

JOHN H. MULLANEY, P.E.
JOHN J. MULLANEY

JOHN H. MULLANEY
CONSULTING RADIO ENGINEERS, INC.

9616 PINKNEY COURT
POTOMAC, MD. 20854
(301) 299-3900

ENGINEERING EXHIBIT EE:

MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
CH. 221A 3 KW 300' HAAT

June 22, 1981

ENGINEERING STATEMENT IN SUPPORT OF
AN APPLICATION FOR A
NEW FM STATION

ENGINEERING EXHIBIT EE:

MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS

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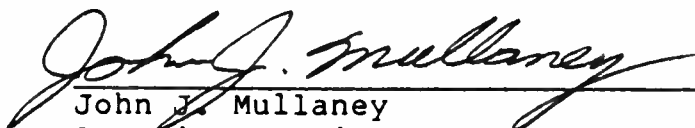
1. Affidavit of Engineer
2. F.C.C. Form 301, Section V-B
3. Narrative Statement
4. Figure 1, Map Showing Proposed Contours
5. Figure 2A-2I, Graphs of Terrain Profile Data
6. Figure 3, Topographic Map Index
7. Figure 3A-3J, Topographic Maps
8. Figure 4, Vertical Tower Sketch
9. Figure 5, Channel Allocation

JOHN H. MULLANEY
CONSULTING RADIO ENGINEERS, INC.

State of Maryland)
County of Montgomery) SS:
Potomac)

John J. Mullaney, being first duly sworn upon oath, deposes and states that he is a graduate electrical engineer with a B.E.E. from Catholic University, and his qualifications are known to the Federal Communications Commission, and that he is an associate engineer in the firm of John H. Mullaney, Consulting Radio Engineers, Inc., and that firm has been retained by Mid County Communications, an applicant for a new FM broadcast station in Nederland, Texas.

He states that various calculations and exhibits associated with this application were prepared by him personally under the direction of John H. Mullaney, P.E. Affiant further states that all facts contained herein are true of his own knowledge except where stated to be on information or belief, and as to those facts, he believes them to be true.


John J. Mullaney
Associate Engineer

Subscribed and sworn to before me this 22nd day of June 1981.

(S E A L)


Joyce A. Mullaney
Notary Public

My Commission Expires: July 1, 1982.

FM BROADCAST ENGINEERING DATA

Name of applicant
Mid County Communications

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 E, complete all paragraphs of this form; if change F 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 9 and the appropriate other paragraphs; for changes G through I, complete only paragraph 2 and the appropriate other paragraphs; for change J, complete only paragraphs 2 and 5.)

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

If this is not for a new station, summarize briefly the nature of the changes proposed.

2. Facilities requested

Frequency 92.1 Mc/s.	Channel No. 221A
Effective Radiated Power Horizontal 3 kw Vertical 3 kw	Antenna height above average terrain Horizontal 300 feet Vertical 300 feet

9.(a) Antenna structure:

Is the proposed construction in the immediate vicinity or does it serve to modify the construction of any standard broadcast station, FM broadcast station, television broadcast station, or other class of radio station? YES NO
If "Yes", attach as Exhibit No. **EE** complete engineering data thereon.

KYKR-FM

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

3. Station location

State Texas	City or town Nederland
-----------------------	----------------------------------

Overall height in feet above ground. (Without obstruction lighting) 496	Overall height in feet above mean sea level. (Without obstruction lighting) 511
---	---

4. Transmitter location (principal community)

State Texas	County Orange
City or town Vidor	Street Address (or other identification) 6 mi. S. of Vidor on Church

Overall height in feet above ground. (With obstruction lighting) 499	Overall height in feet above mean sea level. (With obstruction lighting) 514
--	--

5. Main studio location

State TBD	County - -
City or town - -	Street address - -

Height of antenna radiation center in feet above mean level. Horizontal 311 Vertical 311	
Geographical coordinates of antenna (to nearest second) North latitude 30° 03' 39" West longitude 93° 58' 49"	

6. Remote control point location

State TBD	City or town - -
Street Address (or other identification) - -	

(b) Antenna data	
Make Harris	Type No. or description FML-3E
No. of sections 3 H/V	Antenna power gain Horizontal 1.5 Vertical 1.5

7. Transmitter

Make Harris	Type No. FM-2.5K	Rated Power 2.5KW
-----------------------	----------------------------	-----------------------------

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

(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.)

Is electrical or mechanical beam tilting proposed? YES NO
If so, describe fully in Exhibit No. Including horizontal and pertinent vertical radiation patterns.

Will antenna be altered to provide null fill-in? YES NO

If yes, describe fully in Exhibit No.

8. Modulation monitor

Make Belar	Type No. FMM-1
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10. Transmission line proposed to supply power to the antenna from the transmitter

Make Andrew	Type No. HJ7-50A	Description Air Heliac
Size (nominal transverse dimension) in inches 1-5/8	Length in feet 320	Rated efficiency in percent for this length 86.9

11. Proposed operation

Transmitter power output in kilowatts 2.3	Power dissipation within transmission line in kilowatts 0.3
Antenna input power in kilowatts 2.0	Effective radiated power in kilowatts (Must be same as shown in Para. 2) Horizontal 3.0 Vertical 3.0

12. Will the studios, microphones, and other equipment proposed for transmission of programs be designed for compliance with the FM Technical Standards? Yes No

13. If this application is 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.

14. Attach as Exhibit No. **EE** map(s) (Sectional Aeronautical Charts where obtainable) 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 3.16 μ v/m and the 1 mv/m contours predicted;
- (c) On the map(s) showing the 3.16 mV/m contour, clearly indicate the legal boundaries of the principal community proposed to be served. Submit a statement identifying the source relied upon for the placement of the boundaries;
- (d) Scale of miles.

Areas and population: (latest census.)

Area (sq. mi.) within 1 mv/m contour 594#	Population within 1 mv/m contour 297,000
---	--

15. (a) Attach as Exhibit No. **EE** 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 shown drawn thereon the following data:

1. Proposed transmitter location—accurately plotted;
2. Transmitter location and call letters of all radio stations (except amateur) and the location of established commercial and government receiving stations within 2 miles of the proposed transmitter location;
3. Proposed location of main studio;
4. Character of the area within 2 miles of proposed transmitter location, suitably designated as to residential, business, industrial, and rural nature;
5. 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 or cities to be served.
6. If the proposed transmitter location is outside the boundaries of the principal community proposed to be served, the topography of the intervening area must be clearly shown.

b. Attach as Exhibit No. **EE** profile graphs 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 true north shall be zero azimuth and angles measure clockwise. Show source of topographical data on each.

16. From the profile graphs in 15(b), for the eight mile distance between two and ten miles from the proposed transmitter location, and in accordance with the procedure prescribed in Section 73.313 of the Commission 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.)	Predicted distance in miles to the 3.16mv/m contour	Predicted distance in miles to the 1mv/m con-
0	21	290	7.9	14.2
45	15	296	7.9	14.3
90	11	300	8.0	14.4
135	3	308	8.1	14.6
180	8	303	8.0	14.5
225	11	300	8.0	14.4
270	13	298	8.0	14.4
315	7	304	8.0	14.5
(*) 186	9	302	8.0	14.5
	(11.13)	(299.88)	300	feet (horizontal)
Average	11	Antenna height above average terrain	300	feet (vertical)
		(Average of above listed heights -- must be identical with Paragraph 2)		

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

#Water area of Sabine Lake subtracted

17. Environmental statement. See Part 1, Subpart 1 of the rules.

Would a Commission grant of this application be a major action as defined by Section 1.1305 of the Commission's rules?

- YES If yes, submit as Exhibit No. _____ a narrative statement in accordance with Section 1.1311 of the rules.
 NO If no, explain briefly

Existing tower

No change in overall height

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

June 22, 1981
Date

Signature


John J. Mullaney

Address

John H. Mullaney Consulting Radio
Engineers, Inc.
9616 Pinkney Ct., Potomac, Md. 20854
(301) 299-9300

Telephone No.

- Technical Director
 Registered Professional Engineer
 Chief Operator
 Consultant
 Other (specify) _____

ENGINEERING EXHIBIT EE:

MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
CH. 221A 3 KW 300' HAAT

NARRATIVE STATEMENT:

I. GENERAL:

This engineering statement has been prepared on behalf of Mid County Communications. The purpose of this statement is to request a construction permit to build a new FM broadcast facility on Channel 221A at Nederland, Texas.

The application is not a major environmental impact, as defined by Section 1.1305 of the Commission's Rules, since an existing tower will be used with no change in overall height.

Answers to questions contained in F.C.C. Form 301, Sections V-B, are incorporated in the following paragraphs and figures.

II. ENGINEERING DISCUSSION:

A. Proposed Location:

The applicant proposes to locate on the existing tower of KYKR-FM. The geographic coordinates are:

Latitude: 30° 03' 39"
Longitude: 93° 58' 49"

The proposed site is approximately 5 miles north of the City of License, Nederland, Texas.

B. Antenna System and Tower:

A Harris FML-3E, 3-bay circular polarized FM antenna will be side mounted at 286 to 306 foot level of an existing 499 foot AGL tower. The antenna has a power gain of 1.5 H/V and will have a center of radiation of 296 feet AGL or 311 feet AMSL (Figure 4, Tower Sketch).

The antenna will be fed by 320 feet of 1-5/8" Andrew air heliax, type HJ7-50A, with a rated efficiency of 86.9 percent for this length.

C. Transmitter:

The applicant plans to install a Harris FM-2.5K FM transmitter, which is type accepted for this service. The transmitter will be operated at 2.3 KW which is within its rated power.

D. Channel Allocation:

The proposed site is in accordance with the required mileage separations as set forth in Section 73.207(a). Figure 5 is a channel allocation study from the proposed site.

E. Terrain Profile Data & Coverage:

Terrain profile data was taken from current U.S. Geological Survey quad maps of the area in the usual manner set forth in the Rules. This data has been plotted and submitted as Figure 2A through 2I of this report. The maps from which the data was taken have been photo-reduced and are submitted as Figures 3A through 3J of this report.

The predicted service contours, as shown in Figure 1 of the attached report, were computed using a mathematical model adapted for computer use of data shown in Figure 1 of Section 73.333 (replacement of the Commission's Rules, the so-called "new" F(50,50) curves). This is the Commission's computer program TV FM FS REPORT RS-76-01, dated January 1976.

F. Terrain Profile to City of License:

Figure 2I is a terrain profile plot for radial N-186°-E which is the direct path to Nederland, Texas. This figure illustrates that there is direct line-of-sight to the entire city of license.

The City Limits of Nederland have been outlined on figures 3E and 3H. The farthest portion of the city is 7.944 FCC miles from the proposed site (see figure 3E). The geographic coordinates are:

Latitude: 29° 56' 46"
Longitude: 93° 59' 38"

The City Grade contour (70 dBu) extends 8.02 miles in this direction and therefore encompasses the entire City of License.

G. Coverage Area and Population:

The area contained within the 60 dbu (1.0 mVm) contour was computed mathematically.

The population within this contour was obtained by assuming a uniform distribution of population within minor civil divisions.

H. Other Services in Area:

This is the existing site of KYKR-FM which operates on channel 227C in Port Arthur, Texas. The following is a list of other known services within 5 miles of the proposed site:

1.)	KEAM (AM) CP	1510 KHz.	0.04 miles
2.)	KDLF (AM)	1150 KHz.	2.14 miles
3.)	KQXY (FM)	231C	3.95 miles

Based on the type of transmitter proposed, no intermodulation problems with existing transmitting facilities would be expected. In the unlikely event some problems would occur, the applicant will correct such cases in accordance with the Commission's rules.

I. National Environmental Policy Act of 1969:

The Report and Order implementing the Environmental Policy Act (DO-19555) sets forth the maximum permissible exposure level for humans as 10 mW/cm^2 .

In the following formula:

$$d = \frac{(EIRP)^{.5}}{5.4024}$$

EIRP is the radiation in watts and d is equal to the closest distance in feet that a human can come to an operating antenna.

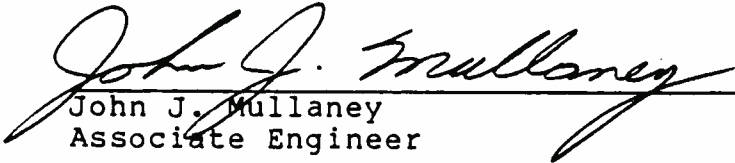
Nederland, Texas

JOHN H. MULLANEY
CONSULTING RADIO ENGINEERS, INC.

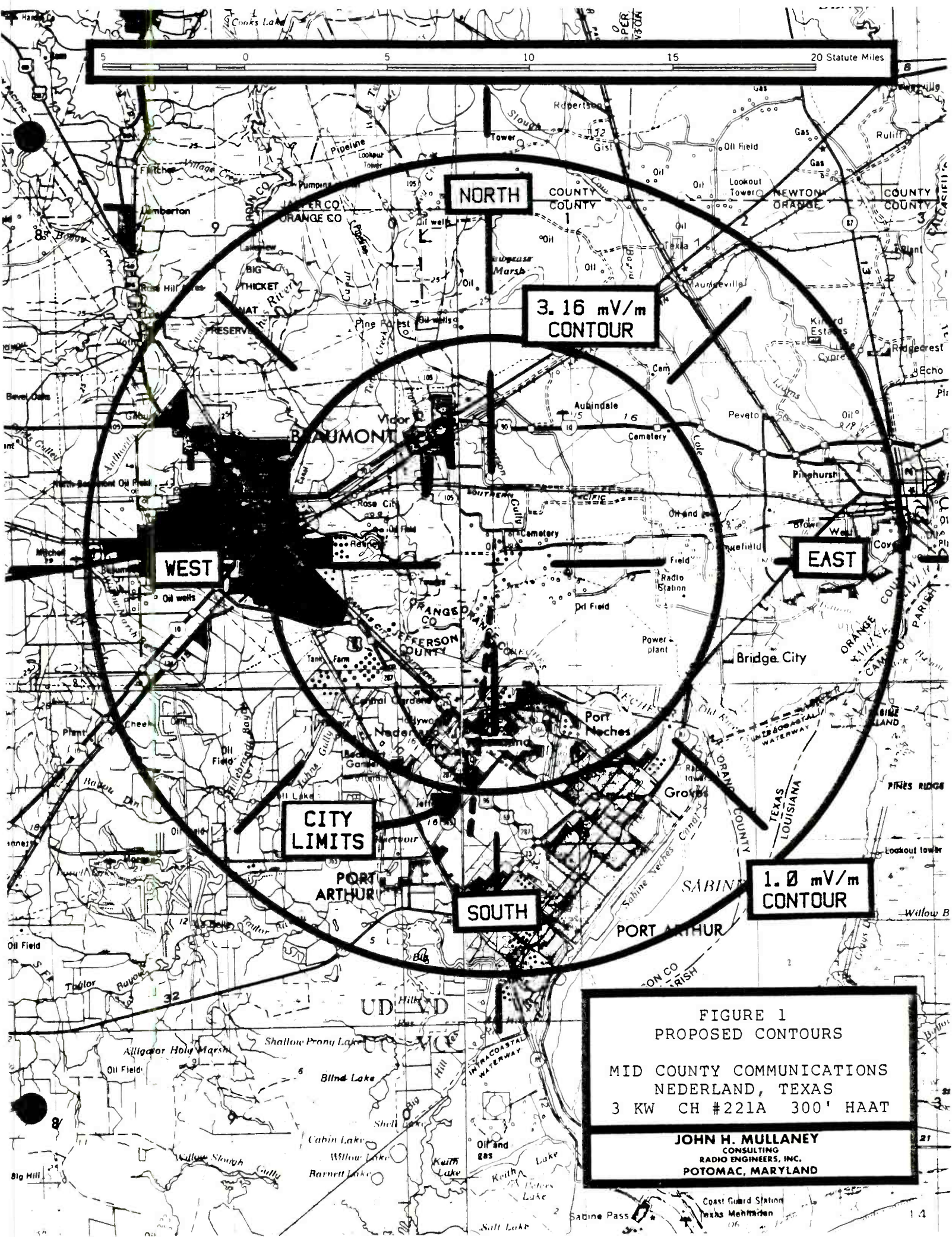
The application of the above equation, in our case, results in a minimum distance of 10.14 feet from the antenna. Inasmuch as the lowest element on the proposed antenna will be approximately 300 feet above ground level, it is self-evident that no hazard from radiation will exist.

III. SUMMARY:

The applicant proposes to construct a new FM facility on Channel 221A at Nederland, Texas. This application is in compliance with the Commission's Rules.


John J. Mullaney
Associate Engineer

June 22, 1981.



NORTH

**3.16 mV/m
CONTOUR**

WEST

EAST

**CITY
LIMITS**

SOUTH

**1.0 mV/m
CONTOUR**

**FIGURE 1
PROPOSED CONTOURS**

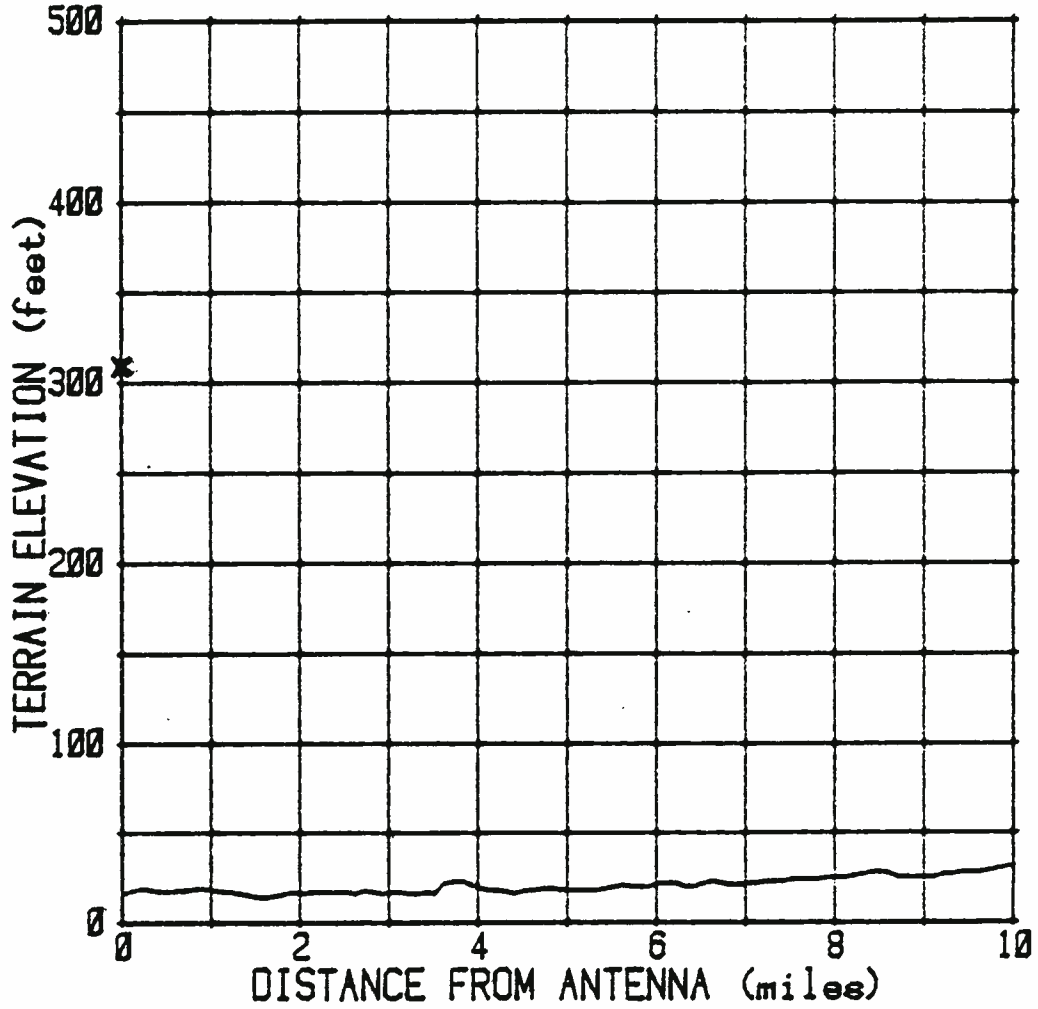
**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 20.6

RADIAL N 0. E



NEDERLAND, TEXAS

FIGURE 2-A
TERRAIN PROFILE GRAPH

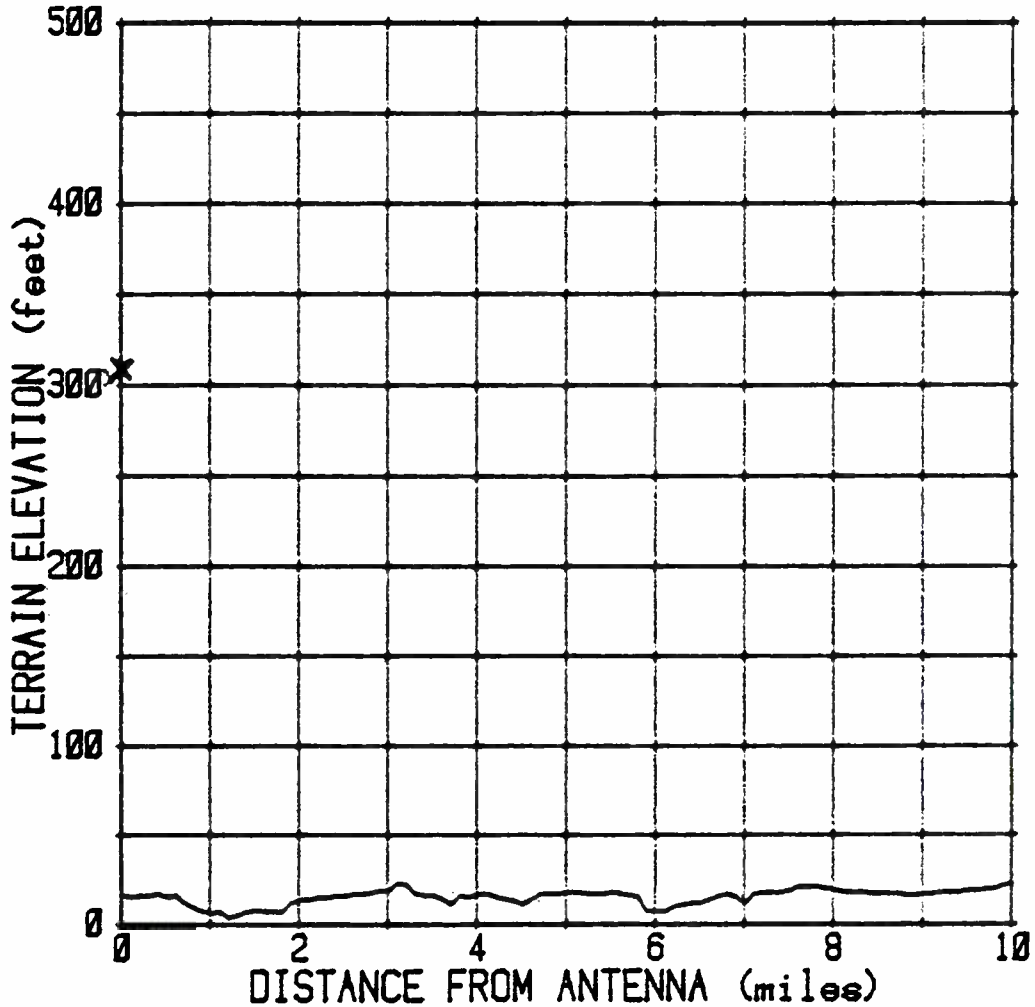
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 15.4

RADIAL N 45. E



NEDERLAND, TEXAS

FIGURE 2-B
TERRAIN PROFILE GRAPH

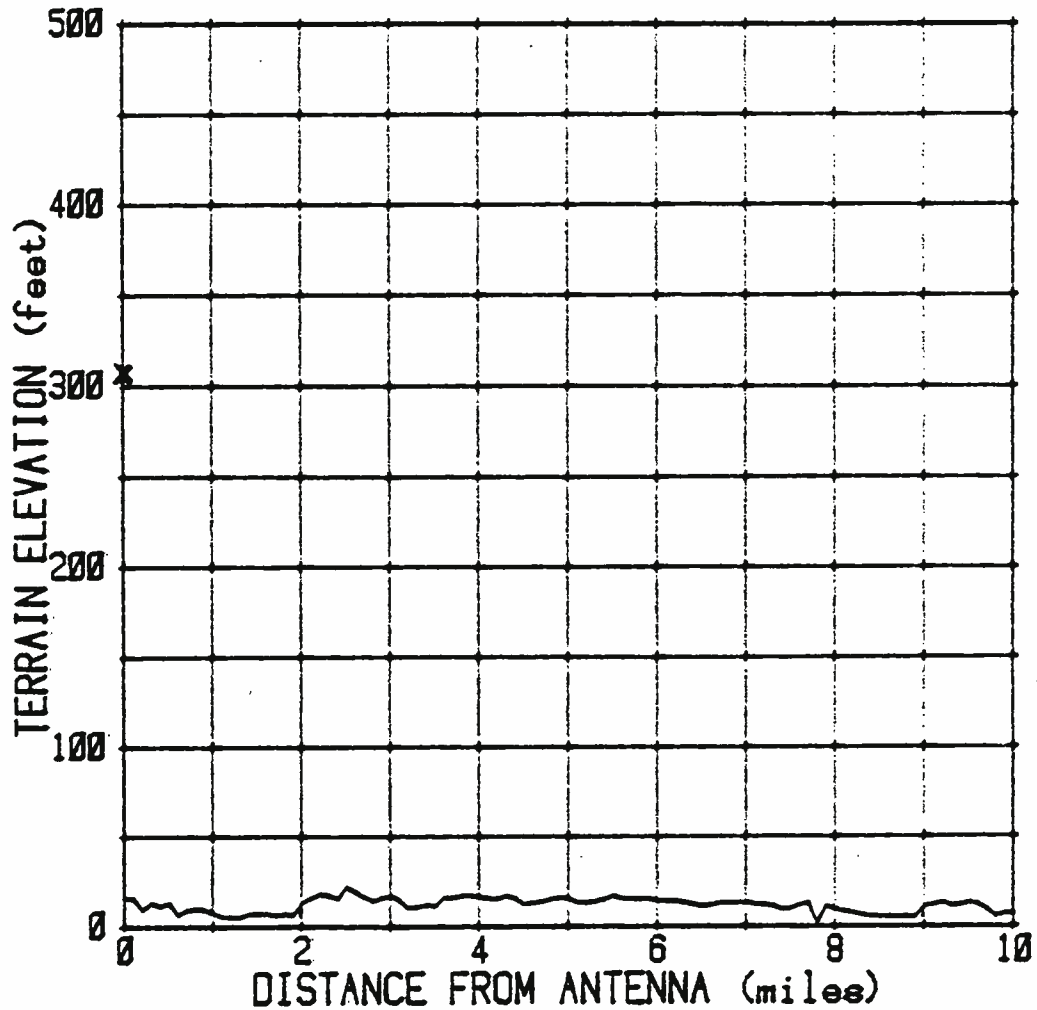
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 11.4

RADIAL N 90. E



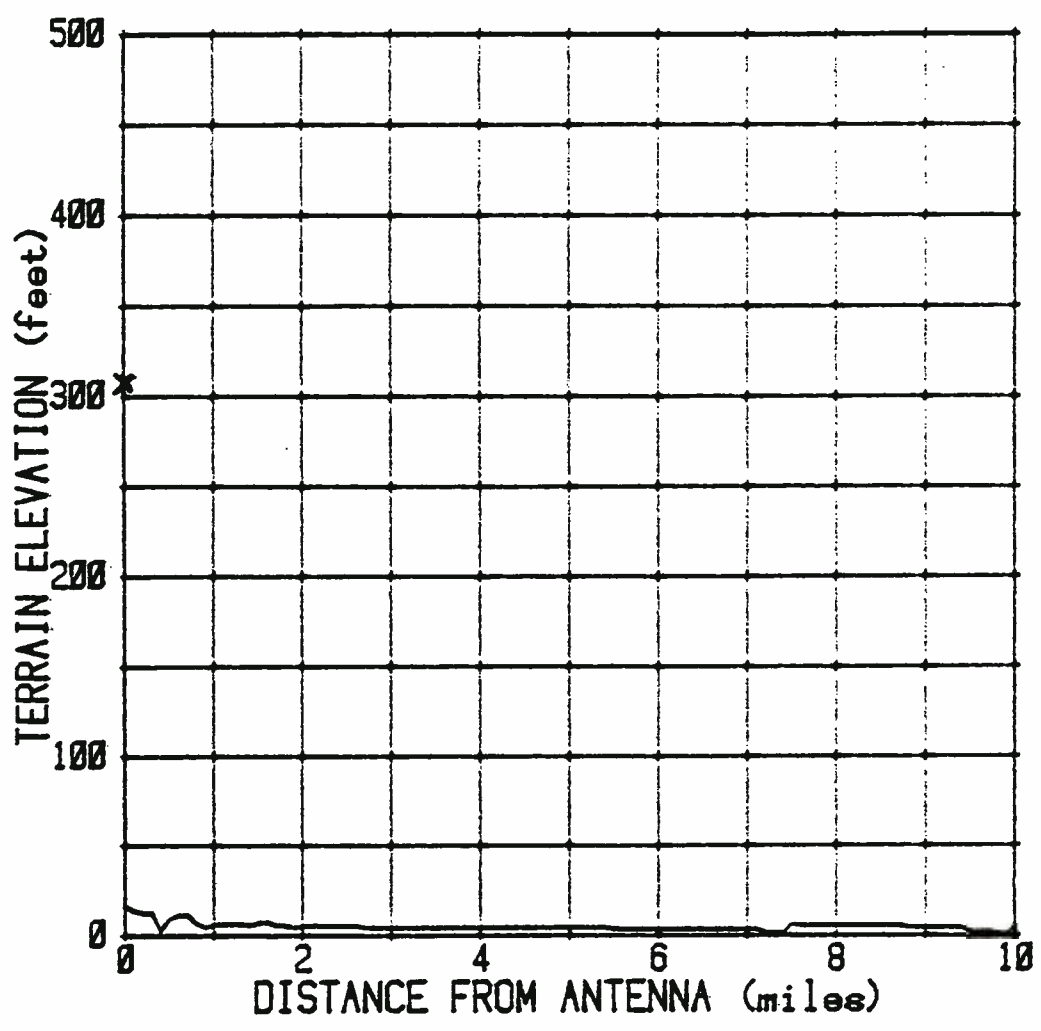
NEDERLAND, TEXAS

FIGURE 2-C
TERRAIN PROFILE GRAPH
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT
JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 2.8

RADIAL N 135. E



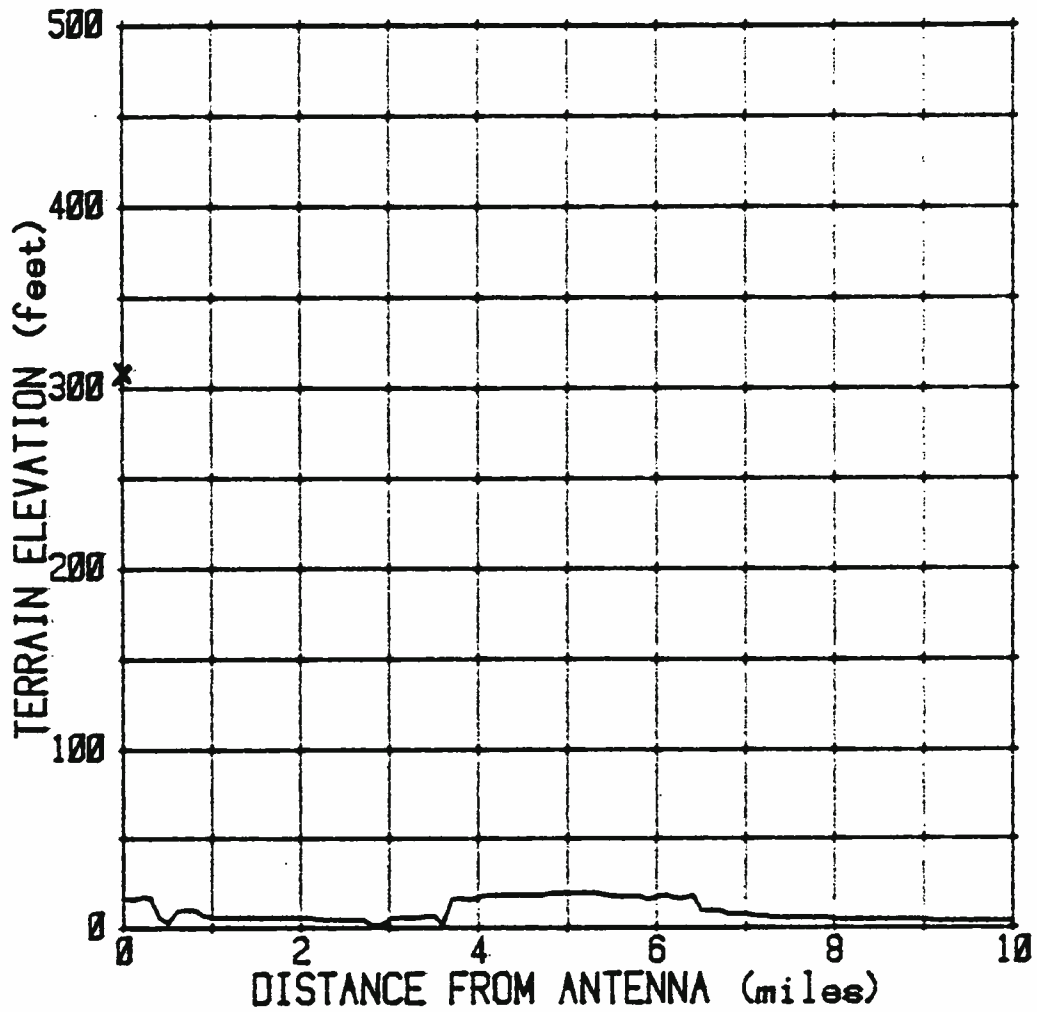
NEDERLAND, TEXAS

FIGURE 2-D
TERRAIN PROFILE GRAPH
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT
JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 8.0

RADIAL N 180. E



NEDERLAND, TEXAS

FIGURE 2-E
TERRAIN PROFILE GRAPH

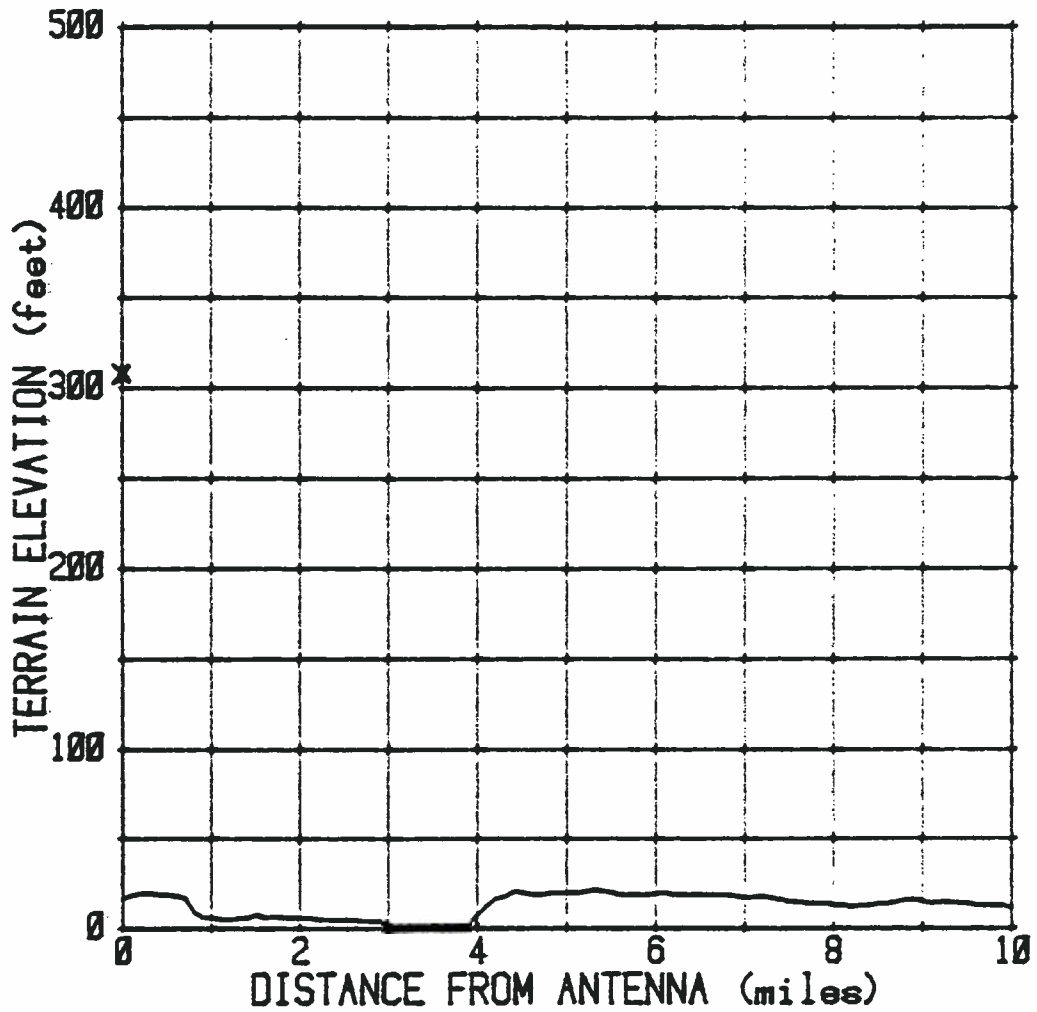
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

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RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 11.4

RADIAL N 225. E



NEDERLAND, TEXAS

FIGURE 2-F
TERRAIN PROFILE GRAPH

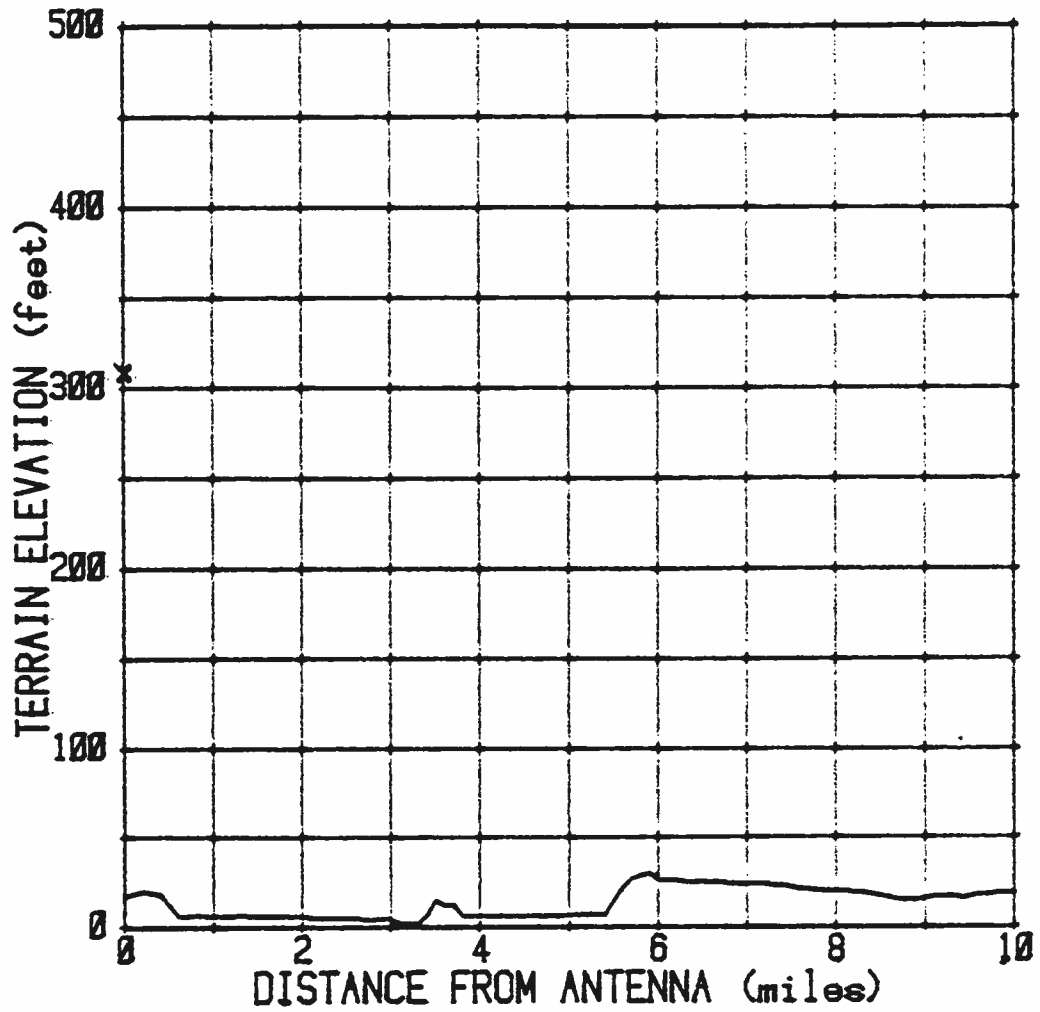
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

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POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 12.5

RADIAL N 270. E



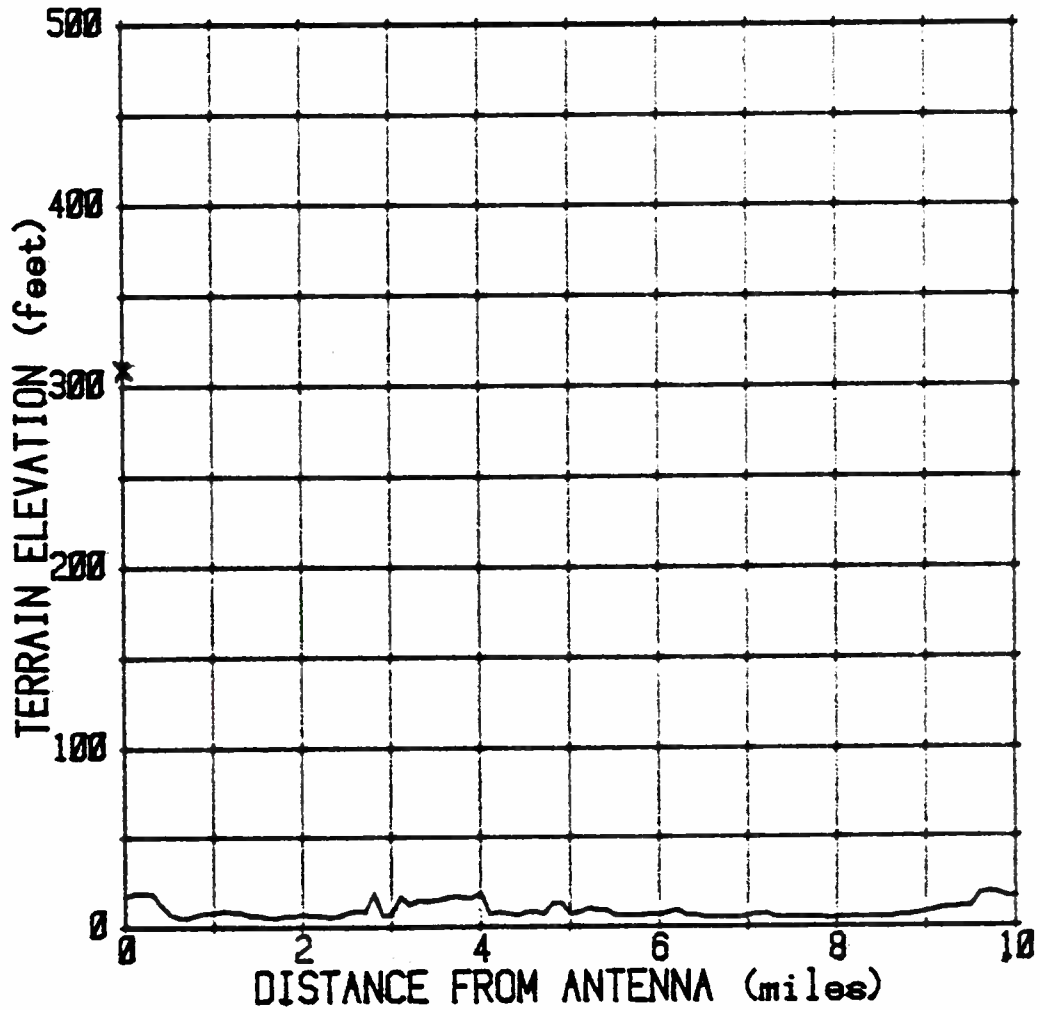
NEDERLAND, TEXAS

FIGURE 2-G
TERRAIN PROFILE GRAPH
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT
JOHN H. MULLANEY
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RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 6.8

RADIAL N 315. E



NEDERLAND, TEXAS

FIGURE 2-H
TERRAIN PROFILE GRAPH

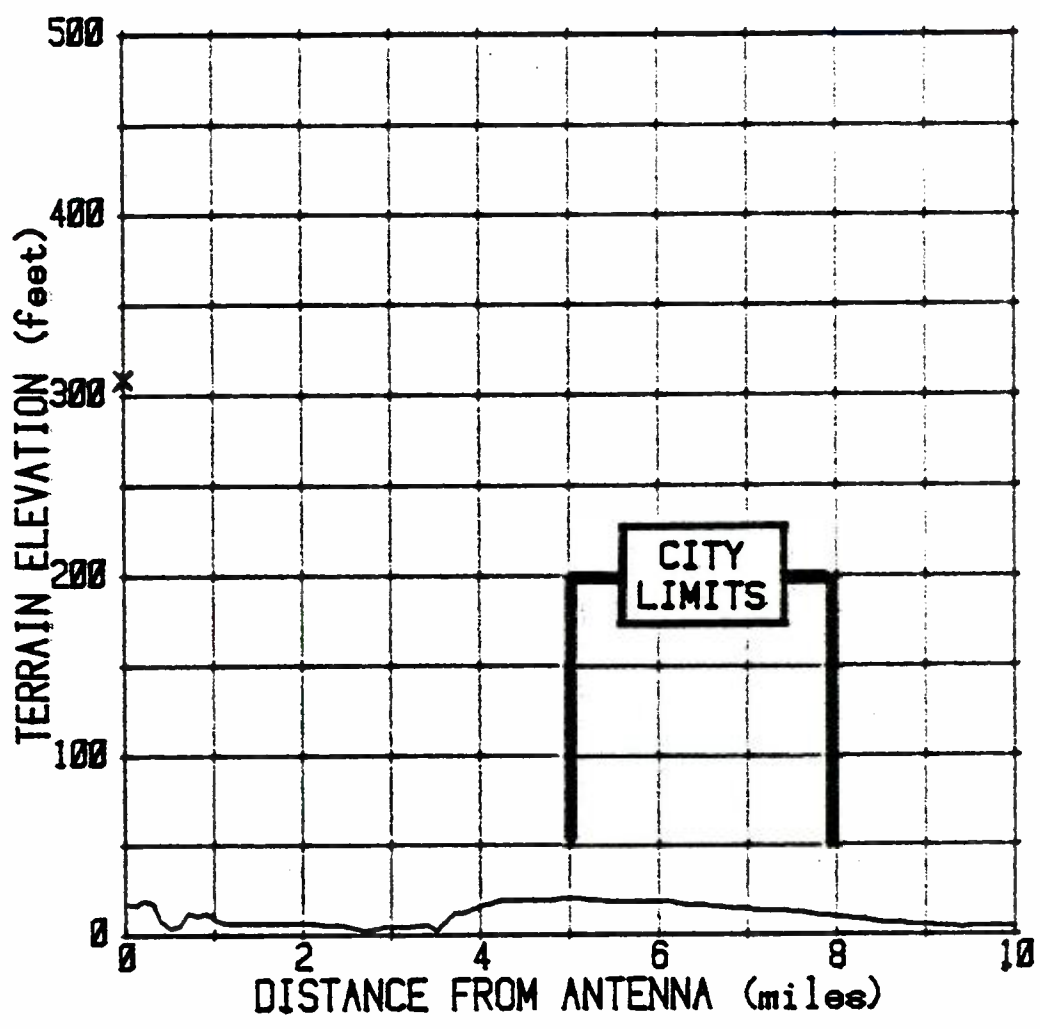
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

SOURCE OF DATA
U.S.G.S. TOPOGRAPHIC MAPS

AVERAGE ELEVATION (2 to 10 miles) : 8.8

RADIAL N 186. E



NEDERLAND, TEXAS

FIGURE 2-I
TERRAIN PROFILE GRAPH
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT
JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

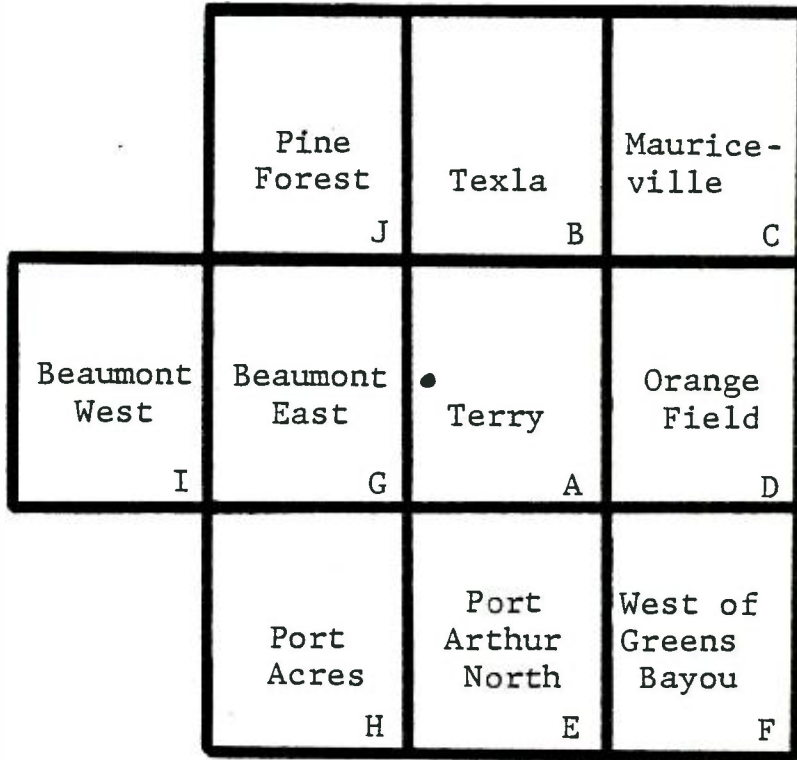
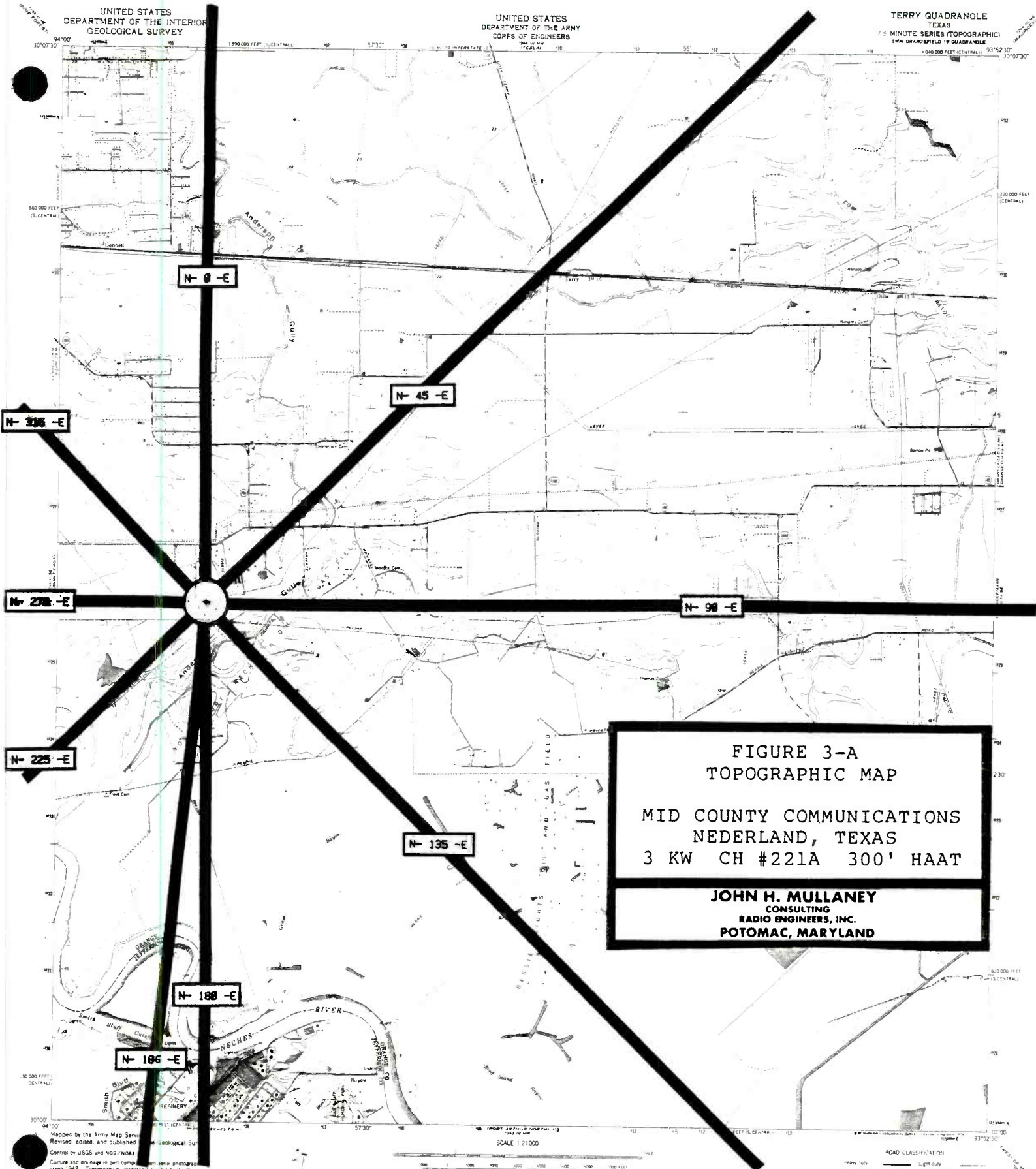


FIGURE 3
TOPOGRAPHIC MAP INDEX
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

JOHN H. MULLANEY
 CONSULTING
 RADIO ENGINEERS, INC.
 POTOMAC, MARYLAND



**FIGURE 3-A
TOPOGRAPHIC MAP**

**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

Mapped by the Army Map Service
Revised, edited, and published
Control by USGS and NGS/NDAA

Culture and drainage in part compiled from aerial photographs
taken 1942. Topography by collaboration surveys by the Geological
Survey 1926. Contour revision 1943. Culture revised by the
Geological Survey from aerial photographs taken 1956. Field check 1957
hydrography compiled from USGS data (map 833 13551)

Projection: 1927 North American datum
10,000-foot grid based on Texas coordinate system,
central and south bearing zones
1:700-meter Universal Transverse Mercator grid lines
scale 1:5,000 (1:50,000)

Features shown in map are compiled from aerial photographs
taken 1970 and 1974. This information not field checked



CONTOUR INTERVAL: 5 FEET
NATIONAL GEODESIC VERTICAL DATUM OF 1929
SOUNDINGS IN FEET - DATUM IS MEAN LOW WATER

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80226 OR RESTON, VIRGINIA 22082
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Heavy duty Light duty
Medium duty Unimproved dirt
State Route

TERRY, TEX.
1:5000 - #9352 5/75
PHOTO REVISION 1970 AND 1974
AND #24 11 SW - SERIES 1982

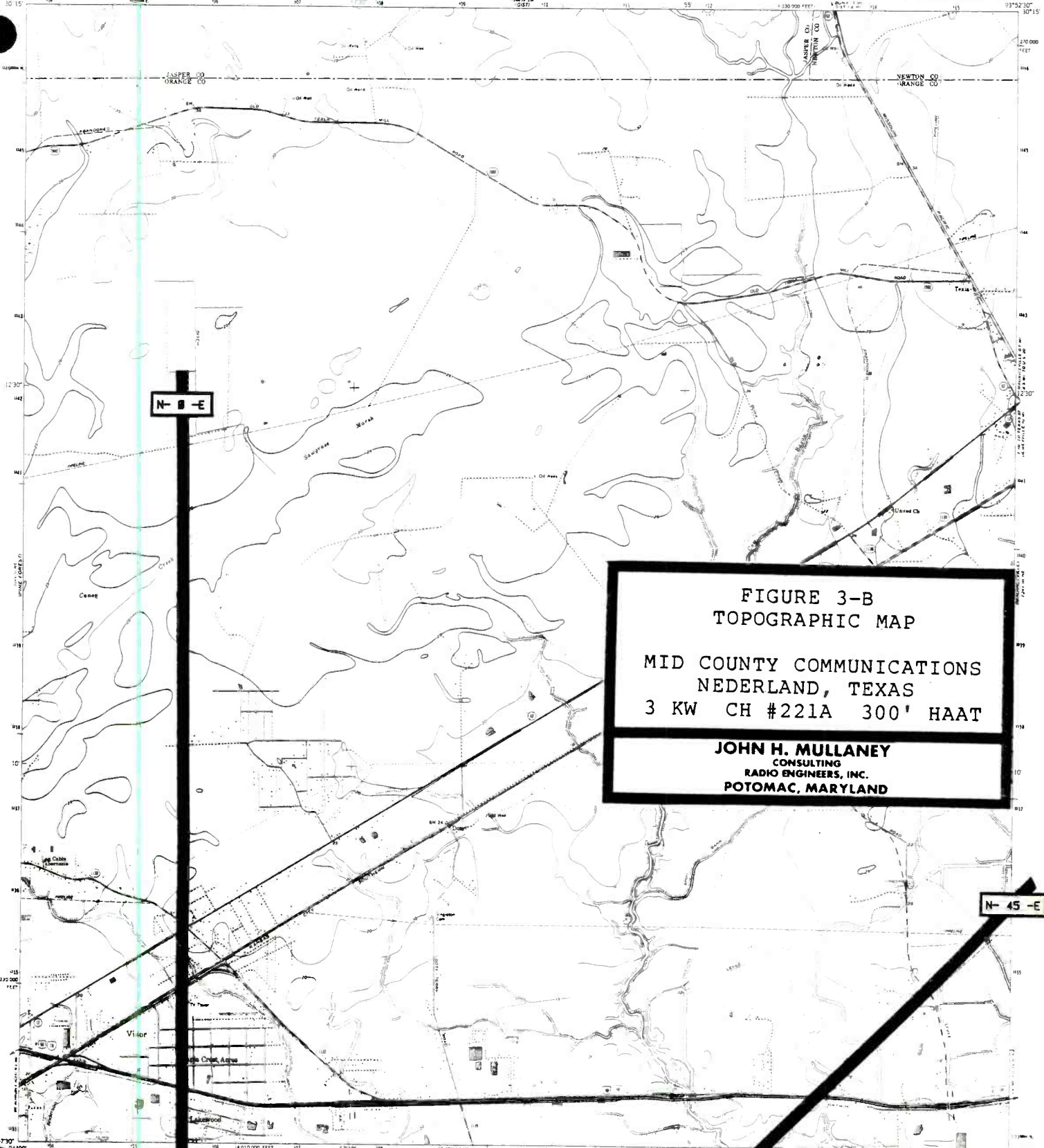


FIGURE 3-B
TOPOGRAPHIC MAP
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT
JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

N - 0 - E

N - 45 - E

N - 0 - E

N - 45 - E

Mapped by the Army Map Service
Revised, edited, and published by the Geobase
Company by USGS, Washington, and the
Corps of Engineers, District of Columbia
Control and design in part control to from aerial photography
taken 1942. Topography by stereoscopic survey on the Geobase
Survey 1948. Control revision 1943. Control revised by the
Geological Survey from aerial photography taken 1946.
Field check 1957.
Projection: 1927 North American datum
10,000 foot grid based on Texas coordinate system, zone 10
2000-meter Universal Transverse Mercator grid, zone 15, shown in blue.
Elevations shown in blue are derived from aerial photographs
taken 1942 and 1945. This information may not be checked.
Purple tint indicates extension of urban area.

SCALE 1:24,000
CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION
Main duty Light duty
Medium duty Unimproved dirt
Interstate Route U.S. Route State Route

THIS MAP COMPLES WITH NATIONAL MAP AGENCY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, THE RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXLA, TEX
NW 4 CORNER FIELD 19 QUADRANGLE
130075 - 493525 / 5
1957
MOTORESERIES 7410 AND 1975
DMA 104-104 NW SERIES 7410

3093-223

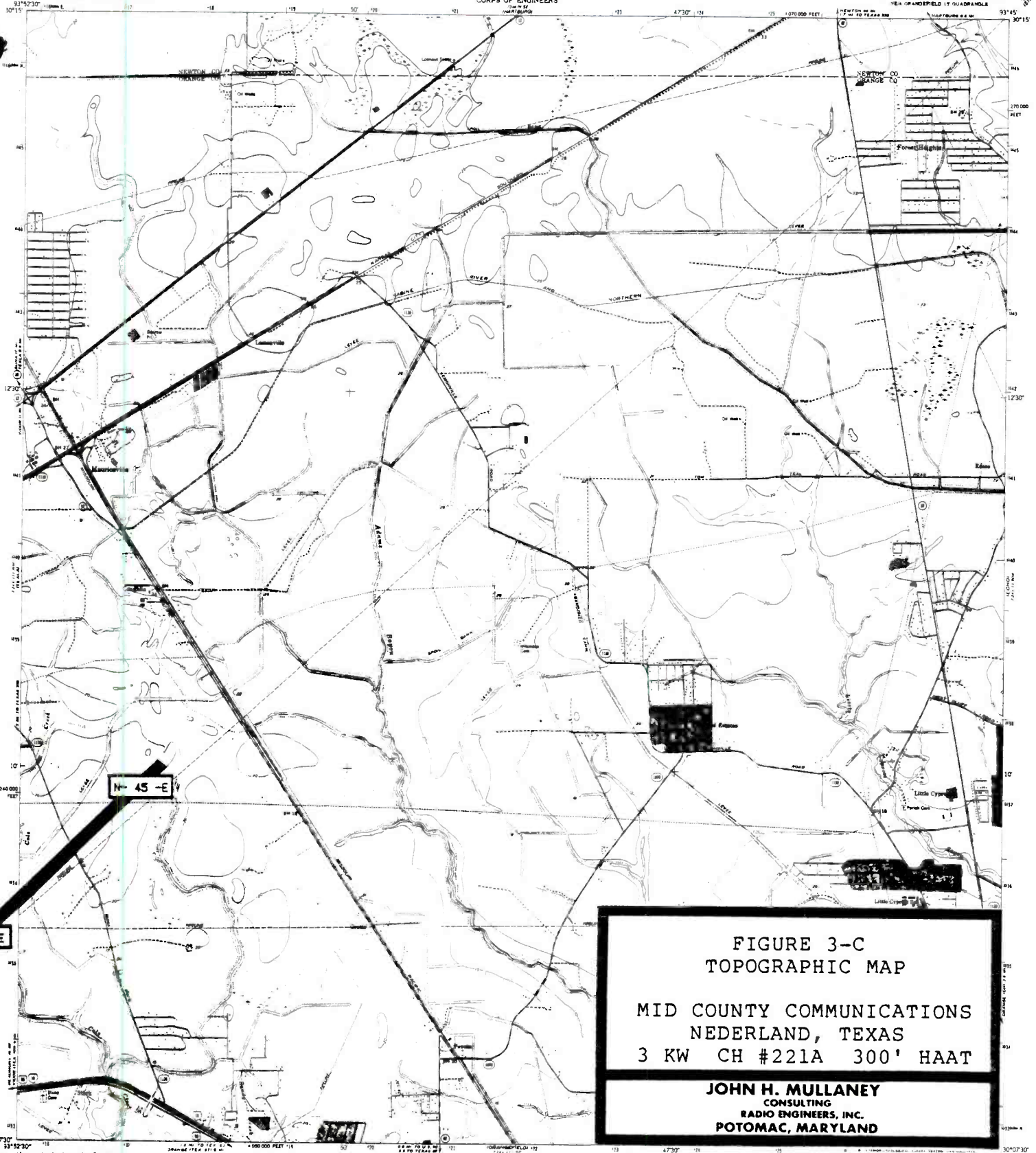
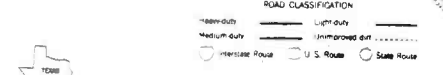


FIGURE 3-C
TOPOGRAPHIC MAP
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT
JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND

Mapped by the Army Map Service
Revised, edited, and published by the Geological Survey

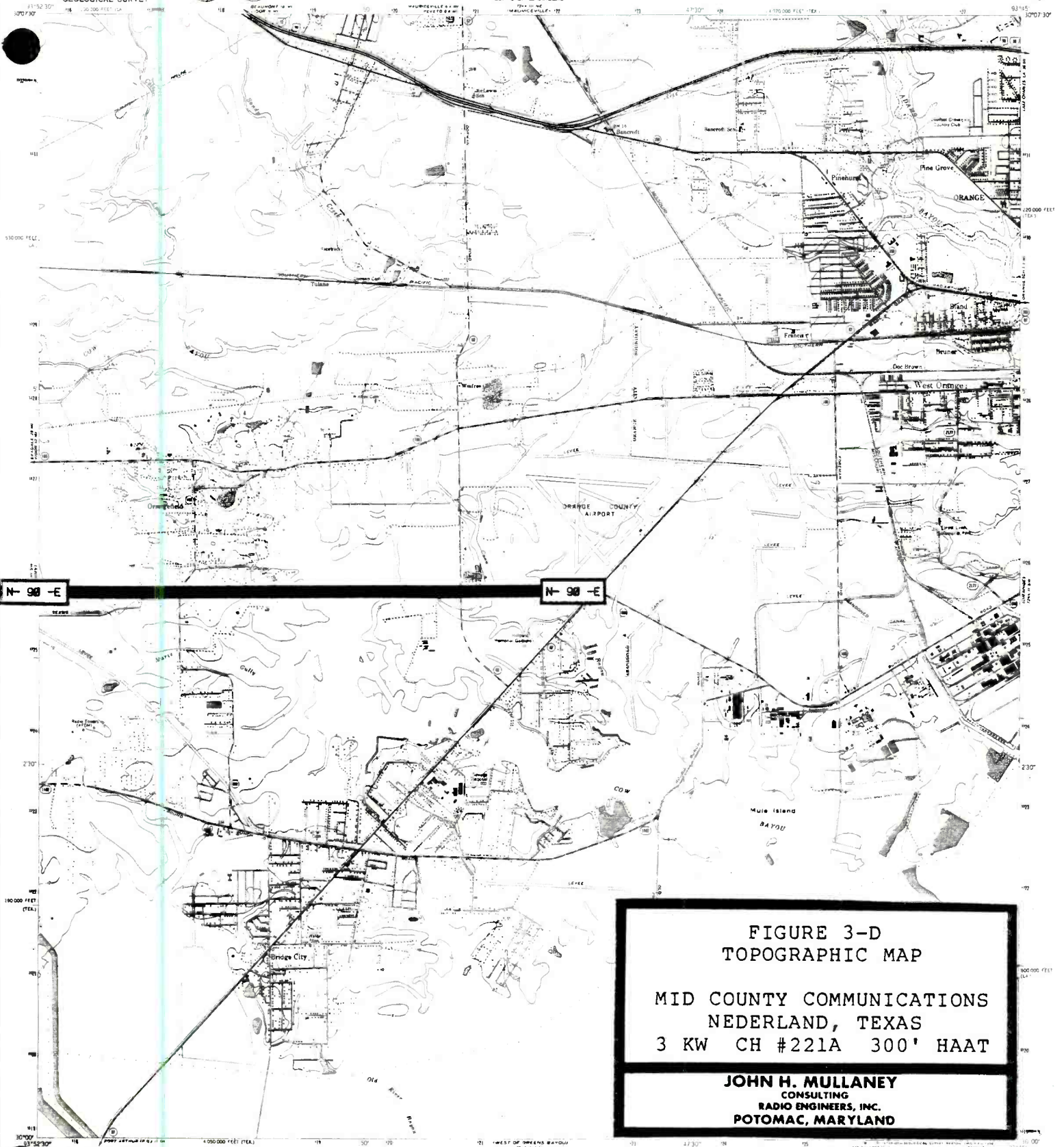
Control by USGS, NGS/NOAA, and IGA
Culture and orthographic in part compiled from aerial photographs taken 1942. Topography by contours derived by the Geological Survey 1926. Contour revision 1943. Culture revised by the Geological Survey from aerial photographs taken 1956. Field check 1957.
Physic projection: 1927 North American datum. 10,000-foot grid based on Texas coordinate system; central zone 1000-meter Universal Transverse Mercator and UTM zone 15 shown in blue.
Revised street in blue compiled from aerial photographs taken 1970 and 1974. This information not base checked.
Purple tint indicates extension of urban areas.



MAURICEVILLE, TEX.
NEW ORLANDFIELD 1° QUADRANGLE
1927 5-MINUTE 17.5
1957
PHOTOREVISED 1970 AND 1974
486 254 11 11 5-SERIES 144

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80226 OR RESTON, VIRGINIA 22082
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

3094-224



**FIGURE 3-D
TOPOGRAPHIC MAP**
**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**
**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

Approved by the Army Map Service
Revised, edited, and published by the Geological Survey
Control by USGS and NDS/NDIA
Culture and drainage in part compiled from aerial photographs taken 1942. Topography by photostereogram survey (United States Geological Survey 1326, Control revision 1943). Culture revised by the Geological Survey from aerial photographs taken 1958. Road data (1957) hydrography compiled from USCGS charts 533 (1955) and 804 (1955).
Magnetic declination: 1327 North American datum
10,000-foot grid based on Texas coordinate system
Contour interval: 100-foot Universal Transverse Mercator grid from zone 15, 3000-ft scale
Revisions shown in purple compiled from aerial photographs taken 1970 and 1974. This information not hydrographic.

ROAD CLASSIFICATION
Light duty
Medium duty
Unimproved dirt
U.S. Route
State Route

SCALE 1:24,000
CONTOUR INTERVAL 5 FEET
NATIONAL GEODESIC VERTICAL DATUM OF 1929

ORANGEFIELD TEX.-LA.
N 3000-69345-1-5
1967
PHOTOREVISED 1970 AND 1974
244 724 III 7.5-MINUTE SERIES 1952

3093-221

N-186-E

N-186-E

N-135-E

N-135-E

N-186-E

N-186-E

CITY LIMITS

**FIGURE 3-E
TOPOGRAPHIC MAP
MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

Made by the Army Map Service
Revised, edited, and published by the Geological Survey
Control on U.S.G.S. 4025/1048 and 714
Culture and drainage in this map are from aerial photographs
taken 1942. Topography is comparable to maps 1943
Culture revised to the 1942 aerial photographs
taken 1942. Topography 1947
Hydrography compiled from USGS 23 charts 517 (1946) and 513 (1945)
Physical features on 1937 North American datum
13,000-foot high range in Texas coordinate system
and to the same point.
1:62,500 scale. 7.5 minute series.
Big line indicates areas in which only
intermittent flows are shown.

UNITED STATES GEOLOGICAL SURVEY
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80276 OR RESTON, VIRGINIA 22082
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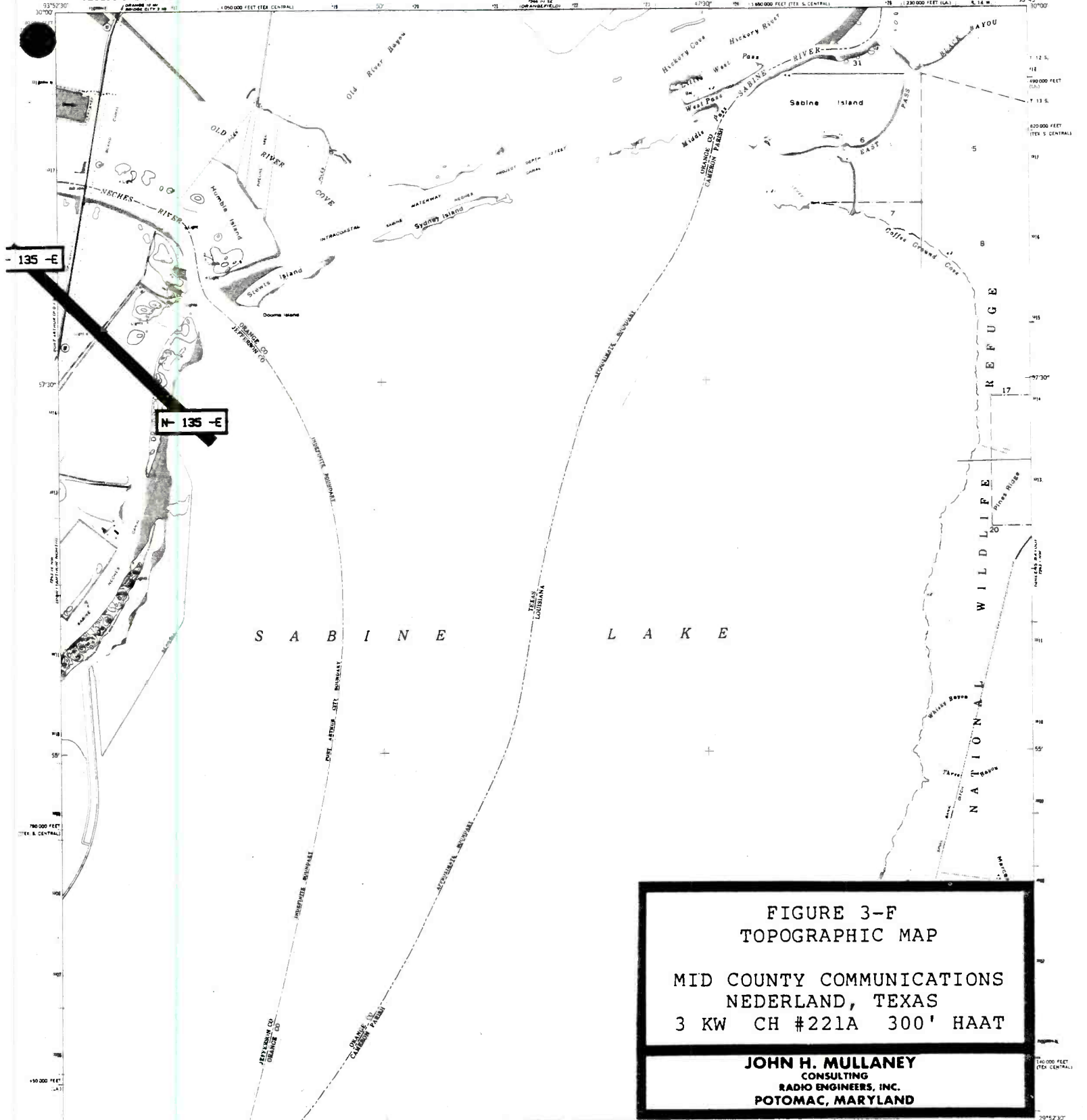


PORT ARTHUR NORTH, TEX.
7.5 MINUTE SERIES TOPOGRAPHIC
MAP NO. PORT ARTHUR 11 QUADRANGLE
1:62,500 FEET 1:62,500
1947
PHOTOREVISED 1976 AND 1975
GSA GEN. INT. 4 SERIES 1422

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

WEST OF GREENS BAYOU QUADRANGLE
TEXAS-LOUISIANA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NEAR PORT ARTHUR 10' QUADRANGLE



- 135 -E

N- 135 -E

**FIGURE 3-F
TOPOGRAPHIC MAP**

**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

Maped by the Army Map Service
Revised, edited and published by the Geological Survey
Control by NGS/NOAA, USCE, and IMA
Culture and drainage in detail compiled from aerial photographs
taken 1942. Topography by stereoscopic method 1943
Culture revised to the Geological Survey from aerial photographs
taken 1950. Field check 1957
Topographic contours from USGS/GS charts 831 (1955) and 817 (1950)
Polyconic projection - 1927 North American datum
10,000 foot grid based on Louisiana coordinate system
South zone and Texas coordinate system - center and south central zones
Zone 15, known in use
Control and high contours from U.S. 1:25,000 14 W,
1:25,000 14 W, 1:25,000 14 W

Revisions shown in purple compiled from aerial photographs
taken 1970 and 1974. This information not field checked

SCALE 1:24,000

CONTOUR INTERVAL 5 FEET
NATIONAL GEODESIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET - DATUM IS MEAN LOW WATER
SHOULDER SYMBOLS INDICATE THE APPROXIMATE USE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS LESS THAN 4 FEET

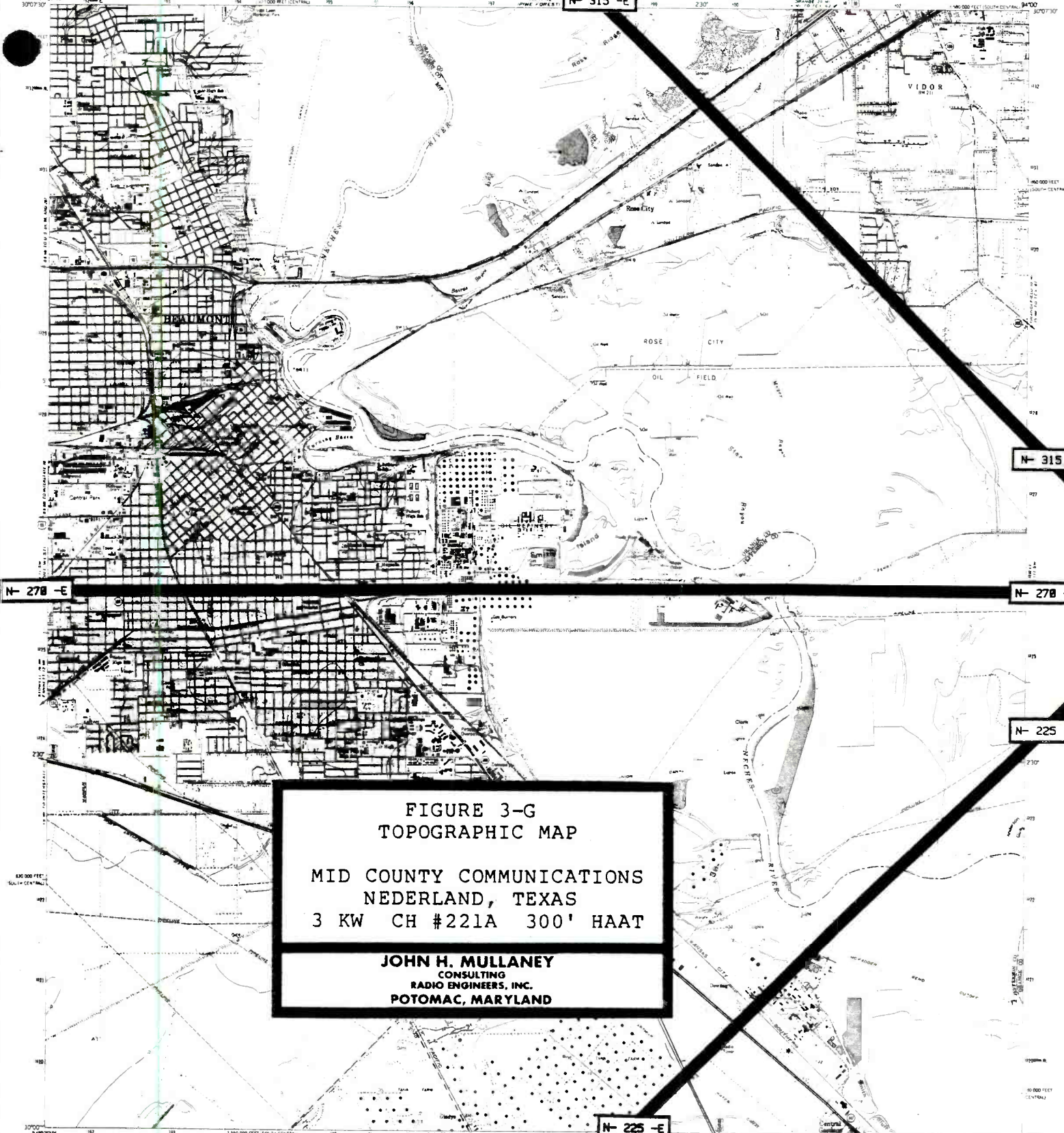
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80202 OR RESTON, VIRGINIA 22092
AND BY THE STATE OF LOUISIANA, DEPARTMENT OF PUBLIC WORKS BATON ROUGE, LOUISIANA 70804
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Main duty Light duty
Medium duty Unimproved dirt
State Road

WEST OF GREENS BAYOU TEX.-LA.
NEAR PORT ARTHUR 10' QUADRANGLE
N2952 5-W9345/7 5

1987
PHOTOREVISED 1970 AND 1974
486 7243 IV 4E-SERIES 4492



**FIGURE 3-G
TOPOGRAPHIC MAP**

**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

Map was edited and published by the Geological Survey
Control by USGS and NOS/NOAA

Planimetry by photogrammetric methods from aerial photographs
taken 1942. Topography from U.S. Corps of Engineers 1:64,000 map
derived from aerial photographs taken 1959. F and checkmate 1:90,000
Selected hydrographic data compiled from USGS 1:50,000
chart 533 (1961). This information is not checked
for navigational purposes

Vertical projection: 1927 North American datum
10,000 foot grid based on Texas coordinate system
South central and central zones
1:200 meter Universal Transverse Mercator grid covers
zone 15, shown in blue

Red line indicates area in which only
airphoto quadrangles are shown

Revisions shown in purple compared from aerial photographs
taken 1970 and 1974. This information has been checked
Purple first indicates extension of urban areas

SCALE 1:24,000

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
SOUNDINGS IN FEET-DATUM IS MEAN LOW WATER

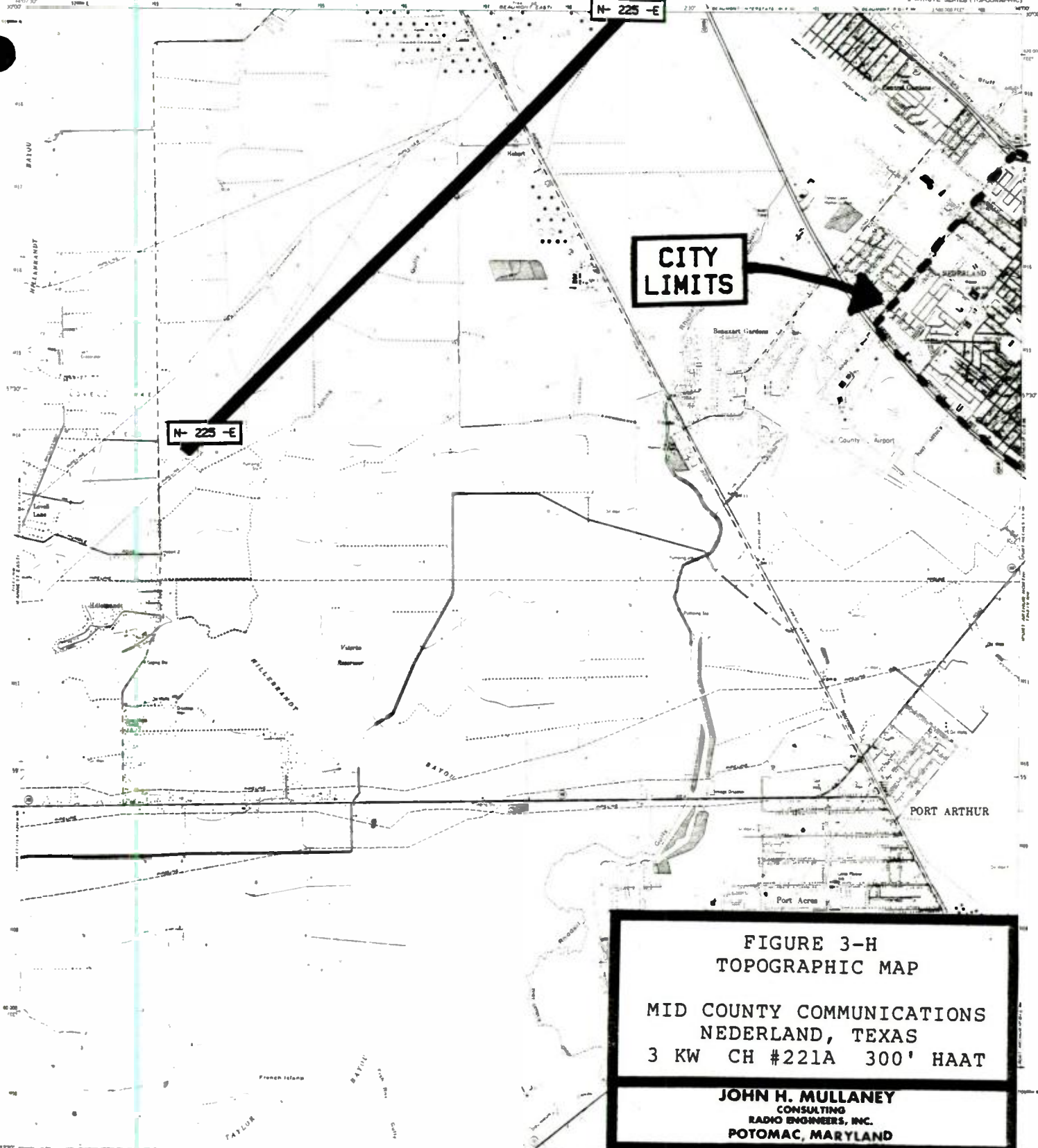
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A COLOR DESCRIBED TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



ROAD CLASSIFICATION

Highway	Light duty
Medium duty	Unimproved dirt
Interstate Route	U.S. Route
	State Route

BEAUMONT EAST, TEX.
1:50,000 - 49400/715
1960
PHOTOREVISED 1970 AND 1974
DMA 1:50,000 SERIES 7182



**CITY
LIMITS**

N-225-E

N-225-E

**FIGURE 3-H
TOPOGRAPHIC MAP**

**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

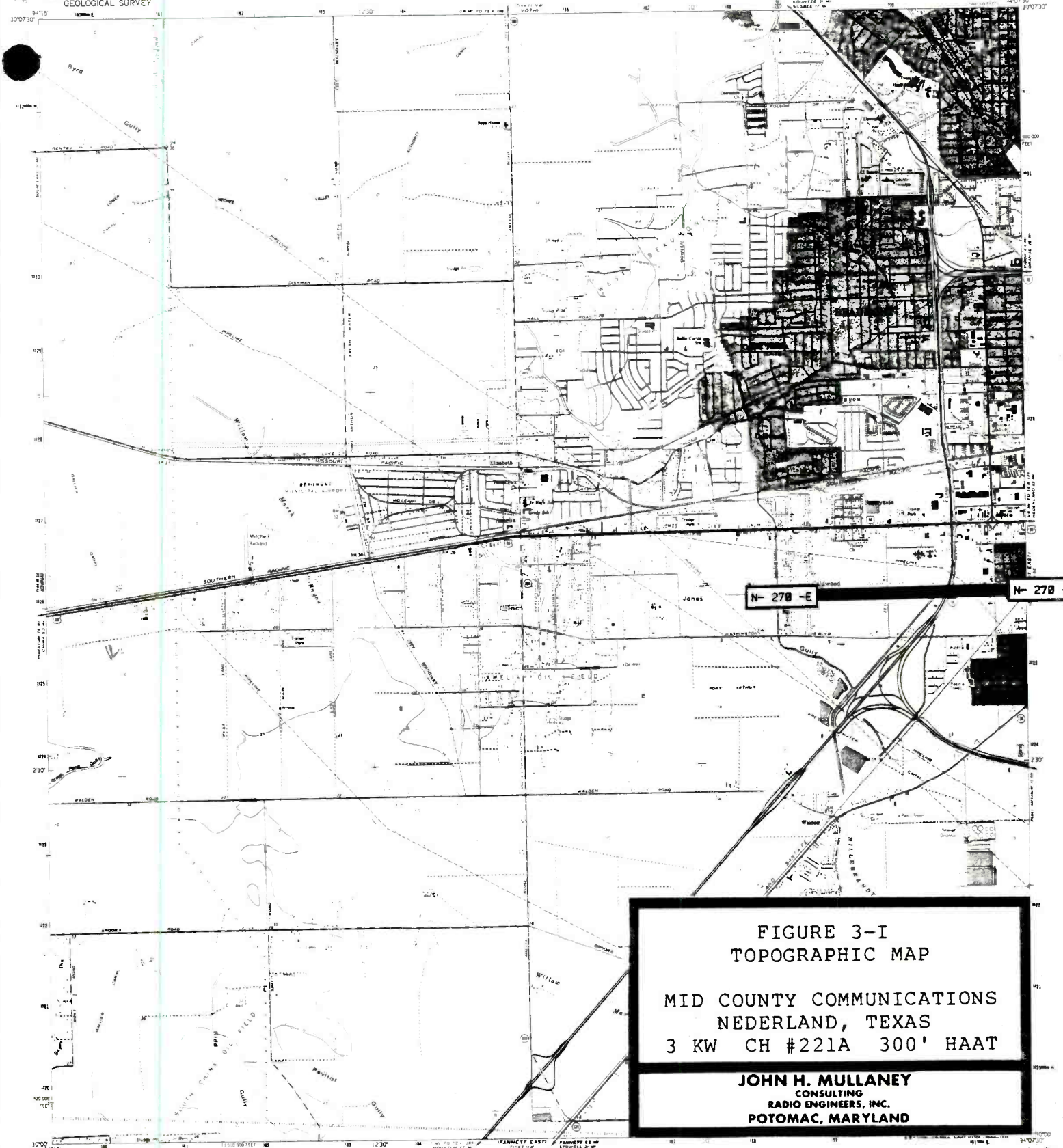
Map edited and published by the Geological Survey
Scale 1:24,000
Photomicrographic map made from
aerial photograph of 1954
Map of Port Arthur is derived from the
aerial photograph of 1954
Revised edition of 1974
1:24,000 map grid based on Texas Topographic
1:24,000 map grid
1974, 5 sheets
Red line indicates areas in which the
map is based on the National Map Accuracy
Standards
Revisions shown on sheets compiled from
aerial photographs taken 1970 and 1974
This information was last checked
Purpose and accuracy of map data

SCALE 1:24,000
NATIONAL GEODETIC VERTICAL DATUM OF 1928

ROAD CLASSIFICATION
Heavy duty Light duty
Medium duty Improved dirt
U.S. Route State Route

FOR SALE BY U.S. GEOLOGICAL SURVEY DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22088
A COLOR COPY OF THIS TOPOGRAPHIC MAP AND SYMBOLS IS AVAILABLE ON REQUEST

PORT ACRES TEX
1974
PHOTOREVISED 1970 AND 1974
1:24,000



N- 27B -E

N- 27B -E

**FIGURE 3-I
TOPOGRAPHIC MAP**

**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

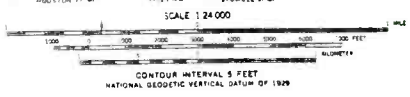
**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

Maped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA

Photometry by photogrammetric methods from aerial photographs
taken 1942. Topography from U.S. Coastal Engineers 1945 data
revised from aerial photographs taken 1959. Field checked 1960.

Mapologic projection: 1927 North American datum
10,000 foot grid based on Texas coordinate system
1900 central zone
10000 meter Universal Transverse Mercator grid lines
zone 18, shown in blue

Red lines indicate areas in which only landmark buildings are shown
Premium contour interval obtained from aerial photographs
taken 1970 and 1974. Contour interval and elevation
shown in feet.



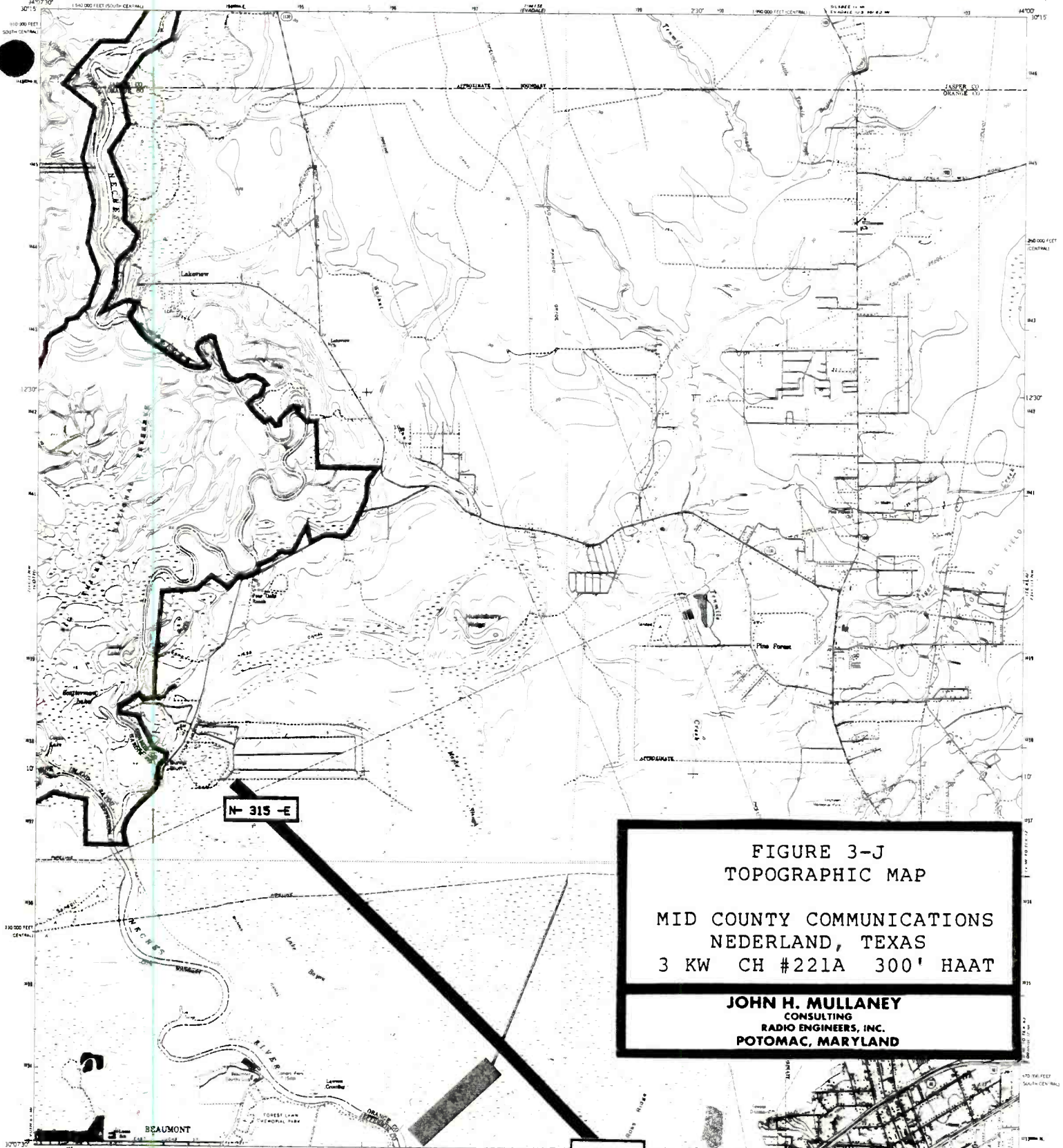
ROAD CLASSIFICATION

Inter-city road ————
Main city road ————
Local city road ————
Unimproved dirt ————
Pressure Road ————
U.S. Route ————
State Road ————

BEAUMONT WEST, TEX.

N 3000 - 99407 5/7 5

1960
PHOTO REPRODUCED 1970 AND 1974
1:25,000 1:50,000 1:62,500 1:75,000 1:100,000 1:125,000 1:150,000 1:200,000 1:250,000 1:300,000 1:400,000 1:500,000 1:600,000 1:750,000 1:1,000,000



**FIGURE 3-J
TOPOGRAPHIC MAP**

**MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT**

**JOHN H. MULLANEY
CONSULTING
RADIO ENGINEERS, INC.
POTOMAC, MARYLAND**

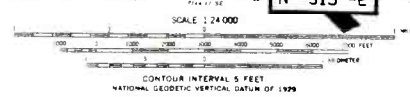
Mapped, edited, and published by the Geological Survey
Control on USGS and NOS/NOAA

Planimetry by photogrammetric methods from aerial photographs
taken 1942. "Contours" from U.S. Corps of Engineers 1946 map
derived from aerial photographs taken 1959. (Not checked 1960)

Photographic projection - 1927 North American datum
1:50,000 foot and based on false coordinate system
central and south central zones
1:50,000-foot Universal Transverse Mercator grid ticks
zone 15, shown in blue

Red line indicates areas in which only red-tinted buildings are shown
Red-tinted shown in purple colored from aerial photographs
taken 1970 and 1974. This information not field checked

Purple line indicates extension of urban areas



ROAD CLASSIFICATION

Heavy duty	Light duty
Medium duty	Unimproved dirt
Interstate Route	U.S. Route
	State Route

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22082
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

PINE FOREST, TEX.
N30075-WS400/7.5
1960
PHOTOREVISED 1970 AND 1974
1:50,000 FT. 7.5-MINUTE SERIES 1982

3094-114

PAINING AND LIGHTING IN ACCORDANCE WITH F. A. A. SPECIFICATIONS.

NOT TO SCALE

514' AMSL

Lat: 30° 03' 39"
Lon: 93° 58' 49"

BEACON

Existing Antenna
KYKR-FM

Proposed Antenna
C.R. = 296'AGL
311'AMSL

15
ABOVE M.S.L.

ITEM	DESCRIPTION	HEIGHT IN FEET
A	FOUNDATION	-
B	TOWER	496
C	OVERALL HEIGHT ABOVE GROUND	499

FIGURE 4
VERTICAL TOWER SKETCH

MID COUNTY COMMUNICATIONS
NEDERLAND, TEXAS
3 KW CH #221A 300' HAAT

JOHN H. MULLANEY
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RADIO ENGINEERS, INC.
POTOMAC, MARYLAND