### HORIZONTAL CONTROL DATA

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

### NO ORIGINAL TEXT

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

R

NAME OF STATION: Honolulu, Hawaiian Electric Co., N Twin Stack Established BY: H.O.F. Year: 1957 State: Hawaii RECOVERED BY:\* D.G. Rushford YEAR: 1964 COUNTY: Honolulu

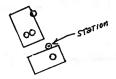
Detailed statement as to the fitness of the original description; including marks found, stampings, enanges mans, and other perturent recta:

Station was identified by angle at station

PUNCHBOWL and recovered.

Located in downtown Honolulu, on Ala Moana Boulevard, between Bishop and Richard Streets, opposite pier 7, at the Hawaiian Electric Company power plant.

Station is the northwest 1 of the 2 stacks on the roof of the southerly one of the two power plant buildings.



Comp-DC 34314

#### ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU HAWAII ELEC N TW STK

HAWAII

THIRD

-ORDER

SOURCE: G-10858

24 Pa - 1 2		
48 32.147 47 48 48 48 48 48 48 48 48 48 48 48 48 48	ELEVATION	METERS FEET

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' 1	8 IOR & B! AHGLE
51,693.94	+ 0 02 55
	51,693.94

PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\, g \, | \, {
m or} \, \Delta \, ^{-g} \, | \, {
m formula neglecting the second term,}$ 

TO STATION OR OBJECT	GEO DETIC AZIMUTH (From south)	PLANE AZIMUTH *	CODE
	• • •	9 , "	•

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1202 HAWAII LATITUDE 21 °00' TO 21 °30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

HONOLULU, HAWAIIAN ELECTRIC COMPANY, NORTHWEST STACK (Hawaii, H.O.F., 1955) -- The NW stack of the Hawaiian Electric Company is located in downtown Honolulu, on Ala Moana Boulevard, between Bishop and Richard Streets, opposite pier 7, and on the N corner of the roof of the NW one of two power plants. The 40-ft. steel stack is mounted on the 110-ft. building, making the entire height 150 ft. above ground level.

Porm 526 (11-8-55)

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

R

Name of Station: Honolulu, Hawaiian Electric Co., N.W. Stack Retablished by: H.O.F. Year: 1955 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 the most northerly one of the 5 stacks at the power

plant and is on the north corner of the north building of the two. Located at the Hawaiian Electric Co. power plant in downtown Honolulu, on Ala Moana Blvd., opposite pier 7. De-Station

(C.A.Annis, 1969) -- Station recovered in ggod condition as described.

Comm-DC 34214

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU HAWAII ELEC NW STACK

HAWAII

YEAR 1955

THIRD

SOURCE: G-14543

GEODETIC LATITUDE:	21 °18 '34. 70478 157 52 00. 25620	ELEVATION	METERS PEET
1 13		l l	

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	×	¥	8 IOR A ANGLE
HI 3	5103	545,362.88	51,951.85	+ 0 02 54

PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\, m{\theta} \,$  OR  $\Delta \,$  GI FORMULA NEGLECTING THE SECOND TERM.

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

THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1203 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

**DESCRIPTION OF TRIANGULATION INTERSECTION STATION** 

HONOLULU

NAME OF STATION: HAWAIIAN GRAIN CORP ELEV

CHIEF OF PARTY: Carl A. Annis Year: 1969

STATE: Hawaii

COUNTY: Honolulu

Description, including sketch of objects

FORM C&GS-525b (12-65) USCOMM-DC 36250-P65

The intersection is located on a large elevator with 16 round bins, and with one high shaft on the horth end and a smaller shed on the south end. The elevator is located at 701 North Nimitz Highway in Honolulu. The point intersected is the south end of the small shed.

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

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU HAWAIIAN GRAIN ELEV

I I AW AH

THIRD

SOURCE: G-14543

DEODETIC LATITUDE:	21 °18 '53.79370	ELEVATION:	METERS
DEODETIC LONGITUDE:	157 52 19.73903		FEET

STATE COORDINATES (FMI)				
STATE & ZONE	CODE	×	24	# IOR A GI ANGLE
HI 3	5103	543,519.09	53,876.38	+ 0 02 47
		On. 11		

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

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

# 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

NAME OF STATION: HONOLULU ZEN BUDDHIST MISSION CENTER TOWER

CHIEF OF PARTY: C.A. Annis YEAR: 1969 STATE: Hawaii COUNTY: Honlulu

Description, including sketch of objects

FORM C&GS-5256 (12-68)

The station is the top of the spire on the tallest and center tower of the Honolulu Zen Buddhist Mission of Hawaii and Bonsai Garden. It is located at 1708 Nuuanu Avenue in Honolulu and is about 100 feet high.

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

ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU BUDDHIST MISS CEN TWR

HAWAII

YEAR: 1969

THIRD

QEODETIC LATITUDE: 21 °19 '17.36358 QEODETIC LANGITUDE: 157 51 27.19455	ELEVATION:	METERS FEET
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STATE COORDINATES (Feri)				
STATE & ZONE	CODE	×	¥	# IOR A RI ANGLE
HI 3	5103	548,485.19	56,258.82	+ 0°03′07°

 $^{ullet}$  Plane azimuth has been computed by the  $\,$   $\,$  for  $\Delta\,$   $\,$  formula neglecting the second term,

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

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1205 QUAD 211573 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

# NO ORIGINAL TEXT

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

R

R

Honolulu,

NAME OF STATION: American Cannery Tank

Established by: L.G.S. Year: 1927 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: Station was recovered. It is the silver,

elevated, water tank, located at the American Can Co. Plant in the Iwilei District of Honolulu. It is about 130 feet high and sets about 600 feet east from the prominent, elevated, "pineapple" tank; these two are the only elevated tanks in Honolulu.

RECOVERY NOTE, THANGULATION STATION

NAME OF STATION: AMERICAN CANNERY WATER TANK YEAR: 1927 ESTABLISHED BY: L. G. S. RECOVERED BY: Carl A. Annis YEAR: 1969

STATE: Hawaii BENCH MARK(8) ALSO COUNTY: Honolulu

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

HONOLULU

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

Intersection station recovered in good condition as described by D. M. Whipp in 1965.

ADJUSTE	D HORIZONTAL	CONTROL	DATA

NAME OF	STATION	HONOLULU	AMERI CAN	CANNERY	TANK		
STATE	HAWAI	ī	YEAR	1927		THIRD	-ORDER

SOURCE: G-14543

GEODETIC LATITUDE:	21 °19 ′12.56815 157 52 20.86065	ELEVATION:	METERS FRET
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STATE COORDINATES (Fert)					
CODE	×	- v	Ø IOR∆ AI ANGLE		
5103	543,411.50	55,770.62	+ 0°02'47		
		CODE X	CODE X Y		

PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\, s\, ({
m or}\, \Delta\, ^{
m q})\,$  Formula neglecting the second term

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From saletb)	CODE
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THE SE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1206
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

# NO ORIGINAL TEXT

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

R

R

Honolulu,

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

NAME OF STATION: Hawaiian Pineapple Co., tank

Betammen by: L.G.S.

Year: 1928 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:

Station was recovered. It is the large elevated tank, a replica of a pineapple, mounted atop 4 steel legs, located in the Iwilei District of Honolulu at the Dole Pineapple Company cannery.

Top of tank is about 195 feet above ground.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: HONOLULU HAWAIIAN PINEAPPLE COMPANY TANK

ESTABLISHED BY: L.G.S. YEAR: 1928 STATE: HAWAII BENCH MARK(S) ALSO COUNTY: HONOLULU

RECOVERED BY: P.D.C. YEAR: 1978 COUNTY: HONOLULU

Detailed statement as to the fitness of the original description; including marks found, sumpings, changes made, and other pertinent factor.

THE STATION WAS RECOVERED AS DESCRIBED AND IN GOOD CONDITION.

NGAA FORM 76-165 (12-72) (OLD COSS 828)

# U.S. G.P.O. 1973-769-566/563 REG.#6

U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SURVEY NAME OF STATION HONDLULU HAWAIIAN PINEAPPLE TK

HAWAII

1928

THIRD

- DEDEA

SOURCE: G-14543

GEODETIC LATITUDE: 157 52 26.59531 ELEVATION: METERS FEET	GEODETIC LATITUDE: 21 *19 '12.*52145 GEODETIC LONGITUDE: 157 52 26.59531	ELEVATION	
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ADJUSTED HORIZONTAL CONTROL DATA

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	х	<b>Y</b>	B OR A GI ANGLE
1I 3	5103	542,869.29	55,765.47	+ 0°02′45
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TO STATION OR OBJECT	GEODETIC AZIMUTH (From seath)	PLANE AZIMUTH " (From punit)	CODE
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THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1207
HAWAII
LATITUDE 21 ° 30′ T0 21 ° 30′
LONGITUDE 157 ° 30′ T0 158 ° 00′
DIAGRAM NF 4-11 OAHU

**DESCRIPTION OF TRIANGULATION INTERSECTION STATION** 

NAME OF STATION: HONOLULU KALANTHUIA APT BLDG ELEV SHAFT

CHIEF OF PARTY, C.A. ANNIS YEAR, 1969 STATE, Hawaii County, Honolul

Description, including sketch of objects

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

The station is the base of a short rod on the top of the elevator shaft; the building is located at 1220 Aela street and it is 15 floors high.

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

HONDLULU KALANIHUIA APT SHAFT

HAWAII

YEAR 1969

THIRD

onnen

SOURCE: G-14543

GEODETIC LATITUDE:	21 °19 '09.24810 157 51 56.05861	ELEVATION:	METERS FEET

ADJUSTED HORIZONTAL CONTROL DATA

		STATE COORDINATES (Feet)		
STATE & ZONE	con€	×	Y	g IOR A BI ANGLE
HI 3	5103	545,756.81	55,437.58	+ 0°02′.56°
		-		

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

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (from south)	CODE
		10 "	

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 HAWAII STATION 1208 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

RADIO STA KCCN MAST

CHIEF OF PARTY: Carl A. Annis Year: 1969 STATE: Hawaii

COUNTY: Honolulu

Description, including sketch of objects

Located between Nimitz Highway and Dillingham Boulevard at the Kapalama Drainage Canal and at the south end of Hart Street, in Honolulu. About 140 feet high, a three-legged steel structure painted in alternate bands of red and white. The point intersected is the red light atop the mast.

SOURCE: G-14543

NAME OF STATION HONOLULU RADIO STA KCCN MAST

STATE: HAWAII

THIRD

ADJUSTED HORIZONTAL CONTROL DATA

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	×	*	# +OR A BI ANGLE	
HI 3	5103	540,985.64	57,267.71	+ 0°02′38″	

PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ IOR A 41 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE
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QG 208

FORM C&GS-525b (12-68) USCOMM-DC 36290-P68

Described by U.S. DEPARTMENT OF COMMERCE SESA COAST AND SECOND SURVEY

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1209
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

Honolulu,

NAME OF STATION: KAPALAMA INCIN PLANT STACK

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

COUNTY, Honolulu

Description, including sketch of objects

FORM C&GS-525b (12-68) USCOMM-DC 36290-P66

Located at Kokea and North King Streets at the Kapalama dumping area. A tan stack 141 feet high.

. . . . .

U.S. DEPARTMENT OF COMMERCE ESSA COAST AND GEODETIC SURVEY HONOLULU KAPALAMA INCIN STACK

STATE HAWAII

YEAR: 1969

THIRD

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SOURCE: G-14543

GEODETIC LATITUDE: 21 °19 '32.42499 ELEVATION: 0500ETIC LONGITUDE: 157 52 21.18467	METERS PEET
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ADJUSTED HORIZONTAL CONTROL DATA

STATE COORDINATES (Fret)				
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ні з	5103	543,379.24	57,774.14	+ 0 02 47

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # OR A 4 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMI, (From south)		PLANE AZIMUTH * (From south)	СОВ
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### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

R

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QUAD 211573 STATION 1210 HAWAII 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

### NO ORIGINAL TEXT

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: Honolulu, Board, Water Supply, Stack Borallesses by: Terr. of Hawgeal: 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 facts:

Station was recovered. Located about crossroad intersection of king and Houghtailing Streets, at the Kalihi Station is a concrete stack 100 feet tall, painted green, with a black section at the top.

RECOVERY NOTE, TRIANGULATION STATION

of
NAME OF STATION: Honolulu, Board/Water Supply, Stack ESTABLISHED BY: Terr. of Hawaii YEAR: 1957 STATE: Hawaii Bench Mark(8) Also [ 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:

Station was recovered, located about 1-3/4 miles northwest of the center of Honolulu, in the south angle of crossroad intersection at King Street and Waiakamilo Road, at the Kalihi Pumping Station of the Honolulu Board of Water Supply.

The station is a concrete stack 100 feet tall, painted green, with a black section at the top.

#### ADJUSTED HORIZONTAL CONTROL DATA

HONOLULU BOARD WTR SUPPLY STK

I I AWAH

1957 YEAR:

THIRD

G-14543

|--|

STATE COORDINATES (Feet)					
CODE	×	<b>v</b>	F OR A SI ANGLE		
5103	542,684.29	59,723.27	+ 0"02'44"		
		CODE X	CODE X Y		

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # ION A SI FORMULA NEGLECTING THE SECOND TERM

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

THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1211 IIAWAH 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 ST THERESA'S CH CROSS

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

Description, including sketch of object:

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

Located at the intersection of North School Street and Monolia Street in Homolulu. The point intersected is the cross on top of the bell tower at the west corner of the church.

Described by \_\_\_\_\_\_U.S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: HONOLULU ST THERESAS CH CROSS

STATE HAWAII

THIRD

SOURCE: G-14543

GEODETIC LONGITUDE: 157 51 50.47695	GEODETIC LATITUDE: 21 °19 ′38."94190 GEODETIC LONGITUDE: 157 51 50.47695	ELEVATION	METERS FEET
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STATE COORDINATES (Feet)					
STATE & ZONE	CODE	ж	Υ	8 OR A BI ANGLE	
HI 3	5103	540,281.98	58,434.12	+ 0°02′.58″	
	F =	-			

 $^{\circ}$  Plane azimuth has been computed by the  $|_{m{ heta}}$  formula neglecting the second term,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE
	0 7 #	UM3	
		[	
	•	1	1

### HORIZONTAL CONTROL DATA

by the National Ocean Survey **MUTAD NAILAWAH DJC**  QUAD 211573 STATION 1212 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

### NO ORIGINAL TEXT

Porm 526 (11-8-55)

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

NAME OF STATION: Hickam AFB, Control Tower 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 facts:

Station was identified by angle from Ewa Church and recovered. It is located at the center of Hickam Air Force Base, 0.65 mile east-southeast from the base Operations Build-Force Base, 0.65 mile east-southeast from the base Operations Building, along the north side of wide taxi-way and about 125 yards southwest from Building No. 4, which is the southernmost building in a north-south row of 7 very large, prominent, hangar-type structures. Station is an octagonal, glass-enclosed room mounted atop 4 square, concrete legs. Roof of control tower is about 80 feet above ground. A pair of red obstruction lights are mounted on a single metal pole about 10 feet above top of roof. Point intersected was

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

NAME OF STATION: Hickam A.F.B. Control Tower

center of control tower.

HTS ESTABLISHED BY: RECOVERED BY: C.A.A. YEAR: 1957 STATE: Hawaii YEAR: 1969 COUNTY: Honolulu

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 as described.

50000

R

HICKAM AFB CONTROL TOWER

THIRD

-ORDER

SOURCE: G-14543

GEODETIC LATITUDE:	21 °20′10.07709	ELEVATION.	METERS
GEODETIC LONGITUDE:	157 56 56.79686		FEET

# IOR A BI ANGLE
8.45 + 0°01'07
500

PLANE AZIMUTH HAS REEN COMPUTED BY THE R (OR  $\Delta$  4) FORMULA REGLECTING THE SECOND TERM.

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

THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1213 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

# NO ORIGINAL TEXT

Pora 526 (11-8-55)

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

Name of Station: Hickam AFB, Water Tower Established BY: HTS Year: 1957 State: 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

Located at the extreme northwest corner of Hickam Air Force Base, at the southeast side of the Hickam Elementary School, in the center of a circular driveway. Shown on USGS map as "Hickam School Tower".
Station is octagonal, concrete structure, tapering slightly, with a large external concrete rib running up each angle or corner. There are several windows scattered around sides of the tower. The tower is topped by 2 octagonal, stepped-down sections, the top one being a glassed-in observation cupola, with a red obstruction light on center of its top. There is a double door on southeast side of tower. Inside of tower there is a plate steel standpipe for water storage. The tower is building No. 1013-5A and is about 45 feet in diameter at the base, and 165 feet high.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: Hickam AFB, Water Tower ESTABLISHED BY: HTS YEAR: 1957

STATE: Hawaii BENCH MARK(S) ALSO

RECOVERED BY: C.A.A. 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:

Station recovered in good condition as described.

R

HICKAM AFB WATER TOWER

I IAWAH

THIRD

G-14543

GEODETIC LATITUDE	21 °20 ′45.63055 157 57 53.72229	ELEVATION	METERS FEET
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ADJUSTED HORIZONTAL CONTROL DATA

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	1 x 1 2		BON A BI ANGLE
HI 3	5103	511,937.42	65,144.30	+ 0 00 46
	21			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\,$   $\,$   $\,$   $\,$   $\,$   $\,$  G  $\,$   $\,$  FORMULA NEGLECTING THE SECOND TERM

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *	CODE
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THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1214 LIAWAH LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

PEARL HARBOR WATER TANK "B" ( Hawa11, E.R.H., 1925) --In S Cahu, on E side of entrance to Pearl Harbor, a water tank, gray, on high steel frame. Has superstructure.

Form 526 (Rev. Feb. 1968)

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: PEARL HARDON WORKER TONK 'S'
ESTABLISHED BY: ERH YEAR: 1925 STATE: HOW 2 !! RECOVERED BY: 5, L. H.

YEAR: 1956 COUNTY: HOMOIVIU

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

Station is inside PEARL HARBOR NAVY BASE, on the South side of Avenue 'D' on South side of building 64. It is an orange and white checked water tank with superstructure (house). Rodio MAST on top of house.

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

R

NAME OF STATION: Pearl Harbor Water Tank "B"

RECOVERED BY: E.R.H. YEAR: 1925 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 was recovered. It is on the Pearl Harbor Navy Base, in the south angle of the intersection of Avenue "D" and 7th Avenue, at the southwest side of building No. 64 and near the northwest end of building No. 64A (the Navy Post Office building).

Station is large, orange and white checked, water tank mounted atop 8 steel girder legs. There is a glass enclosed control booth on top of the tank, with a large mast with cross-arm extending above it. Top of control booth is about 170 feet above ground.

(C.A.Annis, 1969) -- Station recovered in good condition as described.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: PEARL HARBOR WATER TANK B

HAWAII STATE

YEAR 1925

THIRD

-OADER

SOURCE G-14543

21 21 14.78889 GEODETIC LATITUDE FLEVATION METERS 157 57 26.74759 FEET GEODETIC LONGITUDE

STATE CODRDINATES (Feet)				
STATE & ZONE	CODE	×	<b>Y</b>	8 IOR A BI ANGLE
HI 3	5103	514,486.63	68,386.99	+ 0 00 56

PLANE AZIMUTH HAS BEEN COMPUTED BY THE 8 IOR A 41 FORMULA NEGLECTING THE SECOND TERM

TO STATION ON OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH	CODE
		4	
			-
		10-	1.1

THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 STATION 1215 IIAWAH LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

# NO ORIGINAL TEXT

Pora 526 (11-8-55)

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

Name or Station: Pearl Harbor, Ford Island, Control Tower ESTABLISHED BY: H.O.F. YEAR: 1957 STATE: Hawaii RECOVERED BY: "F.J. Tucker Jryman: 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 SALT LAKE & EWA CHURCH Triangulation Stations, and recovered. It is a tall, enclosed tower, or standpipe, painted alternate red and white, with an octagonal, glass-enclosed, observation room mounted on top. The tower is about 195 feet high and has an external stairway running up the east side.

RECOVERY NOTE, TRUMBER ACTION STATION

NAME OF STATION: PEARL HARBOR FORD ISLAND CONTROL TOWER ESTABLISHED BY: H. O. F. YEAR: 1957 RECOVERED BY: Carl A. Annis YBAR: 1969

AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN:

COUNTY: Honolulu

STATE: Hawaii

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

The intersection station was recovered in good condition as described by F. J. Tucker in 1964.

ADJUSTED HORIZONTAL CONTROL DATA

R

R

PEARL HARBOR FORD IS CONT TWR

HAWAII

1957

THIRD

6-14543

GEODETIC LATITUDE: GEODETIC LONGITUDE.	21 °21 '49.64400 157 57 51.24237	NAPAGE STATES	ELEVATION:	METERS FEET
---	-------------------------------------	---------------	------------	----------------

STATE COORDINATES (Fert)				
STATÉ & ZONE	CODE	×	¥	Ø OR∆ 41 ANGLE
HI 3	5103	512,170.39	71,603.27	+ 0°00'47"

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

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE
<del>-</del>			1727
	• 1		
		!	

THESE DATA OBTAINED FROM ADJUSTMENT OF OCT 1971

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM OUAD 211573 STATION 1216
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: ALIAMANU HONO LULU BOARD OF WATER SUPPLY TANK

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

Description including sketch of object: Not described.

ADJUSTED HORIZONTAL CONTROL DATA

ALIAMANU BOARD WTR TK

HAWAI I

1969

THIRD

SOURCE: G-14543

STATE COORDINATES (Feet)				
CODE	×	Υ-	g IOR A GI ANGLE	
5103	528,649.63	69,322.75	+ 0°01′50	
	-	CODE X	CODE X Y-	

\*PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\,$  8  $\,$  10R  $\Delta$  41 FORMULA NEGLECTING THE SECOND TERM,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE
		° ′ *	,
	l	I	l

FORM C&GS-525b (12-69)

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

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

QUAD 211573 HAWAII LATITUDE LATITUDE 21 ° 00' TO 21 ° 50' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION INTERSECTION STATION

NAME OF STATION: EWA AIR FORCE CALIB TOWER

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

Description, including sketch of objects

 $\Box$ 

The station is the red light on top of the tower, located about 1.75 miles south of the intersection of Waipio Access Road and Farrington Highway, about 1.5 miles south of the Navy dry dock, and on Waipio Penninsula. It is a 4 x 8 - foot square four-legged structure about 210 feet high bolted to a concrete pad about six inches thick, with calibration targets on top of the tower.

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

NAME OF STATION: EWA AIR FORCE CALIB TOWER

THIRD

SOURCE G-14543

GEODETIC LONGITUDE: 131 37 21 0 02 900	GEODETIC LATITUDE:	21 <sup>8</sup> 22 20.44179 157 59 27.02906	ELEVATION:	METERS FEET
--	--------------------	--	------------	----------------

ADJUSTED HORIZONTAL CONTROL DATA

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	*	B OR A B ANGLE
HI 3	5103	503,116.29	74,709.47	+ 0 00 12

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (Frem south)	CODE
	• ' (*)		
	-		
		1	
		1 1	

FORM C&GS-5256 (12-68)

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1218 HAWAII LATITUDE 21 ° 00' TO 21 ° 30' LONGITUDE 157 ° 30' TO 158 ° 00' DIAGRAM NF 4-11 OAHU

Desc RM 1

BM 2 /

Desc.

DESCRIPTION OF TRIANGULATION STATION

METERS.

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROM WHICH CAN BE SEEN FROM THE GROUND AT THE STATION

27,08

25.48

NAME OF STATION: 171 USN

NAME OF STATION: 171 (USN)

CHIEF OF PARTY: W.R. Porter

Surface-station mark, Underground-station mark

NOTE, HEIGHT OF TELESCOPE ABOVE STATION MARK

WAIPIO UKA 1873 1927

STATE: Hawaii YEAR: 1960

1

COUNTY: Honolulu HEIGHT OF LIGHT ABOVE STATION WARK

8,253

7.766

DISTANCE

Described by: D.R. Tomlinson

HAWAII

YEAR 1960

SECOND

METERS. ENT OBJECTS

G-12191

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °21 ′15.*923 157 57 50.925	SCALED	1 METERS

ADJUSTED HORIZONTAL CONTROL DATA

CODE	×	¥ =	# IOR A GI ANGLE
5103	512,201.16	68,200.85	+ 0°00′47
	1111		

PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\,s\,$  for  $\Delta\,$  51 formula neglecting the second term

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
WAIPIO UKA	155 03 05.4	155 <sup>°</sup> 02 <sup>′</sup> 18 <sup>°</sup>	5103

Station is located in the Pearl Harbor Shipyard, on the roof of building 171 near the south corner.

ESE

MMA

Station mark is United States Navy bronze disk, stamped 171, comented in the top

of a 5 inch square concrete post projecting 2 inches.

Reference mark 1 is a standard disk, stamped 171 USN NO 1 1960, cemented in a drill hale in the southeast edge of the building.

Reference mark 2 is a standard disk, stamped 171 USN NO 2 1960, commented in a drill hale in the west corner of the building,

Pora 526 (11-8-55)

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

R

DIRECTION

0 00 00.0

69 58 14 -312 35 04

NAME OF STATION: 171 (USN)

ESTABLISHED BY: W.R. Porter YEAR: 1960 STATE: Hawaii 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:

was recovered as described and all marks found in good condition.

QF 234

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM

STATION 1219 QUAD 211573 HAWAII 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
Form 523

DESCRIPTION OF TRIANGULATION STATION

NAME OF STATION: 246 (USN)

STATE: Hawaii

COUNTY: Honolulu

í	CHIEF OF	PARTY: W.R. Porter HEIGHT OF TELESCOPE ABOVE	STATION MARK	EAR: 1960 1 METER	B.†	HEIGHT OF L	Cribed by: D.R.	MARK		METERS.
	Desc.	Surface-station mark, Underground-station mark	DISTANCES AND	DIRECTIONS WHICH CA	TO AZIMU N BE SERN	TH MARK, REFE PROM THE GR	RENCE MARKS AT OUND AT THE ST	ATION	RINEN	r ossects
					BEARING -	DIST	ANCE		DIRECT	TION:
- 1	1	OE	JECT		BEARING -	foot	meters			
								- •	_,	_ "
		WAIPIO UKA 1873	1927				_	0	00	00.00
		Pearl Harbor, Wa	ter Tank. N	avy Tard.	1					
			,	,,	NE -	Approx.	Oll mile 1	84	34	42.8
		1957							24	14
	Desc.	RM 1 ~			SE.	16.89	5.147	125		-w-
. !	Desc.	RM 2 °		.	SSW	17.22	5.249	216	28	31
		(			14 -	Annerow.	0.2 mile	273	48	45.07
	Desc.	ואכטא א עע				white area		- 13	~~	720-1

Station is located in the Pearl Harbor Mavy Tard.

The mark is a standard United States Coast and Geodetic Survey triangulation station bronse disk. Cemented in a drill hole near the center of the most northerly one of four 6 X 6 foot concrete platforms that projects 4 feet above the roof of building 246. The disk is stamped 246 1960.

Reference mark 1 is a standard disk, stamped 246 NO 1 1960, comented in a drill hole near the center of the most easterly one of the platforms.

Reference mark 2 is a standard disk, stamped 246 NO 2 1960, comented in a drill

hole near the center of the most westerly one of the platforms.

10 4 is a United States Navy bronse disk, cemented in a drill hole in concrete.

It is 305.2 feet west of the northwest corner of building 246, 10.8 feet east of the west edge of a dock and 10.4 feet south of the south edge of Drydock four.

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

NAME OF STATION: 246 (USN)

ESTABLISHED BY: W.R. POTTET YEAR: 1960 STATE: Hawaii
RECOVERED BY: D.G. RUShfordyman: 1964 COUNT: Honolulu

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

was recovered and all marks found in good condition as described.

ADJUSTED HORIZONTAL CONTROL DATA

246 USN

1960

SECOND

SOURCE: G-12191

GEODETIC LONGITUDE: 15/ 58 04-599 SCALED FEET	- 1	GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °20 ′56. 301 157 58 04.599	SCALED	3	METERS FEET
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		STATE COORDINATES (Fees)		
STATE & ZONE	CODE	×	¥	# OR A BI ANGLE
HI 3	5103	510,908.99	66,220.72	+ 3°00′42

GEODETIC AZIMUTH (From senth)	PLANE AZIMUTH *  (From south)	CODE
157 °55 14.2	157°54′32″	5103
	(From south)	(From south) (From south)

QF 235

# HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 12:
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

	LANGULATION STATION			ADJUSTE	D HORIZON	TAL CONTROL D	ATA	
POTTE 623  Rev. Aug. 1965  NAME OF STATION: 387 (USN)  CHIEF OF PARTY: W.R. POTTET  NOTE: HEIGHT OF TELESCOPE ABOVE STATION MARK  1 MET	O Described by: D.R. Tomlinson ERR. HEIGHT OF LIGHT ABOVE STATION MARK	METERS.	NAME OF STATION: 387 US		EAR: 1960		SECO	IND ORDER
The state of the s	NS TO AZIMUTH MARK, REPERENCE MARKS AND PROMINENT CAN BE SEEN FROM THE GROUND AT THE STATION  BEARING  DISTANCE  BEARING  Gest  Gest  O  O  O		SOURCE: G-12191					
No reference marks established.			GEODETIC LATITUDE:	21 °21 ′01. 157 58 06.			ELEVATION: SCALED	3 METERS
= 2	1 1 1				STATE COORD	NATES (Feet)		
Station is located on the top of bull	lding 387, in the Pearl Harbor Shipyard. Castened to the east corner of the roof	,	STATE & ZONE	CODE	х		*	# IOR A BI ANGLE
opening. The tablet is stamped 387	CE - COAST AND GEODETIC SURVEY IANGULATION STATION	R	HI · 3	5103	51 0 , 767	7.18 66.	789.87	+ 0°00′42
NAME OF STATION: 387 (USN)		14	PLANE AZIMUTH HAS BEEN CO	MPUTED BY THE 8	ORA S FORMULA N	EGLECTING THE SECOND T	ERM,	
ESTABLISHED BY: W.R. Porter YEAR: 1960 STATE: RECOVERED BY: *D.G. Rushford YEAR: 1964 COUNTY	Hawaii Honolulu		TOSTATI	TOBLEO RO MO		GEODETIC AZIMUTH (From south)	PLANE A	
Detailed statement as to the fitness of the original description; inclu- was recovered and found in good con-	Station	nent facts:				• • • •	o	, 4
40					ı		1	1
*Name of chief of party should be inserted here. The efficer who acton Norm.—Gas of these forms man	Illy visited the station should sign his mame us am one or ane recovery seen.  Coun-8	DC 34314	,					
								QF 236

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 1221

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

DIAGRAM NF 4-11 OAHU

NO TEXT

ADJUSTED HORIZONTAL	CONTROL DATA
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NAME OF STATION OBS BY NGS YEAR 1976 HAWAII THIRD -ORDER

G-15809

21°25' 33: 32683 ELEVATION: METERS GEODETIC LATITUDE: 157 45 34.78749 FEET GEODETIC LONGITUDE:

STATE COORDINATES (Feet)									
CODE	×	· ·	# IOR A BI ANGLE						
5103	581,747.01	94,234.10	+ 0 05 16						
		CODE X	CODE X Y						

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ IOR \$ 41 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR DEJECT		GR	ODETIC	AZIM south		PLAN (Fr		ZIMUT casb)		CODE
Ø			0	'	•	10	0	,	•	
						1			- 1	
						1				

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawalian Datum

GEODETIC LATITUDE:

GEODETIC LONGITUDE

OUAD 211573 STATION 1222
HAWATI
HAWATI
LONGITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 156 ° 00'
DIAGRAM NF 4-11 OAHU

ELEVATION:

METERS

FEET

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF	STATION: AERO	OBSTRUCTION LT	AA	OBS BY NGS
STATE:	HAWAII	YEAR:	1976	THIRD ONDER
SOURCE:	G-15009			

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	¥	# IOR A GI ANGLE
HI 3	5108	580,976.92	95,522.25	+ 0 05 12

PLANE AZIMUTH HAB BEEN COMPUTED BY THE Ø IOR △ GI PORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT GEORGE (From south)

O , P C CDE

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

21°25′46:10499

157 45 42.91733

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

DIAGRAM NF 4-11 OAHU

N	$\cap$	Т	F	X	T
EN	v		_	$\Lambda$	- 1

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION OBS BY NGS YEAR: 1976 HAWAII THIRD

G-15809

GEODETIC LATITUDE:	21°24′46;97209	ELEVATION	METERS
GEODETIC LONGITUDE:	157 46 06.64861		FEET
1			

STATE COORDINATES (Fret)									
STATE & ZONE	CODE	×	٧	A OR A SI ANGLE					
HI 3	5108	578,743.59	89,552.34	+ 0 05 04					

PLANE AZIMUTH HAS SEEN COMPUTED BY THE ~g~ (or  $\Delta~$   $^{0}$ ) Formula neglecting the second term,

•	 g.	"	
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	]		

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 STATION 1224
HAWAII
LATITUDE 22 00 TO 21 37
LONGITUDE 157 30 TO 158 0 00
DIAGRAM NF 411 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

AER	O OBSTRUCTION				085	BY NG	5
FATE: HAWAII	YE	1976			THE	RD	RDER
OURCE: 6-15809							
GEODETIC LATITUDE: GEODETIC LONGITUDE:	21°24′27′ 157 46 29	80050 67873		ē.u	EVATION:	-	MET!
		STATE COOR	DINATES (Fee	re)			
STATE & ZONE	CODE	х		•		8 10R A	a ANGL
HI 3	5103	576,5	70.24	87,6	514.75	+ (	f 04' !
PLANE AZIMUTH HAS BEEN	N COMPUTED BY THE 8 IC	R∆ 41 FORMULA	GEODE	G THE SECOND TER  TIC AZIMUTH  row south)	PLANE A	ZIMUTH *	cor
					۰		
THESE DATA D	BTAINED FROM	AD MICTHER	T 05 /	NIC 1070			
THESE DATA OF	DIMTHED PHOM	ADJUS I MEI	VI OF A	IOG 1979			
						K9 00	4

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

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 STATION 122 HAMAII 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:	 DRETBUCTTON	IT E			ane	BY NGS	
HAWAII		1976			THI	RD.	
втатр:	YE.	•				~ 0	RDER
G-15809							
GEODETIC LATITUDE	21°24′23; 157 46 51.			EL	EVATION		METE FEET
		STATE COOR	DINATES (Fee	rt)			
STATE & ZONE	CODE	×		٧		# HOR A	SI ANGLI
HI 3	5103	574,5	18.48	87,	89.17	+ 0	f 04′ 4
	8						
PLANE AZIMUTH HAS BEEN CO	MPUTED BY THE # 101	RA 41 FORMULA	NEGLECTIN	G THE SECOND TE	EM,	DALA	
TO STAT	ION OR OBJECT			TIC AZIMUTH rom south)	PLANE A	ZIMUTH " outb)	COD
					c		
			1		1		
			1		i		l
THESE DATA OBT	AINED FROM	ADJUSTME!	NT OF A	UG 1979			
						K9 00	5

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum NO TEXT

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AERO OBSTRUCTION LT G

DBS BY NGS

HAWAII

1976

THIRD

G-15809

QEODETIC LATITUDE: 21°25' 49'88774 157 47 45.07878	ELEVATION:	METERS PEET
--	------------	----------------

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	٧	Ø IOR∆ GI ANGLE
1I 3	5103	569,434.61	95,887.66	+ 0° 04′ 29
	1 [			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\, s$  IOR  $\Delta$  4) FORMULA NEGLECTING THE SECOND TERM,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
×	<u> </u>		
		1	

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum | NUMBER | N

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AERO DE	STRUCTION	LT I			<b>0</b> 8S	BY NGS	;
STATE: HAWAII	YEA	1976			THIR	lD _o	nofn
G-15809							
	21°26′53; 57 49 31.			ELE	VATION:		METER
		STATE COORD	INATES (Fee	<i>ı</i> )			
STATE & ZONE	CODE	×		٧	-	ø on∆	d: ANGLE
HI 3	5103	559,37	2.29	102,3	12.55	+ 0	ິ 0 <i>3</i> 5
* PLANE AZIMUTH HAS BEEN COMP	UTED BY THE \$ 104	R∆ 4+ FORMULA	NEGLECTIN	3 THE SECOND TER			
TOSTATION	OR OBJECT			TIC AZIMUTH	PLANE A	ZIMUTH *	CODE
THESE DATA OBTA	NED FROM	ADJUSTMEN	NT OF A	NUG 1979		К9 ОО	<b>5</b> 7

### HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 HAWAII

STATION 1228

LATITUDE 21 0 00 TO 21 0 30 LONGITUDE 157 0 TO 158 0 00

DIAGRAM NF 4-11 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION

OBS BY NGS

IIAWAH HAWAII

YEAR 1976

THIRD

ORDER

G-15809

| 21° 26' 34' 08649 | ELEVATION. | METERS | GEODETIC LANGITUDE: | 157 48 56.61096 | ELEVATION. | METERS | FEET

STATE COORDINATES (Feet)					
CODE	×	*	Ø IOR∆ ØI ANGLE		
5103	562,671.07	100,338.98	+ 0° 04′ 03		
		CODE X	CODE X Y		

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\, g \, \cos \Delta \, \, c_1 \,$  FORMULA NEGLECTING THE SECOND TERM,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From seath)	PLANE AZIMUTH *  (From south)	CODE
		, ,	
	1		
	1		

THESE DATA DETAINED FROM ADJUSTMENT OF AUG 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

STATION 1229

HAWAII

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

DIAGRAM NF 4-11 OAHU

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION OBS BY NGS HAWAII THIRD

G-15809

21°26'58:92509 GEODETIC LATITUDE ELEVATION 157 49 22.81427 FEET GEODETIC LONGITUDE

STATE COORDINATES (Feet)				
STATE & ZONE	CODE	ж	٧	8 OR A BI ANGLE
HI 3	5103	560,192.77	102,842.36	+ 0 03 53
	1			

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

TO STATION OR OBJECT	GEODETIC AZIMUTI	H PLANE AZIMUTH * (From south)	CODE
			ĺ
	1		1

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

### HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 STATION 1230 HAWAII LATITUDE 21 0 00' TD 21 0 50 LONGITUDE 1570 30' TO 158 0 00 DIAGRAM NF 411 OAHU

NO TEXT

### ADJUSTED HORIZONTAL CONTROL DATA

		•	
NAME OF STATION	AERO OBSTRUCTION LT	L	OBS BY NGS
STATE HAWAII	HABY	1976	THIRD -ORDER

6-15809

GEODETIC LATITUDE:	21°27′08:74659 157 49 18.12006	ELEVATION	METERS FEET

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	х	٧	8 -08 A ANGLE
HI 3	5103	560,635.09	103,833.87	+ 0 03 55

 $^{\circ}$  plane azimuth has been computed by the  $~_{\theta}$  ior  $\Delta$   $^{\circ}$  formula neglecting the second term.

GEODETIC AZIMUTH (From south)	PLANE AZIMUTH (From sauth)	CODE
0 .	1007	
	(From south)	(From south) (From south)

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 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

GEODETIC LATITUDE:

GEODETIC LONGITUDE:

QUAD 211573 STATION 1231 HAWAII LATITUDE 21 ° 00° TO 21 ° 30°

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

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

	ADOU	311/Pict Bt 1100		
NAME OF STATION:	AERO OBSTRUCTION LT	· M	OBS BY	NGS
ELAWAH IRTATE	YEAR:	1976	THIRD	-ORDER
6-1580	9			

STATE COORDINATES (Fee)						
STATE & ZONE	CODE	×	<b>Y</b>	8 IOR & STANGLE		
HI 3	5103	561,275.75	104,419.21	+ 0° 03′ 57		
				•		

 $^{\circ}$  PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $~g~({
m or}\, \Delta~^{\circ})~$  FORMULA NEGLECTING THE SECOND TERM.

21°27′14:54054 157 49 11.33091

GEODÉTIC AZIMUTH (From tenth)	PLANE AZIMUTH * (From sealb)	CODE
0 , "	•	
	1	

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 011

METERS

FEET

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 OUAD 211573 STATION 1232
HAWAII
LATITUDE 22 ° 00' TO 21 ° 3g
LONGITUDE 157 ° 30' TO 156 ° 00
DIAGRAM NF 4-11 OAHU

NO TEXT

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AERO	OBSTRUCTION LT N	OBS BY NGS
ETATE: HAWAII	YEAR: 1976	THIRD -ORDER

G-15809 BOUND OBSERVATION CHECK ON THIS POSITION

deoperic Landous 157 47 46.73179	21°25' 32:73296 157 47 46.73179	ELEVATION:	METERS FEET
----------------------------------	------------------------------------	------------	----------------

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	×	*	Ø IOR△ ØI ANGLE	
HI 3	5103	569.280.68	94,156.53	+ 0° 04′ 28	
	1 1				

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

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

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

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

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 HAWAII

STATION 1233

LATITUDE 21 000 TO 21 0 30 LONGITUDE 157 0 30 TO 158 0 60

DIAGRAM NF 4-11 OAHU

NO TEXT

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AERO OBSTRUCTION LT 0 OBS BY NGS
STATE: HAWAII YEAR: 1976 THIRD

G-15809

21°26'11:66029 157 47 26.09021	ELEVATION:	METERS FEET
--------------------------------	------------	----------------

STATE COORDINATES (Fert)					
STATE & ZONE	CODE	х	٧	# OR A B) ANGLE	
HI 3	5103	571,225.70	98,086.90	+ 0° 04' 36	
	1 1				

\* PLANS AZIMUTH HAS BEEN COMPUTED BY THE # IOR & FI FORMULA NEGLECTING THE SECOND TERM,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From weth)	PLANE AZIMUTH *  (From south)	CODE
(8)	• ' •	. , .	

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 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

GEODETIC LATITUDE:

QUAD 211573 HAWAII STATION 1234 LATITUDE 21 . 00' TO 21 . 30 LONGITUDE 157 . 30' TO 158 . 00 DIAGRAM NF 4-11 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF	STATION: AERO	OBSTRUCTION LT	P		085 BY NG	5
STATE	HAWAIT	YEAR	1976	38	THIRD	ORDER
ROUBES	G-15809					

SEODETIC LONGITUDE:	FEET						
STATE COORDINATES (Feet)							
STATE & ZONE	CODE	×	¥	g IGR △ GI ANGLE			
HT 3	5103	558.577.4A	103.031.42	A 0° 03' 47"			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE # IOR A 4 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT CODE (From south) (From south)

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

21°27'00;81656

157 49 39.91101

K9 014

METERS

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 213573 STATION 1235
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30
LONGITUDE 157 ° 30' TO 158 ° 00
DIAGRAM NF 4-11 OAHU

NO TEXT

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AERO OBSTRUC	CTION LT Q	OBS BY NGS
HAWAII	YEAR: 1976	THIRD -ORDER

G-15809

GEODETIC LATITUDE: GEODETIC LONGITUDE:	21°27′08;54807 157 49 51•87490	ELE	VATION: METERS FEET

STATE COORDINATES (Feet)					
STATE & ZONE	cops	×	Ψ	g IOR A GI ANGLE	
HI 3	5103	557,446.47	103,810.30	+ 0 03 42	
			•		
	1 1	i			

 $^{\circ}$  Plane azimuth has been computed by the ~g (or  $\Delta$   $^{\circ}$ ) formula neglecting the second term.

TO STATION OR OBJECT	GEODÉTIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE	
			ŀ	
			]	
	i .	1	'	

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum

NAME OF STATION

QUAD 211573 STATION 1236
HAWAII
LATITUDE 21 00 TO 21 0 30
LONGITUDE 1570 30 TO 258 0 00
DIAGRAM NF 4-11 OAHU

OBS BY NGS

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

AERO OBSTRUCTION LT R

STATE: HAWAI	I	1976			THIRD [-ORDER			
G-1580	9							
GEODETIC LATITUDE	21° 157	27' 18: 29 49 58.44	490 781		ELU	EVATION:		METE!
			STATE COOR	DINATES (Fe				
STATE & ZO	one co	DDE .	×		,		e ion Z	2 di ANGLE
HI 3	5:	103	556,8	24 , 50	104,793.10		+ 6 03 4	
* B1 AME A THAIRTY W	A. A. E. E. S.					<u> </u>		
PLANE AZIMUTH H	AS BEEN COMPUTED BY		FORMULA	GEODE	TIC AZIMUTH	PLANE A	ZIMUTH *	CODE
					om south)	(From s	,	
-								
				j				
				· 		•		
THESE DAT	A OBTAINED	FROM AD.	JUSTME	VT OF A	197 <b>9</b>		•	
							K9 01	6

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 212573 STATION 1237
HAWAIT
LATITUDE 22 ° 00° TO 21 ° 30°
LONGITUDE 157 ° 30° TO 158 ° 00°
DIAGRAM NF 4-11 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION

OBS BY MGS

HAWAII

1976

THIRD

-ORDFR

G-15809

GEODETIC LATITUDE:	21°27′23;99913 157 50 01.11386	ELEVATION:	METERS FEET

STATE COORDINATES (Feet)						
STATE & ZONE	CODE	×	٧	# IOR A ANGLE		
HI 3	5103	556,572.04	105,368.39	+ 0° 03′ 39″		

\* PLANE AZIMUTH HAS SEEN COMPUTED BY THE  $\,$  8  $\,$  IOR  $\Delta$   $\,$  G) FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
Ç4	2.40 J.67 (A)		

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 017

#### OEC 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 STATION 1238
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'

DIAGRAM NF 4-11 OAHU

#### DESCRIPTION OF SURVEY MARK

NAME OF STATION: Abua Overpass

STATE: Hawaii COUNTY: Honolulu

NEAREST TOWN:

ESTABLISHED BY: State of Hawaii

DATE: 1971

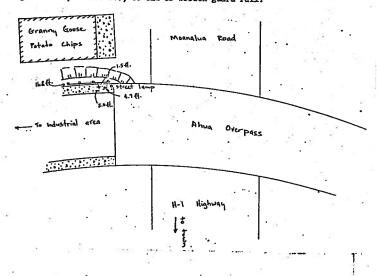
'DESCRIBED BY: Richard M. Itoh

SURFACE MARK: "+" On Concrete Sidewalk

Station is located in Moanalua District, Honolulu on the north side of the Ahua Overpass over H-1 Highway.

To reach station from the intersection of Kamehameha Highway and Middle Street go northeasterly on Middle Street for 0.5 of a mile to the Middle Street Overpass over H-1 Highway and also the Middle Street - Kaua Street intersection. Turn left into Kaua Street and proceed 0.55 of a mile northwesterly on Kaua Street to the Ahua Overpass on the left. Continue on the Ahua Overpass over H-1 Highway for 0.15 of a mile to the station on the right.

Station mark is a "+" cut on the concrete sidewalk on the north side of the Overpass and on the west end. Ties from station are: NW 1.5 ft., to edge of sidewalk, NE 4.7 ft., to a street lamp post, SE 5.0 ft., to edge of curb, W 16.8 ft., to end of wooden guard rail.



### ADJUSTED HORIZONTAL CONTROL DATA

AHUA OVERPASS

OBS BY HIDT

STATE HAWAII

1971

THIRD

G-15752

GEODETIC LATITUDE:	21°20′50:60519 157 53 44.40531	SCALED	8	METERS
GEODETIC LONGITUDE:	157 35 4444051	SCALED		PEET

STATE CODRDINATES (Feet)					
STATE & ZONE	CODE	х .	<b>v</b> –	8 IOR A BI ANGLE	
HI 3	5103	535,505.81	65,656,68	+ 0° 02′ 17	
		9	100		
	100				

 $^{\circ}$  Plane azimuth has been computed by the  $\,\,\phi\,$  (or  $\Delta\,$  5). Formula neglecting the second term,

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE
STATE SURVEY 1-8F	289° 40′ 47;9	289° 38′ 31°	5103
	1 - 1		14.
			i

THESE DATA OBTAINED FROM ADJUSTMENT OF SEP 1979

RL 140

## HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1239
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

## NO ORIGINAL TEXT

AIEA MILL STACK ( Hawaii, E.R.H., 1925; L.G.S., 1927)-In S Oahu, NE of Pearl Harbor, an iron steel-colored stack rising from a large structure (sugar mill) of same color.

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

Pora 526 (11-8-65)

RECOVERED BY:\*

RECOVERY NOTE, TRIANGULATION STATION INTERSECTION

R

Name of Station: Aiea Mill Stack
Established by: E.R.H. Year: 1925

E.R.H. YEAR: 1925 STATE: Hawaii 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. Located at the C and H Sugar Mill in Aiea. Stack is about 150 feet tall and is now painted buff, with the top section painted black.

RECOVERY NOTE, THIAMBULATION STATION INTERSECTION

R

NAME OF STATION: AIEA MILL STACK
ESTABLISHED BY: E. R. H. YEAR: 1925
RECOVERED BY: Carl A. Annis YEAR: 1969
AIRLINE DETARCE AND DEECTION FROM NEAREST TOWN: In City of Honolulu, Hawaii

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

Intersection station recovered in good condition as described by D. M. Whipp in 1965.

FORM C&G\$-526 (8-66)

U.S, DEPARTMENT OF COMMERCI ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION ENVIRONMENTAL SCIENCE SERVICES DE L'AUTRE DE

### ADJUSTED HORIZONTAL CONTROL DATA

ALEA MILL STACK

\_\_\_\_ HAWAII

YEAR: 1925

THIRD

ORDER

G- 558

 GEODETIC LATITUDE:
 21 °22 ′59 °239
 ELEVATION
 METERS

 GEODETIC LONGITUDE:
 157 55 46.891
 FEET

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	х	<b>~</b>	8 IOR A BI ANGLE	
HI 3	5103	523,921.16	78,629.35	+ 0°01′32″	

 $^{\circ}$  Plane azimuth has been computed by the  $|\theta|$  or  $\Delta$  |a| formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From tenth)	PLANE AZIMUTH * (From south)	CODE
		•	
	15%		
	'	•	

## HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1240
HAWAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

DESCRIPTION OF TRIANGULATION STATION Akaka STATE: Hawaii NAME OF STATION: COUNTY: Honolulu CHIEF OF PARTY: YEAR: 1928 LOCALITY: DISTANCES AND DIRECTIONS TO REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE OROUND Surface-station mark, Underground-station mark, Reference mark, Note,\* Reference mark, Azimuth mark. Witness mark. Height of light above station mark Height of telescope above station mark metera-t Detailed description: Old mark consisting of a 2-inch pipe in ground was recovered but found to be loose. It was replaced by a standard bronze disk (Territory Survey) set in concrete in a 5-inch cast iron pipe, which was imbedded in the ground. A concrete shoulder was placed around the pipe near the surface.

DEPARTMENT OF COMMERCE
U. S. COMPT AND QUINCY FUTTH, 856
(Elit. 79b. 1985)

RECOVERY NOTE, TRIANGULATION STATION

R

NAME OF STATION: AKAKA
ESTABLISHED BY: 493
RECOVERED BY: 54H

YEAR: 1938 STATE: Hawaii YEAR: 1936 COUNTY: Honolelu

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

Station is on Oahu Island, JE of Honolulu in Mana Velley. To reach station proceed on E. Mana Drive for 1.7 miles to the In Yee Chung Cemetery; go through the cemetery to the Small circular drive at its North end. Islan is 9, feet north of circular drive. It is a type 'A' mark.

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

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

18—10

(continued on next page)

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: AKAKA

STATE HAWAII

YEAR 1928

SECOND

SOURCE: G- 7448

21 19 21.976     25 48 14.126     26 19 19 19 19 19 19 19 19 19 19 19 19 19	SCALED	99	METERS
---	--------	----	--------

*	1 -			<del></del>
STATE & ZONE	CODE	×	¥	# IOR A BI ANGLE
11 - 3	5103	566,739.07	56.743.82	+ 0 04 17
II - 3	5103	566,739.07	56.743.82	+ 0 04

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

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
PUU PIA	217 51 57.0	217 47 40	5103

QE 012

HORIZONTAL CONTROL DATA

by the
NATIONAL GEODETIC SURVEY
OLD HAWAIIAN DATUM

AKAKA (continued)

PORM 526d (6-18-55)

U.S. DEPARTMENT OF COMMERCI COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION:
ESTABLISHED BY:
RECOVERED BY:
W.R. Porter

YEAR: 1928 STATE: Hawaii YEAR: 1963 COUNTY: Honolulu

HEIGHT OF TELESCOPE ABOVE STATION MARK 2,52 METERS. HEIGHT OF LIGHT ABOVE STATION MARK

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMIMENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION BEARING DIRECTION OBJECT METERS 00 00 00.0 PUU PIA 1928 21,000 6.402 09 11 49 R.M. No. 1 189 12 22 SW 32.239 9.827 R.M. No. 2

Station was recovered in good condition. The station mark was previously described as being a Hawaiian Territorial Survey bronze disk, however a large iron yoke which is part of the Type A signal, rests almost on the mark so it could not be examined for stamping. Two new reference marks, numbers one and two, were set. A complete description follows:

Station is located about 4 miles airline northeast of the Federal Building in Honolulu, in the Woodlawn District, just above an old, Chinese cemetery, on a tree-covered point of a narrow-topped ridge along the southeast side of Manoa Valley.

along the southeast side of manoa valley.

To reach station from the U.S. Post Office Sub Station No. 5 in Manoa, go northeast on E. Manoa Rd. for 0.65 mile; take left fork and go 0.1 mile to cemetery entrance. Pass through gate and go 0.15 mile to end of cemetery drive at northeast end of cemetery. Walk northeast along ridge about 20 yards to station.

Station mark is a Hawaiian Territorial Survey bronze disk, set in Station mark is a Hawaiian Territorial Survey bronze disk, set in the control of the top of 5.5 miles control of the projects of inches

Station mark is a Hawaiian Territorial Survey bronze disk, set in concrete in the top of a 5-inch, cast-iron pipe that projects 6 inches above ground and has a concrete collar 3 inches below its top. It is 45 feet northeast from the last grave at the northeast end of the cemetery. A "Type A", Hawaiian Territorial Survey signal is centered over the mark, with the concrete platform 3 feet above ground and the red and white metal target extending 6 feet above the platform.

Reference mark number one is a standard disk stamped "AKAKA NO 1 1928 1963", brazed to the top of a 1-1/2-inch, iron pipe that is set in cement and projects 6 inches above ground. It is 3 feet northwest of old boulder row, at southeast edge of trail, 20 feet southwest of a lone, metal, fence post, and 1 foot higher than station mark.

Reference mark number two is a standard disk stamped "AKAKA NO 2 1928 1963", brazed to the top of a 1-1/2-inch, iron pipe that is set in cement and projects 4 inches above ground. It is set in trail to station; 17 feet northeast of a large, square, iron fence post; 13 feet northeast of center of concrete, water-meter box, 21 feet northeast of small cutbank at northeast end of last grave, and 3.5 feet 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 27178-PE

# HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1241
HAMAI I
LATITUDE 21 ° 00' T0 21 ° 30'
LONGITUDE 157 ° 30' T0 158 ° 00'
DIAGRAM NF 4-11 OAHU

BALLOON HANGAR ( Hawaii, E.R.H., 1925) -- In S Oahu, on E side of Pearl Harbor entrance, at Fort Kamehameha. A balloon hangar standing isolated in a low grassy flat.

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION BALLOON HANGAR

STATE HAWAII

YEAR 1925

THIRD

-ORD

SOURCE: G- 558

1 157 57 09,078	METERS FEET
-----------------	----------------

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	×	Y	8 IOR A BI ANGLE	
HI 3	5103	516,160.25	56,962.53	+ 0"01'02	

 $^{\circ}$  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	
		• ' •		

# HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HÁWÁIIAN DATÚM

NAME OF STATION: BENCH MARK B 5

SOUNCE G-12664 ON THIS POSITION

STATE: HAWAII

OUAD 211573 STATION 1242
HAWAII
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

SECOND

SEE STATION KEWALO

AD HISTED	HORIZONTAL	CONTROL	DATA

YEAR 1963

21 °17 50 886 157 51 36.793			ELE	ELEVATION		1.84 METERS 6.0 FEET	
		STATE COORD	INATES (Fee	et)			
STATE & ZONE	STATE & ZONE CODE X		*		θ ΟΡΔ	B) ANGLE	
HI 3	5103	547,58	5.40	47,532.50		+ 0	03′03
PLANE AZIMUTH HAS BEEN COM	IPUTED BY THE #	OR A OF FORMULA	NEGLECTIN	G THE SECOND TER	м,		
TO STATE	ON OR OBJECT		(6)	TIC AZIMUTH	PLANE AZ	outh)	CODE
POSITION DETERM	IINED BY T	RAVERSE FR	ROM STA	TION KEWA	LO		

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1243 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 FORM 825 Bay, Oct., 1932,	DESC	CRIP	TION OF	TRIANGULATION	Stati	ON	
NAME OF STATION: BENCH		2	STATE:	Hawaii	Coun	™: Honolulu	
CHIEF OF PARTY: L.G.S.		_	YEAR:	1928 LOCALITY:			
Surface-station mark,	Note,*	Г	DISTANCE	S AND DIRECTIONS TO REF			T OBJECTS WHICH
Underground-station mark,	Note,*	ŀ				THE GROUND	
Reference mark,	Note,*	1.		OBJECT C	ISTANCE	DIRECTION	AZIMUTH .
Reference mark,	Note,*	Ì				. , .	• , ,
Azimuth mark,	Note,*	- 1					
Witness mark,	Note,*	1		ł			
Height of light above station man	rk met	ters.					
Height of telescope above station	mark met	ters.†					
				,			,

A standard Coast and Geodetic Survey bench mark set in concrete pier, standard K 2, just inside of fence corner of rolf course at southeast corner of junction of Waialae and Isenbergh roads.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BENCH MARK K 2 BOTABLISHED BY: L.G.S. YEAR

YEAR: 1928 STATE: Hawaii ESTABLISHED BY: H.O.F. YEAR: 1955 COUNTY: Honolulu

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

The mark was recovered in good condition. A new description follows: Near the intersection of Waialae Avenue and Kealaolu Avenue, across the avenue from Joe Fatt's Restaurant, 60 feet east of the easterly gas pumping platform of a service station, 28 feet east of the center-line of Kealaolu Avenue extended, 7 feet south of the edge of a concrete sidewalk, on the northwest edge of a triangular shaped dirt and grass plot, and 14 inches below the surface of the ground, contained in a 8inch circular cast iron pipe, covered with a smooth cover flush with the ground. The pipe rests upon a rock cribbing surrounding the mark. A cross has been chiseled in top of the mark, partially obliterating the K.

According to the Territorial Highway Department this mark was never disturbed when new construction was being done. However, it should be used with caution.

(continued on next page)

#### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION: BENCH MARK K 2

STATE: HAWAII 1928

SECOND

G- 7448

GEODETIC LATITUDE:	21 °16 ′52.612	ELEVATION	15.63 METERS
GEODETIC LONGITUDE:	157 47 12.202		51.3 FEET

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	ж	<b>Y</b>	P OR A BI ANGLE	
HI 3	5103	572,614.27	41,680.71	+ 0°04′39	
	17				

PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ 108 A FORWULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From small)	CODE
KAIMUKI	89 28 22.8	89°23′44	5103
	1111		

QE 013

### HORIZONTAL CONTROL DATA

by the

NATIONAL GEODETIC SURVEY

OLD HAWAIIAN DATUM

QUAD 211573 STATION 1243
LATITUDE ° ', TO ° ',
LONGITUDE ° ', TO ° ',
DIAGRAM

ORM 526e

U.S. DEPARTMENT OF COMMERCE

#### RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: BENCH MARK K 2

ESTABLISHED BY: LG.S. YEAR: 1928 STATE: Hawaii RECOVERED BY: W.R. POTTET YEAR: 1963 COUNTY: Honolulu

BENCH MARK K 2 (continued)

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFERENCE MARKS AND PROMINENT OBJECTS WHICH CAN BE SEEN FROM THE GROUND AT THE STATION						
		DIST	ANCE			
OBJECT	BEARING	FEET	METERS	DIRECTION		ON
KAIMUKI 1872-1927 R.M. No. 2 R.M. No. 1	WNW ENE	15.198 58.131	4.633 17.719	00 37 179	00	00 •0 50 12

Station mark was recovered and found in good condition. Two new reference marks, numbers one and two, were established. A complete description follows:

Station is located about 5-1/4 miles airline east-southeast of the Federal Building in Homolulu and 1-3/4 miles west of Aina Haina; along the south side of Kalamianacle Highway, at the northwest tip of the waislase Golf Course, in a small, triangle-shaped, grassy plot at the northeast corner of a Flying "A" Service Station lot, and in the west angle of the intersection of Kalamianacle Highway and Kealaclu Ave.

To reach station from the traffic light at the intersection of West Hind Drive and Kalanianacle Highway in Aina Haina, go west on Kalanianacle Highway for 1.9 miles to station on left.

Station mark is a standard bench mark disk, stamped "K2", set in the top of a concrete monument about 1 foot below ground level. Access to the mark is had by removing a smooth-topped, 8-inch-diameter, iron hand-hole cover from the top of an iron casing which is flush with ground level. The mark is 45 feet east of easternmost gas pump of the service station, 29 feet northeast of the extended center line of Kealacul Ave, 26 feet west-scuthwest of street signpost "KEALACUL AVE-WAILAE AVE", 15 feet south of south curb line of Waialae Ave, 6 feet west-southwest of the center of a large manhole cover with "WATER" embossed on it.

Reference mark number one is a standard disk stamped "BM K2 NO 1 1928 1963", cemented in a drill hole in the concrete sidewalk on east side of Kealaclu Ave, 4.5 feet east-northeast of street sign "KEALAOLU AVE-KALANIANAOLE HWY", 7 feet east of pointed end of sidwalk, 6 inches north of edge of sidewalk, and about 1-1/2 feet higher than station mark.

Reference mark number two is a standard disk stamped "BM K2 NO 2 1928 1963", cemented in a drill hole in the sidewalk in front of the service station, 6 inches north of edge of sidewalk, 3.7 feet northwest of a metal light pole, 9-1/2 feet southwest of a power pole, 17 feet east of large manhole cover in sidewalk, and about 1-1/2 feet higher than station mark,

NOTE: A cross chiseled in the center of the disk (station), has the letter "K" partly obliterated.

\*Name of chief of party should be inserted here. The officer who actually visited the stat.\_\_\_\_\_\_ on the state of the recovery note.

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

ISCOMP-PF PF

## HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 STATION 124
HAMAII
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 157 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION	IB SITE 1	OBS BY NGS
STATE HAWAII	YEAR 1976	THIRD
G-15809		
GEODETIC LATITUDE:	21°26′09:90875 157 47 20.43846	SCALED 1 METE

		STATE COORDINATES (Feet)		
STATE & ZONE	CODE	×	¥ .	8 IOR A BI ANGLE
HI 3	5103	571,759.08	97,918.95	+ 0'04'38"

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE # 10R \( \Delta \) 41 FORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT

OF THE SECOND TERM.

GEODETIC AZIMUTH

(From south)

(From south)

CODE

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979

K9 018

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 STATION 1245
HAWAII
LATITUDE 21 00 TO 21 0 30
LONGITUDE 1570 30 TO 158 0 00
DIAGRAM NF 411 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

CALIB SITE 2 OBS BY NGS

IIAWAII

1976

THIRD

ORDER

G-15809

GEODETIC LONGITUDE:	GEODETIC LATITUDE	21°26′26:38214 157 46 05.35832	rented	0	METERS FEET
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STATE COORDINATES (Fert)							
STATE & ZONE	CODE	×	¥	8 IOR A BI ANGLE			
HI 3	5103	578,850.68	99,583.08	+ 0 05 05"			
		i					

\* PLANE AZIMUTH HAS BEEN COMPUTED BY THE  $\,\, heta\,$  (or  $\Delta\,$  (i) Formula neglecting the second term.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH * (From south)	CODE
PAPAA 2	332° 96′ 0113	332° 00′ 56°	5103
			ļ

THESE DATA OBTAINED FROM ADJUSTMENT OF AUG 1979 POSITION DETERMINED BY RESECTION

K9 019

# HORIZONTAL CONTROL DATA

by the National Ocean Survey Old Hawaiian Datum QUAD 211573 STATION 1246
HAWATT
LATITUDE 21 ° 00' TO 21 ° 30'
LONGITUDE 257 ° 30' TO 158 ° 00'
DIAGRAM NF 4-11 OAHU

NO TEXT

ADJUSTED HORIZONTAL CONTROL DATA

AME OF STATION	B STIE 2				085	B1 MC2	i
HAWAII	YEA	1976			THI	PD -0	RDER
G-15809							
EGDETIC LATITUDE:	21°26′34;6 157 47 39.			Şi.	al'ey	0	METER FEET
		STATE COORD	INATES (For	t)	-		
STATE & ZONE	CODE	×		٧		ø IOR∆	GI ANGLE
HI 3	5103	569,92	9.75	100,0	29.77	+ 0	04 3
PLANE AZIMUTH HAS BEEN O		A 51 5001411 A	W501 5071W	7 THE SECOND 151			
	TION OR OBJECT	Z = FUNNULA	GEODE	TIC AZIMUTH	PLANE A		CODE
		-	,,,		0		
			I		•		'
THESE DATA OB	TAINED FROM	AD JUSTMEN	IT OF A	NUG 1979			
						K9 02	20

NO ORIGINAL TEXT

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1247
HAMAI I
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

### ADJUSTED HORIZONTAL CONTROL DATA

FORM 526s

U.S. DEPARTMENT OF COMMERCE

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CAPE
ESTABLISHED BY: HTS
RECOVERED BY: W.R. POrter

YEAR: 1952 STATE: Hawaii 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 PROMIMENT OBJECTS WHICH CAN BE SEEM FROM THE GROUND AT THE STATION OBJECT BEARING US MON NO 1 1952 00 00 00.0 R.M. No. 2 S 17.715 5.400 27 38 54 NE Corner of Beach Shack NW 260.5 59 160 15 Kaneche Bay, MCAS, Hawaiilca Hill Beacon 1952 NW 168 16 21.505 300 02 02 6.555

Station mark was recovered in poor condition. It consisted of a 3/4-inch iron pipe, driven into sandstone bedrock under beach sand, and surrounded near the top with a mass of concrete about 1 foot deep. The sand had eroded away until all of the concrete was exposed. A check run was taken which showed that the mark was at its original location so it was re-marked. Two reference marks, numbers one and two, were established. A complete description follows:

Station is located about 2 miles north of Kailua, on Kapoho Point, where the shoreline turns from south to westerly, running towards the

mouth of Kawainui Canal.

To reach station from the traffic light at the junction of Mokapu Rd. and Kaneohe Bay Dr. at the north end of Kailua, go northeast on Mokapu Rd. for 0.45 mile; take right fork and go 0.1 mile on 0ld Mokapu Rd.; take right fork and go 0.15 mile on Kaimalino St. to locked chain gate at end of street (key may be obtained at the Kaneohe Ranch Co. office at Castle Junction). Pass through gate and keep right, on track road, for 0.15 mile to station on the point.

Station mark is a standard disk stamped "CAPE 1952 1964", set in the top of a 12-inch-square, concrete monument that projects 3 inches. It is 45 feet northwest of extreme tip of the shoreline ledge-rock, 10 feet northwest from inshore line of the bedrock, and 260.5 feet southeast of northeast corner of green beach shack.

Reference mark number one is a standard disk stamped "CAPE RM 1 1952 1964", cemented in a drill hole in bedrock, 6 feet west from water edge and about 1 foot lower than statiom mark.

Reference mark number two is a standard disk stamped "CAPE RM 2 1952 1964", cemented in a drill hole in bedrock, 6 feet northwest of water edge, 30 feet west of extreme tip of point, and about 1 foot lower than station. Beach shack is a board structure with gable roof, about 18 x 24 feet, and painted dark green. It sets 55 feet northeast from water line.

"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-P80

(continued on next page)

NAME OF STATION: CAPE

OBS BY HTS

IIAWAH HAWAII

VEAR: 1952

THIRD

OURCE: G-11968

QEODETIC LATITUDE: 21 °25 '38 °832 GEODETIC LONGITUDE: 157 44 31.062	ELEVATION	METERS FEET
---	-----------	----------------

STATE COORDINATES (Feet)						
STATE & ZONE	CODE	×	¥	B OR A B ANGLE		
HI 3	5103	587,767.03	94,799.14	+ 0°05′39		

PLANE AZIMUTH HAS BEEN COMPUTED BY THE \$ OR A PORMULA NEGLECTING THE SECOND TERM.

TO STATION OR OBJECT	GEODETIC AZIMUTH (From south)	PLANE AZIMUTH *  (From south)	CODE
US MON NO 1	336 °59 23.2	336°53′44″	5103
		A	
_		120	

HORIZONTAL CONTROL DATA

by the NATIONAL GEODETIC SURVEY OLD HAWAIIAN DATUM

STATION 1247

' TO LATITUDE TO LONGITUDE DIAGRAM

QUAD 211573

CAPE (continued)

U.S. DEPARTMENT OF COMMERCE

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CAPE ESTABLISHED BY: HTS RECOVERED BY:

PORM 5260 (9-18-88)

D.M. Whipp

YEAR: 1952 YEAR: 1966

STATE:

Hawaii COUNTY: Honolulu

Island: Oahu

DISTANCES AND DIRECTIONS TO AZIMUTH MARK, REFE FROM THE GRO	RENCE MARI	STATION		IICH CAN	BE SEE	EN .
OBJECT	BEARING	DISTA		- 1	DIRECT	ION I
OBJECT	BEARING	PEET	METERS	-		<del></del> -
US MON NO. 1 1952 RM No. 3 Kaneche Bay, MCAS, Hawaiiloa	WSW	31.086	9.476	00 96 168	00 16 16	00.0 47
Hill, Beacon 1952 RM No. 1	E	21.506	6.555	500		36

Station mark and reference mark number one were recovered in good condition. Reference mark number two had been destroyed so a new reference mark, number three, was established. The green beach shack is gone and there is now a brown beach home in a slightly different location. A complete description follows:

Station is located on Kapoho Point, about 2 miles north of Kailua, where the shoreline turns from south to westerly, running towards the mouth of Kawaimui Canal.

To reach station from the traffic light at the junction of Mokapu

Rd. and Kansche Bay Drive at the north end of Kailua, go northeast on Mokapu Rd. for 0.45 mile; take right fork and go 0.1 mile om Old Mokapu Rd.; take right fork and go 0.15 mile om Kaimalino St. to locked chain gate at end of street (key may be obtained at the Kaneohe Ranch Co. office at Castle Junction). Pass through gate and keep right, on track road, for 0.15 mile to station at shoreline.

Station mark is a standard disk stamped "CAPE 1952 1964", set in the top of a 12-inch-square, comprete momment projecting 1 inch from the sand. It is 45 feet northwest of extreme tip of the point, 10 feet northwest from inshore edge of the bedrock, 5 feet southeast of a rock outcrop at edge of slightly higher sand rise, and about 85 yards southeast of a brown house.

Reference mark number one is a standard disk stamped "CAPE RM 1 1952 1964", cemented in a drill hole in bedrock, 6 feet west from water edge and about 1 foot lower than station mark.

Reference mark number three is a standard disk stamped "CAPE 1952 NO 3 1966", cemented in a drill hole in a coral bedrock knob at edge of sand line, 7 feet north of water line, projecting about 8 inches above sand and at about same elevation as station.

"Name of chief of party should be inserted here. The officer who actually visited the station should be inserted here. The officer who actually visited the station should be inserted here. of the recovery note.

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

USCOMM-DC 27178-P89

### HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573 STATION 1248
HAMAI I
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

CASTLE ( Hawaii, H.A.P., 1932) -- Station is located about 700 meters almost due W of Mokapu. It is on a small knoll at the foot of the rise to Mokapu.

Station mark is a standard disk set in concrete. Reference mark is a standard disk set in a drill hole in a

boulder. OBJECT MOKAPU Ref.Mk.

High water

DISTANCE meters 36.38 37.0 DIRECTION 0°00°00.00

241 48 240

COAST AND GEODETIC SURVEY

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CASTLE
ESTABLISHED BY: H.A.P.
BECOVERED BY: W.R. POrts

W.R. Porter YEAR: 1963 STATE: Hawaii COUNTY: Honolulu

HEIGHT OF TELESCOPE ABOVE STATION MARK 1.49 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 FEET METERS PAPAA 2 1932 ----1932 DISTANCE and DIRECTION 00 00 00.0 36.35 134 55 18 ---1963 DISTANCE and DIRECTION PAPAA 2 1932 ' 00 00 00.0 R.M. No. 1 118.580 (36.143) NNW 134 54 08

Station mark and reference mark were both recovered and found in good condition. A complete description follows:

Station is located on the Kaneohe Marine Corps Air Station, at the west side of the base of Ulupau Head, at the north end of a group of new, cement-block houses (built in late 1963), on the edge of a grassy bank about 40 feet above sea level. The bank drops down steeply to the coral bedrock shoreline just north of the station.

To reach station from the Base Administration Building (Bldg. No 215), go northeast on E Street for 0.2 mile; turn right and go east on Mokapu

Road for 0.4 mile; take left fork and go 0.9 mile on Lawrence Road; go left on Bancroft Drive for 0.25 mile; go left on Pond Road for 0.1 mile; take left fork and go north 0.1 mile to north end of loop road at west end of the north row of houses, near edge of bank, and stration

take left fork and go north o.1 alle to north end of loop road at west end of the north row of houses, near edge of bank, and station.

Station mark is a standard disk stamped "CASTLE 1932", set in the top of a 10-inch-square, concrete monument that projects 3 inches above ground. It is 1-1/2 feet north of an old mesh fence, 4.5 feet east of a jog in the fenceline, 27.5 feet north-northwest of the northwest corner of the westernmost house in the row, and between the fence and a low, naupaka-covered point.

Reference mark number one is a standard disk, unstamped, cemented in a drill hole in the coral bedrock shore at base of the steep, grassy bank. It is 50 feet north-northeast of an old, cement-block bin setting in the base of the bank and is 32.9 feet lower than station mark.

RECOVERY NOTE, TRIANGULATION STATION

NAME OF STATION: CASTLE

R

ESTABLISHED BY:
RECOVERED BY:
C.K.T.
YEAR: 1932
STATE: Hawaii BENCH MARK(8) ALSO COUNTY: HONDILUL
AIRLINE DISTANCE AND DIRECTION FROM NEAREST TOWN: at Kaneohe Marine Corps Air Station

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. It is now \( \frac{1}{2} \) foot north of a woven wire fence line and about 22 feet north of the northwest corner of house \( \frac{1}{2} \) 276.

DAA FORM 76-3 (11-74) ADJUSTED HORIZONTAL CONTROL DATA

CASTLE

IIAWAII

VEAR: 1932

THIRD

OBDE B

SOURCE: G- 9889

GEODETIC LATITUDE: 21 °27 '31.003 ELEVATION: 12 METERS SCALED FEET

STATE COORDINATES (Fee)							
STATE & ZONE	CODE	×	¥	g IOR A 41 ANGLE			
HI 3	5103	587,898.97	106,117.58	+ 0°05′40″			
		,					
				}			

PLANE AZIMUTH HAS BEEN COMPUTED BY THE A (OR A E) FORMULA NEGLECTING THE SECOND TER

TO STATION OR OBJECT	GEODETIC AZIMUTH (From touth)	PLANE AZIMUTH " (From south)	CODE
PAPAA 2	27 13 51 1	27 <sup>°</sup> 08′11 <i>°</i>	5103

# HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM OUAD 211573 STATION 1249
HAWAII
LATITUDE 21 °00' TO 21 °30'
LONGITUDE 157 °30' TO 158 °00'
DIAGRAM NF 4-11 OAHU

SEE STATION LANIKAI

AD BISTED	HORIZONTAL	CONTROL	DATA

STATE: HAWAII	•	YEAR 1963			THIR	D 0#	REGE
SOUNCE G-12664	N CHECK ON	THIS POSIT	.ION				
GEODETIC LATITUDE: GEODETIC LONGITUDE:	21 °23 ′56 157 43 23	:027		SCA	VATION: ALED	6	METE
		STATE COORE	DINATES (Feet)				
STATE & ZONE	CODE	ж		٧			di ANGL
HI 3	5103	594,20	07.44	84,4	36.97	+ 0°	06′0
* PLANE AZIMUTH HAS BEEN	COMPUTED BY THE 8	IORA 41 FORMULA					
TO 87/	ATION OR OBJECT	n n	GEODETIC (From		PLANE A	ZIMUTH *	cod
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			ROM STAT				
-							
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			^			QF 55	7
					· · · · · · · · · · · · · · · · · · ·	QF 55	7
						QF 55	7
						QF 55	7
						QF 55	7
						QF 55	7

# HORIZONTAL CONTROL DATA

by the National Ocean Survey OLD HAWAIIAN DATUM QUAD 211573

STATION 1250

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

# NO ORIGINAL TEXT

Form 526 (11-8-55)

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

R

NAME OF STATION: COOLIDGE

ESTABLISHED BY: HTS YEAR: 1957 STATE: Hawaii RECOVERED BY: D.G. RushfordyBAR: 1964 COUNTY: Honolulu

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

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

A "Type C" signal established by the Hawaii Territorial Survey was recovered in good condition. A complete description follows:

Station is located about 1 mile southwest of the center of Kaneche and 1/4 mile northwest of Likelike Highway, at about 284 feet elevation on the south end of a tree-covered ridge overlooking the State Hospital grounds to the west, and above a green water reservoir.

To reach station from the fire station in Kaneche, go west on Pelaka Rd. for 0.4 mile; go left on Kapunahala Rd. for 0.1 mile; go left on Kaneke St. for 0.25 mile; go right on Kulukece St. for 0.2 mile to locked gate at drive to reservoir on right. Go up this road for 0.1 mile to end of road. Walk up slope about 100 yards, then go left along top of ridge about 130 yards to station.

Station is center of 2-1/2-inch pipe that projects 2 feet from the center of a 5-foot-square concrete platform flush with ground. It is 17 feet east of a jog in fence line and 25 yards south of a grove of large eucalyptus trees. A red and white, removable, metal target is set into the pipe and extends 7 feet above the platform.

> ne of chief of party should be inserted here. The officer who actually visited the station should sign his mame at the end of the recovery nature.
>
> Nove.—One of these ferms must be used for every station reservend. Comm-DC 34314

### ADJUSTED HORIZONTAL CONTROL DATA

NAME OF STATION. COOLIDGE

OBS BY HTS

HAWAII

YEAR: 1957

THIRD

sounce: G-11968

DECODETIC LAYITUDE: 21 °24 '31.321 DECODETIC LONGITUDE: 157 48 42.581	ELEVATION:	METERS FEET
---	------------	----------------

STATE COORDINATES (Feet)					
STATE & ZONE	CODE	×	¥	# IDR A SI ANGLE	
HI 3	5103	564,011.35	87,953.44	+ 0°04′07°	

PLANE AZIMUTH HAS BEEN COMPUTED BY THE #

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