

4852

Diag. CH No. 1282-1 SUPPLEMENT

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic

Field No. _____ Office No. 4852

LOCALITY

State Texas

General locality West Bay

Locality Alligator Point

194 2

CHIEF OF PARTY

Ross A. Gilmore

LIBRARY & ARCHIVES

DATE Original - Aug 7, 1934

4852

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

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 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)

~~Kessel~~ } or Photogrammetric Chief of party Ross A. Gilmore
Party }

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.
Treetop elevations } or { _____

Contours } by { Planetable
Approximate contours } { Multiplex } Interval _____ ft.
Form lines }

REMARKS Sheet was used only to locate two fixed aids to navigation which

supplement horizontal control.

DESCRIPTIVE REPORT TO ACCOMPANY
TOPOGRAPHIC SHEET OFFICE NO. 4852

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
Ross A. Gilmore
Chief of Party

4852

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

AUG 7 1934

Acc. No.

Form 504
Rev. Dec. 1933
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

Topographic Sheet No. **M 4852**
~~Hydrographic~~

Aug. 7, 1934

State **Texas**

LOCALITY

Galveston Island

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

1933

CHIEF OF PARTY

Earl O. Heaton

U. S. GOVERNMENT PRINTING OFFICE: 1934

4852

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

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 **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)**

~~Vessel~~ } or **Photogrammetric** Chief of party **Rosa A. Gilmore**
Party }

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.**
Treetop elevations } or { _____

Contours } by { **Planetable** } Interval _____ ft.
Approximate contours } { **Multiplex** }
Form lines } { _____ }

REMARKS **Sheet was used only to locate two fixed aids to navigation which**

supplement horizontal control.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

4852

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.

State Texas

General locality Galveston Island

Locality North Shore of West Bay and Galveston Island

Scale 1:20,000 Date of survey June to December, 19 33

~~Vessel~~ 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 ~~to tops of trees~~

Contour, Approximate contour, Form line interval _____ feet

Instructions dated Nov. 5, 1932, 19____

Remarks: _____

• Mr Ellis.

Top. 4852. Galveston Bay, Tex
(West Bay)
Greens Lake, not Green.
Decision of U.S.G.B.

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. Heaton, 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 cedars. 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 $2\frac{1}{2}$ 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 $3\frac{1}{2}$ ft. at MLLW. This shoal area extends about $1\frac{1}{2}$ miles NW from Mud Island Beacon #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. $29^{\circ} 16.8'$, Long. $94^{\circ} 58.4'$ 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 1.8 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 $1\frac{1}{2}$ 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 $2\frac{1}{2}$ 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 0.8 mile SW of Bn. 39. Plane table traverse was also run to supplement the triangulation control.

Closing Errors of Traverse and Method of Adjustment:

	Closure (meters)	Distance (miles)
Hitchcock to Karanka	5	4.0
Karanka to Clay	5	3.6
Clay to Gator	9	3.7
Gator to Robin	8	5.0
Robin to Cocoa	5	3.5
Rule to Cocoa	15	3.0
Rule to Sulphur	8	3.6
Sulphur to M.I. Bn. #1	12	2.6
Life to Snake	10	3.7
Snake to Reef	15	4.2
Reef to Oster	8	3.8
Oster to topo. station High	5	1.8
Topo. station High to topo. station Tank	4	3.5
Topo. station Tank to topo station Wind	7	3.5
Topo station Wind to triangulation station San Luis Coast Guard Station	6	3.5

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

Dates of 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 ^x140 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 80 meters NW of the charted location.

The position of the West Bay shore at triangulation station Life is ^x140 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 northernmost part of Hoeckers 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 ^x130 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.

See Review for Differences

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. Geological 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 39 do not agree with the positions as given by triangulation and topographic locations of 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 triangulation and topography should be used for charting without reference to the original chart.

New Names:

Louisiana & Texas Intracoastal Waterway
Galveston-Brazoria County Line.
Hoeckers 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 - SE corner of "Grey Villa".
4. Tank - Water tank 35 ft. high on Davison 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.
8. B.M. 518, U.S.E.D. - 105 m. W of Karankawa Bayou.
9. B.M. 532, U.S.E.D. - 1/3 mile E of Galveston-Brazoria County Line.
10. B.M. 540, U.S.E.D. - 1.1 miles SW of the Galveston-Brazoria County Line.
11. B.M. 557, U.S.E.D. - 1 1/4 miles NE of Alligator Pt.
12. B.M. 566, U.S.E.D. - W shore West Bay near station Sulphur, 3 miles N of Mud Island Cut.

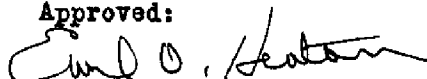
Changes of Coast Line:

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:

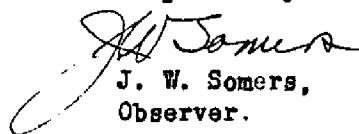
The west half of Galveston Island as shown on this sheet is marshland. About $\frac{1}{4}$ of the marsh area is flooded at MHW. The marshy prairie from Green Lake to Alligator Pt. slopes northwesterly to a semi-permanent marsh. The extent of the effects of MHW was not observed in this section north and 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 $\frac{1}{4}$ 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. & G.S.

Respectfully submitted,



J. W. Somers,
Observer.

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

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:

Earl O. Heaton

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, flagstuffs and like objects are not sufficiently permanent to chart.

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

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:

Earl O. Senter

Earl O. Heaton

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.

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.

Inked by - J. W. Somers and W. T. White.

1. Condition of Records.

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

A bare islet in lat. $29^{\circ}10.9'$, long. $95^{\circ}01.3'$ and a bar awash at M. H. W. in lat. $29^{\circ}13.1'$, long. $95^{\circ}00.7'$ 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-4867 (1934) on the northeast.

4. Comparison with Prior Surveys.

- a. T-328 (1851).

The Gulf shore has built out since the time of this survey. In the vicinity of "13 Mile Road", long. $94^{\circ}57'$, the coast line now is about 95 meters farther out, whereas the Descriptive Report states 130 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 130 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) " "

8. Reviewed by - A. F. Jankowski, October, 1934.

Examined and approved:

C. K. Green, *C. K. Green.*
Chief, Section of Field Records.

R. O. Dolbuit.
Chief, Division of Charts.

F. S. Borden
Chief, Section of Field Work.

G. F. Wade
Chief, Division of H. & T.

NAUTICAL CHARTS BRANCH

SURVEY NO. 7-4852

Record of Application to Charts

[illegible]

M-2168-1

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.