

8881

Diag. Cht. No. 4116-2.

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. PF-5-3-65 Office No. H-8881

LOCALITY

State Hawaii

General locality Molokai Island

Locality Kamalo Harbor

19.65

CHIEF OF PARTY

G.L. Short, CDR, USESSA

LIBRARY & ARCHIVES

DATE 22 OCT 1970

8881

[Handwritten mark]

HYDROGRAPHIC TITLE SHEET

H-8881

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.

PF 5-3-65

State Hawaii

General locality Molokai

Locality Kamalo Harbor

Scale 1:5,000 Date of survey April 1965,
Oct. 25, 1960, revised Nov. 9, 1964,
March, April 1966

Instructions dated Dec. 6, 1965 Project No. _____

Vessel ML #P-2, ML #P-1

Chief of party L.F. Woodcock, G.L. Short

Surveyed by F.S. Ito, R.H. Kerley

Soundings taken by echo sounder, ~~hand text, pole~~ and pole DE 723 # 935, 745

Graphic record scaled by ships personnel

Graphic record checked by ships personnel

Protracted by ships personnel Automated plot by _____

Soundings penciled by ships personnel

Soundings in ~~545000~~ feet at ~~MLW~~ MLLW

REMARKS: _____

57°00'

89'

156°00'

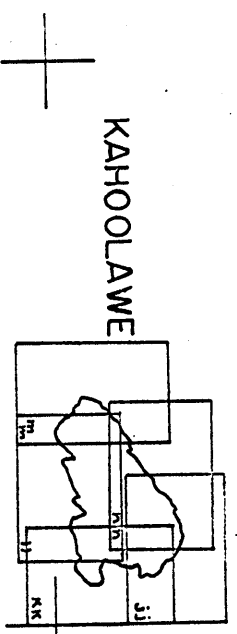
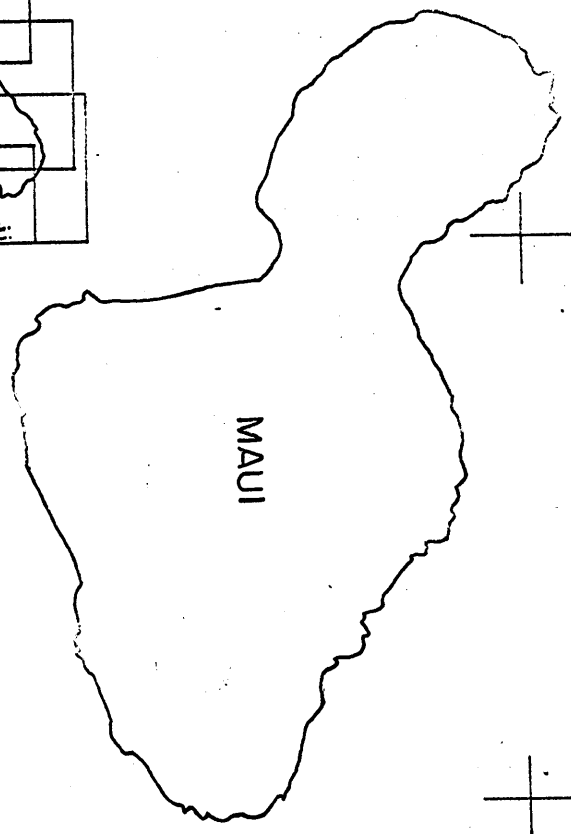
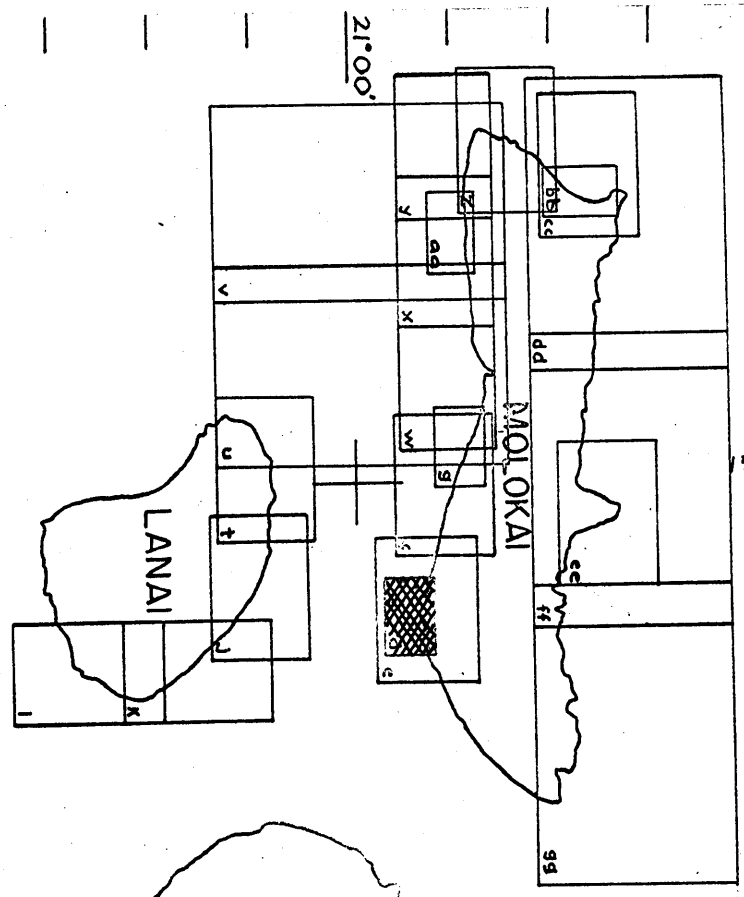
SHEET LAYOUT

PROJECT OPR-419

To accompany report for sheet \bar{d}

PF 5-3-65

H-8881



30'

157°00'

30'

156°00'

30'

30'

21°00'

21°00'

Descriptive Report to accompany hydrographic survey

Office number H-8881, field number PF-5-3-65

USC&GSS PATHFINDER

CDR. G. L. Short, Comd'g.

1966

Scale: 1:5,000

A. Project: This survey was made as part of OPR 419. The original instructions were dated October 25, 1960, and were revised November 9, 1964, and December 6, 1965.

B. Area Surveyed: This survey is of Kamalo Harbor, a natural break in the reef at Kamalo on the south side of Molokai Island, Hawaii. The harbor is fairly deep and is straight sided. It is bounded by very shoal coral reefs.

This survey junctions on all sides with contemporary survey H-8882 (PF 10-5-65).

C. Sounding Vessel:

<u>Launch number</u>	<u>color</u>	<u>day letters</u>	<u>used in</u>
P-1	blue	lower case	1966
P-2 & skiff	violet	lower case	1965
	violet GREEN	lower case	1965

D. Sounding Equipment: All fathometers were Raytheon type DE-723.

<u>Number</u>	<u>Used in</u>	<u>Depth (feet)</u>
141	1965	0 to 100
145	1966	0 to 45

Corrections were determined by daily bar checks and by oceanographic observations. The draft correction for 1965 was plus 2.0 feet; on April 20, 1966 it was 1.5 feet; and on April 23, 1966 it was 2.0 feet. A copy of the 1965 velocity corrections is attached, 1966 velocity corrections were not available at this writing.

E. Smooth Sheet: To be completed by smooth plotter.

F. Control: There was no triangulation used for hydrographic signals on this sheet. The only control in the area for the survey is Raykama, 1961--an adjusted third order triangulation station at the end of the mole. This was the horizontal control for the sheet.

Photogrammetric transfer of signals was from Advance Manuscripts T-11961 and T-11962, job PH 6201, and dated 8-10-62.

The hydrography run by ML#2 on "d" day had to be rejected because of doubtful control. When verifying the hydrography, discrepancies were noticed between "d" day work and other work. Examination of the control seemed to indicate that every right angle was one degree high. This error, although apparently consistent, was not

proveable, so the hydrography was rejected and rerun with ML#1 on "b" day. Day "d" should not be smooth plotted, and all positions of that day must be regarded as unreliable when examining the boatsheet.

G. Shoreline: The shoreline detail was transferred from blue-line manuscripts T-11961 and T-11962. This detail was verified and found to be correct. The low water line was not defined by soundings because of the small tide range.

H. Crosslines: About 10% crosslines were run. Crossings were excellent in the harbor area, and were good on the reef.

I. Junctions: Soundings from the boatsheet of H-8882, PF 10-5-65, show good agreement at the junction.

J. Comparison with prior surveys: Comparison with prior survey H-4457, scale 1:5,000, 1925, indicates shoaling, especially at the head of the harbor. The reef line shows little change, except that the western arm of the harbor was not investigated on H-4457.

K. Comparison with the chart: Comparison with chart 4121, 4th edition, October 1937 shows the same discrepancies found on prior survey H-4457; except that two soundings added to the chart just south of the pier do indicate

the shoaling found during this survey. ✓

L. Adequacy of survey: This survey is complete and adequate to supersede the prior surveys of Kamalo Harbor for charting purposes.

M. Aids to navigation: Kamalo Harbor lighted whistle bouy #2 was found to be on station and in correct operating order. A red day beacon south of the pier at 21-02-48.5N, 156-52-39.0W was located, but maintainence has been discontinued (see Notice to Mariners #13-65) and it is assumed the beacon will deteriorate.

The windmill shown as a landmark on chart 4121 (21-03-05.7N 156-52-50.0W) is no longer existing and should be deleted.

N. Statistics: Skiff 8,00 mm sounding line 191 positions

ML#1 9.6 n.m. sounding line 215 positions ✓

ML#2 22.5 n.m. sounding line 175 positions ✓

Total area surveyed was 0.75 square nautical miles. ✓

One tide station was observed on the sheet. The tide gage was installed on the pier. No current or oceanographic stations were observed on this sheet.

Seven bottom samples were taken. ✓

O. Miscellaneous: N. A.

P. Recommendations: No further field work recommended for this sheet.

Q. References to Reports: Kamalo tide gage, reports of tide station; forwarded 18 May 1966. A report on the time meridian used for the survey, plus a report on survey of the reef area are attached.

Respectfully submitted,

Roger H. Kerley
Roger H. Kerley
Lt(jg) USESSA

REPORT ON SKIFF HYDROGRAPHY

It is believed that a photogrammetric survey is well suited to delineating the multiple hazards of a coral reef.

Three days of skiff hydrography on sheet PF 5-3-65 using a sounding pole did not contribute significantly to the delineation of the bottom configuration. Danger therefore exists in misinterpretation of the navigability of the reef areas surveyed, as extensive coral heads rising close to the surface dot the inshore areas. ✓

On the third day when skiff hydrography was attempted, fresh tradewinds caused choppy water making it very difficult to work.. the boatsheet and all equipment was drenched with spray.

For the reason given, survey of the shallow inshore areas on this sheet by standard hydrographic methods is not considered feasible or economical.

It is recommended that the reef area delineation for this sheet be from the color photographic coverage of the area. ✓

TIDE NOTE H- 8881

The tide gage for this survey was a portable one, installed on the pier at Kamalo ($21^{\circ} 03.0' N$, $156^{\circ} 52.5' W$).

In 1965 MLLW corresponded with 2.4 feet on the staff. No tide report for 1965 has been written to date, so no further information is available.

In 1966 MLLW corresponded to 2.2 feet on the staff (see attached letter C3312-155-CSS 8). The gage operated satisfactorily during the days when hydrography was run. No corrections were applied to observed heights, but times were corrected as necessary to compensate for inaccuracies in the clock. All tides were observed on $150^{\circ} W$ time meridian.

TIDE NOTE FOR HYDROGRAPHIC SHEET

Pacific Marine Center
~~Spencer Chase Office~~

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8881

Locality: Molokai, Hawaiian Islands

Year: 1965,66
~~YORK BAY:~~

Plane of reference is Mean lower low water

Tide Station Used (Form C&GS-681): Kamalo Bay, Molokai, Hawaiian Islands

Height of Mean High Water above Plane of Reference is as follows: 1.6 feet

Remarks

J. M. Symons
J. M. Symons

Chief, Tides and Currents Branch

Memorandum

ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION

The Commanding Officer
USC&GS Ship PATHFINDER
1801 Fairview Avenue, East
Seattle, Washington 98102

DATE: August 11, 1966

In reply refer to:
C3312-155-CSS 8

FROM : Chief, Tides Section
Oceanography Division

SUBJECT: Tidal data, OPR-419

Requested hourly heights are enclosed. Honolulu tabulations are furnished in lieu of Kaunalapau observations. The Kaunalapau record showed evidence of a shifting datum and had to be discarded. MLLW, computed from level records, is 1.9 ft. above staff zero.

Mean lower low water at the other stations is:

Kamalo	2.2 ft. on staff No. 1
Kaunakakai	3.2 ft. on staff

Reference to new staff at Kamalo and requested July observations at Honolulu will be furnished as soon as possible.

Martha A. Winn

Martha A. Winn

Enclosures



Special Note on Time

The time meridian used for this survey was 150W in 1965, but was 135W in 1966. The tides were uniformly recorded on 150W for both years. Care must be taken to examine the sounding volumes to be sure what time meridian was used for the hydrography so that the proper corrections may be applied for the tide data.

Geographic Names

KALOHI CHANNEL

KAMALO

KAMALO HARBOR

MOLOKAI ISLAND

List of signals used on H-8881 (PF 5-3-65)

Name used in Hydrographic Survey	Origin of Signal
Dad	T-11961
Kam	T-11961
Sam	T-11962
Sin	T-11961
Too	T-11961
Wat	T-11962
Wit	T-11961
Zap	T-11962

USC&GSS PATHFINDER
Capt. L. F. Woodcock, Comdg.

Velocity Corrections

Hawaiian Islands - 1965 - 1966

Corrections to be applied to Sheet Nos. PF 5-2-65
and PF 5-3-65.

<u>Correction</u>	<u>to depth</u>
+ 0.0 feet	15.1 feet
0.2	19.6
0.4	24.0
0.6	28.2
0.8	32.7
1.0	37.0
1.2	41.2
1.4	45.7
1.6	50.0
1.8	54.4
2.0	58.8
2.2	63.2
2.4	67.6
2.6	72.0
2.8	76.0
3.0	96.0
4.0	119.0

HAWAIIAN ISLANDS OPR-419
USCGS SHIP PATHFINDER
Capt. L.F. Woodcock, Comdg.

1965 ECHO CORRECTIONS
PF 5-3-65

<u>Vessel</u>	<u>Date</u>	<u>Day</u>	<u>Corrector</u>
ML 2	4/14/65	a	+2.0 ft
..	4/15/66	b	2.0
..	4/16/66	c	2.0

HAWAIIAN ISLANDS OPR419
USCGS SHIP PATHFINDER
Cdr. G.L. Short, Comdg

1966 ECHO CORRECTIONS
PF 5-3-66

<u>Vessel</u>	<u>Date</u>	<u>Day</u>	<u>Corrector</u>
ML 2	3/15/66	d	±1.0 ft
ML 1	4/20/66	a	2.0
..	4/23/66	b	1.0

Approval Sheet: The field records, boat sheet, and reports
for this survey have been inspected, approved, and forwarded.



G.L. Short, CDR., USESSA
Commanding, USC&GSS PATHFINDER

GEOGRAPHIC NAMES
Survey No. H-8881

Name of Survey	Source of Information										
	A	B	C	D	E	F	G	H	K		
Kalohi Channel											1
Kamalo (village)											2
Kamalo Harbor											3
Molokai Island											4
											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

PREPARED BY

Joseph W. Fickert
CARTOGRAPHIC TECHNICIAN

APPROVED BY

A. J. Wright
CHIEF GEOGRAPHER

USC&GSS PATHFINDER

OPR 419

PF 5-3-65

SMOTH PLOTTERS REPORT

All skiff positions are plotted in green.

The following signals were used for control: Too, Kam, Sam, Dad, Wit, Sin, Wat, and Zap.

The pier at Kamalo Harbor has deteriorated so that some soundings which were taken off the western end appear to be in the same location as the pier as shown on Chart 4121.

The day letters "a" and "b" were used in 1965 and again in 1966, however they are purple in color for 1965 and blue for 1966 as launch no. 2 did the Hydro in 1965 and launch no. 1 in 1966.

A. F. Lee
Ch. Sur. Tec.

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8881

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

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS ^{1-- Boat sheet} ^{1-- Plot for} ^{1-- Miller Overlay}	3
DESCRIPTIVE REPORT	1	OVERLAYS	

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	1					
CAHIERS	1					
VOLUMES	4					
BOXES						

T-SHEET PRINTS (List) T-11961 and T-11962 (Advance copies)

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				581
POSITIONS CHECKED		296		
POSITIONS REVISED		15		
DEPTH SOUNDINGS REVISED		96		
DEPTH SOUNDINGS ERRONEOUSLY SPACED		71		
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		—		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		4		
JUNCTIONS		—		
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		93		
SPECIAL ADJUSTMENTS		—		
ALL OTHER WORK		69		
TOTALS		166		
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <u>VINCENT F. FLOR</u>	2/25/70		4/27/70	
REVIEW BY	BEGINNING DATE		ENDING DATE	

VERIFIER'S REPORT
HYDROGRAPHIC SURVEY, H 8881

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>Note: 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 Butt junctions and areas which are SUPERSEDED.</p>	See Doc. Repl	
<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>Part IV - VOLUMES</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>Part II - SHORELINE AND SIGNALS</p> <p>4. Source of shoreline signals Remarks Required: -- List all surveys T-11961 & T-11962 a. Give earliest and latest dates of photographs <i>Completion date for Hydro - 8/1/62</i> b. Field inspection date c. Field Edit date 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: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features</p>	<p>good ✓ ✓ ✓ yes " a few yes ✓</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>Part III - JUNCTIONS</p> <p>Note: 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>		Do not initially	<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	See Desc. Report	
Part VI - SOUNDINGS 18. All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	✓		Part IX - BOATSHEET 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	✓		Part X - GENERAL 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	✓	
Part VII - CURVES 23. The depth curves have been inspected before inking. Remarks Required: -- By whom was the penciled curves inspected.	✓		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	✓		Part XI - NOTES TO THE REVIEWER 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.		
Verified by <i>Vincent F. Flor</i> (VINCENT F. FLOR)			36. Supplemental information.	Date 4/27/70	

H-8881

VERIFIER'S NOTES

SMOOTH SHEET

The polyconic projection of the smooth sheet was prepared and ~~plotted~~^{ruled} by hand by Ship's Personnel.

One hundred per cent of the positions as well as the soundings were plotted and penciled respectively by ship's personnel but were checked, verified, and inked at the Seattle Hydrographic Data Processing Office.


Of the total of 581 positions, approximately 53 per cent were checked. The velocity corrections applied to all volumes were also carefully checked and corrected as quite a few errors were noted. It has also been noted that the initial corrections were applied after the raw soundings were reduced causing a revision of the depth of 96 soundings. The penciled soundings were printed so poorly causing 71 depth soundings erroneously spaced.

There is a shoal of 2 feet located at Lat $21^{\circ}02'49''N$ and Long $156^{\circ}53'06''W$. See pos. 110b, page 54, vol 4.

Reef line seems incomplete as depicted by 1 foot soundings in the vicinity of Lat $21^{\circ}02.55'N$ and Long $156^{\circ}52.85'W$.

The depth curves of the soundings which junction with H-8882 (1965) were left in pencil since H-8882 has not been checked and verified.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Vincent F. Flor". The signature is written in black ink and is positioned below the typed name.

Vincent F. Flor
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

Cornelius A. Pauw
Cornelius A. Pauw
Cartograph Technician

Approved for Forwarding

William M. Martin
William M. Martin
Superv. Cartograph Tech.

Approved and Forwarded

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

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8881

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
4121	1-8-71	E. Frey	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>Made critical corrections only</i>
4130	1-8-71	E. Frey	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>No critical corrections</i>
4120	3-25-71	J.A. Graham	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>9 App'd misc. critical corrections thru chart 4130 dwg #14X</i>
4116	3-25-71	J.A. Graham	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>16 App'd misc. critical corrections thru chart 4120 dwg #9</i>
4179	5/10/71	J.H.C. Hillon	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>9 No critical corr at this time at this time thru 4116 #16 CONSIDER FULLY APP'D</i>
4121	3/28/75	M.D. Kamin	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>EXAMINED FOR REEF AREA ONLY</i>
4130	3/28/75	M.D. Kamin	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>EXAMINED FOR REEF AREA ONLY - THRU 4121</i>
4180	7/21/76	M.D. Kamin	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>EXAMINED FOR CRITICAL CORRECTIONS THRU CHART 4179 - NO CORR.</i>
4121	10/5/77	C.S. Forbes	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>Revised Added one sdg. consider application Final, added numerous soundings in holiday areas.</i>
4179	12/5/77	C.S. Forbes	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>Consider application as Final. No additional corrections.</i>
4116	12-27-77	M. Sager CAT-I	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>Final after Verification Before Review - Thru chart 4120 in conjunction with survey - No corrections. consider FINAL APPLICATION</i>
19351	3-11-94	William J. O'Neil	Full Part Before ^{before} After Verification Review Inspection Signed Via Drawing No. <i>Adequately App'd Dwg 14 - Cut I</i>