

12086

12086

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey SHORELINE (PHOTOGRAMMETRIC)Field No. _____ Office No. T-12086

LOCALITY

State MarylandGeneral locality Worcester CountyLocality Chincoteague Bay1961-1963

CHIEF OF PARTY

Ray M. Sundean Chief of Party
Miller J. Tonkel Baltimore Dis. Office

LIBRARY & ARCHIVES

DATE _____

DESCRIPTIVE REPORT - DATA RECORD

T- 12086

PROJECT NO. (II):

PH-6103

FIELD OFFICE (II):

Snow Hill, Maryland

CHIEF OF PARTY

Ray M. Sundean

PHOTOGRAMMETRIC OFFICE (III):

Baltimore, Maryland

OFFICER-IN-CHARGE

Miller J. Tonkel

INSTRUCTIONS DATED (II) (III):

II 20 November 1961
III 24 October 1962
26 July 1963 - Amendment I

METHOD OF COMPILATION (III):

Kelsh Plotter

MANUSCRIPT SCALE (III):

1:10,000

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):

Pantograph 1:6,000

DATE RECEIVED IN WASHINGTON OFFICE (IV):

DATE REPORTED TO NAUTICAL CHART BRANCH (IV):

APPLIED TO CHART NO.

DATE:

DATE REGISTERED (IV):

GEOGRAPHIC DATUM (III):

NA 1927

VERTICAL DATUM (III): MHW~~MEAN SEA LEVEL~~ EXCEPT AS FOLLOWS:

Elevations shown as (25) refer to mean high water

Elevations shown as (5) refer to sounding datum

i.e., mean low water or mean lower low water

REFERENCE STATION (III):

BEACON CLUMPS (Md.), 1907

LAT.:

38°08'12.218"

LONG.:

75°12'21.796"

☒ ADJUSTED☐ UNADJUSTED

PLANE COORDINATES (IV):

115,559.42

x = 1,315,985.12

STATE

Maryland

ZONE

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.

FORM C&GS-181b
(3-66)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT - DATA RECORD

FIELD INSPECTION BY (II): Jerome E. Tolodziecki		DATE: Jan.-Feb.1962
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION): MHWL delineated by Kelsh Plotter using Field Inspection photographs.		
PROJECTION AND GRIDS RULED BY (IV): A. Roundtree		DATE 8-29-62
PROJECTION AND GRIDS CHECKED BY (IV): I. Y. Fitzgerald		DATE 9-10-62
CONTROL PLOTTED BY (III): L.A. Senasack		DATE 11-30-62
CONTROL CHECKED BY (III): E. L. Rolle		DATE 11-30-62
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III): L.A. Senasack H.P. Eichert		DATE 10-31-62 3-22-63
STEREOSCOPIC INSTRUMENT COMPILATION (III):	PLANIMETRY L. O. Neterer	DATE 1-29-63
	CONTOURS	DATE
MANUSCRIPT DELINEATED BY (III): J. Council		DATE 2-20-63
SCRIBING BY (III): J. Cregan		DATE 3-27-64
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): E. L. Rolle		DATE 3-31-64
REMARKS:		

DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

Wild RC-8

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
61W6238-6239	21 Apr. 1961	1217	1:15,000	0.2 ft. above MLW
62S3171-3175	24 Mar. 1962	1012	1:15,000	0.3 ft. above MLW
63W3380	3 Mar. 1963	1001	1:30,000	0.2 ft. above MLW

TIDE (III)

	RATIO OF RANGES	MEAN RANGE	SPRING RANGE
REFERENCE STATION: Sandy Hook, New Jersey		4.6	5.6
COORDINATE STATION: Snow Hill Landing, Maryland	0.09	0.4	0.5
SUBORDINATE STATION:			

WASHINGTON OFFICE REVIEW BY (IV): Leo F. Beugnet, AMC

DATE:
Jan. 1972

PROOF EDIT BY (IV):

DATE:

NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II):

1

RECOVERED:

1

IDENTIFIED:

0

NUMBER OF BM(S) SEARCHED FOR (II):

0

RECOVERED:

0

IDENTIFIED:

0

NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III):

0

NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III):

0

REMARKS:

COMPILATION RECORD	COMPLETION DATE	REMARKS
Compilation Complete	June 1963	
Final Review	Jan. 1972	

CHINCOTEAGUE BAY

PROJECT PR 6100

PLANIMETRIC MAPPING

SCALE, 1:10,000

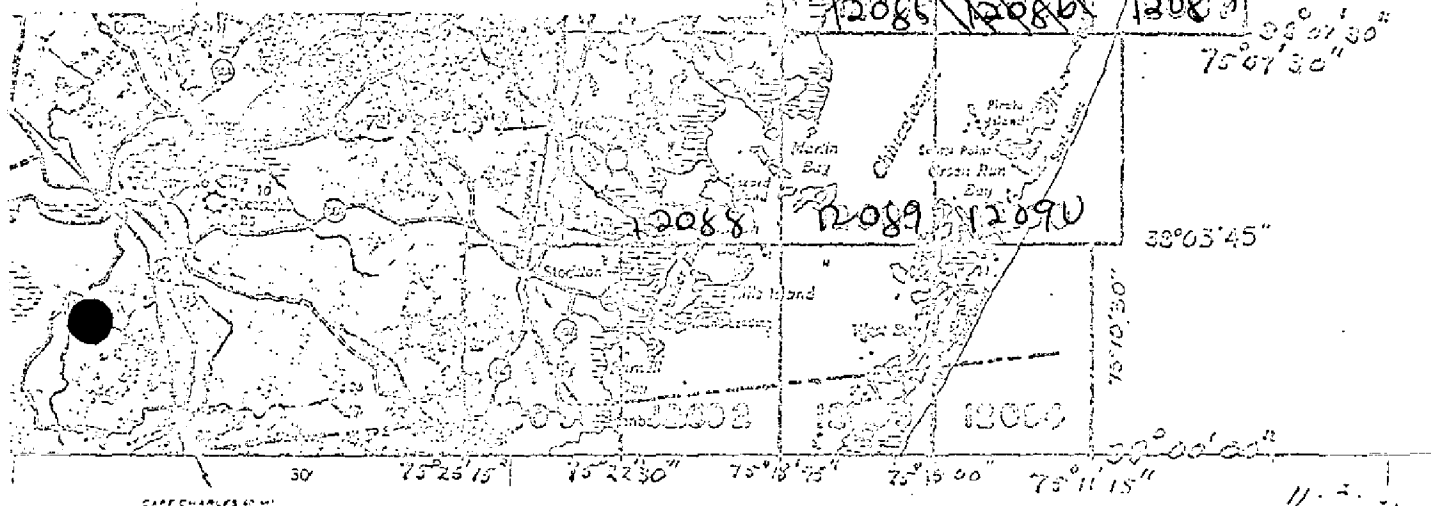
OFFICIAL MILEAGE

SHEET NO.	AREA SQ. MI.	LINEAR MI. SHORELINE
12074	16	30
12075	16	16
12076	4	32
12077	14	14
12078	5	20
12079	14	9
12080	14	20
12081	2	10
12082	14	3
12083	2	12
12084	3	16
12085	3	8
12086	3 ³	4
12087	3	10
12088	9	14
12089	2	12
12090	4	14
12091	14	5
12092	3	14
12093	3	12
12094	3	12

TOTAL

153.3

292



SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-12086

Shoreline survey T-12086 covers a part of Chincoteague Bay. It is one of twenty-one similar surveys in project PH-6103. The primary purpose of the project was to provide new shoreline for nautical charts and special maps for the State of Maryland, Department of Tidewater Fisheries.

Field operations preceding compilation included recovery and identification of horizontal control, field and shoreline inspection, selection of landmarks for charts and location of fixed aids to navigation.

Compilation was at 1:10,000 scale using the panchromatic photography of May 1961 and April 1962. The manuscript was a vinylite sheet 3 minutes 45 seconds in latitude by 3 minutes 45 seconds in longitude. The survey was subsequently scribed and reproduced on cronaflex. One positive and a negative of the final reviewed survey are forwarded for record and registry.

FIELD INSPECTION REPORT

MAPS T-12085, T-12086, T-12088
T-12089, T-12091, and T-12092

PROJECT FH-6103
CHINCOTEAGUE BAY, MARYLAND

2. Aerial Field Inspection

The area covered by these six maps is located on the western and northern sides of Chincoteague Bay. The maps of the Barrier Islands were purposely excluded at this time because of revision needed due to the coastal storm of 6 March, 1962. The other maps will be submitted when the new photography has been inspected and control identified.

Chincoteague Bay is generally shoal with the major small boat channels marked by aids. The bay is chiefly used by small pleasure boats and shallow-draft vessels operated by commercial crab and oyster fishermen.

The land area of the maps consists mainly of marsh areas along the shore.

On maps T-12083 (to be submitted later) and T-12086 color photography was taken of fixed aids to navigation. Most of these photos were over open water; therefore, the aids were cut-in from triangulation stations.

The quality of the photographs was fair. The aids on maps T-12088, T-12089, T-12091, and T-12093 (to be submitted later) were cut-in from photo points as they could not be seen on the photographs.

It is believed enough photographic tones have been labeled to clarify all tones for the compilers.

3. Horizontal Control

All stations indicated on the project diagram were searched for. Requirements for horizontal control identification as indicated on a special copy of the project diagram were met. Triangulation station LAWRENCE, 1958 was substituted for station HOLSTON, 1942 which could not be recovered.

3. Horizontal Control Cont'd

The following stations are lost or destroyed and reported on Form 526:

T-12085
ROBINS MAPSE 1933

T-12086
NONE

T-12088
NONE

T-12091
NONE 1907
PURNELL (VFC) 1933
GREENBACKVILLE, GRACE
M. E. CHURCH, 1907

T-12092
LONG (VFC) 1933
LONG POINT 1902
LONG POINT (M.S.F.C.) 1907

4. Vertical Control

There are no tidal bench marks within the areas of these maps.

5. Contours and Drainage

Drainage consists of small creeks and systems of mosquito control ditches in marsh areas. The ditches are readily apparent and were indicated on the photographs.

6. Woodland Cover

The tree areas are mostly pine with some small areas interspersed with hardwoods.

7. Shoreline and Alongshore Features

The shoreline is mostly apparent. Nearly all the shoreline on these maps is a fringe of marsh. The entire shoreline was inspected by skiff and has been indicated on the photographs. There are occasional short stretches of shoreline that are fast land containing sand or shell.

The shoreline was reinspected by skiff after the coastal storm of 6 March, 1962. Due to the flooding of the marsh areas the storm had no effect on the shoreline on the west side of Chincoteague Bay.

On map T-12092 some alongshore features were changed. These have been indicated on the photographs.

8. Offshore Features

There are no offshore features worthy of mapping.

9. Landmarks and Aids

There are no outstanding landmarks on these maps to be charted.

Fixed aids to navigation are adequately covered on Form 567.

10. Boundaries, Monuments, and Lines

The Maryland-Virginia state line can be established from the geographic positions of the three monuments along the line which are triangulation.

A copy of the General Highway Map of Worcester County Maryland is enclosed.

The approximate limits of the Girdletree Wildlife Demonstration Area controlled by the state of Maryland was delineated according to information supplied by Mr. Hamilton Brimer, caretaker of the reserve.

11. Other Control

Four previously marked topographic stations were searched for and two were recovered.

BEVENS WINDMILL (T-12085), and C-58 (T-12088), were recovered. BAY (T-12089) and FUR (T-12092) were not recovered. Forms 524 have been submitted on all these stations.

The recovered topographic stations were reidentified on the photographs for this project.

Photo points of natural and physical features were marked with copperweld stakes to provide supplemental horizontal control for the Maryland Department of Tidewater Fisheries. These points were spaced to provide control for visual sextant fixes anywhere in the bay area. The points are identified on the ratio prints and a descriptive sketch of each location was made on the backs of the photographs.

12. Other Interior Features

All roads and buildings have been inspected and classified in accordance with Photogrammetry Instructions Numbers 54 and 56.

The shore ends of all overhead power lines and submerged cables have been indicated on the photographs.

12. Other Interior Features Cont'd

There are no airports or landing fields within this area.

13. Geographic Names

A special report on geographic names will be submitted at a later date.

14. Special Reports and Supplemental Data

Special Report Geographic Names, Project PH-6103, to be submitted at a later date.

Special Report Coast Pilot, Project PH-6103, to be submitted at a later date.

Worcester County Highway Map enclosed with this data.

The field photographs and all other data for the compilation of these maps are submitted by Letter of Transmittal dated 23 March 1962.

Respectfully submitted
23 March 1962,

Ray M. Sundean
Chief, Photo Party 723

//

PHOTOGRAMMETRIC PLOT REPORT
PH-6103
Chincoteague Bay, Md.

March 1963

21. Area Covered

Complete or partial coverage of the following surveys in Chincoteague Bay:

T-12074 thru T-12086
T-12088
T-12089
T-12091
T-12092

See previous reports and sketches covering strips 7, 10, 11.

22. Method

Three strips were bridged and adjusted by analytic aerotriangulation, namely 13a, 13b, and 14.

The attempt was made at first to run one strip from 61S 9044 thru 9068. As the result was not satisfactory, the strip was run in two parts with an overlap of six models. This afforded a common area for comparison. In this second attempt photograph 61S 9044 was eliminated as its very short base caused a poor cantilever solution.

The bridges turned out satisfactorily as indicated by the closures in the sketch attached. Strip 13a appeared to be the stronger of the two and since the discrepancies between the two in the overlap area were small (only four points out of 57 as great as 0.3 mm at 1:10,000 scale and the majority insignificant) it was decided to accept the values from strip 13a rather than the mean of the two.

Strip 14, to the west, was needed as several models were required to complete coverage. It was run on one control point, DOWNS, 1955 Sub. Pt. "B" and five pass points from strip 13a. The adjustment was very satisfactory with closures of less than 0.2 mm at 1:10,000 scale.

23. Adequacy of Control

Horizontal control complied with project instructions and was adequate. The sub points for station PINE, 1934, used as

a check showed closures larger than expected (see sketch attached). Seven other triangulation points in this strip held closely. Bridging results comply with National Standards of Map Accuracy for 1:10,000.

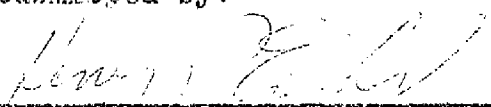
24. Supplemental Data

None

25. Photography

Photography was adequate with regard to overlap and definition. Additional photographic coverage is needed for compilation and will be provided. No further bridging is anticipated.

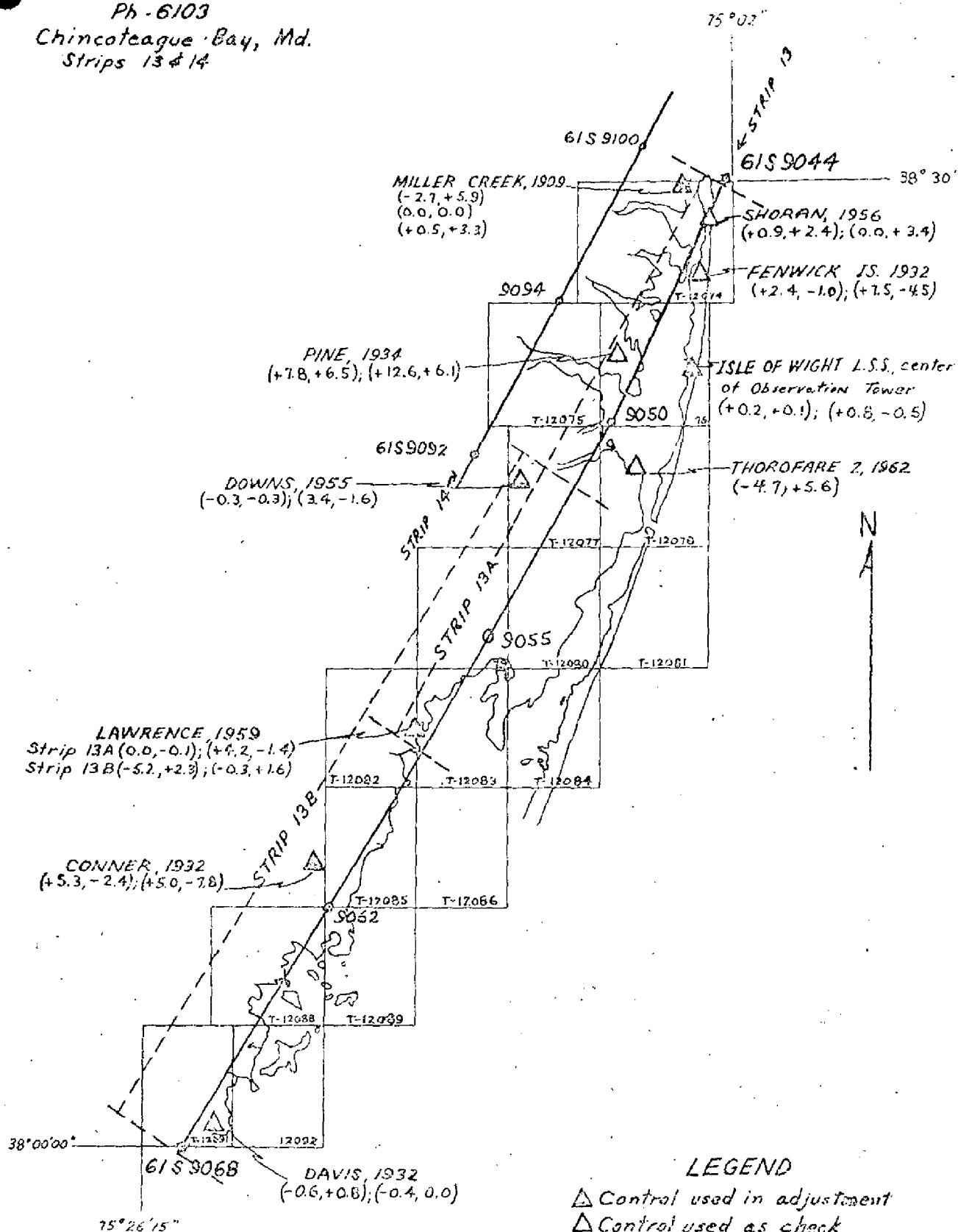
Submitted by:


Henry P. Eichert

Approved by:


Everett H. Ramey
Chief, Aerotriangulation Sec.

Chincoteague Bay, Md.
Strips 13 & 14



LEGEND

- Δ Control used in adjustment
 Δ Control used as check
 Closure of bridge to control
 shown in parenthesis ()

PHOTOGRAMMETRIC PLOT REPORT
Project 21039 (PH-6103)
Chincoteague Bay, Md.
Surveys Nos. T-12086 thru T-12094

21. AREA COVERED

This radial plot covers the areas of the surveys listed above. These are shoreline surveys along Chincoteague Bay and Assateague Island. This radial plot was needed for the compilation of the area and islands west of the Aerotriangulation Bridge Strips 10 and 11 and east of Strip 13B. This includes Tingle Island, Pirate Islands southward to the project limits on the eastern side of Chincoteague Bay. On the western side of Chincoteague Bay the radial plot starts just south of Snow Hill Landing and continues southward to the project limits.

22. METHOD-RADIAL PLOT

Map manuscripts:

Vinylite sheets, with the polyconic projections in black, Maryland Grid in red and/or Virginia South Zone in green which were furnished by the Washington Office.

The positions of all triangulation stations, substitute points and Aerotriangulation Bridge points were plotted on the manuscripts with the coordinatograph.

A sketch showing the layout of the surveys and photograph centers is attached to this report.

Photographs:

Thirty (30) photographs ratioed to the scale of 1:10,000 were used in this plot and are numbered as follows:

61-S-9066	thru	9068
61-S-9298	"	9302
62-W-3757	"	3764
62-W-3786	"	3793
63-W-3382	"	3388

All photographs were printed on single weight paper with the exception of the flight 62-W-3786 thru 3793 which were on cronapaque.

Templets:

Vinylite templets were made of all photographs. No master templet was available for these single lens photographs.

Closure and Adjustment to Control:

The radial plot was constructed directly on the map manuscripts. The construction began with the flight 62-W-3786 thru 3793, which held to the stereo-points as dropped in bridge strips number 10 and 11. Flight 62-W-3757 thru 3764 was then laid using common points between flights. Flight 63-W-3382 thru 3388 was then laid tying into what was believed to be common stereo-bridge points on bridge 13B. The templets of photos on bridge 13B were added to give stronger position for lights which are aids to navigation.

While laying the templets for photos 61-S-9298 thru 9302, it was noted that it was impossible to make a tie across Chincoteague Bay. The error was as much as from 2 to 3 millimeters. Since this flight did not have any images of the aids to navigation on them and since they were printed on light weight paper, the error could be paper distortion. Since we only needed this flight for delineation of the western shore of Chincoteague Bay, the rays were cut off the templets on the eastern side of the bay. The centers will be only good for delineation on the western side of the bay. All of these centers fall in the water area, and for this reason they are dashed centers on the map manuscripts.

Transfer of Points:

The position of all photogrammetric points and photograph centers were pricked on the top templet and drilled down through the templets and map manuscripts.

23. ADEQUACY OF CONTROL

The density and distribution of identified control and stereo-bridge points was adequate.

24. SUPPLEMENTAL DATA

None.

25. PHOTOGRAPHY

The photography was adequate as far as coverage, overlap and image definition. There could be only one suggestion that could be made, and that is where there is a need for a radial plot there is also a need for the photographs to be printed on double weight paper so that the photograph will lay flat and would not distort due to the paper shrinking and expanding and warping.

26. POSITIONS OF AIDS TO NAVIGATION

After all of the templets were taped down onto the map manuscripts the various field cuts to the lights in the area were checked with the radially plotted positions of the office identified lights, which were pricked using as an aid Chart 1220, Revised date 8/6/62. The following is a list of lights and how they were held as comparison with the field angles from the List of Direction. This was done to verify the radial plot.

Chincoteague Bay Light 18 - Without the aid of a radial plot it would have been impossible to locate this point. The cuts as given by the fieldman could have been any of five different points. The cuts from Photo 12 and Boundary Monument Pope Island, 1907 Ecc. missed by approximately 1.5 mm to the southeast and 4.0 mm to the east respectively. The difference between the intersection of the cuts from Photo Point 09 and Photo Point 08 and the radially plotted position was approximately 0.5 mm. An average point was pricked and drilled.

Chincoteague Bay Light 17 - The image for this light did not fall on any of the 1963 photographs. The field cuts from Photo Point 09, Boundary Monument Pope Island, 1907, Ecc. and Cord (VFC), 1933 made a fairly good intersection. The point pricked and drilled was the mean intersection of these three cuts. The cut from Photo Point 08 fell approximately 2.6 mm to the south and was disregarded.

Chincoteague Bay Light 16 - The cuts from Photo Points 03, 11 and 12 fell within .3 mm of the radial plotted position. The point pricked and drilled was the mean of the afore mentioned. The field cut from Photo Point 08 fell approximately 1.3 mm to the east, and the cut from Boundary Monument Pope Island, 1902 Ecc. fell approximately 3.0 mm to the north. These two cuts were disregarded.

Johnson Bay Light 1 - The field cuts from Photo Points 08 and 11 agree with the strong radial plotted position. The cut from Photo Point 12 was disregarded because it fell approximately 0.7 mm to the east.

Johnson Bay Light 3 - The intersection of field cuts from Photo Points 11 and 12 fell approximately 0.7 mm from a good three cut radial plotted position. The point pricked and drilled was the mean of these two intersections. The field cut from Photo Point 08 fell approximately 1.0 mm to the south and was disregarded.

George's Island Landing Light 2 - The field cuts from Photo Point 12 and Cord (VFC), 1933 agreed with the radial plotted position. The intersection of these five rays was pricked and drilled. The field cut from Photo Point 03 fell approximately 1.0 mm to the south while the field cut from Photo Point 13 fell approximately 4.6 mm to the west. These two cuts were disregarded.

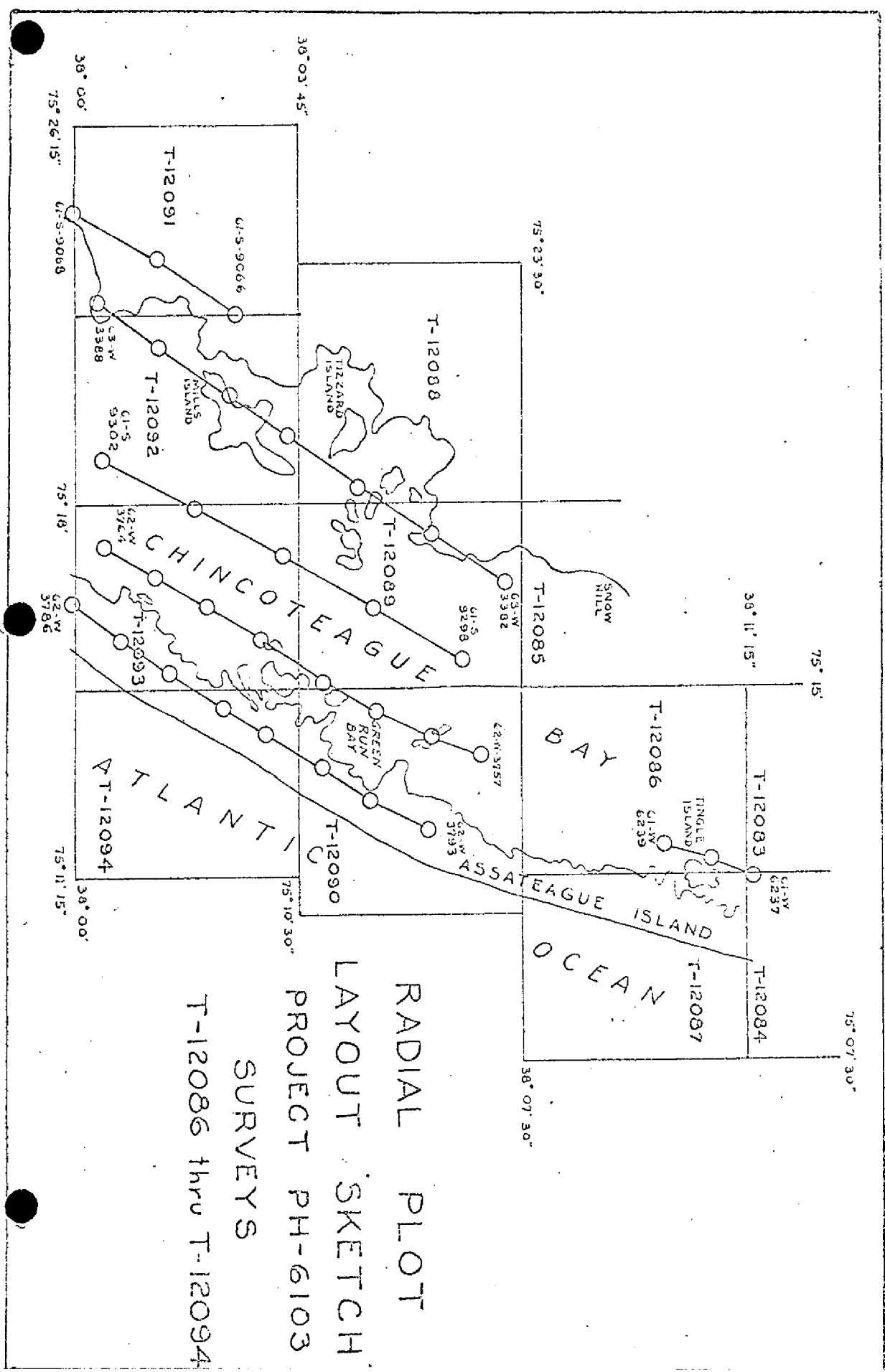
George's Island Landing Light 4 - The field cuts from Photo Points 03, 12 and Cord (VFC), 1933 agreed with the four ray intersection of the radial plot. The only bad ray, which was disregarded, came from Photo Point 13 which fell approximately 5.3 mm to the southwest.

Greenbackville Light 1 - The position of the intersections of the radial plot, the field cuts and the position for this light as shown on Survey No. T-11660 (Project PH-5907) are all in agreement with each other.

Greenbackville Light 3 - The field cuts from Photo Points 00, 02 and 06 agree with the radially plotted position. This point was pricked and drilled. The position as shown on Survey No. T-11660 (Project PH-5907) falls 0.8 mm to the west. The field cut from Cord (VFC), 1933 fell approximately 0.5 mm to the south. These latter two were disregarded.

Respectfully submitted
July 8, 1963

Leroy A. Senasack
Cartographer (Photo)



COMPILATION REPORT

T-12086

There was no compilation report with the data for this survey at the time of final review.

January 14, 1972

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6103 (Maryland & Virginia)

T-12086

Assateague Island

Chincoteague Bay

Outward Tump

Robins Marsh

Straight Marshes

Tingles Island

Tingles Narrows

Approved by:

A. Joseph Wraight
A. Joseph Wraight
Chief Geographer

Prepared by:

Frank W. Pickett
Frank W. Pickett
Cartographic Technician

49. NOTES TO THE HYDROGRAPHER

There are no hydrographic surveys planned in the area of this map.

PHOTOGRAMMETRIC OFFICE REVIEW

T. 12086

1. PROJECTION AND GRIDS ELR	2. TITLE ELR	3. MANUSCRIPT NUMBERS ELR	4. MANUSCRIPT SIZE ELR
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY ELR	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) ELR		7. PHOTO HYDRO STATIONS XX
8. BENCH MARKS XX	9. PLOTTING OF SEXTANT FIXES XX	10. PHOTOGRAMMETRIC PLOT REPORT ELR	11. DETAIL POINTS ELR
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE ELR	13. LOW-WATER LINE XX	14. ROCKS, SHOALS, ETC. XX	15. BRIDGES XX
16. AIDS TO NAVIGATION ELR	17. LANDMARKS ELR	18. OTHER ALONGSHORE PHYSICAL FEATURES ELR	19. OTHER ALONGSHORE CULTURAL FEATURES ELR
PHYSICAL FEATURES			
20. WATER FEATURES ELR		21. NATURAL GROUND COVER XX	22. PLANETABLE CONTOURS XX
23. STEREOSCOPIC INSTRUMENT CONTOURS XX	24. CONTOURS IN GENERAL XX	25. SPOT ELEVATIONS XX	26. OTHER PHYSICAL FEATURES XX
CULTURAL FEATURES			
27. ROADS ELR	28. BUILDINGS ELR	29. RAILROADS XX	30. OTHER CULTURAL FEATURES ELR
BOUNDARIES			
31. BOUNDARY LINES ELR		32. PUBLIC LAND LINES XX	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES ELR		34. JUNCTIONS ELR	35. LEGIBILITY OF THE MANUSCRIPT ELR
36. DISCREPANCY OVERLAY XX	37. DESCRIPTIVE REPORT ELR	38. FIELD INSPECTION PHOTOGRAPHS ELR	39. FORMS ELR
40. REVIEWER EL Rolle		SUPERVISOR, REVIEW SECTION OR UNIT	
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.			
COMPILER		SUPERVISOR	
43. REMARKS			

FIELD EDIT REPORT

T-12086

This survey was not field edited.

REVIEW REPORT T-12086

SHORELINE

JANUARY 5, 1972

61. GENERAL STATEMENT

See Summary which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

A comparison was made with a copy of registered survey T-8128, a 1:20,000 scale survey made in 1941. The two surveys are in good agreement with the exception of small changes in the position of the shoreline in the area of Outward Tump and Tingles Narrows.

Survey T-12086 supersedes the older survey for nautical chart construction purposes.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS TINGLES ISLAND, MD., 1:24,000 scale quadrangle, edition of 1942. The surveys are in good agreement, no discrepancies were noted.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

There are no contemporary hydrographic surveys in the area of this map.

65. COMPARISON WITH NAUTICAL CHARTS

A visual comparison was made with chart 1220, 18th edition dated July 17, 1971. No discrepancies were noted.


66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This survey complies with instructions and was found to be adequate for nautical chart construction purposes.


Reviewed by:


Leo F. Beugnet
Cartographer


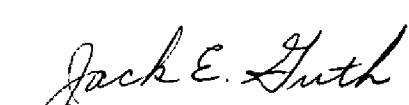
Approved and forwarded:


Melvin J. Umbach, CDR, NOAA
Chief, Photogrammetry Division, AMC

Approved:


Alfred C. Holmes, RADM, NOAA
Director, Atlantic Marine Center

Approved:

 
Chief, Photogrammetric Branch Chief, Coastal Mapping Division