

TP-00377

TP-00377

NOAA FORM 76-35 (6-80)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. TP-00377	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 APUA POINT	
19 77 TO 19 80	
REGISTERED IN ARCHIVES	
DATE	

NOAA FORM 76-36A (3-72) <div style="text-align: right; font-size: small;"> U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN. </div>		TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED		SURVEY TP. <u>00377</u> MAP EDITION NO. <u>(-1)</u> MAP CLASS <u>Final</u> JOB <u>CM-7713</u>									
DESCRIPTIVE REPORT - DATA RECORD													
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division, AMC, Norfolk, VA OFFICER-IN-CHARGE Roy K. Matsushige, - CDR		LAST PRECEDING MAP EDITION <table style="width: 100%;"> <tr> <td style="width: 50%;">TYPE OF SURVEY</td> <td style="width: 50%;">JOB PH. _____</td> </tr> <tr> <td><input type="checkbox"/> ORIGINAL</td> <td>MAP CLASS _____</td> </tr> <tr> <td><input type="checkbox"/> RESURVEY</td> <td>SURVEY DATES: _____</td> </tr> <tr> <td><input type="checkbox"/> REVISED</td> <td>19__ TO 19__</td> </tr> </table>				TYPE OF SURVEY	JOB PH. _____	<input type="checkbox"/> ORIGINAL	MAP CLASS _____	<input type="checkbox"/> RESURVEY	SURVEY DATES: _____	<input type="checkbox"/> REVISED	19__ TO 19__
TYPE OF SURVEY	JOB PH. _____												
<input type="checkbox"/> ORIGINAL	MAP CLASS _____												
<input type="checkbox"/> RESURVEY	SURVEY DATES: _____												
<input type="checkbox"/> REVISED	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) <table style="width: 100%;"> <tr> <td style="width: 50%;">STATE Hawaii</td> <td style="width: 50%;">ZONE 1</td> </tr> </table>			STATE Hawaii	ZONE 1						
STATE Hawaii	ZONE 1												
5. SCALE 1:20,000			STATE _____ ZONE _____										
III. HISTORY OF OFFICE OPERATIONS													
OPERATIONS		NAME		DATE									
1. AEROTRIANGULATION BY		R. Fisher		May 1978									
METHOD: Analytic LANDMARKS AND AIDS BY													
2. CONTROL AND BRIDGE POINTS PLOTTED BY		S. Solbeck		May 1978									
METHOD: Coradomat 21 CHECKED BY		S. Solbeck		May 1978									
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY		R. Kravitz		Feb. 1979									
COMPILATION CHECKED BY		L. Meterer		Feb 1979									
INSTRUMENT: Wild B-8		N.A.											
SCALE: 1:20,000		N.A.											
4. MANUSCRIPT DELINEATION PLANIMETRY BY		L. Williams		Feb 1979									
CHECKED BY		R. Kravitz		Mar 1979									
METHOD: Smooth drafted		N.A.											
CHECKED BY		N.A.											
SCALE: 1:20,000 HYDRO SUPPORT DATA BY		L. Williams		Feb 1979									
CHECKED BY		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		Jun 1981									
CHECKED BY		J. Massey		Aug 1981									
7. COMPILATION SECTION REVIEW BY		D. Butler		Dec 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. Dempsey		May 1986									
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-00377

COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S) F. L. = 153.21 mm Zeiss RMK A 15/23, Lens 118960		TYPES OF PHOTOGRAPHY LEGEND		TIME REFERENCE	
TIDE STAGE REFERENCE		(C) COLOR (P) PANCHROMATIC (I) INFRARED		ZONE	<input checked="" type="checkbox"/> STANDARD
<input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY				MERIDIAN	<input type="checkbox"/> DAYLIGHT
150th					
NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE	
77 GSAASY 604-608	Mar.26,1977	12:30	1:50,000	0.4 ft. above MLLW	
76 GSAASY 179-181	Dec.18,1976	14:26	1:30,000	1.3 ft. above MLLW	
76 GSAASY 174-177	Dec.18,1976	14:34	1:30,000	1.3 ft. above MLLW	
				Mean range \approx 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 LINE: ~~OR MEAN LOW-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

5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
No Survey	TP-00376	No Survey	TP-00378

REMARKS

HISTORY OF FIELD OPERATIONS

I. ☒ FIELD INSPECTION OPERATION
(photoidentification) ☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. Melby	Jan 1978
2. HORIZONTAL CONTROL	RECOVERED BY None ESTABLISHED BY None PRE-MARKED OR IDENTIFIED BY None	
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 None		2. VERTICAL CONTROL IDENTIFIED N.A.	
PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
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 Field Report			

TP-00377

HISTORY OF FIELD OPERATIONS

1. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	W. 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 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 <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 174 thru 177 (Cronapaque Ratios)

76 GSAASY 179 thru 181

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

None

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	Apr. 1979	Apr. 1979
Field edit applied. Compilation complete pending final review.	Dec. 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	2 Landmarks recommended for charting

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

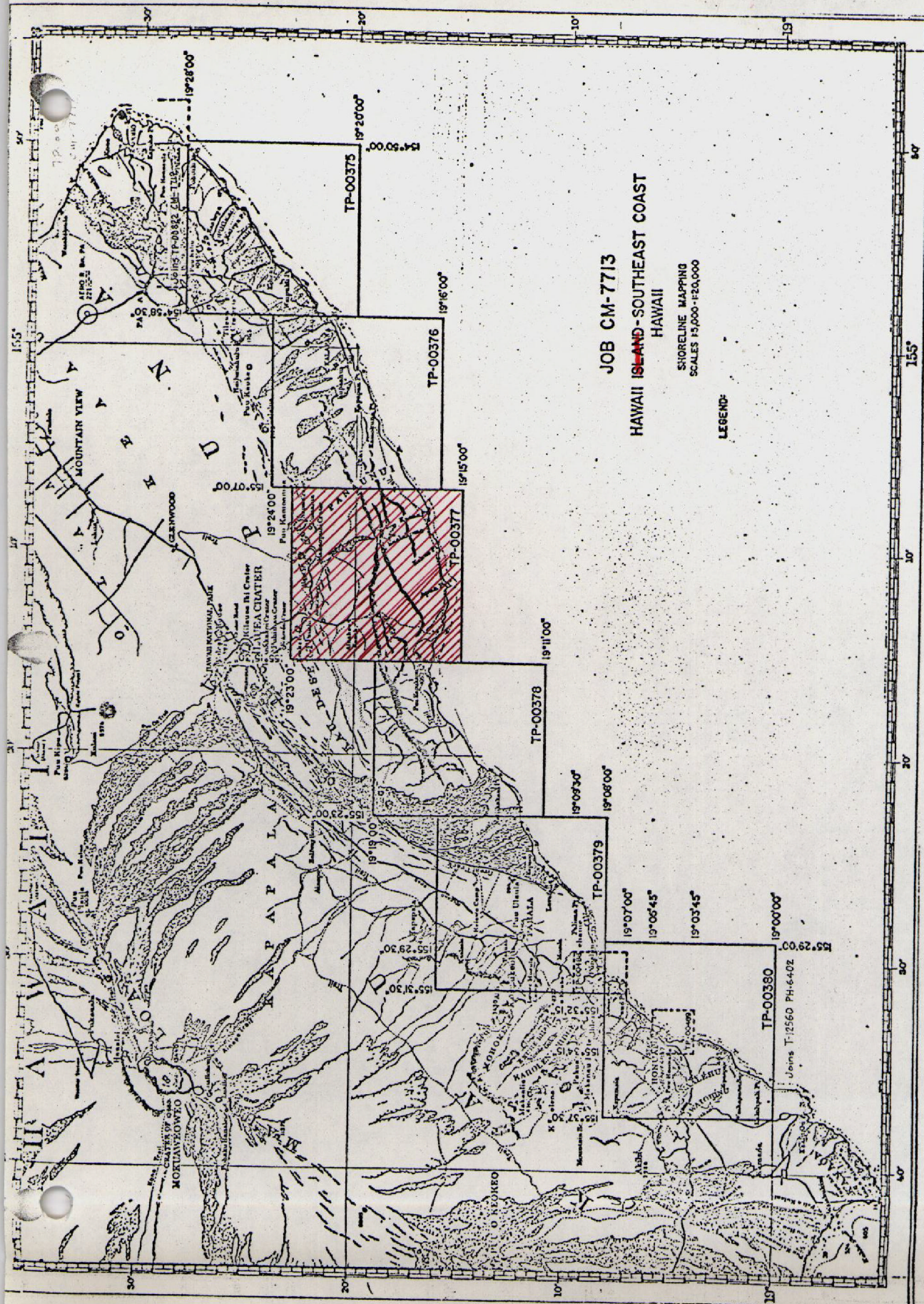
III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☒ FORM NOS 76-40 ~~962~~ 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-00377

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 southeastern coast of Hawaii Island from Long. 155°07.0' to Long. 155°15.5'.

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-9916 by NOAA Ship RAINIER personnel in October 1980.

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

TP-00377

Final review was performed at the Atlantic Marine Center in January 1986. 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.

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FIELD INSPECTION

TP-00377

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°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°00'26". The reference mark was used as a check angle.

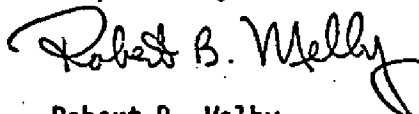
Station PUU ULAULA was photo-identified using a sun azimuth and a stack. the stack is station PAHALA, KAU SUGAR CO STACK, 1977. An N.G.S. Geodetic Field Party was working in the area and a position of the stack should be available from Geodesy in the near future. However, the sun azimuth can be used 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 dark ink, appearing to read "Robert B. Melby". The signature is fluid and cursive, with the first name "Robert" being more prominent than the last name "Melby".

Robert B. Melby
Chief, PMC Photo Party
CPM 133

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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 aero-triangulation 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

Robert E. Fisher

Approved and Forwarded:

Don O. Norman

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)

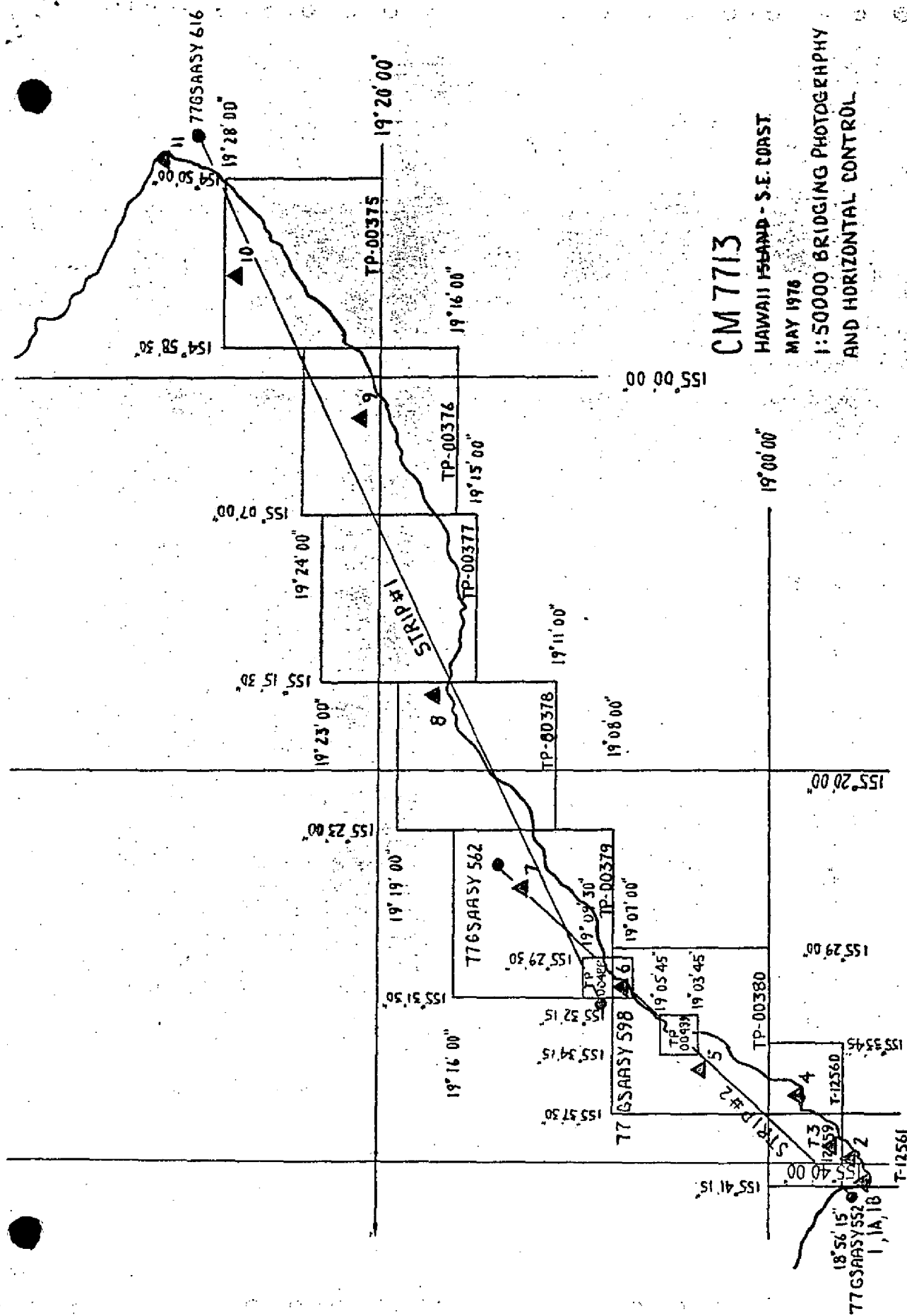
STRIP #4 (1:30,000)

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)

1:50000 BRIDGING PHOTOGRAPHY
AND HORIZONTAL CONTROL

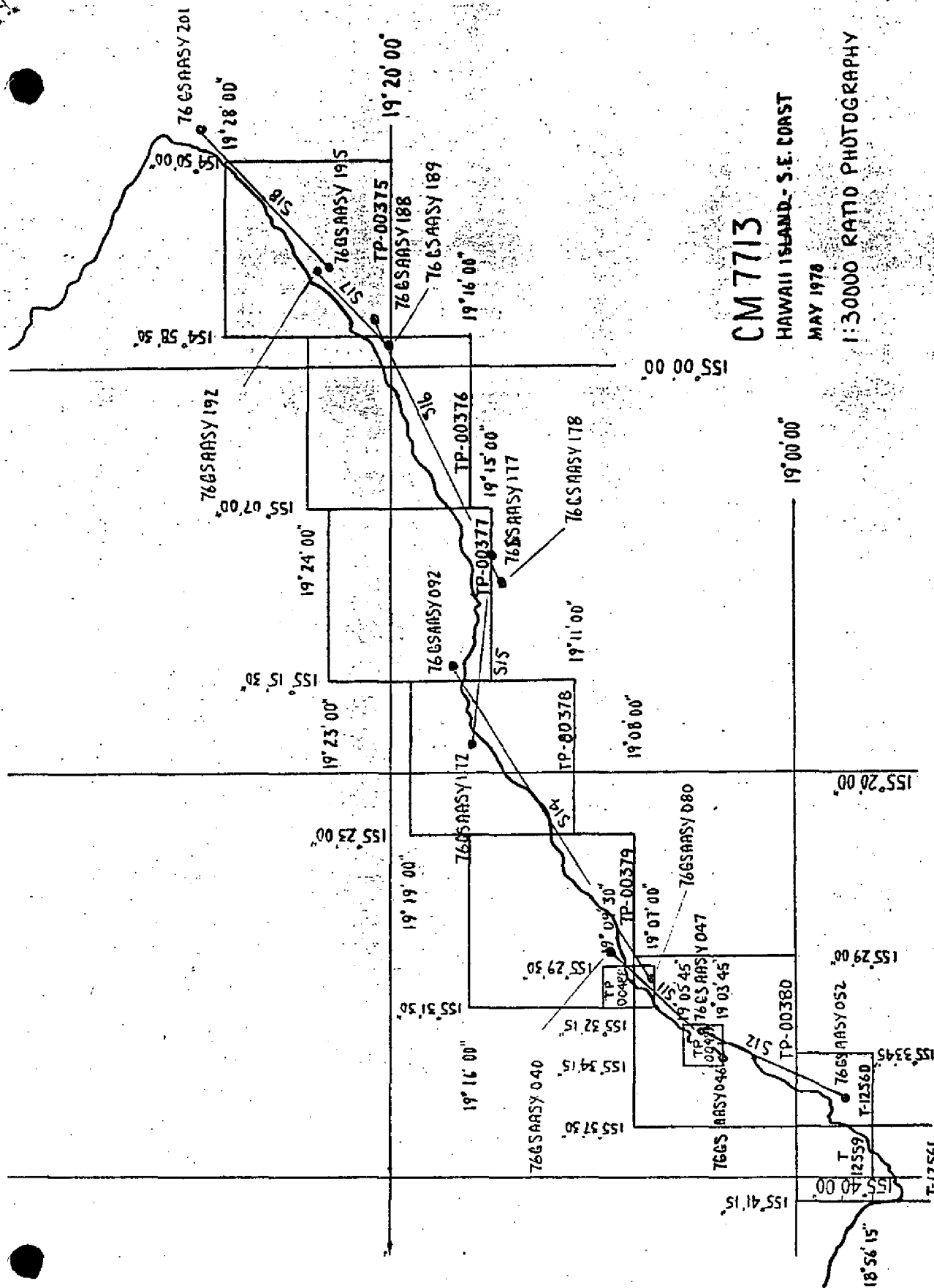


HAWAII IS - S.E. COAST

MAY 1978

1:30000 BRIDING PHOTOGRAPHY 55

1:15000 COMPILATION PHOTOGRAPHY ONLY (STRIP#5)



CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1978

1:30000 RATIO PHOTOGRAPHY

8A

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.	JOB NO.	STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	GEODETTIC DATUM		ORIGINATING ACTIVITY	
					Old Hawaiian	Coastal Mapping Div., AMC		
TP-00377	CM-7713				COORDINATES IN FEET STATE <u>Hawaii</u> ZONE <u>1</u>	GEOGRAPHIC POSITION ϕ LATITUDE λ LONGITUDE	REMARKS	
KAENA POINT USGS, 1977	Quad 191552 Sta. 1017				X=	ϕ 19°17'03.08299"		
					Y=	λ 155°07'27.3336"		
					X=	ϕ		
					Y=	λ		
					X=	ϕ		
					Y=	λ		
					X=	ϕ		
					Y=	λ		
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					X=	ϕ		
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					Y=	λ		
COMPUTED BY	G. Morris				COMPUTATION CHECKED BY	D. Butler	DATE Feb. 4, 1982	
LISTED BY	D. Butler				LISTING CHECKED BY	G. Morris	DATE Feb. 4, 1982	
HAND PLOTTING BY	G. Morris				HAND PLOTTING CHECKED BY	D. Butler	DATE Feb. 4, 1982	

COMPILATION REPORT
CM-7713
TP-00377

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-00377

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 U.S. Geological Survey Quadrangles:
Kalapana, HA, 1:24,000 scale, dated 1966
Makaopuhi Crater, HA, 1:24,000 scale, dated 1963
Kau Desert, HA, 1:24,000 scale dated 1963.

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:

Jerry L. Hancock
for Langley Williams
Cartographic Technician
March 2, 1979

Approved:

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

ADDENDUM TO THE COMPILATION REPORT
CM-7713
TP-00377

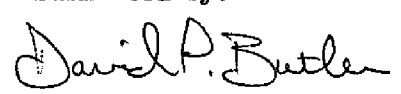
FIELD EDIT

None of the bluff along the shoreline was shown because it is a feature that is characteristic of the area, and not of landmark value.

The field editor was unable to investigate all ledge and foulds 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; however, since these are few and small, exist inside the breaker line, and he states that "the prudent mariner would never venture beyond the breaker 'limit'", we decided not to show them on the manuscript. Also, since no MLLW line was compiled, sporadic and inconsistent use of the ledge symbol would not be appropriate.

Keauhou Landing at latitude 19°16.1', longitude 155°14.3' should be considered as a harbor of refuge for small boats. See the Field Edit Report.

Submitted by:



David P. Butler
Cartographic Technician
Date: Dec. 1981

Geographic Names

Final Name Sheet

CM-7713(Island of Hawaii-Southeast Coast)

TP-00377

Apua Point

Kaena Point

Kahue Point

~~Kealekoma~~ Kealakomo *QKH*

Keaoi

Keauhou Landing

Keauhou Point

Pacific Ocean

Approved by:

Charles E. Harrington
Charles E. Harrington
Chief Geographer-C3X8

Field Edit Report

OPR-T126-RA-80

CM-7713

TP-00377

Hawaii Island
Southeast Coast Hawaii

6 October - 9 October 1980

METHODS

Field edit operations on TP-00377 were conducted on October 6, 1980 and October 9, 1980. Greenwich Mean Time (GMT), also known as Zulu Time (Z) was used to reference shoreline 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 additions of features and green meaning the deletion of the feature.

Field edit was performed by a low, slow flying helicopter west of Lat. 19°15'37"N, Lon. 155°08'31"W and by foot on shore east of here.

The procedure used for the addition of rocks and other features was to first circle and label it on the matte ratio photograph, and also note 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 174-177, 179, 180-181, 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, project instructions, the PMC OORDER and the Provisional Hydro Manual.

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

Direct 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 office could do little to define this area."

The field editor also had a difficult time verifying, or disprove the "foul with rocks and submerged ledge" limits. It was virtually impossible to disprove the dashed "foul with submerged ledges" limit

16

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 ledges" line enclosing the shoreline without being tossed against the cliffs by a wave. A prudent mariner would probably never go closer than those 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 shoreline area located approximately at 19°16'25"N, 155°15'30"W has palm trees growing straight up out of the water. This was due to an earthquake in 1975 in this area. The palm trees are dying and it is estimated that they will be gone in five years.

The submerged ledge limits drawn at Kiauhou Landing do depict a ledge. However, it does not prevent small boats from entering the sheltered area inside the small bay. This is the only "harbor of refuge" for 15 miles in either direction and should not be depicted as "impossible to enter. A 30' motorized boat could enter without too much trouble.

This corrected manuscript should supersede all previous shoreline compilation.

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-00377

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 USGS quadrangles:
Kalapana, Hawaii, dated 1966, 1:24,000 scale
Makaopuhi Crater, Hawaii, dated 1963, 1:24,000 scale
Kau Desert, Hawaii, dated 1963, 1:24,000 scale.

64 - COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Hydrographic survey H-9916 is common to this final shoreline map; however, a comparison was not made since H-9916 was unregistered when a copy was requested in August 1985.

65 - COMPARISON WITH NAUTICAL CHARTS

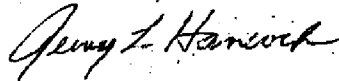
A comparison was made with NOS chart 19320, 1:250,000 scale, 13th edition, July 10, 1982.

66 - ADEQUACY OF RESULTS AND FUTURE SURVEYS

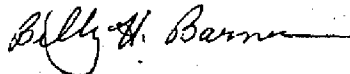
This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

TP-00377

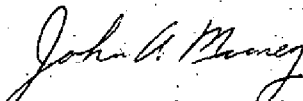
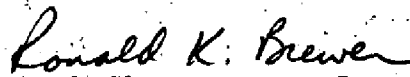
Submitted by:

Jerry L. Hancock
Final Reviewer

Approved for forwarding:

Billy H. Barnes
Chief, Photogrammetric Section, AMC

Approved:

John A. Meany
Chief, Photogrammetric Section,
RockvilleRonald K. Brewer
Chief, Photogrammetry Branch,
Rockville

RESPONSIBLE PERSONNEL	
TYPE OF ACTION	NAME
OBJECTS INSPECTED FROM SEAWARD	W. L. Mobley
POSITIONS DETERMINED AND/OR VERIFIED	W. L. Mobley
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	G. A. Morris
INSTRUCTIONS FOR ENTRIES UNDER 'METHOD AND DATE OF LOCATION' (Consult Photogrammetric Instructions No. 64.)	
OFFICE I. 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 I. NEW POSITION DETERMINED OR VERIFIED Enter the applicable data by symbols as follows: F - Field 1 - Located V - Verified 1 - Triangulation 2 - Traverse 3 - Intersection 4 - Resection A. Field positions* require entry of method of location and date of field work. EXAMPLE: F-2-6-L 8-12-75 *FIELD POSITIONS are determined by field observations based entirely upon ground survey methods.	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 II. 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 III. 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.

