

13120

13120

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-13120

LOCALITY

State Puerto Rico

General locality Southwest Coast

Locality Pasaje De Margarita

1966-1968

CHIEF OF PARTY

Alfred C. Holmes, NOAA
Director, Atlantic Marine Center

LIBRARY & ARCHIVES

DATE

DESCRIPTIVE REPORT - DATA RECORD

T - 13120

SUBJECT NO. (II):

PH-6708

FIELD OFFICE (III):

None

CHIEF OF PARTY

PHOTOGRAMMETRIC OFFICE (III):

Atlantic Marine Center

OFFICER-IN-CHARGE

Alfred O. Holmes , RADM
Director

INSTRUCTIONS DATED (III) (III):

Field - September 27, 1966
December 14, 1967

Office - November 14, 1967

METHOD OF COMPILATION (III):

Wild B-8 Plotter

MANUSCRIPT SCALE (III):

1:10,000

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):

1:5,000 pantographed to 1:10,000

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):

PUERTO RICO

VERTICAL DATUM (III): MHW

~~XXXXXXXXXX~~ 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 ~~XXXXXXXXXX~~

REFERENCE STATION (III):

LLANOS, 1966

LAT.:

17° 58' 13.51200"

LONG.:

67° 05' 59.77713"

☒ ADJUSTED☐ UNADJUSTED

PLANE COORDINATES (IV):

STATE

ZONE

Y = 50,198.49 ft. X = 268,341.34 ft.

Puerto Rico

1

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.

DESCRIPTIVE REPORT - DATA RECORD

FIELD INSPECTION BY (II):		DATE:
None		
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):		DATE
A. Bethea		10/20/67
PROJECTION AND GRIDS CHECKED BY (IV):		DATE
L. Van Scoy		10/21/67
CONTROL PLOTTED BY (III):		DATE
B. Barge		11/17/67
CONTROL CHECKED BY (III):		DATE
L. O. Neterer		11/17/67
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):		DATE
I. Saperstein		10/31/67
STEREOSCOPIC INSTRUMENT COMPILATION (III): Wild B-8	PLANIMETRY R. R. White Reviewed by A. L. Shands	DATE 12/2/67 12/7/67
	CONTOURS Inapplicable	DATE
MANUSCRIPT DELINEATED BY (III):		DATE
R. E. Smith		1/28/68
SCRIBING BY (III):		DATE
R. R. White		5/28/68
PHOTOGRAMMETRIC OFFICE REVIEW BY (III):		DATE
COMPILATION R. E. Smith FIELD EDIT R. J. Pate SCRIBING & STICK UP R. E. Smith		1/29/68 5/14/68 6/07/68
REMARKS:		
FIELD EDIT BY: R. E. Kesselring 3/26/68		

DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

"L" & "M"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
66M(c) 637 & 638	11/15/66	0854	1:60,000	0.3' above MLW
66M(c) 645	11/15/66	0904	1:60,000	0.3' above MLW
66L(c) 8313-8315	11/15/66	0944	1:30,000	0.4' above MLW
66L(c) 8327-8329	11/15/66	0955	1:30,000	0.4' above MLW
66L 8513R-8515R	11/16/66	0927	1:30,000	0.3' above MLW

PREDICTED

TIDE (III)

Diurnal

		RATIO OF RANGES	MEAN RANGE	EXTREME RANGE
REFERENCE STATION:	Galveston, Texas			1.4
SUBORDINATE STATION:	Paraguera (Isla Maguey)	0.4		0.6
SUBORDINATE STATION:				
WASHINGTON OFFICE REVIEW BY (IV): Leo F. Beugnet, Atlantic Marine		DATE: May, 1970		
PROOF EDIT BY (IV): Center		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		

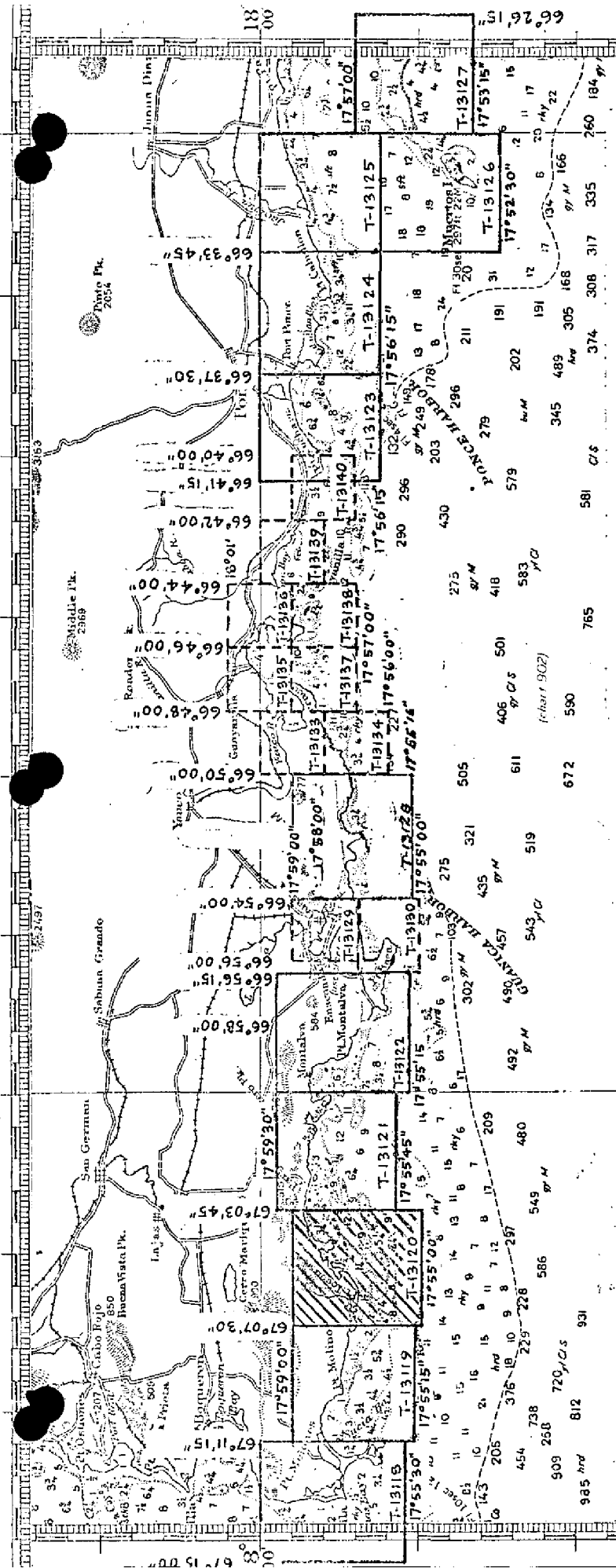
REMARKS:

T-13120

COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore Area for Hydro	January 1968	Superseded
Field Edit applied Compilation Complete	April 1968	Superseded
Arrecife Margarita revised	November 1968	Superseded
Final Review	May 1970	

67°00'

66°30'



OFFICIAL MILEAGE FOR COST ACCOUNTS

JOB PH - 6708

Sheet No.

Sq. Mi.

Sheet No.

Sq. Mi.

T-13118
T-13119
T-13120
T-13121
T-13122
T-13123
T-13124
T-13125
T-13126
T-13127
T-13128

9 9 9 9 9 9 9 9 9 9 9 9

T-13129
T-13130
T-13133
T-13134
T-13135
T-13136
T-13137
T-13138
T-13139
T-13140
Total

6 3 3 3 3 3 3 3 3 3 3 3

114

67°00'

66°30'

6

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-13120

Shoreline survey T-13120 is one of twenty-one similar surveys in job PH-6708. The job is comprised of ten 1:5,000 and eleven 1:10,000 scale surveys located along the south coast of Puerto Rico. This survey covers the area from Arrecife Margarita northeastward to Caleta Parguera.

Field work preceding compilation consisted of pre-marking of horizontal control. There was no field inspection; the survey was field edited subsequent to compilation.

Compilation was at 1:10,000 scale by Wild B-8 Plotter using the photography of November 1966. A copy of the incomplete manuscript along with specially prepared photographs and ozalid prints were furnished for preparation of the boat sheet, location of photo-hydro signals and field edit use.

The compilation manuscript was a vinylite sheet 3 minutes, 45 seconds in latitude by 3 minutes 45 seconds in longitude. After application of field edit the manuscript was scribed, stuck-up and reproduced on cronaflex. Final review was in the Atlantic Marine Center in May 1970. One cronaflex copy and a negative of the final reviewed manuscript are forwarded for record and registry.

FIELD INSPECTION REPORT
Job PH-6708
T-13120

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

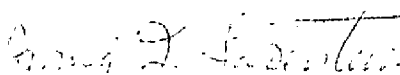
The definition and quality of the RC-9 "M" and RC-8 "L" color photography was fair and good respectively. Smoke covers parts of some photographs on Strips 3 and 5A, but should not hinder compilation of the shoreline.

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

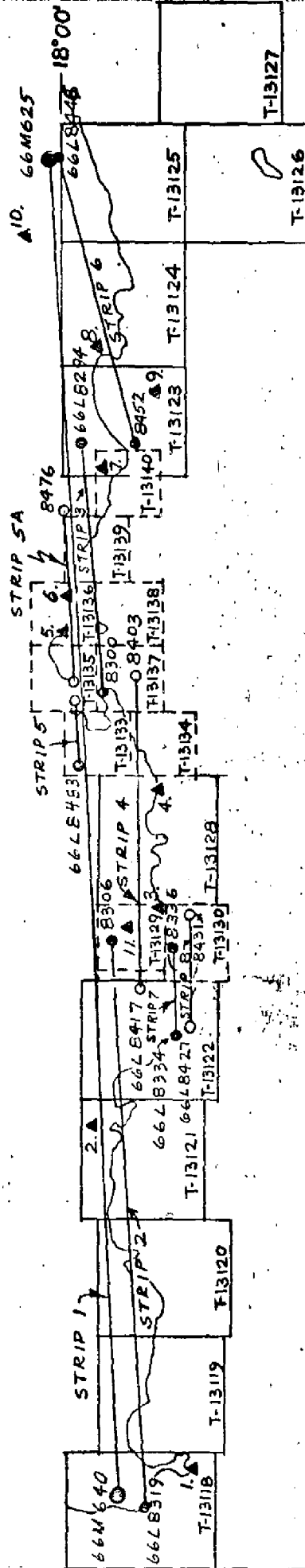

I. I. Saperstein

Approved and Forwarded


Henry P. Eichert, Chief
Aerotriangulation Section

66°30'

67°00'



1. CABO ROJO (USAF) 1966
2. CERRO VERTERO 2 (USGS) 1934
3. ENSENADA, SOUTH R.R. SUGAR CO.
CENT. GUANICA WEST & EAST STACKS, 1966
GUANICA MUNIC. W.T. 1966
4. VAQUERO, 1900
5. TURN 2, 1966
6. GUAYANILLA, UNION CARBIDE CO. W.T. 1966
7. REY, 1966
8. PONCE, RADIO STATION WELO MAST, 1966
PONCE BAY FRONT & REAR RANGE LTS. 1966
9. CORDOÑA ISLAND L.H. 1900
10. PONCE, DON Q RUM CO. STACK, 1966
11. BAHIA DE GUANICA RANGE FRONT
& REAR LTS. 1966

AEROTRIANGULATION

PUERTO RICO
Southwest Coast

PH-6708
Oct. 1967

LEGEND

- ▲ Control Used in Adjustment
- 1:60,000 Photos (color)
- 1:30,000 Photos (")
- 1:15,000 Photos (")

SCALE FACTORNone.

[illegible]

COMPILATION REPORT
T-13120

31. DELINEATION:

The shoreline and all other features were compiled using the Wild B-8 stereoplotter and color photographs taken at 0.6 ft. above mean low water. The infrared photographs were used as a check on the shoreline compilation. There was no field inspection.

32. CONTROL:

See Photogrammetric Plot Report attached.

33. SUPPLEMENTAL DATA:

None

34. CONTOURS AND DRAINAGE:

Contours are inapplicable. Drainage was delineated from office interpretation.

35. SHORELINE AND ALONGSHORE DETAILS:

See Paragraph #31. No low water line was delineated. The shallow and foul limits were delineated using the Wild B-8 and from office interpretation of the photographs.

36. OFFSHORE DETAILS:

Since there was no prior field inspection and due to penetration over water areas, underwater features and hazards to navigation could not be delineated with any accuracy. See Notes for the Hydrographer.

37. LANDMARKS AND AIDS:

None

38. CONTROL FOR FUTURE SURVEYS:

None

39. JUNCTIONS

Junctions are in agreement with T-13119 to the west, and T-13121 to the east. There are no contemporary surveys to the north or south.

40. HORIZONTAL AND VERTICAL ACCURACY

No statement.

46. COMPARISON WITH EXISTING MAPS:

A comparison has been made with USGS Quadrangle PARGUERA, P. R., scale 1:20,000, dated 1957.

47. COMPARISON WITH NAUTICAL CHARTS:

A comparison has been made with USC&GS Chart #901, scale 1:100,000, 9th edition, dated March 1, 1965.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Submitted:

R. R. White

R. R. White
Cartographic Aid

Approved for forwarding:

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

Approved:

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

September 9, 1970

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6708 (Puerto Rico)

T-13120

Arrecife Laurel

Arrecife Margarita

Atravesado

Caleta Parguera

Cayo Vieques

El Palo

Isla Cueva

Isla Guayacan

Mar Caribe

Pasaje de Margarita

Punta Cueva de Ayala

Punta Guayacan

Punta Tocon

San Cristobal

Approved by:



A. Joseph Wraight
Chief Geographer

Prepared by:



Frank W. Pickett
Cartographic Technician

49. NOTES FOR THE HYDROGRAPHER

There are no photo hydro stations or recoverable topographic stations within the limits of this sheet.

All reefs, shoals, shallow areas, foul areas, and submerged rocks are from office interpretation of the color photographs.

There was considerable penetration on the color photography; due to this and without the aid of any prior shoreline inspection, these offshore features have been shown only as aid to the hydrographer. They may be only bottom changes, coral, or marine vegetation. The delineation of all these features should be verified, and if any exist that are not shown they should be located. Also, any that are shown that do not exist should be deleted.

If landmarks or non-floating aids to navigation exist in the area, please locate and submit Form 567.

See notes on the FIELD EDIT OZALID.

FORM C&GS-1002
(9-66)U.S. DEPARTMENT OF COMMERCE
ESSA
COAST AND GEODETIC SURVEY

PHOTOGRAMMETRIC OFFICE REVIEW

T-13120

1. PROJECTION AND GRIDS RES	2. TITLE RES	3. MANUSCRIPT NUMBERS RES	4. MANUSCRIPT SIZE RES
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY RES	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) XX		7. PHOTO HYDRO STATIONS XX
8. BENCH MARKS XX	9. PLOTTING OF SEXTANT FIXES XX	10. PHOTOGRAMMETRIC PLOT REPORT Bridge (W.O.)	11. DETAIL POINTS Wild B-8
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE RES	13. LOW-WATER LINE XX	14. ROCKS, SHOALS, ETC. RES	15. BRIDGES XX
16. AIDS TO NAVIGATION XX	17. LANDMARKS XX	18. OTHER ALONGSHORE PHYSICAL FEATURES RES	19. OTHER ALONGSHORE CULTURAL FEATURES RES
PHYSICAL FEATURES			
20. WATER FEATURES RES	21. NATURAL GROUND COVER RES		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 RES	28. BUILDINGS RES	29. RAILROADS XX	30. OTHER CULTURAL FEATURES RES
BOUNDARIES			
31. BOUNDARY LINES XX		32. PUBLIC LAND LINES XX	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES RES	34. JUNCTIONS RES		35. LEGIBILITY OF THE MANUSCRIPT RES
36. DISCREPANCY OVERLAY XX	37. DESCRIPTIVE REPORT BW	38. FIELD INSPECTION PHOTOGRAPHS XX	39. FORMS RES
40. REVIEWER <i>R. E. Smith</i> R. E. Smith 1/29/68		SUPERVISOR, REVIEW SECTION OR UNIT <i>Albert C. Rauck, Jr.</i> A. 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 <i>B. Wilson</i> B. Wilson 5/13/68 Reviewed by R. J. Pate 5/14/68		SUPERVISOR <i>Albert C. Rauck, Jr.</i> A. C. Rauck, Jr.	
43. REMARKS Field Edit applied from Field Edit ozalid, color transparencies Nos. 66-L-8313, 8327, 8328, and 8329.			

FIELD EDIT REPORT

T-13120

Job PH-6708

Southwest Coast of Puerto Rico

Field edit was performed in accordance with Instructions - PHOTO-HYDRO SUPPORT AND FIELD EDIT - Job PH-6708, dated December 14, 1967, and with Photogrammetry Instructions concerning field edit.

52. Adequacy of compilation.

Compilation was adequate. A few minor shoreline changes along the mangrove were recommended and a foul area was changed to shallow. A few mangrove bushes were compiled which do not exist and these were deleted.

One small bluff, for proposed chart 948, was recommended.

Considering that there was no field inspection, compilation was not merely adequate, it was excellent.

54. Recommendations.

A concise definition of the term shallow is needed.

55. Examination of proof copy.

Dr. Luis R. Almodovar of La Parguera, Lajas, Puerto Rico, will be happy to examine a proof copy of this map.

56. Landmarks and non-floating aids to navigation.

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

57. Reefs, shoals, rocks and foul areas.

Numerous coral reefs are contained on this map. They were, for the most part, correctly identified and delineated. Most of these reefs were awash or bare to an average of one foot at the time of observation. No effort was made to inspect them at predicted low water. Times and heights visible at observation were indicated on the field edit ozalid and cross-referenced to the photographs. The majority of these reefs are probably bare or awash at the sounding datum and should be shown with the coral symbol. The steep, offshore edge of these reefs is generally foul with submerged coral formations. The inshore edge is usually smooth and sandy, with approximately four to five feet of water within fifty feet of the coral. A few soundings were taken and indicated on the ozalids and the photographs.

57(cont.)

Submerged reefs were noted as such on the field edit ozalid. One or two shoals were mistaken for reefs and vice versa.

Numerous shoals were delineated on this map. Some were too deep to be verified by the field editor and will be confirmed or deleted by the hydrographer. Others appear to be bottom vegetation and were deleted.

Rock delineation was good. Several submerged rocks were deleted. The submerged rocks on the reefs, or at least those so noted, should be shown as awash.

One foul area was deleted and one added. The shallow limit lines on the offshore edges of the reefs are, more properly, foul limits. This should, however, be further confirmed by the hydrographer.

58. Drainage and flooded areas.

There is no drainage of note on this map.

For notes pertaining to this heading, see the report for T-13118.

59. Geographic names.

The majority of the names on this map are in undisputed local usage. There are two undisputed new names and two disputed names, one of which falls partially on T-13121.

The two new names are:

ATRAVESADO - which means crossed, and refers to this reef's generally north-south direction as opposed to the east-west trend of the majority of the reefs.

SAN CRISTOBAL - meaning St. Christopher.

Both of these names were unanimously agreed upon by the included authorities, who stated that the names have been in use for at least twenty to twenty-five years.

The disputed names are:

EL PALO - which is charted as ARRECIFE LAUREL.

ARRECIFE LAUREL - which is charted as ARRECIFE CORAL.

Five of the six included authorities, as well as numerous other local residents, agree on these names. They are, however, well established on the charts and maps of the area under the charted names. Whether these names are more important to the inhabitants or to navigation is difficult to determine. Offhand, they are

59(cont.)

probably more important to local residents, the majority of whom make their living from the sea and who know the reefs and waters intimately. There is very little shipping, perhaps none, in the area. International freighters and tankers stand well offshore, so that the names of these reefs, other than the fact that they are reefs, is of little value to them.

Local authorities consulted were:

Dr. Luis R. Almodovar of La Parguera, Lajas, Puerto Rico. Dr. Almodovar is a professor at the Institute of Marine Science of the University of Puerto Rico. He has been a resident for ten years and is a well known local sport fisherman.

Mr. Victor M. Rosado of La Parguera, Lajas, Puerto Rico. Mr. Rosado is a research assistant at the Institute of Marine Science and has been a resident of La Parguera for thirty years.

Mr. Juan J. Irizarry of La Parguera, Lajas, Puerto Rico. Mr. Irizarry is a research assistant at the Institute of Marine Science and has been a resident of La Parguera for thirty-four years.

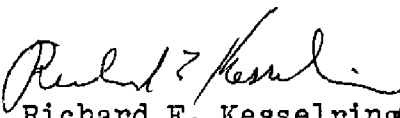
Mr. Luis A. Porlilla Rosorlo of La Parguera, Lajas, Puerto Rico. Mr. Porlilla is a night watchman and local fisherman. He has been a resident of La Parguera for thirty-six years.

Mr. Daniel Rosado Torres of La Parguera, Lajas, Puerto Rico. Mr. Rosado is a local fisherman and has been a resident of La Parguera for thirty years.

Mr. Lindorfo Cancel of La Parguera, Lajas, Puerto Rico. Mr. Cancel is a local carpenter and a former charter boat captain. He has been a resident of La Parguera for twenty-one years.

60. Photography.

Photography was excellent. The color transparencies were used almost exclusively for the field edit and left little to be desired.


Richard E. Kesselring
Surveying Technician
March 26, 1968

REVIEW REPORT T-13120
SHORELINE
May 27, 1970

61. GENERAL STATEMENT

See Summary which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED SURVEYS

Comparison was made with copies of Registered Surveys No. 2469, 1:20,000 scale, dated 1900 and No. 2475, 1:20,000 scale dated 1899.

These two surveys do not show any of the offshore reefs or any rocks within the limits of T-13120. The most noticeable change is in the placement of the apparent shoreline along the mangrove. The areas of the larger changes have been noted on the comparison print in blue.

Registered Surveys Nos. 2469 and 2475^{are} superseded by T-13120 for nautical chart construction purposes.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS PARGUERA, P. R., 1:20,000 scale, 7 1/2 minute quadrangle, dated 1957. The difference in the shoreline of the two surveys has been noted on the comparison print in brown.

The reefs as shown on the USGS quadrangle are not in good agreement with those of this survey.

Three submerged rocks on the USGS quadrangle at latitudes and longitudes 17° 56' 11" - 67° 05' 19"; 17° 57' 30" - 67° 04' 29" and 17° 58' 01" - 67° 03' 53" are not visible on photographs of the area. These rocks and the reefs have also been noted on the comparison print in brown.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with copies of boat sheets WH-10-1A-68 (H-8984) and WH-10-2B-68 (H-8985). The shoreline on the boat sheets is not complete. The shoreline that is on the boat sheets appears to have been obtained from T-13120.

The boat sheets contain no rocks or any of the offshore coral reefs within the limits of this survey.

65. COMPARISON WITH NAUTICAL CHARTS

A visual comparison was made with chart 901, 1:100,000 scale, 10th edition, March 25, 1968. The two surveys are in fair agreement.

The only rocks on the chart are those which define the reefs. A submerged wreck on the westerly end of Arrecife Margarita near latitude 17° 55' 12" longitude 67° 07' 27" is not identifiable on photographs that cover the area.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

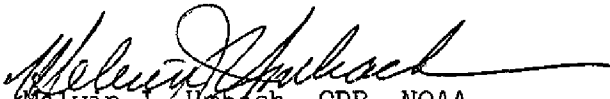
This survey complies with instructions and meets the National Standards of Map Accuracy.


67. OFFSHORE FEATURES

The reefs on this survey shown with reef symbol and noted as coral reef awash were obtained from infrared photographs 66L-8513 through 66L-8515 and 66L-8525 through 66L-8527. Only the area believed to be awash at mean low water was delineated with the reef symbol.


Reviewed by:

Approved for forwarding:

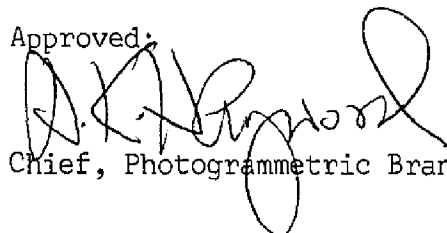

Melvin J. Umbach, CDR, NOAA
Chief, Photogrammetry Division, AMC



Leo F. Beugnet
Cartographer

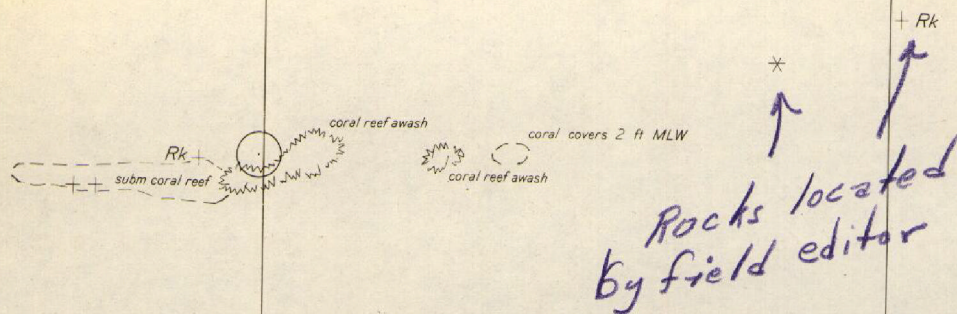
Approved:


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

Approved:


Chief, Photogrammetric Branch


Chief, Coastal Mapping Division



17° 56' 00"

coral reef awash

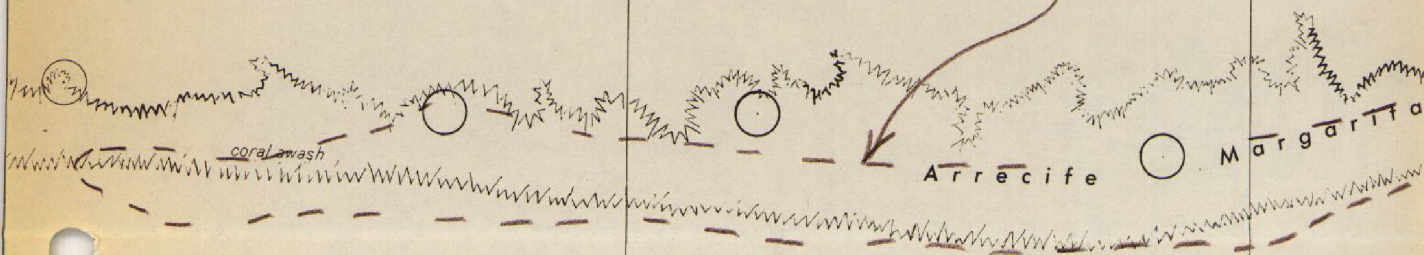
coral reefs awash

17° 55' 30"

67° 07' 00"

Brown dashed area is
reef from USGS PARGUERA
quadrangle

67° 08' 30"



T-13120

NOTE: The predicted tide range is 0.6 Ft. Therefore no distinction has been made for rocks or coral awash at M.H.W. or M.L.W. All are indicated as awash.

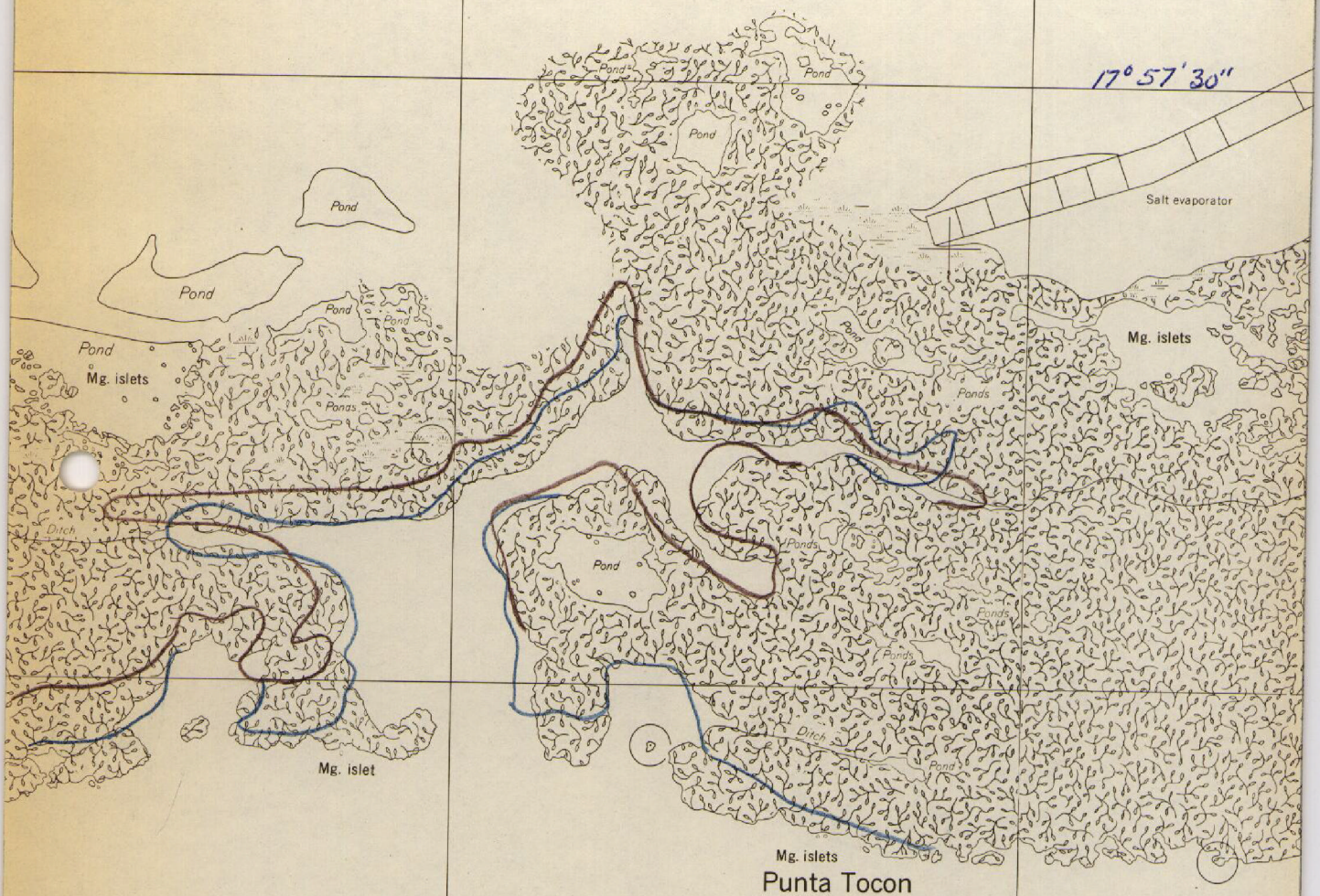
Brown dashed areas are
reefs from USGS PARGUERA
Quadrangle

M A

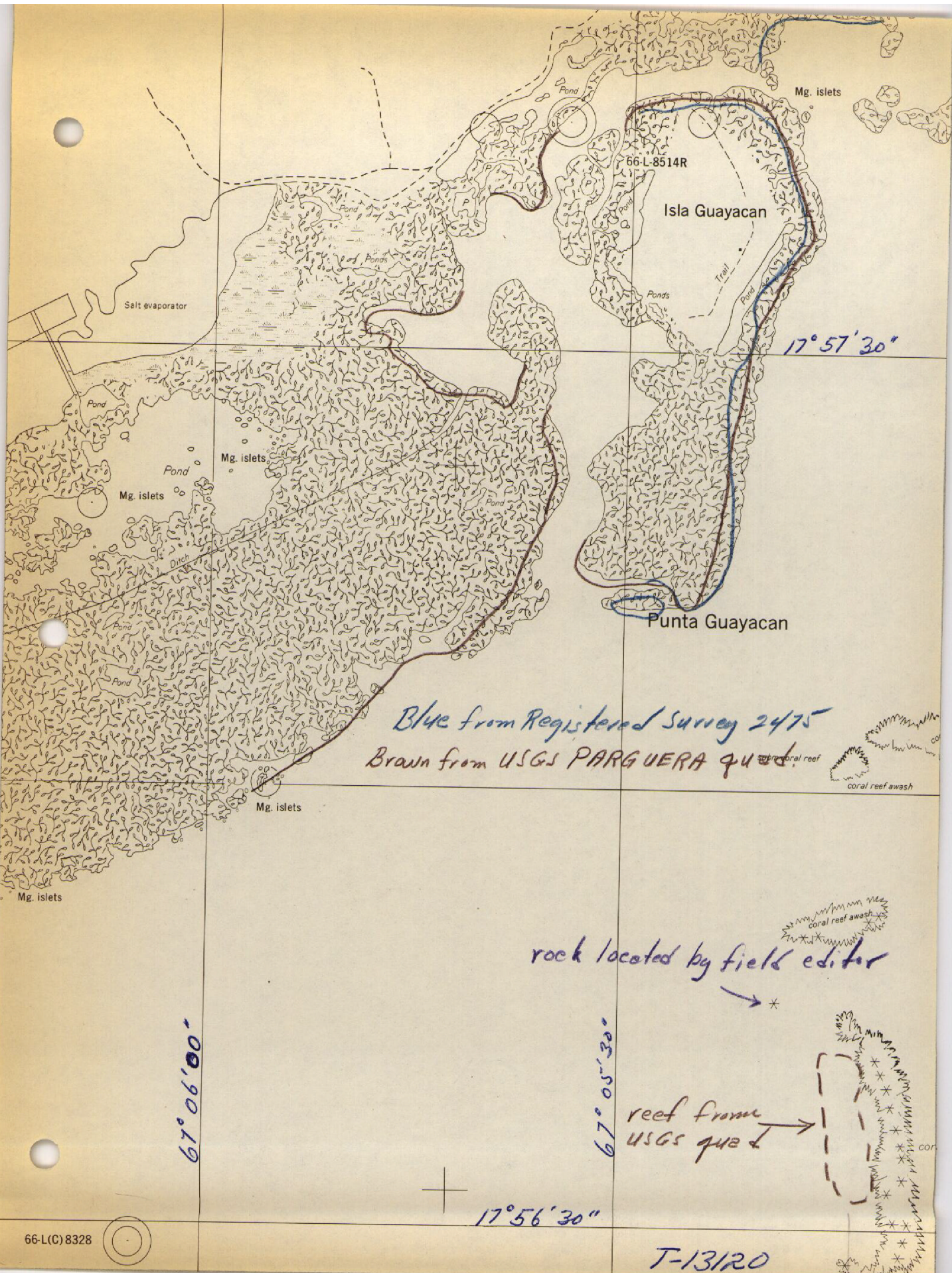
T-13120

Blue - From Registered Survey No. 2469 & 2475
Brown - From USGS PARGUERA, P.R. Quad.

66-L-8515R



T-13120



17° 57'30"

y = 45,000 FT

57'00"

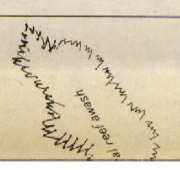
y = 40,000 FT

56'30"

From USGS quad

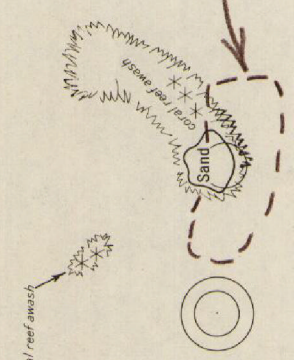


coral reef awash



A

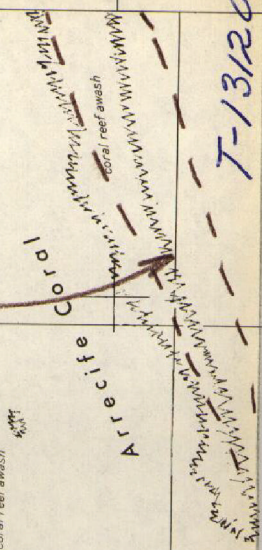
Brown dashed areas are reefs from USGS quadrangle



66L(C) 8329

67°04'00"

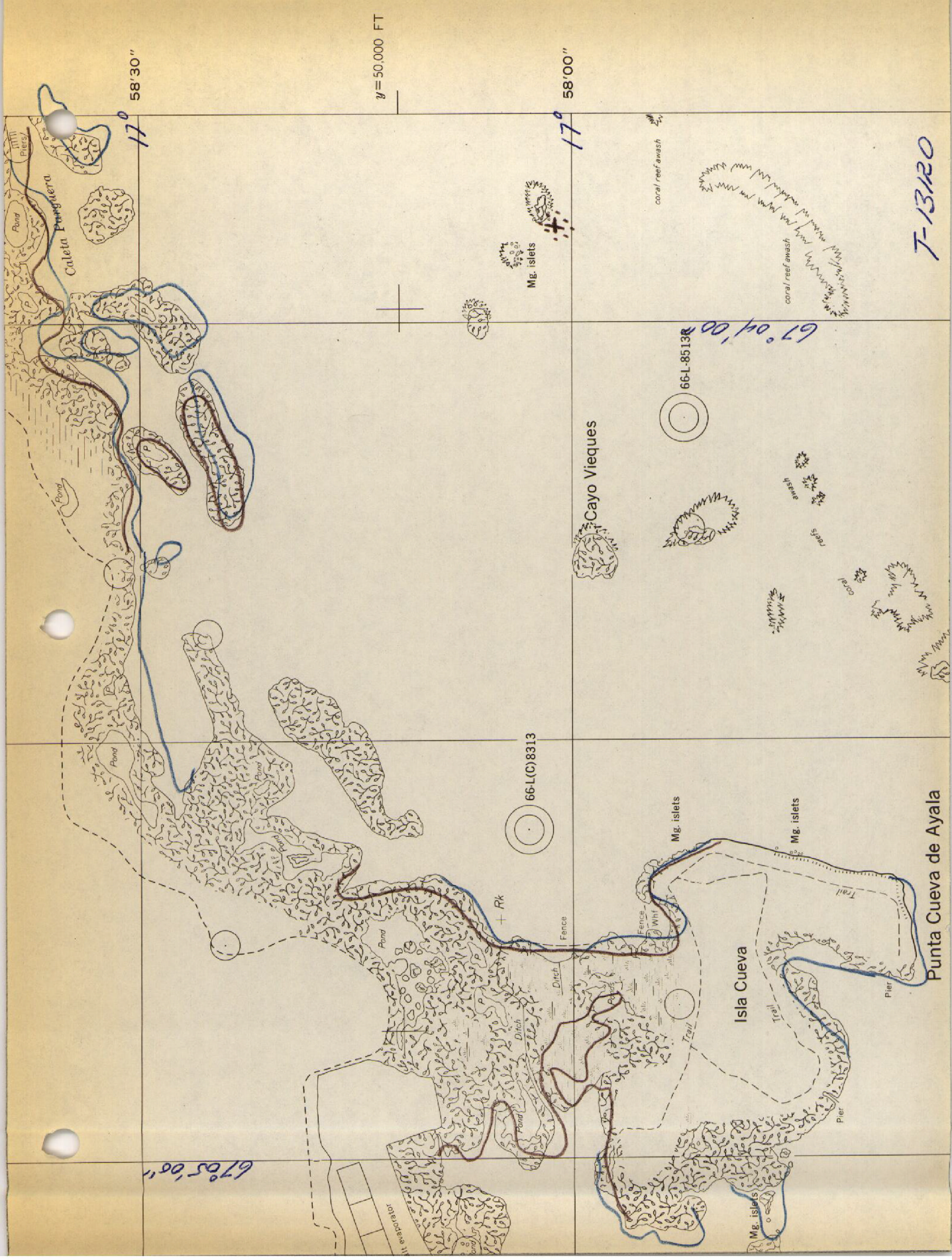
67°03'45"



17°56'30"

A

T-13120



T-13120