

T-12549

T-12549

|                                                                                                         |                  |
|---------------------------------------------------------------------------------------------------------|------------------|
| NOAA FORM 76-35<br>(3-76)                                                                               |                  |
| U.S. DEPARTMENT OF COMMERCE<br>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION<br>NATIONAL OCEAN SURVEY |                  |
| DESCRIPTIVE REPORT                                                                                      |                  |
| Map No.<br>T-12549                                                                                      | Edition No.<br>1 |
| Job No.<br>PH-6402                                                                                      |                  |
| Map Classification<br>FINAL FIELD EDITED MAP                                                            |                  |
| Type of Survey<br>SHORELINE                                                                             |                  |
| LOCALITY                                                                                                |                  |
| State<br>HAWAII                                                                                         |                  |
| General Locality<br>HAWAII ISLAND, WEST COAST<br>KAILUA TO SOUTH CAPE                                   |                  |
| Locality<br>KAULUOA POINT                                                                               |                  |
| 19 63 TO 19 72                                                                                          |                  |
| REGISTRY IN ARCHIVES                                                                                    |                  |
| DATE                                                                                                    |                  |

|                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                   |                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| NOAA FORM 76-36A<br>(3-72)                                                                                                                                                                              |  | U. S. DEPARTMENT OF COMMERCE<br>NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.                                                                                                                                                                                           |                                                          |
| <b>DESCRIPTIVE REPORT - DATA RECORD</b>                                                                                                                                                                 |  | TYPE OF SURVEY<br><input checked="" type="checkbox"/> ORIGINAL<br><input type="checkbox"/> RESURVEY<br><input type="checkbox"/> REVISED                                                                                                                           |                                                          |
| PHOTOGRAMMETRIC OFFICE<br>Coastal Mapping Div,<br>Atlantic Marine Center, Norfolk, VA                                                                                                                   |  | SURVEY <u>XP-T-12549</u><br>MAP EDITION NO. <u>(1)</u><br>MAP CLASS <u>FINAL</u><br>JOB <u>PH-6402</u>                                                                                                                                                            |                                                          |
| OFFICER-IN-CHARGE<br>R. Matsushige                                                                                                                                                                      |  | LAST PRECEDING MAP EDITION<br>TYPE OF SURVEY<br><input type="checkbox"/> ORIGINAL<br><input type="checkbox"/> RESURVEY<br><input type="checkbox"/> REVISED<br>JOB <u>PH</u> <u>PH</u><br>MAP CLASS <u>      </u><br>SURVEY DATES:<br>19 <u>  </u> TO 19 <u>  </u> |                                                          |
| <b>I. INSTRUCTIONS DATED</b>                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                   |                                                          |
| <b>1. OFFICE</b>                                                                                                                                                                                        |  | <b>2. FIELD</b>                                                                                                                                                                                                                                                   |                                                          |
| Compilation Oct. 28, 1969<br>Amendment 1 Jan. 3, 1973<br>Memo Sept. 1, 1978                                                                                                                             |  | Control/Field Inspection May 8, 1964                                                                                                                                                                                                                              |                                                          |
| <b>II. DATUMS</b>                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                   |                                                          |
| 1. HORIZONTAL: <input type="checkbox"/> 1927 NORTH AMERICAN                                                                                                                                             |  | OTHER (Specify)<br>Old Hawaiian                                                                                                                                                                                                                                   |                                                          |
| 2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER<br><input type="checkbox"/> MEAN LOW-WATER<br><input type="checkbox"/> MEAN LOWER LOW-WATER<br><input type="checkbox"/> MEAN SEA LEVEL |  | OTHER (Specify)                                                                                                                                                                                                                                                   |                                                          |
| 3. MAP PROJECTION<br>Polyconic                                                                                                                                                                          |  | 4. GRID(S)<br>STATE <u>Hawaii</u> ZONE <u>1</u>                                                                                                                                                                                                                   |                                                          |
| 5. SCALE<br>1:10,000                                                                                                                                                                                    |  | STATE <u>      </u> ZONE <u>      </u>                                                                                                                                                                                                                            |                                                          |
| <b>III. HISTORY OF OFFICE OPERATIONS</b>                                                                                                                                                                |  |                                                                                                                                                                                                                                                                   |                                                          |
| OPERATIONS                                                                                                                                                                                              |  | NAME                                                                                                                                                                                                                                                              | DATE                                                     |
| 1. AEROTRIANGULATION BY<br>METHOD: <u>Stereoplanigraph</u> LANDMARKS AND AIDS BY                                                                                                                        |  | J. Perrow                                                                                                                                                                                                                                                         | June 1969                                                |
| 2. CONTROL AND BRIDGE POINTS PLOTTED BY<br>METHOD: <u>Coradomat</u> CHECKED BY                                                                                                                          |  | J. Perrow<br>J. Perrow                                                                                                                                                                                                                                            | June 1969<br>June 1969                                   |
| 3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY<br>COMPILATION CHECKED BY<br>INSTRUMENT: <u>Wild B-8</u> CONTOURS BY<br>SCALE: <u>1:10,000</u> CHECKED BY                                                      |  | L. Neterer<br>A. Shands<br>N.A.<br>N.A.                                                                                                                                                                                                                           | Oct. 1969<br>Oct. 1969<br><br>                           |
| 4. MANUSCRIPT DELINEATION PLANIMETRY BY<br>CHECKED BY<br>METHOD: <u>Smooth drafted</u> CONTOURS BY<br>CHECKED BY<br>SCALE: <u>1:10,000</u> HYDRO SUPPORT DATA BY<br>CHECKED BY                          |  | C. Blood<br>L. Graves<br>N.A.<br>N.A.<br>C. Blood<br>L. Graves                                                                                                                                                                                                    | Mar. 1970<br>Mar. 1972<br><br><br>Mar. 1970<br>Mar. 1972 |
| 5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY                                                                                                                                                             |  | L. Graves                                                                                                                                                                                                                                                         | Mar. 1972                                                |
| 6. APPLICATION OF FIELD EDIT DATA BY<br>CHECKED BY                                                                                                                                                      |  | R. White<br>R. Minton                                                                                                                                                                                                                                             | Feb. 1973<br>June 1974                                   |
| 7. COMPILATION SECTION REVIEW BY                                                                                                                                                                        |  | R. Minton                                                                                                                                                                                                                                                         | June 1974                                                |
| 8. FINAL REVIEW BY                                                                                                                                                                                      |  | J. Hancock                                                                                                                                                                                                                                                        | Apr. 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. DAUGHERTY                                                                                                                                                                                                                                                      | SEP 87                                                   |

T-12549

## COMPILATION SOURCES

## 1. COMPILATION PHOTOGRAPHY

|                                                                                                                                                                                           |             |                                                                                 |          |                          |                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------|----------|--------------------------|----------------------------------------------|
| CAMERA(S)<br>Wild RC-8"S", S=152,29mm                                                                                                                                                     |             | TYPES OF PHOTOGRAPHY<br>LEGEND<br>(C) COLOR<br>(P) PANCHROMATIC<br>(I) INFRARED |          | TIME REFERENCE           |                                              |
| TIDE STAGE REFERENCE<br><input checked="" type="checkbox"/> PREDICTED TIDES<br><input type="checkbox"/> REFERENCE STATION RECORDS<br><input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY |             |                                                                                 |          | ZONE<br>Hawaii           | <input checked="" type="checkbox"/> STANDARD |
|                                                                                                                                                                                           |             |                                                                                 |          | MERIDIAN<br>150th        | <input type="checkbox"/> DAYLIGHT            |
| NUMBER AND TYPE                                                                                                                                                                           | DATE        | TIME                                                                            | SCALE    | STAGE OF TIDE            |                                              |
| 63S(P)7823,7825,7826*                                                                                                                                                                     | Aug.29,1963 | 09:04                                                                           | 1:30,000 | 1.1 FT. above MLLW       |                                              |
| 63S(P)8080,8081*                                                                                                                                                                          | Sept.1,1963 | 09:17                                                                           | 1:30,000 | 0.4 FT. above MLLW       |                                              |
| 63S(C)7886-7888**                                                                                                                                                                         | Aug.29,1963 | 09:58                                                                           | 1:15,000 | 1.6 FT. above MLLW       |                                              |
| 63S(C)8021-8025**                                                                                                                                                                         | Aug.31,1963 | 10.26                                                                           | 1:15,000 | 1.4 Ft. above MLLW       |                                              |
|                                                                                                                                                                                           |             |                                                                                 |          | Mean Tide Range = 1.4FT/ |                                              |

## 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-9307        | 1972    | Registered       |               |         |                  |

## 5. FINAL JUNCTIONS

|                  |              |                  |              |
|------------------|--------------|------------------|--------------|
| NORTH<br>T-12548 | EAST<br>None | SOUTH<br>T-12550 | WEST<br>None |
|------------------|--------------|------------------|--------------|

## REMARKS

T-12549  
HISTORY OF FIELD OPERATIONS1. ☒ FIELD INSPECTION OPERATION☐ FIELD EDIT OPERATION

| OPERATION                           | NAME                                                                                                                                                               | DATE                 |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1. CHIEF OF FIELD PARTY             | R. Newson                                                                                                                                                          | Feb.-Sept. 1964      |
| 2. HORIZONTAL CONTROL               | RECOVERED BY<br>ESTABLISHED BY<br>PRE-MARKED OR IDENTIFIED BY                                                                                                      | None<br>None<br>None |
| 3. VERTICAL CONTROL                 | RECOVERED BY<br>ESTABLISHED BY<br>PRE-MARKED OR IDENTIFIED BY                                                                                                      | None<br>None<br>None |
| 4. LANDMARKS AND AIDS TO NAVIGATION | RECOVERED (Triangulation Stations) BY<br>LOCATED (Field Methods) BY<br>IDENTIFIED BY                                                                               | None<br>None<br>None |
| 5. GEOGRAPHIC NAMES INVESTIGATION   | TYPE OF INVESTIGATION<br><input type="checkbox"/> COMPLETE<br><input type="checkbox"/> SPECIFIC NAMES ONLY<br><input checked="" type="checkbox"/> NO INVESTIGATION |                      |
| 6. PHOTO INSPECTION                 | CLARIFICATION OF DETAILS BY                                                                                                                                        | E. Cline             |
| 7. BOUNDARIES AND LIMITS            | SURVEYED OR IDENTIFIED BY                                                                                                                                          | N.A.                 |

Aug. 1964

## 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)

63(S)7825, 7826, 8080, 8081 (1:30,000 scale matte contacts)

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 Project field report

NOAA FORM 76-36C  
(3-72)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL OCEAN SURVEY

T-12549

## HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

| OPERATION                           | NAME                                                                                                                                                                  | DATE                           |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| 1. CHIEF OF FIELD PARTY             | (NOAA SHIP RAINIER)<br>G. Haraden                                                                                                                                     | Sept.-Oct.<br>1972             |
| 2. HORIZONTAL CONTROL               | RECOVERED BY<br>ESTABLISHED BY<br>PRE-MARKED OR IDENTIFIED BY                                                                                                         | S. Hollinshead<br>None<br>None |
| 3. VERTICAL CONTROL                 | RECOVERED BY<br>ESTABLISHED BY<br>PRE-MARKED OR IDENTIFIED BY                                                                                                         | None<br>None<br>None           |
| 4. LANDMARKS AND AIDS TO NAVIGATION | RECOVERED (Triangulation Stations) BY<br>LOCATED (Field Methods) BY<br>IDENTIFIED BY                                                                                  | None<br>None<br>None           |
| 5. GEOGRAPHIC NAMES INVESTIGATION   | TYPE OF INVESTIGATION<br><input type="checkbox"/> COMPLETE<br><input type="checkbox"/> SPECIFIC NAMES ONLY BY<br><input checked="" type="checkbox"/> NO INVESTIGATION |                                |
| 6. PHOTO INSPECTION                 | CLARIFICATION OF DETAILS BY                                                                                                                                           | S. Hollinshead                 |
| 7. BOUNDARIES AND LIMITS            | SURVEYED OR IDENTIFIED BY                                                                                                                                             | N.A.                           |

## II. SOURCE DATA

1. HORIZONTAL CONTROL IDENTIFIED  
None2. VERTICAL CONTROL IDENTIFIED  
None

| PHOTO NUMBER | STATION NAME | PHOTO NUMBER | STATION DESIGNATION |
|--------------|--------------|--------------|---------------------|
|              |              |              |                     |

## 3. PHOTO NUMBERS (Clarification of details)

63S(C) 7886-7888, 8023, 8024 (Cronapaqueratios, 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

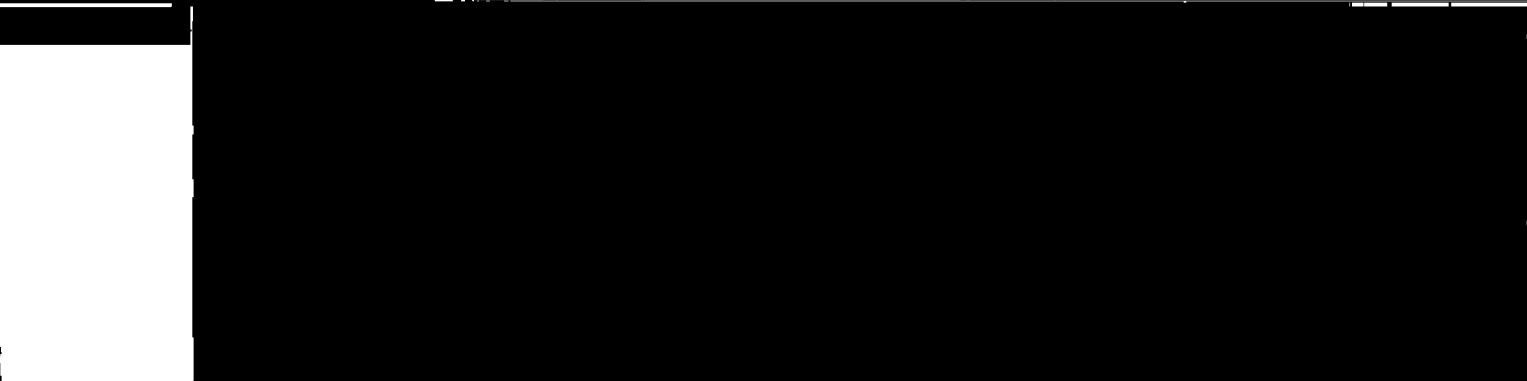
## 8. OTHER FIELD RECORDS (Sketch books, etc. DO NOT list data submitted to the Geodesy Division)

1 Field edit paper print  
1 Field edit report

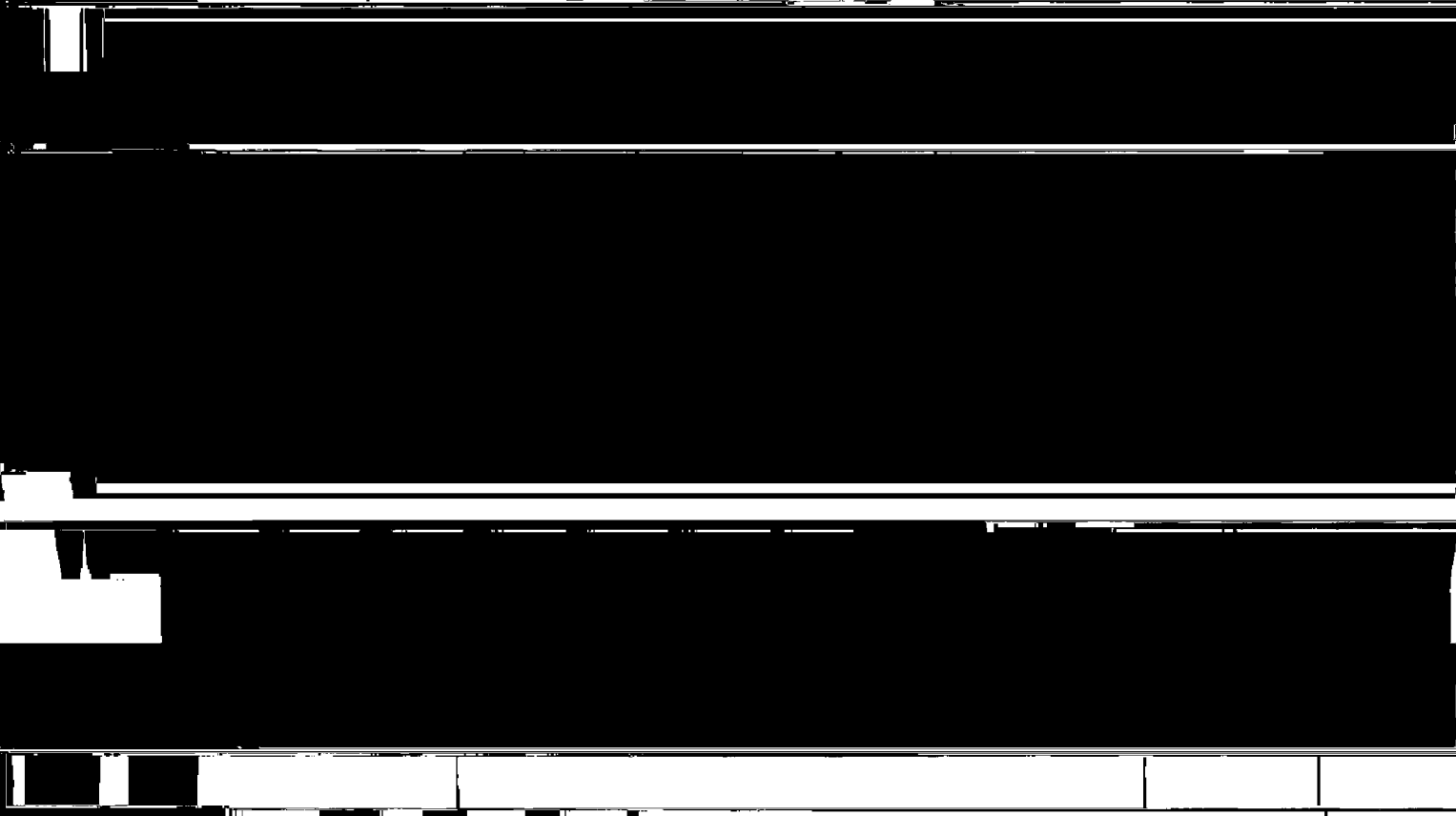
|                                               |                                                                                        |
|-----------------------------------------------|----------------------------------------------------------------------------------------|
| <b>NOAA FORM 76-36D</b><br>(3-72)             | <b>U. S. DEPARTMENT OF COMMERCE</b><br>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION |
| <b>T-12549</b><br><b>RECORD OF SURVEY USE</b> |                                                                                        |

| I. MANUSCRIPT COPIES                        |           |                     |                           |               |
|---------------------------------------------|-----------|---------------------|---------------------------|---------------|
| COMPILATION STAGES                          |           |                     | DATE MANUSCRIPT FORWARDED |               |
| DATA COMPILED                               | DATE      | REMARKS             | MARINE CHARTS             | HYDRO SUPPORT |
| Compilation complete<br>pending field edit  | Mar. 1972 | Class II manuscript | None                      | July 1972     |
| Field edit applied,<br>compilation complete | June 1974 | Class I manuscript  | Nov. 1979                 | June 1974     |

|              |            |           |           |           |  |
|--------------|------------|-----------|-----------|-----------|--|
| Final review | April 1987 | Final Map | July 1987 | July 1987 |  |
|--------------|------------|-----------|-----------|-----------|--|



| II. LANDMARKS AND AIDS TO NAVIGATION None                 |                                 |                   |         |
|-----------------------------------------------------------|---------------------------------|-------------------|---------|
| I. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH |                                 |                   |         |
| NUMBER                                                    | CHART LETTER<br>NUMBER ASSIGNED | DATE<br>FORWARDED | REMARKS |
|                                                           |                                 |                   |         |





SUMMARY TO ACCOMPANY  
DESCRIPTIVE REPORT

T-12549

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 portrays the shoreline along the southwest coast of Hawaii Island from Latitude 19° 18' 45" to Latitude 19° 22' 30".

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. In addition, 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 adjoining project PH-6401.

Analytic aerotriangulation was adequately provided by the Washington Science Center in June 1969. Tie points from photo strip #4 contained in adjoining project PH-6401 were included in this bridge. Aerotriangulation activity included ruling the base manuscripts and also provided ratio prints for compilation and hydrographic/field edit operations.

Compilation for this map was performed at the Coastal Mapping Section, Atlantic Marine Center in March 1972. Copies of the initial compilation and hydrographic support data were forwarded to the hydrographer for field edit.

Field edit was conducted in conjunction with hydrographic survey H-9307 by NOAA Ship RAINIER personnel in September 1972.

T-12549

Application of field edit was completed at the original compilation office in June 1974 and the manuscript was advanced to Class I. Map copies were submitted to the hydrographer for smooth sheet application.

Final review was performed at the Atlantic Marine Center in April 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-12549

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.

UNITED STATES GOVERNMENT

# Memorandum

*C. 63 8374*  
U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

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631W

TO : Chief, Photogrammetric Field Operations  
THRU : Honolulu Field Officer *no R*

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 & 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.

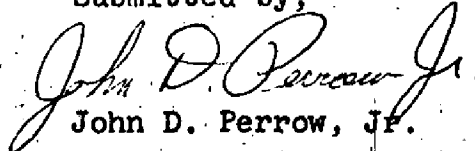
24. Supplemental Data

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

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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

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SHORELINE MAPPING

JOB PH-6402

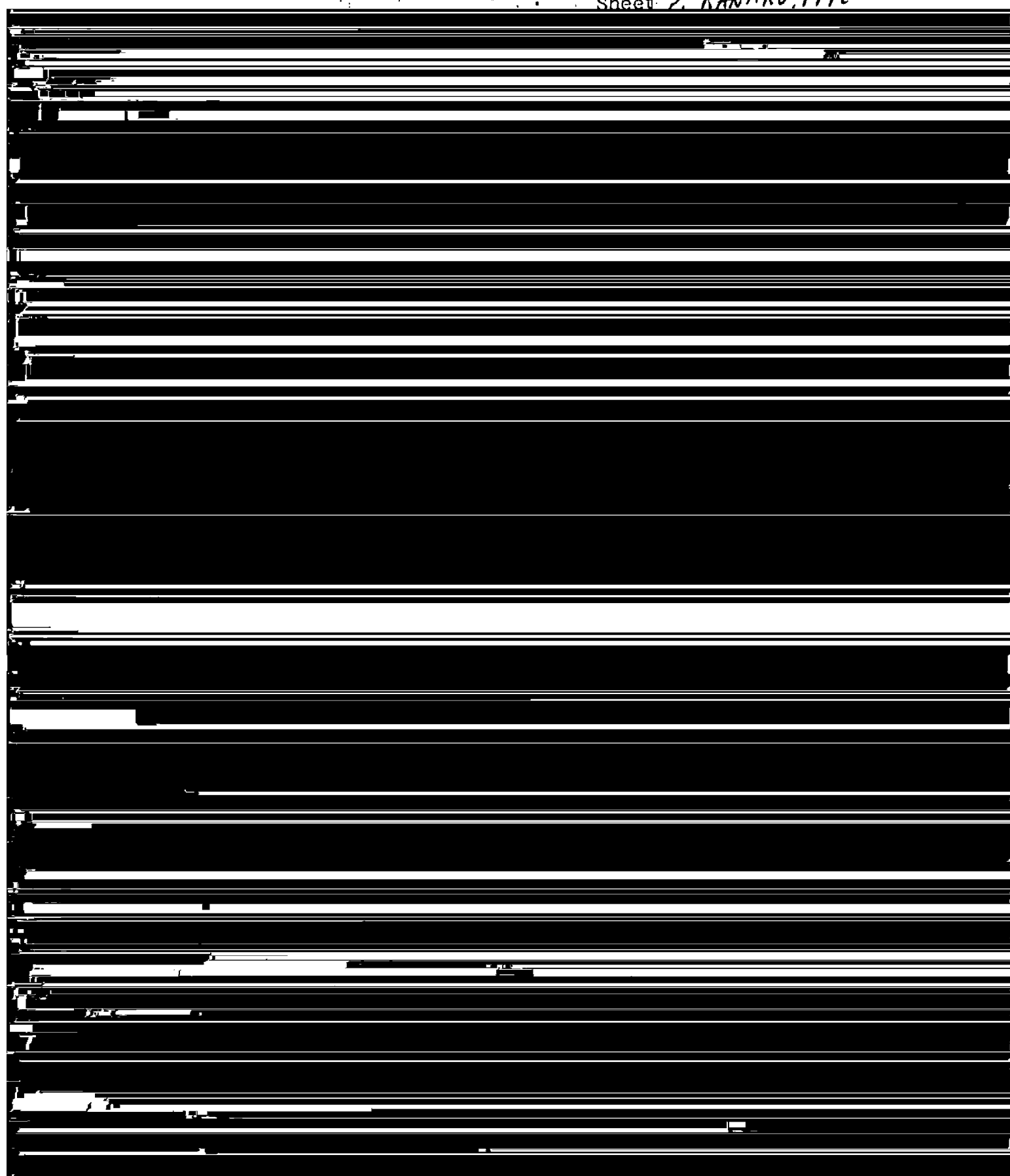
HAWAII IS. WEST COAST

OFFICE

1. POINT, 1928

Sheet

2. KANAKU, 1948



Photogrammetric Plot Report

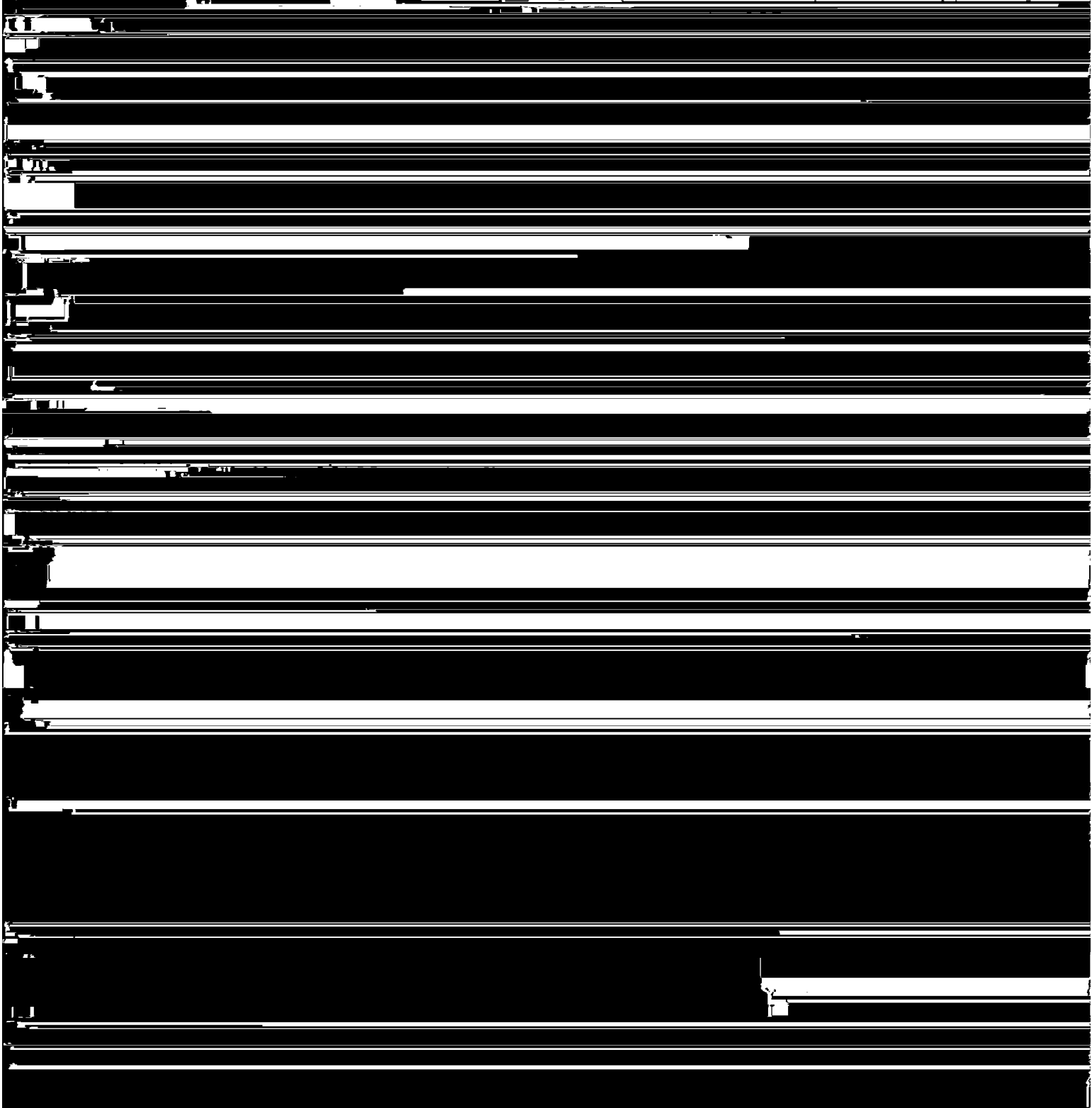
PH-6401

Hawaii Island, Hawaii

Feb. 4, 1969

21. Area Covered

The area covered by this report is along the northwest coast of Hawaii Island. T-sheets in this area are numbered 12534 thru 12541, 12543, and 12545 at 1:10,000 scale. T-



24. Supplemental Data

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 with the exception of T-12542. 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

1. KEPUI 2, 1948

2. KEPUI, 1913

KEPUH 2 1948

56'15"  
52'30"  
54'45"



## DESCRIPTIVE REPORT CONTROL RECORD

| MAP NO.                     | JOB NO. | STATION NAME              | SOURCE OF INFORMATION<br>(Index) | PH-6402<br>AEROTRI-<br>ANGULATION<br>POINT<br>NUMBER | GEODETTIC DATUM                                                                   |                                                               | ORIGINATING ACTIVITY         |         |
|-----------------------------|---------|---------------------------|----------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------|---------|
|                             |         |                           |                                  |                                                      | Old Hawaiian Datum<br>COORDINATES IN FEET<br>STATE <u>Hawaii</u><br>ZONE <u>1</u> | Geographic Position<br>$\phi$ LATITUDE<br>$\lambda$ LONGITUDE | Coastal Mapping Section, AMC | REMARKS |
| T-12549                     |         | KAULUOA, 1972             | Field Edit<br>Report 1972        |                                                      | $\chi =$                                                                          | $\phi$ 19° 19' 31.604"                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$ 155° 53' 29.658"                                    |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$ 19° 19' 02.505"                                        |                              |         |
|                             |         | KAHOE, 1972               | Field Edit<br>Report 1972        |                                                      | $y =$                                                                             | $\lambda$ 155° 53' 12.471"                                    |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$ 19° 20' 35.230"                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$ 155° 52' 33.168"                                    |                              |         |
| PAM, 1972                   |         | Field Edit<br>Report 1972 |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
|                             |         |                           |                                  |                                                      | $\chi =$                                                                          | $\phi$                                                        |                              |         |
|                             |         |                           |                                  |                                                      | $y =$                                                                             | $\lambda$                                                     |                              |         |
| COMPUTED BY<br>L. L. Graves |         |                           |                                  |                                                      | COMPUTATION CHECKED BY<br>F. P. Margiotta                                         |                                                               | DATE                         | 1-30-73 |
|                             |         |                           |                                  |                                                      | LISTING CHECKED BY                                                                |                                                               | DATE                         |         |
|                             |         |                           |                                  |                                                      | HAND PLOTTING CHECKED BY                                                          |                                                               | DATE                         |         |

## COMPILATION REPORT

T-12549

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:

Refer to the Photogrammetric Plot Report, dated June 10, 1969.



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:

T-12549

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 February 4, 1969 (PH-6401) and June 10, 1969.

46. COMPARISON WITH EXISTING MAPS:

A comparison was made with USGS quadrangle Kauluoa Point, Hawaii, scale 1:24,000, dated 1962.

47. COMPARISON WITH NAUTICAL CHARTS:

A comparison was made with C. &amp; G.S. Chart 4115, scale 1:250,000, 8th edition, dated September 9, 1963, revised January 1, 1967.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY:

None.

ITEMS TO BE CARRIED FORWARD:

None.

Submitted by:

*Gary J. Hancock*for Charles Blood  
Cartographic Technician  
March 1970

Approved:

*Gary L. Hancock*for Albert C. Rauck, Jr.  
Chief, Coastal Mapping Section

ADDENDUM TO THE COMPILATION REPORT

T-12549

Field edit was performed in September 1972 by NOAA ship RAINIER personnel. Adequate field data was furnished to advance the manuscript to Class I.

GEOGRAPHIC NAMES

FINAL NAME SHEET

PH-6402 Hawaii

T-12549

- ~~Alae~~ *Not compiled*
- ~~Honokua~~ *Not compiled*
- ~~Island of Hawaii~~
- ~~Kalahiki~~ *Not compiled*
- ~~Kalahiki Beach~~
- ~~Kapilo Bay~~
- ~~Kaohe~~
- ~~Kauluoa Point~~
- ~~Lapawai Bay~~
- ~~Lepeamca Rock~~
- ~~Limukoko Point~~
- ~~Pacific Ocean~~
- ~~Papakolea Point~~
- ~~Puiwa Point~~
- ~~Waiea~~ *Not compiled*

Approved by:

A. J. Wright  
A. Joseph Wright  
Chief Geographer

Prepared by:

Frank W. Pickett  
Frank W. Pickett  
Cartographic Technician

FIELD EDIT REPORT

OPR-419, 1972

T-12539 through T-12550    \$  
T-13382    T-11796  
Kona Coast, Hawaii

NOAA Ship RAINIER

CAPT G.E. HARADEN  
Commanding

## INTRODUCTION - METHODS

Field edit was accomplished between 14 September and 26 October 1972 by personnel of the NOAA Ship RAINIER. Work was performed from a 16 foot skiff. Landings were made where necessary to verify shoreline character.

The field edit started approximately 0.4 miles north-east of Puialoa Point, Hawaii and extended southward to Puoa Point (see appendix). Editing was completed on Manuscripts T-12539, T-12540, T-12541, T-12542, T-13382, T-12543, T-12544, T-12545, T-11796, T-12546, T-12548, and T-12549. Field edit was begun but not completed on Manuscript T-12550. No field edit was done on Manuscripts T-12547 and T-11797.

All additions and corrections were noted in purple on the field edit ozalids. Deletions were accented in green. Photos used in this edit were from PH-6401 and 6402. Values given for distances from MHWL and heights of rocks were estimated. All time references were made to 150° W longitude.

To aid in cross-referencing, A "Manuscript Reference Index" and a "Position Abstract" are included in the appendix. Also included in the appendix are: 1) List of detached positions, 2) A complete signal tape listing, 3) Listing of Triangulation Stations recovered, established, and re-established.

### ADEQUACY OF COMPILATION

The compilation of the MHWL on the edited manuscripts was excellent and required very few corrections. In general the compilation of off-shore features was also excellent. Time and height data for rocks not identified on the manuscripts has been included on the photographs.

### DISCUSSION AND RECOMMENDATIONS

#### T-12539 (completed) Mahailua Bay

The shoreline in this area is primarily composed of steep cliffs 20' high, interspersed with sandy beach. The northern and southern-most buildings at Mahailua Bay are the only two prominent objects in the vicinity and therefore are of landmark value. The wooden windmill located at  $19^{\circ} 47' 13.35''$  N and  $156^{\circ} 02' 22.50''$  W, is no longer standing and should be deleted from C&GS Chart 4140. Further information is furnished on NOAA Form 76-40 (see appendix).

#### T-12540 (completed) Makako Bay

The shoreline in this area is composed primarily of low bluffs and sandy beach with marsh surrounding fish ponds.

Keahole Point Lighthouse is of landmark value. The lighthouse was field identified from photo 63-S-7943. Further information is provided on NOAA Form 76-40 (see appendix).

T-13382 (completed) Honokohau Bay

The shoreline in this area is composed primarily of gently sloping lava flows with interspersed sandy beach and marsh surrounding Kaloko Fish Pond.

Keahuolu Point Northeast Range Marker, 1948, is of landmark value. Keahuolu Point Northwest Range Marker, 1948\*, has fallen over and is no longer visible from seaward. Four new navigational lights mark the entrance to the new boat basin at Honokohau, located just south of Maliau Point. Further information is provided on NOAA Form 76-40 (see appendix).

T-12541 (completed) Kailua Bay

The shoreline in this area is composed primarily of sloping lava rock with marsh surrounding small ponds and fish ponds at Honokohau Bay.

\* NOTE: Keahuolu Point Northeast Range Marker, 1948, and Keahuolu Point Northwest Range Marker, 1948, are located on Manuscripts T-12541 and T-13382.

The northern-most building at Honokohau, although small, is of landmark value as a navigational aid when entering the Honokohau boat basin. Keahuolu Point Northeast, Keahuolu Point Southeast, and Keahuolu Point Southwest Range Markers are very faded and weathered but are of landmark value. The building located at Honokohau (approximate location, latitude  $19^{\circ}40'25.85''$  N and longitude  $156^{\circ}01'44.83''$  W) and Keahuolu Point Northwest Range Marker are not visible from seaward and should be deleted. Further information is provided on NOAA Form 76-40 (see appendix).

T-12542 (completed) Kailua Bay

The shoreline in this area is composed primarily of low bluffs interspersed with sandy beach.

The facade of the Kona Hilton Hotel, which is illuminated yellow at night, and Kailua Lighthouse are of landmark value; both were intersected using second order, class II methods. A crane lighted at night by a floodlight and used by fishermen as a navigational aid and the Kailua Mokuaikaia Church spire are also of landmark value.

The cattle pens, small craft warning mast, and building on the Kailua pier have been removed and should be deleted. The tanks located at latitude  $19^{\circ}38'34.80''$  N, and longitude  $156^{\circ}00'03.46''$  W, and the Kona Airport Airway Beacon have been removed and should be deleted. The church spire, latitude  $19^{\circ}38'24.22''$  N and longitude  $155^{\circ}59'37.05''$  W, is

present as described but is obscured by vegetation. Further information is provided on NOAA Form 76-40 (see appendix).

T-12543 (completed) Keauhou Bay

This area is composed primarily of rocky shoreline interspersed with sandy beaches.

New buildings at latitude  $19^{\circ}35'52.50''$  N, longitude  $155^{\circ}58'31.50''$  W and latitude  $19^{\circ}34'39.60''$  W, longitude  $155^{\circ}58'12.60''$  W are not of landmark value. A hotel just south of Kalaau o Kalakani and a blue church building at Kahaluu Bay are of landmark value.

A spire at Kahaluu Bay is not visible and should be deleted. Further information is provided on NOAA Form 76-40 (see appendix).

T-12544 (completed) Keauhou Bay

The shoreline in this area is primarily composed of lava bluffs 30 feet high.

Keauhou Bay Light and Keauhou Bay Entrance Directional Light (both lights on the same structure) and the Kona Surf Hotel (approximate position scaled) are of landmark value. Further information is provided on NOAA Form 76-40 (see appendix).

T-12545 (completed) Keikiwaha Point

The shoreline in this area is composed of low lava bluffs approximately 10 feet high. There are no objects of landmark value.

T-12546 (completed) Keawekahaka Bay

The shoreline in this area is primarily composed of lava bluffs approximately 30 feet high.

There are no objects of landmark value.

T-11796 (completed) Kealakekua Bay

The shoreline in this area consists of low lava bluffs six to ten feet high with rocky beaches and a steep cliff (160 feet high) on the northeast side of the bay.

Napoopoo, Kahikolu Church Spire, 1913, Napoopoo Light-house, and Captain Cook's Monument are all of landmark value. Further information is provided on NOAA Form 76-40 (see appendix).

T-12547 (incomplete) Kealakekua Bay

No field edit was done on this manuscript.

T-11797 (incomplete) Honaunau Bay

No field edit was done on this manuscript.

T-12548 (completed) Kauhako Bay

The shoreline in this area is composed of bluffs approximately 40-60 feet high with interspersed sandy beach. Buildings in the area indicated on the manuscript at Kauhako Bay are of landmark value. (building locations were not determined by the field editor or located by the compiler - see manuscript).

A church steeple located near Palanihi Point no longer exists and should be deleted.

Further information is provided on NOAA Form 76-40 (see appendix).

T-12549 (completed) Kauluoa Point

The shoreline in this area is composed of cliffs from 10 to 60 feet high interspersed with gravel, sand, and rocky beaches. There are no objects of landmark value.

T-12550 (incomplete) Puoa Point

The shoreline in this area is composed of lava bluffs approximately 40-60 feet high. There are no objects of landmark value. Field edit was completed to Puoa Point.

Respectfully submitted,

*Steven J. Hollinshead*  
Steven J. Hollinshead  
LTJG, NOAA

## MANUSCRIPT REFERENCE INDEX

OPR-419

FIELD EDIT

| MANUSCRIPT NUMBER        | REFERENCE PHOTO<br>NUMBERS                   | REFERENCE DETACHED<br>POSITIONS |
|--------------------------|----------------------------------------------|---------------------------------|
| T-12539<br>Mahailua Bay  | 63-S-7948<br>63-S-8060                       |                                 |
| T-12540<br>Makako Bay    | 63-S-7943<br>63-S-8063*                      |                                 |
| T-12541<br>Kailua Bay    | 63-S-8063*<br>63-S-8094                      |                                 |
| T-13382<br>Honokohau Bay | 69-E-9255<br>69-E-9254                       |                                 |
| T-12542<br>Kailua Bay    | 63-S(C)-7913<br>63-S(C)-7915<br>63-S(C)-7917 | Detached Positions<br>10/05/72  |
| T-12543<br>Keauhou Bay   | 63-S-8067<br>63-S-8068                       |                                 |
| T-12544<br>Keauhou Bay   | 63-S(C)-8158<br>63-S(C)-8159<br>63-S(C)-8160 |                                 |

\*NOTE: Photo 63-S-8063 used on T-Sheets T-12540  
and T-12541

MANUSCRIPT NUMBER

REFERENCE PHOTO  
NUMBERSREFERENCE DETACHED  
POSITIONS

T-12545

Kailashaba Detach

63-S-8088

63-S-8087x

T-11706

62-S-8128

Detached

REVIEW REPORT  
SHORELINE

T-12549

61. GENERAL STATEMENT:

Final review for this Final Field Edited Map was accomplished at the Atlantic Marine Center in April 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 Kauluoa Point, Hawaii, 1:24,000 scale, dated 1962.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS:

A comparison was made with a registered copy of H-9307, RA-10-06-72, surveyed in 1972 did not reveal any significant differences.

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:

*Jay O. Robson*  
Chief, Photogrammetric Production Sec.

*A. Y. Bryson*  
Chief, Photogrammetry Branch

