**U. S. COAST AND GEODETIC SURVEY**
DEPARTMENT OF COMMERCE

**DESCRIPTIVE REPORT**

<table>
<thead>
<tr>
<th>Type of Survey</th>
<th>Topographic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field No.</td>
<td>Ph-36(48)C</td>
</tr>
<tr>
<td>Office No.</td>
<td>T-9192</td>
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**LOCALITY**

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<tr>
<td>General locality</td>
<td>Kleberg County</td>
</tr>
<tr>
<td>Locality</td>
<td>Cayo Del Mazon</td>
</tr>
</tbody>
</table>

**1951**

**CHIEF OF PARTY**
George E. Morris, Jr., Chief of Field Party
Hubert A. Paton, Baltimore Photo Office

**LIBRARY & ARCHIVES**

DATE **Nov 5 1953**
DATA RECORD

T - 9192

Project No. (II): Ph-36(48)Q

Quadrangle Name (IV): Riviera Beach, NE

Field Office (II): Brownsville, Texas

Chief of Party: George E. Morris, Jr.

Photogrammetric Office (III): Baltimore, Md.

Officer-in-Charge: Hubert A. Paton

Instructions dated (II) (III):
14 February 1949, Supplement No. 1 (Field) 9 May 1949
Supplement No. 2 (Field) 26 July 1949
Supplement No. 2 (Field) 28 July 1949
Office compilation assignment 8 June 1949

Copy filed in Division of Photogrammetry (IV)
Office Files

Method of Compilation (III): Graphic

Manuscript Scale (III): 1:20,000

Stereoscopic Plotting Instrument Scale (III):

Scale Factor (III): 1.000

Date received in Washington Office (IV): 5-23-50

Date reported to Nautical Chart Branch (IV): 9-26-50

Applied to Chart No. 894

Date: 11-15-51

Date registered (IV): 10-4-52

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N. A. 1927

Vertical Datum (III): MSL

Mean sea level except as follows:
Elevations shown as (F) refer to mean high water.
Elevations shown as (L) refer to sounding datum.
I.e., mean low water or mean lower low water.

Reference Station (III): FORALES, 1949

Lat: 27° 25' 59.47" (1890.4m)
Long: 97° 36' 14.21" (3209.4m)

Plane Coordinates (IV):

State: Texas
Zone: South

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office,
or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.
Areas contoured by various personnel
(Show name within area)

(i), (ii), (iii)
DATA RECORD

F.M. Wisiecki
Field Inspection by (II): J.H. Clark
Date: July, August & September 1949

Planetary contouring by (II): F.M. Wisiecki
J.H. Clark
Date: July, August & September 1949

Completion Surveys by (II): William H. Shearouse
Date: Nov. 1951

Mean High Water Location (III) (State date and method of location):
Not mapped. See 57, this report.

Projection and Grids ruled by (IV): W.E.W.
Date: 10-18-49

Projection and Grids checked by (IV): H.D.W.
Date: 10-21-49

Control plotted by (III): F.J. Tarcza

Date: 12-27-49

Control checked by (III): W.L. Llewellyn

Date: 12-30-49

Radial Plot of Survey by (III): F.J. Tarcza

Date: 1-18-50

Stereoscopic Instrument compilation (III):

Planimetry

Date:

Contours

Date:

Manuscript delineated by (III): M.L. Bloom
Date: 3-8-49

Photogrammetric Office Review by (III):
J.W. Vonasek
Date: 5-2-12-50

Elevations on Manuscript checked by (II) (III): J.W. Vonasek
Date: 4-27-50
Camera (kind or source) (III): U.S.C. & G.S. single lens type "0", 6" focal length.

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<td>12-8-48</td>
<td>1309</td>
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<td>48-0-1394 to</td>
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<td>1:20,000</td>
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<tr>
<td>48-0-1397</td>
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</table>

Tide (III)

No tide; see field report

Reference Station: The mean range of tide in
Subordinate Station: Baffin Bay is less than 1/2 foot.
Subordinate Station: The mean range of tide in

Washington Office Review by (IV): E.H. Ramey

Final Drafting by (IV):

Drafting verified for reproduction by (IV):

Proof Edit by (IV):

Land Area (Sq. Statute Miles) (III): 56
Shoreline (More than 200 meters to opposite shore) (III): None
Shoreline (Less than 200 meters to opposite shore) (III): 8 mi.
Control Leveling - Miles (II): 25.0
Number of Triangulation Stations searched for (II): 95:
Number of S.Ms searched for (II): 15:
Number of Recoverable Photo Stations established (III): none
Number of Temporary Photo Hydro Stations established (III): none

Remarks:

#HINDJOSO 1949 reported although just inside quadrangle T-9193.

STATISTICS OUTSIDE THE QUADRANGLE (ALSO PROJECT):

(1) Triangulation
   a. USG&GS - 5 stations were searched for, 5 were recovered, and 4 were identified.
   b. USGS - 5 stations were searched for, 5 were recovered, and 5 were identified.

(2) Bench Marks
   a. USG&GS - 16 were searched for and 15 were recovered.
   b. USGS - 5 were searched for and 5 were recovered.
Project Ph-36(45) consists of fifty-two quadrangles at 1:20,000, each 7.5 minutes in latitude and longitude, covering the Gulf Coast of Texas and the Intracoastal Waterway from Aransas Bay to Brownsville and the Mexican Border. Adjoining the project to the north is a series of shoreline surveys in Part IV of Project Ph-14(45).

Information concerning Ph-36(45) in its broader aspects will be included in a project completion report to be compiled at the conclusion of the review of all surveys in this project.

Twenty-six of the quadrangles in this project are topographic surveys and are to be published at 1:24,000 scale by the Geological Survey. The other twenty-six quadrangles are planimetric surveys. Of these, nineteen are to be used as bases by the Geological Survey for the compilation of 7.5 minute topographic quadrangles and will not be published as planimetric maps. The remaining seven, T-9176, T-9177, T-9178, T-9181, T-9182, T-9209, and T-9210, will be published as planimetric maps.

Cloth-backed lithographic prints of the original manuscript at compilation scale and the descriptive reports for all maps in this project will be filed in the Bureau archives. Cloth-backed copies of the published topographic quadrangles at 1:24,000 scale will also be filed.

All special reports except the Geog. Names Report will be filed in the Project Completion Report.
2. AREAL FIELD INSPECTION

This quadrangle is situated in the north central part of Kleberg County, Texas. The relief varies from prominent along the eroded streambeds and mesquite covered ridges to relatively flat in the remaining areas. The soil is a sandy clay silt loam that is typical of the coastal prairie region. The silt and clay content is heavy enough to make the area very difficult to traverse, even with four-wheel drive vehicles, when wet.

The entire quadrangle is in the Laureles Division of King Ranch and is used exclusively for grazing purposes. The area is unpopulated and the several buildings shown on the field inspection photographs include a few bunkhouses that are used during roundups. The area is accessible only through locked gates. Because of the noted absence of cultural features; fences, windmills, and corrals have been indicated on the field inspection photographs.

Photography was adequate for field work and no vegetation growths peculiar to the general area were encountered. A heavy growth of grass, generally found between the five and ten foot contour, photographed with practically the same tone as the scrub that is found on higher ground. However, the grass is represented by a uniform tone whereas the scrub appears as slightly mottled. In many areas the growth from open to scrub is very gradual and the line of demarcation is indefinite. For this reason the field inspector has delineated several marginal growths that might give the compiler trouble.

Field inspection was performed on the contour photographs.

Field Editor see paragraph 5 concerning the delineation of Agua Dulce Creek (Cayo del Mazon and Cayo de Hinoso).

3. HORIZONTAL CONTROL

See "Special Report, Supplemental Control, Project Ph-36(48)." See § 14, this report.

The station mark for USC&GS station HINDEJO 1949 falls just east of the quadrangle and in quadrangle T-9193( ). The azimuth mark is just inside this quadrangle. Recovery and identification data are submitted with this quadrangle. Filed in Div. of Photogrammetry.

The following USC&GS third-order 1949 intersection stations established by this field party within the limits of photography were not identified because of a plethora of other identified control:

BURRO WINDMILL; GUAYACAN WINDMILL; HUISACHE WINDMILL;
NORIA DAN WINDMILL; ZACAHUISTLE WINDMILL.
The following USGS stations, north of the quadrangle, were recovered and identified:

**PRIM TRAV STA NO 5 1922 TEXAS FL8**

- **6** FL9
- **32Y** A8
- **33Y** A9

USGS station PRIM TRAV STA NO 3LY 1922 TEXAS A7, also north of the quadrangle, was not identified since it is a reference mark for USC&GS station CHILTIPII 1949. CHILTIPII was identified.

Horizontal control identification was made on the following photographs:
- 48-0-1356
- 48-0-1359
- 48-0-1360
- 48-0-1392
- 48-0-1393
- 48-0-1394
- & 48-0-1395

4. **VERTICAL CONTROL**

Within the quadrangle, the following USC&GS second-order bench marks were recovered and identified approximately on the contour photographs:
- R 632
- S 632
- T 632
- U 632
- V 632
- W 632
- X 632
- Y 632
- Z 632
- A 634
- F 920
- G 920
- X 919
- Y 919

Humble Oil & Refining Company bench mark L-17, believed to be second-order, was identified approximately on contour photograph 48-0-1397 and Form 638 submitted. (See quadrangle T-9196( ) for complete information and records of Humble Oil & Refining Company levels).

To provide additional control for the contours, 25 miles of fourth-order levels were run between USC&GS second-order bench marks in the immediate area and TEM's 92-01 to 92-37 inclusive were established. The maximum error of closure was 0.75 ft., and all closures in excess of 0.36 ft. were prorated throughout the loop in error. Level points (TEM's) were spotted on the contour photographs.

5. **CONTOURS AND DRAINAGE**

Contouring was done by standard planetable methods on single lens ratio prints. Photographs were carefully examined under the field stereoscope prior to field work and again before inking of the pencil contours.

Field contouring was greatly facilitated in the scrub areas by occupying, with planetable, a platform built atop a standard panel truck; and in the large open areas by allowing the roadmen to use vehicles.

Vertical accuracy checks run as a check on the topographer along with the required changes in the contours have been indicated in violet ink. Original contours in brown ink that were found in error have been deleted with "X's" in green ink. See § 53 this report.
Satisfactory contour junctions were made with quadrangle T-9191( ) on the west, quadrangle T-9193( ) on the east, and quadrangle T-9196( ) on the south. A planetable traverse was run along the project limit on the north side of the quadrangle.

Contouring was done on the following photographs: 48-0-1356 to 48-0-1359 inclusive; 48-0-1394 to 48-0-1397 inclusive.

The entire quadrangle drains into Alazan Bay. Agua Dulce Creek (Cayo del Mazon and Cayo de Hinoso) has been classified as perennial by the field inspector and the approximate limits of the streambed where running water is believed to be usually found have been delineated on the contour photographs. This field delineation was accomplished on 18 October 1949 and follows a definite photographic tone. However, the water level is influenced primarily by wind action upon the waters of Alazan Bay, and a brisk, prevailing southerly wind will force water up the creek beyond the north limit of the quadrangle. The slope between the center of the delineated stream and the storm water, or wash, line is usually a constant flat slope, and when not covered by water there is no distinguishable perennial streambed limit. For these reasons it is difficult to delineate anything but an approximate streambed limit and it is recommended that the field editor verify the field inspector's delineation.

The storm water line, or wash line, results from the action of unusually strong prevailing southerly winds on Alazan Bay, or from excessive rain runoffs, and is very near the vegetation line, or the five foot contour, whichever is found farther offshore. A more exact location would be impractical without precise planetable methods. See §68, this report.

6. WOODLAND COVER

Woodland cover consists only of scrub growths of mesquite, principally on the ridges, and covers approximately ten per cent of the entire quadrangle. See item 67, this report.

7. SHORELINE AND SHORELINE FEATURES

The mean water line of Alazan Bay does not quite extend into this quadrangle. All elevations in the center of streambeds entering the quadrangle and along the shoreline of Alazan Bay included in the SE corner of the quadrangle are above 1.4 ft. See contour photographs for this quadrangle, quadrangle T-9193( ), and quadrangle T-9196( ). See §68, this report.

8. OFFSHORE FEATURES

Inapplicable.

9. LANDMARKS AND AIDS

Inapplicable.
10. **BOUNDARIES, MONUMENTS, AND LINES**

See "Special Report, Boundaries, Baffin Bay to Latitude N 28°00', Project Ph-36(48)." Filed in Div. of Photogrammetry. See §47, this report.

11. **OTHER CONTROL**

Two azimuth marks within the quadrangle, HINDJOSO 1949 and PORTALES 1949, were located by chaining the distances from the station marks, and the measurements are submitted on Form M-2226-12, and also included on the recovery notes for the stations.

The quadrangle is too far from navigable water to require the establishment of topographic stations.

12. **OTHER INTERIOR FEATURES**

All roads were classified in accordance with Photogrammetry Instructions No. 10, dated 14 April 1947, and the Topographic Manual. All roads within the quadrangle are private.

All buildings to be shown have been classified in accordance with Photogrammetry Instructions No. 29, dated 1 October 1948, and the Topographic Manual.

Two former Navy auxiliary landing fields, Field 14 and Field 15, are within the quadrangle and have been indicated. The Navy has abandoned both fields, and they have reverted back to their original use as cattle pastures and see only occasional use by sportsmen flying small planes.

13. **GEOGRAPHIC NAMES**

See "Special Report, Geographic Names, Aransas Bay to Baffin Bay, Project Ph-36(48)." filed in Geographic Names Section, Div. of Charts.

14. **SPECIAL REPORTS AND SUPPLEMENTAL DATA**


Records, Quadrangle T-9192( ), to Baltimore 26 October 1949 by letter of transmittal Ph-36 Field 42.

Submitted
21 October 1949

James H. Clark
Cartographic Survey Aid

Approved
26 October 1949

George E. Morris, Jr.
Chief of Party
<table>
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<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION</th>
<th>DATUM</th>
<th>LATITUDE OR y-COORDINATE</th>
<th>LONGITUDE OR x-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS</th>
<th>DATUM CORRECTION</th>
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1 FT. = 304.8006 METER

COMPUTED BY: W. Lineweaver  
DATE: 19 December 1949

CHECKED BY: F.J. Tarcza  
DATE: Dec. 22, 1949
PHOTOGRAHMETRIC PLOT REPORT

The photogrammetric plot report for this survey is part of the descriptive report for Survey No. T-9191, submitted to the Washington Office 3 May 1950.

31. "DELINEATION"

The delineation was by graphic methods.

A discrepancy overlay has been prepared and is being submitted with this manuscript. The field inspection and photo coverage was complete and satisfactory.

32. "CONTROL"

The identification and density of horizontal control was adequate.

33. "SUPPLEMENTAL DATA"

Geographic names standard dated 11-4-49 on the Sarita quadrangle and Petronilla quadrangle. Data on names filed in Geographic Names Section, Div. of Charts.

34. "CONTOURS AND DRAINAGE"

No comment.

35. "SHORELINE AND ALONGSHORE DETAILS"

There is no shoreline in the area. The storm water line or wash line was delineated below the five foot contour to avoid merging the two lines. See § 7, this report. Also § 68 of this report.

36. "OFFSHORE DETAILS"

None.

37. "LANDMARKS AND AIDS"

None.
38. **CONTROL FOR FUTURE SURVEYS**

Forms 524 for Portales Azimuth Mark, 1949 and Hindjuso Azimuth Mark, 1949, were prepared in the compilation office and are being submitted with this manuscript.

39. **JUNCTIONS**

Junctions to the west with Survey No. T-9191, to the south with T-9196 and to the east with T-9193 have been made and are in agreement. There is no contemporary survey to the north.

40. **HORIZONTAL AND VERTICAL ACCURACY**

No comment. See § 53 of this report.

41. **BOUNDARIES**

This survey is wholly within the boundaries of Commissioner, Precinct 4, Kleberg County. There are no boundaries in the area.

42 through 45

Inapplicable.

46. **COMPARISON WITH EXISTING MAPS**

Comparison was made with the Corps of Engineers, U. S. Army, Sarita quadrangle, scale 1:125,000, edition of 1920, revised in 1928.

47. **COMPARISON WITH NAUTICAL CHARTS**

A small area in the southeast corner of this survey appears on Chart No. 1286 published 8/1/49 corrected to September 19, 1949, but in such a generalized manner that comparison was not practical.

Respectfully submitted

Mary Louise Bloom
Cartographic Draftsman

Approved and forwarded
23 May 1950

Hubert A. Paton
Comdr., USCGS
Officer in Charge
PHOTOGRAMMETRIC OFFICE REVIEW
T-9192

1. Projection and grids [Jaw]
2. Title [Jaw]
3. Manuscript numbers [Jaw]
4. Manuscript size [Jaw]

CONTROL STATIONS
5. Horizontal control stations of third-order or higher accuracy [Jaw]
6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) [Jaw]
7. Photo hydrometric stations [Jaw]
8. Bench marks [Jaw]
9. Plotting of sextant fixes [None]
10. Photogrammetric plot report [Jaw]
11. Detail points [Jaw]

ALONGSHORE AREAS
(Nautical Chart Data)
12. Shoreline [None]
13. Low-water line [None]
14. Rocks, shoals, etc. [None]
15. Bridges [None]
16. Aids to navigation [None]
17. Landmarks [None]
18. Other alongshore physical features [None]
19. Other alongshore cultural features [None]

PHYSICAL FEATURES
20. Water features [Jaw]
21. Natural ground cover [Jaw]
22. Planetary contours [Jaw]
23. Stereoscopic instrument contours [Jaw]
24. Contours in general [Jaw]
25. Spot elevations [Jaw]
26. Other physical features [Jaw]

CULTURAL FEATURES
27. Roads [Jaw]
28. Buildings [Jaw]
29. Railroads [None]
30. Other cultural features [Jaw]

BOUNDARIES
31. Boundary lines [None]
32. Public lands lines [Jaw]

MISCELLANEOUS
33. Geographic names [Jaw]
34. Junctions [Jaw]
35. Legibility of the manuscript [Jaw]
36. Discrepancy overlay [Jaw]
37. Descriptive Report [Jaw]
38. Field inspection photographs [Jaw]
39. Forms [Jaw]

Reviewer

Supervisor, Review Section or Unit

FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

__________________________
Compiler

__________________________
Supervisor

43. Remarks:
Field Edit Report, T-9192

51. Methods.—To make a thorough ground comparison, all roads and trails were ridden out. The classification of each was checked and all natural and cultural features compared with the compilation. At the same time, questions raised by the reviewer were answered after the necessary investigation or study of the feature was made.

Deletions, additions and corrections were made on the Field Edit Sheet, Discrepancy Print or the photographs. Where made on the photographs, reference to the photograph number was noted on the Discrepancy Print. Photographs used were: 48-0-1356, 1394, 1395, 1396, and 1397.

Violet ink was used for additions and corrections; green for deletions.

52. Adequacy of compilation.—The compilation appears to be very good and will be adequate after application of field edit information. See item 66

53. Map accuracy.—No horizontal accuracy test was specified, but from visual inspection and points used to take-off and tie-in with the planetable, the horizontal accuracy appears excellent. See item 66

Standard plane-table methods were used to run a vertical accuracy test in the vicinity of latitude 27 degrees 28.5 minutes, longitude 97 degrees 33.5 minutes. It began horizontally at a road intersection (point A on the Field Edit Sheet) and ended at points B and A on the Field Edit Sheet, which are road intersections. Vertically it began and ended at bench mark Y 919. The horizontal error of closure was 20 feet in azimuth; the vertical 0.5 foot low. No adjustments were made.

Results are as follows:

32 points tested.
29 points were within 1/2 contour interval.
3 points tested were in error more than 1/2 contour interval.
No points were in error more than 5 feet.

91% of all points were within the allowable limits of standard mapping accuracy.

Minor corrections in the contours have been made on the Field Edit Sheet. The contour pattern is good and believed to be adequate.

54. Recommendations.—No recommendations are offered.

55. Examination of proof copy.—It is recommended that the proof copy of the map be sent to the King Ranch Office, Kingsville, Texas, attention Mr. Robert C. Wells, for examination.
Geographic names.--JABONGILLOS RANCH was the only name in question and it was found to be correct. The authority for this name is the King Ranch foreman. He found no discrepancies in charted names.

Respectfully submitted,
29 November 1951

William H. Shearouse
William H. Shearouse,
Cartographer

Approved
3 Dec. 1951

Lucy L. Bernstein
28 November 1951

To: The Director  
U. S. Coast and Geodetic Survey  
Washington 25, D. C.

Subject: Vertical Accuracy Test, Quadrangle T-9192,  
Project Ph-36(48)

A vertical accuracy test of approximately 2 miles length was run by  
standard planetical methods in quadrangle T-9192, in the vicinity of lat-  
titude 27 degrees 28.5 minutes, longitude 97 degrees 33.5 minutes, with the  
following results:

32 points tested.  
29 points were within $1\frac{1}{2}$ contour interval.  
  3 points were in error more than $1\frac{1}{2}$ contour interval.  
  No points were found in error more than 5 feet.  
  91% of points tested were within the allowable limits of standard  
mapping accuracy.

Horizontal origin and termination were at road intersections. Error  
of closure was 20 feet in azimuth.

Vertically it began and ended at bench mark Y 919. Error of closure  
was 0.5 foot low.

No adjustments were made.

Respectfully submitted,

William H. Shearouse,  
Cartographer

Approval  
3 Dec. 1951

Lucy L. Benedict
48. GEOGRAPHIC NAMES

- Burro Windmill *
- Cayo de Hinosa
- Cayo del Mazón
- Chiltipin Creek
- Commissioners Precinct 4
- Esquina Windmill
- Field 14 Windmill *
- Field 15 Windmill *
- Guyacan Windmill *
- Hinojoseno Artesian Well
- Huasache Windmill *
- Jaboncillos Ranch (Position on sheet agrees with names report by Nelson)
- King Ranch
- Kleberg County
- Little Tule Lake
- Noria Maria Windmill *
- Petronilla Creek
- Portales Verde Windmill (Position on sheet agrees with names report by Nelson)
- Tunas Creek
- Zacahuistle Windmill *

* Shown as "well" in all instances to maintain consistency. Both well and windmill will be indicated on finished map and manuscript. ENR.

Names underlined in red are approved 4-25-51. L. Hecker
62. Comparison with Registered Topographic Surveys:

1627 1:20,000 1931-32

Survey T-9192 is to supersede this prior survey for nautical charting purposes for common areas.

63. Comparison with Maps of Other Agencies:

Surita quadrangle (7.0 X 7) 1:125,000 ed. 1920 rev. 1928

64. Comparison with Contemporary Hydrographic Surveys:

None

65. Comparison with Nautical Charts:

1236 1:80,000 1952 corr. 52-1/1

Changes and corrections resulting from the field edit and review of this map are shown on the manuscript in red.

66. Accuracy of Results and Future Surveys:

This map complies with project instructions and meets the national standards of map accuracy.

67. Woodland Cover:

Reference Item 6. An area of larger denser growth was indicated on field photograph 49-0-1-57 as "trees" and is shown as such in the east central portion of this map.

68. Shoreline:

For a more comprehensive discussion of the mapping of the shoreline in Project Ph-36(93) see copies of instructions and correspondence which follow this report.

Reviewed by:

Everett F. Ramsey

Everett F. Ramsey
To: Comdr. George E. Morris, Jr.
U. S. Coast and Geodetic Survey
Airport Branch Post Office
Brownsville, Texas

Subject: Instructions - Project Ph-36(48)-Field,
Supplement 1

Reference: Your letter of 1 February 1950. Subject:
Shoreline in the Laguna Madre and previous
correspondence on this subject.

1. These supplemental instructions cover the mapping
of shoreline in Laguna Madre.

2. Where the mean high-water line is definite and
can be readily distinguished on the ground, it shall be
identified on the photographs and will be delineated on
the manuscripts in the usual manner with a solid black
line. As for example, at the southern end of the Laguna
and along parts of the west shore the high-water line
appears to be quite definite and subject to identification
and delineation in the usual manner.

3. In the mud flat areas of Laguna Madre or in any
part of the Laguna where the mean high-water line is
indefinite and is not subject to accurate identification
on the photographs, it shall be omitted and will not be
mapped. In such areas the shoreline will be mapped as
indicated in paragraph 4.

4. In the mud flat areas and in other areas where
the mean high-water line is indefinite and is omitted as
stated in paragraph 3, the storm water line shall be identi-
fied on the photographs and shall be mapped as the shore-
line. The storm water line shall be shown on the manuscripts
by a broken black line to represent the edge of land that is
seldom, if ever, inundated. This line will be the limit of the
buff tint on nautical charts.

5. In the mud flat areas and in other areas of the
Laguna Madre where extensive areas are bare at low water
stage, the approximate low-water line shall be indicated
by the field inspection and shall be delineated on the
manuscripts with a dotted line. This line will mark the limits of flats that are frequently inundated and will define the limits of the green tint on the nautical charts.

6. Each map manuscript on which any part of the shoreline is defined by the broken line specified in paragraph 4 shall carry the following note and this note shall be shown on the published maps:

Water stages in this area vary widely with meteorological conditions; the mean high-water line is extremely indefinite and has been omitted. The usual mean high-water line has been replaced with a broken line that defines the edge of land that is seldom, if ever, inundated. The dotted line represents the approximate mean low-water line and defines the edge of areas that are frequently inundated.

7. One flight of 1,20,000 nine-lens photographs will be flown along the center of the Laguna Madre as soon as aerial photography is started this spring, probably in late March or early April. The officer-in-charge of the photographic mission will contact you and will endeavor to fly these photographs when the water stage is either normal or below normal. These photographs will be taken especially for the field delineation of the approximate low-water line.

8. This office will consider favorably your estimates for the hire of a plane for field inspection of the photographs for delineation of the mean low-water line.

9. With reference to the last paragraph, page 2, of the reference letter, you are authorized to run cross-section level lines or do any surveying you consider economically justifiable for delineating the approximate mean low-water line on the photographs. You should keep in mind that the line to be mapped is an approximate mean low-water line for charting purposes and that it is not the intent of these instructions that the exact mean low water contour be mapped. If relatively stable high water conditions occur, short sounding lines at intervals normal to the mean low-water line might be preferable to the level lines mentioned in your letter. It is assumed that signals from opposite shores of the Laguna Madre would be visible for this purpose and that soundings from a skiff might serve the purpose as well as the level lines.
10. Reference should be made to the Humble Oil Company map and other tested survey data in sketching the approximate mean low-water line on the photographs. The low water contour will not be copied directly from such maps but will be compiled from the approximate line shown on the field inspection photographs.

11. Please do not hesitate to write to the office if you have further questions regarding these instructions.

/S/ L. O. COLBERT

Director
Excerpt from Bureau letter of April 26, 1950 to Mr. Nelson Jones, Humble Oil & Refining Company.

You are correct in your contention in paragraph 1 of page 2 of your letter "that the mean high water line is never indefinite where sufficient work has been done to determine it in accordance with accepted practice", but for the purposes for which our surveys are intended, it is only necessary generally to delineate a line which approximates the mean high water line. In accordance with this understanding, the following changes are being made in statements 1, 2, and 4 quoted under those numbers on the first page of your letter.

1. Where the high water line is indicated by definite differences in the terrain and can be readily distinguished on the ground, as in the southern end of Laguna Madre and along parts of the west shore, it shall be shown in the usual manner with a solid black line.

2. In the mud flat areas, or in any part of the Laguna madre where the high water line is not indicated by differences in appearance of the terrain, the high water line shall be omitted and will not be mapped. In these areas the storm water line shall be mapped as a broken black line to represent the edge of land that appears seldom, if ever, to be inundated, except perhaps in violent storms. This line will be the limit of the buff tint on nautical charts.

4. Each map on which the storm water line is shown shall carry the following note:

Water stages in this area vary widely with meteorological conditions; where the high water line is very indefinite it has been omitted. The usual high water line has been replaced with a broken line to indicate the edge of land which appears to be seldom, if ever, inundated except perhaps in violent storms. The dotted line represents the approximate low water line and the edge of areas usually inundated.

It must be emphasized that for the purposes of the nautical charts an approximation to mean high water is all that is needed for the guidance of the mariner, and this so-called high water line is estimated by the topographer from the physical appearance of the beach and the stage of the tide at the time the survey is made. Those using our charts must keep this limitation in mind, particularly if they are to be used for purposes for which the charts are not intended.
As you will appreciate from our letter dated December 20, 1949, it would be impracticable to attempt to delineate the line of mean high water on the charts of the Laguna Madre without a careful and thorough investigation made pursuant to law by our own engineers. The present appropriations of the Bureau do not provide for this type of investigation, except when Federal interests are involved.

The wording of a descriptive note for the areas in the vicinity of Laguna Madre is still under study and Comdr. Morris will be kept advised of the results of these studies.

The wording of the explanatory note to be shown on charts and maps as shown in paragraph 4 is the result of subsequent conferences and has been adopted as the final wording in place of the wording given in paragraph 6 of the Project Instructions, Supplement 1, dated 24 February 1950.

O. S. Reading,
Chief, Division of Photogrammetry
Memorandum

To: Atlantic Region Engineer
   Central Region Engineer

From: Chief Topographic Engineer (RT-4)

Subject: Coast Survey manuscripts covering recent surveys on the southern Texas coast.

The following information should be noted by your cartographers for use when subject manuscripts are received from the Coast and Geodetic Survey for drafting and publication by the Geological Survey. Manuscripts covering the Laguna Madre areas (see the Lopena Island and Saltillo Ranch 15-minute maps) will be among the first deliveries from the South Texas project area of Coast and Geodetic Survey.

In a recent conference with Coast Survey personnel and Mr. Wilson of Humble Oil Company, some of the unusual features characterizing these areas were discussed. It appears that the mean high water line (our normal shoreline) cannot be determined in the Laguna Madre area and others of like character. Our old maps, and the new C&GS compilations, delineated as shoreline the limits of occasional inundation. It is now recognized that this line should be otherwise designated to avoid the implication that much of the Laguna Madre area is of a normal tideland nature. Actually most of this area is known as the Laguna Madre Flats--an essentially mainland feature. Except for a very small sector which Humble Oil mapped on a large scale (with 0.2 foot contour interval) the actual line of mean high water is indeterminate within feasible costs. The problem therefore resolves itself to one of an editorial nature, to devise some means of presenting the available facts in understandable form, and to convey the actual conditions properly for general map use.

The consensus recommendation is that of limiting the blue tint in the Laguna Madre area, and others of similar nature, to the low water line. The limits of occasional inundation (shown on our old maps and the C&GS manuscripts as normal shoreline) should be delineated by broken line on the dark blue drawing and should be described in the legend as noted below. This is an identifiable feature on the ground, and as such is an essential item of map content.

The treatment recommended herewith will pose a minor problem in occasional spots where the normal high waterline (shore) line is dropped (or changes to the line limiting occasional inundation) in estuaries from the Gulf. We understand that the low water line will closely parallel the shoreline in such cases and the blue
tint would therefore lack a bounding line only for a tenth of an inch or so.

Question was also raised concerning the relative propriety of the generic terms island vs potrero for specifically named isolated segments above the limits of occasional inundation. This question will be resolved by field check soon to be made by USC&GS and we should use the terms that will be indicated on their final compilations. Note attached copy of letter of April 24 from the Humble Oil Company to the Coast and Geodetic Survey.

The unusual conditions noted above will call for a marginal note on maps so affected, such as the following:

Water stages vary with meteorological conditions. Approximate limits of occasional inundation shown by broken blue lines where mean high water (normal shore line) is undetermined for lack of visual evidence.

s/ Gerald FitzGerald
Chief Topographic Engineer
June 7, 1951

Mr. S. W. Oberg
Chief Engineer
Humble Oil & Refining Co.
Post Office Box 2180
Houston 1, Texas

Dear Mr. Oberg:

Careful consideration has been given to the several suggestions contained in your letters of June 27, 1950, March 20, 1951, and April 24, 1951, relative to the symbolization, notations, and nomenclature to be used on manuscript topographic maps and nautical charts of the Coast and Geodetic Survey covering the Laguna Madre area of Texas, or similar areas elsewhere.

In the light of these suggestions and the conferences had with your representatives, this Bureau is prepared to adopt the following procedures relative to these matters:

A. SYMBOLIZATION FOR MANUSCRIPT TOPOGRAPHIC MAPS
(These are prepared as black and whites only)

1. A solid heavy black line will be used for the high-water line where this feature is definite and marked by visible evidence on the ground.
2. Where the high-water line is indefinite and is not marked by visible evidence on the ground, a broken line will be used to indicate the approximate inshore limits of areas subject to inundation.
3. A dotted line will be used to represent the approximate low-water line.

B. SYMBOLIZATION FOR NAUTICAL CHARTS

1. Where the high-water line has been delineated on the topographic map by a solid heavy black line, it will be so shown on the nautical charts.
2. Where the high-water line has not been delineated on the topographic map, a light broken line will be used on the charts to indicate the approximate inshore limits of areas subject to inundation.
3. The low-water line will be shown by a dotted line.
4. Inshore of (1) or (2) above, a bluff tint will be used to show land above high water.
5. Between (1) or (2) above and the low-water line, a green tint will be used.
6. Offshore of (3) the area will be left blank or a blue tint will be used.
C. SYMBOLICATION FOR QUADRANGLE MAPS

It is the understanding of this Bureau that the U. S. Geological Survey will limit the blue tint on the quadrangle maps to the low-water line for the areas where the high-water line is indefinite. In such cases the area inshore of the low-water line will be left untinted or will be symbolized by a fine black stippling.

D. NOTATIONS TO BE USED

1. On Manuscript Topographic Maps.--The following notation will be used on the manuscript topographic maps where the high-water line is omitted:

   Note:
   "Water stages in this area vary widely with meteorological conditions. The high-water line has been omitted where it is indefinite and is not marked by visible evidence on the ground. The broken line indicates the approximate inshore limits of areas subject to inundation. The dotted line represents the approximate low-water line."

2. On Nautical Charts.--No notations regarding the omission of the high-water line or the nature of the broken line will be shown on the published chart. It is considered that the color symbolization provided for under section A above will sufficiently designate the character of the area.

3. On Quadrangle Maps.--It is the understanding of this Bureau that the U.S. Geological Survey will place a notation in the margin of the map covering this area substantially the same as given in D (1) above but in an abbreviated form.

Regarding other notations suggested in your letters of June 27, 1950, and March 20, 1951, for use on our manuscript topographic maps and nautical charts, to the effect that "This map (or chart) is not intended for use as evidence of boundaries or property ownership," I regret that we cannot comply with this request. As was stated in my letter of October 10, 1950, it is the Bureau's desire to have its surveys and charts correctly interpreted by those having occasion to use them. It is also our desire to have them serve a maximum usefulness. While their primary purpose is to promote safety in navigation, we know from experience that they have a great many collateral uses. They have been used many times in the past in boundary disputes as evidence of the condition of our coastline as of a given date, or to show the successive changes (both natural and artificial) that have taken place in an area over a period of years. We would not want to
circumscribe there uses. The limitations that must be placed upon our surveys and charts are set out in the pamphlet titled "Coast and Geodetic Survey Data--An Aid to the Coastal Engineer," a copy of which was previously sent to you. I trust you will understand our position in this matter.

E. NOMENCLATURE

This office is cognizant of the importance of using correct geographic names on its surveys and charts, and special efforts are taken by our field parties and in our office investigations to arrive at the most probably correct name. Where published names differ from well-established local usage, our field parties are instructed to obtain verification from at least three local authorities. This was the case with the names that were placed on the advance prints of topographic maps T-9203 to T-9208, inclusive, that were sent to you.

The comments contained in your letter of March 20, 1951, as well as in the several letters received from interested parties, throw new light on the nomenclature problem of this area. In view of the conflicting information, a reevaluation is required of the correctness of the tentative names adopted by this Bureau.

It is our established practice to submit all names (generic or specific) of a conflicting nature to the U. S. Board on Geographic Names for final settlement. This Board is charged with responsibility for deciding all name conflicts. The Federal agencies are required to conform to the decisions of the Board. All of the information that has been received thus far, including letters, maps, etc., will be furnished to the Board. It might be mentioned that in 1943 the Board approved the name Lomeno Island, rejecting the form Potrero Lomena.

Should you wish to submit additional information to the Board, you may send it to the U. S. Board on Geographic Names, Department of the Interior, Washington 25, D. C. Pending final decision by the Board, conflicting names will be appropriately indicated on our topographic maps.

I wish to assure you of our full cooperation in these matters. It was indeed a pleasure to have been able to meet personally with representatives of your company. If I may be of further service to you, please do not hesitate to call on me again.

Very truly yours,

s/ R. F. A. Studds
Rear Admiral, USCG & GS
Director
# Nautical Charts Branch

**Survey No. 9192**

Record of Application to Charts

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<th>Chart</th>
<th>Cartographer</th>
<th>Remarks</th>
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<td>894</td>
<td>McNamara</td>
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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.