

TP-00375

TP-00375

NOAA FORM 76-35 (6-80)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. TP-00375	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 KEHENA	
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 OFFICER-IN-CHARGE Roy K. Matsushige		SURVEY TP. <u>00375</u> MAP EDITION NO. (1) MAP CLASS Final JOB <u>RK-CM-7713</u>	
		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 ZONE Hawaii 1	
5. SCALE 1:20,000		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	Mar 1979
INSTRUMENT: Wild B-8 SCALE: 1:20,000		L. Neterer	Mar 1979
		N.A.	
		N.A.	
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY		L. Williams	Mar. 1979
METHOD: Smooth drafted SCALE: 1:20,000		R. Kravitz	Mar 1979
		N.A.	
		N.A.	
HYDRO SUPPORT DATA BY CHECKED BY		L. Williams	Mar 1979
		R. Kravitz	Mar 1979
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		R. Kravitz	Mar 1979
6. APPLICATION OF FIELD EDIT DATA BY		G. Morris	Mar 1981
		J. Massey	May 1981
7. COMPILATION SECTION REVIEW BY		D. Butler	Nov. 1981
8. FINAL REVIEW BY		J. Hancock	Jan 1986
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Hancock	Feb 1986
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		P. D. ...	APR 86
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		E. DAUGHERTY	MAY 86

NOAA FORM 76-36B (3-72)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY			
Tp-00375 COMPILATION SOURCES					
1. COMPILATION PHOTOGRAPHY					
CAMERA(S) F. L. = 153.21mm Lens 118960 Zeiss RMK A 15/23		TYPES OF PHOTOGRAPHY LEGEND (C) COLOR (P) PANCHROMATIC (I) INFRARED		TIME REFERENCE	
TIDE STAGE REFERENCE <input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				ZONE Hawaii MERIDIAN 150th	<input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> DAYLIGHT
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
77GSAASY-611-615	Mar.26,1977	12:30	1:50,000	0.4 ft. above MLLW	
76GSAASY 195-199	Dec.18,1976	14:15	1:30,000	1.3 ft. above MLLW	
76GSAASY 189-192	Dec.18,1976	14:20	1:30,000	1.3 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 1:50,000 scale photos and graphically using ratio prints of the 1:30,000 scale photographs.					
3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE: None compiled.					
4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)					
SURVEY NUMBER	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED
H-9918	Oct/Nov 80	Registered			
5. FINAL JUNCTIONS					
NORTH CM-7712 TP-00822	EAST No Survey	SOUTH No Survey	WEST TP-00376		
REMARKS					

NOAA FORM 76-36C (3-72)		TP-00375		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
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		L. Riggers	
		ESTABLISHED BY		L. Riggers	
		PRE-MARKED OR IDENTIFIED BY		L. Riggers	
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		None	
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		None	
7. BOUNDARIES AND LIMITS		SURVEYED OR IDENTIFIED BY		None	
II. SOURCE DATA					
1. HORIZONTAL CONTROL IDENTIFIED			2. VERTICAL CONTROL IDENTIFIED		
			None		
PHOTO NUMBER	STATION NAME		PHOTO NUMBER	STATION DESIGNATION	
77GSASY 614	Kaliu, 1949 (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-00375

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

HISTORY OF FIELD OPERATIONS

1. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	W. Mobley	Nov. 1980
2. HORIZONTAL CONTROL	RECOVERED BY M. McCluskey	Sept. 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 M. McCluskey	Sept. 1980
	LOCATED (Field Methods) BY M. McCluskey	Sept. 1980
	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 None	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

None

2. VERTICAL CONTROL IDENTIFIED

None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION

3. PHOTO NUMBERS (Clarification of details)

76 GSAASY 188, 191, 195, 197, 198, 199 (Cronapague Ratios)

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

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

7. SUPPLEMENTAL MAPS AND PLANS

1 Sketch -Pohoiki Breakwater

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

1 Field Edit Report
 1 Field Edit Film Print
 1 Field 76-40 form

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.	Mar 1979	Class III Manuscript	April 1979	August 1979
Field edit applied, compilation complete.	Nov. 1981	Class I Manuscript	None	Feb. 1982
Final Review	Jan. 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	One Aid for Charting

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

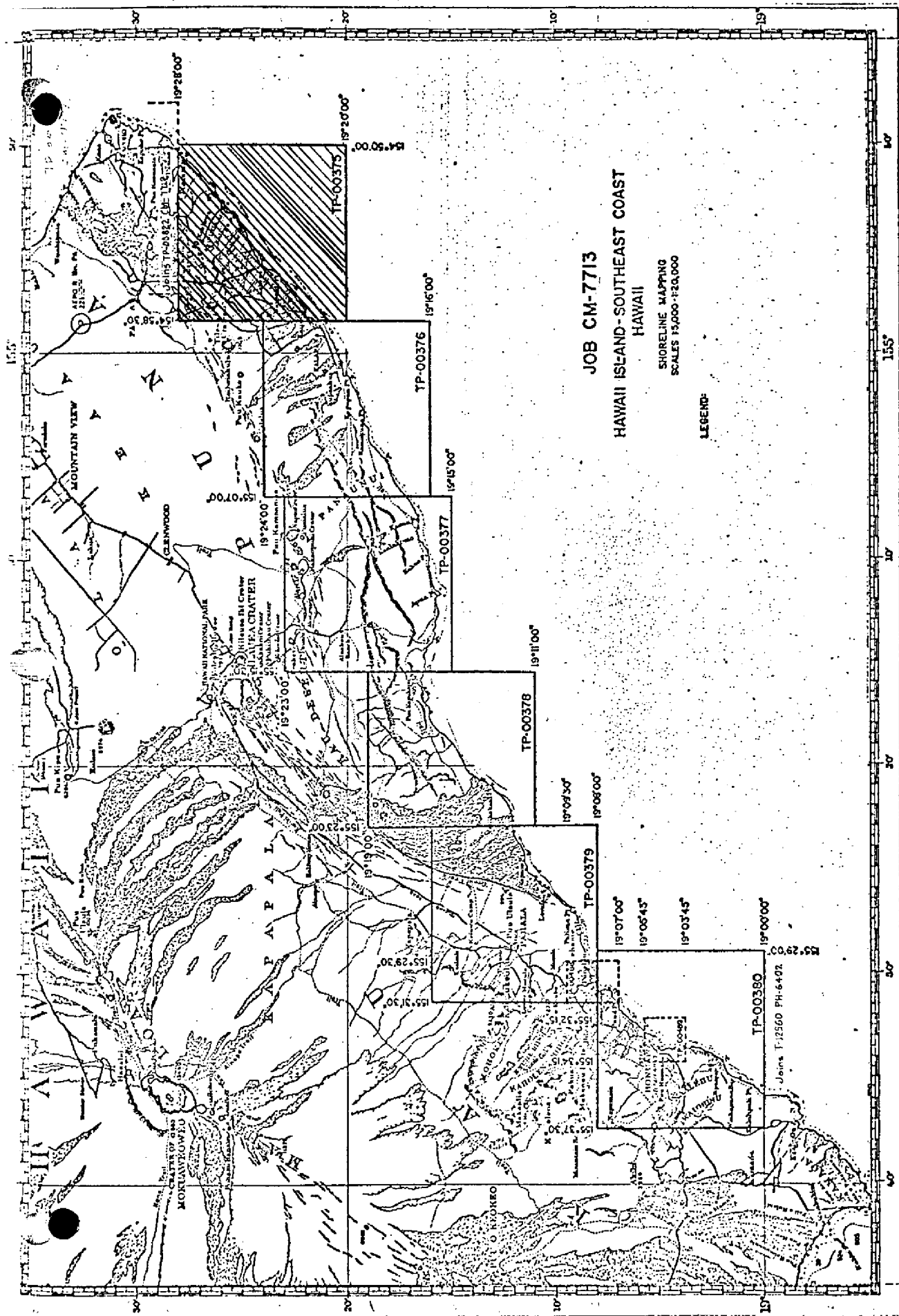
III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS 76-40 ☒ 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	



SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00375

This 1:20,000 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 a portion of shoreline along the eastern coast of Hawaii Island from Lat. 19°20.0' to Lat. 19°28.0'. This map defines the northeast limit of the project and junctions with shoreline project CM-7712.

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 mapping photographs was performed at the Coastal Mapping Section, Atlantic Marine Center in March 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 in conjunction with hydrographic survey H-9918 by NOAA Ship RAINIER personnel in November 1980.

Application of field edit data was accomplished at the Photogrammetric Section, Pacific Marine Center in November 1981 and the manuscript was advanced to Class I. A copy of the Class I manuscript was forwarded to the Hydrographic Surveys Branch.

TP-00375

Final review was performed at the Atlantic Marine Center in January 1986. At this time a comparison was made with a registered copy of contemporary hydrographic survey H-9918. A final Chart Maintenance Print and Notes to Hydrographer Print were prepared and 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.

7

FIELD INSPECTION

TP-00375

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.

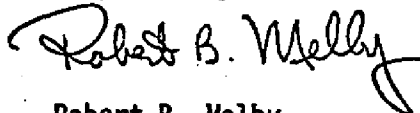
Station PUU ULAULA was photo-identified using a sun azimuth and a stack. the stack is station PAHALA, KAU SUGAR CO STACK, 1977. An N.G.S. Geodetic Field Party was working in the area and a position of the stack should be available from Geodesy in the near future. However, the sun azimuth can be used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

7B
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".

Robert B. Melby
Chief, PMC Photo Party
CPM 133

8

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.

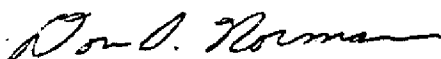
This photography was flown by American Aerial Survey, Inc., with a Zeiss RMK A 15/23 camera, lens serial number 118960.

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

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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)

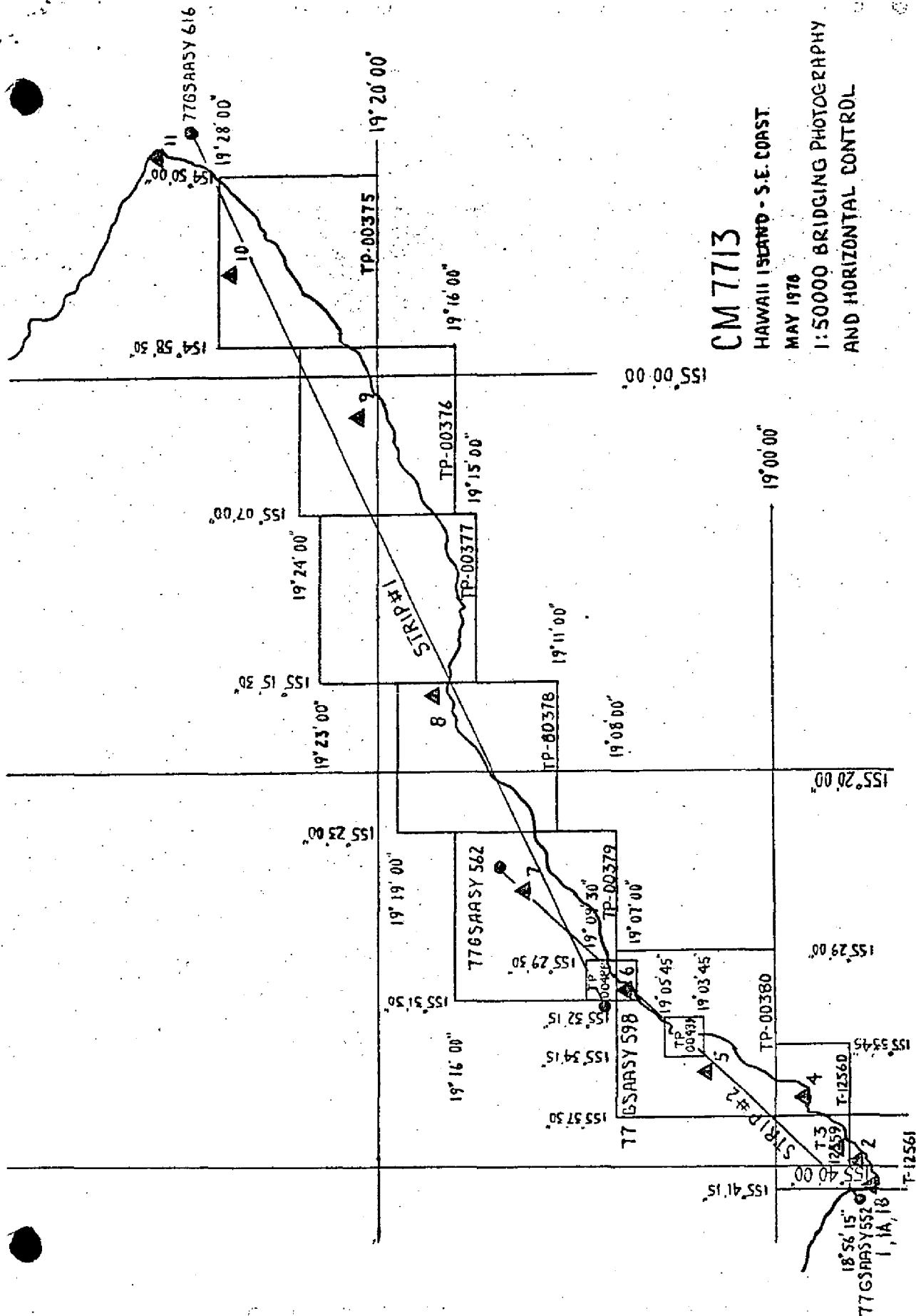
STRIP #4 (1:30,000)

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)

82

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)

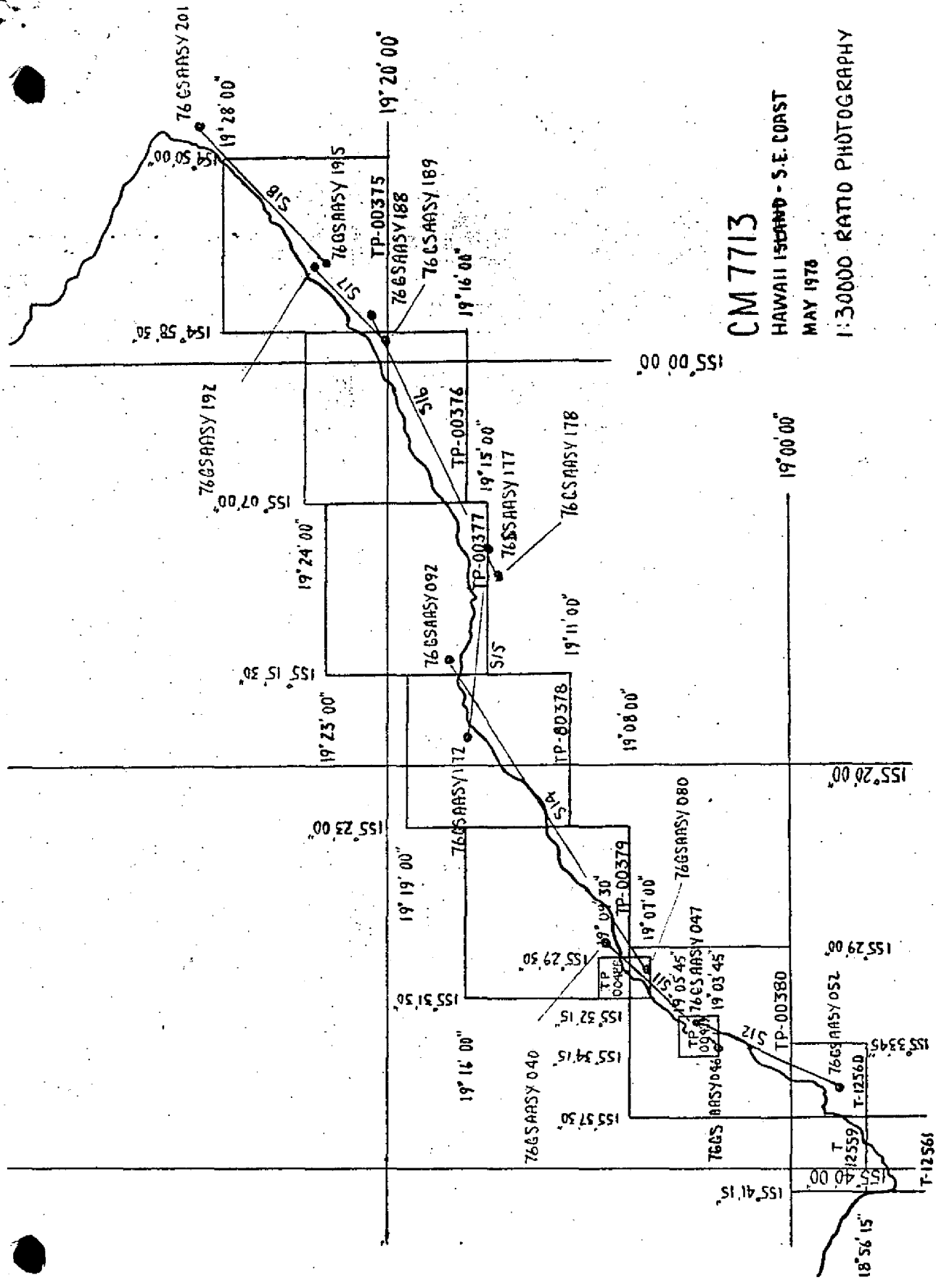


HAWAII IS - S.E. COAST

1:30000 BRIDGING PHOTOGRAPHY

15000 COMPILATION PHOTOGRAPHY ONLY (STRIP#5)

1. *Introduction*



CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1976

1:30000 RADAR 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 J. Norman

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO. TP-00375	JOB NO. CM-7713	GEODETTIC DATUM Old Hawaiian		COORDINATES IN FEET STATE <u>Hawaii</u> ZONE <u>1</u>		GEOGRAPHIC POSITION ϕ LATITUDE λ LONGITUDE		REMARKS Originating Activity Coastal Mapping Division, AMC, Norfolk, VA
		AEROTRI- ANGULATION POINT NUMBER	SOURCE OF INFORMATION (Index)	X=	Y=	ϕ	λ	
KALIU, (HGS), 1891 ✓	P.C. pg. 6	10 614100		X=	699.219.95 ✓	ϕ	19 27 19.890 ✓	
				Y=	226,275.71 ✓	λ	154 55 18.123 ✓	
				X=		ϕ		
				Y=		λ		
				X=		ϕ		
				Y=		λ		
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				X=		ϕ		
				Y=		λ		
COMPUTED BY A. Rauck		DATE 10/3/78	COMPUTATION CHECKED BY R. Kravitz			DATE 3/26/79		
LISTED BY A. Rauck		DATE 10/3/78	LISTING CHECKED BY R. Kravitz			DATE 3/26/79		
HAND PLOTTING BY		DATE	HAND PLOTTING CHECKED BY			DATE		

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COMPILATION REPORT
CM-7713
TP-00375

31 - DELINEATION

Delineation was by instrument methods using the Wild B-8 stereoplotter and 1:50,000 scale photography. Points common to the 1:30,000 scale photographs were selected on the ratio photographs 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.

36 - OFFSHORE DETAILS

There were no significant offshore details.

37 - LANDMARKS AND AIDS

There were no charted landmarks or aids within the mapping area 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-00375

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
Quadrangles:

Kapoho, HA, 1:24,000 scale, dated 1965
Pahoa South, HA, 1:24,000 scale, dated 1966
Kalapaña, HA, 1:24,000 scale, dated 1966

47 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with National Ocean Survey Chart 19320, scale
1:250,000, 12th edition, dated June 17, 1978. The scale of this chart
would not permit suitable comparison.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Submitted by:

Gregory L. Hancock
for Langley Williams
Cartographic Technician
March 22, 1979

Approved:

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

ADDENDUM TO THE COMPILATION REPORT

TP-00375

FIELD EDIT

A note has been attached to the Photogrammetric Plot Report explaining that coordinates for some stations have been readjusted since the aerotriangulation phase of this project. A note in the current horizontal control quad states that "these data should be used for all surveys after December 1975". The final 76-40 and 76-41 reflect the current published positions.

Pohoiki Bay Breakwater Light 2 and Tidal Bench Mark 161-8062-E were submitted by the field editor with third order positions on a Field Geographic Positions list. However, because the N.G.S. terminal at PMC rejected the positions when a preliminary adjustment was attempted, we have elected to treat them as less than third order positions. Neither the Tidal Bench Mark nor the dols surrounding the breakwater were shown due to congestion of detail in the area. A boat ramp in Pohoiki Bay was not detailed either because of limited space.

The field editor was unable to investigate all of the ledge and foul areas due to the surf and swell conditions which are characteristic of the entire shoreline. He recommends the areas that he was able to classify be delineated, but since these are few and small, exist inside the breaker line, and the field editor states that a prudent mariner would never venture beyond this limit, we chose not to show them on the manuscript. Since no MLLW line was compiled, use of the ledge symbol would not be appropriate.

At the request of the NOAA Ship RAINIER personnel, the breaker line was extended across the entrance to Pohoiki Bay because the bay is inaccessible most of the time and should not be considered a safe harbor for refuge from foul weather since entry should be attempted only by persons with local knowledge of the surf conditions that exist.

Rocks that were either too close together to portray properly or that posed no hazard to navigation were deleted from the original compilation and were not delineated from the field edit data.

An area at approximately latitude 19°27'25", longitude 154°50'50" was labeled both on photo 76 GSAASY 199 and on the field edit ozalid as rocks baring 1 foot at 2140Z and 2141Z on November 4, 1981. However, the field editor failed to photo identify or submit positions for individual rocks. A xerox copy of a portion of a boatsheet supplied with the field edit identifies this area as a submerged ledge. The description of range/azimuth fixes 1239 and 1240 submitted as part of the field

edit data classify the area as the MHW line and seaward extent of ledge respectively. Consequently, the MHW line has been extended to position 1239 and a rock awash delineated at position 1240. The remaining fix information verified the original compilation. The only additions were the breakwater and bulkhead.

Submitted by:

Greg J. Harlock

for

David P. Butler
Cartographic Technician
Date: Nov. 1981

June 22, 1978

17

Geographic Names

Final Name Sheet

CM-7713(Island of Hawaii-Southeast Coast)

TP-00375

Kaakepa

Kahinihiniula

Kalaehiamoe

Kaimu

Kaimu Beach

Kalepa Point

Kamaili

Kaulupo

Kehena

Kumakaula Heiau

Lae O Kahuna

Lililoa

Lolia

Mahinaakaka Heiau

Opihikao


Paakikii

Pacific Ocean

Pohoiki

Waipuku Point

Approved by:


Charles E. Harrington
Chief Geographer-C3X8

FIELD EDIT REPORT

OPR-T126-RA-80
CM-7713
TP-00375

Hawaii Island
Southeast Coast Hawaii

31 October 80 - 4 November 80

METHOD

Field edit operations of TP-00375 began on October 31, 1980 (JD 305) and ended on November 4, 1980 (JD 309). Greenwich Mean Time (GMT), also known as Zulu Time (Z), was used to reference shoreline features. Shoreline features can easily 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 with 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 at the same time. The feature was then photo-pricked on the chronopaque photograph and labeled. Later it was transferred to the master film field edit ozalid.

The black and white photos 188, 190-192, 195-199, master film field edit ozalid and the discrepancy print were used to record and present the data.

This field edit survey complied with chapter 11, Manual of Coastal Mapping Field Procedures and project instructions.

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 investigations of geographic names.

MANUSCRIPT ACCURACY

Direct visual comparison of shoreline features with the discrepancy print and photos was the method of determining accuracy. Agreement was excellent except were 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 office could do little to define this area."

The field editor also had a difficult time verifying or disproving the "foul with rocks and 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.

The Pohoiki breakwater was built in 1978 by the Army Corps of Engineers. It was built after the aerial photographs were taken, thus it does not appear on them. A sketch of the Pohoiki breakwater is included with this report. Several fixes were taken using a T-2, and an HP-3808 EDM1 along the shoreline to define the shoreline near the breakwater for a large scale expansion of the hydro boat sheet. This information, including a copy of the final field sheet in this area, is attached to this report. Positions of benchmark 161-8062-E, 1980 and the Pohoiki breakwater light were obtained from the horizontal control work for this project. Benchmark 161-8062-E, 1980 is located at the very end of the breakwater. Pohoiki breakwater light is located 1.1 meters from the offshore tip of the breakwater. A line drawn connecting the benchmark and breakwater light, evenly divides the breakwater down its longitudinal axis. The breakwater is surrounded by concrete dolos which help break the wave actions. The distance which the dolos extend out from the breakwater had to be estimated since it was physically impossible to climb out to the end of them. All other measured distances were taped.

This corrected manuscript should supercede all previous shoreline compilations.

Respectfully submitted

David J. Kruth

David J. Kruth
LTJG, NOAA

Approved and Forwarded

Wayne L. Mobley

Wayne L. Mobley
Captain, NOAA
Commanding

REVIEW REPORT
TP-00375

SHORELINE

61 - GENERAL STATEMENT

Final review for this final field edited map was accomplished at the Atlantic Marine Center in January 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 1:24,000 scale USGS quadrangles:

Kalapana, Hawaii, dated 1966

Pahoa South, Hawaii, dated 1966

Kapoho, Hawaii, dated 1965

64 - COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Portions of contemporary hydrographic surveys H-9917 and H-9918 are common to this final shoreline map. A comparison was made with a registered copy of H-9918, RA-20-7-80, 1:20,000 scale, field surveyed Oct/Nov. 1980. Survey H-9917 was currently unregistered as of August 1985 and consequently a comparison was not made.

65 - COMPARISON WITH NAUTICAL CHARTS

A comparison was made with NOS chart 19320, 1:250,000 scale, 13th edition, July 10, 1982.

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-00375

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. Mincey

John A. Mincey
Chief Photogrammetric Section,
Rockville

Ronald K. Brewer

Ronald K. Brewer
Chief, Photogrammetry Branch,
Rockville

[illegible]

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	W.L. Mobley, Capt., NOAA
POSITIONS DETERMINED AND/OR VERIFIED	W.L. Mobley, Capt., NOAA
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	G.A. Morris, Carbo. Technician
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION'	
(Consult Photogrammetric Instructions No. 64.)	
OFFICE 1. OFFICE IDENTIFIED AND LOCATED OBJECTS Enter the number and date (including month, day, and year) of the photograph used to identify and locate the object. EXAMPLE: 75E(C)6042 8-12-75	FIELD (Cont'd) B. Photogrammetric field positions* require entry of method of location or verification, date of field work and number of the photograph used to locate or identify the object. EXAMPLE: P-8-V 8-12-75 74L(C)2982
FIELD 1. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field L - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection P - Photogrammetric Vis - Visually 5 - Field identified 6 - Theodolite 7 - Planetable 8 - Sextant A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-1 8-12-75	11. TRIANGULATION STATION RECOVERED When a landmark or aid which is also a triangulation station is recovered, enter 'Triang. Rec.' with date of recovery. EXAMPLE: Triang. Rec. 8-12-75 111. POSITION VERIFIED VISUALLY ON PHOTOGRAPH Enter 'V-Vis.' and date. EXAMPLE: V-Vis. 8-12-75 **PHOTOGRAMMETRIC FIELD POSITIONS are dependent entirely, or in part, upon control established by photogrammetric methods.
*FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	

