

TP-00488

TP-00488

NOAA FORM 76-35 (6-80)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. TP-00488	Edition No. 1
Job No. CM-7713	
Map Classification FINAL, FIELD EDITED MAP	
Type of Survey SHORELINE	
LOCALITY	
State HAWAII	
General Locality HAWAII, SOUTHEAST COAST	
Locality PUNALUU HARBOR	
19 77 TO 19 80	
REGISTERED IN ARCHIVES	
DATE	

NOAA FORM 76-36A (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.	
DESCRIPTIVE REPORT - DATA RECORD		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division, AMC, Norfolk, VA		SURVEY TP. 00488 MAP EDITION NO. (1) MAP CLASS Final JOB PH CM-7713	
OFFICER-IN-CHARGE Roy K. Matsushige		LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB PH. _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__	
I. INSTRUCTIONS DATED			
1. OFFICE		2. FIELD	
Aerotriangulation Feb. 13, 1978 Compilation June 23, 1978		Control Nov. 2, 1977	
II. DATUMS			
1. HORIZONTAL: <input type="checkbox"/> 1927 NORTH AMERICAN		OTHER (Specify) Old Hawaiian Datum	
2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL		OTHER (Specify)	
3. MAP PROJECTION Transverse Mercator		4. GRID(S) STATE Hawaii ZONE 1	
5. SCALE 1:5,000		STATE ZONE	
III. HISTORY OF OFFICE OPERATIONS			
OPERATIONS		NAME	
DATE			
1. AEROTRIANGULATION BY METHOD: Analytic LANDMARKS AND AIDS BY		R. Fisher May 1978	
2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Coradomat 21 CHECKED BY		S. Solbeck May 1978 S. Solbeck May 1978	
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY		R. Kravitz Oct. 1978 A. Rauck Oct. 1978	
INSTRUMENT: Wild B-8 SCALE: 1:5,000		CONTOURS BY CHECKED BY N.A.	
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY		R. Kravitz Dec 1978 A. Rauck Feb. 1979	
METHOD: Smooth drafted SCALE: 1:5,000		CONTOURS BY CHECKED BY N.A.	
HYDRO SUPPORT DATA BY CHECKED BY		R. Kravitz Dec 1978 A. Rauck Feb 1979	
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		A. Rauck Feb 1979	
6. APPLICATION OF FIELD EDIT DATA BY		G. A. Morris Jul 1981 D. Butler Feb 1982	
7. COMPILATION SECTION REVIEW BY		D. Butler Feb 1982	
8. FINAL REVIEW BY		J. Hancock Feb 1986	
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Hancock Feb 1986	
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		P. Dempsey May 1986	
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		E. DAUGAERTZ MAY 86	

NOAA FORM 76-36B (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY TP-00488 COMPILATION SOURCES			
1. COMPILATION PHOTOGRAPHY					
CAMERA(S) F. L. = 153.21 mm Zeiss RMK A 15/23 Lens 118960 TIDE STAGE REFERENCE <input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE ZONE Hawaii MERIDIAN 150th <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT	
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
77GSAASY 636-639	Mar. 26, 1977	14:50	1:15,000	0.4 ft. above MLLW	
				Mean range = 1.7 ft.	
REMARKS Photography by American Aerial Survey, Inc., of Northern California Geodetic Survey					
2. SOURCE OF MEAN HIGH-WATER LINE: The mean high water line was compiled by instrument methods using the 1:15,000 scale photographs and graphically using ratio prints to assist in the compilation process.					
3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE: None compiled.					
4. CONTEMPORARY HYDROGRAPHIC SURVEYS <i>(List only those surveys that are sources for photogrammetric survey information.)</i>					
SURVEY NUMBER	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED
H-9857	Oct.-Dec. 79	Registered			
5. FINAL JUNCTIONS					
NORTH	EAST	SOUTH	WEST		
Tp-00379	TP-00379	TP-00380	TP-00380		
REMARKS The northern portion of this inset map lies within the southwest corner of TP-00379 (1:20,000) and the southern portion lies within the northeast corner of TP-00380 (1:20,000).					

NOAA FORM 76-36C (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
TP-00488 HISTORY OF FIELD OPERATIONS			
I. <input checked="" type="checkbox"/> FIELD INSPECTION OPERATION <input type="checkbox"/> FIELD EDIT OPERATION			
OPERATION	NAME	DATE	
1. CHIEF OF FIELD PARTY	R. Melby	Jan 1978	
2. HORIZONTAL CONTROL	RECOVERED BY	R. Melby	Jan 1978
	ESTABLISHED BY	None	
	PRE-MARKED OR IDENTIFIED BY	R. Melby	Jan 1978
3. VERTICAL CONTROL	RECOVERED BY	N.A.	
	ESTABLISHED BY	N.A.	
	PRE-MARKED OR IDENTIFIED BY	N.A.	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY	None	
	LOCATED (Field Methods) BY	None	
	IDENTIFIED BY	None	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY BY <input checked="" type="checkbox"/> NO INVESTIGATION		
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	None	
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	N.A.	
II. SOURCE DATA			
1. HORIZONTAL CONTROL IDENTIFIED		2. VERTICAL CONTROL IDENTIFIED	
		N.A.	
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
77GSAASY599	LUU, 1930 (Direct & sub. pt. identified)		
3. PHOTO NUMBERS (Clarification of details)			
None			
4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED			
None			
PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
5. GEOGRAPHIC NAMES: <input type="checkbox"/> REPORT <input checked="" type="checkbox"/> NONE		6. BOUNDARY AND LIMITS: <input type="checkbox"/> REPORT <input checked="" type="checkbox"/> NONE	
7. SUPPLEMENTAL MAPS AND PLANS			
None			
8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)			
1 Form 76-53 1 field report			

NOAA FORM 76-36C
(3-72)

TP-00488

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	W. L. Mobley	Oct 1980
2. HORIZONTAL CONTROL	RECOVERED BY M. McCluskey	Oct 1980
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
3. VERTICAL CONTROL	RECOVERED BY None	
	ESTABLISHED BY None	
	PRE-MARKED OR IDENTIFIED BY None	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY None	
	LOCATED (Field Methods) BY None	
	IDENTIFIED BY D. Kruth	Oct 1980
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY D. Kruth	Oct 1980
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY N.A.	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

N.A.

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

77GSAASY 637-639 (1:5,000 scale Cronapaque Ratio)

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

(Picnic Shelters recommended as landmarks but shown as map features.)

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
77GSAASY 637	Picnic Shelters		

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

1 field edit film print

1 field edit report

1 field edit paper print

1 field 76-40 form

NOAA FORM 76-36C
(3-72)

* U.S. GPO: 1977-765-092/1105 Region 6

RECORD OF SURVEY USE

I. MANUSCRIPT COPIES

COMPILATION STAGES			DATE MANUSCRIPT FORWARDED	
DATA COMPILED	DATE	REMARKS	MARINE CHARTS	HYDRO SUPPORT
Compilation complete pending field edit	Feb. 1979	Class III Manuscript	Mar. 1979	Mar. 1979
Field edit applied, compilation complete, pending final review.	Feb. 1982	Class I Manuscript	None	Feb. 1982
Final Review	Feb. 1986	Final Map	mar 1986	mar 1986

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

(NUMBER pages)	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
1		Mar 1986	Landmark to be Charted

2. ☐ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: _____3. ☐ REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: _____

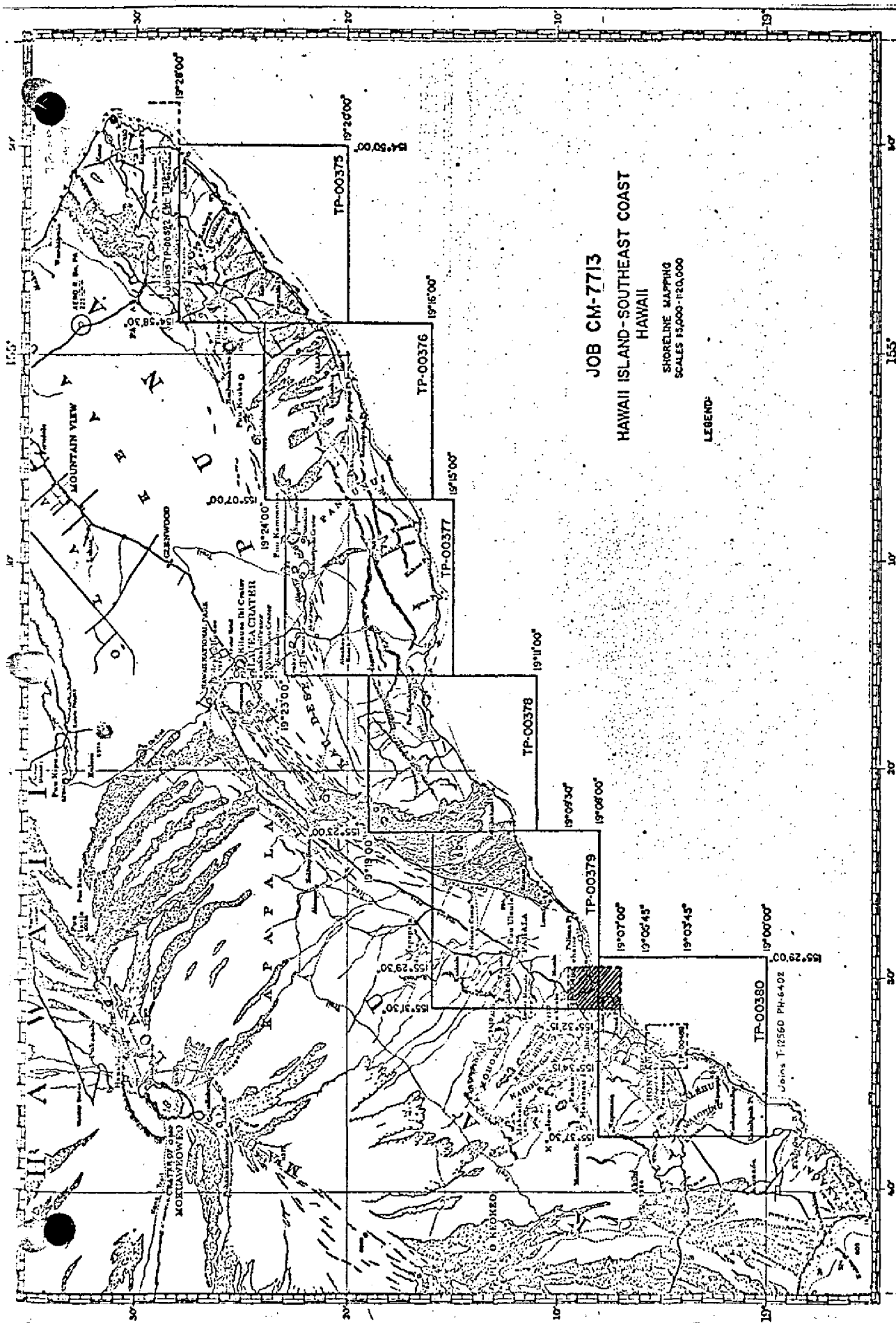
III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS ⁷⁶⁻⁴⁰ ~~557~~ SUBMITTED BY FIELD PARTIES.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
ACCOUNT FOR EXCEPTIONS:

4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: _____

IV. SURVEY EDITIONS (This section shall be completed each time a new map edition is registered)

SECOND EDITION	SURVEY NUMBER TP - _____ (2)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	



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SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00488

This 1:5,000 scale final shoreline map is one of eight maps that comprise project CM-7713, Hawaii Island, Southeast Coast, Hawaii. The eight maps are assigned as TP-00375 through TP-00380 at 1:20,000 scale and TP-00488 and TP-00489 at 1:5,000 scale.

The purpose of this map was to furnish data in support of hydrographic operations and to provide current shoreline data for marine charts.

This map portrays shoreline along the southeastern coast of Hawaii Island from Long. 155°29.5' to Long. 155°31.5' and is an inset map which is proportionately contained within maps TP-00379 and TP-00380. This large scale map features Punaluu Harbor which is one of the few harbor/landing areas along the southeastern coastline.

Photo coverage for the project was adequately provided with panchromatic photography flown by a private contractor, American Aerial Survey, Inc., with the Zeiss RMKA 15/23 camera. Aerotriangulation/ compilation photographs at 1:50,000 and 1:30,000 scales and supplemental compilation/photo-hydro support photographs at 1:30,000 and 1:15,000 scales were taken at various times from December 1976 to March 1977.

Field work prior to compilation consisted of the recovery, establishment, and photoidentification of horizontal control necessary for aerotriangulation. This activity was completed February 1978.

Analytic aerotriangulation was provided by the Washington Science Center in May 1978. This activity included ruling the base manuscripts and providing ratio photographs for compilation. In addition to this project, control was established in order to complete the compilation of three maps for adjoining project PH-6402. During the compilation process of CM-7713, modifications to the original control were made by the aerotriangulation section and subsequent control accompanied with an Addendum to the Photo Plot Report were provided in November 1978.

Compilation by office interpretation of the 1:15,000 scale mapping photographs was performed at the Coastal Mapping Section, Atlantic Marine Center in February 1979. Copies of the Class III manuscript and hydrographic support data were forwarded to the hydrographer for field edit. A copy of the Class III manuscript was also submitted to the Marine Charts Section.

Field edit for this map was performed by NOAA Ship RAINIER personnel in conjunction with hydrographic surveys H-9857 and H-9913, field surveyed in Oct.-Dec. 1979.

TP-00488

Application of field edit data was accomplished at the Photogrammetric Section, Pacific Marine Center in February 1982 and the manuscript advanced to class I. A copy of the Class I manuscript was forwarded to the Hydrographic Surveys Branch.

Final review was performed at the Atlantic Marine Center in February 1986. During this review, four submerged reef limits, previously compiled from field edit remarks, were removed from the manuscript. The field editor stated that these reefs "could not be seen" but indicated that breakers were evident in the general areas in which submerged rocks are currently charted. The removal of the "submerged reefs" may affect hydro survey H-9913. An annotated final Chart Maintenance Print and Notes to Hydrographer Print were prepared to identify all revisions and were forwarded to Photogrammetry Headquarters for distribution.

The Descriptive Report for this final field edited map contains all pertinent information used to produce this map. The original base manuscript and related data were forwarded to the Washington Science Center for final registration.

FIELD INSPECTION

TP-00488

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery and photoidentification of the horizontal control necessary for the aerotriangulation of the project.

FIELD OPERATIONS REPORT

Projects CM-7712 & CM-7713

North and Southeast Coast, Island of Hawaii, Hawaii

January - February 1978

Area:

The two adjoining projects covers the southeast and northeast coast of the Island of Hawaii. The southernmost portion of the area is virtually a desert with little rainfall. The northeast coast is subjected to considerable rainfall and sugar cane fields are commonplace.

Except for a couple of small, isolated beaches, the shoreline is steep and rocky, where the lava flows reached the ocean.

Photography:

Panchromatic aerial photography was furnished the field unit for the photo-identification of the required horizontal control stations, necessary for the aerotriangulation. The photography was considered adequate for the field identification.

Horizontal Control:

All of the stations were reached by vehicle or short distance back packing

Several sun azimuths were observed to determine the azimuth to substitute stations. Greenwich Mean Time was observed and recorded with short wave radio signals from WWVH and a digital watch. Time and observed zenith distances were recorded to permit either the time/azimuth or time/altitude method of computation.

Station HILINA USGS 1961 was photo-identified and a sun azimuth was observed. B.M. 139YY USGS was used as an intermediate azimuth point, in conjunction with the sun azimuth. The B.M. did not have a previous azimuth or position. The U.S.G.S. published data lists R.M.I. as $46^{\circ}00'26''$. A telephone conversation with the U.S.G.S. in Menlo Park, California confirmed the number 4 and 6 were transposed and the azimuth should read $64^{\circ}00'26''$. The reference mark was used as a check angle.

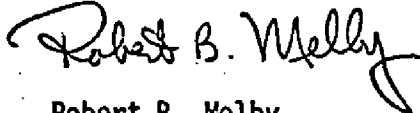
Station PUU ULAULA was photo-identified using a sun azimuth and a stack. the stack is station PAHALA, KAU SUGAR CO STACK, 1977. An N.G.S. Geodetic Field Party was working in the area and a position of the stack should be available from Geodesy in the near future. However, the sun azimuth can be used to determine the azimuth to the sub-points.

Page 2

The field-photo data was submitted to the Rockville office before this report was written to permit the aerotriangulation of the flightlines at the earliest date.

Two non-floating aids to navigation and one landmark for charts were located by triangulation/traverse methods. They have been entered and submitted on form 76-40 to C-3415.

Respectfully Submitted,

A handwritten signature in cursive script, reading "Robert B. Melby". The signature is written in dark ink and is positioned above the typed name and title.

Robert B. Melby
Chief, PMC Photo Party
CPM 133

PHOTOGRAMMETRIC PLOT REPORT
HAWAII ISLAND-SOUTHEAST COAST
CM-7713

May 10, 1978

Area Covered

This project covers most of the southeast coast of Hawaii Island, Hawaii. The following T-sheets are involved:

TP-00375 thru TP-00380 (1:20,000)
TP-00488 and TP-00489 (1:5,000)

In addition to the above T-sheets, T-12559 thru T-12561 at 1:10,000 scale from PH-6402 are also covered.

Method

Two strips of 1:50,000 (strips 1 and 2) and one strip of 1:30,000 (strip 4) panchromatic photography were bridged by analytic aerotriangulation methods.

Strip 4 was bridged solely to provide compilation points for 1:15,000 compilation photography covering TP-00488 and TP-00489.

Ties were made with strip 2 of CM-7712 on the north coast and strip 12 of PH-6402 located near the southern end of the island.

Ratio points for the offshore 1:30,000 scale strips 11 thru 18 were read on the 1:50,000 strips.

Strip 12, 1:30,000, of PH-6402 which would not adjust satisfactorily in 1969 for unknown reasons was rebridged using old horizontal control along with 1977 identified horizontal control and ties from the 1:50,000 strip 2 of the CM-7713 project.

Strips 2 and 4 of CM-7713 and strip 12 of PH-6402 adjusted satisfactorily. The 1964 subpoint for KAMILO (HTS) 1898 is believed to be in error and was disregarded.

Strip 1 of CM-7713 could not be adjusted to meet bridging accuracy standards for all stations. A problem is suspected with PULAMA 1914 but could not be resolved. The final adjustment to this strip was made letting PULAMA 1914 float and disregarding the error in y of about -25 feet at this station.

Ratio points for an offshore 1:15,000 color strip were read on Strip 12. (PH-6402)

T-sheets TP-00375 through TP-00380, TP-00488, TP-00489, and T-12559 through T-12561 were plotted and sent to AMC at Norfolk, Virginia.

Adequacy of Control

With the exception of a horizontal control problem in strip 1 the horizontal control was adequate.

Vertical control was obtained from shoreline points and USGS quadrangle elevations and was satisfactory.

Photography

The quality and location of the photography was satisfactory.

This photography was flown by American Aerial Survey, Inc., with a Zeiss RMK A 15/23 camera, lens serial number 118960.

Submitted by:



Robert E. Fisher

Approved and Forwarded:



Don O. Norman
Acting Chief
Aerotriangulation Section

HORIZONTAL CONTROL FOR CM-7713

- 1 KALAE LIGHT 1948
- 1A KALAE 2, 1948
- 1B KALAE 1887
- 2 PALAHEMO 1898
- 3 MAHANA 1898
- 4 KAMILO (HTS) 1898
- 5 STEIN 2 (HTS) 1949 ✓
- 6 LUU 1930 ✓
- 7 PUU ULAULA 1914 ✓
- 8 HILINA USGS 1961 ✓
- 9 PULAMA 1914 ✓
- 10 KALIU 1949 ✓
- 11 CAPE KUMUKAHI LIGHTHOUSE 1949

HORIZONTAL FIT TO CONTROL (FEET)

STRIP #1 (1:50,000)

6.	LUU 1930	(1.90, 0.26)
	SUB PT.	(1.45, -1.00)
7.	PUU ULAULA 1914	(-3.55, -0.98)
8.	HILINA USGS 1961	
	SUB PT. A	(5.34, -1.60)
	SUB PT. B	(1.67, 1.16)
9.	PULAMA 1914	
	SUB PT. A	(4.59, -23.68)
	SUB PT. B	(11.88, -28.72)
10.	KALIU 1949	(-2.05, -8.61)
	SUB PT.	(0.03, -2.17)

STRIP #2 (1:50,000)

1A	KALAE 2, 1948	
	SUB PT. A	(-0.96, 0.23)
	SUB PT. B	(1.19, 0.95)
4.	KAMILO (HTS) 1898	(2.06, 0.58)
	SUB PT.	(0.33, -0.11)
5.	STEIN 2 (HTS) 1949	(-1.26, -1.59)
	SUB PT.	(2.42, 1.99)
6.	LUU 1930	(-0.07, 1.16)
	SUB PT.	(-0.24, -0.47)
7.	PUU ULAULA 1914	(0.23, -0.36)

STRIP #4 (1:30,000)

5.	STEIN 2 (HTS) 1949	(-0.01, -0.04)
	SUB PT.	(0.11, 4.03)
6.	LUU 1930	(0.00, 0.00)
7.	PUU ULAULA 1914	(0.01, 0.01)

STRIP #12 (1:30,000)

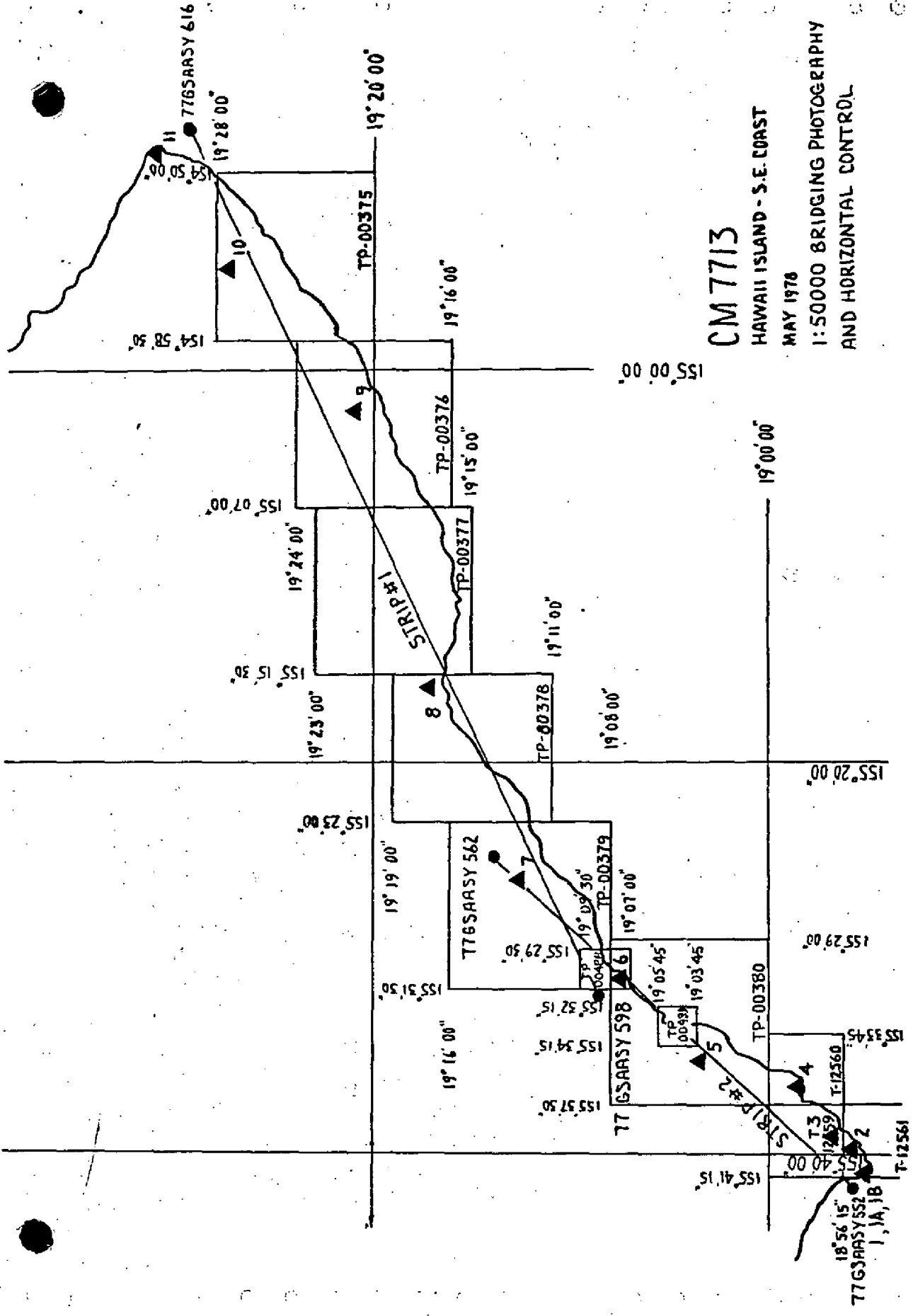
4. KAMILO (HTS) 1898	(4.01, -0.39)
3. MAHANA 1898	(1.48, 0.46)
2. PALAHEMO 1898	(2.64, -1.31)
1B. KALAE 1887	(0.36, -0.37)
1A. KALAE 2, 1948 SUB PT.	(2.30, 1.46)
1. KALAE LIGHT 1948	(-0.16, -0.27)

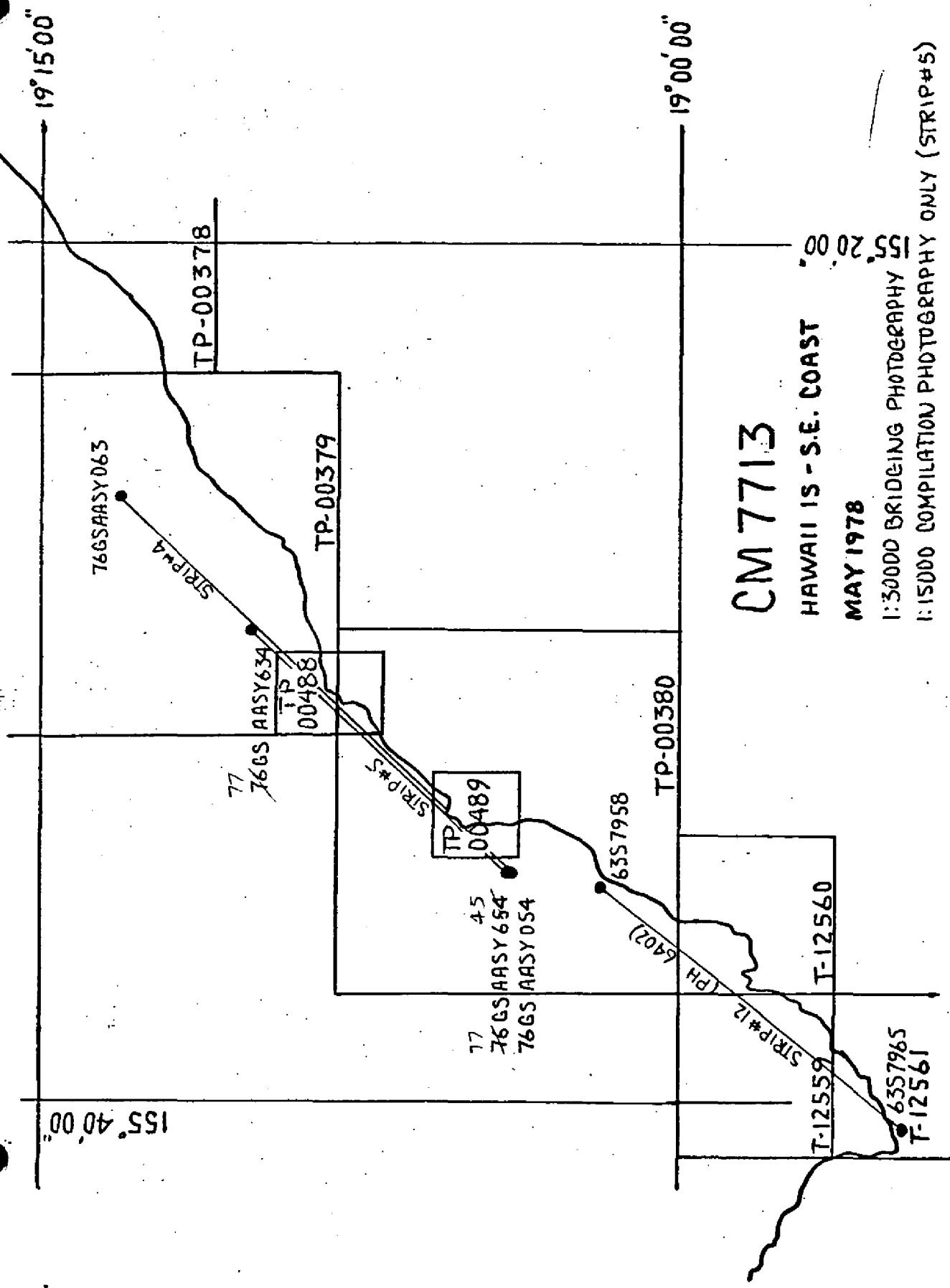
CM7713

HAWAII ISLAND - S.E. COAST

MAY 1976

1:50000 BRIDGING PHOTOGRAPHY
AND HORIZONTAL CONTROL





CM 7713

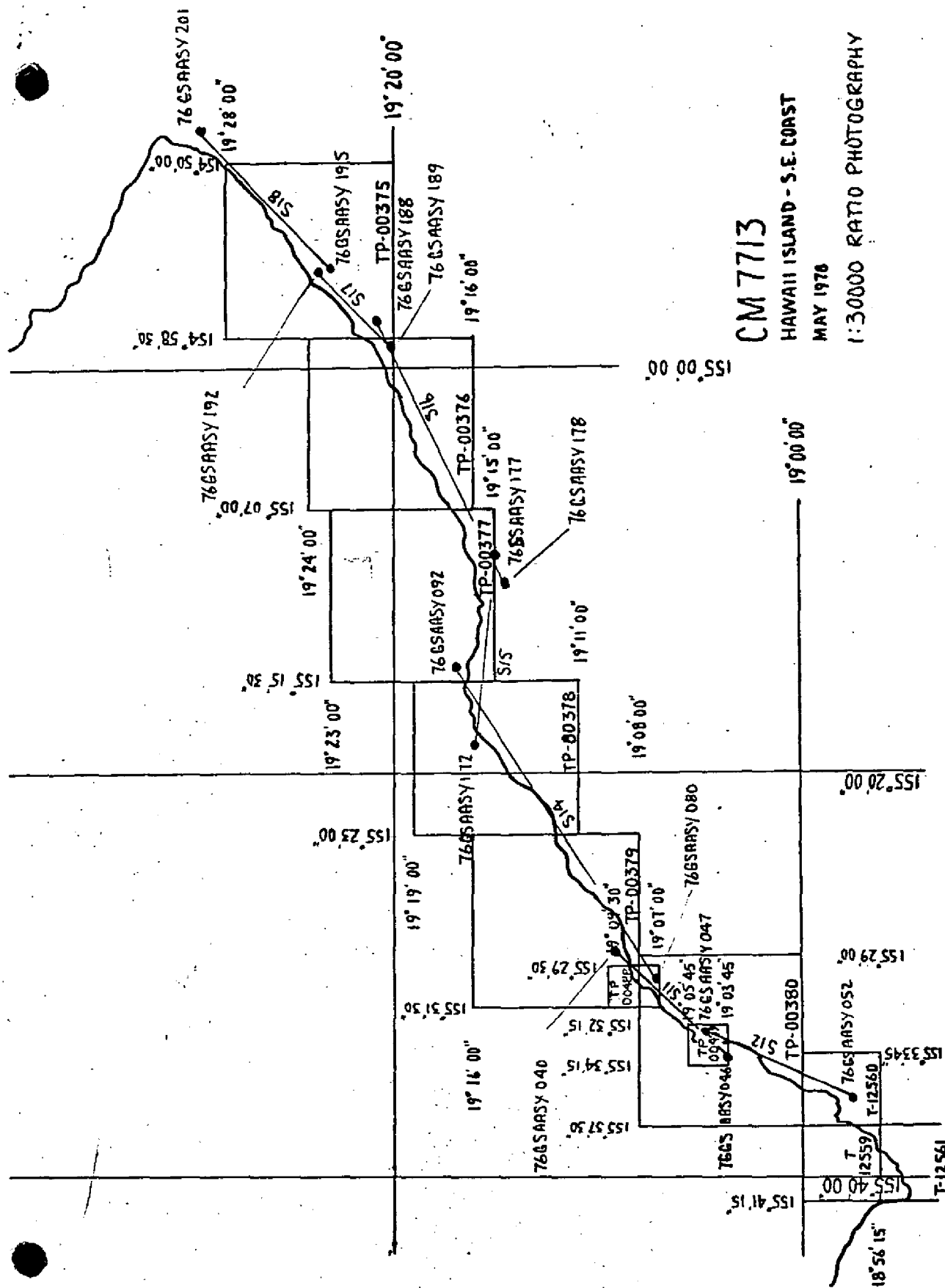
HAWAII IS - S.E. COAST

MAY 1978

1:30000 BRIDGING PHOTOGRAPHY

1:15000 COMPILATION PHOTOGRAPHY ONLY (STRIP#5)

155° 20' 00"



CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1970

1:30000 RATIO PHOTOGRAPHY

Addendum
 Photogrammetric Plot Report
 Hawaii ~~Island~~ SE Coast
 CM-7713
 November 28, 1978

The intersection station, Honuapo, Hutchinson Sugar Co., Mill Stack, 1967 would not fit the control points used for strip adjustment. This stack lies between Stein 2 (HTS), 1949 and LUU, 1930. Both Stein 2 and LUU are identified direct.

In Strip 4 (1:30,000 scale) the stack is a poor image. When the three control points for the strip are held, the stack is out about 10 feet in X and 16 feet in Y. However, the quality of a strip adjustment with only three control points can not always be evaluated.

In Strip 2 (1:50,000 scale) the image of the stack is also questionable, but its approximate position can be measured. In this strip, there are five field identified control points to adjust the strip and the adjustment with these five points is good. The stack is out 3 x 12 feet in this strip. (I believe the discrepancy between the two strips is due chiefly to the image quality of the stack).

The written description of the stack appears to agree with the image on the 1:15,000 scale photography. The image is good on this photography. The stack was cut in from three stations by Geodesy. No other information appears to be available.

On the basis of the adjustment of Strip 2 with the five control stations, I can only surmise that the discrepancy is with the position on the stack and that the strips covering this area and the control used to adjust these strips are adequate.

Don O. Norma

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	SOURCE OF INFORMATION (Index)	AEROTRIANGULATION POINT NUMBER	GEODETTIC DATUM		ORIGINATING ACTIVITY		REMARKS
				Old Hawaiian	Unit, AMC, Norfolk, VA			
STATION NAME	TP-00488	CM-7713		COORDINATES IN FEET	GEODETTIC POSITION	φ LATITUDE	λ LONGITUDE	
				STATE	Hawaii			
				ZONE	1			
LUU, 1930		Quad 191553 Sta. 1062	6 599100	X=	495,387.48	φ	19 07 36.455	
				Y=	106,564.34	λ	155 30 48.106	
HILL (PUEHU H.T.S.), 1914		Quad 191553 Sta. 1019	18	X=		φ	19 08 43.967	
				Y=		λ	155 30 58.842	
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
				X=		φ		
				Y=		λ		
COMPUTED BY	A. Rauck			COMPUTATION CHECKED BY	R. Kravitz			DATE 10/23/78
LISTED BY	A. Rauck			LISTING CHECKED BY	R. Kravitz			DATE 2/3/79
HAND PLOTTING BY				HAND PLOTTING CHECKED BY				DATE

COMPILATION REPORT

CM-7713

TP-00488

31 - DELINEATION

Delineation was by instrument methods using the Wild B-8 stereoplotter and 1:15,000 scale compilation photographs. Ratio photographs were provided in order to assist in graphic compilation of the mean high water line. Photo coverage and quality were adequate.

32 - CONTROL

See the Photogrammetric Plot Report dated May 10, 1978.

33 - SUPPLEMENTAL DATA

None.

34 - CONTOURS AND DRAINAGE

Contours are not applicable to the project. Drainage was by the Wild B-8 stereoplotter and by office stereoscopic interpretation of the ratioed photographs.

35 - SHORELINE AND ALONGSHORE DETAIL

Alongshore details were delineated by the Wild B-8 stereoplotter and by office inspection of the ratioed photographs.

The mean high water line was office edited and refined from the ratioed photographs. Heavy surf action, apparent on the photographs, made delineation extremely difficult.

36 - OFFSHORE DETAILS

The delineation of both alongshore and offshore detail which primarily consists of rocks, was hindered by the apparent shoreline breakers that originate an average of 100 feet offshore.

37 - LANDMARKS AND AIDS

There were no charted landmarks or aids within the limits of this manuscript.

38 - CONTROL FOR FUTURE SURVEYS

None.

39 - JUNCTIONS

See the Form 76-36B, item 5 of the Descriptive Report concerning junctions.

TP-00488

40 - HORIZONTAL AND VERTICAL ACCURACY

Refer to the Photogrammetric Plot Report dated May 10, 1978.

46 - COMPARISON WITH EXISTING MAPS

A comparison was made with the following U.S. Geological Survey
Quadrangle:

Naalehu, HA, scale 1:24,000, dated 1962

Punaluu, HA, scale 1:24,000, dated 1966

Pahala, HA, scale 1:24,000, dated 1967.

47 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with National Ocean Survey Chart 19322, scale
1:2,500, 5th edition, dated June 25, 1977.

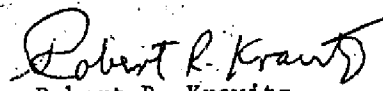
ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

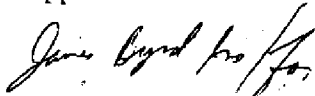
ITEMS TO BE CARRIED FORWARD

None.

Submitted by:


Robert R. Kravitz
Cartographic Technician
December 12, 1978

Approved:



Albert C. Rauck, Jr.
Chief, Coastal Mapping Section

ADDENDUM TO THE COMPILATION REPORT

TP-00488

FIELD EDIT

A charted STEEPLE* at $19^{\circ}08'11.90''$, $155^{\circ}30'36.06''$, and visible on the photography, was not positioned by the compilation office or investigated by the field editor. It was indicated as a landmark (Position Approximate) on Chart 19322, with the steeple shown on the wrong end of the church. It was positioned during the application of the field edit data using ratios 77GSAASY 637 & 638, shown as a landmark, and listed on the appropriate form 76-40 as having not been inspected from seaward.

Although the field editor submitted a form 76-40 for the two picnic shelters at $19^{\circ}08'12''$, $155^{\circ}30'30''$ they will not be processed as landmarks because on the field edit ozalid he changed his descriptive note of the features from "landmark value" to "charting value". And also because, stereoscopically, it appears that the building to the northeast, or the steeple to the west, would be much more prominent objects.

Horizontal control station HILL (PUEHU HTS) 1914 was retained on the manuscript, even though a form 75-82A was not submitted, because it was used in aerotriangulation. Station PUNALUU, 1949 was recovered by the field editor and listed on the form 76-41, but it was not plotted on the manuscript.

On the field edit ozalid, the field editor delineated an area of ledge attached to the shore and a detached reef that uncover at MLLW. These features conform with chart 19322, but he failed to substantiate them with any photographs or fix data.

An ^{inadequate} ~~adequate~~ chart comparison was made during the compilation activity. Several charted items were not compiled or questioned, and were not picked up by the field editor:

- a. rock awash at $19^{\circ}07'59''$, $155^{\circ}30'30''$
- b. obstruction (pile?) at $19^{\circ}08'02.5''$, $155^{\circ}30'26''$
- c. rock awash at $19^{\circ}08'04.5''$, $155^{\circ}30'26''$
- d. rock awash at $19^{\circ}08'11''$, $155^{\circ}30'23''$
- e. submerged rock at $19^{\circ}08'14.5''$, $155^{\circ}30'07''$

Submitted by:

for *George L. Hancock*
David P. Butler
Cartographic Technician
Date: Feb. 1982

* Position of steeple determined
by instrument methods during
Quality Control Review.
Position accurate. PJD

June 22, 1978

Geographic Names

Final Name Sheet

CM-7713(Island of Hawaii-Southeast Coast)

TP-00488

Kaieie Heiau

Kaneeleele Heiau

Kapukini

Kohaahu

Koloa Beach

Kuhua Bay

Nahuluhulu Point

Ninole

Ninole Cove

Ninole Springs

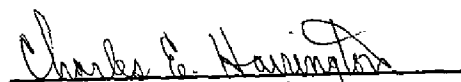
Pacific Ocean

Punaluu

Punaluu Harbor

Puuo Point

Approved by:


Charles E. Harrington
Chief Geographer-C3X8

FIELD EDIT REPORT

OPR-T126-RA-80
CM-7713
TP-00488

Hawaii Island
Southeast Coast Hawaii
(Punaluu)

J2 October 80 - 4 October 80
(JD 276 - 278)

METHODS

Field edit operations on TP-00488 began on October 2, 1980 (JD 276) and ended on October 4, 1980 (JD 278). Greenwich Mean Time (GMT), was used to reference shore line features. Shoreline features can be cross referenced by comparing the time when observed between the field discrepancy print, the photographs and the master film field edit ozalid. Notes on the master film field edit ozalid were made using violet meaning verification or addition of features and green meaning the deletion of the feature.

All field edit was performed on shore by foot. The procedure used for the addition of rocks and other features was to first circle and label it on the matte ratio photograph, also noting it on the field discrepancy print. The feature was then photo-pricked on the chron-opaque photographs and labeled. Later it was transferred to the master film field edit ozalid.

The black and white photos 636, 637, 638, 639, master film field edit ozalid and the discrepancy print were used to record and present the data.

This field edit survey complied with chapter II, Manual of Coastal Mapping Field Procedures, Project Instructions, The Provisional Hydro Manual, and the PMC OORDER.

ADEQUACY AND COMPLETENESS

The manuscript, as amended by the field edit survey, is adequate and complete. The entire manuscript was field edited.

GEOGRAPHIC NAMES

There was no investigation of geographic names.

MANUSCRIPT ACCURACY

Visual comparison of shoreline features with the discrepancy print and photos was the method of determining accuracy. Agreement was excellent except where noted.

RECOMMENDATIONS AND MISCELLANEOUS COMMENTS

A note from the compiler to the field editor stated; "The entire shoreline is enclosed by a dashed line indicating an area foul with rocks and ledge. The heavy surf at the shoreline is indicative of the nature of the shoreline. The compilation officer could do little to define this area."

The field editor also had a difficult time verifying or disproving the "foul with rocks and submerged ledge" limits. It was virtually impossible to disprove the dashed "foul with submerged ledges" limit line enclosing the shoreline. The surf, swell and distance from shore made it impossible to see if submerged ledges really existed. The survey launches approached as close as safety from the

surf allowed from the offshore side of these foul limits in order to better define them. It would have to be a perfectly calm day (very rare for this coastline), for a boat to even have a chance to enter this dashed "foul with rocks and submerged ledge" line enclosing the shoreline without being tossed against the cliffs by a wave. A prudent mariner would probably never go closer than these foul limits.

The field editor has shown on the master film field edit ozalid areas where it was positively determined to be "foul with rocks and submerged ledges". In some areas this foul limit was moved even farther offshore for safety.

It is recommended that present "foul with rocks and submerged ledges" limits with changes shown on the master film field edit ozalid be changed to "foul with breakers" and areas positively identified as "foul with rocks and submerged ledges" by the field editor be mapped as such. This would eliminate the possibility of an area positively identified as "foul with rocks" to be also enclosed by the offshore "foul with rocks and submerged ledge" limits. It would also give the most accurate and safest description of the shoreline.

Several rocks, offshore in the Punaluu area, could not be seen by the field editor nor were they verified by the hydrographer. These rocks are noted on the master film field edit ozalid with recommendations.

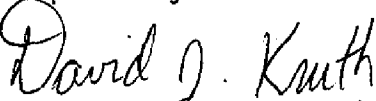
The MHWL line around Ninole cove has changed drastically. The area was reported to have been changed by a storm according to a local person. The approximate MHWL is shown on the master film field edit ozalid.

The foul limits into Punaluu harbor have been changed by the field editor. The part of the foul limit which was deleted is the entrance used by fisherman to get to the head of Punaluu Harbor.


A visual inspection from sea for landmarks was performed.

This corrected manuscript should supercede all previous shoreline compilations.

Respectfully Submitted


David J. Kruth
LTJG, NOAA

Approved and Forwarded


Wayne L. Mobley
Captain, NOAA
Commanding

REVIEW REPORT
TP-00488

SHORELINE

61 - GENERAL STATEMENT

Final review for this final field edited map was accomplished at the Atlantic Marine Center in February 1986. For a schedule of the office and field operations, refer to the Summary included with this Descriptive Report.

62 - COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Not applicable.

63 - COMPARISON WITH MAPS OF OTHER AGENCIES

A comparison was made with the following USGS quadrangle:
NAALEHU, Hawaii, dated 1962, 1:24,000 scale
PUNALUU, Hawaii, dated 1966, 1:24,000 scale
PAHALA, Hawaii, dated 1967, 1:24,000 scale.

64 - COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

A comparison was made with a registered copy of H-9857, RA-20-4-79, 1:20,000 scale, field surveyed Oct.-Dec. 1979. A 1:5,000 scale inset survey (H-9913) of Punaluu Harbor is contained within H-9857. However, a comparison was not made with H-9913 since it was unregistered when an inquiry was made in August 1985 to obtain a copy.

65 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with the following NOS charts:
19320, 1:250,000 scale, 13th edition, July 10, 1982
19322, 1:2,500 scale, 6th edition, June 25, 1983.

66 - ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

TP-00488

Submitted by:

Jerry L. Hancock

Jerry L. Hancock
Final Reviewer

Approved for forwarding:

Billy H. Barnes

Billy H. Barnes
Chief, Photogrammetric Section, AMC

Approved:

John A. Mooney

Chief, Photogrammetric Section,
Rockville

Ronald K. Brewer

Chief, Photogrammetry Branch,
Rockville

