

8138

Diag. Cht. No. 6002-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic Survey

Field No. WC FP 151-54 Office No. H-8138

LOCALITY

State Washington

General locality Willapa Bay

Locality Outside Coast

1945

CHIEF OF PARTY

C. A. George

LIBRARY & ARCHIVES

DATE July 5, 1956

8138

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-8138

Field No. WCFP-151-54

State WASHINGTON  
General locality WILLAPA BAY  
Locality OUTSIDE COAST  
Scale 1:15,000 Date of survey 30 July to 1 Oct. 1954  
Instructions dated 9 March 1954  
Vessel West Coast Field Party  
Chief of party C. A. George  
Surveyed by G.E. Haraden, K.A. MacDonald and R.M. Sylar  
Soundings taken by ~~hydrographer~~, graphic recorder, ~~hydrographer~~  
Fathograms scaled by Field Party  
Fathograms checked by Field Party  
Protracted by C.E. Pedersen  
Soundings penciled by C.E. Pedersen  
Soundings in ~~feet~~ feet at ~~MLLW~~ MLLW and are true depths  
REMARKS:

*gms*

NOTES FOR DESCRIPTIVE REPORT TO ACCOMPANY HYDROGRAPHIC SURVEY

REGISTRY NO. H-8138 (1954) FIELD NO. WCFP-151-54

OUTSIDE COAST, WILLAPA BAY, WASHINGTON

PROJECT CS-372

SCALE 1:15,000

WEST COAST FIELD PARTY

C. A. GEORGE, CHIEF OF PARTY

SURVEYED BY: G. E. HARADEN, K. A. MACDONALD, AND R. M. SYLAR

A. PROJECT

The work was done in accordance with instructions 22/MEK, FP-West Coast, dated 9 March 1954, addressed to CDR. C. A. George, OinC., West Coast Field Party.

B. SURVEY LIMITS AND DATES

The area covered by this survey includes the entrance to Leadbetter Channel as far east as Longitude  $124^{\circ} 03.5'$ , the area between Latitude  $46^{\circ} 36'$  and Latitude  $46^{\circ} 38'$ , on the outside coast from the beach out to the ten-fathom curve, plus a small area in the vicinity of Latitude  $46^{\circ} 42.2'$ , Longitude  $124^{\circ} 06'$

Field work began 30 July 1954 and ended 1 October 1954.

A junction was made with contemporary survey H-8137 (1954), scale *Review, P#* 1:10,000, on the east.

C. VESSEL AND EQUIPMENT

USC&GS Launch no. 122, based at Bay Center, Washington, was used for the entire survey. The turning radius of the launch at sounding speed was approximately 12 meters.

Fathometer no. 152 SPX of the 808 J type was used throughout.

D. TIDE AND CURRENT STATIONS

A standard tide gage was maintained at Toke Point, Washington. All tide reducers were computed from data obtained from this station. No time or range corrections were applied to the tidal data in reducing soundings.

E. SMOOTH SHEET

The smooth sheet will be plotted by the Seattle Processing Office. ✓

F. CONTROL STATIONS

The source of control was as follows:

1. Previous triangulation:

- (a) WILLAPA BAY (2nd Order) 1952 and 1953-G-10474 Pages 1 to 3,
- (b) OLYMPIC PENINSULA (1st Order) 1953-G-10362 Pages 1, 4, & 9.
- (c) STRAIT OF SAN JUAN DE FUCA, 1939 Pages 654 and 655.
- (d) COLUMBIA RIVER TO WILLAPA BAY 1939-G-5788 Pages 749 to 776. ✓

2. Description of Recoverable Topographic Stations from Surveys T-9634, T-9635, T-9637, and T-9638.

3. Triangulation locations of temporary hydrographic stations in 1954. See 1954 G. P. List.

4. Photo-hydro signals located by field party on manuscripts T-9634 S, T-9634 N, ~~T-9635 S~~, ~~T-9635 N~~, T-9637 N, and ~~T-9638~~.

G. SHORELINE AND TOPOGRAPHY

Shoreline for the boat sheet was sketched in with reference to shoreline manuscripts T-9637 N, T-9634 N, and T-9634 S. (1950-53) Review, P1

Because of breakers it was impossible to delineate the low water line. ✓

H. SOUNDINGS

Soundings were taken with an 808 J type fathometer calibrated at 800 fms/sec. (*corrected to true depths by bar check corrections*) ✓

Large swells were encountered the greater part of the time during the survey and these combined with large sand ridges in the approaches to and entrance of Leadbetter Channel made interpretation of the fathograms difficult. ✓

When running in the large swells the fathometer record nearly always faded as the day progressed. All the usual measures failed to remedy this situation. ✓

## I. CONTROL OF HYDROGRAPHY

Hydrography was controlled by sextant fixes throughout. Some difficulty was experienced obtaining control on the offshore Portion of the sheet due to the combined effects of poor visibility and poor quality of the fixes. ✓

## J. ADEQUACY OF SURVEY

The survey is considered complete, and adequate to supersede prior surveys for charting. At the junction with contemporary Survey H-8137 (1954), there appears to be a difference which cannot be resolved. | *Review, #4*  
 Soundings between 6"b" and 7"b" of this survey plot between shoaler soundings on two lines of Survey H-8137. The positions and fathograms have been verified. Heavy seas prevented further field work in the area. It is recommended that the shoaler soundings between 57 - 58"na" and 72 - 73"na" on Survey H-8137 be retained. The junction with U. S. Engineers Survey, file no. E-4-7-23, of July 1954, scale 1:24,000 at the entrance to Leadbetter Channel is satisfactory. \ Bp. 51783

No holidays exist and standard depth curves can be drawn for the entire area.

## K. CROSSLINES

Approximately 12% crosslines were run. Some crossings in the offshore areas disagree by as much as \*2 feet. This can probably be attributed to rough weather conditions and poor fathometer performance.  
*\* differences resolved on smooth sheet*

## L. COMPARISON WITH PRIOR SURVEYS

Prior surveys in this area were made approximately 30 years ago, *Review, #5* and a detailed comparison is considered impractical.

Soundings from the U. S. Engineers survey of 1953 were transferred to the boat sheet, however, before Survey H-8138 was completed, the Engineers made a new condition survey in July 1954. Where junctions occur, the agreement between the Engineers Survey, file no. E-4-7-23, July 1954, scale 1:24,000 and H-8138 is satisfactory.  
 Bp. 51783

The instructions for the 1954 field work did not include any work on the outside coast except in the vicinity of Leadbetter Channel. However, a sounding line was run enroute to investigate the wreck at Latitude  $46^{\circ} 42.3'$  and Longitude  $124^{\circ} 06.0'$ . This line disclosed differences as much as 25 feet with the Engineers 1953 survey, but agreed reasonably well with the survey made by the Engineers in July 1954. ✓

M. COMPARISON WITH CHART *Review, #6*

In comparison with Chart 6185, printed 3 March 1954, considerable change is noted in the vicinity of Willapa Bay, Entrance Lighted Buoy 12 (Approx. Latitude  $46^{\circ} 42.8'$  and Longitude  $124^{\circ} 04.3'$  to  $124^{\circ} 05.2'$ ) as mentioned in the preceding paragraph.

The breaker line at the west side of the entrance to Leadbetter Channel (Latitude  $46^{\circ} 37.5'$  and Longitude  $124^{\circ} 05.2'$ ) has extended approximately  $1/4$  mile to the southeast.

The wreck charted at Latitude  $46^{\circ} 42.3'$  Longitude  $124^{\circ} 06.0$  was investigated by running a series of closely spaced sounding lines over the area, but no indication of the wreck was found. (*Wreck symbol deleted from chart per H.O.N. to M. #31 (1956), Deletion concurred in*)

N. DANGERS AND SHOALS

No additional shoals or dangers were found other than those mentioned in Paragraph M, above.

O. COAST PILOT INFORMATION

Coast Pilot information was furnished The Director by letter of 13 December 1954.

P. AIDS TO NAVIGATION

No fixed aids to navigation were located. Floating aids are as follows:

Buoy	Date Located	Pos. No.	Depth	Lat.	Long.
LEADBETTER CHANNEL					
Buoy 1	18 August 1954	63" g"	33	$46^{\circ} 37.18'$	$124^{\circ} 05.90'$
WILLAPA BAY					
Entrance Lighted Whistle Buoy 8	7 Sept. 1954	44" k"	37	$46^{\circ} 42.40'$	$124^{\circ} 06.35'$
* Entrance Lighted Bell Buoy 12	7 Sept. 1954	49" k"	? (50)	$46^{\circ} 42.85'$	$124^{\circ} 04.95'$ <sup>8</sup>

\* Location is approximate only. Buoy was located by estimated distance from a poorly controlled line run enroute from investigation of charted wreck.

Q. LANDMARKS FOR CHARTS

There are no recommended landmarks within the limit of this survey. ✓  
*(see Chart Letter 121, 1954)*

U. VELOCITY CORRECTIONS

Velocity corrections were determined from barchecks taken during the hydrographic operations. Copies of the abstract of velocity and phase corrections to be applied to the soundings on this survey is included in this report. ✓

Z. TABULATION OF APPLICABLE DATA

Applicable Date	Forwarded To	Date
<u>TIDAL DATA</u>		
Level Records, Toke Point and Bay Center	The Director	3 August 1954
Level Records, Palix River	The Director	28 Sept. 1954
Tide Marigrams, Bay Center and Palix River	The Director	28 Sept. 1954 ✓
Tide Rolls, Toke Point	The Director	8 Oct. 1954
Hourly Heights, Tide Curves and Reducers	Seattle Processing Office	Jan. 1955
<u>PHOTOGRAMMETRIC DATA</u>		
Field Photographs	Baltimore Photo Office	8 Oct. 1954 27 Oct. 1954
Office Photographs	Portland Photo Office	3 Nov. 1954
Manuscripts T-9634S, T-9634 N, T-9635 S, T-9635 N, T-9637 N, and T-9638	Seattle Processing Office	3 Nov. 1954 ✓
<u>HYDROGRAPHIC DATA</u>		
Boat Sheets, Fathograms, Velocity Corrections Report, Control Data	Seattle Processing Office	Jan. 1955

TIDE NOTE TO ACCOMPANY DESCRIPTIVE REPORT  
OF SURVEY H-8138 (1954) WCFP-15-154

The standard tide gage located at Toke Point at Latitude  $46^{\circ} 42.47'$  and Longitude  $123^{\circ} 57.93'$  was used for obtaining all tide reducers for Survey H-8138.

Mean lower low water on the tide staff corresponds to a reading of 3.7 feet. No corrections to the observed readings were applied for differences in time or height.

Reference: The Director's letter, 36-rjb, dated 11 August 1954.



Submitted,

*Kenneth A. MacDonald*  
Kenneth A. MacDonald  
Ensign, USC&GS

Approved and Forwarded

*C. A. George*  
C. A. George  
CDR., USC&GS  
CinC, West Coast Field Party

## STATISTICS FOR HYDROGRAPHIC SURVEY

Field No. 15-154 (1954)

SHEET NO. H-8138

West Coast Field Party CS-372

Vol No.	Day Letter	Date	HL Sdgs.	No. Pos	Stat. Miles	Sdg.
1	a	30 July		65	17.9	Launch
2	b	4 Aug.		83	21.2	
2 & 3	c	5 Aug.		88	21.7	
4	d	9 Aug.		103	25.9	
5	e	10 Aug.		131	27.1	
6	f	11 Aug.		122	22.0	
7	g	18 Aug.		106	18.3	
8	h	20 Aug.		104	23.5	
9	j	3 Sept.		97	20.9	
10	k	7 Sept.		51	9.4	
10	l	27 Sept.		3	0.4	
10	m	29 Sept.	13	77	11.4	
11	n	1 Oct.		56	8.3	
TOTAL			13	1,086	228.0	

Total area 10.5 square statute miles

2138

**ABSTRACT OF VELOCITY CORRECTIONS  
FOR HYDROGRAPHIC SURVEY  
PROJECT CS-372  
Willapa Bay, Washington**

Corrections	Dates	To Be Applied Sheet	Day Letter	
<b>(PERIOD 1)</b>				
<b>A Scale</b>				
0.0 to 44.0	0.0	14 July thru 10 Aug.	WOPP 1354	
44.5 to 52.0	+0.2	and	H-8137	
52.5 to 55.0	+0.4	2 Sept. thru 19 Oct.	"a" thru "g" "ga" thru "db"	
<b>B Scale (&amp; C Scale)</b>				
35.0 to 47.0	+0.2	FATHOMETER SPX 152 FUNCTIONING NORMALLY. see Field Report CS-372 for 1954	WOPP 15154	
47.5 to 52.5	+0.4		H-8138	
53.0 to 56.0	+0.6		"a" thru "e"	
56.5 to 58.5	+0.8		"j" thru "n"	
59.0 to 61.5	+1.0			
62.0 to 64.0	+1.2		WOPP 1254	
64.5 to 67.5	+1.4	H-8136	"b" thru "p"	
68.0 to 72.5	+1.6	13 October	WOPP 1454	
72.0 to 75.5	+1.8		H-8136	"a" day only
76.0 to 110.0	+2.0			
<b>(PERIOD 2)</b>				
<b>A Scale</b>				
0.0 to 55.0	0.0	11 Aug. thru 18 Aug.	WOPP 1354	
<b>B Scale (&amp; C Scale)</b>				
35.0 to 38.0	+1.4	Fathometer SPX 152 used with amplifier from fathometer SPX 154 see Field Report CS-372 for 1954	WOPP 15154	
38.5 to 42.0	+1.6		H-8138	
42.5 to 47.5	+1.8		"f" thru "g"	
48.0 to 56.5	+2.0			
57.0 to 72.5	+2.2			
72.0 to 110.0	+2.4			
<b>(PERIOD 3)</b>				
<b>A Scale</b>				
0.0 to 30.0	0.0	19 Aug. thru 2 Sept.	WOPP 1354	
30.5 to 38.0	+0.2		H-8137	
38.5 to 42.5	+0.4	New tubes in amplifier of fathometer SPX 152. Compass bar check this day	WOPP 15154	
43.0 to 46.5	+0.6		H-8138	
47.0 to 50.0	+0.8		with all other barchecks of H-8138	
50.5 to 55.0	+1.0		WOPP 1254	
55.5 to 58.0	+1.2		H-8136	
<b>B Scale (&amp; C Scale)</b>				
35.0 to 42.0	+1.2			
42.5 to 54.5	+1.4			
55.0 to 63.0	+1.6			
63.5 to 70.0	+1.8			
70.5 to 79.0	+2.0			
79.5 to 89.0	+2.2			
89.5 to 105.0	+2.4			

## ABSTRACT OF PHASE CORRECTIONS

Field No. WUPP 15154 (1954)

Sheet No. E-8138

West Coast Field Party CS-372

From Pos. No.	To Pos. No. (inclusive)	Phase Corr.
22 h+5	29 h+5	- 1.0
36 j+7	54 j	+ 1.0
70 j+9	92 j+2	+ 1.0
1 k	2 k+3	+ 1.0
4 k	4 k+4	+ 1.0
48 k+7	51 k	+ 1.0

## LIST OF STATIONS ON H-8136 (1954)

Field No. WUPP-15-154

Name Used In Hydro Survey	Origin Of Station
BANK	T-9637 *
BLO	Manuscript T-9637 H
DRY	G. P. List, WUPP, 1954
FORE	T-9637 *
FLAG	Willapa Bay O. G. Station Flagstaff, 1939
INT	G. P. List, WUPP, 1954
JIM	JIM (USE), 1939
LEAD	LEAD 4, 1939
LOG	G. P. List, WUPP, 1954
ROY	Willapa Bay Light, 1939
STAK	T-9637 *
SAN	Manuscript T-9634 H
STING	STING (USE), 1952 *
WIN	Manuscript T-9637 H
Bum	Vol 2 H-8136 Hydro. Station of whitewashed driftwood, see vol. 2, p. 62, H-8136

\* Positions From "Description of Recoverable Topographic Station" (Form 524) ↑

APPROVAL SHEET

SURVEY H-8138 (FIELD NO. WCFP-15154)

The survey is considered complete and adequate. No additional field work is recommended.

The boat sheet was examined daily as the field work progressed.

The field records and boat sheet are to be forwarded to the Seattle Processing Office for smooth plotting in accordance with the Director's letter, 22/MEK, dated 11 October 1954.

All corrections to the soundings have been entered and checked. The soundings have been reduced, but not checked. (*checked in Processing Office*)

*C. A. George*

C. A. George  
CDR., USC&GS  
OinC, West Coast  
Field Party

PROCESSING OFFICE NOTES  
H-8138 WCFP 151-54

E. SMOOTH SHEET

The Smooth Sheet, hand constructed, using standard methods was made in the Seattle Processing Office.

F. CONTROL

Hydrographic station Bum was needed for the plotting. This signal was scaled and transferred from sheet H-8136. A three point fix from volume 2, sheet H-8136, checked this location using the signals on H-8138.

G. SHORELINE AND TOPOGRAPHY

The shoreline was transferred by machine projector from the 1:10,000 scale prints of the Topographic Manuscripts T-9637 N, T-9634 N, and T-9634 S. (1950-53)

K. CROSSLINES

The poor crossings caused by wave action were rescanned, during the penciling of the soundings and improved on. Some crossings of a foot remain. Examples of these are: 31 to 37g, and 91 to 92j in relation to 24-25a, 48-49h and 31-32h. (resolved by further rescanning during verification)

Considering the wave action and the difficulty described by the field party, it is felt that the crosslines are in reasonable agreement.

N. DANGERS AND SHOALS

The breakers and the dashed-line of the breaker area were transferred from the boat sheet to the smooth sheet. "Breakers" penciled at the end of line 104h, at  $46^{\circ} 38.60'$ ,  $124^{\circ} 04.50'$  is from the record book and had not been noted on the boat sheet. *These breakers probably result from currents and not from shoals. Note from pos 104h not inked*

P. AIDS TO NAVIGATION

A sounding of 50 feet is given in the report for the floating aid; Lighted Bell Buoy 12. The location of this buoy is only by estimated distance from the sounding line and is so indicated in the report. No sounding is recorded for this location. (falls in 40-55 ft)

Respectfully submitted,

*William M. Martin*

William M. Martin  
Cartographer-in-charge, SPO

Approved and Forwarded:

*Frank G. Johnson*  
Frank G. Johnson, Captain, C&GS  
Seattle District Officer

GEOGRAPHIC NAMES ON H-8138

PACIFIC OCEAN

WASHINGTON

WILLAPA BAY

LEADBETTER PT.

CAPE SHOALWATER

NORTH COVE



GEOGRAPHIC NAMES

Survey No. H-8138

Name on Survey											
	A	B	C	D	E	F	G	H	K		
<u>Washington</u>											1
<u>Willapa Bay</u>											2
<u>Pacific Ocean</u>											3
<u>Leadbetter Point</u>											4
<u>Leadbetter Channel</u>											5
<u>Cape Shoalwater</u>											6
<u>North Cove</u>											7
											8
											9
											10
											11
											12
<u>Toke Point</u>											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved  
7-19-56.

(tide station, off sheet)

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8138.....

Records accompanying survey:

Boat sheets ..1.; sounding vols. ...11; wire drag vols. ....;  
bomb vols. ....; graphic recorder rolls .6-Envelopes  
special reports, etc. .1-Smooth sheet and 1-Descriptive report.....  
1-Velocity Correction Report filed in Cahier with H-8335.....

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

Number of positions on sheet	1086
Number of positions checked	13
Number of positions revised	0
Number of soundings revised (refers to depth only)	13
Number of soundings erroneously spaced	0
Number of signals erroneously plotted or transferred	0
Topographic details	Time 2 hrs.
Junctions	Time 2 hrs.
Verification of soundings from graphic record	Time 9 hrs.

Verification by *Stephen Rose* Total time 116 hrs. Date *Apr. 11, 1957*

Reviewed by *J.A. Winsmore* Time 32 Date *10 June 1957*

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys:~~

29 August 1956

Division of Charts: R. H. Carstens

Plane of reference approved in  
11 volumes of sounding records for

HYDROGRAPHIC SHEET 8138

Locality Willapa Bay, Washington

Chief of Party: C. A. George in 1954  
Plane of reference is mean lower low water, reading  
3.7 ft. on tide staff at Toke Point  
13.8 ft. below B. M. 4 (1922)

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

Condition of records satisfactory except as noted below:



Chief, ~~Division of~~ Tides ~~and Currents~~ Branch

DIVISION OF CHARTS  
REVIEW SECTION - NAUTICAL CHART BRANCH  
REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8138

FIELD NO. WCFP-151-54

Washington, Willapa Bay, Outside Coast

Project No. CS-372

Surveyed - July - Oct., 1954

Scale 1:15,000

Soundings:

Control:

808 Depth Recorder

Sextant fixes on  
shore signals

Chief of Party - C. A. George  
Surveyed by - G. E. Haraden, K. A. MacDonald and R. M. Sylar  
Protracted by - C. E. Pedersen  
Soundings plotted by - C. E. Pedersen  
Verified and inked by - S. Rose  
Reviewed by - T. A. Dinsmore 10 June 1957  
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates with the unreviewed manuscripts of air-photographic surveys T-9634 N, T-9634 S, and T-9637 N of 1950-53.

The origin of the signals is given in the Descriptive Report.

2. Sounding Line Crossings

Depths at crossings are in good agreement.

3. Depth Curves and Bottom Configuration

Because of breakers it was impossible to delineate the low-water curve and in some instances the 6-ft. depth curve. Except where breakers occurred, the usual depth curves were adequately delineated.

The bottom is generally uneven. The unsurveyed shoals flanking the channel off Leadbetter Point are the most conspicuous and hazardous features in the area.

4. Junctions with Contemporary Surveys

The junction with H-8137 (1954) on the east will be considered in the review of that survey. No other adjoining contemporary surveys are registered in this office at the present time.

5. Comparison with Prior Surveys

H-335 (1852) 1:20,000	H-4215 (1922) 1:20,000
H-1379 (1877) 1:40,000	H-4363 (1924) 1:20,000
H-1799 (1887) 1:20,000	H-4557 (1926) 1:20,000
H-2046 (1890) 1:20,000	H-4620 (1926) 1:20,000
H-2104 (1891) 1:20,000	<u>H-4658 (1927) 1:15,000</u>
<u>H-3297 (1911) 1:20,000</u>	

These prior surveys covered the area of the present survey during the periods indicated. The later surveys generally provide the most complete prior coverage. A comparison of the prior and present surveys reveals that radical bottom changes have taken place in the area immediately west and northwest of Leadbetter Point. The channel and adjacent sand bars have shifted freely throughout the years. Where present channel depths of 29 ft. now occur in lat.  $46^{\circ}39.6'$ , long.  $124^{\circ}04'$ , a large sand bar previously uncovered at M.L.L.W. In lat.  $46^{\circ}38.5'$ , long.  $124^{\circ}05.5'$ , prior depths of 36 ft. are now superseded by a large shoal within the present area of breaking seas. These examples are representative of the major bottom changes that have taken place in the inshore areas. In the offshore depths (36 - 70 ft.), little change in bottom is noted. The entrances to Willapa Bay are regarded as highly changeable.

The present survey supersedes the prior surveys within the common area.

6. Comparison with Chart 6185 (Latest print date 6/4/56)A. Hydrography

Charted hydrography originates principally with the prior surveys together with numerous surveys by the Corps of Engineers the latest of which is blueprint 52955 (1955). The present survey has been partially applied to the chart through blueprint 51987 (copy of the boat sheet). In the offshore area charted depths differ with present survey depths by 1 - 4 ft. in some instances.

The present survey supersedes all charted information except that originating with Corps of Engineers surveys made subsequent to the present survey.

B. Aids to Navigation

The buoys located on the present survey should be disregarded. The charted buoys are from subsequent information (Corps of Engineer surveys of 1955) and adequately mark the features intended.

7. Condition of Survey

- a. The sounding records are complete; the Descriptive Report covers all matters of importance.
- b. The smooth plotting was accurately done.
- c. The small area of hydrography south of Cape Shoalwater was developed by closely spaced sounding lines in investigating a sunken wreck previously charted in lat.  $46^{\circ}42.3'$ , long.  $124^{\circ}06'$ . The wreck was a fishing boat originally reported in H. O. Notice to Mariners 26 (1948). As a result of the present investigation, the wreck is considered to be now nonexistent and has been deleted from the chart (H. O. N. to M. 31, 1956).


8. Compliance with Project Instructions

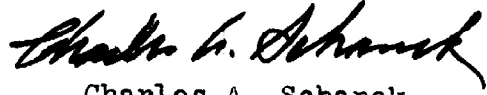
The survey adequately complies with the Project Instructions.


9. Additional Field Work

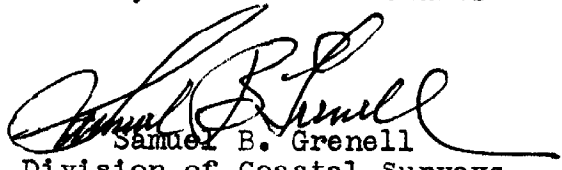
This survey adequately serves charting requirements and no additional field work is recommended. The Corps of Engineers make periodic surveys of the entrances to Willapa Bay.

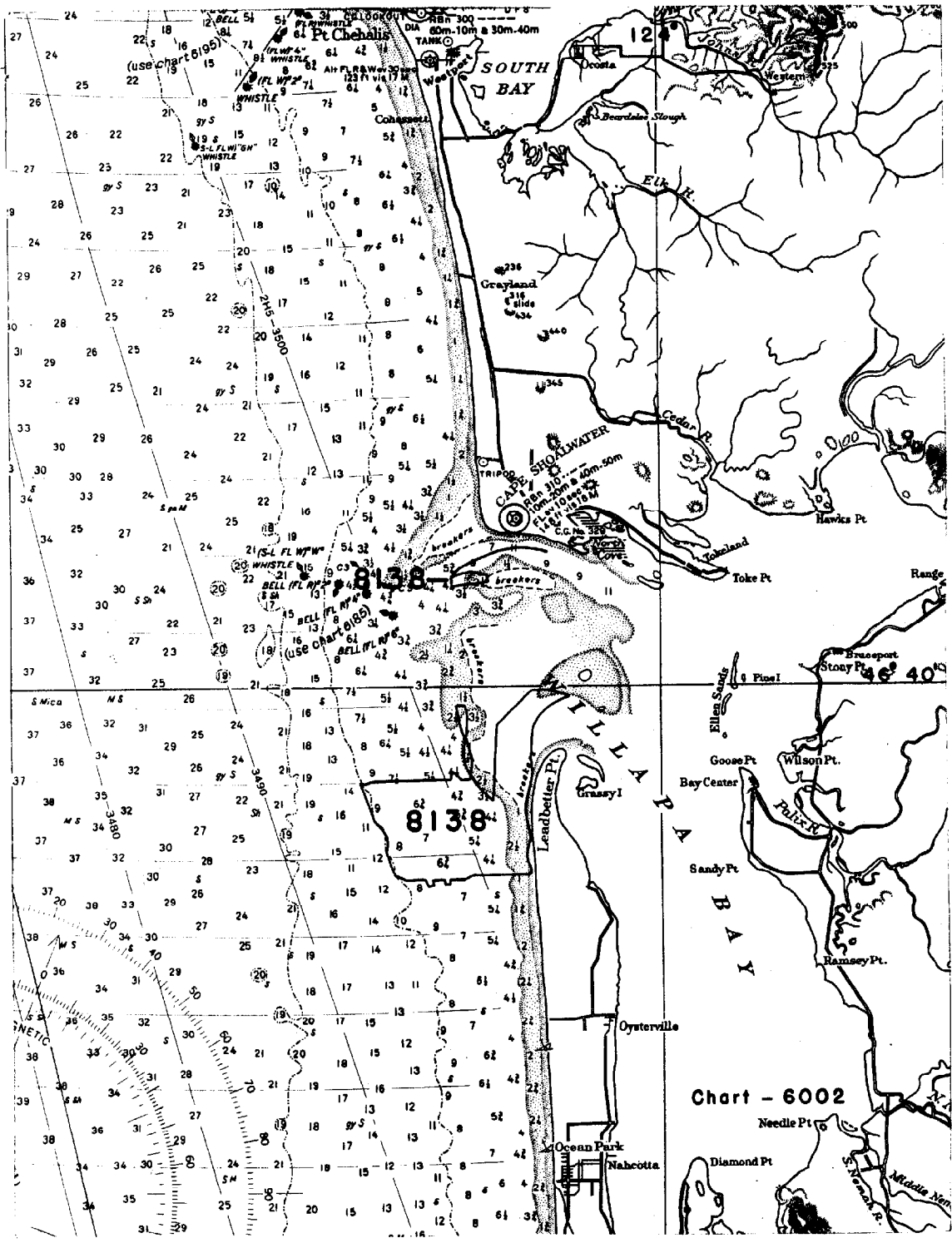
Examined and Approved:

  
Max G. Ricketts  
Chief, Nautical Chart Branch

  
Charles A. Schanck  
Chief, Division of Charts

  
Karl B. Jeffers  
Chief, Hydrography Branch

  
Samuel B. Grenell  
Chief, Division of Coastal Surveys



# NAUTICAL CHARTS BRANCH

SURVEY NO.     H-8138    

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
9-9-57	6185	R.H. Macomber	Exam <del>Before</del> After Verification and Review <i>Part. appl. 3/1/6</i> <i>Only critical corrections made at this time</i>
9-23-58	6002	T.A. Dinsmore	<del>Before</del> After Verification and Review <i>Fully applied</i> <i>Examined - no corrections</i>
6/14/61	6185	J. H. Eaton	<i>Comp App'd.</i> <del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review
			<del>Before</del> After Verification and Review

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.