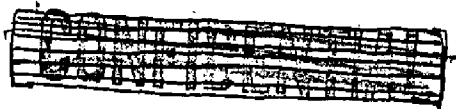


4059



Diag. Cht. Nos. 4100 & 4116

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey

Topographic

Field No.

Office No.

4059

LOCALITY

State

Hawaii

General locality

Hana Cove

Locality

Mauis Maui

1924

CHIEF OF PARTY

E. R. Hand.

LIBRARY & ARCHIVES

DATE

July 25, 1924

B-1870-1 (1)++

DECLASSIFICATION BY NOAA
PURSUANT TO DOC SYSTEMATIC REVIEW
GUIDELINES AS DESCRIBED IN SECTION
3.3 (a), EXECUTIVE ORDER 12356

4059

~~CONFIDENTIAL~~

Acc. No. 25-100
JUL 25 1924
U. S. & G. SURVEY

Confidential

4059

~~CONFIDENTIAL~~

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

State: Hawaii

11-5813

DESCRIPTIVE REPORT.

Topog. Sheet No. 4059

LOCALITY:

Island of Maui

Hana

1924

CHIEF OF PARTY:

E. R. Hand

DESCRIPTIVE REPORT

To accompany topographic sheet of Hana Cove, Maui, T.H. Surveyed June, 1924

Eoline R. Hand, Chief of Party.

The survey was controlled rigidly by the four triangulation stations: KA PUKAULUA, PUU O KA HAULA, NANUALELE (misspelled on the data furnished me) and KAUIKI. There were no errors of traverse and therefore no adjustments in any place. These positions were plotted on the projection in accordance with the data furnished me; but I notice they do not fit the values that I scaled off the bromide of topog sheet 3274. Presumably different datum. I do not know which is finally to be accepted but there ought to be consistency; for instance, the position of Hana Light, as given in the Light List, does not fit my value furnished in my List of Positions. Their height is 85 for focal plane of light; I do not know how closely they obtain those heights, therefore cannot say if 84 or 85 is the better. I know my value was carefully obtained, but the matter seems of little practical importance - a foot's difference. We ought to get together, though, on the position.

I can add but little information beyond what I show; the cannery is new; capacity when running full (not yet going) will be a million cases a year, 24 cans to case. They are held up by lack of water now. The wharf is new; a fine structure of concrete; the moor. buoys belong to plantation, Kaeleku Sugar Co. There is an oil tank (fuel) at pineapple place, capacity 15000 bbls. a pipeline from wharf.

It may be said the semi-cone shown behind wharf is not natural; it is not, I agree. The high cliff was actually Blasted down to make a big fill for the wharf. I have endeavored to show how it now appears.

I have described the range; it is most useful. It would seem a good thing to follow the British custom and make a sketch of this range. I submit a photograph of this range; the after range is not the light spot away up but is the gable in the shadow. it may be clearly made out under a glass.

This city is quite isolated; the road to the south runs about fifteen miles or so and then stops, there is no road connection around that way, though it is possible to come down the famous Haleakala crater and out Hana way, from Wailuku. To the north the road runs about twelve miles, but a highway is now being built all the way to Mailulu, the large town on the north side of Maui. Optimists believe this way will be open in 1925. At present, at the end of this twelve mile stretch of road one goes over the well advertised Ditch Trail, a horseback ride of wondrous beauty, and thrills. There is a steamer in to Hana once a week, the Mauna Kea, of the Inter-Island S.S.Co. it calls in Friday usually, from Honolulu, with freight and passengers, goes on to Hawaii, and back again the next day, Saturday, for the return to Honolulu.

The sunken rock shown on the section of topog. sheet 3274 is not a single rock, but an extensive patch; it is generally breaking. However I did discover and locate a pinnacle as shown, just NW of the red buoy, No. 2. It has sixteen (16) feet over it, reduced.

For further information on this survey see my report to the Director, dated June 30, on the execution of Orders of 3/25/24 (7mcs)

The Range was carefully determined at its outer end. Taking average of best values I have decided that a point 668 m. from sta. NANUALELE, on az. 324° 10' should control it.

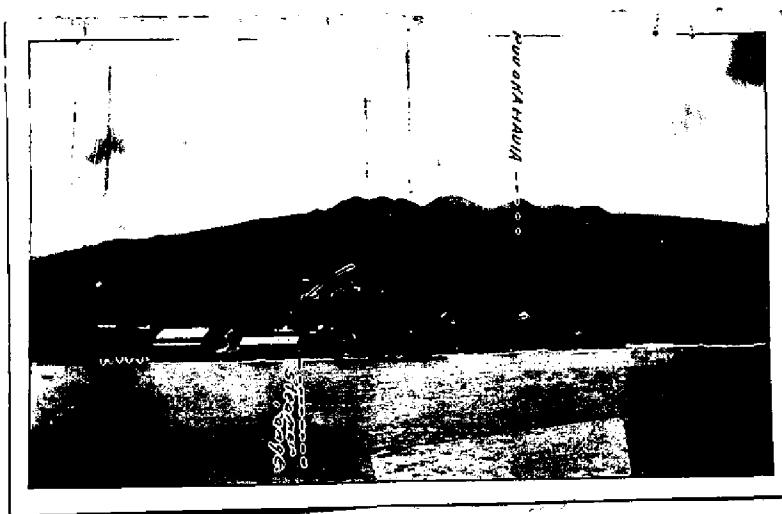
Eoline R. Hand
Eoline R. Hand, HAGE.

LIST OF POSITIONS

to accompany topographic sheet of Hana Cove, Maui, T.H. Surveyed June 1924.

Eoline R. Hand, Chief of Party.

Name	Lat.	D.M.	Long.	D.P.	Description
L.H.	20°45'	285	155°58'	1665	sq. wh. structure center steep sided
		1560		71	islet off Kauiki Hd. with top level- ed off: hei. focal plane of lt. 84' but Listed as 85' also different pos- ition listed from above probably acct different datum. W.fl. ev. 2 sec.
Warf	45'	240	59'	166	outer, or N. cor. new wharf: at bitt
		1605		1570	or niggerhead.
Fr. range	45'	196	59'	470	N.gable most nly of two warehouses
		1648		1266	on the shore beyond wharf: white: ### it is the fertilizer shed.
Rear range	45'	47	59'	761	gable of Hana Store (P.O.) has red
		1798		975	roof: front shows brown: seen well above trees.
Pine	45'	1080	59'	591	short but large diametered iron
		765		1145	stack at pineapple cannery on north shore: bldg grey: g:i; sides and ## roofs.



DESCRIPTIVE REPORT

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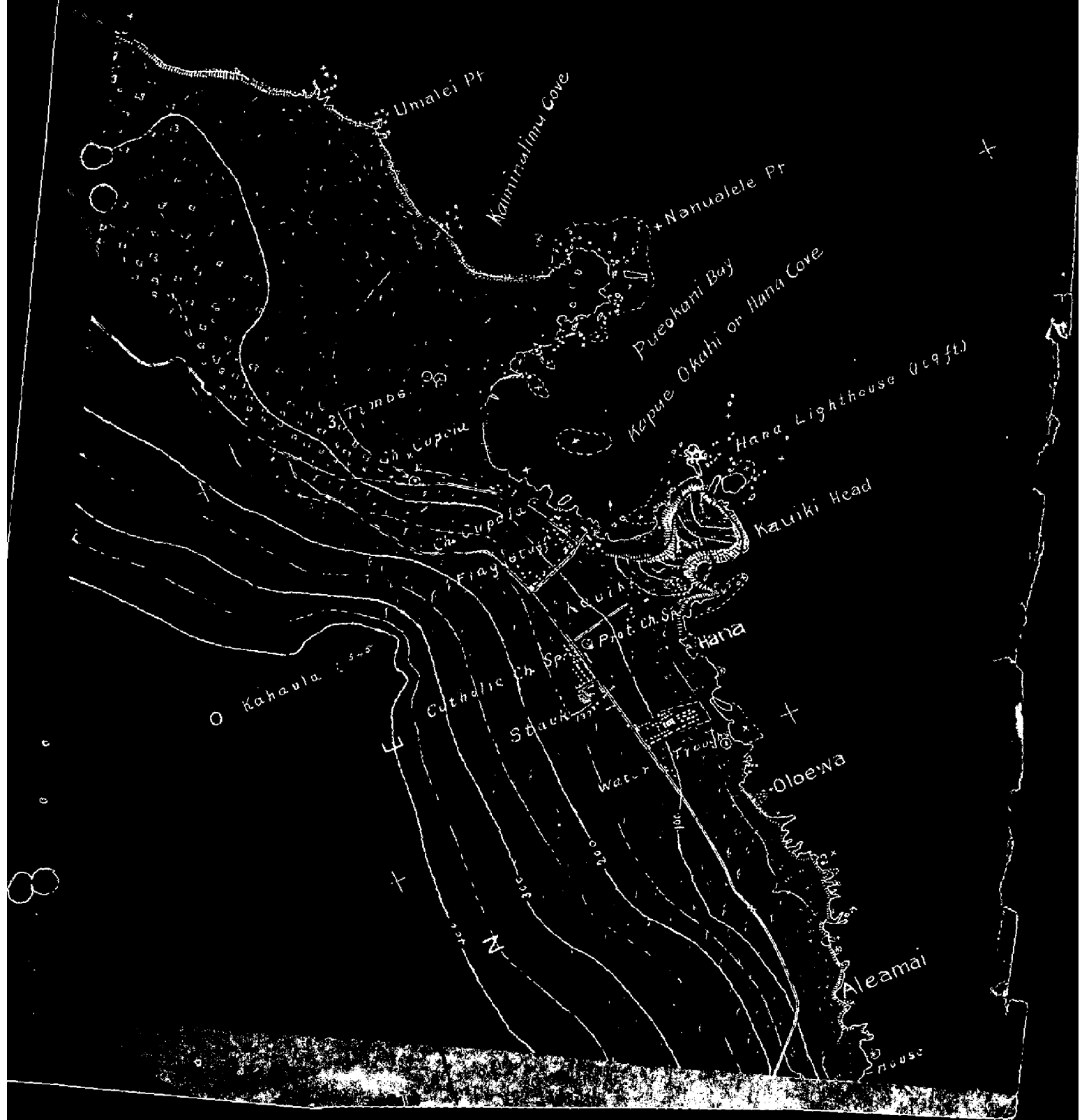
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The Range was carefully determined at its outer end. Taking average of best values I have decided that a point 668 m. from sta. NANUALELE, on az. 324° (signed) Eoline R. Hand. should control it.

Eoline R. Hand, H&GE.

405
Photographed from original Topo. Sheet No. 2
in the Archives of the U. S. Coast and Geodesic
Survey. Surveyed in 1912. Scale, 1:25,000.
Ash., E.C. Division of Charts. March 17, 192



(SPACE FOR ARCHIVES STAMP)

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

_____, *Superintendent*

HYDROGRAPHIC SHEET No. _____

SOUNDINGS*Locality:*

_____*Boat* _____*Vol. No.* _____ *Vols.* _____*From* _____, 19____, *angle* _____*To* _____, 19____, *angle* _____*Miles of sounding lines* _____*Number of soundings* _____*Number of angles* __________
19_____*Name of Vessel:*

_____*Chief of Party:*

SOUNDINGS

Main T. L.

Year 1924 Month June

Day of Month 18

POSITION NUMBER.	TIME		SOUNDINGS		RED. FOR TIDE	REDUCED SOUNDINGS		BOTTOM
	MER.	M.	FEET	TENTHS		FEET	TENTHS	
	h. m. s.		Fathoms	Feet	Feet	Fathoms	Feet	
1	8.35	8	8	0		48	0	
2	8.45	8	8	0		48	0	
3	8.52	8	8	0		48	0	
4	9.49	8	8	0	0.10	48	0	
	9.50	7	1	5		43	5	
	9.51	6	5	5		41	5	
	9.52	7	5	5		47	5	
	meters							
5	9.54	6	4	0		40	0	
	9.55	6	0	0		36	0	
	9.56	5	3	0		33	0	
	9.57	5	2	0		31	0	
6	9.58	5	0	0		30	0	
7	10.42	1	2	0		28	0	
	47	2	2	0		26	0	
	43.30	2	5	0		17	5	
	44.00	3	0	0		16	0	
	44.30	2	1	0		19	0	
8	45.00	3	2	0		20	0	
	45.30	3	3	0		21	0	
	46.00	3	4	0		22	0	
	46.30	3	5	0		23	0	
9	47.00	3	5	0		24	0	
10	48.00	4	00	0		25	0	
10	49.00	4	00	0		24	0	
	50.00	4	1	0		25	0	
11	51.00	4	2	0		26	0	
	52.00	4	4	0		28	0	
	53.00	4	2	0		26	0	
	54.00	5	2	0		32	0	

Hana-68
plantain
wholeboat

Boat used

11-740

day

BOAT'S HEAD
BY COMPASS

ANGLES AND RANGES

REMARKS
AND
COURSE

Pine 79'00" detached
Waf 87'00" passed -
Twin 87'00" rings on
steamer
range

2 Bgen 6506
Sp. 5456
Twin 5456

3 Waf 9018
Twin 6530

4 Pine 6428 from
Moor range to in
range. in above
range.

5 L. H. abean

6 E edge what in range end line.

7 of the good even been
entire
line began
new H. with
an eye on
P. line.

8 moving
big heavy problem

9 on steamer range

10 for far in range K. abean.

11 not broken next to hole in
K. abean in range

SOUNDINGS

Main T W

Year 19 24 Month JuneDay of Month 18

11-740

POSITION NUMBER	TIME M. P. A.	SOUNDINGS		RED. FOR TIDE	REDUCED SOUNDINGS		BOTTOM
		FEET	TENTHS		FEET	TENTHS	
		Fathoms	Feet		Fathoms	Feet	
		h. m. s.					
	A	10	53.00	5.00	0.0	30.00	✓
			56.00	2.00		12.00	✓
12			57.00	2.00		12.00	✓
							✓
13		11	07	1.00	0.4	5.60	✓
			11 08	2.00		11.60	✓
			11 09	1.41		10.60	✓
			11 10	2.00		11.60	✓
			11 11	1.30		10.60	✓
			11 12	2.00		11.60	✓
			11 13	2.20		13.60	✓
			11 14	2.10		12.60	✓
14			11 15	3.00		17.60	✓
15			11 16	5.00		29.60	✓
			11 17	5.00		29.60	✓
16			11 18	4.41		27.60	✓
			11 19	4.30		26.60	✓
17			11 20	4.40	0.4	27.60	✓
			11 21	4.40		27.60	✓
			11 22	4.40		27.60	✓
18			11 23	4.40		27.60	✓
			11 24				✓
19			11 25	4.20		25.60	✓
20			11 25	4.10		24.60	✓
21			11 25 45	3.10	✓	18.60	✓
			D.M.	1.40			✓
22			12 38.00	2.30	✓	13.60	✓
			38.10	2.30		19.60	✓
			39.00	5.20		30.60	✓
			40.00	5.40		32.60	✓
23			40.30	5.20		30.60	✓
			41.00	5.10		29.60	✓
24			42.00	4.50		27.60	✓
25			43.00	3.30		19.60	✓
			44.00	5.00		28.60	✓
26			45.00	3.40	✓	20.60	✓
			46.00	2.30	✓	13.60	✓
			47.00	2.00		10.60	✓
27			48.00	2.00		10.60	✓

Boat used

11-740

bees whole lot; 9 day

BOAT'S HEAD BY COMPASS

ANGLES AND RANGES

REMARKS
AND
COURSE

ANGLES AND RANGES

REMARKS
AND
COURSE

(Sounded "sire" horn
in. at sand head, onto sand
sand, N W of "cable")

12. slept and had hair
cutting. S. end line

13 ~~Chen~~ 1123
~~Mountain~~ ~~Golo~~ (center)
 100 ft. 46°00' (phase)
 turning back now,
 can not see 4 edge
 notes lamb in lungs

14, N edge near house. erect

15 found for range and
will check in des-
range.

16 ~~N. pa~~ ~~sha~~ near color &
Hatched in cage

17 ~~Penk~~ ~~Bar~~ ~~Boz~~ ~~hr.~~ ~~s/~~ ~~hr~~
Navla in cargo.

18 less of pair factory
and water in cave
also girl letter, near
in cave house

19 ^{in ship's harbor} looking along N. edge
1 ^{of} fertile mountains.

20 - off the whole of a modes
as well as what.

2, 15 feet of cor. is before
end line.

22nd pos. is 10 ft off the
sandy corals or gravel.
and runs again to
the cor of black clay. w
enough

23 ✓ Canary
Crossed, shipwreck

24 ✓ S. concolor h. ant / dobaule

25 ✓ must be next colored kakaka

2c ✓ ^{For} ~~his~~ ^{by} ~~and~~ ^{of} ~~Rakasha~~ ^{means}

274 ¹² ~~Magnall~~ 7600 ✓
 44 33 ~~linotum~~

SOUNDINGS

Year 1924 Month

Day of Month

11-710

POSITION NUMBER.	TIME MER.----- M.-----	SOUNDINGS		RED. FOR TIME	REDUCED SOUNDINGS		BOTTOM
		FEET	TENTHS		FEET	TENTHS	
		Fathoms	Feet	Feet	Fathoms	Feet	
	<i>h. m. s.</i> P. M.						
	P. M.			1.8			
28	1256	3	3		19	2	end lead
	1257	3	0		16	2	
	1258	3	00		16	2	
29	1259	5	3		31	2	
	1300	run					
	1301	run					
	1302	5	2		30	2	
	1303	3	0		16	2	
	1304	3	00		16	2	
30	1305	2	2		12	2	
	1306	2	4		14	2	
	1307	4	2		24	2	
	1308	3	4		20	2	
	1309	4	3		25	2	end lead
	1310	5	1		29	2	lead
	1311	4	3		26	2	
31	131200	5	3		31	2	
	131300	4	5		27	2	
32	131400	4	3	2.0	25	0	
	131500	6	0		34	0	
	1316	3	4		20	0	
	131700	6	0		34	0	
	131800	6	1		35	0	
33	131900	6	3		37	0	
34	1400	6	3		37	0	
	140100	5	5		33	0	
35	140200	5	2		30	0	
36	144600	2	1		11	0	
	145000	6	2		36	0	
37	145600	7	2		42	0	
	145700	6	2		36	0	
38	148000	5	1		27	0	
39	149000	5	00		25	0	
	150	5	2		30	0	
	151000	6	2		36	0	
40	152000	5	3		31	0	
	153000	5	0		28	0	
41	154000	3	4		20	0	

Lead 8000

Boat used

day

11-740

BOAT'S HEAD BY COMPASS

ANGLES AND RANGES

REMARKS
AND
COURSE

29) *Linum S. guayanaense* -
with *E. moribundum* -
my new sig.
where chain head just
as large - 1 - 1000

30 Noddy nigrum Lachlan
in range
mod N.E. wind ✓

31 - must be nests collected and
labeled in cages.

32 New colonies over 1
Rabbits in range

33. in learning language

34 mid of warehouse (feet)
and gables too change

35 ✓ E morning breeze
line ends ✓

3.6 line starts just W of the rock that is off pennell, and

37 Yucca M. orange. crossing step cane 8

38. half reg. delinger holes
aged 10, north. sta

~~The Corbo's of color; all in Rome~~

40 centimeters ² hours / Kalsche
in large

41 Δ Man 77 22 lead
Pent 21 40 hit
down

train near NE
(also elsewhere, such
junction, in camp?)
Kahurangi

SOUNDINGS

Year 19 24 Month

Day of Month / 18

[illegible]

Sublocality

4

Boat used *Long Bone*
near whole boat 9 day

11-740

BOAT'S HEAD
BY COMPASS

ANGLES AND RANGES

REMARKS
AND
COURSE

42 *nan* 5310 *from H.L.*
Pine *beach*
bar 1416 *in range.*
line run S. towards bay 2
& point to in range
subd. line into post ★

43 *nan* mid *ls* and
Robards in range

44 *half way between*
*mid *ls* and end of*
Colo. in range &
Robards

45 *nan* *ls* & *Colo.*

46 *middle of above line*

47 *base of post beam*
*also *ls* *Colo.* and*
Robards about by
same center line towards
east.

48 *in ship's range, ~~down~~*

49 *mid. of post mound house*
*(*ls* *range*) and *ls* *Colo.**
gate in range.

50 *Pine* 69 57 ✓
Worhouse *cr.*

*mid. *east* *ls* *Colo.* *permeable**
*in *ls* *range* *with *ls* *cr.***
gate *O.K.*

SOUNDINGS

Year 19

Month

Day of Month

18

POSITION NUMBER.	TIME		SOUNDINGS		RED. FOR	REDUCED SOUNDINGS		BOTTOM
	MER.	M.	FEET	TENTHS	TIDE	FEET	TENTHS	
		Fathoms	Feet	Feet	Fathoms	Feet		

Sublocality
Hana Cove
Boat used heavy whaleboat day

5

11-740

BOAT'S HEAD BY COMPASS	ANGLES AND RANGES	REMARKS AND COURSE
	Pm 50° 0'	✓
	Calab (N)	on ship's range
51	Pm 54 06	
52	Pm 51 14 ✓ Sole 58 56 Pm.	
53	Pm 68 35	
	Fund range "new signal" ?	
54	Warp 53 10 Pm outer rock (of 2)	
55	94 53 53 10	
	Pm 71 55 fund range new sig ?	
57	Pm 184 00 close to range Warp 127 28 outer rock Pm in on ship's range	
58	inner of two rocks off pier to be kept with. hand of Ld.	
59	E buty of new in range	
60	E edge reef in line	
61	W edge " not quite on.	

SOUNDINGS

Locality

Main, T. N.

Year 1924 Month June

Day of Month 19

11-740

POSITION NUMBER.	TIME		SOUNDINGS		RED. FOR TIDE	REDUCED SOUNDINGS		BOTTOM
	MER.	M.	FEET	TENTHS		FEET	TENTHS	
A. 1/4.					✓			
1	7	34 30	6	0	0.0	36	0	sand with coral & shell
		35 30	5	2		32	0	
		36 30	5	0		30	0	
		37 30	4	4		28	6	
2		38 00	4	3		27	0	
		38 30	4	1		25	0	
		39 00	3	5		23	0	
3		39 30	3	3		21	6	
		40 00	3	0		18	0	
4		40 30	2	5		17	0	
5		8 05	3	2		20	0	
6		8 06	3	4		22	0	
7		8 06 30	3	5		23	0	
8		8 07 00	4	6		24	0	
9		8 08 00	4	1		25	0	
10		8 09 00	4	2		26	0	
11		8 09 30	4	3		27	0	
12		8 10 00	4	2		26	0	
13		8 10 30	4	2		26	8	
14		8 11 00	3	3		21	0	
15		8 30 00	3	2		20	0	
16		8 30 30	3	5		23	0	
17		8 31 00	4	1		25	0	
18		8 31 30	4	00		24	0	
19		8 32 00	4	2		26	3	
20		8 32 30	4	2		26	0	
21		8 33 00	4	3		27	0	
22		8 34 00	4	2		26	0	
23		8 36 00	4	1		25	0	
24		8 38 00	4	0		24	0	
25		8 40 00	3	5		23	0	
26		8 43 00	3	2		20	0	
27		8 46 00	3	0		18	0	
28		8 48 00	2	5		17	0	

sand with black & coral

Sublocality *Heavy boat* *heavy boat* *plantation*

Boat used

day

11-740

BOAT'S HEAD BY COMPASS	ANGLES AND RANGES	REMARKS AND COURSE
1	Point 94/69 summit Range (front) ascends near long high	
2	Point 113 24 line Range 129 10 ends Waip (corolla) close near mouth.	
3	Point 4 1 7	
4	Point 113 24 line Range 129 10 ends Waip (corolla) close near mouth.	
<p> Summit 5-24 are around dock as for lowest 5 is at outer corner, 6 is in line W edge W wharf house, 7 is mid " " 8 is in line E edge W wharf house 9 " 1/3 dist to W edge E " " 10 " 2/3 " " " " " 11 " in line W edge E wharf house, 12 " " " mid " " " 13 " " " E " " " 14 " at E cor wharf, 15 off E wharf, in line with 28 27 N for same dist for width plot of pos section. 16 is diag. off cor. same dist as width wharf. 17 is off wharf equal dist to width. opposite 18 is off 13 19 " " 12 20 " " 11 21 " " 10 22 " " 9 23 " " 8 24 " " 7 25 " " 6 26 " " 5 27 is diag. off cor. same as 16 28 same relation pos. 62 15 </p>		
		<p> 5 28 6 28 7 29 8 27 9 22 10 21 11 20 12 19 13 18 14 17 15 16 </p>

SOUNDINGS

Year 1924 Month June Day of Month 9

POSITION NUMBER.	TIME	SOUNDINGS			RED. FOR TIDE	REDUCED SOUNDINGS		BOTTOM
		FEET	TENTHS	FEET		TENTHS		
M.	Fathoms	Feet	Feet	Fathoms	Feet			
	A. M.							
29	9 12 00	2 5		✓ 0	17	0		
	12 30	2 5		0A	17	0		
	13 00	3 0			18	0		
	13 30	3 1			19	0		
	14 00	3 1			19	0		
	14 30	3 2			20	0		
	15 0	3 3			21	0		
	15 30	3 3			21	0		
30	16 00	3 5			23	0		
	16 30	3 4			22	0		
	17 00	3 4			22	0		
	17 30	3 5			23	0		
	18 00	4 0			24	0		
	18 30	4 1			25	0		
	19 00	4 1			25	0		
	19 30	4 2			26	0		
	20 00	4 1			25	0		
31	20 30	4 2			26	0		
	21 00	4 2			26	0		
	21 30	4 3			27	0		
	22 00	4 3			27	0		
	22 30	4 3			27	0		
	23 00	4 4			28	0		
	23 30	4 4			28	0		
	24 00	4 4			28	0		
	24 30	4 5			29	0		
32	25 00	4 5			29	0		
33	25 30	3 0						
33	10 30	3 2			20	0		
	38 00	4 0			24	0		
	39 30	4 1			25	0		
	40 00	4 2			26	0		
34	40 30	4 5			29	0		
	41 00	4 4			28	0		
35	41 30	4 4			28	0		
	42 00	5 0			32	0		
	42 30	4 4			28	0		
	43 30	5 5			35	0		
	44 00	5 2			32	0		
	44 30	5 5			35	0		
	45 00	6 0			36	0		
36	46	4 5			29	0		
	46 30	5 0			30	0		
	47 00	5 0			30	0		

17ava 6 one
beom whaleboat

7

Boat used

day

11-740

BOAT'S HEAD BY COMPASS	ANGLES AND RANGES	REMARKS AND COURSE
29	Pm 150 10 Fm 109 35 Mm 109 35	starts near old dock runs out E. (plots here)
30	Pm 120 00 Fm 97 05 Mm	in line heady dock. fresh E by wind
31	Pm 111 00 Fm 90 36 Mm	in line heady dock.
32	Pm 108 35 Fm 90 32 Mm	stops acc. v in
33	Pm 108 42 Fm 124 25 Mm	stops in acc. v E
34	Pm 98 47 Fm 86 20 Mm	in very E edge of reef
36	Pm 89 22 Fm 58 45 Mm	in

SOUNDINGS

Locality Mauri T.D.

Year 1924 Month

five

Day of Month 19

[illegible]

Havabone

Sublocality

8

(Boat used) from Wharf, 6 day

11-740

BOAT'S HEAD
BY COMPASS

ANGLES AND RANGES

REMARKS
AND
COURSE

fresh E.
meat.

37

Pin 7940
Front
men 4230

slightly
over horizon
back rain

38

Pin
Front
men

slightly
inshore,
men 65
longer than

38

Pin 9626
Front
Tank (at cliff) 10534

R. 12, fairly
inshore

39

W edge of bay in line

40

E " " " "

41

Pin 8647
Front
men 10230

line tank
longer
red buoy.

42

buoy (E) and Remembrance

43

Pin 7720
Front
men 4715

line with
obs. at H.

44

Pin 4910
Boat (near)
men 5500

slightly near
L. H. near
in the N. from
buoy
in range

SOUNDINGS

Year 19 24 Month June Day of Month 19

11-749

POSITION NUMBER.	TIME		SOUNDINGS		REDUCED SOUNDINGS		BOTTOM	
	MER.	M.	FEET TENTHS		REF. FOR TIDE	FEET TENTHS		
			Fathoms	Feet		Feet		Fathoms
	h. m. s.							
	P.M.							
	12	52 30	8.0		1.0	47		
		53 00	8.0					
45		53 30	6.0		35	0		
46		54 00	5.1		30	0		
		54 30	4.2		25	0		
		55 00	5.5		34	0		
47		55 30	5.0		29	00		
		56 00	4.00		23	0		
		56 30	3.5		22	0		
		57 00	4.0		23	0		
		57 30	4.4		27	0		
48		58 00	5.2		31	0		
		58 30	6.0		35	0		
		59 00	5.5		34	0		
49		59 30	6.3		38	0		
	1	00 00	6.3		38	0		
		30	6.3		38	0		
		1 00	6.2		27	0		
		2 00	6.1		35	0		
		2 30	6.0		35	0		
50		3 00	5.4		35	0		
		3 30	5.3		33	0		
		4 00	5.1		32	0		
		4 30	5.0		30	0		
51		5 00	4.3		29	0		
		5 30	4.1		26	0		
		6 00	4.0		24	0		
52		6 30	3.4		23	0		
53		7 00	3.2		21	0		
					19	0		

11-740

BOAT'S HEAD BY COMPASS	ANGLES AND RANGES	REMARKS AND COURSE
45	Off port beam	
46	break (Wong) in range, "new"	
47	Periscope 72 20 Flood 61 50 New	✓
48	Periscope, middle moon buoy, abeam 20 m off port.	
49	Periscope 76 54 Flood 97 15 New	✓
50	Edge of what is line	
51	opposite middle what.	
52	new middle what	
53	at the moon buoy.	

SOUNDINGS

Main T.H.

Year 1924 Month June Day of Month 19

11-740

POSITION NUMBER.	TIME		SOUNDINGS		RED. FOR TIDE	REDUCED SOUNDINGS		BOTTOM
	MER.	M.	FEET	TENTHS		FEET	TENTHS	
			Fathoms	Feet		Fathoms	Feet	
		<i>0 h. m. s.</i>						
54	1	29 30	3	0	✓	1.5	16	5 ⁰⁰
		30 00	3	1			17	5 ⁰⁰
		30 30	3	2			18	5 ⁰⁰
55		31 00	3	5			21	5 ⁰⁰
		31 30	4	0			22	5 ⁰⁰
56		32 00	4	3			25	5 ⁰⁰
		32 30	4	5			27	5 ⁰⁰
57		33 00	5	0			28	5 ⁰⁰
58		33 30	5	00			28	5 ⁰⁰
		34 00	5	2			30	5 ⁰⁰
		34 30	5	2			30	5 ⁰⁰
		35 00	5	3			31	5 ⁰⁰
		35 30						
		36 00						
59		36 30	6	1			35	5 ⁰⁰
		37 00	6	2			36	5 ⁰⁰
		37 30	6	2			36	5 ⁰⁰
		38 00	6	3			37	5 ⁰⁰
60		38 30	6	4			38	5 ⁰⁰
		39 00	7	3			43	5 ⁰⁰
		39 30	6	5			39	5 ⁰⁰
		40 00	5	5			33	5 ⁰⁰
		40 30	6	0			34	5 ⁰⁰
		41 00	6	0			37	5 ⁰⁰
61		41 30	6	0			34	5 ⁰⁰
		42 00	7	0			40	5 ⁰⁰
62		42 30	7	5			45	5 ⁰⁰

✓

63 2 15 00 3 10 2.00 16 0

64 2 20 00 3 2 2.10 18 9

645 2 46 00 3 3 2.13 18 7

⑦ pinnacle

11-740
 Locality
 11-740

10

Boat used theory wheelboat, day

BOAT'S HEAD BY COMPASS	ANGLES AND RANGES	REMARKS AND COURSE
54	Pen 10830 Front 12755 New (probably 664)	in plank cushion and covers and covers main body
55	in line with deck	
56	" " middle "	
57	" " Edge "	
58	Pen 9650 Front New 9716	
59	Emerson in "New"	
60	Pen 8309 Front New 5548	
61	Now and only big chris large	
62	Pen 6905 Front New 3415	end of just # of in front of new body
searching for		
63	Pen 7249 Front New 3546	
	Pen 7315 (near)	
	Front 3627	
	New 7327	
	Front 3640	
	New	

Tide reducers approved
 Division Tide, etc. 7/26/24

SOUNDINGS

Year 19

Month

Day of Month

[illegible]

Report on Hydrography shown on Top. Sheet No 4059

The hydrography done in Hana Cove, consists of two days work. Part of the work is controlled by three point fixes and the balance by cross ranges. Everything was verified with the exception of a few ranges, which could not be identified. These were shown in the same position in which they had been plotted by the field party.

The record is not well kept and is hard to decipher in places.

R. L. Johnston

Report on Hydrography shown on Top. Sheet No 4059

The hydrography done in Hana Cove, consists of two days work. Part of the work is controlled by three point fixes and the balance by cross ranges. Everything was verified with the exception of a few ranges, which could not be identified. These were shown in the same position in which they had been plotted by the field party.

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ists". That certainly exists - but it is not a sunken rock but rather an extensive patch: it is nearly always breaking. It is well developed on the Harbor Commission plat. However there actually IS a rock, but it is in another locality - further out, just NNW of channel buoy No. 2, and therefore off the steamer track. Hearing rumors of this rock I first went to the top of the overhanging cliffs of Kauiki Head from which point of vantage I easily saw indications of it. So, knowing that the Harbor Commission had already found twenty one feet in that spot but that a vessel drawing less was said recently to have struck there I went out intending to get a shoaler sounding if there was one as I assumed. I spent an entire afternoon hovering about this rock, trying for a shoaler value. I at last got a sixteen, reduced. This was the least I could find. I verified the 21 pinnacle shown on the Harbor Commission plat and the position but I do not feel certain that my value is exactly on their pinnacle, but rather a bit on the north side of it, probably corresponding with their 21.5. The rock does seem to have two points as near as I could judge: no wire drag was necessary: it is easily seen. This rock breaks only in heavy weather, and is not to be confused by vessels entering with the breakers seen in the centre of the cove - the patch before-mentioned.

5. I made a careful test of the Harbor Commissioners hydrographic survey, and have to report that I find it excellent, and well adapted for transfer to our proposed chart of Hana Cove. I am told here that the soundings are reduced for tide. I checked by running some cross lines. These lines were held for the most part rigidly on ranges, by an expert, and a good part of the fixes were by means of cross ranges. Such sextant fixes as there were I took myself: and I could easily do this without appreciable error, since I can follow one angle almost instantaneously by another, and the boat (a great hulk of a ship's lifeboat) we could scarcely propel through the water. This boat was given us free by the plantation: it was the only one available. You can verify the comparison by pantographic or other methods. I used a protractor, with extended arms. I put their station "Jake" on my sheet so as to aid in the comparison. I suggest, then, the common stations, Manualele, Jake, Lighthouse, and Kauiki be used. Do not expect a rigid agreement: for the bottom is quite irregular, being coral, and other rock. As I was not instructed to make a hydrographic survey the records are not complete, being for my own personal information: but I send in the record book I used, in case you wish to have my findings verified. I also enclose a tide book. I observed for LLW on several consecutive days: I did not take the average of these for my datum, since most were minus tides, but, using them as a guide and check, I adopted 1.7 as my datum on staff, since this was reading of my LLW on June 20 on which day the book shows neither a plus nor a minus. So I took 1.7 off all my soundings. I spent two days on this hydrographic investigation.

6. My Estimates asked for two men for ten days at \$2.00 but but this abnormally heavy boat made necessary the employment of more men to handle it at all. But since this was for two days only and the total is less than the \$40 I had available for the two hands, I feel that you will approve.

7. I draw to your attention the useful Steamer Range. I have submitted a photograph with the thought that the Admiralty custom might possibly be followed, and a sketch placed on the chart of that aid, invaluable in the restricted harbor of Hana.

Colin R. Hand
Colin R. Hand, H&GE.

4-VEC

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

September 18, 1924.

SECTION OF FIELD RECORDS

Report on Topographic Sheet No. 4059

Hana, T. Hawaii

Surveyed in 1924

This survey includes a hydrographic examination of Hana Bay.

Instructions dated March 25, 1924

Chief of Party, E. R. Hand.

Surveyed and drawn by E. R. Hand.

Hydrography plotted and verified and inked by R. L. Johnston.

1. The Topographic records conform to the requirements of the General Instructions. The sounding record does not conform to the requirements, but this is accounted for by the surveyor because the work is an examination only rather than a complete survey.
2. The plan and character of the topographic survey conform to the requirements of the General Instructions.
3. The plan and extent of the topographic and hydrographic surveys satisfy the specific instructions.
4. The sounding line crossings are adequate.
5. The topographic drawing was done in the field, but the hydrographic work was plotted in the office.
6. The hydrographic development is not sufficiently close to enable the curves to be completely drawn. It was made for the purpose of checking the accuracy of the 1923 survey by the Board of Harbor Commissioners (B.P. 18797). It is believed to be sufficiently accurate and complete for this purpose, but it will be necessary to enlarge Captain Hand's survey to that of the blue print in order to enable the test to be made.

7. The junction with the adjoining topographic survey is satisfactory.
8. No further surveying is required within the area covered by the sheet.
9. The character and scope of the topographic surveying are excellent - that of the hydrographic work is satisfactory.
10. Reviewed by E. P. Ellis, September, 1924.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

confidential

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

U. S. Coast and Geodetic Survey.

Register No. 4059

State . . . Territory of Hawaii

General locality . . ~~Island of Maui~~

Locality Hana

Chief of party Eoline R. Hand,

Surveyed by " " " "

Date of survey June, 1924

Scale 1 : 5000

Heights in feet above . . MHW

Contour interval . . . 20 feet.

Inked by Eoline R. Hand . Lettered by Eoline R. Hand

Records accompanying sheet (check those forwarded): Photograph [✓] of range

[✓] Descriptive report, Horizontal angle books, Field computations,

Data from other sources affecting sheet . bromide of Board [✓] arb. Comm,
bromide topog. sheet 3274 hyd. survey (in six sec-
tions)

Remarks: