Original

11819

11819

Form 504

U. S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey Shoreline(Photogrammetric)

Field No. ..... *Office No.* T-11819

LOCALITY

State Hawaii

General locality Molokai

Locality Mokio Point

1967-1968

CHIEF OF PARTY

Allen L. Powell, 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 - 11819

PROJECT NO. (II):

PH-6201

FIELD OFFICE (II):	CHIEF OF PARTY
Honolulu, Hawaii	H. J. Seaborg
PHOTOGRAMMETRIC OFFICE (III):	**OFFICER-IN-CHARGE**
Atlantic Marine Center	Allen L. Powell, Director, AMC

INSTRUCTIONS DATED (II) (III):

Field	April 25, 1962
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):	STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):
1:10,000	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 (III):

MEAN ~~SEA LEVEL~~ 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~~ mean lower low water

REFERENCE STATION (III):

KAEO 1925 ✓

LAT.:	LONG.:	[X] ADJUSTED [ ] UNADJUSTED

PLANE COORDINATES (IV):		STATE	ZONE
Y = 321,021.50 ft. ✓	X = 307,494.30 ft. ✓	Hawaii	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.

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

FIELD INSPECTION BY (II): L.F. Van Scoy	DATE: August 29, 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): A. E. Roundtree	DATE 2-2-65
PROJECTION AND GRIDS CHECKED BY (IV): R. Glaser	DATE 2-10-65
CONTROL PLOTTED BY (III): Portland Photogrammetric Office	DATE 1965
CONTROL CHECKED BY (III): Portland Photogrammetric Office	DATE 1965
RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III): H. P. Eichert	DATE Dec. 1964
STEREOSCOPIC INSTRUMENT COMPILATION (III): PLANIMETRY A. L. Shands	DATE July 18, 1967
CONTOURS Inapplicable	DATE
MANUSCRIPT DELINEATED BY (III): A. L. Shands	DATE August 18, 1967
SCRIBING BY (III): B. L. Barge	DATE October 31, 1969
PHOTOGRAMMETRIC OFFICE REVIEW BY (III): Compilation C. H. Bishop Field Edit R. E. Smith Scribing R. E. Smith	DATE Sept. 1, 1967 Oct. 8, 1969 December 23, 1969

REMARKS:
Field edit by: Roland L. Newsom March & April 1968

USCOMM-DC 36393-P66

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

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

DESCRIPTIVE REPORT - DATA RECORD

CAMERA (KIND OR SOURCE) (III):

Wild RC-8 "W"

PHOTOGRAPHS (III)

NUMBER	DATE	TIME	SCALE	STAGE OF TIDE
60-W-2178 thru 2182	2 Oct.1960	0850	1:25,160	0.8 Ft. above MLLW
61-W-1034 thru 1036	24 Sept.1961	1210	1:15,000	1.4 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): Leo F. Beugnet, Atlantic Marine Center — DATE: July 1970

PROOF EDIT BY (IV): — DATE:

NUMBER OF TRIANGULATION STATIONS SEARCHED FOR (II): 3	RECOVERED: 3	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): 6

REMARKS:

USCOMM-DC 86393C-P66

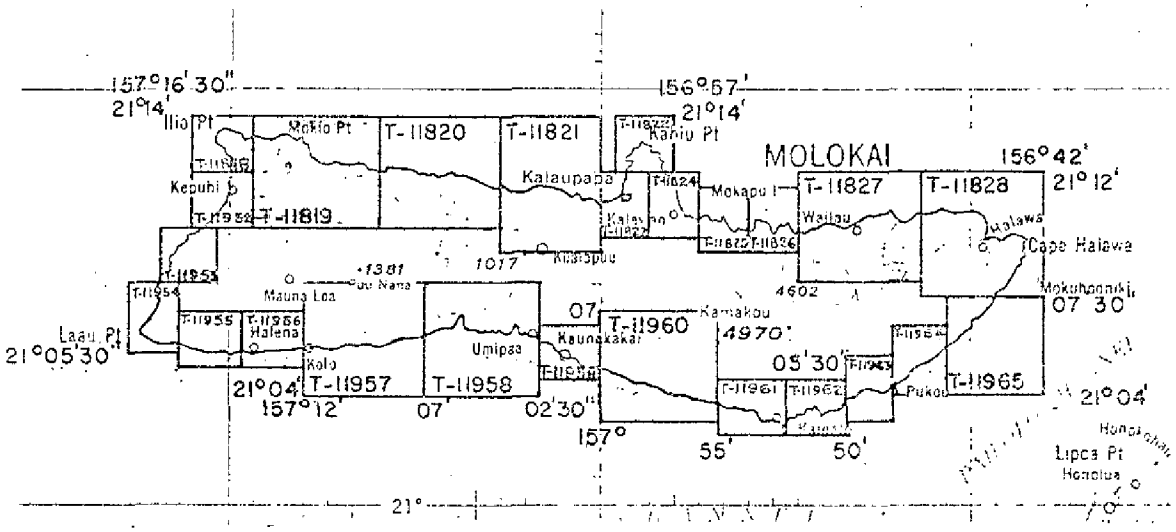
COMPILATION RECORD	COMPLETION DATE	REMARKS
Alongshore area for hydro	August 1967	Superseded
Field Edit applied Compilation complete	June 27, 1969	

PROJECT PH-6201

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-11819

Shoreline survey T-11819 is one of twenty-five similar surveys in Project PH-6201. The maps in this project cover the entire coast of Molokai. This map covers a part of the north shore from Mokio Point to Kaiehu Point.

Field work preceding compilation consisted of identification of horizontal control, shoreline and field inspection, and selection of landmarks for charts.

Compilation was at 1:10,000 scale by Wild B-8 Plotter, using photography obtained on October 2, 1960, and September 24, 1961. Cronaflex copies of the manuscript, along with ozalids and specially prepared photographs, were provided 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. Field edit was accomplished in April 1968. After application of field edit data, the manuscript was scribed, stick-up applied, and reproduced on cronaflex. Final review was in the Atlantic Marine Center in July 1970. A cronaflex copy of the final manuscript and a negative are forwarded for record and registry.

FIELD INSPECTION REPORT

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

Project PH-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 Makanalua Peninsula on the north central coast. The Kauhako Crater remains as evidence of this eruption. The highest peak is Kamakou 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 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 seldomed used except by an occasional small fishing or pleasure boat. The wharf located at Pukoo is no longer in evidence. Located at Halealon 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 Makanalua Peninsula is the small settlement of Kalaupapa. The settlement is maintained by the State of Hawaii, Department of Health for the treatment of Hansen's Disease (Lepersey). 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 accessable 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 an the mean high water noted on the field photographs. The shoreline along the north coast except for the Makanalua 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 accessable 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 inaccessable 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 Pukoo, 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.

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 accessable 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 boardered 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 seccted 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
Waiahewahewa, 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, AID 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

OCT 30 1962

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

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

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

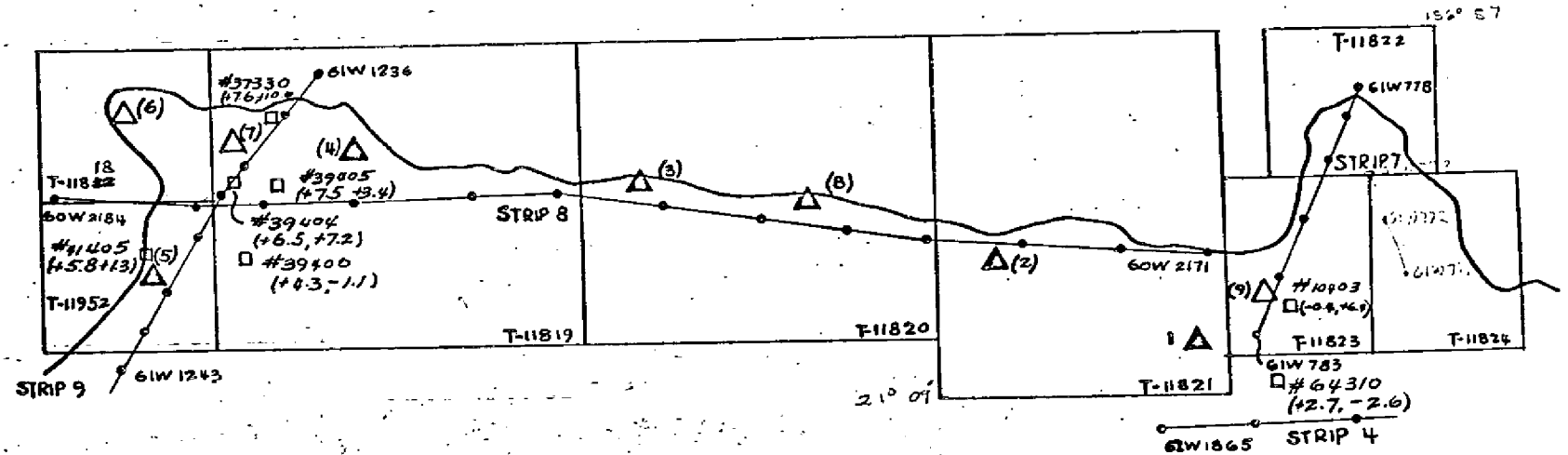
None

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

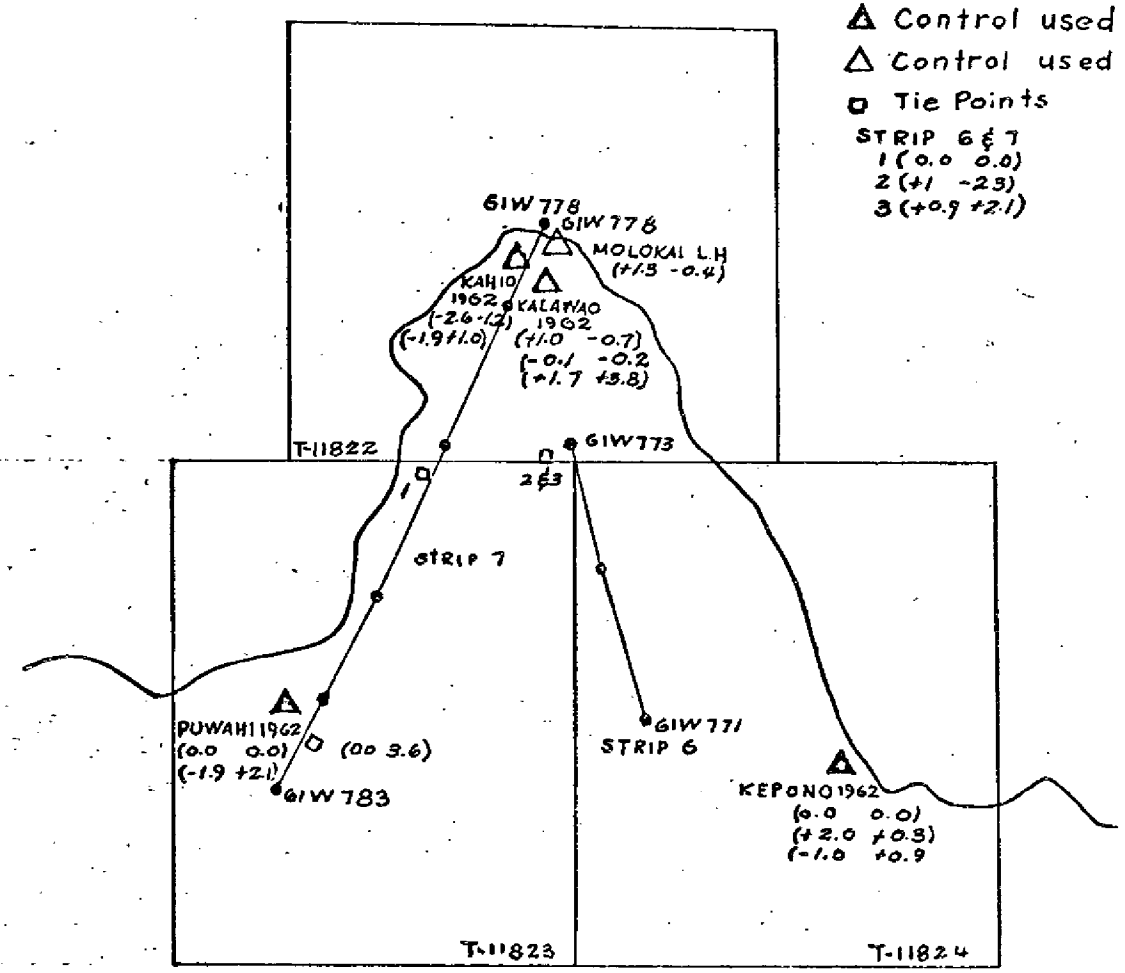
LEGEND

▲ 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) POHAKUNUI, 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 (-1.6, 2.7) Sub Pt B (-1.0, -5.3)
(4) LAINA (KAA) 1926 Sub Pt A (0.0, 4.9)
(5) PUU O KAIKA, 1915 Sub Pt A (+1.2, -2.1) Sub Pt B (-6.7, +0.1)
(6) SAND 1950 (Sub Pt A (+2.6, 17.9) Sub Pt (+2.0, 16.8)
(7) KAEO 1926 Sub Pt A (+2.3, 9.1) Sub Pt B (+0.7, +8.9)
(8) PUU KAPELE, 1888 Sub Pt A (+2.9, -1.2) Sub Pt B (-1.4, -5.0)
(9) POWAHI 1962 Sub Pt A (+0.1, 20.0)
Sub. Pts. for SAND 1950 were considered poor at the time of plate measurement



AEROTRIANGULATION SKETCH
MOLOKAI ISLAND HAWAII
PROJECT 21044

FORM 164
(4-23-54)

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

DESCRIPTIVE REPORT — CONTROL RECORD

MAP T-11819 PROJECT NO. PH-6201 SCALE OF MAP 1:10,000 SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE	DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS FORWARD (BACK)	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD (BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD (BACK)
	W.O. Form 164	Old Hawaiian	321,021.50	1,021.50 (3,978.50)			
KAEO 1925			307,494.30	2,494.30 (2,505.70)			
LAINA KAA	"	"	319,358.20	4,358.20 (0,641.80)			
(HGS) 1885	"		318,098.90	3,098.90 (1,901.10)			
PUU APALU	G.P.	"	21° 10' 47.498"	1.460.8 (384.4)			
TANK 1962	Ag. 112		157° 13' 58.368"	1.683.7 (47.0)			

1 FT. = .3048006 METER

COMPUTED BY: C. H. Bishop DATE August 23, 1967 CHECKED BY: F. T. Wilson DATE August 23, 1967

COMM-DC-57843

E
18

COMPILATION REPORT
MAP MANUSCRIPT T-11819
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.

33. SUPPLEMENTAL DATA:

None.

34. CONTOURS AND DRAINAGE:

Contours are not applicable.

Four intermittent drains were compiled.

35. SHORELINE AND ALONGSHORE DETAILS:

Field inspection was adequate for the delineation of the mean high water line. Foul, ledge, and bluff lines are from office inspection of the photographs. One short stretch of approximate mean lower low water line was shown near longitude 157° 11'.

36. OFFSHORE DETAILS:

None.

37. LANDMARKS AND AIDS:

None.

38. CONTROL FOR FUTURE SURVEYS.

None

39. JUNCTIONS:

Satisfactory junctions have been made with T-11818 to the west and T-11820 to the east. There is no detail at the junction with T-11952 to the west. 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 USCGS Quadrangle ILIO POINT, HAWAII, and MOLOKAI AIRPORT, HAWAII. The scale for both is 1:24,000 and both 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 by:

Allen L. Powell

Allen L. Powell
Director, Atlantic Marine Center

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6201

T-11819

HAWAII (title)

KAA GULCH

KAIEHU POINT

KALANI

KAPALAUOA

KAWAALOA

KAWAHUNA

MANALO GULCH

MOKIO POINT

MOLOKAI

MOOMOMI

MOOMOMI COVE

PACIFIC OCEAN

PUEOAO

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 are still in existence.

Point	Description
1901	Large pointed black outcrop
1902	Large boulder
1903	Chunk of bluff at MHWL
1904	Top of offshore rock
1905	Top of offshore rock
* 1906	Top of rock

* Selected in office.

FORM C&GS-1002
(9-66)

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

PHOTOGRAMMETRIC OFFICE REVIEW

T-11819

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

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

ALONGSHORE AREAS *(Nautical Chart Data)*

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

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

PHYSICAL FEATURES

20. WATER FEATURES	21. NATURAL GROUND COVER	22. PLANETABLE CONTOURS
CHB	X	X

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

CULTURAL FEATURES

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

BOUNDARIES

31. BOUNDARY LINES	32. PUBLIC LAND LINES
X	X

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
X	CHB	CHB	CHB

40. REVIEWER	SUPERVISOR, REVIEW SECTION OR UNIT
Charles H. Bishop C. H. Bishop	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	SUPERVISOR
A.C. Rauck June 30, 1969 Rev. by: R. E. Smith Oct. 8, 1969	Albert C. Rauck, Jr. Albert C. Rauck, Jr.

43. REMARKS R.E. Smith

Field edit applied from: Field Edit Ozalid
Matteratios - 60-W-2179 and 2181

15
22

Field Edit Report
To Accompany T 11819

USC&GSS McARTHUR

Ronald L. Newsom
CDR, USESSA
Commanding Officer

51 METHODS

Manuscript T 11819 was field edited by personnel aboard the USC&GSS McARTHUR in conjunction with hydrography on boatsheets AR 10-2-67 (H 8968) and AR 20-3-68 (H 8982). Shoreline inspections was accomplished from Launch AR-1 and it was found that the heavy swell and resulting surf made delineation of the MLLW line impossible. Additions and corrections to the manuscript have been noted on the one field edit ozalid provided for T 11819 and then cross referenced and noted in violet ink on photo numbers 60W2179 and 60W2181. No deletions were necessary.

52 ADEQUACY OF COMPILATION

Manuscript T 11819 is complete and adequate for use in conjunction with this hydrographic survey. The inshore area, with the exception of the shoreline and bluffline, was not field edited.

54 RECOMMENDATIONS

None

REVIEW REPORT T-11819

SHORELINE

JULY 21, 1970

61. GENERAL STATEMENT

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

62. COMPARISON WITH REGISTERED SURVEYS

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

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with USGS ILIO POINT and MOLOKAI AIRPORT, HAWAII, quadrangles. These are 1:24,000-scale surveys, dated 1952. These surveys are in fairly good agreement with T-11819. The difference in the shoreline of the three surveys has been indicated on the comparison print in brown.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with a copy of H-8982, AR-20-3-68. The shoreline of the two surveys is in good agreement.

A rock at latitude 21° 13' 18", longitude 157° 13' 12" is noted on the boat sheet as awash 2 to 4 feet. This rock appears to be submerged on the photographs of the area. All differences in rock data have been indicated on the comparison print in purple.

65. COMPARISON WITH NAUTICAL CHARTS

A visual comparison was made with Chart 4120, 3rd edition, October 14, 1968. The shoreline of the two surveys appears to be in good general agreement.

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

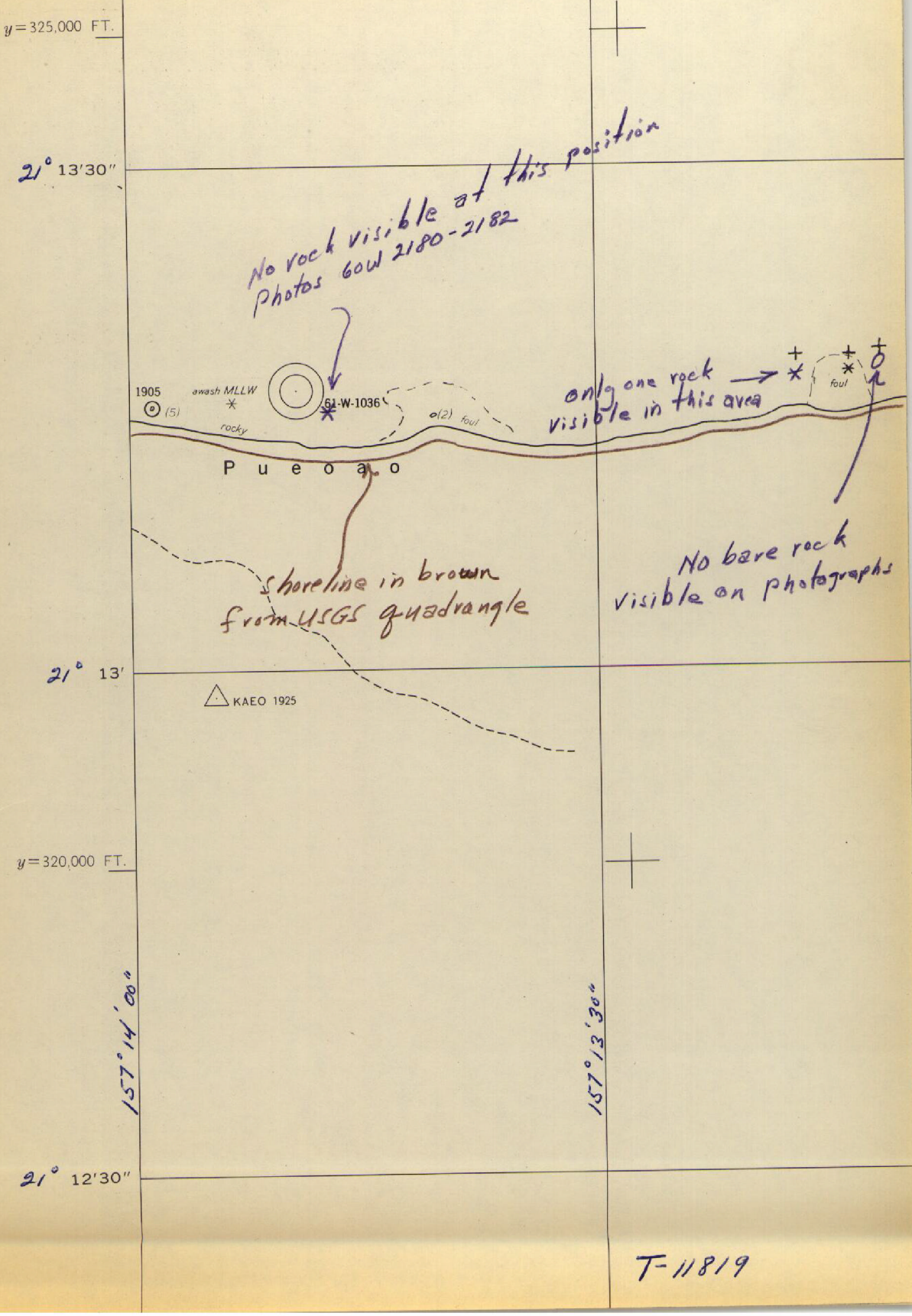
Approved by:

Charles Thomas

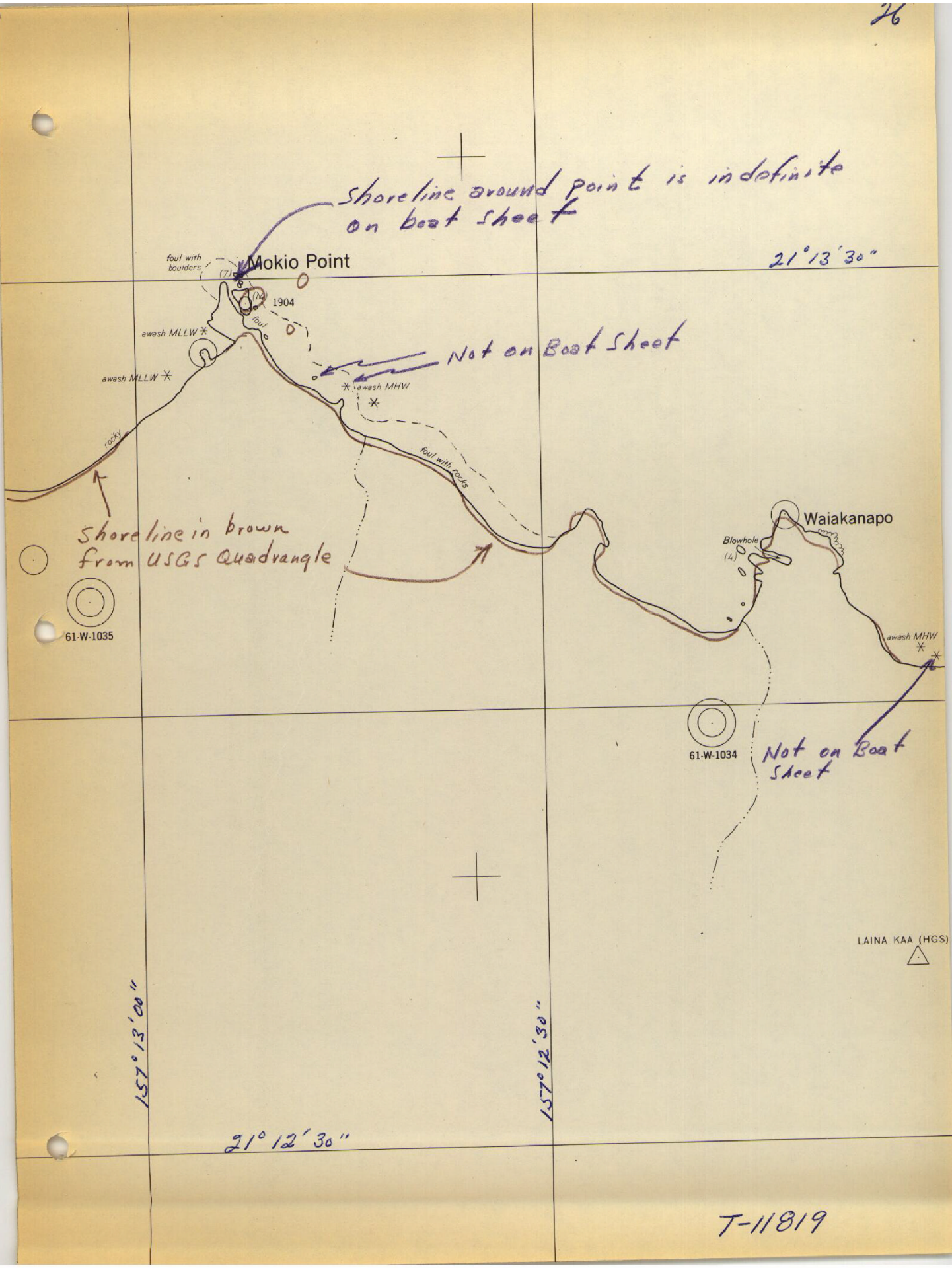
Chief, Photogrammetric Branch

Jack E. Luth

Chief, Photogrammetry Division


y = 325,000 FT.
21° 13'30"
No rock visible at this position
Photos 60W 2180-2182
1905
awash MLLW
(5)
61-W-1036
o(2) foul
rocky
only one rock visible in this area
foul
P u e o a o
shoreline in brown from USGS quadrangle
No bare rock visible on photographs
21° 13'
KAEO 1925
y = 320,000 FT.
157° 14' 00"
157° 13' 30"
21° 12'30"

T-11819


Shoreline around point is indefinite on boat sheet
Mokio Point
foul with boulders
(7)
1904
foul
awash MLLW
awash MLLW
rocky
Not on Boat Sheet
awash MHW
foul with rocks
Shoreline in brown from USGS Quadrangle
61-W-1035
Waiakanapo
Blowhole
(4)
awash MHW
61-W-1034
Not on Boat Sheet
LAINA KAA (HGS)
21°13'30"
157°13'00"
157°12'30"
21°12'30"

T-11819

I 27

21°13'00"

Not on boat sheet

awash MLLW

1906

1885

rocky

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."

Kaa Gulch

Rocks not on boat sheet

rocky

1903

stones

rocky

Cave 20 ft high 50 ft wide

Kapalauoa

Shoreline in brown from USGS Quadrangle

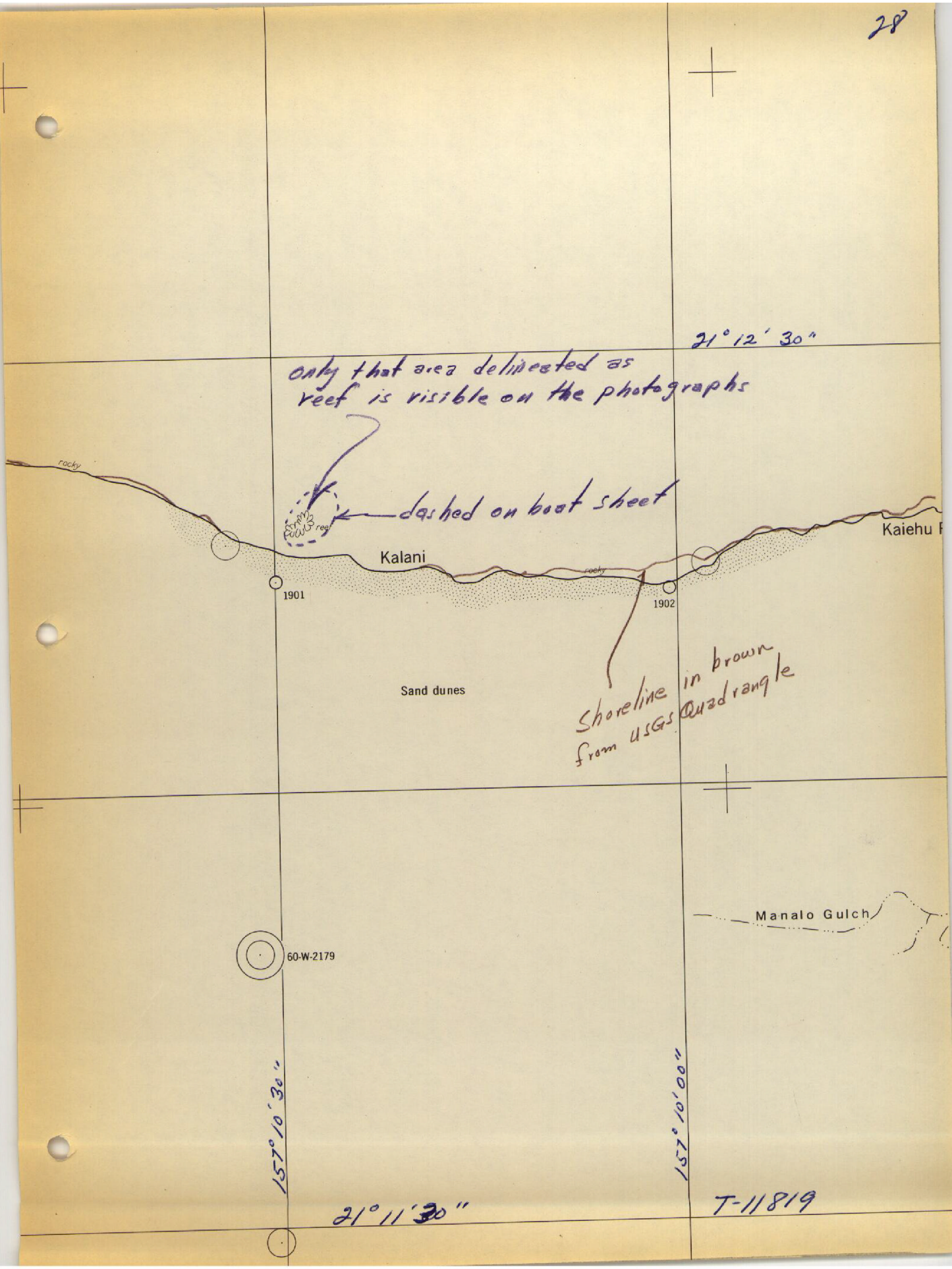
157°11'30"

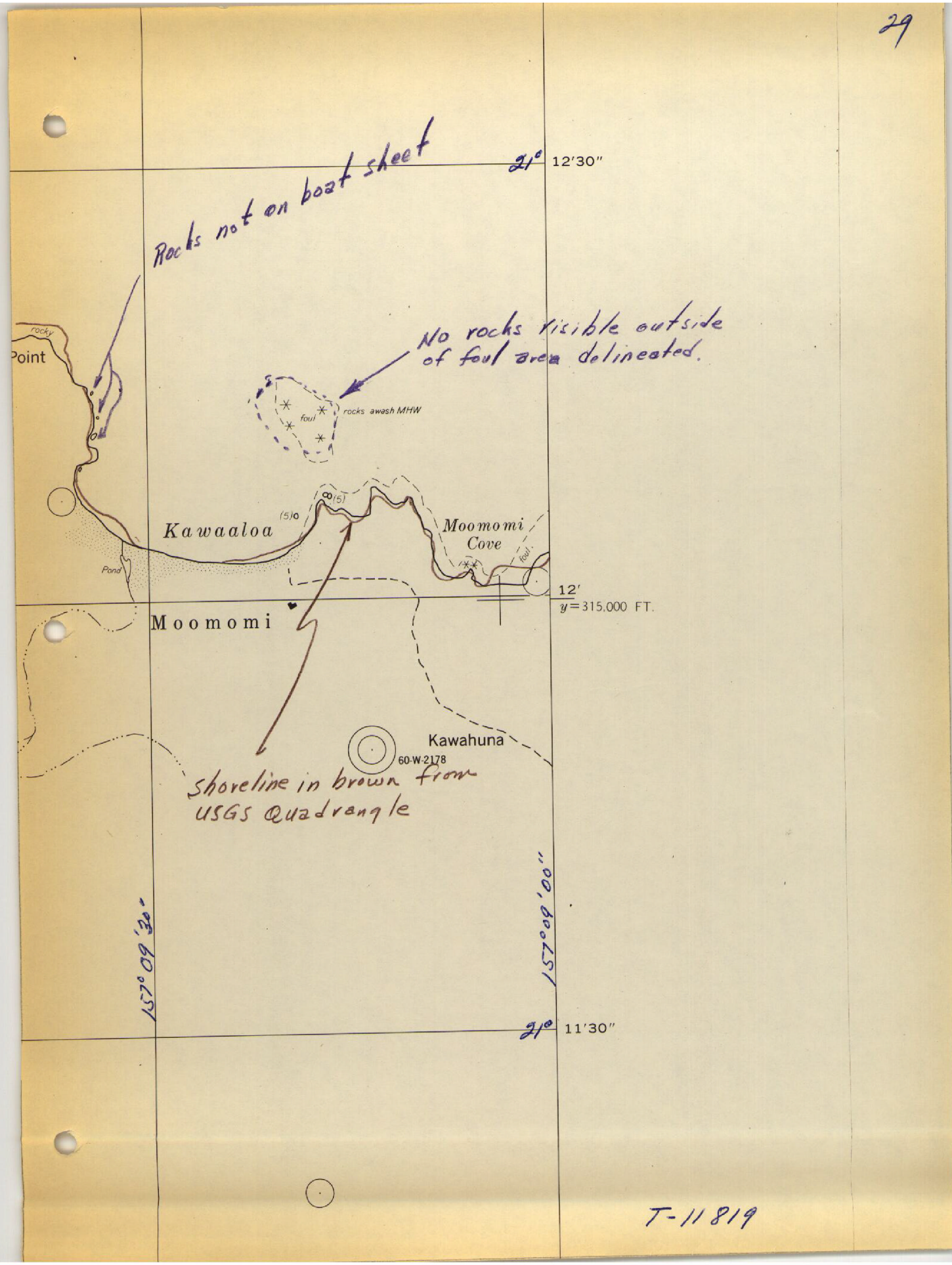
157°11'00"

21°12'00"

60-W-2180

T-11819


21° 12' 30"
only that area delineated as reef is visible on the photographs
rocky
dashed on boat sheet
reef
Kalani
rocky
Kaiehu P
1901
1902
Sand dunes
Shoreline in brown from USGS Quadrangle
Manalo Gulch
60-W-2179
157° 10' 30"
157° 10' 00"
21° 11' 30"
T-11819


21° 12'30"
Rocks not on boat sheet
No rocks visible outside of foul area delineated.
rocky
Point
foul
rocks awash MHW
Kawaaloa
(5)o
∞(5)
Moomomi Cove
foul
Pond
12'
y=315,000 FT.
Moomomi
Kawahuna
60-W-2178
shoreline in brown from USGS Quadrangle
157°09'30"
157°09'00"
21° 11'30"

T-11819