

# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1001  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 30' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

APPLE (Maui County, Hawaii, O.W.S., 1931)--Station is on the NW part of Lanai Island, about 1 mi. E of the beach, and in the center of a prominent 637-ft. knoll. It is marked by a standard disk cemented in a drill hole in a large boulder. The boulder is the center one of a circular group of large boulders. No reference marks were established.

(11-8-55)

## RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: APPLE  
 ESTABLISHED BY: O.W.S. YEAR: 1931 STATE: Hawaii  
 RECOVERED BY: H.J. Seaborg YEAR: 1962 COUNTY: Maui  
 Island: Lanai

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

Station was recovered and found in good condition. A complete description follows. Station is located about 9 miles airline west-northwest of Lanai City and 1 mile east-northeast of Kalaehole Point, on a rocky rise of about 637 feet elevation, along the south side of a track road.

To reach station from the post office in Lanai City, go northwest for 0.05 mile; turn left and go 0.15 mile; turn right and go northwest for 0.5 mile to end of paved road. Continue, on graded road, for 0.8 mile to crossroad. Turn right and follow main road through pineapple fields for 3.1 miles to end of fields. Continue ahead for 0.95 mile to fork. Take right fork through ironwood trees for 0.85 mile to fork. Take left fork and go 2.5 miles to fork on grassy flat. Take left fork and go 2.65 miles to fork on small red flat. Take left fork and go 0.9 mile to station on rise on left.

Station mark is a standard disk stamped "APPLE 1931", cemented in a drill hole in a large boulder near the center of a group of boulders. It is 30 yards south of the track road.

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

NOA-DC 343 14

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: APPLE

STATE: HAWAII

YEAR: 1931

SECOND

ORDER

SOURCE: G-13124

GEODETIC LATITUDE: 20° 53' 15.588	ELEVATION: 164.6 METERS
GEODETIC LONGITUDE: 157 02 39.611	606 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ OR Δ OR ANGLE*
HI 2	5102	371,078.65	201,482.65	- 0 08 05"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ OR Δ OR FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE

GF 346



# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1003  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

## NO ORIGINAL TEXT

Form 526  
 (11-8-66)

U. S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY  
 RECOVERY NOTE, TRIANGULATION STATION

### R

NAME OF STATION: **FLAG**  
 ESTABLISHED BY: O.W.S. YEAR: 1932 STATE: Hawaii  
 RECOVERED BY: H.J. Seaborg YEAR: 1962 COUNTY: Maui  
 Island: Lanai

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

Station mark disk, stamped "FLAG 1932", cemented in a drill hole in a depression on the top of a large bedrock outcrop about 5 feet high, was recovered and found in good condition.

Because of the location of the mark making it impossible to set up an instrument, the mark was removed and a new station, FLAG 2, was established about 100 feet east. See description of that station.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **FLAG**  
 STATE: **HAWAII** YEAR: **1931** THIRD ORDER

SOURCE: G-1452  
 NO OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE:	20° 54' 03.71	ELEVATION:	METERS
GEODETIC LONGITUDE:	157 03 06.08		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	$\beta$ OR $\Delta$ OR ANGLE*
HI 2	5102	368,580.45	206,343.83	- 0 08 15

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

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE

\* 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.

COM-DC 34914

QF 137

# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1004  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 535  
 REV. AUG. 1958

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: FLAG 2		STATE: Hawaii	COUNTY: Maui
CHIEF OF PARTY: Harold J. Seaborg		YEAR: 1962	Island: Lanai
			Described by: R.F. Hanson
NOTE*	HEIGHT OF TELESCOPE ABOVE STATION MARK 1.56 METERS.†	HEIGHT OF LIGHT ABOVE STATION MARK METERS.	
2	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	DISTANCE feet meters
			DIRECTION: ° ' "
12c	POHAKU R.M. No. 2	ENN	14.908 4.544 00 00 00.0
12a	R.M. No. 1	ENE	22.930 6.990 273 06 33

Station is located about 10 miles airline northwest of Lanai City and 1 mile northeast of Keanayapa Point, which is the westernmost point of Lanai Island, on the summit of a low hogback ridge of about 415 feet elevation that has a scattered covering of small kiawe trees on it.

To reach station from the post office in Lanai City, go northwest on Lanai Avenue for 0.05 mile; turn left and go 0.15 mile to crossroad. Turn right and go northwest for 0.5 mile to end of paved road. Continue on graded road for 0.8 mile to crossroad. Turn right and go on main road through pineapple fields for 3.1 mile to end of fields. Continue on track road for 0.95 mile to fork. Take right fork through ironwood trees for 0.85 mile to fork. Take left fork and go 2.5 miles to fork on grassy flat. Take left fork and go 2.65 miles to fork on small red flat. Take right fork, straight ahead, for 0.45 mile to end of road at triangle base

on large kiawe tree. From here pack west-northwest, downgrade on brushy slope, keeping towards the prominent sand loading dock on Molokai Island, for about 1/2 mile to station.

Station mark is a standard disk stamped "FLAG 2 1962", cemented in a drill hole in a flat, 2 x 3-foot boulder that projects 6 inches above ground. It is 8 feet west of a cairn built on a large flat boulder.

Reference mark number one is a standard disk stamped "FLAG 2 NO 1 1962", cemented in a drill hole in a large, flat, triangle-shaped bedrock outcrop that projects 1 foot above ground. It is at same elevation as station.

Reference mark number two is a standard disk stamped "FLAG 2 NO 2 1962", cemented in a drill hole in a 1-1/2 x 3-foot boulder that projects 1 foot above ground. It is at the same elevation as the station.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FLAG 2  
 STATE: HAWAII YEAR: 1962 SECOND ORDER  
 SOURCE: G-13124

GEODETIC LATITUDE: 20° 54' 03.241	ELEVATION: 125.1 METERS
GEODETIC LONGITUDE: 157° 03' 05.049	410 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	ρ 10N Δ ρ 1 ANGLE °
HI 2	5102	368,678.09	206,296.27	- 0° 08' 14"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE ρ OR Δ ρ FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
POHAKU	299 40 25.9	299 48 40	5102

OF 349

\* Refer to notes in manuals of triangulation and state publications of triangulation. † Direction-angle measured clockwise, referred to initial station.  
 ‡ To nearest meter only, when no trigonometric leveling is being done.



# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1006  
 HAWAII  
 LATITUDE 20° 50' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 FORM 525  
 Rev. Aug. 1968

## DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: **KAALA** STATE: **Hawaii** COUNTY: **Maui** **Lanai Island**

CHIEF OF PARTY: **Harold J. Seaborg** YEAR: **1962** Described by: **R.F. Hanson**

NOTE*	HEIGHT OF TELESCOPE ABOVE STATION MARK A. 46 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	
12c	Surface-station mark, Underground-station mark						
							00 00 00.0
12c	FLAG 2		WNW	27.09	8.256		35 41 32
	R.M. No. 2						
12c	R.M. No. 1		N	13.28	4.048		105 51 47

Station is located about 8-1/2 miles airline northwest of Lanai City and 1-3/4 miles southeast of Polihua Beach, at about 800 feet elevation, on a low rocky point in the bend of a track road that runs northwest down to Polihua Beach.

To reach station from the post office in Lanai City, go northwest on Lanai Avenue for 0.05 mile; turn left and go southwest for 0.15 mile to a crossroad. Turn right and go northwest on Frazier Street for 0.5 mile to end of paved road. Continue ahead on wide, graded road, which bears left, for 0.8 mile to a crossroad. Turn right and go northwesterly on main road through pineapple fields for 2.7 miles to end of fields. Continue ahead on track road for 0.95 mile to fork. Take right fork, following road between two rows of ironwood trees for 0.75 mile to fork just after passing through a tree row at right angles to the road. Take left fork and go 2.5 miles to dim left fork. Keep ahead on right fork and go 1.8 miles to the

station on left.

Station mark is a standard disk stamped "KAALA 1962", cemented in a drill hole in a 30-inch-diameter, bedrock outcrop that projects about 6 inches above ground. It is 4.7 feet north-northeast of a white witness post, 21 feet south-southeast of a cairn, and 40 feet west of center line of track road. There is a corrugated iron rain-catcher and a pipeline about 600 feet northwest of the station.

Reference mark number one is a standard disk stamped "KAALA NO 1 1962", cemented in a drill hole in a large red outcrop that projects about 18 inches above ground. It is 20 feet east of the cairn and about 2 feet lower than station.

Reference mark number two is a standard disk stamped "KAALA NO 2 1962", cemented in a drill hole in a 3 x 4-foot boulder that projects 30 inches above ground. It is 7 feet west of the cairn and about 2 feet lower than the station.

Station POLIHUA will serve as the azimuth mark.

\* Refer to notes in manuals of triangulation and state publications of triangulation.  
 † To nearest tenth only, when no trigonometric leveling is being done.

‡ Direction-angle measured clockwise, referred to initial station.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **KAALA**  
 STATE: **HAWAII** YEAR: **1962** SECOND ORDER

SOURCE: **G-13124**

GEODETIC LATITUDE	20° 54' 19.760	ELEVATION:	255.5 METERS
GEODETIC LONGITUDE	157 01 27.296		838 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	θ 10R Δ 01 ANGLE °
HI 2	5102	377,950.24	207,941.51	- 0 07 39

\* 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
FLAG 2	79 48 38.0	79 56 17	5102

# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1007  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

## ADJUSTED HORIZONTAL CONTROL DATA

**Kaapa (Lanai Island, F. G. Engle, 1927).**—On west coast of Lanai, about 6 miles north by west of Kaunalapau Harbor, on a double rocky point about ¼ mile south of Kaapahu Hill. Station is about 1 mile southwest of water tank and just west of a narrow cove which forms the mouth of a gulch. Approached by road running northwest from Lanai City. Station marked according to note 4, standard disk in bowlder, while two reference marks, note 12c, standard reference disks in bowlders, were set at the following distances and azimuths from the station: No. 1, 23.84 meters (78.2 feet), 113° 49.5'; No. 2, 21.10 meters (69.2 feet), 219° 36.5'.

### RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **KAAPA**  
 ESTABLISHED BY: **F.G.E.**  
 RECOVERED BY: **H.J. Seaborg**  
 YEAR: **1927**  
 STATE: **Hawaii**  
 COUNTY: **Maui**  
 Island: **Lanai**

HEIGHT OF TELESCOPE ABOVE STATION MARK **0.80** 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	
<b>GALE 1927</b>				00 00 00.0
<b>Kaunalapau Light</b>	SE	6.1	miles	70 57 01.6
<b>R.M. No. 1</b>	W	78.96	24.068	211 35 36
<b>R.M. No. 2</b>	N	68.71	20.942	317 28 41

Station was recovered and all marks found in good condition. A complete description follows:

Station is located about 8 miles airline west-northwest of Lanai City, 6 miles northwest of the wharf at Kaunalapau Harbor, and 1/2 mile south of Kaapahu Hill on the bluff overlooking the ocean at the south tip of the large bulge which comprises the northwest end of Lanai Island.

To reach station from the post office in Lanai City, go northwest on Lanai Avenue for 0.05 mile; turn left and go 0.15 mile to crossroad. Turn right and go northwest for 0.5 mile to end of paved road. Continue ahead on graded road for 0.8 mile to crossroad. Turn right and follow main road for 3.1 miles through pine-apple fields, to end of fields. Continue on road for 0.95 mile to fork. Take right fork through ironwood trees for 0.85 mile to fork. Take left fork and go 2.5 miles to fork on grassy flat. Take left fork and go 0.4 mile to dim left fork. Take the left fork and follow track road for 1.4 miles to end of road at rain-trap No. 8. From here pack southwest down brushy slopes for about 1 mile to station.

Station mark is a standard disk stamped "KAAPA 1927", cemented in a drill hole in the top of a 3-foot-square bedrock outcrop that projects 2 feet above ground. It is 20 feet northeast of edge of cliff and about 200 yards northwest of a deep ravine.

Reference mark number one is a standard disk stamped "KAAPA 1 1927", cemented in a drill hole in the southeast end of a 5-foot boulder that projects 3 feet above ground. It is 15 feet northeast of edge of cliff and about 4 feet lower than station mark.

Reference mark number two is a standard disk stamped "KAAPA 2 1927", cemented in a drill hole in the southwest end of a large bedrock ledge that projects 4 feet above ground. It is 6 feet east-northeast of an 8-foot kiawe tree which is the only one in the vicinity. The mark is 7-1/2 feet higher than station mark.

\*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.

USCOMM-DC 27178-P89

NAME OF STATION **KAAPA**  
 STATE **HAWAII** YEAR **1927** THIRD ORDER  
 SOURCE **G-SP150**

GEODETIC LATITUDE: <b>20° 51' 56.344</b>	ELEVATION <b>CS</b> METERS
GEODETIC LONGITUDE: <b>157 02 13.705</b>	SCALED METERS

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	$\beta$ OR $\Delta$ OR ANGLE*
HI 2	5102	373,516.75	193,481.81	- 0 07 55

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

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE
GALE	262 10 59.1	262 18 54	5102

QI 610

# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1008  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

## NO ORIGINAL TEXT

KAENA (Maui County, Hawaii, J.B.M., 1914; O.W.S., 1932)

Station is 2 mi. E-NE of Kaena Point, on the NW coast of Lanai Island. It is on a prominent knoll, about 350 m. back from the E end of the sand beach shoreline. Station is marked by a 6-ft. cairn of rocks. No other marks were established.

FORM 2200  
 (9-18-59)

U.S. DEPARTMENT OF COMMERCE  
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
 NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

### RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: **KAENA**  
 ESTABLISHED BY: **J.B.M.** YEAR: **1914** STATE: **Hawaii**  
 RECOVERED BY: **H.J. Seaborg** YEAR: **1962** COUNTY: **Maui**  
 Island: **Lanai**

HEIGHT OF TELESCOPE ABOVE STATION MARK **1.18** 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	
KAALA				00 00 00.0
R.M. No. 1	E	16.81'	5.123'	300 32 13"
R.M. No. 2	S	20.71'	6.311'	352 51 06"

A mark consisting of a 1/2-inch brass pipe was recovered and found in good condition, under a large cairn. Two new reference marks were established. A complete description follows:

Station is located about 9-1/2 miles airline northwest of Lanai City and 2-1/4 miles west-southwest of Pohakuloa Point, which is the northernmost point of Lanai Island. It is on the summit of a small hill of 135 feet elevation that is covered with kiawe trees.

To reach station from the post office in Lanai City, go northwest on Lanai Avenue for 0.05 mile; turn left and go 0.15 mile to crossroad. Turn right and go 0.5 mile to end of paved road. Continue ahead on graded road for 0.8 mile to a crossroad. Turn right and follow main road through pineapple fields for 3.1 miles to end of fields. Continue ahead for 0.95 mile to fork. Take right fork through ironwood trees for 0.85 mile to fork. Take left fork and follow track road for 2.5 miles to fork on grassy flat. Continue ahead on right fork for 3.7 miles to large sand beach and end of truck travel. Pack easterly along shoreline for about 1 mile to prominent, large sand dune near shore. Here go right, south, for about 350 yards to station.

Station mark is a 1/2-inch brass pipe cemented in a drill hole in a 1 x 2 foot boulder that projects 1 foot above ground. It is at the southwest edge of a clump of kiawe trees on summit of small hill.

Reference mark number one is a standard disk stamped "KAENA NO 1 1914 1962", cemented in a drill hole in a small boulder that projects 1 inch above ground. It is about 1 foot lower than station mark.

Reference mark number two is a standard disk stamped "KAENA NO 2 1914 1962", cemented in a drill hole in a small boulder that projects 1 foot above ground.

Name of chi  
 of the record

should be inserted here. The officer who actually visited the station should sign his name at the end

one of these forms must be used for every station recovered.

name at the end

JSCOMM-DC 27178-P29

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: **KAENA**  
 STATE: **HAWAII** YEAR: **1914** SECOND ORDER

SOURCE: **G-13124**

GEODETTIC LATITUDE:	20° 55' 34".082	ELEVATION:	41.5 METERS
GEODETTIC LONGITUDE:	157° 01' 22".964		135 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	# OR Δ #1 ANGLE °
HI 2	5102	378,377.61	215,439.18	- 0° 07' 38"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OR Δ #1 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETTIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
KAALA	3 08 06.1	3 15 44	5102

QF 353





JUN 1976  
 U.S. DEPARTMENT OF COMMERCE  
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
 NATIONAL OCEAN SURVEY, NATIONAL GEODETIC SURVEY

# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1011  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

PINE (Maui County, Hawaii, O.W.S., 1931)--Station is on the NW part of Lanai Island, about 1 mi. NW of Koapahu Hill, and 1 mi. E of the beach. It is at about the middle part of the W edge of a prominent 500-ft. hill, and about 20 ft. back from the edge. It is marked by a standard disk cemented in a drill hole in a boulder.

(11-8-55)

## RECOVERY NOTE, TRIANGULATION STATION

**R**

NAME OF STATION: PINE  
 ESTABLISHED BY: O.W.S. YEAR: 1931 STATE: Hawaii  
 RECOVERED BY: H.J. Seaborg YEAR: 1962 COUNTY: Maui

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

Station was recovered and found in good condition. A complete description follows:  
 Station is located about 8-1/2 miles airline west-northwest of Lanai City and 1/2 mile north of the coastline of the large bulge of the northwest end of the island, on the west end of a flat hill of about 500 feet elevation.  
 To reach from the post office in Lanai City, go northwest 0.05 mile; turn left and go 0.15 mile; turn right and go northwest for 0.5 mile to end of paved road. Continue on graded road 0.8 mile to crossroad. Turn right and follow main road through pineapple fields for 3.1 miles to end of fields. Continue ahead for 0.95 mile to fork. Take right fork through ironwood trees for 0.85 mile to fork. Take left fork and go 2.5 miles to fork on grassy flat. Take left fork and go 2.65 miles to fork on small red flat. Take left fork and go 0.9 mile to station APPLE 1931 on left. Continue downgrade on rocky road for 0.5 mile to end of truck travel. Pack southerly, cross-country, at about same elevation for about 3/4 mile to summit of prominent hill and station.

Station mark is a standard disk, unstamped, cemented in a drill hole in a 12-foot diameter bedrock outcrop that projects 3 feet above ground. It is about 100 yards southwest of a rocky point of the same elevation, and about 1/4 mile southeast of an old black water tank that sets at the base of the station hill.

No reference marks were recovered.

\* 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. COM-DC 34314

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PINE  
 STATE: HAWAII YEAR: 1931 SECOND ORDER

SOURCE: G-13124

GEODETIC LATITUDE	20° 52' 39.294	ELEVATION	158.6 METERS
GEODETIC LONGITUDE	157° 02' 40.328		520 FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	X	Y	$\beta$ 10R $\Delta$ $\beta$ 1 ANGLE *
HI 2	5102	371,002.09	157,821.03	- 0° 08' 05"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\beta$  10R  $\Delta$   $\beta$  1 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE

QF 347

# HORIZONTAL CONTROL DATA

by the  
 National Ocean Survey  
 OLD HAWAIIAN DATUM

QUAD 201571 STATION 1012  
 HAWAII  
 LATITUDE 20° 30' TO 21° 00'  
 LONGITUDE 157° 00' TO 157° 30'  
 DIAGRAM NF 4-16 MAUI

DEPARTMENT OF COMMERCE  
 U. S. COAST AND GEODETIC SURVEY  
 Form 583  
 Rev. Aug. 1962

## DESCRIPTION OF TRIANGULATION STATION

NAME OF PARTY: POHAKU

STATE: Hawaii

COUNTY: Maui  
 Island: Lanai

Described by: R.P. Hanson

CHIEF OF PARTY: Harold J. Seaborg YEAR: 1962

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.44 METERS.†

HEIGHT OF LIGHT ABOVE STATION MARK METERS.

NOTE*	HEIGHT OF TELESCOPE ABOVE STATION MARK	DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION	DISTANCE		DIRECTION †
			feet	meters	
2	Surface-station mark, Underground-station mark				
		OBJECT	BEARING		
		FLAG 2			00 00 00.0
12c		R.M. No. 2	NW	19.01'	5.795'
12c		R.M. No. 1	S	10.41'	3.173'

Station is located about 7 miles airline northwest of Lanai City and 3 miles east-southeast of Kaenapapa Point; on the west side of a round-topped hill of about 1240 feet elevation that is covered with very large boulders.

To reach station from the post office in Lanai City, go northwest on Lanai Avenue for 0.05 mile; turn left and go 0.15 mile to crossroad. Turn right and go northwest for 0.5 mile to end of paved road. Continue ahead on wide graded road for 0.8 mile to crossroad. Turn right and follow main road through pineapple fields for 3.1 miles to end of fields. Continue ahead for 0.95 mile to fork. Take right fork through ironwood trees for 0.85 mile to fork. Take left fork and go 2.5 miles to fork on grassy flat. Take left fork and go 0.4 mile to dim left fork. Take left fork and go 0.4 mile to boulder-covered hill on left side of saddle, and end

of trunk travel. Pack westerly about 100 yards to west side of hill and station. Station mark is a standard disk stamped "POHAKU 1962", cemented in a drill hole in a 2-foot-diameter boulder that projects 6 inches above ground. It is 20 yards west of high point of hill.

Reference mark number one is a standard disk stamped "POHAKU NO 1 1962", cemented in a drill hole in a 2-foot-diameter boulder that projects 6 inches above ground. It is at same elevation as station.

Reference mark number two is a standard disk stamped "POHAKU NO 2 1962", cemented in a drill hole in the west side of a large boulder that projects about 4 feet above ground.

## ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION POHAKU

STATE HAWAII

YEAR 1962

SECOND

SOURCE G-13124

GEODETIC LATITUDE	20° 53' 03.595"	ELEVATION	578.3 METERS
GEODETIC LONGITUDE	157° 01' 15.689"		1241 FEET

### STATE COORDINATES (Feet)

STATE & ZONE	CODE	X	Y	ϕ (HOR Δ) ANGLE*
HI 2	5102	379,223.42	200,254.13	- 0° 07' 34"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE ϕ (HOR Δ) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH* (From south)	CODE
FLAG 2	119 41 05.6	119 48 40	5102

QF 34c

\* Refer to manuals of triangulation and state publications of triangulation. † Direction-angle measured clockwise, reference star only, when no trigonometric leveling is being done. ‡ Initial station. 16-52200-1 U. S. G. S. SURVEY SERVICE



