

11821

11821

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-11821
LOCALITY	
State	HAWAII
General locality	MOLOKAI
Locality	KALUANUI
19 <del>60</del> <sup>65</sup> - 1968	
CHIEF OF PARTY	
Allen L. Powell, Director, AMC	
LIBRARY & ARCHIVES	
DATE	

DESCRIPTIVE REPORT - DATA RECORD

T -11821

PROJECT NO. (II):

PH-6201

FIELD OFFICE (II):

Honolulu

CHIEF OF PARTY

H. J. Seaborg

PHOTOGRAMMETRIC OFFICE (III):

Atlantic Marine Center

OFFICER-IN-CHARGE

Allen L. Powell, Director, AMC

INSTRUCTIONS DATED (I) (III):

Office Compilation

May 31, 1962

December 14, 1962

" " Amendment I

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):		DATE:
L. F. Van Scoy		August 1962
MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):		
2 October 1960 Wild B-8 Plotter		
PROJECTION AND GRIDS RULED BY (IV):		DATE
A. E. Roundtree		2-2-65
PROJECTION AND GRIDS CHECKED BY (IV):		DATE
R. Glaser		2-10-65
CONTROL PLOTTED BY (III):		DATE
Portland Photogrammetric Office		1965
CONTROL CHECKED BY (III):		DATE
Portland Photogrammetric Office		1965
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):		DATE
H. P. Eichert		December 1964
STEREOSCOPIC INSTRUMENT COMPILATION (III):	PLANIMETRY	DATE
	Wild B-8	A. L. Shands July 24, 1967
	CONTOURS	DATE
	Inapplicable	
MANUSCRIPT DELINEATED BY (III):		DATE
A. L. Shands		September 16, 1967
SCRIBING BY (III):		DATE
B. Wilson		Oct 15, 1969
PHOTOGRAMMETRIC OFFICE REVIEW BY (III):		DATE
Compilation C. H. Bishop		Sept. 20, 1967
Field Edit R. E. Smith		Oct. 17, 1969
Scribing & Stick-up R. E. Smith		Dec. 5, 1969
REMARKS:		
Field Edit by: R. L. Newsom December 1968		

DESCRIPTIVE REPORT - DATA RECORD

AREA (KIND OR SOURCE) (III):

Wild RC-8 "W"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
60 W 2171 thru 2173	2 Oct. 1960	0849	1:25160	0.8 ft. above MHW

TIDE (III) Predicted

Diurnal

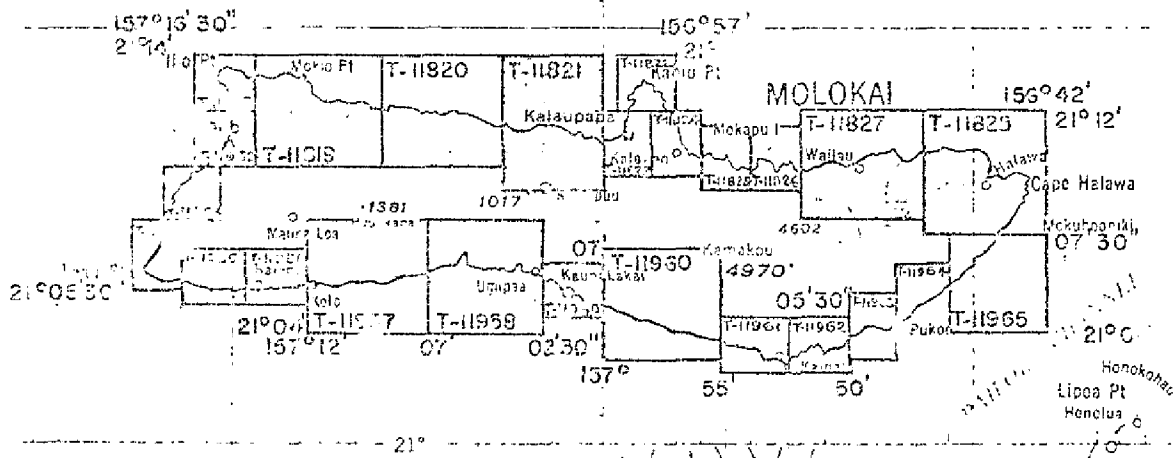
RATIO OF MEAN

T-11821

COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore area for hydro	August 1967	Superseded
Field edit applied compilation complete	July 1969	

PROJECT PH-0201

SHORELINE MAPPING  
1:5,000 AND 1:10,000 SCALES  
MOLOKAI ISLAND HAWAII



## Official Mileage for Cost Accounts

Sheet No.	Shoreline Lin. Mi.	Area Sq. Mi.	Sheet No.	Shoreline Lin. Mi.	Area Sq. Mi.
11818	4	4	11952	3	3
11819	6	6	11953	3	3
11820	6	6	11954	2	2
11821	4	4	11955	3	3
11822	3	3	11956	3	3
11823	1	1	11957	6	6
11824	3	3	11958	5	5
11825	3	3	11959	3	3
11826	3	3	11960	6	6
11827	6	6	11961	3	3
11828	9	9	11962	4	4
			11963	3	3
			11964	3	3
			11965	3	3
			Total	98	98

SUMMARY TO ACCOMPANY  
DESCRIPTIVE REPORT T-11821

Shoreline survey T-11821 is one of twenty-five similar surveys in Project PH-6201. The surveys in this project cover the entire coast of Molokai Island, Hawaii. This survey covers that part of the north coast extending from Halo eastward to Auahua.

Field work preceding compilation consisted of recovery and identification of horizontal control, field and shoreline inspection, identification of landmarks for charts, and selection of photo-hydro signal sites.

Compilation was at 1:10,000 scale by Wild B-8 Plotter methods, using the photography of October 2, 1960. Cronaflex copies of the manuscript along with ozalids and specially prepared photographs were provided for transfer of the shoreline to the boat sheets, location of photo-hydro signals, and field edit use.

The manuscript was a vinylite sheet 5 minutes in latitude by 4 minutes in longitude. After application of field edit, which was accomplished in December 1968, the survey was scribed, reproduced on cronaflex, and stick-up applied. Final review was in the Atlantic Marine Center in August 1970. One cronaflex and a negative of the final reviewed survey are forwarded for record and registry.

## FIELD INSPECTION REPORT

Map Manuscripts  
T-11952 thru 11965  
T-11818 thru 11828

Project FH-6201

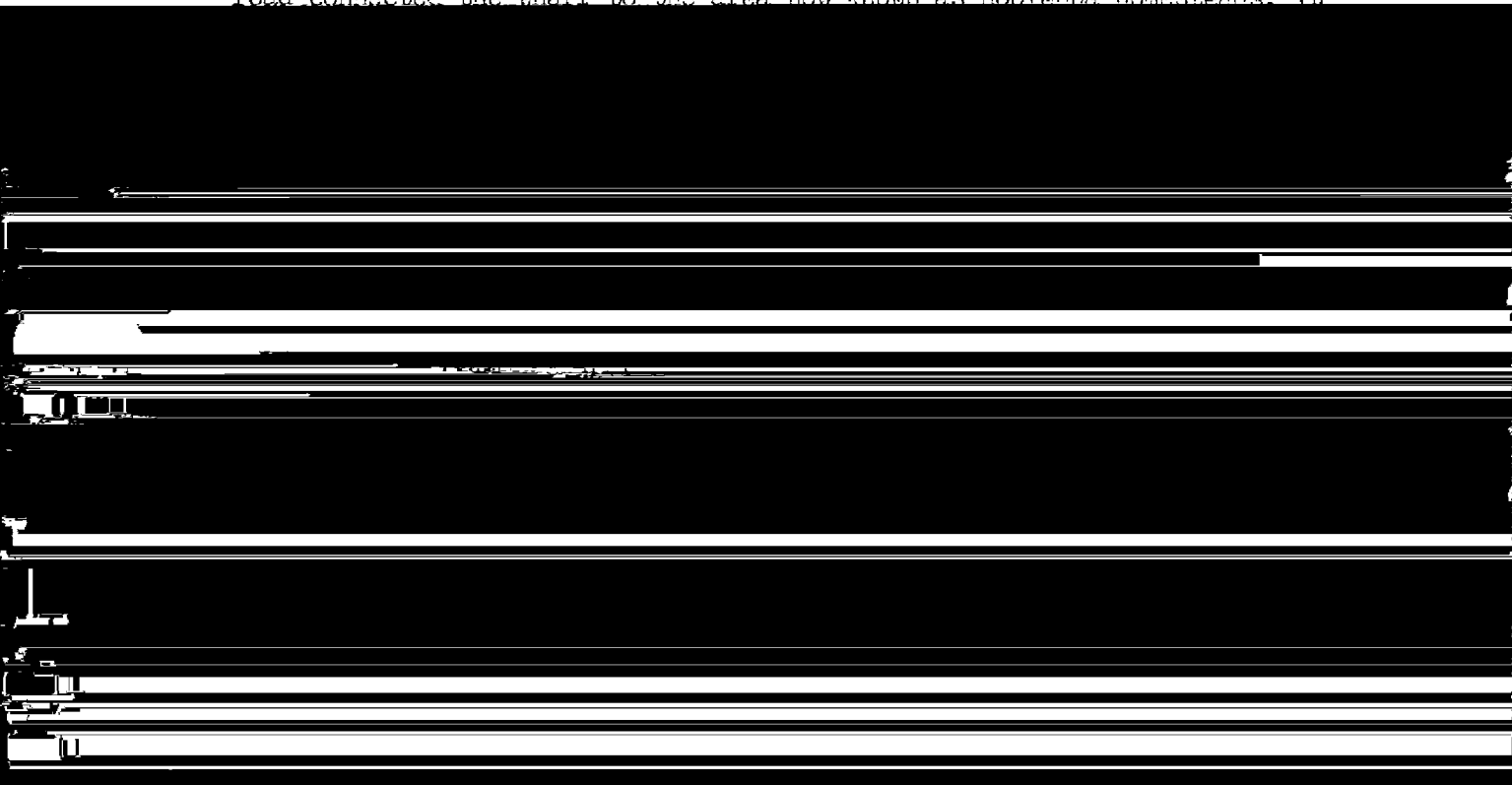
January - October 1962

2. AREAL FIELD INSPECTION

The area covered by this report encompasses the whole of the island of Molokai. This is the fifth largest of the group of islands that form the State of Hawaii. The island was originally formed by the eruption of two volcanos. One was located somewhere near the east end of the island and the other somewhere near the west end. Following these eruptions the numerous deep drainages were created by stream erosion and the ocean created the great cliffs along the north coast. A later eruption formed the Maianalua Peninsula on the north central coast. The Kauhako Crater remains as evidence of this eruption. The highest peak is Kanakou which is 4958 feet above sea level.

The climate of the island varies considerably depending on the elevation and location in relation to the prevailing trade winds. The mean annual temperature at sea level is about 74 degrees. The temperature seldom varies more than 10 degrees except at the higher elevations. The yearly rainfall varies from about 7 inches around Kaunakakai to over 150 inches in the high mountain sections of the northeast.

The only port in use on the island is located at Kaunakakai. A small wharf connected to the shore by a long mole is used to load and unload barges, and serve small commercial and private boats. At one time a railroad connected the wharf to the area now known as Hoolehua Homesteads. It



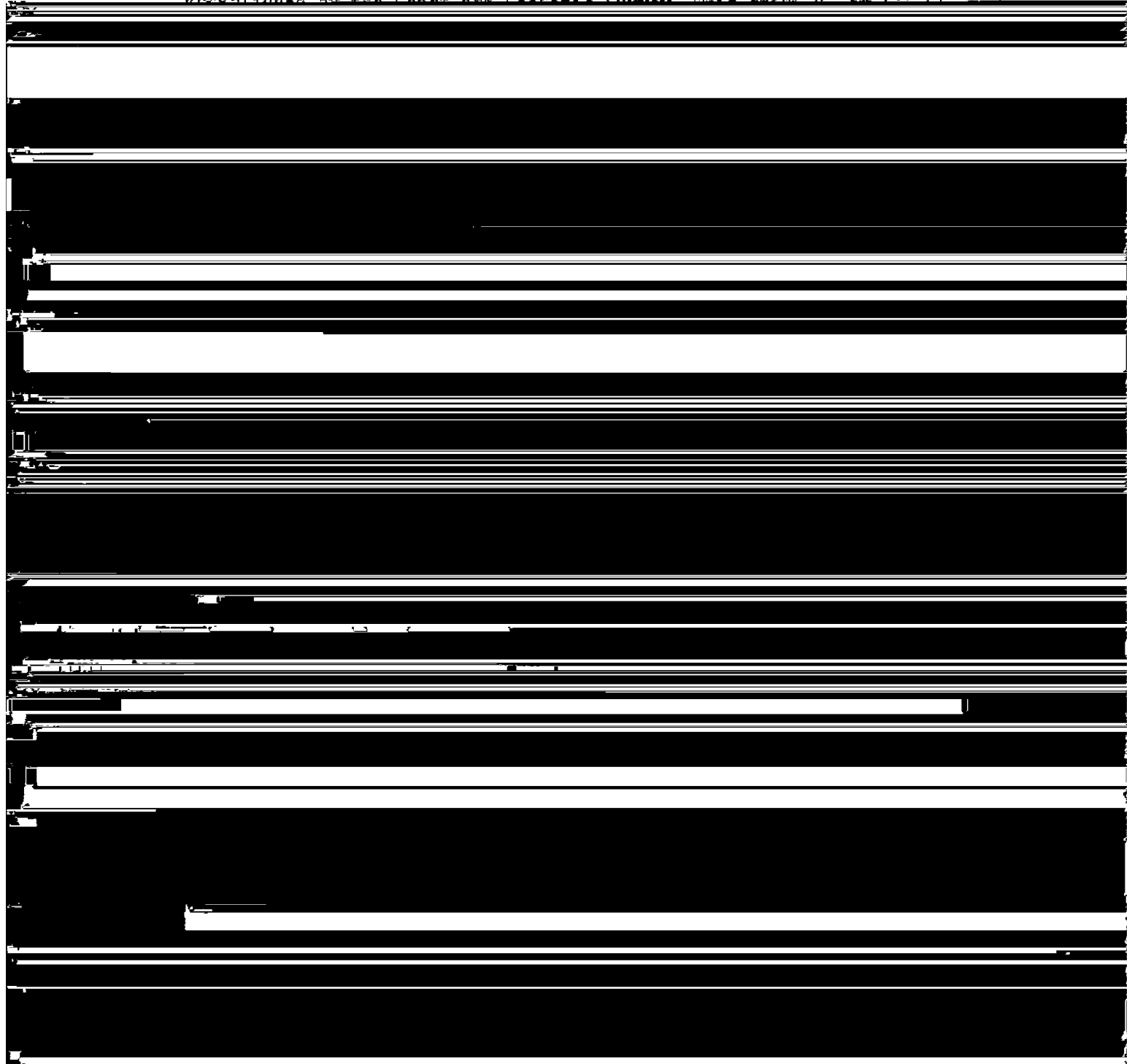


Located on the Makenalua Peninsula is the small settlement of Kalanapapa. The settlement is maintained by the State of Hawaii. Department of

Molokai VOR (MOKK)  
 Puu Apalu, Tank  
 Ilio Pt., Coast Guard Loran Mast  
 Waiahewahewa, Aero Beacon Red Light  
 Laau Pt. Light  
 Kaunakakai Harbor, Entrance Range, Front Light  
 Kaunakakai Harbor, Entrance Range, Rear Light

(b) No datum adjustments were made by the field party.

(c) WAIELI 2, 1945 was the only control station identified that was not established by the Coast and Geodetic Survey. This station was established



A total of 13 U. S. Geological Survey bench marks were searched for. These marks were used in conjunction with the tellurometer traverse work on the island and for use in determining the elevation of landmarks. All marks were listed on Form 685 which was submitted to the Honolulu District Officer.

#### 5. CONTOURS AND DRAINAGE

Contours not applicable

Drainage is self evident on the photographs. All streams except for a few in the larger valleys of the northeast coast and near the east end of the south coast are intermittent. During the wet season there are dozens of waterfalls cascading from the tops of the cliffs and rims of the valleys of the northeast coast. Marsh areas have been indicated on the field photographs.

#### 6. WOODLAND COVER

The mountainous areas of the northeast part of the island is covered with a dense growth of native ferns and hardwoods. A large stand of planted softwoods is located along the top of the pali in the north central part of the island. Keawe trees which were introduced to the island about 100 years ago cover most of the remainder of the island except for the cultivated areas. Along the mud flats of the south coast there are scattered stands of introduced Mangrove trees.

#### 7. SHORELINE AND ALONGSHORE FEATURES

(a) The mean high water line was indicated on the photographs. Along some sections of the northeast coast the shoreline was obscured due to the shadows created on the photographs from the almost vertical cliffs. In some areas of the south coast the shoreline was partially obscured by low overhanging Kiawe trees. In most cases this overhang was less than 10 meters and the approximate correct location was indicated on the photographs. Also along the south coast there are scattered stands of Mangrove trees. In these areas the mean high water line was indicated as apparent shoreline.

The shoreline along the north, east, and small areas of the west and southwest coast contain many areas of alongshore rocks, projecting reefs and ledges, and almost vertical bluffs. These features combined with a normally heavy surf breaking along the shore tend to confuse the location of the mean high water line on the photographs.

Where possible especially along the beach areas and the more accessible sections of the coast the location of the mean high water line was determined by measurements to near by objects.

(b) The low water line was not indicated on the photographs.

(c) Where possible the character of the foreshore was indicated on the photographs.

(d) The north, east, and sections of the west and southwest coast is bordered by rocky cliffs. In some cases these cliffs are over 2000 feet high. Along most of the south coast, sections of the west coast, and the Moomoni area the land has a more gradual slope with a small relatively flat area adjacent to the coast.

(e) The only unnatural features to be found in the project area were located at Kalaupapa, Kamalo, Kaunakakai, Kolo, and Haleolono. All information regarding these features was indicated on the field photographs.

(f) Not applicable

(g) Along the south shore there are the remains of many fishponds. The stone walls for some of these have been completely leveled and for most of the others large sections of the walls have been leveled. The location of these fishponds is apparent on the photographs.

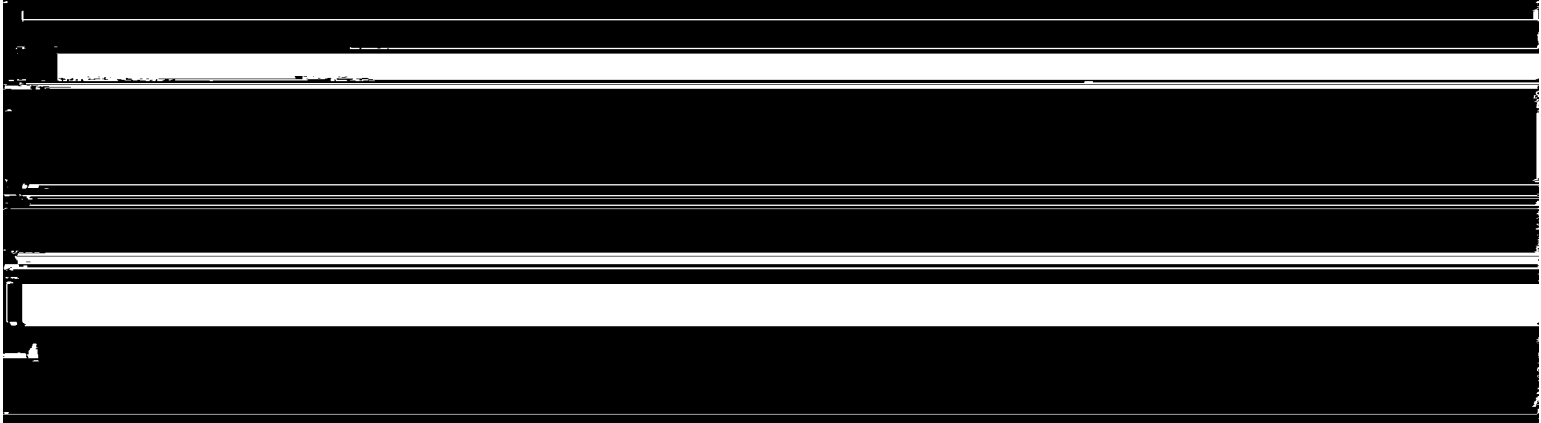
#### 8. OFFSHORE FEATURES

Offshore rocks are located along many areas of the north, east, and sections of the west and southwest coast. Most of these rocks that are visible on the photographs are adjacent to the shore. In these areas it is probable that there are many rocks that are not visible on the photographs but are close enough to the surface of the water to consider the foreshore as being foul with submerged rocks. The height of many of the rocks along the shore were estimated at the time the shoreline was inspected.

A reef about 0.5 to 1.0 mile offshore is located along most of the south coast. Between the reef and the shore there are scattered areas of sand and many coral heads that project at low water.

#### 9. LANDMARKS AND AIDS

(a) All charted landmarks were investigated by the field party. A total of 13 old landmarks were deleted from the charts and four old landmarks were retained. A total of 11 new landmarks were selected for charting. The old landmarks which were to be deleted were indicated on the sections of the charts on which they appeared. These sections of the charts will be submitted with the field records. All old landmarks that were retained and



(c) The geographic positions for the following charted aeronautical aids was determined by traverse or triangulation during the 1962 field season.

Molokai, Airport Beacon  
 Waiahewa, Aero Beacon Red Light  
 Waihuna, Aero Beacon, Red Light  
 Kualapuu, Aero Beacon, Red Light

The geographic position of one new aeronautical aid selected for charting was determined during the 1962 field season.

Molokai VOR (MKK)

All aeronautical aids to be charted were listed on Form 567 and the elevation for each aid was determined by the field party.

(d) The geographic positions of the following list of aids to navigation was determined by the field party during the 1962 season.

Molokai Lighthouse  
 Laau Pt. Light  
 Ilio Pt., Coast Guard Loran Mast  
 Kaunakakai Harbor, Entrance Range, Front Light  
 Kaunakakai Harbor, Entrance Range, Rear Light

All nautical aids to be charted were listed on Form 567 and the elevation for each aid was determined by the field party.

(e) Not applicable

#### 10. BOUNDARIES, MONUMENTS, AND LINES

Not applicable

#### 11. OTHER CONTROL

No recoverable topographic stations were established.

In all areas where identifiable objects could be found photo hydro sites were selected. In some cases it will be necessary to locate a more suitable location for the hydrographic signals from the selected photo hydro sites .

#### 12. OTHER INTERIOR FEATURES

All roads in the project area were classified on the field photographs in compliance with the project instructions.

All public buildings with their function was indicated on the field photographs.

The main airport serving the island is located south of the Hoolehua Homestead area in the central section of the island. A small airport for use by small aircraft is located on the Makanalua Peninsula. A small private airstrip is located at Haleolon near the southwest end of the island.

No bridges or overhead cable crossings over navigable water are located in the project area. There are no submerged cables connecting the island with other areas.

13. GEOGRAPHIC NAMES

Not Applicable

Approved: OCT 30 1962  
*H. J. Seaborg*  
H. J. Seaborg  
Capt., C & G S  
Honolulu District Officer

Respectfully submitted:  
*Leonard F. Van Scoy*  
Leonard F. Van Scoy  
Supervisory Survey Technician  
Unit Chief, C & G S

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# Photogrammetric Plot Report

Project 21044

Molokai, Hawaii

December, 1964

## 21. Area Covered

This report pertains to the remainder of the Island of Molokai. It covers surveys T-11818 thru T-11824.

## 22. Method

Three strips were bridged by analytic aerotriangulation. Strips 6 and 7 were at a scale of 1:15,000 and strip 8 at 1:25,000.

During the processing of the data for strip 8, distortions were evident at the eastern terminal. Model 2169-70 was eliminated from the bridge, and model 2170-2171 appeared to have distortions also in the center and north side although the two tie points on the south side of the model agreed well with strips 4 and 6. Fortunately these models were not needed as the area is adequately covered by strips 6 and 7.

## 23. Adequacy of Control

The failure of horizontal points in strip 8 to hold together beyond point 86110 and 11 was attributed at first to a possible datum difference. This could not be proved. When additional measurements and a study of the cantilever output indicated distortions in the bridge, this idea was discarded.

Although control point 10100 would not hold well with 86110 and 11 in strip 8, when 10100 was used as a terminal in strip 7, tie point 10403 agreed reasonably well with strip 8.

Control complied with project instructions and was adequate.


## 24. Supplemental Data

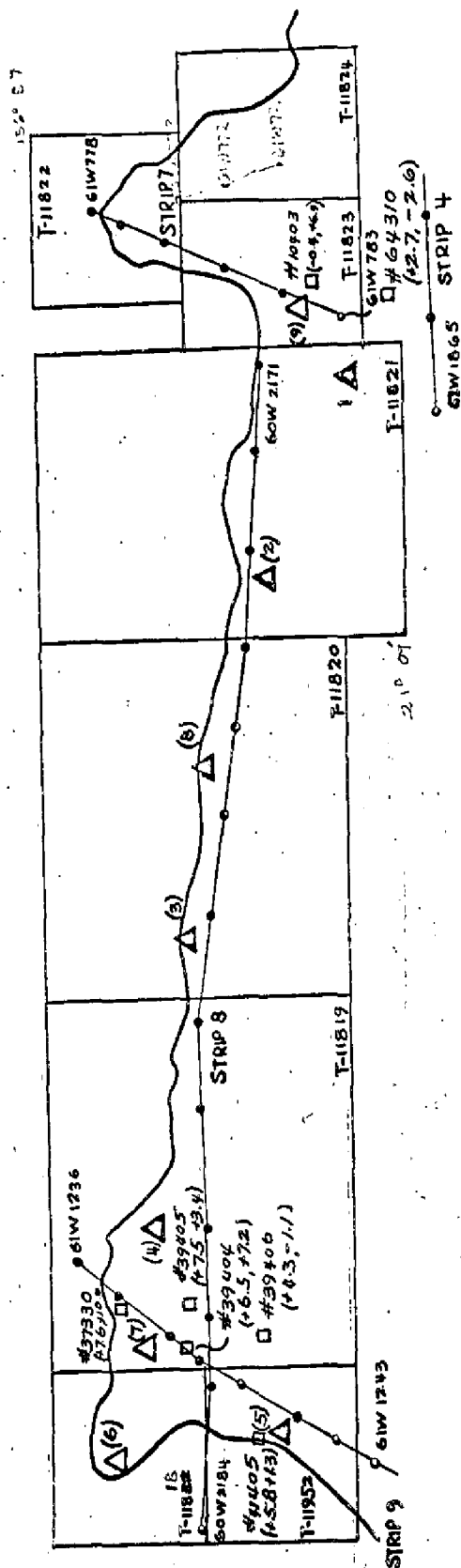
None

## 25. Photography

Photography was adequate with regard to coverage, overlap, and definition.

Respectfully submitted,

  
Henry P. Eichert, Acting Chief,  
Aerotriangulation Section



# AEROTRIANGULATION SKETCH

MOLOKAI ISLAND, HAWAII

PROJECT 21044

## LEGEND

Δ CONTROL USED IN ADJUSTMENT

Δ CONTROL USED AS CHECK

□ TIE POINTS

- (1) NAHAEULA 2, 1962 Sub Pt. A (+0.3, +0.9) Sub Pt. B (+2.8, -1.1)
- (2) POHAKUNUI, 1888 Sub Pt. A (-2.8, +0.8) Sub Pt. B (-10.0, -3.2)
- (3) MOOMOMI, 1962 Sub Pt. A (-16.2, 7) Sub Pt. B (-10, -5.3)
- (4) LAINA (KAA) 1926 Sub Pt. A (0.0, 4.9)
- (5) POU O KAIKA, 1915 Sub Pt. A (+1.2, -2.1) Sub Pt. B (-6.2, 10.1)
- (6) SAND 1950 Sub Pt. A (+2.4, 17.9) Sub Pt. B (42.0, 16.8)
- (7) KAE O KAELE, 1926 Sub Pt. A (2.8, 9.1) Sub Pt. B (40.7, +8.9)
- (8) POU KAPELE, 1988 Sub Pt. A (+2.9, -1.2) Sub Pt. B (-14, -5.0)
- (9) POUWAI 1962 Sub Pt. A (10.1, 20.0)

Sub. Pts. for SAND 1950 were considered poor at the time of plate measurement



LEGEND

△ Control used in adjustment

△ Control used as check

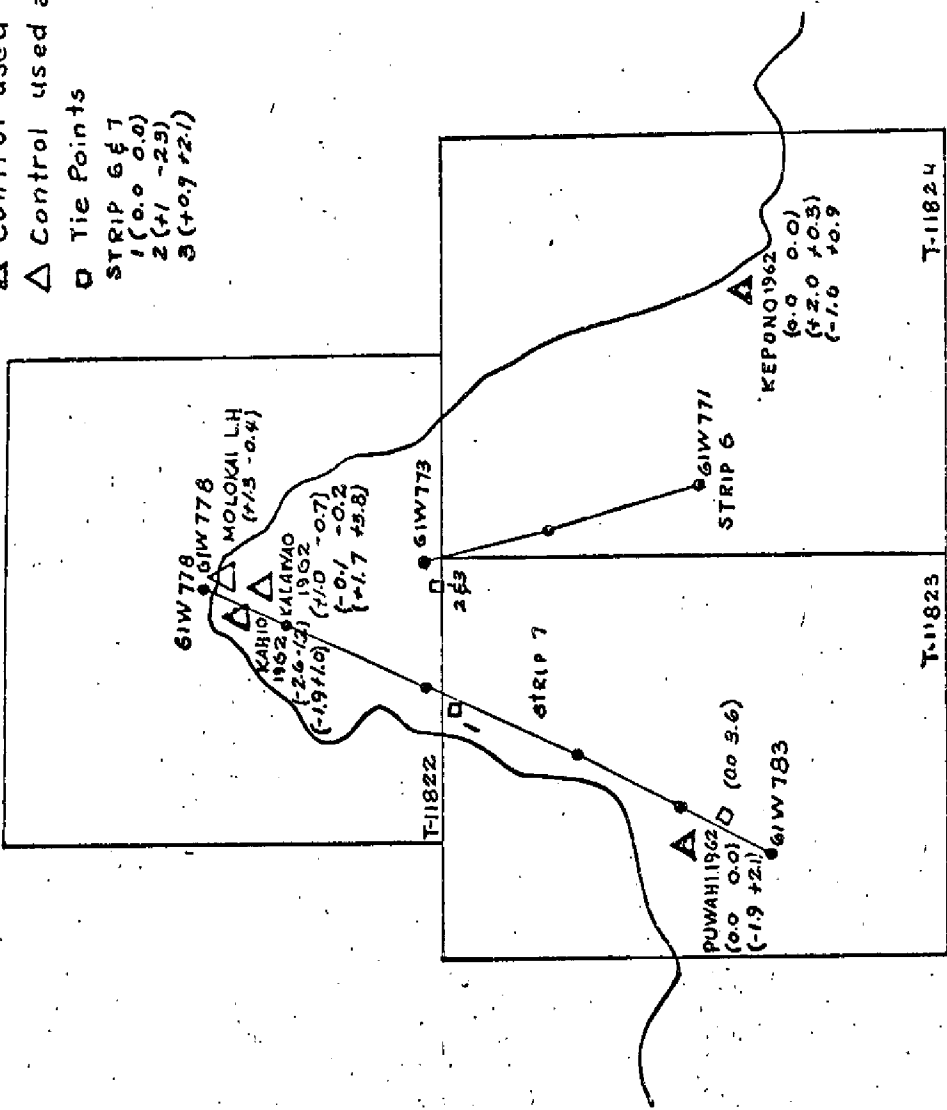
□ Tie Points

STRIP 6 & 7

1 (0.0 0.0)

2 (+1 -2.9)

3 (+0.9 +2.1)



AEROTRIANGULATION SKETCH

MOLOKAI ISLAND HAWAII

PROJECT 21044

## MAP T-11821

PROJECT NO.

PH-6201

SCALE OF MAP 1:10,000

SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	X X X X X X X X X X COORDINATE X X X X X X X X X X COORDINATE X	N. A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS (1 Ft. = 3048006 meter) FORWARD (BACK)
HAHAEULA 2, 1962	Form 164 W. O. IBM	Old Hawaii	x = 384 207.8 ✓ y = 301 811.0 ✓	4 207.8 (0793.2) ✓ 1 811.0 (3189.0) ✓
KAULAPUU AERO BEACON RED LIGHT 1962	GP Page 113	"	21° 09' 11.842 ✓ 157° 03' 14.588 ✓	364.2 (1189.0) ✓ 420.9 (1310.1) ✓
KAULIWAI 1885	GP Page 72	"	21 09 40.07 ✓ 157 00 58.11 ✓	
MIDDLE HILL (HGS) 1885	GP Page 107	"	21° 09' 11.161" ✓ 157° 03' 14.828" ✓	343.2 (1502.0) ✓ 427.8 (1303.2) ✓
PUU O KAMAO	GP Page 72	"	21 10 43.11 ✓ 157 01 47.16 ✓	
OLELEUWE 1885	"	"	21 10 24.51 ✓ 157 02 21.62 ✓	
POHAKUNUI 1962	Form 164 W. O.	X= Y=	368 354.00 ✓ 310 466.70 ✓	3 354.00 (1 646.00) ✓ 0 466.70 (4 533.30) ✓
PUU IJIA 1885	GP Page 72	"	21 10 43.09 ✓ 157 00 38.16 ✓	

COMPUTED BY

CHB

DATE \_\_\_\_\_

9/20/67

**CHECKED BY**

DATE \_\_\_\_\_

COMPILATION REPORT  
Map Manuscript T-11821  
Project PH-6201

31. DELINEATION:

Planimetry was compiled with the Wild B-8 Plotter.

32. CONTROL:

See the Photogrammetric Plot Report by H. P. Eichert dated December 1964.

33. SUPPLEMENTAL DATA

None.

34. CONTOURS AND DRAINAGE

Contours are not applicable.

The drainage from Kapale Gulch and Mimino Gulch was compiled from office stereo interpretation. This drainage pattern could not be traced to the ocean because of much deep shadow.

35. SHORELINE AND ALONGSHORE FEATURES

Field inspection was adequate for the delineation of the mean high water line. Foul limits, bluff lines, and rocks for which elevations are not shown are from office interpretation of the photographs.

36. OFFSHORE DETAILS

None.

37. LANDMARKS AND AIDS

None. One Aeronautical Aid is within this survey. It is KAULAPUU AERO BEACON, RED LIGHT 1962. Form 567 is herewith submitted.

40. HORIZONTAL ACCURACY:

No Statement.

46. COMPARISON WITH EXISTING MAPS:

Comparison was made with U.S.G.S. Quadrangle KAUNAKAKI, HAWAII, Scale 1:24,000, dated 1952.

47. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Nautical Chart 4116, Scale 250,000, 12th edition, dated August 17, 1964.

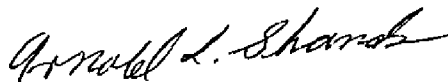
ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted:



Arnold L. Shands  
Cartographic Technician  
2 November 1967

Approved:



Allen L. Powell, RADM, USESSA  
Director, AMC

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6201

T-11821

AUAHUA

HALO

HAWAII (title)

KALUANUI

KAPALE GULCH

KAPUAHIAPELE

KUKUIOKANALOA

MIMINO GULCH

MOLOKAI

PACIFIC OCEAN

POHAKUNUI

Approved by:

*A. J. Wraight*

A. J. Wraight  
Chief Geographer

Prepared by:

*F. W. Pickett*

F. W. Pickett  
Cartographic Technician

49. NOTES FOR THE HYDROGRAPHER

Refer to the Field Edit Ozalid.

Photo-hydro points were selected by the Field Inspector in 1962.

The following is a list of photo-hydro points that are shown on the manuscript and cronapaque ratio prints for your use if they still exist:

<u>Point</u>	<u>Description</u>
2101	Lone clump of low brush
2102	Large bush
2103	Large lone bush
2104	Clump of brush

## PHOTOGRAMMETRIC OFFICE REVIEW

T- 11821

1. PROJECTION AND GRIDS CHB	2. TITLE CHB	3. MANUSCRIPT NUMBERS CHB	4. MANUSCRIPT SIZE CHB
CONTROL STATIONS			
5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY CHB	6. RECOVERABLE HORIZONTAL STATIONS OF LESS THAN THIRD-ORDER ACCURACY (Topographic stations) X		7. PHOTO HYDRO STATIONS X
8. BENCH MARKS X	9. PLOTTING OF SEXTANT FIXES X	10. PHOTOGRAMMETRIC PLOT REPORT Bridge - W. O.	11. DETAIL POINTS Wild B-8
ALONGSHORE AREAS (Nautical Chart Data)			
12. SHORELINE CHB	13. LOW-WATER LINE X	14. ROCKS, SHOALS, ETC. CHB	15. BRIDGES X
16. AIDS TO NAVIGATION ACR	17. LANDMARKS X	18. OTHER ALONGSHORE PHYSICAL FEATURES CHB	19. OTHER ALONGSHORE CULTURAL FEATURES CHB
PHYSICAL FEATURES			
20. WATER FEATURES X	21. NATURAL GROUND COVER X		22. PLANETABLE CONTOURS X
23. STEREOSCOPIC INSTRUMENT CONTOURS X	24. CONTOURS IN GENERAL X	25. SPOT ELEVATIONS X	26. OTHER PHYSICAL FEATURES X
CULTURAL FEATURES			
27. ROADS CHB	28. BUILDINGS CHB	29. RAILROADS X	30. OTHER CULTURAL FEATURES X
BOUNDARIES			
31. BOUNDARY LINES X		32. PUBLIC LAND LINES X	
MISCELLANEOUS			
33. GEOGRAPHIC NAMES CHB	34. JUNCTIONS CHB		35. LEGIBILITY OF THE MANUSCRIPT CHB
36. DISCREPANCY OVERLAY X	37. DESCRIPTIVE REPORT CHB	38. FIELD INSPECTION PHOTOGRAPHS CHB	39. FORMS CHB
40. REVIEWER <i>Charles H. Bishop</i> C. H. Bishop 9/20/67		SUPERVISOR, REVIEW SECTION OR UNIT <i>Albert C. Rauck, Jr.</i> 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 Albert C. Rauck, Jr. Rev. by: R. E. Smith		SUPERVISOR <i>Albert C. Rauck, Jr.</i> Albert C. Rauck, Jr.	
43. REMARKS <i>P. C. Smith</i>			
Field Edit applied from: Field Edit Ozalid & Field Edit Photo. No. 60-W-2172			

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Field Edit Report  
To Accompany T 11821

USC&GSS McARTHUR

Ronald L. Newsom  
CDR, USESSA  
Commanding Officer

51 METHODS

Manuscript T 11821 was field edited by personnel aboard the USC&GSS McARTHUR in conjunction with the hydrography on boatsheets AR 20-1-68 (H 8981) and AR 10-2-68 (H 8975). Shoreline area inspection and all other acquisition of field edit material was accomplished from Launch AR-1. Heavy swell and the resulting surf along with a steep bottom contour made delineation of the MLLW line impossible. Additions and corrections to the manuscript have been noted on the single field edit ozalid that was provided for T 11821 and then cross referenced and noted in violet ink on photo number 60W2172. No deletions on the field edit ozalid were necessary

52 ADEQUACY OF COMPILATION

Manuscript T 11821 is complete and adequate for use in conjunction with this hydrographic survey. The area of this manuscript from the bluff lines seaward was field edited.

54 RECOMMENDATIONS

None



## REVIEW REPORT T-11821

## SHORELINE

AUGUST 4, 1970

61. GENERAL STATEMENT

See Summary, which is page 6 of the Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

There were no registered topographic surveys available for comparison purposes at the time of final review.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS KAUNAKAKAI, HAWAII, 9.5 by 7.5 minute quadrangle, 1:24,000 scale, edition of 1952. There are no rocks or offshore features shown on the USGS quadrangle. The shoreline of the two surveys is in only fair agreement. The difference has been shown on the comparison print in brown.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with copies of boat sheets H-8975 (AR-10-2-68 sheet "ee") and H-8981 (AR-20-1-68). None of the rocks close inshore to the mean high water line are shown on these boat sheets.

The shoreline of H-8975 (AR-10-2-68) is in good agreement with that of T-11821. The shoreline for H-8981 (AR-20-1-68) was evidently obtained from a reduction of T-11821. Two small discrepancies in the shoreline were noted between longitudes 157°02'30" and 157°03'30". These have been noted on the comparison print in purple.

65. COMPARISON WITH NAUTICAL CHARTS

A visual comparison was made with Chart 4120, 3rd edition, dated October 14, 1968. The shoreline of the chart is generalized and shows no rocks in the area of this survey.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

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

Reviewed by:

*Leo F. Beugnet*  
Leo F. Beugnet  
Cartographer

Approved by:

*Allen L. Powell*  
Allen L. Powell, RADM, USESSA  
Director, Atlantic Marine Center

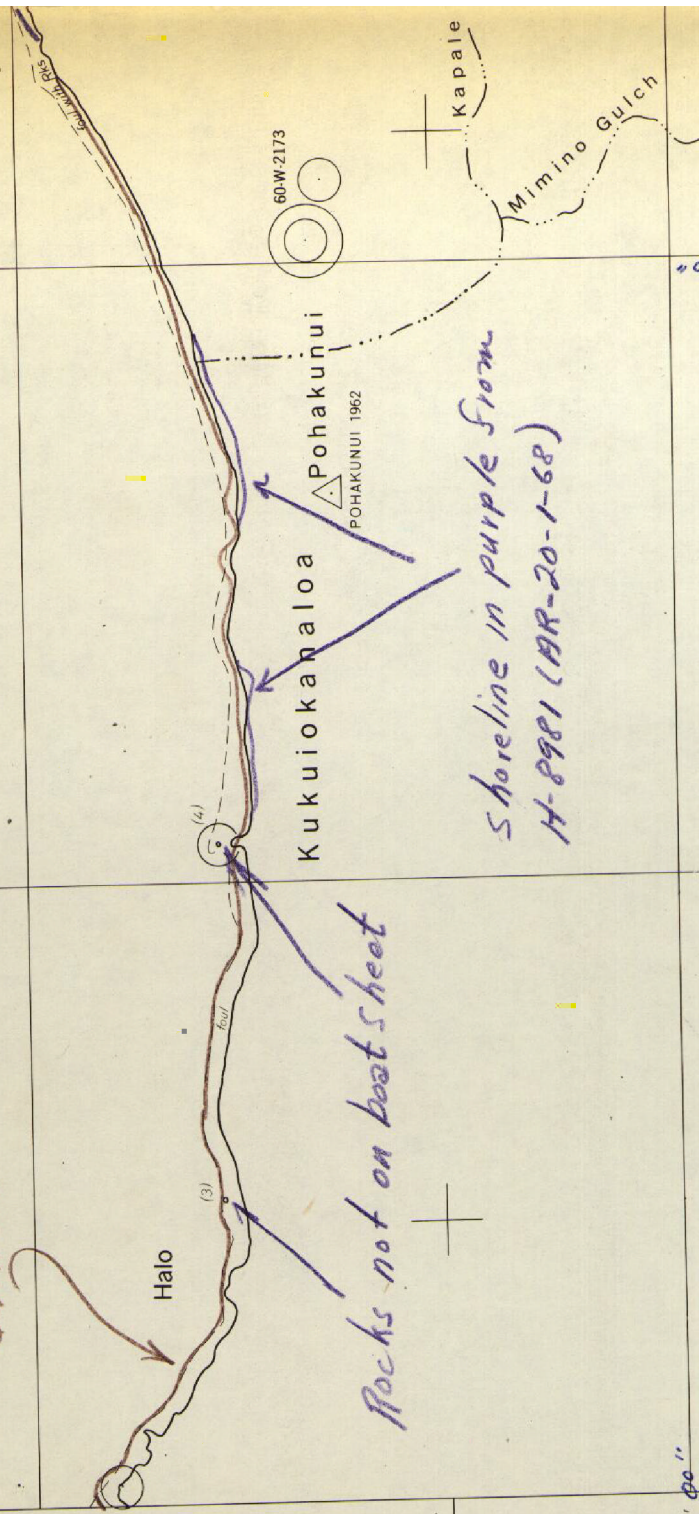
Approved by:

*Charles L. Lannon*      *Jack E. Guth*  
Chief, Photogrammetric Branch      Chief, Photogrammetry Division

Shoreline in brown from USGS Quadrangle

Shoreline in brown from

21° 11' 30"



y=310,000 FT.

21° 11' 00"

157° 04' 00"

T-11821

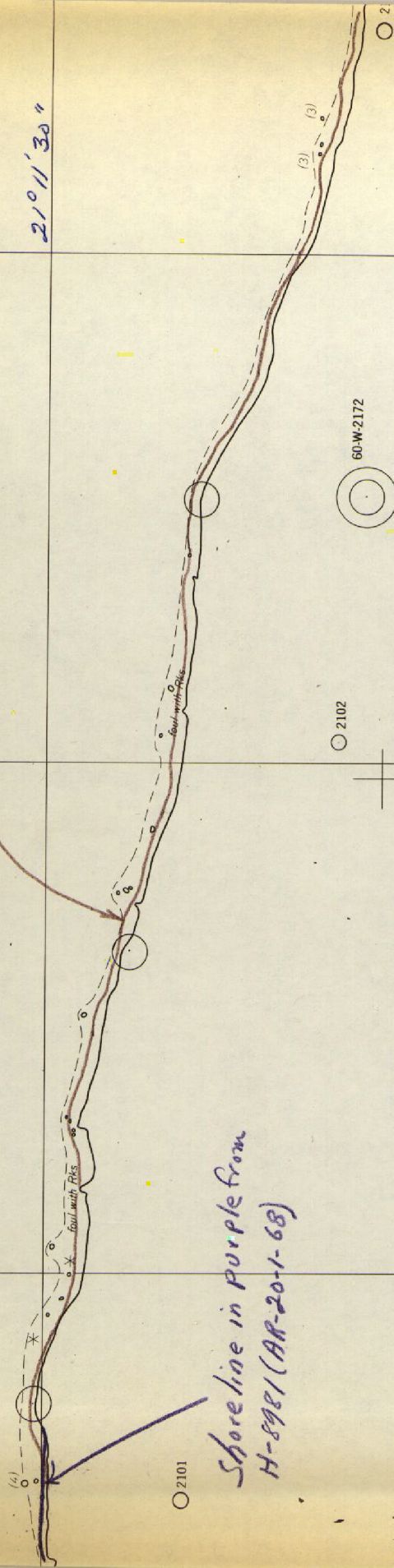
25



NOTE:

"The photogrammetric location and delineation of features offshore from the mean high-water line on this survey may not be complete or final. The contemporary reviewed hydrographic survey of the area where available, should be consulted for the final delineation."

Shoreline in brown from USGS Quadriangle



Shoreline in purple from  
H-8981 (AR-20-1-68)

Note: No rocks in this area  
are shown on the boat sheet

157° 02' 30"

21° 11' 00"

157° 01' 30"

T-11821

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T-11821

Shoreline in brown from USGS Quadrangle

21° 11' 30"

157° 00' 00"

1:310,000 FT.

21° 11' 00"

157° 01' 00"

Kaluanui

Kapuahiapele

Note: No rocks in this area  
are shown on the boat sheet

2104

