**Type of Survey**  Topographic

**Field No.**  Office No.  4852

**LOCALITY**

State  Texas

General locality  West Bay

Locality  Alligator Point

---

1947

CHIEF OF PARTY

Ross A. Gilmore

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**DATE**  Original  — Aug. 7, 1934
Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

Registry No. T-4252
Field No. 
Scale 1:20,000

State Texas General locality Galveston Island, West Bay
Specific locality Alligator Point

Dates: Survey began 1 December 1947 Completed 5 December 1947

Photography Supplemented by ground surveys to
Project No. Ph.14.(46) Instructions dated not dated (suppl. 1, 7-22-47)

Party or Photogrammetric Chief of party Ross A. Gilmore
Field work by Charles H. Bishop Office work by Charles H. Bishop
Final inking by Charles H. Bishop

Ground elevations in feet above M. H. W. or
Treetop elevations

Contours Approximate contours by Planetable Multiplex Interval ft.
Form lines

Remarks Sheet was used only to locate two fixed aids to navigation which
supplement horizontal control.
PROJECT: Ph-14(46)
DATUM: NA 1927
DATE OF INSTRUCTIONS: undated
Supplement 1, dated 22 July 1947
DATE OF FIELD WORK: December 1947
SCALE: 1:20,000

PURPOSE: To locate two fixed aids to navigation and to supplement horizontal control in the vicinity of West Bay.

METHODS: Standard planetable methods were used. Cuts were taken from three horizontal control stations that were established in 1933.

CONTROL: Horizontal control stations used are as follows:

RULE, 1933
LIFE, 1933
SNAKE, 1933

Recovery Notes, Form 526, have been submitted for the above stations.

AIDS LOCATED: The aids located are CHOCOLATE BAY RANGE A FRONT LIGHT and CHOCOLATE BAY RANGE A REAR LIGHT. These aids have been lettered on the sheet in orange ink. Form 524 has been submitted for each of these aids.

Submitted by:

Charles H. Bishop
Charles H. Bishop
Photo.Aid.

Approved and forwarded:

Ross A. Gilmore
Chief of Party
DESCRIPTIVE REPORT

Topographic Sheet No. M 4852

Aug. 7, 1934

State Texas

LOCALITY

Galveston Island, North Shore of West Bay, and Galveston Island

1933

CHIEF OF PARTY

Earl O. Heaton
Each Topographic and Graphic Control Sheet, and each Air Photographic Drawing should be accompanied by this form, completed so far as practicable, when forwarded to the Washington office.

Registry No. \( T-4852 \)
Field No. 
Scale \( 1:20,000 \)

State \( \text{Texas} \)  General locality \( \text{Galveston Island, West Bay} \)

Specific locality \( \text{Alligator Point} \)

Dates: Survey began \( 1 \text{ December 1947} \)  Completed \( 5 \text{ December 1947} \)

Photography, Supplemented by ground surveys to

Project No. \( \text{Ph. 14 (46)} \)  Instructions dated \( \text{not dated (suppl. 1, 7-23-47)} \)

\( \text{Chief of party} \) \( \text{Boan A. Gilmore} \)

Field work by \( \text{Charles H. Bishop} \) Office work by \( \text{Charles H. Bishop} \)

Final inking by \( \text{Charles H. Bishop} \)

Ground elevations \( \text{in feet above} \left\{ \begin{array}{c} \text{M. H. W.} \\ \text{or} \\ \text{or} \\ \text{or} \\ \text{or} \\ \text{or} \end{array} \right. \)

Treetop elevations

Contours
Approximate contours \( \text{by} \left\{ \begin{array}{c} \text{Planetary} \\ \text{Multiplex} \end{array} \right. \) Interval \( \text{ft.} \)

Form lines

Remarks \( \text{Sheet was used only to locate two fixed aids to navigation which} \)

\( \text{Supplement horizontal control.} \)
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. M 4852

REGISTER NO.

Texas

State

General locality... Galveston Island

Locality... North Shore of West Bay and Galveston Island

Scale... 1:20,000 Date of survey... June to December, 1933

Project... Project: HT-118, Galveston Bay}

Chief of party... Earl O. Heaton

Surveyed by... J. W. Somers

Inked by... J. W. Somers & W. T. White

Heights in feet above... M. H. W. to ground

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

Instructions dated... Nov. 5, 1932

Remarks:

\[ * \text{Mr Ellis} \]

Top 4852. Galveston Bay, Tex (West Bay)

Greens Lake, not Green.

Decision of US GE
DESCRIPTIVE REPORT
TO ACCOMPANY TOPOGRAPHIC SHEET "M"
WEST BAY & CHOCOLATE BAY
Scale: 1:20,000
Project: HT-118, Galveston Bay
Surveyed June to December, 1933
E. O. Beaton, H. & G. Engineer, Chief of Party
J. W. Somers Topographer
Instructions Dated Nov. 5, 1932

General Description of Coast:
The gulf coast of Galveston Island from "12 mile rd" SW to San Luis Coast Guard Station is a low, sandy shore with small scattered sand dunes. This area supports a substantial growth of grass and a few wind rows of salt cedar. A very small part of this section is under cultivation. The west shore of Galveston Island is low marsh land and the entire shore line is a series of coves, inlets, and bayous. There are numerous small shell and marsh islands off this shore, including the islands of Karankawa Reef.

A narrow channel extends SW through West Bay to a point 2½ miles SW of Karankawa Reef. The controlling depth of this channel is 5 ft. at MLLW. This section of the channel is marked at frequent intervals by day beacons, some of which are in a bad state of repair and remain only as single piles.

The channel entrance to the Mud Island Cut has shoaled to a controlling depth of 3½ ft. at MLLW. This shoal area extends about 1½ miles NW from Mud Island Channel #1. The channel in this shoal area is marked by temporary markers of various forms.

The spoil dump of the new Texas-Louisiana Waterway forms the NW shore of West Bay from Lat. 29° 16.8', Long. 94° 58.4' to the Galveston-Brazoria County line. This spoil dump is about 12 ft. high and is broken only at the mouth of Greens Bayou and Karankawa Bayou. The shore line from the county line to Nymph Pt. is low prairie and marsh. The west shore of West Bay is low, marshy, prairie with an average height above MHW of 2 ft., except for a shell mound 1½ miles north of Mud Island Channel which is about 6 ft. high. The shore of Chocolate Bay is grassy prairie and the average height of the banks forming the shore is 3 ft. above MHW. The only vegetation in this region is grass.

A channel extends through Chocolate Bay to Chocolate Bayou. This channel is marked as follows: two day beacons which are 10" piles, bare 9 ft. at MHW, located ½ miles off Alligator Pt., and a row of channel markers constructed of 4" x 4" piles which are bare 7 ft. at MHW. These markers are all off the east and north side of the channel except topographic signal SIDE which is south of the channel. The controlling depth of the channel in Chocolate Bay was 2½ ft. at MLLW, Jan., 1934.

Landmarks:
San Luis Coast Guard Station.
Topographic signal CORN - the SE corner of a large two-story house named the "The Grey Villa".

Character of Control Used:
Sheet M is controlled by nine second order triangulation stations; Hitchcock, Karanka, Clay, Gator, Robin, Sulphur, Life, Snake, and Reef; and ten third order triangulation stations; Cocoa, Rule, Mud Island Channel Bn. 1, Cupola of San Luis Coast Guard Station, Oster, West Bay Bns. #2, 4, 23, 37, and a 10" pile which is 6 ft. bare at MHW and located about 0.6 mile SW of Bn. 39. Plane table traverse was also run to supplement the triangulation control.
Closing Errors of Traverse and Method of Adjustment:

<table>
<thead>
<tr>
<th>Distance (meters)</th>
<th>Distance (miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitchcock to Karanka</td>
<td>5</td>
</tr>
<tr>
<td>Karanka to Clay</td>
<td>5</td>
</tr>
<tr>
<td>Clay to Gator</td>
<td>9</td>
</tr>
<tr>
<td>Gator to Robin</td>
<td>8</td>
</tr>
<tr>
<td>Robin to Cocoa</td>
<td>5</td>
</tr>
<tr>
<td>Rule to Cocoa</td>
<td>15</td>
</tr>
<tr>
<td>Rule to Sulphur</td>
<td>8</td>
</tr>
<tr>
<td>Sulphur to M.I. Bn. #1</td>
<td>12</td>
</tr>
<tr>
<td>Life to Snake</td>
<td>10</td>
</tr>
<tr>
<td>Snake to Reef</td>
<td>15</td>
</tr>
<tr>
<td>Reef to Oster</td>
<td>8</td>
</tr>
<tr>
<td>Oster to topography station High</td>
<td>5</td>
</tr>
<tr>
<td>Topography station High to topography station Tank</td>
<td>4</td>
</tr>
<tr>
<td>Topography station Tank to topography station Wind</td>
<td>7</td>
</tr>
<tr>
<td>Topography station Wind to triangulation station San Luis Coast Guard Station</td>
<td>6</td>
</tr>
</tbody>
</table>

All traverse lines were adjusted as prescribed in the topographic manual, C. & G.S. publication #144.

Dates on Triangulation Stations:

Two dates are shown on this sheet at triangulation stations which have been recovered. The date of original establishment is shown in parenthesis and the last date of occupation is also shown. This was done because the datum was changed in 1927. The last date is the one which represents the plotted position.

Failure to Agree with Former Work:

This sheet was compared with U. S. C. & G. S. Chart #1282 and the following discrepancies were noted:

- The Gulf shore at the south end of the "13 mile road" is 140 meters SE of its position on the above chart.
- The Gulf shore at Lat. 29° 09.0', Long. 95° 01.3' agrees with its former location, but at the San Luis Coast Guard Station it appears to be 60 meters NW of the charted location.
- The position of the West Bay shore at triangulation station Life is 140 meters SE of its former position while at triangulation station Reef the shore is now 110 meters S of the location as charted.
- There is a displacement of the northeastermost part of Hoekers Pt. of 70 meters to the north and of the southeasternmost part of Lake Como of 210 meters to the east in comparison with the chart. There is a displacement of 160 meters to the north and 130 meters to the west of a small bayou at the junction of Green Lake and Bayou and of the easternmost part of Karankawa Bayou of 110 meters to the east with no change in latitude.
- The south side of Karankawa Pt. has receded about 60 meters although the east side of this Point shows very little change.
- Alligator Pt. now appears to be 130 meters north and 150 m. east of its previous location.
- The greatest difference found was at Nymph Pt. where the present position of the tip of the Point is displaced 275 meters to the north and 130 meters east of the previous position.
These differences are due largely to the erosion and building up
action of wind and waves and possibly to some extent to poor control on
previous surveys.

This sheet was also compared to an advance sheet of the U. S. Geolo-
gical Survey and the two projects were found to agree in general as to the
shape of the shore line but not in its position. The poor agreement in
position probably indicates poor triangulation control and inadequate
field inspection for the reduction of photographs from which the U. S. G. S.
sheet was compiled.

The numbers of the West Bay Beacons 5 to 29 are not not correctly given
on Chart #1282. The correct number of these beacons was obtained by a careful
check in the field. Bns. 19 to 27 on the chart are shown correctly on this
sheet as Bns. 21 to 29. The positions of Bns. 2, 4, and 21 to 29 do not
agree with the positions as given by triangulation and topographic locations
on this sheet. Bns. 21, 25, 27, 29, 33, 35, and 39 were located on Sheet
M by plane table cuts to verify triangulation cuts. New positions by triangu-
lation and topography should be used for charting without reference to the
original chart.

New Names:
Louisiana & Texas Intracoastal Waterway
Galveston-Brasoria County Line.
Hoekers Pt.

List of Plane-table Positions:
1. White - SW corner white house near Gulf Beach.
2. High - Windmill on Lykes Bros. ranch W of "13 mile Rd."
3. Corn - SW corner of "Grey Villa".
4. Tank - Water tank 35 ft. high on Davisson ranch.
5. Green - Windmill at H. Kempner's Camp.
6. Iron - Windmill 25 ft. high, 15 m. NW of wood windmill on
   H. Sealy property.
7. B.M. 501, U.S.E.D. - One mile NE of Green Bayou at Station Hitchcock.
12. B.M. 566, U.S.E.D. - W shore West Bay near station Sulphur 3 miles N
   of Mud Island Cut.

Changes of Coast Line:
The Gulf Coast of Galveston Island appears to have built out some in
the vicinity of the "13 mile road" and to have receded about 100 meters near
the San Luis Coast Guard Station. The west shore of Galveston Island shows
that a gradual erosion is in process. Karankawa Reef has been reduced in
size but not in general appearance. The West Bay shore line of the mainland
shows that a very slow erosion has been taking place, except at Alligator
and Nymph Points where the recession of the shoreline is very noticeable
in comparison with chart 1282. The mainland shore of West Bay is changing
as the dredging operations of the Intracoastal Waterway proceeds. In this
area the shore changes from low prairie to a high sand clay ridge, as seen
from the Bay. This waterway spoil bank is about 12 ft. high. Only slight
changes are noted on the shores of Chocolate Bay and the west shore of
West Bay.
Character of Marshes:

The west half of Galveston Island as shown on this sheet is marshland. About 1/2 of the marsh area is flooded at MHW. The marshy prairie from Green Lake to Alligator Pt. slopes northwesterly to a semi-permanent marsh. The extent of the effects of MHW was not observed in this section north and east of Alligator Pt. The shore area of Halls Lake is also flooded by M.H.W. but none of the Chocolate Bay shore is submerged by M.H.W. Narrow strips of marsh land along the west shore of West Bay are flooded at M.H.W. and in very few places does this flooded area extend more than 1/4 mile inshore. The soil of these marsh sections is a black mud containing some sand, shell, and decayed vegetable matter.

Approved:  
Earl O. Heaton,  
Chief of Party, C.& C.S.

Respectfully submitted,  
J. W. Somers,  
Observer.
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:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>POSITION</th>
<th>METHOD OF DETERMINATION</th>
<th>CHARTS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE corner 2-story grey house known as “The Grey Villa”</td>
<td>29 10.1212.6 94 58.1456.6 N.A. 1927 Plane-table</td>
<td>1282</td>
<td></td>
</tr>
<tr>
<td>Cupola of San Luis Coast Guard Station</td>
<td>29 06.1501.42 95 09.487.54 n</td>
<td>Triangulation 1282</td>
<td></td>
</tr>
</tbody>
</table>

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, flagstaffs and like objects are not sufficiently permanent to chart.
# LANDMARKS FOR CHARTS

**Corpus Christi, Texas**

**July 30, 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:

![Signature]

Earl O. Heatton

Chief of Party

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>POSITION</th>
<th>METHOD OF DETERMINATION</th>
<th>CHARTS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE corner 2-story</td>
<td>29 10 1212.6 94 58 1456.6 N.A.</td>
<td>Plane-table</td>
<td>1282</td>
</tr>
<tr>
<td>grey house known as &quot;The Grey Villa&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cupola of San Luis Coast</td>
<td>29 06 1501.42 95 09 467.54</td>
<td>Triangulation</td>
<td>1282</td>
</tr>
<tr>
<td>Guard Station</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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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, flagstaffs and like objects are not sufficiently permanent to chart.
Section of Field Records

REVIEW OF TOPOGRAPHIC SURVEY NO. 4852 (1933)

North Shore of West Bay and Galveston Island, Texas
Surveyed: June - December, 1933
Instructions dated: November 5, 1932 (E. O. Heaton)

Plane Table Survey  Cloth Mounted

Chief of Party - E. O. Heaton.
Surveyed by - J. W. Somers.


The Descriptive Report is clear and comprehensive and satisfactorily covers everything of importance.

A bare islet in lat. 29°10.9', long. 95°01.3' and a bar awash at M. H. W. in lat. 29°13.1', long. 95°00.7' were located by the hydrographic party and are inked in red with notes regarding their origin.

The records conform to the requirements of the Topographic Manual with the following exceptions:

a. Scaled one-half meter distances were not laid off for distortion measurement.

2. Compliance with Instructions for the Project.

The survey complies with the instructions.

3. Junction with Contemporary Surveys.

Satisfactory junctions were made with T-4853 (1933) on the southwest and with T-4857 (1934) on the northeast.


a. T-323 (1851).

The Gulf shore has built out since the time of this survey. In the vicinity of "13 Mile Road", long. 94°57', the coast line now is about 95 meters farther out, whereas the Descriptive Report states 150 meters. There is a remarkable agreement along both shores of West Bay. It is not apparent how much of the differences in the surveys is due to natural changes and to insufficient control for the old survey.
b. **T-374 (1852).**

A comparison of this survey with the present survey shows that differences as stated in the Descriptive Report are somewhat excessive. The Gulf coast appears to have receded about 40 meters near the San Luis Coast Guard Station, and not 100 meters as given in the report. Alligator Point is now about 75 meters east and 25 meters north of the old position. The Descriptive Report gives the differences as 150 m. and 150 m., respectively.

Nymph Point has shifted about 250 meters to the north. There is fair agreement in Chocolate Bay and the minor differences are very likely due to insufficient control for the old survey.

5. **Field Drafting.**

The field inking is satisfactory.

6. **Additional Field Work Recommended.**

No additional field work is required.

7. **Superseding Old Surveys.**

Insofar as the topography actually covered on the present survey is concerned, it supersedes the following surveys for charting purposes:

- T-328 (1851) in part
- T-374 (1852) " "


Examined and approved:

- C. K. Green, Chief, Section of Field Records.
- R.O. Pollard, Chief, Division of Charts.
- T.S. Borden, Chief, Section of Field Work.
- G. Habe, Chief, Division of H. & T.
<table>
<thead>
<tr>
<th>DATE</th>
<th>CHART</th>
<th>CARTOGRAPHER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/24/50</td>
<td>886</td>
<td>Abele</td>
<td>Before After Verification and Review</td>
</tr>
<tr>
<td></td>
<td>887</td>
<td>D.R. Engle</td>
<td>Before After Verification and Review</td>
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<td>Before After Verification and Review</td>
</tr>
</tbody>
</table>

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.