

8542

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-10-4-60 Office No. H-8542

LOCALITY

State Washington

General locality Whidbey Island

Locality Crescent Harbor & Saratoga Passage

19 60-62

CHIEF OF PARTY

N. E. Taylor

LIBRARY & ARCHIVES

DATE April 24, 1962

8542

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-8542

Field No. LJ-10-4-60

State WASHINGTON

General locality WHIDBEY ISLAND

Locality CRESCENT HARBOR AND SARATOGA PASSAGE

Scale 1:10,000 Date of survey 2 Aug. to 22 Sept. 1960 & 13 Sept. 1962

Instructions dated 22 April 1960

Vessel LESTER JONES Launch No. 88

Chief of party N. E. Taylor

Surveyed by David Cummings

Soundings taken by fathometer, graphic recorder, ~~hand/lead/tide~~

Fathograms scaled by Ship personnel

Fathograms checked by " "

Protracted by M. H. Fleming

Soundings penciled by V. E. Flor

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

REMARKS:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*JL*

DESCRIPTIVE REPORT TO ACCOMPANY  
HYDROGRAPHIC SURVEY H-8542  
Field No. LJ-10-4-60  
Crescent Harbor, Wash.

Scale - 1:10,000

1960

USC&GSS LESTER JONES

Chief of Party N. E. Taylor

A. PROJECT

This survey is part of project OPR-412, instructions dated 22 April 1960. ✓

B. AREA SURVEYED

This survey covers part of Crescent Harbor and Saratoga Passage to the northwest end of Camano Island, Washington, approximately Lat. 48°14' to 48°18', Long. 122°32' to 122°37'. Dates of starting and ending of survey 2 August 1960 and 22 September 1960, respectively. ✓

This survey makes junctions with H-1885 (1888) scale 1/20,000, H-64714 (1939) scale 1/10,000, H-7045 (1945) scale 1/20,000, H-7809 (1951) scale 1/10,000, and contemporary surveys H-8543 and H-8544. (1960) ✓

C. SOUNDING VESSEL

All hydrography was accomplished by Launch #88, operating from USC&GS Ship LESTER JONES, except for 5 positions on "j" day, when a skiff was used to verify rocks at low water. ✓

D. SOUNDING EQUIPMENT

The soundings were obtained by 808 type fathometer #107s. ✓

E. SMOOTH SHEET

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

F. CONTROL

Hydrography for this survey was controlled by horizontal sextant angles taken on triangulation, photo topo and hydrographic signals. The photo located signals are from preliminary manuscripts T-11596, (1960) T-11597 and T-11605, all from the Portland Photo Office. (1960) (1960) ✓

G. SHORELINE

The <sup>best sheet</sup> shoreline is from Preliminary Manuscripts T-11595, T-11596, (1960) T-11597, T-11603 and T-11605 compiled in the Portland Photo Office. (1960) (1960) (1960)

There does not appear to be any shoreline discrepancies between the manuscripts and the hydrography. The transfer of the shoreline has been checked.

#### H. CROSSLINES

Approximately 7.5 percent of the soundinglines are crosslines. The soundings at crossings are in good agreement.

#### I. JUNCTIONS

The junctions with H-~~7015~~<sup>(1945)</sup> and H-7809 appear to be in reasonable agreement. No copy of H-6475 is available for comparison. Junctions with H-~~1885~~<sup>(1951)</sup> and H-8544<sup>(1960)</sup> have been compared and found satisfactory. The junction with H-8543 will be compared when that sheet is completed.  
(1960)

#### J. COMPARISON WITH PRIOR

This survey has been compared with H-1885 (1888) and found satisfactory except for the 12 foot sounding at Lat.  $48^{\circ}16'.82''$ , Long  $122^{\circ}33'.94''$ , which was charted. Sounding lines on the present survey are about 100 meters apart in this area and the 12 foot sounding could have been missed. H-8542 shows 2.2 fms. about 30 meters west.  
(1960) *Present depths adequate*

#### K. COMPARISON WITH CHART

This survey has been compared with Chart 6450, 12th Ed., Nov. 6/61 and, except for one sounding that could not be verified, the agreement is good. The  $3\frac{3}{4}$  fm. charted sounding at Lat.  $48^{\circ}17'.47''$ , Long.  $122^{\circ}36'.44''$ . This sounding falls close to 5.3 fms. on the smooth sheet. See section of this chart attached to this report for comparison.

\* See Review Paragraph ~~3C~~ 3C.  $3\frac{3}{4}$  disproved.

A comparison with Chart 6401, 2nd Ed., Revised 3/27/61, was also made and, except for two soundings which could not be verified, the agreement is satisfactory. The soundings on this chart are in feet. The 23 foot sounding at Lat.  $48^{\circ}17'.47''$ , Long.  $122^{\circ}36'.44''$  corresponds to the  $3\frac{3}{4}$  fm. sounding mentioned above on Chart 6450. The 12 foot sounding at Lat.  $48^{\circ}16'.82''$ , Long  $122^{\circ}33'.94''$  apparently comes from H-1885 (1888). H-8542 shows 2.2 fms. about 30 meters west at the charted 12 foot sounding. See Chart 6401 enclosed with smooth sheet for comparison of depth curves. \* See paragraph 7(1) for comments in Review

#### L. ADEQUACY OF SURVEY

This survey is complete and adequate to supersede prior surveys for charting. The zero curve has been delineated. No bottom samples were obtained on this survey.— Bottom characteristics transferred in Brown to smooth sheet from H-1885 (1888)

#### M. AIDS TO NAVIGATION

There are three fixed aids to navigation in the area of this survey, Forbes Point Light, Crescent Harbor Light and Point Polnell Light,

the positions of which agree with the charts and the 1962 Light List for the Pacific Coast. There are also three floating aids, Forbes Point Buoy Red Nun No. 2, Crescent Harbor Lighted Bell Buoy No. 3, and Point Polnell Lighted Buoy No. 5, and numerous seadrome buoys which are not located by this survey.

#### N. STATISTICS

All hydrography on this survey was accomplished by Launch #88, working from the Ship LESTER JONES, with the exception of 5 positions on "j" day which were taken from a skiff at low water.

There are 1315 positions and 204.8 nautical miles of sounding lines covering an area of 11.4 sq. nautical miles.


#### O. MISCELLANEOUS

This report was written in the Processing Office from the smooth sheet. There were no notes for this survey or for several others transmitted from the Ship to the Processing Office.

Respectfully submitted,

  
William M. Martin  
Supervisory Cartographer

Approved and forwarded

  
M. E. Wennermark  
Captain, G&GS  
Seattle District Officer

TIDE NOTE TO ACCOMPANY  
HYDROGRAPHIC SURVEY  
H-8542

A portable automatic tide gage was maintained at Coupeville, Whidbey Island, Wash., Lat.  $48^{\circ}13'.37$ , Long.  $122^{\circ}41'.21$  for reduction of soundings. No staff reading is available, in the Processing Office, for MLLW. The reducers appear to have been applied without corrections for time or height.

PHASE CORRECTION - PROJECT OPR-412  
Launch #88

		<u>A scale</u>	<u>B scale</u>
H-8542	Fathometer #107-s	0	-2.0 fms.
Vol. 4, pg. 15			

A note in the Fathometer Report for this project says there are no scale changes on this survey. This is not right. There is one sounding on "d" day and five soundings on "f" day on the B scale. ✓

SIGNALS USED ON H-8542

ABE	T-11596
BAR	VOL. 1, (1962), pg. 3
BIR	BIRD, 1944
BLO	BLOWERS BLUFF KLOOTCHMAN ROCK, 1951
BOX	VOL. 1, pg. 1
CRE	CRESCENT HARBOR LIGHT, 1960
CUE	VOL. 1, pg. 1
DOG	Unable to find position for this station on either H-8542 or H-8543. Transferred from B.S.
DUF	T-11596
EVA	T-11596
FIG	VOL. 1, pg. 1
FOR	FORBES POINT LIGHT, 1960
GAS	VOL. 1, pg. 1
HAG	VOL. 1, pg. 1
HIS	T-11605
KEY	T-11605
MOO	Source not known. Transferred from Boat Sheet.
NAS	WHIDBEY ISLAND NAS ROTATING AERO BEACON, 1960
NAV	RNG NAVY WHIDBEY RADIO NUW, 1954
NEL	NELL, 1939
OAK	OAK HARBOR WATER TANK, 1944
PIE	T-11605
POL	POLNELL (USE), 1924
RAW	STRAWBERRY POINT LIGHT, 1960 (T-116)
ROT	T-11597
TOM	T-11605



VELOCITY CORRECTION ABSTRACT

1960 Field Season

PROJECT CS-241 (Applicable to H-8518, H-8519, H-8520)

<u>DEPTH (Fathoms)</u>	<u>CORRECTION (Fathoms)</u>
0 - 7	+ 0.0
7.1 - 15	+ 0.1
15.1 - 24	+ 0.2
24.1 - 32	+ 0.3
32.1 - 40	+ 0.4
40.1 - 49	+ 0.5
49.1 - 57	+ 0.6
57.1 - 66	+ 0.7
66.1 - 74	+ 0.8
74.1 - 83	+ 0.9
83.1 - 92	+ 1.0
92.1 - 100	+ 1.1
100.1 - 109	+ 1.2
109.1 - 118	+ 1.3
118.1 - 126	+ 1.4
126.1 - 135	+ 1.5
135.1 - 144	+ 1.6
144.1 - 150	+ 1.7

*Not Applicable*

PROJECT CS-412 (Applicable to H-8542, H-8543, H-8544, LJ-10-7-60)

<u>DEPTH (Fathoms)</u>	<u>CORRECTION (Fathoms)</u>
0.0 - 4.0	+ 0.0
4.1 - 12	+ 0.1
12.1 - 19	+ 0.2
19.1 - 26	+ 0.3
26.1 - 40	+ 0.4
40.1 - 53	+ 0.6
53.1 - 68	+ 0.8
68.1 - 81	+ 1.0

REFERENCE:

Data and Computations included in Special Fathometer Report for 1960 Field Season.

GEOGRAPHIC NAMES

Survey No. H-8542

Name on Survey	Sources										1	
	A	B	C	D	E	F	G	H	K	BFN		
Blowers Bluff ✓	6404											1
Camano Island ✓	6450											2
Crescent Harbor ✓	6404											3
East Rock	"											4
Forbes Point ✓	"											5
Maylor Point ✓	"									X		6
Oak Harbor ✓	"											7
Point Polnell ✓	"											8
Rocky Point ✓	6450									X		9
Saratoga Passage ✓	"											10
Strawberry Point ✓	"											11
Whidbey Island ✓	"											12
												13
												14
												15
												16
												17
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												25
												26
												27

*George M. Bae*  
 Geographic Names Section  
 10 May 1962

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8542....

Records accompanying survey: Smooth sheets 1...;  
*Revised* 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		<u>1315</u>
Number of positions checked		<u>140</u>
Number of positions revised		<u>11</u>
Number of soundings revised (refers to depth only)		<u>78</u>
Number of soundings erroneously spaced		<u>8</u>
Number of signals erroneously plotted or transferred		<u>0</u>
Topographic details	Time	<u>28 hrs</u>
Junctions	Time	<u>72 hrs</u>
Verification of soundings from graphic record	Time	<u>10 hrs</u>
Special adjustments	Time	<u>0</u>

Verification by R. A. Lillis Total time 305 Date 5-19-70

Reviewed by H. M. Schantz Time 9.6 hrs Date 9-8-71

Inspected by D. R. Engle 29 6-1-73  
Castano 4

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8542

FIELD NO. LJ-10-4-60

Washington, Whidbey Island, Crescent Harbor and Saratoga Passage

SURVEYED: August 2 through September 22, 1960, and September 13, 1962

SCALE: 1:10,000

PROJECT NO.: OPR-412

SOUNDINGS: 808 Fathometer

CONTROL: Sextant fixes on shore signals

Chief of Party .....	N. E. Taylor
Surveyed by .....	D. Cummings
Protracted by .....	M. H. Fleming
Soundings plotted by .....	V. F. Flor
Verified and inked by .....	R. A. Lillis
Reviewed by .....	H. M. Schantz
.....	Date: September 8, 1971
Inspected by .....	D. R. Engle

1. Description of the Area

This survey is located between Whidbey Island and Camano Island, Washington. It covers most of Crescent Harbor and the northern entrance to Saratoga Passage.

The mud bottom slopes sharply from the northwestern shoreline of Camano Island to maximum depths of more than 50 fathoms to form a deep channel in Saratoga Passage, then rises gradually to the shoreline in Crescent Harbor. A shoal extends from Pt. Polnell northwesterly into Crescent Harbor for about a mile, and southerly into Saratoga Passage for about a quarter mile.

2. Control and Shoreline

The control is adequately described in the Descriptive Report.

The shoreline originates with reviewed photogrammetric manuscripts T-11595, T-11596, T-11597, T-11603, and T-11605 of 1960. Differences were noted between rock elevations as determined by photogrammetry and by the hydrographer. Those by the hydrographer were accepted and are shown on the present survey.

### 3. Hydrography

- A. Depths at crossings are in good agreement.
- B. The usual depth curves are adequately delineated. The development of bottom configuration and determination of least depths are considered adequate.
- C. Additional development of an area centered at lat.  $48^{\circ}17'30''N.$ , long.  $122^{\circ}36'30''W.$  to disprove a charted  $3\frac{3}{4}$  fm. sounding was accomplished in 1962. The overlay for this additional work is included in the descriptive report.

### 4. Condition of the Survey

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

- A. No bottom samples were taken during the survey.
- B. The floating aids within the area of the survey were not located.

### 5. Junctions

Adequate junctions were effected with H-8544 (1960) on the south, H-6474 (1939) on the east and H-8543 (1960) on the southwest. The junction with H-7809 (1951) on the west will be discussed in the review of that survey.

### 6. Comparison with Prior Surveys

- A. H-1885 (1888) 1:20,000

The area of the present survey is completely covered by this prior survey. A comparison of the prior and present depths shows the bottom to be stable. During the 72 years from the prior survey to the present survey, no appreciable change has taken place. Bottom characteristics were transferred to the present survey from this prior survey.

Rocks charted off Polnell Point in approximate lat.  $48^{\circ}16'27''$ , long.  $122^{\circ}33'39''$  are from generalized information on H-1885. The rocks awash and legend "scattered boulders awash MLLW" on the present survey adequately convey the same information except

for one offshore rock awash in lat.  $48^{\circ}16'25''$ , long.  $122^{\circ}33'40''$ . This rock is not considered disproved and has been carried forward to the present survey.

With the addition of the above information the present survey is adequate to supersede the prior survey within the common area.

B. H-7045 (1945) 1:20,000

This prior survey covers the present survey area from approximate lat.  $48^{\circ}14'00''$  to lat.  $48^{\circ}15'00''$  and from long.  $122^{\circ}33'00''$  to long.  $122^{\circ}35'30''$ . A comparison of the prior and present depths shows no significant changes.

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

7. Comparison with Chart 6404 (latest print date September 30, 1968)  
Chart 6450 (latest print date February 6, 1971)

A. Hydrography

The charted hydrography originates with surveys by the U.S. Navy and the prior and junctional surveys discussed above, supplemented by partial application of the boatsheet and smooth sheet of the present survey prior to verification and review.

Attention is directed to the erroneous 12-ft. sounding charted in lat.  $48^{\circ}16'49''$ , long.  $122^{\circ}33'56''$  from H-1885 (1888) which should have been corrected by plus 1 foot to reduce it to Mean Lower Low Water, in accordance with instructions from Tide Division as noted on H-1885. This sounding, corrected to 13 ft., is in agreement with the present soundings.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

No floating aids to navigation were located on the present survey. However, all aids as presently charted adequately mark the features intended.


8. Compliance with Project 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 recommended.

Examined and Approved:

  
\_\_\_\_\_  
Chief  
Marine Chart Division

  
\_\_\_\_\_  
for Associate Director  
Office of Marine Surveys and Maps

H-8542

Information for Future Pre-Survey Reviews

The bottom in this area is very stable.

Resurvey Cycle Information

Position Index - lat.481, long. 1224

Bottom Index Change - 2

Use Index - 2

Resurvey Cycle - 50 yrs.



RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

January 15 1963

Nautical Chart Division: R. H. Carstens

Plane of reference approved in  
1 volumes of sounding records for

HYDROGRAPHIC SHEET 8542 (Additional Work)

Locality Whidbey Island, Washington

Chief of Party F. X. Popper (1962)

Plane of reference is mean lower low water

ft. on tide staff at

ft. below B. M.

Height of mean high water above plane of reference at  
working ground is: 10.6 feet.

Condition of records satisfactory except as noted below:

  
Chief, Tides and Currents Branch

RH C ✓

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

May 15, 1962

Division of Charts: R. H. Carstens

Plane of reference approved in  
6 volumes of sounding records for

HYDROGRAPHIC SHEET 8542

Locality Crescent Harbor and Saratoga Passage, Washington

Chief of Party: N. E. Taylor (1960)  
Plane of reference is mean lower low water reading  
1.6 ft. on tide staff at Coupeville, Washington  
14.4 ft. below B. M. 1 (1935)

Height of mean high water above plane of reference is: 10.6 feet.

Condition of records satisfactory except as noted below:

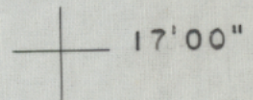
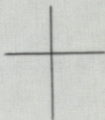
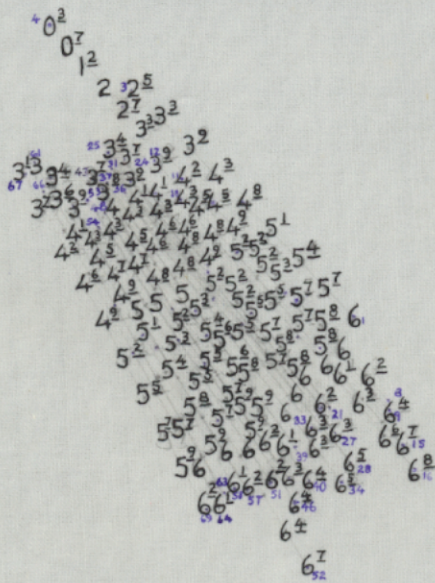
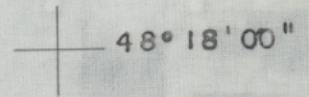
J. M. Symons  
Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents~~

122° 37' 00"

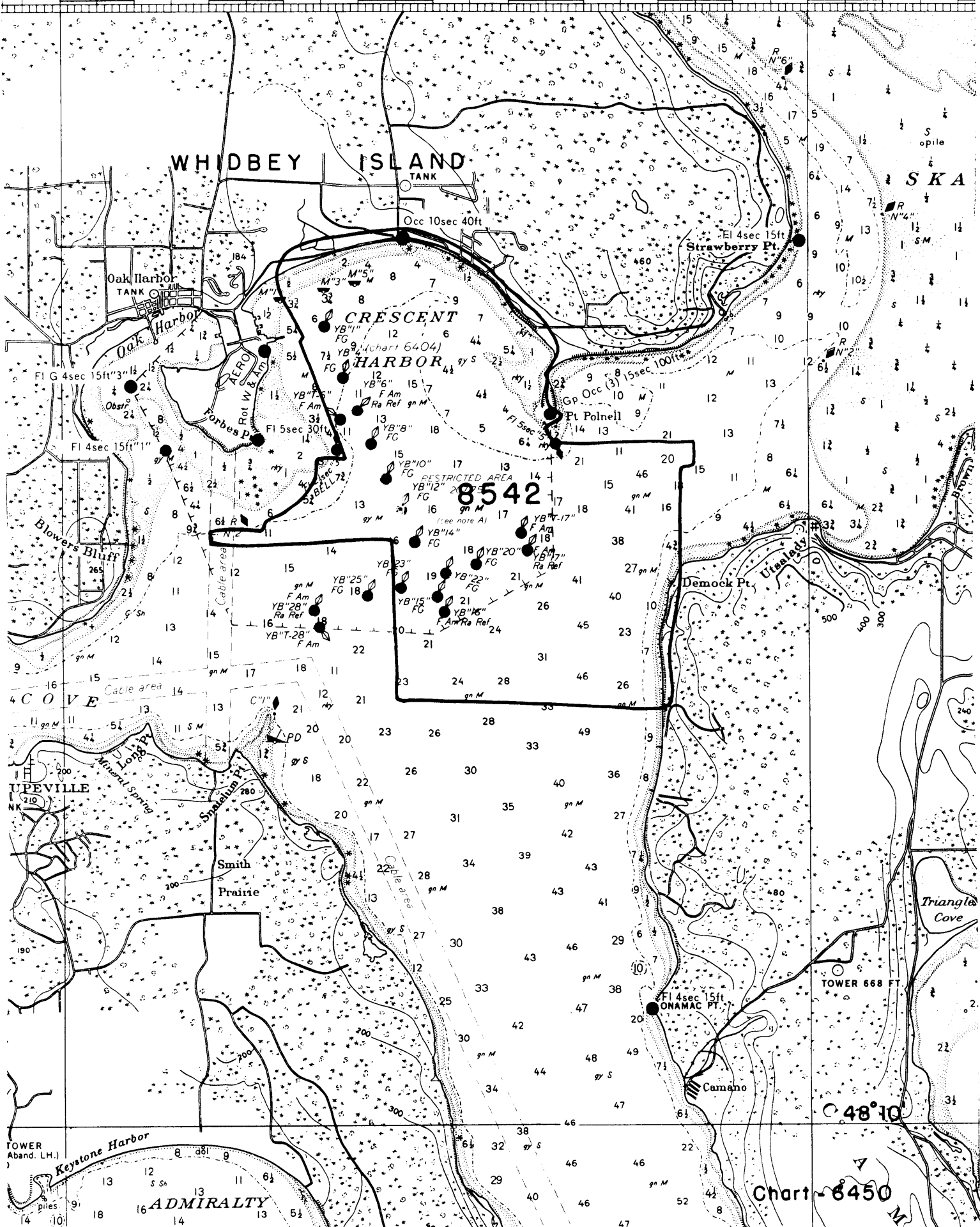


36' 00"



ADDITIONAL WORK (1962)

# WHIDBEY ISLAND



RESTRICTED AREA  
8542  
(see note A)

S K A

TOWER 668 FT.

Chart 6450

TOWER Aband. L.H.)

ADMIRALTY

48° 10'

# NAUTICAL CHARTS BRANCH

SURVEY NO. H-8542

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
6-25-62	6450	C. R. W.	<del>Exam</del> Before <del>After</del> Verification and Review No Corr
10/8/64	6404	T. A. Kennedy	Before After Verification and Review
8/4/73	6404	R. Davis	<del>Exam</del> Fully Applied After Verification and Review + inspection
8/8/77	6450	J. STUART	Fully App Before After Verification and Review + inspection
1-10-74	134	N. Chandler	Through chart 6404 Fully Applied Before After Verification and Review + inspection
			Before After Verification and Review
			Before After Verification and Review
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			Before After Verification and Review

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.