

8983

FORM C&GS-504

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

DESCRIPTIVE REPORT

Type of Survey: Hydrographic

Field No. AR 5-3-68 Office No. H 8983

LOCALITY

State: Hawaii

NORTH COAST MOLOKAI

General locality: ~~Hawaiian Islands~~

*Molokai*

Locality: ~~North Coast Molokai Island~~

Haua Bay & Pelekunu Bay

Pelekunu Bay, Haua Bay, Bay and

1968

*(in the vicinity of  
Akala Island)*

CHIEF OF PARTY

Ronald L. Newsom, CDR, USESSA

*(Geo name  
requested for  
this area)*

LIBRARY & ARCHIVES

*RS*

DATE: 10 AUG 1970

8983

**HYDROGRAPHIC TITLE SHEET**

H 8983

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

AR 5-3-68

State Hawaii

General locality North Coast of Hawaiian Islands, Molokai

Locality <sup>(new name)</sup> Haupt Bay, Pelekunu Bay  
~~North Coast Molokai Island~~

Scale 1:5,000 Date of survey 22 May 8 Sept. 68

Instructions dated 15 February 1968 Project No. OPR 419

Vessel USC&GSS McARTHUR Launch AR-1

Chief of party Ronald L. Newson, CDR, USESSA

Surveyed by S.R. Petersen, R.A. Sundholm, J.A. Lyons, J.R. Carr

Soundings taken by echo sounder, ~~and~~ DE 723 #'s 915, 920, 931

Graphic record scaled by McARTHUR Personnel

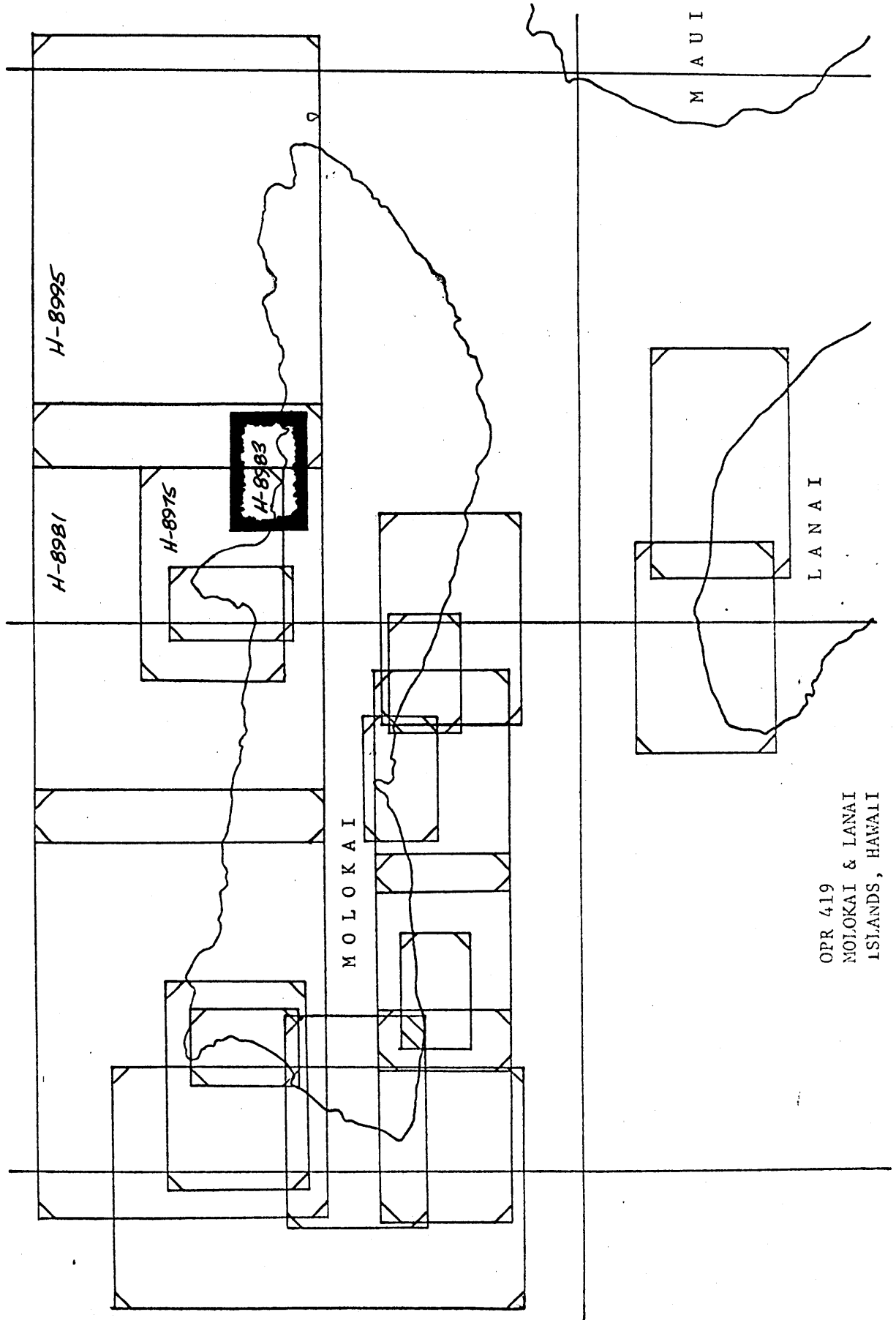
Graphic record checked by McARTHUR Personnel

Protracted by <sup>Gerber</sup> Digital Plotter Automated plot by PMC

Soundings penciled by Digital Plotter

Soundings in ~~XXXXXX~~ feet at MDW MLLW

REMARKS:



OPR 419  
MOLOKAI & LANAI  
ISLANDS, HAWAII

Descriptive Report  
to Accompany  
Hydrographic Survey H 8983 (AR 5-3-68)  
OPR 419

USC&GSS McARTHUR  
Ronald L. Newsom, CDR, USESSA

Scale 1:5,000  
1968

A. PROJECT

Hydrography on this boatsheet was accomplished in accordance with Project Instructions OPR 419 Lanai and Molokai Island, Hawaii, dated 15 February 1968 (CFS2 4060/02) and with memorandum CFS2 4060/02 dated 2 April 1968.

B. AREA SURVEYED

The area surveyed consists of three harbors of refuge on the north coast of Molokai Island east of the Makaanalua Peninsula: The bay adjacent to the mouth of Waikolu Valley; Haupu Bay; and Pelekunu Bay. The survey was accomplished between the dates May 22, 1968 and September 8, 1968. Prior surveys are non-existent in these three areas. This survey junctions with the following contemporary surveys:

H 8975 AR 10-2-68	1:10,000	1968 by McARTHUR
H 8981 AR 20-1-68	1:20,000	1968 by McARTHUR
H 8995 AR 20-4-68	1:20,000	1968 by McARTHUR

C. SOUNDING VESSEL

<u>Vessel</u>	<u>Color</u>	<u>Pos. Nos.</u>
Launch AR-1	blue	1-651, 1001-1025

D. SOUNDING EQUIPMENT

Raytheon DE 723 fathometers were used throughout the survey. Three different units were used due to breakdowns. Serial #931 was used through position no. 279 ("a", "b" and part of "c" day); serial #915 used through position number 296 (remainder of "c" day); and serial #920 was used until the completion of the Survey. A sufficient number of bar checks were taken to insure that no great differences in characteristics existed between these different units. The bar checks were taken to 36 feet to determine instrument and transducer draft corrections. The fathometer initial was set at 0.0 feet at all times. No settlement, squat, or phase corrections were applied. Velocity corrections were applied. Velocity corrections were obtained

from a Nansen cast to 100 fathoms taken on the north coast of Molokai Island on 18 October 1968. Tide reducers were obtained from a bubbler gage at Kalaupapa, Molokai.

E. SMOOTH SHEET

The smooth sheet is to be plotted at the Electronic Data Processing Center, Pacific Marine Center by Gerber Plotter. ✓

F. CONTROL

Visual methods were used to control this survey. ✓  
Photo-hydro signals were located on 1:5,000 scale shoreline manuscripts T-11824, T-11825, T-11826. Two (2) signals were located by sextant cuts.

G. SHORELINE

Shoreline was transferred by blue line from the above mentioned shoreline manuscripts. The shoreline as shown is correct. The ~~dotted~~ <sup>solid</sup> line delineating foul areas of heavy swells are approximately correct. These areas would be foul even in a light swell. On a normal day, however, the ground swell is moderate (3 to 5 feet) usually accompanied by wind making the entire shoreline foul. ✓

H. CROSSLINES

There were 59.4 nautical miles of hydrography run of which 4.7 were crosslines. This constitutes 7.6% of the total. There were no discrepancies.

I. JUNCTIONS

This survey agreed very well with the three contemporary surveys listed in section B above. No adjustment was necessary. ✓

J. COMPARISON WITH PRIOR SURVEY

No prior survey exist in this area. No presurvey review items were located on this sheet. ✓

K. COMPARISON WITH THE CHART

Chart 4120 (1:80,000) has no soundings in these three bays. All areas surveyed here can be described as extremely hazardous to navigation due to the swell ✓

and wind conditions that prevail. A Shoreline comparison shows that a major foul area to the west of Pelekunu Bay in the vicinity of Mokumanu Island is newly charted and verified. Further west the area around Kukaiwaa Point on the chart does not delineate the foul area there. *These foul areas are shown on H-8981(1968)*

L. ADEQUACY OF THE SURVEY

This survey is complete and adequate to supercede prior surveys for charting of the area. *CONCUN* ✓

M. AIDS TO NAVIGATION

None ✓

N. STATISTICS

Launch AR-1  
nautical miles of sounding line positions 59.4 ✓  
665  
Bottom Samples 19  
Area in square nautical miles 0.8

O. MISCELLANEOUS

The bottom in all three bays, especially Haupu Bay and Pelekunu Bay, is very irregular with jutting rocks and pinnacles. Soundings were selected in such a way as to reflect the shallowest sounding, but it should be noted that many deeper parts of the bottom are there. Two tunnels were verified; both in the vicinity of Haupu Bay. One, a two ended natural tunnel (at signal MOM) is oriented ENE and as a result offers no shelter from prevailing swells and wind. *Two ended tunnel is shown on T-11825(1968) and H-8981(1968)* ✓  
The other, a dead end cave on the east side of Haupu Bay, is approximately 100 yards deep and can be safely entered by craft less than 25'. The width at the entrance is only 30' and entry can be hazardous in moderate ground swell.  
An old landing on the west side of Pelekunu Bay could be used by a boat in distress or to land persons in Pelekunu Valley.

P. RECOMMENDATIONS

All three of these bays provide excellent shelter in all weather except storms from the north or northwest. ✓

During the prevailing swells and wind from the north-east Haupū Bay and the area behind Okala are very good. However it should be advised that the bottom is very hard and anchoring is not recommended during heavy weather or very changeable weather due to the chance of anchors pulling loose in a shift of wind or anchors becoming set hard between boulders making them impossible to raise.

The channel between Okala Island and Leinaopapio Pt. can be hazardous due to swift currents passing through. Wind swept waves often break due to the confused mixing of swells, wind, and current.

Special note is given to the submerged rock southwest of Mokohāla Island. Its location was confirmed by several supplemental lines run in that area.

It is recommended that the area just west of Okala Island and adjacent to Waikolu Stream be designated a geographic name either as a bay or as a roadstead as it is the best anchorage on the north shore of Molokai Island except for the leeward area of the Makanalua Peninsula. A practical name suggested here is Kalawao or Waikolu.

*rock is covered if at MLW. Because it frequently uncovers in swells, it is shown on the SS- as being a wash at MLLW. (O)*

*This rock awash should be charted.*

Q. REFERENCES TO REPORTS

None

Submitted by:

*John C. Albright*  
ENS, USESSA

for  
Roger G. Kraynick  
LTJG, USESSA

Approved and Forwarded:

*Ronald L. Newsom*

Ronald L. Newsom, CDR, USESSA  
Commanding Officer, USC&GSS McARTHUR

Enclosures:

Tide Note

Abstract of Corrections to echo soundings (table & curve)

List of Signals

Abstract of daily work record

List of Basic Field Records

Approval Sheet

TIDE NOTE FOR HYDROGRAPHIC SHEET

March 12, 1969

~~XXXXXXXXXXXXXXXXXXXX~~ Pacific Marine Center

Plane of reference approved in  
~~XXXXXXXXXXXXXXXXXXXX~~ for

HYDROGRAPHIC SHEET 8983

Locality: Molokai Island, Hawaii

Chief of Party: R. L. Newson, 1968

Plane of reference is mean lower low water


Tide Station Used (Form C&GS-681):  
Kalaupapa, Molokai Island, Hawaii

Height of Mean High Water above Plane of Reference is as follows:  
1.7 feet.

Remarks

Tide reducers have been revised in red and verified  
for the following days:

199  
200  
209  
210

  
Chief, Tides and Currents Branch



TIDE TAPE AR 5-3-68 H8983

060000	00	<del>1000</del>	0000	143	0	000000	000000	5/22
074000	00	<del>1000</del>						
092000	00	<del>1001</del>						
160000	00	<del>1002</del>						
180000	00	<del>1001</del>						
060000	00	<del>1003</del>	0000	199	0	000000	000000	7/17 ✓
100000	00	<del>1003</del>						
130000	00	<del>1002</del>						
160000	00	<del>1001</del>						
180000	00	<del>1002</del>						
060000	00	<del>1003</del>	100000	200	0	000000	000000	18
093000	00	<del>1003</del>						
123000	00	<del>1002</del>						
180000	00	<del>1001</del>						
060000	00	<del>1004</del>	20000	209	0	000000	000000	7/27
0730		<del>121000</del>						
		<del>142000</del>						
		<del>155000</del>						
		<del>173000</del>						
0830		<del>060000</del>	0000	210	0	000000	000000	28
		<del>135000</del>						
		<del>150000</del>						
		<del>180000</del>						
		<del>060000</del>	0000	235	0	000000	000000	8/22
		<del>083000</del>						
		<del>095000</del>						
		<del>110000</del>						
		<del>115000</del>						
		<del>130000</del>						
		<del>154000</del>						
		<del>172000</del>						
		<del>060000</del>	0000	240	0	000000	000000	27
		<del>083000</del>						
		<del>120000</del>						
		<del>135000</del>						
		<del>180000</del>						
		<del>060000</del>	0000	241	0	000000	000000	28
		<del>073000</del>						
		<del>142000</del>						
		<del>180000</del>						
		<del>060000</del>	0000	252	0	000000	000000	9/8
		<del>073000</del>						
		<del>102000</del>						
		<del>114000</del>						
		<del>130000</del>						
		<del>170000</del>						
		<del>182000</del>						

Plane of Reference Approved  
 Datum Planes Section  
 Date 3/10/69 est

TIDE TAPE AR 5-3-68 H-8983

*Corrected Tide  
P.O.*

060000 00 1000 0000 143 0 000000 000000

074000 00 1000

092000 00 1001

160000 00 1002

180000 00 1001

060000 00 1003 0000 199 0 000000 000000

100000 00 1002

130000 00 1003

160000 00 1003

180000 00 1003

060000 00 1001 0000 200 0 000000 000000

093000 00 1002

123000 00 1003

180000 00 1003

060000 00 1002 0000 209 0 000000 000000

~~151000 00 100~~ *a.k.*

073000 00 1001

142000 00 1003

155000 00 1003

175000 00 1004

060000 00 1002 0000 210 0 000000 000000

083000 00 1001

150000 00 1003

180000 00 1003

060000 00 1000 0000 235 0 000000 000000

083000 00 1000

095000 00 1001

110000 00 1002

115000 00 1003

130000 00 1004

154000 00 1005

172000 00 1004

060000 00 1003 0000 240 0 000000 000000

083000 00 1003

120000 00 1002

135000 00 1003

180000 00 1004

060000 00 1004 0000 241 0 000000 000000

073000 00 1004

142000 00 1003

180000 00 1004

060000 00 1002 0000 252 0 000000 000000

073000 00 1002

102000 00 1001

12 114000 00 1002

11 130000 00 1003

10 170000 00 1004

9 182000 00 1003

8

7

6

5

4

3

2

Tide Note  
to Accompany H 8983 (AR 5-3-68)

Tide Station	Kalaupapa Kalaupapa Harbor Molokai Island
	Lat. 21°12'22"N Long. 156°59'29"W
Plane of Reference	MLLW=3.8 ft. on 68 staff
Time Meridian	150°W
Time Correction	None
Height Correction	None
Time of Coverage	May 22 to Sept. 8, 1968
Area of Coverage	Entire Survey

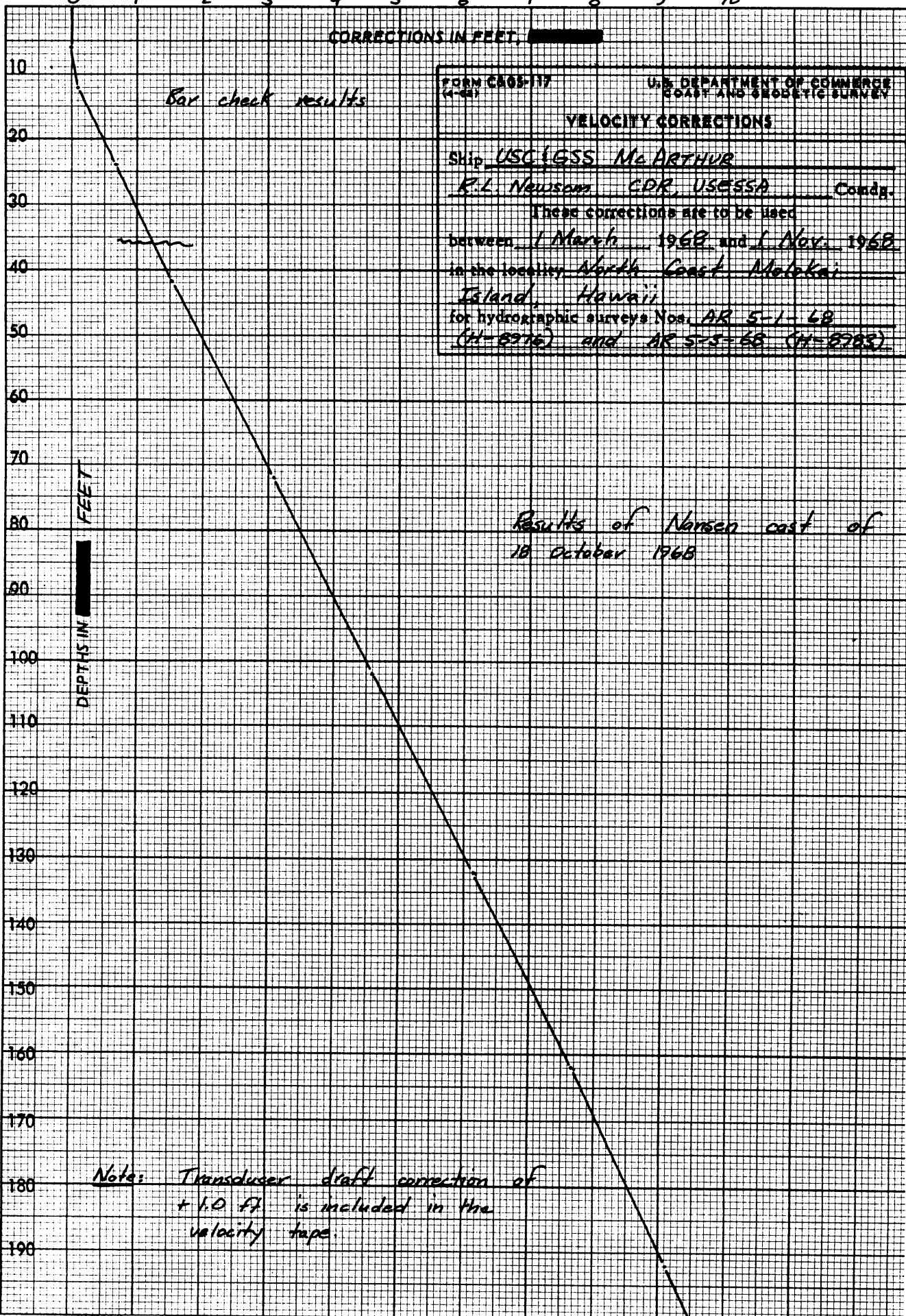
ABSTRACT OF VELOCITY CORRECTIONS H-8983 (AR 5-3-68)

VELOCITY TAPE TYPE NO. 1

All depths and corrections are in feet.

000150	00	0010
000245	00	0015
000360	00	0020
000460	00	0025
000608	00	0030
000805	00	0040
001005	00	0050
001197	00	0060
001392	00	0070
001594	00	0080
001793	00	0090
001995	00	0100
002190	00	0110
002390	00	0120
002590	00	0130

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)



(For deep water add a 0 to these figures)

Note: Transducer draft correction of + 1.0 ft is included in the velocity tape.

358-10 1/2  
U.S.A.

20 X 20 TO THE INCH  
KEUFFEL & ESSER CO.

K&E

Signal List  
to Accompany H 8983 (AR 5-3-68)

Signal	Number	Origin
ABE	008	T-11826
AMY	011	T-11826
ASH	033	T-11824
BAH	025	T-11825
BAT	010	T-11826
BEA	030	Vol. 1, p. 4,6
BOB	034	T-11824
CAT	018	T-11826
DOG	012	T-11826
END	032	T-11824
FAL	019	T-11825
FLY	015	T-11826
GOE	016	T-11826
JEN	006	T-11826
JOE	027	T-11825
KIT	014	T-11826
LEE	003	T-11826
LED	029	T-11824
LYN	007	T-11826
MOM	024	T-11825
OLA	001	MOKOHOLA 2, 1962
PAP	028	LEINAOPAPIO
POI	021	T-11825
POP	023	T-11825
POT	013	T-11826
RAN	002	T-11826
ROK	004	T-11826
SHE	020	T-11825
SIS	026	T-11825
TAR	009	T-11826
TEK	035	T-11824
TOE	005	T-11826
TOM	022	T-11825
UGH	017	Vol. 4, p.13
WAL	031	T-11824

8983

per Review 11/1/68

H Y D R O - S I G N A L C A R D S

EDP N6. NO.	LATITUDE	LONGITUDE	NAME
8983 001	21102926	156524257	OLA
8983 002	21094972	156530101	RAN
8983 003	21100507	156531231	LEE
8983 004	21104217	156531636	ROK
8983 005	21102179	156532388	TOE
8983 006	21102364	156534905	JEN
8983 007	21102195	156534850	LYN
8983 008	21102000	156534694	ABE
8983 009	21101681	156534503	TAR
8983 010	21101434	156534402	BAT
8983 011	21101171	156534278	AMY
8983 012	21101154	156534666	DOG
8983 013	21101096	156534832	POT
8983 014	21100806	156534863	KIT
8983 015	21100488	156535050	FLY
8983 016	21095983	156535283	GOE
8983 017	21095817	156535577	UGH
8983 018	21095840	156535900	CAT
8983 019	21095203	156540069	FAL
8983 020	21095856	156540392	SHE
8983 021	21095505	156540801	POI
8983 022	21095219	156541144	TOM
8983 023	21100013	156541692	POP
8983 024	21100559	156543297	MOM
8983 025	21100241	156544340	BAH
8983 026	21102793	156550468	SIS
8983 027	21102735	156552548	JOE
8983 028	21103281	156555276	PAP
8983 029	21103222	156555453	LED
8983 030	21102569	156555210	BEA
8983 031	21102062	156560087	WAL
8983 032	21102052	156561300	END
8983 033	21102627	156562364	ASH
8983 034	21102871	156563727	BOB
8983 035	21103765	156564912	TEK
0000			

Geographic Names List

HAUPU BAY

KAHOLAIKI BAY

KANEAIMOA PT.

KAPAHU PT

LEINAOPAPIO PT.

MOKOHOLA IS.

MOKOLEA ROCK

MOKUMANU IS.

MOLOKAI ISLAND

OKALA IS.

PELEKUNU BAY

UMILEHI PT.



Abstract of Daily Work Record  
to Accompany H 8983 (AR 5-3-68)

<u>Vessel</u>	<u>Fath.#</u>	<u>Date</u>	<u>Julian Day</u>	<u>Positions</u>
Launch AR1	931	22 May 68	143	2001-2005 1-149
	931	17 July 68	199	153-272
	931 915	18 July 68	200	273-296
	920	27 July 68	209	300-380
	920	28 July 68	210	381-436
	920	22 August 68	235	437-566
	920	27 August 68	240	567-635
	920	28 August 68	241	1001-1004 637-651
	920	8 September 68	252	1005-1025

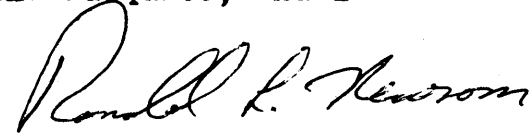
List of Basic Field Records  
to Accompany H 8983 (AR 5-3-68)

- 1 Boatsheet
- 1 Hydrographic Signal Overlay
- 4 Form 275 Sounding Volume vols. 1-4
- 1 Abstract of Bar Checks
- 1 Signal list
- 1 Accordion File containing ~~and~~ 9 envelopes with fathograms
- 1 Sounding Tape #1 and 16 pages printout
- 1 Sounding Tape #2 and 19 pages printout
- 1 Velocity Tape and 1 page printout
- 1 Tide Tape and 1 page printout
- 3 Advance Manuscript T-11824 1:5,000
- 3 Advance Manuscript T-11825 1:5,000
- 2 Advance Manuscript T-11826 1:5,000
- 1 Advance Manuscript T-11824, reduced to 1:10,000  
(mailed with records of H 8975)
- 1 Advance Manuscript T-11825 reduced to 1:10,000  
(mailed with records of H 8975)
- 1 Advance Manuscript T-11826, reduced to 1:10,000  
(mailed with records of H 8975)
- 1 Advance Manuscript T-11825 reduced to 1:20,000  
(mailed with records of H 8981)
- 1 Advance Manuscript T-11826 reduced to 1:20,000  
(mailed with records of H 8981)
- 1 Form 733A Oceanographic Log Sheet A with 1 page of  
curve and 2 pages computations (mailed with records  
of H 8982)

Approval Sheet  
for  
H 8983 (AR 5-3-68)

Field work on this survey was accomplished under my general supervision. Frequent inspections of the field data and boatsheet were made by me as the survey progressed. The sounding records have been inspected by me and are approved. This survey is complete and adequate, and is hereby approved.

27 February 1969



Ronald L. Newsom  
CDR, USESSA  
Commanding Officer  
USC&GSS McARTHUR

OPR 419  
 EDD# 03037  
 (KK)

C.O.  
 Mc ARTHUR  
 Mc ARTHUR  
 Sept 15, 67

4154.5 \*  
~~3308.5~~ ✓  
 2,340,100.2 ✓  
 156 54 30 ✓  
 5,000 ✓

\*  
 CHANGE TO INCLUDE 037  
 11/5/68

21° 09.39 ✓  
 156° 56.7 ✓ \*

21 11 45 ✓  
 21 09 45 ✓  
 02 00 ✓

15 ✓  
 8 ✓

156 56 45 ✓  
~~30~~ \*  
 156 52 45 ✓  
~~30~~  
 04 00 ✓

15 ✓  
 11 ✓  
 16 ✓

1  
 PNU

Plotted 9/12/67  
 Shipped

EDP 03037 (A-8983)  
 (KK)  
 7/1/67

REVIEWED XRU 70 = 4154.5  
 OR 11/1/68  
 (Handwritten signature)  
 (Handwritten note: 156-52-95)

6	3	7	8	2	0	6	4	0	7	1
<del>4</del>	<del>0</del>	<del>1</del>	<del>5</del>	<del>8</del>	5	0	0	0	0	4
2	3	4	0	1	0	0	2	0	7	1
5	6	4	8	7	0	0	0	0	6	1
2	0	9	9	7	3	7	5	0	ML	1

156543000000  
 5000

08983  
 03037  
 53  
 6  
 8

02	10	9	4	5	7	6	1	8	5	0	0	0	0	5
15	6	5	2	3	5	6	4	7	6	0	0	0	0	6
1	5	0	0	0	0	0	0	0	0	0	0	0	0	8

REC  
 7-18-67

		G R I D C A R D S			
		( 1 PLOTTER UNIT = .00375 INCHES )			
H-NO	-SEQ NO	LATITUDE	LONGITUDE	X	Y
08983	0000	21094500	156524500	15084	01744
08983	0001	21100000	156524500	15084	02712
08983	0002	21101500	156524500	15084	03681
08983	0003	21103000	156524500	15083	04649
08983	0004	21104500	156524500	15083	05618
08983	0005	21110000	156524500	15083	06587
08983	0006	21111500	156524500	15083	07555
08983	0007	21113000	156524500	15083	08524
08983	0008	21114500	156524500	15083	09493
08983	0108	21114500	156530000	14174	09493
08983	0107	21113000	156530000	14174	08524
08983	0106	21111500	156530000	14174	07555
08983	0105	21110000	156530000	14175	06587
08983	0104	21104500	156530000	14175	05618
08983	0103	21103000	156530000	14175	04649
08983	0102	21101500	156530000	14175	03681
08983	0101	21100000	156530000	14175	02712
08983	0100	21094500	156530000	14175	01744
08983	0200	21094500	156531500	13267	01744
08983	0201	21100000	156531500	13266	02712
08983	0202	21101500	156531500	13266	03681
08983	0203	21103000	156531500	13266	04649
08983	0204	21104500	156531500	13266	05618
08983	0205	21110000	156531500	13266	06587
08983	0206	21111500	156531500	13266	07555
08983	0207	21113000	156531500	13266	08524
08983	0208	21114500	156531500	13266	09493
08983	0308	21114500	156533000	12357	09493
08983	0307	21113000	156533000	12357	08524
08983	0306	21111500	156533000	12357	07555
08983	0305	21110000	156533000	12357	06587
08983	0304	21104500	156533000	12358	05618
08983	0303	21103000	156533000	12358	04649
08983	0302	21101500	156533000	12358	03681
08983	0301	21100000	156533000	12358	02712
08983	0300	21094500	156533000	12358	01744
08983	0400	21094500	156534500	11449	01744
08983	0401	21100000	156534500	11449	02712
08983	0402	21101500	156534500	11449	03681
08983	0403	21103000	156534500	11449	04649
08983	0404	21104500	156534500	11449	05618
08983	0405	21110000	156534500	11449	06587
08983	0406	21111500	156534500	11449	07555
08983	0407	21113000	156534500	11449	08524
08983	0408	21114500	156534500	11449	09493

08983 0508	21114500	156540000	10540	09493
08983 0507	21113000	156540000	10540	08524
08983 0506	21111500	156540000	10540	07555
08983 0505	21110000	156540000	10540	06587
08983 0504	21104500	156540000	10540	05618
08983 0503	21103000	156540000	10541	04649
08983 0502	21101500	156540000	10541	03681
08983 0501	21100000	156540000	10541	02712
08983 0500	21094500	156540000	10541	01744
08983 0600	21094500	156541500	09632	01744
08983 0601	21100000	156541500	09632	02712
08983 0602	21101500	156541500	09632	03681
08983 0603	21103000	156541500	09632	04649
08983 0604	21104500	156541500	09632	05618
08983 0605	21110000	156541500	09632	06587
08983 0606	21111500	156541500	09632	07555
08983 0607	21113000	156541500	09632	08524
08983 0608	21114500	156541500	09632	09493
08983 0708	21114500	156543000	08723	09493
08983 0707	21113000	156543000	08723	08524
08983 0706	21111500	156543000	08723	07555
08983 0705	21110000	156543000	08723	06587
08983 0704	21104500	156543000	08723	05618
08983 0703	21103000	156543000	08723	04649
08983 0702	21101500	156543000	08723	03681
08983 0701	21100000	156543000	08723	02712
08983 0700	21094500	156543000	08723	01744
08983 0800	21094500	156544500	07815	01744
08983 0801	21100000	156544500	07815	02712
08983 0802	21101500	156544500	07815	03681
08983 0803	21103000	156544500	07815	04649
08983 0804	21104500	156544500	07815	05618
08983 0805	21110000	156544500	07815	06587
08983 0806	21111500	156544500	07815	07555
08983 0807	21113000	156544500	07815	08524
08983 0808	21114500	156544500	07815	09493
08983 0908	21114500	156550000	06906	09493
08983 0907	21113000	156550000	06906	08524
08983 0906	21111500	156550000	06906	07555
08983 0905	21110000	156550000	06906	06587
08983 0904	21104500	156550000	06906	05618
08983 0903	21103000	156550000	06906	04649
08983 0902	21101500	156550000	06906	03681
08983 0901	21100000	156550000	06906	02712
08983 0900	21094500	156550000	06906	01744
08983 1000	21094500	156551500	05997	01744
08983 1001	21100000	156551500	05997	02712
08983 1002	21101500	156551500	05998	03681
08983 1003	21103000	156551500	05998	04649

08983 1004	21104500	156551500	05998	05618
08983 1005	21110000	156551500	05998	06587
08983 1006	21111500	156551500	05998	07555
08983 1007	21113000	156551500	05998	08524
08983 1008	21114500	156551500	05998	09493
08983 1108	21114500	156553000	05090	09493
08983 1107	21113000	156553000	05089	08524
08983 1106	21111500	156553000	05089	07555
08983 1105	21110000	156553000	05089	06587
08983 1104	21104500	156553000	05089	05618
08983 1103	21103000	156553000	05089	04649
08983 1102	21101500	156553000	05089	03681
08983 1101	21100000	156553000	05089	02712
08983 1100	21094500	156553000	05089	01744
08983 1200	21094500	156554500	04180	01744
08983 1201	21100000	156554500	04180	02712
08983 1202	21101500	156554500	04180	03681
08983 1203	21103000	156554500	04180	04649
08983 1204	21104500	156554500	04181	05618
08983 1205	21110000	156554500	04181	06587
08983 1206	21111500	156554500	04181	07555
08983 1207	21113000	156554500	04181	08524
08983 1208	21114500	156554500	04181	09493
08983 1308	21114500	156560000	03273	09493
08983 1307	21113000	156560000	03273	08524
08983 1306	21111500	156560000	03272	07555
08983 1305	21110000	156560000	03272	06587
08983 1304	21104500	156560000	03272	05618
08983 1303	21103000	156560000	03272	04649
08983 1302	21101500	156560000	03272	03681
08983 1301	21100000	156560000	03272	02712
08983 1300	21094500	156560000	03271	01744
08983 1400	21094500	156561500	02363	01744
08983 1401	21100000	156561500	02363	02712
08983 1402	21101500	156561500	02363	03681
08983 1403	21103000	156561500	02363	04649
08983 1404	21104500	156561500	02363	05618
08983 1405	21110000	156561500	02364	06587
08983 1406	21111500	156561500	02364	07555
08983 1407	21113000	156561500	02364	08524
08983 1408	21114500	156561500	02364	09493
08983 1508	21114500	156563000	01456	09493
08983 1507	21113000	156563000	01456	08524
08983 1506	21111500	156563000	01455	07555
08983 1505	21110000	156563000	01455	06587
08983 1504	21104500	156563000	01455	05618
08983 1503	21103000	156563000	01455	04649
08983 1502	21101500	156563000	01455	03681
08983 1501	21100000	156563000	01454	02712



08983 1500	21094500 156563000 01454 01744
08983 1600	21094500 156564500 00545 01744
08983 1601	21100000 156564500 00546 02712
08983 1602	21101500 156564500 00546 03681
08983 1603	21103000 156564500 00546 04649
08983 1604	21104500 156564500 00546 05618
08983 1605	21110000 156564500 00547 06587
08983 1606	21111500 156564500 00547 07555
08983 1607	21113000 156564500 00547 08524
08983 1608	21114500 156564500 00547 09493

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GEOGRAPHIC NAMES

Survey No. H-8983

Name on Survey	On previous survey											
	A	B	C	D	E	F	G	H	K			
Hauko'i ✓												1
Hauku Bay ✓												2
Kaholaiki Bay												3
Kaneaimoa Point ✓ (KANEIAMA PT on H8883 & T-11826)												4
Kapailoa												5
Keawanaui ✓												6
Kipu ✓												7
Kui ✓ (is this a town name or island name?)												8
Leinaoapi Point												9
Makohala Island ✓												10
Mokolea Rock ✓												11
Mokumanu ✓												12
Molokai Island ✓ (Molokai Island or Molokai)?												13
Okala Island ✓												14
Pahu Point ✓ (KAPAHU on T-11826)												15
Pauonuakea ✓												16
Pelekunu (site) ✓												17
Pelekunu Bay ✓												18
Waaula ✓												19
Umilehi Point ✓												20
Nanimini (T-11826)												21
Anokaiole (T-11826)												22
Lelekoa (T-11826)												23
Pauono (T-11826)												24
Hauku (T-11826)												25
Kaaloa (T-11825)												26
												27

To be approved  
11/15/57

PREPARED BY

*Frank W. ...*  
CARTOGRAPHIC TECHNICIAN

APPROVED BY

*A. J. Wright*  
CHIEF GEOGRAPHER

HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. 8983

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET & P.O.		/	BOAT SHEETS		/	
DESCRIPTIVE REPORT		/	OVERLAYS <i>Boat sheet</i>		<i>23</i>	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES			<i>1</i> <del><i>2</i></del>			
CAHIERS	<i>1</i>					
VOLUMES	<i>4</i>					
BOXES						

T-SHEET PRINTS (*List*)

SPECIAL REPORTS (*List*)

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				<i>660</i>
POSITIONS CHECKED		<i>660</i>	<i>66</i>	
POSITIONS REVISED		<i>75</i>		
DEPTH SOUNDINGS REVISED		<i>369</i>		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		<i>0</i>		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		<i>0</i>		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS				
JUNCTIONS		<i>1</i>		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		<i>16</i>		
SPECIAL ADJUSTMENTS				
ALL OTHER WORK		<i>207</i>		
TOTALS		<i>224</i>		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <i>A. E. Eichelberger</i>	<i>11/25/69</i>		<i>7/28/70</i>	
REVIEW BY	BEGINNING DATE		ENDING DATE	

*Inspected by F. Sautsbury 11/15/83*

VERIFIER'S REPORT  
HYDROGRAPHIC SURVEY, H. 8983

**INSTRUCTIONS** - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

**CL - Check List Items:** should be checked as having been completed during the verification processes.

**R - Report Item:** This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT	CL	R	Part III - JUNCTIONS (Continued)	CL	R
<p><b>Note:</b> The verifier should first read the Descriptive Report for general information and problems.</p> <p>1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None</p>	✓		<p>10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of <b>Butt</b> junctions and areas which are <b>SUPERSEDED</b>.</p>	✓	
<p>2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None</p>	✓		<p><b>Part IV - VOLUMES</b></p> <p>11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None</p>	✓	
<p>3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None</p>	✓				
<p><b>Part II - SHORELINE AND SIGNALS</b></p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys</p> <p>a. Give earliest and latest dates of photographs ✓</p> <p>b. Field inspection date ✓</p> <p>c. Field Edit date ✓</p> <p>d. Reviewed-Unreviewed ✓</p>	✓		<p>12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following:</p> <p>(a) rocks ✓</p> <p>(b) line turns ✓</p> <p>(c) position values of beginning and ending of lines ✓</p> <p>(d) bar check or velocity correctors ✓</p> <p>(e) time recording ✓</p> <p>(f) notes or markings on fathograms ✓</p> <p>(g) was reduction of soundings accurately done? ✓</p> <p>(h) was scanning accurate? ✓</p> <p>(i) were peaks at uneven intervals missed? ✓</p> <p>(j) were stamps completed? ✓</p> <p>(k) references to adjacent features ✓</p>	✓	✓
<p>5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.</p>	✓				
<p>6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None</p>	✓				
<p>7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.</p>	✓				
<p><b>Part III - JUNCTIONS</b></p> <p><b>Note:</b> Make a cursory comparison preliminary to inking soundings in area of overlap.</p> <p>8. All junctions of contemporary or overlapping sheets were transferred in colored ink and overlapping curves were made identical. Remarks Required: -- None</p>	✓		<p>13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None</p>	✓	
<p>9. The notation in slanted lettering "JOINS H---- (19 )" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None</p>	✓		<p>14. The protracting and plotting of all unsatisfactory crossings were verified. Remarks Required: -- None</p>	✓	
			<p>15. All detached positions locating critical soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None</p>	✓	

Part V - PROTRACTING (Continued)	CL	R	Part VIII - AIDS TO NAVIGATION	CL	R
16. The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	✓		26. All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	✓	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	✓		27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required; -- None	✓	
<b>Part VI - SOUNDINGS</b> 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		<b>Part IX - BOATSHEET</b> 28. The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	✓	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	✓		29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.		✓
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	✓		<b>Part X - GENERAL</b> 30. All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	✓	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	✓		31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	✓	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: -- Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	✓		32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	✓	
<b>Part VII - CURVES</b> 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.		RDL	33. The bottom characteristics are adequately shown. Remarks Required: -- None	✓	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: a. From T-Sheet in dotted black lines b. From soundings in orange c. Approximate position of sketched curve is dashed orange d. Approximate position of shoal area not sounded in black dashed Remarks Required: -- None	✓ ✓ ✓ ✓		<b>Part XI - NOTES TO THE REVIEWER</b> 34. Unresolved discrepancies and questionable soundings.	✓	
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.		✓	35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.	✓	
			36. Supplemental information.	✓	
Verified by <i>A. E. Eichelberger</i>			Date <i>7/28/70</i>		

## Verifiers Report

AR-05-3-68

OPR-419

H-8983

All records have been examined.  
All positions have been checked, soundings corrected and plotted.  
All data received has been checked.

The shoreline was transferred from advance manuscripts T-11824, T-11825 and T-11826. Field inspection was made in August 1962 from photographs flown in September 1961 and January 1962. Field edit to the shoreline was applied in June 1965. *(Final reviewed manuscripts were applied during review)*

This sheet junctions with the following contemporary unverified surveys: on the west with H-8975 (1968), on the north with H-8981 (1968) and on the east with H-8995 (1968). *(All surveys are now verified and adequate junctions made)*

Positions values at the beginning of lines not entered by field personnel in the sounding volumes was entered by the verifier during completion of the smooth sheet. The scanning of the fathograms was poor in general as are some portions of the fathograms. Soundings were not scanned with an allowance for the erratic profile caused by sea conditions. Many peaks and deeps at odd intervals were missed or placed at the nearest 15" interval. ✓

Fathometer no. 931 was operating improperly on day 143 from position 2 through 79. Double and triple echoes appearing on the fathograms between these positions. ✓

A 10 ft. discrepancy existed in soundings between positions 36 - 39, 46 - 49 and 54 - 55, when compared to adjacent soundings from other lines. See note, volume 1, page 13 and note on fathogram following position 137. This 10 ft. was added to the raw soundings by vessel personnel, resulting in reasonable agreement with subsequent soundings. ✓

Fathometer no. 915 was installed on day 200, position 280. An 11 fm. phase error from A to B & C scales were corrected from position 280 to position 296. ✓  
See note, volume 2, page 37.

A third fathometer, no. 920, was installed on day 209 position 300, and was used to completion of the survey with no further difficulties. ✓

No valid explanation of the fathometer malfunctions was apparent to technicians at PMC. ✓

The zero curve was not defined by hydrography, probably due to hazardous conditions along the shoreline. ✓  
The 6 ft. curve is adequately shown only at the southern end of Pelekunu Bay. The MLLW line is not indicated on the advance manuscripts, nor on final reviewed manuscripts.

Dangers to navigation:

- { Rock @ Lat. 21°10'23", Long. 156° 56' 02": transferred from manuscript T-11824 (height 2 ft). 5 ft. height linked on smooth sheet from pos. 1. *rk bare 5ft MHW* ✓
- Subm.* Rock near pos. 141 Lat. 21° 10' 22", Long. 156° 56' 07": not indicated on boatsheet or smooth sheet. Arbitrary location of pos. 141. *Transferred to SS. from T-11824(141-68)* ✓
- { Rock @ Lat. 21° 10' 00", Long 156° 53' 56": transferred from manuscript T-11826 (height 3 ft). Same rock pos. 485. *rk bare 3ft MHW* ✓
- Rock @ Lat. 21°10'25", Long. 156° 56' 15": transferred from boatsheet as a submerged rock plotted on smooth sheet from pos. 143. *(Revised to rock awash during renew)* ✓
- { Rock @ Lat. 21°09' 59", Long. 156°53' 56": located by hydro party, pos. 486, height 2 ft. *(uncovers 2ft at MLLW)*
- Rock @ Lat. 21°10' 00", Long 156°53' 56": located by hydro party, pos. 487, height 1 ft. *(uncov. 1ft at MLLW)* ✓
- { Rock @ Lat. 21°09' 57", Long. 156°54' 00": transferred from manuscript T-11826, height 1 ft from pos. 489. *rk awash, uncov 1ft MHW* ✓
- Foul area: pos. 485 - 489, transferred from boatsheet. ✓
- { Rock near sndg no. 061403 @ Lat. 21°09' 55", Long. 156°54'08": not indicated on boatsheet, not plotted on smooth sheet. Questionable location. *do not concur - rock is noted in sdg. vol. to be 15ft off starboard at pos 614-300, added rk awash to S.S. during renew.*

There are no prior surveys of this area.

Chart 4120 (3rd edition, 1968) has no soundings in the area covered by this survey. ✓

This survey is considered adequate for charting purposes. ✓

Respectfully submitted,


*A. E. Eichelberger*

A. E. Eichelberger  
Carto-tech.

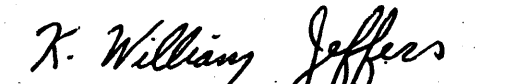
Approval Sheet

The smooth sheet has been inspected and meets the requirements of the Hydrographic Manual. (Note: Exceptions are noted in the verifier's report.)

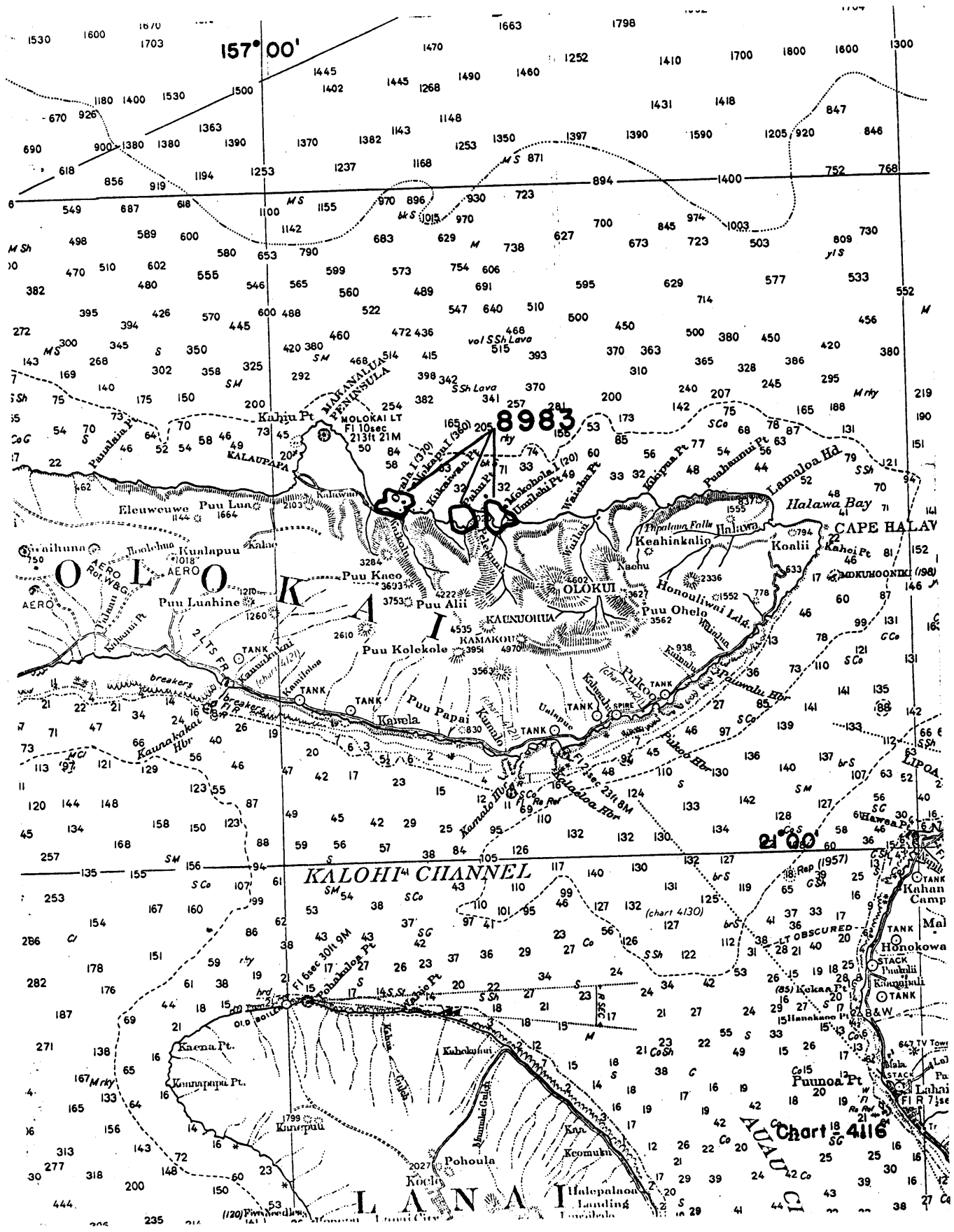
Examined and Approved

  
William M. Martin  
Supervisory Carto. Tech.

Approved and Forwarded

  
K. William Jeffers, MR, USESSA  
Chief, Processing Division, PMC





157°00'

21°00'

KALOHI CHANNEL

Chart No. 4116

LANAI

OLO

KAI

LOKUI

CAPE HALAW

Halawa Bay

Kahoiki Pt.

Koalii

Honouliuli Ld.

Puu Ohelo

Puu Kolekole

Puu Papai

Kaunaloa

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

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Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

Kaunaloa Pt.

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8983

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
4130	26 Oct 70	B. Degan	<del>Full Part Before</del> <del>After Verification</del> Review Inspection Signed Via Drawing No. 14
4120	19 Mar 71	J.A. Graham	<del>Full Part Before</del> <sup>Before</sup> After Verification Review Inspection Signed Via Drawing No. 9 Applied misc corrections to chart thru cht. 4130 dwg. #14
4116	3-19-71	J.A. Graham	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 16 App'd misc critical corrections only thru cht. <del>4120</del> 4130
19018 4179	5/10/71	J. H. Hillan	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 9 No critical corr at this scale <del>at this time thru 4116 #16</del>
19013 4180	7/21/76	M.D. KAVIS	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. Examined for Critical corr. thru 4179 Consider Final Application - due to scale
4130 (19347)	5/18/81	R.S. House	<del>Full Part Before</del> After Verification <del>Review Inspection Signed Via</del> Drawing No. Final Dwg. Aid Proof #23 FINAL
4120 (19351)	7/13/81	W.W. Hausman	<del>Full Part Before</del> After Verification Review Inspection Signed Via A.P. Drawing No. 12 thru 4130 (5/18/81 entry)
19340	8/2/81	Swiftwick	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 21 thru 19351
19004	9/4/81	Hausman	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 33 Examined thru 19340. No corr at this scale.
19010	10/16/81	R.S. House	<del>Full Part Before</del> After Verification Review Inspection Signed Via Drawing No. 1A Examined thru cht 19351, no corr