

8933

Diag. Cht. No. 6450-2.

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. HO-10-4-67 Office No. H-8933

LOCALITY

State Washington

General locality Strait of Juan De Fuca

Locality Discovery Bay

1967

CHIEF OF PARTY

W. F. Forster, II

LIBRARY & ARCHIVES

DATE October 10, 1968

USCOMM-DC 87022-P66

8933

HYDROGRAPHIC TITLE SHEET

H-8933

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.

HO-10-4-67

State Washington

General locality Strait of Juan de Fuca

Locality Discovery Bay

Scale 1:10,000 Date of survey 1967 May 19, 1967-June 26, 1967

Instructions dated 6 February 1967 Project No. OPR 412

Vessel Ship Hodgson

Chief of party Walter F. Forster, II

Surveyed by LT. W. F. Forster, LT.(j.g.) D. J. Lystrom, and ENS. A. Hogue

Soundings taken by echo sounder, ~~hand depth~~ DE-723 fathometers

Graphic record scaled by Ship personnel

Graphic record checked by Ship personnel

Protracted by Gerber Digital Plotter Automated plot by Pacific Marine Center

Soundings penciled by Gerber Digital Plotter

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW are true depths.

REMARKS: Verification by Norfolk Hydrographic Processing Branch

J. J. G.

To Accompany

Hydrographic Sheet H-8933 (HO-10-4-67)

Discovery Bay, Washington

Scale 1:10,000

USC&S Ship Hodgson, CSS 27

LT. Walter F. Forster, II, COMDG.

A. Project

The survey was accomplished under OPR-412, project instructions dated 6 February 1967.

B. Area Surveyed

This survey includes the entire area of Discovery Bay. The sheet limits end at a line between Diamond Point and Cape George.

The control was predominantly established during May and early June. Hydrography was started on 19 May 1967 and completed on 26 June 1967.

The only prior survey of the area is survey no. 1516a, scale 1:20,000, 1881.

C. Sounding Vessel

All sounding lines were run by Launch 122, lower case violet letters, and Launch 95, lower case green letters were used on the boat sheet. Ship Hodgson only took bottom samples shown in upper case red day letters on the boat sheet. Skiff #1 and #2, detached positions are shown in lower case orange and brown day letters respectively.

The positions have been re-numbered for logging and automated plotting as follows.

Launch 122	1 to 1219
Launch 95	1220 to 1993
Skiff #1	1994 to 2051
Skiff #2	2052 to 2135
Ship Hodgson	2136 to 2174

D. Sounding Equipment

Raytheon D-723 fathometers were used throughout; Launch 122 used serial no. 534, Launch 95 used serial no. 146, and Ship Hodgson used serial no. 554.

The echo sounding velocity corrections were determined from serial temperature, salinity and B. T. observations. The corrections for Launch 122 and Launch 95 also include bar check results such that a table of total

corrections may be used which includes transducer draft, velocity correction and instrument error. These corrections are accounted for under a separate report. An abstract of corrections is included with this report. ✓

E. Smooth Sheet

The signal over lag was plotted by Gerber Digital Plotter and verified by ^{Norfolk} ~~ship~~ personnel. The position and sounding data will be logged by personnel at Pacific Marine Center. The position overlay and final smooth sheet will be plotted electronically and verified by personnel at ~~PMC~~ ^{AMC}. ✓

F. Control

All hydrography was accomplished by visual fix methods. The control signals were established from recovered triangulation stations, and photo identified stations on incomplete manuscripts, scale 1:10,000, nos. T-12054, T-12055, T-12061 and T-12062. Five signals were located by sextant and t-2 cuts. ✓

G. Shoreline

Shoreline was transferred directly to the boat sheet from incomplete manuscripts, scale 1:10,000, nos. T-12054, T-12055, T-12061 and T-12062. ✓

Shoreline for the smooth sheet will be obtained from advanced manuscripts of the same numbers and will be applied at ~~Pacific~~ ^{Atlantic} Marine Center. ✓

The low water line could not be defined in some areas due to steeply sloping shore. ✓

H. Crosslines

Crosslines, consisting of 10% of the regular system of sounding lines, were in good agreement except in a few cases of very steep bottom characteristics. ✓

I. Junctions

Junction was made with contemporary survey no. H-8930 ⁽¹⁹⁶⁷⁾ (HO-10-3-67). This junction is adequate and complete. ✓

J. Comparison with Prior Surveys

Comparison of soundings of prior survey no. H-1516a, 1881, indicate a generally good agreement. However, the age and incompleteness of the old survey does not allow an accurate comparison. ✓

There were no pre-survey review items for this area.

K. Comparison with the Chart

A comparison of the survey with chart no. 6403, 1963, 1:40,000, the largest scale chart of the area, indicates that the bottom characteristics have remained generally the same. ✓

L. Adequacy of the Survey

The survey is considered complete and adequate to supersede prior surveys for charting. ✓

M. Aids to Navigation

There are no aids to navigation in the area of this survey. ✓

N. Statistics

	<u>Hodgson</u>	<u>Launch 122</u>	<u>Launch 95</u>	<u>Skiff</u>
Positions	39	1219	774	142
Miles of soundings (nautical)	Bottom samples	146.6	126.6	---
Area Surveyed (sq. nautical miles)	---	7.2	6.0	---
Oceanographic Stations	2	---	---	---
Bottom Samples	39	---	---	2

2174 ✓

O. Miscellaneous

Various rocks and objects were located by sextant fixes and are plotted on the boat sheet. ✓

P. Recommendations

None

Q. Reference to Reports

1. Corrections to echo soundings, Port Discovery to Dungeness Bay, 1967. ✓
2. Coast Pilot Report, Port Discovery to Dungeness Bay, 1967.

Respectfully submitted

Walter F. Forster, II
 LT. USESSA
 C. O. USC&GSS Hodgson

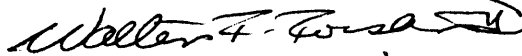
APPROVAL SHEET

Project OPR-412
Sheet H-8933

Discovery Bay, Washington

The field work on this survey was accomplished under direct supervision of the commanding officer. The boat sheet was given daily inspection to check for adequacy and accuracy. The survey is considered complete and adequate and no additional field work is considered necessary.

The signal over lay was plotted and verified. However, the position and soundings have not been logged at the time of this approval.



Walter F. Forster, II
LT. USESSA
Commanding Officer
USC&GSS Hodgson

TIDE NOTE

Registry Number: H-8933
Field Number: HQ-10-4-67

Discovery Bay, Washington

A Porter Fischer digital tide gage was installed at Cape George small boat basin, Lat. $48^{\circ}06'06.5''N$, Long. $122^{\circ}53'03''W$, for the purpose of this survey. A fixed staff was also established and periodic comparisons were made during the course of the survey. Three new tidal bench marks were established to maintain the datum of the staff. Simultaneous tide comparisons were made at Cape George and the south end of Discovery Bay. The time difference at high or low water was less than 5 minutes.

The digital tide data has been submitted to the Rockville office for verification and computation of tide reducers for soundings.

Time Meridian: $120^{\circ} W$

MLLW on Staff:

Dates of Levels to Staff: 17 April 1967 and 28 June 1967.

Tabulated Echo Sounder Corrections for:

Launch 122

<u>Depth</u>	<u>Total Correction (+)</u>
0 to 8 fathoms	+0.3 fathoms
8 to 18	0.4
27	0.5
37	0.6
47	0.7
56	0.8
65	0.9
73	1.0
82	1.1
91	1.2
100	1.3

The above corrections include transducer draft, velocity correction, and instrument error. These corrections are applicable to survey nos. H-8928, H-8929, H-8930, and H-8933.

Tabulated Echo Sounder Corrections for:

Launch 95

<u>Depth</u>	<u>Total Correction (+)</u>
0 to 6 fathoms	+0.2 fathoms
6 to 15	0.3
25	0.4
34	0.5
44	0.6
53	0.7
62	0.8
71	0.9
79	1.0
88	1.1
96	1.2

The above corrections include transducer draft, velocity correction, and instrument error. The corrections are applicable to survey nos. H-8930 and H-8933.

TIDE NOTE FOR HYDROGRAPHIC SHEET

January 5, 1968

~~Natural Ocean Data~~ Pacific Marine Center

Plane of reference approved ~~at~~
~~Washington, D.C. on 10/1/67 for~~

HYDROGRAPHIC SHEET 8928; 8930; 8933

Locality: Port Discovery - Dungeness Bay, Washington

Chief of Party: W. F. Forster, 1967

Plane of reference is mean lower low water

Tide Station Used (Form C&GS-681):

Sequim Bay
Cape George

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

Sequim Bay = 6.9 ft.
Cape George = 6.9 "

Remarks Tide reducers for the following positions have been revised in red and verified.

<u>Day No.</u>	<u>Time</u>
113	9:40 - 11:52
115	10:35 & 11:52
121	14:28 - 16:43
139	12:00
142	8:56 - 11:38


Chief, Tides and Currents Branch

ABSTRACT OF SIGNALS (computer print out)

Discovery Bay H8933

NUMBER	LATITUDE	LONGITUDE	NAME	SOURCE
8933 401-	48005637	122495576	AND	ANDERSON (USE), 1940
8933 402-	48050592	122551654	)ANN	T-12054
8933 405-	48043590	122532440	)BEK	T-12054
8933 406-	47593645	122520231	BIT	vol. III, p. 41 (hydrographic
8933 409-	48024960	122522104	)CAR	CARR 2 (USE), 1955
8933 410-	48002897	122500607	)CRO	T-12062
8933 411-	48024442	122493366	)DOK	T-12062
8933 412-	48043609	122524618	)EVE	T-12054
8933 413-	47595102	122524948	)FOX	T-12061
33 414-	48021673	122515786	)GIB	GIBB 2 ECC, 1955
8933 415-	48030961	122503962	)GOF	T-12062
8933 416-	48031460	122540410	)HAR	HARD, 1962
8933 417-	48051236	122524919	)HER	T-12054
8933 418-	48045008	122531111	)INN	T-12054
8933 419-	48000958	122520371	)JUG	T-12062
8933 420-	47593988	122523082	)KAT	T-12061
8933 422-	48043198	122522816	)LIK	T-12055
33 423-	48052878	122545793	)LOT	T-12054
8933 424-	48002266	122514490	MAY	vol. III, p. 41 (hydrographic)
8933 425-	48010100	122512412	)NIL	NILL 2, 1955
8933 426-	47595633	122523265	)OFF	T-12061
8933 427-	48015941	122494257	)PEL	T-12062
8933 429-	48054730	122551673	)PIN	T-12054
8933 430-	48040932	122553530	POO	T-12054
8933 431-	48063107	122524930	POS	vol. IX, p. 17 (transit cuts)
8933 432-	48041822	122520193	)PUS)	T-12055
8933 433-	48061641	122530198	)REB	vol. IX, p. 17 (offset from NORCO, 1961)
8933 434-	48003192	122513699	)ROD	T-12062

NUMBER	LATITUDE	LONGITUDE	NAME	SOURCE
8933 435-	48035863	122512467	)ROT	T-12055
8933 436-	48060828	122525941	)TEX	vol. IX, p. 17 (offset from NORCO, 1961)
8933 437-	48054364	122545401	)TIN	T-12054
8933 438-	48033865	122511713	)TIT	T-12062
8933 439-	48032331	122510347	TUK	TUKEY (USE), 1911
8933 441-	48044056	122530860	SIK	T-12054
8933 442-	48055682	122524426	)SIX	T-12054
8933 443-	47594555	122505817	)WAT	T-12062
8933 445-	48044827	122552461	)YIP	T-12054
8933 447-	48000304	122522306	)WEE	T-12062

GEOGRAPHIC NAMES

Survey No. H-8933

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
Adelma Beach											1
Beckett Point											2
Cape George											3
Diamond Point											4
Discovery Bay											5
Fairmont											6
Gardiner											7
Kalset Point											8
Maynard											9
Miller Peninsula											10
Mill Point											11
Port Discovery											12
Quimper Peninsula											13
Strait of Juan de Fuca											14
Tukey											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved
Nov. 18, 1968
Frank W. Pickett

FORM C&GS-946
(REV. 11-65)
(PRESC. BY
HYDROGRAPHIC
MANUAL 20-2,
6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS
HYDROGRAPHIC SURVEY NO. H-8933

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		1	
DESCRIPTIVE REPORT		1	OVERLAYS		7	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS / SOURCE DOCUMENTS
ENVELOPES			4			
CAHIERS	1		1 & 1-Envelope, Printouts			
VOLUMES	11					
BOXES						

T-SHEET PRINTS (LINE) T-12054, 12055, 12061 & 12062

SPECIAL REPORTS (LINE)
1 - CORRECTIONS TO ECHO SOUNDINGS

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				2174
POSITIONS CHECKED	300		27	
POSITIONS REVISED	222	6	4	
DEPTH SOUNDINGS REVISED			3	
DEPTH SOUNDINGS ERRONEOUSLY SPACED			15	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED				
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		11 hrs		
JUNCTIONS			8	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS	20 hrs	2 hrs	20	
SPECIAL ADJUSTMENTS			30	
ALL OTHER WORK	138 hrs	65 hrs	61	
TOTALS	158 hrs	78 hrs	119 hrs	355 hrs

PRE-VERIFICATION BY <u>W. J. Jones & W. W. Taylor</u>	BEGINNING DATE 1/26/68	ENDING DATE 7/18/68
VERIFICATION BY <u>Allen Schugart</u>	BEGINNING DATE 9/18/68	ENDING DATE 10/1/68
REVIEW BY <u>George Myers</u>	BEGINNING DATE 10/16/68	ENDING DATE 3/28/69

FIG. 18.

DESCRIPTIVE REPORT DATA RECORD			
PART I SMOOTH SHEET PREPARATION		PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR			
B. DISTORTION MARKS PLOTTED			
C. PROJECTION INTERSECTIONS PLOTTED			
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED			
E. OVERLAYS PREPARED BY			
1. POSITION NUMBER			
2. EXCESS SOUNDINGS			
3. PRELIMINARY SMOOTH PLOT			
4. LIST OTHERS			
A.			
B.			
F. SOUNDING SELECTION BY			
G. PLOTTER INPUT	PREPARED		
H.	CHECKED		
I. DESCRIPTIVE REPORT ADDENDUMS			
PART II SMOOTH SHEET COMPLETION		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE		ALLAN K. SCHUGELD	9/30/68
B. PROJECTION INTERSECTIONS VERIFIED BY		ALLAN K. SCHUGELD	9/18/68
C. PROJECTION LINES RULED BY		ALLAN K. SCHUGELD	9/19/68
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		NOT APPLICABLE	
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		ALLAN K. SCHUGELD	9/30/68
2. EXCESS SOUNDING OVERLAY COMPARED		W. H. FEZEL	7/11/68
3. PRELIMINARY SMOOTH PLOTS COMPARED		W. H. FEZEL	7/18/68
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM		ALLAN K. SCHUGELD	10/1/68
G. CONTROL STATIONS VERIFIED		W. L. JONNS	1/29/68
H. POSITIONS MANUALLY PLOTTED		W. L. JONNS	2/20/68
I. MANUAL PLOT VERIFIED		W. H. FEZEL	6/26/68
J. SHORELINE APPLIED		ALLAN K. SCHUGELD	9/20/68
K. BOTTOM CHARACTERISTICS ADDED		ALLAN K. SCHUGELD	9/23/68
L. NOTES AND DEPTH CURVES ADDED		ALLAN K. SCHUGELD	9/27/68

H- 8923

- A. Additions and corrections have been furnished the plotter
Except for verifier's changes to be
center by the verification unit. submitted by Review Section

Signed Alfred S. Ruffin
Date Oct. 3, 1968 Title Chief, Processing Br., AMC

- B. Additions and corrections have been added to the survey
records and the final smooth sheet forwarded to the verifica-
tion unit.

Date _____ Signed _____
Title _____

- C. The smooth sheet has been inspected, is complete, and
meets the requirements of the General Instructions for
automated surveys and the Hydrographic Manual. (Note:
All exceptions are listed in the verifier's report).

Signed Alfred S. Ruffin
Date Oct. 3, 1968 Title Chief, Processing Br., AMC

- D. Smooth sheet and records forwarded to Rockville, Maryland
Office.

Date Oct. 4, 1968

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY
MARINE CHART DIVISION
HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8933

FIELD NO. HO-10-4-67

Washington - Strait of Juan de Fuca, Discovery Bay

SURVEYED: May 19, 1967 - June 26, 1967

SCALE: 1:10,000

PROJECT NO.: OPR-412

SOUNDINGS: DE-723 Fathometer
Lead Line
Sounding Pole

CONTROL: Sextant angles
on shore signals

Chief of Party..... W. F. Forster II
Surveyed by..... D. J. Lystrom
..... A. Hogue
Protracted by..... Gerber Digital Plotter
Soundings Plotted by..... Gerber Digital Plotter
Verified and Inked by..... A. K. Schugeld (Norfolk)
Reviewed by..... G. K. Myers
..... Date: 3/28/69
Inspected by..... R. H. Carstens

1. Description of the Area

The present survey covers the entire area of Discovery Bay. In the greater portion of the Bay, the bottom is flat or greatly sloping and is covered by depths generally less than 30 fathoms. Sharp gradients prevail along the sides of the Bay. Mud flats or submerged flats extend about 3/4 mile from the head of the Bay and contain numerous piling and submerged remnants of piles.

Many boulders uncover along the sand and gravel shores. Green sand and mud are the prominent bottom characteristics in the deeper areas.

2. Control and Shoreline

The origin of control is adequately covered in Part F of the Descriptive Report.

The shoreline was applied from reviewed photogrammetric manuscripts T-12054(1960-62), T-12055(1960-62), T-12061(1960-62), and T-12062(1960-62). Additional information was obtained in 1967 from field observations and is shown on revision sheets RS-875, 876, 879, and 880. This additional field information was examined during the review of this survey and the necessary corrections were made.

3. Hydrography

A. The depths at crossings are in good agreement and the usual depth curves were adequately delineated.

B. The development of bottom configuration is considered good and the investigation of least depths considered adequate except for the 3.3 fathom shoal sounding at lat. $48^{\circ}00.91'$, long. $122^{\circ}50.28'$ which should have been more fully developed.

4. Condition of the Survey

The field plotting, sounding records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, supplemented by the Instruction Manual for Automated Hydrographic Surveys except for the following:

A. Abstracts and records were not inserted in the Descriptive Report for the following:

1. Parameters for Digital Computing Polyconic Projections (Form #1)
2. Tide Correction Abstract (Form #8502)

B. The Descriptive Report Data Record of smooth sheet preparation was not completed.

C. Frequently, soundings along the low water line were erroneously scanned from the fathometers by the hydrographer because of the loss of the bottom trace in the initial. Missed soundings on the raw data print-out were correctly logged, but incorrectly interpreted. This error was brought to the attention of PMC, which said the program would be corrected.

D. Sounding lines beginning from a slow start near shore were not correctly logged in a manner to account for the reduced speed at the beginning of the line, nor were the correct positions provided during the verification of the survey.

The logging should have included supplementary positions (see item 4-6 of the Instruction Manual) in order to correctly position soundings obtained before the boat had acquired full speed. The hydrographer probably could have alleviated this situation by maintaining a 1/2 normal speed on the first two positions from shore and increasing to full speed on the second position. On scales of 1:10,000 or smaller this procedure would not likely incur errors of any consequence.

E. Information is not adequate regarding the remains of numerous piling and ruins charted in this area. Very little investigation was made to verify the existence of submerged remains.

5. Junctions

An adequate junction was made with H-8930(1967) on the north.

6. Comparison With Prior Surveys

A.	H-333	(1852)	1:214,240
	H-405	(1853)	1:211,798

The small scale of these reconnaissance surveys and their lack of development preclude a detailed comparison with the present survey. General depths are in good agreement with the present survey. The present survey is adequate to supersede these prior surveys in the common area.

B. H-1516A (1881) 1:20,000

This survey covers the area of the present survey north of lat. 48°01'. Depths are in excellent agreement and indicate the bottom to be very stable.

The present survey is adequate to supersede the prior surveys in the common area.

7. Comparison With Chart

Chart 6403 (latest print date 09/16/68)

A. Hydrography

The charted hydrography originates with the previously discussed surveys which require no further consideration, supplemented by depths from the boat sheet of the present survey.

B. Topography

The shoreline, piling, and rock information originating with topographic surveys previously mentioned in item 2 are in agreement with the chart and require no further consideration, except for the following:

1. The pier charted at lat. $48^{\circ}03.90'$, long. $122^{\circ}51.35'$ was applied to the present chart in error. This pier does not exist and should be deleted from the chart.
2. The ruins charted at lat. $48^{\circ}03.20'$, long. $122^{\circ}50.78'$ were applied from T-12602. A charted landing had existed in this location since 1869, as shown on T-1125. A topographic revision survey in June 1967 (RS-880) states this landing does not exist; therefore, the ruins should be deleted from the chart.
3. The piles charted in the vicinity of lat. $47^{\circ}59.75'$, long. $122^{\circ}51.50'$ from T-4190(1926) were not found during a limited search of this area. Since a 4-foot tide existed during the investigation, it is considered that these piles may exist as stumps and have been carried forward as submerged piling.
4. The rows of piling charted beyond the low water line in the area of lat. $47^{\circ}59.80'$, long. $122^{\circ}52.30'$ originate with T-4190. These piles were neither proved nor disproved by the present survey. However, an examination of 1960 air photos indicate stumps of pilings exist below water; therefore, the charted pilings from T-4190 are carried forward as submerged.

5. The two dolphins charted at lat. $47^{\circ}59.72'$, long. $122^{\circ}52.57'$ and lat. $47^{\circ}59.76'$, long. $122^{\circ}52.61'$ from T-12061 should be replaced on the chart by the dolphins determined on RS-879.
6. The two dolphins charted at lat. $47^{\circ}59.77'$, long. $122^{\circ}52.50'$ and lat. $47^{\circ}59.75'$, long. $122^{\circ}59.59'$ from T-4190 should be deleted from the chart and replaced by dolphins appearing on RS-879.
7. The dock ruins and piling charted at lat. $47^{\circ}59.85'$, long. $122^{\circ}52.60'$ within the low water line originate with T-4190. As no evidence of them was found on recent topographic surveys, it is assumed these structures have deteriorated from wave action and marine organisms. These should be deleted from the chart.
8. The piling charted at lat. $48^{\circ}00.98'$, long. $122^{\circ}51.41'$ originate with T-4190 and are described as broken piling. The pilings were neither investigated nor disproved on the present survey and were carried forward as submerged piling.
9. The pilings charted at lat. $48^{\circ}04.35'$, long. $122^{\circ}55.50'$ from T-4189 have apparently broken off as a reference by the hydrographer describes "rotten piling lying along the beach line". Examination of 1960 air photos indicated pilings exist in this area below water. Therefore, these have been carried forward as submerged piling.
10. The pilings charted at lat. $48^{\circ}05.10'$, long. $122^{\circ}53.00'$ from T-4189 were not verified by the present survey, nor the photogrammetric field edit of 1967. However, an examination of 1960 air photos indicates such structures exist below water. Therefore, these piles were carried forward as submerged piling.
11. The piles charted at lat. $48^{\circ}02.40'$, long. $122^{\circ}52.10'$ originate with chart letter 255/1941. The piles were not investigated or disproved by the present survey. It is considered that submerged remains may still exist and the piles should be charted as such.

12. The 3½ charted in lat. 48°00.7', long. 122° 50.1' from the boat sheet of the present survey is an error in the records and should be disregarded.

C. Aids to Navigation

There are no aids to navigation located on this survey.

The present survey is adequate to supersede the charted information, except as discussed in item 11 above.


8. Compliance With Project Instructions

The present survey adequately complies with the Project Instructions except that numerous charted piling were not investigated or disposed of by the field party.


9. Additional Field Work

This survey is considered to be a good basic survey and no additional hydrography is recommended.

Examined and Approved:



Chief
Marine Chart Division



Associate Director
Hydrography and Oceanography

INFORMATION FOR FUTURE PRE-SURVEY REVIEWS

The items previously discussed in Part 7 of this review concerning piling and ruins originating with T-4189, T-4190, and chart letter 255/1941, should be included in a future Pre-Survey Review for further investigation to prove or disprove their existence.

Specific investigation of the 3 3/10 in lat. 48°00.9', long. 122°50.27' should be accomplished.

Reg. No. H-8933

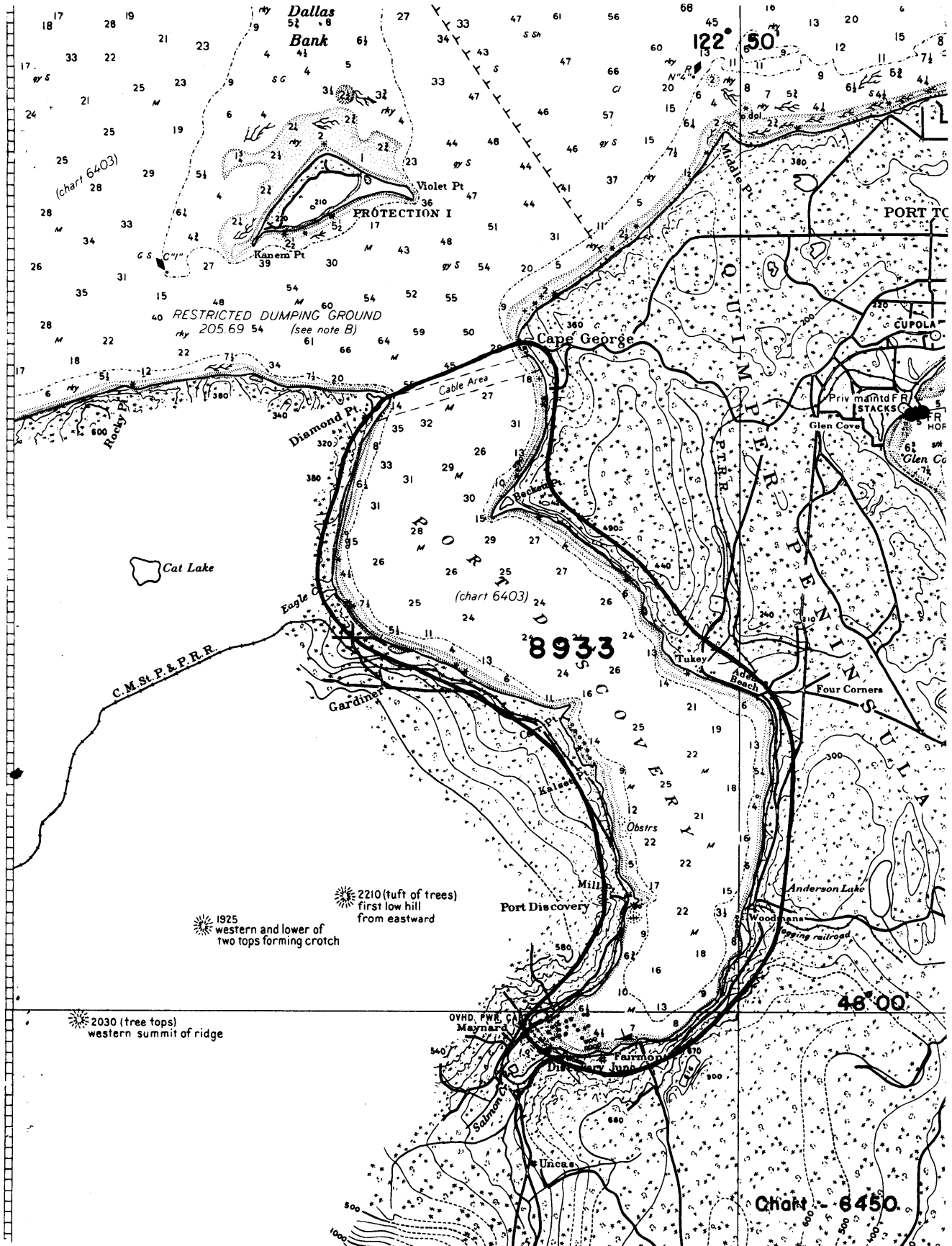
The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE _____ TIME REQ'D _____ INITIALS _____

REMARKS:



(chart 6403)

RESTRICTED DUMPING GROUND
205.69 54 (see note B)

Cat Lake

C.M. St. P. & P.R.R.

1925
western and lower of
two tops forming crotch

2210 (tuft of trees)
first low hill
from eastward

2030 (tree tops)
western summit of ridge

Chart - 6450

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8933

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
6403	12-14-68	A J Sunday	Full Part ^{before} After Verification Review Inspection Signed Via Drawing No. 10
6450	12-14-68	A J Sunday	Full Part ^{before} After Verification Review Inspection Signed Via Drawing No. <i>Applied thru 6403 #10</i>
184-5C	12-14-68	J M O'Connor	Full Part ^{before} After Verification Review Inspection Signed Via Drawing No. 9 <i>Consider Part. Applied until inspection Applied thru chrt 6403 #10</i>
6382	6/24/69	J. McMillan	Full Part ^{Before} After Verification Review, Inspection Signed Via Drawing No. <i>#20 Applied thru chrt # 6403.</i>
6300	7/25/69	J. McMillan	Full Part ^{Before} After Verification Review Inspection Signed Via Drawing No. <i>32 Thru chrt 6382 Dwg #20</i>
6403	11-12-70	S. Bailey	Full Part ^{Before} After Verification Review Inspection Signed Via Drawing No. 10
5C-184	11-12-70	S. Bailey	Full Part ^{Before} After Verification Review Inspection Signed Via Drawing No. 11 <i>THRU DWG. 6403 #10</i>
6382	7-12-72	J. Stuart	Full Part ^{Before} After Verification Review Inspection Signed Via Drawing No. <i>Revised Rock Symbols per 1968 Memo</i>
6403	4-17-73	J. Stuart	Full Part ^{Before} After Verification Review Inspection Signed Via Drawing No.
18471	4/8/83	J A Graham wtr	Full Part ^{Before} After Verification Review Inspection Signed Via Drawing No. 1