

T-12561

T-12561

NOAA FORM 76-35 (3-76)	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
DESCRIPTIVE REPORT	
Map No. T-12561	Edition No. 1
Job No. PH-6402	
Map Classification FINAL FIELD EDITED MAP	
Type of Survey SHORELINE	
LOCALITY	
State HAWAII	
General Locality HAWAII ISLAND, WEST COAST KAILUA TO SOUTH CAPE	
Locality KA LAE	
19 63 TO 1979	
REGISTRY 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 ☒ ORIGINAL ☐ RESURVEY ☐ REVISED	
PHOTOGRAMMETRIC OFFICE Coastal Mapping Division Atlantic Marine Center, Norfolk, Va		SURVEY XX T-12561 MAP EDITION NO. (1) MAP CLASS FINAL JOB PH- 6402	
OFFICER-IN-CHARGE R. Matsushige		LAST PRECEDING MAP EDITION TYPE OF SURVEY ☐ ORIGINAL ☐ RESURVEY ☐ REVISED	
JOB PH- _____ MAP CLASS _____ SURVEY DATES: 19__ TO 19__			
I. INSTRUCTIONS DATED			
1. OFFICE		2. FIELD	
Compilation: Oct. 28, 1969 Amendment I: Jan. 3, 1973 Memo: Sept. 1, 1978 Compilation (CM-7713) Jan. 23, 1978		Control/Field Inspection May 8, 1964	
II. DATUMS			
1. HORIZONTAL: ☐ 1927 NORTH AMERICAN		OTHER (Specify) Old Hawaiian	
2. VERTICAL: ☒ MEAN HIGH-WATER ☐ MEAN LOW-WATER ☐ MEAN LOWER LOW-WATER ☐ MEAN SEA LEVEL		OTHER (Specify)	
3. MAP PROJECTION Transverse Mercator		4. GRID(S) STATE <u>Hawaii</u> ZONE <u>1</u>	
5. SCALE 1:10,000		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 CHECKED BY		S. Solbeck S. Solbeck	May 1978 May 1978
3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY INSTRUMENT: Wild B-8 SCALE: 1:10,000 CONTOURS BY CHECKED BY		D. Butler L. Neterer N.A. N.A.	Sept 1978 Sept 1978
4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY METHOD: Smooth drafted CONTOURS BY CHECKED BY SCALE: 1:10,000 HYDRO SUPPORT DATA BY CHECKED BY		J. Roderick L. Neterer N.A. N.A. J. Roderick L. Neterer	Oct 1978 Oct 1978 Oct 1978 Oct 1978
5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY		L. Neterer	Oct 1978
6. APPLICATION OF FIELD EDIT DATA BY		D. Butler	June 1980
7. COMPILATION SECTION REVIEW BY		F. Mauldin	June 1980
8. FINAL REVIEW BY		J. Hancock	May 1987
9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY		J. Hancock	June 1987
10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY		P. Dempsey	Aug 1987
11. MAP REGISTERED - COASTAL SURVEY SECTION BY		E. PAUBERTY	Sep 87

COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S)

Wild R.C. 8"S", S=152.29mm

TYPES OF PHOTOGRAPHY
LEGEND

TIME REFERENCE

TIDE STAGE REFERENCE

☒ PREDICTED TIDES☐ REFERENCE STATION RECORDS☐ TIDE CONTROLLED PHOTOGRAPHY

(C) COLOR

(P) PANCHROMATIC

(I) INFRARED

ZONE

Hawaii

☒ STANDARD

MERIDIAN

150th

☐ DAYLIGHT

NUMBER AND TYPE

DATE

TIME

SCALE

STAGE OF TIDE

63S(P) 7964-7965*

Aug. 31, 1963

09:33

1:30,000

1.1 FT. above MLLW

63S(P) 7967-7968*

Aug. 31, 1963

09:36

1:30,000

1.1 Ft. above MLLW

63S(C) 8006-8013**

Aug. 31, 1963

10:05

1:15,000

1.3 FT. above MLLW

Mean Tide Range=1.7FT.

REMARKS

*Bridging/compilation photographs, **Compilation/hydro support photographs.
Tide range derived from Honuapo Hawaii gage.

2. SOURCE OF MEAN HIGH-WATER LINE:

The mean high water line was compiled from office interpretation of the compilation photographs using stereo instrument and graphic methods.

3. SOURCE OF MEAN LOW-WATER OR MEAN LOWER LOW-WATER LINE:

No mean lower low water line was compiled

4. CONTEMPORARY HYDROGRAPHIC SURVEYS (List only those surveys that are sources for photogrammetric survey information.)

SURVEY NUMBER

H-9852

H-9853

DATE(S)

1979

SURVEY COPY USED

Registered

SURVEY NUMBER

DATE(S)

SURVEY COPY USED

5. FINAL JUNCTIONS

NORTH

T-12559

EAST

None

SOUTH

None

WEST

None

REMARKS

T-12561

HISTORY OF FIELD OPERATIONS

I. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	R. Newsom	Feb.-Sept. 1964
2. HORIZONTAL CONTROL	RECOVERED BY E. Cline ESTABLISHED BY E. Cline PRE-MARKED OR IDENTIFIED BY E. Cline	Feb. July 64 " "
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 E. Cline LOCATED (Field Methods) BY None IDENTIFIED BY E. Cline	Aug. 1964 Aug. 1964
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION ☐ COMPLETE ☐ SPECIFIC NAMES ONLY ☒ NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY E. Cline	Aug. 1964
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY N.A.	

II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED

2. VERTICAL CONTROL IDENTIFIED

None

PHOTO NUMBER	STATION NAME	PHOTO NUMBER	STATION DESIGNATION
63(S)7965*	Ka Lae 2, 1948 (Direct & Sub. Pt.)		
63(S)7964*	Palahemo, 1898 (Direct & Sub. Pt.)		
	*Partial ratio print		

3. PHOTO NUMBERS (Clarification of details)

63S(C) 7963-7965 (1:30,000 scale matte contacts)

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME
63(S)7965	Ka Lae Light		

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)

2 Forms 152 (CSI), 1 Project field report

NOAA FORM 76-36C (3-72)		T-12561 HISTORY OF FIELD OPERATIONS		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY	
I. ☒ FIELD INSPECTION OPERATION (See Item #8) ☐ FIELD EDIT OPERATION					
OPERATION		NAME		DATE	
1. CHIEF OF FIELD PARTY		B. Melby		Jan. 1978	
2. HORIZONTAL CONTROL		RECOVERED BY		B. Melby	
		ESTABLISHED BY		B. Melby	
		PRE-MARKED OR IDENTIFIED BY		B. Melby	
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			
		☐ COMPLETE			
		☐ SPECIFIC NAMES ONLY			
		☒ 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		
			None		
PHOTO NUMBER	STATION NAME		PHOTO NUMBER	STATION DESIGNATION	
77GS AASY * 553	Kalae 2, 1948 (Sub Pts. A & B)				
(*Contact print)					
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: ☐ REPORT ☒ NONE			6. 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 NOAA Form 76-53 (CSI) (* Field work performed in conjunction with adjoining project CM-7713)					

NOAA FORM 76-36C
(3-72)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEYT-12561
HISTORY OF FIELD OPERATIONSI. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

OPERATION	NAME	DATE
1. CHIEF OF FIELD PARTY	(NOAA Ship RAINIER) W. Mobley	Sept./Oct. 1979
2. HORIZONTAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	None None None
3. VERTICAL CONTROL	RECOVERED BY ESTABLISHED BY PRE-MARKED OR IDENTIFIED BY	None None None
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED (Triangulation Stations) BY LOCATED (Field Methods) BY IDENTIFIED BY	None None None
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION ☐ COMPLETE ☐ SPECIFIC NAMES ONLY ☒ NO INVESTIGATION	
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	T. Clark
7. BOUNDARIES AND LIMITS	SURVEYED OR IDENTIFIED BY	N.A.

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)

63S(C) 8008-8010, 8012 (Cronapague ratios, 1:10,000 scale)

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 film print, 1 Field edit paper print, 1 Field edit report,
1 Form 76-40

T-12561
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	Oct. 1978	Class III manuscript	Oct. 1978	Oct. 1978
Field edit applied, compilation complete	June 1980	Class I manuscript	June 1980	June 1980
Final review	May 1987	Final Map	July 1987	July 1987

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

76-40 NUMBER Page	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
1		June 1980	Navigational Aid to be charted

2. ☒ REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: June 19803. ☐ 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 567 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)

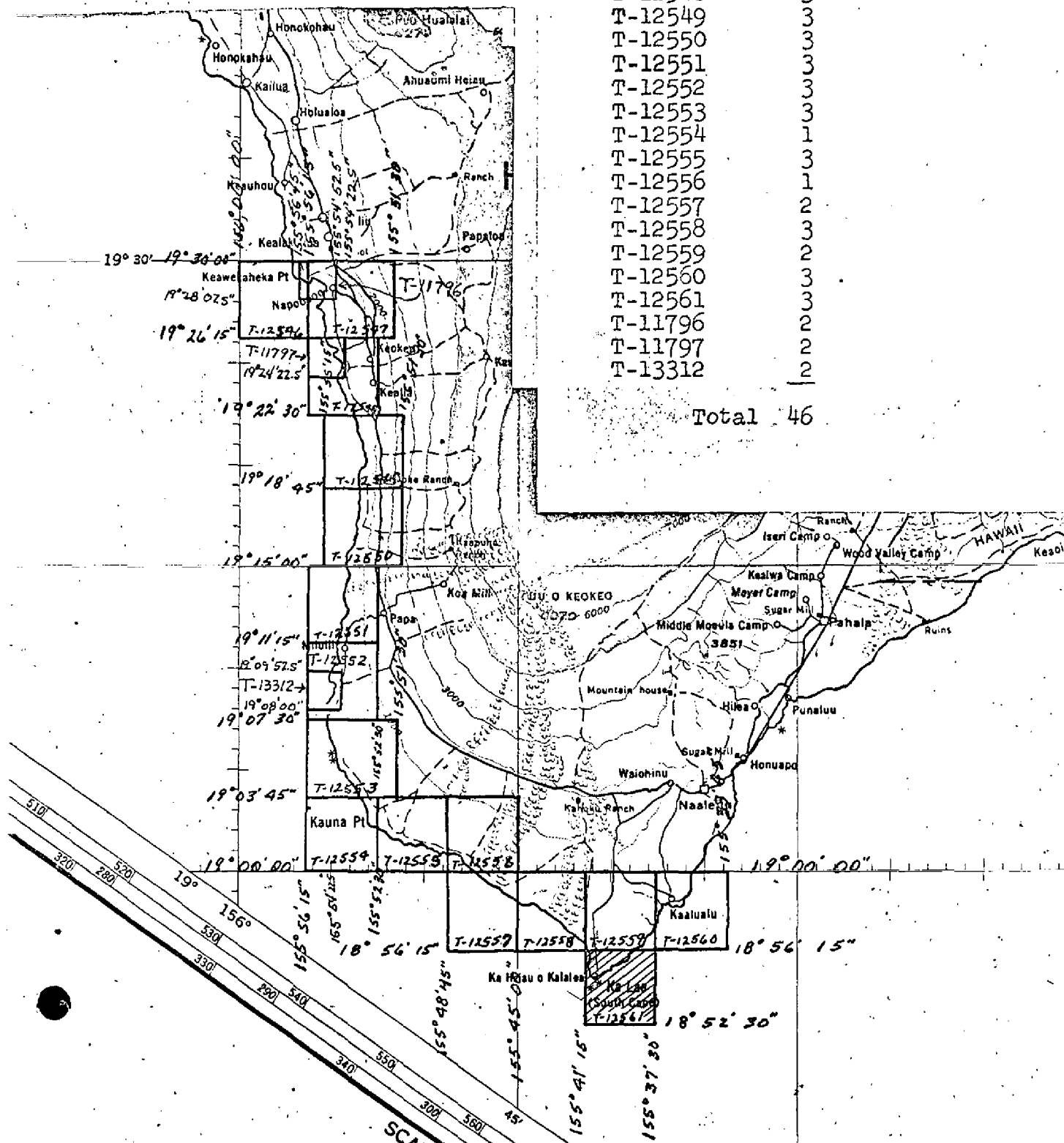
SECOND EDITION	SURVEY NUMBER TP - _____ (2)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
THIRD EDITION	SURVEY NUMBER TP - _____ (3)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	
FOURTH EDITION	SURVEY NUMBER TP - _____ (4)	JOB NUMBER PH - _____	TYPE OF SURVEY ☐ REVISED ☐ RESURVEY MAP CLASS ☐ II. ☐ III. ☐ IV. ☐ V. ☐ FINAL
	DATE OF PHOTOGRAPHY	DATE OF FIELD EDIT	

OFFICIAL MILEAGE FOR COST ACCOUNTS

Sheet No.	Area Sq. Miles
--------------	-------------------

T-12546	1
T-12547	3
T-12548	3
T-12549	3
T-12550	3
T-12551	3
T-12552	3
T-12553	3
T-12554	1
T-12555	3
T-12556	1
T-12557	2
T-12558	3
T-12559	2
T-12560	3
T-12561	3
T-11796	2
T-11797	2
T-13312	2

Total 46



SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

T-12561

This 1:10,000 scale Final Field Edited Map is one of nineteen maps that comprise PH-6402, Hawaii Island, West Coast, Kailua to South Cape. The project consists of sixteen 1:10,000 scale maps (T-12546 thru T-12561) and three 1:5,000 scale inset maps (T-11796, T-11797, T-13312).

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 includes shoreline along the most southern coast of Hawaii Island from Latitude 18° 54' 45" to Latitude 18° 56' 15".

Photo coverage for the project was adequately provided in August/September 1963 using the Wild RC-8 "S" camera. Photography consisted of 1:30,000 scale panchromatic photographs used for field inspection, aerotriangulation, and compilation. Color photographs at 1:15,000 scale were obtained for compilation and hydro support. Additional color photographs at 1:15,000 scale were obtained in March 1969 with the Wild RC-8 "E" camera. These supplemental photographs were used to compile inset maps T-11796 and T-11797. The stage of tide for all project photographs was based upon predicted tide data. No infrared photographs were provided.

Field work prior to aerotriangulation consisted of the recovery and establishment of horizontal control by photoidentification methods. A field inspection was performed for the project area utilizing the 1:30,000 scale contact photographs. This activity was conducted in February thru September 1964 in conjunction with the northern adjoining project PH-6401. Due to inadequate bridging results, additional horizontal control was established in January 1978 in conjunction with the southern adjoining project, CM-7713.

Analytic aerotriangulation was provided by the Washington Science Center in June 1969. Bridging results for maps T-12559 thru T-12561 could not be satisfactorily achieved. Consequently, the bridge for adjoining project CM-7713 was extended to include horizontal control for the three maps. Refer to the Photogrammetric Plot Report for CM-7713 dated May 10, 1978.

Compilation for this map was performed at the Coastal Mapping Section, Atlantic Marine Center in October 1978. Copies of the initial compilation and hydrographic support data were forwarded to the hydrographer for field edit.

Field edit was conducted in October 1979 by NOAA ship RAINIER personnel in conjunction with hydrographic surveys H-9852 and H-9853.

T-12561

Application of field edit was performed at the original compilation office in June 1980. Map copies were submitted to Marine Charts and to the hydrographer for smooth sheet application.

Final review was performed at the Atlantic Marine Center in May 1987. A comparison was made with the common hydrographic survey and nautical chart. The original base manuscript and related data along with a final Chart Maintenance Print and a Hydrographic Print were forwarded to the Washington Science Center for registration and distribution.

FIELD INSPECTION

T-12561

Field activity prior to compilation included a field inspection of the shoreline and the recovery/photoidentification of horizontal control necessary for project aerotriangulation. Results of the 1964 field inspection were submitted on the 1:30,000 scale contact photographs. Due to inadequate bridging results for maps T-12558 thru T-12561, additional horizontal control was established in January 1978 in conjunction with adjoining project CM-7713.

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

40

631W

TO : Chief, Photogrammetric Field Operations
THRU : Honolulu Field Officer *DR*

DATE: August 5, 1964

FROM : Lt(jg) Edward P. Cline

SUBJECT: Control Identification Project No. 21413

No problems were found in the control identification on Project 21413. The following is a list of the stations identified on the various Flight Lines:

FLIGHT STRIP NO. 5

WAIKAKUU, 4, 1951
KAPUKAWAA, 1884
OHEPUUPUU, 1890

FLIGHT STRIP NO. 6

KAMOI, 1948
NA PUU a PELE, 1891
PUU KI, 1914
TANK, 1948
Supplimental Station Pricked:
KAUNA POINT LIGHT, 1948

FLIGHT STRIP NO. 7

KALAE 2, 1948
PALAHEMO 1898
KAMILO, 1898
KIPAEPAE, 1898
Supplimental Stations Pricked:
KALAE LIGHT, 1948
KALAE, 1887
MAHANA, 1898

The ratio prints provided by the Washington Office were of great assistance in the identification of the stations and they were very well placed.

Edward P. Cline
Edward P. Cline

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Photogrammetric Plot Report
Hawaii Island, Hawaii
PH-6402

June 10, 1969

21. Area Covered

This project extends along the southwest shore of Hawaii Island. It includes T-sheets 12546 through 12561 at 1:10,000 and T-sheets 11796, 11797 and 13312 at 1:5,000. This project joins PH-6401 which extends along the northwest shore of the island.

22. Method

Strips were bridged on the stereoplanigraph and adjusted by IBM 1620 methods. Strip #4 discussed in the report for PH-6401. Strip #10 was adjusted on five triangulation stations with tie points from Strips #4 and #11 as checks. Strip #11 was adjusted on five stations with one station and tie points as checks. The adjustment of Strip #12 met with considerable problems. These problems were due to control identification on stations KAMILO, KIPAEPAE on the northeast end of the strip. Points were dropped from Strip #11 to enable model 63-S-7964 and 7965 to be set, thus enabling T-sheet 12561 to be completed.

T-sheets 12559 and 12560 must await further field work. Difficulties were also experienced in bridging Strip #13. This problem was resolved by dropping enough points from Strips #4 and #10 to set individual models between 63-S-8080 and 8085. All points between strips were averaged. Points were drilled by using the Wild PUG.

23. Adequacy of Control

Control provided by the field was adequate. The following stations could not be held in the bridging adjustments.

1. KEEI SOUTH BASE, 1948, SS #1 and SS #2, could not be held in Strip #13, as was the case of Strip #4 in PH-6401. No reasons could be determined for the lack of adjustment with other points.

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2. KAMILO, 1949 and SS #1 3. KIPAEPAE, 1948
and SS #1. Problems with these two stations could
not be resolved. Re-identification of the stations
is planned at the same time that work continues
to the east.

4. McCANDLESS, 1948 SS #1 and SS #2 although held
in the bridging could be seen on only one photograph
in Strip #10 due to cloud coverage.

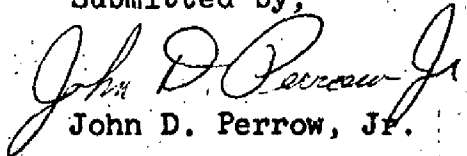
24. Supplemental Data

Ratio prints will be provided to aid in compilation.
Local USGS quads were used to provide vertical points
needed for the strip adjustment program.

25. Photography

Photography was not adequate to provide coverage of
the 1:5,000 scale sheets. This inadequate coverage was
caused by a change in the limits of the 1:5,000 areas
after bridging was nearing completion. Photography was
adequate in regard to definition and overlap.

Submitted by,


John D. Perrow, Jr.

Approved by,



Henry P. Eichert
Chief, Aerotriangulation Section

Notes to Compiler
PH-6402
Hawaii Island, Hawaii

The following points should be used in setting individual models along Strips #12 and #13.

(1) 63-S-7964-7965

Points 68803, 68804, 67100, 67101, 64100, 64101, 64102 and 64103.

(2) 63-S-8080-8081

Points 22330, 23310, 23800, 23801

(3) 63-S-8081-8082

Points 77331, 78333, 22801, 23800, McCANDLESS SS #1 and SS #2

(4) 63-S-8082-8083

Points 76331, 77331, 77333

(5) 63-S-8083-8084

Points 75331 HONAUNAU ST. BENEDICT CATH. CH. SPIRE, 1948 plus points dropped from model 8082-8083.

(6) 63-S-8084-8085

Points 75331, 75333 plus points dropped from model 8083-8084.

Plates 63-S-7821 and 7824 were not used in bridging Strip #10.

Plates 63-S-7976, 7978, 7880, 7982 and 7984 were not used in Strip #11.

SHORELINE MAPPING

JOB PH-6402

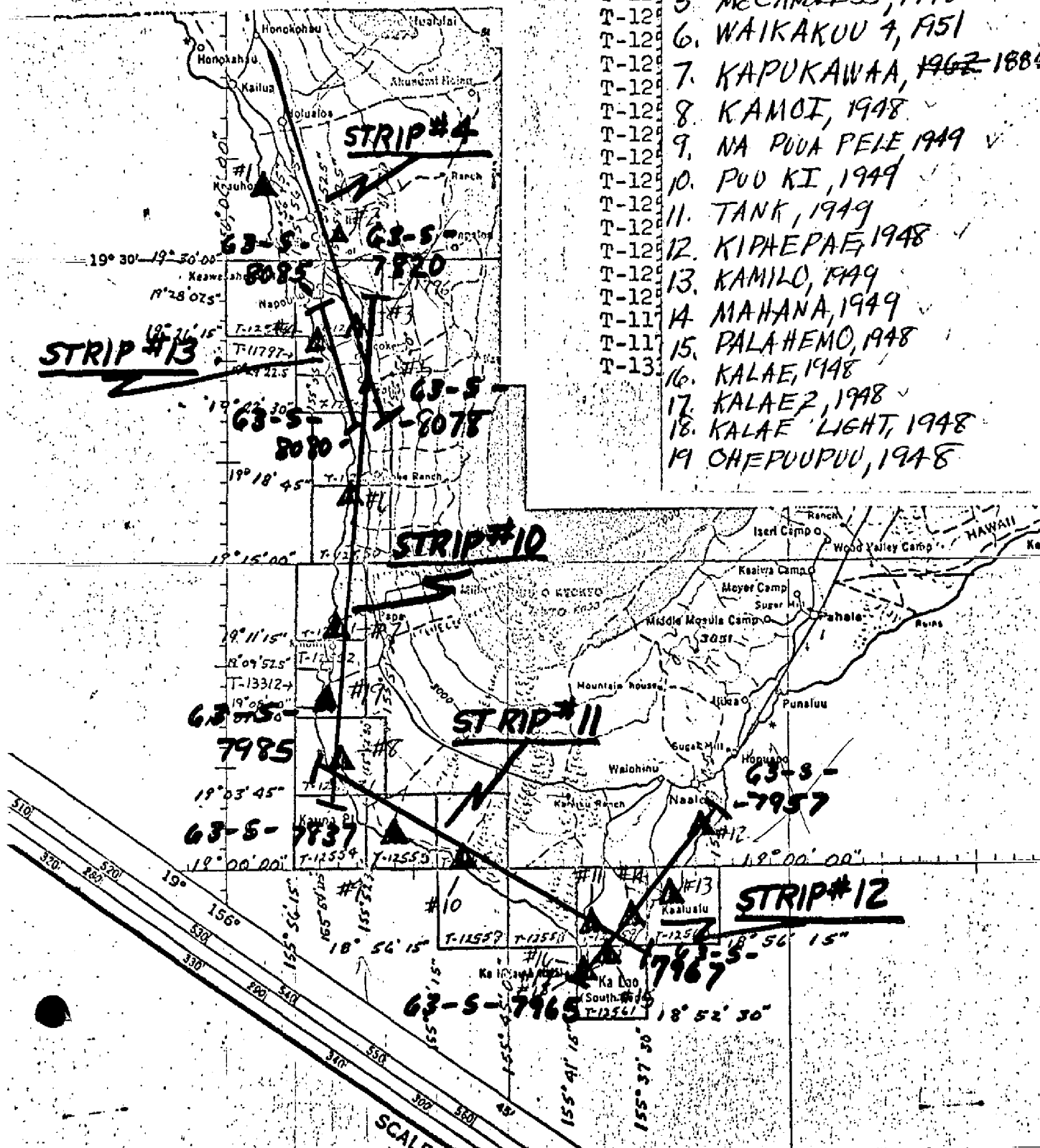
HAWAII IS. WEST COAST
AILUA TO SOUTH CAPE

SCALE 1:10,000

OFFICE

Sheet
No.

1. POINT, 1928
2. KANAKU, 1948
3. HONAUNAU ST. BENEDICT
CATH. CH. SPIRE, 1948
4. KEETI S. BASE, 1948
5. McCANDLESS, 1948
6. WAIKAKU 4, 1951
7. KAPUKAWAA, 1962-1884
8. KAMOI, 1948
9. NA PUA PELE 1949
10. POU KI, 1949
11. TANK, 1949
12. KIPHEPAE, 1948
13. KAMILO, 1949
14. MAHANA, 1949
15. PALAHEMO, 1948
16. KALAE, 1948
17. KALAE 2, 1948
18. KALAE LIGHT, 1948
19. OHEPUUPUU, 1948



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)

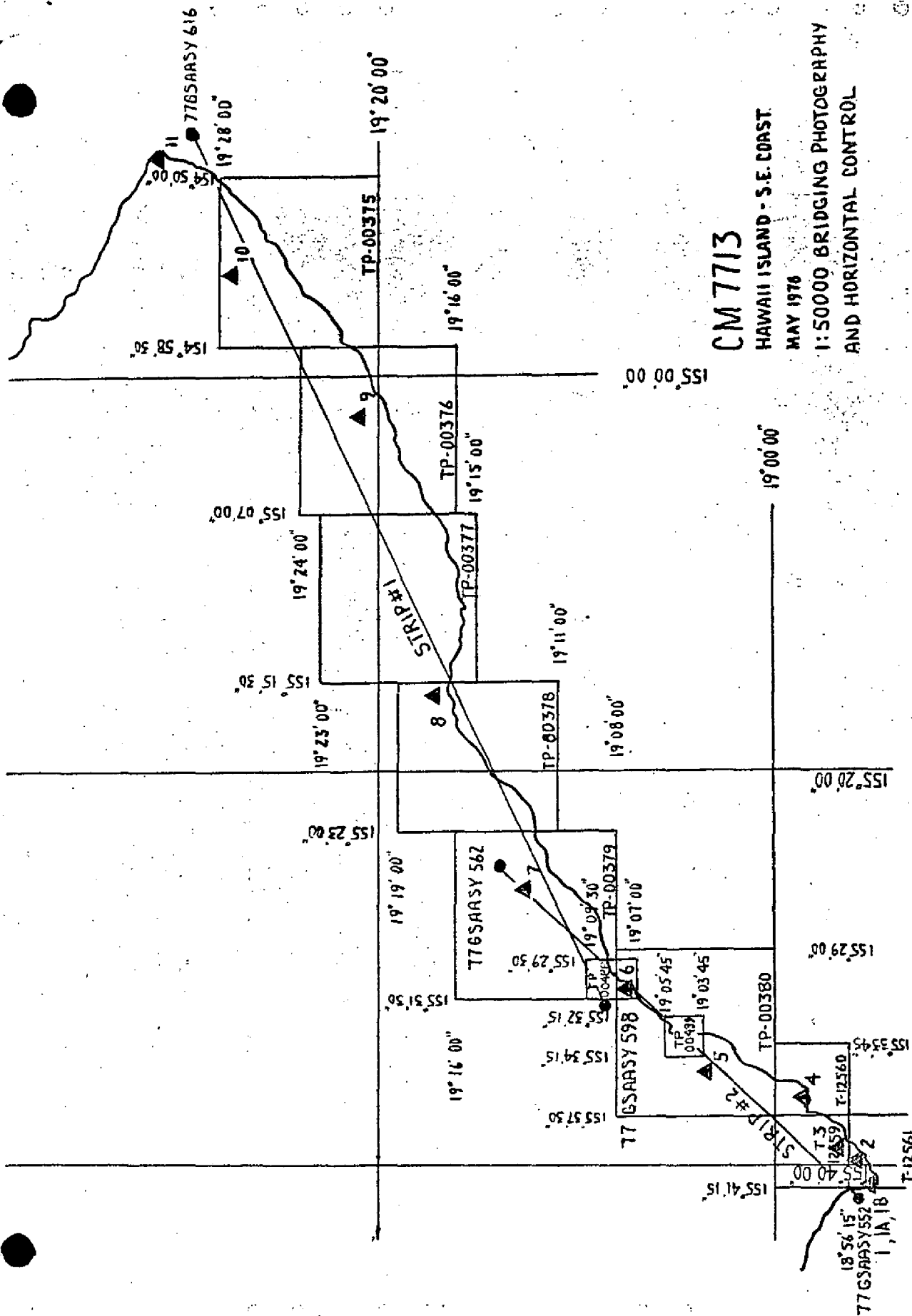
1A	KALAE 2, 1948	
	SUB PT. A	(-0.96, 0.23)
	SUB PT. B	(1.19, 0.95)
4.	KAMILO (HTS) 1898	(2.06, 0.58)
	SUB PT.	(0.33, -0.11)
5.	STEIN 2 (HTS) 1949	(-1.26, -1.59)
	SUB PT.	(2.42, 1.99)
6.	LUU 1930	(-0.07, 1.16)
	SUB PT.	(-0.24, -0.47)
7.	PUU ULAULA 1914	(0.23, -0.36)

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)

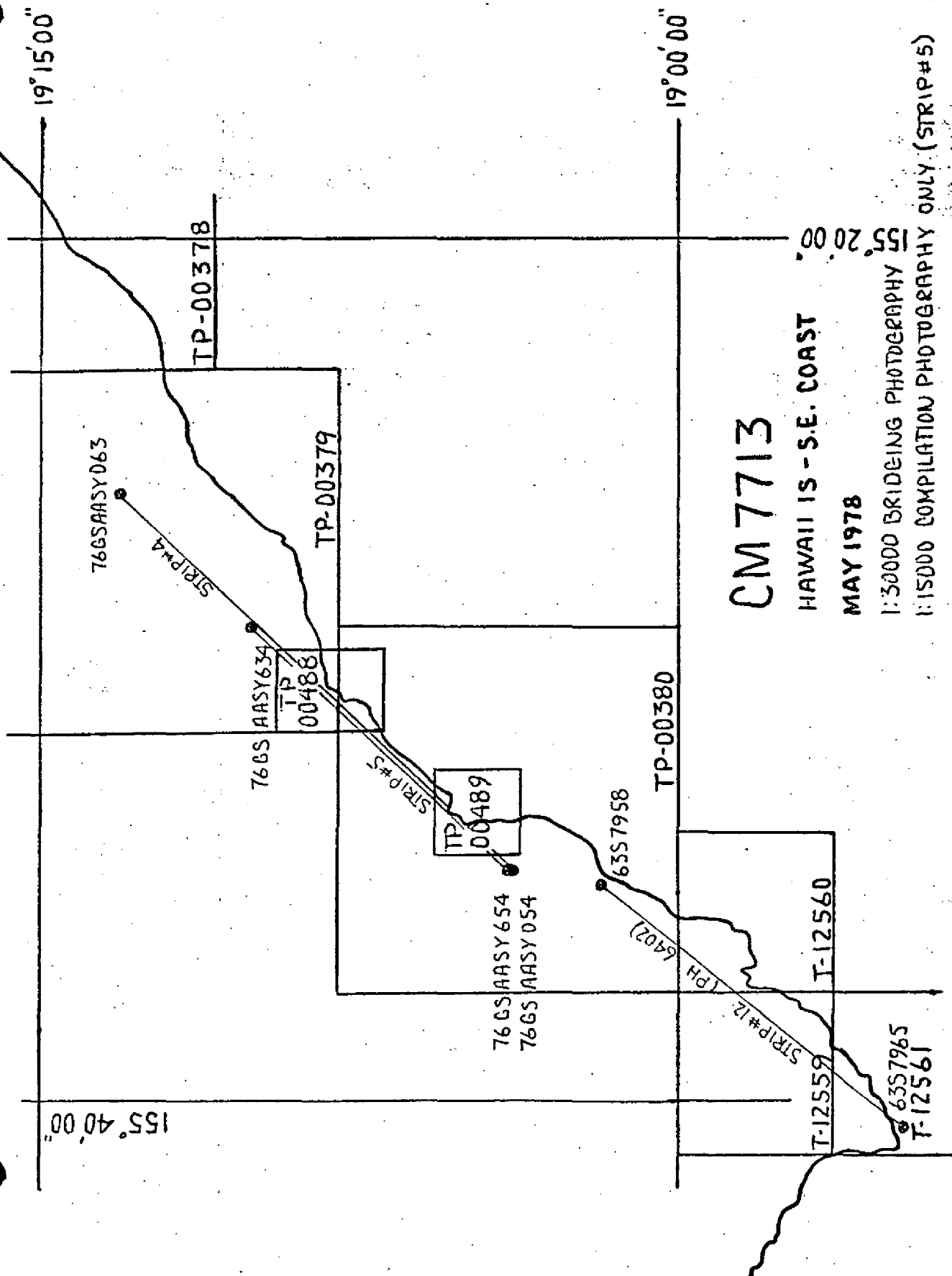


CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1976

1:50000 BRIDGING PHOTOGRAPHY
AND HORIZONTAL CONTROL



CM 7713

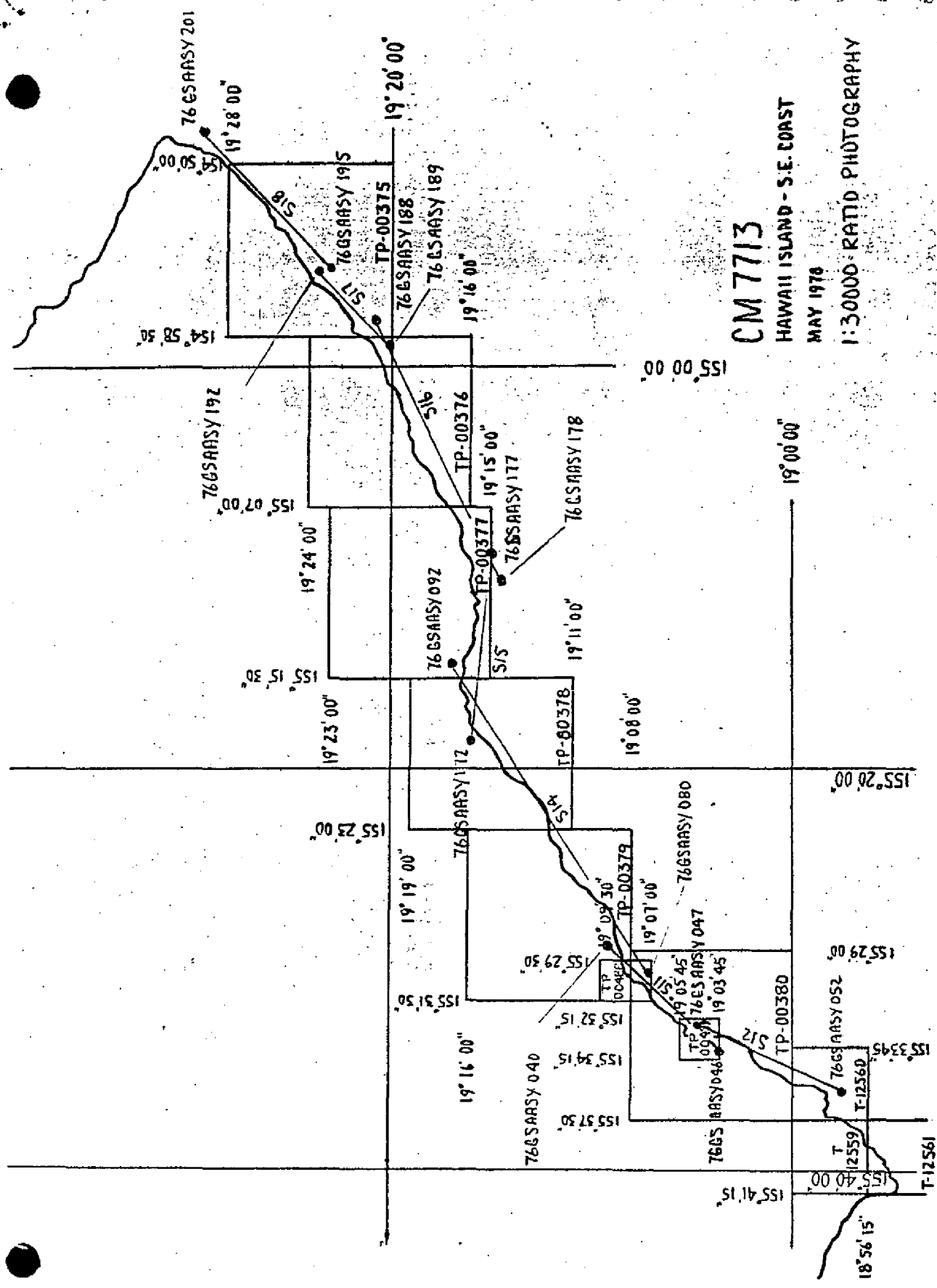
HAWAII IS - S.E. COAST

MAY 1978

1:30000 BRIDGING PHOTOGRAPHY

1:15000 COMPILATION PHOTOGRAPHY ONLY (STRIP#5)

155° 20' 00"



DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	PH-6402	GEODESY DATUM		ORIGINATING ACTIVITY		
			Old Hawaiian Datum	Coastal Mapping Section, AMC			
STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI- ANGULATION POINT NUMBER	COORDINATES IN FEET		GEOGRAPHIC POSITION		REMARKS
			STATE	ZONE	ϕ LATITUDE	λ LONGITUDE	
KA LAE 2, 1948-1949	G.P. Pg. 27		X=		ϕ 18° 54' 56.570"		
			Y=		λ 155° 41' 04.290"		
PALAHEMO (H.G.S.) (H.T.S. 1938), 1898	G.P. Pg. 27		X=		ϕ 18° 55' 54.401"		
			Y=		λ 155° 39' 40.233"		
KA LAE (H.G.S.), 1887	G.P. Pg. 40		X=		ϕ 18° 54' 57.671"		
			Y=		λ 155° 41' 04.143"		
			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. C. Rauck, Jr.	DATE	COMPUTATION CHECKED BY		DATE		
LISTED BY		7-29-69	D. Butler		9-21-78		
HAND PLOTTING BY		DATE	LISTING CHECKED BY		DATE		
		DATE	HAND PLOTTING CHECKED BY		DATE		

COMPILATION REPORT

T-12561

31. DELINEATION:

Delineation was by instrument methods using the Wild B-8 stereoplotter and 1:30,000 scale panchromatic compilation/bridging photographs. Ratio prints of the 1:15,000 scale color photographs were used graphically to supplement the compilation of minor detail and to assist in photo interpretation.

The field inspection supplied on the 1:30,000 scale contact prints was difficult to interpret. Individual rocks that could not be clearly identified during compilation were not compiled.

Photo quality and coverage were adequate.

32. CONTROL:

Specified control stations from adjoining project CM-7713 were provided to strengthen the horizontal control for this manuscript.

Refer to the Photogrammetric Plot Reports, dated June 10, 1969 and May 10, 1978 (CM-7713).

33. SUPPLEMENTAL DATA:

None.

34. CONTOURS AND DRAINAGE:

Contours are inapplicable. Drainage was delineated from the compilation photographs.

35. SHORELINE AND ALONGSHORE DETAILS:

The shoreline, coral and fowl limits were delineated from office interpretation of the photographs and from the annotated photographs resulting from the precompilation field inspection. Because of the small tide range, no mean lower low water line was compiled.

36. OFFSHORE DETAILS:

Compilation of offshore detail was performed as described in Item #31.

T-12561

37. LANDMARKS AND AIDS:

One charted navigational aid was photogrammetrically positioned and appropriate data was submitted for field edit.

38. CONTROL FOR FUTURE SURVEYS:

None.

39. JUNCTIONS:

Refer to the Data Record Form 76-36B, Item 5.

40. HORIZONTAL AND VERTICAL ACCURACY:

Refer to the Photogrammetric Plot Reports dated June 10, 1969 and May 10, 1978 (CM-7713).

46. COMPARISON WITH EXISTING MAPS:

A comparison was made with USGS quadrangle Ka Lae, Hawaii, scale 1:24,000, dated 1959.

47. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with NOS Chart 19320, 12th edition, scale 1:250,000, dated June 17, 1978.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

Joanne L. Hancock
for Joanne Roderick
Cartographer
October 1978

Approved:

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

ADDENDUM TO THE COMPILATION REPORT

T-12561

Field edit was conducted in September/October 1979 by NOAA ship RAINIER personnel in conjunction with hydrographic surveys H-9852 and H-9853. Adequate information was furnished to advance the manuscript to Class I.

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6402 Hawaii

Tpl2561

Hanaleua

Island of Hawaii

Kaalo

Kahawai Kolono

Kahukupoko

Ka Lae

Kananaka

Kaulana

Luakeanano

Lua o Palahemo-----Not compiled *JWH*

Mahana Bay-----Compiled on T-12559 *JWH*

Pacific Ocean

Pali Haukeuke

Papakolea

Pohakea

Puu Alii

Puu Ulaula-----Not compiled *JWH*

Kaahue *JWH*

Pohokuloa *JWH*

Approved by:

A. J. Wright
A. Joseph Wright
Chief Geographer

Prepared by:

Frank W. Pickett
Frank W. Pickett
Cartographer Technician

FIELD EDIT REPORT
OPR-T126-RA-79
CM-7713
T-12561

HAWAII
Hawaii, Southeast Coast
Ka Lae

1 Field Edit

25 September 1979 - 4 October 1979
(J.D. 268 - J.D. 277)

Methods

Field edit operations on T-12561 began 25 September 1979 (J.D. 268) and ended 4 October 1979 (J.D. 277). Ship's time (GMT-9) was used to reference shoreline features in the field, but conversion was made to GMT (Ship's time +9) on the field edit sheet and final discrepancy print. Notes on the field edit sheet and discrepancy print were made using colors with the following acceptable meanings: green-deletion of features; red-answers to specific questions on the sheets; violet-verification or additions.

The features were verified on foot ~except for the sheet west and north of Ka Lae light. This latter area was examined by small boat. Additions of rocks were photo-pricked and referenced on the discrepancy print. The rock at W155° 29' 24", N18° 55' 36" was neither verified nor disproved due to surf conditions. Also due to surf conditions, it was difficult in some cases to determine the submerged ledge or foul limits.

Color photographs 8008, 8009, 8010, 8012, the discrepancy print, and the field edit sheet were sued to record and present data.

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

Adequacy and Completeness

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

Geographical Names

The name of the bay in the special investigation is Kaulana Bay.

Manuscript Accuracy

Direct comparison of shoreline features with the discrepancy print and photos was the primary method of determining accuracy. Agreement was excellent with the exception of Kaulana Bay boat ramp, a new feature. During an investigation of the bay as a possible harbor of refuge the boat ramp was located using two T-2 Theodolites. Its location is N18° 55' 11.780", W155° 40' 17.410".

Recommendations

The rock at 155° 29' 24", 18° 55' 36"N should be retained as plotted on the manuscript. The Kaulana Bay boat ramp should be plotted.

This corrected manuscript should supercede all previous shoreline compilations.

Respectfully submitted,

Thomas G. Clark

Thomas G. Clark
Lieutenant, NOAA

Approved and Forwarded

Wayne L. Mobley

Wayne L. Mobley
Captain, NOAA
Commanding

Attachments: Sketch
76-36 A, B, C, D
76-40 Landmarks for Navigation
Master Signal Tape Listing

Separate Items: Photographs C&GS 31 AUG 63 S(C) 8007-8013
Master Film Field Edit Ozalid
Final Discrepancy Print
Field Discrepancy Print

REVIEW REPORT
SHORELINE

T-12561

61. GENERAL STATEMENT:

Final review for this Final Field Edited Map was accomplished at the Atlantic Marine Center in May 1987. 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 USGS quadrangle Ka Lae, Hawaii, scale 1:24,000, dated 1962.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

A comparison was made with a registered copy of hydrographic surveys H-9852, RA-10-3-79 and H-9853, RA-10-4-79; both surveyed in 1979 at 1:10,000 scale. No significant differences were noted.

65. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with NOS Chart 19320, 13th edition, scale 1:250,000, 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.

Submitted by:

Jerry L. Hancock
Jerry L. Hancock
Final Reviewer

Approved for forwarding:

Billy H. Barnes
Billy H. Barnes
Chief, Photogrammetric Section, AMC

Approved:

Irving O. Robinson
Chief, Photogrammetric Production Sec.

A. Y. Buser
Chief, Photogrammetry Branch

OBJECTS IDENTIFIED FROM SEAWARD	J. C. Talbot	☒ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER (Specify)
POSITIONS DETERMINED AND/OR VERIFIED	J. C. Talbot	FIELD ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES	D. P. Butler	OFFICE ACTIVITY REPRESENTATIVE
		☐ REVIEWER ☐ QUALITY CONTROL AND REVIEW GROUP REPRESENTATIVE

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
- L - Located
- V - Verified
- 1 - Triangulation
- 2 - Traverse
- 3 - Intersection
- 4 - Resection
- 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-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.

