9635,
9635 N, 9635 S
COMBINED

Diag. Cht. No. 6002-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Topographic & Shoreline

Field No. Ph-62 *Office No.* T-9635

LOCALITY

State Washington

General locality Willapa Bay

Locality Tokeland - Hawks Point to Goose Point

1950-57

CHIEF OF PARTY

F. Natella, Chief of Party (Field)
E. H. Kirsch, Balto. Photo. Office

LIBRARY & ARCHIVES

DATE June 5, 1958

8-1870-1 (1)

9635,
9635 N, 9635 S
COMBINED

DATA RECORD

T-9635

Project No. (II): Ph-62 Quadrangle Name (IV): TOKELAND

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 Aug. 1951
15 Feb. 1952
13 May 1952

Copy filed in Division of Photogrammetry (IV)

Method of Compilation (III): Air Photographic (Multiplex)

Manuscript Scale (III): 1:17,000 (topo.)
1:10,000 (shoreline)

Stereoscopic Plotting Instrument Scale (III): 1:17,000 (topo.)
1:10,000 (shoreline)

Scale Factor (III): 1.000

Date received in Washington Office (IV): JUN 29 1955

Date reported to Nautical Chart Branch (IV):

JUL 18 1955

Applied to Chart No. Date:

Date registered (IV): 14 Mar 1958

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): TOKELAND, 1952

Lat.: 46° 42' 18.981" Long.: 123° 57' 57.853" Adjusted ~~Unadjusted~~

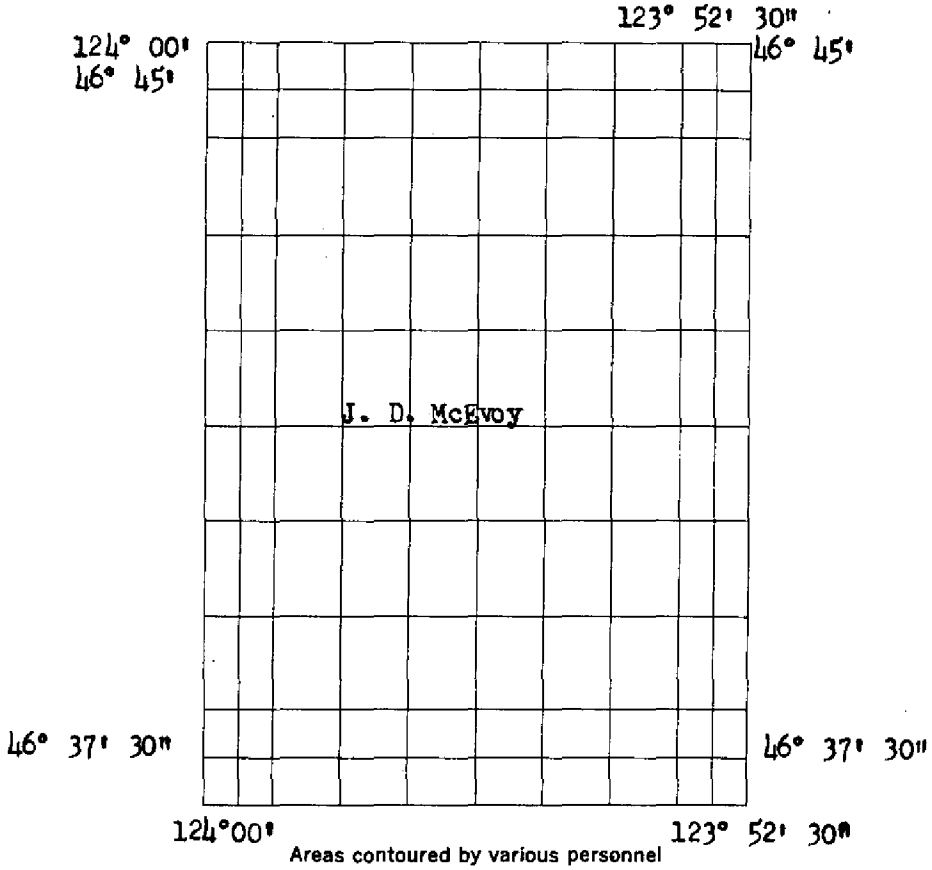
Plane Coordinates (IV): State: Zone:

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.

M-2618-12(4)



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

DATA RECORD

Field Inspection by (II): Interior Shoreline — John H. Winniford (John H. Winniford) (Charles H. Bishop) (Sheridan W. Jones) — Date: Aug. Sept. 1953

Planetable contouring by (II): (Gordon R. Combs) — Date:

Completion Surveys by (II): C.H. Bishop — Date: July 1957

Mean High Water Location (III) (State date and method of location):
Southern MHWL of Toke Pt. Peninsular located by Distances Given From Reference Points. The MHWL of Snag Islands from Planetable 1:20,000 dated 22 June 1953. Remainder located July 1953 photogrammetric.

Projection and Grids ruled by (IV): Jack Allen — Date: *22 Sept. 1952; 25 Sept. 1952

Projection and Grids checked by (IV): H. D. Wolfe — Date: * 3 Oct. 1952; 5 Oct. 1952

Control plotted by (III): — Date:
*E. H. Taylor — *12 Dec. 1953
A. K. Heywood — 19 Nov. 1952

Control checked by (III): — Date:
*J. D. McEvoy — *15 Dec. 1953
E. L. Rolle — 19 Nov. 1952

~~Radial Plot~~ or Stereoscopic Control extension by (III): D. M. Brant — Date: 2 Feb. 1954

Stereoscopic Instrument compilation (III):
*E. H. Taylor — *3 Feb. 1954
Planimetry *E. L. Rolle — Date: *17 Feb. 1954
J. D. McEvoy — 29 Nov. 1954
Contours J. D. McEvoy — Date: 29 Nov. 1954

Manuscript delineated by (III): * J. D. McEvoy — Date: *15 March 1954
J. D. McEvoy — 14 Jan. 1955

Photogrammetric Office Review by (III): *A. K. Heywood — Date: 22 April 1955
A. K. Heywood — 17 May 1955

Elevations on Manuscript checked by (II) (III): A. K. Heywood — Date: 17 May 1955

*Pertains to Shoreline Manuscript only.

M-2618-12(4)

Camera (kind or source) (III): USC&GS 6" Metrogon Type "O"

Number	Date	PHOTOGRAPHS (III) Time (P.S.T.)	Scale	Stage of Tide
50-0-1663 thru 1666	7/11/50	15:03	1:24,000	3.5' above MLLW
1705 - 1713	7/11/50	15:26	"	3.3' above MLLW
1732 - 1741	7/11/50	15:42	"	3.3' above MLLW
51-0-7203 - 7205	6/16/51	14:37	1:40,000	3.0' above MLLW
7243 - 7245	6/17/51	12:34	"	At MHW
7303 - 7305	6/17/51	15:02	"	1.6' above MLLW

Hanford -

From Table of Predicted Tides

Tide (III)

Diurnal

Ratio of Ranges	Mean Range	~~Spring~~ Range
0.9	6.8	8.9

Reference Station: Aberdeen, Wash.

Subordinate Station: Toke Point

Subordinate Station:

Washington Office Review by (IV): A.K. Heywood Date: FEB. 1958

Final Drafting by (IV): Date:

Drafting verified for reproduction by (IV): Date:

Proof Edit by (IV): Date:

Land Area (Sq. Statute Miles) (III): 19

Shoreline (More than 200 meters to opposite shore) (III): 18

Shoreline (Less than 200 meters to opposite shore) (III): 5

Control Leveling - Miles (II): 11

Number of Triangulation Stations searched for (II): 37 Recovered: 19 Identified: 7

Number of BMs searched for (II): 11 Recovered: Identified:

Number of Recoverable Photo Stations established (III): 11

Number of Temporary Photo Hydro Stations established (III): None

Remarks:

M-2618-12(4)

SUMMARY
TO ACCOMPANY DESCRIPTIVE REPORT T-9635

Topographic map T-9635 is one of 14 similar maps in Project PH-62. It covers the entrance to Willapa Bay.

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.

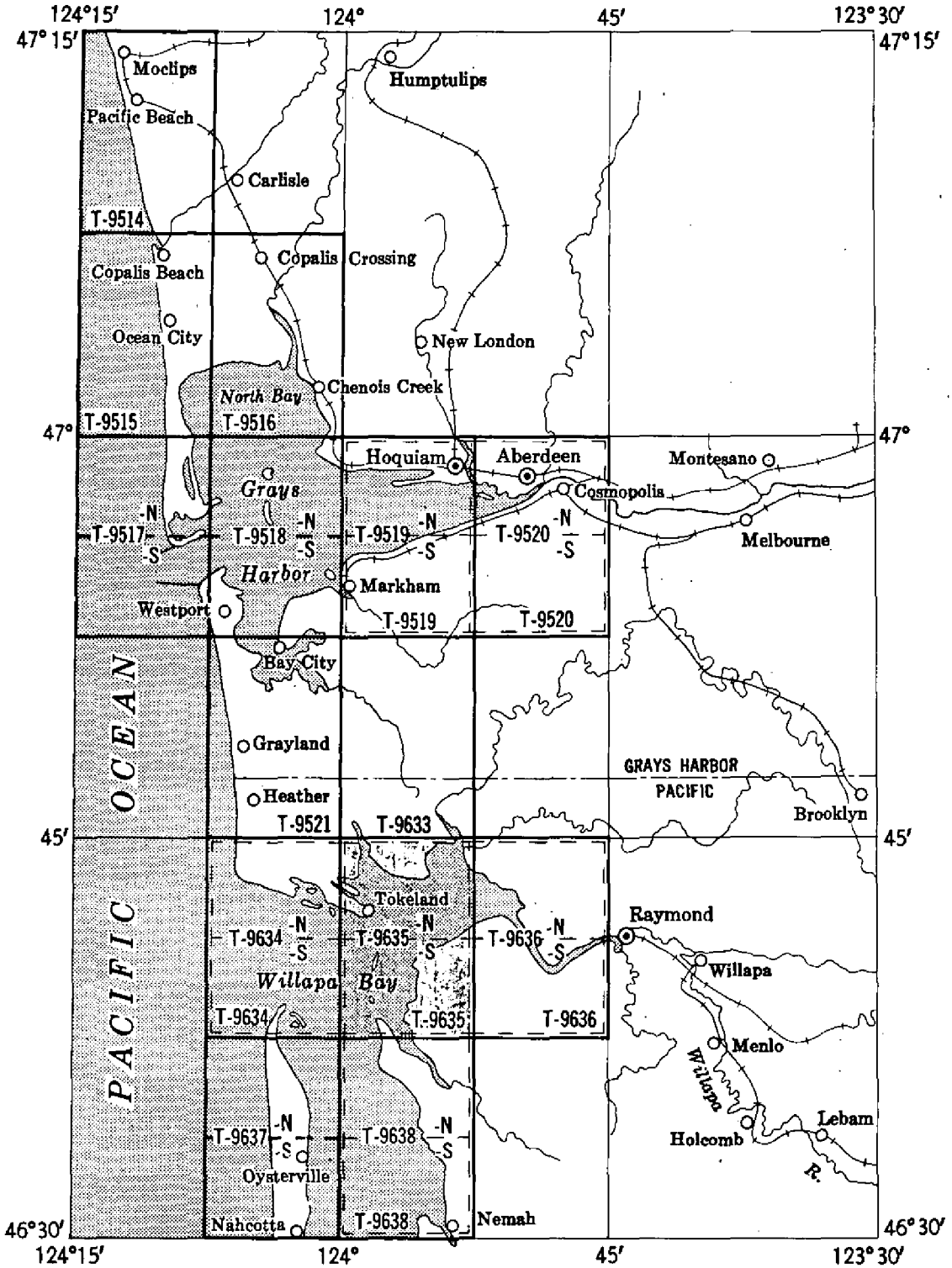
The registered copies under T-9635 will include a cronar film positive of the topographic manuscript and shoreline surveys.

A shoreline survey was also made of this area. The multiplex compilation was at a scale of 1: 10,000. Two manuscpipts, north and south halfs, each sheet being $3\frac{3}{4}$ minutes in latitude and $7\frac{1}{2}$ minutes in longitude.

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,

FORM 164
(4-23-54)

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

DESCRIPTIVE REPORT — CONTROL RECORD

MAP T-9635 PROJECT NO. Ph-62 SCALE OF MAP 1:17,000 (topo.) 1:10,000(shoreline) SCALE FACTOR 1.000

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR φ-COORDINATE / LONGITUDE OR x-COORDINATE ° ' "	DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS FORWARD	(BACK)	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)
KINDRED, 1952	Misc. Field Comp.	N.A. 1927	46 43 00.935	28.9	(1823.9)					
			123 58 43.736	928.9	(345.4)					
TOKELAND, 1952	"	"	46 42 18.981	586.1	(1266.6)					
			123 57 57.853	1229.0	(45.6)					
CAMEO, 1952	"	"	46 43 32.519	1004.2	(848.6)					
			123 56 41.109	873.0	(401.2)					
HAWKS 2, 1939	G-5788 p. 760	"	46 43 37.037	1143.7	(709.1)					
			123 54 49.606	1053.4	(220.7)					
TOKE POINT C. G. BOAT HO. S.E. GABLE (BOAT) 1939	" p. 767	"	46 42 22.016	679.8	(1172.9)					
			123 57 55.730	1183.8	(90.7)					
HAWKS, 1922	" p.1015	"	46 43 36.886	1139.0	(713.7)					
			123 54 49.472	1050.5	(223.6)					
**BUSH, 1952	Misc. Field Comp.	"	46 43 35.790	1105.2	(747.6)					
			123 56 40.850	867.4	(406.7)					
WILLAPOINT OYSTER COMPANY HOUSE CUPOLA (Hum) 1939	G-5788 p. 767	"	46 43 00.922	28.5	(1824.3)					
			123 56 01.365	29.0	(1245.1)					
BRUCE 2, 1922	G-5788 p. 760	"	46 40 43.114	1331.3	(521.5)					
			123 54 51.826	1101.5	(173.7)					
STONY POINT, 1939	" p. 760	"	46 40 21.350	659.3	(1193.5)					
			123 55 30.776	654.2	(621.3)					

** Less than 3rd order

1 FT. = 3048006 METER

COMPUTED BY: H. P. Eichert DATE October 30, 1953 CHECKED BY: A. K. Heywood DATE Oct. 30, 1953

COMM-DC-57843

FORM 164
(4-23-54)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT
CONTROL RECORD

MAP T-9635 PROJECT NO. Ph-62 SCALE OF MAP 1:10,000 SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE	DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS FORWARD	(BACK)	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)
ELLEN 3, 1939	G-5788 p.760	N.A. 1927	46 40 00.045	1.4	(1851.4)					
			123 57 40.951	870.5	(405.0)					
BAY, 1939	G-5788 p. 764	"	46 37 35.290	1089.7	(763.1)					
			123 55 52.048	1107.3	(169.2)					
BAY CENTER CHANNEL RANGE FRONT LT (CUT), 1939	G-5788 p. 766	"	46 38 51.498	1590.2	(262.6)					
			123 57 01.164	24.8	(1251.2)					
E. GABLE LIME FACTORY BAY CENTER, 1939	G-5788 p. 765	"	46 37 47.626	1470.6	(382.2)					
			123 56 59.982	1275.9	(00.5)					
** LICK, 1953	Field Comp. Form 28B	"	490,576.49	175.7	(1348.3)					
			1,151,368.98	417.3	(1106.7)					
PALIX, 1939	G-5788 p. 764	"	46 38 31.857	983.7	(869.1)					
			123 56 17.775	378.0	(898.1)					
SB 2 (USE), 1939	G-5788 p. 764	"	46 39 59.390	1833.9	(18.9)					
			123 55 03.919	83.3	(1192.2)					
STORE, 1939	G-5788 p. 764	"	46 37 55.010	1698.7	(154.1)					
			123 56 59.168	1258.6	(17.7)					
WILLAPA BAY RM * NO. 1 (LUG), 1939	G-5788 p.769	"	46 42 08.441	260.6	(1592.2)					
			123 53 52.662	1118.8	(155.9)					
GOOSE 4, 1939	p. 654	"	46 38 12.005	370.7	(1482.0)					
			123 57 32.251	686.0	(590.2)					
PALE, ** 1953	Field Comp. Form 28B	"	491,267.60	386.4	(1137.6)					
			1,152,165.56	660.1	(863.9)					

NOT PLOTTED. STATION IS LOOSE IN THE GROUND

** Less than 3rd order.

* This station name has been changed to WILLAPA RIVER DYBN. 15, 1953

1 FT. = .3048006 METER

COMPUTED BY: E. H. Taylor DATE 11 February 1954 CHECKED BY: H. P. Eichert DATE 11 February 1954

COMM-DC-57843

FORM 164
(4-23-54)

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

DESCRIPTIVE REPORT — CONTROL RECORD

MAP T-9635 PROJECT NO. Ph-62 SCALE OF MAP 1:10,000 SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE			DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS		DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS		FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS	
			°	'	"	FORWARD	(BACK)		FORWARD	(BACK)	FORWARD	(BACK)
S B 1, USE, 1937	C of E South Bend	N.A. 1927	46	38	09.283	286.6	(1566.1)					
			123	55	10.813	230.0	(1046.2)					
WILLAPA RIVER LT 8, 1953	Field Comp Form 28B	"	46	41	30.799	951.0	(901.7)					
			123	55	40.100	852.1	(422.8)					
WILLAPA RIVER LT 13, 1953	"	"	46	42	02.102	64.9	(1787.8)					
			123	54	27.449	583.3	(691.4)					
WILLAPA RIVER RANGE FR LT 4, 1953	"	"	46	41	32.861	1014.7	(838.0)					
			123	57	16.122	342.6	(932.3)					
WILLAPA RIVER RANGE REAR LT 4, 1953	"	"	46	41	29.803	920.3	(932.4)					
			123	57	39.159	832.2	(442.9)					
BAY CENTER CHANNEL LT, 1953	"	"	46	38	51.480	1589.7	(263.0)					
			123	57	01.183	25.2	(1250.8)					
BAY CENTER CHANNEL DIRECTIONAL LT, 1953	"	"	46	38	22.269	687.6	(1165.1)					
			123	58	13.994	297.6	(978.5)					
WILLAPA RIVER DAY-BEACON 15, 1953	"	"	46	42	08.438	260.6	(1592.2)					
			123	53	52.667	1118.9	(155.8)					
CEDAR RIVER FLATS LT., 1953	"	"	46	42	08.081	249.5	(1603.3)					
			123	57	35.714	758.7	(516.0)					

1 FT. = .3048006 METER

COMPUTED BY E. H. Taylor — DATE 10 February 1954 — CHECKED BY H. P. Eichert — DATE 11 February 1954

COMM-DC-57843

FORM 164
(4-23-54)

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

DESCRIPTIVE REPORT — CONTROL RECORD

MAP T- 9635 PROJECT NO. Ph-62 SCALE OF MAP 1:10,000 SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE	DISTANCE FROM GRID IN FEET. OR PROJECTION LINE IN METERS FORWARD	(BACK)	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)
SUB. STA. 1 KINDRED, 1952	Office Comp.	N.A. 1927	46 43	127.7	(1725.1)					
			123 58	882.2	(392.1)					
SUB. STA. 2 KINDRED, 1952	"	"	46 43	60.3	(1792.5)					
			123 58	855.3	(419.0)					
SUB. STA. 3 KINDRED, 1952	"	"	46 43	44.3	(1808.5)					
			123 58	774.0	(500.3)					
SUB. STA. 4 KINDRED, 1952	"	"	46 43	17.8	(1835.0)					
			123 58	932.7	(341.6)					
SUB. STA. TOKELAND, 1952	"	"	46 42	603.7	(1249.0)					
			123 57	1209.2	(65.4)					
SUB. STA 1 CAMEO, 1952	"	"	46 43	983.1	(869.7)					
			123 56	903.0	(371.2)					
SUB. STA 2 CAMEO, 1952	"	"	46 43	1004.2	(848.6)					
			123 56	897.4	(376.8)					
SUB. STA. 3 CAMEO, 1952	"	"	46 43	1020.8	(832.0)					
			123 56	889.7	(384.5)					
SUB. STA. 4 CAMEO, 1952	"	"	46 43	989.8	(863.0)					
			123 56	865.0	(409.2)					
SUB. STA WOOD, 1953	"	"	46 45	50.4	(1802.3)					
			123 53	1115.8	(157.7)					
SUB. STA. STONY POINT, 1939	"	"	PROTRACTOR							
SUB. STA. BRUCE 2, 1939	"	"	46 40	1205.6	(647.2)					
			123 54	1160.1	(125.1)					

1 FT. = .3048006 METER

COMPUTED BY: H. F. Eichert DATE 10 November 1953

CHECKED BY: A. K. Heywood DATE 19 November 1953

COMM-DC-57843

FORM 164
(4-23-54)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT
CONTROL RECORD

MAP T-9635 PROJECT NO. Ph-62 SCALE OF MAP 1:10,000 SCALE FACTOR

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR y-COORDINATE / LONGITUDE OR x-COORDINATE	DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS FORWARD	(BACK)	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)	FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD	(BACK)
SUB. STA. STORE, 1939	Office Comp.	N.A. 1927	46 37	1719.4	(133.4)					
			123 56	1270.4	(05.9)					
SUB. STA. ELLEN 3, 1939	"	"	PROTRACTOR							
SUB. STA. PALE, 1953	"	"	491,326.02	404.2	(1119.8)					
			1,152,186.31	666.4	(857.6)					
SUB. STA. "A" LICK, 1953	"	"	490,570.72	174.0	(1350.0)					
			1,151,411.59	430.3	(1093.7)					
SUB. STA. "B" LICK, 1953	"	"	490,622.07	189.6	(1334.4)					
			1,151,412.47	430.5	(1093.5)					

1 FT. = .3048006 METER

COMPUTED BY H. P. Eichert DATE 10 November 1953 CHECKED BY A. K. Heywood DATE 19 November 1953

COMM-DC-57843

COMPILATION REPORT
Project Ph-62
Survey T-9635

Field Inspection Report: Bound with the Descriptive Report for T-9633.

Photogrammetric Plot Report: Bound with the Descriptive Report for T-9637

31. DELINEATION

All detail, except shoreline, was compiled by the multiplex instrument. Detail points were established during the multiplex orientation for use in compiling shoreline from the photographs.

The topographic survey was delineated at 1:17,000 scale; the shoreline survey at 1:10,000 scale. A suitable reduction of the 1:10,000 scale shoreline manuscript furnished on film positive was utilized in the transfer of shoreline and offshore details to the topographic manuscript.

32. CONTROL

Refer to the Photogrammetric Plot Report, item No. 23.

33. SUPPLEMENTAL DATA

Land Plats:

TWP 14N R9W
TWP 13N R10W

34. CONTOURS AND DRAINAGE

Refer to item No. 6 of the Field Inspection Report which gives a description of woodland cover and extreme tree heights. The almost complete timber cover directly affects the contour accuracy. A more complete discussion giving opinions and reasons will be found in item No. 34 of the Descriptive Report for T-9516.

Diapositive quality was only fair.

There was considerable glare as mentioned in item No. 25, paragraph 2 of the Photogrammetric Plot Report.

35. SHORELINE AND ALONGSHORE DETAILS

Refer to paragraphs one (1) thru three (3) of the Field Inspection Report, item No. 7.

Shoreline inspection was fair.* Some areas will need particular attention and have been so noted for field edit. There seemed to be some question as to whether or not the field inspector meant grass-in-water when he noted marsh. In several instances stereoscopic examination indicated this disagreement and grass-in-water was shown. These areas extend from the vicinity of Niawiakum River to the east limits of the manuscript.

* THESE AREAS WERE RESOLVED BY THE OFFICE INSPECTOR. J.W. NEAL

36. OFFSHORE DETAILS

Copies of this shoreline survey were furnished to hydrography prior to review and the forwarding of this report. Hydrographic surveys have since been completed. Many piles, noted to be located on a chart section during the hydrographic survey, will have to be added before offshore details can be considered complete. These data are not available to this office.

Shoal areas were furnished by hydrography on a black and white copy of the manuscript.

37. LANDMARKS AND AIDS

PINE ISLAND CHANNEL DAYBEACON 2, 1953 was deleted from the manuscript in accordance with data submitted by hydrography on a black and white copy of T-9635N.

*Palix River Lt. and two channel markers in the vicinity of Bay Center are not shown. The chart section mentioned in the previous item No. 36 noted these positions to be located. No data has since been furnished to locate these aids and they are not shown on either the topographic or shoreline surveys.

* AT THE TIME OF FINAL REVIEW, PSOOOSY DID NOT HAVE A POSITION OF THIS LIGHT. THE LT. AND CHANNEL MARKERS ARE SHOWN ON THE HYDROGRAPHIC SURVEY H-8137.
AKA

38. CONTROL FOR FUTURE SURVEYS

Eight Forms 524 have been submitted at the time of this report. Two recoverable topographic stations were established and the positions of three were verified by multiplex. Two stations, PALE and LICK, 1953 were established by field inspection but not listed in paragraph No. 11 of the Field Inspection Report.

A list of recoverable topographic stations has been prepared and included in paragraph No. 49. The original copy, "Notes to the Hydrographer", was submitted 5 April 1954 with the shoreline surveys prior to the body of the Compilation Report.

39. JUNCTIONS

Junction was made:

To the north with Survey T-9633.
To the south with Survey T-9638.
To the east with Survey T-9636.
To the west with Survey T-9634.

40. HORIZONTAL AND VERTICAL ACCURACY

Refer to item No.23 of the Photogrammetric Plot Report and item No. 34 of this report.

41. BOUNDARIES

The Public Land lines are fair. Only two section covers could be recovered by the Field Inspection. The area has not been cut over recently enough to aid in locating the land lines.

46. COMPARISON WITH EXISTING MAPS

C of E Tactical Map South Bend, scale 1:62,500.

47. COMPARISON WITH NAUTICAL CHARTS

Chart No. 6185, scale 1:40,000, published Sept 1952 (36th Edition) 9/1/52.

Items to be applied immediately: None.

Items to be carried forward: None.

Respectfully submitted
20 June 1955

A. K. Heywood
Carto. (Photo.)

Approved and forwarded
21 June 1955

E. H. Kirsch, Comdr. USC&GS
Officer in Charge
Balto. Photo. Office

48. GEOGRAPHIC NAMES LIST

Bay Center
Bay Center Channel
Bay Center Cuttoff Channel
Bone River

Cedar River

Ellen Sands
Empire Spit

Freshwater Creek

Goose Point

Hansen Creek
Holton Ranch
Hawks Point

Kindred Island
Kindred Slough

Niawiakum River
Norris Slough
North River

Old State Road No. 12 = U.S. 101 (latest official State Highway map shows both numbers)

Pine Island
Pine Island Channel

Russell Channel

Smith Creek
Snag Islands
Stony Point

Teal Duck Slough
Toke Point
Tokeland

Willapa Bay

Washington (for title)

Bruceport
Bruceport Park
Bush Pacific Pioneer State Park

State or Ore 13A (to Tokeland)

Names approved 9-7-56
L. Heck

Form T-2

PHOTOGRAMMETRIC OFFICE REVIEW

T- 9635

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 alongshore 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. H. K. Haywood — Reviewer; [signature] — 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.

Compiler — Supervisor

43. Remarks:

M-2623-12

PHOTOGRAMMETRIC OFFICE REVIEW

T- 9635 (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 alongshore 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. H. T. Hammond
Reviewer

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.

Compiler

Supervisor

43. Remarks:

Form 567
April 1945

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED / ~~TO BE DELETED~~ — 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 ~~(deleted from)~~ the charts indicated.

The positions given have been checked after listing by Henry P. Eichert

E. H. Kirsch, *Chief of Party.*

STATE	WASHINGTON		POSITION										
			LATITUDE*			LONGITUDE*							
CHARTING NAME	DESCRIPTION	SIGNAL NAME	°	′	″ D.M. METERS	°	′	″ D.P. METERS	DATUM	METHOD OF LOCATION AND SURVEY NO.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
LT	(△ Willapa River Range Rear Lt. 4, 1953)		46	41	29.803 920.3	123	57	39.159 832.2	NA 1927	Triang. T-9635	1953		x		6185
BN	(Pine Island Channel Daybeacon 2, 1953)		46	41	26.776 826.8	123	58	33.513 712.1	"	Theodolite T-9635	"		x		"
BN	(Pine Island Channel Daybeacon 4, 1953)		46	41	13.734 424.1	123	58	15.871 337.3	"	"	"		x		"
BN	(Pine Island Channel Daybeacon 6, 1953)		46	41	04.366 134.8	123	58	02.771 58.9	"	"	"		x		"
BN	(Pine Island Channel Daybeacon 8, 1953)		46	40	57.083 1762.7	123	57	47.260 1004.4	"	"	"		x		"
BN	(Pine Island Channel Daybeacon 10, 1953)		46	40	29.094 898.4	123	57	23.784 505.5	"	"	"		x		"
BN	(Pine Island Channel Daybeacon 12, 1953)		46	40	11.559 356.9	123	56	56.078 1192.1	"	"	"		x		"
LT	(△ Bay Center Channel Lt., 1953)		46	38	51.480 1589.7	123	57	01.183 25.2	"	Triang. T-9635	"		x		"
LT	(△ Bay Center Channel Directional Lt., 1953)		46	38	22.269 687.6	123	58	13.994 297.6	"	"	"		x		"
LT	(△ Willapa River Lt., 8, 1953)		46	41	30.799 951.0	123	55	40.100 852.1	"	"	"		x		"
LT	(△ Willapa River Lt. 13, 1953)		46	42	02.102 64.9	123	54	27.449 583.3	"	"	"	x			"
~~LT~~	~~(△ Cedar River Flats Light, 1953)~~		46	42	08.081 249.5	123	57	35.714 758.7	"	Removed	"	x			"
LT	(△ Willapa River Range Front Lt. 4, 1953)		46	41	32.861 1014.7	123	57	16.122 342.6	"	"	"		x		"
BN	(North River Daybeacon 2, 1953)		46	42	24.21 747	123	54	21.28 452	"	Theodolite T-9635	"		x		"

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

Form 567
April 1945

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR ~~LANDMARKS~~ FOR CHARTS

TO BE CHARTED / ~~TO BE DELETED~~ — 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 ~~(deleted from)~~ the charts indicated.

The positions given have been checked after listing by Henry P. Eichert

E. H. Kirsch, *Chief of Party.*

STATE: WASHINGTON

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION LATITUDE * ° ′	″ D.M. METERS	POSITION LONGITUDE * ° ′	″ D.P. METERS	DATUM	METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
BN	(North River Daybeacon 4, 1953)		46 42	39.41 1217	123 54	09.70 206	NA 1927	Theodolite T-9635	1953		x		6185
BN	(North River Daybeacon 6, 1953)		46 42	53.86 1663	123 54	01.98 42	"	"	"		x		"
BN	(North River Daybeacon 8, 1953)		46 43	13.54 418	123 54	02.21 47	"	"	"		x		"
BN	(North River Daybeacon 10, 1953)		46 43	33.49 1034	123 54	11.11 236	"	"	"		x		"
BN	(North River Daybeacon 12, 1953)		46 43	44.27 1367	123 54	17.14 364	"	"	"		x		"
BN	(North River Daybeacon 14, 1953)		46 43	56.74 1752	123 54	31.93 678	"	"	"		x		"
BN	(North River Daybeacon 16, 1953)		46 44	07.35 227	123 54	38.34 814	"	"	"		x		"
BN	(△ Willapa River Daybeacon 15, 1953)		46 42	08.438 260.6	123 53	52.667 1118.9	"	Triang. T-9635	"		x		"

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

Form 567
April 1945

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

NONFLOATING AIDS OR LANDMARKS FOR CHARTS

TO BE CHARTED / ~~TO BE DELETED~~ } STRIKE OUT ONE

Baltimore, Maryland 24 February, 1954

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

The positions given have been checked after listing by Henry P. Eichert

E. H. Kirsch, *Chief of Party.*

STATE: WASHINGTON

CHARTING NAME	DESCRIPTION	SIGNAL NAME	POSITION LATITUDE* ° ′	LATITUDE* ″ D.M. METERS	LONGITUDE* ° ′	LONGITUDE* ″ D.P. METERS	DATUM	METHOD OF LOCATION AND SURVEY No.	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
GAB	(△ Toke Point, Coast Guard Boathouse southeast gable, 1939)		46 42	22.016 679.8	123 57	55.730 1183.8	NA 1927	Triang. T-9635	1939		x		6185
TRIPOD	(△ Hawks 2, 1939)		46 43	37.037 1143.7	123 54	49.606 1053.4	"	"	"		x		"

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
Form 24A
Rev. Oct., 1932

For Photogrammetry

LIST OF DIRECTIONS

Station Park (Topo) *State* Washington

Chief of party F.N. *Date* 28 May 1953 *Computed by* R.H.S.II

Observer J.H.W. *Instrument* Kern 36563 *Checked by* F.N.

OBSERVED STATION	Observed direction	Eccentric reduction	Sea level reduction*	Corrected direction with zero initial	Adjusted direction*
	° ′ ″	′ ″	″	° ′ ″	′ ″
Willapa River Range Rear Light 4	0 00 00.00			0 00 00.00	
Willapa River Range Front Light 4	2 02 43.5				
Willapa River Light 8	8 53 20.8				
Willapa River Light 13	49 27 04.8				

Recorded pp. 1-4, Vol. 7
All objects v.g.
No eccentricities.
Observed from instrument tripod.

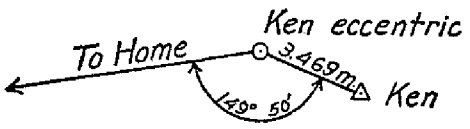
* These columns are for office use and should be left blank in the field.

Station: Ken | *State:* Maryland

Chief of party: C. V. H. | *Date:* 1917 | *Computed by:* O. P. S.

Observer: C. V. H. | *Instrument:* No. 168 | *Checked by:* W. F. R.

OBSERVED STATION	Observed direction	Eccentric reduction	Sea level reduction	Corrected direction with zero initial	Adjusted direction
	° ′ ″	′ ″	″	° ′ ″	′ ″
Chevy	0 00 00.00	− 7.31		0 00 00.00	
Tank west of △ Dulce	29 03 37.0	−1 09.8		29 02 34.5	
Ken (center), 3.469 meters	176 42				
Forest Glen standpipe	313 24 53.0	+3 01.2		313 28 01.5	
Home	326 31 30.21	+ 31.93		326 32 09.45	
Bureau of Standards, wireless pole	352 17 20.8	+ 5.7		352 17 33.8	
Reno	357 28 48.63	− 1.16		357 28 54.78	
Reference mark, 16.32 m	358 31 20				



This form, with the first three and fifth columns properly filled out and checked, must be furnished by field parties. *To be acceptable it must contain every direction observed at the station.*

It should be used for observations with both repeating and direction theodolites.

The directions at only one station should be placed on a page.

If a repeating theodolite is used, do not abstract the angles in tertiary triangulation. The local adjustment corrections (to close horizon only) are to be written in the Horizontal Angle Record, and the List of Directions is to be made from that record directly.

Choose as an initial for Form 24A some station involved in the local adjustment, and preferably one which has been used as an initial for a round of directions on objects not in the main scheme. Use but one initial at a station. Call the direction of the initial 0° 00′ 00.″ 00, and by applying the corrected angles to this, fill in opposite each station its direction reckoned *clockwise* around the whole circumference regardless of the direction of graduation of the instrument. The clockwise reckoning is necessary for uniformity and to make the directions comparable with azimuths.

If a station has been occupied eccentrically, reduce to the center and enter in this form, in ink, the resulting corrections to the observed directions in the column provided for them. If an eccentric reduction is necessary, but not made in the field, leave the column blank. If the station was occupied centrally, and no eccentric reduction is required, put dashes in the column to show that no corrections are necessary.

Directions in the main scheme should be entered to hundredths of seconds in first-order triangulation; otherwise to tenths only. Points observed upon but once, direct and reverse, should be carried to tenths in first-order and second-order triangulation, and to even seconds only in third-order triangulation. In general, but two uncertain figures should be given.

It is recommended that the following simple plan of observing be used with a repeating instrument: Measure each single angle in the scheme at each station and the outside angle necessary to close the horizon. *Measure no sum angles.* Follow each measurement of every angle immediately by a measurement of its explement. Six repetitions are to constitute a measurement. The local adjustment will consist simply of the distribution of the error of closure of the horizon.

FIELD EDIT REPORT

Project Ph-62

T-9635 and T-9636

1 August 1957

V. R. Sobieralski, Chief of Party

51. Methods

Field edit of these maps 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. The work was accomplished in June and July 1957.

All planimetric features have been edited. Deletions and additions have been made on Field Edit Sheet Nos. 1, 2 and 3 (T-9636) and Field Edit Sheet No. 1 (T-9635).

Notes to the field editor on the discrepancy prints have either been answered on the print itself or cross-referenced to the proper source of information.

In general, violet ink has been used for elevations and contour corrections made by planetable, whereas barometric elevations and contour changes have been indicated with red ink. One planetable traverse in T-9635 on the south side of the Bone River was inadvertently inked with red ink. Deletions have been made with green ink. Red ink has been used to check, correct and add cultural features.

No section corners or points on line were located in T-9635.

The following section corner in T-9636 was recovered and located by planetable:

Section Corner 32, 33, 5, 4 T14, 15N R9W, located on Field Edit Sheet No. 1.

The following section corners and points on section lines were recovered and identified on 1:20,000 scale field photographs:

Point	Identified on Photo
Section Corner 29, 28, 32, 33 T14N R9W	51 0 7173
" " 31, 1, 6 T13,14N R9,10W	51 0 7173

Point		Identified on Photo
Section Corner	36, 31, 1 T13, 14N R9,10W	51 0 7173
" "	5, 4, 8, 9 T13N R9W	51 0 7174
Point on line	3 T14N R11W	51 0 7149
" " "	10 5/4 T14N R9W	51 0 7171
" " "	34 T14,15N R9W	51 0 7150
" " "	3 10/11 T14N R9W	51 0 7149
" " "	11 T14N R9W	51 0 7149
	14	

Field edit information has been noted on the discrepancy prints, Field Edit Sheets 1 through 3 in T-9636, Field Edit Sheet No. 1 in T-9635 and on the following 1:20,000 scale field photographs:

Photograph	Information
51 0 7173	Section Corner
51 0 7174	Section Corner
51 0 7148	Buildings at west edge of Raymond
51 0 7149	Point on section line
51 0 7150	Point on section line
51 0 7171	Point on section line
51 0 7172	Terminal of submarine cable
51 0 7205	Terminal of submarine cable
51 0 7303	Terminal of submarine cable and buildings
51 0 7304	Shoreline in Bay Center and buildings

State Highway 13-A is being extended westward from the Airport Road at Willapa Harbor Airport and the present contract will take it to North River. Construction is now in progress and all of the road that could be located by planetable at the time of field edit has been located on Field Edit Sheet No. 1. Contract plans for the section from Airport Road to North River were obtained from the Washington State Highway Commission and are included with the field edit data. The following road survey stations have been located on the sheet by planetable methods: Stations 267+00, 296+56, 324+50, 335+50, 340+50, 406+00. It is believed that these stations will enable the compiler to align the new road on the map.

52. Adequacy of Compilation

No inadequacies were noted in the compilation and it will be complete with the application of the field edit data.

53. Map Accuracy

No deficiencies in horizontal accuracy were noted during field edit operations.

Vertical accuracy tests were run in both sheets. In T-9636 the tests were along the Palix River - South Bend Road and along Church Road. Of the one hundred and five points tested by plane-table, one hundred and one points or ninety-six percent of them were within one-half contour interval. Of fifteen points tested by barometric leveling, only sixty percent were within one-half contour interval. One would naturally expect the contours to be fairly accurate along the roads but inaccuracies are to be expected in the wooded areas where checking is extremely difficult and highly impractical. It is believed that this map will not conform to national map accuracy standards for a 40-foot contour interval because a large area of the map is wooded.

Three accuracy tests were run in the southeast corner of T-9635. Of ninety-three points tested by planetable, only seventy-six percent were within one-half contour interval. Of twelve points tested by barometric leveling, only eight points or sixty-seven percent were within one-half contour interval.

The accuracy tests have been abstracted and are submitted with this report.

54. Recommendations

No recommendations are made.

55. Examination of Proof Copy

A proof copy of these maps may be sent to the following named persons for examination:

Mr. I. W. Pottu
County Court House
South Bend, Washington

Mr. L. S. Mathews
County Court House
South Bend, Washington

Mr. Pottu is the Pacific County Engineer and Mr. Mathews is the office engineer for Pacific County.

The only discrepancy in geographic names that was noted is the spelling of Stuart Slough, near the west edge of T-9636. The correct spelling is STUART rather than STUWART as it is spelled on the map.

Approved:

V. Ralph Sobieralski
By J.E.D.

V. Ralph Sobieralski
LCDR C&G Survey
Chief of Party

Respectfully submitted:

Charles H Bishop

Charles H. Bishop
Cartographer
C&GS

REVIEW REPORT T-9635
TOPOGRAPHIC
6 February 1958

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

1262	1:10,000	1871	4253	1:20,000	1926
1264	"	"	6728b	1:10,000	1939
1292	"	1872	6729	"	"
3224	1:20,000	1911	6730b	"	"
3921	"	1922			

Manuscript T-9635 supercedes all of the above surveys in common areas as source material for charts.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

Corps of Engineer Tactical Map South Bend 1:62,500.

Several elevations of tops and saddles published on this map were checked during field edit and found to be +80 to +100 feet in error.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

H-8137	1954	1:10,000
H-8136	"	"

The offshore details, location of piles and daybeacons, north of latitude 46°44' in the area of North River is incomplete. This information was requested during the Photogrammetric Review on a chart section. (See item 36 Compilation Report). No contemporary hydrographic was made in this area.

65. COMPARISON WITH NAUTICAL CHARTS

Chart 6185	1:40,000	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. Refer to Items 34 and 40 of the Compilation Report.

New photography, purchased by this Bureau, was used to edit planimetric detail and the representation of contour shapes.

This photography was of 12" focal length and obtained from H. G. Chickering of Eugene, Oregon, dated 1955.

Horizontal accuracy was good as stated in item 53 of the Field Edit Report. It was of sufficient accuracy for use in the contemporary hydrographic surveys completed in this area.

67. LANDLINES

All of the landlines are unreliable. Only two section corners could be found due to the dense growth.

Reviewed by

A. K. Heywood

Approved

Chief, Review Branch
Photogrammetry Division

Chief, Nautical Chart Branch
Charts Division

Chief, Photogrammetry Division

Chief, Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. T-9635

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
9-10-57	6185	RKD	Partial ~~Before~~ After Verification and Review SMG
9-14-79	18504 (6185)	D. C. Larson	Fully ~~Before~~ After Verification and Review Has been superseded 18485
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before 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.