

8332

Original

Diag. Cht. No. 6380.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. HO-1255 Office No. H-8332

LOCALITY

State Washington

General locality Washington Coast

Locality Part of Guemes Channel, southern half of Bellingham Channel and central part of Rosario Strait

19~~4~~ 55

CHIEF OF PARTY

A. N. Stewart and Paul Taylor

LIBRARY & ARCHIVES

JUN 1 1958

DATE

B-1870-1 (1)

8332

430 app
427 app
427
423
421
400

*Ver. some edgs on steep
gradients are too widely
spaced and additions
should be made*

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-8332

Field No. HO-1255

State Washington

General locality Washington Coast

Part of Guemes Channel, southern half of Bellingham Channel and
Locality central part of Rosario Strait.

Scale 1/10,000 Date of survey 20 May - 29 Aug. 1955

Instructions dated 7 Jan. 1955

Vessel HODGSON, Launches 176 and 177

Chief of party A. N. Stewart and Paul Taylor

Surveyed by A. N. Stewart, M. J. Tonkel and R. C. Munson

Soundings taken by fathometer, ~~grapho recorder, hand level, etc.~~

Fathograms scaled by Personnel Ship HODGSON

Fathograms checked by Personnel Ship HODGSON

Protracted by C. R. Lehman

Soundings penciled by C. R. Lehman

Soundings in fathoms feet at ~~MLLW~~ MLLW

REMARKS:



K.W.

1/5/55

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8332 (FIELD NO. HO-1255)

A. N. STEWART

SCALE 1:10,000 SHIP HODGSON P. TAYLOR, COMDG.

SURVEYED BY: A. N. STEWART, M. J. TONKEL, R. C. MUNSON

A. PROJECT

This survey was executed as part of Project 1241 under Instructions 22/SRO; S-2-HO, dated 7 January 1955.

B. SURVEY LIMITS AND DATES

This survey covers part of Guemes Channel, west of Long. 122 - 37'W, the southern part of Bellingham Channel and the central portion of Rosario Strait from Lat. 48 - 29'5N, to Lat. 48 - 34'5N.

Field work was begun 20 May 1955 and was completed 29 August 1955.

This survey is joined on the east by Sheet Field No. HO-1155 and on the north by Sheets Field Nos. HO-1455 and HO-1555, of this project.

C. VESSEL AND EQUIPMENT

The survey was executed by the Ship HODGSON and hydrographic launches Nos. 176 and 177.

808 fathometers Nos. 150SPX, 106S, and 62S with reeds calibrated for a velocity of 800 fathoms per second were used for all hydrography.

D. TIDE AND CURRENT STATIONS

A time correction of minus fifteen minutes (-15) and a range correction of minus three tenths (-0.3) of a foot was applied to the Anacortes tide gage, Lat. 48 - 31'3N, Long. 122 - 36'7 W between the dates 20 May 1955 and 9 June 1955, inclusive; thereafter, a portable automatic tide gage was installed and maintained on Strawberry Bay Lat. 48 - 43'85N, Long. 122 - 43'35W and was used without time or range correction.

Two current stations were maintained during this survey and within the limits of this sheet. They were designated Current Station No. 1, located in Rosario Strait at Lat. 48 - 33'6N, Long. 122 - 45'11W; No. 3 located in Thatcher Pass Lat. 48 - 31'68N, Long. 122 - 48.36W.

E. SMOOTH SHEET

All work on smooth sheet will be done by the Seattle Processing Office and will be covered by their report which will be an addenda to this report.

F. CONTROL STATIONS

STATION	DATE	SOURCE	CHIEF OF PARTY
BELLE ROCK LIGHT	1939	USC&GS	R. L. S.
BERRY 2	1939	"	R. L. S.
BLACK 2	1939	"	J. S. L.
BLAKE	1939	"	R. L. S.
CUPOLA ANACORTES FERTILIZER PLANT	1927	"	Intersection
CYPRESS IS. LIGHT	1939	"	C. A. E.
STACK	1953	"	Intersection
FAUNTLEROY PT. LIGHT	1939	"	R. L. S.
FIDALGO N2	1885	"	J. J. G.
HAMMILL	1939	"	B. H. R.
JAM	1939	"	R. L. S.
REEF PT.	1939	"	R. L. S.
SHAN	1940	"	J. C. B.
SPUR	1886	"	J. J. G.
TANK	1953	"	Intersection
WHITE ROCK	1889	"	J. J. G.
STRAW	1939	"	R. L. S.

Supplementary control was photographic or cut in by sextant angles taken on stations previously located *or topographic from topographic sheet H0-A*

A list of all signals and origin is contained in Vol. No. 1, of sounding records.

G. SHORELINE AND TOPOGRAPHY

All shoreline is from manuscripts T-11228, through T-11230, and topographic manuscripts *1953-1889, 1746(A)-1886, and 6804.*
1952-1889, 1748 - 1886

A few discrepancies in the shoreline in the vicinity of Anacortes were noted on the photos and/or manuscripts and were returned to Washington Office for correction.

On account of the steep-to, rocky coast it was impractical to delineate the low water line in all cases.

H. SOUNDINGS

All soundings except a few hand lead soundings on isolated rocks and shoals were made with 808 fathometers No. 150SPX, 62S and 106S.

The fathometer initial was set so that with the bar at two fathoms the fathometer would read two fathoms eliminating any index correction. The fathometers were calibrated for a velocity of 800 fathoms per second.

A temperature-salinity observation was taken on the 16 May 1955 in Rosario Strait at Lat. 48 - 32199N, Long. 122 - 45150W and the results were used for the velocity corrections for this sheet. The corrections applied to the soundings are listed in Table 2 following this report.

Phase comparisons were taken for "A-B" scales during this survey and the results tabulated and meaned to obtain a corrector to apply to B Scale. See Table 3. (not shown)

177 bottom samples were taken throughout the area.

All correctors were entered in the sounding volumes and checked.

I. CONTROL OF HYDROGRAPHY

All hydrography was controlled by visual sextant angles on shore signals.

J. ADEQUACY OF SURVEY

This survey is complete and adequate for charting purposes.

The junctions with adjoining sheets in all other areas are satisfactory and no holidays exist. Depth curves can be adequately drawn at the junctions.

K. CROSSLINES

Approximately 60 miles or about 8% of all sounding lines on this survey are crosslines. All crossings appear to be satisfactory.

L. COMPARISON WITH PRIOR SURVEYS

The following are prior surveys conducted in this area.

SURVEY	SCALE	DATE
H-6607	1/10,000	1940
H-7080	"	1947
H-1953a	"	1914
H-4736	1/5,000	1927
H-1814	1/20,000	1887
H-6645	1/10,000	1939

The soundings of these prior surveys were transferred to the boat sheet and appear to compare satisfactorily.

M. COMPARISON WITH CHART

This survey was compared with Chart 6380, eight edition published, March 1947, reprint 9 August 1954; Chart 6376, first edition published May 1945 reprint 23 January 1954; Chart 6378, eleventh edition published, June 1935, reprint 9 August 1954. The charted soundings and the soundings of this survey compare satisfactorily. This survey should supersede all charted data. Discrepancies noted by chart comparison are:

<u>CHART LOCATION</u>	<u>CHART NO-TATION OR SYMBOL</u>	<u>NEW LOCATION</u>	<u>NEW NOTATION OR SYMBOL</u>	<u>REMARKS</u>
48 - 30170N 122 - 40193W	Buoy (FL W) "2"	48 - 30172N 122 - 40194W	Same	Pos. 78c ✓
48 - 31180N 122 - 47126W	Lawson Rock buoy	48 - 31183N 122 - 47126W	Same	Pos. 153p 169p
48 - 32101N 122 - 43115W	Buoy Cl	48 - 32105N 122 - 43115W	Same	Pos. 78f 47d
48 - 33138N 122 - 45168W	11 fm. shoal	same	7.0 ^o fm. shoal	Pos. 35p 74-75p

N. DANGERS AND SHOALS

No new shoals were found during this survey but particular attention should be given to the numerous rock locations and notes on boat sheets.

O. COAST PILOT INFORMATION

The published Coast Pilot information is complete and adequate.

P. AIDS TO NAVIGATION

Fauntleroy Point Light and Cypress Island Light are the only fixed aids to navigation in this area. They are charted correctly.

There are three floating aids to navigation the location of which vary slightly as compared to the charted positions. See section "M" of this report for the new positions of these aids.

Q. LANDMARKS

There are no landmarks for charts and no new ones suggested.

R. GEOGRAPHIC NAMES

There are no recommended new names or changes.

S. SILTED AREAS

No significant new deposition or alongshore shifting was noted.

Z. TABULATION OF APPLICABLE DATA

Tide Data, Anacortes and Strawberry Bay Tide Gages - forwarded to Washington Office.

Air Photo Data - forwarded to Washington Office

Temperature-Salinity Report

Fathometer Corrections - following this report

Triangulation Data and Report - forwarded to Washington Office.

Landmarks for Charts - forwarded to Washington Office

Current Data - forwarded to Washington Office

Respectfully submitted,

J. P. Randall,
Ens., USC&GS

Approved by:

Paul Taylor
Paul Taylor,
CDR, USC&GS
Comdg., Ship HODGSON

TABLE 1

STATISTICS
FOR

HYDROGRAPHIC SURVEY H _____ (FIELD NO. HO-1255)

VOL.	DAY	DATE	VESSEL	POS.	SDG. LINE	STAT. MI.	H. L.
1	A	5/20/55	HODGSON	87	22.3		
1	B	6/14/55	"	27	—		27
1	C	6/24/55	"	209	48.6		22
1	D	6/27/55	"	121	21.2		27
2	E	6/28/55	"	154	31.0		8
2	F	6/29/55	"	102	17.3		14
TOTAL - - - -				700	140.4		98
3	a	6/7/55	Lch. 176	180	30.8		
3	b	6/8/55	"	166	32.9		
3&4	c	6/9/55	"	158	20.2		20
4	d	6/10/55	"	235	38.1		
4&5	e	6/11/55	"	172	36.9		9
5	f	6/12/55	"	191	31.8		
5	g	8/29/55	"	42	4.7		2
TOTAL - - - -				1144	195.4		31
6	a	5/24/55	Lch. 177	141	24.5		
6	b	5/25/55	"	195	29.2		
6&7	c	6/2/55	"	150	20.5		
7	d	6/3/55	"	69	8.4		23
7	e	6/4/55	"	170	28.4		
7	f	6/5/55	"	136	23.1		
8	g	6/8/55	"	226	35.7		
8	h	6/12/55	"	160	23.6		12
9	j	6/13/55	"	95	10.6		26
9	k	6/14/55	"	195	39.5		
9&10	l	6/22/55	"	243	42.8		
10	m	6/23/55	"	216	40.4		
11	n	6/24/55	"	209	32.2		17
11	p	6/25/55	"	241	36.6		2
12	q	6/27/55	"	73	9.1		4
12	r	6/28/55	"	150	20.4		
12	s	7/12/55	"	82	14.1		
12&13	t	7/17/55	"	170	18.8		14
13	u	7/18/55	"	165	28.8		2
13	v	7/19/55	"	91	13.0		
13&14	w	7/20/55	"	137	17.2		13
14	x	7/27/55	"	47	5.3		2
14	y	8/29/55	"	52	4.7		
TOTAL - - - -				3413	526.9		115

GEOGRAPHIC NAMES

Geographic Names penciled on smooth sheet.

(To be listed by Seattle Processing Office.)

TABLE 2

VELOCITY CORRECTION ABSTRACT

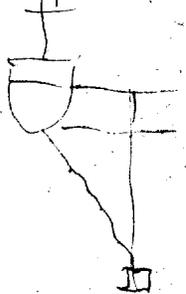
Depth Fm.	Corrn. Fm.
0 - 8.5	0.0
8.5 - 11.0	+ 0.1
11.0 - 37.0	+ 0.2
37.0 - 59.0	+ 0.4
59.0 - (82)	+ 0.6

TABLE 3

BAR CHECK COMPUTATIONS

SHIP HODGSON

See D.R. of H-8318
for diagram



Variations in draft due to fuel and water are too small to effect a change in Corrector - varies between 7.7 - 8.1 feet.
(See Descriptive Report Field No. HO-1555 for Comparison)

Draft 7.7 ft.
Half Beam 12.6 ft.
Oscillator 60.0 ft.

True Depth = 53.8 ft. = 8.9 fm.

+ transducer to oscillator
diagonal measurement
should be 9.0 fm

INITIAL	OSCILLATOR	FATH. READ	FATH RD. INITIAL	
1.0 fm.	10.0 fm.	5.7 fm.	4.7 fm.	
1.0 fm.	10.0 fm.	5.6 fm.	4.6 fm.	
1.0 fm.	10.0 fm.	5.3 fm.	4.3 fm.	
1.0 fm.	10.0 fm.	5.5 fm.	4.5 fm.	
1.0 fm.	10.0 fm.	5.5 fm.	4.5 fm.	
1.0 fm.	10.0 fm.	5.5 fm.	4.5 fm.	
1.0 fm.	10.0 fm.	5.5 fm.	4.5 fm.	
			<u>4.5 fm.</u>	
			4.5 fm.	Mean
			9.0 fm.	2(Corr.Fath.Rd.)
			8.9 fm.	True Depth
			-0.1 fm.	Corr. to Apply

SMOOTH SHEET

The smooth sheet was hand constructed by the Seattle Hydrographic Processing Unit. Standard methods of construction and checking were used for the projection and the transfer of shoreline and control.

SOUNDINGS

On parts of "r" "s" and "t" day, Launch 177, a speed correction had been applied to the fathometer soundings by the field party. When these soundings were used for smooth plotting it was found that the crossings did not agree, so the correction was rejected. No reason for the apparent change of speed could be detected, though it appears to effect the paper speed only.

ADEQUACY OF SURVEY

The junction with H-8331 has been compared and is in agreement. The junctions with other contemporary surveys will be compared when those surveys are smooth plotted. The boat sheet comparisons do not show any disagreement.

COMPARISON WITH PRIOR SURVEYS

A comparison was made with surveys H-1814, H-4736, H-6607 and H-6645. The soundings from the older surveys appear to be in general agreement with the present. A shoal sounding of $4 \frac{3}{4}$ fms shown on H-1814 at Lat. $48^{\circ} 31'.86$, Long. $122^{\circ} 39'.66$ and charted on Chart 6376 as 5 fms plots on H-8332 as 5.1 fms. Survey H-6607 appears to be about one fathom deeper in the vicinity of Lat. $48^{\circ} 31'.0$, Long. $122^{\circ} 43'.5$ which changes the 20 fathom depth curve in that area. The rest of the junction with H-6607 varies up to a fathom deep but is generally satisfactory. H-4736 and H-6645 appear to be in satisfactory agreement.

COMPARISON WITH CHART

This survey has been compared with Chart 6376, 1st Ed. Revised 11/12/56 and corrected to 7 Feb. 1958; Chart 6378 11th Ed. Revised 8/13/56 and corrected to 26 Oct. 1957; Chart 6380 8th Ed. Revised 4/21/58 corrected to 18 May 1958. Discrepancies in addition to those noted by the hydrographer are:

<u>Chart Location</u>	<u>New Location</u>	<u>Symbol</u>	<u>Remarks</u>
$48^{\circ} 31'.91$ N 122 39 .66 W	$48^{\circ} 31'.89$ N 122 39 .66 W	5 fm shoal	charted approx. 80 m too far north
$48^{\circ} 30'.45$ N 122 41 .45 W	$48^{\circ} 30'.45$ N 122 41 .38 W	$4\text{-}3/4$ fm shoal	charted approx. 80 m too far west

The source of both of the above charted soundings appears to have been H-1814, which is in agreement with the smooth sheet. Except for the

difference noted under "Comparison with Prior Surveys" on H-6607 and notes by the hydrographer, corrected in ink to smooth sheet values, the charts and the smooth sheet appear in satisfactory agreement.

DANGER AND SHOALS

A number of rocks referred to in the sounding records, without elevations or accurate locations, are shown on the smooth sheet as rocks awash.

Respectfully submitted,



WILLIAM M. MARTIN
Supervisory Cartographer, C&GS

APPROVED AND FORWARDED:



E. H. KIRSCH
CAPTAIN, C&GS
SEATTLE DISTRICT OFFICER

GEOGRAPHIC NAMES PENCILED ON H-8332

ARMITAGE ISLAND

BELLINGHAM CHANNEL

BLACK ROCK

BLAKELY ISLAND

CYPRESS ISLAND

DECATUR ISLAND

DEEPWATER BAY

FAUNTLEROY POINT

FIDALGO ISLAND

GREEN POINT

GUEMES ISLAND

Guemes ~~Street~~ Channel

JAMES ISLAND

POINTER ISLAND

REEF POINT

ROSARIO STRAIT

SECRET HARBOR

SHANNON POINT

SHIP HARBOR

STRAWBERRY BAY

STRAWBERRY ISLAND

SUNSET BEACH

THATCHER PASS

TIDE NOTE FOR HYDROGRAPHIC SHEET

19 June 1958

Chart Division: R. H. Carstens

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 8332

Locality Rosario Strait, Washington

Chief of Party: A. N. Stewart in 1955

Plane of reference is mean lower low water, reading

7.9ft. on tide staff at Strawberry Bay, Cypress Island

11.2ft. below B.M. 1 (1955)

6.7 ft. on tide staff at Anacortes
14.0 ft. below B.M. 2 (1921)

Height of mean high water above plane of reference is as follows:

Strawberry Bay = 7.3 feet

Anacortes = 7.4 feet

Condition of records satisfactory except as noted below:

Signature

Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. H-8332

Name on Survey	Source of Name									
	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
<u>Washington</u>			(title)						BGN	1
<u>Fidalgo Island</u>										2
<u>Ship Harbor</u>										3
<u>Guemes Channel</u>										4
<u>Shannon Point</u>										5
<u>Sunset Beach</u>										6
<u>Green Point</u>										7
<u>Rosario Strait</u>									BGN	8
<u>James Island</u>										9
<u>Decatur Island</u>										10
<u>Thatcher Pass</u>										11
<u>Fauntleroy Point</u>										12
<u>Armitage Island</u>									BGN	13
<u>Pointer Island</u>									"	14
<u>Blakely Island</u>										15
<u>Black Rock</u>										16
<u>Cypress Island</u>										17
<u>Strawberry Island</u>										18
<u>Strawberry Bay</u>			(tide station)							19
<u>Reef Point</u>										20
<u>Secret Harbor</u>										21
<u>Deepwater Bay</u>										22
<u>Bellingham Channel</u>										23
<u>Guemes Island</u>										24
Tide station off sheet:										25
<u>Anacortes</u>										26
										27

Names approved 6-19-58

L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8332...

Records accompanying survey:

Boat sheets ..2..; sounding vols. .14..; wire drag vols.; bomb vols.; graphic recorder rolls 6. Envelopes special reports, etc. 1-Smooth sheet and 1-Descriptive report.
.....

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

Number of positions on sheet	.....
Number of positions checked	.....	6
Number of positions revised	.....	2
Number of soundings revised (refers to depth only)	.....	9
Number of soundings erroneously spaced	.....	4
Number of signals erroneously plotted or transferred	.....	0
Topographic details	Time	1
Junctions	Time	0
Verification of soundings from graphic record	Time	2
<i>Partial Verif F. SAULSBURY</i>	12	6-24-58
Verification by.....	Total time	Date

Partial Verif.

Reviewed by..... Time Date

Approx 100 intermediate sdgs. were added to improve development.

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H-8332

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken.
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude.
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year.
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering.
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken.
6. All positions verified instrumentally were check marked in the sounding records.
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings.
8. The metal protractor has been checked within the last three months.
9. The protracting and plotting of all bad crossings were verified.
10. All detached positions locating critical soundings, rocks or buoys were verified.
11. The boat sheet was compared with the smooth sheet.

12. The spacing of soundings as recorded in the records was closely followed.
13. The bottom characteristics were shown on outstanding shoals.
14. The reduction and plotting of doubtful soundings were checked.
15. The transfer of contemporary topographic information was carefully examined.
16. All junctions were transferred and overlapping curves made identical.
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.
18. The depth curves have been inspected before inking.
19. All triangulation stations and transfer of topographic and hydrographic signals were checked.
20. Heights of rocks were checked against range of tide.
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve.
22. Unnecessary pencil notes have been removed.
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet.
24. The low water line and delineation of shoal areas have been properly shown.
25. Degree and minutes values and symbols have been checked.
26. Questionable soundings have been checked on the fathograms

27. Source of shoreline and signals (when not given in report).
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual.
29. All aids located, with those on contemporary topographic sheets, have been shown on survey.
30. Depth curves were satisfactory except as follows:
31. Sounding line crossings were satisfactory except as follows:
32. Junctions with contemporary surveys were satisfactory except as follows:
33. Condition of sounding records was satisfactory except as follows: *Appx. 0.2 fm Sidel corr. to attain agreement 87-88C (6-2-55) L#177*
34. The protracting was satisfactory except as follows:
*Pos. revised - 349 (Vol. 5) off & replotted
1C - Replotted using CUP for st. 4*
35. The field plotting of soundings was satisfactory except as follows:
36. Notes to reviewer:

Verified by

Date

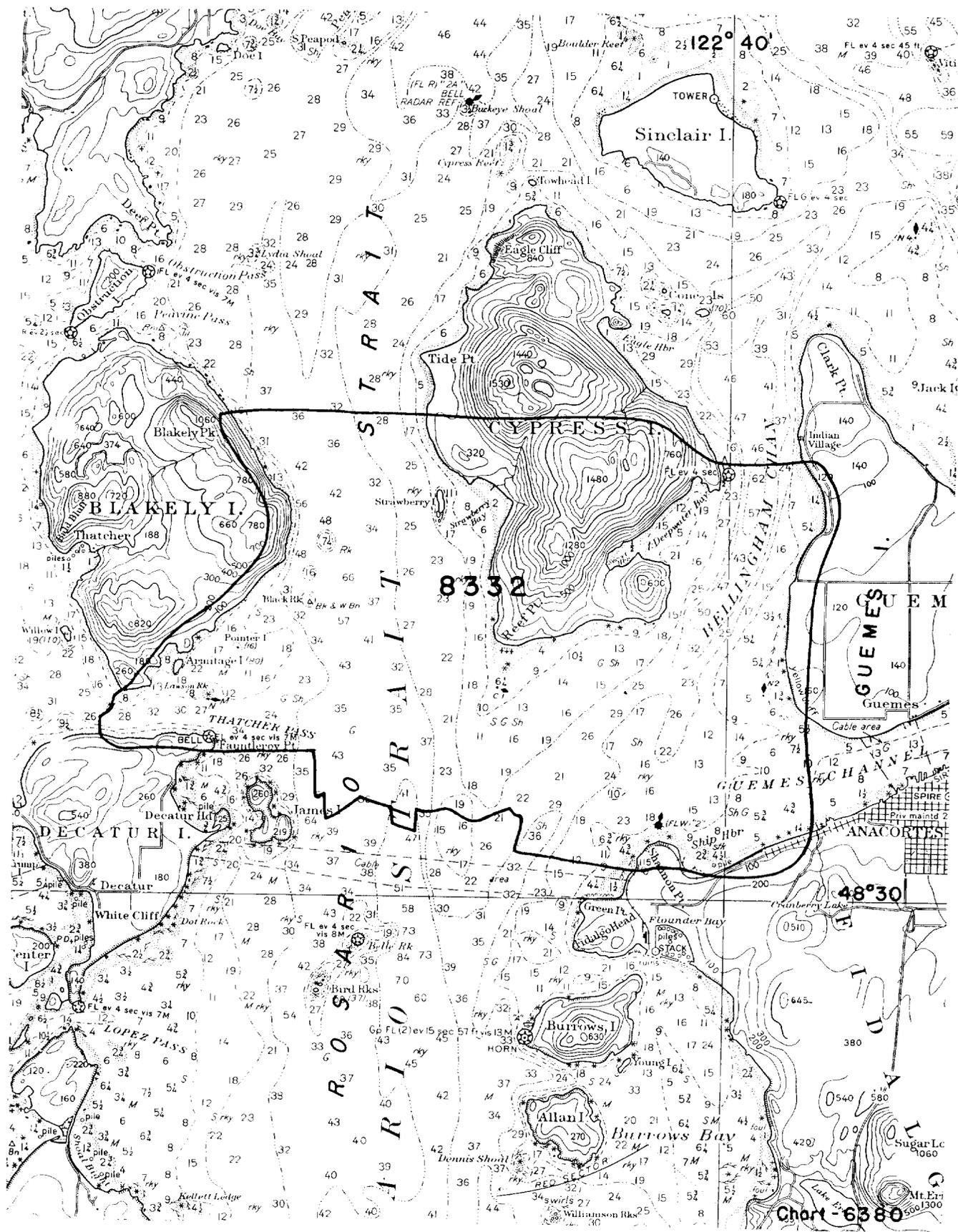


Chart - 6380

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8332

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8/1/58	6380	John M. McAinden	Before After Verification and Review <i>gmo</i> Critical Corrections only
8-14-58	6376	R. K. DeLander	Before After Verification and Review. <i>Ent. corr.</i>
8-17-58	6300	R. K. DeLander	<i>only.</i> Before After Verification and Review. <i>no corr.</i>
2-25-59	6376	R. E. Elkins	Before After Verification and Review <i>Partly app in area of WD H-8431</i>
26 Aug 59	6378	<i>Wicks</i>	Before After Verification and Review <i>Partial only</i>
20 FEB 62	6376	F. BROVOLD	Before After Verification and Review <i>Partial only</i>
2/5/80	18424	<i>Coritto RM</i>	Before After Verification and Review <i>Fully applied</i>
4/9/80	18430	<i>B. W. Hamilton</i>	Before After Verification and Review <i>Fully applied</i>
6/10/80	18421	<i>Coritto</i> 6-16-80 RAS	Before After Verification and Review <i>Fully applied</i>
6/10/80	18423	<i>Coritto</i> 6-16-80 RAS	Before After Verification and Review <i>Fully applied</i>
6/13/80	18400	<i>Coritto</i> 6-16-8-RAS	After Verification + Review <i>Fully applied</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.