

00376

TP-00376

NOAA FORM 76-35
(6-80)U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT

Map No.

TP-00376

Edition No.

1

Job No.

CM-7713

Map Classification

FINAL, FIELD EDITED MAP

Type of Survey

SHORELINE

LOCALITY

State

HAWAII

General Locality

HAWAII - SOUTHEAST COAST

Locality

KUPAPAU POINT

1977 TO 1980

REGISTERED IN ARCHIVES

DATE

| | | | |
|---|--|---|----------|
| NOAA FORM 76-36A (3-72) | | U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMIN. | |
| DESCRIPTIVE REPORT - DATA RECORD | | TYPE OF SURVEY <input checked="" type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED | |
| | | SURVEY TP- 00376 MAP EDITION NO. (1) MAP CLASS Final JOB AK CM-7713 | |
| PHOTOGRAMMETRIC OFFICE Coastal Mapping Division, Norfolk, VA OFFICER-IN-CHARGE Roy K. Matsushige, CDR | | LAST PRECEDING MAP EDITION TYPE OF SURVEY <input type="checkbox"/> ORIGINAL <input type="checkbox"/> RESURVEY <input type="checkbox"/> REVISED JOB PH- MAP CLASS SURVEY DATES: 19__ TO 19__ | |
| I. INSTRUCTIONS DATED | | | |
| 1. OFFICE | | 2. FIELD | |
| Aerotriangulation Feb. 13, 1978 Compilation June 23, 1978 | | Control Nov. 2, 1977 | |
| II. DATUMS | | | |
| 1. HORIZONTAL: <input type="checkbox"/> 1927 NORTH AMERICAN | | OTHER (Specify) Old Hawaiian Datum | |
| 2. VERTICAL: <input checked="" type="checkbox"/> MEAN HIGH-WATER <input type="checkbox"/> MEAN LOW-WATER <input type="checkbox"/> MEAN LOWER LOW-WATER <input type="checkbox"/> MEAN SEA LEVEL | | OTHER (Specify) | |
| 3. MAP PROJECTION Transverse Mercator | | 4. GRID(S) STATE Hawaii ZONE 1 | |
| 5. SCALE 1:20,000 | | STATE ZONE | |
| III. HISTORY OF OFFICE OPERATIONS | | | |
| OPERATIONS | | NAME | DATE |
| 1. AEROTRIANGULATION BY METHOD: Analytic LANDMARKS AND AIDS BY | | R. Fisher | May 1978 |
| 2. CONTROL AND BRIDGE POINTS PLOTTED BY METHOD: Coradomat 21 CHECKED BY | | S. Solbeck | May 1978 |
| | | S. Solbeck | May 1978 |
| 3. STEREOSCOPIC INSTRUMENT PLANIMETRY BY COMPILATION CHECKED BY | | R. Kravitz | Mar 1979 |
| INSTRUMENT: Wild B-8 SCALE: 1:20,000 | | L. Neterer | Mar 1979 |
| | | N.A. | |
| | | N.A. | |
| 4. MANUSCRIPT DELINEATION PLANIMETRY BY CHECKED BY | | L. Williams | Mar 1979 |
| METHOD: Smooth drafted SCALE: 1:20,000 | | R. Kravitz | Mar 1979 |
| | | N.A. | |
| | | N.A. | |
| HYDRO SUPPORT DATA BY CHECKED BY | | L. Williams | Mar 1979 |
| | | R. Kravitz | Mar 1979 |
| 5. OFFICE INSPECTION PRIOR TO FIELD EDIT BY | | R. Kravitz | Mar 1979 |
| 6. APPLICATION OF FIELD EDIT DATA BY | | G. Morris | Apr 1981 |
| | | J. Massey | Jul 1981 |
| 7. COMPILATION SECTION REVIEW BY | | D. Butler | Nov 1981 |
| 8. FINAL REVIEW BY | | J. Hancock | Jan 1986 |
| 9. DATA FORWARDED TO PHOTOGRAMMETRIC BRANCH BY | | J. Hancock | Feb 1986 |
| 10. DATA EXAMINED IN PHOTOGRAMMETRIC BRANCH BY | | P. Dempsey | Mar 1986 |
| 11. MAP REGISTERED - COASTAL SURVEY SECTION BY | | E. DAUBERTER | MAY 86 |

COMPILATION SOURCES

1. COMPILATION PHOTOGRAPHY

| | | | | | |
|---|---------------|---|----------|----------------------|--|
| CAMERA(S) F. L. = 153.21 mm Zeiss RMK A15/23 Lens 118960 | | TYPES OF PHOTOGRAPHY LEGEND | | TIME REFERENCE | |
| TIDE STAGE REFERENCE | | (C) COLOR (P) PANCHROMATIC (I) INFRARED | | ZONE Hawaii | <input checked="" type="checkbox"/> STANDARD |
| <input checked="" type="checkbox"/> PREDICTED TIDES <input type="checkbox"/> REFERENCE STATION RECORDS <input type="checkbox"/> TIDE CONTROLLED PHOTOGRAPHY | | | | MERIDIAN 150th | <input type="checkbox"/> DAYLIGHT |
| NUMBER AND TYPE | DATE | TIME | SCALE | STAGE OF TIDE | |
| 77 GSAASY 608-611 | Mar. 26, 1977 | 12:30 | 1:50,000 | 0.4 ft. above MLLW | |
| 76 GSAASY 182-188 | Dec. 18, 1976 | 14:26 | 1:30,000 | 1.3 ft. above MLLW | |
| | | | | Mean Range = 1.7 ft. | |

REMARKS

Photography by American Aerial Survey, Inc., of Northern California
Geodetic Survey.

2. SOURCE OF MEAN HIGH-WATER LINE:

The Mean High Water Line was compiled by instrument methods using the
1:50,000 scale photos and graphically using ratio prints of the 1:30,000
scale photographs.

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

None compiled.

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

| SURVEY NUMBER | DATE(S) | SURVEY COPY USED | SURVEY NUMBER | DATE(S) | SURVEY COPY USED |
|---------------|---------|------------------|---------------|---------|------------------|
| | | | | | |

5. FINAL JUNCTIONS

| NORTH | EAST | SOUTH | WEST |
|-----------|----------|-----------|----------|
| No Survey | TP-00375 | No Survey | TP-00377 |

REMARKS

TP-00376

HISTORY OF FIELD OPERATIONS

1. ☒ FIELD INSPECTION OPERATION (Photoidentification) ☐ FIELD EDIT OPERATION

| OPERATION | NAME | DATE |
|-------------------------------------|--|----------|
| 1. CHIEF OF FIELD PARTY | R. Melby | Jan 1978 |
| 2. HORIZONTAL CONTROL | RECOVERED BY R. Melby | Jan 1978 |
| | ESTABLISHED BY R. Melby | Jan 1978 |
| | PRE-MARKED OR IDENTIFIED BY R. Melby | Jan 1978 |
| 3. VERTICAL CONTROL | RECOVERED BY None | |
| | ESTABLISHED BY None | |
| | PRE-MARKED OR IDENTIFIED BY None | |
| 4. LANDMARKS AND AIDS TO NAVIGATION | RECOVERED (Triangulation Stations) BY None | |
| | LOCATED (Field Methods) BY None | |
| | IDENTIFIED BY None | |
| 5. GEOGRAPHIC NAMES INVESTIGATION | TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION | |
| 6. PHOTO INSPECTION | CLARIFICATION OF DETAILS BY None | |
| 7. BOUNDARIES AND LIMITS | SURVEYED OR IDENTIFIED BY None | |

II. SOURCE DATA

| 1. HORIZONTAL CONTROL IDENTIFIED | | 2. VERTICAL CONTROL IDENTIFIED | |
|----------------------------------|--------------|--------------------------------|---------------------|
| PHOTO NUMBER | STATION NAME | PHOTO NUMBER | STATION DESIGNATION |
| 77GSAASY-610 | Pulama, 1914 | | |

3. PHOTO NUMBERS (Clarification of details)

None

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

| PHOTO NUMBER | OBJECT NAME | PHOTO NUMBER | OBJECT NAME |
|--------------|-------------|--------------|-------------|
| | | | |

5. GEOGRAPHIC NAMES: ☐ REPORT ☒ NONE 6. BOUNDARY AND LIMITS: ☐ REPORT ☒ NONE

7. SUPPLEMENTAL MAPS AND PLANS

None

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

- 1 - Form 76-53
- 1 - Form 76-61A and One Form Reduction to Sea Level.
- 1 - Field Report

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

TP-00376

HISTORY OF FIELD OPERATIONS

I. ☐ FIELD INSPECTION OPERATION☒ FIELD EDIT OPERATION

| OPERATION | NAME | DATE |
|---------------------------------------|--|----------|
| 1. CHIEF OF FIELD PARTY | W. Mobley | Oct 1980 |
| 2. HORIZONTAL CONTROL | D. Kruth | Oct 1980 |
| RECOVERED BY | None | |
| ESTABLISHED BY | None | |
| PRE-MARKED OR IDENTIFIED BY | None | |
| 3. VERTICAL CONTROL | None | |
| RECOVERED BY | None | |
| ESTABLISHED BY | None | |
| PRE-MARKED OR IDENTIFIED BY | None | |
| 4. LANDMARKS AND AIDS TO NAVIGATION | None | |
| RECOVERED (Triangulation Stations) BY | None | |
| LOCATED (Field Methods) BY | None | |
| IDENTIFIED BY | None | |
| 5. GEOGRAPHIC NAMES INVESTIGATION | TYPE OF INVESTIGATION <input type="checkbox"/> COMPLETE <input type="checkbox"/> SPECIFIC NAMES ONLY <input checked="" type="checkbox"/> NO INVESTIGATION | |
| 6. PHOTO INSPECTION | CLARIFICATION OF DETAILS BY D. Kruth | Oct 1980 |
| 7. BOUNDARIES AND LIMITS | SURVEYED OR IDENTIFIED BY None | |

II. SOURCE DATA

| 1. HORIZONTAL CONTROL IDENTIFIED | | 2. VERTICAL CONTROL IDENTIFIED | |
|----------------------------------|--------------|--------------------------------|---------------------|
| PHOTO NUMBER | STATION NAME | PHOTO NUMBER | STATION DESIGNATION |
| | | | |

3. PHOTO NUMBERS (Clarification of details)

76 GSAASY 182-188 (Cronapague Ratios)

4. LANDMARKS AND AIDS TO NAVIGATION IDENTIFIED

None

| PHOTO NUMBER | OBJECT NAME | PHOTO NUMBER | OBJECT NAME |
|--------------|-------------|--------------|-------------|
| | | | |

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

7. SUPPLEMENTAL MAPS AND PLANS

None

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

 1 Field Edit Report
 1 Field Edit Film Print

RECORD OF SURVEY USE

I. MANUSCRIPT COPIES

| COMPILATION STAGES | | | DATE MANUSCRIPT FORWARDED | |
|---|-----------|----------------------|---------------------------|---------------|
| DATA COMPILED | DATE | REMARKS | MARINE CHARTS | HYDRO SUPPORT |
| Compilation complete pending field edit. | Mar. 1979 | Class III Manuscript | Apr. 1979 | Apr. 1979 |
| Compilation Complete pending final review. | Nov. 1981 | Class I Manuscript | None | Feb. 1982 |
| Final Review | Jan. 1986 | Final Map | mar 1986 | mar 1986 |
| | | | | |

II. LANDMARKS AND AIDS TO NAVIGATION

1. REPORTS TO MARINE CHART DIVISION, NAUTICAL DATA BRANCH

| NUMBER | CHART LETTER NUMBER ASSIGNED | DATE FORWARDED | REMARKS |
|--------|---------------------------------|-------------------|---------|
| | | | None |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

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

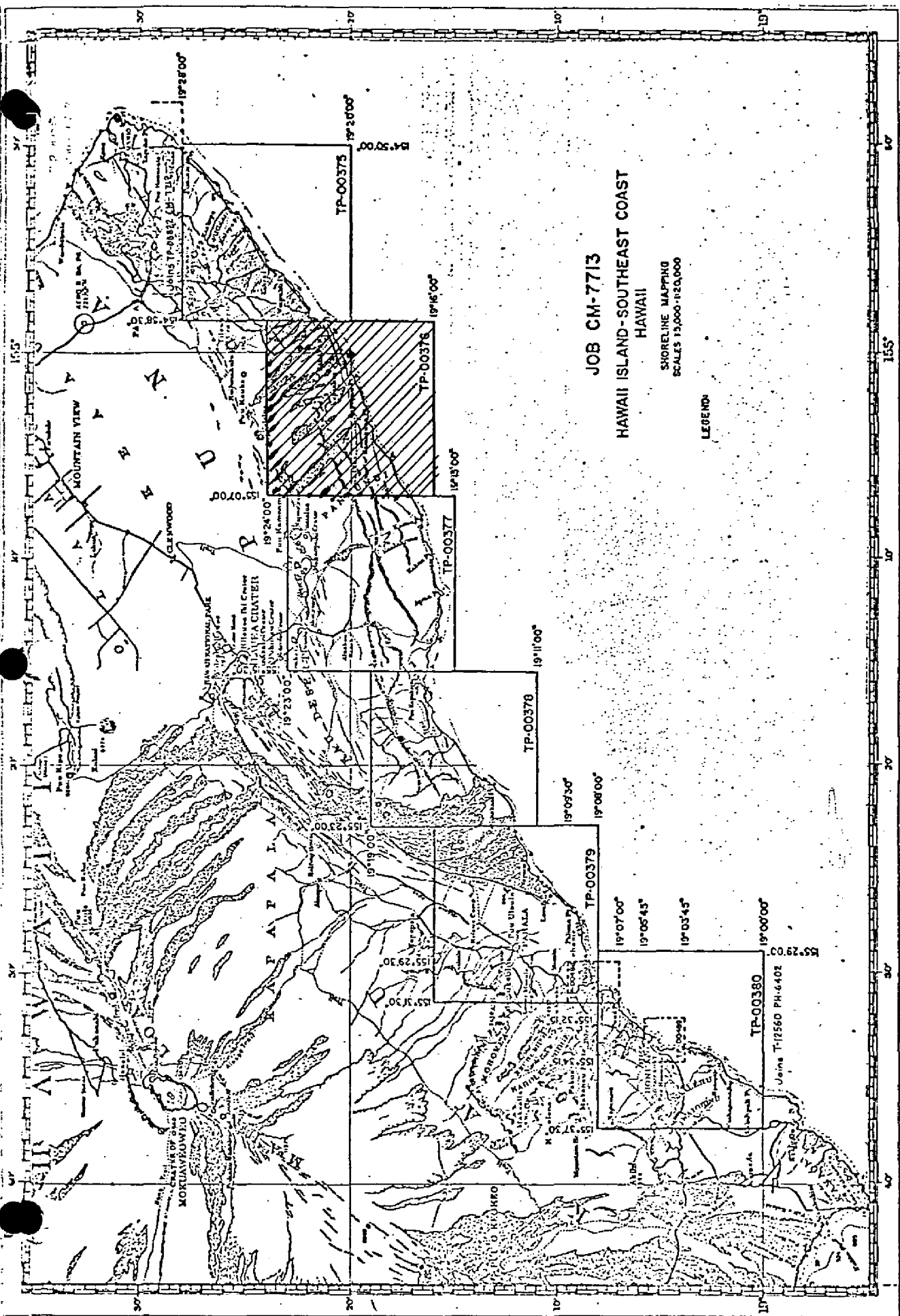
III. FEDERAL RECORDS CENTER DATA

1. ☒ BRIDGING PHOTOGRAPHS; ☒ DUPLICATE BRIDGING REPORT; ☒ COMPUTER READOUTS.
2. ☒ CONTROL STATION IDENTIFICATION CARDS; ☐ FORM NOS 567 SUBMITTED BY FIELD PARTIES.
3. ☒ SOURCE DATA (except for Geographic Names Report) AS LISTED IN SECTION II, NOAA FORM 76-36C.
ACCOUNT FOR EXCEPTIONS:

4. ☐ DATA TO FEDERAL RECORDS CENTER. DATE FORWARDED: _____

IV. SURVEY EDITIONS (This section shall be completed each time a new map edition is registered)

| | | | |
|-------------------|---------------------------------|--------------------------|---|
| SECOND EDITION | SURVEY NUMBER TP - _____ (2) | JOB NUMBER PH - _____ | TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL |
| | DATE OF PHOTOGRAPHY | DATE OF FIELD EDIT | |
| THIRD EDITION | SURVEY NUMBER TP - _____ (3) | JOB NUMBER PH - _____ | TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL |
| | DATE OF PHOTOGRAPHY | DATE OF FIELD EDIT | |
| FOURTH EDITION | SURVEY NUMBER TP - _____ (4) | JOB NUMBER PH - _____ | TYPE OF SURVEY <input type="checkbox"/> REVISED <input type="checkbox"/> RESURVEY MAP CLASS <input type="checkbox"/> II. <input type="checkbox"/> III. <input type="checkbox"/> IV. <input type="checkbox"/> V. <input type="checkbox"/> FINAL |
| | DATE OF PHOTOGRAPHY | DATE OF FIELD EDIT | |



JOB CM-7713
HAWAII ISLAND - SOUTHEAST COAST
HAWAII

SHORELINE MAPPING
SCALE 1:250,000

LEGEND

TP-00380
Joining T-12560 PH-4402
CO. 62, 63, 64

TP-00377
19°24'00"
19°23'00"
19°22'00"
19°21'00"
19°20'00"
19°19'00"
19°18'00"
19°17'00"
19°16'00"
19°15'00"

TP-00378
19°09'30"
19°08'00"

TP-00379
19°07'00"
19°05'45"
19°03'45"
19°00'00"

TP-00376
19°28'00"
19°27'00"
19°26'00"
19°25'00"
19°24'00"
19°23'00"
19°22'00"
19°21'00"
19°20'00"
19°19'00"
19°18'00"
19°17'00"
19°16'00"
19°15'00"

6

SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT

TP-00376

This 1:20,000 scale final shoreline map is one of eight maps that comprise project CM-7713, Hawaii Island, Southeast Coast, Hawaii. The eight maps are assigned as TP-00375 through TP-00380 at 1:20,000 scale and TP-00488 and TP-00489 at 1:5,000 scale.

The purpose of this map was to furnish data in support of hydrographic operations and to provide current shoreline data for marine charts.

This map portrays a portion of shoreline along the southeastern coast of Hawaii Island from Lat. $19^{\circ}16.0'$ to Lat. $19^{\circ}24.0'$.

Photo coverage for the project was adequately provided with panchromatic photography flown by a private contractor, American Aerial Survey, Inc., with the Zeiss RMKA 15/23 camera. Aerotriangulation/ compilation photographs at 1:50,000 and 1:30,000 scales and supplemental compilation/photo-hydro support photographs at 1:30,000 and 1:15,000 scales were taken at various times from December 1976 to March 1977.

Field work prior to compilation consisted of the recovery, establishment, and photoidentification of horizontal control necessary for aerotriangulation. This activity was completed February 1978.

Analytic aerotriangulation was provided by the Washington Science Center in May 1978. This activity included ruling the base manuscripts and providing ratio photographs for compilation. In addition to this project, control was established in order to complete the compilation of three maps for adjoining project PH-6402. During the compilation process of CM-7713, modifications to the original control were made by the aerotriangulation section and subsequent control accompanied with an Addendum to the Photo Plot Report were provided in November 1978.

Compilation by office interpretation of the mapping photographs was performed at the Coastal Mapping Section, Atlantic Marine Center in March 1979. Copies of the Class III manuscript and hydrographic support data were forwarded to the hydrographer for field edit. A copy of the Class III manuscript was also submitted to the Marine Charts Section.

Field edit for this map was performed in conjunction with hydrographic survey H-9917 by NOAA Ship RAINIER personnel in October 1980.

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

6A
TP-00376

Final review was performed at the Atlantic Marine Center in January 1986. A final Chart Maintenance Print and Notes to Hydrographer Print were prepared and forwarded to Photogrammetry Headquarters for distribution.

The Descriptive Report for this final field edited map contains all pertinent information used to produce this map. The original base manuscript and related data were forwarded to the Washington Science Center for final registration.

FIELD INSPECTION

TP-00376

There was no field inspection prior to compilation. Field work accomplished was limited to the recovery and photoidentification of the horizontal control necessary for the aerotriangulation of the project.

FIELD OPERATIONS REPORT

Projects CM-7712 & CM-7713

North and Southeast Coast, Island of Hawaii, Hawaii

January - February 1978

Area:

The two adjoining projects covers the southeast and northeast coast of the Island of Hawaii. The southernmost portion of the area is virtually a desert with little rainfall. The northeast coast is subjected to considerable rainfall and sugar cane fields are commonplace.

Except for a couple of small, isolated beaches, the shoreline is steep and rocky, where the lava flows reached the ocean.

Photography:

Panchromatic aerial photography was furnished the field unit for the photo-identification of the required horizontal control stations, necessary for the aerotriangulation. The photography was considered adequate for the field identification.

Horizontal Control:

All of the stations were reached by vehicle or short distance back packing

Several sun azimuths were observed to determine the azimuth to substitute stations. Greenwich Mean Time was observed and recorded with short wave radio signals from WWVH and a digital watch. Time and observed zenith distances were recorded to permit either the time/azimuth or time/altitude method of computation.

Station HILINA USGS 1961 was photo-identified and a sun azimuth was observed. B.M. 139YY USGS was used as an intermediate azimuth point, in conjunction with the sun azimuth. The B.M. did not have a previous azimuth or position. The U.S.G.S. published data lists R.M.I. as $46^{\circ}00'26''$. A telephone conversation with the U.S.G.S. in Menlo Park, California confirmed the number 4 and 6 were transposed and the azimuth should read $64^{\circ}00'26''$. The reference mark was used as a check angle.

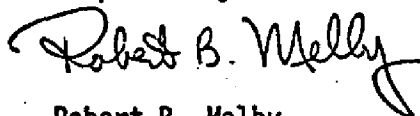
Station PUU ULAULA was photo-identified using a sun azimuth and a stack. the stack is station PAHALA, KAU SUGAR CO STACK, 1977. An N.G.S. Geodetic Field Party was working in the area and a position of the stack should be available from Geodesy in the near future. However, the sun azimuth can be used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

Page 2

The field-photo data was submitted to the Rockville office before this report was written to permit the aerotriangulation of the flightlines at the earliest date.

Two non-floating aids to navigation and one landmark for charts were located by triangulation/traverse methods. They have been entered and submitted on form 76-40 to C-3415.

Respectfully Submitted,

A handwritten signature in dark ink, appearing to read "Robert B. Melby". The signature is fluid and cursive, with a large initial "R" and a long, sweeping underline.

Robert B. Melby
Chief, PMC Photo Party
CPM 133

8

PHOTOGRAMMETRIC PLOT REPORT
HAWAII ISLAND-SOUTHEAST COAST
CM-7713

May 10, 1978

Area Covered

This project covers most of the southeast coast of Hawaii Island, Hawaii. The following T-sheets are involved:

TP-00375 thru TP-00380 (1:20,000)
TP-00488 and TP-00489 (1:5,000)

In addition to the above T-sheets, T-12559 thru T-12561 at 1:10,000 scale from PH-6402 are also covered.

Method

Two strips of 1:50,000 (strips 1 and 2) and one strip of 1:30,000 (strip 4) panchromatic photography were bridged by analytic aerotriangulation methods.

Strip 4 was bridged solely to provide compilation points for 1:15,000 compilation photography covering TP-00488 and TP-00489.

Ties were made with strip 2 of CM-7712 on the north coast and strip 12 of PH-6402 located near the southern end of the island.

Ratio points for the offshore 1:30,000 scale strips 11 thru 18 were read on the 1:50,000 strips.

Strip 12, 1:30,000, of PH-6402 which would not adjust satisfactorily in 1969 for unknown reasons was rebridged using old horizontal control along with 1977 identified horizontal control and ties from the 1:50,000 strip 2 of the CM-7713 project.

Strips 2 and 4 of CM-7713 and strip 12 of PH-6402 adjusted satisfactorily. The 1964 subpoint for KAMILO (HTS) 1898 is believed to be in error and was disregarded.

Strip 1 of CM-7713 could not be adjusted to meet bridging accuracy standards for all stations. A problem is suspected with PULAMA 1914 but could not be resolved. The final adjustment to this strip was made letting PULAMA 1914 float and disregarding the error in y of about -25 feet at this station.

Ratio points for an offshore 1:15,000 color strip were read on Strip 12. (PH-6402)

8A

T-sheets TP-00375 through TP-00380, TP-00488, TP-00489, and T-12559 through T-12561 were plotted and sent to AMC at Norfolk, Virginia.

Adequacy of Control

With the exception of a horizontal control problem in strip 1 the horizontal control was adequate.

Vertical control was obtained from shoreline points and USGS quadrangle elevations and was satisfactory.

Photography

The quality and location of the photography was satisfactory.

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

Submitted by:

Robert E. Fisher

Robert E. Fisher

Approved and Forwarded:

Don O. Norman

Don O. Norman
Acting Chief
Aerotriangulation Section

HORIZONTAL CONTROL FOR CM-7713

- 1 KALAE LIGHT 1948
- 1A KALAE 2, 1948
- 1B KALAE 1887
- 2 PALAHEMO 1898
- 3 MAHANA 1898
- 4 KAMILO (HTS) 1898
- 5 STEIN 2 (HTS) 1949
- 6 LUU 1930
- 7 PUU ULAULA 1914
- 8 HILINA USGS 1961
- 9 PULAMA 1914
- 10 KALIU 1949
- 11 CAPE KUMUKAHI LIGHTHOUSE 1949

00

HORIZONTAL FIT TO CONTROL (FEET)

STRIP #1 (1:50,000)

| | | |
|-----|--|-----------------------------------|
| 6. | LUU 1930 SUB PT. | (1.90, 0.26) (1.45, -1.00) |
| 7. | PUU ULAULA 1914 | (-3.55, -0.98) |
| 8. | HILINA USGS 1961 SUB PT. A SUB PT. B | (5.34, -1.60) (1.67, 1.16) |
| 9. | PULAMA 1914 SUB PT. A SUB PT. B | (4.59, -23.68) (11.88, -28.72) |
| 10. | KALIU 1949 SUB PT. | (-2.05, -8.61) (0.03, -2.17) |

STRIP #2 (1:50,000)

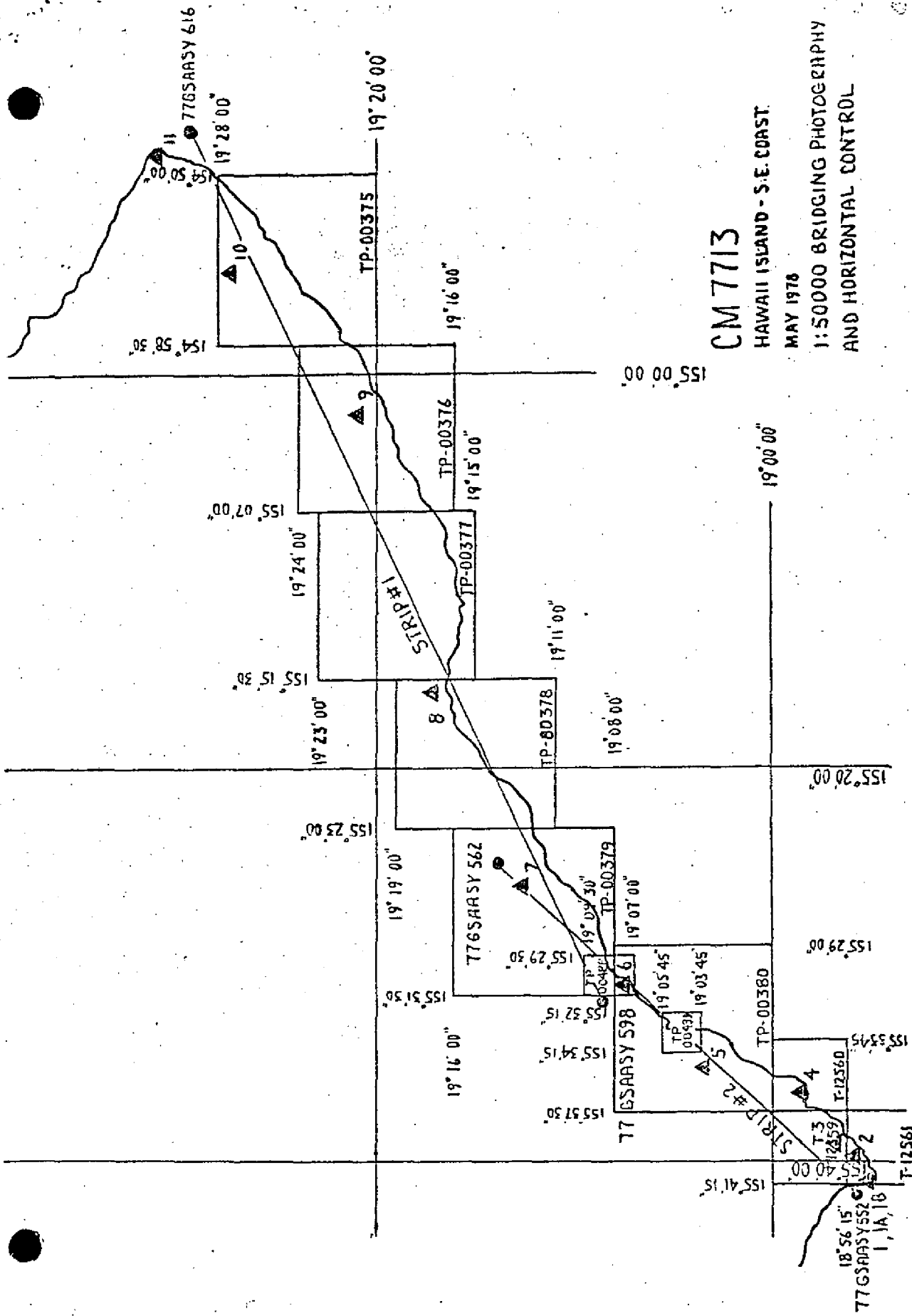
| | | |
|----|---|---------------------------------|
| 1A | KALAE 2, 1948 SUB PT. A SUB PT. B | (-0.96, 0.23) (1.19, 0.95) |
| 4. | KAMILO (HTS) 1898 SUB PT. | (2.06, 0.58) (0.33, -0.11) |
| 5. | STEIN 2 (HTS) 1949 SUB PT. | (-1.26, -1.59) (2.42, 1.99) |
| 6. | LUU 1930 SUB PT. | (-0.07, 1.16) (-0.24,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

STRIP #4 (1:30,000)

| | | |
|----|-------------------------------|--------------------------------|
| 5. | STEIN 2 (HTS) 1949 SUB PT. | (-0.01, -0.04) (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) |

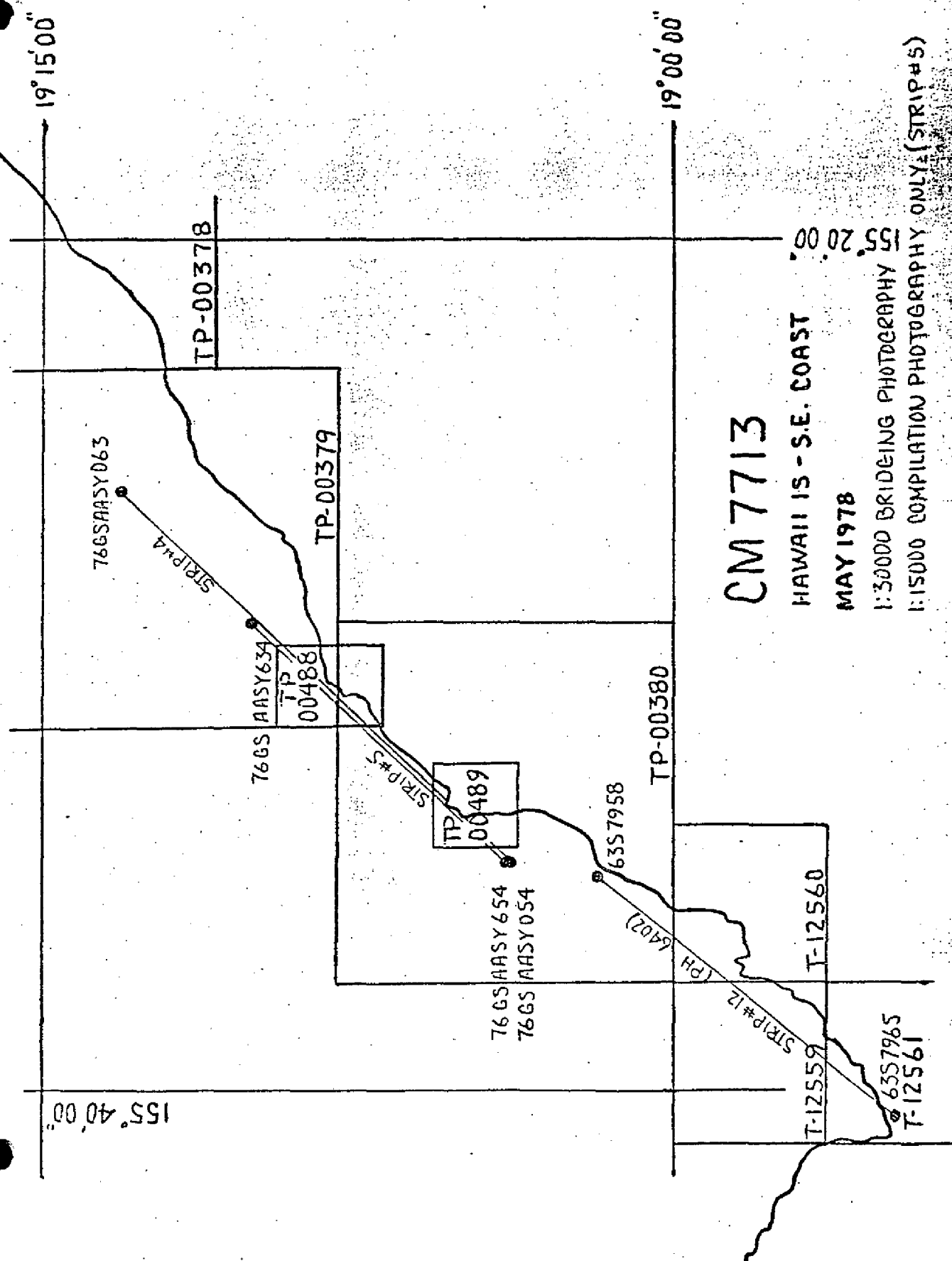


CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1978

1:50000 BRIDGING PHOTOGRAPHY
AND HORIZONTAL CONTROL



CM 7713

HAWAII IS - S.E. COAST

MAY 1978

1:30000 BRIDGING PHOTOGRAPHY

1:15000 COMPILATION PHOTOGRAPHY ONLY (STRIP#5)

19° 20' 00"

19° 00' 00"

19° 15' 00"

155° 40' 00"

TP-00378

TP-00379

TP-00380

T-12559

T-12560

T-12561

76GS AASY 063

76GS AASY 634

TP 00488

76GS AASY 654

76GS AASY 054

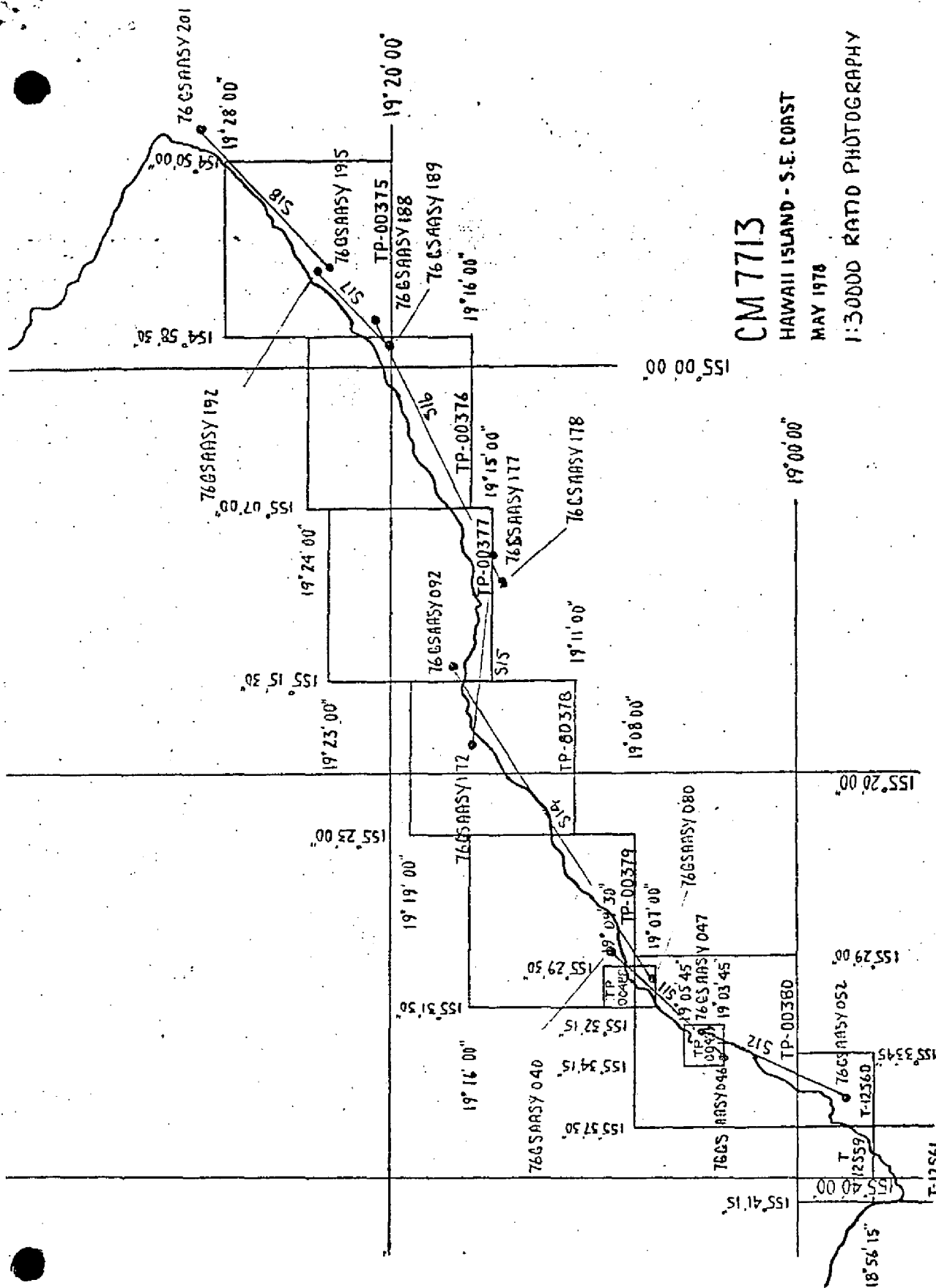
63S7958

(202)

PH 6402

TP 00489

63S7965



CM 7713

HAWAII ISLAND - S.E. COAST

MAY 1978

1:30000 RADIAL PHOTOGRAPHY

Addendum
Photogrammetric Plot Report
Hawaii Island - SE Coast
CM-7713
November 28, 1978

The intersection station, Honuapo, Hutchinson Sugar Co., Mill Stack, 1967 would not fit the control points used for strip adjustment. This stack lies between Stein 2 (HTS), 1949 and LUU, 1930. Both Stein 2 and LUU are identified direct.

In Strip 4 (1:30,000 scale) the stack is a poor image. When the three control points for the strip are held, the stack is out about 10 feet in X and 16 feet in Y. However, the quality of a strip adjustment with only three control points can not always be evaluated.

In Strip 2 (1:50,000 scale) the image of the stack is also questionable, but its approximate position can be measured. In this strip, there are five field identified control points to adjust the strip and the adjustment with these five points is good. The stack is out 3 x 12 feet in this strip. (I believe the discrepancy between the two strips is due chiefly to the image quality of the stack).

The written description of the stack appears to agree with the image on the 1:15,000 scale photography. The image is good on this photography. The stack was cut in from three stations by Geodesy. No other information appears to be available.

On the basis of the adjustment of Strip 2 with the five control stations, I can only surmise that the discrepancy is with the position on the stack and that the strips covering this area and the control used to adjust these strips are adequate.

Don O. Norman

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COMPILATION REPORT

CM-7713

TP-00376

31 - DELINEATION

Delineation was by instrument methods using the Wild B-8 stereoplotter and 1:50,000 scale photography. Points common to the 1:30,000 scale photographs were selected on the ratio photographs in order to assist in graphic compilation of the mean high water line. Photo coverage and quality were adequate.

32 - CONTROL

See the Photogrammetric Plot Report dated May 10, 1978.

33 - SUPPLEMENTAL DATA

None.

34 - CONTOURS AND DRAINAGE

Contours are not applicable to the project. Drainage was by the Wild B-8 stereoplotter and by office stereoscopic interpretation of the ratioed photographs.

35 - SHORELINE AND ALONGSHORE DETAIL

Alongshore details were delineated by the Wild B-8 stereoplotter and by office inspection of the ratioed photographs.

The mean high water line was office edited and refined from the ratioed photographs.

36 - OFFSHORE DETAILS

There were no significant offshore details.

37 - LANDMARKS AND AIDS

There were no charted landmarks or aids within the mapping area of this manuscript.

38 - CONTROL FOR FUTURE SURVEYS

None.

39 - JUNCTIONS

See the Form 76-36B, item 5 of the Descriptive Report concerning junctions.

TP-00376

40 - HORIZONTAL AND VERTICAL ACCURACY

Refer to the Photogrammetric Plot Report dated May 10, 1978.

46 - COMPARISON WITH EXISTING MAPS

A comparison was made with the U.S. Geological Survey Quadrangle: Kalapana, HA, 1:24,000 scale, dated 1966.

47 - COMPARISON WITH NAUTICAL CHARTS

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

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Submitted by:

Gary L. Hancock
for Langley Williams
Cartographic Technician
March 13, 1979

Approved:

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

ADDENDUM TO THE COMPILATION REPORT
CM-7713
TP-00376

FIELD EDIT

Horizontal control stations LAEAPUKI 1914, KUPAPAU 1914, and HAKUMA 1914 were not used in aerotriangulation but were plotted during compilation and retained on the manuscript because the field editor recovered them. PULAMA 1914 was the only station used during aerotriangulation; however, since its position floated approximately 25 feet in the Y-direction, it was removed. Refer to the Photogrammetric Plot Report. LAEAPUKI 1914 was misspelled on the recovery card that was submitted and this misspelling was carried to the list of Geographic Positions (Form 28D). Stations KAMOA 1980, WAHALUA 1980, and PANA 1980 were not plotted, but were listed on the 76-41.

The field editor was unable to investigate all ledge and foul areas due to the surf and swell conditions, which are characteristic of the entire shoreline. He recommends the areas that he was able to classify be delineated as such; however, since these are few and small, exist inside the breaker line, and he states that "the prudent mariner would never venture beyond the breaker limit", we decided not to show them on the manuscript. Also, since no MLLW line was compiled (the ratios were taken at 1.3 ft. above MLLW), sporadic use of the ledge symbol would not be appropriate. The outer extent of areas of ledge and foul-with-rocks were shown with a rock awash symbol if height data was submitted and if it was deemed significant.

A revision to the MHW line was provided by the field editor on photograph 76 GSAASY 187. It appears as if the changes were made monoscopically, but coupled with the annotations on the field edit ozalid, there was sufficient data submitted to accurately depict the area.

No bluff was delineated because none of it is of landmark value since it is a characteristic feature of the entire shoreline.

Submitted by:

Gerry L. Hancock

for

David P. Butler
Cartographic Technician
Date: Nov. 1981

June 22, 1978

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Geographic Names

Final Name Sheet

CM-7713(Island of Hawaii-Southeast Coast)

TP-00376

Hakuma Point

Ka Lae Apuki

Kalapana

Kamoamo

Kamokuna

Kapaahu

Kekaloa Heiau

Kii

Kupapau Point

Laeapuki

Pacific Ocean

Puu Manawealea

Queens Bath

Wahaula Heiau

Waiaka Pond

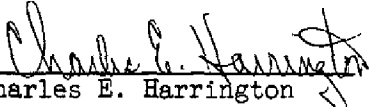
Waiakolea Pond

Waikupanaha Pond

Wilipea

Punahaha *gkH*

Approved by


Charles E. Harrington

Chief Geographer-C3X8

FIELD EDIT REPORT

OPR-T126-RA-80
CM-7713
TP-00376

Hawaii Island
Southeast Coast Hawaii

10 October 80 - 31 October 80

METHOD

Field edit operations on TP-00376 began on October 10, 1980 (JD 284) and ended on October 31, 1980 (JD 305). Greenwich Mean Time (GMT), also known as Zulu Time (Z), was used to reference shoreline features. Shoreline features can be crossed referenced by comparing the time when observed between the field discrepancy print, the photographs and the master film field edit ozalid. Notes on the master film field were made with violet meaning verification or addition of features and green meaning the deletion of the feature.

All field edit was performed on shore by foot. The procedure used for the addition of rocks and other features was to first circle and label it on the matte ratio, also noting it on the field discrepancy print at the same time. The feature was then photo-pricked on the chronopaque photograph and labeled. Later it was transferred to the master film field edit ozalid.

The black and white photos 182-187, master film field edit ozalid and the discrepancy print were used to record and present the data.

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

ADEQUACY AND COMPLETENESS

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

GEOGRAPHIC NAMES

There was no investigations of geographic names.

MANUSCRIPT ACCURACY

Direct visual comparison of shoreline features with the discrepancy print and photos was the method of determining accuracy. Agreement was excellent except were noted.

RECOMMENDATIONS AND MISCELLANEOUS COMMENTS

A note from the compiler to the field editor stated: "The entire shoreline is enclosed by a dashed line indicating an area foul with rocks and ledge. The heavy surf at the shoreline is indicative of the nature of the shoreline. The compilation officer could do little to define this area."

The field editor also had a difficult time verifying or disproving the "foul with rocks and submerged ledge" limits. It was virtually impossible to disprove the dashed "foul with submerged ledges" limit line enclosing the shoreline. The surf, swell and distance from shore

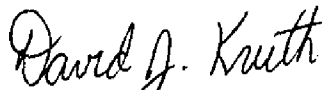
made it impossible to see if submerged ledges really existed. The survey launches approached as close as safety from the surf allowed from the offshore side of these foul limits in order to better define them. It would have to be a perfectly calm day (very rare for this coastline), for a boat to even have a chance to enter this dashed "foul with rocks and submerged ledge" line enclosing the shoreline without being tossed against the cliffs by a wave. A prudent mariner would probably never go closer than these foul limits.

The field editor has shown on the master film field edit ozalid areas where it was positively determined to be "foul with rocks and submerged ledges". In some areas this foul limit was moved even farther offshore for safety.

It is recommended that present "foul with rocks and submerged ledges" limits with changes shown on the master film field edit ozalid be changed to "foul with breakers" and areas positively identified as "foul with rocks and submerged ledges" by the field editor be mapped as such. This would eliminate the possibility of an area positively identified as "foul with rocks" to be also enclosed by the offshore "foul with rocks and submerged ledge" limits. It would also give the most accurate and safest description of the shoreline.

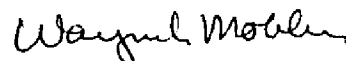
This corrected manuscript should supercede all previous shoreline compilations.

Respectfully submitted



David J. Kruth
LTJG, NOAA

Approved and Forwarded



Wayne L. Mobley
Captain, NOAA
Commanding

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REVIEW REPORT
TP-00376

SHORELINE

61 - GENERAL STATEMENT

Final review for this final field edited map was accomplished at the Atlantic Marine Center in January 1986. For a schedule of the office and field operations, refer to the Summary included with this Descriptive Report.

62 - COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

Not applicable.

63 - COMPARISON WITH MAPS OF OTHER AGENCIES

A comparison was made with USGS quadrangle: Kalapana, Hawaii, dated 1966, 1:24,000 scale.

64 - COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Hydrographic survey H-9917 is common to this final shoreline map; however, a comparison was not made since H-9917 was unregistered when a copy was requested in August 1985.

65 - COMPARISON WITH NAUTICAL CHARTS

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

66 - ADEQUACY OF RESULTS AND FUTURE SURVEYS

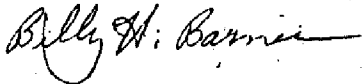
This map complies with the Project Instructions, and meets the requirements for National Standards of Map Accuracy.

TP-00376

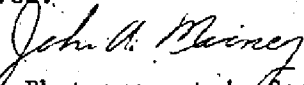
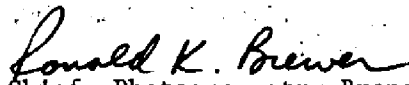
Submitted by:

Jerry L. Hancock
Final Reviewer

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