T-12559

T-12559

NOAA FORM 76-35
(3-76)

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

DESCRIPTIVE REPORT

Map No. T-12559	*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 O HOAIKU

19 63 TO 19 79

REGISTRY IN ARCHIVES

DATE

*U. S. GOVERNMENT PRINTING OFFICE:1976-669-248

NOAA FORM 76-36A (3-72) — U. S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.

DESCRIPTIVE REPORT - DATA RECORD

TYPE OF SURVEY: [X] ORIGINAL [ ] RESURVEY [ ] REVISED

SURVEY NO. T-12559
MAP EDITION NO. (1)
MAP CLASS FINAL
JOB PH-6402

PHOTOGRAMMETRIC OFFICE
Coastal Mapping Div.
Atlantic Marine Center, Norfolk, VA

OFFICER-IN-CHARGE
R. Matsushige

LAST PRECEEDING 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	Control/field inspection	May 8, 1964
Amendment I	Jan. 3, 1973		
Memo	Sept. 1, 1978		
Compilation (CM-7713)	Jan. 23, 1978		

II. DATUMS

1. HORIZONTAL: [ ] 1927 NORTH AMERICAN — OTHER (Specify): Old Hawaiian

2. VERTICAL: [X] MEAN HIGH-WATER [ ] MEAN LOW-WATER [ ] MEAN LOWER LOW-WATER [ ] MEAN SEA LEVEL — OTHER (Specify):

3. MAP PROJECTION: Transverse Mercator

4. GRID(S): STATE: Hawaii; ZONE: 1

5. SCALE: 1:10,000 — STATE: ; ZONE:

III. HISTORY OF OFFICE OPERATIONS

OPERATIONS		NAME	DATE
1. AEROTRIANGULATION METHOD: Analytic	BY	R. Fisher	May 1978
	LANDMARKS AND AIDS BY		
2. CONTROL AND BRIDGE POINTS METHOD: Coradomat	PLOTTED BY	S. Solbeck	May 1978
	CHECKED BY	S. Solbeck	May 1978
3. STEREOSCOPIC INSTRUMENT COMPILATION INSTRUMENT: Wild B-8 SCALE: 1:10,000	PLANIMETRY BY	D. Butler	Sept1978
	CHECKED BY	A. Rauck	Sept1978
	CONTOURS BY	N.A.	
	CHECKED BY	N.A.	
4. MANUSCRIPT DELINEATION METHOD: Smooth drafted SCALE: 1:10,000	PLANIMETRY BY	R. Kravitz	Oct.1978
	CHECKED BY	F. Margiotta	Oct.1978
	CONTOURS BY	N.A.	
	CHECKED BY	N.A.	
	HYDRO SUPPORT DATA BY	R. Kravitz	Oct. 1978
	CHECKED BY	F. Margiotta	Oct. 1978
5. OFFICE INSPECTION PRIOR TO FIELD EDIT	BY	F. Margiotta	Oct. 1978
6. APPLICATION OF FIELD EDIT DATA	BY	L. Williams	June 1980
	CHECKED BY	R. Kravitz	June 1980
7. COMPILATION SECTION REVIEW	BY	R. Kravitz	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. Dougherty	Aug 1987
11. MAP REGISTERED - COASTAL SURVEY SECTION	BY	E. DAUGHERTY	Sep 87

NOAA FORM 76-36A — SUPERSEDES FORM C&GS 181 SERIES

* U.S. G.P.O. 1972-769382/582 REG.#6

NOAA FORM 76-36B
(3-72)

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

T-12559

COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

CAMERA(S): Wild R.C. 8-"S", S=152.29mm

TIDE STAGE REFERENCE
- [X] PREDICTED TIDES
- [ ] REFERENCE STATION RECORDS
- [ ] TIDE CONTROLLED PHOTOGRAPHY

TYPES OF PHOTOGRAPHY LEGEND
- (C) COLOR
- (P) PANCHROMATIC
- (I) INFRARED

TIME REFERENCE
ZONE: Hawaii — [X] STANDARD
MERIDIAN: 150th — [ ] DAYLIGHT

NUMBER AND TYPE	DATE	TIME	SCALE	STAGE OF TIDE
63S(P) 7962-7964 *	Aug.31,1963	09:31	1:30,000	1.1FT. above MLLW
63S(C) 8014-8015 **	Aug.31,1963	10:10	1:15,000	1.6FT. above MLLW
				Mean tide range =1.7 FT.

REMARKS: *Bridging/compilation photographs, **Compilation/hydro support photographs

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	DATE(S)	SURVEY COPY USED	SURVEY NUMBER	DATE(S)	SURVEY COPY USED
H-9853 H-9854	1979	Registered			

5. FINAL JUNCTIONS

NORTH	EAST	SOUTH	WEST
None	T-12560	T-12561	T-12558

REMARKS

*U.S. GOVERNMENT PRINTING OFFICE:1977-765-092

NOAA FORM 76-36C
(3-72)

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

T-12559

HISTORY OF FIELD OPERATIONS

1. [X] 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	July 1964
	ESTABLISHED BY	E. Cline	July 1964
	PRE-MARKED OR IDENTIFIED BY	E. Cline	July 1964
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 [X] NO INVESTIGATION — BY		
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	E. Cline	
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)7853*	Tank, 1949 (Direct & Sub.Pt.)		
63(S)7963*	Mahana, 1898 (Direct)		
	*Partial Ratio Print		

3. PHOTO NUMBERS *(Clarification of details)*

63S(P) 7963 (1:30,000 scale matte contact)

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

PHOTO NUMBER	OBJECT NAME	PHOTO NUMBER	OBJECT NAME

5. GEOGRAPHIC NAMES: [ ] REPORT [X] NONE

6. BOUNDARY AND LIMITS: [ ] REPORT [X] 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, 1 Project field report

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

NOAA FORM 76-36C
(3-72)

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

T-12559

HISTORY OF FIELD OPERATIONS

I. ☐ 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	J. Talbott	Sept. 1979
	ESTABLISHED BY	None	
	PRE-MARKED OR IDENTIFIED BY	None	
3. VERTICAL CONTROL	RECOVERED BY	None	
	ESTABLISHED BY	None	
	PRE-MARKED OR IDENTIFIED BY	None	
4. LANDMARKS AND AIDS TO NAVIGATION	RECOVERED *(Triangulation Stations)* BY	None	
	LOCATED *(Field Methods)* BY	None	
	IDENTIFIED BY	None	
5. GEOGRAPHIC NAMES INVESTIGATION	TYPE OF INVESTIGATION ☐ COMPLETE ☐ SPECIFIC NAMES ONLY ☒ NO INVESTIGATION — BY		
6. PHOTO INSPECTION	CLARIFICATION OF DETAILS BY	T. Clark	Oct. 1979
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) 8013-8016 (Cronapaque 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 ☒ 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 Field edit film print, 1 Field edit paper print, 1 NOAA form 76-40,
1 Field edit report

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

NOAA FORM 76-36D
(3-72)

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

T-12559

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 II 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 pages	CHART LETTER NUMBER ASSIGNED	DATE FORWARDED	REMARKS
1		June 1980	Landmark for charting

2. [X] REPORT TO MARINE CHART DIVISION, COAST PILOT BRANCH. DATE FORWARDED: June 1980
3. [ ] REPORT TO AERONAUTICAL CHART DIVISION, AERONAUTICAL DATA SECTION. DATE FORWARDED: None

III. FEDERAL RECORDS CENTER DATA

1. [XX] BRIDGING PHOTOGRAPHS; [X] DUPLICATE BRIDGING REPORT; [X] COMPUTER READOUTS.
2. [X] CONTROL STATION IDENTIFICATION CARDS; [X] FORM NOS. 76-40 SUBMITTED BY FIELD PARTIES.
3. [X] 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)*

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

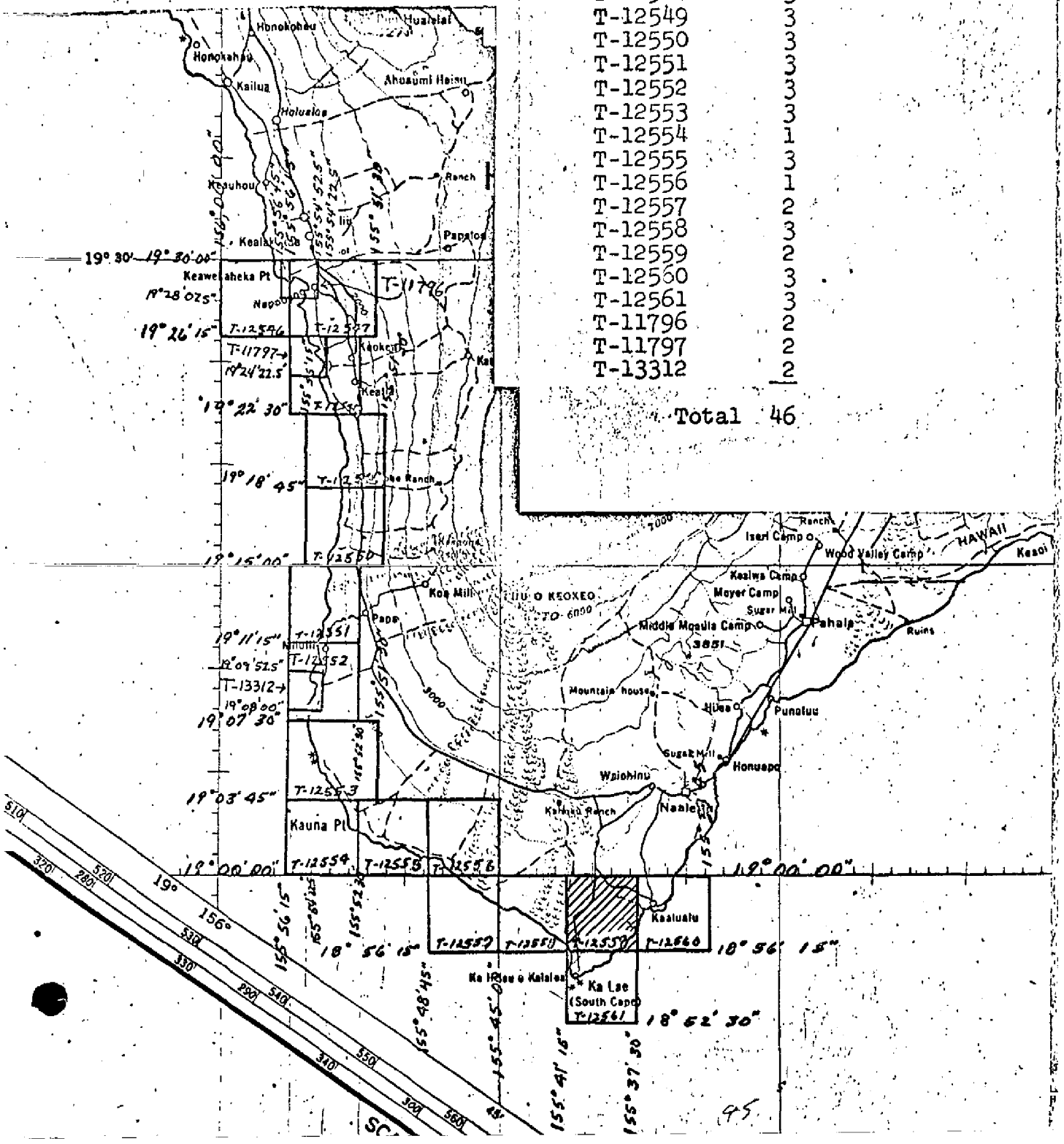
☆ U.S. GPO: 1977=765-092/1106 Region 6

JOB PH-6402
SHORELINE MAPPING
HAWAII IS. WEST COAST
AILUA TO SOUTH CAPE
SCALE 1:10,000

JOB PH-6402

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-12559

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 southern coast of Hawaii Island from Latitude 18° 56' 15" to Latitude 18° 58' 00".

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-9853 and H-9854.

T-12559

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-12559

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.

C-673 8374

FORM CD-121 (9-21-60)
(PRES. BY A.O. 205-10)

UNITED STATES GOVERNMENT

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

Memorandum

40 6310

TO : Chief, Photogrammetric Field Operations DATE: August 5, 1964
THRU : Honolulu Field Officer

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, 1949

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

CC: Honolulu Field Office

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.

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.

John D. Perrow, Jr.

Approved by,

Henry P. Eichert

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.

JOB PH-6402

SHORELINE MAPPING

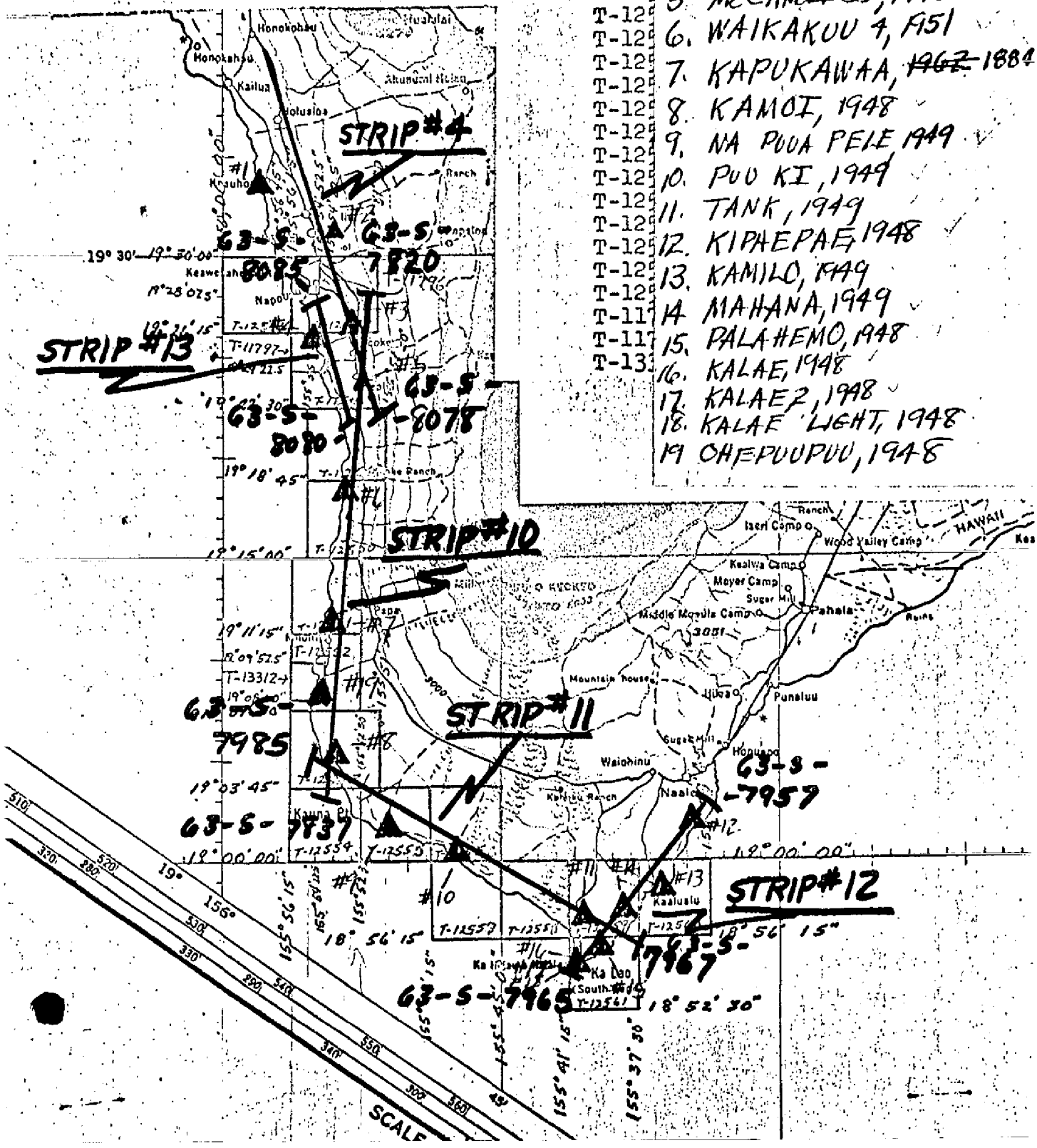
HAWAII IS. WEST COAST

AILUA TO SOUTH CAPE

SCALE 1:10,000

OFFIC

Sheet No.	
T-12	1. POINT, 1928
T-12	2. KANAKU, 1948
T-12	3. HONAUNAU ST. BENEDKT CATH. CH. SPIRE, 1948
T-12	4. KEEI S. BASE, 1948
T-12	5. McCANDLESS, 1948
T-12	6. WAIKAKUU 4, 1951
T-12	7. KAPUKAWAA, ~~1962~~ 1884
T-12	8. KAMOI, 1948
T-12	9. NA PUUA PELE 1949
T-12	10. PUU KI, 1949
T-12	11. TANK, 1949
T-12	12. KIPAEPAE, 1948
T-12	13. KAMILO, 1949
T-12	14. MAHANA, 1949
T-11	15. PALAHEMO, 1948
T-11	16. KALAE, 1948
T-13	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 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

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
X 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)

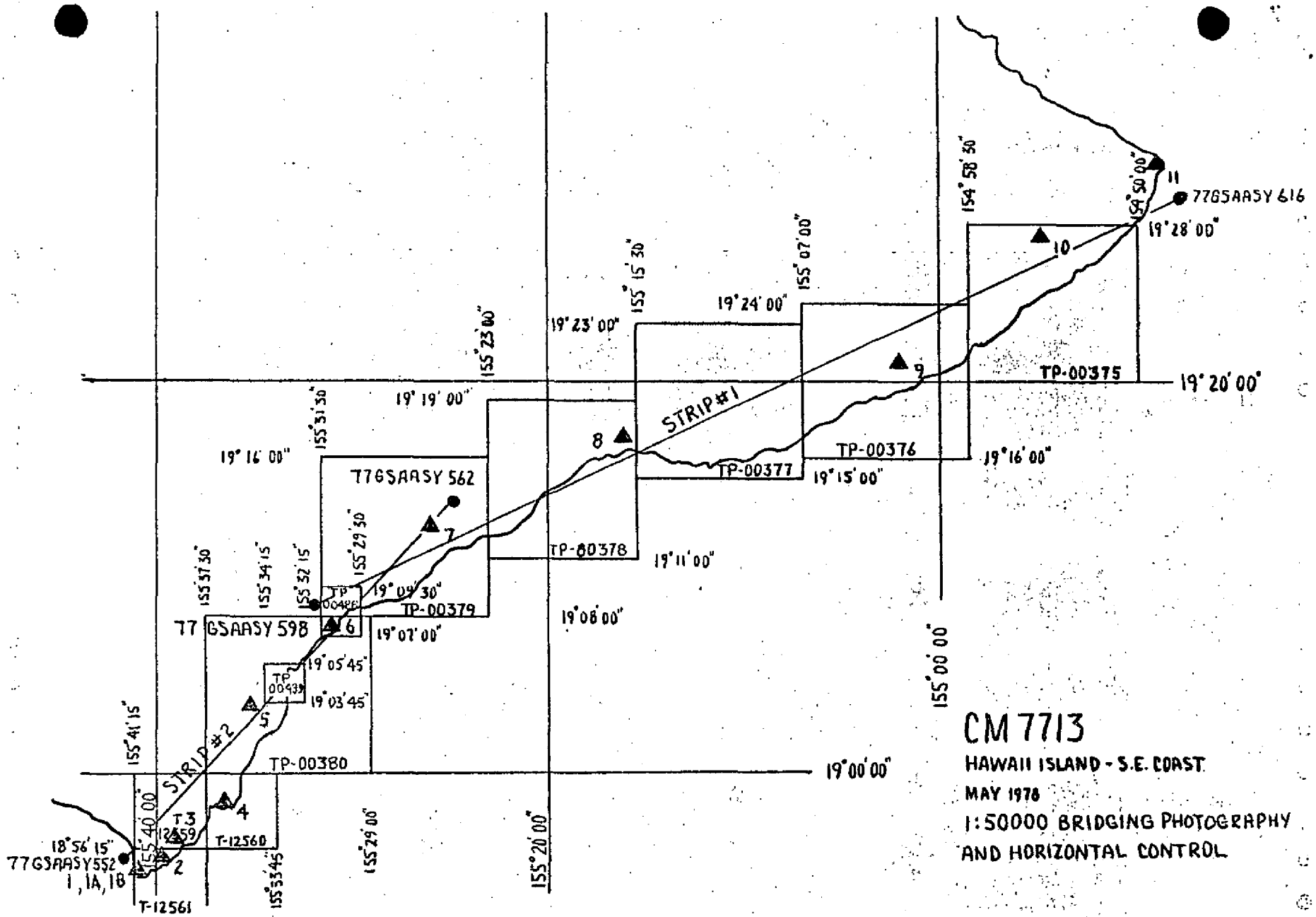
1A	KALAE 2, 1948	
	SUB PT. A	(-0.96, 0.23)
	SUB PT. B	(1.19, 0.95)
4.	KAMILO (HTS) 1898	(2.06, 0.58)
	SUB PT.	(0.33, -0.11)
5.	STEIN 2 (HTS) 1949	(-1.26, -1.59)
	SUB PT.	(2.42, 1.99)
6.	LUU 1930	(-0.07, 1.16)
	SUB PT.	(-0.24, -0.47)
7.	PUU ULAULA 1914	(0.23, -0.36)

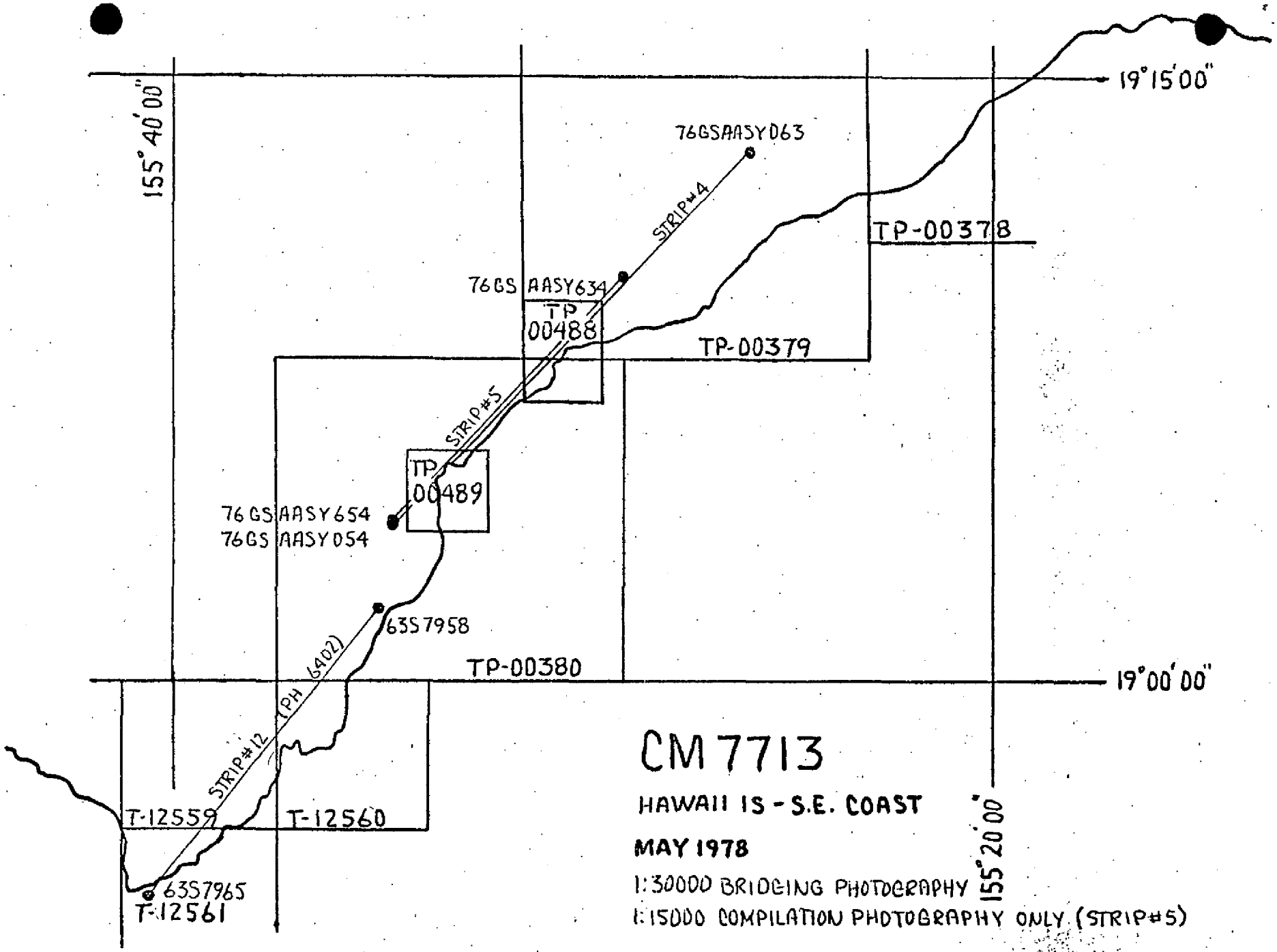
STRIP #4 (1:30,000)

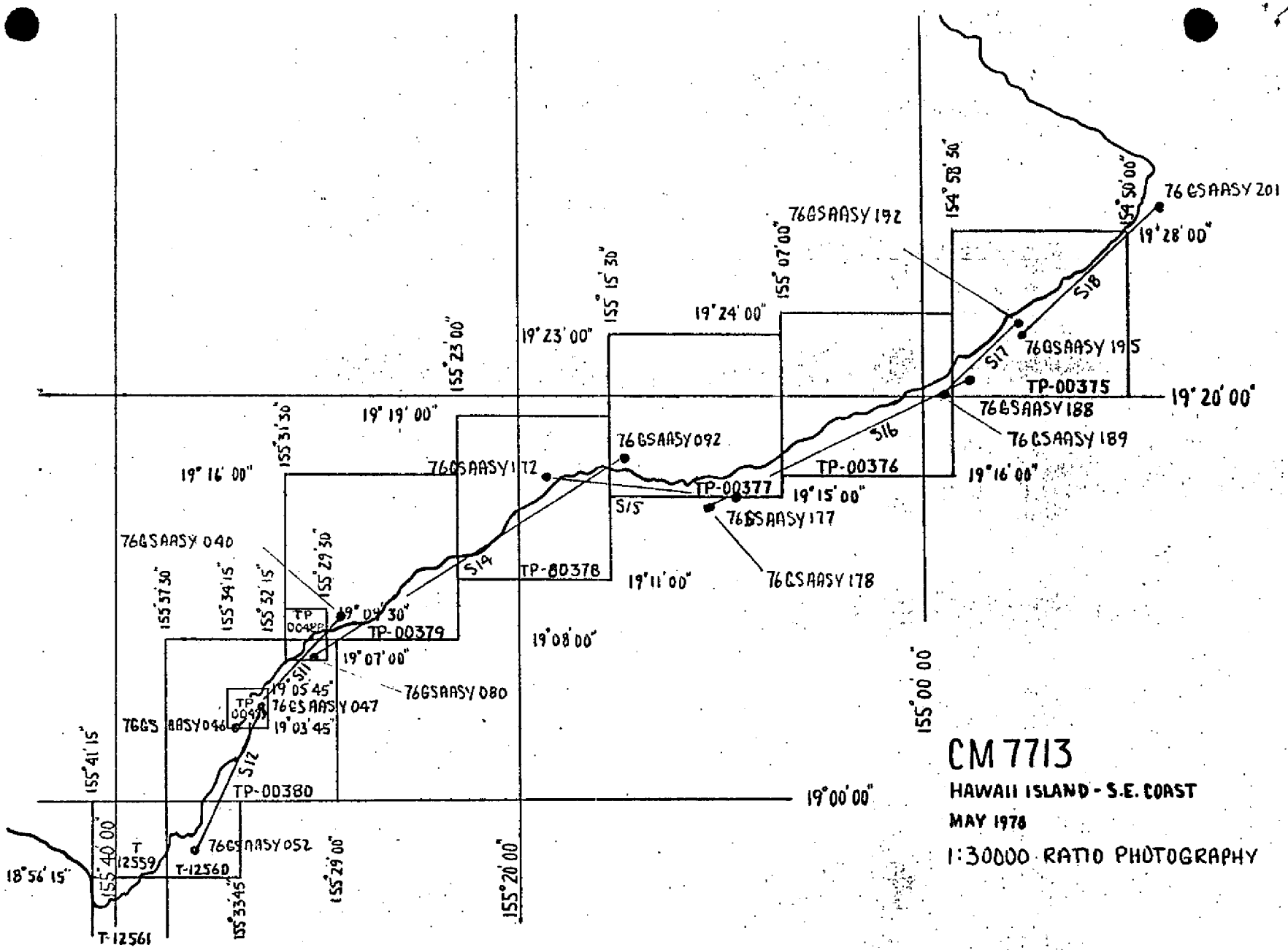
5.	STEIN 2 (HTS) 1949	(-0.01, -0.04)
	SUB PT.	(0.11, 4.03)
6.	LUU 1930	(0.00, 0.00)
7.	PUU ULAULA 1914	(0.01, 0.01)

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 1978
1:50000 BRIDGING PHOTOGRAPHY
AND HORIZONTAL CONTROL
STRIP #1
STRIP #2
77GSAASY 616
77GSAASY 562
77GSAASY 598
77GSAASY552
1, 1A, 1B
T-12561
T-12560
T3
12559
TP-00375
TP-00376
TP-00377
TP-00378
TP-00379
TP-00380
TP-00438
TP-00439
19°28'00"
19°24'00"
19°23'00"
19°20'00"
19°19'00"
19°16'00"
19°15'00"
19°11'00"
19°08'00"
19°07'00"
19°05'45"
19°04'30"
19°03'45"
19°00'00"
18°56'15"
155°50'00"
155°41'15"
155°40'00"
155°34'15"
155°33'45"
155°32'15"
155°31'30"
155°29'30"
155°29'00"
155°23'00"
155°20'00"
155°15'30"
155°07'00"
155°00'00"
154°58'30"


155°40'00"
19°15'00"
76GSAASY063
STRIP#4
TP-00378
76GS AASY634
TP
00488
TP-00379
STRIP#5
TP
00489
76GS AASY654
76GS AASY054
6357958
TP-00380
19°00'00"
STRIP#12
(PH 6402)
T-12559
T-12560
6357965
T-12561
155°20'00"
CM 7713
HAWAII IS - S.E. COAST
MAY 1978
1:30000 BRIDGING PHOTOGRAPHY
1:15000 COMPILATION PHOTOGRAPHY ONLY (STRIP#5)



CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1978

1:30000 RATIO PHOTOGRAPHY

NOAA FORM 76-41
(6-75)

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

DESCRIPTIVE REPORT CONTROL RECORD

MAP NO.	JOB NO.	GEODETIC DATUM	ORIGINATING ACTIVITY
T-12559	PH-6402	Old Hawaiian Datum	Coastal Mapping Section, AMC

STATION NAME	SOURCE OF INFORMATION (Index)	AEROTRI-ANGULATION POINT NUMBER	COORDINATES IN FEET STATE Hawaii ZONE 1	GEOGRAPHIC POSITION φ LATITUDE λ LONGITUDE	REMARKS
MAHANA (H.G.S.), (H.T.S. 1938), 1898	G.P. Pg. 19		x=	φ 18° 56' 46.169" -	
			y=	λ 155° 39' 02.560" -	
TANK, 1949	G.P. Pg. 34		x=	φ 18° 57' 05.502" -	
			y=	λ 155° 40' 10.464" -	
ROAD TANK. 1949	G.P. Pg. 34		x=	φ 18° 58' 23.84" -	
			y=	λ 155° 40' 21.82" -	
			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	DATE	COMPUTATION CHECKED BY	DATE
A. C. Rauck, Jr.	7-29-69	D. Butler	9-13-78
LISTED BY	DATE	LISTING CHECKED BY	DATE
HAND PLOTTING BY	DATE	HAND PLOTTING CHECKED BY	DATE

SUPERSEDES NOAA FORM 76-41, 2-71 EDITION WHICH IS OBSOLETE.

COMPILATION REPORT

T-12559

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 foul 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-12559

37. LANDMARKS AND AIDS:

One charted landmark was photogrammetrically positioned and the 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:

Jerry L. Hancock

for Robert Kravitz
Cartographic Technician
October 1978

Approved:

Jerry L. Hancock

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

ADDENDUM TO THE COMPILATION REPORT

T-12559

Field edit was conducted in September/October 1979 by NOAA ship RAINIER personnel in conjunction with hydrographic surveys H-9853 and H-9854. Adequate information was furnished to advance the manuscript to Class I.

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6402 Hawaii

T-12559

Island of Hawaii

Ka Lae o Hoaiku

Ka Lae Paakai

Mahana Bay

Pacific Ocean

Pohokinikini ------Not compiled

Puu Auluhula ------Not compiled

Puu Koihala -------Not compiled

Puu Maemae ---------Not compiled

Puu Mauu

Puu o Mahana

Approved by:

A. J. Wraight

A. Joseph Wraight
Chief Geographer

Prepared by:

Frank W. Pickett

Frank W. Pickett
Cartographic Technician

FIELD EDIT REPORT
OPR-T126-RA-79
CM-7713
T-12559

HAWAII
Hawaii, Southeast Coast
Ka Lae O Hoaiky

1 Field Edit
27 September 1979 - 6 October 1979
(J.D. 270 - J.D. 279)

Methods

Field edit operations on T-12559 began 27 September 1979 (J.D. 270) and ended 6 October 1979 (J.D. 279). 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 accepted meanings: green-deletion of features; red-answers to specific questions on the sheets; violet-verification or additions.

The features were verified on foot. Additions of rocks were photopicked and referenced on the discrepancy print. There were some rocks neither verified nor disproved, due to surf or distance from shore. In these cases the rocks were left unreferenced on the discrepancy print. In many cases it was impossible to determine the limits of the submerged ledge line.

The color photographs 8013, 8014, 8015, 8016, the discrepancy print and the field edit sheet were used 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

There was no investigation of geographical names.

Manuscript Accuracy

Accuracy was determined by direct comparison of shoreline features with the discrepancy print and photos. Agreement was very good.

The antenna at N 19° 56' 43.39" W155° 41' 13.18" was verified. However, private communication with the Air Force indicated it would be dismantled "soon".

TANK 1949 was not searched for as there were several tanks in the area, none of which were of landmark value.

Recommendations

The rocks neither verified nor disproved should be retained as plotted on the manuscript.

The antenna at N19° 56' 43.39" W155° 41' 13.18" should be retained as plotted.

TANK 1949 should be removed from the chart.

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
Recovery Notes

Separate Items: Photographs C&GS 31 AUG 63 S(C) 8013-8016
Master Film Field Edit Ozalid
Final Discrepancy Print
Field Discrepancy Print

REVIEW REPORT
SHORELINE

T-12559

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-9853, RA-10-4-79 and H-9854, RA-10-5-79; 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:

Chief, Photogrammetric Production Sec.

Chief, Photogrammetry Branch

OBJECTS [redacted]ECTED FROM SEAWARD	T. CLARK	☑ HYDROGRAPHIC PARTY ☐ GEODETIC PARTY ☐ OTHER *(Specify)*
POSITIONS DETERMINED AND/OR VERIFIED	T. CLARK	FIELD ACTIVITY REPRESENTATIVE
	L. WILLIAMS	OFFICE ACTIVITY REPRESENTATIVE
FORMS ORIGINATED BY QUALITY CONTROL AND REVIEW GROUP AND FINAL REVIEW ACTIVITIES		☐ 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	P - Photogrammetric
L - Located	Vis - Visually
V - Verified	
1 - Triangulation	5 - Field Identified
2 - Traverse	6 - Theodolite
3 - Intersection	7 - Planetable
4 - Resection	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.

☆ U.S. GPO:1975-0-565-080/1155

NOAA FORM 76-40
(8-74)

Replaces C&GS Form 567.

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

LANDMARKS FOR CHARTS

ORIGINATING ACTIVITY
- [ ] HYDROGRAPHIC PARTY
- [ ] GEODETIC PARTY
- [ ] PHOTO FIELD PARTY
- [x] COMPILATION ACTIVITY
- [ ] FINAL REVIEWER
- [ ] QUALITY CONTROL & REVIEW GRP.
- [ ] COAST PILOT BRANCH

(See reverse for responsible personnel)

- [x] TO BE CHARTED
- [ ] TO BE REVISED
- [ ] TO BE DELETED

REPORTING UNIT (Field Party, Ship or Office): Coastal Mapping Div. AMC Norfolk, VA

STATE: Hawaii

LOCALITY: Hawaii Southwest Coast

DATE: June, 1980

The following objects HAVE [x] HAVE NOT [ ] been inspected from seaward to determine their value as landmarks.

OPR PROJECT NO.	JOB NUMBER	SURVEY NUMBER	DATUM
T-126	PH-6402	T-12559	Old Hawaiian

CHARTING NAME	DESCRIPTION (Record reason for deletion of landmark or aid to navigation. Show triangulation station names, where applicable, in parentheses)	POSITION LATITUDE ° ′	LATITUDE ″ D.M. Meters	POSITION LONGITUDE ° ′	LONGITUDE ″ D.P. Meters	METHOD AND DATE OF LOCATION (See instructions on reverse side) OFFICE	FIELD	CHARTS AFFECTED
TELEM. ANT.	(North Telemetry Boresight Pole, 1964)	18-56	43.37 1333.4	155-41	13.81 404.1	63S(P) 7969 Aug 31, 1963	F-V-VIS Oct 11, 1979	19320.
							Position from master station list OPR-T-126-RA-79	

FORM C&GS-8352
(8-28-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. T-12559, (PH-6402)

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Revi

CHART	DATE	CARTOGRAPHER	REMARKS
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
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			Drawing No.