

4234

C. & G. SURVEY
L. & A.
FEB 7 1927
Acc. No.

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State ~~Territory of Hawaiian Is.~~

11-5613

DESCRIPTIVE REPORT.

Topographic Sheet No. ~~1~~ 4234

LOCALITY:

S. Coast of Kauai
~~Island of Kauai~~

Anakua Pt. to Kekaha including
~~Waimea Makaweli Landing~~

Makaweli and Waimea
~~and Vicinity~~

January
1926

CHIEF OF PARTY:

Clem L. Garner

4234

DESCRIPTIVE REPORT
to accompany

TOPOGRAPHIC SHEET #1, WAIMEA, MAKAWELI LANDING, AND VICINITY.

PERFORMED UNDER INSTRUCTIONS DATED NOV. 23, 1925.

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Limits

The area covered by this sheet is a strip from the shore to about a mile inland extending from one mile east of Makaweli to about one mile west of Kekaha.

General Description

While Kauai as a whole is mountainous, this particular region is low and rolling. From Anakua Point to Koki Point the shore is composed of lava rock from 5 to 25 feet high, irregular and full of indentations; the larger of these indentations containing sand beaches. From Koki Point on the shore consists of sandy beaches, broken only by a few rocky points.

Ships approaching Makaweli Landing and Waimea from the south-east will find the red brick Makaweli Mill Chimney most conspicuous. The Makaweli region is rolling and gently sloping, and covered with cane fields. These cane fields are bordered by rows of trees. Along the shore are patches of algaroba and iron-wood trees. Because of the trees, little is conspicuous in Hoanua Bay (harbor of Makaweli Landing) except the dock, the derrick on the dock, and the sugar warehouse behind.

After Poo Point is passed Waimea appears on a low flat plain, backed by ridges and higher land covered with cane fields. The grey concrete chimney of the Waimea mill is the most prominent object in Waimea, but is not conspicuous from a distance. The wharf surmounted by a shed and derrick; the square, pole-topped spire of the Union Church; and the concrete reservoir on the hillside back of Waimea are also outstanding.

From Waimea Bay to Kekaha the silver-painted brick chimney of the Kekaha Sugar Mill appears prominently. In fact the three mill chimneys mentioned make ideal objects for three point fixes by vessels in the vicinity of Waimea.

Inshore Reefs

Reefs fringe the points as shown by the breakers indicated on the sheet. Ships should keep outside of the red buoy off Poo Point, and should not approach the beach west of Waimea nor Oomano Point too closely.

Ports

Waimea is a village with a variety of small stores. Foods, water, lumber, and general merchandise may be purchased in limited quantities. There are several garages, schoolhouses, and churches, a post office, and a private hospital. Sugar of the Kekaha Sugar Co. is shipped from the company's dock, being lightered out in gas and whale boats to steamers of the Interisland Steam Navigation Company.

Makaweli Landing is purely a shipping point for sugar of the Hawaiian Sugar Company. There are no stores. As in Waimea merchandise

must be lightered out in whaleboats to vessels.

The village of Makaweli is about two miles southeast of Makaweli Landing. The Hawaiian Sugar Company's mill, several general stores, a post office, a private hospital, a church, and several schools are located here.

Streams

With the exception of the Waimea River all streams are slight and of no importance. The Waimea River is shallow. Its mouth is constricted by a sandspit, and even at the deepest point is only about two feet deep. The basin between the sandspit and the trestle highway bridge is ~~from two to~~ seven feet in depth. The river above this bridge is quite shoal. About a mile up stream at the fork in the river, the west fork becomes insignificant, and the east fork or Makaweli River becomes almost dry. There are a few rowboats on the Waimea River.

Survey Methods

Upon starting the topographic survey in Waimea difficulty was encountered because of erroneous geodetic positions for certain signals. The first topographic work did not check on the signals and was therefore rejected. Triangulation stations Papai and Lani were occupied with theodolites and the positions of the three mill chimneys redetermined. The position of Kekaha Mill Chimney was shifted some 540 meters westward, that of Waimea Mill Chimney about 20 meters S.E., and that of Makaweli Mill Chimney remained the same. Stations Flood, Cane, Point, and Wharf were occupied with theodolite and determined by three point fixes on the chimneys. Cuts to various objects were also taken. The rebuilding of the Waimea Mill Chimney and the alteration of the dock and dock shed in about 1914 explains the shifts of those objects. With the new positions of the three chimneys and of the four other signals mentioned for control, the topographic survey was now carried on satisfactorily.

A traverse was run from Kekaha Mill Chimney to the Waimea Mill Chimney closing with an error of 11 meters. A traverse was run from Waimea Mill Chimney to Makaweli Mill Chimney closing with an error of 17 meters. These traverses were adjusted in ratio to the distance from the initial signals. Signals Stumps, Wreck, Lone Tree, Rocky, and Herd, were later checked by triangulation computation and found to be correct. The traverse was continued east from Makaweli Chimney. The positions of signals Hood and Minn were checked by plane table three point fixes on Mill, Chim, and Neys. The traverse from Minn to Anakua Point was checked by resection on signal Mill whenever it was visible. It was so checked at signal Pow.

The detail survey of the villages, buildings, and roads, was done by a number of traverses. With the exception of two small spur traverses, these were loop traverses from one to three miles in length and closing within the allowable error. One of these spur traverses ran into the Robinson estate, located $\frac{3}{4}$ of a mile north-west of Makaweli Landing, the other spur traverse ran along the hill road on the north side of Kekupua Valley and was used in determining the contouring around that valley.

Approved and forwarded

Clem L. Garner
Clem L. Garner, Engineer,
Chief of Party

Respectfully submitted,

Leonard S. Hubbard
Leonard S. Hubbard. Jnr. H. & C. Eng.

PLANE TABLE POSITIONS

Object and Description	Latitude	D.M.	Longitude	D.M.	Height	Remarks
	0		0		feet	
Post, round post south of road.	21 - 57	: 1248	159 - 42	: 828	: 10	
		: (597)		: (893)		
Flag Pole, in camp on hill	21 - 58	: 948	159 - 41	: 600	: 430	height of top
		: (895)		: (1121)		
Lone Tree, most conspicuous tree in vicinity	21 - 57	: 1046	159 - 41	: 334	: 98	
		: (799)		: (1387)		
Tall, most conspicuous tree in vicinity	21 - 57	: 731	159 - 40	: 998	: 10 1/2	
		: (1114)		: (723)		
Spire, polelike spire on square wooden tower of church, Waimea	21 - 57	: 978	159 - 40	: 528	: 105	
		: (867)		: (1194)		
Red House, cupula of the largest house seen from the bay, Waimea	21 - 57	: 532	159 - 40	: 480	: 30 (app)	cupula
		: (1325)		: (1241)		
Reservoir, southern cor. of concrete reservoir at foot of hillside.	21 - 57	: 555	159 - 40	: 70	: 115	
		: (1290)		: (1651)		
Tank ₁ , a small water tank east of small shed	21 - 56	: 1096	159 - 39	: 1099	: 18 (app)	
		: (749)		: (622)		
Tank ₂ , a water tank east of small shed	21 - 56	: 1025	159 - 39	: 909	: 18 (app)	
		: (820)		: (813)		
Derrick	21 - 56	: 581	159 - 39	: 264	: 18	
		: (1264)		: (1458)		
House, center of S.W. face of shed on point	21 - 56	: 203	159 - 39	: 273	: 10	
		: (1642)		: (1449)		
Jap, seaward face of Japanese fisherman's shed	21 - 55	: 1562	159 - 38	: 1520	: 13	
		: (283)		: (201)		
Pow, large pole signal surrounded by cairn of rocks	21 - 54	: 491	159 - 37	: 465	: 30	cairn of rocks 3 ft. high, probably recoverable.
		: (1354)		: (1256)		

STATISTICS
to accompany Topographic Sheet #1
WAIMEA, MAKAWELI LANDING, AND VICINITY.

Statute miles of shore line ----- 9 $\frac{3}{4}$ mi.

Statue miles of roadways, railroads, rivers, creeks-42 $\frac{3}{4}$ mi.

Area covered by topography ----- 9 $\frac{3}{4}$ squ. statute mi.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO NO. 11-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

April 11, 1927.

SECTION OF FIELD RECORDS

Report on Topographic Sheet No. 4234

Anakua Pt. to Kekaha, Kauai, H. I.

Surveyed in 1926

Instructions dated November 23, 1925 (DISCOVERER)

Chief of Party, C. L. Garner.

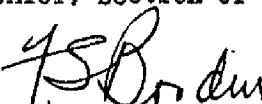
Surveyed and inked by L. S. Hubbard.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of the survey conform to the requirements of the General Instructions.
3. The plan and extent of the survey satisfy the specific instructions.
4. The junction with the adjoining survey is adequate.
5. No further surveying is needed within the area covered by the sheet.
6. The character and scope of the surveying and field drafting are excellent.
7. Reviewed by E. P. Ellis, April, 1927.

Approved:



Chief, Section of Field Records (Charts)



Chief, Section of Field Work (H. & T.)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

The finished Topographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

4234

U. S. Coast and Geodetic Survey.

Register No. 4234

State ~~Territory of Hawaiian Is.~~
General locality ~~Kauai Island~~ S. Coast of Kauai
Locality Anakua Pt. to Kekaha, including Makaweli and Waimea,
Waimea and Makaweli Landing.
Chief of party Clem L. Garner.
Surveyed by L.S. Hubbard.
Date of survey January, 1926.
Scale 1. - 10,000
Heights in feet above mean high water.
Contour interval 100. feet.
Inked by L.S.H. Lettered by L.S.H.
Records accompanying sheet (check those forwarded): Photographs,
Descriptive report, Horizontal angle books, Field computations,
Data from other sources affecting sheet

Remarks: