

# 4465

# 4465

Diag. Cht. No. 4116

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

## DESCRIPTIVE REPORT

Type of Survey *Topographical*  
Field No. \_\_\_\_\_ Office No. *4465*

### LOCALITY

State *Hawaiian Island*  
General locality *Kahului*  
Locality *Harbor*

1929

CHIEF OF PARTY

*H. J. Adams*

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DATE *December 1929*

B-1870-1 (1)++

4465

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
R. S. Patton, Director	
<div>C. &amp; G. SURVEY DEC 23 1929 Acc. No.</div>	
State: <u>Hawaiian Is.</u> <del>Ter. of Hawaii.</del>	
DESCRIPTIVE REPORT	
<div>Topographic <del>Hydrographic</del></div>	Sheet No. H. <u>4465</u>
LOCALITY	
<del>Island of Maui.</del>	
Kahului Harbor.	
192 9.	
CHIEF OF PARTY	
K. T. Adams.	

GOVERNMENT PRINTING OFFICE

*For a Sheet  
Manuscript  
See 4465*

Topo  
DESCRIPTIVE REPORT  
to accompany  
HYDROGRAPHIC SHEET NO. H.  
Scale 1-5,000.

Kahului Bay, Maui, T. H.

Date of Instructions: Confirmation of Director's radiogram of  
March 9, 1929.  
Date of Survey: March 26 to April 14, 1929.  
Chief of Party: K. T. Adams, H. & G. Engr.  
Topographer: Glendon E. Boothe, Jr. H. & G. Engr.

**LIMITS:**

This sheet consists of a complete shoreline survey, running 1.4 miles to the east, and 2.7 miles to the northwest of Kahului Harbor; a detail survey of the harbor, and docks; a resurvey of Kanaha Pond; and such roads, railroads, buildings, and other features that have been changed since the previous survey.

**CONTROL:**

Control for this survey is based on three triangulation signals, TUG 1912, HAY 1912, and HEN 1912, on the northwest side of the sheet; three triangulation signals, KAHULUI BANK CUPOLA 1912, WATERTANK 1929, and FLAGSTAFF PIER NO. 1 1929, in the center of the sheet; and the triangulation signal MAUI NORTH BASE 1871, 1912, at the northeast end of the sheet. All triangulation signals, with the exception of WATERTANK, are very near the shoreline.

**METHODS:**

The party consisted of one officer, and three men. The usual plane table method was used in this survey. In order that the hydrographic party might commence work as soon as practicable a party built the signals, and they were all located before any other work was done by the topographic party.

The work was started from the triangulation station TUG. Before reaching the vicinity of the West Breakwater the triangulation control was lost. The azimuth, and distance was carried by the plane table method, but no error was found on checking in at triangulation station FLAGSTAFF PIER NO. 1.

The work in the harbor was carefully controlled by the use of three triangulation stations. From the harbor the

work to the northeast was closed by running over to the triangulation station MAUI NORTH BASE. From there a traverse was run up the railroad track to make a connection to the city map of the railroad tracks, and then closed on the triangulation FLAGSTAFF, PIER NO. 1.

In order to tie in the city map a traverse was run up the Government road to City Bench Mark No. 2, elevation 4.59 feet, from triangulation station FLAGSTAFF, PIER NO. 1. When running the shoreline City Bench Mark No. 8, elevation 11.81 feet, was located. The intersection of the center of the road to Wailuku and the center of the railroad tracks at the west end of Main Street was located from a line coming from the shoreline of the bay. As the triangulation station WATER TANK, 1923 is located on the city blueprint it can be used as a common point to help tie in the city map.

The shoreline of Kanaha Pond was completely rerun due to various changes.

#### GENERAL DESCRIPTION:

Kahului Harbor is the main port for the Island of Maui, and the only one in which ships can go alongside the docks. The docks are owned by the Territory of Hawaii and are of concrete construction with steel and corrugated iron warehouses.

Pier No. 1, on the east side of the harbor, is long enough at the present time to accomodate and load two small ships at once, or one large ocean going vessel. This pier is equipped with a conveyor system for handling sugar and sacked or boxed goods. It is equipped with railroad tracks, and a travelling railway crane is available. The pier is now being built to over twice its present length and it is expected that another warehouse of equal size to the present one will be constructed in the near future. Railroad and highway connections lead to the dock and into the warehouse.

Pier No. 2 is on the west side of the harbor. It is of similar construction to Pier No. 1, but not as long and the warehouse not as large. Altho equipped with railroad tracks it does not have a conveyor system. This pier is used by the Inter-Island Steam Navigation Company. Two of these ships can lay alongside at the same time. It has railroad and highway connections.

Just east of the shore end of the warehouse on Pier N. 2 there was a marine railway for small boats and launches, but it has been destroyed. About half way between Piers No 1 and 2 a new marine railway for small boats and launches has been built.

Just east of the present marine railway there is the remains of an old dock. Practically nothing is left of this dock but the piling.

Northwest of the seaward end of Pier No. 1 there is a small pier with oil, gasoline, and molasses pipes. A ship has to anchor off, and make connections to these pipes with hoses.

Three mooring buoys are located in the bay as shown. The buoys for the entrance are being moved as the work progresses on the breakwaters, therefore their location is only temporary. The west face of Pier No.2 is not used by ships.

The harbor is protected from all directions except northerly, and northeasterly winds. Two breakwaters are under the process of construction. They are being built of large rocks. The East Breakwater is expected to be completed about March 1, 1930, and the West Breakwater about January 1, 1931. When these breakwaters are complete they will leave an opening of about 600 feet.

The shoreline from Pier No. 2 to where the highway comes up to it is a sloping, fine yellow sand beach. From this point to signal HI the shoreline is of small, smooth rocks, and sand. From signal HI to the West Breakwater the shoreline is of yellow sand with seaweed. From the West Breakwater to the signal TO the shore is of small, smooth rocks, and sand. From signal TO to the end of the sheet the shore is of fine yellow sand. The shoreline from East Breakwater to signal CHIM is made up of large boulders, and the land from the shoreline to the pierline is made up of filled coral dredged from the harbor. From signal CHIM to the eastern end of the sheet the shoreline is of fine yellow sand. From signal BOW to the northeast end of the sheet algeroba trees grow up nearly to the storm line.

Kanaha Pond is a shallow body of fresh water. The Hawaiian and Commercial Sugar Company turn their waste water from their refinery into the pond at the southeast side. The only outlet is a drainage canal dug through to the ocean on the northwest side. Algeroba trees grow up to the shoreline about three quarters of the way around the pond. There is a large island in the center of the pond but it is very little above the water level. Several very small islands are to the southeast of it. The water is shallow enough so that horses and cows can wade out to the island.

The area west of a line drawn from a point 75 meters offshore at the triangulation station TUG to the seaward end of the West Breakwater is covered by breakers in all but the calmest weather.

From Pier No. 1 to the northeast end of the sheet the water is shallow, and the breakers lead from a quarter to three eighths of a mile offshore in ordinary weather.

During calm weather small boats can land on the sand beach anywhere to the east of signal CHIM, in the bay, but in ordinary weather only at the docks.

## COMPARISONS AND CHANGES.

On this survey the shoreline as a whole checks with that shown on Chart No. 4105, except that it appears that with the projection held on Chart No. 4105 the shoreline and inshore detail should be moved about 25 meters to the west. This is also proven by the triangulation data as of 1929 in the case of station FLAG-STAFF, PIER NO. 1. Plotting this position on Chart No. 4105 it will come about 25 meters west of its position as shown by the location of the warehouse on Chart No. 4105.

The paved highway from Kahului to where it turns inland north of the West Breakwater was rerun as some changes had been made in it.

The highway, as shown on Chart No. 4105, running north from the Wailuku River, is an unimproved dirt road. This dirt road joins with a paved highway just south of a small stream, as shown on topographic sheet No. H, and leads up to the entrance of the Maui Country Golf Club.

All buildings along the coast were located on the topographic sheet, with the exception of those covered by the Kahului City map. Buildings on Chart No. 4105 in this area that do not correspond should be removed from the chart.

The railroad leading east from Kahului has been moved as shown on the topographic sheet. A connection was made with the city map.

Kanaha Pond has greatly changed in shape. The western outlet as shown on chart No. 4105 has been entirely filled in and a new one cut as shown.

The piers at Kahului have been changed as shown. The breakwaters have been changed and will be built further than shown on the topographic sheet. A blueprint of the approved changes furnished by the Corps of Engineers, U. S. Army, accompanies the topographic sheet. A letter from the District Engineer, Corps of Engineers, stating the approximate time that these changes will be completed is attached to this report.

It will be noted that on this blueprint the eastern pier is No. 2 and the western pier No. 1. On the blueprint furnished by the city of Kahului the eastern pier is No. 1 and the western one No. 2. These designations are used by the Harbor Master and are used on this sheet as the correct ones.

A blueprint of the city of Kahului, including the buildings of the California Packing Corporation, accompanies this topographic sheet. This blueprint was checked over by the topographer. Notations and corrections are noted on it. It will be noted that a number of the streets as shown on the blueprint have not been cut through. The distance as measured on the blueprint between WATER TANK and City Bench Mark No. 2, elevation 4.59 feet, is 1  $\frac{1}{2}$  less

than the distance between these two objects on the topographic sheet. Shorter distances measured run 2% less in distance than on the topographic sheet.

#### LANDMARKS.

The most prominent landmarks are the water tank, painted aluminum in color, about 140 feet high, on the grounds of the California Packing Corporation just west of the town; the concrete stack, 180 feet in height, light grey in color, known as the Central Power Station stack, located about 1.4 miles east of Kahului (not on Chart No. 4105); a large high, narrow, grey building located about 360 meters North By West from the shore end of the West Breakwater, and known as the Rock Crusher.

The town does not show up well on account of the trees, but the warehouses on the piers, the railroad shop, buildings and oil tanks southeast of Pier No. 1 show well from a moderate distance.

#### STATISTICS.

Statute miles of high water line .....	5.5
Statute miles of roads and trails .....	2.1
Statute miles of tracks .....	1.6
Statute miles of shoreline of streams and ponds ..	5.4
Square miles of area .....	0.5
Working days .....	14 $\frac{1}{2}$
Number of men in party .....	3

Respectfully submitted,

*Glendon E. Boothe*  
Glendon E. Boothe,  
Jr. H & G Engineer.

Approved.

*K.T. Adams*  
K. T. Adams,  
Commanding,  
Steamer GUIDE.

DESCRIPTION AND LOCATION OF SIGNALS ON TOPOGRAPHIC SHEET "H".

NAME OF STATION	LATITUDE	D. M. Meters	LONGITUDE	D. P. Meters	DESCRIPTION
FAR	20 56'	20.3	156 29'	-(82.7) +1650.9	Cross banner.
OUT	20 55'	-(194.9) +1650.3	156 29'	-(148.8) +1585.0	Red flag.
GOF	20 55'	-(453.3) +1391.9	156 29'	-(48.5) +1685.3	Circular wood water tank on hill.
OLD	20 55'	-(556.4) +1288.8	156 29'	-(381.4) +1352.4	Seaward gable of unpainted house.
TO	20 55'	-(883.7) +961.5	156 29'	-(483.5) +1250.3	White banner.
GREEN	20 55'	(1103.2) 742.0	156 29'	(436.7) 1297.0	Center of roof of green house against g. hillside.
NEW	20 55'	(1275.9) 569.3	156 29'	(484.0) 1249.0	Center of green roof of large brown house, about 5 windows in seaward side.
WALK	20 55'	(1384.6) 460.6	156 29'	(569.0) 1165.0	W. flag on fence corner.
RED	20 55'	(1632.1) + 213.1	156 29'	(561.0) + 1173.0	Seaward gable of small red house, two windows under gab.
BUT	20 55'	(1797.5) 47.7	156 29'	(635.0) 1099.0	White square target.
POL	20 54'	(305.0) 1540.0	156 29'	(708.0) 1026.0	W. flag pole south of unpainted house.
RIDE	20 54'	(376.8) 1468.4	156 29'	(1337.0) 396.8	W. triangular signal surmounted by a white flag.
SIG	20 54'	(662.2) 1183.0	156 29'	(1476.0) 257.8	Black and white diamond target with w. banner on beach.
FEN	20 54'	(948.9) 896.3	156 29'	(1656.0) 77.8	W. cloth on solid wood fence.
BAN	20 54'	(1217.6) 627.6	156 29'	(1698.6) 35.2	White flag on beach.
DRY	20 54'	(1240.0) 605.2	156 29'	(1645.0) 88.8	Seaward gable of large red roofed building.
Bro	20 54'	(1519.1) 326.1	156 29'	(1707.6) 26.2	Signboard with white cloth to seaward.
BRCK	20 54'	(1517.4) 327.8	156 28'	(509.4) 1223.6	Ww cairn on outer end of western breakwater.
MID	20 54'	(1605.7) 239.5	156 28'	(302.0) 1432.0	Ww cairn at center of eastern breakwater.
Uno	20 54'	(1746.4) 98.8	156 28'	(45.8) 1688.2	Signboard backed with red cloth.
Dos	20 53'	(1.0) 1844.2	156 28'	(97.6) 1636.4	Signboard.
TRES	20 53'	(73.0) 1772.2	156 28'	(143.4) 1590.6	Signboard.
FOR	20 53'	(136.8) 1708.4	156 28'	(178.9) 1555.1	Signboard with black cloth to seaward.
HI	20 53'	(213.6) 1631.6	156 28'	(214.8) 1519.2	W. cloth around elec. pole.



STATION	LATITUDE	D. M.	LONGITUDE	D.P.	DESCRIPTION
		Meters		Meters	
FIVE	20° 53'	-(263.4) +1581.8	156° 28'	-(263.4) +1470.6	Signboard.
TINY	20° 53'	-(370.2) +1475.0	156° 28'	-(373.0) +1361.0	Ww rocks with white cloth behind.
SIX	20° 53'	-(449.0) +1396.2	156° 28'	-(481.0) +1253.0	Signboard with red cloth to seaward.
LEW	20° 53'	-(528.1) +1317.1	156° 28'	-(565.5) +1168.5	White cloth around electric pole.
SEVN	20° 53'	(533.3) 1311.7	156° 28'	(593.5) 1140.5	Whitewashed rocks on beach.
ATE	20° 53'	(614.6) 1230.4	156° 28'	(674.4) 1059.6	Signboard with white cloth to seaward.
NINE	20° 53'	(655.0) 1190.0	156° 28'	(796.5) 937.5	Red flag on beach.
TEN	20° 53'	(648.0) 1197.0	156° 28'	(906.8) 827.2	W. barrel on post with w. board below.
ONCE	20° 53'	(594.9) 1250.3	156° 28'	(1057.0) 677.0	White banner on beach.
WIRE	20° 53'	(532.0) 1313.2	156° 28'	(1180.5) 553.5	Green radio mast.
LESS	20° 53'	(486.7) 1358.5	156° 28'	(1240.4) 493.6	White radio mast.
MAST	20° 53'	(416.0) 1429.0	156° 28'	(1340.0) 394.0	Green radio mast inside yard with cocoanut trees around it.
HID	20° 53'	(305.4) 1539.6	156° 28'	(1388.0) 346.0	Ww tree at corner of Pier 2.
NE	20° 53'	(255.0) 1590.0	156° 28'	(1413.8) 320.2	NE corner of main shed on Pier 2.
TIDE	20° 53'	(221.0) 1624.0	156° 28'	(1314.5) 419.5	Red box on tide gauge.
TAR	20° 53'	(161.0) 1684.2	156° 28'	(1256.5) 477.5	Cross banner on end of Pier 2.
TRY	20° 53'	(296.1) 1549.1	156° 28'	(1493.0) 241.0	Switch at shore end of Pier 2.
FAM	20° 53'	(235.2) 1610.0	156° 28'	(1523.0) 211.0	Vertical member of derrick used to load stone on barge.
BIT	20° 53'	(223.0) 1622.0	156° 28'	(1622.0) 112.0	White cloth around electric pole between Piers 1 and 2.
BOY	20° 53'	(146.0) 1699.0	156° 28'	(1634.5) 99.5	Ww on old iron buoy on the shore.
DOT	20° 53'	(80.0) 1765.0	156° 28'	(1606.3) 127.7	Round ww on rocks south of shore end of Pier 1.
WIN	20° 53'	(41.2) 1804.0	156° 28'	(1559.6) 174.4	W. cloth around elec.pole shore end of Pier 1.
CHIM	20° 53'	(47.7) 1797.3	156° 27'	(56.0) 1678.0	Black steel stack on round house appears among oil tanks.
TOT	20° 54'	(1497.8) 347.4	156° 28'	(1071.2) 662.8	Cross banner near sea end of eastern breakwater.
CAR	20° 54'	(1555.7) 289.5	156° 28'	(1148.0) 586.0	Second flag from shore end of eastern breakwater.
SID	20° 54'	(1595.5) 249.5	156° 28'	(1209.5) 524.5	First flag from ditto.
NOR	20° 54'	(1659.8) 185.4	156° 28'	(1371.0) 363.0	Northern of tall wooden watertanks nearest eastern breakwater.

STATION	LATITUDE	D. M. METERS	LONGITUDE	D. P. METERS	DESCRIPTION
TAL	20° 54'	-(1705.8) +139.4	156° 28'	-(1372.5) +361.5	Vertical member of "A" frame derrick on Pier 1.
SOU	20° 54'	-(1698.0) +147.2	156° 28'	-(1396.5) +337.5	Southern of tall wooden water tanks nearest Pier 1.
GOT	20° 54'	-(1708.6) +136.6	156° 28'	-(1533.3) +200.7	Wooden water tank on beach back of Pier 1.
CUP	20° 53'	(12.5) 1832.5	156° 27'	(328.6) 1405.4	Flag staff on largest building of group of buff bldgs., Kah. Club
BUR	20° 54'	(1774.2) 71.0	156° 27'	(393.5) 1340.5	Steel barrel ww, with flag above. East of buff buildings.
DUN	20° 54'	(1818.2) 27.0	156° 27'	(534.7) 1199.3	East gable of old house on beach east of row of tall trees.
BOW	20° 54'	(1831.3) 13.7	156° 27'	(737.6) 996.4	White flag on sand dune.
LEAN	20° 54'	(1840.0) 5.2	156° 27'	(910.5) 823.5	Triangular signal with cloth.
HOT	20° 53'	(5.5) 1839.5	156° 27'	(1140.0) 594.0	White flag shore.
SAND	20° 54'	(1809.5) 35.7	156° 27'	(1309.0) 425.0	Small white flag high on sand dune.
STEP	20° 54'	(1789.8) 55.4	156° 27'	(1462.2) 271.8	Banner on pole with short cross pieces for steps.
HECK	20° 54'	(1740.2) 105.0	156° 27'	(1612.0) 122.0	White flag on sand dune.
BANG	20° 54'	(1663.2) 182.0	156° 27'	(1702.0) 32.0	White flag on net drying frame. West of houses on beach.
FINE	20° 54'	(1608.3) 236.9	156° 26'	(863.7) 1647.3	Triangular signal east of houses on beach.
BUS	20° 54'	(1580.2) 265.0	156° 26'	(251.5) 1482.5	White flag on sand dune, east of signal FINE.

WAR DEPARTMENT  
UNITED STATES ENGINEER OFFICE  
214 FEDERAL BUILDING

PHONE NO. 1370  
P. O. BOX 2240

In reply refer to:

#401

HONOLULU, T. H.,

July 5, 1929

Mr. K. T. Adams

Commanding

Steamer Guide

Honolulu, T. H.

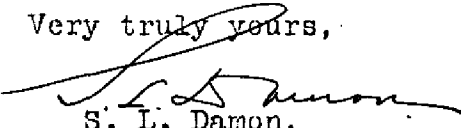
Sir:

In accordance with your request dated July 1, 1929, a blueprint is herewith showing authorized breakwater construction and dredging in Kaha-lui Harbor.

It is expected that the east breakwater will be completed about March 1, 1930, and the west breakwater about January 1, 1931.

It is expected that the dredging will be completed about July, 1930.

Very truly yours,

  
S. L. Damon,  
Captain, Corps of Engineers,  
District Engineer.

1 Incl.



DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. H.

REGISTER NO.

State Territory of Hawaii.

General locality Island of Maui.

Locality Kahului Harbor, Maui.

Scale 1- 5,000 Date of survey March 26th to April 14th 1929.

Vessel U. S. C. & G. S. S. GUIDE.

Chief of Party K. T. Adams.

Surveyed by Glendon E. Boothe.

Inked by Glendon E. Boothe.

Heights in feet above ----- to ground to tops of trees

Contour, Approximate contour, Form line interval ---- feet

Instructions dated Confirmation of Director's radiogram 192  
of March 9, 1929.

Remarks: Detail survey of shoreline, harbor, and docks.

Survey not carried into the interior.

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.

4465

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. H.

REGISTER NO.

State ~~Territory of Hawaiian Is.~~ 4465

General locality Island of Maui.

Locality Kahului Harbor, Maui.

Scale 1- 5,000 Date of survey March 24th to April 14th, 1929.

Vessel U. S. C. & G. S. S. GUIDE.

Chief of Party E. T. Adams.

Surveyed by Glendon E. Boothe.

Inked by Glendon E. Boothe.

Heights in feet above seas to ground to tops of trees

Contour, Approximate contour, Form line interval 100 feet

Instructions dated Confirmation of Director's radiogram  
of March 9, 1929., 1929

Remarks: Detail survey of shoreline, harbor, and docks.

Survey not carried into the interior.

## NAUTICAL CHARTS BRANCH

SURVEY NO. 4465

## Record of Application to Charts

[illegible]

M.2168-1

**A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.**