

11820

11820

FORM C&amp;GS-504

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

## DESCRIPTIVE REPORT

Shoreline  
Type of Survey ..... (Photogrammetric)  
Field No. .... Office No. T-11820

## LOCALITY

State ..... Hawaii  
General locality ..... Molokai  
Locality ..... Pauualaia

1962-1968

CHIEF OF PARTY  
Allen L. Powell, RADM, USESSA  
Director, Atlantic Marine Center

## LIBRARY &amp; ARCHIVES

DATE .....

## DESCRIPTIVE REPORT - DATA RECORD

T-11820

PROJECT NO. (II):  PH-6201		
FIELD OFFICE (III):  Honolulu, Hawaii		CHIEF OF PARTY  H. J. Seaborg
PHOTOGRAMMETRIC OFFICE (III):  Atlantic Marine Center		OFFICER-IN-CHARGE  Allen L. Powell, Director, AMC
INSTRUCTIONS DATED (II) (III): Office compilation May 31, 1962 Office compilation, Amendment I December 14, 1962 Office compilation, Amendment II February 20, 1963 Office compilation, Amendment III January 8, 1964 Office compilation, Amendment IV April 24, 1967		
METHOD OF COMPILATION (III):  Wild B-8		
MANUSCRIPT SCALE (III):  10,000	STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):  1:15,000 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):
GEOGRAPHIC DATUM (III):  Old Hawaiian		VERTICAL DATUM (II): <del>MEAN SEA LEVEL</del> <sup>mean high water</sup> 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):  MOOMOMI 1962 ✓		
LAT.:	LONG.:	<input checked="" type="checkbox"/> ADJUSTED <input type="checkbox"/> UNADJUSTED
PLANE COORDINATES (IV):  y = 315,556.50 ft. ✓      x = 338,127.70 ft. ✓		STATE  Hawaii ✓
		ZONE  2 ✓
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.		

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
	A. L. Shands	7/21/67
	CONTOURS	DATE
	Inapplicable	
MANUSCRIPT DELINEATED BY (III):		DATE
A. L. Shands		9/10/67
SCRIBING BY (III):		DATE
B. L. Barge		November 5, 1969
PHOTOGRAMMETRIC OFFICE REVIEW BY (III):		DATE
Compilation: C. H. Bishop		9/14/67
Field Edit: R. E. Smith		10/16/69
Scribing: R. E. Smith		12/10/69
REMARKS:		
Field Edit by: Roland L. Newsom December 1968		

## DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

Wild RC-8 "W"

## PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
60 W 2174 thru 2177	2 Oct. 1960	0849	1:25, <sup>000</sup> <del>100</del>	0.8 Ft. above MLLW

## TIDE (III) PREDICTED

DIURNAL

		RATIO OF RANGES	MEAN RANGE	SPRING RANGE
REFERENCE STATION:	HONOLULU		1.2	1.9
SUBORDINATE STATION:	WAIMANALO	0.92	1.1	1.8
SUBORDINATE STATION:				
WASHINGTON OFFICE REVIEW BY (IV): <i>Leo F. Beugnet, Atlantic Marine Center</i>		DATE: <i>July 1970</i>		
PROOF EDIT BY (IV):		DATE:		
NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II):	2	RECOVERED: 2	IDENTIFIED: 2	
NUMBER OF BM(S) SEARCHED FOR (II):	None	RECOVERED:	IDENTIFIED	
NUMBER OF RECOVERABLE PHOTO STATIONS ESTABLISHED (III):		None		
NUMBER OF TEMPORARY PHOTO HYDRO STATIONS ESTABLISHED (III):		98		

REMARKS:

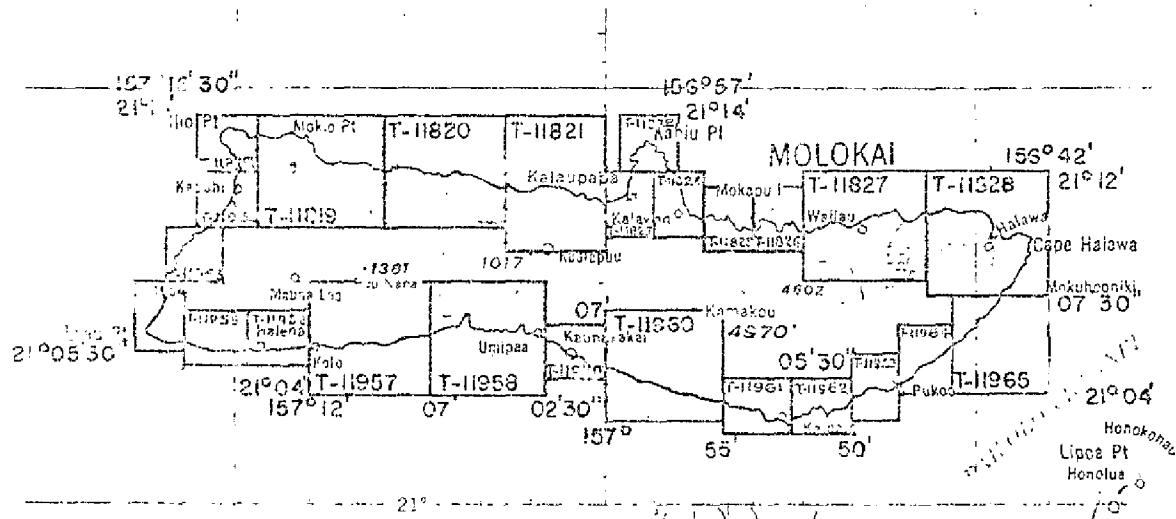


T-11820

COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore area for hydro	August 1967	Superseded
Field edit applied compilation complete	July 1, 1969	

# PROJECT MH-620

## 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.
11810	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	3	3
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			53		

SUMMARY TO ACCOMPANY  
DESCRIPTIVE REPORT T-11820

Shoreline survey T-11820 is one of twenty-five similar surveys in Project PH-6201. These surveys cover the entire coast of Molokai Island, Hawaii. This map covers part of the north coast from Moomomi Cove to Anianikeha.

Field work preceding compilation consisted of identification of horizontal control, shoreline and field inspection, and identification of photo-hydro signal sites. There were no fixed aids to navigation or landmarks for charts within the limits of the survey.

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 specially prepared photographs and ozalid prints were furnished for transfer of the shoreline to the boat sheet, location of photo-hydro signals, and field edit use.

The manuscript was a vinylite sheet 4 minutes in latitude by 5 minutes in longitude. After application of field edit, which was accomplished in December 1968, the survey was scribed and stick-up applied. Final review was in the Atlantic Marine Center in July 1970. One cronaflex copy of the final reviewed manuscript along with a negative 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 Kaunako 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 Hooilehua Homesteads. It was abandoned soon after completion as the sugar plantation it was constructed to serve was a failure. The economy of the island is almost wholly dependant on the growing of pineapple and cattle ranching.

The wharf located at Kolo was used for a time to load pineapple from the Maunaloa area. It was later abandoned and since that time has been partially destroyed by fire. The wharf located at Kamalo is now in poor condition and seldom used except by an occasional small fishing or pleasure boat. The wharf located at Pukoo is no longer in evidence. Located at Haleolon is a small harbor protected by a breakwater. This is a private harbor and is used to load sand and cinder barges for shipment to Oahu. A small private airstrip is located along the easterly breakwater.

Located on the Makenalua Peninsula is the small settlement of Kalaulapa. The settlement is maintained by the State of Hawaii, Department of Health for the treatment of Hansen's Disease (Leprosy). Special permission must be obtained from the state before visiting this area. No facilities for serving the public are permitted on the peninsula. The U.S. Coast Guard maintains an isolated light station at the northern tip of the peninsula. The area is served by limited airplane service and supplies are brought in by barge at infrequent intervals. A small wharf protected by a short breakwater is located at the settlement. This area is isolated from the remainder of the island except for a foot trail that leads down the steep rocky cliffs from the top of the pali southwest of the settlement.

Shoreline around the island vary from the almost vertical rock cliffs along most of the north and east coast, to the narrow and relatively flat coastal areas along the south coast. Most of the south coast is protected by an offshore reef. A few sandy beaches are located along the south and west coasts. Most of the north coast is accessible only by boat and any landings there should be attempted with extreme caution.

Photography was adequate for the identification of horizontal control and shoreline inspection for most of the island. A few sections of the shoreline along the northeast coast of the island were in complete shadow from the most vertical cliffs.

The shoreline for the entire island was visually inspected at the mean high water noted on the field photographs. The shoreline along the north coast except for the Makenalua Peninsula was inspected by cruising offshore in a small boat. The work was difficult due to the small size of the boat, the rough seas, and strong winds. A few landings were made on the more prominent points along the northeast coast. The remainder of the island was inspected by walking the shoreline in the more accessible areas, and by observations from vantage points along bluffs and cliffs where the shoreline could not be otherwise visited. Scattered sections of the shoreline along the south coast were obscured by overhanging Keawe trees and dense growths of Mangrove trees.

### 3. HORIZONTAL CONTROL

(a) The following described intersection stations were located by traverse or triangulation as nautical aids, aeronautical aids, and landmarks.

Molokai Lighthouse  
 Molokai Airport Beacon  
 Waihuna, Aero Beacon Red Light  
 Kaulapuu, Aero Beacon Red Light

Molokai VOR (MKK)  
 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 by the Territory of Hawaii and can be considered as third order accuracy. The station was destroyed before it could be tied to the 1962 work. HELENA, 1962 which is located about a half mile west of this station was later identified. All other control stations identified were established by the Coast and Geodetic Survey or tied to by the geodetic party during the 1962 season. Many of the old stations could not be recovered and new stations had to be established to meet the control requirements.

(d) Control stations were positively identified in all areas indicated on the control diagram.

(e) All control stations within the limits of the project except for a few along the inaccessible northeast coast of the island were searched for. Part of this recovery was performed by the geodetic party located on the island. All station searched for were listed on Form 526 which was submitted to the Honolulu District Officer. A complete list of all stations reported lost on Form 526 would have to be obtained from the Honolulu District Officer or the Division of Geodesy. No stations that were listed as lost were identified for use in the plot.

(g) The quality of identification of each station or substitute station has been indicated on the control station identification card. None of the identification was considered to be sub-standard.

#### 4. VERTICAL CONTROL

The only vertical control requirement was the recovery of all tidal bench marks in the project area and identification of one mark in each of the groups.

All tidal bench marks listed at Fukoo, Kamalo, Kaunakakai, and Kolo were searched for. A total of 18 bench marks were searched for. All marks were listed on Form 685 which was submitted to the Honolulu District Officer.

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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 Moomomi 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 the new landmarks selected for charting were listed on Form 567, and the elevation for each landmark was determined by the field party.

- (b) No interior landmarks were selected for charting.



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

Molokai, Airport Beacon  
Waiahawahewa, 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.

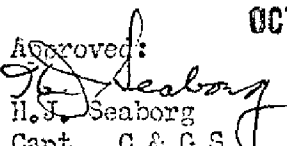
All public buildings with their function was indicated on the field photographs.

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.

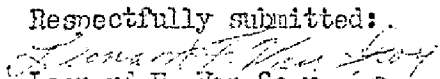
No bridges or overhead cable crossings over navigable water are located in the project area. There are no submerged cables connecting the island with other areas.

13. GEOGRAPHIC NAMES

Not Applicable

Approved:   
H.S. Seaborg  
Capt., C & G S  
Honolulu District Officer

OCT 30 1962

Respectfully submitted:  
  
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.

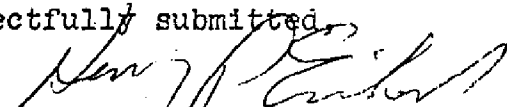
24. Supplemental Data

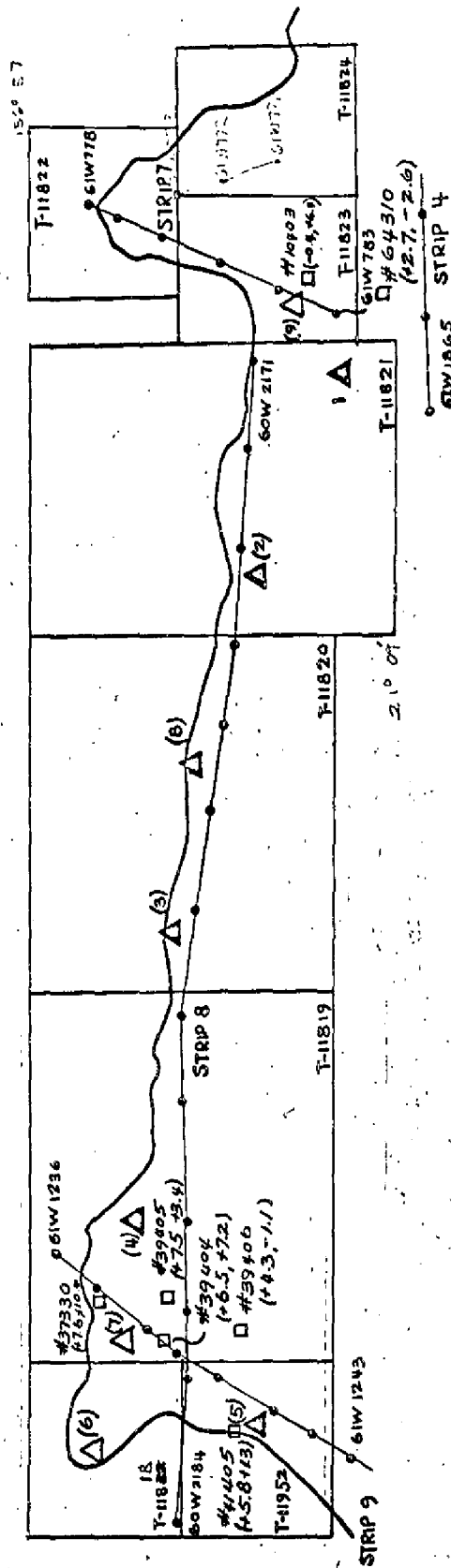
None

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

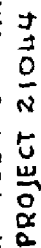
△ CONTROL USED IN ADJUSTMENT

◻ CONTROL USED AS CHECK

□ TIE POINTS

- (1) HAHAEULA 2, 1962 Sub Pt. A (+0.3, +0.9) Sub Pt. B (+2.8, -1.1)
- (2) POHAKUUNUI, 1888 (10.1, -1.2) Sub Pt. A (-2.8, +0.8) Sub Pt. B (-10.0, -3.2)
- (3) MOOMOMI, 1962 Sub Pt. A (-16.2, 7.1) Sub Pt. B (-10.0, -5.3)
- (4) LAINA (KAA) 1926 Sub Pt. A (0.0, 0.0)
- (5) PUU O KAIKA, 1915 Sub Pt. A (+12.2, -2.1) Sub Pt. B (-6.7, 0.1)
- (6) SAND 1950 Sub Pt. A (+2.6, 17.9) Sub Pt. B (+2.0, 16.8)
- (7) KAEU 1926 Sub Pt. A (+2.3, 9.1) Sub Pt. B (+0.7, +0.9)
- (8) PUU KAPELE, 1888 Sub Pt. A (+2.9, -1.2) Sub Pt. B (-1.0, -5.0)
- (9) PUWAHI 1962 Sub Pt. A (10.1, 20.0)

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

$3(+0.9+2.1)$ 





COMPILATION REPORT  
Map Manuscript T-11820  
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; submitted with Compilation Report for T-11822.

*Bound with this report  
see page 14*

33. SUPPLEMENTAL DATA:

None.

34. CONTOURS AND DRAINAGE:

Contours are not applicable.

Several intermittent drains were compiled.

35. SHORELINE AND ALONGSHORE FEATURES:

Field inspection was adequate for the delineation of the mean high water line. Foul and ledge limits and bluff lines were delineated from office interpretation of the photographs. No low water line was mapped.

36. OFFSHORE DETAILS:

None.

37. LANDMARKS AND AIDS:

38. CONTROL FOR FUTURE SURVEYS:

None.

39. JUNCTIONS:

Satisfactory junctions were made with T-11819 to the west and T-11821 to the east. There are no contemporary surveys to the north and south.

40. HORIZONTAL AND VERTICAL ACCURACY:

No statement.

46. COMPARISON WITH EXISTING MAPS:

Comparison was made with USGS Quadrangles MOLOKAI AIRPORT, HAWAII, scale 1:24,000, dated 1952 and KAUNAKAKAI, HAWAII, scale 1:24,000, dated 1952.

47. COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Nautical Chart 4116, scale 1:250,000, 12th edition, dated August 17, 1964.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

*Arnold L. Shands*

Arnold L. Shands  
Cartographic Technician  
2 November 1967

Approved:

*Allen L. Powell*

Allen L. Powell, Director, AMC.



GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6201

T-11820

ANAHAKI GULCH

ANIANIKEHA

HAWAII (title)

HINANAULUA

KAHINA AKALANI

MANEOPAPA GULCH

MOLOKAI

MOOMOMI COVE

NAAUKAHIHI

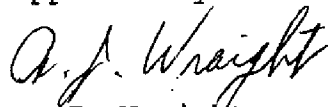
NENEHANAUPO

PACIFIC OCEAN

PAUALAIA POINT

PUU KA PELE

Approved by:



A. J. Wraight  
Chief Geographer

Prepared by:



Frank 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 are still in existence:

<u>Point</u>	<u>Description</u>
2001	N.E. gable of building
2002	N.E. 1 of 2 posts
2003	N.E. corner of stone windbreak
2004	Top of rocky knob
2005	E. corner of bluff
2006	First outcrop down from top
2007	Large rock
2008	Small tree
<del>2009</del>	<del>N.W. 1 of 2 tanks</del>

## PHOTOGRAMMETRIC OFFICE REVIEW

T. 11820

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 X
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 X	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 Charles H. Bishop C.H. Bishop		SUPERVISOR, REVIEW SECTION OR UNIT Albert 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 Albert C. Rauck, Jr. Rev. by: R. E. Smith		SUPERVISOR Albert C. Rauck, Jr.	
43. REMARKS Field edit applied from: Field edit ozalid and matte field ratios 60 W 2175 and 60 W 2177			

12  
22

Field Edit Report  
To Accompany T 11820

USC&GSS McARTHUR

Ronald L. Newsom  
CDR, USESSA  
Commanding Officer

51 METHODS

Manuscript T 11820 was field edited by personnel aboard the USC&GSS McARTHUR in conjunction with the hydrography on boatsheets AR 20-3-68 (H 8982) and AR 20-1-68 (H 8981). Shoreline area inspection and all other acquisition of field edit material was accomplished from Launch AR-1. It was found that heavy swell and the resulting surf along with a rather 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 provided for T 11820 and then cross referenced and noted in violet ink on photo numbers 6OW2175 and 6OW2177. No deletions on the field edit ozalid were necessary.

52 ADEQUACY OF COMPILATION

Manuscript T 11820 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.

53 RECOMMENDATIONS

None

## REVIEW REPORT T-11820

## SHORELINE

JULY 29, 1970

61. GENERAL STATEMENT

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

62. COMPARISON WITH REGISTERED SURVEYS

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

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS KAUNAKAKAI and MOLOKAI AIRPORT, HAWAII, quadrangles. These are 1:24,000 scale surveys, dated 1952. Neither of these surveys show any of the rocks or foul areas along the shoreline.

The major discrepancy in the shoreline of the USGS quadrangles and T-11820 occurs in the easterly section of the survey from longitude 157°04'00" to approximate longitude 157°06'00". This has been indicated on the comparison print in brown.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with copies of H-8981, AR-20-1-68 and H-8982, AR-20-3-68. There are no discrepancies between the shoreline of the boat sheets and that of T-11820.

The boat sheets do not contain all of the rocks and foul areas as shown on T-11820. These have been noted on the comparison print in purple.

65. COMPARISON WITH NAUTICAL CHARTS

Comparison was made with Chart 4120, 3rd edition, October 14, 1968. The shoreline of the two surveys is in good general agreement. The chart 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. Lennor*      *Jack E. Guth*  
Chief, Photogrammetric Branch      Chief, Photogrammetry Division

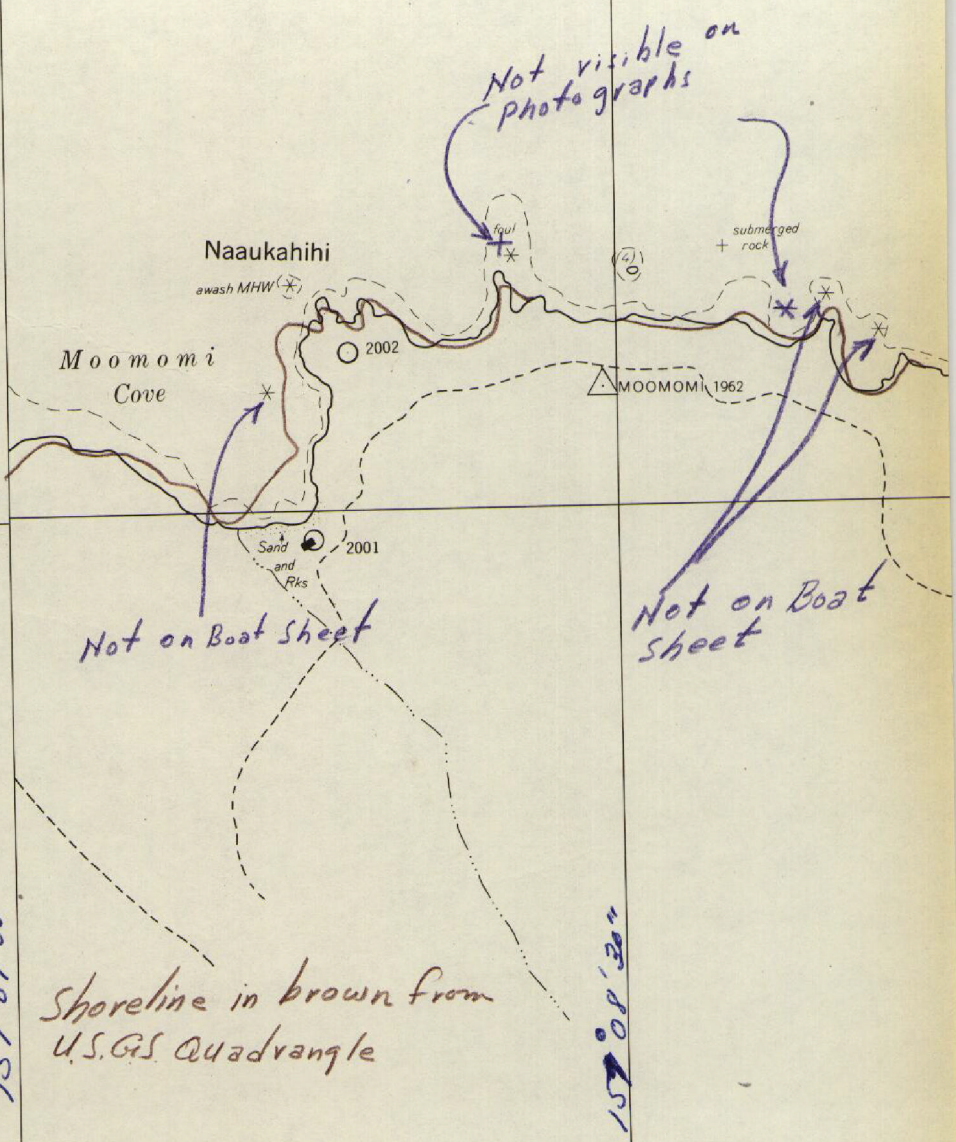
21° 12'30"

21° 12'  
y = 315.000 FT.

21° 11'30"

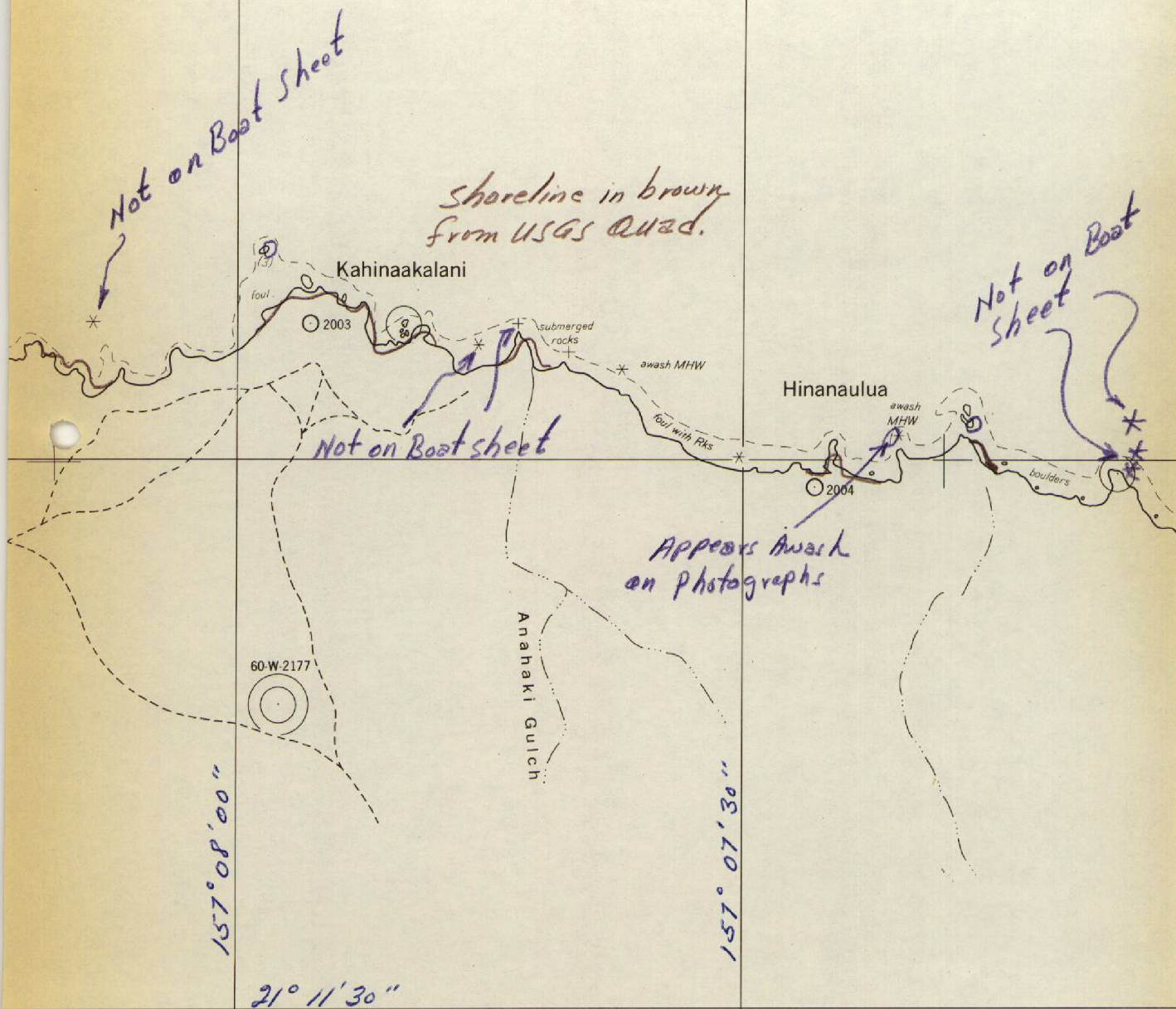
157° 09'00"

157° 08'30"





21° 12' 30"



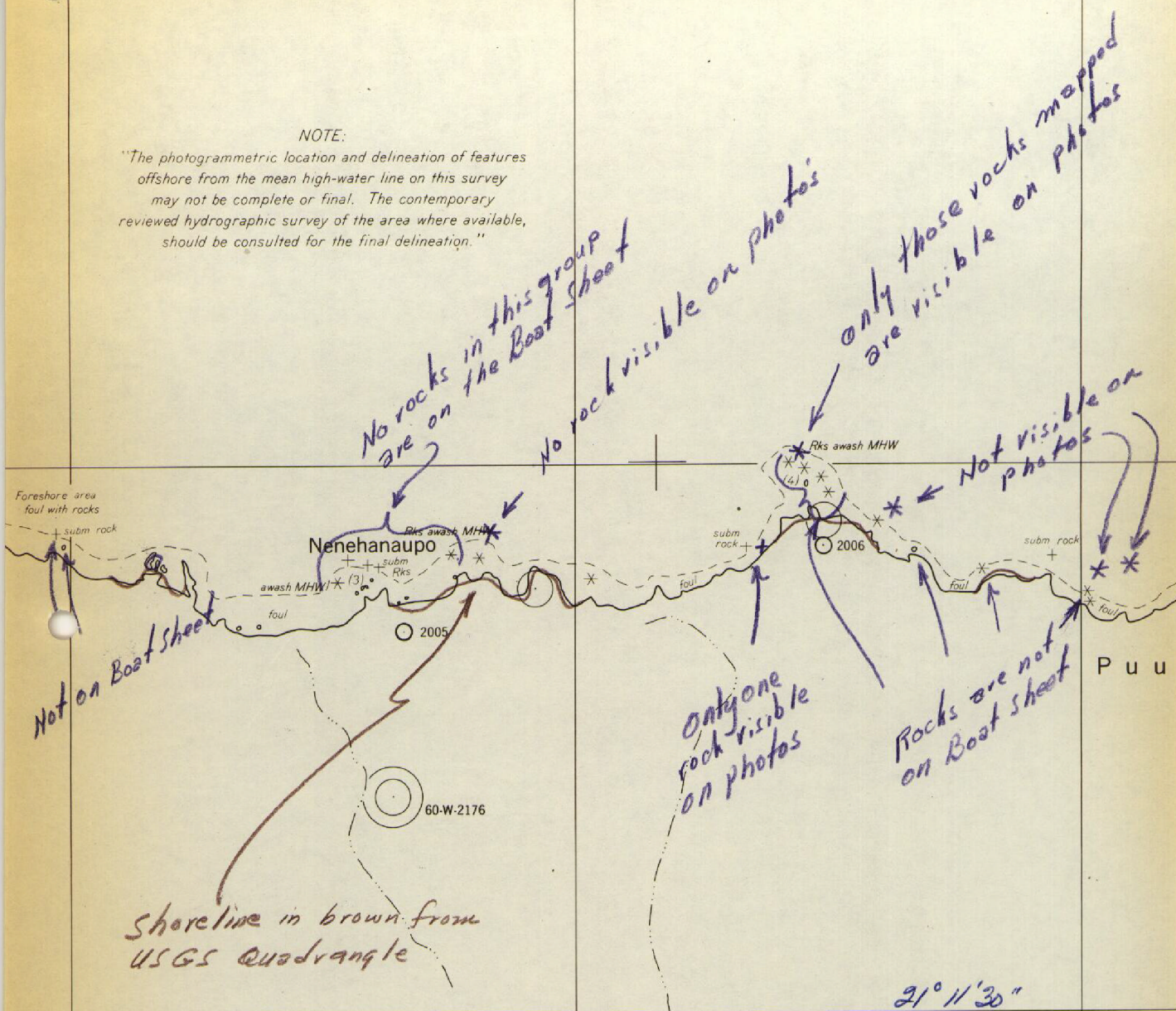
T-11820



21° 12' 30"

## 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."



21° 11' 30"

157° 07' 00"

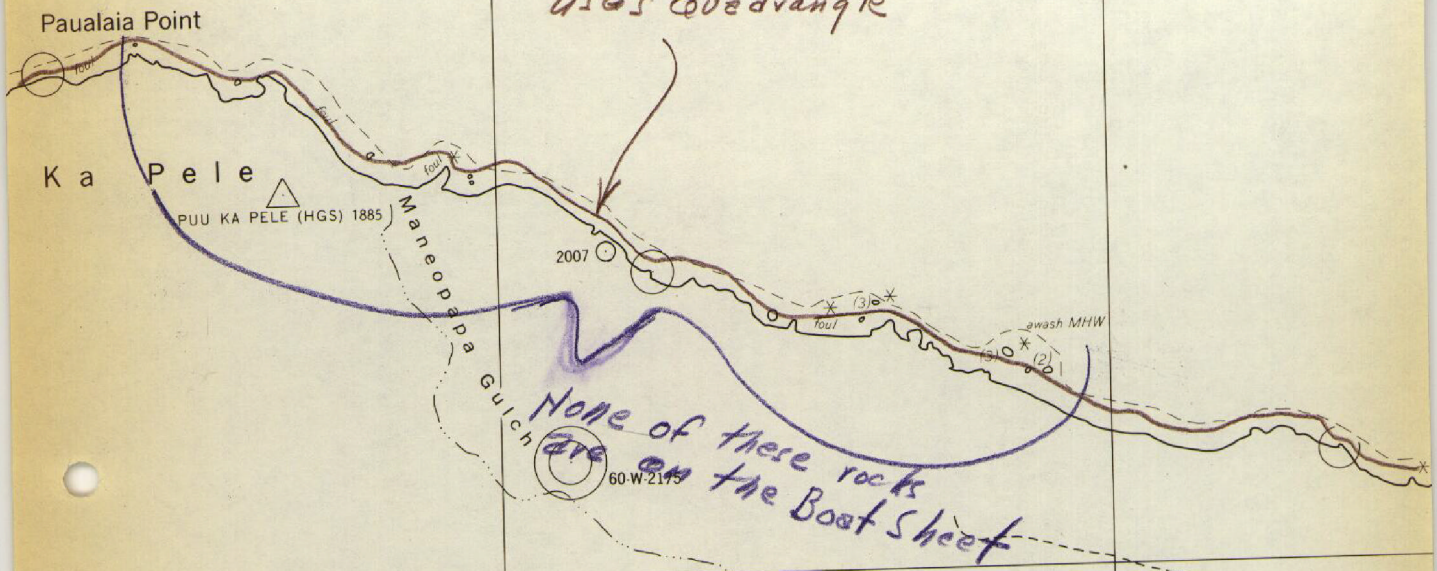
157° 06' 00"

T-11820



21° 12' 00"

Shoreline in brown from  
USGS Quadangle



157° 05' 30"

157° 05' 00"

21° 11' 00"

T-11820



21° 12' 00"  $y = 315,000$  FT.

Shoreline in brown from  
USGS quadrangle

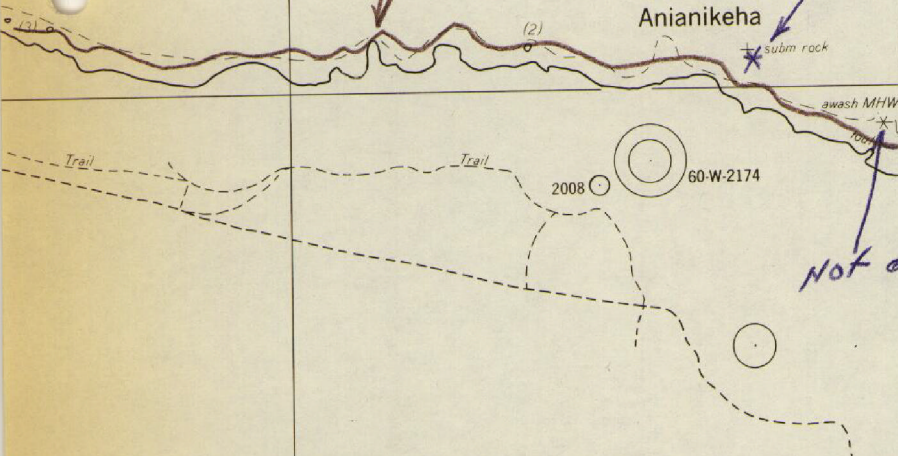
Appears submerged  
on photos

Anianikeha

subm rock

11' 30"

Not on Boat sheet



157° 04' 30"

157° 04' 00"  $y = 310,000$  FT.  
21° 11' 00"

T-11820