U.S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey: TOPOGRAPHIC
Field No.: Ph-36(48)E Office No.: T-9213

LOCALITY
State: TEXAS
General locality: LAGUNA MADRE
Locality: MOUTH OF ARROYO COLORADO

19452

CHIEF OF PARTY
G.E. Morris, Jr., Chief of Party.
H.A. Paton, Baltimore Photogrammetric Office

LIBRARY & ARCHIVES
DATE: Nov 6 - 1953
DATA RECORD

T-9213

Project No. (II): Ph-36(48)E Quadrangle Name (IV):

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

8 June 1949
14 Feb. 1949
26 July 1949
28 July 1949
24 Feb. 1950

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): 12-11-50 Date reported to Nautical Chart Branch (IV): 12-18-50

Applied to Chart No. 897 Date: Nov 1951 Date registered (IV): 10-9-52

Publication Scale (IV): 1:24,000 Publication date (IV):

Geographic Datum (III): N. A. 1927 Vertical Datum (III): MSL

Mean sea level except as follows:
Elevations shown as (2) refer to mean high water
Elevations shown as (3) refer to sounding datum
I.e., mean low water or mean lower low water

Reference Station (III): SKIN 2, 1939

Lat.: 26° 26' 46.881" 144.2.8m Long.: 97° 24' 42.739" 1184.1m Adjusted

Plane Coordinates (IV): Lambert Grid State: Texas Zone: South

Y = 284,934.71 X = 2,352,036.60

Roman numerals indicate whether the item is to be entered by (I) 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

Field Inspection by (II):  W. M. Reynolds
W. H. Nelson
B. F. Lampton, Jr.

Date: Dec-Jan 1950
        April 1950
        March-July 1950

Planetable contouring by (II): B. F. Lampton, Jr.
G. B. Torbert

Date: March-July 1950
        August 1950

Completion Surveys by (II):  W. H. Shearouse

Date: 21 Feb, 1952

Mean High Water Location (III) (State date and method of location): Field surveys Jan. 1950 to Aug. 1950

Projection and Grids ruled by (IV):  S.R.
Date: 9/15/50

Projection and Grids checked by (IV): H.D.W.
Date: 9/18/50

Control plotted by (III):  F.J. Tarcza
Date: 9/25/50

Control checked by (III):
Bernice Wilson
Date: 9/29/50

Radial Plot or Stereoscopic
Control extension by (III):
Frank J. Tarcza
Date: 10/20/50

Stereoscopic Instrument compilation (III):
Planimetry
Contours

Manuscript delineated by (III): Ruth R. Hartley
Date: 10/30/50
11/17/50
12-5-50

Photogrammetric Office Review by (III):
R. Glaser
Date: 12-5-50

Elevations on Manuscript
checked by (II) (III):
R. Glaser
Date: 12-5-50
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<th>Scale</th>
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<td>12-8-48</td>
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<td>1:20,000</td>
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<td>48-0-1292</td>
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<td>48-0-1422 to</td>
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</table>

Tide (III)

Reference Station: The mean range of tide is less than \(\frac{1}{2}\) foot.

<table>
<thead>
<tr>
<th>Ratio of Ranges</th>
<th>Mean Range</th>
<th>Spring Range</th>
</tr>
</thead>
</table>

Washington Office Review by (IV): C. H. Hanrick

Final Drafting by (IV):          
Drafting verified for reproduction by (IV):  
Proof Edit by (IV):               

Land Area (Sq. Statute Miles) (III): 48
Shoreline (More than 200 meters to opposite shore) (III): 71 statute miles
Shoreline (Less than 200 meters to opposite shore) (III): 23 statute miles
Control Leveling - Miles (II): 26.3
Number of Triangulation Stations searched for (II): 5 (2) Recovered: 4 (1) Identified: 4 (1)
Number of BMs searched for (II): 14 Recovered: 14*
Number of Recoverable Photo Stations established (III): 3 Recovered: 10**
Number of Temporary Photo Hydro Stations established (III): 0

Remarks: \(\) outside quadrangle.
* 15 BM's were recovered
** 14 BM's identified (3 as recoverable topo stations)
BM 207 was reported as a recoverable topo station but was not pricked as such.

* In the Laguna Madre Area, the periodic tide is negligible; the variation in water level depends principally on the wind.
Project Ph-36(48) 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(46).

Information concerning Ph-36(48) 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-9175, T-9176, T-9177, T-9181, T-9189, T-9204, and T-9205, will be published as planimetric maps.

Cloth-backed lithographic prints of the original map manuscripts 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 Geo. Names Report will be filed in the Project Completion Report.
2. AREAL FIELD INSPECTION

The entire land area of the quadrangle falls within the El Sabu Ranch, except for a small area southeast of the Arroyo Colorado which is within the Lincoln Ranch.

Along the western edge of the quadrangle there is heavy mesquite scrub extending into the quadrangle approximately three miles along the southern edge. To the east of the scrub there are extensive grass flats. East of the grass flats the ground drops off suddenly to low flats consisting of a mixture of sand and mud. Near the center of the quadrangle the sand and mud flats extend well inland. Around the edge of the sand and mud flats, and forming islands in the flats, are numerous sandy ridges, mostly covered with heavy, thorny scrub. The sand and mud flats gradually slope into the Laguna Madre to the east. A portion of the Intracoastal Waterway falls in the northeast corner of the quadrangle. There is a string of spoil islands to the west of the channel.

On the photographs, the mesquite scrub appears mottled gray and is clearly visible under the stereoscope. The grassy flats appear smoother gray. There are a number of lighter gray areas in the grass. These are burned off areas and are not permanent but change periodically. The whiter patches in the grassy flats are sand. There are a number of ponds, intermittent ponds, and areas subject to flooding in the mesquite and grass flats. These can be recognized by their smooth, dark appearance. The sand and mud flats appear very light. It is very difficult to distinguish water on the photographs. Water areas in the flats vary considerably, and it is not known just where the water was at the time of photography, but permanent water areas vary in appearance from black to almost white. It will be necessary for the compiler to follow field notes as to water areas.

The ratio prints are of rather poor quality compared to the contact prints. They lack detail and have insufficient contrast.

The field inspection is believed to be adequate and complete.

Field inspection was done on photographs 48-0-1289, 48-0-1290, 48-0-1292, 48-0-1422, 48-0-1423, 48-0-1424, and 48-0-1425.

3. HORIZONTAL CONTROL

The following third-order triangulation stations were established during field inspection: LOS OVEJAS WINDMILL 1949, and CHANPURADO WINDMILL 1949. See "Special Report, Supplemental Third Order Control and Aids to Navigation, Project Ph-36(48), Baffin Bay to Arroyo Colorado."

Station FELICAN 2 1913 was reported lost. A broken monument was found at the site of station FELICAN 2 1913. This was identified for use in the radial plot.
Horizontal control identification has been done on photographs 48-0-1290, 48-0-1292, 48-0-1327, 48-0-1424, and 48-0-1970.

4. **VERTICAL CONTROL**

The following are bench marks of the U. S. Engineers which were recovered: Nos. 135, 207, 209, 219, 226, 235, 236, 240, 245, 353, 359, 361, 363, and 364. These are believed to be of third order accuracy. For explanation of datum adjustment, see Field Inspection Report for Quadrangle T-91S8( ).

Fly levels were run to establish supplemental elevations for planestable contouring. The level points are designated 13-01 through 13-39, inclusive.

5. **CONTOURS AND DRAINAGE**

Contouring was done directly on 1:20,000 scale photographs by planestable methods. In the mesquite scrub areas, a planestable tower was used with very good results. In most of the quadrangle, "Walkie Talkie" radios were used for communication between the unit chief and rodmen with excellent results. Special reports will be submitted at a later date concerning the use of the planestable tower and radios.

There is no definite drainage pattern.

Contouring was done on photographs 48-0-1289, 48-0-1290, 48-0-1292, 48-0-1422, 48-0-1423, 48-0-1424, and 48-0-1425.

6. **WOODLAND COVER**

Vegetation has been classified according to Photogrammetry Instructions No. 15, dated 16 June 1947.

7. **SHORELINE AND ALONGSHORE FEATURES**

See [Exposed Report]

See "Special Report, Identification and Delination of the Shoreline of Laguna Madre, Project Ph-36(45)."

8. **OFFSHORE FEATURES**

There are no offshore features.

9. **LANDMARKS AND AIDS**

Chart Letter 897(52)

See "Special Report, Supplemental Third Order Control and Aids to Navigation, Project Ph-36(45), Baffin Bay to Arroyo Colorado."
10. **BOUNDARIES, MONUMENTS, AND LINES**

See "Special Report, Boundaries, Project Ph-36(48), Baffin Bay to the Rio Grande."

11. **OTHER CONTROL**

The following USF bench marks have been identified on the photographs as recoverable topographic stations: 207, 359, 361, and 364. Identification was done on the following photographs: 48-0-1423, 48-0-2018, 48-0-2019, and 48-0-1965.

12. **OTHER INTERIOR FEATURES**

Much of the grassy flats is quite low, and appears as though it might periodically flood. This might be true if rainfall in the area were greater. Actually, there are a number of low areas in the grassy flats which do flood in the occasional rains. These have been labeled on the photographs.

There is one graded dirt road in the southern part of the quadrangle that runs to two abandoned oil well drilling sites. All other roads are primitive. There are a number of cow paths visible on the photographs, especially on the contact prints, that should not be shown. Only those roads labeled as such on the photographs should be delineated.

There are a number of water holes for cattle. These are identifiable by the spoil on one or two sides. Some of these are fed by windmills and others are placed in low areas to catch rain water. They should be shown as ponds.

Windmills which have not been located by triangulation have been identified on the photographs.

A characteristic of the ridges along and in the sand and mud flats is that one side is usually a heavily eroded bluff, especially on the higher ridges.

There are no buildings.

The south boundary fence of the El Sauz Ranch has been identified on the photographs.

13. **GEOGRAPHIC NAMES**

See "Special Report, Geographic Names, Project Ph-36(48), Port Mansfield (Red Fish Landing) to the Rio Grande."
14. SPECIAL REPORTS AND SUPPLEMENTAL DATA


"Special Report, Identification and Delineation of the Shoreline of Laguna Madre, Project Ph-36(48)", to be submitted at a later date.


"Special Report, Boundaries, Project Ph-36(48), Baffin Bay to the Rio Grande", forwarded to Washington Office 8 June 1950;

Data, Quadrangle T-9213( ), forwarded to the Baltimore Office 17 August 1950, on letter of transmittal Ph-36 Field 90.

Submitted
8 August 1950

B. Frank Lampton, Jr.
Cartographic Survey Aid

Approved

George E. Morris, Jr.
Chief of Party
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<th>STATION</th>
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<th>DATE</th>
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<th>DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS</th>
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<td>97 22 45.104</td>
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* A NOPAL falls west of this sheet (T-9213)
PHOTOGRAMMETRIC PLOT REPORT

The photogrammetric plot report covering the area of this survey has been submitted with the descriptive report for Survey T-9215.

31. DELINEATION

Graphic methods were used.

The contours on this survey are incomplete. No contouring was done by the field party in the area to the east of the Arroyo Colorado, in Cameron County. (See item 17 of Field instructions for Project Ph-36(48) dated Feb. 14, 1949.) Contours for this area and part of Survey T-9214 may be found on the U.S.G.S. quadrangle Mouth of Arroyo Colorado, Texas, which was surveyed in 1929. Gaps in contouring were completed during field edit.

32. CONTROL

The identification, density, and placement of control were adequate.

33. SUPPLEMENTAL DATA


34. CONTOURS AND DRAINAGE

See items 5 and 31.

35. SHORELINE AND ALONGSHORE DETAILS

Shoreline inspection was adequate with the exception of the river near the northern limits of the quadrangle. This was delineated after stereoscopic examination of the photographs.

The approximate low water line was furnished by the field party.

36. OFFSHORE DETAILS

No comment
37. **LANDMARKS AND AIDS**

Form 567 is being submitted for the one aid to navigation.

There are no landmarks.

38. **CONTROL FOR FUTURE SURVEYS**

Forms 524 are being submitted for three recoverable topographic stations. B.M. 207 listed in par. 11 of Field Report as a recoverable topographic station was identified as such on photo 48-0-2013 and then erased. A different identification was made on photo 48-0-1425 but not as a recoverable topographic station; also no form 524 was submitted for this B.M. by the field party. Refer to item 4, pt.

A list of the stations has been prepared and is included in paragraph 49.

39. **JUNCTIONS**

Junction to the east with T-9214 has been made and is in agreement.

Junction to the south with T-9216 and to the north with T-9211 will be made when these manuscripts are compiled.

There is no contemporary survey to the west.

40. **HORIZONTAL AND VERTICAL ACCURACY**

No comment.

41 through 45

Inapplicable.

46. **COMPARISON WITH EXISTING MAPS**

T-9213 was compared with U.S.G.S. Mouth of Arroyo Colorado quadrangle, scale 1:31,680, edition of 1935 reprinted 1944.

Only the area east of the Arroyo Colorado is shown on the U.S.G.S. quadrangle and is contoured at 1 foot intervals. This part of T-9213 has not been contoured but the storm water line appears to agree with contours
shown on the U.S.G.S. map.

T-9213 was also compared with Corps of Engineers Tactical Map, Josephine Island quadrangle, scale 1:62,500, edition of 1931.

47. COMPARISON WITH NAUTICAL CHARTS

T-9213 was compared with Nautical Chart No. 1288, scale 1:80,000 published March 6, 1950, corrected to October 13, 1950.

Items to be applied to nautical charts immediately:

None.

Items to be carried forward

None.

Respectfully submitted
20 November 1950

Ruth R. Hartley
Carto Photo. Aid

Approved and forwarded
11 December 1950

Hubert A. Paton
Comdr., C&GS
Officer in Charge
GEOGRAPHIC NAMES

Shown on names standard and on manuscript:

Arroyo Colorado
Cameron County
Chubby
Green Hill
Hawk Island
Intracoastal Waterway
Josephine Island
Laguna Madre
Mud Island
Mullet Island
Willacy County

Shown on names standard but not on manuscript

Goose Hill — location as shown on names standard is questionable.
Loma Alta — location not given by field party.

Located by Field Editor

Ok

Located by Field Editor

Fernando — area to which this name applies is not clear.

Shown on manuscript but not on names standard

Well
Guilota (Windmill)
Las Cuestas Well (Windmill)
La Torre Well (Windmill)
Tanque Hal Well (Windmill)
Tanque Charlie Well (Windmill)
Granjeno Well (Windmill)
El Sauz Ranch

7-26-51
A.Y.W.

5-20-52
A.D.W.
49. NOTES FOR THE HYDROGRAPHER

The following are recoverable topographic stations shown on T-9213:

BM 364, (USE) 1932 50
BM 361, (USE) 1932 50
BM 359, (USE) 1932 50

SKIN 2 AZ MK (1939), 1951

U.S. Fish & Wildlife Service Nov. 5, 1952
PHOTOGRAMMETRIC OFFICE REVIEW


CONTROL STATIONS
5. Horizontal control stations of third-order or higher accuracy 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) 7. Plane hydro stations 8. Bench marks

ALONGSHORE AREAS
(Nautical Chart Data)

PHYSICAL FEATURES

CULTURAL FEATURES

BOUNDARIES
31. Boundary lines 32. Public land lines

MISCELLANEOUS

Reviewed by
Supervisor, Review Section of Unit

REMARKS
41. Remarks (see attached sheet)

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.

Compiled by
Supervisor

43. Remarks:
Field Edit Report, T-9213

51. **Methods.**—All roads were travelled by Jeep to check their classification and to answer questions raised by the reviewer. At the same time all topographic features were verified as to their existence and classification.

Additions and corrections are shown on the Field Edit Sheet or the photographs and cross-referenced.

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

Field edit information will be found on the Field Edit Sheet, the Discrepancy Print and photographs 48-C-1281, 1970, and 9-lens prints 25739 and 25740.

Field edit additions to the Field Edit Sheet were by planetable. Information shown on the photographs was by direct identification.

52. **Adequacy of compilation.**—Compilation of map details is adequate and will be complete after application of field edit information.

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 good.

The contours were checked extensively and it is believed they are now within accuracy requirements. A total of 126 points were tested and 13 of them were found to be out more than 1/2 contour interval. Most of the areas of considerable relief have been tested and the contours changed where necessary. The western part of the area had little or no relief and was not tested.

Contours in the southeast corner, taken from the U. S. Geological Survey quadrangle, were checked by standard planetable methods. The traverse originated at the center of a bridge horizontally and bench mark 135 USE, vertically. It was ended at triangulation station Pelican 2, 1913. The vertical closure was 0.4 ft. high and the horizontal closure was "flat". Contours were proved to be very good except for small areas where the storm water line has washed away. Also the ridges are narrower than when originally contoured. The storm water line was inspected and has been delineated on 9-lens office photograph 25739. Where the 5-foot contour fails to agree with the storm water line, the contour should be adjusted, for reason noted above.

54. **Recommendations.**—None offered.

55. **Examination of proof copy.**—It is recommended that the proof copy be sent to Mr. Bland Durham for examination. Mr. Durham is foreman of El Sauz Ranch and very familiar with the area. He has agreed to make the examination. His address is Rt. 1, Raymondville, Texas.
Geographic names.--Four windmills were located and the names are recommended for charting. They are LOMA ALTA WINDMILL, GRANJENO WINDMILL, TANKE HAL WINDMILL, and TANKE CHALIE WINDMILL. The names were furnished by the ranch foreman and are shown in their proper locations on the Field Edit Sheet.

56. Boundaries, monuments and lines.--A part of the Laguna Atascosa National Wildlife Refuge is within this quadrangle. The limits should be added to the map manuscript from the Boundary Map furnished by the Field Inspection Party and which is included in the Special Report on Boundaries, Baffin Bay to the Rio Grande. One boundary monument was recovered and identified on photograph 48-0-1970 as an aid in controlling the delineation of said boundary. The monument recovered marks corner number 9 on the Boundary Map and is the most northerly point of the Refuge. Form 524 is submitted for it. Corner 10 was also searched for but not found.

* Endnote: See Special Report on Boundaries, see item 14, p. 10 for further details.

See item 56 of Field Edit Report for quadrangle T-9211 for discussion of Commissioner Precinct numbers in Willacy County.

Respectfully submitted,
21 February 1952
William H. Shearouse
William H. Shearouse,
Cartographer
<table>
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<th>CHARTS AFFECTED</th>
<th>DATE</th>
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</table>

Date: 1 March, 1959

I recommend that the following be charted on the charts indicated.

Ch. Lf. 809 (50)
62. Comparison with Registered Topographic Surveys:

1476b  (1879-80)  1:20,000
1477a  (1879-80)  1:20,000

The Intracoastal Waterway has been constructed since the old surveys.

These topographic surveys are superseded by the new map (T-9213) for nautical charting.

63. Comparison with Maps of Other Agencies:

Mouth of Arroyo Colorado Quadrangle (Cameron Co.)
Josephine Island Quadrangle, Edition 1931, 1:62,500

The Intracoastal Waterway does not appear on these old maps.

64. Comparison with Contemporary Hydrographic Surveys:

None

65. Comparison with Nautical Charts:

Chart No. 1286, 15 January 1951, 1:80,000

66. Adequacy of Results and Future Surveys:

In the Laguna Madre area the water stages vary widely with meteorological conditions. In view of this, it was decided to omit the high-water line where it is indefinite and unmarked by visible evidence on the ground, and in its stead to indicate by a broken line symbol the approximate limits of areas which were subject to inundation. This decision was arrived at mainly for these reasons:

1. The difficulty encountered in identifying the MHW line from photographs of the Laguna Madre area and of other similar areas throughout the project.

2. It was considered impractical to resolve this problem by extensive leveling.

For a more detailed study and investigation of this subject, refer to the correspondence and various reports to be attached to the completion report which will be submitted when the review of the surveys on this project has been completed.
The reasons and the decision reached in adopting the special treatment accorded to the shoreline delineation are discussed in the following pages of correspondence and instructions attached to the Descriptive Report for T-9214.

This map complies with the project instructions and the National Map Accuracy Standards.

67. Vertical Control:

The mean sea level elevations of the USE bench marks noted on the manuscript were determined during field survey operations by applying a datum correction of -1.02 feet. This datum plane correction was determined in the vicinity of Corpus Christi Bay by running a line of levels between USE bench marks, which are based on the Mean Low Gulf Datum, and USC&GS bench marks on the Sea Level Datum of 1929.

For additional information refer to the Descriptive Report for T-9186, side heading 4.

68. Supplemental Data:

Channel reference line piles along the east side of the Intracoastal Waterway were added to the map manuscript in accordance with the data submitted by the field editor. For additional clarifying information on this subject refer to the Review Report for T-9211.

Reviewed by:
Charles Hanavich

APPROVED:

J. V. Griffith
Chief, Review Section
Division of Photogrammetry

W. Christian
Chief, Nautical Chart Branch
Division of Charts

J. L. Reading
Chief, Div. Photogrammetry

Earl O. Heston
Chief, Div. Coastal Surveys
HISTORY OF HYDROGRAPHIC INFORMATION
QUADRANGLE T-9213

Laguna Madre - Vicinity of Josephine Island, Texas

Hydrography was applied to the manuscript of this quadrangle in accordance with Division of Photogrammetry general specifications dated 18 May, 1949.

Soundings at mean low water datum originate with the following:

USCGS Nautical Charts
896, 1:40,000, temporary aid proof dated April, 1952
897, 1:40,000, " " " " May 28, 1952

Hydrography was applied by K. N. Maki and checked by C. B. Samuel.

[Signature]
K. N. Maki
Division of Photogrammetry
9 June 1952
# Record of Application to Charts

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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.