HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM OUAD 211573 STATION 1251
HAHAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

SEE STATION HAWAII ASTRO IGY

AD HIGTED HODIZONTAL	CONTROL	DATA
ADJUSTED HORIZONTAL	CONTROL	DATA

DANJON ASTROLABE

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1252
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

Pora 526 (11-8-85) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: DE RUSSY

RECOVERED BY: U.G.S. YEAR: 1927 STATE: Hawaii Recovered By: W.R. Porter Year: 1963 County: Honolulu

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

Station mark was recovered and found in good condition. No reference marks were established because the station is in a well-protected location in a restricted area on a military reservation. A complete description follows:

Station is located in the Waikiki District of Honolulu, in the south end of Fort De Russy Military Reservation; on the concrete roof of Battery Randolph, a large, concrete building that formerly held two coastal defense cannon.

Station mark is a standard disk stamped "DE RUSSY 1927", cemented in a drill hole in the concrete roof, 17.7 feet northeast of southwest edge of roof, 75.5 feet southwest from the top of the bevel of the northeast edge of the roof, 18 feet northwest of the center of the second manhole cover (from the southeast end) of a row of five, 14.1 feet southeast of the center of the third manhole cover in the row, 9.4 feet southeast from the center-line of the battery, and opposite the battery observation post.

*Name of chief of party abould be inserted here. The officer who astmity visited the station should sign his name at the end of the recovery ness.

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

Coma-DC 24.11

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DE RUSSY

STATE HAWAII

YEAR: 1927

THIRD

00050

SOURCE G- 558

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °16 '55.269 157 50 11.886	SCALED	2	METERS FEET

·	PION A BI ANGLE
41,928.52	+ 0 03 34
	20.39 41.928.52

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, heta\,$ IOR $\Delta\,$ AI FORMULA REGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
14	0 , "		

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1253
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 411 OAHU

NO ORIGINAL TEXT

DIAMOND HEAD LIGHTHOUSE (Hawail, E.R.H., 1925; O.W.S., 1931) --Locality - S.E. coast of Cahu. Lighthouse is large white structure on S end of Diamond Head, plainly visible at sea. Station was not visited.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: ESTABLISHED BY: RECOVERED BY: R.C. Munson Page 1970 County; Honolulu

Airline Distance and Direction From Nearest Town: 1--3/4 miles Southeast from downtown Waikiki.

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. It is a white pyramidal concrete tower with red dome roof and is 55 feet high. Located on bluff above sea at southwest side of Diamond Head at the U. S. Coast Guard Station. Light is 147 feet above sea level.

FORM C&GS-526 (1-65)

NAME OF STATION: DIAMOND HEAD LIGHTHOUSE

STATE: HAWAII YEA

THIRD

IKU

G-SP156
SOUND OBSERVATION CHECK ON THIS POSITION

QEODETIC LATITUDE: 21 °15 '31.97 157 48 44.25	ELEVATION	METERS FEET
---	-----------	----------------

ADJUSTED HORIZONTAL CONTROL DATA

STATE & ZONE	CODE	×	Y	8 IOR A BI ANGLE
HI 3	5103	563,918.50	33,532.97	+ 0 04 05

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR A FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	QEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
		0 , "	
		- 9	

Q1 322

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 HAWAII

STATION 1254

LATITUDE

21 °00' TO 21 °30' LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

Dillingham Center of House

(Oahu Island, E. R. Hand, 1925).—On southwest slope of Diamond Head, the center of gable roof, midway between two great, squat, end towers, of cement structure (residence), tinted pink with red tile roof.

1826 U.S. DEPARTMENT OF COMMENCE - CASET AND STONETIC SUBJECT.

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

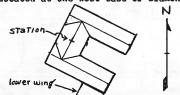
Name of Station: Dillingham center of house

ESTABLISHED BY: E.R.H. YEAR: 1925 STATE: Hawaii

RECOVERED BY: *D.G. Rushford YEAR: 1964 COUNTY: Honolulu

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

Station was recovered. It is a large, two-story, pink, concrete mansion, with red tile roof, in the shape of a square "C". The ends of the two sides of the C, which lie northwest-southeast, are narrow and have the appearance of "great squat end towers" mentioned in old description, but the roof-lines of the building are all the same elevation. The point intersected was midway between the end parts of the building at the center of the closed part of the C. Located at the west base of Diamond Head.



ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: DILLINGHAM CENTER OF HOUSE

HAWAII

YEAR: 1925

THIRD

G-SP156

GEODETIC LATITUDE: 21 °15 ′52 ″499 GEODETIC LONGITUDE: 157 49 07.592	ELEVATION	METERS FEET
--	-----------	----------------

		STATE COORDINATES (Feet)		
STATE & ZONE	cops	×	V	8 IOR A SI ANGLE
HI -3	5103	561,670.39	35,601.70	+ 0°03′57
	l i			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE A IOR Δ GI FORMIJI A NEGLECTING THE SECOND TERM

TO STATION OR OBJE	ст	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH	
		0 , *		•
		SI COMPLETE	0.00	
			1.0	

QI 325

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 HAWAII LATITUDE

21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

Flat (Oahu Island, E. R. Hand, 1926).—On southeast coast of Oahu, on the flat coral islet that lies just off Alala Point. Station is on the most southerly point of this islet, the point closest to the mainland. It is 10 feet from the water, and is marked according to note 3.

. RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: FLAT

YEAR: 1926 STATE: ESTABLISHED BY: E.R.H. RECOVERED BY: D.M. Whipp YEAR: 1965 COUNTY: Honolulu

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

Station was

searched for but not found. The island is composed of very porous coral rock and it is believed that portions of the south end have been worn off due to wave action.

Sextant angles measured at point station was believed to have been located agree very closely with angles computed to adjacent triangulation stations. Station is believed destroyed.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION:

HAWAII

YEAR

THIRD

STATION 1255

G-SP156

GEODETIC LATITUDE:	21 °24 '09. 262 157 43 22.394	SCALED	1	METERS
GEODETIC LONGITUDE:	131 43 22.334	00,122		FEET

STATE & ZONE	CODE	×	Y	8 IOR A BI ANGLE
HI 3	5103	594,270.85	85,772.50	+ 0°06'04

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, heta\,$ I or $\Delta\,$ 41 Formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From sauth)	PLANE AZIMUTH * (From south)	CODE
		0 ' "	

QI 434

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 2256
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

Fort Armstrong Flagstaff (Hawaii, J.H.P., 1933) -- This flagstaff was located by intersection directions from Punchbowl, Rocky Hill, and Kaimuki. It is the flagstaff at Fort Armstrong in the city of Honolulu and is in the position shown on Chart No. 4109.

Porm 526 (11-8-55) U.S. DEPARTMENT OF COMMERCE - COAST AND GRODETIC SURVEY RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

1

Name of Station: Fort Armstrong Flagstaff

Detablished by: J.H.P. Year: 1933 State: Hawaii

Recovered by: D.G. Rushford Year: 1964 County: Honolulu

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 in City of Honolulu at Fort Armstrong, inside the fenced area enclosing the U.S. Public Health and Quarantine Station buildings, about 100 feet southwest of southernmost office building.

Station is a tapering, steel pole supported by a concrete foundation. It is 1 foot in diameter at the base, 85 feet high, and has a gold ball on top.

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

Nora.—One of these ferms must be used for every station recovered.

Comp.—DC 348:

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FORT ARMSTRONG FLAGSTAFF

STATE HAWAII

Vean 193

THIRD

OBSER

SOURCE G- 9849

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	ж	¥	S OR A BI ANGLE
HI 3	5103	544,220.52	49,017.28	+ 0 02 50

*Plane azimuth has been computed by the | heta| formula neglecting the second term

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
	0 ' *	(10)	
		1	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM OUAD 211573 STATION 1257
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 411 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FORT DE RUSSY FLAGPOLE

STATE HAWAII

1927

THIRD

-00050

SOURCE: G- 558

GEODETIC LATITUDE:	21 °17 ′03.870 157 50 12.574	ELEVATION	METERS FEET

STATE & ZONE	CODE	×	*	8 IOR A BI ANGLE
HI · 3	5103	555,554.43	42,796.29	+ 0°03′33°

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR & 41 FORMULA NEGLECTING THE SECOND TERM.

GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	con	
0 , "			
		(From south) (From south)	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1258
HAWAI I
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

FORT KAMEHAMEHA FLAGSTAFF (Hawaii, E.R. H., 1925) -- In S Oahu, on E side of Pearl Harbor entrance, the flagstaff at Fort Kamehameha.

(11-8-55)

RECOVERY NOTE, TRIANGULATION STATION
INTERSECTION

R

Name of Station: Fort Kamehameha flagstaff

Established by: E.R.H. Year: 1925 State: Hawaii

Recovered by: D.G. Rushford Year: 1964 Count: Honolulu

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

Station was identified by check angle at triangulation stations SALT LAKE and EWA CHURCH and recovered in good condition. It is a white, tapering steel pole, 65 feet high, with a red obstruction light on top.

Located at the southwest corner of Hickam A.F.B., at Fort Kamehameha,

Located at the southwest corner of Hickam A.F.B., at Fort Kamehameha, at the crossroad intersection of Gardner and Seaman Avenues, 0.3 mile south of the entrance gate of Fort Kamehameha. The flagpole sets on a 6-foot-diameter concrete base in the center of a 20-foot-diameter lawn encircled by a concrete curbing, and is in the middle of the intersection, in front of the Fort Kamehameha Youth Center Building.

*Name of chief of party absent be inserted here. The officer who actually visited the station absent sign bit name at the end of the recovery nets.

Nova.—One of these forms must be used for every station recovered.

Comp.-DC 34314

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: FORT KAMEHAMEHA FLAGSTAFF

STATE: HAWAII

192

THIRD

G- 558

GEODETIC LATITUDE: 21 °19 '28."716 ELEVATION: METERS FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	٧	# OR A BI ANGLE
HI 3	5103	512,779.98	57.383.88	+ 0 00 49
				- 4

*PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\,\, heta\,$ for $\Delta\,$ GI Formula reglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
		۰ ، ۰	
	70 100		

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1259
HAWAII
LATITUDE 21 °00' T0 21 °30'
LONGITUDE 157 ° 30' T0 158 ° 00'
DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

DEPARTMENT OF COMMERCE O. S. COMPT AND STATION STATION FORTH SSE PORTS SSE P

R

NAME OF STATION: FORT SHAFTER, Hagstaff

EGYABLISHED BY: O. B. F. YEAR: 1909 STATE: HOWDII
RECOVERED BY: 5LH YEAR: 1955 COUNTY: HONOIULU

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

STATION IS ON CAHU Ishud, in the center of Fort SHAFTER at the North-East corner of the parade ground on Palm Circle Drive, across fro Richardson HALL (Headquarters, U.S. Firmy Pacific). It is in the center of a circular concrete section 52 feet in diameter. The flagstaff is in 2 sections; the lower section is octogranal concrete and steel, the upper section is steel pipe.

Pora 526 (11-8-65) U.S. DEPARTMENT OF COMMERCE - COAST AND GEODETIC SURVEY RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

R

NAME OF STATION: Fort Shafter, flagstaff

ESTABLISHED BY: O.B.F. YEAR: 1909 STATE: Hawaii Recovered by: D.G. Rushford Year: 1964 County: Honolulu

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

was recovered. It is located in the Kalihi District of Honolulu, at Fort Shafter, in the northeast corner of Palm Circle Drive and set at the center of a circular, concrete base 52 feet in diameter. The flagstaff is in 2 sections; the base section is concrete and is octagon-shaped. The top section is steel pipe and is offset westward from the center of the base section. The entire flagstaff is painted white and is about 65 feet high. There are 4 guy-cables attached to the top of the first section.



RECOVERY NOTE, THE SECTION STATION

R

NAME OF STATION: FORT SHAFTER FLAGSTAFF ESTABLISHED BY: 0.B.F. YEAR: 1909 RECOVERED BY: Carl A. Annis Year: 1969 AURLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

STATE: Hawaii BENCH MARK(8) ALSO COUNTY Honolulu

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

Intersection station recovered in good condition as described,

ADJUSTED HORIZONTAL CONTROL DATA

FORT SHAFTER FLAGSTAFF

--- HAWAII

YEAR 190

THIRD

-CBD

SOURCE: G-SP156

GEODETIC LATITUDE	21 °20 ′58. 234 157 53 23. 544	ELEVATION	METERS
GEODETIC LONGITUDE	15. 55 25.511		

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	v	# OR A A ANGLE
HI 3	5103	537,477.34	06,427.76	+ 0 02 24

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR & FORMULA NEGLECTING THE SECOND TERM.

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

QI 367

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1260
HAWAII
LATITUDE 21 000' TO 21 030'
LONGITUDE 157 030' TO 158 000'
DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

Pora 526 (11-8-65)

NAME OF STATION: HAUIKI

ESTABLISHED BY: L.G.S.
RECOVERED BY: W.R. Porter

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

 \mathbb{R}

YEAR: 1928 STATE: Hawaii

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

YEAR: 1963 COUNTY: Honolulu

A "Type C", Hawaiian Territorial Survey signal was recovered in good condition. Because of isolated and protected location of the station, and also because of its rugged construction no reference marks were established. A complete description follows:

Station is located about 2-3/4 miles airline north-northeast of the Federal Building in Honolulu, at about 260 fest elevation, on the southeast slope of a brushy ridge that lies between the Kalihi District and Fort Shafter Military Reservation.

To reach station from the Patch Gate entrance at the east side of Fort Shafter, go southeast on Notley Street for 0.05 mile; turn left and go northeast on Meyers St. for 0.25 mile to end of truck travel at east end of high cut-bank. Pack along trail on top of cut-bank to top of ridge, then go right, through brush, to station.

Station is center of 2-1/2-inch, iron pipe that projects 18 inches from center of 6-1/2-foot-square, concrete platform that comprises the top of a concrete structure projecting about 4 feet above ground. A red and white, metal target, set into the pipe, extends 7 feet above the platform. Station is 30 yards northeast of fence-line that runs along top of cut-bank.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: HAUIKI

ESTABLISHED BY: L.G.S.
RECOVERED BY: J.M.C.

YEAR: 1928 YEAR: 1966

STATE: Hawaii BENCH MARK(S) ALSO COUNTY: Honolulu

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN

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

Station recovered in good condition. Previous description adequate.

FORM C&G\$-526 (1-68)

U.S. DEPARTMENT OF COMMERCE

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION HAUIKI

STATE HAWAII

YEAR 1928

SECOND

IND

SOURCE G- 7448

GEODETIC LATITUDE:	21 °20 ′52.°487 157 52 43.689	11	SCALED	80	METERS FEET

	(40)	STATE COORDINATES (Feet)	1,	
STATE & ZONE	CODE	×	Y	g OR A di ANGLE
HI 3	5103	541,245.32	65,850.66	+ 0 02 39

*PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, heta\,$ for $\Delta\,$ $\,^{
m d}$ Formula neglecting the second term.

-	
(A) _ (C)	W)
100	
170	

QE 005

NOAA FORM 76-3?

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM OUAD 211573 STATION 1261
HAWAI I
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

Hawaiiloa Hill (Oahu Island, E. R. Hand, 1926).—On the eastern coast of Oahu, in the western part of Mokapu Peninsula, on a steep, conical hill, which occupies a prominent position. For many years there has been a concrete monument on top of this hill; it is the mark sighted on. Identical with Loa, 1910.

HAWAIILOA HILL (

Hawaii, E.R. H., 1926; H.A. P., 1932)
--Station re-marked in 1929 ac-

cording to Note 14A.

Omu 526a

U.S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: HAWAIILOA HILL

ESTABLISHED BY: E.R.H.
RECOVERED BY: W.R. Porter

YEAR: 1926 STATE: Hawaii
YEAR: 1964 COUNTY: Honolulu

HEIGHT OF TELESCOPE ABOVE STATION MARK METERS, HEIGHT OF LIGHT ABOVE STATION MARK METERS. DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAM BE SEEN FROM THE GROUND AT THE STATION DISTANCE OBJECT BEARING DIRECTION FEET METERS MOKAPU RESET 1962 00 00 00.0 PAPAA 2 1932 105 11 09.1 HEEIA 1872-1927 192 12 07.2

A "Type C", Hawaii Territory Survey signal was recovered in good condition. No record of its establishment could be found either at the Kaneohe Marine Corps Air Station's DPW office or at the Hawaii State Survey office. A check run was taken which proved that the station is at exact point of the original station. Considerable excavation and cutting was done on the hilltop in preparation for the construction of the Kansas Tower, but the point on which the station

was located was left alone and is at the south side of the Kansas Tower. The distance to HAWAIILOA HILL 2 1941 was checked and it is exactly the same as recorded in 1941. Both stations are on exactly the same line to MOKAFU RESET 1962. A complete description follows:

Station is located on the Kaneohe Marine Corps Air Station, on Puu Hawaiiloa, at the south side of the Kansas Tower, about level with the floor of the glass-enclosed observation room.

Station may be reached by obtaining permission and directions from the S-2 office in the Administration Building (Bldg. No. 215) on the Marine Base.

Station is center of iron pipe that projects 2 feet from the center of a 5-1/2-foot-square, concrete platform which sets on the top of a dirt-filled, 8 x 10-foot concrete box with sides about 6 feet high on the lower side and flush with hill on north side. There is a slight space between dirt and bottom of platform on the east side and the top of a 2-foot-square concrete block can be seen, which supports the platform and the pipe. Station is 5 feet south of edge of stairway and 5.55 meters from HAWAIILOA HILL 2, in azimuth 74° 56'.

An iron pipe, painted alternate red and white, is set into the 2-foot-high pipe and extends 8 feet above station platform.

(R.L.N., 1967) -- Station recovered as previously described.

*Name of chief of party should be inserted here. The officer who actually visited the station should sig. ... usupe at the end of the recovery note.

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

USCOMM-DC 27172-PED

ADJUSTED HORIZONTAL CONTROL DATA

MEGESTATION HAWAIILOA HILL

STATE: HAWAII

1926

THIRD

.

SOURCE: G-SP156

GEODETIC LATITUDE:	21 °27 '04.107 157 45 34.551	ELEVATION:	METERS
GEODETIC CONGITODE:			FEET

	- 1911	STATE COORDINATES (Feet)		
STATE & ZONE	CODE	x	7 U V U 8	# OR A BI ANGLE
HI 3	5103	581,755.30	103,393.95	+ 0 05 17
	8		2	

PLANE AZIMUTH HAS SEEN COMPUTED BY THE & OR A G FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
	0 ' "	0	
		0 (400)	
	4 4 2		

QI 430

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1262 HAWAII 21 ° 00' TO 21 ° 30' LATITUDE LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

Hawaii, B. H. R., 1941) -- New construction HAWAIILOA HILL 2 (necessitated the removal of Hawaiiloa Hill and before the original station was disturbed a new disk, stamped "HAWAIILOA HILL, 1941," was set in the concrete walk running around the new flight control tower built on the hill. The new station is on the SE corner of the walk and will see all around the horizon. A theodolite was set up over the old station and the mark (new) was placed directly on line with station MOKAPU and toward MOKAPU at a distance of 5.548 meters. The new and old station are on the same elevation. At the time this work was done it was thought impossible to save the old station. The local civilian engineer however preserved the location of the old station and has marked it with an iron pipe. For inshore objects this station is still usable and when work is finally completed in the area it can be re-marked with a standard disk.

Station mark (new) is a standard disk set in concrete.

(11-8-65)

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: HAWAIILOA HILL 2 YBAR: 1941 BYATE: Hawaii ESTABLISHED BY B.H.R. RECOVERED BY: H. J. Seaborg YEAR: 1962 COUNTY: Honolulu

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. It is a standard triangulation disk set in a drill hole at the southeast corner of the concrete walk around the Observation Tower known as Kansas Tower. The station is about 20 feet above the ground.

Porm 526 (11-8-55)

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

R

R

NAME OF STATION: HAWAIILOA HILL 2

YEAR: 1941 STATE: Hawaii ESTABLISHED BY: B.H.R. RECOVERED BY: W.R. Porter YEAR: 1963 COUNTY: Honolulu

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

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

Station is located on Puu Hawaiiloa, on the Kaneohe Marine Corps Air Station, on the catwalk at the southeast corner of the "Kansas

Towery a large, concrete, yellow-colored, observation building. Station may be reached by obtaining permission and directions at the S-2 Office in the Base Administration Building (No. 215), on the Marine Base.

Station mark is a standard disk stamped "HAWAIILOA HILL 2 1941", cemented in a drill hole in the concrete catwalk. It is 2.25 feet south-southeast of the southeast corner of the building, 1.83 feet north of edge of catwalk, and 18.208 feet (5.550 meters) east-northeast of station HAWAIILOA HILL 1926.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATIONS Hawaiiloa Hill 2 YEAR: 1941 ESTABLISHED BY: B.H.R. RECOVERED BY:

YEAR: 1967

BENCH MARK(8) ALSO STATE: Hawaii

COUNTY: Honolulu R.L.N. AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

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

Station was recovered as previously described,

ADJUSTED HORIZONTAL CONTROL DATA

HAWAIILOA HILL 2

HAWAII

THIRD

G- 1372 SOUNCE OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: 21 °27 '04 °154 157 45 34 365	SCALED	103	METERS FEET
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STATE & ZONE	CODE	×	•	P OR A B ANGLE
11 3	5103	581,772.87	103,398.72	+ 0 05 17

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR A OF FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (Fram seath)	CODE
	0 ' "		
	-1 87 grade 400		
	The Real Property As		

POSITION DETERMINED BY TRAVERSE FROM STATION HAWAIILOA HILL

DEC 1979

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 211573 HAWAII

LATITUDE

STATION 1263

21 ° 00' TO 21 ° 30'

LONGITUDE 157 0 30 TO 158 0 00

DIAGRAM NF 4-11 OAHU

DESCRIPTION OF SURVEY HARK

NAME OF STATION: Henry

STATE: Hawaii COUNTY: Honolulu

NEAREST TOLM: Honolulu

ESTABLISHED BY State of Hawaii, Highways Division

DATE: 1971

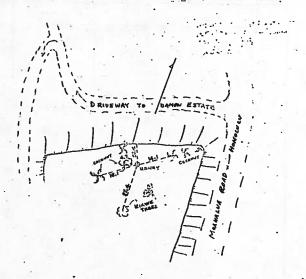
DESCRIBED BY: James T. Ishihara

SURFACE MARK: 3/4 Inch Pipe In Concrete

Station is located on the northeasterly side of the Henry Damon residence on the westerly side of Moanalua Road.

To reach station from the U.S. Army, Fort Shafter Simon Bolivar Buckner Gate, head 0.35 mile northwest along Kaua Street to the intersection at Moanalua Road, continue 0.75 mile northwest along Moanalua Road to a break in the medial strip, turn left in a westerly direction and head 0.15 mile along driveway to old gate to Damon Estate, pass through gate and proceed 0.25 mile along driveway passing the new gate to the Henry Damon residence driveway, turn left and head about 300 ft. in a northerly direction to the end of the driveway and walk about 500 ft. in a northerly direction to station.

Station mark is a $3/4^{\circ}$ pipe set in concrete and level with the ground Ties to station are: NE 16.1 ft. from a coconut tree, S 23.4 ft. from the edge of cut, NSW 14.1 ft. from a coconut tree and northerly 27.4 ft. from a Kiawe (Algaroba) tree.



ADJUSTED HORIZONTAL CONTROL DATA

HENRY NAME OF STATION:

OBS BY HIDT

HAWAII

THIRD

G-15752

GEODETIC LATITUDE:	21°21′26:18438 157 53 59.21252	SCALED	49 METERS	٦
GEODETIC LONGITUDE:	137 33 37.21232	SCALED	FEET	-

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	×	٧	# IOR A ANGLE	
HI 3	5103	534,103.77	69,245,69	+ 0 02 11	
	200				

. PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\,s\,$ for $\Delta\,$ guarantee anglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
SALT LAKE	131° 33′ 27; 9	131° 31′ 16″	5103

THESE DATA OBTAINED FROM ADJUSTMENT OF SEP 1979

RL 143

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1264
HAWAII
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

NO TEXT

	ADJUSTE	HORIZON	AL CON	TROL DAT	Ά		
AME OF STATION	JLU						
I I AWAH	YEAR: 1887				SECO	ND -or	OEA
OURCE: G-SP156							
DEODETIC LATITUDE:	21 °18 '28." 157 51 44.			ŠC.	ALED	3	METERS FEET
		STATE COORD	NATES (Feet)				
STATE & ZONE	cont	×		Y		Ø IOR △ ØI ANGLE	
HI 3	5103	546,833.46		51,2	51,282.66		03′.00
* PLANE AZIMUTH HAS BEEN CO	MPUTED BY THE # 10	OR A FORMULA	NEGLECTING T	HE SECOND TER	м,		L E
TOSTAT	ION OR OBJECT		(Fron	: AZIMUTH I south)	PLANE A	ZIMUTH *	CODE
			۰				
					7.0		

QO 399

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1265 HAWAII LATITUDE 21 ° 00' TO 21 ° 30'

LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

Porm 526 (11-8-55)

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

R

Name of Station: Honolulu Harbor Channel, rear range light EGYALLERIED BY: J.H. Peters Yam: 1935 Stars: Hawaii RECOVERED BY: D.G. Rushford Yam: 1964 COUNTY: Honolulu

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 in downtown Honolulu, at intersection of King and Bethel Streets, on top of the 5-story McCandless Building.

Station is a short, 3-legged, tapering, skeleton-steel tower, painted white. A white, rectangular daymark, with red stripe is mounted on the southwest side of the tower. A flashing red light is mounted on top of tower.

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU HARBOR CHAN R RNG LT

HAWAII

YEAR: 1935

THIRD

SOURCE: G- 9849

GEODETIC LATITUDE:	21 °18 ′46. 281	ELEVATION:	METERS
GEODETIC LONGITUDE:	157 51 56.639		FEET

STATE COORDINATES (Feet)							
STATE & ZONE	CODE	×	¥ = 7	# IOR A BI ANGLE			
HI 3	5103	545,703.91	53,120.17	+ 0°02′56			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\,s\,$ for $\Delta\,$ G: Formula neglecting the second term,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE	
		0 /		
37				

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1266 QUAD 211573 LIAWAH LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

,			
U. B. COAST AND GEOGRIC SURVEY	DESCRIPTION	OF TRIANGULATION	INTERSECTION STATIO

NAME OF STATION. Honolulu Harbor Year: 1964 STATE: Hawaii Front range light

COUNTY: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the range light mounted on top of a white pipe structure on the roof of the American Factors Building in Honolulu at intersection of Halekauwila and Fort Streets. The light is 90 feet above street level. The pole structure is guyed 3 ways and has a white, rectangular daymarker, with a vertical red stripe, affixed on its seaward side.



· .c

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU HARBOR F RNG LT

THIRD

SOURCE: G-13544

GEODETIC LATITUDE:	21 °18 '40 297 157 52 00 033	ELEVATION	METERS FEET
GEODETIC CONTONION			

		STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	y	# IDR A BI ANGLE		
HI 3 5103	5103	545,383.51	52,516.12	+ 0°02′.54		

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

HORIZONTAL CONTROL DATA

NATIONAL GEODETIC SURVEY OLD HAWAIIAN DATUM

QUAD 211573 STATION 1267 QUAD 2110/5
HAWAII
LATITUDE 21°00' TO 21°30'
LONGITUDE 157°30' TO 158°00'
DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: HONOLULU KING BLDG EAHMA GARDENS Elev Shaft

CHIEF OF PARTY: C.A. Annis YEAR: 1968 STATE: Hawaii County: Honolulu

Description, including sketch of object:

The station is the light on the top of the elevator shaft; the building is located at 1519 Nuuanu avenue; it is the northeast and highest of 2 white buildings and is 23 floors high.

FORM C&GS-525b (12-48)

U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HONOLULU KING BLDG EAMMA GRONS

STATE: HAWAII

YEAR 1969

THIRD -ORDER

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 19 06.02288 157 51 34.17472	ELEVATION:	WETERS

STATE COORDINATES (Feet)						
STATE & ZONE	ATE & ZONE CODE		•	# 108 A 61 ANGLE		
HI 3 5103	547,826.24 55,113.96		+ 0 03 04			
	The Value	1000	- 1			

Plane azimuth has been computed by the ϕ for Δ =1 formula neglecting the second term.

TO STATION OR OBJECT		GE ((From	AZIM south			E AZI	МЏТН [*] 116)		CODE
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		1				,			- 1	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1268 QUAD 211573 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

Honolulu longitude monument (Oahu Island, Edwin Smith, 1903).—In the grounds of the United States Navy station, 88.97 meters (291.9 feet) north and 505.97 meters (1,660.0 feet) east of harbor light. Station marked by a concrete pier 14 by 26 inches in cross section, and 3 feet high, resting on a concrete foundation 3 by 4 feet in cross section, which in turn rests upon coral rock 2½ feet below surface of ground. North of the center of the pier, and 3.435 meters (11.27 feet) therefrom is a galvanized iron pipe 2½ feet long set in cement, with its center marked by a conper bolt. its center marked by a copper bolt.

HONOLULU LONGITUDE MONUMENT (

Hawaii, E.S., 1903; G.A.N.,

1952) tion is in a built-up part of the city and is presumed to be gone.

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: HONOLULU LONGITUDE MONUMEN T RECOVERED BY: D.G. RUSHFORD YEAR: 1903 STATE: Hawaii

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

Searched for but not found. Station was located on property that has been a military reservation for many years. There is a large barracks very near where the station was. Station was probably destroyed by construction.

Comm-DC 34314

HONOLULU LONGITUDE MON

STATE: HAWAII

THIRD

G-SP156

GEODETIC LATITUDE: 21 °18 '23.719 GEODETIC LONGITUDE: 157 51 55.441	SCALED	2	METERS
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		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	к	¥	Ø IOR∆ ØI ANGLE
HI 3	5103	545,819.13	50.843.79	+ 0°02′.56

ANE AZIMUTH HAS BEEN COMPUTED BY THE 8 (OR A G) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	coc
	0 , "		

QI 340

HORIZONTAL CONTROL DATA

by the

NATIONAL GEODETIC SURVEY

OLD HAWAIIAN DATUM

QUAD 211573 STATION 1269
HAWAIT
LATITUDE 21 ° 00' TO 21 °30' t
ONGITUDE 157 ° 30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: HONOLULU MAKIKI TOWER APT ANTENNA

CHIEF OF PARTY: Carl A. Annis YEAR: 1969 STATE: Hawaii COUNTY: Honolulu

Description, including sketch of objects

The station is the TV antenna on top of the elevator shaft of a tan and white building which is 18 floors high. It is located at 1617 Keeaumoku Street.

FORM C&GS-5256 (12-68)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

MAME OF STATION: HONOLULU MAKIKI TOWER APT ANT

STATE: HAWAII

YEAR: 1969

THIRD -ORDER

SOURCE: G-14543

NO OBSERVATIONAL CHECK ON THIS POSITION

GEODETIC LATITUDE:	21 18 28,62998	ELEVATION	METERS
GEODETIC LONGITUDE:	157 50 17.37524	-7239-1 - I-	PEST

		STATE COORDINATES (Feet)		12
STATE & ZONE	CODE	х	•	# IOR A 41 ANGLE
ні 3	5103	555,091.59	51,348.01	+ 0 03 32

 ullet plane azimuth has been computed by the $\,$ # ior Δ =1 Formula neglecting the second term,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	coos
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The state of	* *		
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		*	
*			

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1270 HAWAII 21 ° 00' TO 21 ° 30' LATITUDE LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

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

R

Name of Station: Honolulu, Radio Station KHVH Tower

ESTABLISHED BY: H.O.F. RECOVERED BY: H.J.S.

Yman: 1957 State: Hawaii YEAR: 1961 COUNTY: Honolulu

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

It is the tall structural steel radio mast painted in alternate red and white sections located at Waikiki Beach and just west of the Hilton Hawaiian Village Hotel.

Pora 526 (11-8-55)

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

INTERSECTION

NAME OF STATION: Honolulu, Radio Station KHVH, Tower RECOVERED BY: H.O.F. YEAR: 1957 STATE: HAWAII
RECOVERED BY: D.M. Whipp YEAR: 1965 COUNTY: HONOlulu

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

was recovered. It is a slender, 3-legged, skeleton steel structure, about 279 feet tall and painted alternate red and white. Located in the Waikiki District, on grounds of the Hilton Hawaiian Village Hotel parking lot.

*Name of chief of party should be inserted here. The officer who actually visited the station should sign his me Norm.—One of these forms must be used for every station recovered.

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU RADIO STA KHVH TOWER

OBS BY HTS

STATE

1957

THIRD

G-11968

0EODETIC LATITUDE: 21 °17 ′11 . 899 0EODETIC LONGITUDE: 157 50 24-291	ELEVATION	METERS FEET
---	-----------	----------------

STATE & ZONE	cept	×	Ψ.	# IOR A BI ANGLE
I 3	5103	554,445.49	43,605.27	+ 0°03′29

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $|\theta|$ OR Δ 4) FORMULA NEGLECTING THE SECOND TERM,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From somb)	PLANE AZIMUTH * (From south)	CODE
	(4)		

OF 213

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1271
HAMAII
LATITUDE 21 ° 00' TO 21 ° 30'
CONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

HONOLULU ST. ANDREWS CATHEDRAL HI TOWER

(Oahu Island, E. R. Hand, 1925).—In southeastern Oahu, on southwestern slope of Punchbowl, tower of heavy design, square, yellow, each corner built out cylindrically, with one raised higher than the other three.

Pora 526 (11-8-65) U.S. DEPARTMENT OF COMMERCE - COAST AND GRODETIC SURVEY
RECOVERY NOTE, TRIANGULATION STATION
INTERSECTION

R

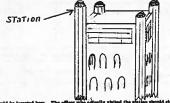
Honolulu
Name of Station: St. Andrews Cathedral, highest tower
Established by: E.R.H. Year: 1925 State: Hawaii
Recovered by: D.G. Rushford Year: 1964 County: Honolulu

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

Station was

identified by angle at station FUNCHBOWL and recovered.

Located in Homolulu along Queen Emma Street, at Queen Emma Square, on the tower of the St. Andrews Cathedral. The tower is a tan, stone structure about 100 feet high, with each of its 4 corners built out in octagonal shape and extending above the top of the tower. One corner extends further above the tower top than the others and this one is the station.



RECOVERY NOTE, THAT SECTION STATION

HONOLULU

NAME OF STATION: ST ANDREWS CATH HIGHEST TOWER
ESTABLISHED BY: E. R. H. YEAR: 1925 STATE:

ENTABLISHED BY: E. R. H. YEAR: 1925 STATE: Hawaii BENCH MARK(8) ALBO RECOVERED BY: Carl A. Annis Year: 1969 COUNTY: Honolulu

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

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

Intersection station recovered in good condition as described by D. G. Rushford in 1964.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HONOLULU ST ANDREW CATH HI TWR

HAWAII

1925

THIR

....

SOURCE. G-SP156

GEODETIC LATITUDE: 21 °18 '47."329 GEODETIC LONGITUDE: 157 51 35.850	ELEVATION.	METERS FEET
--	------------	----------------

STATE COURDINATES (Feet)				
STATE & ZONE	CODE	×	v	# OR A ST ANGLE
HI 3	5103	547,669.51	53,227.63	+ 0 03 03

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 108 A 41 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH " (From south)	CODE
	0 '	8 2	
*18	eci la	321	

QI 331

FORM CAGS-526 (9-66)

U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC BURYES

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1272 HAWAII 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

R

Name of Station: Honolulu, Tripler Hospital, Twin Lights
Established by: HTS Year 1957 State: Hawaii
RECOVERED BY: D.G. Rushford Year 1964 County: Honolulu

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

The station was recovered. It is located about 4 miles airline northwest from the center of Honolulu, on top of

that is the highest part of the southwest edge of the small square roof that is the highest part of the hospital building.

Although called twin lights, there are actually 4 lights in the group, but so arranged that appear as twins from a distance. The lights are mounted on a horizontal bracket on top of a single pipe extending about 3 feet above the roof 3 feet above the roof.



RECOVERY NOTE, TRANSPECTION STATION

NAME OF STATION: HONOLULU TRIPLER HOSP TWIN LIGHTS YEAR: 1957 STATE: Hawaii BENCH MARK(S) ALSO COUNTY: Honolulu Carl A. Annis YEAR, 1969 RECOVERED BY: AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

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

Intersection station recovered in good condition as described by D. G. Rushford in 1964.

FORM C&GS-526 (8-68)

U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU TRIPLER HOSP TWIN LTS

HAWAII STATE:

YEAR: 1957

THIRD

SOURCE: G-11968

	' "		
GEODETIC LATITUDE	21 21 46.206	ELEVATION	METERS
GEODETIC LONGITUDE:	157 53 34.881		FEET

STATE COORDINATES (Feet)					
STATE & ZONE	cone	×	•	# IOR A BI ANGLE	
HI 3	5103	536,402.36	71,267.38	+ 0°02'20	

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, heta\,$ OR $\Delta\,$ SI FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From seath)	PLANE AZIMUTH * (From south)	CODE
	.0. 1	0.00	
		1 9 13	

HORIZONTAL CONTROL DATA

by the NATIONAL GEODETIC SURVEY OLD HAWAIIAN DATUM QUAD 211573 STATION 127
HAWAII
LATITUDE 21° 00′ 10 21° 30′
LONGITUDE 157° 30′ 10 158° 00′
DIAGRAM NF 4-11 OAHU STATION 1273

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: HONOLULU UNIV OF HAWAII FLAGPOLE

CHIEF OF PARTY: C.A. Annis YEAR: 1969 STATE: Hawaii County: Honolulu

Description, including sketch of objects

FORM C&GS-5256 (12-68)

The station is the ball on the top of the flagpole, located at the south side of the university grounds at the corner of Dole street and University Avenue and is about 60 feet high.

U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HONOLULU UNIV HAWAII FLAGPOLE

STATE: HAWAII

YEAR: 1969

THIRD -ORDER

source: G-14543

		, ,	0	
ATION: METERS	ELEVATION:	18 01.63888	= 21 18	GEODETIC LATITUDE:
FERT		49 23.12315		GEODETIC LONGITUDE:
		49 23.12315	101 49	GEDDETIC CONGITODE.

STATE COORDINATES (Feet)					
STATE & ZONE	TATE & ZONE CODE		*	# IOR A 41 ANGLE	
ні 3	5103	560,224.60	48,630.15	+ 0 03 51	
				- 1	

	O STATION OR C	BJECT		080	ODETIC AZ			AZIMUTH "	CODE
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				- *			G 393	= ×	
			12						
								-	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1274
HAWAII
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

SEE STATION KALIHI 2

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HYDRANT 4859

STATE: HAWAII

1964

THIRD

-04068

G-12664 OBSERVATION CHECK ON THIS POSITION

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °19 ′28.349 157 53 40.016	SCALED	2	METERS FEET

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	ж	Y	Ø IOR △ GI ANGLE
HI 3	5103	535,926.31	57,357.36	+ 0°02′18

*PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\,\, heta\,\,$ formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH " (From sauth)	cont
	0 / "	0 ' "	

POSITION DETERMINED BY TRAVERSE FROM STATION KALIHI 2

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAHAN DATUM

QUAD 211573 STATION 1275 IIAWAH 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

KAHALA(Hawaii, L.G.S., 1928) -- A standard bronze disk (Territory Survey) set in concrete pier located on grounds of Kahala Public Park near beach, W of golf course entrance. The mark is a few yards NV of bathhouse.

PORM 5260

U.S. DEPARTMENT OF COMMERCE

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: KAHALA

/ YEAR: 1928 , STATE: ESTABLISHED BY: L.G.S. Hawa11 W.R. Porter YEAR: 1963 COUNTY: Honolulu

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.5 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 DISTANCE DIRECTION METERS PEET WAIALAE 1927 00 00.0 R.M. No. 1 NNE 173.70 (52.944) 13 46 15 NW Corner of Bath-house ENE 64.8 71 24 27 R.M. No. 2 71.510 271 32 36 Water Faucet NW 12.95 299 25 39 Traverse Mark NNW 435.308 (132.682)343 29

Station mark was recovered and found in good condition, although it was about 20 inches below ground surface. The mark was left in place as an underground mark, and a new surface mark was plumbed over it. Two reference marks were established. A complete description follows:

Station is located airline, about 6 miles east-southeast of the Federal Building in Honolulu and 2-1/4 miles east-northeast of Diamond Head, in the south corner of Waialae Beach Park, about 0.1 mile southwest of the clubhouse of the Waialae Golf Club.

To reach station from the Waikiki Fire Station, at intersection of Ala Wai Blvd and Kapahulu Ave, go south on Paki Ave for 1.0 mile; continue ahead, on Diamond Head Road, for 1.5 miles to fork. Continue ahead, on right fork (Kahala Ave), for 1.6 miles to the park on right. Go southeast, along right side of park, for about 125 yards to station.

Station mark is a standard disk stamped "KAHALA 1928 1963", set in the top of a 12-inch-square, concrete monument flush with the ground. It is 45.9 feet northeast of cement-block wall, 150.1 feet southwest of south-west end of foot-bridge over canal, 15 feet southeast of a 30-inch banyan tree, and about 23 yards northwest from mean high water line.

Underground mark is an unstamped, Hawaii Territory Survey, bronze disk set in the top of a mass of concrete about 20 inches under ground. Reference mark number one is a standard disk stamped "KAHALA NO 1 1928 1963", cemented in a drill hole in the concrete wall along the southwest side of a canal. It is 64.7 feet northwest of edge of foot-bridge.

Reference mark number two is a standard disk stamped "KAHALA NO 2"

1928 1963", set in the top of an 11-inch-square, concrete monument flush with the ground. It is 18 inches north from the junction of the cement block wall and a board wall, and opposite the end of the property line running southwest from the park boundary.

Traverse mark is a 4-inch, chiseled cross in the concrete walk on the southeast side of the concrete bridge on Kahala Ave. The cross is 8 inches southwest from the northeast end of the walk.

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

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

ADJUSTED HORIZONTAL CONTROL DATA

KAHALA NAME OF STATION

HAWAII

1928 YEAR:

SECOND

SOURCE: G- 7448

GEODETIC LATITUDE: 21 °16 ′20.058 GEODETIC LONGITUDE: 157 46 49.439	SCALED	1	METERS FEET

STATE & ZONE	CODE	×	•	P OR △ AT ANGLE
H1 3	5103	574,771.65	38,398.99	+ 0 04 47

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, heta\,$ (OR $\Delta\,$ 4) FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From touth)	PLANE AZIMUTH * (From south)	CODE
WAIALAE	184 °25 ′53.*8	184°21′07°	5103

OE 014

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1276 IIAWAH LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY FORTH ASS D	DESCRIPTION	OF TRIANGULATION	Intersection Station
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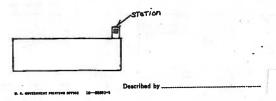
Name of Station: Kailua, Kaneohe Year: 1964 State: Hawaii Reservoir

COUNTY: Honolulu

CHIEF OF PARTY: D.G. Rushford

Description, including sketch of object: Located at north end of Kailua, on east slopes of Puu Papaa, at about 220 feet elevation. 381 meters east-northeast of station PAPAA 2, about 300 yards southwest of Kaneohe Bay Drive, and 0.35 mile west-northwest of intersection of Mokapu Blvd. and Kaneohe

A concrete, water reservoir 60 feet in diameter and 18 feet high, with a small gauge-house 4 x 8 feet in size, at east edge of top of reservoir and projecting 7 feet above the top. Point intersected was center of gauge-house.



ADJUSTED HORIZONTAL CONTROL DATA

KAILUA KANEOHE RESERVOIR

THIRD

SOURCE: G-12664

GEODETIC LATITUDE:	21 25 35 236	ELEVATION	METERS
GEODETIC LONGITUDE:	157 45 21.899		FEET

STATE & ZONE	CODE	×	Y	9 OR A BI ANGLE
HI 3	5103	582,964.44	94,428.61	+ 0 05 21

PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ IOR & FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR DEJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	cop
	0 , •	0 ' "	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1277 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

KALIHI (Hawaii, L.G.S., 1928) -- A standard bronze disk (Territory Survey) set in concrete pier on coral at the makai end of Pineapple Road in Kalihi, about 25 yards 8 of road between road and Auiki pond.

KALIHI (

Hawaii,L.G.S.,1928;G.A.N.,1952)
--J.M. Dunn, Territorial Surveyor, stated: Station is in an area used during World War II for warehouses and filled in. It was said to have been shielded by a form built around the station when fill was made. It was searched for and not found. Should be considered lost for practical purposes.

RECOVERY NOTE, TRIANGULATION STATION

IAME OF STATION: KALTHT STABLISHED BY: L.G.S.

YEAR: 1928 STATE: Hawaii RECOVERED BY: W.R. Porter YEAR: 1963 COUNTY: Honolulu

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.6 METERS, HEIGHT OF LIGHT 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 OBJECT BEARING DIRECTION PEET SALT LAKE 1873-1927 00 00.0 R.M. No. 1 NE 6.446 64 01 30 R.M. No. 2 SE 65.304 19.906 173 37 06

Station was recovered and found in good condition, although it has been re-marked with a disk that appears to be a U.S. Corps of Engineers mark. No information or records could be found to indicate who re-marked the station. It is located in an area that was filled in during World War II, and was probably re-marked to bring it up to ground level. Two new reference marks were established. A complete description follows: Station is located about 2 miles airline west-northwest of the Federal

Building in Homolulu, just outside the west boundary of the Kapalama Military Reservation, in the south end of the storage yard of State Tile Co.

To reach station from entrance of Kapalama Military Reservation, at junction of Waiakamilo St, and Nimitz Highway, go northwest on Nimitz Highway for 0.7 mile; turn left on Sand Island Access road and go 0.5 mile; turn left on Auiki St. and go 0.1 mile; turn right, into entrance of State Tile Company, and go 0.1 mile to end of yard; turn left and go about 50

yards to station.

Station mark is a bronze disk, with no pre-cast lettering on it, but stamped "TERR. OF HAWAII TRIG STA KALIHI RESET OCT 1948", set in concrete in a 6-inch iron pipe that projects 4 inches above ground and has an 18-inch-square, concrete shoulder around it, flush with top of pipe. The mark is 4 inches below top of pipe. A 7-inch, iron, hand-hole cover, with "WATER" embossed on it, is on top of the pipe. The mark is 46.2 feet north of south fence line, 21.4 feet south-southwest of a fence-corner post where an extension of the yard runs eastward, and 111.9 feet west-southwest of the northeast corner of the extension.

Reference mark number one is a standard disk stamped "KALIHI NO 1 1928 1963", cemented in a drill hole in the concrete base of the fence corner post, about 1 inch above ground.

Reference mark number two is a standard disk stamped "KALIHI HO 2 1928 1963", set in the top of an ll-inch-square, concrete monument flush with ground. It is 1 foot north of the south fence line of the yard and 68 feet west of the southeast corner of the yard.

(continued on next page)

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-P85

ADJUSTED HORIZONTAL CONTROL DATA

KALIHI NAME OF STATION

HAWAII

1928

SECOND

G- 7448

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °19 ′27.′087 157 53 34.843	SCALED	1 METERS

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	•	# IDR A BI ANGLE
HI 3	5103	536,415.49	57,230.36	+ 0°02′20′

 $^{\circ}$ Plane azimuth has been computed by the $\,\,g\,$ ior $\,\Delta\,$ $\,\,$ eu formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From soulb)	CODE
SALT LAKE	158 24 54.1	158 22 34	5103

QE 001

JUN 1978

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

KALIHI (continued)

HORIZONTAL CONTROL DATA by the

NATIONAL GEODETIC SURVEY OLD HAWAIIAN DATUM

QUAD 211573 LONGITUDE DIAGRAM

STATION 1277

Pore 526 (11-8-65)

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

R

NAME OF STATION: KALIHI ESTABLISHED BY: L.G.S. NAME OF STATION: RELIGIBLE TO STATE: RECOVERED BY: D.G. S. YEAR: 1928 STATE: Hawaii RECOVERED BY: D.G. RUShford Year: 1964 County: Honolulu

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

Station mark and reference mark number two were recovered in good condition. Reference mark number one was found destroyed.

The Army has terminated the leases of several small industries on U.S. Government property in the vicinity and plans to use the land. When State Tile Company vacated the property on which the station is located the reference mark was destroyed by bulldozer during the

cleanup of the area.

Since the station is liable to be destroyed or badly obstructed to the extent of uselessness when the army occupies the property, a new station, KALIHI 2, was established. See description for that station.

Comm-DC 34314

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1278 IIAWAH LATITUDE 21 ° 00' TO 21 °30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: KALIHI 2

STATE: Hawaii

Honolulu

NOTE,	HEIGHT OF TELESCOPE ABOVE	STATION MARK 1 METE	964. RB.1	HEIBHT OF	SCRIBED BYS R.F.	ION WAR	POII		ETER
1b 7a	Surface-station mark, Underground-station mark	DISTANCES AND DIRECTION WHICH C			ERENCE MARKS COUND AT THE S			ENT OBJE	ста
10	O.E.	UECT	BEARING	DIST	ANCE		nin	ECTION :	_
			appending.	feet	meters		Disc	PCITORI	
	PUNCHBOWL 1873-19: Street Marker, Sm Cross on concrete R.M. No. 1 Hydrant No. 4859 Property Corner M	ike post(Azimuth Mark)	SE	107.550	(47.442) mile (31.788) (32.781)	00 42 49 59 59	00 21 31 03 28	00.0 18 06.5 11 10	
116	R.M. No. 2 Honolulu, Int. Air		WSW *	8.301 12.303	2.531 3.751	136 153 188	31 17 15	41 32 38.0	Ĭ.

Station is located about 2 miles west-northwest of center of Honolulu, along the southwest side of Sand Island Road, 1/2 mile northwest of Sand Island Bridge, and at the northeast corner of the high, corrugated iron fence surrounding the Keehi Drydock Company yard.

To reach station from the entrance of Kapalama Military Reservation, at junction of Waiakamilo St. and Nimits Highway, go northwest on Nimits Highway for 0.7 mile; turn left on Sand Island Road and go 0.6 mile to station on right.

Station mark is a standard disk stamped "KALIHI 2 1964", set in the top of a

12-inch-diameter, concrete monument, about 1 inch below ground level. It is 20 feet west of edge of road, 3.7 feet northeast of power pole No. 18, and on opposite side of the power pole from two water company junction boxes.

Underground mark is a standard disk stamped "KALIHI 2 1964", set in a mass of concrete about 3 feet below ground level.

Reference mark number one is a standard disk stamped "KALIHI 2 NO 1 1964", cemented in a drill hole in the north side of the semi-circular, concrete curbing around hydrant No. 4859. It is at about same elevation as station.

Reference mark number two is a standard disk stamped "KALIHI 2 NO 2 1964", set in the top of a 12-inch-diameter, concrete monument that projects 3 inches above ground. It is 5 feet west of the property corner marker, 1.9 feet north of fence, and about same elevation as station.

Cross on concrete post (Asimuth Mark) is a 2-inch cross in the top of a post that is the 4th one of 6 (from bridge) in the guard-rail on northeast side of the road. It is 18 feet north-northwest of a traffic light.

Property corner marker is a 3/8-inch iron rod comented in a 3/4-inch pipe, set

at corner of fence, flush with ground.

Street Marker Spike is large, round-head spike driven into road surface, flush, on center-line of road at south end of long curve. It has a white circle surrounding it.

ADJUSTED HORIZONTAL CONTROL DATA

KALIHI 2

STATE HAWAII

1964

SECOND

-ORDER

SOURCE G-12664

21 19 29 367 GEODETIC LATITUDE SCALED. METERS 157 53 40.353 GEODETIC LONGITUDE FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	Y	FIOR A BI ANGLE
HI 3	5103	535,894.38	57,460.06	+ 0°02′18

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR A GI FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From toatb)	CODE
AZIMUTH MARK	332 49 04.6	332°46′46″	5103

POSITION DETERMINED BY TRAVERSE FROM STATION KALIHI AND CHECKED BY ADDITIONAL OBSERVATIONS

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 HAWAII LATITUDE 21 °00' TO 21 °30' LONGITUDE 157 °30' TO 158 °00' DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

COUNTY: Honolulu Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Front Range Light

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the range light on top of a 3-legged, skeleton steel tower that is 33 feet high and is painted alternate orange and white. The light projects 4 feet above top of tower. A large, diamond-shaped daymarker is affixed to the south side of

Located on the east edge of Harris Island, 50 yards west of Kalihi Channel Light No. 13, on west side of Kalihi Channel.

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ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KALIHI CHANNEL F RNG LT

STATE: HAWAII

THIRD

SOURCE: G-13544

GEODETIC LATITUDE: 21 °18 '43.883 157 53 52.824	ELEVATION	METERS FEET
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STATE & ZONE	CODE	× .	¥	# IOR A BI ANGLE
HI 3	5103	534,718.25	52,869.98	+ 0°02′14

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # (OR A #) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODÉTIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	COD€

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211575 STATION 1280 HAWAII LATITUDE LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Green light 5

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the green light mounted on a pipe atop a black box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "5" is painted on 3 sides of the box.

Located about 1250 yards west of the south tip of Sand Island, on the west side of Kalihi Channel.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KALIHI CHANNEL GREEN LIGHT 5

YEAR 1964

THIRD

SOURCE: G-13544

GEODETIC LATITUDE:	21 °18 '09.719	ELEVATION:	METERS
GEODETIC LONGITUDE:	157 53 59.797		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	•	FIOR A RI ANGLE
HI-3	5103	534,061.11	49,422.45	+ 3 32 11

TO STATION OR OBJECT		EODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
	-	a , ,		
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HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1281 QUAD 211573 IIAWAH 21 ° 00' TO 21 ° 30' LATITUDE LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY FORTH, 525 b	DESCRIPTION	OF TRIANGULATION	Intersection	STATION
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Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Green light

County: Honolulu

CHIEF OF PARTY: R.C. Munson

17.0

Description, including sketch of object: Station is the green light mounted on a pipe atop a black box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white number "9" is painted on 3 sides of the box.

Located about 490 yards south of Harris Island, on the west side of Kalihi Channel.

KALIHI CHANNEL GREEN LIGHT 9

STATE HAWAII

YEAR: 1964

THIRD

SOURCE G-13544

GEODETIC LATITUDE	21 °18 '28.623 157 53 57.262	ELEVATION	METERS FEET
020021102011011			

STATE & ZONE	CODE	×	٧	# IDR A & ANGLE
HI 3	5103	534,259.60	51,330.00	+ 0 02 12

 $^{\circ}$ PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\,\, g\,$ IOR $\Delta\,$ GI FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (Fram south)	COD
	0 , "	0	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573

STATION 1282

HAWAII

LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00'

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Green light 13

County: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the green light mounted on a pipe atop a black box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "13" is painted on

3 sides of the box.

Located about 45 yards offshore from the east edge of Harris
Island, on the west side of Kalihi Channel, 50 yards east of the Kalihi Channel Front Range Light.

100

DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KALIHI CHANNEL GREEN LIGHT 13

STATE: HAWAII

YEAR. 1964

THIRD

SOURCE: G-13544

GEODETIC LATITUDE:	21 °18 '43.'987	ELEVATION	METERS
GEODETIC LONGITUDE:	157 53 51.235		PEET

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	Υ	# IOR A GI ANGLE
HI 3	5103	534,868.50	52.880.58	+ 0°02′14

PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ 'OR A 1 FORMULA NEGLECTING THE SECOND TERM.

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

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1283 QUAD 211573 HAWAII LATITUDE LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

CHEARTIMENT OF COMMERCE

U. S. COLITAIN STATES DESCRIPTION OF TRIANGULATION INTERSECTION STATION

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Green light 17

County: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the green light mounted on a pipe atop a black box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "17" is painted on 3 sides of the box.

Located about 190 yards southeast of the Kalihi Channel Rear Range Light and 100 yards east of the south end of the mud flat on which the rear range light is located, on northwest side of Wellin Channel.

Kalihi Channel.



STATE: HAWAII

SOURCE: G-13544

ADJUSTED HORIZONTAL CONTROL DATA

KALIHI CHANNEL GREEN LIGHT 17

THIRD

21 18 58.900 METERS ELEVATION GEORETIC LATITUDE 157 53 47.005 FEET GEODETIC LONGITUDE:

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	•	B DR & B ANGLE
11 3	5103	535,267.47	54,385.54	+ 0 02 16

THE BY THE 4 108 A ST FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	CODE
	0	*	
		LATE AND A SECOND	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1284 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

MERCE DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Green light 19

County: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the green light mounted on a pipe atop a black box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "19" is painted

on 3 sides of the box.

Located about 100 feet south, offshore, from the southernmost tip of land at the State of Hawaii Keehi Marina, on northwest side of Kalihi Channel.



ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATIONS KALIHI CHANNEL GREEN LIGHT 19

STATE HAWAII

YEAR: 1964

THIRD

SOURCE: G-13544

GEODETIC LATITUDE:	21 °19 '02.216	ELEVATION:	METERS
GEODETIC LONGITUDE:	157 53 36.143		FEET

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	٧	# OR A GI ANGLE
HI 3	5103	536,294.27	54,720.81	+ 0 02 20

PLANE AZIMUTH HAS BEEN COMPUTED BY THE A IOR A SI FORMULA NEOL

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	COD
	0 / *		
	l		

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1285 QUAD 211573 HAWAII 21 ° 00' TO 21 ° 30' LATITUDE LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Rear Range Light

COUNTY: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the range light on top of a 3-legged, skeleton steel tower that is 62 feet tall and is painted alternate orange and white. The light projects 4 feet above top of tower. A large, diamond-shaped daymarker is affixed to the south side of the tower.

Located on the mid flat southwest across Seaplane Lane "D" from the State of Hawaii Keehi Marina, about 170 yards north from south end of the mud flat.

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ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KALIHI CHANNEL R RNG LT

STATE: HAWAII

YEAR 1964

THIRD

SOURCE: G-13544

GEODETIC LATITUDE	21 °19 '03.875 157 53 50.193	ELEVATION	METERS FEET
GEODETIC LONGITODE			

STATE & ZONE	CODE	×	*	8 IOH A SI ANGLE
н1 3	5103	534,965.71	54,887.32	+ 0°02′14

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TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From south)	coo
	0 ' "	0 , "	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1286 HAWAI I LATITUDE 21 ° 30' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Red light 6

COUNTY: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the red light mounted on a pipe atop a red box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white number "6" is painted on 3 sides of the box.

Located about 1100 yards west of the south tip of Sand Island, on the east side of Kalihi Channel.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KALIHI CHANNEL RED LIGHT 6

STATE: HAWAII

THIRD

SOURCE: G-13544

GEODETIC LATITUDE: 21 °18 '08 "557 GEODETIC LONGITUDE: 157 53 54 950	ELEVATION.	METERS FEET
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STATE COORDINATES (Fert)				
STATE & ZONE	CODE	×	· ·	# IOR A I ANGLE
E 1H	5103	534,519.50	49,345.86	+ 0°02′13
	1			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE θ (OR Δ α) FORMULA NEGLECTING THE SECOND TERM,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From touth)	FLANE AZIMUTH * (From west)	CODE
	0 , "		

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1287
HAWAI I
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

DEPARTMENT	
	GEODETIC SURVEY

MERCE DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station Kalihi Channel, Year: 1964 State: Hawaii Red light 8

COUNTY: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the red light mounted on a pipe atop a red box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. Large white number "8" is painted on

3 sides of the box.

Located about 570 yards southwest of Mokauea Island, on the east side of Kalihi Channel



	Described by

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KALIHI CHANNEL RED LIGHT 8

STATE: HAWAII

YEAR: 1964

THIRD

U -05

SOURCE: G-13544

GEODETIC LATITUDE:	21 °18 ′27.′462	ELEVATION	METERS
GEODETIC LONGITUDE:	157 53 52.402		FEET

STATE & ZONE	CODE	×	٧	BIOR A BI ANGLE
11 3	5103	534,759.23	51,213.15	+ 0 02 14

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, g \,$ (OR $\Delta \,$ 4) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From senib)	COD
	(40)		

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 HAWAII

STATION 1288

LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

REPARTMENT OF COMMERCE			
U. S. COAST AND GEDDETIC SURVEY	DESCRIPTION A	OF TREAMORE ASSOCIA	INTERSECTION STATION
Form 485 b	DESCRIPTION A	OF TRIVICULATION	inibrsection station

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Red light 12

COUNTY: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the red light mounted on a pipe atop a red box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "12" is painted on 3 sides

Located about 210 yards southeast of the south end of Harris Island and 150 yards southwest of the west point of Mokauea Island, on the east side of Kalihi Channel.

STATE HAWAII

ADJUSTED HORIZONTAL CONTROL DATA

KALIHI CHANNEL RED LIGHT 12

THIRD

FEET

SOURCE: G-13544 21 °18 '40.758 GEODETIC LATITUDE: ELEVATION: METERS 157 53 47.098

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	х	¥	# IOR A & ANGLE	
HI 3	5103	535,259.88	52,555.03	+ 0 02 16	

PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\, g \, \, \mathrm{ior} \, \Delta \, \, \, \mathrm{g}_{\, \, \, }$ Formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From touth)	CODE
	. , ,		
	•	•	'

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1289 QUAD 211573 HAWAII HAMAII LATITUDE 21 °00' TO 21 °30' LONGITUDE 157 °30' TO 158 °00' DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

DEPARTMENT OF COMMERCIA U. S. COAST AND GEODETIC SURVEY FORTE 525 D	DESCRIPTION	OF TRIANGULATION	INTERSECTION STATION
---	-------------	------------------	----------------------

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Red light 16

COUNTY: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the red light mounted on a pipe atop a red box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "16" is painted on 3

Located about 60 yards north, offshore, from the north end of Mokauea Island, on the east side of Kalihi Channel.

NAME OF STATION: KALIHI CHANNEL RED LIGHT 16

STATE HAWAII

YEAR 1964

THIRD

SOURCE G-13544

GEODETIC LATITUDE	21 °18 '48.622	ELEVATION	METERS
GEODETIC LONGITUDE:	157 53 41.731		FEET

STATE & ZONE	CODE		¥	# IOR △ BI ANGLE
11 3	5103	535,766.83	53,348.83	+ 0°02′18

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR & 41 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	con
The state of the s	0 , #	0 , "	
	1	1	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1290
HAMAI I
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kalihi Channel, Year: 1964 State: Hawaii Coun Red light 20

County: Honolulu

CHIEF OF PARTY: R.C. Munson

Description, including sketch of object: Station is the red light mounted on a pipe atop a red box on a dolphin. Center of light is 5 feet above top of box and is 15 feet above water. A large white "20" is painted on 3 sides of the box.

Located about 100 feet offshore from the west end of Sand Island, on the southeast side of Kalihi Channel.

140

Described	ьу	
Described	u,	

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION KALIHI CHANNEL RED LIGHT 20

STATE HAWAII

YEAR 1964

THIRD

...

SOURCE: G-13544

DEODETIC LATITUDE: 21 °18 '57.406 GEODETIC LONGITUDE: 157 53 33.140	ON. METERS FRET
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STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	٧	8 OR A A ANGLE
HI 3	5103	536,578.54	54,235.68	+ 0"02'21

 $^{\circ}$ PLANE AZIMUTH HAS BEEN COMPUTED BY THE ~ heta~ (OR $\Delta~$ $^{\circ}$). FORMULA NEGLECTING THE SECOND TERM.

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

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 HAWAII 21 ° 00' TO 21 ° 30' LATITUDE LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

Kalihi fire station (Oahu Island, E. R. Hand, 1925).—On southern shore of Oahu, about 2 miles northwest of Honolulu, the tower of the Kalihi fire station, a tall slender square yellow tower with red pyramidal roof. It shows up well inland between Honolulu and Ahua Point, and is distinguishable from a similar tower nearer town, by the fact that it has iron balconies, one on each side immediately below windows.

DEPARTMENT OF COMMERCE
U. S. COAST AND SEDENTE SURVEY
FORD 596
(Rev. Feb. 1989)

RECOVERED BY: 5.L.H.

RECOVERY NOTE, TRIANGULATION STATION

R

ESTABLISHED BY: E.R.H.

NAME OF STATION: KREINI FIRE STATION

YEAR: 1915 STATE: Hawaii YEAR: 1956 COUNTY: Honolulu

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

Statuon 12 on Ornu Island about 2 miles Northwest of Honoluly, west of the intersection of kalini Street and Horth King street. The otation is the tower of the kalini five station which is square, white stocco, red tile took and iron balconies, one on each side below windows.



Form 526 (11-8-85)

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

R

NAME OF STATION: Kalihi Fire Station ESTABLISHED BY: E.R.H. YEAR: 1925 STATE: Hawaii RECOVERED BY: * D.G. Rushford YEAR: 1964 COUNTY: Honolulu

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

Station was re-

covered. It is a tan colored tower about 10 feet square, with red tile pyramidal roof, on northeast side of Kalihi Fire Station. Top of tower is about 50 feet above ground and there are double, round-topped windows near the top on all 4 sides of tower, with small, iron balconies beneath them. Station is located about 2 miles northwest of center of Honolulu, 1 block northwest of the intersection of Kalihi and King Streets, on the northeast side of King Street, opposite the junction of Self Ln.

Comm-DC 34314

ADJUSTED HORIZONTAL CONTROL DATA

KALIHI FIRE STATION

I I AWAH

THIRD

G-SP156

ELEVATION	METERS FEET
	ELEVATION

STATE & ZONE	CODE	×	Ψ	8 IOR A BI ANGLE
HI 3	5103	541,287.99	61,024.67	+ 0°02'39

PLANE AZIMUTH HAS BEEN COMPUTED BY THE & OR & GI FORMULA NEGLECTING THE SECOND TERM.

(From south)	
0 , "	

QI 365

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1292 HAWAII 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

KAH (

Hawaii, L.G.S., 1927) -- A standard station-mark

ADJUSTED HORIZONTAL CONTROL DATA

DEPARTMENT OF COMMERCE
U. S. COMET AND SECONTIC SURVEY
FORM \$36
(Rev. Peb. 1945)

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: KAM

ESTABLISHED BY: 493 RECOVERED BY: 5 ZH YEAR: 1927 STATE: Hawaii YEAR: 1956 COUNTY: HONOFULU

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

Stotion was searched for but not found. Presumed des troyed.

Porm 526 (11-8-85)

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

NAME OF STATION: KAM YEAR: 1927 STATE: ESTABLISHED BY: L.G.S. RECOVERED BY: D.G. Rushford YEAR: 1964 COUNTY: Honolulu

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

Station was searched for but not found. It's location is on the

Station was searched for but not found. It's location is on the top of Battery Closson, an old Coast Artillery emplacement, once classified as secret, so it was not adequately described.

An attempt at recovery was made by inverse from a trial point nearby, established by triangulation. This indicated that the station was at the center of the battery. A sketch obtained from the Corps of Engineers shows that the battery has about 15 feet of dirt cover on top of the concrete structure. Considerable digging was done but the mark was not found. No information could be obtained from the Corps of Engineers found. No information could be obtained from the Corps of Engineers as to whether the mark may have been set on the concrete structure before the dirt cover was put on.

NAME OF STATION: KAM

STATE: HAWAII

YEAR. 1927

THIRD

SOURCE: G- 558

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °19 ′19.840 157 56 12.142	SCALED	6	METERS FEET

STATE COORDINATES (Feet)				
STATE & ZONE	cone	×	·	# OR A BI ANGLE
HI 3	5103	521,543.61	56,491.10	+ 0 01 23

PLANE AZIMUTH HAS BEEN COMPUTED BY THE & IOR & RI FORMULA NEGLECTING THE SECOND

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

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1293 QUAD 211573 HAWAII 21 ° 00' TO 21 ° 30' LATITUDE LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

KAMEHAMEHA SCHOOL, CUPOLA (Hawaii, C.K.G., 1932) -- The cupola of Kamahameha School, a group of buildings on the slopes 2 miles N of Honolulu, at an elevation of about 500 feet, 1/4 mile E of Kalihi Stream. The buildings are easily seen from several miles to S and W and appear low and flat and are tan colored. The cupola is small and has a short chimney (only a few feet showing) on its top.

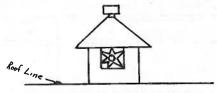
RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

Name of Station: Kamehameha School, cupola Established BY: C.K.G. YEAR: 1932 State: Hawaii ESTABLISHED BY: C.K.G. RECOVERED BY: D.G. Rushford YMAR: 1964 COUNTY: Honolulu

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

R

was identified by angle from station PUNCHBOWL and recovered in good condition. The cupola is about 6 feet square and 6 feet high, with a peaked, green tile roof. There is a short, cylindrical ornament on top. Cupola is located on the wing on the northeast side of the girls' building at Kamehameha School, which is 2 miles due north of downtown Honolulu on a ridge about midway between Likelike Highway and Pali Highway, at about 750 feet elevation.



The officer who actually visited the station should sign his name at the end of

Comm-DC 34214

ADJUSTED HORIZONTAL CONTROL DATA

KAMEHAMEHA SCHOOL CUPOLA

I IAWAH STATE

YEAR: 1932

THIRD

NO OBSERVATION CHECK ON THIS POSITION

21 °20 '43.07 GEODETIC LATITUDE: 157 51 29.48	ELEVATION	METERS FEET
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STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	•	Ø IOR△ ØI ANGLE
HI 3	5103	548,261.31	64,906.35	+ 0°03′06

PLANE AZIMUTH HAS BEEN COMPUTED BY THE & ICR A G) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	COD
		0 , "	

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWA!!AN DATUM QUAD 211573 STATION 1294
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

Kaneohe (Oahu Island, E. R. Hand, 1926).—On the eastern coast of Oahu, close to the shore at the southern end of Kaneohe Bay. A road from the vicinity of Kailua Beach crosses Mokapu Peninsula and continues west closely following the shore at the south end of Kaneohe Bay, where it abruptly leaves the bay and goes straight out to the Honolulu-Kaneohe road, going through a deep cut. Station is on the north bank of this cut, at the highest part of the rise, and on the side of the road toward Kaneohe village. It is about 100 meters from the water of a fish pond. From the station the radio towers at Heeia naval radio and the triangulation station Heeia are in range. Best reached from Honolulu road, turning off to right (pineapple field road) just before reaching road to Kaneohe Coral Gardens. Marked by a 2-inch galvanized iron pipe set in concrete. This is a private land survey mark.

KANEOHE (Hawaii, E.R.H., 1926; H.A.P., 1932)

-Searched for but not found. Mark
may have washed down into road. The range mentioned in description was "open".

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION KANEOHE

STATE HAWAII

YEAR 1926

THIRD

ORDER

SOURCE: G-SP156

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °24 '40.879 157 47 02.478	SCALED	30	METERS
GOODE TO CONTROLE		SCALED		FEET

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	×	V	8 OH A ST ANGLE	
HI 3	5103	573,469.08	88,930.02	+ 0 04 44	

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR A #1 FORMULA NEGLECTING THE SECOND TERM

GEODETIC AZIMUTH (From touth)	PLANE AZIMUTH * (From south)	CODE
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QI 424

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1295 QUAD 211573 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

Porm 526 (11-8-55)

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

R

NAME OF STATION: Kaneohe Bay, MCAS, Radio Beam
ESTABLISHED BY: H.O.F. YEAR: 1957 STATE: Hawaii
RECOVERED BY: W.R. Porter YEAR: 1964 COUNTY: Honolulu

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

Station was identified by angle from

surrounding station.

Located about 2-1/2 miles northeast of Kaneche, at west end of the Located about 2-1/2 miles northeast of Kaneche, at west end of the runway. Located about 2-1/2 miles northeast of Kaneche, at west end of the Kaneche Marine Corps Air Station, near southwest end of the runway, on roof of the control tower, which is located on the northwest corner of the roof of building No. 105.

Station is a grey, capsule-shaped cylinder about 1 foot in diameter and 3 feet long, mounted vertically on top of a 12-foot pipe on the northeast side of the control tower roof. It is a receiving antenna for lift direction finding equipment.

for UHF direction-finding equipment.

Comm-DC 34314

ADJUSTED HORIZONTAL CONTROL DATA

KANECHE BAY MCAS RADIO BEAM

OBS BY HTS

STATE: HAWAII

YEAR: 1957

THIRD

SOURCE: G-11968

GEODETIC LATITUDE	21 °26 '51.876 157 46 31.428	ELEVATION	METERS FEET
GEODETIC LONGITUDE:			

STATE & ZONE	CODE	×	▼	8 OR A B ANGLE
4I 3	5103	576,384.12	102,151,85	+ 0 04 .56

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE & IOR & GI FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH PLANE AZIMUTH (From seath) (From seath)		CODE
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NOV 1979

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 211573 HAWAII

STATION 1296

LATITUDE 21 . 60' TO 21 . 30 LONGITUDE 157 . 30 TO 158 . 00

DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: Kaneohe MCAS, Windsock

CHIEF OF PARTY: C. K. Townsend YEAR: 1976

STATE: Hawaii

COUNTY: Honolulu

Description, including sketch of object: Located about 2½ miles northeast of the town of Kaneohe, at the Kaneohe Marine Corps Air Station, near the northwest corner of the southwest end of the main runway and about 4 meters east of the shoreline of Kaneohe Bay.

The windsock is attached to a vertical pipe that is hinged to two similiar, 8 foot high vertical pipes that rise above a rectangular, concrete base. The point intersected was the single pipe where it joins the two pipes. The overall height of the windsock is about 16 feet. Its base is about 5 feet above sea level.

FORM C&GS-525b (12-68)

U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

KANEOHE MCAS WINDSOCK NAME OF STATION

OBS BY NGS

STATE HAWAII

YEAR: 1976

THIRD

SOURCE: G-15809

GRODETIC LATITUDE:	21°26′50:17385		
GEODETIC LONGITUDE:	157 46 48.24347	ELEVATION:	METERS
			FEET

STATE COORDINATES (Free)					
STATE & ZONE	CODE	х	¥	# IOR A AI ANGLE	
HI 3	5103	574,795.83	101,977.85	+ 0° 04′ 50′	

 $^{\circ}$ PLANE AZIMUTH HAS BEEN COMPUTED BY THE $\,s\,$ for $\Delta\,$ G $\,$ formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	COD
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		1 1	
		}	
	1		

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 021

HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 STATION 1297
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

SEE STATION KANEOHE MCAS WINDSOCK

ADJUSTED HORIZONTAL CO	NTROL DATA
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KANEOHE MCAS WINDSOCK ECC OBS BY MGS

HAWAII 1976 THIRD

G-15809 CHECK ON THIS POSITION

21°26′50:18580 257 46 48.29733	45XIEP	2 METERS
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		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	¥ = 1	8 IOR A 41 ANGLE
HI 3	5103	574,790.74	101,979.05	+ 0 04 50
	4 4 4 4			

 $^{\circ}$ PLANE AZIMUTH HAS BEEN COMPUTED BY THE $~\theta~$ IOR $\Delta~$ GI. FORMULA NEGLECTING THE SECOND TERM,

18° 32' 08:4	316° 27′ 19″	5103
	18 32 08.4	18 32 08.4

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 022

HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1298
HANAI I
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

NO ORIGINAL TEXT

FORM 526s

U.S. DEPARTMENT OF COMMERCE

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: KANEOHE NEW ESTABLISHED BY: HTS YEAR: 1957 STATE: Hawaii Recovered By: W.R. Porter Year: 1964 COUNTY: Honolulu

HEIGHT OF TELESCOPE ABOVE STATION MARK $1.5\,$ METERS, HEIGHT OF LIGHT ABOVE STATION MARK DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAM BE SEEN FROM THE GROUND AT THE STATION OBJECT DISTANCE DIRECTION FEET METERS HEEIA 1872-1927 00 00 00.0 HAWAIILOA HILL 1926 NE 77 22 43.6 MOKAPU RESET 1962 NE 92 09 47.8 R.M. No. 1 N 11.200 3.415 34 58 R.M. No. 2 E 10.512 3.205 134 36

An iron pipe set concrete was recovered. Check angle observations proved it to be the station. Two new reference marks were established. A complete description follows:

Station is located about 1-1/2 miles east-southeast of Kaneche, along the northwest side of Kaneche Bay Drive, on the summit of a small, brushy hill of about 140 feet elevation that has a lone, wooden antenna pole about 40 feet high on it.

To reach station from the post office in Kaneche, go southerly on State Highway 83 for 1.2 miles; turn left and go east on Kaneche Bay Drive for 1.35 miles to hill on left, by a Latter Day Saints church

school. Pack northwest about 140 yards to top of hill and station.

Station mark is the center of a 1-1/2-inch, iron pipe that is set in an 18-inch-diameter concrete monument that is flush with the ground, and has "KANEOME 2" inscribed in it. The pipe projects 4 inches above the concrete and is 7.2 feet west-northwest of the center of the wooden antenna pole.

Reference mark number one is a standard disk stamped "KANEOHE NEW NO 1 1957 1964", brazed to the top of a 1-1/2-inch iron pipe that is set in concrete and projects 6 inches. It is 4 feet south of the northwest guy-wire of the antenna pole and about 6 inches lower than stattom mark.

Reference mark number two is a standard disk stamped "KANEOHE NEW NO 2 1957 1964", brazed to the top of a 1-1/2-inch iron pipe that is set in concrete and projects 6 inches. It is 4 feet northeast of the antenna pole and about 6 inches lower 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 27179-F

ADJUSTED HORIZONTAL CONTROL DATA

KANEOHE NEW

OBS BY HTS

I I AWAH

Vess 1957

THIRD

SOURCE: G-11968

GEODETIC LATITUDE: 21 °24 '42. 533 GEODETIC LONGITUDE: 157 47 05. 970	ELEVATION	METERS FEET
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STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	· ·	# IOR A RI ANGLE
HI 3	5103	573,138.89	89,096.46	+ 0 04 43

PLANE AZIMUTH HAS BEEN COMPUTED BY THE heta IOR Δ 41 FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From sextb)	PLANE AZIMUTH * (From seeib)	CODE
HEEIA	133 46 43.8	133 42 01	5103

NOV 1979

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

HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 HAWAII STATION 1299 21 ° 00' TO 21 ° 30 LATITUDE LONGITUDE 157 . 30 TO 158 . 00 DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

DESCRIPTION OF TRIANGULATION INTERSECTION STATION Name of Station, Kaneohe Passage Range Front Light KANEOHE PASSAGE RNG FRONT LT COUNTY: Honolulu

NAME OF STATION HAWAII

OBS BY NGS THIRD -ORDER

Description, including sketch of objects

CHIEF OF PARTY: C. K. Townsend YEAR: 1976

The station is located about 2 miles north of the town of Kaneohe, at the town of Heeia, on the west shore of Kaneohe Bay and on a low dike that surrounds the east side of Heeia Pond.

STATE: Hawaii

The station is the short, vertical spindle that supports a green, directional light on a concrete pole. A red and white daymark is displayed from the top of the pole. Designated as No. 3747 in the publication Light List, 1976. The light is about 38 feet above sea level.

G-15809

21°26' 16:54873 GEODETIC LATITUDE 157 48 28.00195 GEODETIC LONGITUDE

METERS FEET

STATE CODRDINATES (Feet) B IOR A BI ANGLE STATE & ZONE + 0 04 13 98,572.65 565,375.96 5103 HI 3

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR A # FORMULA NEGLECTING THE SECOND TERM.

CODE	PLANE AZIMUTH *	GEODETIC AZIMUTH (Fram south)	TO STATION OR OBJECT
	0 , "	Q / P	10 STATION ON CESSE.
		MILLION THE WORLD	
	ALCOHOL:		

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 023

FORM C&GS-525b (12-66)

U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY

NOV 1979

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 211573 HAWAII

STATION 1300

LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Name of Station: Kaneohe Passage Range Rear Light

CHIEF OF PARTY: C. K. Townsend YEAR: 1976

STATE, Hawaii

County, Honolulu

Description, including sketch of object:

FORM C&GS-525b (12-68)

The station is located about 2 miles north of the town of Kaneohe, at the town of Heeia, on the west shore of Kaneohe Bay and on the inshore (west) side of Heeia Pond and in the back yard of a private residence.

The station is the short, vertical spindle that supports a green, directional light on a skeleton tower. A red and white daymark is also displayed from the top of the tower and it is designated as No. 3748 in the publication 'Light List'1976. The light is about 80 feet above sea level.

escribed by

U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: KANEOHE PASSAGE RNG REAR LT

OBS BY NGS

HAWAII

YEAR: 1976

THIRD

-OADER

6-15609

GEODETIC LATITUDE:	21°26′05:13337	ELEVATION	METERS
GEODETIC LONGITUDE:	157 48 37-28319		PEET

STATE COORDINATES (Feet)			
CODE	×	¥	8 IOR A & ANGLE
5103	564,500.51	97,419.76	+ 0° 04′ 10′

* PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ IOR \$ SI FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OSJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
		0 , "	
		1	

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 024

HORIZONTAL CONTROL DATA

by the National Ocean Survey 'OLD HAWAIIAN DATUM QUAD 211573 HAWAII LATITUDE 21 STATION 1301 LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

Kekepa Island (Oahu Island, E. R. Hand, 1926).—On east coast of Oahu Island, in southeastern part of Kaneohe Bay, about ¾ mile west of north end of Mokapu Peninsula, a huge symmetrical coral rock, with sides deeply undercut so that the rock from almost any direction presents the appearance of a turtle. The formation is sometimes referred to as "Turtle Island." Station is exact center of rock, not marked.

U.S. DEPARTMENT OF COMMERCE - COAST AND GRODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: Kekepa Island Ymam: 1926 State: Hawaii ESTABLISHED BY: E.R.H. RECOVERED BY: F. J. Tucker jr YEAR: 1965 COUNTY: Honolulu

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

The island was not visited but is easily identified from the previous description. It lies in Kaneohe Bay, about 3/4-mile west of station PAKO 1932 which is on the northwest point of Mokapu Peninsula.

Comm-DC 34314

ADJUSTED HORIZONTAL CONTROL DATA

KEKEPA ISLAND

STATE: HAWAII

THIRD

SOURCE: G-SP156

GEODETIC LATITUDE	21 °27 ′54 • 289	ELEVATION	METERS
GEODETIC LONGITUDE	157 46 41.882		FEET

STATE & ZONE	CODE	×	V	# IOR △ BI ANGLE
11 3	5103	575,387.64	108,447.99	+ 0°04′52

TO STATION OR OBJECT	GEODETIC AZIMUTH (From soulb)	PLANE AZIMUTH (From south)	con
	9 , *		

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