

5355

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Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: Texas

DESCRIPTIVE REPORT

Photo-
Topographic
~~Hydrographic~~

Sheet No. 5355

LOCALITY

Matagorda Bay

~~Olivio to Palacios~~

VICINITY OF CARANCAHUA BAY.

1934

CHIEF OF PARTY

Ensign T. M. Price Jr.

U. S. GOVERNMENT PRINTING OFFICE: 1928

5355

applied to chart 1284, Jan. 17, 1938

J. G. L.

78

204

205

282

590

520

902

701

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

REG. NO. 5355

PHOTO
TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 5

REGISTER NO. 5355

State Texas

General locality Matagorda Bay

Locality VICINITY OF CARACANUA BAY
~~Olivia to Palacios~~

Scale 1/20,000 Photographs: December 19, 1933
Date of survey April-May-June 1933
Compilation: April-May-June 1933

Vessel U. S. Army Air Corps. Camera: Fairchild T-3A, 31-76
Compilation Party # 20, Corpus Christi, Texas.

Chief of party Ensign T. M. Price, Jr.

Surveyed by See data sheet in the descriptive report.

Inked by W. H. Burwell

Heights in feet above.....to ground to tops of trees

Contour, Approximate contour, Form line interval.....feet

Instructions dated November 7, 1933

Remarks: Compilation of aerial photographs J5-25, inclusive.

sheet reduced to scale and printed by photo-lithographic process.

-NOTES ON COMPILATION-

SHEET NO. FIELD 5 (Reg. No. 5355)

PHOTOS: No. "J"-5 to "J"-25 inclusive

DATE OF PHOTOGRAPHS: December 19, 1933

TIME: 9:48 to 10:02 A.M.

	By	Date
SCALE FACTOR (0.985)	(sgd) <u>C. H. Rulfs</u>	4/12/34
PROJECTION	(sgd) <u>T. M. Price Jr.</u>	4/17/34
PROJECTION CHECKED	(sgd) <u>W. H. Burwell</u>	4/18/34
CONTROL PLOTTED	(sgd) <u>W. Mack Crook</u>	4/19/34
CONTROL CHECKED	(sgd) <u>W. H. Burwell</u>	4/20/34
SMOOTH RADIAL LINE PLOT	(sgd) <u>W. H. Burwell</u>	5/ 3/34
DETAIL INKED	(sgd) <u>W. H. Burwell</u>	5/15/34; 6/30/34

AREA OF DETAIL INKED 33.5 SQ. STATUTE MILES

LENGTH OF SHORE LINE OVER 200 m. 47.1 STATUTE MILES.

LENGTH OF SHORE LINE UNDER 200 m. 11.3 STATUTE MILES.

GENERAL LOCATION Matagorda Bay

LOCATION ~~Olivia to Palacios~~ Vicinity of Carancahua Bay

DATUM STATION	<u>Well Point 1856, 1931</u>	Latitude <u>28°-38'-31.242"</u> (+961.8 m.)
(N.A. 1927)		Longitude <u>96°-19'-21.466"</u> (+583.0 m.)
		(position from adjusted office list)

COMPILER'S REPORT
for
PHOTO TOPOGRAPHIC SHEET FIELD NO. 5 (Reg. No. 5355)

1. GENERAL INFORMATION

This sheet was compiled from photographs taken by the U. S. Army Air Corps using Fairchild T-3A camera # 31-76. The photographs used are # 5 to # 25 inclusive, "J" flight. The flight for the photographs were made December 19, 1933 at 9:48 to 10:02 A. M.

The tide in Matagorda, Carancihua, Turtle and Trespalacios Bays is small and the only difference in its stage that would effect interpretation of the aerial photographs would be caused by strong winds. The height of water at the time the pictures were taken, however, is considered normal.

2. CONTROL

(a) Sources

Triangulation by F. L. G. 1931

Triangulation by Lieut. E. O. Heaton, 1934

Triangulation by Ensign T. M. Price, 1934

This control is on the 1927 N. A. Datum.

for 1934 triangulation

The field parties geographic positions were used. The difference between the unadjusted and final adjusted positions would be un-plottable at the scale of this compilation. Harbor U. S. E., a station of the U. S. E. D. 1930 triangulation was not cut in by C. and G. S. triangulation, but was plotted on sheet from position obtained by adjusting from other U. S. E. stations of the same scheme that were located in 1934 by C. and G. S. This position was checked by the radial plot.

(b) Errors

No errors in control were found by the radial line plot, with the exception of small errors in location of control in photographs, in one or two instances. This was most noticeable in the case of R. M. # 1, Well Point # 2, but the proximity of this station to Well Point 1856 rendered it unnecessary for control use. In every instance the abundance of strong surrounding control guaranteed the accuracy of the radial plot and subsequent tracing.

(c) Remarks

The hydrographic stations (shown by black circles) were located on the ground and directly on the photographs by the field inspection party, and their positions are established by the radial plot only.

3. COMPILATION

(a) Method

The usual radial line method of plotting from five lens photographs was used in the compilation of this sheet. There was no departure from the standard practice.

3. COMPILATION (Cont'd)

(b) Adjustment of Plot

No particular difficulty was encountered and no unusual adjustments of the plot were necessary. Instead there was an exceptional freedom from tilt and scale fluctuation. The control was plentiful, and in general, of such strength and distribution as to give good intersections.

(1) Trimming and Mounting

Most of the field prints on the "J" flight were lost when a skiff capsized during the field inspection, and the field inspection notes were made on the office prints.

The trimming distance for the D-wing was found to be 68.5 mm. instead of 69.4 mm. and 68.5 mm. instead of 69.0 mm.

The fact that the office prints were received from the Air Corps trimmed and mounted, and the field prints trimmed, proved a handicap. It was found necessary to remount the office prints, and tape was substituted for the wire clips with which they had been mounted. It was difficult, and impossible in some cases, to secure correct matching of detail, and the collimating distance was not perfectly correct as aforementioned. A correct value for the mounting distance was obtained from prints which had sufficient detail and this value used in mounting prints lacking in proper detail.

(c) General Description of Topography and Interpretation

In addition to the field Inspection Report of Matagorda and adjoining Bays (filed with Descriptive Report Register No. 5351) the following notes are submitted to act as a guide in the interpretation of this sheet, since the compiler also assisted in the field inspection of this area.

The coast line of Matagorda Bay between Sand Point and Carancahua Bay is in general a sand and shell beach, fairly wide at Sand Pt. and gradually narrowing down toward Carancahua Bay. Inland, the country is, for the most part, pasture land, with grassy sloughs and marshy areas.

In the vicinity of Salt Lake, Redfish Lake, and Carancahua Bay entrance, there are marshes and sand flats, occasionally covered with water at extreme high tides and to a varying extent at other tides. The limit of submergence at storm tides is shown with a dash line. The west shore of Carancahua Bay is characterized by a sandy beach, north of Salt Lake, and shoals. There is a portion of the west shore of Carancahua Bay northwest of Redfish Lake where the m.H.W. was shown broken, due to the fact that it enters upon flats, and varies greatly with the seasons and wind tides. The east shore, for the most part, is formed by a shelving beach and bluffs, not exceeding 8 feet in height. At El Campo Club there are several small piers.

3. COMPILATION (Cont'd)

(c) General Description of Topography and Interpretation (Cont'd)

From Carancahua Bay entrance to Well Point the character of the coast changes gradually from a low and marshy nature to a slight elevation, faced by a receding bluff about 5 feet high. From Carancahua Bay entrance, about half way to Well Point the M.H.W. is difficult to interpret, due to the fact that it is greatly concealed by marsh grass, growing below and beyond the normal M.H.W. Even in the field it was difficult to decide on any definite line, but it is confidently believed that the interpretation shown on this sheet approximates it closely. In various places near the bays there are dense clumps of trees and brush, seldom exceeding 15 feet in height, consisting of mesquite, scrub oak and salt cedar. All of these types of growth have been represented by the "general tree" symbol. Immediately inland, for the most part, the country is low and frequently marshy. There are scattered cultivated fields, but the land is mostly used for grazing.

Both shores of Turtle Bay, for the most part, are fringed with marshes, which surrounds numerous sloughs and bayous extending inland. Cultivation and works and structures increase toward the north.

From Turtle Bay to Trespalacios Bay there is a gradual change in the nature of the coast, from the low and marshy point at the Turtle Bay entrance to a slight elevation, with bluffs facing the Bay. These, however, diminish toward Palacios.

Camp Hulen is situated on the peninsula between Turtle and Trespalacios Bays. This is a National Guard Infantry camp, and is occupied only during the summer months. It has a wharf extending into deep water, and the camp is served by a railroad spur from Palacios.

North and northeast of Camp Hulen, the country is generally settled, consisting mainly of cultivated fields and pastures, divided by field roads and ditches.

Little difficulty was experienced in interpreting the photographic detail. The mean high water line from Carancahua Bay entrance to Well Point is somewhat obscured by marsh grass, and its exact delineation at some places is not definite in nature. Also, correct interpretation between fields actively cultivated, and areas that are not cultivated at present was difficult in a few places, due to lack of definite boundaries.

The only first order road in this locality is the state Highway from Fort Lavaca to Camp Hulen and Palacios. It is concrete paved, 20 feet wide, with a 100 foot right of way, and shallow ditches on each side, and is indicated by a solid double line. The county, and section ~~and private~~ roads, all of which are dirt, with shallow ditches on each side are shown by a double dash line indicating their importance rather than their condition, which is always bad in wet weather. Field roads and trails are shown by a single dash line.

3. COMPILATION (Cont'd)

(c) General Description of Topography and Interpretation (Cont'd)

All boundaries of shallow water areas (shown by low water sand symbol) on this sheet were so indicated from their appearance on the photographs alone, and cannot be taken as representing the low water line. ~~until later revised from hydrographic or ground surveys.~~

(d) Bridges

The only bridge occurring on this sheet that crosses a navigable stream is that over Reed Creek, on the highway from Port Lavaca to Palacios. This is a fixed concrete bridge on piling bents, 157.5 feet long. The horizontal clearance between bents is 13.1 feet and the vertical clearance is 3.3 feet. Measurements made by field party.

All other bridges are fixed wooden, over small, non-navigable or intermittent streams.

(e) Information from Other Sources

The only source of information was that furnished by the photographs and notes written in the photographs by the field inspection party, except the extremity of Well Pt. and shoal there was changed to conform with its present condition as determined by the hydrographic party. (this point and reef are subject to constant change)

(f) Conflicting Names

It is recommended that the spelling of Karankawa Bay be changed to Carancahua Bay to conform with the practice of the Texas State Highway Department, the Galveston office of the U. S. Engineers, the Texas State maps issued by the Dept. of Interior, County map (Calhoun county) and local practice.

(g) List of Names

Salt Lake ✓
Redfish Lake ✓
Ganado Club ✓
Carancahua Club ✓
El Jampo Club ✓
Camp Mullen ✓
Smith Mott ✓
Turtle Point ✓

The above new names are given to represent localities and bodies of water hitherto not named on charts. Local inhabitants, county maps, and signs were the source of these names and they have general acceptance in the locality.

(h) Junction with Adjoining Sheets

This sheet is joined by sheet field no. 4 Reg. No. 5354 on the east and by sheet field no. 6 Reg. no 5356 on the west, and by 1:25,000 plan table sheet field letter "Y" on the north west. The junctions with adjoining sheets are satisfactory.

(i) Shoals

Shoal areas were outlined by a dotted line only from their appearance on the photographs and this should not be taken as representing the low water line necessarily.

4. COMPARISON WITH OTHER SURVEYS

Surveys of this area were made by the Coast and Geodetic Survey about 1880 (Chart # 1284). Detail comparison is as follows:

Change in position of M.H.W. where it crosses the following meridians. (Measured on the meridians at 1 minute intervals) Change, old to* new (meters)

Matagorda Bay Shore:

Near	Latitude	On Longitude	
	° ' "	° ' "	
28	35 31	96 26 00	- 85.0
	36 00	25 00	-145.0
	36 29	24 00	- 73.0
	36 54	23 00	-117.0
	37 25	22 00	-318.0
	37 55	21 00	+97.5
	38 18	96 20 00	-83.0
	38 33	19 00	-93.0
	38 43	18 04	-35.5
28	40 27	18 00	-91.0
	40 09	17 00	-49.0
	40 37	16 00	-39.0
	41 08	15 00	-99.5
	41 40	14 00	-89.0

Carancahua Bay:

28	38 28	96 25 00	-102.0
	39 07	25 00	-129.0
	38 02	24 00	+ 23.0
	37 53	23 00	+ 42.0
	39 54	23 00	- 92.0
	37 42	22 00	- 64.0
	39 43	22 00	-102.0

* +Accumulation; -Recession

Oliver Point Beacon (F. R.) is shown on chart # 1284 about 225 yards too far southwest.

A detailed comparison with chart # 1284 shows that the shore of Matagorda Bay is in a state of recession, averaging about 100 meters. Carancahua Bay is apparently becoming larger, and the various points and peninsulas sharper and more narrow. A general comparison shows it is necessary to completely revise existing charts in regard to roads and to show the layout of Camp Hulen with railroad and pier as shown on this sheet. There is now no island off of Turtle Point.

There are piers, in various localities, not previously shown.

5. LANDMARKS

The following landmarks are recommended for this area. They were selected by the field inspection party and submitted on Form # 567:

	Latitude	Longitude
(1) Water Tank, Camp Hulen	28°-41'+1483.8 m.	96°-14' +1332.7 m.
(2) Radio Tower, Camp Hulen (North)	28°-41'+1041.3 m.	96°-14' +1085.6 m.
(3) Radio Tower, Camp Hulen (South)	28°-41'+1000.9 m.	96°-14' +1103.2 m.
(4) Oliver Point Beacon	28°-38'+ 844.4 m.	96°-15' + 572.7 m.
(5) Pole (E. side Carancahua B. Entr.)	28-37 1118.8	96 -22 245.8

The pole on the W. side of Carancahua Bay entrance will be located by

6. RECOVERABLE OBJECTS

The following recoverable objects are among the points selected by the field inspection party for hydrographic stations and their position was determined by the radial plot of this sheet. All described by the field inspection party on form 524.

Object	Latitude	(Meters)	Longitude	(Meters)
NE corner of Shed	28°-41'	+ 52.2	96°-17'	+1199.0
El Campo Water Tank	28°-39'	+374.6	96°-21'	+ 743.1
Shed (SE cor. of Long Shed)	28°-38'	+203.5	96°-18'	+1290.4
Bldg. Camp Hulen Wharf	28°-41'	+257.9	96°-14'	+1372.6

+1203.5

7. RECOMMENDATION FOR FURTHER SURVEYS

The compilation of this sheet is believed to have the probable error of 5 meters in well defined detail of importance for charting and of 8 meters for other data. It is understood that the width of roads, etc. may be slightly expanded in order that the detail may be kept clear and the running together of lines avoided. The size of buildings may also be slightly exaggerated.

To the best of my knowledge this sheet is complete in all detail of importance for charting purposes, within the accuracy stated above, and no additional surveys are required.

Submitted by (sgd) W. H. Burwell
W. H. Burwell

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Corpus Christi, Texas

July 1, 1934

DIRECTOR, U.S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted:

Sheet Field No. 5
Register No. 5355

T. M. Price Jr.

Chief of Party.

[illegible]

A list of objects carefully selected because of their value as landmarks as determined from seaward, together with individual descriptions, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report.

The selection, determination, and description of these points are an important factor in the value of the chart. Landmarks selected at appropriate intervals can be clearly charted. However, when none is outstanding, a group of two or three objects may by their interrelationship provide positive identification. A group so selected should be indicated.

The description of each object should be short, but such as will clearly identify it; for example, a standpipe, elevated tank, gas tank, church spire, tall stack, red chimney, radio mast, etc. Assign numerals to landmarks to indicate: (1) Offshore, (2) inshore, (3) harbor, 1, 2, 3 would be a mark useful on all charts. Generally, flagstaves and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

Corpus Christi, TexasJuly 1, 1934

DIRECTOR, U.S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted: **Permanent aids to navigation**

Sheet Fld. No. 5

Reg. No. 5355

T. H. Price

Chief of Party.

DESCRIPTION	POSITION					METHOD OF DETER- MINATION	CHARTS AFFECTED	
	LATITUDE		LONGITUDE		DATUM			
	°	'	D. M. METERS	°				'
OLIVER POINT (F.R.) (station Oliver Pt. En. 1934)	28-38		+ 844.4 -1002.7	96-15		+ 572.7 -1056.9	N.A. 1927	Triang. 1284
POLE (on E. side of Caram- cahua Bay Entrance (station East En. Caramcahua Bay Entrance, 1934)	28-37		1118.8	96-22		245.8	N.A. 1927	Triang. 1284

Survey No. T-5355

GEOGRAPHIC NAMES

Date. May 29, 1935Chart No. 1117 and 1284

TEXAS

Diagram No. _____

Approved by the Division of Geographic Names, Department of Interior. *

Referred to the Division of Geographic Names, Department of Interior. R

Under investigation. Q

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	<u>Camp Hulen</u>				
	<u>Turtle Bayou</u>	1117			
	<u>Horn Creek</u>	1117			
	<u>Reed Creek</u>	1117			
	<u>Turtle Bay</u>	1117 & 1284			
	<u>Turtle Bay Point</u>	-----	Yes		
	<u>Trespalacios Bay</u>	1117 & 1284			
	<u>Carancahua Club</u>	-----			
	<u>Carancahua Bay</u>	Karankawa Bay			
	<u>Cahado Club</u>	-----			
	<u>El Campo Club</u>	-----			
	<u>Salt Lake</u>	-----	Yes		
	<u>Redfish Lake</u>	-----	"		
	<u>Well Point</u>	1117 & 1284			
	<u>Matagorda Bay</u>	1117 & 1284			
	<u>Note;</u> It is the policy of this Department not to accept names of localities that are dependent upon the name of the tenant, since his tenancy is subject to probable frequent changes.				
		APPROVED NAMES UNDERLINED IN RED <i>W.J. Woods</i> W.J. Woods			
	<u>Note</u> The above mentioned note mentions that this department does not accept these names but at the same time leaves the use of these names to the discretion of the Compiler.				

*Underlined names approved
Jan. 21 1936
C. E. Egan*

REVIEW OF AIR PHOTO COMPILATION T-5355 (1935)

Scale 1:20,000

Projection

Projection diagonals fail to check by 0.5 m. across 8 minute squares. This discrepancy probably is due to the matching of the negatives.

Comparison with Graphic Control Surveys

There are no graphic control surveys of the area covered by this compilation.

Comparison with Previous Topographic Surveys

T 645 (1856), Scale 1:20,000
T 737 (1857-58), Scale 1:20,000

Numerous changes in detail have occurred since the date of these topographic surveys (T 645, T 737). These changes as well as the interpretation of the photographic detail are well covered by the descriptive report, T 5355.

It is believed that the discrepancies in shoreline location between this compilation and that of the previous surveys are due largely to interpretation rather than to actual changes. The 1856 survey undoubtedly lacked control causing an apparent difference in azimuth in upper Turtle Bay of about 1°.

This compilation is complete and adequate to supersede T 645 and T 737 for the area it covers.

Comparison with Chart No. 1284

For detailed comparison with the chart see descriptive report, page 7. It is felt that the statement that the shore has receded 100 meters is erroneous and that this discrepancy is due largely to change of datum and to interpretation.

Comparison with Contemporary Hydrographic Surveys

H 5813 (1935), 1:20,000
H 5866 (1935), 1:20,000

Examination of the hydrographic sheets shows this compilation to be in agreement with the hydrography. A small shell island shown on the hydrographic sheet has been transferred to the compilation.

Landmarks and Aids to Navigation

Landmarks submitted in chart letters Nos. 590 (1935), 282 (1935) and 820 (1935) are located on this compilation with the exception of the two day beacons (chart letter No. 590 - 1935) located by hydrography.

Well Point Light shown on the chart but not on this compilation is listed in Notice to Mariners No. 27, 1935, paragraph 1093. Position was by the Lighthouse Service.

Dec. 17, 1935.



Fred A. Riddell

✓ B.G. Jones 1/15/36

REVIEW OF AIR PHOTO COMPILATION NO. 5355

Chief of Party: T. M. Price Jr.

Compiled by: See page 2
of descriptive report.Project: Party No. 20
Corpus Christi, Texas

Instructions dated: Nov. 7, 1933

- ✓1. The charts of this area have been examined and topographic information necessary to bring the charts up to date is shown on this compilation. (Par. 16a, b,c,d,e,g and i; 26; and 64)
- ✓2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g,n)
- ✓3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d,e)
No supplementary ground surveys.
- ✓4. Blue-prints and maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28)
No blue prints etc. submitted.
- ✓5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report.
Smooth hydrographic sheet not finished but comparison made to date of submitting this sheet.
- ✓6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c,h,i)
No unusual or large adjustments.
- ✓7. High water line on marshy ~~and-mangrove~~ coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Refer also to the pamphlet "Notes on the Compilation of Planimetric Line Maps from Five Lens Air Photographs."

8. The representation of low water lines, reefs, ~~toral reefs and rocks~~, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41)
Shoal areas indicated only, by a dotted outline. No low water line obtained.
9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57)
10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)
11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c)
Clearances only obtained of bridges over navigable waters.
12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts ~~and from the U.-S.-G.-S.-Quadrangles~~ is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)
13. The geographic datum of the compilation is N. A. 1927 and the reference station is correctly noted.
14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)
15. The drafting is satisfactory and particular attention has been given the following:
 1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report.
 2. The degrees and minutes of Latitude and Longitude are correctly marked.

3. All station points are exactly marked by fine black dots.
4. Closely spaced lines are drawn sharp and clear for printing.
5. Topographic symbols for similar features are of uniform weight.
6. All drawing has been retouched where partially rubbed off.
7. Buildings are drawn with clear straight lines and square corners where such is the case on the ground.

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time.

17. Remarks:

18. Examined and approved;

T. M. Price Jr.

T. M. Price Jr.
Chief of Party

19. Remarks after review in office:

See preceding pages 1 to 2 for detailed office verification

Reviewed in office by: *Fred. A. Russell* & *B. G. Jones*

Examined and approved:

C. K. Green

C. K. Green
Chief, Section of Field Records

L. O. Lobnitz

L. O. Lobnitz
Chief, Division of Charts

J. S. Borden

J. S. Borden
Chief, Section of Field Work

G. H. Hude

G. H. Hude
Chief, Division of Hydrography and Topography.