

9634,  
9634N, 9634S  
COMBINED

Diag. Cht. No. 6002-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic

Field No. Ph-62 Office No. T-9634

LOCALITY

State Washington

General locality Willapa Bay

Locality North Cove

1945-56

CHIEF OF PARTY

F. Natella, Chief of Field Party

E. H. Kirsch, Balto. Photo. Office

LIBRARY & ARCHIVES

DATE June 5, 1958

B-1870-1 (1)

18504 - app ✓

9634,  
9634N, 9634S  
COMBINED

# DATA RECORD

T-9634

Project No. (II): **Ph-62(49)**

Quadrangle Name (IV):

Field Office (II): **Raymond, Washington**

Chief of Party: **Fred Natella**

Photogrammetric Office (III): **Baltimore, Md.**

Officer-in-Charge: **E. H. Kirsch**

Instructions dated (II) (III):  
**20 March 1951**  
**3 August 1951**  
**15 February 1952**  
**13 May 1952**

Copy filed in Division of  
 Photogrammetry (IV)

Method of Compilation (III): **Multiplex**

Manuscript Scale (III): **1:17,000**

Stereoscopic Plotting Instrument Scale (III): **1:17,000**

Scale Factor (III): **1.000**

Date received in Washington Office (IV):

**JUN 15 1955**

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV): **13 Feb 1957**

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): **NA 1927**

Vertical Datum (II):

Mean sea level except as follows:  
 Elevations shown as (25) refer to mean high water  
 Elevations shown as (5) refer to sounding datum  
 i.e., mean low water or mean lower low water

Reference Station (III): **LARKIN, 1939**

Lat.: **46° 44' 21.527"**

Long.: **124° 02' 49.208"**

Adjusted  
~~Unadjusted~~

Plane Coordinates (IV):

State:

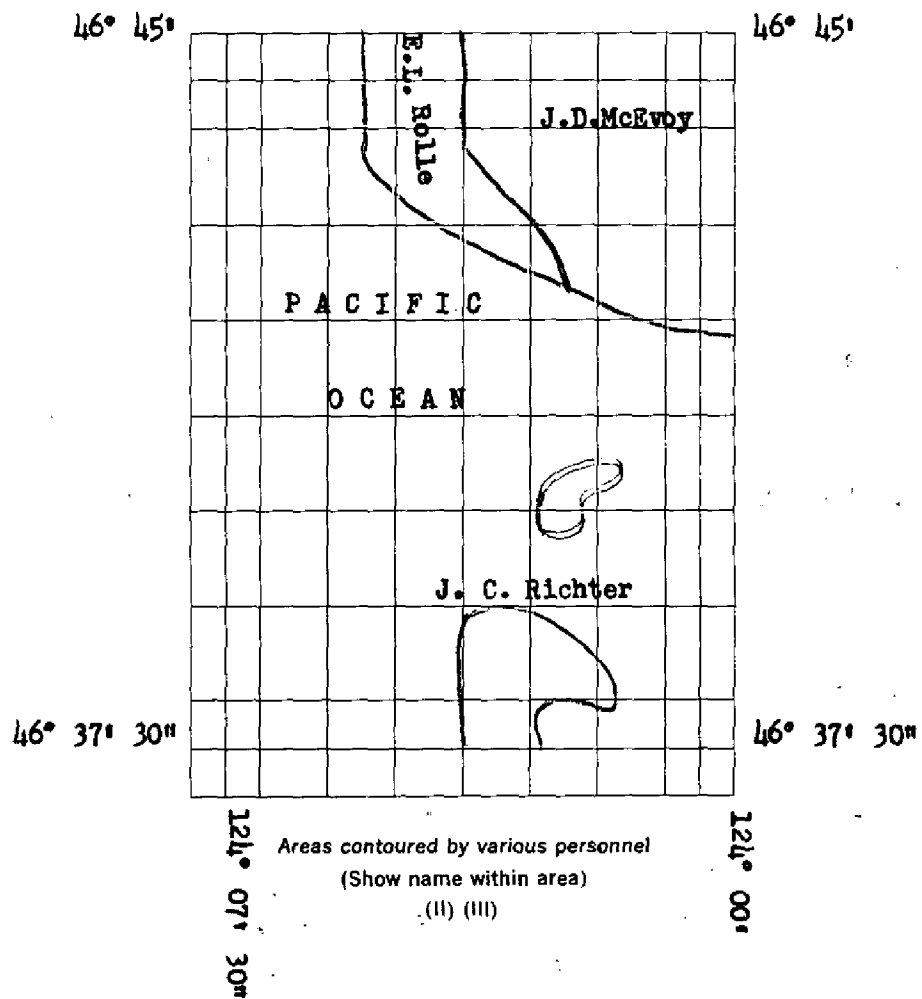
Zone:

Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office, or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.





# DATA RECORD

Field Inspection by (II): **Charles H. Bishop**  
**Ray H. Skelton II**

Date: **June-July 1953**  
**August 1953**

Planetable contouring by (II):

Date:

Completion Surveys by (II):

**CHARLES H BISHOP**

Date: **Nov 1956**

Mean High Water Location (III) (State date and method of location):

**Small Sand Island at Lat. 46° 40' from planetable - June 22, 1953**

**From Cape Shoalwater S.E. to North Cove - furnished by**  
**Field Party on Photo. 7183 (1:10,000) - March 24, 1954.**

**North Beach Peninsular from Photo. 1613 (1:10,000) by planetable June 30, 1953.**

**Graveyard Spit & Empire Spit from Hydro Survey - Oct. 1954**

Projection and Grids ruled by (IV): **Jack Allen**

Date: **March 2, 1953**

Projection and Grids checked by (IV): **H. D. Wolfe**

Date: **March 3, 1953**

Control plotted by (III): **A. K. Heywood**

Date: **Oct. 7, 1953**

Control checked by (III): **E. H. Taylor**

Date: **Oct. 8, 1953**

Radial Plot or Stereoscopic **D. M. Brant**

Date: **Nov. 12, 1953**

Control extension by (III):

Stereoscopic Instrument compilation (III): 

|   |            |   |                     |
|---|------------|---|---------------------|
| { | Planimetry | } | <b>E. L. Rolle</b>  |
|   | Contours   |   | <b>J. D. McEvoy</b> |

Date: **Nov. 8, 1954**

Date: **Nov. 22, 1954**

Manuscript delineated by (III): **C. A. Lipscomb**

Date: **Jan. 6, 1955**

Photogrammetric Office Review by (III): **A. K. Heywood**

Date: **Jan. 24, 1955**

Elevations on Manuscript **A. K. Heywood**  
checked by (II) (III):

Date: **Jan. 24, 1955**



Camera (kind or source) (III): USC&GS camera Type "0", 6" focal length

| PHOTOGRAPHS (III) |         |              |          |                |
|-------------------|---------|--------------|----------|----------------|
| Number            | Date    | Time         | Scale    | Stage of Tide  |
| 7183 - 7184       | 6/16/51 | 14:06 P.S.T. | 1:40,000 | 3.3' above MHW |
| 7203 - 7204       | "       | 14:38 "      | 1:40,000 | 3.7' " "       |
| 1613              | 7/11/50 | 13:54 "      | 1:24,000 | 2.4' " "       |

Tide (III)  
(From predicted tables)

Reference Station: Aberdeen, Wash.  
Subordinate Station: Willapa Bay Entrance  
Subordinate Station:

| Di-urnal        |            |              |
|-----------------|------------|--------------|
| Ratio of Ranges | Mean Range | Spring Range |
| 0.8             | 6.2        | 8.1          |
|                 |            |              |

Washington Office Review by (IV):

A.K. Heywood

Date:

JAN 1958

Final Drafting by (IV):

Date:

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 11

Shoreline (More than 200 meters to opposite shore) (III): 12

Shoreline (Less than 200 meters to opposite shore) (III):

Control Leveling - Miles (II): 2.8

Number of Triangulation Stations searched for (II): 2

Recovered: 2

Identified: 1

Number of BMs searched for (II): 0

Recovered: 0

Identified: 0

Number of Recoverable Photo Stations established (III): 2

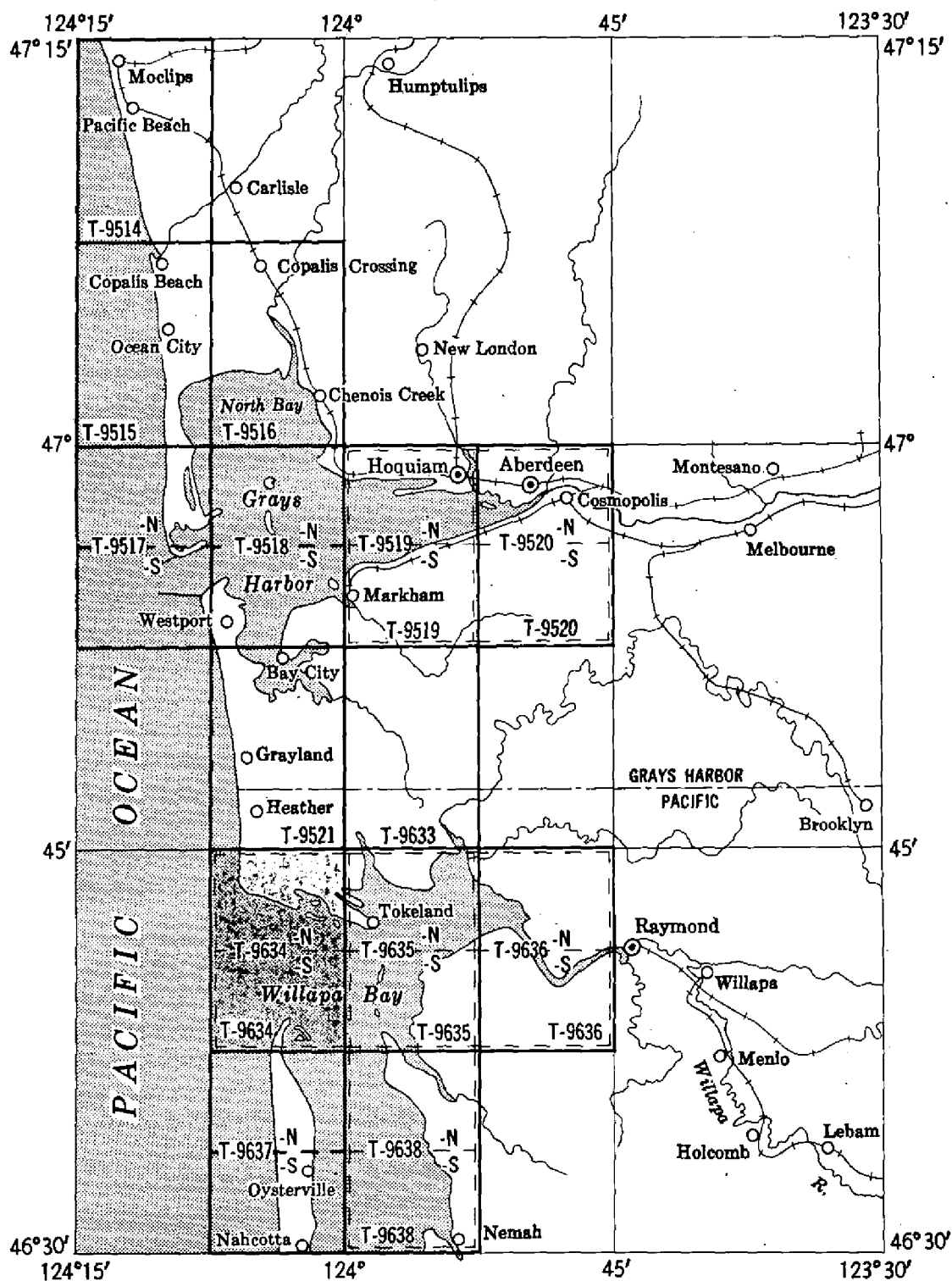
Number of Temporary Photo Hydro Stations established (III):

Remarks:

# TOPOGRAPHIC AND SHORELINE MAPPING PROJECT PH-62 (49)

## WASHINGTON, Grays Harbor - Willapa Bay

Compilation scales 1:10,000 and 1:20,000



TOPOGRAPHIC MAPS: T-9514, T-9515, T-9516 T-9519, T-9520, T-9521, T-9633 to T-9636 and T-9638, (scale 1:20,000),  
T-9517-N, T-9517-S, T-9518-N, T-9518-S, T-9637-N, T-9637-S, (scale 1:10,000),

SHORELINE SURVEYS: T-9519-N, T-9519-S, T-9520-N, T-9634-N, T-9634-S,  
T-9635-N, T-9635-S, T-9636-N, T-9636-S, T-9638-N, T-9638-S, scale 1:10,000,

SUMMARY  
TO ACCOMPANY DESCRIPTIVE REPORT T-9634

Topographic map T-9634 is one of 14 similar maps in Project PH-62. It covers from Cape Shoalwater south to North Beach Peninsula.

This is a multiplex project in advance of Hydrographic surveys to be made in the area.

The field operations preceding compilation included complete field inspection. The establishment of some additional horizontal control and the determination of elevations necessary to control a multiplex project vertically.

The multiplex compilation was at a scale of 1:17,000. The manuscript consists of one vinylite sheet  $7\frac{1}{2}$  in latitude and  $7\frac{1}{2}$  in longitude.

The entire map was field edited. It does not meet the National Standards of Map Accuracy. It is to be published by the Geological Survey as a standard topographic quadrangle at a scale of 1:62,500 without an accuracy statement.

The registered copies under T-9634 will include a coronar film positive.



MAP T-9634

PROJECT NO. Ph-62

SCALE OF MAP 1:10,000.

SCALE FACTOR...1.0000

[illegible]

1 FT. = .3048006 METER  
COMPUTED BY: E.

**Taylor**

DATE **Oct. 5, 1953**

CHECKED BY: **A. K. Heywood**

DATE **Oct. 5, 1953**

COMM - DC - 5784

U.S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY  
DESCRIPTIVE REPORT  
CONTROL RECORD

MAP T. 9634

PROJECT NO. Ph-62

SCALE OF MAP 1:10,000

SCALE FACTOR 1.000

| STATION                      | SOURCE OF INFORMATION (INDEX) | DATUM        | LATITUDE OR $\psi$ -COORDINATE<br>LONGITUDE OR $\chi$ -COORDINATE | DISTANCE FROM GRID IN FEET.<br>OR PROJECTION LINE IN METERS |          | DATUM CORRECTION | N.A. 1927 - DATUM<br>DISTANCE FROM GRID OR PROJECTION LINE<br>IN METERS |        | FACTOR DISTANCE<br>FROM GRID OR PROJECTION LINE<br>IN METERS |
|------------------------------|-------------------------------|--------------|---|---|----------|------------------|---|--------|--|
|                              |                               |              |   | FORWARD   | (BACK)   |                  | FORWARD   | (BACK) |  |
| Sub. Pt. 1<br>BEACH 2, 1932  | Office<br>Comp.               | N.A.<br>1927 | 46 44<br>124 05   | 1234.9  | ( 617.8) |                  |   |        |  |
| Sub. Pt. 2<br>BEACH 2, 1932  | "                             | "            | 46 44<br>124 05   | 1291.8  | ( 560.9) |                  |   |        |  |
| Sub. Pt. 3<br>BEACH 2, 1932  | "                             | "            | 46 44<br>124 05   | 1321.7  | ( 531.0) |                  |   |        |  |
| Sub. Pt.<br>BETA, 1952       | "                             | "            | 46 43<br>124 01   | 277.8   | ( 995.8) |                  |   |        |  |
| Sub. Pt. 1<br>LARKIN, 1939   | "                             | "            | 46 44<br>124 02   | 671.3   | (1161.4) |                  |   |        |  |
| Sub. Pt. 2<br>LARKIN, 1939   | "                             | "            | 46 44<br>124 02   | 1.3   | (1272.9) |                  |   |        |  |
| Sub. Pt. 3<br>LARKIN, 1939   | "                             | "            | 46 44<br>124 02   | 652.5   | (1200.2) |                  |   |        |  |
| Sub. Pt. 4<br>LARKIN, 1939   | "                             | "            | 46 44<br>124 02   | 1117.7  | (1156.1) |                  |   |        |  |
| Sub. Pt. 5<br>LARKIN, 1939   | "                             | "            | 46 44<br>124 02   | 654.8   | (1197.9) |                  |   |        |  |
| Sub. Pt. 1<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 1149.2  | (124.6)  |                  |   |        |  |
| Sub. Pt. 2<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 687.1   | (1165.6) |                  |   |        |  |
| Sub. Pt. 3<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 1066.1  | ( 207.7) |                  |   |        |  |
| Sub. Pt. 4<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 642.9   | (1209.8) |                  |   |        |  |
| Sub. Pt. 5<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 985.7   | ( 288.1) |                  |   |        |  |
| Sub. Pt. 1<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 625.8   | (1226.9) |                  |   |        |  |
| Sub. Pt. 2<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 965.8   | ( 308.0) |                  |   |        |  |
| Sub. Pt. 3<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 1221.3  | ( 631.4) |                  |   |        |  |
| Sub. Pt. 4<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 25.0  | (1249.4) |                  |   |        |  |
| Sub. Pt. 5<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 1268.8  | ( 583.9) |                  |   |        |  |
| Sub. Pt. 1<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 106.3   | (1168.1) |                  |   |        |  |
| Sub. Pt. 2<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 1274.2  | ( 578.5) |                  |   |        |  |
| Sub. Pt. 3<br>JIM(USE), 1939 | "                             | "            | 46 44<br>124 02   | 176.9   | (1097.5) |                  |   |        |  |

1 FT. = .3048006 METER

COMPUTED BY: D. M. Brant

DATE Oct. 7, 1953

CHECKED BY: D. H. Taylor

DATE Oct. 8, 1953

COMM. DC-5784

COAST AND GEODETIC SURVEY  
CONTROL RECORD

MAP T- 9634

PROJECT NO. Ph-62

SCALE OF MAP 1:10,000

SCALE FACTOR.....1.000

[illegible]

1 FT. = .3048006 METER  
COMPUTED BY: D.

**D. M. Brant**

DATE \_\_\_\_\_

Oct. 7, 1953

CHECKED BY: **E. H. Taylor**

DATE \_\_\_\_\_

Oct. 8, 1953

COMM-DC-5784



COMPILATION REPORT  
Project PH-62  
Survey T-9634

Field Inspection Report:  
Photogrammetric Plot Report:

Bound with the Descriptive Report for T-9637.

31. DELINEATION

All topography in the northern portion was compiled by the Multiplex instrument; that small peninsular to the south, by Kelsh.

Except for the area about Smith Anderson Road, field inspection was adequate. The field inspection of buildings in this area was different on successive photographs, 7183 and 7184.

Refer to Descriptive Report T-9638, item 31 for shoreline detail.

32. CONTROL

Refer to Photogrammetric Plot Report bound with T-9637 under item No. 23.

33. SUPPLEMENTAL DATA

Coast Guard Drawing No. 3201, Willapa Bay L. H. Reservation, scale 1:600, No. BL2-C38.  
Land Plat: twp 14 NR 11 W. Will. Meridian.

34. CONTOURS AND DRAINAGE

\*The photographs in the northern portion of this quadrangle were cloudy. This of course left large gaps in our 1:17,000 sheet. It was attempted to fill as many as possible, using 1:24,000 scale photography. This necessitated considerable work since tie-ins had to be enlarged to 1:10,000; the multiplex work in each gap completed, and then reduced to 1:17,000 scale. Since five or six such set-ups were made- a disproportionate amount of time is expended in clouded areas delineating contours. The affected gap area is doubled by clouds since each throws its shadow on the ground. Either the clouds or shadows will frequently cover a given ground elevation which renders a level solution doubtful. The operator is forced to show sub-standard contours, then ask for an extensive field edit check. \* THIS AREA IS DASHED ON THE MANUSCRIPT. NO FIELD CHECK WAS MADE SINCE MAP IS TO BE PUBLISHED WITHOUT ACCURACY NOTE.

In view of these conditions, it is recommended areas covered by clouded photographs be reflown prior to field inspection.

35. SHORELINE AND ALONGSHORE DETAILS

36. OFFSHORE DETAILS

48. GEOGRAPHIC NAMES LIST

Cannery Slough  
Cape Shoalwater

Dexter by the Sea

Empire Spit

Georgetown Cem  
Georgetown Slough  
Grassy Island  
Graveyard Spit

Kindred Slough

Larkin Road  
Leadbetter Point

North Cove  
North Cove (village)  
North Beach Peninsula  
North Willapa Bay Grange

Pacific County Drainage  
Ditch No. 1  
Pacific Ocean

Smith Anderson Road

~~Teal Duck~~  
Teal Duck Slough  
Tokeland Road

Wash. 13A  
Willapa Bay

Shoalwater Bay Indian Reservation

U.S. Coast Guard Reservation

Names approved  
12-6-56.  
L.H.



## PHOTOGRAMMETRIC OFFICE REVIEW

T-9634

1. Projection and grids ✓ 2. Title ✓ 3. Manuscript numbers ✓ 4. Manuscript size ✓

## CONTROL STATIONS

5. Horizontal control stations of third-order or higher accuracy ✓ 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) ✓ 7. Photo hydro stations ✓ 8. Bench marks ✓ 9. Plotting of sextant fixes ✓ 10. Photogrammetric plot report ✓ 11. Detail points ✓

## ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline ✓ 13. Low-water line ✓ 14. Rocks, shoals, etc. ✓ 15. Bridges ✓ 16. Aids to navigation ✓ 17. Landmarks ✓ 18. Other alongshore physical features ✓ 19. Other along-shore cultural features ✓

## PHYSICAL FEATURES

20. Water features ✓ 21. Natural ground cover ✓ 22. Planetable contours ✓ 23. Stereoscopic instrument contours ✓ 24. Contours in general ✓ 25. Spot elevations ✓ 26. Other physical features ✓

## CULTURAL FEATURES

27. Roads ✓ 28. Buildings ✓ 29. Railroads ✓ 30. Other cultural features ✓

## BOUNDARIES

31. Boundary lines ✓ 32. Public land lines ✓

## MISCELLANEOUS

33. Geographic names ✓ 34. Junctions ✓ 35. Legibility of the manuscript ✓ 36. Discrepancy overlay ✓ 37. Descriptive Report ✓ 38. Field inspection photographs ✓ 39. Forms ✓

40. A. C. Richter  
ReviewerHenry P. Fisher  
Supervisor, Review Section or Unit

41. Remarks (see attached sheet)

## FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT

42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

J. C. Richter  
CompilerHenry P. Fisher  
Supervisor

43. Remarks:



# FIELD EDIT REPORT

Project 24120

Sheets T-9521, T-9633 and T-9634

23 November 1956

## 51. Methods:

Field edit was done in accordance with Letter: Instructions for Field Edit, Project Ph-62, dated 1 June 1955, and notes to the field editor on the discrepancy prints.

All cultural features were edited. Additions were made with red ink and deletions with green ink. Comparison with the hydrographic survey completed this year should be made for mean low low-water line and offshore structures, namely piling. See Section 52, Paragraphs a and d for shoreline changes in South Bay.

No extensive effort to recover section corners was made. All section corners that were suggested for recovery on the discrepancy prints were searched for. A summary of section corner information follows:

### T-9521

| <u>Section Corner</u>                          | <u>Information</u>  |
|--|---|
| 22,23,27,26 T16N R11W                          | Located by planetable on Field Edit Sheet No. 1   |
| 27,26,34,35 T16N R11W                          | Recovered. Could not be identified on photograph and inasmuch as the adjacent corner to the north was located, it was considered impractical to locate by planetable because of the line clearing that would have been necessary. |
| 21,22,28,27 T15N R11W<br>28,27,33,34 T15N R11W | Both these corners were searched for but not recovered.   |

### T-9634

No section corner information

### T-9633

(cont. next page)

T-9633

| <u>Section Corner</u>                              | <u>Information</u>  |
|--|---|
| 22,23,27,26 T16N R10W                              | Recovered, identified on Photo 51 O 7248 (1:17,000)         |
| 15,14,22,23 T15N R10W                              | Doubtful recovery, identified on Photo 51 O 7246 (1:17,000) |
| Point on line between Sections 22 and 27 T15N R10W | Recovered and identified on Photo 51 O 7246 (1:17,000)      |
| 22,23,27,26 T15N R10W<br>27,26,34,35 T15N R10W     | Both these corners searched for but not recovered.          |

Inasmuch as Paragraph 3 of Notes to Field Editor, T-9521 states: "Field edit of ocean shoreline may be omitted. This shoreline will be mapped as of 1952 (date of field inspection) with further field check", no attempt was made to edit the ocean shoreline on T-9521 and \*T-9634. There is no ocean shoreline on T-9633.

\* SEE DESCRIPTIVE REPORT (SHORELINE)  
FOR "REPORT ON SHORELINE CHANGES" by F. NATANA. AKL  
3

A legend of colored inks and symbols used during field edit is found on Field Edit Sheet No. 1, Sheet T-9521.

Notes to the field editor have been answered on the discrepancy prints on which they appear or cross - referenced to the proper source of information.

Field edit information has been noted on the discrepancy prints, Field Edit Sheet No. 1 for each of the sheets included in this report, on supplementary data listed in Section 56 of this report and on the following photographs:

| <u>Photo</u>          | <u>Information</u>  |
|-----------------------|---|
| ✓ 51 O 7183 (contact) | Swamp limits and terminal of submarine cable just east of Cape Shoalwater                           |
| ✓ 51 O 7184 (contact) | Trail and photo point for locating Section Corner 16,15,21,22 T15N R11W. See reverse side of photo. |
| ✓ 51 O 7185 (contact) | Points on section lines   |
| ✓ 51 O 7203 (contact) | Point on section line 28/27   |
| 51 O 7204 (contact)   | Additional shoreline inspection northwest of Tokeland   |



## Index

## Information

- |                        |  |
|------------------------|--|
| ✓ 51 0 7240 (contact)  | Indication of drainage, Elk River and tributary streams and trail on west side of road 7 |
| 50 0 1529 (contact)    | Swamp limits and drainage  |
| 51 0 7246 (1:17,000)   | Section line information   |
| 51 0 7248 (1:17,000)   | Section line information   |
| ✓ 50 0 1524 (1:10,000) | Swamp limits   |
| ✓ 50 0 1525 (1:10,000) | Verification and reidentification of Bench Mark K 295                                    |
| ✓ 50 0 1526 (1:10,000) | Drainage, north side of Grayland   |

Barometric elevations in the area just northeast of Grayland (T-9521) were established by the leap-frog method. The single-base method was used to establish all other barometric elevations in T-9521 and T-9633. The furthest distance from the base that elevations were established was approximately one and one-half miles. The single-base method was used because of the time element involved. Denseness of brush hindered travel to the extent that several of the elevations could not have been established within a days time using the leap-frog method.

## 52. Adequacy of Compilation:

It is believed that compilation of these sheets with the information furnished was adequate. Attention is directed to the following changes and verifications made during field edit:

### T-9521

a. Secondary Highway No. 13-A has been relocated at Bay City and a new bridge constructed. The road was located on Field Edit Sheet No. 1 by planetable methods and drawing of Secondary State Highway No. 13-A, South Bay Bridge Approaches, which is submitted with the field edit data for Sheet T-9521. Bridge clearances were obtained from the Washington State Highway Commission. This is the only highway relocation within the area of Sheet T-9521. The old bridge structure, the west approach and part of the east approach were removed at the time of field edit and the removal of the east approach was still in progress. The entire old structure has been deleted from the map.

b. Terminals of submarine and overhead cables across South Bay have been located by planetable on Field Edit Sheet No. 1.

c. Note shoreline change around the bridge approach fills at the



South Bay Bridge.

d. The structures on the pier on the east side of South Bay at Bay City have been razed and the west end of the pier is in ruin. The structure has been classified as "pier in ruin".

e. The following triangulation and topographic stations in the vicinity of Bay City have been destroyed:

- ✓ Hep 1940
- ✓ Bay City Range 2 Front Daybeacon 1952
- ✓ Bay City Range 3 Front Daybeacon 1952
- ✓ Weight 1940
- ✓ Bay City Pilchard Plant Stack 1952

Recovery notes for these stations are submitted with the field edit data for this sheet.

f. The boundary of Twin Harbors Beach State Park is indicated on the park drawing. The park includes Parcels A, B and F on the east side of Highway 13-A and Government lot 3 (Parcel D) and Blocks 1, 2, 3 and 4 on the west side of the highway. Blocks A and B which join the west side of Blocks 3 and 4 are not included in the park at the time of field edit. See Section 56, Paragraph "a" of this report.

g. Bench Mark K 295 was reidentified by the detail point method. On the original control station identification card, the angle at the substitute station from Station PINE 1952 to BM K 295 is  $312^{\circ} 12' 01''$ , not  $12^{\circ} 12' 01''$  as it appears to be at first glance. Also the distance should be 32.19 meters, 105.6 feet. The original substitute station was not recovered and the angles and distances were not checked by the field edit unit, but the direct identification in 1952 on the 1:10,000 scale print of Photograph 50 0 1525 was verified by measurements to detail points which have been indicated on the photograph with purple ink. See note on Photo 1525 and control station identification card for BM K 295 dated 10/1/56.

h. TRIPOD 1952 (approximate latitude  $46^{\circ} 46.15'$ , longitude  $124^{\circ} 05.5'$ ) has been destroyed. The present tripod was located by plane-table on Field Edit Sheet No. 1 and designated as TRIPOD 1956. See Form 524 for TRIPOD 1952 and TRIPOD 1956.

i. The elevation indicated with red pencil at approximate latitude  $46^{\circ} 47.3'$ , longitude  $124^{\circ} 00.3'$  was not checked. The field edit unit attempted to reach the point but denseness of underbrush slowed travel to the extent that the party had to turn back before reaching it in order to get out of the woods before dark. It was considered impractical to make a second attempt.

k. Numerous buildings have been added. See Field Edit Sheet No. 1, 1956, for additions and deletions of buildings.

T-9634

- a. A new road 7 to Willapa Bay Light has been added. See Field Edit Sheet No. 1.
- b. Note arrangement of buildings at road intersection approximately 1500 feet south of BM U 295. See Field Edit Sheet No. 1.
- c. Several buildings have been added to the map. See Field Edit Sheet No. 1, T-9634, for additions and Deletions.

T-9633

- a. The 400 top indicated with red pencil at approximate latitude  $46^{\circ} 50.0'$  and longitude  $123^{\circ} 56.4'$  was not checked as the field edit unit could not reach the point and get out of the woods before dark on the same day.
- b. Note addition of buildings at approximate Latitude  $46^{\circ} 50'$  Longitude  $123^{\circ} 58.8'$  and additions and deletions of buildings along the Johns River Road.

53. Map Accuracy:

No horizontal accuracy test was made.

No vertical accuracy test was required and none was made. The 20-foot contour was added where indicated on the discrepancy prints and contours along the beach were checked. Some 20-foot contours were added along the beach on Sheet T-9521.

Barometric elevations were established where it was indicated that checks should be made in the wooded areas. These elevations indicated that the AMS elevations for the same points are incorrect. See barometric elevations indicated with red ink on the Field Edit Sheets.

The planetable was used to check elevations in the vicinity of Station LARKIN 1939, Sheet T-9634. The elevation of this station published in the list of geographic positions (unadjusted field) was used.

54. Recommendations:

The only sheets furnished for T-9521 and T-9633 were at the scale of 1:17,000. This is a very inconvenient scale to use on the planetable, as each stadia distance must be multiplied by a factor before it can be plotted on the sheet with a 1:10,000 or 1:20,000 scale. It is recommended that sheets for planetable use be at the scale of either 1:10,000 or 1:20,000.

55. Examination of Proof Copy

The following named persons have agreed to examine a proof copy of the map if it should be sent to them:

Mr. F. T. Workman  
Bay City, Washington

Mr. Prespert Ostroski  
c/o West Tacoma Newsprint  
400 East First Street  
Cosmopolis, Washington

Mr. Workman has been a resident of the area for approximately thirty five years.

Mr. Ostroski has been in the area six years and is at present an engineer with West Tacoma Newsprint.

56. Supplemental Data:

a. Drawing of Twin Harbors Beach State Park with park boundary indicated thereon with red pencil.


b. Ratio print of drawing - Secondary State Highway No. 13-A, South Bay Bridge Approaches.

57. Current Hydrographic Surveys:

That part of the hydrographic survey of Grays Harbor completed by the Coast and Geodetic Survey in September 1956 that is within the area of Sheet 2-5521 (South Bay) should be searched for piling or other offshore detail that may have been missed by the field editor.

Respectfully submitted:

  
Charles H. Bishop  
Cartographer

  
for Charles H. Bishop  
Cartographer

REVIEW REPORT T-9634  
TOPOGRAPHIC  
6 January 1958

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

|       |          |      |         |          |      |
|-------|----------|------|---------|----------|------|
| H-335 | 1:20,000 | 1852 | 4253    | 1:20,000 | 1926 |
| 1261  | 1:10,000 | 1871 | 6730A-B | 1:10,000 | 1939 |
| 1262  | "        | "    | 6728A   | "        | "    |
| 1264  | "        | "    | 4252    | 1:20,000 | 1926 |
| 3921  | 1:20,000 | 1922 | 6728B   | 1:10,000 | 1939 |

Manuscript T-9634 supercedes all of the above surveys in common areas as source material for charts.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Cape Shoalwater, AMS Series V 791, Sheet 1177 II, Scale 1:50,000.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

|        |          |      |
|--------|----------|------|
| H-8136 | 1:10,000 | 1954 |
| H-8137 | "        | "    |
| H-8138 | 1:15,000 | "    |

The surveys above and manuscript T-9634 are in agreement.

65. COMPARISON WITH NAUTICAL CHARTS

6185 38th Edition 1955 Revised 11/25/57.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

This map complies with instructions.

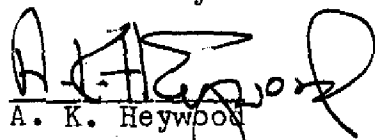
It does not meet the National Standards of Map Accuracy. *It contains*

Refer to the General Statements under item 66 for Review Report T-9514.

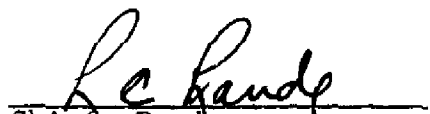
67. LANDLINES


There are no section lines for that portion of North Beach Peninsula shown on this manuscript. This peninsula has built up since the time of the G. L. O. survey.


Reviewed by


  
A. K. Heywood

Approved

  
Chief, Review  
Photogrammetry Division

  
Chief, Nautical Chart Branch  
Charts Division

  
Chief, Photogrammetry  
Division

  
Chief, Coastal Surveys Division



# DATA RECORD

T 9634 (Shoreline)

Project No. (II): Ph-62(49)

Quadrangle Name (IV):

Field Office (II): Raymond, Wash.

Chief of Party: Fred Natella

Photogrammetric Office (III): Baltimore, Md.

Officer-in-Charge: E. H. Kirsch

Instructions dated (II) (III):  
20 March 1951  
3 August 1951  
15 February 1952  
13 May 1952

Copy filed in Division of  
Photogrammetry (IV)

Method of Compilation (III): Multiplex

Manuscript Scale (III): 1:10,000

Stereoscopic Plotting Instrument Scale (III): 1:10,000

Scale Factor (III): 1.000

Date received in Washington Office (IV): JUN 15 1955

Date reported to Nautical Chart Branch (IV): JUN 27 1955

Applied to Chart No.

Date:

Date registered (IV): 13 Feb 1955

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N.A. 1927

Vertical Datum (III):

Mean sea level except as follows:  
Elevations shown as (25) refer to mean high water  
Elevations shown as (5) refer to sounding datum  
i.e., mean low water or mean lower low water

Reference Station (III): LEAD 4, 1939

Lat.: 46° 38' 29.929"

Long.: 124° 03' 00.900"

Adjusted  
~~location~~

Plane Coordinates (IV):

State:

Zone:

Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office, or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.

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Inapplicable

Areas contoured by various personnel  
 (Show name within area)  
 (II) (III)

# DATA RECORD

Field Inspection by (II): Charles H. Bishop  
Ray H. Skelton II

Date: June, July 1953  
August 1953

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

\* Mean High Water Location (III) (State date and method of location):

Small Sand Islands at Lat. 46° 40' from planetable - June 22, 1953  
From Cape Shoalwater SE to North Cove furnished by Field Party  
on Photo 7183 (1:10,000) - March 24, 1954.  
North Beach Peninsular from Photo. 1613 by planetable 1953  
Graveyard, Empire Spit shoreline from Hydro Survey Oct. 1, 1954.

Projection and Grids ruled by (IV): Jack Allen

Date: Sept. 10, 1952

Projection and Grids checked by (IV): H. O. Wolfe

Date: Oct. 3, 1952

Control plotted by (III): A. K. Heywood

Date: Oct. 7, 1953

Control checked by (III): E. H. Taylor

Date: Oct. 8, 1953

Radial Plot or Stereoscopic

Date: Nov. 12, 1953

Control extension by (III): D. M. Brant

Stereoscopic Instrument compilation (III):  
Planimetry (J. C. Richter)  
(E. L. Rolle )

Date: Oct. 29, 1953

Nov. 23, 1953

Date:

Manuscript delineated by (III): J. McEvoy

Date: Feb. 9, 1954

Photogrammetric Office Review by (III): A. K. Heywood

Date: Jan. 31, 1955

~~Examination of Manuscript~~

Date:

checked by (II) (III):

\* See Special Report of "Shoreline Changes Cape Shoalwater" bound with this report.

USC&GS Camera Type "0" - 6" focal length.

Camera (kind or source) (III):

| Number      | Date    | PHOTOGRAPHS (III) |  | Scale    | Stage of Tide  |
|-------------|---------|-------------------|--|----------|----------------|
|             |         | Time              |  |          |                |
| 1607 - 1615 | 7/11/50 | 13:53             |  | 1:24,000 | 2.4' above MHW |
| 1531 - 1533 | "       | 13:00             |  | "        | 2.8' " "       |
| 1663 - 1664 | "       | 15:03             |  | "        | 3.1' " "       |

(From Predicted Tables)

Tide (III)

Reference Station: ABERDEEN, WASH  
 Subordinate Station: WILLAPA BAY ENTRANCE  
 Subordinate Station:

| Ratio of<br>Ranges | Mean<br>Range | Spring<br>Range |
|--------------------|---------------|-----------------|
| 0.8                | 6.2           | 8.1             |
|                    |               |                 |

Washington Office Review by (IV):

Date:

Final Drafting by (IV):

Date:

Drafting verified for reproduction by (IV):

Date:

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 11  
 Shoreline (More than 200 meters to opposite shore) (III): 12  
 Shoreline (Less than 200 meters to opposite shore) (III): none  
 Control Leveling - Miles (II):  
 Number of Triangulation Stations searched for (II): Recovered:  
 Number of BMs searched for (II): Recovered:  
 Number of Recoverable Photo Stations established (III): 2  
 Number of Temporary Photo Hydro Stations established (III): none

Identified:  
 Identified:

Remarks:



See Descriptive Report for T-9634 (Topographic) for listing  
of horizontal control stations on Form M-2388-12.

37. LANDMARKS AND AIDS

There is one aid and four landmarks within this survey.

38. CONTROL FOR FUTURE SURVEYS

Forms 524 were submitted on 8 June for two recoverable topographic stations. Three Forms are listed in paragraph 11 of the Preliminary Field Report. Station "WILL, 1927" has since been destroyed by erosion.

A list of recoverable topographic stations has been prepared and included in paragraph 49, submitted to the Washington office on 9 April 1954.

39. JUNCTIONS

Junctions have been made as follows:  
To the north with Survey T-9621.  
To the south with Survey T-9637.  
to the east with Survey T-9635.

40. HORIZONTAL AND VERTICAL ACCURACY

Refer to Photogrammetric Plot Report, item 23 bound with T-9637.

46. COMPARISON WITH EXISTING MAPS

Inapplicable.

47. COMPARISON WITH NAUTICAL CHARTS

Chart 6002, scale 180,789 at Latitude 47° 00', published July 1942  
10 Edition 4/21/52.

Items to be applied immediately: None.

Items to be carried forward: None.

Approved and forwarded

*E. H. Kirsch*  
E. H. Kirsch, Comdr. USCGS  
Officer in Charge  
Balto. Photo. Office

Respectfully submitted

14 June 1955

*Albert K. Heywood*  
Albert K. Heywood  
Carto. (Photo.)

T-9634  
(Shoreline Survey)

48. GEOGRAPHIC NAMES LIST

Cannery Slough  
Cape Shoalwater

Dexter by the Sea

Empire Spit

Georgetown Slough  
Grassy Island  
Graveyard Spit

Leadbetter Point

North Cove  
North Cove  
North Beach Peninsula  
North Willapa Bay Grange

Pacific Ocean

Tokeland Road

Willapa Bay

COMPILATION REPORT  
Project Ph-62  
Shoreline Survey T-9634

Field Inspection Report:  
Photogrammetric Plot Report:

Bound with Descriptive Report for T-9637.

31. DELINEATION

32. CONTROL

33. SUPPLEMENTAL DATA

Refer to Descriptive Report for the Topographic Survey and to the Photogrammetric Plot Report.

34. CONTOURS AND DRAINAGE

Inapplicable.

35. SHORELINE AND ALONGSHORE DETAILS

The MHWL in the vicinity of Cape Shoalwater S.E. is subject to change. (Refer to Shoreline Changes Drwg. No. 5003 by U.S.C.G. and special report bound under this cover.)

The shoreline from Cape Shoalwater S.E. to North Cove was at first furnished by planetable dated June 26, 1952. This was questioned by the compilation office and was again furnished on a 1:10,000 ratio photograph of 7183 dated March 24, 1954.

The MHWL of graveyard Spit and Empire Spit area was delineated from a recent hydrographic survey dated Oct. 1954 furnished on a black and white copy of the manuscript.

The sand islands shoreline at latitude 46° 40' was furnished on a planetable sheet dated June 22, 1953.

The shoreline of North Beach peninsular was given on field ratio photograph 1613, located by planetable 6 June 1953.

36. OFFSHORE DETAILS

Complete.



## PHOTOGRAMMETRIC OFFICE REVIEW

T. 9634 SHORELINE

1. Projection and grids \_\_\_\_\_ 2. Title \_\_\_\_\_ 3. Manuscript numbers \_\_\_\_\_ 4. Manuscript size \_\_\_\_\_

## CONTROL STATIONS

5. Horizontal control stations of third-order or higher accuracy \_\_\_\_\_ 6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) \_\_\_\_\_ 7. Photo hydro stations \_\_\_\_\_ 8. Bench marks \_\_\_\_\_ 9. Plotting of sextant fixes \_\_\_\_\_ 10. Photogrammetric plot report \_\_\_\_\_ 11. Detail points \_\_\_\_\_

## ALONGSHORE AREAS

(Nautical Chart Data)

12. Shoreline \_\_\_\_\_ 13. Low-water line \_\_\_\_\_ 14. Rocks, shoals, etc. \_\_\_\_\_ 15. Bridges \_\_\_\_\_ 16. Aids to navigation \_\_\_\_\_ 17. Landmarks \_\_\_\_\_ 18. Other alongshore physical features \_\_\_\_\_ 19. Other along-shore cultural features \_\_\_\_\_

## PHYSICAL FEATURES

20. Water features \_\_\_\_\_ 21. Natural ground cover \_\_\_\_\_ 22. Planetable contours \_\_\_\_\_ 23. Stereoscopic instrument contours \_\_\_\_\_ 24. Contours in general \_\_\_\_\_ 25. Spot elevations \_\_\_\_\_ 26. Other physical features \_\_\_\_\_

## CULTURAL FEATURES

27. Roads \_\_\_\_\_ 28. Buildings \_\_\_\_\_ 29. Railroads \_\_\_\_\_ 30. Other cultural features \_\_\_\_\_

## BOUNDARIES

31. Boundary lines \_\_\_\_\_ 32. Public land lines \_\_\_\_\_

## MISCELLANEOUS

33. Geographic names \_\_\_\_\_ 34. Junctions \_\_\_\_\_ 35. Legibility of the manuscript \_\_\_\_\_ 36. Discrepancy overlay \_\_\_\_\_ 37. Descriptive Report \_\_\_\_\_ 38. Field inspection photographs \_\_\_\_\_ 39. Forms \_\_\_\_\_

40. A. R. King  
Reviewer

Nancy P. Eicher  
Supervisor, Review Section or Unit

41. Remarks (see attached sheet)

## FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT

42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The manuscript is now complete except as noted under item 43.

Charles M. Burt  
Compiler

Nancy P. Eicher  
Supervisor

43. Remarks:

# NONFLOATING AIDS ORIENTED MARKS FOR ROCKETEERS

**STRIKE OUT ONE**

**Baltimore, Md.**

24 Feb. 1951

I recommend that the following objects which ~~have~~ *(have not)* been inspected from seaward to determine their value as landmarks be charted on ~~(see page 10)~~ the charts indicated.

The positions given have been checked after listing by

**E. H. Kirsch,**

[illegible]

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating*

**DEPARTMENT OF COMMERCE**  
**U. S. COAST AND GEODETIC SURVEY**

## NONFLOATING AIDS OR LANDMARKS FOR CHARTS

**TO BE CHARTED  
TO BE CHARTED**

**STRIKE OUT ONE**

**Baltimore, Maryland**

24 Feb. 1954

I recommend that the following objects which ~~have~~ *(have not)* been inspected from seaward to determine their value as landmarks be charted on ~~(charts)~~ the charts indicated.

The positions given have been checked after listing by

प्राप्तः ॥ १

**Chief of Party.**

[illegible]

This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and *nonfloating*

SHORELINE CHANGES, CAPE SHOALWATER, WASHINGTON, PROJECT Ph-62

The current location of the mean high water line around Cape Shoalwater has been determined by a planetable survey directly on the 1:10,000 scale ratio print of photo O-7183. The eastern limits of the new shoreline close around an island, Graveyard Spit, and will present no junction problems, but the northern limits of the remapped shoreline may not junction well. The shoreline, however, was carried to the limit of available photography.

Changes in the shoreline in this area are due to two causes, first the seasonal vertical change in the beach and second, the consistent and continuous shift to the north of the entrance to Willapa Harbor.

The Shellfish Division of the Washington State Bureau of Fisheries makes continuous observations of the beaches in connection with clam research and conservation practices. They report that the ocean beaches build up to 2 to 3 feet vertically during the summer months and are washed out each winter. In some places this drop is greater and the beach around Leadbetter Point to the south has dropped about 4 feet this winter. A three-foot vertical change in the beach would shift the mean high water line about 100 feet. These changes are seasonal and affect only the beach. The seaward limit of the grass does not change appreciably.

The second part of the change in the area is the continuous shift to the north of the Willapa Harbor entrance. About 100 years ago vessels could enter the harbor through a channel near the north limit of the trees on Leadbetter Point. The channel has always tended to move north, and this tendency together with a severe storm in 1952, and subsequent storms has caused extensive erosion of all shoreline in the bay. A number of triangulation stations in Willapa Bay have been destroyed.

Previous reference to this erosion has been made in paragraph 2, page 7 and paragraph 7, page 12 of the "Preliminary Field Inspection Report" for quadrangles T-9633 to T-9636 inclusive, project Ph-62.

The mean high water line was located by mapping the contour 3.4 feet above mean sea level. Position ties to photographic detail were made at about one mile intervals, and position closures were adequate for the purpose.

Noted and Forwarded

*Fred Natella*  
Fred Natella  
Officer-in-Charge

Respectfully Submitted,

*Ray H. Skelton II*  
Ray H. Skelton II  
Cartographic Engineer

REVIEW REPORT T-9634  
TOPOGRAPHIC  
6 January 1958

The shoreline manuscript and the topographic manuscript  
are in complete agreement.

No review report has been written for this manuscript.

Refer to review report for the topographic survey T-9634