



# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

Q 201554 STATION 1002  
 HAWAII  
 LATITUDE 20 °30' TO 21 °00'  
 LONGITUDE 155 °30' TO 156 °00'  
 DIAGRAM NF 4-16 MAUI

**Kauiki** (Maui Island, Hawaiian Government Survey, 1878).—  
 Near the extreme eastern end of East Maui, on summit of hill of same name, in  
 Hana District, south of Pueokahi Harbor. Marked by brick pier used by latitude  
 party in 1887.

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 533  
**RECOVERY NOTE, TRIANGULATION STATION**

NAME OF STATION: **Kauiki** STATE: **Hawaii** COUNTY: **Maui**  
 ESTABLISHED BY: **Hawaiian G.S.** YEAR: **1878** LOCALITY: **Hana**  
 RECOVERED BY: **V.S.Seward** YEAR: **1929**

Detailed statement as to the fitness of the original description: On the summit of a hill of the same  
 name. South of Pueokahi Harbor. At the extreme eastern point of  
 Maui.

Original Mark: A brick pier 1887.  
 New Mark: Standard Territory of Hawaii Bronze Tablet set in new  
 concrete pier. Over which was built a Type A Hawaii Territory  
 Survey Triangulation Station Monument.

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 533  
 Rev. Aug. 1948  
**RECOVERY**  
**DESCRIPTION OF TRIANGULATION STATION**

NAME OF STATION: **KAUIKI** STATE: **Hawaii** COUNTY: **Maui**

CHIEF OF PARTY: **C.T.Hubmeyer** YEAR: **1950** Described by: **G.B.G.**

NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK **2.65** METERS; HEIGHT OF LIGHT ABOVE STATION MARK **2.35** METERS.

NOTE	OBJECT	BEARING	DISTANCE		DIRECTION
			feet	meters	
	MAKAALAE				0 00 00.0
11a	Puu O Kahaula (Target)	NW	1 mile		84 58 59.3
	Reference mark No.1	N	31.76	9.681	160 06 13-
11a	Reference mark No.2	SE	21.43	6.531	325 20 17

Station was recovered as described.  
 Remains of the old brick pier are at the station.  
 Reference mark No.1 is north of the station. A standard disk set  
 in a square topped concrete post projecting 4 inches, stamped KAUIKI  
 RM NO 1 1950.  
 Reference mark No.2 is southeast of the station. A standard disk  
 set in a square topped concrete post projecting 4 inches, stamped  
 KAUIKI RM NO 2 1950.  
 To reach from the Hana School: pass between buildings and pick  
 up trail at rear of buildings, follow trail to top of hill and sta.

**RECOVERY NOTE, TRIANGULATION STATION**

NAME OF STATION: **KAUIKI**  
 ESTABLISHED BY: **H.G.S.** YEAR: **1878** STATE: **Hawaii**  
 RECOVERED BY: **H.J.S.** YEAR: **1961** COUNTY: **Maui**

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:  
 The station and both reference marks were recovered in good condition  
 as described by C.T.H. in 1950. The area is heavily overgrown with wild  
 cane and the station cannot be used without building or extensive clear-  
 ing.

The 1950 recovery note is adequate.

(continued on next page)

**ADJUSTED HORIZONTAL CONTROL DATA**

NAME OF STATION: **KAUIKI**

STATE: **HAWAII**

YEAR: **1878**

FIRST

ORDER

SOURCE: **G- 9311**

GEODETIC LATITUDE:	<b>20 °45 '26.780</b>	ELEVATION:	<b>117.8</b> METERS
GEODETIC LONGITUDE:	<b>155 59 03.889</b>		<b>386</b> FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	$\theta$ OR $\Delta$ OR ANGLE*
HI 2	5102	733,056.94	154,524.72	+ 0 14 31

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\theta$  OR  $\Delta$  OR  $\theta$  FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE
PUU O KAHUALA	93 46 13.7	93 31 43	5102







# HORIZONTAL CONTROL DATA

QUAD 201554

STATION 1004

by the  
 NATIONAL GEODETIC SURVEY  
 OLD HAWAIIAN DATUM -

LATITUDE     ° ' TO ° '  
 LONGITUDE   ° ' TO ° '  
 DIAGRAM -

MAKAALAE (continued)

FORM 526a  
 (2-18-65)

U.S. DEPARTMENT OF COMMERCE  
 COAST AND GEODETIC SURVEY

## RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **MAKAALAE**  
 ESTABLISHED BY: **C.T. Husemeyer** YEAR: **1950** STATE: **Hawaii**  
 RECOVERED BY: **R.C. Munson** YEAR: **1968** COUNTY: **MauI**  
 Island: **MauI**

HEIGHT OF TELESCOPE ABOVE STATION MARK **1.59** METERS, HEIGHT OF LIGHT ABOVE STATION MARK METERS.  
 DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

OBJECT	BEARING	DISTANCE		DIRECTION
		FEET	METERS	
KEAKAAMANU 2 -----1950 DISTANCE and DIRECTION-----				00 00 00.0
R.M. No. 1	E	55.85	17.025	143 21 03
R.M. No. 2	SSE	79.34	24.181	230 31 09
KEAKAAMANU 2 1950 -----1968 DISTANCE and DIRECTION-----				00 00 00.0
Stone pier	NW	115.482	(35.199)	20 31 57.7
R.M. No. 1	E	55.773	17.000	143 20 56
R.M. No. 2	S	79.346	24.184	230 31 14

Station was recovered and all marks found in good condition. A discrepancy was noted in the distance to RM No. 1; it was double-checked and the 1950 distance found to be slope distance. The 1968 distance is correct horizontal distance. A complete description follows:

Station is located about 3 miles south of Hana, in pastureland, on Makaalae Point, about 50 yards southeast of old concrete foundations, and 75 yards southeast of a large, lone, ironwood tree.

To reach station from the post office in Hana, go south on State Highway 31 for 2.9 miles to concrete bridge; continue for 0.1 mile to wire gate on left, at telephone pole 66T. Pass through gate and follow field road west for 0.45 mile to station.

Station mark is a standard disk stamped "MAKAALAE 1950", cemented in a drill hole in a boulder projecting 5 inches from ground. It is 20.4 feet west of the north 1 of 2 large, stone and concrete troughs and 57 yards north of a row of ironwood and pine trees at edge of pasture.

Reference mark number one is a standard disk stamped "MAKAALAE NO 1 1950", cemented in a drill hole in a small bedrock outcrop projecting 2 inches from ground. It is 148 feet west of the north 1 of the 2 troughs and is 2 feet lower than station mark.

Reference mark number two is a standard disk stamped "MAKAALAE NO 2 1950", cemented in a drill hole in a long, narrow, bedrock outcrop that projects 5 inches from ground. It is 90 feet north of edge of pine trees and 3.44 feet lower than station mark.

Stone pier is a 6-foot-diameter, stone and mortar structure, with a conical top, in which is a 3-inch-diameter iron bolt, which is 6 feet above ground. The pier sets about 30 feet southeast from the old foundation and is the southeastern 1 of several similar structures, which were once bases for antenna masts.

\*Name of chief of party should be inserted here. The officer who actually visited the station should sign his name at the end of the recovery note.

NOTE - One of these forms must be used for every station recovered.

USCOMS-DC 87178-P88



# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

0 201554 STATION 1006  
 HAWAII  
 LATITUDE 20 °30' TO 21 °00'  
 LONGITUDE 155 °30' TO 156 °00'  
 DIAGRAM NF 4-16 MAUI

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 533  
 Rev. Aug. 1963

DESCRIPTION OF TRIANGULATION STATION  
 PUU O KAHAULA (HTS) State: Hawaii County: Maui

NAME OF STATION: CHIEF OF PARTY: C.T. Husemeyer YEAR: 1950 Described by: G.B.G.  
 HEIGHT OF TELESCOPE ABOVE STATION MARK 1.35 METERS HEIGHT OF LIGHT ABOVE STATION MARK 1.73 METERS

NOTE	Surface-station mark, Underground-station mark	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION		
		OBJECT	BEARING	DIRECTION
			Feet	meters
		OLOPAWA (HGS)		0 00 00.0
		Kauiki Head Light	E 1 mile	151 43 41.8

Located near the eastern tip of East Maui, Hana District, on Hana Ranch property, on the summit of Puu Okahaula, a twin topped hill about 3000 feet west of the Village of Hana. Station is on the most prominent top which is the top nearest the ocean.

Station was described by the Hawaiian Territory Survey (V.S. Seward) in 1929 as: 3/4 inch galvanized iron pipe set in concrete pier. Top of pier 4 inches below the surface of the ground and covered with one inch of soil over which was built a Type B Hawaiian Territory Survey Monument.

The center of target holder in Monument was used as station.  
 To reach from the Hana Ranch Headquarters: go northerly on track

road from power plant and ice house, pass through two board gates, turn left and follow ranch roads that circle hill to summit and station.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: PUU O KAHAULA (HTS) **R**  
 ESTABLISHED BY: C.T.H. YEAR: 1950 STATE: Hawaii BENCH MARK(S) ALSO   
 RECOVERED BY: R.C. Munson YEAR: 1968 COUNTY: Maui  
 AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: Island: Maui

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

Station was recovered in good condition. Located about 1/2-mile west of Hana, on the summit of Puu o Kahaula, a grassy hill of about 545 feet elevation in pasture land of Hana Ranch. There is a large stone cross on the slightly lower point of the hill to east of station.

To reach station from the post office in Hana, go north on the main road for 0.25 mile to macadam road left, in front of the Hana Maui Hotel. Turn left and follow road up through pasture for 0.55 mile to southeast side of hill. Pack about 100 yards to top and station.

Station is marked by a Type B signal, a 6-foot-square, concrete platform flush with ground, with a 12-inch-square, concrete pier 2 feet tall, in its center, which holds a removeable red and white metal target.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: PUU O KAHAULA (HTS) **R**  
 ESTABLISHED BY: C.T.H. YEAR: 1950 STATE: Hawaii BENCH MARK(S) ALSO   
 RECOVERED BY: Ja. Vladimir Dykan YEAR: 1978 COUNTY: Maui  
 AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: Hana

Detailed statement as to the fitness of the original description; including marks found, stampings, changes made, and other pertinent facts:

The station was recovered in good condition as described by R. C. Munson in 1968.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PUU O KAHAULA HTS  
 STATE: HAWAII YEAR: 1950 THIRD ORDER

SOURCE: G- 9311

GEODETIC LATITUDE:	20 45 29.848	ELEVATION:	166.2 METERS
GEODETIC LONGITUDE:	155 59 53.415		545 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ 10R Δ 01 ANGLE °
HI 2	5102	728,395.23	154,814.63	+ 0 14 13

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ 10R Δ 01 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
OLOPAWA	110 36 23.1	110 22 10	5102

QE 392