

8323

Diag. Cht. No. 6380.

<p>Form 504 U. S. DEPARTMENT OF COMMERCE COAST AND GEODETIC SURVEY</p> <h2 style="text-align: center;">DESCRIPTIVE REPORT</h2>	
Type of Survey	Hydrographic
Field No.	LJ-1556
Office No.	H-8323
LOCALITY	
State	Washington
General locality	Rosario Strait
Locality	Off Lummi Bay
<u>1956</u>	
CHIEF OF PARTY	
K. B. Jeffers & G. C. Mast	
LIBRARY & ARCHIVES	
DATE	July 13, 1960

USCOMM-OC 5087

8323

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

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

REGISTER NO. H-8323

Field No. LJ-1556

State WASHINGTON

General locality ROSARIO STRAIT
~~WASHINGTON COAST~~

Locality Off Lummi Bay
~~SEPT OF ROSARIO~~
~~JUNCTION OF GEORGIA STRAITS & ROSARIO STRAIT~~

Scale 1:10,000 Date of survey 12 August 1956 - 27 Sept 1956

Instructions dated 24 OCTOBER 1956

Vessel SHIP LESTER JONES

Chief of party K. B. JEFFERS & G. C. MAST

Surveyed by K. BIEFFERS, P. A. STARK, J. J. DERMODY & R. MANSFIELD

Soundings taken by fathometer, ~~graphical~~ hand

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by SHIP PERSONNEL

Protracted by H. C. Parsons

Soundings penciled by H. C. Parsons

Soundings in fathoms ~~feet~~ at MLLW at a velocity of sound 100

REMARKS: of 800/fms per second.

* Official name per Board on Geo. Names

CW

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-8323 (FIELD NO. LJ-1556)
JUNCTION OF GEORGIA STRAIT & ROSARIO STRAIT
SCALE 1:10,000 SHIP LESTER JONES K. B. JEFFERS &
G. C. MAST, Comdg.

SURVEYED BY: K.B. JEFFERS, P.A. STARK, J.J. DERMODY & R. MANSFIELD

A. PROJECT:

This survey is part of Project 12410 and was executed under supplemental instructions No. 22/MEK S-2-LJ dated 24 October 1955 and Director's letter 22/MEK S-1-LJ dated 9 August 1956.

B. SURVEY LIMITS & DATES:

General Locality: Junction of Rosario Strait, Georgia Straits & Hale Passage. *Lummi*
BAY

Field work began on 12 August and was completed on 27 September 1956.
(1956) This survey is joined on the south by H-8322 (LJ-1456) on the east by H-8321 (LJ-1356) and H-7962. ~~There are no contemporary surveys to the north or west.~~ *See review (1953)* *1956*

Progress of inshore work was impeded by lack of power and poor design of Launch 176.

C. VESSELS & EQUIPMENT:

Offshore hydrography was done by the ship LESTER JONES using 808 fathometer No. 75. Inshore work was done by Launch 176 operating from the ship and using 808 fathometers No. 102-S and 107-S. Both fathometers were operated using reed tachometer calibrated for a speed of sound of 800 fathoms per second.

D. TIDE & CURRENT STATIONS:

A portable tide gage was maintained during the time of this survey in Echo Bay, Sucia Islands, and was used without time or height corrections to reduce all soundings. *off survey limits within limits of H-8323*

Current Station No. 13, Lat. 48-45.43 N., Long. 122-45.92 W. was observed.

E. SMOOTH SHEET:

The boat sheet has a dog ear attached to give better control on the south limits.

The smooth sheet should therefore be projected on a 42 inch sheet which will be trimmed to *36* inch standard size upon verification and review.

It is recommended that the smooth plot be done by the circle of equal angle method. Otherwise, any distortion in the smooth sheet will prevent adequate verification of the position plotting.

If this method is used, see notes on top and bottom of boat sheet regarding the drawing of the arcs.

The field copy of computation of centers is enclosed, with the original copy of this report.

The smooth plot is to be done by the Seattle Processing Office - their addenda report will be attached to this report.

F. CONTROL STATIONS:

The following triangulation stations were used as hydro signals:

MIG, 1941
PUFFIN I. LT., 1940

MIG
PUF (landmark)

TREE 1950. (Ten feet above ground, 30 feet above MHW)
 3.6 m. N.W. of SANDY, 1949. } see T-5583-S, D.R.
 is landmark

SANDY, 1949
 CLAM, 1956

SAND
 CLAM (see new 1956 G.P.)

Other signals were located by standard graphic control method on sheet LJ-D-56 and ~~HO-D-55~~ by standard photogrammetric methods on T-5583-N & S, or by theodolite cuts.

Recoverable topo station Tower, 1949 was used as a hydro signal, called TOW.

G. SHORELINE & TOPOGRAPHY:

Shoreline for this survey originates north of 48-47 with photogrammetric survey sheet T-5583-S. South of this line, the shoreline is from old topo survey sheets T-1870 and T-1871: (1888)

The high water line was spot checked on Graphic Control Sheets LJ-D-56 and ~~HO-D-55~~. (HO-D-55 falls south of H-8323)

Where possible and pertinent, the low water line was delineated by hydrography.

H. SOUNDINGS:

Soundings taken on the ship were by 808 fathometer No. 75 with initial set at one fathom.

Soundings taken on Launch 176 were by 808 fathometers No. 102-S & 107-S, initial set at zero.

See special Fathometer Report submitted by Ship LESTER JONES in 1956.

Attached to this report are abstracts of velocity corrections and of fathometer corrections.

Bar checks were taken on Launch 176 twice daily, weather and sea permitting. The ship took no bar checks; however, fathometers were exchanged between launch and ship during the season, so all fathometers were checked with the bar.

I. CONTROL OF HYDROGRAPHY:

All hydrography was controlled by sextant angles on shore objects.

The plotting of fixes offshore was done by use of the circle of equal angle method.

Inshore, whenever Launch 176 encountered strong currents, for example off Pt. Miglèy, an attempt was made to run visual ranges. Therefore, slight discrepancies exist in the spacing between fixes.

J. ADEQUACY OF SURVEY:

This survey is complete and adequate to supersede all prior surveys.

Junctions with contemporary surveys are adequate, and depth curves can be joined.

There are no holidays.

K. CROSSLINES:

Approximately 8% of the lines run are crosslines. Crossed soundings agree adequately on the boat sheet.

L. COMPARISON WITH PRIOR SURVEYS:

Soundings from H-2079 (1889-1:20,000) were compared to contemporary soundings and in general agree adequately on the boat sheet.

M. COMPARISON WITH CHART:

Soundings from charts 6378 and 6380 in general agree favorably with contemporary soundings from the boat sheet.

N. DANGERS & SHOALS:

Shoal NW of Pt. Migley ✓ 48-45.2 ✓ Marked by USCG Obstruction
122-43.3 ✓ buoy.

The shoal area extending off Sandy Pt. is adequately delineated by the depth curves.

O. COAST PILOT INFORMATION:

See special Coast Pilot Report submitted by the Ship LESTER JONES in 1956.

P. AIDS TO NAVIGATION:

Point Migley Buoy (CG 162, page 180) is located on the boat sheet and is properly charted. *Pacific Lite List, p.178, (1956) number 1937*

Q. LANDMARKS FOR CHARTS:

The TREE charted on Sandy Pt. is correctly charted.

Puffin Island Shoal Lt. (CG 162, #1974) is correctly charted.

* The cracking tower at Ferndale should be charted; it is triangulation intersection station "Ferndale Refinery Cracking Tower, 1956". *is charted.*

* The refinery pier is correctly charted. **Not in survey limits*

R. GEOGRAPHIC NAMES:

See special Geographic Names Report submitted by this vessel in 1956.

The area around the new refinery north of Lummi Bay is called "Ferndale", an unincorporated township. Since the refinery cracking tower is a landmark for charts, recommend to CHART this name.

S. SILTED AREAS:

All flat bottom on this survey is silted. The smooth plot will adequately delineate these areas.

Z. TABULATION OF APPLICABLE DATA:

1956 Coast Pilot Report	Forwarded to Wash. Office
1956 Geographic Names Report	" " " "
1956 Fathometer Report	" " " "
1956 Magnetic Data	" " " "
1956 Tide Data	" " " "
1956 Current Data	" " " "
1956 Landmarks for Charts Data	" " " "
Graphic Control Sheets & Report	" " Seattle Pro. Off.
Tide Curves and Reducers	" " " "
* Photogrammetric Data & Report	" " Portland Phot. Off.

* included with 1956 hydrographic records.

Respectfully submitted,

John J. Dermody
John J. Dermody,
Lieutenant (j.g.), C&GS

APPROVAL SHEET

This survey was done under the supervision of the Chief of Party. Applicable records and the boat sheet have been inspected and deemed complete and adequate to supersede all prior surveys.


G. C. MAST,
COMMANDER, C&GS
CHIEF OF PARTY

STATISTICS FOR HYDROGRAPHIC SURVEY
H-8323 (LJ-1556) - 1956
SHIP LESTER JONES PROJECT 12410

<u>DATE</u>	<u>VOL.</u>	<u>DAY LTR.</u>	<u>POS.</u>	<u>STAT. MILES</u>	<u>L.L. SNDGS.</u>
<u>SHIP LESTER JONES</u>					
22 Aug.	I	A	109	29.7	--
23 Aug.	I & II	B	230	57.4	--
25 Aug.	II	C	41	10.7	--
26 Aug.	II & III	D	161	35.4	27
6 Sept.	III	E	74	19.9	--
7 Sept.	III	F	98	26.9	--
8 Sept.	III & IV	G	144	37.0	--
10 Sept.	IV	H-	114	29.5	--
11 Sept.	IV & V	J	169	45.4	--
12 Sept.	V	K	13	--	13
21 Sept.	V	L	123	32.6	--
26 Sept.	V & VI	M	876	20.6	--
27 Sept.	VI	N	101	27.7	--
<u>TOTALS</u>			1,464	372.8	40

LAUNCH 176

12 Aug.	1	a	96	13.0	8
14 Aug.	1	b	40	5.9	--
24 Aug.	1	c	134	24.8	1
<u>TOTALS</u>			270	43.7	9

Grand total 1,734

ALPHABETICAL LIST OF SIGNALS - LJ-1556

<u>NAME</u>	<u>SOURCE</u>
HEE	T-5583-S
CLAM	CLAM, 1956
GAB	T-5583-S
GOT	LJ-D-56
GUG	LJ-D-56
HIE	LJ-D-56
JOB	LJ-D-56
JON	LJ-D-56
KAN	LJ-D-56
LAB	LJ-D-56
LUF	Vol. 1
NIP	LJ-D-56
MEW	LJ-D-56
MIG	MIG, 1941
PEB	T-5583-S
PED	LJ-D-56
POO	LJ-D-56
PUF	PUFFIN I. LT., 1940
ROC	LJ-D-56
SAN	SANDY, 1949
SOB	Vol. 1
TOW	TOWER, 1949
WOO	Vol. 1

USCGSS LESTER JONES
 1956 VELOCITY CORRECTION ABSTRACT
 FROM
 SERIAL TEMPERATURES

Applicable Depth	April	May	June	July	Aug.	Sept.	Oct.	Nov.
	<u>Corrections in Fathoms</u>							
7	+ 0.02	+0.05	+0.05	+0.06	+0.09	+0.07	+0.06	+0.05
12	+0.04	+0.10	+0.10	+0.12	+0.16	+0.14	+0.12	+0.09
17	+0.05	+0.15	+0.15	+0.18	+0.23	+0.21	+0.17	+0.14
22	+0.07	+0.19	+0.20	+0.25	+0.30	+0.28	+0.23	+0.18
27	+0.09	+0.24	+0.25		+0.36	+0.34	+0.29	
32	+0.11	+0.29	+0.30		+0.43	+0.41	+0.35	
37	+0.13	+0.34	+0.35		+0.49	+0.47	+0.40	
42	+0.14	+0.38	+0.40		+0.56	+0.54	+0.46	
47	+0.16	+0.43	+0.45		+0.62	+0.60	+0.51	
52	+0.18	+0.47	+0.50		+0.68	+0.66	+0.56	
57		+0.52	+0.55		+0.75	+0.73	+0.61	
62		+0.56				+0.79	+0.66	
67		+0.61						

NOTE: The above values are velocity corrections based solely on monthly serials. They were combined with Bar Check and Draft data to obtain the final fathometer corrections.

SHIP LESTER JONES

1956 FATHOMETER CORRECTIONS

(Derived from Bar Check and Serial Data - 1956)

SHIP - FATHOMS

April
+ 0.3 0 to 16
+ 0.4 16 to 45
+ 0.5 45 to 70

MAY - JUNE
+ 0.3 0 to 7
+ 0.4 7 to 18
+ 0.5 18 to 28
+ 0.6 28 to 38
+ 0.7 38 to 48
+ 0.8 48 to 58
+ 0.9 58 to 68

JULY - SEPT.
+ 0.3 0 to 5
+ 0.4 5 to 11
+ 0.5 11 to 19
+ 0.6 19 to 27
+ 0.7 27 to 35
+ 0.8 35 to 43
+ 0.9 43 to 50
+ 1.0 50 to 58
+ 1.1 58 to 66
+ 1.2 66 to 74

OCT. - NOV.
+ 0.3 0 to 7
+ 0.4 7 to 17
+ 0.5 17 to 26
+ 0.6 26 to 36
+ 0.7 36 to 46
+ 0.8 46 to 57
+ 0.9 57 to 67

LAUNCH - FATHOMS

April
+ 0.3 0 to 5
+ 0.2 5 to 25
+ 0.3 25 to 54
+ 0.4 54 to 75

MAY - JUNE
+ 0.2 0 to 15.3
+ 0.3 15.3 to 25.5
+ 0.4 25.5 to 35.7
+ 0.5 35.7 to 45.7
+ 0.6 45.7 to 55
+ 0.7 55 to 66
+ 0.8 66 to 76

JULY - SEPT.
+ 0.2 0 to 9.5
+ 0.3 9.5 to 18.0
+ 0.4 18.0 to 26.0
+ 0.5 26.0 to 35.0
+ 0.6 35.0 to 43.0
+ 0.7 43.0 to 51.0
+ 0.8 51.0 to 59.0
+ 0.9 59.0 to 67.0
+ 1.0 67.0 to 75.0

OCT. - NOV.
+ 0.2 0 to 6.0
+ 0.3 6.0 to 16.0
+ 0.4 16 to 26
+ 0.5 26 to 36
+ 0.6 36 to 46
+ 0.7 46 to 56
+ 0.8 56 to 66
+ 0.9 66 to 76

LAUNCH - FEET

April
+ 1.4 0 to 28
+ 1.6 28 to 75

MAY - JUNE
+ 0.8 0 to 14
+ 1.0 14 to 23
+ 1.2 23 to 32
+ 1.4 32 to 55

JULY - SEPT.
+ 1.0 0 to 7
+ 1.2 7 to 19
+ 1.4 19 to 31
+ 1.6 31 to 43
+ 1.8 43 to 55

OCT. - NOV.
+ 1.2 0 to 13
+ 1.4 13 to 25
+ 1.6 25 to 38
+ 1.8 38 to Rest of
A Scale

PHASE

Fathometer
Number B "SCALE" (A-B)
75 - 0.3
102-S - 2.5 fms.
107-S - 1.5

LINE OF CENTERS COMP.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 662
Rev. Sept. 1942

INVERSE POSITION COMPUTATION - To determine
base SANDY to TOWER
for Sheet LJ-1556

$$s_1 \sin \left(\alpha + \frac{\Delta\alpha}{2} \right) = \frac{\Delta\lambda_1 \cos \phi_m}{A_m}$$

$$s_1 \cos \left(\alpha + \frac{\Delta\alpha}{2} \right) = \frac{-\Delta\phi_1 \cos \frac{\Delta\lambda}{2}}{B_m}$$

$$-\Delta\alpha = \Delta\lambda \sin \phi_m \sec \frac{\Delta\phi}{2} + F(\Delta\lambda)^2$$

in which $\log \Delta\lambda_1 = \log (\lambda' - \lambda)$ - correction for arc to sin*; $\log \Delta\phi_1 = \log (\phi' - \phi)$ - correction for arc to sin*; and $\log s = \log s_1 +$
correction for arc to sin*.

		NAME OF STATION					
1. ϕ	48° 47' 16.101"	SANDY		λ	122° 42' 23.465"	✓	
2. ϕ'	48° 48' 50.995"	TOWER		λ'	122° 42' 24.509"	✓	
$\Delta\phi (= \phi' - \phi)$		1	34.894 ✓	$\Delta\lambda (= \lambda' - \lambda)$		+	1.044 ✓
$\frac{\Delta\phi}{2}$			47.447 ✓	$\frac{\Delta\lambda}{2}$			0.522 ✓
$\phi_m (= \phi + \frac{\Delta\phi}{2})$	48° 48' 03.548"		✓				
$\Delta\phi$ (secs.)			94.894 ✓	$\Delta\lambda$ (secs.)			1.044 ✓
$\log \Delta\phi$	1.977 2388 ✓			$\log \Delta\lambda$	0.018 7005 ✓		
cor. arc-sin	-			cor. arc-sin	-		
$\log \Delta\phi_1$				$\log \Delta\lambda_1$			
$\log \cos \frac{\Delta\lambda}{2}$				$\log \cos \phi_m$	9.818 6722 ✓		
$\text{colog } B_m$	1.489 8250 ✓			$\text{colog } A_m$	1.491 1071 ✓		
$\log \left\{ s_1 \cos \left(\alpha + \frac{\Delta\alpha}{2} \right) \right\}$	3.467 0638 ✓		(opposite in sign to $\Delta\phi$)	$\log \left\{ s_1 \sin \left(\alpha + \frac{\Delta\alpha}{2} \right) \right\}$	1.328 4798 ✓		
				$\log \left\{ s_1 \cos \left(\alpha + \frac{\Delta\alpha}{2} \right) \right\}$	3.467 0638 ✓		
$\log \Delta\lambda$			$3 \log \Delta\lambda$	$\log \tan \left(\alpha + \frac{\Delta\alpha}{2} \right)$	7.861 4160 ✓		
$\log \sin \phi_m$			$\log F$	$\alpha + \frac{\Delta\alpha}{2}$	179° 35' 00.873"		
$\log \sec \frac{\Delta\phi}{2}$			$\log b$	$\log \sin \left(\alpha + \frac{\Delta\alpha}{2} \right)$	7.861 4045 ✓		
$\log a$				$\log \cos \left(\alpha + \frac{\Delta\alpha}{2} \right)$	9.999 9885 ✓		
a				$\log s_1$	3.467 0753 ✓		
b				cor. arc-sin	+		
$-\Delta\alpha$ (secs.)				$\log s$	2931.4 m. ✓		
$\frac{\Delta\alpha}{2}$							
$\alpha + \frac{\Delta\alpha}{2}$							
α (1 to 2)							
$\Delta\alpha$							
	180						
α' (2 to 1)							

* Use the table on the back of this form for correction of arc to sin.

NOTE.—For log s up to 4.0 and for $\Delta\phi$ or $\Delta\lambda$ (or both) up to 3', omit all terms below the heavy line except those printed (in whole or in part) in heavy type or those underscored, if using logarithms to 7 decimal places.

Table of arc-sin corrections for inverse position computations

$\log s_1$	Arc-sin correction in units of seventh decimal of logarithms	$\log \Delta\phi$ or $\log \Delta\lambda$	$\log s_1$	Arc-sin correction in units of seventh decimal of logarithms	$\log \Delta\phi$ or $\log \Delta\lambda$	$\log s_1$	Arc-sin correction in units of seventh decimal of logarithms	$\log \Delta\phi$ or $\log \Delta\lambda$
4. 177	1	2. 686	5. 223	124	3. 732	5. 525	497	4. 034
4. 327	2	2. 836	5. 234	130	3. 743	5. 530	508	4. 039
4. 415	3	2. 924	5. 243	136	3. 752	5. 534	519	4. 043
4. 478	4	2. 987	5. 253	142	3. 762	5. 539	530	4. 048
4. 526	5	3. 035	5. 260	147	3. 769	5. 543	541	4. 052
4. 566	6	3. 075	5. 269	153	3. 778	5. 548	553	4. 057
4. 599	7	3. 108	5. 279	160	3. 788	5. 553	565	4. 062
4. 628	8	3. 137	5. 287	166	3. 796	5. 557	577	4. 066
4. 654	9	3. 163	5. 294	172	3. 803	5. 561	588	4. 070
4. 677	10	3. 186	5. 303	179	3. 812	5. 566	600	4. 075
4. 697	11	3. 206	5. 311	186	3. 820	5. 570	613	4. 079
4. 716	12	3. 225	5. 318	192	3. 827	5. 575	625	4. 084
4. 734	13	3. 243	5. 326	199	3. 835	5. 579	637	4. 088
4. 750	14	3. 259	5. 334	206	3. 843	5. 583	650	4. 092
4. 765	15	3. 274	5. 341	213	3. 850	5. 587	663	4. 096
4. 779	16	3. 288	5. 349	221	3. 858	5. 591	674	4. 100
4. 792	17	3. 301	5. 356	228	3. 865	5. 595	687	4. 104
4. 804	18	3. 313	5. 363	236	3. 872	5. 600	702	4. 109
4. 827	20	3. 336	5. 369	243	3. 878	5. 604	716	4. 113
4. 857	23	3. 366	5. 376	251	3. 885	5. 608	729	4. 117
4. 876	25	3. 385	5. 383	259	3. 892	5. 612	743	4. 121
4. 892	27	3. 401	5. 390	267	3. 899	5. 616	757	4. 125
4. 915	30	3. 424	5. 396	275	3. 905	5. 620	771	4. 129
4. 936	33	3. 445	5. 403	284	3. 912	5. 624	785	4. 133
4. 955	36	3. 464	5. 409	292	3. 918	5. 628	800	4. 137
4. 972	39	3. 481	5. 415	300	3. 924	5. 632	814	4. 141
4. 988	42	3. 497	5. 422	309	3. 931	5. 636	829	4. 145
5. 003	45	3. 512	5. 428	318	3. 937	5. 640	845	4. 149
5. 017	48	3. 526	5. 434	327	3. 943	5. 644	861	4. 153
5. 035	52	3. 544	5. 440	336	3. 949	5. 648	877	4. 157
5. 051	56	3. 560	5. 446	345	3. 955	5. 652	893	4. 161
5. 062	59	3. 571	5. 451	354	3. 960	5. 656	909	4. 165
5. 076	63	3. 585	5. 457	364	3. 966	5. 660	925	4. 169
5. 090	67	3. 599	5. 462	373	3. 971	5. 663	941	4. 172
5. 102	71	3. 611	5. 468	383	3. 977	5. 667	957	4. 176
5. 114	75	3. 623	5. 473	392	3. 982	5. 671	973	4. 180
5. 128	80	3. 637	5. 479	402	3. 988	5. 674	989	4. 183
5. 139	84	3. 648	5. 484	412	3. 993	5. 678	1005	4. 187
5. 151	89	3. 660	5. 489	422	3. 998			
5. 163	94	3. 672	5. 495	433	4. 004			
5. 172	98	3. 681	5. 500	443	4. 009			
5. 183	103	3. 692	5. 505	453	4. 014			
5. 193	108	3. 702	5. 510	464	4. 019			
5. 205	114	3. 714	5. 515	474	4. 024			
5. 214	119	3. 723	5. 520	486	4. 029			

a = distance in meters between stations

d = " along perpendicular bisector to center of circle.

α = angle whose center is at point d .

formula

$$d = \frac{a}{2} \cot \alpha$$

SANDY-MIG = 4370.3 m ✓

SANDY-TOWER = 2931.4 m

LINE OF CENTERS COMP.

d
SANDY-MIG

Cotangent

2

2.1657 ✓

13°

2.1374 ✓

~~13-10~~

2.1097 ✓

20

2.0826 ✓

~~30~~

2.0563 ✓

40

2.0305 ✓

~~50~~

2.0054 ✓

14-

1.9568 ✓

20

1.9104 ✓

40

1.8660 ✓

15-

1.8235 ✓

20

1.7828 ✓

40

1.7437 ✓

16-

1.7062 ✓

20

1.6701 ✓

40

1.6354

17-

1.5858 ✓

30

1.5388 ✓

18-

1.4943 ✓

30

1.4521 ✓

19-

1.4120 ✓

30

1.3737 ✓

20-

6003.5 ✓

1.3373 ✓

30

5844.4 ✓

1.3025 ✓

21-

5692.3 ✓

1.2693 ✓

30

5547.2 ✓

1.2375 ✓

22-

5408.2 ✓

1.2071 ✓

30

5275.4 ✓

1.1779 ✓

23-

5147.8 ✓

1.1499 ✓

30

5025.4 ✓

1.1230 ✓

24-

4907.8 ✓

1.0971 ✓

30

4794.6 ✓

1.0723 ✓

25-

4686.3 ✓

d
SANDY-TOWER

6348.5

6184.4

6027.8

5878.6

5736.2

5600.1

5470.0

5345.4

5226.1

5111.5

5001.6

4895.7

4794.0

4648.6

4510.8

4380.4

4256.7

4139.1

4026.9

3920.2

3818.1

3720.8

3627.6

3538.5

3452.9

3370.8

3292.0

3216.0

3143.3

comp KIBU

SANDY-MIG

	$\frac{1}{2}$ cot.	
4480.4	1.0252 ✓	26
4288.6	0.9813 ✓	27
4109.8	0.9404 ✓	28
3942.0	.9020 ✓	29
3784.7	.8660 ✓	30
3636.5	.8321 ✓	31
3497.1	.8002 ✓	32
3364.7	.7699 ✓	33
3239.7	.7413 ✓	34
3120.8	.7141 ✓	35
3007.6	.6882 ✓	36
2899.7	.6635 ✓	37
2797.0	.6400 ✓	38
2698.2	.6174 ✓	39
2604.3	.5959 ✓	40
2513.8	.5752 ✓	41
2426.8	.5553 ✓	42
2343.3	.5362 ✓	43
2262.9	.5178 ✓	44
2185.2	.5000 ✓	45
2110.0	.4828 ✓	46
2037.9	.4663 ✓	47
1967.5	.4502 ✓	48
1899.3	.4346 ✓	49
1833.3	.4195 ✓	50
1769.5	.4049 ✓	51
1707.0	.3906 ✓	52
1646.7	.3768 ✓	53
1587.7	.3633 ✓	54
1530.0	.3501 ✓	55

SANDY-TOWER

3005.3
2876.6
2756.7
2644.1
2538.6
2439.2
2345.7
2256.9
2173.0
2093.3
2017.4
1945.0
1876.1
1809.8
1746.8
1686.1
1627.8
1571.8
1517.9
1465.7
1415.3
1366.9
1319.7
1274.0
1229.7

PROCESSING OFFICE NOTES H-8323

SMOOTH SHEET

The smooth sheet was hand constructed by the Seattle Hydrographic Processing Unit using standard methods of construction and checking.

The circle method, as suggested in the field report, was used to control off-shore sounding lines.

ADEQUACY OF SURVEY

The junction with H-8321, to the East, has been compared and found to be in agreement. The depth curves can be drawn at the junction.

The junction with H-8322, to the South, will be compared when that sheet is completed.

No copies of surveys to the North are at hand for comparison.

Junctions inked in Washington, D.C., office with H-8321, 8322, 8519, 8481, 8478 and 7962

COMPARISON WITH CHART

This survey has been compared with Chart 6380, 8th Ed. Revised 9/21/59 and Chart 6378, 12th Ed. Dated 2/8/60.

The only notable difference between Chart 6378 and the survey is in the ten fathom curve between Lats. $48^{\circ} 44' 30''$ and $48^{\circ} 46' 00''$ and Long. $122^{\circ} 43' 00''$ and $122^{\circ} 44' 00''$.

Differences were found in the 10, 20, 30, and 40 fm. curves on Chart 6380.

See sections of charts, attached to this report, for comparisons.

Respectfully submitted



WILLIAM M. MARTIN
SUPERVISORY CARTOGRAPHER

Approved and forwarded



R. E. WILLIAMS

Lt. CDR., C&GS

for

Seattle District Officer

GEOGRAPHIC NAMES
Survey No. H-8323

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On Chart No. 6380</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On previous survey No.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On U. S. quadrangle Maps</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">From local information</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">On local Maps</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">P. O. Guide or Map</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Rand McNally Atlas</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">U. S. Light List</div> </div>										K	BGN
	A	B	C	D	E	F	G	H				
Strait of Georgia	x										x	1
Lummi Island	x											2
Point Migley	x										x	3
Sandy Point	x											4
Rosario Strait (Title) _a	x											5
												6
												7
												8
												9
												10
												11
												12
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												27

GEOGRAPHIC NAMES SECTION
18 JULY 1960

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO.8323....

Records accompanying survey: Smooth sheets ...1..;

boat sheets ...1..; sounding vols. .7....; wire drag vols.;

Descriptive Reports ...1..; graphic recorder envelopes ...3....;

special reports, etc.

.....

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

Number of positions on sheet 1734

Number of positions checked 57 plus 2 in the Wash. office

Number of positions revised 5 + 2 in the Wash. office (1162 "a")

Number of soundings revised (refers to depth only) 0

Number of soundings erroneously spaced 0

Number of signals erroneously plotted or transferred 0

Topographic details Time 2 hrs.

Junctions Time 30 hrs.

Verification of soundings from graphic record Time 8 hours + 2 hrs. in the Dir. office

Special adjustments Time None

Verification by *A. B. Rose* Total time *62 hrs. 91 hours* Date *25 July 1962*

Reviewed by *E. G. Thomas* Time *23* Date *8/14/64*

L.S.S.

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~DIVISION OF COASTAL SURVEYS~~

3 Aug. 1960

Division of Charts R. H. Carstens

Plane of reference approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 8323

Locality Georgia Strait, Washington

Chief of Party: K.B. Jeffers, & G.G. Mast in 1956
Plane of reference is mean lower low water, reading
0.3 ft. on tide staff at Echo Bay
6.9 ft. below B. M. 2 (1956)

Height of mean high water above plane of reference is 7.9 feet.

Condition of records satisfactory except as noted below:

William Shogren
Chief, Tides Branch

~~DIVISION OF COASTAL SURVEYS~~

OFFICE OF HYDROGRAPHY AND OCEANOGRAPHY

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8323

FIELD NO. LJ-1556

Washington, Rosario Strait, Off Lummi Bay

SURVEYED: August 12, 1956 - September 27, 1956

SCALE: 1:10,000

PROJECT NO.: 12410

SOUNDINGS: 808 Depth Recorders CONTROL: Sextant fixes
on shore signals

Chief of Party..... K. B. Jeffers
..... G. C. Mast
Surveyed by..... K. B. Jeffers
..... P. A. Stark
..... J. J. Dermody
..... R. Mansfield
Protracted by..... H. C. Parsons
Soundings Plotted by..... H. C. Parsons
Verified and Inked by..... A. K. Schugeld
..... S. Rose
Reviewed by..... E. Thomas
..... Date: 08/14/64
Inspected by..... R. H. Carstens

1. Description of the Area-

This survey covers the entrance to Lummi Bay and the north entrance into Rosario Strait. The bottom is fairly regular and slopes gradually from the lesser depth at the entrance to Lummi Bay to the natural deep of Rosario Strait. The bottom is characterized in the vicinity of Pt. Migley, by irregularities in depths less than 10 fathoms.

2. Control and Shoreline

The origin of control is adequately described in the Descriptive Report. The smooth sheet is now the authority for signal locations transferred from graphic control

2.

survey LJ-D-56, since that survey sheet has been destroyed. The shoreline shown on the smooth sheet north of $48^{\circ}47.0$ (north of Sandy Pt.) originates with reviewed photogrammetric survey T-5583-S(1949-52). The Puffin Island shoreline originates with T-1870(1888) and Lummi Island shoreline originates with T-1871(1888).

3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves are adequately delineated. Portions of the low-water line and ledge originate with prior surveys H-1953 and H-2079.
- C. The development of the bottom configuration and investigation of least depths is considered adequate.

4. Condition of the Survey

The field plotting, sounding records, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual.

5. Junctions

An adequate junction was effected with H-8478(1959) on the northwest; H-8481(1959) on the west and north; H-7962(1953) on the northeast; H-8321(1956) on the east; H-8322(1956) on the south; and H-8519 on the southwest. This completes all junctions prescribed for the present survey.

6. Comparison With Prior Surveys

A.	H-708	(1858)	1:20,000
	<u>H-709</u>	<u>(1858-59)</u>	<u>1:100,000</u>

A comparison with the few soundings from the small scale survey H-709, together with the reconnaissance nature of both surveys, would provide little significant information for this area.

B.	H-1953	(1889)	1:20,000
	<u>H-2079</u>	<u>(1889-91)</u>	<u>1:20,000</u>

A comparison of the sparse soundings shown on this survey with those soundings of the present survey

3.

indicate little or no significant change has occurred in the more offshore area. The present survey seems shoaler in random areas, but this results from the more detailed hydrography of the present survey. In the vicinity of Pt. Migley minor differences of approximately $\frac{1}{2}$ fathom exist in depths less than 10 fathoms. Also, both local deepening and shoaling has apparently made minor changes in the bottom in the vicinity of Sandy Pt.

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

7. Comparison With Chart 6378 (latest print date 05/22/61)
Chart 6380 (latest print date 06/15/64)

A. Hydrography

The charted hydrography originates principally with prior surveys H-1953(1889) and H-2079(1889-91), which need no further discussion, and is supplemented by minor revisions from the penciled smooth sheet prior to verification and review.

The rock awash charted in lat. $48^{\circ}44.72'$, long. $122^{\circ}43.0'$ on 6378 from the penciled smooth sheet was not valid and was removed from the smooth sheet by the verifier.

The present survey supersedes the charted information in the common area.

B. Aids to Navigation

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

8. Compliance With Instructions

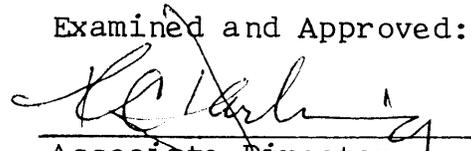
The survey adequately complies with the project instructions.

9. Additional Field Work

This survey is considered to be a good basic survey and no additional field work is necessary.



Chief
Marine Chart Division

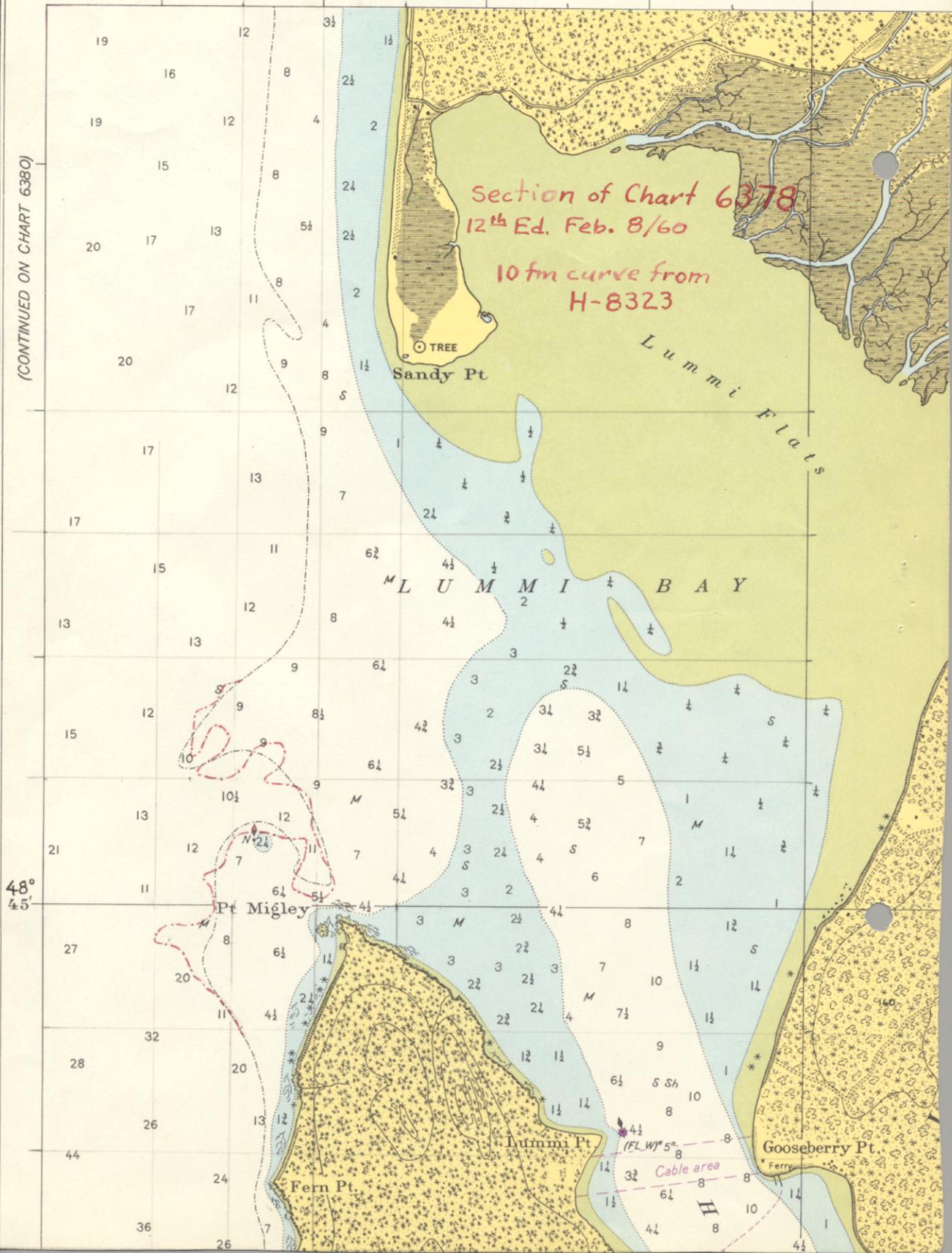
Examined and Approved:


Associate Director
Office of Hydrography
and Oceanography

(CONTINUED ON CHART 6380)

Section of Chart 6378
12th Ed. Feb. 8/60

10 fm curve from
H-8323



50'

122°45'

40'

Section of Chart 6380

8th Ed. Rev. 9/21/59

Soundings and depth curves
in red from H-8323

CAUTION

Improved channels shown by broken lines are
subject to shoaling, particularly at the edges.



48°
50'

change in 10 fm curve
shown on Chart 6378

122° 40'

48° 50'

Cherry Pt.

FERNDALE

Neptune Beach

Sandy Pt

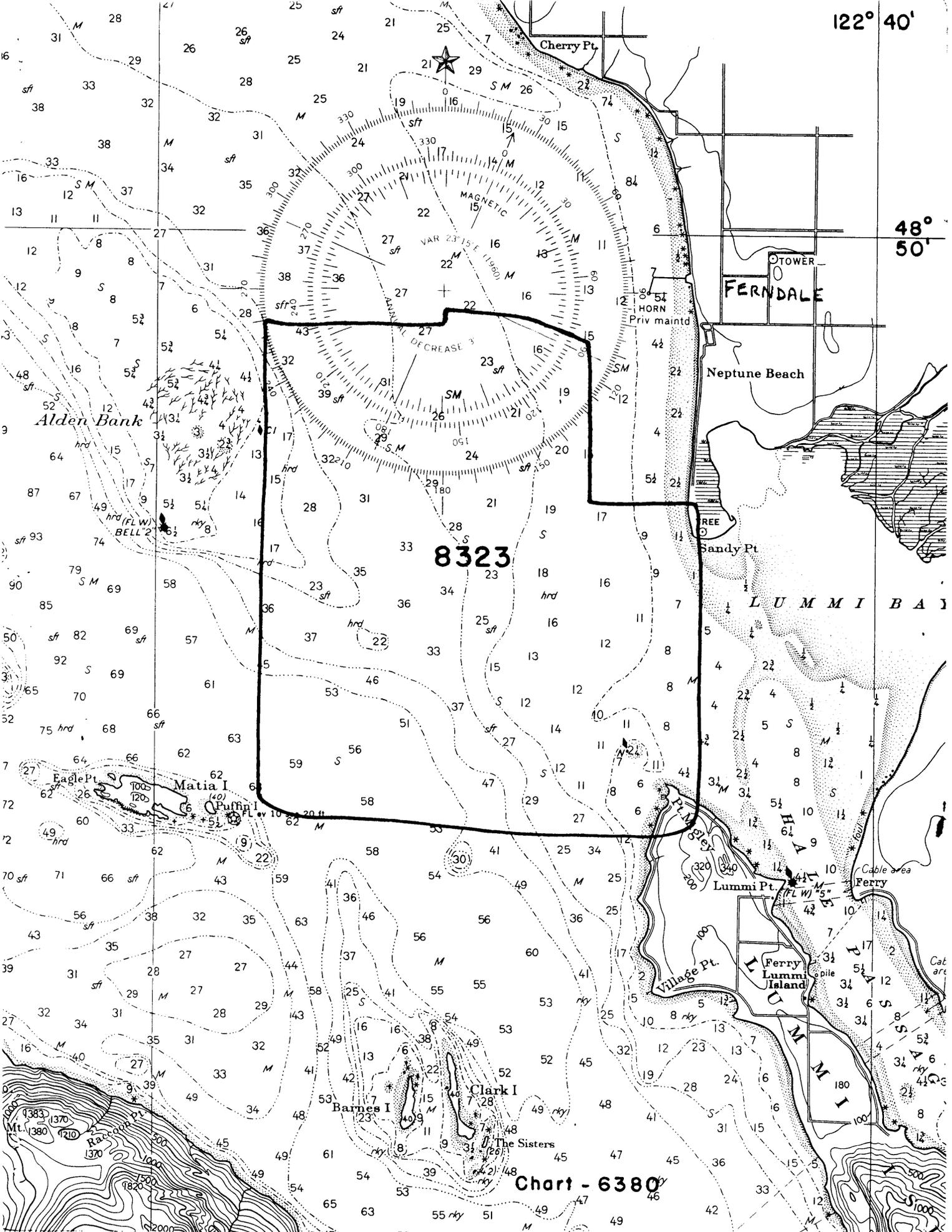
L U M M I B A Y

Lummi Pt Ferry

Ferry Lummi Island

8323

Chart - 6380



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8323

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
12-19-60	6378	M. Rogers	Examined Before After Verification and Review <i>minor corr only</i>
12-19-60	6380	M. Rogers	Examined thru chart 6378 in common area and chartboard remainder Before After Verification and Review
12-19-60	6300	M. Rogers	Minor revisions made. Examined thru chart 6380 Before After Verification and Review <i>Added 2 soundings</i>
4-28-67	6378	M. A. Mall	Before After Verification and Review <i>before inspection</i> Exam Review, no corr
2-21-68	6380	M. A. Mall	Before After Verification and Review <i>before inspection</i> Exam Review, no corr
4/18/69	6378	F. W. Maloney	Before After Verification and Review <i>BUT BEFORE INSPECTION</i>
8/16/69	6380	O. Svendsen	CONSIDERED Fully Applied UNLESS CORR. THRU INSPECTION. Fully applied Before After Verification and Review <i>after inspection</i>
10/17/69	184	R. A. Lillis	Dwg # 35 Fully applied Before After Verification and Review <i>after inspection</i> thru chart 6380 Dwg # 35
8-28-70	6300	J. T. Gallahan	Before After Verification and Review <i>consider fully</i> <i>appld to Dwg 6300 # 33 - thru Ch. 6380</i>
11-14-77	18431	RCS D. C. Larson	Before After Verification and Review <i>fully applied</i> <i>to new chart</i>

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.