ORIGINAL

13137

13137

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Shoreline (Photogrammetric)

Field No. ..... *Office No.* T-13137

LOCALITY

State Puerto Rico

General locality Southwest Coast

Locality Arrecife Unitas

1966-1969

CHIEF OF PARTY

Alfred C. Holmes, Director, AMC

LIBRARY & ARCHIVES

DATE .....

USCOMM-DC 5087

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

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

DESCRIPTIVE REPORT - DATA RECORD

T-13137

PROJECT NO. (III):

PH-6708

FIELD OFFICE (II):	CHIEF OF PARTY
None	
PHOTOGRAMMETRIC OFFICE (III):	**OFFICER-IN-CHARGE**
Atlantic Marine Center, Norfolk, VA	Alfred C. Holmes, Director

INSTRUCTIONS DATED (II) (III):

OFFICE - Nov. 14, 1967
OFFICE - SUPPLEMENT 1 - Nov. 4, 1968
OFFICE AMENDMENT 1 Dec. 9, 1968

METHOD OF COMPILATION (III):

Wild B-8 Plotter

MANUSCRIPT SCALE (III):	STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):
1:5,000	1:2,500 Pantographed To 1:5,000
DATE RECEIVED IN WASHINGTON OFFICE (IV):	**DATE REPORTED TO NAUTICAL CHART BRANCH (IV):**

APPLIED TO CHART NO.	DATE:	DATE REGISTERED (IV):
		JUN 1975

GEOGRAPHIC DATUM (III):	VERTICAL DATUM (III):
Puerto Rico	MEAN HIGH WATER 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):

None

LAT.:	LONG.:	
		[X] ADJUSTED [ ] UNADJUSTED
PLANE COORDINATES (IV):		**STATE** / **ZONE**
Y = X =		

(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.

USCOMM-DC 36393A-P66

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

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

DESCRIPTIVE REPORT - DATA RECORD

T-13137

FIELD INSPECTION BY (II): None	DATE:
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION): Air Photo Compilation - Date of Photography - Nov. 15, 16, 1966	
PROJECTION AND GRIDS RULED BY (IV): A. Bethea	DATE: Oct. 11, 1968
PROJECTION AND GRIDS CHECKED BY (IV): L. F. Van Scoy	DATE: Oct. 17, 1968
CONTROL PLOTTED BY (III): Aerotriangulation Points: - B. Nicholson Triangulation Stations: - None	DATE: Nov. 8, 1968
CONTROL CHECKED BY (III): Aerotriangulation Points: - J. Steinberg Triangulation Stations: - None	DATE: Nov. 8, 1968
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III): I. I. Saperstein	DATE: Oct. 31, 1967
STEREOSCOPIC INSTRUMENT COMPILATION (III): Wild B-8	PLANIMETRY By: R. White Reviewed By: A. Shands
	DATE: Feb. 1969 Date Feb. 1969
	CONTOURS: Inapplicable
	DATE:
MANUSCRIPT DELINEATED BY (III): A. L. Shands	DATE: Feb. 1969
SCRIBING BY (III): C. J. Woodson C. Parker	DATE: Aug. 4, 1971 July 11, 1972
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): Compilation: C.H. Bishop Field Edit: R.E. Smith Scribing and Stick Up: B.L. Barge	DATE: Feb. 1969 Mar. 28, 1969 Aug. 6, 1971

REMARKS:

Field Edit By: Richard E. Kessling
DATE: Feb. 1969

USCOMM-DC 36393B-P66

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

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

DESCRIPTIVE REPORT - DATA RECORD

T-13137

CAMERA (KIND OR SOURCE) (III):

U.S.C.&G.S. Type "L"&"M" Wild RC-8 & RC-9

PHOTOGRAPHS (III)

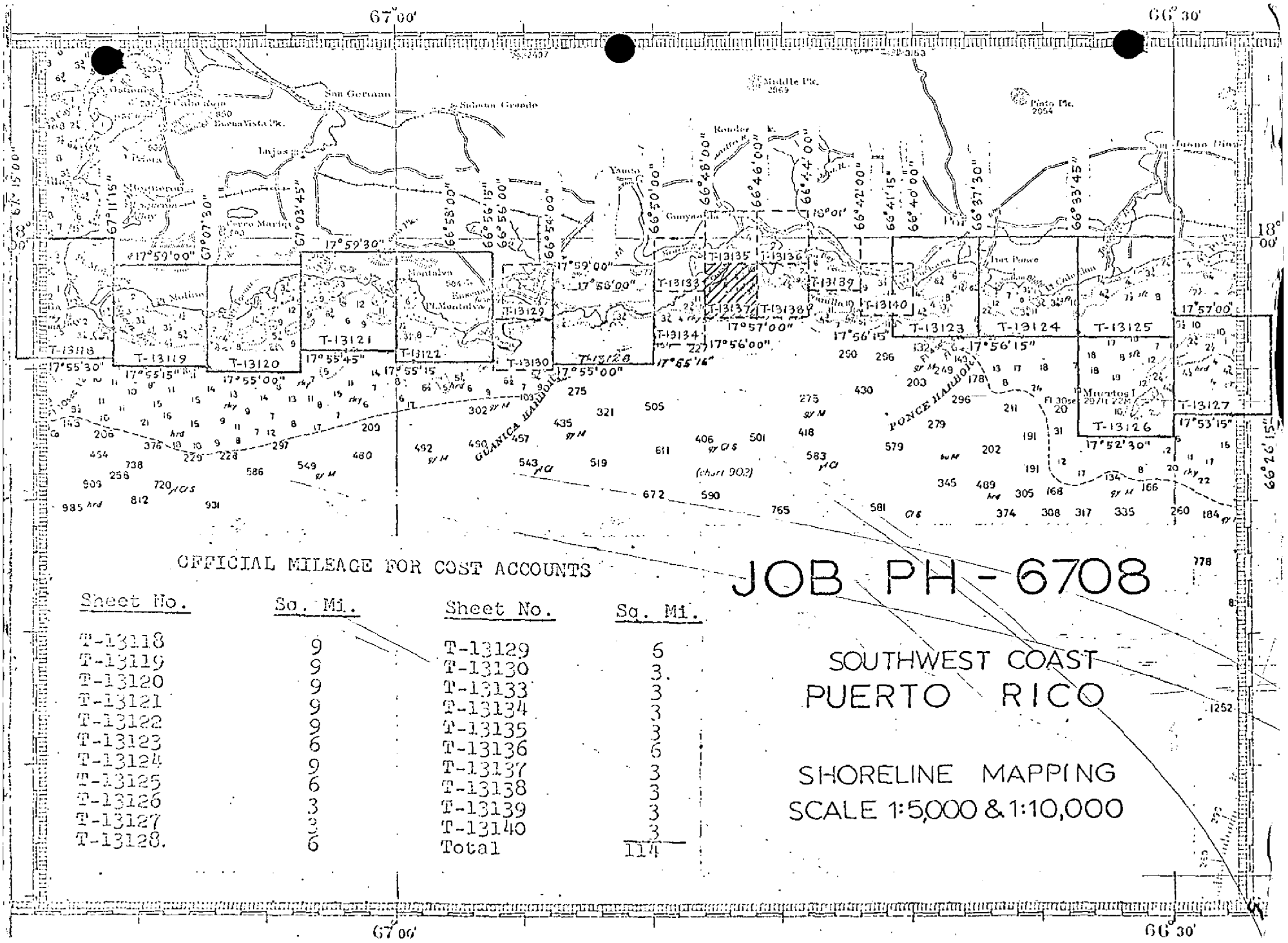
NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
66-L-8402 thru 66-L-8404	15 Nov. 1966	1037	1:15,00	0.75' above MLW

PREDICTED **TIDE (III)** DIURNAL

[redacted]

T-13137

COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore Area For Hydro.	Feb. 1969	Superseded
Field Edit Applied	March 1969	Superseded
Final Review	Jan. 1973	



OFFICIAL MILEAGE FOR COST ACCOUNTS

Sheet No.	Sq. Mi.	Sheet No.	Sq. Mi.
T-13118	9	T-13129	6
T-13119	9	T-13130	3
T-13120	9	T-13133	3
T-13121	9	T-13134	3
T-13122	9	T-13135	3
T-13123	6	T-13136	3
T-13124	9	T-13137	3
T-13125	6	T-13138	3
T-13126	3	T-13139	3
T-13127	3	T-13140	3
T-13128.	6	Total	114

JOB PH-6708

SOUTHWEST COAST
PUERTO RICO

SHORELINE MAPPING
SCALE 1:5,000 & 1:10,000

SUMMARY TO ACCOMPANY

DESCRIPTIVE REPORT

T-13137

Shoreline survey T-13137 is one of twenty-one similar surveys in project PH-6708. The project is onsthe south shore of Puerto Rico and extends from Cabo Rojo to Cayo Berberia. This survey covers part of Punto Verraco, part of Puerto de Guanilla and also Arrecife Guanilla and also Arricife Unitas.

There was no field work prior to the compilation of this manuscript.

Compilation was by B-8 plotter using November, 1966 photography. The compilation was at 1:5,000 scale. (see item 31 of the compilation report) A copy of the incomplete manuscript along with specially prepared photographs were furnished for the preparation of the boat sheet, location of photo-hydro signals and field edit use. The manuscript was a vinylite sheet two minutes in longitude by two minutes in latitude. Final review was at AMC in January, 1973. A negative and a cronaflex of the final reviewed survey are forwarded for record and registry.

FIELD INSPECTION REPORT
PH-6708
T-13137

There was no field inspection prior to compilation.

PHOTOGRAMMETRIC PLOT REPORT
Job PH-6708
Puerto Rico

October 31, 1967

21. Area Covered

This report covers the southwest part of Puerto Rico, consisting of eight (8) 1:10,000 scale T-sheets, T-13118 thru T-13125, and thirteen (13) 1:5,000 scale T-sheets, T-13128 thru T-13140. Photography covering sheets T-13126 and T-13127 was not bridged at this time due to lack of control.

22. Method

Analytic aerotriangulation methods were used to bridge Strip 1, 1:60,000 scale color diapositives, using premarked and office identified control. Numerous tie points were located to control the compilation photography. Strips 3, 5, 5A, 6, 7 and 8 were bridged by analytic methods. Strips 2 and 4 were bridged by stereoplanigraph in order to facilitate the work.

The attached sketch of the strips bridged shows the placement of triangulation used in the final strip adjustment. Closures to control are shown for each strip on the IBM readout, along with all bridge points on Puerto Rico plane coordinates.

23. Adequacy of Control

Horizontal control is adequate to control Strip 1. All other strips were bridged using tie points and horizontal control and is adequate.

The premarked paneling at station PAGEN was removed prior to photography and the subpoint could not be identified. It was decided, therefore, to end Strip 1 with photo 66-M-625 and Strip 6 with photo 66-L-8433. However, it is believed that sheet T-13125 can be adequately compiled.

Station GUANICA L.H. 1900 does not have a valid position. Geodesy did not tie to this station during the 1966 work, and no adjustment was made to the new Puerto Rico datum. (Station has been reported destroyed.) The positions shown on Form 725d computed by Geodesy is arbitrary. Therefore, GUANICA L.H. Subpoint 1 and subpoint 2 are unreliable and were not held in the bridge.

It is to be noted that all horizontal control used on this job and the final pass point positions are on the new Puerto Rico Datum. A Xerox copy of triangulation station positions issued by Geodesy is submitted to the Compilation office with this job. Previously published GP's and plane coordinates should not be used for plotting.

24. Supplemental Data

Vertical control needed for the adjustment was taken from USGS quadrangles.

25. Photography

The definition and quality of the RC-9 "M" and RC-8 "L" color photography was fair and good respectively. Smoke covers parts of some photographs on Strips 3 and 5A, but should not hinder compilation of the shoreline.

Although sheets T-13137 thru T-13140 are covered by 1:15,000 scale photographs, these photographs were not bridged, nor can they be used for compilation on the plotter because of water areas. Strip 3, therefore, should be used to compile the above sheets.

Ratio prints have been ordered for the 1:30,000 and 1:15,000 scale photographs to compilation scale, on black and white base.

Several points were transferred to ratio print 66-L-8394 in order that a reef on T-13140 may be compiled graphically.

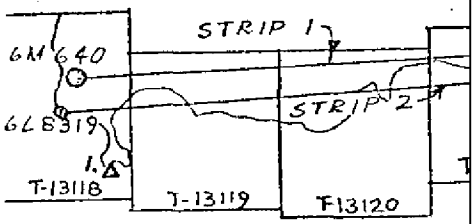
Respectfully submitted

I. I. Saperstein

Approved and Forwarded

Henry P. Eichert, Chief
Aerotriangulation Section

10



1. CABO ROJO (USAF) 1966
2. CERRO VERTERO 2 (US
3. ENSENADA, SOUTH P.R. S
   CENT. GUANICA WEST &
   GUANICA MUNIC. W.T.
4. VAQUERO, 1900
5. TURN 2, 196
6. GUAYANILLA, UNION CA
7. REY, 1966
8. PONCE, RADIO STATION
   PONCE BAY FRONT & RC
9. CARDONA ISLAND L.A
10. PONCE, DON Q RUM
11. BAHIA DE GUANICA
    & REAR CTS. 1966

FORM C&GS-164
(4-68)
USCOMM-DC
50318-P68

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

DESCRIPTIVE REPORT CONTROL RECORD

MAP T- 13137 PROJECT NO. PH-6708 SCALE OF MAP 1:5,000 SCALE FACTOR None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR Y COORDINATE LONGITUDE OR X COORDINATE	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS *(1 Ft. = 3048006 meter)* FORWARD (BACK)
None		Puerto Rico		

COMPUTED BY | DATE | CHECKED BY | DATE

11

COMPILATION REPORT

PH-6708

T-13138

31. DELINEATION

Refer to Photogrammetric Plot Report - Job PH-6708, Puerto Rico, dated Oct. 31, 1967. Specifically Item 25 - Photography, paragraph 2.

In order to use Strip 3 to compile T-13137 thru T-13140, it was necessary to plot controls and compile on worksheets at 1:6,000 scale and photographically enlarge to 1:5,000 scale (see Amendment I. to office instructions, dated Dec. 9, 1968).

The enlargement ratio required to compile at 1:5,000 scale from 1:30,000 scale bridge strip 3 with the B-8 plotter was not possible. It was, therefore considered more expedient to compile T-13135 thru T-13140 at 1:6,000 scale, drop shoreline pass points common to both the 1:15,000 photos and the 1:30,000 models, and then enlarge photographically to 1:5,000 scale, at a ratio of 1 = 1.2.

This enlargement was then transferred to the 1:5,000 manuscripts and the 1:5,000 scale ratio prints processed for hydro. support data.

The use of the 1:30,000 scale models from strip 3, enabled the compiler to adequately cover all inshore areas and much of the offshore areas of shoal, coral reefs, small islands and etc., which would not have been possible with the 1:15,000 offshore photos which were not bridged.

The alongshore and shoreline features of the mainland were further refined with the models set utilizing the 1:15,000 scale inshore plates: - 66L(c) 8475 thru 8484.

32. CONTROL

See Photogrammetric Plot Report dated October 31, 1967.

33. SUPPLEMENTAL DATA

None

34. CONTOURS AND DRAINAGE

Contours are inapplicable.

Drainage was delineated from office interpretation of the photographs.

35. SHORELINE AND ALONGSHORE DETAILS

The mean high water line and shallow lines were delineated from office interpretation of the photographs. There are no cultural features adjacent to or extending from the shoreline.

36. OFFSHORE DETAILS

All shallow, shoal, submerged coral and Island limits were delineated from office interpretation of the photographs.

37. LANDMARKS AND AIDS

Appropriate copies of Forms 567 have been forwarded to the Washington Office.

38. CONTROL FOR FUTURE SURVEYS

None

39. JUNCTIONS

Junctions are in agreement with T-13135 to the North, T-13133 to the West and T-13138 to the East. There is no contemporary survey to the South.

40. HORIZONTAL AND VERTICAL ACCURACY

No statement.

46. COMPARISON WITH EXISTING MAPS

Comparison has been made with USGS Quadrangle PUNTA VERRACO, PR, scale 1:20,000, dated 1958.

47. COMPARISON WITH NAUTICAL CHARTS

Comparison was made with Chart 928, Bahia de Guayanilla scale 1:10,000, 5th Edition, dated October 18, 1965.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None

ITEMS TO BE CARRIED FORWARD

None

Submitted:

A. L. Shands
Cartographic Technician

Approved:

Alfred C. Holmes
RADM, NOAA
Director, AMC

December 11, 1972

GEOGRAPHIC NAMES

FINAL NAME SHEETS

Ph-6708 (Puerto Rico)

TP-13137

Arrecife Guayanilla

Arrecife Unitas

Mar Caribe

Punta Verraco

Puerto de Guayanilla

Approved:

A. J. Wraight

A. Joseph Wraight
Chief Geographer

Prepared by:

Charles E. Harrington

Charles E. Harrington
Cartographer

49. NOTES FOR THE HYDROGRAPHER:

None

FORM C&GS-1002 (9-66)

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

PHOTOGRAMMETRIC OFFICE REVIEW

T-13137

1. PROJECTION AND GRIDS	2. TITLE	3. MANUSCRIPT NUMBERS	4. MANUSCRIPT SIZE
CHB	CHB	CHB?	

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. PHOTO HYDRO STATIONS
XX	XX	XX

8. BENCH MARKS	9. PLOTTING OF SEXTANT FIXES	10. PHOTOGRAMMETRIC PLOT REPORT	11. DETAIL POINTS
XX	XX	Bridge - W. O.	Wild B-8

ALONGSHORE AREAS *(Nautical Chart Data)*

12. SHORELINE	13. LOW-WATER LINE	14. ROCKS, SHOALS, ETC.	15. BRIDGES
CHB	XX	CHB	XX

16. AIDS TO NAVIGATION	17. LANDMARKS	18. OTHER ALONGSHORE PHYSICAL FEATURES	19. OTHER ALONGSHORE CULTURAL FEATURES
XX	XX	CHB	XX

PHYSICAL FEATURES

20. WATER FEATURES	21. NATURAL GROUND COVER	22. PLANETABLE CONTOURS
XX	XX	XX

23. STEREOSCOPIC INSTRUMENT CONTOURS	24. CONTOURS IN GENERAL	25. SPOT ELEVATIONS	26. OTHER PHYSICAL FEATURES
XX	XX	XX	XX

CULTURAL FEATURES

27. ROADS	28. BUILDINGS	29. RAILROADS	30. OTHER CULTURAL FEATURES
CHB	XX	XX	XX

BOUNDARIES

31. BOUNDARY LINES	32. PUBLIC LAND LINES
XX	XX

MISCELLANEOUS

33. GEOGRAPHIC NAMES	34. JUNCTIONS	35. LEGIBILITY OF THE MANUSCRIPT
CHB	CHB	CHB

36. DISCREPANCY OVERLAY	37. DESCRIPTIVE REPORT	38. FIELD INSPECTION PHOTOGRAPHS	39. FORMS
CHB	CHB	XX	CHB

40. REVIEWER		SUPERVISOR, REVIEW SECTION OR UNIT
Charles H. Bishop	2/11/69	A. C. Rauck, Jr. Albert C. Rauck, Jr.

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
C.H. Bishop	3/26/69	
Reviewed By: R.E. Smith	3/28/69	A. C. Rauck, Jr. Albert C. Rauck, Jr.

43. REMARKS

Field Edit Applied From: Field Edit Ozalid Color Contact Photos 66-L-8300, 8402 thru 8404, and 8482
Matte Ratio Print 66-L-8483

FIELD EDIT REPORT
SOUTHWEST COAST OF PUERTO RICO
JOB PH-6708
MAP T-13137

52. ADEQUACY OF COMPILATION

Compilation was adequate. A few minor shoreline changes were recommended and the bluff delineation revised in some areas. A mangrove area was omitted and two or three unimportant bare rocks were overlooked. The trails shown on this sheet are private. One area of fast shoreline was omitted; it was delineated on the photo and cross referenced to the field edit ozalid. The compilation of the shoals and reefs will be discussed under side heading 58 below.

54. RECOMMENDATIONS

There are no recommendations.

55. EXAMINATION OF PROOF COPY

Sr. Oscar Padilla, Urb. Estella Box 28, Guayanilla, Puerto Rico, will be happy to examine a proof copy of the map. Sr. Padilla is the senior harbor pilot of Bahía de Guayanilla.

56. GEOGRAPHIC NAMES

The authorities listed below agree that the names on this map are correct, complete and in current local use.

Authorities consulted are listed below.

I. Sr. Oscar Padilla
Urb. Estella Box 28
Guayanilla, Puerto Rico

Sr. Padilla is the senior harbor pilot of Bahía de Guayanilla and has been a resident for 64 years.

II. Sr. Gilberto Castro Perez
Bo Playa
Guayanilla, Puerto Rico

Sr. Castro is a boat operator and has been a local resident for nine years.

III. Sr. Daniel Santiago
Bo Playa
Guayanilla, Puerto Rico

Sr. Santiago is a harbor pilot and has been a local resident for three years. He is retired from the U.S. Merchant Service.

IV. Sr. Faustino Allongo
R.F.D. 2 639 H
Ponce, Puerto Rico

Sr. Allongo is a contractor and has been a local resident and fisherman for twenty years.

V. Sr. Ramon Torres Echevarria
Ext. Mariani A-110
Ponce, Puerto Rico

Sr. Torres is a mechanical engineer and prominent local sports fisherman. He has been a resident for 36 years.

The harbor pilots mentioned above are licensed by the Puerto Rican Pilot Service.

57. LANDMARKS AND NONFLOATING AIDS TO NAVIGATION

There are no landmarks or fixed aids to navigation within the limits of this map.

58. ROCKS, REEFS, SHOALS AND FOUL AREAS

There are only three or four unimportant rocks on this map. These, where omitted, were indicated on the field photographs and cross referenced to the field edit ozalid. The reefs, for the most parts, were correctly delineated with the exception of the northeasterly end of the Arrecife Unitas. Corrections were inked on the color contact prints and depths were given where practical. Awash areas were also noted and times of observation were noted, both on the photograph and the field edit ozalid. These reefs are coral, or at least the leading or offshore portion of them is coral. The coral portions were indicated on the photos and field edit ozalid.

Offshore from the highest part of these reefs, it is generally foul with submerged coral formations. These areas were outlined on the photos where they were discernable.

Shoals are numerous. A good half of this map being composed of shoals and shallow areas. One large shoal was classified as a shallow area. Many areas, near the westerly limit of the map, were designated as shoal. These may be shallower than the surrounding bottom, but they were too deep for the field editor to determine. A number of small shoals were overlooked in the northerly part of the map near Punta Verraco. These were indicated on the field edit ozalid and cross referenced to the appropriate photograph.

The shallow limits on this sheet were difficult to determine. The entire area comprises one huge flat which is covered with marine vegetation. The limits on the sheet were revised where possible and an approximate limit inked where no definite line of demarkation was visible. Areas awash were indicated, when they were visible, on the photographs.

59. PHOTOGRAPHY

Photography consisted of 1:5000 black and white copies of the color photography and 1:15,000 and 1:30,000 color contact prints. The color prints were more amendable to the work on the reefs and shallow areas.

60. DISPOSITION OF DATA

All data was forwarded to the Photo Branch, Atlantic Marine Center. Copies of the Field edit, Form567's and form 526's were transmitted to the ship Whiting.

Richard E. Kesselring
Surveying Technician

REVIEW REPORT

SHORELINE

T-13137

61. GENERAL STATEMENT

See summary which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED SURVEYS

A visual comparison was made with a copy of registered survey No. 2468, 1:20,000 scale dated 1900. The only portion of this sheet that appears on the registered survey is Punta Verraco which is in general agreement.

Survey T-13137 supersedes registered survey No. 2468 and is to be used for nautical chart construction purposes.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

A visual comparison was made with USGS Punta Verraco, PR quadrangle, 1:20,000 dated 1958. The Punta Verraco shoreline is in general agreement. The offshore features were taken from an obsolete copy of Chart 928. See item 64.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

A comparison was made with H-9031, 1:5,000 scale and dated 11/1/72. This was sounding overlay #2 which had its shoreline from advance manuscript T-13137. Consequently there were no differences in the shoreline. However, there were many gaps in reef areas and submerged coral areas. These blank areas are supplemented by a Photo-Bathymetric Overlay.

65. COMPARISON WITH NAUTICAL CHARTS

Comparison was made with Chart No. 928, dated March 4, 1972, at 1:10,000 scale. The chart is in general agreement with this survey except for natural changes in shoreline. Differences are noted on the comparison print in red.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This survey meets project instructions and meets the National Standards of Map Accuracy.

Reviewed by:

Bernard Kurs
Cartographer

Approved for forwarding:

Melvin J. Umbach
CDR, NOAA
Chief, Coastal Mapping Division, AMC

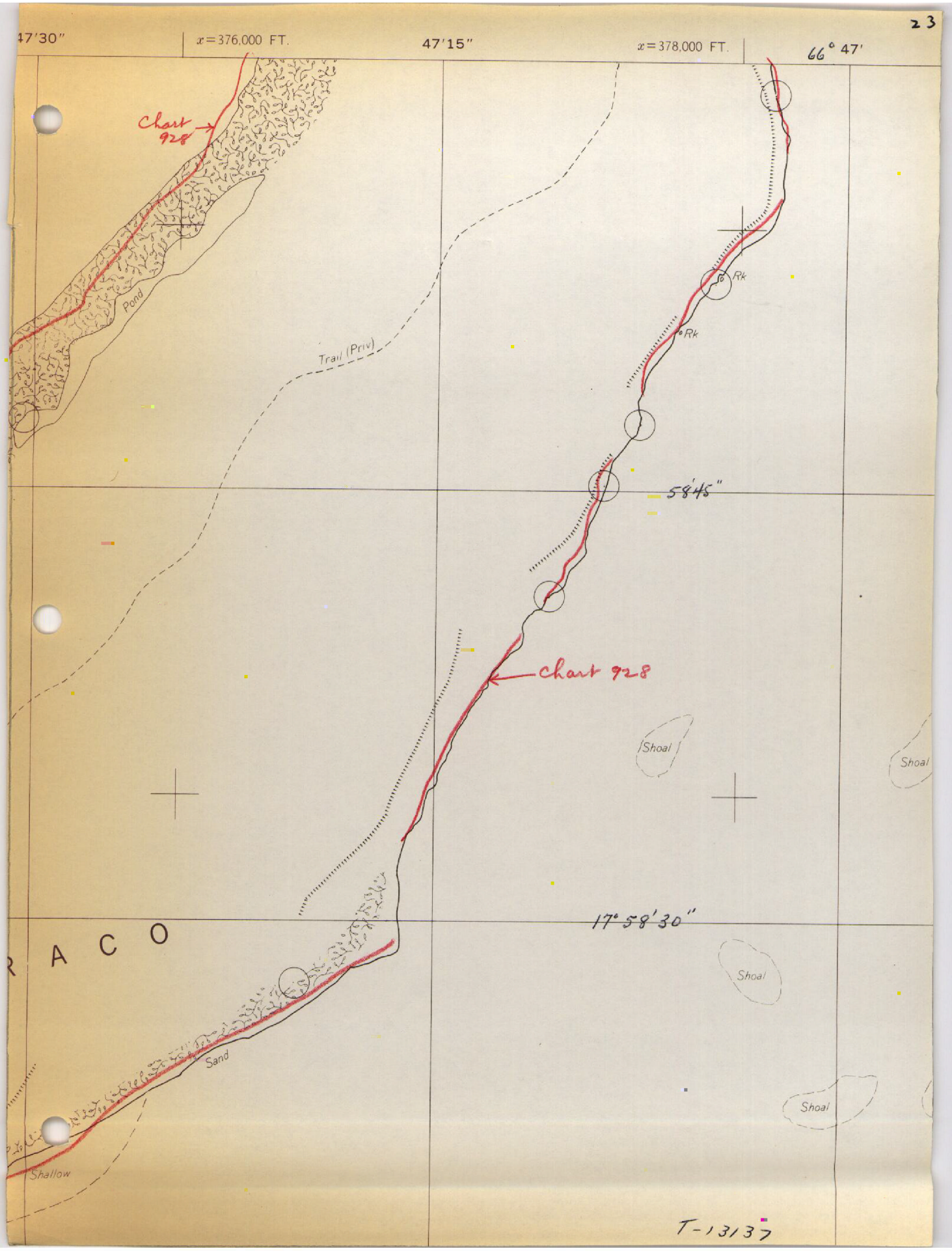
Approved:

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

Approved:

Chief, Photogrammetric Branch

Chief, Coastal Mapping Division


47'30"
x=376,000 FT.
47'15"
x=378,000 FT.
66° 47'
Chart 928
Pond
Trail (Priv)
Rk
Rk
58'45"
Chart 928
Shoal
Shoal
17° 58' 30"
Shoal
Sand
Shoal
Shallow
R A C O
T-13137