**Diag. Cht. No. 6450-2.**

**Form 504**

**U. S. DEPARTMENT OF COMMERCE**

**COAST AND GEODETIC SURVEY**

**DESCRIPTIVE REPORT**

**Type of Survey** Shoreline (Photogrammetric)

**Field No.** Ph-5995  **Office No.** T-11608

**LOCALITY**

<table>
<thead>
<tr>
<th>State</th>
<th>Washington</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puget Sound</td>
<td></td>
</tr>
<tr>
<td>General locality</td>
<td>Stillaguamish River</td>
</tr>
<tr>
<td>Locality</td>
<td>Stanwood</td>
</tr>
</tbody>
</table>

**1959 - 1960**

**CHIEF OF PARTY**

Lorne G. Taylor & Fred Natella

**LIBRARY & ARCHIVES**

**DATE**  September 1964
Project No. (II): Ph-5905
Quadrangle Name (IV):

Field Office (II): Mt. Vernon, Washington
Photogrammetric Office (III): Portland, Oregon
Instructions dated (III): 10 Feb. 1960 II
Supplement 1, 5 May 1960 II & III
Chief of Party: Lorne G. Taylor
Unit Chief: W. V. Hull
Officer in Charge: Lorne G. Taylor & Fred Natella
Copy filed in Division of Photogrammetry (IV)

Method of Compilation (III): Graphic
Manuscript Scale (III): 1:10,000
Stereoscopic Plotting Instrument Scale (III):
Scale Factor (III): None
Date received in Washington Office (IV): NOV 6 1961
Date reported to Nautical Chart Branch (IV):

Publication Scale (IV):
Geographic Datum (III): N.A. 1927

Reference Station (III): None can be occupied.
Vertical Datum (III): X
Mean sea level except as follows:
Elevations shown as (2) refer to mean high water
Elevations shown as (3) refer to sounding datum
i.e., mean low water or mean lower low water

Lat.: Adjusted
Long. 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.
Areas contoured by various personnel
(Show name within area)
(I) (II) (III)
FIELD INSPECTION by (II):
W. V. Hull & R. B. Melby
Date: July & Aug. 1960

PLANE TABLE CONTOURING by (II):
Date:

COMPLETION SURVEYS by (II):
Date:

MEAN HIGH WATER LOCATION (III) (State date and method of location): 7-13 and 8-29-60 by field inspection and graphic compilation.

PROJECTION AND GRIDS RULED by (IV):
J. Keefer
Date: 7-7-60

PROJECTION AND GRIDS CHECKED by (IV):
W. S.
Date: 8-17-60

CONTROL PLOTTED by (III):
C. C. Harris
Date: 10-6-60

CONTROL CHECKED by (III):
L. L. Graves
Date: 10-10-60

RADIAL PLOT OR STEREOSCOPIC
CONTROL EXTENSION by (III):
J. L. Harris
Date: 1-11-61

STEREOSCOPIC INSTRUMENT COMPILED (III):
Planimetry
Date:
Contours
Date:

MANUSCRIPT Delineated by (III):
D. N. Williams, rough draft
Date: 3-2-61
D. N. Williams, Scribing
5-1-61
C. C. Harris, Stick-up
7-7-61

PHOTOGRAMMETRIC OFFICE REVIEW by (III):
C. C. Harris, Rough Draft
Date: 3-23-61
J. E. Deal, Advance
9-19-61

ELEVATIONS ON MANUSCRIPT
CHECKED by (II) (III):
None
Date:
Camera (kind or source) (III): C&GS 9-lens - 8.25 inches focal length.

**PHOTOGRAPHS (III)**

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Time</th>
<th>Scale</th>
<th>Stage of Tide</th>
</tr>
</thead>
<tbody>
<tr>
<td>60016 thru</td>
<td>9-9-59</td>
<td>09:00</td>
<td>1:10,000</td>
<td>4.9' above M.L.L.W.</td>
</tr>
<tr>
<td>60018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60089 thru</td>
<td></td>
<td>09:50</td>
<td></td>
<td>5.8' above M.L.L.W.</td>
</tr>
<tr>
<td>60091</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tide (III)**

| Reference Station: Seattle, Washington |
| Subordinate Station: Stanwood, Stillaguamish River |

<table>
<thead>
<tr>
<th>Ratio of Diurnal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Spring Range</td>
</tr>
<tr>
<td>Mean Range</td>
</tr>
</tbody>
</table>

Washington Office Review by (IV):

Final Drafting by (IV):

Drafting verified for reproduction by (IV):

Proof Edit by (IV):

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

Shoreline (More than 200 meters to opposite shore) (III): 11

Shoreline (Less than 200 meters to opposite shore) (III): 2

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II): 3

Number of BMs searched for (II): 1

Number of Recoverable Photo Stations established (III): None

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

Remarks:
FIELD INSPECTION REPORT

Map Manuscript T-11608

Project Ph-5905

Refer to the Field Inspection Report for the entire Project Ph-5905 by Wesley V. Hull, February 1960 to September 1960.

Filed with Desc. Report T-11584
PHOTOGRAMMETRIC PLOT REPORT

Map Manuscript T-11608

Project Ph-5905

Refer to Photogrammetric Plot Report for T-11598 thru T-11600, T-11606 thru T-11610 and T-11616 which is included in the Descriptive Report for T-11598 (1960).
<table>
<thead>
<tr>
<th>STATION</th>
<th>SOURCE OF INFORMATION (INDEX)</th>
<th>DATUM</th>
<th>LATITUDE OR μ-COORDINATE LONGITUDE OR x-COORDINATE</th>
<th>DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS</th>
<th>DATUM CORRECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>STANWOOD, NORWEGIAN LUTHERAN CHURCH, RED STEEPLE, 1924</td>
<td>Wash.N.</td>
<td>N.A.</td>
<td>457,336.14</td>
<td>2336.14 (2663.86)</td>
<td>712.1 (811.9)</td>
</tr>
<tr>
<td>EAST STANWOOD, CARNATION MILK CO. CHIMNEY, 1924</td>
<td>P-297</td>
<td>1927</td>
<td>1,626,650.75</td>
<td>1650.75 (3349.25)</td>
<td>503.1 (1020.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N.A. 1927 DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORWARD (BACK)</td>
</tr>
<tr>
<td>712.1 (811.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORWARD (BACK)</td>
</tr>
<tr>
<td>552.0 (972.0)</td>
</tr>
</tbody>
</table>
31. **Delineation:**

   Graphic methods were used to compile the planimetry. Field inspection was adequate. The city limits of Stanwood and East Stanwood were transferred to the manuscript from the U.S.G.S. Stanwood, Wash. 7½ minute quadrangle.

32. **Control:**

   Refer to Descriptive Report for T-11607 (1960).

33. **Supplemental Data:**

   None.

34. **Contours and Drainage:**

   Contours are not applicable.

   Drainage not field inspected was delineated by the compiler with reference to the U.S.G.S. 7½ minute Stanwood, Washington quadrangle.

35. **Shoreline and Alongshore Areas:**

   Field inspection of these features was adequate. Because the photography was made just below mean high-water the limits of the grass in water areas in Port Susan are only approximate. For the same reason no low-water or shoal lines were compiled and only the foreshore areas visible on the photographs are shown in Stillaguamish River and Hat Slough.

   The large tidal flats in this area are an important characteristic and low-water photography would have been most desirable for adequate delineation.

36. **Offshore details:**

   Numerous piling and dolphins have been compiled just offshore from the mean high-water line.

37. **Landmarks and Aids:**

   There are no aids to navigation.
Forms 567 are submitted for the charting of one landmark and deletion of one landmark.

38. **Control for Future Surveys:**
   None.

39. **Junctions:**
   Satisfactory junctions were made on the north with T-11600, on the west with T-11607, on the east with T-11609 and on the south with T-11616.

40. **Horizontal and Vertical Accuracy:**
   Refer to Descriptive Report for T-11607.

46. **Comparison with Existing Maps:**
   Comparison was made with U.S.G.S. 7½ minute Stanwood, Wash. quadrangle, Scale 1:24,000, Edition of 1956.

47. **Comparison with Nautical Charts:**
   Comparison was made with Nautical Chart 6450, Scale 1:80,000, Eleventh Edition, revised 9-5-60, hand corrected thru 4-15-61.

   Items to be Applied to Nautical Charts Immediately:
   None.

   Items to be Carried Forward:
   None.

Approved: Fred Natella, CAPT, C&GS
Respectfully submitted: J. Edward Deal
Portland District Officer Cartographer
49. Notes to the Hydrographer:

None.
<table>
<thead>
<tr>
<th>COMPILATION RECORD</th>
<th>COMPLETION DATE</th>
<th>REMARKS</th>
</tr>
</thead>
</table>
PHOTOGRAMMETRIC OFFICE REVIEW
T. 11603

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

CONTROL STATIONS
5. Horizontal control stations of third-order or higher accuracy X
6. Recoverable horizontal stations of less than third-order accuracy (topographic stations) X
7. Photo hydro stations None
8. Bench marks None
9. Plotting of sextant fixes None
10. Photogrammetric plot report X
11. Detail points X

ALONGSHORE AREAS
(Nautical Chart Data)
12. Shoreline X
13. Low-water line None
14. Rocks, shoals, etc. X
15. Bridges X
16. Aids to navigation None
17. Landmarks X
18. Other alongshore physical features X
19. Other alongshore cultural features X

PHYSICAL FEATURES
20. Water features X
21. Natural ground cover X
22. Planetable contours None
23. Stereoscopic instrument contours None
24. Contours in general None
25. Spot elevations
26. Other physical features X

CULTURAL FEATURES
27. Roads X
28. Buildings X
29. Railroads None
30. Other cultural features X

BOUNDARIES
31. Boundary lines X
32. Public land lines None

MISCELLANEOUS
33. Geographic names X
34. Junctions X
35. Legibility of the manuscript X
36. Discrepancy overlay None
37. Descriptive Report X
38. Field inspection photographs
39. Forms
40. C.C. Harris

Reviewer

Supervisor, Review Section or Unit

J. Edward Deal

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:
48. Geographic Names:

Church Creek
Douglas Slough
East Stanwood
Florence
Hat Slough
Irvine Slough
Jorgenson Slough
Port Susan
Stanwood
Stillaguamish River

Geographic Names Section
25 February 1963
61. General Statement

These are ten (10) shoreline maps of Project PH 5905, Puget Sound, Washington. These maps were prepared primarily to provide basic maps, including the location of all non-floating aids and landmarks for use in revising our nautical charts and for control of proposed hydrographic surveys.

62. Comparison with Registered Topographic Surveys

<table>
<thead>
<tr>
<th>Survey</th>
<th>Scale</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-1254</td>
<td>1:10,000</td>
<td>1871</td>
</tr>
<tr>
<td>T-1755</td>
<td>1:20,000</td>
<td>1886</td>
</tr>
<tr>
<td>T-1994</td>
<td>1:20,000</td>
<td>1888</td>
</tr>
<tr>
<td>T-2011</td>
<td>1:20,000</td>
<td>1888</td>
</tr>
<tr>
<td>T-1253</td>
<td>1:10,000</td>
<td>1871</td>
</tr>
<tr>
<td>T-6767</td>
<td>1:10,000</td>
<td>1940</td>
</tr>
<tr>
<td>T-6768</td>
<td>1:10,000</td>
<td>1940</td>
</tr>
</tbody>
</table>

There are cultural and shoreline changes due to the difference in time interval. The shoreline has eroded approximately 30 to 40 meters in some areas. T-11601 through T-11610 are to supersede the above listed surveys of common areas for nautical charting.

63. Comparison with Maps of Other Agencies

<table>
<thead>
<tr>
<th>Agency</th>
<th>Scale</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port Townsend North</td>
<td>1:24,000</td>
<td>1953</td>
</tr>
<tr>
<td>Coupeville</td>
<td>1:24,000</td>
<td>1953</td>
</tr>
<tr>
<td>Camano</td>
<td>1:24,000</td>
<td>1953</td>
</tr>
<tr>
<td>Juniper Beach</td>
<td>1:24,000</td>
<td>1956</td>
</tr>
<tr>
<td>Stanwood</td>
<td>1:24,000</td>
<td>1956</td>
</tr>
<tr>
<td>Arlington West</td>
<td>1:24,000</td>
<td>1956</td>
</tr>
</tbody>
</table>

There are small cultural and shoreline differences but in general the agreement is good.

64. Comparison with Contemporary Hydrographic Surveys

<table>
<thead>
<tr>
<th>Survey</th>
<th>Scale</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>H-8542</td>
<td>1:10,000</td>
<td>1960</td>
</tr>
<tr>
<td>H-8543</td>
<td>1:10,000</td>
<td>1960</td>
</tr>
<tr>
<td>H-8544</td>
<td>1:10,000</td>
<td>1960</td>
</tr>
</tbody>
</table>

Shoreline and control of the subject surveys was furnished prior to the hydrographic surveys and apparently no difference exist.

65. Comparison with Nautical Charts

<table>
<thead>
<tr>
<th>Survey</th>
<th>Scale</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>6450</td>
<td>1:80,000</td>
<td>1961 revised to 1963</td>
</tr>
<tr>
<td>184 S.C.</td>
<td>1:80,000</td>
<td>1963</td>
</tr>
</tbody>
</table>
There are only minor differences between the charts and the manuscript.

66. **Accuracy of Results and Future Surveys**

These surveys were constructed according to project instructions and are within the requirements for adequacy and accuracy.

Reviewed by:

[Signature]

L. C. Lande

Approved by:

[Signature]

Chief, Photogrammetric Branch

Chief, Nautical Chart Division

[Signature]

Chief, Photogrammetry Division

Acting
**INSTRUCTIONS**

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

<table>
<thead>
<tr>
<th>CHART</th>
<th>DATE</th>
<th>CARTOGRAPHER</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>184-5C</td>
<td>12-29-64</td>
<td>A. J. Hoffman</td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td>6300</td>
<td>8-19-65</td>
<td>C. Robinson</td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td>18-441</td>
<td>3-27-80</td>
<td>R. A. Lillies</td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No.</td>
</tr>
<tr>
<td>18-423</td>
<td>1/21/81</td>
<td>D. C. Larsen</td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No. 21</td>
</tr>
<tr>
<td>18-440</td>
<td>3/12/81</td>
<td>D. C. Larsen</td>
<td>Full Part Before After Verification Review Inspection Signed Via Drawing No. 33</td>
</tr>
</tbody>
</table>

**FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. T-11608**