

# 8914

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. LJ-10-3-66 Office No. H-8914

### LOCALITY

State ..... Washington  
General locality ..... Puget Sound  
Locality Point No Point To Useless Bay

1966-67

### CHIEF OF PARTY

H. E. McCall & W. F. Foster, II

### LIBRARY & ARCHIVES

DATE ..... 11-4-66

USCOMM-DC 37022-P66

# 8914

HYDROGRAPHIC TITLE SHEET

H-8914

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.

LJ 10-3-66

State Washington

General locality Puget Sound

Locality Point No Point <sup>To</sup> Useless Bay

Scale 1 : 10,000 Date of survey March-April, 1967  
July - September, 1966

Instructions dated January 11, 1966

Vessel USC & GSS LESTER JONES, LAUNCH 1206

*See also other  
title sheet.*

Chief of party LCDR Harold E. McCall

Surveyed by LCDR Harold E. McCall, LT(JG) O.R. MacIntosh, ENS L.W. Pape

Soundings taken by echo sounder, ~~hand level, wire~~

Fathograms scaled by Ship Personnel

Fathograms checked by Ship Personnel

Protracted by Ship Officers

Soundings penciled by Ship Officers

Soundings in fathoms ~~feet~~ at ~~MHW~~ MLLW

REMARKS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*R.W.W. 6-17-91*

HYDROGRAPHIC DESCRIPTIVE REPORT

TO ACCOMPANY LJ 10-3-66  
Puget Sound, Washington

H-8914

Scale: 1:10,000

Dates: 21 June thru 7 September, 1966

A. PROJECT

Sheet LJ 10-3-66 was part of project OPR-412, Puget Sound, Possession Sound, Admiralty Inlet, and Hood Canal, Washington. The original instructions are dated 11 January 1966, and supplemental instructions dated 24 February 1966, 11 April 1966, 25 April 1966, and 2 May 1966.

B. AREA SURVEYED:

Lat : 47°59'30" on the North  
Lat : 47°52'30" on the South  
Long: 122°26'00" on the East  
Long: 122°32'30" on the West

C. SOUNDING VESSELS:

Soundings were taken by Ship LESTER JONES, and Launch 1206. Ship LESTER JONES and Launch 1206 were used for bottom samples, and 16' skiff was used for rock location. Day letters were assigned as follows:

Ship LESTER JONES : upper case purple  
Launch 1206 : lower case blue  
Skiff 16' : lower case green

D. SOUNDING EQUIPMENT:

Raytheon Fathometer DE-723, Serial #545 and #548 were used by the Ship LESTER JONES. Serial #548 was used in Launch 1206. Leadline soundings were taken with Launch 1206 and 16' skiff.

For the Ship LESTER JONES, the initial was held on 1.0 fathoms, and deviation from this was applied as initial correction. Phase comparisons were taken for both fathometers. A bar check was taken and the results applied to the entire sheet. The sum of phase corrections and bar check correction were entered as draft correction.

For the Launch, bar checks were taken twice daily. Phase comparisons were taken once and applied to the entire sheet. Average daily bar checks were applied to each days hydrography. Initial was set at 0.0 fathoms and the deviation applied as initial correction. The sum of phase correction and bar check correction were entered as draft correction. For additional information, see tables following descriptive report.

E. SMOOTH SHEET:

The smooth sheet projection was plotted by the Digital Plotter. It was ruled at the Pacific Marine Center by ship personnel. The remainder of the sheet was also completed there.

F. CONTROL:

All hydrography was visually controlled by sextant fixes. Signals were located photogrammetrically, using manuscripts T-11631, T-11632, T-11638, and T-12070, and also by sextant cuts. See list of signals following descriptive report.

G. SHORELINE:

Shoreline was transferred to the boat sheet from manuscripts T-11631, T-11632, T-11638, and T-12070.

H. CROSSLINES:

An adequate number of crosslines have been run. The soundings obtained agree closely, no discrepancy being in excess of 2 fathoms.

I. JUNCTIONS:

By smooth plotter.

J. COMPARISON WITH PRIOR SURVEYS

Registered survey H-1338A (1875) was the latest available survey of the area. Scale 1:40,000. The sizeable difference between this and the sheet scale and age of the prior survey makes comparison difficult. However, all charted features seem to be in good agreement with the smooth sheet.

K. COMPARISON WITH THE CHART:

Comparison was made with C&GS Chart 6450 and 6421. All charted features seem to have been clearly and adequately developed on the smooth sheet, except for the location of a sunken wreck, lat. 47°54.10' long. 122°31.10' (approx.) which was pre-survey review item #9 OPR-412. This item was investigated, but it was not located. *Retain*

L. ADEQUACY OF SURVEY:

The survey is complete and adequate for charting.

M. AIDS TO NAVIGATION

Aids to navigation on LJ-10-3-66 include a light marking Point No Point, Black Bell, and a light marking Double Bluff. All aids to navigation have been located, and appear on the boat sheet.

N. STATISTICS:

Hydrography	#Pos.	#Miles	sdg. Line	Bottom Samples
Ship	1156		217.5	70
Launch	1443		174.4	2
Other	16		---	---
TOTAL	2615		391.9	72

O. PRE SURVEY REVIEW:

Items for pre-survey review Project OPR-412, nos. 3 & 9 were investigated, adequately verified and appear on the boat sheet. Supplemental Instructions of 24 February 1966 was investigated but no grounded vessel was located as described in the instructions. Depth of this location is approximately 20 fathoms. Investigation considered inadequate for wreck ref. re PSR item no. 9, see Sect. K of this report. *Suppl. Inst. of 47°56.1' N 122°27' W*

P. OCEANOGRAPHY:

Nansen casts were taken on 1 July, 1 August, 2 September 1966, and data was used to determine velocity corrections. See tables following descriptive report.

Q. MISCELLANEOUS:

None

R. RECOMMENDATIONS

None

Respectfully Submitted,

*J.L. Heagle*

J.L. Heagle  
ENS, USESSA

Approval Sheet

Survey LJ 10-3-66 and accompanying records have been examined by me and are approved herewith. The boat sheet and records were inspected daily while the survey was in progress. The survey is adequate for charting purposes, and no additional fieldwork is recommended. ✓

*Harold E. McCall*

LCDR Harold E. McCall, USESSA  
Commanding, Ship LESTER JONES

TIDE NOTE H-8914

A portable tide gage was installed on 13 June 1966 and maintained at Hansville, Washington, and was used as a tidal reference throughout the survey. The height of MLLW corresponding to zero on the staff was -4.8 feet.

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 12, 1967

Nautical Chart Division: Pacific Marine Center ✓

Plane of reference approved in  
14 volumes of sounding records for

HYDROGRAPHIC SHEET 8914

Locality: Admiralty Inlet, Washington

Chief of Party: H. E. McCall 1966

Plane of reference is mean lower low water

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

Hansville, Washington

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

9.5 feet

Remarks

  
Chief, Tides and Currents Branch



GEOGRAPHIC NAMES PENCILED ON  
SMOOTH SHEET H-8914  
LJ-10-3-66



DOUBLE BLUFF

INDIAN POINT

NORWEGIAN POINT

POINT NO POINT

PUGET SOUND

SUNLIGHT BEACH

USELESS BAY

WHIDBEY ISLAND

NAMES OF HYDROGRAPHIC SIGNALS

LJ 10-3-66

<u>NAME</u>	<u>LOCATION</u>	<u>NAME</u>	<u>LOCATION</u>
ACT	T-12070	LUG	T-11632
ANN	T-12070	MAD	T-11632
ANO	T-11631	MAN	T-11638
ARM	T-11632/sextant cut	NED	T-11638
BAR	T-11632/sextant cut	NET	T-11632
BAT	T-12070	NOZ	T-12070
BIL	T-11638	ODD	T-11631
BOB	T-12070/sextant cut	PEN	T-11631
BLU	T-12070/sextant cut	POT	T-12070
CAR	T-12070	PUT	T-11632
CUT	T-11632	RAP	T-11631
DEB	T-12070	RED	T-12070
DIG	T-11632	RIP	T-11632
DUB	T-11631/Double Bluff Light	SAM	T-11631/sextant cuts
EAR	T-12070	SOT	T-11632
EWE	T-11632	SUN	T-11631/sextant cuts
EYE	T-12070	TAD	T-11632
FAB	T-11632	TER	T-12070
GAM	T-11632	TOE	T-12070
HAT	T-11631	TOW	T-11631
HET	T-11638	UNC	T-11631
HIP	T-12070	UNO	T-11632
HOT	T-11631/sextant cut	USE	T-12070/Point No Point Light House
IDA	T-11632	VAT	T-11632
JIB	T-11632	WAR	T-11632
KID	T-11632	WET	T-11631/sextant cuts
LAX	T-11638	WIN	T-11631
LEG	T-12070	YEL	T-12070
LES	T-12070	YEN	T-11632
LOG	T-12070	ZIT	T-11631/sextant cuts

LAUNCH BAR CHECKS &  
PHASE COMPARISONS

Fathometer #548

A-Scale - 0

B-Scale - 0 (+0.5 fathom on h day, vol. 5)

C-Scale - 0

Fathometer #545

A-Scale - 0.0

B-Scale - +0.3 fms

C-Scale - +0.6 fms

BAR CHECKS

Date:	Day Letter:	Applied Correction:
June 27	a	+0.2 fms
July 6	b	+0.3 fms
July 7	c	+0.2 fms
July 10	d	+0.2 fms
July 11	e	+0.2 fms
July 12	f	+0.2 fms
July 19	g	+0.2 fms
July 20	h	+0.2 fms
July 21	j	+0.2 fms
July 22	k	+0.1 fms
July 25	l	+0.1 fms
July 26	m	+0.2 fms
August 24	n	+0.2 fms
September 7	p	+0.2 fms

3 - 4

SHIP LESTER JONES

PHASE CORRECTIONS -- MARCH, 1966

Fathometer #548

A scale - 0  
B scale - 0  
C scale - 0  
D scale - 0

Fathometer #545

A scale - 0  
B scale - 0  
C scale - +0.2  
D scale - +0.3

BAR CHECK -- MARCH, 1966

<u>Depth Reading</u>	<u>True Depth</u>	<u>Depth Reading</u>	<u>True Depth</u>
4.6	5	2.6	3
6.6	7	4.5	5
9.8	10	6.3	7
10.0	10	---	10
6.5	7	---	10
4.5	5	6.2	7
2.5	3	4.5	5
		2.5	3

Bar Check Correction for all depths = +0.4 fms.

VELOCITY CORRECTIONS  
From Oceanographic Station #4

USC&GSS LESTER JONES  
July 6, 1966

To be applied to all hydrography accomplished between June 20,  
1966 and July 15, 1966.

<u>DEPTH</u> <u>CORRECTION</u> (FMS)	<u>CORRECTION</u> <u>DEPTH</u> (FMS)
0.0 - 2.5 -----	0.0
2.5 - 7.5 -----	0.1
7.5 - 12.5 -----	0.2
12.5 - 20.0 -----	0.3
20.0 - 30.0 -----	0.4
30.0 - 42.5 -----	0.6
42.5 - 62.5 -----	0.8
62.5 - 87.5 -----	1.2
87.5 - 112.5 -----	1.5
112.5 - Bottom -----	1.9

VELOCITY CORRECTIONS  
From Oceanographic Station #5

USC&GSS LESTER JONES  
1 August 1966

To be applied to all hydrography accomplished between 16 July 1966,  
and 15 August 1966.

<u>DEPTH</u> <u>CORRECTION</u> (FMS)	<u>CORRECTION</u> <u>DEPTH</u> (FMS)
0.0 - 2.5 -----	0.0
2.5 - 7.5 -----	+0.1
7.5 - 12.5 -----	+0.2
12.5 - 20.0 -----	+0.4
20.0 - 30.0 -----	+0.5
30.0 - 42.5 -----	+0.7
42.5 - 62.5 -----	+1.0
62.5 - 87.5 -----	+1.4
87.5 - 112.5 -----	+1.8

VELOCITY CORRECTIONS  
From Oceanographic Station #6  
USC&GSS LESTER JONES  
September 2, 1966



To Be Applied To All Hydrography Accomplished  
16 August - 15 September 1966

<u>CORRECTIONS</u> (FMS)	<u>DEPTH</u> (FMS)
0.0	0.0 - 2.5
+0.1	2.5 - 7.5
+0.2	7.5 - 12.5
+0.3	12.5 - 20.0
+0.5	20.0 - 30.0
+0.8	30.0 - 42.5
+1.1	42.5 - 57.5
+1.3	57.5 - 72.5
+1.6	72.5 - 87.5
+1.8	87.5 - 112.5

GEOGRAPHIC NAMES

Survey No. H-8914

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
Deer Lagoon											1
Double Bluff											2
Hansville											3
Indian Point											4
Norwegian Point											5
Point No. Point											6
Puget Sound											7
Sunlight Beach											8
Useless Bay											9
Whidbey Island											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

PREPARED BY

*Frank W. Ricketts*  
CARTOGRAPHIC TECHNICIAN

APPROVED BY

*A. Joseph Wright*  
CHIEF GEOGRAPHER



HYDROGRAPHIC SURVEY STATISTICS  
HYDROGRAPHIC SURVEY NO. H-8914

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS		2	
DESCRIPTIVE REPORT		1	OVERLAYS		4	
DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	1					
VOLUMES	15					
BOXES						
T-SHEET PRINTS (List) <u>T-11631, T-11632, T11638, T12070</u>						
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				2615
POSITIONS CHECKED		1816	14	
POSITIONS REVISED		804	3	
DEPTH SOUNDINGS REVISED		4170	51	
DEPTH SOUNDINGS ERRONEOUSLY SPACED		about 360	2	
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		5		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		4	18	
JUNCTIONS		40	3	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		416	5	
SPECIAL ADJUSTMENTS		226	10	
ALL OTHER WORK		64	121	
TOTALS		750	157	
PRE-VERIFICATION BY	BEGINNING DATE		ENDING DATE	
VERIFICATION BY <u>Clarence T. Lehman</u>	3/28/1967		10/12/1967	
REVIEW BY <u>Kenneth W. Wellman</u>	1-5-74		3-1-74	
<u>Inspect Carstens</u>	8/28/74			

HYDROGRAPHIC TITLE SHEET

H-8914

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.

LJ-10-3-66

State Washington

General locality Puget Sound

Locality Point-No-Point 31

Scale 1:10,000 Date of survey March 29, 30, 31, 1967  
February 6, 1967 Supplemented  
April 4, 1967

Instructions dated March 14, 1967 Project No. OPR-412

Vessel USC&GSS HODGSON

Chief of party LT Walter F. Forster, II

Surveyed by LTJG D. J. Lystrom and ENS. A. Hogue, Jr.

Soundings taken by echo sounder, hand lead, pole Echo Sounder DE-723

Fathograms ~~Graphic Record~~ scaled by Personnel of Ship HODGSON

Fathograms ~~Graphic Record~~ checked by Personnel of Ship HODGSON

Protracted by C.A.J. Pauw Automated plot by \_\_\_\_\_

Soundings penciled by C.A.J. Pauw

Soundings in fathoms ~~feet~~ at MLW ~~MLW~~

REMARKS: This survey was to accomplish an investigation of a sunken wreck in five fathoms of water. This report is to aid the smooth plotter in adding this survey to Sheeth-8914.

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-8914  
SCALE 1:10,000  
USC&GS SHIP HODGSON, CSS-27  
LT W.F. FORSTER II, COMMANDING

A. PROJECT

This investigation comes under project number OPR-412, Port Discovery to Dungeness Bay, Washington. The instructions are dated 6 February 1967 and supplemented by instructions listed as Change Number 1 dated 14 March 1967.

B. AREA SURVEYED

The survey included the area east and southeast of Point-no-Point. The area lies within Latitudes  $47^{\circ} 54.0'$  on the south and  $47^{\circ} 55.0'$  on the north with limits of Longitude of  $122^{\circ} 30' 30''$  on the east and  $122^{\circ} 31' 30''$  on the west. The entire survey was within an area of approximately one (1) square mile which falls within the limits of area described above.

The southern shoreline is characterized by a sandy bottom with a gentle slope which drops off rather abruptly at approximately the ten foot depth curve. The northern shoreline off of Point-no-Point is characterized by a shifting sandbar due to the currents and the riptide produced by the topographic features of the surrounding area.

The control established previously (survey H-8914, LJ-10-3-66) was relocated and upgraded for use on the 22nd and 23rd of March 1967. Launch hydrography was conducted the 29th, 30th and 31st of March 1967. Ship hydrography was done on 4 April 1967.

The prior survey to which this investigation is a supplement is LJ-10-3-66 under register number H-8914.

C. SOUNDING VESSEL

This survey was conducted from two vessels. The Ship HODGSON, designated by red upper-case letters, and motor launch 122, designated by violet lower-case letters.

D. SOUNDING EQUIPMENT

Raytheon 723 echo sounding equipment was used on all of the vessels. The serial numbers are as follows:

HODGSON	#554
LAUNCH	#534

The ship used a Honeywell sea-scanner to supplement fathometer soundings taken over the area of the investigation.

The echo sounder corrections were determined from bar checks taken daily.

E. SMOOTH SHEET

The boat sheet and plastic overlay used were made by transferring grids, control, shoreline, etc., from boat sheet LJ-10-3-66. All information transferred was traced and inked by HODGSON personnel.

F. CONTROL

Visual control was used in all aspects of the survey. The bulk of control used for the investigation was established using photogrammetry. Station "BLU" was established using sextant cuts.

G. SHORELINE

See section E.

H. CROSSLINES

The crosslines run were at least 10% of the major scheme. No major discrepancies were noted.

I. JUNCTIONS

Not applicable to this investigation.

J. COMPARISON WITH PRIOR SURVEYS

This investigation compares favorably with the soundings indicated on boat sheet LJ-10-3-66 under H-8914.

K. COMPARISON WITH THE CHART

A comparison of the investigation with Chart 6450 (13th Edition, 9 August 1965) shows satisfactory sounding agreement. Presurvey review item number nine, a thirty foot pleasure craft, was not found in the area indicated on the chart. It is recommended that the symbol be removed from the chart.  
*PSR item 9 not considered disproved, retain on the chart*

The five-fathom shoal (reported in 1965), located east of Point-no-Point on Chart 6450, was not found when investigated. It is recommended that this shoal indication be removed from the chart.

L. ADEQUACY OF INVESTIGATION

The investigation is complete and adequate to supersede previous reports concerning the ~~sunken wreck and~~ five-fathom shoal area.

M. AIDS TO NAVIGATION

Not applicable.

N. MISCELLANEOUS

Heavy current of undetermined variable set and drift, as well as the presence of a rip tide hampered launch work hydrography.

O. STATISTICS

The statistics for the investigation are as follows:

Ship HODGSON

Positions..... 13  
Miles of Sounding Line..... 3.5

Launch 122

Positions..... 236  
Miles of Sounding Line..... 18.6

Number of Tide Stations..... 1

P. RECOMMENDATIONS

*Wreck not disproved, retain on chart pending wire drag investigation*  
It is recommended that the sunken wreck symbol at approximate Latitude 47° 54'.10+N Longitude 122° 31'.10+W on Chart 6450 (13th Edition, August 9, 1965) be <sup>retained</sup> removed. It is also recommended that the five-fathom shoal indication (reported 1965) be removed from the same chart (6450). This shoal indication is at approximate Latitude 47° 54'.70N Longitude 122° 30.90'W. *5 fms. considered disproved. BNC 2/3/71*

Q. REFERENCES TO REPORTS

Corrections to echo soundings will be determined by the processing office at the Pacific Marine Center.

Tide reducers will be determined at the Pacific Marine Center using the standard tide gage at Seattle, Washington.

Respectfully submitted,

*Alexander Hogue Jr.*

Alexander Hogue, Jr.  
ENS, USESSA

LIST OF SIGNALS

Name used in hydrographic investigation:

BLU  
LEG  
NOZ  
USE  
YEL

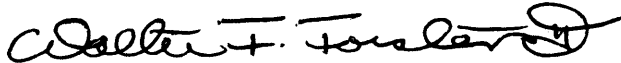
Origin of stations listed may be found in the descriptive report with field number LJ-10-3-66, office number H-8914, and locality of Puget Sound, Washington.

APPROVAL SHEET

Project OPR-412  
Supplemental Investigation on Sheet H-8914  
Point-no-Point, Puget Sound, Washington

The field work on this investigation was done under the direct supervision of the Commanding Officer. The boat sheet was given a daily examination to check adequacy and accuracy of the hydrography. The investigation is considered complete and adequate and no additional field work is deemed necessary.

*Wreck investigation was not considered adequate (See section P of this report)*



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

H-8914 (LJ-10-3-66)

Smooth Plotter's Note

SPECIAL INVESTIGATION by Ship HODGSON 1967

Corrections to the echo soundings were derived from H-8928 (HO-10-1-67) Sequim Bay. The processing office personnel translated the echo correction observations from the fathoms and tenth to feet and tenth and compiled the tabulation used for this special survey. No adjustments for difference in locality were applied. See Tabulation Appendix.

Tide reducers to the soundings were derived from the standard tide gage at Seattle. The processing office personnel adjusted the Seattle tides to tides at Point No Point by ratio and retarded times. A tide note prepared by processing office personnel is made part of this report. Graphs for tide reducers were plotted and hourly heights scaled therefrom. See Tabulation Appendix.

Initial corrections were entered by Seattle processing office personnel and soundings reduced.

To avoid congestion this special survey was platted on four overlays - one for each day's work. It is noted that the depths on different days do not always check on this special survey. Some depth discrepancies also are apparent when this special survey is compared with the Survey H-8914 ~~work~~ done by the Ship LESTER JONES in 1966.

No attempt was made to reconcile these differences.

This special Survey fulfills its purpose by proving that <sup>wreck not disproved</sup> ~~no~~ wreck now exists and there is no evidence of a five fathoms shoal. See Paragraph P, RECOMMENDATIONS of this report.

Respectfully submitted,

*Cornelius A. J. Pauw*  
Cornelius A. J. Pauw



Tabulation Echo Sounder Corrections for Launch 122

(Transposed from fathoms and tenths of fathoms into feet and tenths of feet)

<u>Depth</u>	<u>Total Correction +</u>
0-6 feet	0.5 feet
6-20 feet	1.0 feet
20-68 feet	1.5 feet
68-117 feet	2.0 feet
117-162 feet	2.5 feet
162 to 213 feet	3.0 feet
213 to 258 feet	3.5 feet
258 to 303 feet	4.0 feet

Data from H-8928 (HO-10-1-67) Sequim Bay

H-8914

TIDE NOTE

The tides for the additional<sup>ns</sup> hydrographic work done in 1967 by Ship HODGSON in the immediate vicinity of Point No. Point were derived as follows: Seattle tide were adjusted by the ratio of 0.92 and the times retarded by 16 minutes for each hour.

H-8928

Tide Reducers

a day

29th March 1967

Time

Tide Reducer in feet

11 h. 34 m. to 11 h. 48 m.  
11 h. 48 m. to 12 h. 10 m.  
12 h. 10 m. to 12 h. 32 m.  
12 h. 32 m. to 13 h. 30 m.  
13 h. 30 m. to 13 h. 56 m.  
13 h. 56 m. to 14 h. 17 m.  
14 h. 17 m. to 14 h. 35 m.  
14 h. 35 m. to 14 h. 50 m.  
14 h. 50 m. to 15 h. 04 m.

0.5  
0.00  
+0.5  
+1.0  
+0.5  
0.0  
0.5  
1.0  
1.5

b day

30th March 1967

12 h. 35 m. to 12 h. 54 m.  
12 h. 54 m. to 13 h. 31 m.  
13 h. 31 m. to 14 h. 12 m.  
14 h. 12 m. to 14 h. 46 m.

0.0  
+0.5  
+1.0  
+0.5

c day

31st March 1967

10 h. 58 m. to 11 h. 12 m.  
11 h. 12 m. to 11 h. 22 m.  
11 h. 22 m. to 11 h. 33 m.  
11 h. 33 m. to 11 h. 45 m.  
11 h. 45 m. to 11 h. 58 m.  
11 h. 58 m. to 12 h. 11 m.  
12 h. 11 m. to 12 h. 25 m.  
12 h. 25 m. to 12 h. 39 m.  
12 h. 39 m. to 12 h. 54 m.  
12 h. 54 m. to 13 h. 10 m.  
13 h. 10 m. to 13 h. 30 m.  
13 h. 30 m. to 13 h. 55 m.  
13 h. 55 m. to 15 h. 27 m.

5.5  
5.0  
4.5  
4.0  
3.5  
3.0  
2.5  
2.0  
1.5  
1.0  
0.5  
0.0  
+0.5

a day

4th of April 1967

11 h. 25 m. to 13 h. 55 m.  
13 h. 55 m. to 14 h. 30 m.  
14 h. 30 m. to 15 h. 02 m.  
15 h. 02 m. to 15 h. 24 m.

7.5  
7.0  
6.5  
6.0

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. J. Pauw*  
Cornelius A. J. 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

H-8914 (1966)

Items for Future Presurvey Review

No significant natural changes were noted in the area. Sunken wrecks PA should be disproved by other methods than sounding line development. The 40-fm. knoll in lat. 47°54.9', long. 122°29.1' should be developed for lesser depths.

<u>Position Index</u>		<u>Bottom Change</u>	<u>Use</u>	<u>Resurvey</u>
<u>Lat.</u>	<u>Long.</u>	<u>Index</u>	<u>Index</u>	<u>Cycle</u>
475	1224	3	6	25 Years
475	1223	2	6	25 Years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8914

FIELD NO. LJ-10-3-66

Washington, Puget Sound, Point No Point to Useless Bay

SURVEYED: July-September 1966  
March-April 1967

SCALE: 1:10,000

PROJECT NO. OPR-412

SOUNDINGS: DE-723 Echo Sounder  
Leadline

CONTROL: Sextant Fixes on  
Shore Signals

Chief of Party ..... H. E. McCall  
..... W. F. Forster II  
Surveyed by ..... H. E. McCall  
..... O. R. MacIntosh  
..... L. W. Pape  
..... D. J. Lystrom  
..... A. Hogue, Jr.  
Protracted by ..... Ship's Officers  
..... C. A. J. Pauw  
Soundings Plotted by ..... Ship's Officers  
..... C. A. J. Pauw  
Verified and inked by ..... C. R. Lehman  
Reviewed by ..... K. W. Wellman  
Date: March 1, 1974  
Inspected by ..... R. H. Carstens

1. Description of the Area

This survey covers a portion of Puget Sound from Useless Bay to south of Point No Point. The bottom slopes from uncovering in-shore flats to depths as great as about 120 fms. Numerous boulders are found on the flats inshore of the MLLW line.

## 2. Control and Shoreline

The origin of control is given in section F of the Descriptive Report.

The shoreline originates with reviewed photogrammetric surveys T-11631, T-11632, T-11638 and T-12070 of 1960-61.

## 3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated.

C. The development of the bottom configuration and the investigation of least depths are adequate with the exception of the 40-fathom shoal in the vicinity of lat.  $47^{\circ}54.9'$ , long.  $122^{\circ}29.1'$  which may contain shoaler depths.

## 4. Condition of the Survey

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

A. Section B of the Descriptive Report was not completed in accordance with the Hydrographic Manual i.e., a brief area description, inclusive dates of survey and a list of contemporary and prior surveys were not included.

B. The work accomplished while utilizing the DE-723 depth recorder number 545 required the application of corrections to soundings on A, B and C phase to attain agreement with other depths. Stylus arm correctors were also applied by the verifier as required.

C. Recorded notes pertaining to detached rocks were non-standard and gave the size of rocks with no reference to tide or sounding datum. This information was insufficient to compute the elevation of the rocks above MLLW. The method of determining the height of rocks when these were under water was not described.

D. It was necessary to revise the position of 5 signals during verification.

E. Most of the descriptive notes in the water area had dots over the i's. This is not in accordance with section 6-41 of the Hydrographic Manual.

F. Depth curves were not always delineated on the deep side of soundings.

## 5. Junctions

The junctions with H-8894 (1966) on the east, H-8895 (1966) on the south, H-8912 (1966) on the west (northern half) and H-8915 (1966) on the west (southern half) were discussed in the respective survey reviews of those surveys.

## 6. Comparison with Prior Surveys

- A. H-1338a (1875) 1:40,000
- H-1338b (1876) 1:40,000
- H-1344 (1876) 1:40,000

These prior surveys cover the area of the present survey. A comparison between the present and prior surveys reveals a variable pattern of depth differences ranging from plus or minus 0 to 8 fathoms shoreward of the 30 fathom curve to plus or minus 0 to 15 fathoms in greater depths. These differences can be attributed to the less accurate methods employed on the prior surveys.

The 3-fathom curve follows the same general configuration shown on the prior surveys.

The sand and shell bottom character has remained essentially unchanged over most of the area. The areas characterized as rocky on the prior survey however, are now generally characterized by sand and shell.

The shoreline has remained generally stable with random indications of accretion and recession within an approximate range of 50 meters. More noteworthy shoreline changes are the 200-meter recession of a prior peninsula in lat. 47°57.2', long. 122°26.6' and the approximate 500-meter extension of



another peninsula located in the vicinity of lat. 47°59.0', long. 122°28.2'.

The larger scale and more completely developed present survey is adequate to supersede the prior surveys in the common area.

B. H-4711 (1927) 1:10,000  
H-7613 (1948) 1:5,000

These prior surveys cover a small area of the present survey along the western limit of hydrography and in the vicinity of Double Bluff. A comparison of the present survey with the prior surveys reveals generally stable depths with variable differences of less than 1 fathom shoreward of the 10-fathom curve and present depths to be 2 to 3 fathoms shoaler in depths greater than 50 fathoms. The curves follow the same general configuration as shown on the prior surveys. The shoreline northeast of Double Bluff accreted approximately 35 meters between the dates of these prior surveys and has subsequently receded to the general configuration in 1927. The variations in inshore depths and shoreline configuration can be attributed to the shifting of the foreshore and sandy bottom by the strong currents in the area.

The 11-foot and other soundings in the vicinity of lat. 47°58.2', long. 122°31.55' on H-7613, reveal a shoal feature not indicated on the present survey. The soundings were carried forward to the present survey. With these additions the present survey is adequate to supersede the prior surveys in the common area.

7. Comparison with Chart 6450 (latest print date 10-14-72)  
 6421 (latest print date 7-28-73)

A. Hydrography

The charted hydrography originates with the previously discussed prior surveys supplemented by the partial application of the boat sheet and verified smooth sheet of the present survey.

Attention is directed to the following:

Chart 6421

1. The rock awash charted at lat.  $47^{\circ}58.22'$ , long.  $122^{\circ}31.69'$  originates with the boat sheet of the present survey. The rock is shown at a slightly different position on the smooth sheet and should be charted in accordance with the smooth sheet position.

Chart 6450

2. Two rocks awash charted at lat.  $48^{\circ}52.55'$ , long.  $122^{\circ}30.60'$  and lat.  $48^{\circ}52.70'$ , long.  $122^{\circ}30.60'$  originate with L663 (1933). The present survey adequately delineates the rocks in this area and should supersede the prior source for charting.

3. The  $6\frac{1}{2}$ -fathom sounding charted at lat.  $47^{\circ}54.00'$ , long.  $122^{\circ}30.90'$  is considered to be a boat sheet sounding displaced to avoid overlapping a wreck symbol. The sounding should be disregarded.

4. The submerged wreck charted at lat.  $47^{\circ}54.10'$ , long.  $122^{\circ}31.10'$  originates with NM 52/63. The present survey investigation did not disprove this wreck and therefore it should be retained on the chart.

5. The submerged wreck charted at lat.  $47^{\circ}55.61'$ , long.  $122^{\circ}30.00'$  originates with LNM 61/70 subsequent to the present survey. It should be retained on the chart.

6. The  $1\frac{1}{4}$ -fathom sounding charted at lat.  $47^{\circ}54.82'$ , long.  $122^{\circ}26.57'$  apparently originates with a displaced sounding from the boat sheet of the adjoining survey H-8894 and should be superseded by present survey depths.

7. The submerged wreck charted at lat.  $47^{\circ}56.10'$ , long.  $122^{\circ}27.00'$  originates with Bp 98414 (1965) and L634 (1967). It was not disproved by the present survey and should be retained on the chart.

8. The dolphin and piles charted in the vicinity of lat.  $47^{\circ}56.20'$ , long.  $122^{\circ}26.76'$  originate with L331 (1971), subsequent to the date of the present survey and should be retained on the chart.

9. The submerged rock charted at lat. 47°57.51', long. 122°26.68' originates with L331 (1971) subsequent to the present survey. It should be retained on the chart as a rock awash uncovering 3 ft. at MLLW.

10. The islet charted at lat. 47°57.31', long. 122°26.49' and the two islets charted in the vicinity of lat. 47°59.40', long. 122°29.20' originate with Bp 98053 (1959). They are considered superseded by the reviewed photogrammetric manuscript T-11632 of 1960-61.

11. The piers charted in Useless Bay, north of lat. 47°59.00', originate with Bp 98414, a 1965 air photo revision. They should be retained on the chart.

12. The rock awash in the vicinity of lat. 47°58.37', long. 122°27.65', on the present survey, should be added to the chart.

There are a few minor variations between the present survey and the charted high water line. With the exception of the revisions shown on Bp 98414, a 1965 air photo revision, the reviewed photogrammetric manuscripts, listed in section 2 of this review report, should supersede the charted topography in the area common to the present survey.

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.

#### B. Aids to Navigation


The aids to navigation on the present survey are in substantial agreement with the charted positions and adequately mark the features intended.

#### 8. Compliance with Instructions

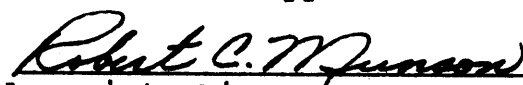
This survey adequately complies with the project instructions.

#### 9. Additional Field Work

This is a good basic survey and no additional field work is recommended.

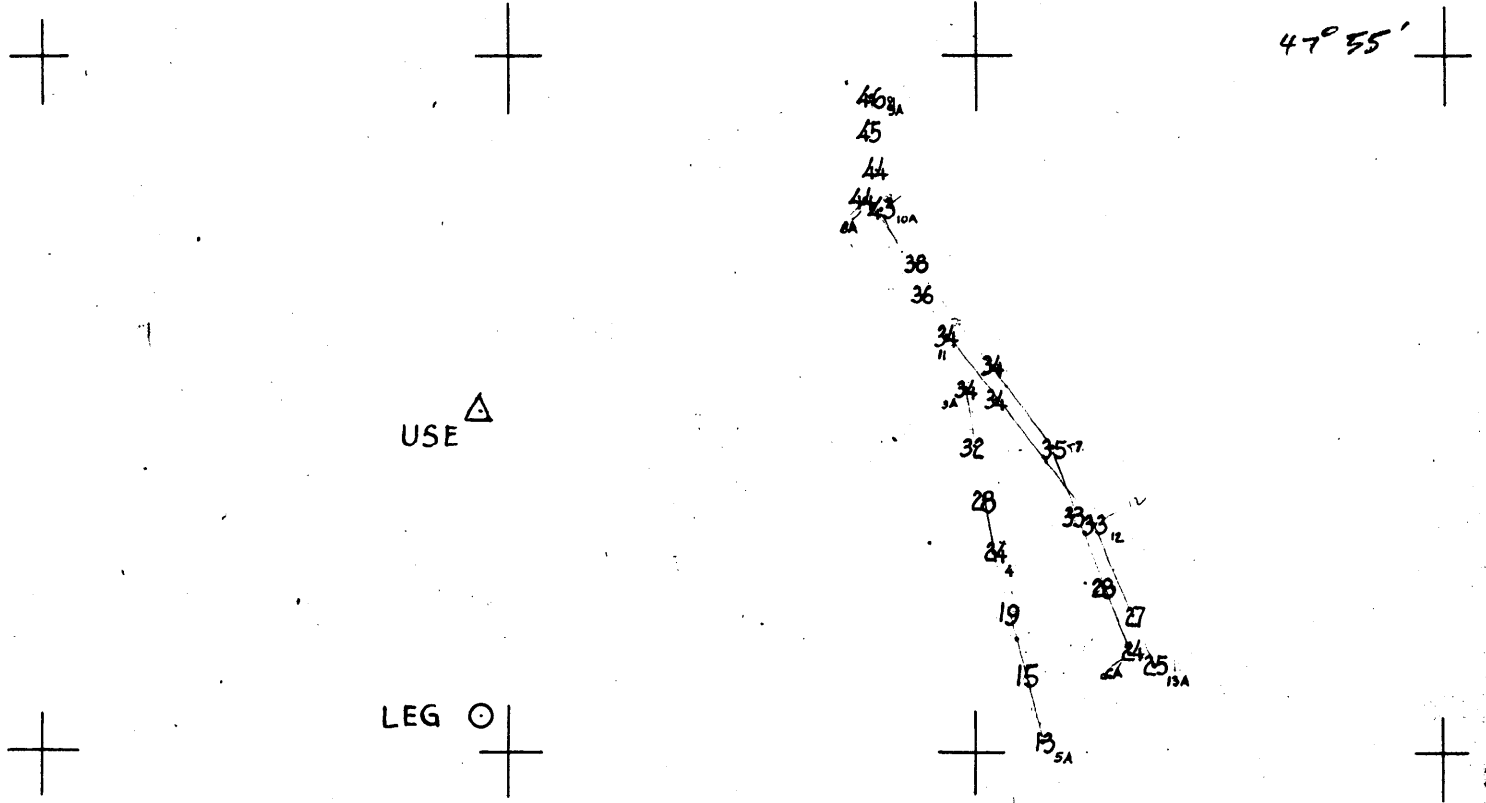
  
 Chief  
 Marine Chart Division

Examined and Approved:

  
 Associate Director  
 Office of Marine Surveys and Maps

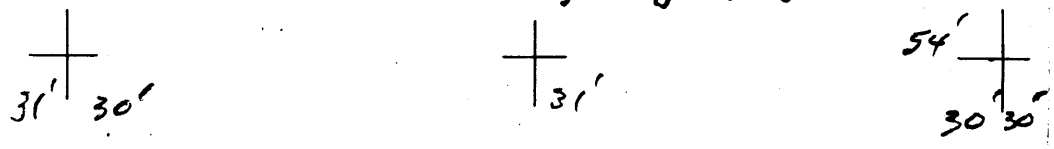
H 8914 (1966)  
Overlay No 1.

Reviewer - transfer  
positions and sdgs  
as necessary to main  
sheet



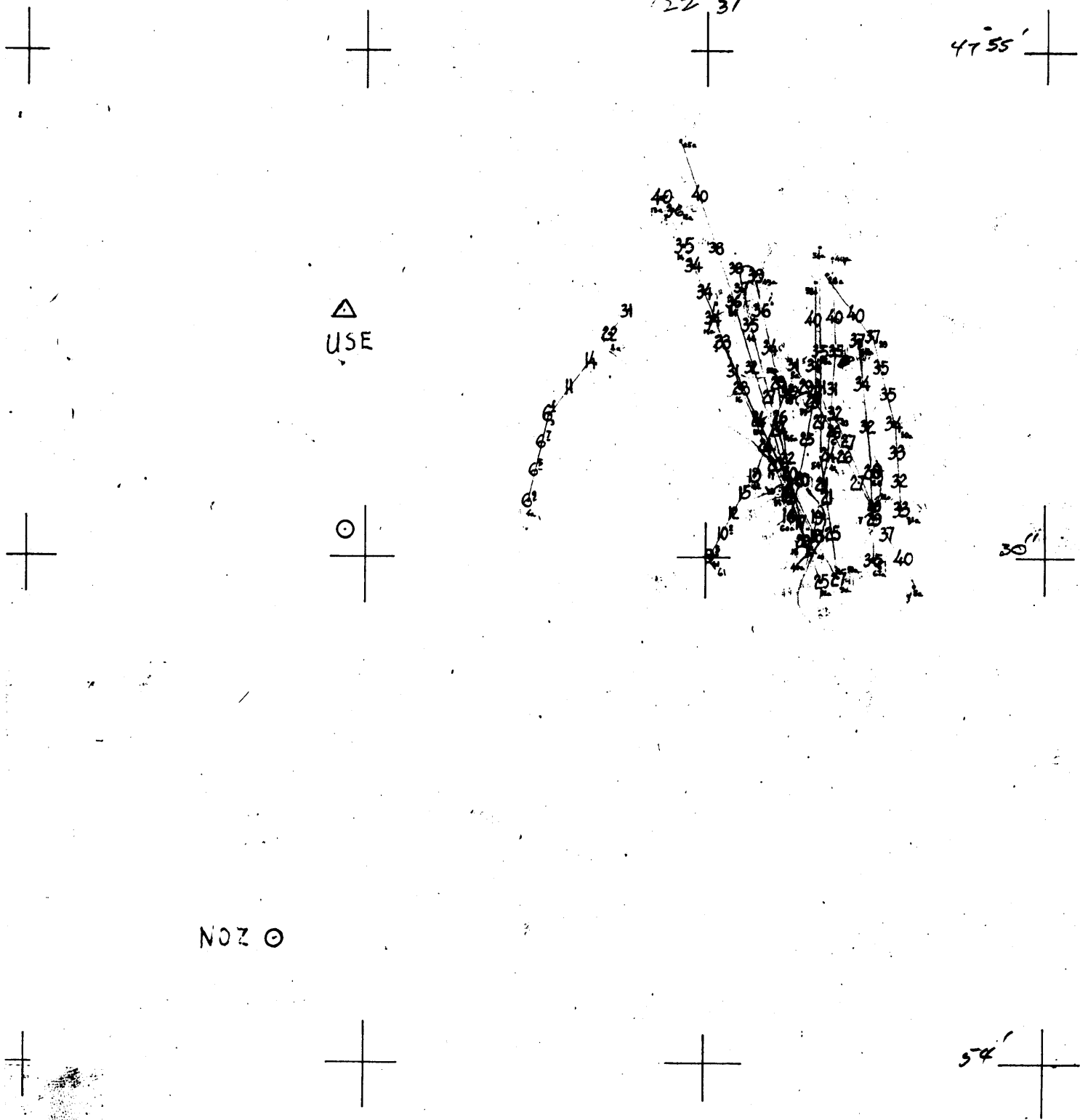
Sea Scanner used to Supplement  
Launch Hydrography

NOZ



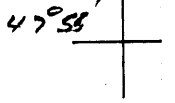
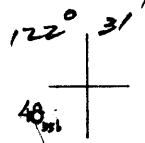
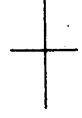
H 8914 (1966)  
Overlay No. 2

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H 8914 (1966)  
Overlay No 3.

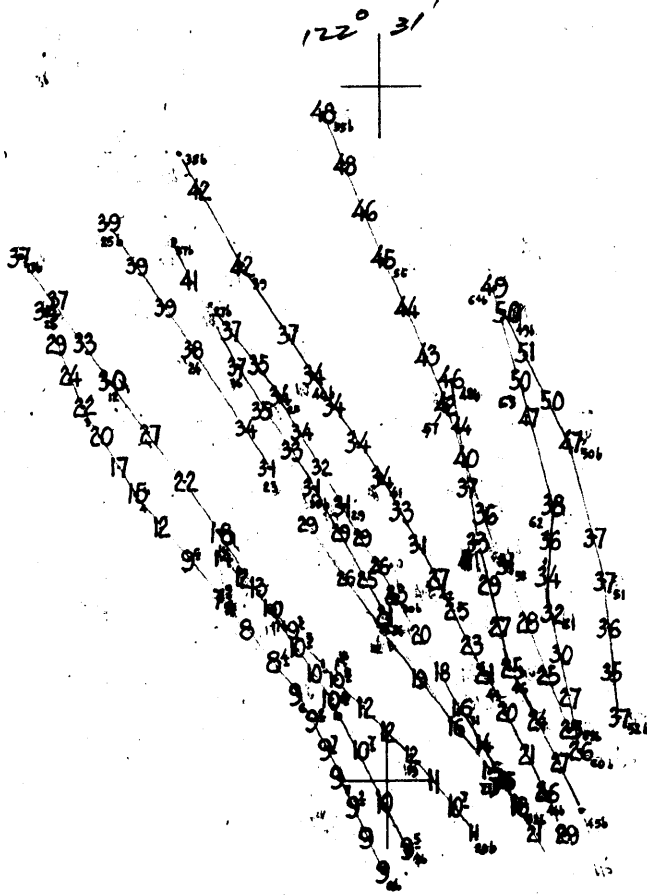
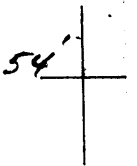
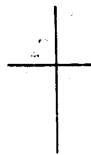
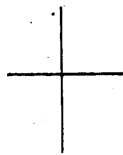
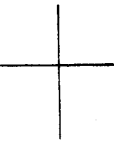
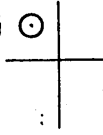
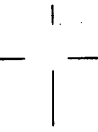
Transfer as  
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USE  $\triangle$

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H 8914 (1966)  
Overlay No 4

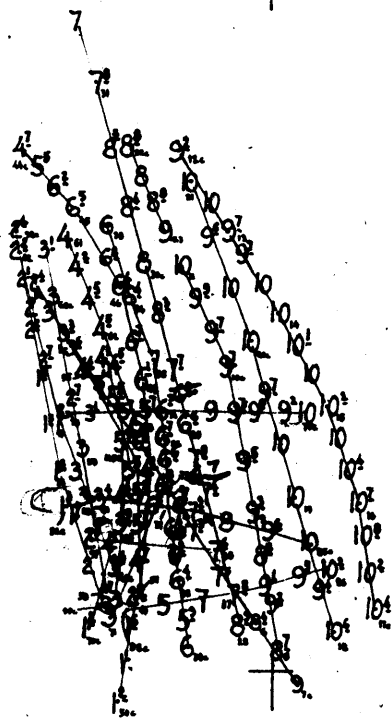
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31'00"  
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54'30"  
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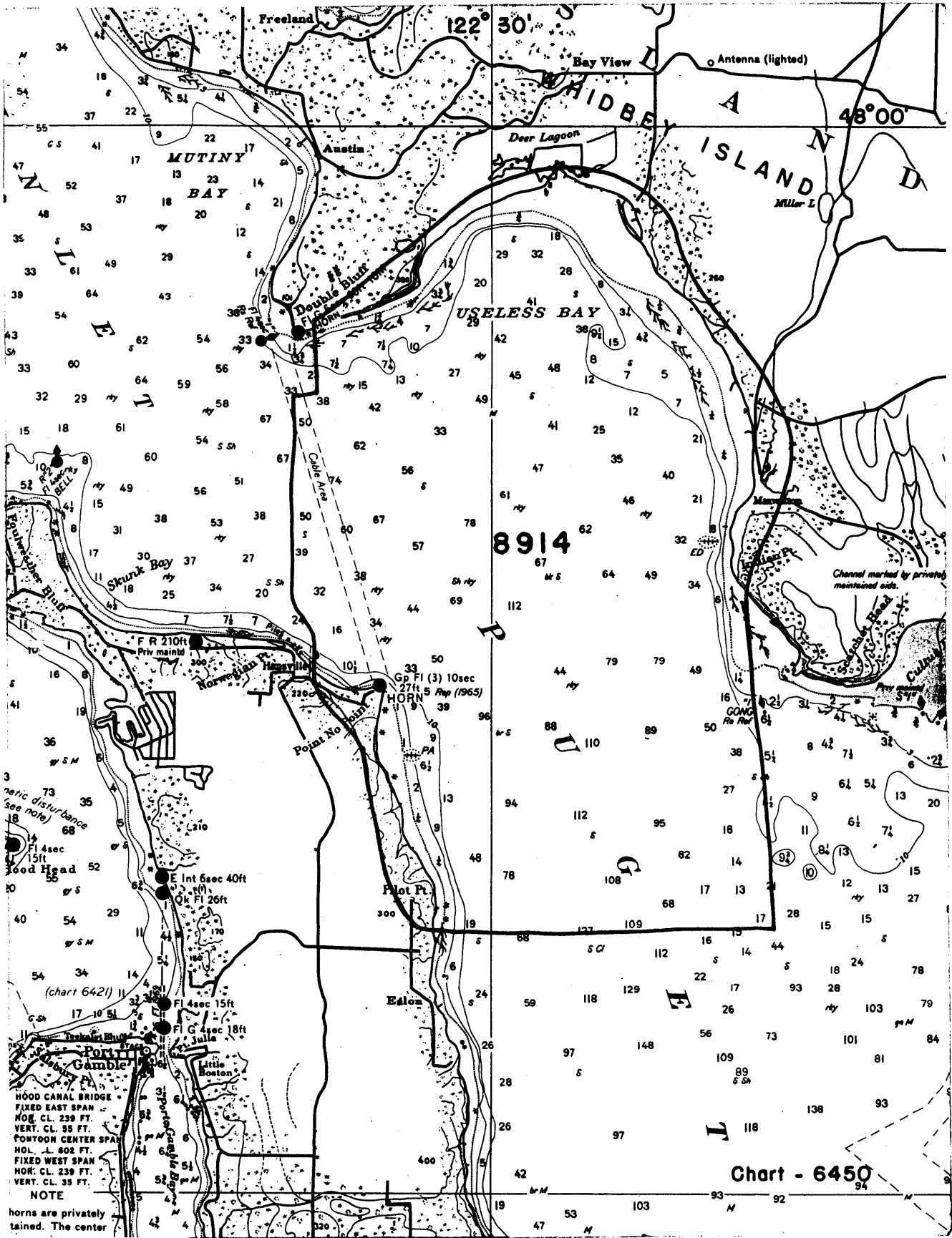
54'00"  
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RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8914

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 <sup>BEFORE</sup>
6450	10/6/70	Jeff Stuart	<del>Full Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No. 39 Examined for critical corrections no revision.
5C-184	11-9-70	John R. Bailey	<del>Full Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No. EXAMINED FOR CRITICAL CORRECTIONS NO REVISION.
185SC	11/10/70	R. DAVIS	<del>Full Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No. 70 EXAM. NO CRITICAL CORRECTIONS Thru 6450 Dwg #39
6421	7/22/71	H. Danley	<del>Full Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No. 12 Exam for critical corr - No Corr
6401	5/16/72	Jeffrey Stuart	<del>Full Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No.
6450 (18441)	6/15/76 revised 7/6	R. A. Lillis D. Coats	Full <del>Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No.
18536 (18445)	6-23-76 8-22-76	R. A. Lillis D. Coats	Full <del>Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No.
6421 (18461)	6-8-76	R. A. Lillis	Full <del>Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No.
184-5C (18423)	6-23-76	R. A. Lillis	Full <del>Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No.
6401 (18440)	8-17-76	Ray Spence	Full <del>Part</del> <sup>BEFORE</sup> AFTER Verification Review Inspection Signed Via Drawing No. thr -6450
18477	10/1/82	JA Graham	Fully applied to new chart N-1 (18477) after inspection
18473	4/15/83	JA Graham	Full after inspection Dwg 1.