in db:	Input to transmission line in dbk:
In dbk: -8.26 In kw: 0.15	0	-8.26

Transmission line power loss in db:	Antenna input power in dbk:	Antenna power gain in db:	Effective radiated power
-1.4	-9.66	+6.00	In dbk: -3.66 In kw: 0.430

(b) Aural

Transmitter power output	Multiplexer loss in db:	Input to transmission line in dbk:
In dbk: -11.25 In kw: 0.075	0	-11.25

Transmission line power loss in db:	Antenna input power in dbk:	Antenna power gain in db:	Effective radiated power
-1.4	-12.65	+6.0	In dbk: -6.65 In kw: 0.215

10. Modulation monitors

(a) Visual monitor or monitoring equipment

Make	Type No.
KAY LAB	ARM-13A

(b) Aural monitor

Make	Type No.
Hewlett Packard	335 ER

11. Frequency monitors

(a) Visual monitor

Make	Type No.	Accuracy
Herlett Packard	335ER	± 500cps

(b) Aural monitor

Make	Type No.	Accuracy
Hewlett Packard	335ER	± 1000cps

12. If the above monitors or monitoring equipment have not been approved by the F.C.C., include as Exhibit No. a brief technical description of each. FCC approved

13. Will the studios, cameras, microphones, and other equipment proposed for transmission of programs be designed for compliance with the Commission's Rules? Yes [X] No [ ]

14. (a) Attach as Exhibit No. B &C a map(s) (topographic where obtainable, such as U. S. Geological Survey quadrangles) for the area within 15 miles of the proposed transmitter location and show drawn thereon the following data:

1. Proposed transmitter location--accurately plotted;
2. Transmitter location and call letters of all known radio stations (except amateur) and the location of known commercial and government receiving stations within 2 miles of the proposed transmitter location;
3. Character of the area within 2 miles of proposed transmitter location, suitably designated as to residential, business, industrial, and rural nature;
4. At least eight radials each extending to a distance of ten or more miles from the proposed transmitter location, one or more of which must extend through the principal city to be served. On File

(b) Attach as Exhibit No. D on file profile graphs with reasonably large scales for the radials in (a) (5) above. Each graph shall show the elevation of the antenna radiation center. Identify each graph by its bearing from the proposed transmitter location. Direction of true north shall be zero azimuth, with angles measured clockwise. Show source of topographical data on each.

15. From the profile graphs in 14(b), for the eight mile distance between two and ten miles from the proposed transmitter location, and in accordance with the procedure prescribed in the Commission's Rules, supply the following tabulation of data:

Radial bearing (degrees true)	Average elevation of radial (2-10 mi.) in feet above mean sea level	Height in feet of antenna radiation center above average elevation of radial (2-10 mi.)	Effective radiated power in radial direction	Predicted distance in miles to the Grade contour 77db	(71db)	Predicted distance in miles to the Grade contour 56db
0 0	2064 feet	182.5 feet	-3.66 dbk	3.0 Mi	4.3 mi.	10.0 mi.
45	1885	361.5	-3.66	4.2	6.2	15.2
90	2070	176.5	-3.66	2.95	4.1	9.9
135	1755	491.5	-3.66	4.7	7.0	17.5
180	2076	170.5	-3.66	2.9	4.0	9.9
225	2296	-49.5	-3.66	2.85	3.8	9.5
270	2462	-215.5	-3.66	2.85	3.8	9.5
315	2247	-0.5	-3.66	2.85	3.8	9.5
(*)						

Note: 225 - 315 radials assumed to produce coverage equal to min in other directions or to limits of line of sight of antenna structure

2107e

*Radial over principal community if not included above. Do not include in average.

Antenna height above average terrain 139.6 feet (must be identical with Paragraph 2)

For portions marked "on file" see original application filed May, 1955 (Engineering report) and amendment of January 10, 1956.

16. Attach as Exhibit No. I&II map(s) (Sectional Aeronautical charts where obtainable, preferably without aeronautical overlay) of the area proposed to be served and shown drawn thereon: on file

(a) Proposed transmitter location and the radials along which the profile graphs have been prepared;

(b) The studio location and boundaries of the principal community; Studio in lower part of Hotel

(c) The predicted Grade A and Grade B contours from 12 above;

(d) The required minimum field strength contour;

(e) Scale of miles.

17. Attach as Exhibit No. F thru P a sufficient number of aerial photographs taken in clear weather at appropriate altitudes and angles to show the nature of the surrounding terrain in the vicinity of the proposed transmitter site. The photographs must be marked so as to show compass directions. Photographs taken in eight different directions from an elevated position on the ground will be acceptable in lieu of the aerial photographs if the area can be clearly shown. On file

Give date photographs were taken.

On file

18. Will the minimum required value of field strength predicted in accordance with the method prescribed in the Commission's Rules, be provided over the entire principal community proposed to be served? Areas will have signal of 77 db or more - See Exhibit IV on file Yes [x] No [ ]

19. Will the main studio be located within the limits of the principal community proposed to be served. Yes [x] No [ ]

20. (a) Does the proposed transmitter location comply with the minimum separation requirements of the Commission's Rules? Yes [x] No [ ]

(b) If any co-channel separations are proposed that are less than the applicable minimum separation requirement plus 20 miles, or if other channel separations are proposed that are less than the applicable minimum separations plus 10 miles, list such separations below. (Include existing stations, proposed stations and cities which appear in the table of assignments; the location and geographical coordinates of each antenna, proposed antenna or reference point as appropriate; the distance to each from the proposed transmitter location; and the method used in each instance to measure the distance.) If none, so state.

none

21. If this is an application for modification of construction permit state briefly as Exhibit No. the present status of construction and indicate when it is expected that construction will be completed.

Within 30 days

I certify that I am the Technical Director, Chief Engineer, or Consulting Engineer of the radio station for which this application is submitted and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief. (This signature may be omitted provided the engineer's original signed report of the data from which the information contained herein has been obtained is attached hereto.)

Date _____

_____

Technical Director, Chief Engineer or Consulting Engineer

KSHO-TV

ENGINEER'S COPY

Broadcast Application | FEDERAL COMMUNICATIONS COMMISSION | Section V-C

TELEVISION BROADCAST ENGINEERING DATA

Name of applicant: **Television Company of America, Inc.** BMPCT-#243 referred to ASB- 9-11-57 4854

1. Purpose of authorization applied for: (Indicate by check mark)

(If application is for a new station or for any of the changes numbered B through D, complete all paragraphs of this form; if change E is of a character which will change coverage or increase the overall height of the antenna structure more than 20 feet, answer all paragraphs, otherwise complete only paragraphs 2 and 7 and the appropriate other paragraphs; for changes F through I, complete only paragraph 2 and the appropriate other paragraphs; for change J, complete only paragraphs 2, 5 and 16(b).

A. ☐ Construct a new station
B. ☒ Change effective radiated power or antenna height above average terrain
C. ☒ Change transmitter location
D. ☐ Change frequency
E. ☒ Change antenna system
F. ☐ Construct or change auxiliary antenna system
G. ☒ Change transmitter
H. ☐ Install auxiliary or alternate main transmitter
I. ☐ Other changes (specify)
J. ☒ Change studio location

2. Facilities requested

Frequency: 210 — 216 Mc. | Channel No. 13

Effective Radiated Power (visual)	Effective Radiated Power (aural)	Antenna height above average terrain
In dbk: 10.6	In dbk: 7.6	130 feet
In kw: 11.5	In kw: 5.75	

3. Station location (principal community)

State: Nevada | City or town: Las Vegas

4. Transmitter location

State: Nevada | County: Clark

City or town: Las Vegas | Street Address (or other identification): El Rancho Vegas Hotel

5. Main studio location

State: Same as transmitter | County:

City or town: | Street address:

6. Transmitters

Visual

Make	Type No.	Rated power
RCA	TT-2AH	In dbk: 3.01 In kw: 2.0

Aural

Make	Type No.	Rated Power
RCA	TT-2AH	In dbk: 0 In kw: 1.0

(If the above transmitter has not been accepted for licensing by the F.C.C., attach as Exhibit No. a complete showing of transmitter details. Showing should include schematic diagram and full details of frequency control. If changes are to be made in licensed transmitter include schematic diagram and give full details of change.)

(a) Describe in Exhibit No. means which will be used for determining and maintaining power output of the transmitters to the values specified in this application. On file

(b) Multiplexer: Make RCA Type No. MI-19390

Rated input power 10 dbk

Rated loss: Visual 0.004 db Aural 0.004 db

7. (a) Antenna structure

Is the proposed construction in the immediate vicinity of any other radio station or will the proposed transmitting antenna be supported by the antenna structure of any other radio station? Yes ☐ No ☒ If "Yes", attach as Exhibit No. complete engineering data showing details and effect upon other station.

Submit as Exhibit No. Eng. a vertical plan sketch for the proposed total structure (including supporting building if any) giving heights above ground in feet for all significant features.

Overall height in feet above ground. (Without obstruction lighting)	Overall height in feet above mean sea level. (Without obstruction lighting)
242'	2296'
Overall height in feet above ground. (With obstruction lighting)	Overall height in feet above mean sea level. (With obstruction lighting)
245'	2299'

Height of antenna radiation center in feet above mean sea level. 2278 feet

Geographical coordinates of antenna (to nearest second)

North latitude: 36 08 32 | West longitude: 115 09 37

How were coordinates determined? From USGS Las Vegas Quadrangle

Indicate by check mark the zone in which structure is located. 1 ☐ 2 ☒ 3 ☐

(b) Antenna data

Visual

Make	Type No.
RCA	TF-6AH

Number of sections	Rated input power in dbk	Power gain in db
6	15.44	8.39

Aural (if separate)

Make	Type No.
Not separate	

Number of sections	Rated input power in dbk	Power gain in db

If directional antenna is proposed, give full details including horizontal and vertical plane radiation patterns, as Exhibit No. Not applicable

Is electrical or mechanical beam tilting proposed? If so, describe fully in Exhibit No. including horizontal and pertinent vertical radiation patterns. Yes ☐ No ☒

Will antenna be altered to provide null fill-in? Yes ☐ No ☒

If yes, describe fully in Exhibit No.

8. Transmission line proposed to supply power to the antenna from the transmitter

(a) Visual

Make	Type No.	Rated input power in dbk
Prodelin	600	8.75

Size (nominal inside transverse dimensions) in inches	Length in feet	Power loss in db for this length
1-5/8"	250'	0.78

(b) Aural (if separate) Not separate

Make	Type No.	Rated input power in dbk

Size (nominal inside transverse dimension) in inches	Length in feet	Power loss in db for this length

9. Proposed operation

(a) Visual

Transmitter power output (after vestigial sideband filter, if used)	Multiplexer loss in db:	Input to transmission line in dbk:
In dbk: 3.01 In kw: 2.0	0.004	3.01

Transmission line power loss in db:	Antenna input power in dbk:	Antenna power gain in db:	Effective radiated power
0.78	2.23	8.39	In dbk: 10.62 In kw: 11.5

(b) Aural

Transmitter power output	Multiplexer loss in db:	Input to transmission line in dbk:
In dbk: 0.0 In kw: 1.0	0.004	0.0

Transmission line power loss in db:	Antenna input power in dbk:	Antenna power gain in db:	Effective radiated power
0.78	-0.78	8.39	In dbk: 7.61 In kw: 5.75

10. Modulation monitors No change

(a) Visual monitor or monitoring equipment

Make	Type No.

(b) Aural monitor

Make	Type No.

11. Frequency monitors No change

(a) Visual monitor

Make	Type No.	Accuracy

(b) Aural monitor

Make	Type No.	Accuracy

12. If the above monitors or monitoring equipment have not been approved by the F.C.C., include as Exhibit No. a brief technical description of each. Not applicable

13. Will the studios, cameras, microphones, and other equipment proposed for transmission of programs be designed for compliance with the Commission's Rules? Yes [XX] No [ ]

14. (a) Attach as Exhibit No. Eng. a map(s) (topographic where obtainable, such as U. S. Geological Survey quadrangles) for the area within 15 miles of the proposed transmitter location and show drawn thereon the following data:

1. Proposed transmitter location--accurately plotted;
2. Transmitter location and call letters of all known radio stations (except amateur) and the location of known commercial and government receiving stations within 2 miles of the proposed transmitter location;
3. Character of the area within 2 miles of proposed transmitter location, suitably designated as to residential, business, industrial, and rural nature;
4. At least eight radials each extending to a distance of ten or more miles from the proposed transmitter location, one or more of which must extend through the principal city to be served.

(b) Attach as Exhibit No. Eng. profile graphs with reasonably large scales for the radials in (a) (4) above. Each graph shall show the elevation of the antenna radiation center. Identify each graph by its bearing from the proposed transmitter location. Direction of true north shall be zero azimuth, with angles measured clockwise. Show source of topographical data on each.

15. From the profile graphs in 14(b), for the eight mile distance between two and ten miles from the proposed transmitter location, and in accordance with the procedure prescribed in the Commission's Rules, supply the following tabulation of data:

Radial bearing (degrees true)	Average elevation of radial (2-10 mi.) in feet above mean sea level	Height in feet of antenna radiation center above average elevation of radial (2-10 mi.)	Effective radiated power in radial direction	Predicted distance in miles to the Grade A contour	Predicted distance in miles to the Grade B contour
0 0	feet	feet	dbk	mi.	mi.
45					
90					
135					
180					
225					
270					
315					
(*)					
Average					

See Figure 6 of Engineering Exhibit

*Radial over principal community if not included above. Do not include in average.

Antenna height above average terrain _____ feet (Must be identical with Paragraph 2)

16. Attach as Exhibit No. **Eng.** map(s) (Sectional Aeronautical charts where obtainable, preferably without aeronautical overlay) of the area proposed to be served and shown drawn thereon:

(a) Proposed transmitter location and the radials along which the profile graphs have been prepared;

(b) The studio location and boundaries of the principal community;

(c) The predicted Grade A and Grade B contours from 12 above;

(d) The required minimum field strength contour;

(e) Scale of miles.

17. Attach as Exhibit No. **Eng.** a sufficient number of aerial photographs taken in clear weather at appropriate altitudes and angles to show the nature of the surrounding terrain in the vicinity of the proposed transmitter site. The photographs must be marked so as to show compass directions. Photographs taken in eight different directions from an elevated position on the ground will be acceptable in lieu of the aerial photographs if the area can be clearly shown.

Give date photographs were taken.

18. Will the minimum required value of field strength predicted in accordance with the method prescribed in the Commission's Rules, be provided over the entire principal community proposed to be served? Yes [X] No [ ]

19. Will the main studio be located within the limits of the principal community proposed to be served. **Waiver of 3.613 requested** Yes [ ] No [X]

20. (a) Does the proposed transmitter location comply with the minimum separation requirements of the Commission's Rules? Yes [X] No [ ]

(b) If any co-channel separations are proposed that are less than the applicable minimum separation requirement plus 20 miles, or if other channel separations are proposed that are less than the applicable minimum separations plus 10 miles, list such separations below. (Include existing stations, proposed stations and cities which appear in the table of assignments; the location and geographical coordinates of each antenna, proposed antenna or reference point as appropriate: the distance to each from the proposed transmitter location; and the method used in each instance to measure the distance.) If none, so state.

Flagstaff, Ariz. - 207 miles (Channel 13)

No application or existing station

Distance measured on Albers Equal Area map

21. If this is an application for modification of construction permit state briefly as Exhibit No. the present status of construction and indicate when it is expected that construction will be completed.

Not applicable

I certify that I am the ~~Technical Director, Chief Engineer, or~~ Consulting Engineer of the radio station for which this application is submitted and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief. (This signature may be omitted provided the engineer's original signed report of the data from which the information contained herein has been obtained is attached hereto.)

Date **September 3, 1957**

s/ Jules Cohen

~~Technical Director, Chief Engineer or~~ Consulting Engineer

Broadcast Application

FEDERAL COMMUNICATIONS COMMISSION

Section V-G (Antenna)

ANTENNA AND SITE INFORMATION
(see instruction B
Section I)

Name of applicant: Television Company of America, Inc.

Address where applicant can be reached in person: Fremont Hotel, Las Vegas, Nevada

Since this Section is submitted to the Regional Airspace Subcommittee of the Air Coordinating Committee for clearance in connection with obstructions to air navigation, it is necessary that all the data called for be supplied. Previously and separately filed data must not be incorporated by reference.

Legal Counsel: A. Harry Becker

Address: Wyatt Bldg., Washington 5, D.C.

Consulting Engineer: Vandivere, Cohen and Wearn

Address: 1420 New York Ave., Wash. 5, D.C.

Class of station: Television

Facilities requested: Ch 13, 11.5 kw, 130'

1. Location of antenna

State	County	City or Town
Nevada	Clark	Las Vegas

Exact antenna location (street address) (If outside city limits, give distance and direction from, and name of nearest town)

El Rancho Vegas Hotel

Geographic coordinates (to be determined to nearest second. For directional antenna give coordinates of center of array.) For single vertical radiator give tower location.

North latitude	West longitude
36° 08' 32"	115° 09' 37"

Purpose of application (Check appropriate box)

a. New antenna construction [X]
b. Alteration of existing antenna structures [ ]
c. Change in location [ ]

2. Features of surrounding terrain

List any natural formations or existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft and thereby minimize the aeronautical hazard of the antenna.

KENO towers 0.3 mile south, 2265' above MSL

Television station KLAS-TV tower 0.9 mi south, 2318' above MSL

Submit as Exhibit No. Eng a chart on which is plotted the exact location of the antenna site, and also the relative location of the natural formations and/or the existing man-made structures listed above.
The chart used shall be an Instrument Approach Chart (or the landing chart on reverse side thereof), or a Sectional Aeronautical Chart, choice depending upon proximity of the antenna site to landing areas. 1/ In general, the Sectional Aeronautical Chart should be used only when the antenna site is more than 10 miles from a landing area or when an Instrument Approach Chart is unobtainable. 1/ These charts may be purchased from the U. S. Coast and Geodetic Survey, Washington 25, D. C.
1/ Exception - Where the proposed antenna site is within the boundary of a landing area for which no Instrument Approach Chart is available, submit a self-made, large scale map showing antenna site, runway(s) and existing man-made structures listed above.

3. Designation, distance, and bearing to center line of nearest established airway within 5 miles: Amber 2, 1.1 miles, 129° True

4. List all landing areas within 10 miles of antenna site. Give distance and direction to the nearest boundary of each landing area from the antenna site.

	Landing Area	Distance	Direction
(a)	McCarran Field	3.1 miles	South
(b)	Nellis Air Force Base	8.1 miles	Northeast
(c)	Skyhaven Airport	5.0 miles	Northwest

5. Description of antenna system (If directional, give spacing and orientation of towers).

RCA Type TF-6AH television antenna on 205' steel supporting tower

Type						
Description of tower(s)						
Self-supporting / Guyed X / Tubular (Pole)						
Tower (height figures should include obstruction lighting)	#1	#2	#3	#4	#5	#6
Height of radiating elements	242'					
Overall height above ground	245'					
Overall height above mean sea level	2299'					

If a combination of Standard, FM, or TV operation is proposed on the same multi-element array (either existing or proposed) submit as Exhibit No. a horizontal plan for the proposed antenna system, giving heights of the elements above ground and showing their orientation and spacing in feet. Clearly indicate if any towers are existing. Not applicable

Submit as Exhibit No. Eng a vertical plan sketch for the proposed total structure (including supporting building if any) giving heights above ground in feet for all significant features. Clearly indicate existing portions, noting painting and lighting.

Is the proposed antenna system designed so that obstruction lights may be installed and maintained at the uppermost point(s)? Yes [X] No [ ]

6. Is the proposed site the same or immediately adjoining the transmitter-antenna site of other stations authorized by the Commission or specified in another application pending before the Commission? Yes [ ] No [X]

If the answer is "Yes", give

Call letters	File numbers

Date September 3, 1957

s/ Jules Cohen
Signature of Engineer preparing data

VANDIVERE, COHEN AND WEARN
CONSULTING ELECTRONIC ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION COMPANY OF AMERICA, INC.
KSHO-TV
LAS VEGAS, NEVADA

CH 13 11.5 KW 130 FT

September 3, 1957

VANDIVERE, COHEN AND WEARN
CONSULTING ELECTRONIC ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION COMPANY OF AMERICA, INC.
KSHO-TV
LAS VEGAS, NEVADA
CH 13 11.5 KW 130 FT

Table of Contents

VANDIVERE, COHEN AND WEARN
CONSULTING ELECTRONIC ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION COMPANY OF AMERICA, INC.
KSHO-TV
LAS VEGAS, NEVADA
CH 13 11.5 KW 130 FT

Engineering Statement

This engineering exhibit was prepared in accordance with the Rules of the Federal Communications Commission and pursuant to the provisions of Sections V-C and V-G of FCC Form 301 in support of an application by Television Company of America, Inc., licensee of Television Station KSHO-TV, for a construction permit. The applicant proposes to move both transmitter and studio and install a new transmitter and antenna. KSHO-TV presently operates on Channel 13 at Las Vegas, Nevada, with effective radiated power of 0.436 kw visual and antenna height above average terrain of 100 feet. Operating as proposed, effective radiated power will be 11.5 kw and antenna height above average terrain will be 130 feet.

Proposed Equipment

It is proposed to employ an RCA Type TF-6AH, six-section, superturnstile antenna having a power gain at visual carrier of 6.9 (8.39 db). This antenna, when used with the RCA Type TT-2AH transmitter and approximately 250 feet of 1-5/8 inch Teflon-insulated transmission line, would be expected to develop effective radiated power of 11.5 kilowatts peak visual. The

estimated over-all efficiency of the transmission line is 83.5 percent. All of the equipment to be employed will comply with FCC Rules.

Proposed Transmitter and Studio Location

KSHO-TV proposes to locate its transmitter and studio at El Rancho Vegas Hotel on U.S. Highway 91-466, one-quarter mile south of the Las Vegas city boundary. Waiver of Section 3.613(a) is requested by the applicant. The antenna is to be mounted on a 205-foot guyed tower. Over-all height above ground will be 242 feet (2296 feet above mean sea level - 2299 feet, including beacon).

Geographic coordinates of the proposed site, as determined from the Las Vegas quadrangle of the U. S. Department of the Interior Geological Survey, are:

North Latitude 36° 08' 32"

West Longitude 115° 09' 37"

The location proposed is in an area called "The Strip" running south from Las Vegas and comprised almost exclusively of resort hotels. Figure 2 herein shows commercial and industrial areas within two miles of the proposed location and the sites of nearby radio and television stations. The location is approximately 0.3 miles from the three-tower antenna system of KENO, which operates on 1460 kc with 1000 watts and directional antenna during nighttime hours. The new KSHO-TV tower will be

insulated and the transmission lines will be isolated so that the system may be detuned at the 1460 kc frequency in order to eliminate any adverse effect on the KENO antenna system. No other radio or television system in the area is expected to be affected by the proposed structure.

The over-all height of the KSHO-TV antenna proposed is somewhat less than the height of the existing KENO towers so the proposed construction would not be expected to constitute a hazard to air navigation.

Coverage Contours

The positions of the coverage contours were determined in accordance with the Rules Governing Television. The average elevation from two to ten miles from the transmitter was determined from data obtained from USGS topographic maps reproduced herein as Figure 4. On five bearings (0°, 45°, 90°, 135° and 180°) the distances to coverage contours were determined by employment of Figure 10 of Section 3.699 of the Rules. On the remaining three bearings, negative antenna heights are encountered and the distances to contours were therefore estimated by consideration of the topography involved.

Jules Cohen

VANDIVERE, COHEN and WEARN

September 3, 1957

ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION COMPANY OF AMERICA, INC.
KSHO-TV
LAS VEGAS, NEVADA
CH 13 11.5 KW 130 FT

Engineering Specifications

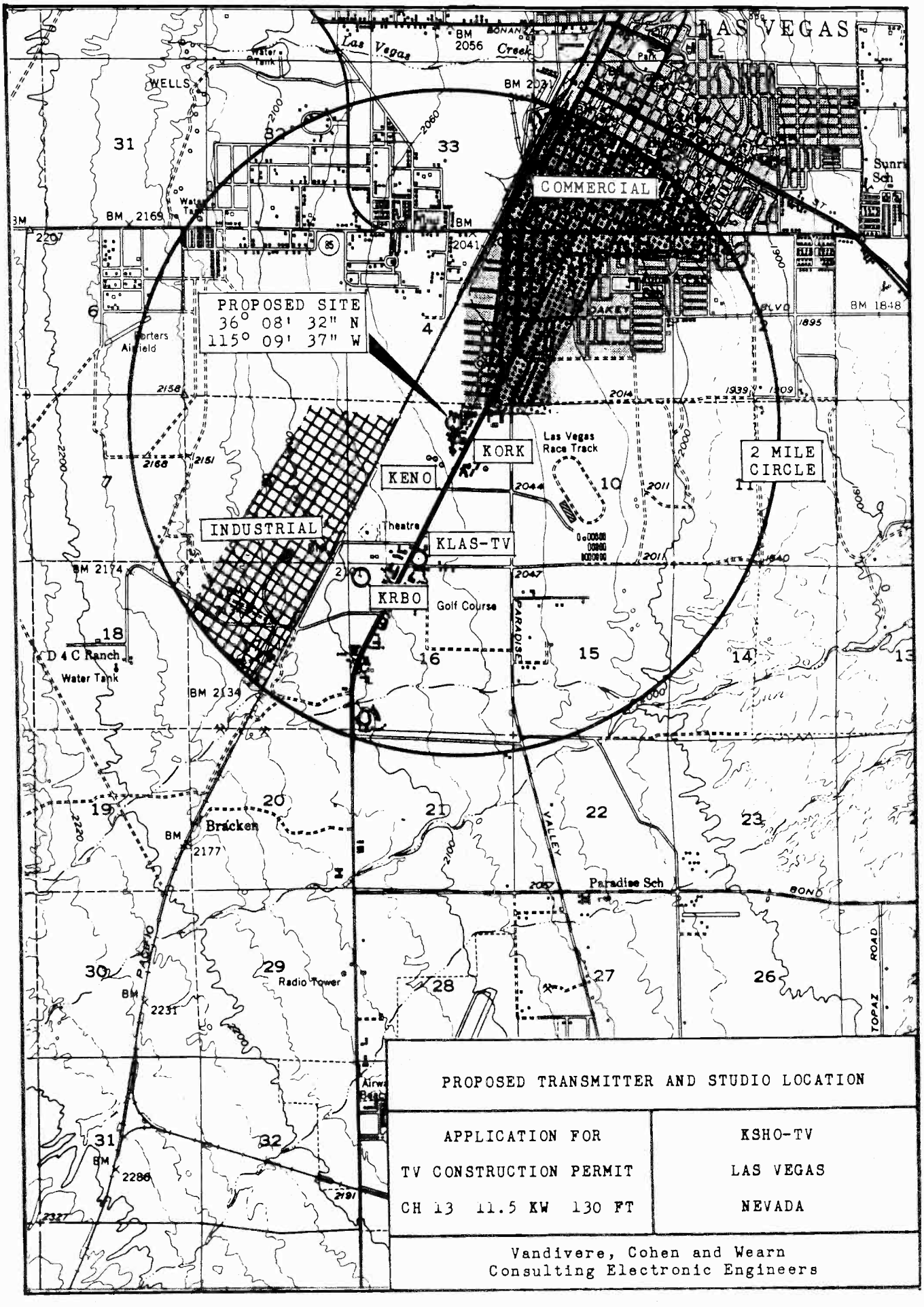
Channel	13
Frequency	210 - 216 mc
Antenna	RCA Type TF-6AH (6-section)
Elevation of Site above MSL	2054'
Height of Supporting Tower above Ground	205'
Over-all Height of Supporting Tower and Antenna above Ground	242'
(with beacon)	245'
Over-all Height of Supporting Tower and Antenna above MSL	2296'
(with beacon)	2299'
Average Elevation of Radials	2151'
Height of Antenna Radiation Center above Ground	224'
Height of Antenna Radiation Center above MSL	2278'
Height of Antenna Radiation Center above Average Terrain	127' Rounded to 130'
Transmission Line	
Type	Prodelin Series 600
Nominal Size	1-5/8"
Rated Power Input per line	7.5 kw
Length	250'
Efficiency (0.78 db Loss)	83.5%

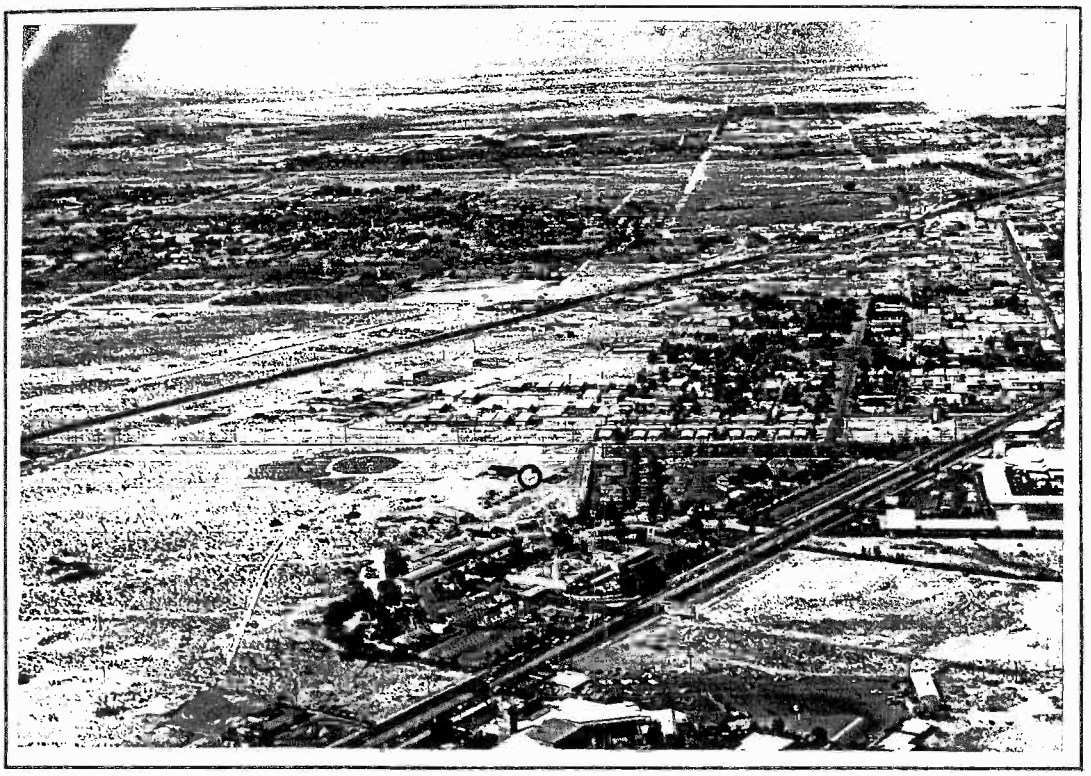
Engineering Exhibit
Las Vegas, Nevada

Engineering Specifications (cont.)

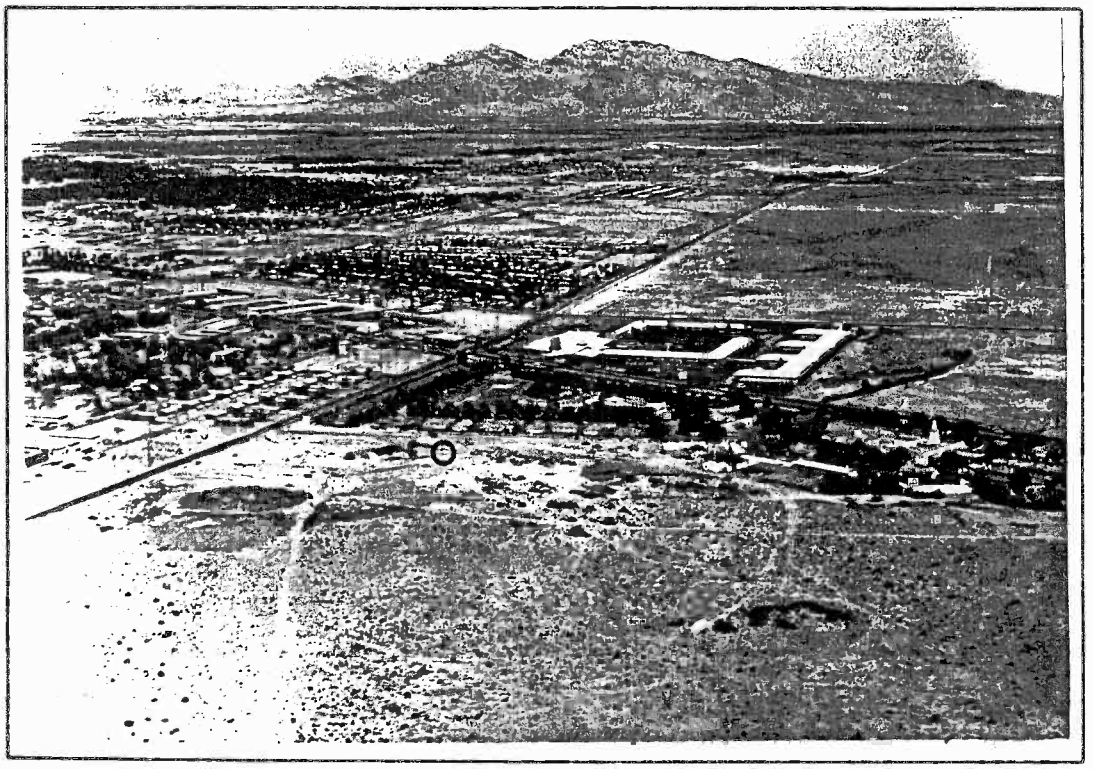
Diplexer				RCA MI-19390	
Transmitter Output					
	Visual	2.0	kw	3.01	dbk
	Aural	1.0	kw	0.0	dbk
Diplexer Loss					
	Visual	0.1	%	0.004	db
	Aural	0.1	%	0.004	db
Transmission Line Input					
	Visual	2.0	kw	3.01	dbk
	Aural	1.0	kw	0.0	dbk
Transmission Line Loss		16.5	%	0.78	db
Antenna Input					
	Visual	1.67	kw	2.23	dbk
	Aural	0.835	kw	-0.78	dbk
Antenna Power Gain		6.9		8.39	db
Effective Radiated Power					
	Visual	11.5	kw	10.62	dbk
	Aural	5.75	kw	7.61	dbk

Figure 2


LAS VEGAS
PROPOSED SITE
36° 08' 32" N
115° 09' 37" W
COMMERCIAL
INDUSTRIAL
2 MILE CIRCLE
KORK
KENO
KLAS-TV
KRBO
Las Vegas Race Track
Golf Course
Theatre
Paradise Sch
Radio Tower
Bracken
D 4 C Ranch
Water Tank
Porters Airfield
BM 2056
BM 2169
BM 2041
BM 2174
BM 2134
BM 2177
BM 2231
BM 2286
BM 1848
PROPOSED TRANSMITTER AND STUDIO LOCATION
APPLICATION FOR
TV CONSTRUCTION PERMIT
CH 13 11.5 KW 130 FT
KSHO-TV
LAS VEGAS
NEVADA
Vandivere, Cohen and Wearn
Consulting Electronic Engineers
1 0 1 2 3 4 MILES
CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL



LOOKING NORTH

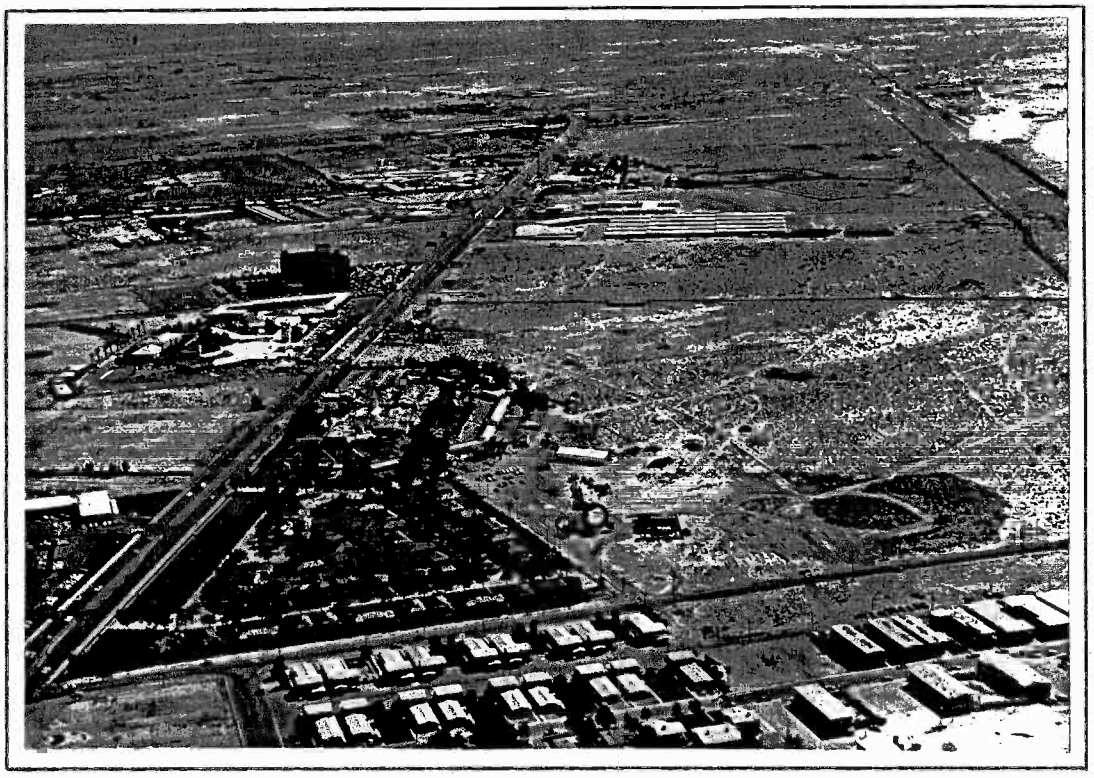


LOOKING EAST

AERIAL PHOTOGRAPHS OF PROPOSED SITE AND VICINITY
(CIRCLE INDICATES TOWER LOCATION)

SEPTEMBER, 1957

KSHO-TV LAS VEGAS, NEVADA



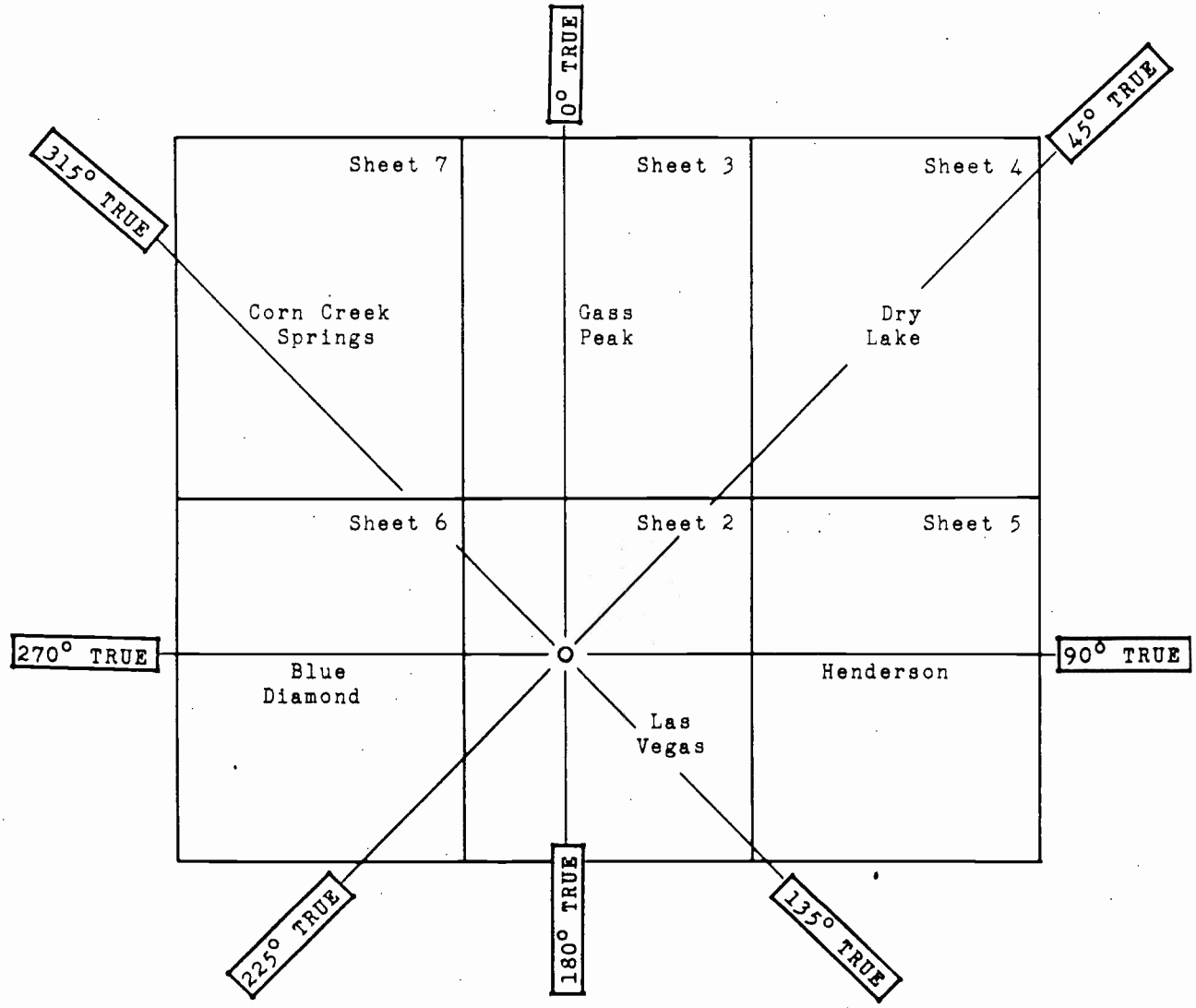
LOOKING SOUTH

LOOKING WEST

AERIAL PHOTOGRAPHS OF PROPOSED SITE AND VICINITY
(CIRCLE INDICATES TOWER LOCATION)

SEPTEMBER, 1957

KSHO-TV LAS VEGAS, NEVADA



INDEX TO TOPOGRAPHIC QUADRANGLES

LOCATION OF PROFILE RADIALS	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	

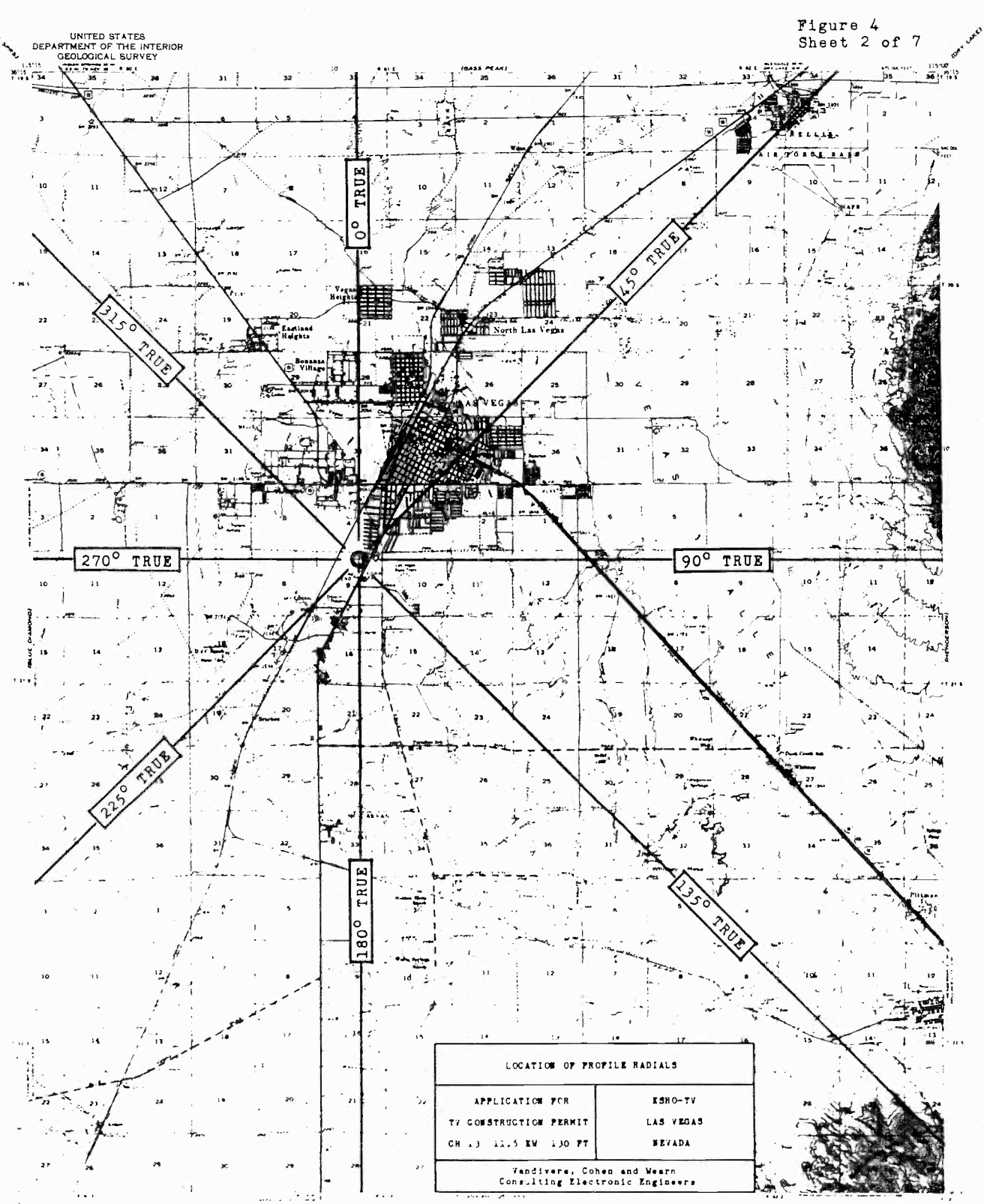

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
0° TRUE
45° TRUE
90° TRUE
135° TRUE
180° TRUE
225° TRUE
270° TRUE
315° TRUE
North Las Vegas
Eastland Heights
Bonanza Village
LAS VEGAS
LOCATION OF PROFILE RADIALS
APPLICATION FOR
TV CONSTRUCTION PERMIT
CH 13 11.5 KW 130 FT
KSHO-TV
LAS VEGAS
NEVADA
Vandivere, Cohen and Wearn
Consulting Electronic Engineers
LAS VEGAS NEV

Figure 4
Sheet 3 of 7

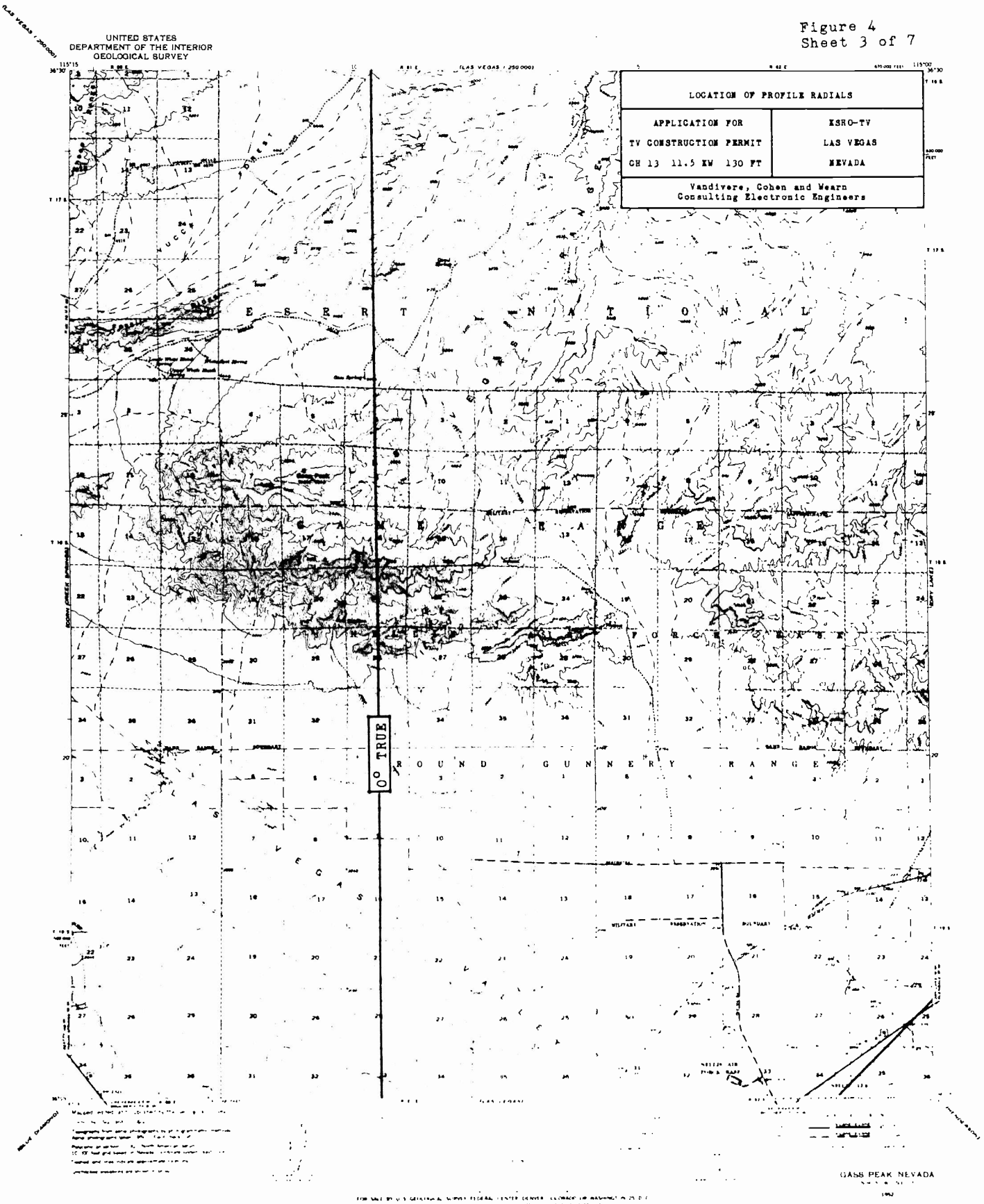


Figure 4
Sheet 4 of 7

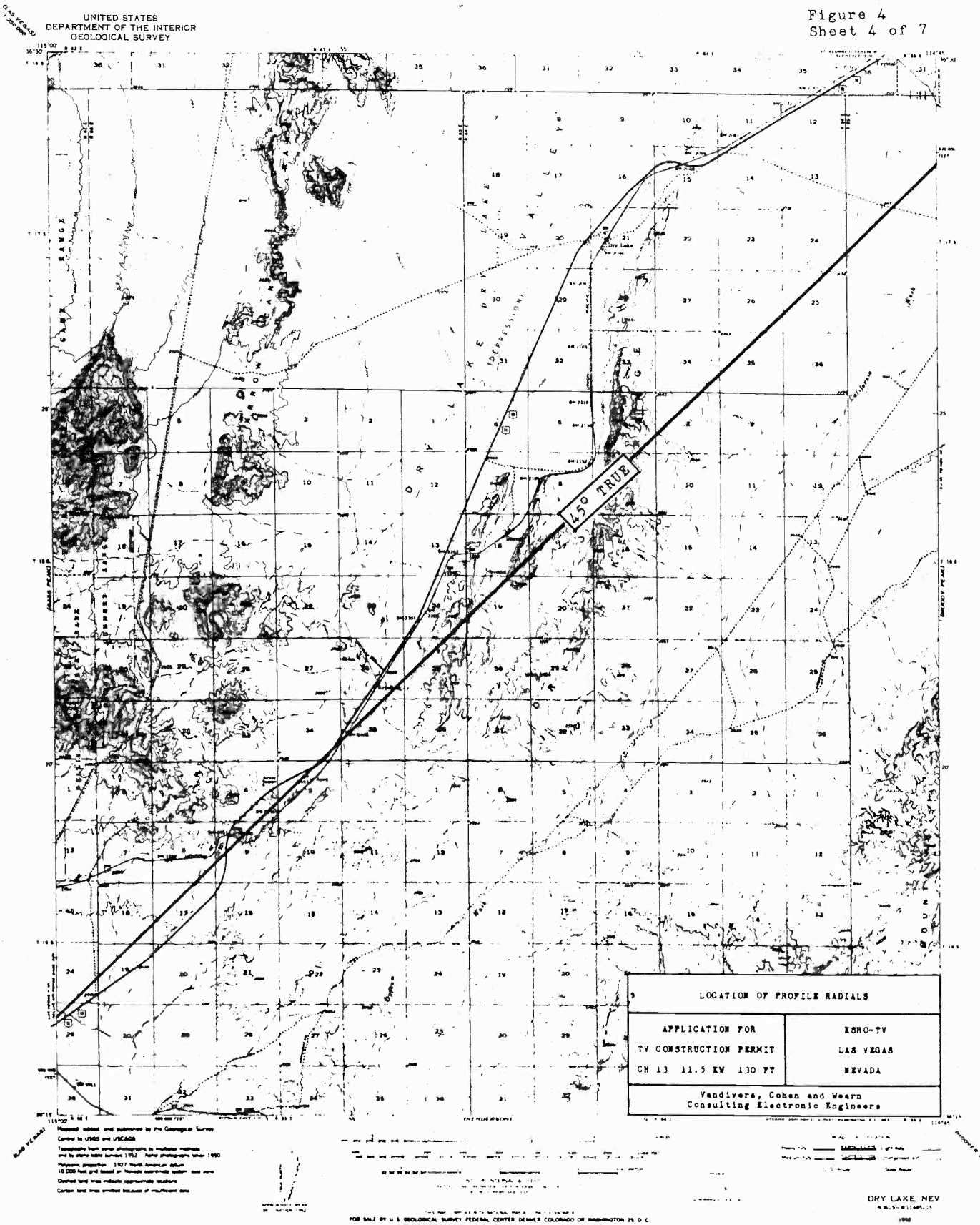


Figure 4
Sheet 5 of 7

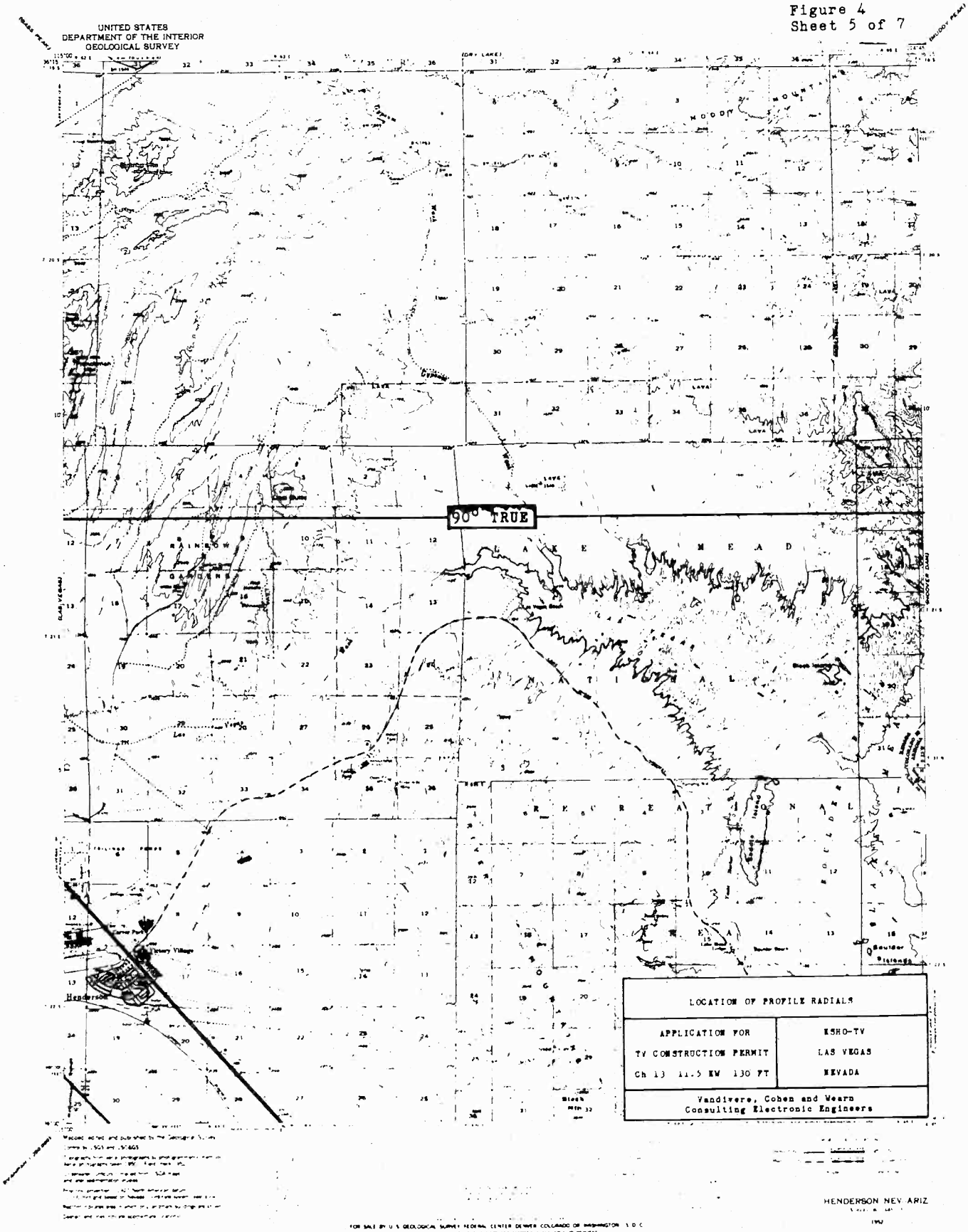


Figure 4
Sheet 6 of 7

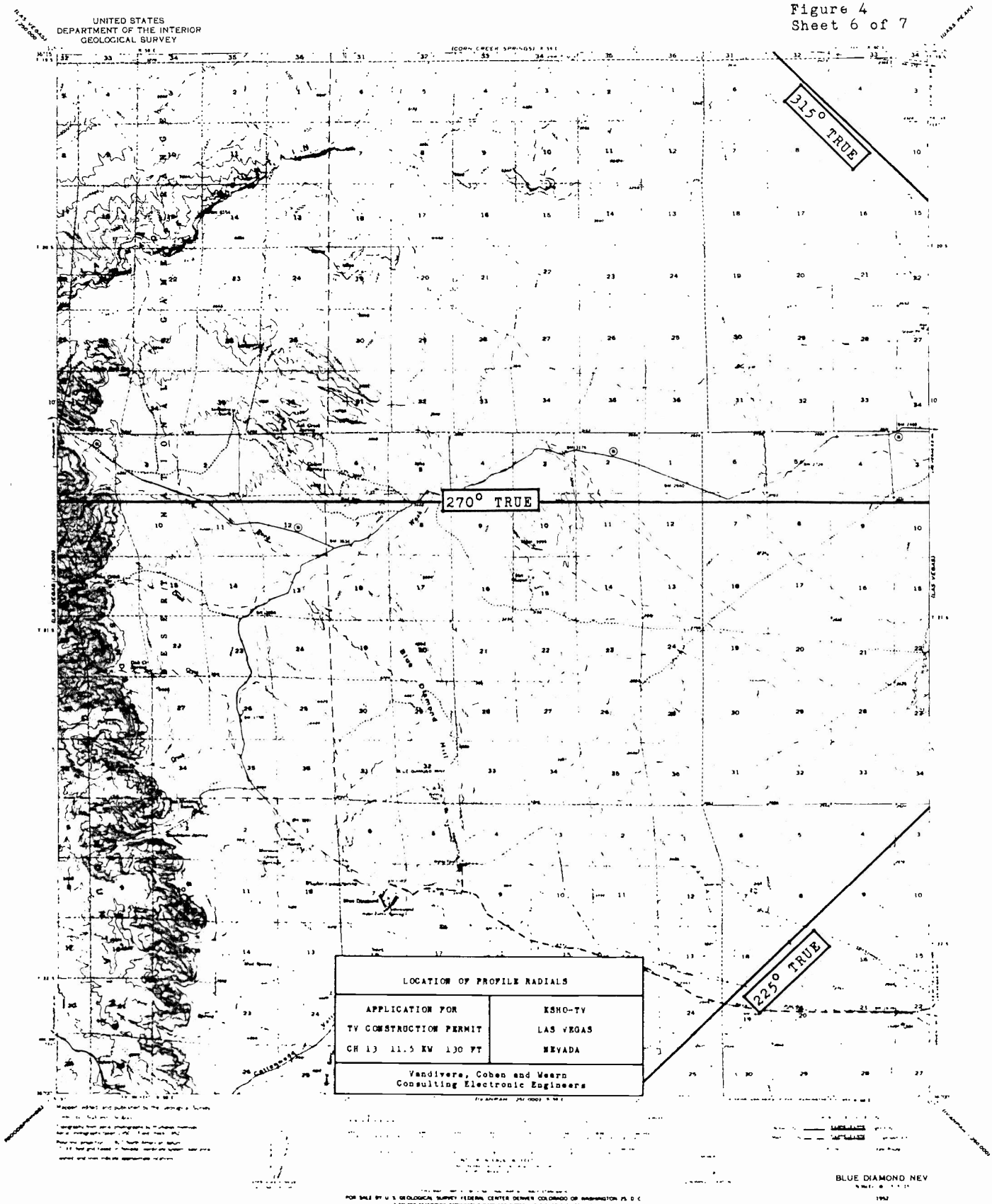
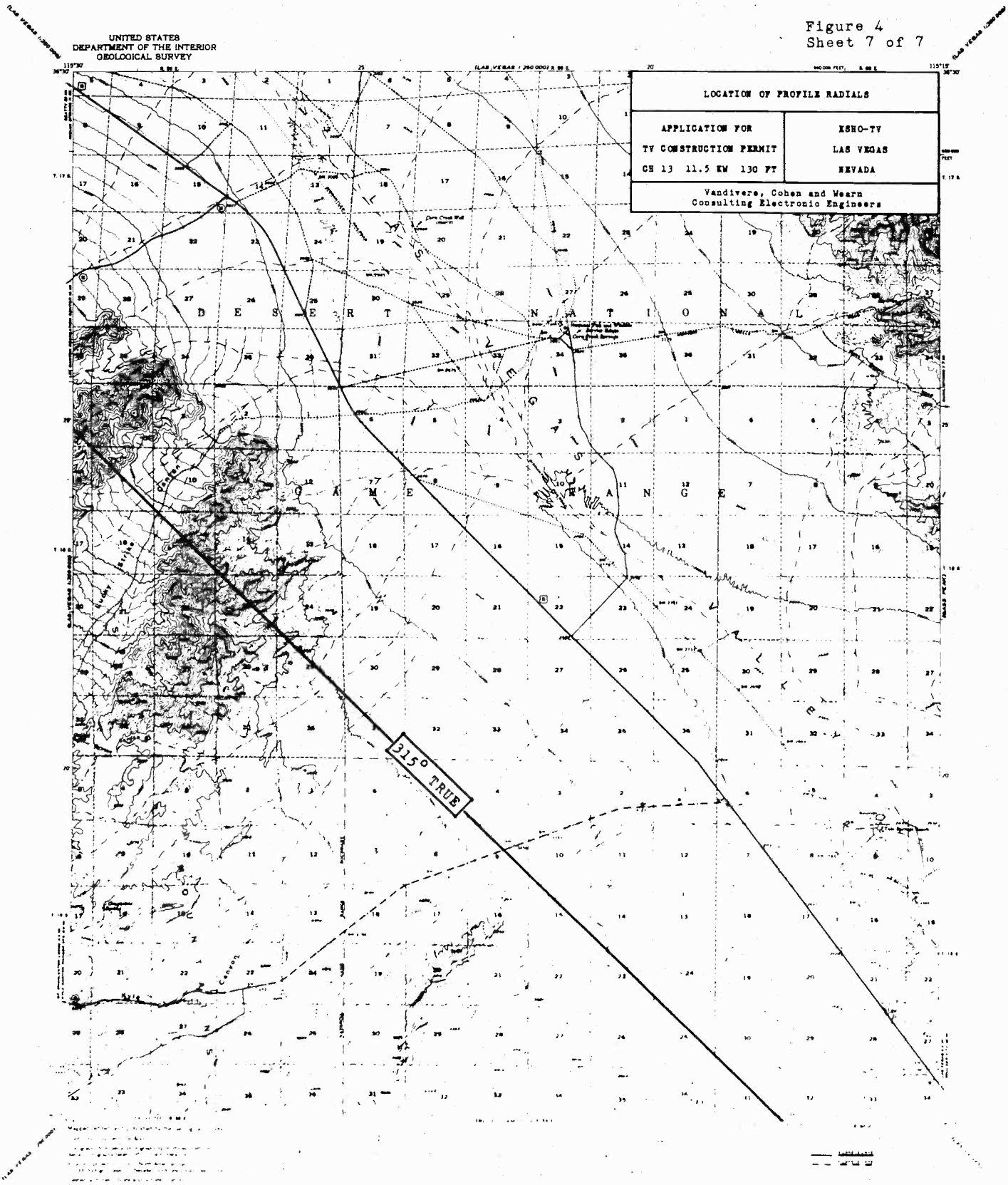
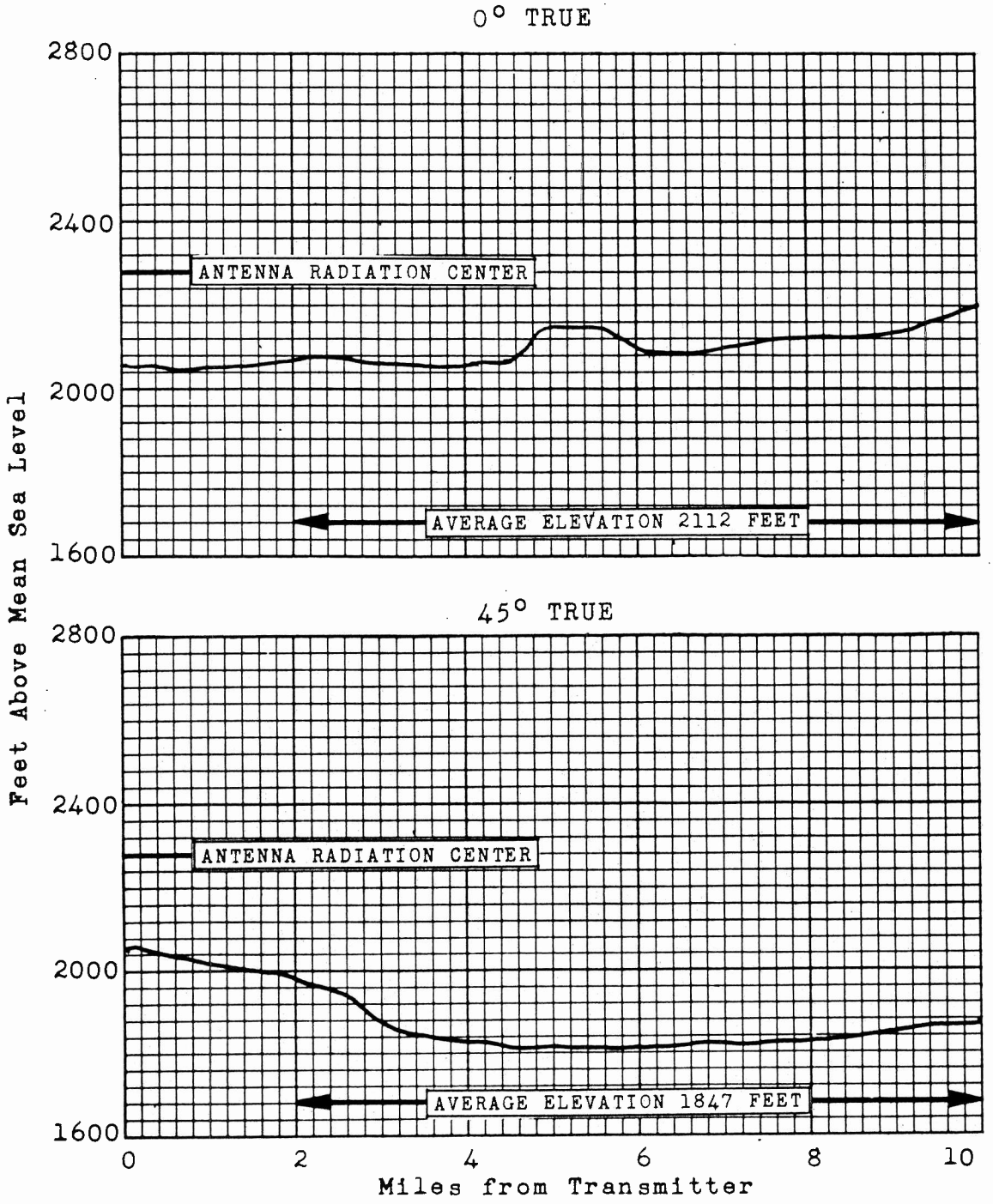


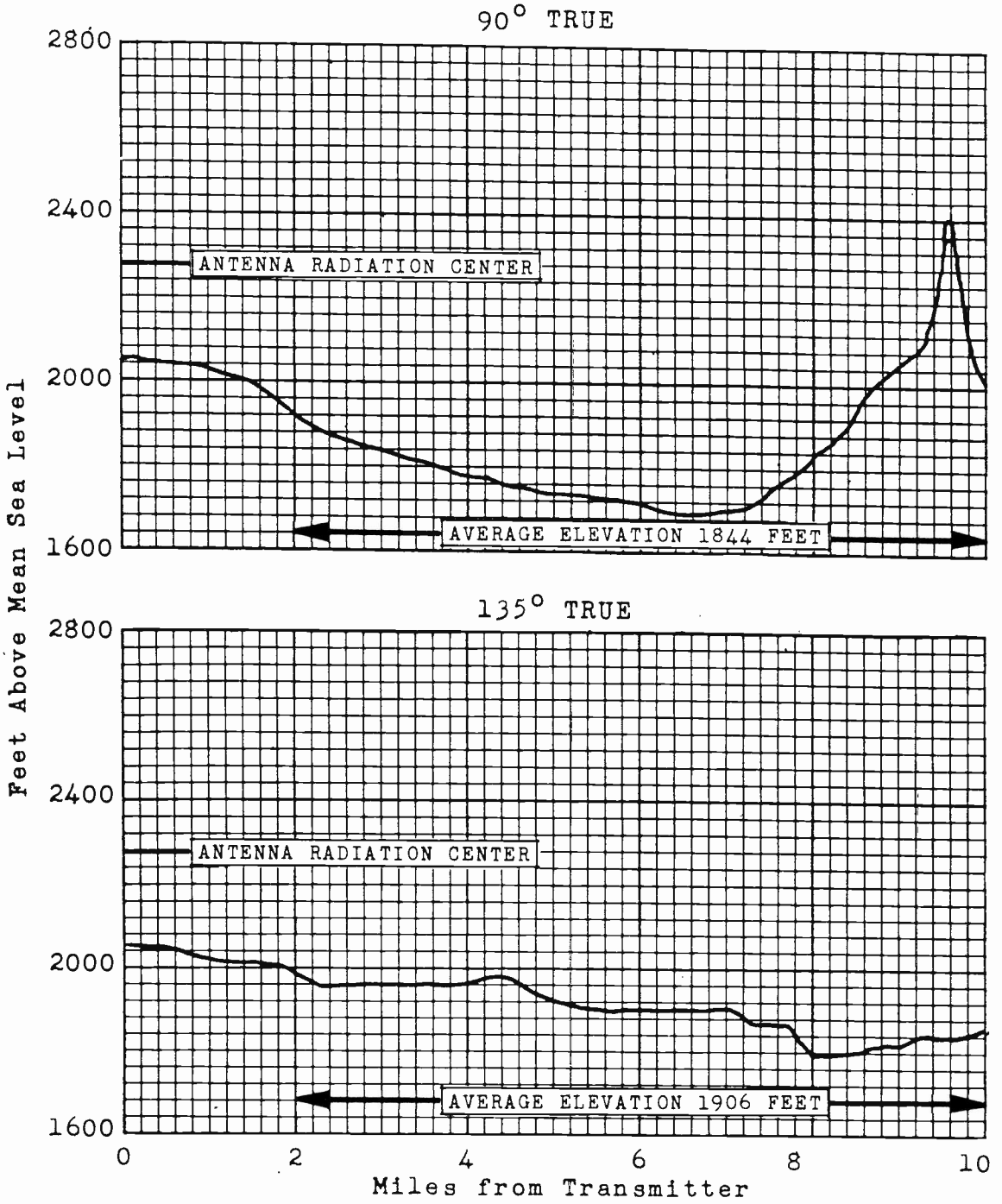
Figure 4
Sheet 7 of 7





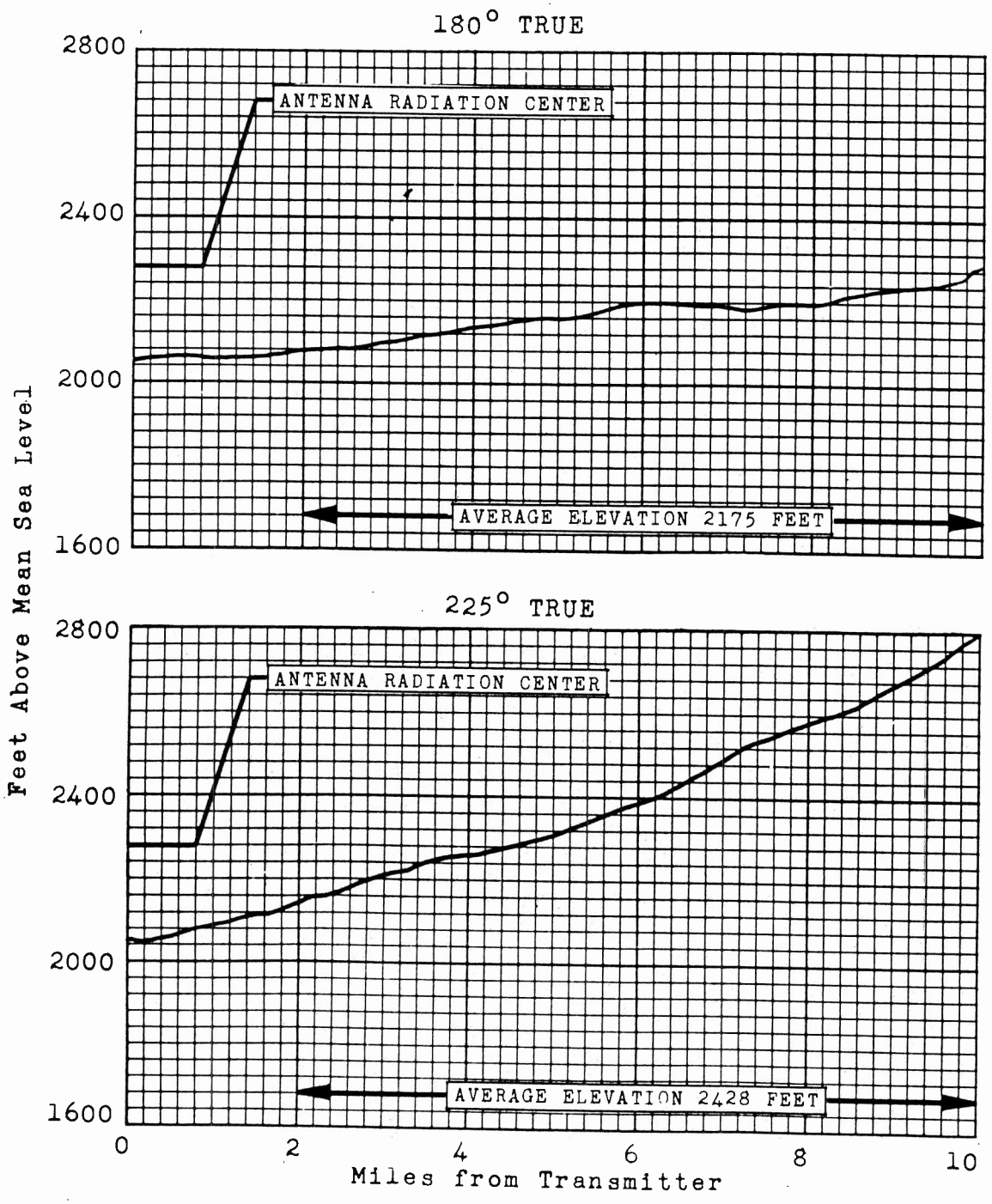
ELEVATION DATA FROM USGS TOPOGRAPHIC MAPS

PROFILE GRAPHS	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	



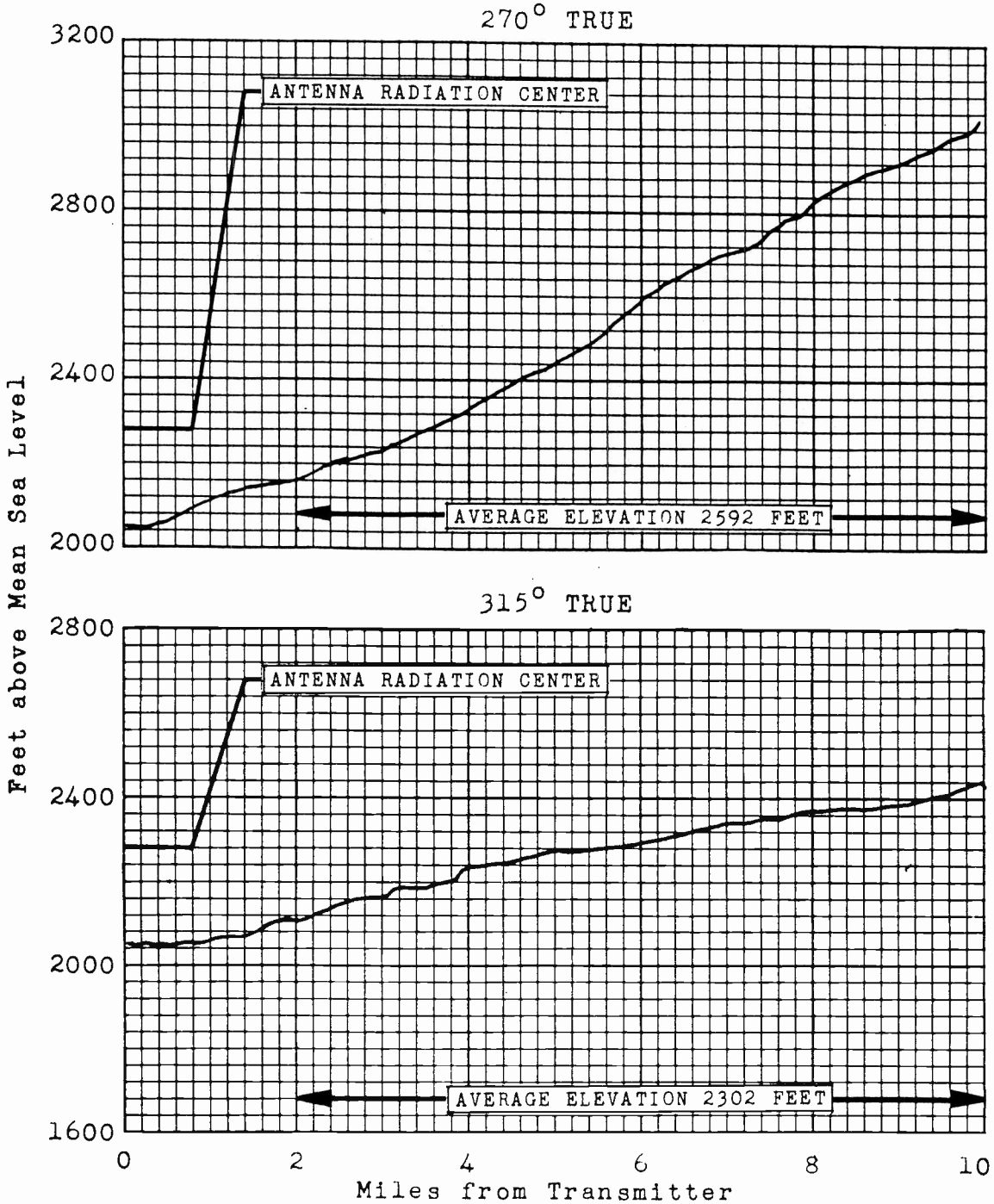
ELEVATION DATA FROM USGS TOPOGRAPHIC MAPS

PROFILE GRAPHS	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	



ELEVATION DATA FROM USGS TOPOGRAPHIC MAPS

PROFILE GRAPHS	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	



ELEVATION DATA FROM USGS TOPOGRAPHIC MAPS

PROFILE GRAPHS	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	

Figure 6

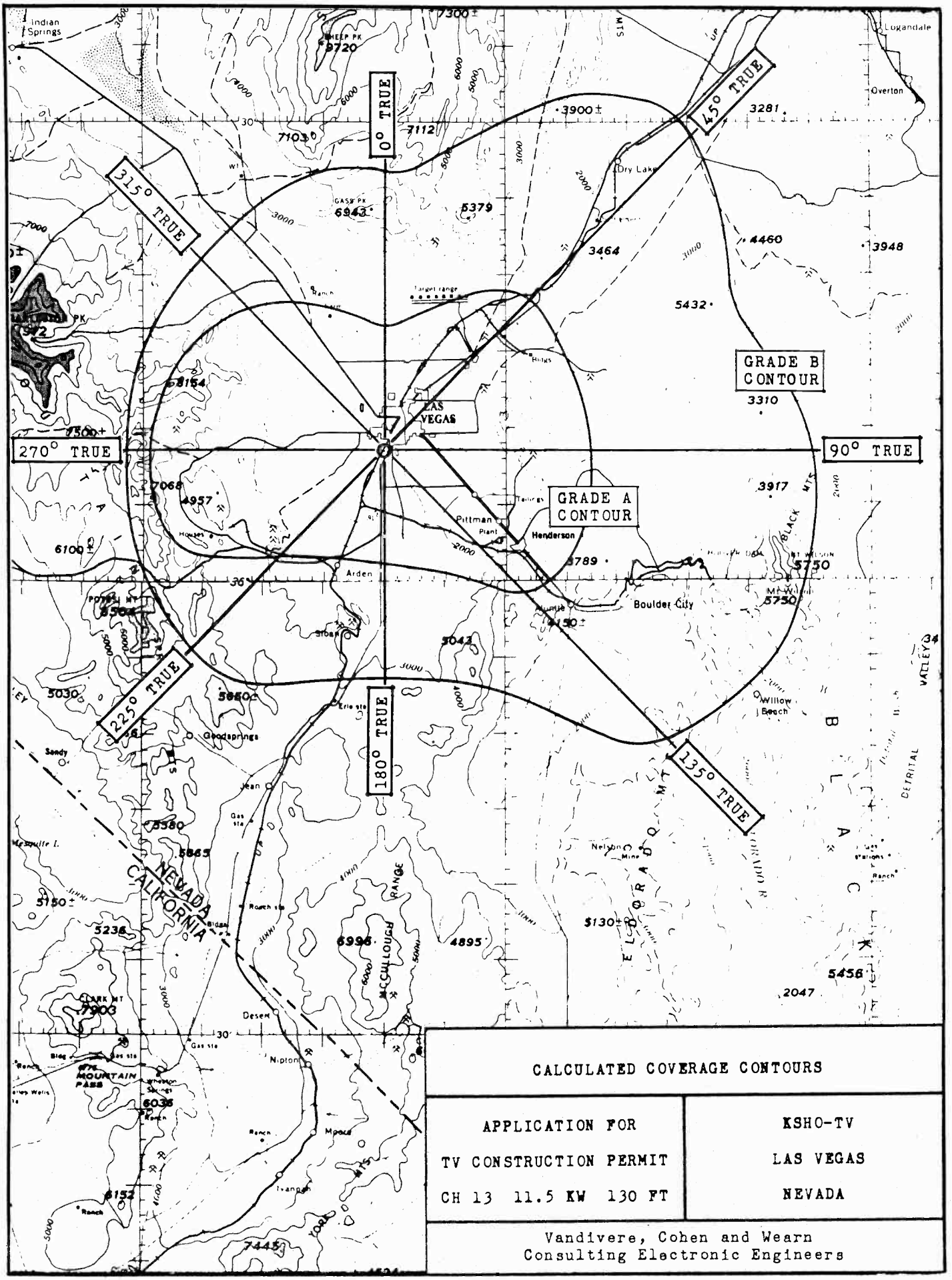
ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION COMPANY OF AMERICA, INC.
KSHO-TV
LAS VEGAS, NEVADA
CH 13 11.5 KW 130 FT

Average Elevations and Distances to Coverage Contours

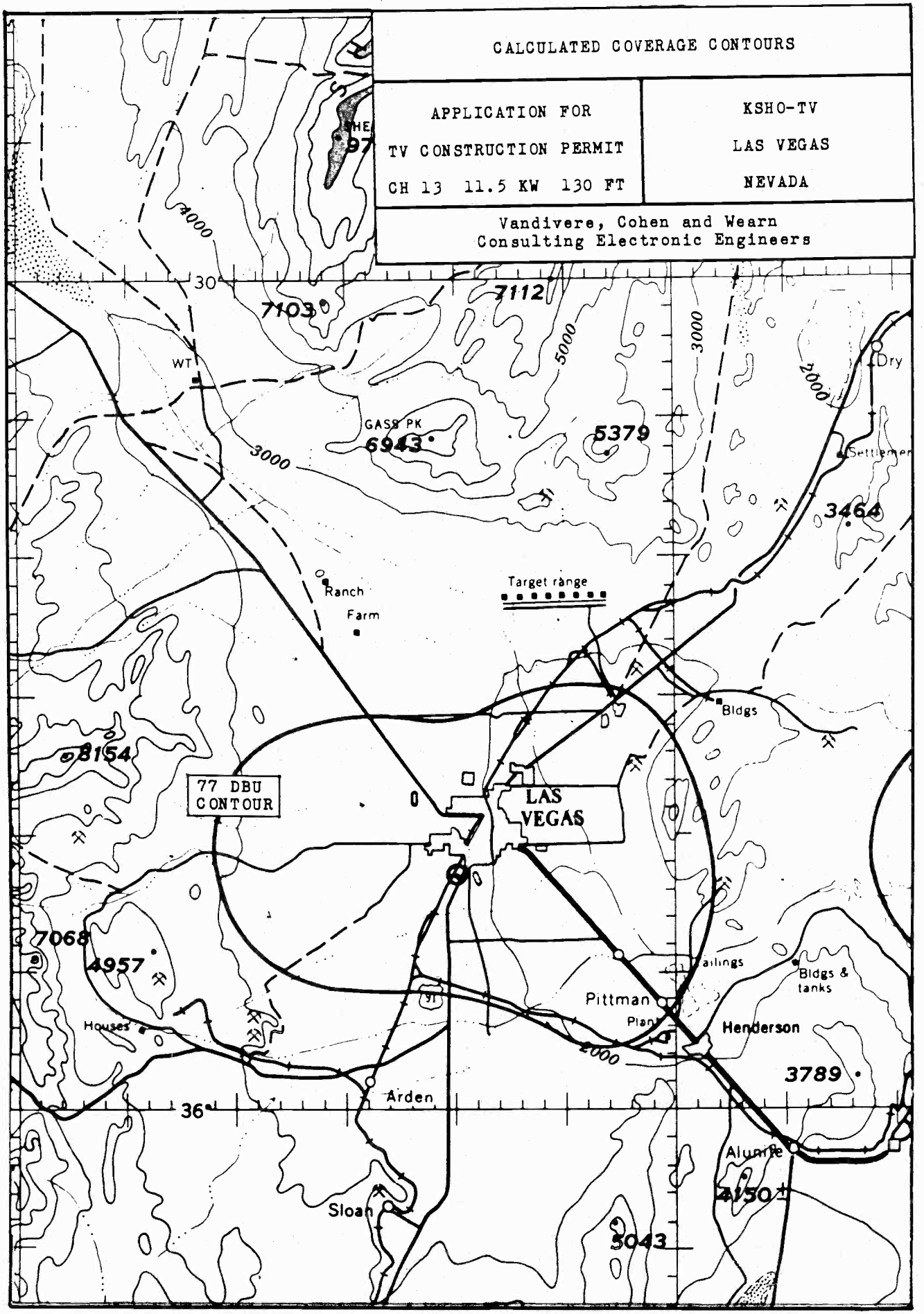
Radial Bearing (degrees)	Average Elevation of Radial (feet)	Height of Radiation Center Above Avg. Terrain (feet)	Distance to 77 dbu Contour (miles)	Distance to Grade A Contour (miles)	Distance to Grade B Contour (miles)
0	2112	166	6.5	9.0	21
45	1847	431	11.0	15.8	33.5
90	1844	434	11.0	15.8	33.5
135	1906	372	10.0	14.5	31
180	2175	103	5.0	8.4	17.5
225	2428	-150	6.8*	11.3*	21.1*
270	2592	-314	10.1*	18.1*	19.8*
315	2302	- 24	8.7*	14.8*	20.0*
Average	2151	127			

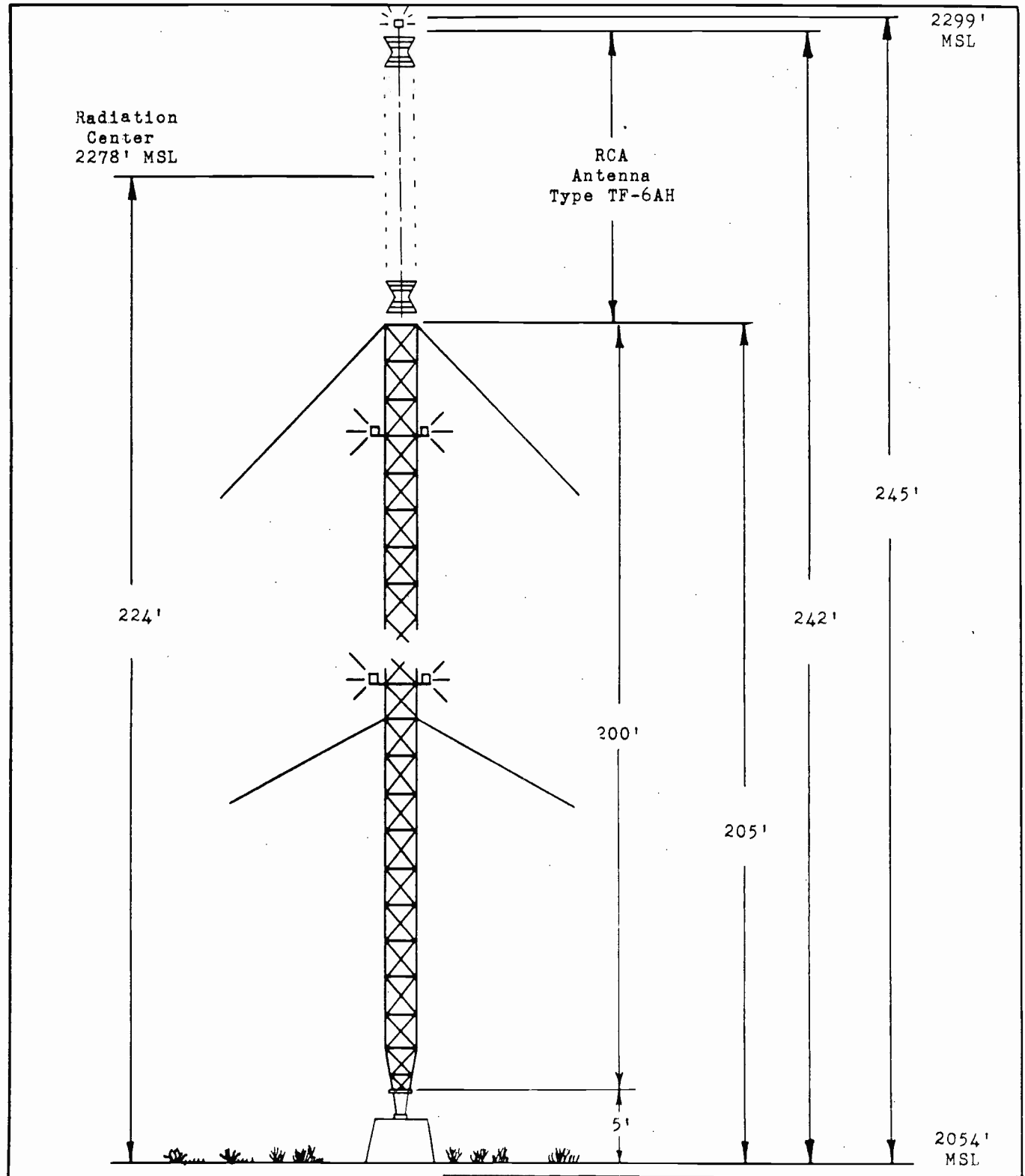
(Round to 130)

* Estimated from topography



CALCULATED COVERAGE CONTOURS	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	


CALCULATED COVERAGE CONTOURS
APPLICATION FOR
TV CONSTRUCTION PERMIT
CH 13 11.5 KW 130 FT
KSHO-TV
LAS VEGAS
NEVADA
Vandivere, Cohen and Wearn
Consulting Electronic Engineers
4000
7112
7103
5000
3000
2000
WT
GASS PK
6943
5379
3464
Dry
Target range
Ranch
Farm
Bldgs
8154
77 DBU
CONTOUR
LAS
VEGAS
7068
4957
Houses
Pittman
Plant
Henderson
3789
Arden
Alunite
4150
Sloan
5043
Statute Miles
10
0
10
20

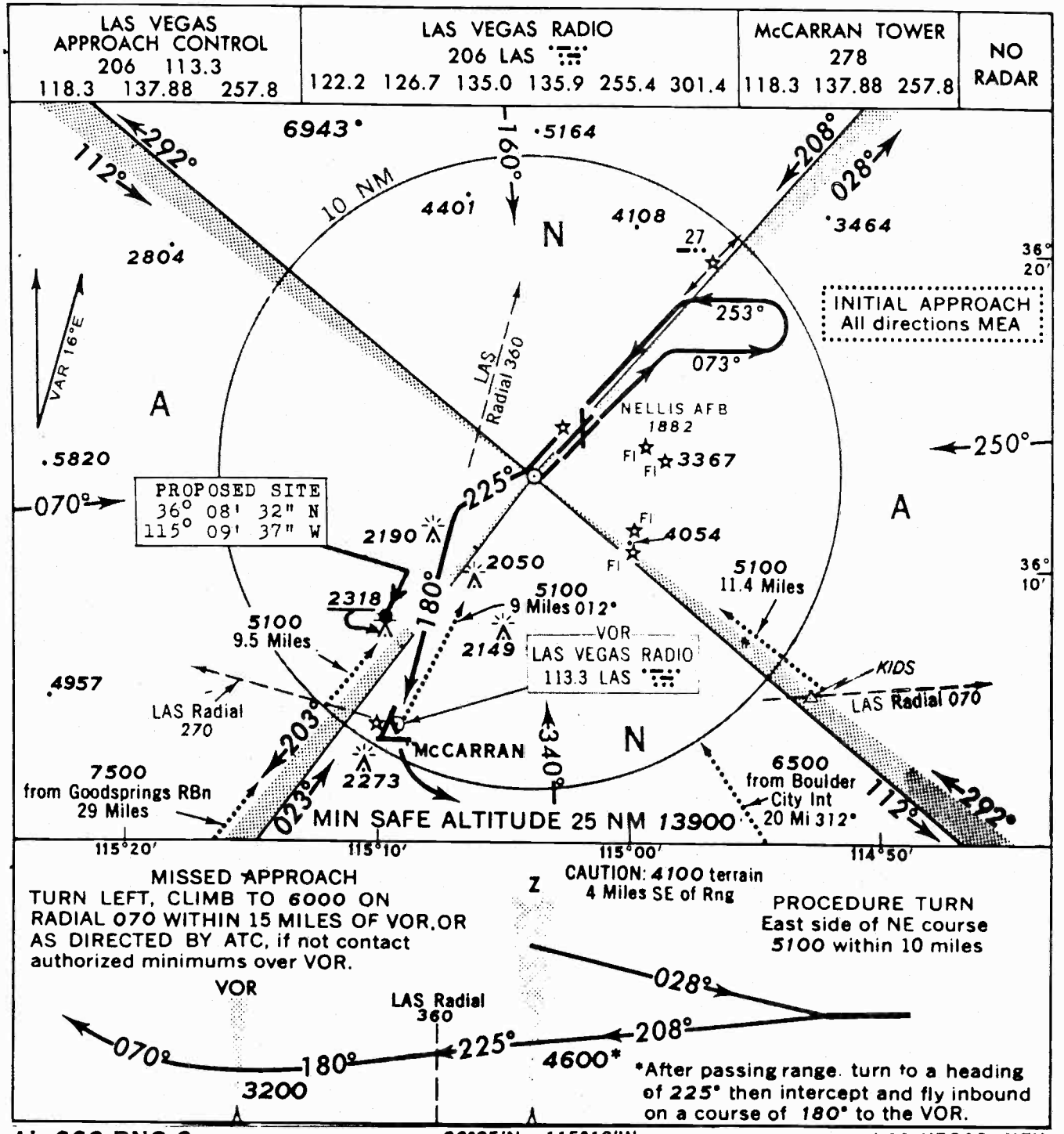


PROPOSED ANTENNA AND SUPPORTING TOWER

APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA

Vandivere, Cohen and Wearn
Consulting Electronic Engineers

Figure 9



AERONAUTICAL APPROACH CHART	
APPLICATION FOR TV CONSTRUCTION PERMIT CH 13 11.5 KW 130 FT	KSHO-TV LAS VEGAS NEVADA
Vandivere, Cohen and Wearn Consulting Electronic Engineers	

VANDIVERE, COHEN AND WEARN
CONSULTING ELECTRONIC ENGINEERS
WASHINGTON, D. C.

ENGINEERING EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT
TELEVISION COMPANY OF AMERICA, INC.
KSHO-TV
LAS VEGAS, NEVADA
CH 13 11.5 KW 130 FT

Affidavit

WASHINGTON)
) ss:
DISTRICT OF COLUMBIA)

Jules Cohen, being first duly sworn, says that he is a member of the firm of Vandivere, Cohen and Wearn, consulting electronic engineers; that his qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission; that he is a registered professional engineer in the District of Columbia and the Commonwealth of Virginia; that the foregoing exhibit was prepared by him and under his direction, and that the statements contained therein are true of his own personal knowledge except those stated to be on information and belief, and as to those statements he verily believes them to be true and correct.

s/ Jules Cohen

Subscribed and sworn to before me this 3rd day of September, 1957.

s/ Inez M. Brooks
Notary Public, D. C.

My commission expires
January 31, 1961

(SEAL)