**Descriptive Report**

**Type of Survey**: Shoreline (Photogrammetric)

**Field No.**: Ph-6012  
**Office No.**: T-11990

**Locality**

State: **Hawaii**  
General locality: **Maui Island**  
Locality: **Puukiki**

**1960-63**

**Chief of Party**: H.J. Seaborg, Honolulu District Off.  

**Library & Archives**

**Date**: 1967
DESCRIPTIVE REPORT - DATA RECORD
T-11990

PROJECT NO. (III):

PH 6012

FIELD OFFICE (III):
Honolulu, Hawaii

CHIEF OF PARTY
H. J. Seaborg

PHOTOGRAHMATIC OFFICE (III):
Baltimore, Maryland

OFFICER-IN-CHARGE
W. E. Randall

INSTRUCTIONS DATED (III) (III):

14 November 1960
28 November 1960
13 June 1961
16 January 1962

METHOD OF COMPILATION (III):

Kelsh Plotter

MANUSCRIPT SCALE (III):
1:5,000

STEREOSCOPIC PLOTTING INSTRUMENT SCALE (III):
1:5,000

DATE RECEIVED IN WASHINGTON OFFICE (IV):

DATE REPORTED TO NAUTICAL CHART BRANCH (IV):

APPLIED TO CHART NO.

DATE:

DATE REGISTERED (IV):

GEOGRAPHIC DATUM (III):

Old Hawaiian

VERTICAL DATUM (III): MSL
MEAN SEA LEVEL EXCEPT AS FOLLOWS:
Elevations shown as (25) refer to mean high water
Elevations shown as (5) refer to sounding datum
i.e., mean low water or mean lower low water

REFERENCE STATION (III):

MAKAALAE, 1950

LAT.: 20° 12' 42.548"

LONG.: 155° 59' 30.868"

ADJUSTED

UNADJUSTED

PLANE COORDINATES (IV):

137,943.79

X = 730,605.51

STATE
Hawaii

ZONE
2

ROMAN NUMERALS INDICATE WHETHER THE ITEM IS TO BE ENTERED BY (II) FIELD PARTY, (III) PHOTOGRAHMATIC OFFICE,
OR (IV) WASHINGTON OFFICE.
WHEN ENTERING NAMES OF PERSONNEL ON THIS RECORD GIVE THE SURNAME AND INITIALS, NOT INITIALS ONLY.
# DESCRIPTIVE REPORT - DATA RECORD

**FIELD INSPECTION BY (III):**

John C. Lajoye  
**DATE:**  
Feb. 1962

**MEAN HIGH WATER LOCATION (III) (STATE DATE AND METHOD OF LOCATION):**

Mean high water located by Kelsh Plotter from photography of October 1960 supplemented by panchromatic and color photography of 1962.

**PROJECTION AND GRIDS RULED BY (IV):**

S.R.  
**DATE:**  
3-19-62

**PROJECTION AND GRIDS CHECKED BY (IV):**

S.R.  
**DATE:**  
3-19-62

**CONTROL PLOTTED BY (III):**

L. A. Senasack  
**DATE:**  
3-11-62

**CONTROL CHECKED BY (III):**

L. O. Neterer  
**DATE:**  
3-11-62

**RADIAL PLOT OR STEREOSCOPIC CONTROL EXTENSION BY (III):**

Aerotriangulation - Washington Office  
**DATE:**  
Feb. 1962

**STEREOSCOPIC INSTRUMENT COMPILATION (III):**

**PLANIMETRY:**

J. D. McEvoy  
**DATE:**  
3-62

J. D. McEvoy  
**CONTOURS:**  
Inapplicable  
**DATE:**

**MANUSCRIPT DELINEATED BY (III):**

J. D. McEvoy  
**DATE:**  
3-62

**SCRIBING BY (III):**

**DATE:**

**PHOTOGRAHAMMETRIC OFFICE REVIEW BY (III):**

D. M. Brant  
**DATE:**  
3-62

**REMARKS:**

*Field Edit - 1963*
### Photographs (III)

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>DATE</th>
<th>TIME</th>
<th>SCALE</th>
<th>STAGE OF TIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 W 2379</td>
<td>5 Oct. 1960</td>
<td>1023</td>
<td>1:25,000</td>
<td>0.5 Ft. above MLLW</td>
</tr>
<tr>
<td>62 W 2249 thru 2254</td>
<td>26 Jan. 1962</td>
<td>0925</td>
<td>1:15,000</td>
<td>1.1 Ft.</td>
</tr>
<tr>
<td>62 W(C) 2289 thru 2291</td>
<td>26 Jan. 1962</td>
<td>0950</td>
<td>1:10,000</td>
<td>1.0 Ft.</td>
</tr>
<tr>
<td>62 W(C) 2267 thru 2271</td>
<td>26 Jan. 1962</td>
<td>0942</td>
<td>1:10,000</td>
<td>1.0 Ft.</td>
</tr>
</tbody>
</table>

### Tide (III)

- **Diurnal**

<table>
<thead>
<tr>
<th>REFERENCE STATION:</th>
<th>Honolulu, Hawaii</th>
<th>RATIO OF RANGES</th>
<th>MEAN RANGE</th>
<th>SPRING RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBORDINATE STATION:</td>
<td>Hana, Hawaii</td>
<td>1.2</td>
<td>1.9</td>
<td></td>
</tr>
</tbody>
</table>

**Final Washington Office Review by:** Leo F. Beugnet, Norfolk Regional Office  
**DATE:** Nov. 1965

**Proof Edit by:**  
**DATE:** Dec. 1965

**Number of Triangulation Stations Searched for (III):** 4  
**Recovered:** 4  
**Identified:** 3

**Number of BM's Searched for (II):** 0  
**Recovered:** 0  
**Identified:** 0

**Number of Recoverable Photo Stations Established (III):** 0

**Number of Temporary Photo Hydro Stations Established (III):** 5

**Remarks:**
<table>
<thead>
<tr>
<th>Compilation Record</th>
<th>Completion Date</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alongshore area for hydro</td>
<td>June 1962</td>
<td>superseded</td>
</tr>
<tr>
<td>Final Compilation</td>
<td>March 1964</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SUMMARY TO ACCOMPANY
DESCRIPTIVE REPORT T-11990

Shoreline manuscript T-11990 is one of forty-nine similar maps in this project and covers a part of the coastline of Maui Island. This was a Kelsh project in advance of hydrographic surveys in the area. The field operations preceding compilation included recovery and identification of horizontal control and field inspection. The Kelsh compilation was at 1:5,000 from 1:25,000 scale photography obtained in October 1960. A cronaflex positive showing shoreline, alongshore detail and shoreline pass points was furnished for preparation of the hydrographer's boat sheet and the location of hydrographic signals. 1:5,000 scale ratio prints were furnished for hydro support and field edit purposes. The compilation manuscript is a vinylite sheet 1 minute 50 seconds in latitude by 2 minutes 50 seconds in longitude from which the smooth sheet was drafted and reproduced on cronaflex. One cronar positive and one cronar negative are provided for record and registry.
FIELD INSPECTION REPORT
T-11990

Please refer to the Field Inspection Report for Maui Island, Hawaii bound with the Descriptive Report for T-11991.
<table>
<thead>
<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>LATITUDE OR X-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS</th>
<th>N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>FORWARD               (BACK)</td>
<td>FORWARD               (BACK)</td>
</tr>
<tr>
<td>KOA, 1950</td>
<td>P.C. Zone 2 p. 16</td>
<td>717.133.45</td>
<td>133,830.19</td>
<td></td>
</tr>
<tr>
<td>MAKALIHIHANAU, (HOS)</td>
<td></td>
<td>720.272.03</td>
<td>130,939.71</td>
<td></td>
</tr>
<tr>
<td>(HTS, 1950) 1878</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makaalae, 1950</td>
<td></td>
<td>730.605.51</td>
<td>137,943.79</td>
<td></td>
</tr>
<tr>
<td>Makahahana 2, 1950</td>
<td></td>
<td>720.307.77</td>
<td>136,135.58</td>
<td></td>
</tr>
<tr>
<td>Pohue, 1950</td>
<td></td>
<td>727.256.17</td>
<td>133,088.84</td>
<td></td>
</tr>
<tr>
<td>Puuiki (HGS), 1878</td>
<td></td>
<td>727.581.31</td>
<td>135,459.62</td>
<td></td>
</tr>
<tr>
<td>Muolea, 1950</td>
<td></td>
<td>724.051.20</td>
<td>129,792.64</td>
<td></td>
</tr>
<tr>
<td>Puuiki, Catholic Church Spire, 1950</td>
<td>p. 20</td>
<td>727.352.16</td>
<td>135,564.52</td>
<td></td>
</tr>
</tbody>
</table>
For additional data pertaining to this survey please refer to the Field Inspection Report for Maui Island bound with T-11991 and the Photogrammetric Plot Report bound with T-11997.

ITEMS 31 THRU 36

Refer to the Compilation Report for T-11896.

37. LANDMARKS AND AIDS

There are no fixed aids to navigation within the compilation limits. Landmarks have been reported on form 567.

38. CONTROL FOR FUTURE SURVEYS

No control for future surveys was established.

39. JUNCTIONS

Satisfactory junctions were made with T-11989 on the north and with T-11939 on the south. There is no contemporary survey on the west; the Pacific Ocean is on the east.

40. COMPARISON WITH EXISTING MAPS

Comparison was made with U.S.G.S. Hana and Kipahulu quadrangles, scales 1:24,000, editions of 1957.

41. COMPARISON WITH NAUTICAL CHARTS

Comparison was made with nautical chart H116, 1:250,000 scale, 12th edition, August 17, 1964.
ITEMS TO BE APPLIED TO CHARTS IMMEDIATELY

None

ITEMS TO BE CARRIED FORWARD

None

Respectfully submitted:

Joseph Steinberg

For:
Donald M. Brant
Carto. (Photo.)

Approved:

J. Bull
Capt. C&GS
Norfolk Regional Officer
48. Geographic Names List:

The Geographic names listed below were furnished by the Washington Office on U.S.G.S. Hana and Kipahulu, Hawaii 7½ minute quadrangles, 1:24,000 scale, editions of 1957.

Alaalaula Gulch
Kaou
Kakio
Kapia Stream
Keawa Bay
Koali
Kulepeamo Point
Laupapa Rock
Makaalae Point
Moku Pala
Muolea
Oahu Point
Pacific Ocean
Papaahawhawa Gulch
Popokanalaoa Harbor
Puuki
Pukuilua Gulch
Waiohonu Stream

ALL NAMES APPROVED BY GEOGRAPHIC NAMES SECTION UNLESS GUESSING MARKED.

A. J. Wright
49. **NOTES FOR THE HYDROGRAPHER**

A set of ratio photographs (taken in 1962) has been prepared for use during photo-hydro support.

Color photography was used as an aid in interpreting offshore details and foul lines.

The positions of the following hydrographic signal sites, identified on field inspection photographs, have been established photogrammetrically for the following surveys:

<table>
<thead>
<tr>
<th>Signal No.</th>
<th>Description</th>
<th>Photo. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-11989</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8901</td>
<td>Rag on palm</td>
<td>2377</td>
</tr>
<tr>
<td>8902</td>
<td>Rag on lauhala tree</td>
<td>2377</td>
</tr>
<tr>
<td>8903</td>
<td>Rag on small kamane tree</td>
<td>2377</td>
</tr>
<tr>
<td>8904</td>
<td>Rag on bush, W. side of path</td>
<td>2377</td>
</tr>
<tr>
<td>8905</td>
<td>Rag on iron wood tree</td>
<td>2377</td>
</tr>
<tr>
<td>8906</td>
<td>Rag on lone lauhala tree</td>
<td>2377</td>
</tr>
<tr>
<td>T-11990</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9001</td>
<td>West gable, aluminum roof cottage</td>
<td>2378</td>
</tr>
<tr>
<td>9002</td>
<td>Flag, S. E. corner of rock pile</td>
<td>2378</td>
</tr>
<tr>
<td>9003</td>
<td>S. E. Corner GAY house</td>
<td>2378</td>
</tr>
<tr>
<td>9004</td>
<td>Center of round rock</td>
<td>2377</td>
</tr>
<tr>
<td>3904</td>
<td>West gable, small brown, green roof house</td>
<td>2380</td>
</tr>
</tbody>
</table>
**PHOTOGRAMMETRIC OFFICE REVIEW**

**T-11990**

<table>
<thead>
<tr>
<th>1. PROJECTION AND TYPE</th>
<th>2. TITLE</th>
<th>3. MANUSCRIPT NUMBER</th>
<th>4. MANUSCRIPT SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFB</td>
<td>LFB</td>
<td>LFB</td>
<td>LFB</td>
</tr>
</tbody>
</table>

5. HORIZONTAL CONTROL STATIONS OF THIRD-ORDER OR HIGHER ACCURACY: LFB

7. PHOTO HYDRO STATIONS: None

8. BENCH MARKS: None

9. PLATING OF SEXTANT FIXES: None

10. PHOTOGRAMMETRIC PLOT REPORT: LFB

11. DETAIL POINTS: LFB

12. SHORELINE: LFB

13. LOW WATER LINE: LFB

14. ROCKS, shoals, etc.: LFB

15. BRIDGES: None

16. AIDS TO NAVIGATION: None

17. LANDMARKS: None

18. OTHER ALONGSHORE PHYSICAL FEATURES: LFB

19. OTHER ALONGSHORE CULTURAL FEATURES: LFB

20. WATER FEATURES: LFB

21. NATURAL GROUND COVER: LFB

22. PLANETARY CONTOURS: None

23. STEREOSCOPIC INSTRUMENT CONTOURS: None

24. CONTOURS IN GENERAL: None

25. SPOT ELEVATIONS: None

26. OTHER PHYSICAL FEATURES: LFB

27. ROADS: LFB

28. BUILDINGS: LFB

29. RAILROADS: None

30. OTHER CULTURAL FEATURES: LFB

31. BOUNDARY LINES: None

32. PUBLIC Land LINES: None

33. GEOGRAPHIC NAMES: LFB

34. JUNCTIONS: LFB

35. LEGIBILITY OF THE MANUSCRIPT: LFB

36. DISCREPANCY OVERLAY: LFB

37. DESCRIPTIVE REPORT: LFB

38. FIELD NOTES ON PHOTOGRAPHS: LFB

39. FORMS: LFB

**SIGNATURE OF REVIEWER**

**Leif F. Rognseth**

**SIGNATURE OF SUPERVISOR**

**Joseph Steinberg**

**FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT**

Additions and corrections made by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted on reverse side.

**SIGNATURE OF PREPAGER**

**Leif F. Rognseth** For SDW Evoy.

**SIGNATURE OF SUPERVISOR**

**Joseph Steinberg**

**USE REVERSE SIDE FOR REMARKS**
FIELD EDIT REPORT
T-11990

There is no formal Field Edit Report.

Transmittal letters to W.O. were checked. No F.E. Sheet was forwarded.
61. GENERAL STATEMENT

See Summary accompanying Descriptive Report.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

A visual comparison was made with Registered Planetable surveys No. 3274, 1:20,000 scale dated March 30, 1914 and No 3275, 1:20,000 scale dated June 4, 1914.

Shoreline manuscript T-11990 supersedes these two planetable surveys and should be used for all nautical chart construction.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Comparison was made with U.S.G.S. Hana and Kipahulu quadrangles, 1:24,000 scale, editions of 1957.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

Comparison was made with copies of boat sheets H-8719 PF-10-2-63 sheet CC and H-8826-PF-10-7-63 sheet 3. The differences between the manuscript and boat sheets are shown on the comparison print.

65. COMPARISON WITH NAUTICAL CHARTS

Comparison was made with nautical chart 4116, 1:250,000 scale, August 17, 1964.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This survey complies with instructions and meets the National Standards of Map Accuracy.

* Note: A "Notes to Verify" page (copy, page 17 of this report) was submitted to the Hydro Branch, 8/4/65.
Reviewed by:

SALT BRIGANT

Approved by:

J. Bill, Director, Atlantic Marine Center

Approved by:

Chief, Cartographic Branch 543

Chief, Chart Division

Chief, Operations Division

Chief, Photogrammetry Division
I recommend that the following objects which have been inspected from seaward to determine their value as landmarks be charted on the charts indicated.

The positions given have been checked after listing by Leo F. Beugnet.

<table>
<thead>
<tr>
<th>CHARTING NAME</th>
<th>DESCRIPTION</th>
<th>SIGNAL NAME</th>
<th>LATITUDES</th>
<th>LONGITUDES</th>
<th>DATUM</th>
<th>METHOD OF LOCATION AND SURVEY NO.</th>
<th>DATE OF LOCATION</th>
<th>CHARTS AFFECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPIRE</td>
<td>(Puuiki, Catholic Church Spire, 1950)</td>
<td></td>
<td>20  N 42 19.100</td>
<td>156 00 151.6</td>
<td>Hawaiian Old Triang.</td>
<td>T-11990 7-10-61</td>
<td>x 4116</td>
<td></td>
</tr>
</tbody>
</table>

This form shall be prepared in accordance with Hydrographic Manual, Publication 20.2, Sec. 6-36, Fig. 79. Positions of charted landmarks and non-floating aids to navigation, if reetermined, shall be reported on this form. Revisions shall show both the old and new positions. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.* Tabulate seconds and meters.
NOTES TO VERIFIER
H-8719 and H-8826
(Comparison with T-11990)

Boat sheet copies of hydrographic surveys H-8719 (PP-10-2-63, sheet cc) and H-8826 (PP-10-7-63, sheet 3) were compared with map T-11990 during final review of the shoreline survey. Differences in shoreline exist between the boat sheets and the shoreline map. These differences are indicated on the comparison print accompanying the shoreline map.

The shoreline map was field edited during hydrography. No field edit report was submitted; and, in addition, no discrepancy print was forwarded to the Washington office upon completion of final review in the Photogrammetric Office. It is assumed that as was the case for other project maps, no changes were indicated by the field editor for application to the shoreline map.

No mention is made in either the compilation or final review reports for the shoreline survey to the effect that the subject differences result from office initiated corrections applied subsequent to forwarding the "Incomplete Manuscript" for hydro support.

Existing differences in the surveys apparently result from errors in application of photogrammetric survey shoreline to the boat sheets.

WASHINGTON OFFICE, REVIEW UNIT

A3
<table>
<thead>
<tr>
<th>CHART</th>
<th>DATE</th>
<th>CARTOGRAPHER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4115</td>
<td>11/8/66</td>
<td>TA 1/112</td>
<td>Full Part Before Verification Review Inspection Signed Via Drawing No. Previous application adequate.</td>
</tr>
</tbody>
</table>

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