

11456 THRU 11462

11456 THRU 11462

Diag. Cht. No. 5902-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Shoreline (Photogrammetric)

Field No. Ph-132 B Office No. T-11456 thru  
T-11462

LOCALITY

State Oregon

General locality Tillamook County

Locality Nehalem River

1954

CHIEF OF PARTY

F. Natella

LIBRARY & ARCHIVES

DATE July 31, 1959

## DATA RECORD

2;

T - 11456 - 11462

Project No. (II): Ph-132 B

Quadrangle Name (IV):

Field Office (II): Portland, Oregon

Chief of Party: Fred Natella

Photogrammetric Office (III): Portland, Oregon

Officer-in-Charge: Fred Natella -

Instructions dated (II) (III): 14 July 1954

24 Feb. 1955 (Office)

Supplement 1

Copy filed in Division of  
Photogrammetry (IV)

Method of Compilation (III): Kelsh Plotter

Manuscript Scale (III): 1:5,000

Stereoscopic Plotting Instrument Scale (II): 1:3,000

Scale Factor (III): None

Date received in Washington Office (IV):

Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV):

1/29/59

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): See reverse side of this page

Lat.:

Long.:

Adjusted X  
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.

T-11456

NEAHKAHNIE, 1875

Lat.	45°	44'	37.958"	1171.9m
Long.	123°	56'	25.663"	554.8m

T-11457

QUARRY, 1954

Lat.	45°	45'	28.030"	865.4m
Long.	123°	53'	10.448"	225.8m

T-11458

GRAVEL, 1954

Lat.	45°	44'	57.301"	1769.1m
Long.	123°	50'	16.785"	362.8m

T-11459

CREST, 1954

Lat.	45°	42'	02.925"	90.3m
Long.	123°	55'	22.974"	497.0m

T-11460

MOHLER, 1954

Lat.	45°	42'	08.514"	262.9m
Long.	123°	51'	52.465"	1135.0m

T-11461

NEHALEM, 1926

Lat.	45°	39'	57.981"	1790.0m
Long.	123°	56'	10.746"	232.6m

T-11462

NEDONNA, 1954

Lat.	45°	38'	35.535"	1097.1m
Long.	123°	56'	22.831"	494.4m


Areas contoured by various personnel

(Show name within area)

(II) (III)

# DATA RECORD

4.

Field Inspection by (II): Charles H. Bishop  
Leonard F. Van Scoy  
Joe B. Roberts

Date: August -  
November 1954

Planetable contouring by (II):

Date:

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location): From field inspection data of August to November 1954 and as verified by compiler using Kelsh Plotter,

Projection and Grids ruled by (IV):

Date:

Projection and Grids checked by (IV):

Date:

Control plotted by (III): J. L. Harris

Date: 3/29/55

Control checked by (III): J. E. Deal

Date: 4/4/55

Radial Plot or Stereoscopic T-11456 thru T-11459 (Stereoplanigraph)  
Control extension by (III): T-11459(Part) thru T-11460, J. E. Deal

Date: May 1956  
June 1955

Stereoscopic Instrument compilation (III):  
Planimetry D. N. Williams  
(all sheets)  
Contours

Date: June & July 1955  
Revision June 1956  
Date:

Manuscript delineated by (III): See reverse side for drafting

Date:

Photogrammetric Office Review by (III): J. E. Deal

Date: Aug. Sept. 1955  
Aug. 1956

Elevations on Manuscript  
checked by (II) (III):

*Not applicable*

Date:

Sheet No.	Scribing	Date	Stick-up	Date
T-11456	J. L. Harris	8/8/55	C. C. Harris	9/19/55
T-11457	J. L. Harris	8/17/55	J. L. Harris	9/12/55
T-11458	D. N. Williams	8/25/55	D. N. Williams	9/14/55
T-11459	C. C. Harris	8/19/55	C. C. Harris	8/26/55
T-11460	J. L. Harris	7/28/55	J. L. Harris	8/10/55
T-11461	C. C. Harris	7/11/55	C. C. Harris	7/19/55
T-11462	J. L. Harris	7/15/55	J. L. Harris	7/20/55

Revision of T-11456 thru T-11459 - D.N. Williams - 7/23/56

Camera (kind or source) (III): U.S.C. & G.S. (Wild Single Lens) Focal length  
6 inches

5.

PHOTOGRAPHS (III)					
Number	Date	Time	Scale	Stage of Tide	
54W2068 thru 2077	5/28/54	7:30	1:5000 (ratio)		
54W2081 "	2084 "	7:35	"	5.0 ft. above M.L.L.W.:	
54W2089 "	2093 "	7:40	"	@ coast (Brighton)	
54W2101 "	2103 "	7:45	"		
54W2106 "	" "	7:50	"	3.9 ft. above M.L.L.W.:	
54W2111 "	2122 "	7:55	"	Nehalem River (Nehalem)	
55W807 "	816 10/15/55	10:45	1:15000 (contact)	7.7 ft. above M.L.L.W.	
55W830 "	835 "	10:55	"	@ Coast	
				6.1 ft. above M.L.L.W.	
				@ Nehalem	

Tide (III)

Reference Station: Humboldt Bay, California  
Subordinate Station: Brighton, Oregon  
Subordinate Station: Nehalem, Oregon

Diurnal		
Ratio of Ranges	Mean Range	Spring Range
	4.5	6.4
1.3	5.9	7.8
1.2	5.6	7.2

Washington Office Review by (IV):

Date: Dec. 1958

Final Drafting by (IV):

Portland Photogrammetric Office

Date: 1955

Drafting verified for reproduction by (IV):

J. J. Streifler

Date: Dec. 1958

Proof Edit by (IV):

Date:

Land Area (Sq. Statute Miles) (III): 16.3

Shoreline (More than 200 meters to opposite shore) (III): 29.5 statute miles

Shoreline (Less than 200 meters to opposite shore) (III): 16.1 statute miles

Control Leveling - Miles (II):

Number of Triangulation Stations searched for (II):

Recovered: 6

Identified: 42

Number of BMs searched for (II):

Recovered: 3

Identified:

Number of Recoverable Photo Stations established (III): 2

Number of Temporary Photo Hydro Stations established (III): 136

Remarks:

### Summary

to accompany shoreline surveys T-11456 thru T-11462

Subject surveys are a group of seven shoreline surveys, representing part "B" of project PH-132 (6132). It is situated on the Pacific Coast in the State of Oregon and extends in latitude from 45°37'30" to 45°45'00", in longitude from 123°48'45" to 124°00'00". This covers the Pacific coastal area from Manhattan Beach northward to Neakahnie Mt., and from Nehalem River Entrance along Nehalem River to a point 1.3 miles past Mohler on State Road No. 53, as well as Nehalem Bay and about 2 miles of N. Fork Nehalem River.

The project originated in 1954 for the purpose of providing base maps of a new nautical chart and to furnish shoreline and horizontal control data for future hydrographic surveys. The seven sheets were compiled in 1955 at the Portland Photogrammetric Office by a combination of Kelsh Model - and Radial Line-Templates and because of considerable elevation differences supplemented by Stereoplanigraph Bridging along the north limits of the project from the Washington Office. Copies of "Advanced Compilation Manuscripts" were furnished and utilized in the compilation of hydrographic surveys H-8346 and H-8368 during 1956-57 and at the time of the Washington Office Review were found to be in good agreement with subject surveys.

A cronar film positive at the compilation scale of 1:5000 and the Descriptive Report will be registered and filed in the Bureau Archives.

Dec. 1958



## FIELD INSPECTION REPORT

NEHALEM RIVER, OREGON

Project Ph-132B

August - November 1954

2. Areal Field Inspection:

This report covers a coastal area entirely within Tillamook County and lies between latitudes  $45^{\circ} 37' 30''$  and  $45^{\circ} 45' 00''$  and between longitude  $123^{\circ} 48' 45''$  and the Pacific Ocean. The Nehalem River enters the area near the northeast corner of the project, flows in a southwesterly direction and enters the Pacific Ocean near the southwest corner. A sand spit about  $2\frac{1}{2}$  miles long and 0.2 to 0.3 mile wide is on the north side of the river mouth. The river widens into Nehalem Bay about 3 miles north of its mouth. It is affected by tide to the limits of field inspection. Nehalem Bay is about 2 miles long, between 1 and 2 miles wide and is between Wheeler and the north end of the sand spit between the lower Nehalem River and the ocean. It is mostly bare at low tide with numerous snags scattered throughout its area. The river channel is along the south side of the bay.

The south end of the project area is characterized by a flat sandy area about 0.2 to 0.5 mile wide, joined on the east side by wooded hills rising to elevations of more than 1000 feet at the east edge of the project. U. S. Highway 101 and State Highway 53 follow the base of these hills throughout the length of the project. The Nehalem River valley is a flat area, mostly treeless with scattered alders along the river and sloughs. It is about  $1\frac{1}{2}$  miles wide at its widest point and extends from Dean Point to the north limit of the project area. The area north of Manzanita and Nehalem has been partially logged off and attains the highest elevations in the project.

U. S. Highway 101, a well traveled north-south route, enters the area close to the coast at the south limit of the area and follows along the coast to the Nehalem River, then along the east edge of the river to Nehalem where it crosses and continues in a general northwesterly direction to the north limit of the project. Oregon State Highway 53 has its junction with U. S. Highway 101 about 1 mile north of Wheeler. It meanders along the southeast edge of the river valley and leaves the project area at the northeast corner.

Principal industries in the area are lumbering, dairying and tourist trade. There is a shingle mill in Wheeler. A small cheese factory is at Mohler and another near the northeast corner of the area. Many tourists come to the area to fish the Nehalem River which is well known for its salmon and steelhead.

There are several settlements in the area. Wheeler, the principal one, is located on the east side of Nehalem Bay. There is a bank, hospital, grocery stores, arthritis clinic, hardware and other stores here, as well as tourist accommodations. Nehalem, which ranks second to Wheeler, is on the west side of the Nehalem River about 1.5 miles north of Wheeler. Brighton is a small settlement along U. S. Highway 101 about 1 mile north of the mouth of the river. Manzanita, a resort community, is located along the ocean beach 2 miles west of Nehalem. Its population is seasonal. Manhattan, another resort community, is along U. S. Highway 101 at the south edge of the area. Mohler is a small settlement located 1 mile east of the junction of U. S. Highway 101 and State Highway 53. There is a store, post office and small cheese factory here.

A line of the Southern Pacific Company parallels U. S. Highway 101 through the area from the south limit to Wheeler, then parallels State Highway 53 to Mohler where it turns south and east along the Nehalem River and continues eastward from the east limit of the project.

There is a current topographic survey of the land area of this project by the U. S. Geological Survey.

### 3. Horizontal Control:

Only six stations established by the U. S. Coast and Geodetic Survey were recovered. These were not adequate for control of the radial plot and additional triangulation was necessary. Two main quadrilaterals were extended eastward from the line MANZANITA 1926 - NEAHKAHNIE 1875 - 1941. As this line was not previously observed, an inverse computation was necessary for the starting distance and azimuth. NEAHKAHNIE 2 (USE) 1941 was used for a check angle. The check was between 2 and 3 seconds. The triangle MANZANITA - NEAHKAHNIE 2 - NEAHKAHNIE was not observed because the line NEAHKAHNIE 2 - NEAHKAHNIE was obstructed by trees. Several supplemental stations and sixteen intersection stations were established. Five U. S. E. traverse stations were tied into the scheme.

(a) The following additional marked triangulation stations were established using the line MANZANITA 1926 - NEAHKAHNIE 1875 - 1941 as a take-off line:

CARLTON 2	J 97	SOUTH
CREST	L 47	STUMP
DEAN POINT	MOHLER	TEM L
GRAVEL	NEDONNA	TRANS
HOGBACK	QUARRY	WILKINS
	R 47	

The accuracy of these stations is second order, except CARLTON 2. This station could be seen only from stations CREST and NEHALEM 1926

which unfortunately, were not intervisible from the ground. Therefore, the determination of the triangle closure for triangle CARLTON 2 - CREST - NEHALEM was derived from an inverse computation between the established position of NEHALEM and the new position of CREST. The resulting 15 seconds closure should not be attributed entirely to instrumental error - some of it surely must be due to inconsistency in the adjusted positions of NEHALEM and the two recovered stations from which CREST was determined. Until the office makes a study of the problem and determines the cause of this error and the means to correct it the position of CARLTON 2 should be considered as less than third order.

The following objects were located by theodolite cuts:

Manzanita, Red House, West Gable	
Mohler, Blue House, North Gable	
Mohler, White Barn, West Gable	
Nehalem, L-shaped Barn, North Gable	
Nehalem River Daybeacon 1	
" " "	2
" " "	3
" " "	4
" " "	5
Nehalem River, White Silo, Center of Top	
" " Dell Curtis Moorage, West Gable	
" " Entrance Range 1 Front Light	
" " " " " Rear "	
" " Unpainted Barn, South Gable	
Nehalem, White Barn, North Gable	
Wheeler, Lewis Shingle Co., Spar	

The accuracy of these intersection stations is third order.

(b) No datum adjustments were made by the field party.

(c) The following U. S. E. traverse stations were recovered and tied to Coast and Geodetic Survey control by triangulation or traverse:

TEM 1	J 97	K 47
R 47	M 47	

The accuracy of these stations is second order.

(d) The following stations were searched for and reported as LOST:

CARLTON 1875  
 First Peak East of Neahkahnie 1926  
 High Point of Trees between Wheeler and Brighton 1926  
 High Point of Trees South of Brighton 1926  
 KEATON 1875  
 Mountain North of Neahkahnie Mountain 1926  
 MOUTH 1926

(e) The following Coast and Geodetic Survey control stations were not searched for:

BEND 1875 (description inadequate, area changed)  
 Brighton, Water Tank on Hill 1926 (in vicinity of recovered station)  
 FISHERY 1875 (previously listed as LOST)  
 LANDING 1875 (previously listed as LOST)  
 POINT 1875 (previously listed as LOST)  
 REDWOOD 1875 (location is under large sand dune near MANZANITA 1926)  
 SEELY 1875 (previously listed as LOST)

(f) The quality of identification of stations is noted on each identification card. Two stations listed as "doubtful" (Cable, Prominent White House South of Brighton 1926 and Large Rock off Carlton 1875) were identified for verification by the radial plot rather than for control.

4. Vertical Control:

Not applicable.

5. Contours and Drainage:

Not applicable.

6. Woodland Cover:

Not applicable.

7. Shoreline and Alongshore Features:

(a) The mean high water line has been indicated in the usual manner on the following photographs:

2068	2082 - 2084	2101 - 2103	2117 - 2121
2075	2089 - 2093	2106	

The mean high water line in the vicinity of CARLTON 2 is at the base of sheer cliffs and was inspected the best way possible from the tops of the cliffs. The mean high water line around the sand spit and southward from the mouth of the river was determined by measuring from identifiable points on the photographs and is subject to frequent changes by storm and current action. There are long stretches of apparent shoreline in Nehalem Bay. The marsh on the east side of the bay apparently

is building up toward the west and no definite line can be indicated on that side of the marsh. At extreme high waters the entire marsh is flooded.

The shoreline up-river from Nehalem is characterized by overhanging trees and many piling close to the shore.

(b) No attempt was made to locate the low water line. The approximate low water line has been indicated occasionally.

(c) The character of the foreshore has been indicated on the field photographs.

(d) The only cliffs in the area are in the vicinity of CARLTON 2. These have been indicated on the photographs. Bluffs and banks that exist along the river between Wheeler and Mohler have been indicated on the photographs.

(e) All shoreline structures have been indicated on the field photographs.

(f) There is only one submarine cable in the project. The shore ends of it have been indicated on photograph No. 2118.

(g) There are no shoreline features other than piers and floats which have been delineated on the photographs.

#### 8. Offshore Features:

Charted rocks just inside the mouth of the river were investigated and data noted on photograph No. 2118. Rails driven as piling in the vicinity of Brighton were not visible on the photographs and were located by sextant fixes recorded on the face of photograph No. 2117. Other offshore piling, mostly close to shore, were visible on the photographs and indicated thereon. Heights were estimated and checked at intervals by use of a hand level. The heights of several snags in Nehalem Bay and Nehalem River in the vicinity of Nehalem and Wheeler were determined by the same method. Heights of the rocks offshore from the cliffs at the northwest corner of the project were estimated by looking down on them from the top of the cliffs. The taller ones may not be accurate within several feet. No rocks in the project that were not visible on the photographs were located.

#### 9. Landmarks and Aids:

No landmarks were selected. Seven fixed aids were located by theodolite cuts. Form 567 is submitted.

10. Boundaries, Monuments and Lines:

Not applicable.

11. Other Control:

No topographic stations were established. Triangulation is closely enough spaced throughout the area to satisfy this requirement. The following photo-hydro points were identified and briefly described on the face of the photographs:

<u>Station</u>	<u>Photo No.</u>	<u>Station</u>	<u>Photo No.</u>
5601-5604	2106	6001-6004	2101
5701-5713	2102	6005-6012	2093
5801-5819	2075	6101-6115	2084
5820-5854	2101	6102-6104	2117
5901-5904	2102	6105-6110	2118
5905-5921	2091	6111-6114	2117
5922-5934	2082		

It was assumed that the hydrographer will have the field photographs or duplicates of them with the photo-hydro points identified thereon in his possession when recovery of the points is attempted. It will be very difficult, if not impossible to recover many of the points without the photographs.

12. Other interior Features:

Roads in this project were classified as DDL and DFL - double dashed line and double full line. Buildings to be mapped have been outlined or circled in red. Unless they are indicated as Class 2, they are Class 1. Deletions have been made with green ink.

Bridge clearances have been noted on the photographs, with the exception of the swing bridge at Nehalem. The omission of this bridge clearance was an oversight. Clearance data is as follows:

<u>Bridge</u>	<u>Type</u>	<u>Horiz.</u> <u>(feet)</u>	<u>Vertical</u> <u>(feet)</u>	<u>Time</u> <u>(PST)</u>	<u>Date</u>
Hwy over North Fork Nehalem River 1.4 miles NE of Nehalem	Fixed	93 (right span)	11.3	1150	8/25/54
Hwy over Neha- lem River at Mohler	Fixed	R 97 L 97	18.0	1545	8/27/54

<u>Bridge</u>	<u>Type</u>	<u>Horiz. (feet)</u>	<u>Vertical (feet)</u>	<u>Time (PST)</u>	<u>Date</u>
Railroad over Nehalem River 0.4 mile south of Mohler	Fixed	166	27.7	1130	8/25/54

There are three overhead power line crossings and one telephone line crossing over the Nehalem River between Wheeler and Mohler. Clearances above the water have been determined by use of the planetable and alidade and the data recorded on the backs of photograph Nos. 2091 and 2101.

<u>Cable</u>	<u>Location</u>	<u>Clearance (feet)</u>	<u>Time</u>	<u>Date</u>
Power	South side of bridge at Nehalem	49.3	Lowest point above mean high water	
Power	0.7 mile north of Mohler	30.2	1000	11/23/54
Telephone	1.1 mile north west of Mohler	30.4	1020	11/23/54
Power	1.2 mile north west of Mohler	33.0	1020	11/23/54

There are no airports or landing fields within the project area.

### 13. Geographic Names:

No systematic investigation of geographic names was required and none was made. The names "Tideland Road" and "McDonald Road", both marked by road signs at each end of the roads in the vicinity of Nehalem, have been indicated on the appropriate photographs.

### 14. Special Reports:

The only special report accompanying the data for this project is COAST PILOT REPORT, NEHALEM RIVER, OREGON, Project Ph-132B, dated 14 December 1954.

### 15. Notes for the Hydrographer:

Data that should be further investigated by the hydrographer are:



- (a) Horizontal and vertical clearance of swing bridge at Nehalem.
- (b) Horizontal clearance of railroad bridge 0.4 mile south of Mohler.
- (c) Coast Pilot.

*d) Investigation of landmarks for charts.*

*CH, 12/27/54*

Approved and forwarded:

Respectfully submitted:

*Fred Natella*  
 Fred Natella  
 Comdr., USC&G Survey  
 Chief of Party

*for Fred Natella*  
 Charles H. Bishop  
 Cartographer  
 USC&GS

To the statement "The accuracy of these stations is second order" under the heading of "Horizontal Control", paragraph 3 (a), I would like to interpose this amendment - the scheme in itself is of second order calibre, but since it took off from a third order line, for the present, and until a connection is made to a line of higher order, the scheme should be considered no better than the starting data or third order. It is believed the line WILKINS - QUARRY can be connected directly to RECTOR L.O. (USE) - FOLEY without too much difficulty. With the office's approval, reconnaissance for this or some other connection will be made next Spring and a report submitted on the results.

*F. N.*

F. N.



## PHOTOGRAMMETRIC PLOT REPORT

Map Manuscripts T-11456 thru T-11462

Project 2727 (6132B)

21. Area Covered:

The plot covers an area about one mile wide along the Pacific Ocean shoreline from Manhattan, Oregon to Neahkahnie Mountain, Oregon. Also included are both shores of the Nehalem River from its mouth to Nehalem Bay, all of the shoreline of Nehalem Bay, Nehalem River from Nehalem Bay to a point about 2 miles upstream from the town Nehalem and the North Fork of the Nehalem River from Nehalem again to a point about 2 miles upstream from Nehalem. It comprises Map Manuscripts T-11456 thru T-11462.

22. Method:

Seven polyconic projections, scale 1:5000, one for each map manuscript and ruled on vinylite were joined together for the original radial plot which was a combination of Kelsh Model Templets and Radial Line Templets. Several subsequent plots were made with Kelsh Model Templets and a control extension was made in the Washington Office along the north limits of the project by Stereoplanigraph Bridging. All facts relative to all the work required for the completion of a photogrammetric plot for this project is contained in correspondence, copies of which are included in this report and listed in order of reading as follows:

Letter to Chief, Division of Photogrammetry, dated 19 May 1955,  
Subject: "Radial Plot Project Ph-132B".

Letter 731-lmh from Chief, Photogrammetry Division, dated  
26 May 1955, Subject: "Kelsh Bridging, Project Ph-132B".

Letter to Chief, Division of Photogrammetry dated 7 June 1955  
Subject: "Kelsh Bridging, Project Ph-132B".

Letter 731,mkl from Asst. Chief, Photogrammetry Division dated  
14 June 1955, Subject: "Kelsh Bridging, Project Ph-132B".

Letter to Chief, Division of Photogrammetry, dated 20 July 1955,  
Subject: "Radial Plot Ph-132B".

Letter 711,mkl from Chief, Photogrammetry Division, dated 4  
August 1955, Subject: "Radial Plot, Project Ph-132B".

Letter to Chief, Division of Photogrammetry dated 9 August 1955,  
Subject: "Map Manuscript T-11456, Project Ph-132B".

Letter 73,mkl from Chief, Photogrammetry Division, dated 23 January 1956, Subject: "Compilation, Project 6132B, Nehalem River, Oregon.

Letter to Chief, Division of Photogrammetry, dated 12 March 1956, Subject: "Revision, Radial Plot, Project 6132B using Kelsh Model Templates, 1955 photography."

Letter 77,vbr from Chief, Photogrammetry Division dated 20 April 1956, Subject: "Stereoplanigraph Bridging, Project 6132".

Stereoplanigraph Bridging Report (no date) Project 6132 submitted by J. Perrow, Cartographer.

23 thru 30:

Facts pertinent to these items are contained in the correspondence listed.

Forwarded:



Fred Natella  
Comdr., C&G Survey  
Officer-in-Charge

Respectfully submitted:



J. Edward Deal  
Cartographer  
USC&GS

19 May 1954<sup>5</sup>

To: The Chief, Division of Photogrammetry  
U. S. Coast and Geodetic Survey  
Department of Commerce  
Washington 25, D. C.

Subject: Radial Plot - Project 132B

Ratio office prints were not furnished for each single lens photograph covering Project Ph-132B but a diapositive of each photograph for use in the Kelsh Plotter was furnished.

For this reason it was first assumed that it was intended to run the radial plot by making acetate templets of each model obtained in the Kelsh Plotter. This method was tried and two templets were drawn of each model using a different point of origin for each of the two templets when drawing radials. It was soon evident that much of the horizontal control could not be used to advantage by this method. A regular radial plot using ratio office prints and acetate radial line templets was then run and has been practically completed within the detail limits of the project.

During this process a stronger radial plot was attempted by including field ratio prints W-2070 thru W-2073 along with the office ratio prints to tie into stations QUARRY, HOGBACK and NEA-KAHNIE across the northern limits of the project.

After considerable effort we have not been able to accomplish this with the photographs on hand and it is believed that paper distortion in the field prints may be causing the trouble.

It is requested that office ratio prints Scale 1:5000 be furnished for W-2070 thru W-2073 so we may attempt to complete the plot to our satisfaction and also in order to determine the accuracy of field identification in this area.

We would like to clear this condition immediately but if desired it may be done sometime in the future because the area in question is outside the detail limits of the project.

The compilation work by Kelsh Plotter will not be delayed since a good plot will be completed by a hand templet method supplemented where needed by templets made from models obtained with the Kelsh Plotter.

S/FRED NATELLA  
Fred Natella  
Comdr., C&G Suvery  
Officer-in-Charge

JED/bpo

731-lmh  
26 May 1955

To: CDR. Fred Natella  
U. S. Coast and Geodetic Survey  
405 Custom House  
Portland 9, Oregon

Subject: Kelsh Bridging - Project Ph-132B

Receipt of your letter dated 19 May 1955, regarding the plotting on project Ph-132B, is acknowledged. I can well understand the difficulties you have experienced, and want you to continue to refer your problems to this office for assistance.

We think that we should discontinue all single-lens radial line plots with unrectified photographs as rapidly as possible and make such plots with rectified photographs or with model templates. Consequently, I want you to put aside the radial plot on Ph-132B and explore further the possibility of completing this project either with the Kelsh plotter directly or with model templates, or a combination of both, as stated in the remainder of this letter.

With your present equipment this limits the bridging facilities for your Kelsh work to bridging directly with the Kelsh plotter or with model templates. The bare rudiments of these methods were given to Mr. Williams while he was in Washington, but unfortunately time was not sufficient to give him adequate training in these procedures.

We have examined the project diagram and are unable to determine why the horizontal control could not be used to the best advantage by the model template method. It is noted that you prepared two templates for each model, using a different point of origin for each of the templates. Presumably, you selected the origins that would give the strongest cuts and optimum utilization of horizontal control. Is the difficulty due to some of the control points falling off the table or so near the edge that the tracing table rocks? If this is the case, reduce your viewing scale to bring the images onto the table and adjust the pantograph to accommodate the 1:5,000 drawing scale.

You may wish to bridge part of the area directly on the Kelsh plotter. With this method the bridge should be started in any model with two well distributed horizontal control points and closing on at least one horizontal control point in the third or

-2-

fourth model, leveling on water or elevations from the quadrangle maps. The closure error is prorated throughout the bridge so that after the models are reset the closure error will be zero.

Project Ph-132B was originally assigned to the Cartographic Branch, and a copy of their instructions is enclosed. The purpose in forwarding the selected 1:5,000 scale office photographs was for the preparation of a special set of photographs for ship-board plotting of photo-hydro control, as outlined in paragraphs 1.3 and 1.4 of this instruction, and not for laying a radial plot.

Office photographs 54-2070 thru 2073 will not be furnished because this project should not be bridged by obsolete graphic methods. After you have had an opportunity to study the problems in more detail and, in view of the enclosed literature, please let me hear from you.

I would like you to impress upon your people that no problem is too small to require assistance from this office, especially when new instruments and techniques are involved. Both the scribing and the use of the Kelsh plotter are new at Portland and we want to assist you in every way possible. Forward your problems to us; they need not be presented in smooth form - notes in long-hand from the Kelsh plotter operator or sketches will be completely acceptable.

S/L. W. SWANSON,

L. W. Swanson, Chief,  
Photogrammetry Division

Enclosures:

USGS Instruction (Chap. 308 Kelsh Plotter Procedure)  
A Kelsh Plotter Problem by Bernard J. Colner  
Instruction to Cartographic Branch

7 June 1955

To: The Chief, Division of Photogrammetry  
Coast and Geodetic Survey  
Department of Commerce  
Washington 25; D. C.

Thru: The Officer-in-Charge  
Portland Photogrammetric Office

Subject: Kelsh Bridging - Project Ph-132B

Reference: Letter dated 26 May 1955 from Chief, Division of  
Photogrammetry, same subject.

As suggested and in accordance with the methods listed in the above reference we have endeavored to again complete the radial plot for Project Ph-132B.

We have been successful except along the northern limits of T-11456 and T-11457 and the difficulties experienced in this area will be discussed in a separate paragraph of this letter.

It is now apparent that much of our original difficulties were in the vicinity of model templet 2120-2119 where we experienced trouble in dropping stations STUMP and NEDONNA. The sub-stations for both of these horizontal control stations were not too definite on the ratio print and were very indefinite in the Kelsh model. Also, there is approximately 475 ft. difference in elevation between the two stations and the model had to be accurately leveled to overcome the displacement at station STUMP. After very carefully completing a templet from this model a satisfactory radial plot was accomplished in this area.

As the radial plot progressed it was evident that many of the horizontal control stations would fall just off of a model which had already been extended to its limits. Also, in order to make a tie between models it was necessary to extend the plot entirely from pass points located along the limits of the previous model. For certain models we made three templets and for each the radials were drawn from a different origin, so that strong angles of intersection of radials were obtained to strongly locate these pass points. From these points the plot was then extended to the next model in which in most cases there was an additional identified horizontal control station. There was no case where it was necessary to extend beyond two models to reach another identified

-2-

horizontal control station. During the orientation of the model templets, great care was taken to make certain that azimuths between points of origin were held and also that each point of origin was held to the intersected location supplied from other templets. Except as further stated the plot is strong except for model 2094-2093 which has no tie on its eastern limits. This model is beyond the detail limits and not necessary for compilation of planimetry.

In the area along the north limits of T-11456 and T-11457 not completed by bridging or with model templets the following facts are noted.

Model templets were laid for:

2076 - 2075  
2075 - 2074  
2074 - 2073  
2073 - 2072  
2072 - 2071 (without benefit station HOGBACK, 1954)  
2069 - 2068  
2112 - 2111 (without benefit station NEAHKAHNIE 2)

and all models southerly from this model. Due to the great differences in elevation and because of insufficient end lap it was not possible to make model templets for 2070 - 2069 and 2071 - 2070. Also for similar reasons the area could not be bridged with the Kelsh Plotter from station QUARRY to station HOGBACK to station NEAHKAHNIE 2. Also, because of poor flight placement and location it will be just barely possible and only by extending the instrument beyond normal conditions, to compile the shoreline with the Kelsh along the Pacific Coast between Lat. 45-44-10 and Lat. 45-44-35. Experienced operators from other agencies were consulted on this problem and one agency sent its most experienced operator to our office to try to complete this plot. An extension to raise the tracing table 25 mm and one to raise it 75 mm is in use in two agencies in Portland to accomodate similar conditions. However, one operator now using these extensions did not believe they would help in this case because of insufficient end lap in the flight 2067 thru 2077. In the model 2112 - 2111 there are elevation differences from sea level to 1700 feet. In 2070 - 2069 there are also the same elevation differences. In 2071 - 2070 there are differences of approximately 1500 feet.

The plot can be completed for mapping all planimetry in the project, except for tying completely across the northern limits by supplementing the model templets now laid with radial line templets

-3-

of 2069, 2111 and 2112. These three can be oriented to the points established by the model templets and also into stations CARLTON 2, NEAHKAHNIE 2 and HOGBACK. Station LARGE ROCK OFF CARLTON, 1875 was not identified in the field. It was suggested by the field inspector that the highest point on this rock be identified in the office. The office identification is doubtful either by use of the stereoscope or in the model supplied by the Kelsh Plotter.

That part of the radial plot which has been completed with the model templets will be transferred to the map manuscripts and compilation of planimetry with the Kelsh Plotter will proceed. That part not possible to complete with model templets will be laid aside pending further instructions and suggestions from the Washington Office.

There were some slight differences in the location of pass points between the original radial line plot and the latest model templet plot.

The latter is accepted as more accurate because of the absence of tilt, relief displacement and lens distortion found in ratio prints.

The personnel of this office are anxious to produce to most accurate radial plots possible and will welcome criticism of any methods outlined in this letter.

Respectfully submitted,

S/J. EDWARD DEAL, JR.

J. Edward Deal, Jr.  
Cartographer, USC &GS

Endorsement:

We had trouble laying the plot on that northern east-west flight, between NEAHKAHNIE 2 and QUARRY both with radial templets from field prints and from the Kelsh templets. So far we guess and surmise but we still do not have a definite answer. Can your office supply it? It must be remembered that the terrain rises abruptly from sea level to 1700 feet. The first question then, is the Kelsh capable of handling so abrupt a change in elevation within one model? Another question - why did the radial templets give us trouble - was it because of the same abrupt change in elevation - was it because of excessive distortion in the ratio prints - was it paper distortion in the prints - or was it a combination of



-4-

these factors? Would templets from office prints resolve the difficulty?

As Mr. Deal explained in his report above, that particular segment is not necessary to the project and we can proceed without interruption in delineating the shoreline manuscripts. But for the sake of completeness and, for academic interest, if for nothing else, I would like to see that gap closed. If it can be done with radial templets from office prints it is requested that this office be furnished with office prints of that flight across the top of the project, from CARLTON 2 to GRAVEL.

S/FRED NATELLA

Fred Natella  
Comdr., USC&G Survey  
Officer-in-Charge

bpo

731 mkl

AIR MAIL

14 June 1955

To:           Officer-in-Charge  
              Portland Photogrammetric Office  
              U. S. Coast and Geodetic Survey  
              405 Custom House  
              Portland 9, Oregon

Subject:       Kelsh Bridging - Project Ph-132B

Receipt of your letter dated 7 June 1955, regarding specific problems that you have encountered in the Kelsh bridging of this project, is acknowledged.

It was not anticipated that you would require model 54-W-2093-2094 for bridging. Diapositive No. 2094 was furnished to complete the stereo coverage if required for compilation, but it was planned that the bridging would close in model 2092-2093 on triangulation station MOHLER.

My first thought was to request you to return the Kelsh plates and field records for the northern flight, models 54-W-2068 thru 2076 to this office for experimental bridging on our Kelsh and later on the stereoplanigraph. However, after making a more detailed study of the problems, I can see that this would be of no avail. There just is not enough end lap for bridging the strip.

This office should have been cognizant of the absence of satisfactory end lap before assigning the project to you, but, since, it was not, there are two possible remedies, (1) obtain new photography and (2) strengthen the model templet plot by including 1:10,000 scale nine lens photographs in the plot.

Later this week nine lens office photographs, Nos. 37060 thru 37062 and 37122, will be mailed to you with office prints of the northern strip. Please inform me whether or not the inclusion of these photographs produce a satisfactory plot of the area; if not, new photography will be scheduled when the air photo mission returns from Alaska in the fall.

In reply to the questions contained in page 4 of your letter, the following is given:

1. The Kelsh is capable of handling abrupt changes in elevation from sea level to 1700 feet if the overlap is proper.

-2-

OinC, Portland Office  
14 June 1955

2. The radial templets prepared from the field photographs gave trouble because of paper distortion, and the effects of small tilts are aggravated by changes in elevation.
3. Templets from office prints would have minimized the errors caused by paper distortion but would not have improved the templets made from tilted photographs.

I regret that a project was assigned to your office that was beyond the limits of the Kelsh and can well appreciate your concern. Your staff is to be commended for the painstaking and descriptive letters that have been written to present the problems to the Washington office.

S/MAX G. RICKETTS

Max G. Ricketts, Asst. Chief  
Photogrammetry Division

20 July 1955

To: The Chief, Division of Photogrammetry  
U. S. Coast and Geodetic Survey  
Department of Commerce  
Washington 25, D. C.

Subject: Radial Plot Ph-132B

Reference: Letter 731-mkl, Asst. Chief Photogrammetry Division,  
dated 14 June 1955, Subject: Kelsh Bridging

A radial plot was completed of the northern limits of Project Ph-132B using the photographs listed in paragraph 5 of the above reference.

Templets of all single lens ratio office prints were satisfactorily oriented except for 54-W-2070. The only nine lens (1:10,000 scale) photograph used was No. 37061.

From this plot two radials were obtained and held to stations QUARRY and HOGBACK and four radials were obtained and held to NEAHKANIE 2 (USE). Intersections of radials to pass points in this plot were excellent.

Recently a field unit was sent into the area to locate and select photo-hydro signals for use in a hydrographic survey to be made in the near future by the U. S. Engineers. While they were there stations HOGBACK and NEAHKANIE 2 (USE) were again identified and also an identification was made of NEAHKANIE 1875. All of these were very positive identifications and were used during the running of this radial plot.

It is now evident that the trouble is caused by ratio office print 54W2070 which is affected by tilt aggravated by the severe changes in elevation found in the photograph area. No attempt has been made to compute the tilt because of the lack of adequate data on elevations. The Nehalem, Oregon A.M.S. Quadrangle, contour interval 100 ft. is the only data available at this office.

Satisfactory shoreline manuscripts can be compiled from the results of the plot and photograph on hand. There is a possibility that beyond the detail limits and along the flight 54W2067 thru 54W2077 that the plot is subject to effects and errors found in radial plots completed by using acetate radial line templets of ratio prints. If it is desired to verify the locations of pass points along this flight it is suggested that new photography be made having sufficient end lap for the use of templets made with the Kelsh Plotter.

S/FRED NATELLA  
Fred Natella  
Comdr., C&G Survey  
Officer-in-Charge

JED/bpo

711-mk1

4 August 1955

To:           Officer in Charge  
              Portland Photogrammetric Office  
              Coast and Geodetic Survey  
              405 Custom House  
              Portland 9, Oregon

Subject:       Radial Plot - Project Ph-132B

Reference:     Your letter dated 20 July 1955, same subject

I think it will be preferable to delay delineation of manuscript T-11456 pending completion of adequate photography and a check of the plot. We will endeavor to take a new strip of photographs along the northern edge of the project and possibly short strips parallel to the shore on this sheet so that you can make the plot with model templets.

You are probably correct in your appraisal of the radial plot; however, I want to be careful with the plots we make for hydrographic control and believe that it is better to do extra work than to give the hydrographic party a sheet of questionable accuracy. It is for this reason that I prefer to take the additional photography and have you complete the plot with model templets before we release it.

S/L. W. SWANSON

L. W. Swanson, Chief  
Photogrammetry Division

AIR MAIL

9 August 1955

To: The Chief, Division of Photogrammetry  
U. S. Coast and Geodetic Survey  
Department of Commerce  
Washington 25, D. C.

Subject: Map Manuscript T-11456 - Project Ph-132B

Reference: Letter 711-mk1 dated 4 August 1955, Subject:  
"Radial Plot - Project Ph-132B"

Instructions in the above reference arrived too late to defer the delineation and scribing of T-11456. This manuscript has been scribed and symbol stick-up applied. The type stick-up order has been forwarded to Washington.

We will hold the manuscript pending receipt of new photography and a subsequent relaying of the radial plot with model templates. If it is then indicated that the completed manuscript is inadequate and cannot be satisfactorily corrected we will request a new projection on Mylar or use the blue coat method (which ever is desirable) to rescribe the manuscript.

S/FRED NATELLA

Fred Natella  
Comdr., USC&G Survey  
Officer-in-Charge

JED/bpo

COPY

73-mk1

23 January 1956

To: CDR Fred Natella  
Coast and Geodetic Survey  
405 Custom House  
Portland 9, Oregon

Subject: Compilation, Project 6132B, Nehalem River, Ore.

In reference to your letter dated 18 January 1956, Kelsh diapositives for re-compilation of the northern limit of subject project were forwarded to you via Railroad Express on 13 January 1956.

We overlooked forwarding prints of these photographs for stereoscopic examination or for use in the Kelsh dark room, and will forward contact prints today. If ratios are required, please advise.

S/L. W. SWANSON

L. W. Swanson, Chief  
Photogrammetry Division

12 March 1956

To: The Chief, Division of Photogrammetry  
Coast and Geodetic Survey  
Department of Commerce  
Washington 25, D. C.

Subject: Revision radial plot, Project 6132B using Kelsh  
Model Templets, 1955 photography.

This office has been unable to complete a radial plot with Kelsh model templets of the photography for Project 6132, Nehalem River, Oregon which was made in October 1955 and covers a strip along the Pacific Ocean and a strip across the northern limits of the project. Two people and a supervisor have been engaged on this plot for about three weeks and they have exhausted all possibilities in an effort to reach a successful conclusion.

First, all suggestions and methods outlined in Photogrammetric Instruction 53, dated 12 January 1956, "Model Templet Bridging for Planimetric Mapping" have been rigidly followed.

Secondly, our principal difficulties appear to be that; in a rugged elevated area, such as this plot is concerned with, there is not sufficient data available to horizontalize many models as described in Section 2, "Instrumentation" Paragraph .01 (4) of the above instructions.

In the strip across the north limits of the project model templets were first made, before instructions were received, using the pantograph. These were disregarded because of the instructions and also because a satisfactory solution could not be reached.

Model templets were then made without pantograph and an attempt was made to horizontalize the models by using elevations transposed from topographic maps of the area. These gave entirely different results but was also unsuccessful in a satisfactory conclusion.

Model templets were then made with the bar and plates level at the beginning of relative orientation. Templets made by this method did not give a successful conclusion.

Upper area and lower area templets were made for each of several models. They appeared to be adequate in their own areas and with immediately adjoining models but the entire strip could not be concluded.



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If the results of the lay down was short between GRAVEL and UNPAINTED BARN (First Model) to NEAHKAHNIE 1875 (Last Model) the adjustment would be in reverse and much out of azimuth for QUARRY and HOGBACK and they could not be brought in by the mathematical adjustment. Also good intersections of pass points were not obtained in some cases.

A model could not be made for photographs 55 W 807 and 55 W 808 because the projectors could not be brought close enough together to accomodate the overlap in line of flight between the two photographs.

The control identification is considered good and in two cases the stations were revisited in 1955 and new identifications were made. The images are not standout picture points but they are probably the best that can be obtained normally in such an area.

The geographic positions were computed from strong figures involving many observations and it is unlikely that an error could exist in the location of horizontal control.

The main difficulty developes between QUARRY, NEAHKAHNIE, 1875 and CARLTON 2, 1954. It is the opinion of the personnel of this office that the difficulties may be attributed to the limitation of the Kelsh Instrument for bridging horizontal control in an area containing such great differences of elevation. In an attempt to overcome the elevation differences extensions of 10 cm and 15 cm and the tracing table for which they were machined were borrowed from Mr. Henry A. Staats, local civil engineer. Either the machining of the extensions was poor or the parts are worn to such an extent that the table wobbles and points cannot be dropped with accuracy. Properly machined extensions would probably be of great aid in doing future plots of this kind.

It is also believed that in such an area sufficient barometric elevations should be obtained during field inspection on picture points for use in adequately horizontalizing the models.

Thirdly, the difficulties with the flight along the Pacific Coast are believed to be in line with those described in Section 9 "Problems that may be encountered" paragraph .01 and Subject 7 "Horizontal Control Requirements" paragraph .01 (3) of the instructions. These adverse conditions are prevalent in this flight. Model Templet 55 W 832 and 55 W 833 is very much in doubt because of these conditions. A fair plot that was adjusted satisfactorily was accomplished along the coast but the results could not be correlated with the strip across the north limits east of the Neah-Kahnle stations.

-3-

It is stated that in normal level areas which are found in parts of this project where the horizontalization of the model was sure, that no difficulties were encountered in accomplishing a plot.

Returned under separate cover and listed on the enclosed transmitting letter are all control data, plates, photographs and manuscripts in the project covering the area of the two flights in this revision plot. The map manuscript show the results of the original plot which was a combination of Kelsh model templets and radial line templets made from ratio prints of 1954 single lens photography. The compilation of planimetric detail was done on the basis of the results of this plot. The pass points shown either with circles in red ink or blue ink are the final locations of the original plot.

The completed map manuscripts will be retained in Portland, unless otherwise instructed, until we are notified of the final solution of the photogrammetric plot which might require revisions of the planimetry as presently compiled. It is suggested that if there are changes that the changes be indicated on the map manuscripts in a different color ink so that the Portland personnel might observe the amount of movement in any pass point. Also the Portland personnel is very interested and would appreciate being informed as to how these difficulties are eventually solved.

S/FRED NATELLA

Fred Natella  
Comdr., C&G Survey  
Officer-in-Charge

JED:FN/bpo

77-vbr

20 April 1956

To:           Officer-in-Charge  
              Portland Photogrammetric Office  
              Coast and Geodetic Survey  
              405 Custom House  
              Portland 9, Oregon

Subject:       Stereoplanigraph Bridging - Project 6132

Two stereoplanigraph bridges were run in the area that you unsuccessfully attempted to bridge with model templets as outlined in your letter of 12 March 1956. The results of these bridges have been described in the attached report.

No difficulty is anticipated when you re-set the Kelsh models for detailing the bridged strips; however, the adjoining models will probably have to be re-detailed holding to the new pass points and control in the strips to the south and east.

Our experience with model templet bridges is limited and it is, therefore, difficult to isolate the cause of your trouble in this case. The stereoplanigraph can maintain strip horizontalization with small tolerances for models having no level data. This is not possible with the Kelsh Plotter and may be the largest source of error.

The Research Branch will provide your instrument with appropriate extensions of 10 and 15 cm. for the plotting table.

Do not hesitate to communicate with this office if you encounter any further difficulty on this project.

S/MAX G. RICKETTS

Max G. Ricketts for  
L. W. Swanson, Chief  
Photogrammetry Division

Attachment

## Stereoplanigraph Bridging Report

Project 6132

The original manuscripts could not be matched due to differential shrinkage. New manuscripts were ruled.

Models 835-830 were bridged by setting Model 835-834 on Sub. Pt. CREST, 1954 and NEHALEM RIVER WHITE SILO, CENTER OF TOP, 1954 and extending control northward. All control was held with the exception of LARGE ROCK OFF CARLTON, 1875, which is not described. Identification of this station proved difficult; results were inconsistent with other stations, therefore the station was disregarded.

To help in setting Kelsh Model 831-830, an approximate elevation of 1630' was established for Sub. Pt. NEAHKAHNIE, 2, USE, 1941.

Models 807-815 were bridged by setting Model 814-815 on stations SS BRAVEL, 1954 and NEHALEM RIVER UNPAINTED BARN, SOUTH GABLE, 1954, and extending control westward. Again, station LARGE ROCK OFF CARLTON, 1875 could not be held and was disregarded.

In both bridges an attempt to recover Kelsh pass points was made with little success due to the difference in the 1954-1955 photography. The points which were recovered were plotted with red circles. Some of these points are labeled with a question mark where identification was extremely doubtful.

Pass points for resetting the Kelsh models for detailing were plotted on the new manuscripts with blue circles and the points pricked on contact prints.

Possible reasons why model templet bridge failed:

- (1) Extreme differences in elevations
- (2) Lack of vertical control
- (3) Dense tree areas making parallax solution difficult on Kelsh Plotter
- (4) Extreme overlap in Model 807-808
- (5) Differential shrinkage in manuscripts

Submitted by:

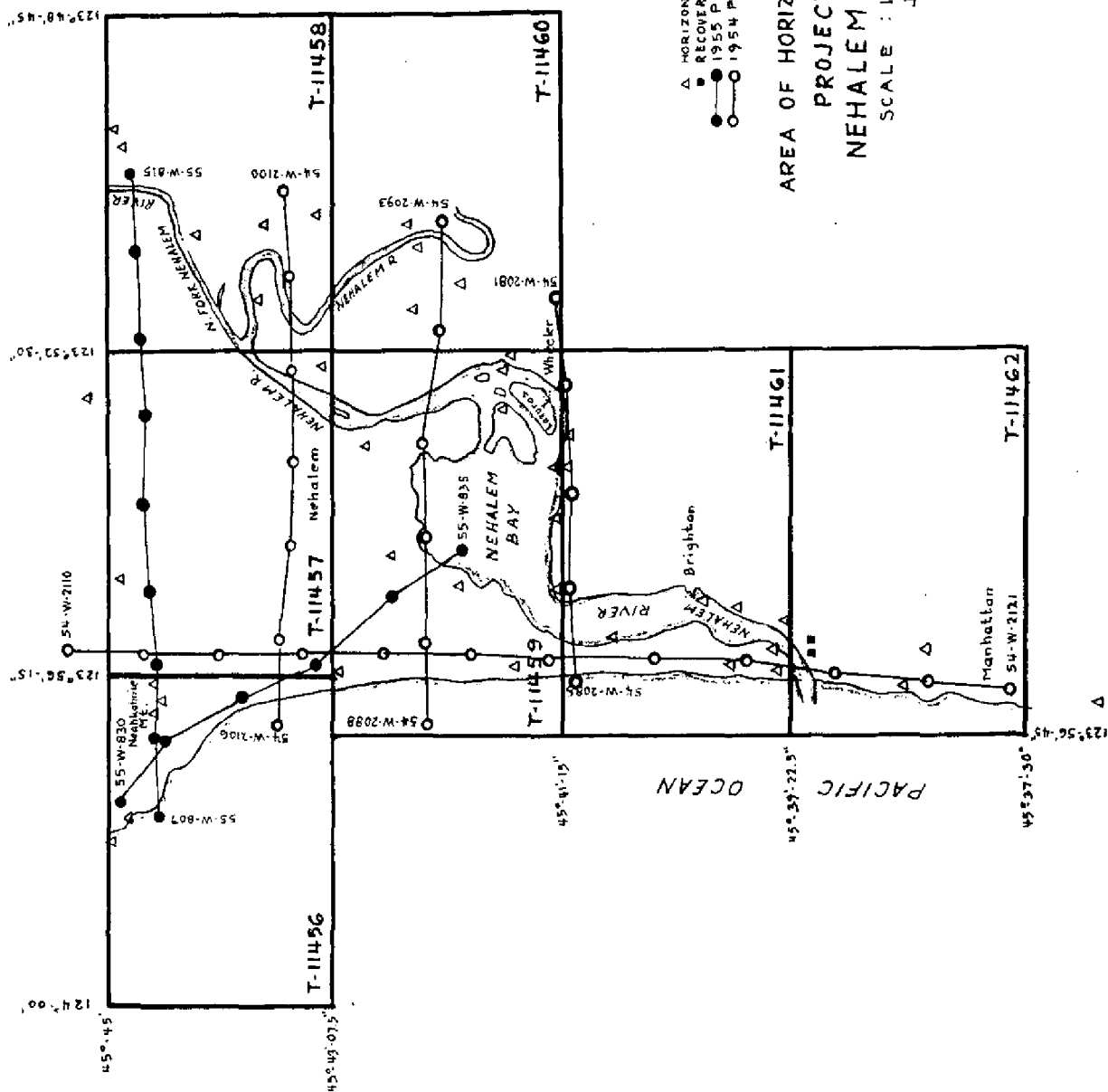
S/JOHN D. PERROW JR.

J. Perrow  
Cartographer

Approved by:

S/MORTON KELLER

M. Keller  
Supervisory Cartographer







MAP T-11458.

PROJECT NO. 2727 (6132B)

SCALE OF MAP 1:5000

SCALE FACTOR None

[illegible]



MAP T-11459

PROJECT NO. 2727 (6132B)

SCALE OF MAP 1:5000

SCALE FACTOR

None

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		FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS
						FORWARD	(BACK)	FORWARD (BACK)
MANZANITA, RED HOUSE, WEST GABLE, 1954	Field	N.A.	45 43 03.594			111.0	(1741.5)	
	Comp.	1927	123 56 18.739			405.3	( 892.4)	
WILKINS, 1954	"	"	45 42 50.122			1547.5	( 305.0)	
	"	"	123 53 37.710			815.6	( 482.1)	
NEHALEM RIVER, WHITE SILO, (CENTER OF TOP), 1954	"	"	45 42 37.190			1148.2	( 704.2)	
	"	"	123 54 51.060			1104.4	( 193.4)	
CREST, 1954	"	"	45 42 02.925			90.3	(1762.1)	
	"	"	123 55 22.975			497.0	( 801.0)	
MANZANITA, 1926	G-634	"	45 41 44.173			1363.8	( 488.6)	
	P-607	"	123 56 11.008			238.2	(1060.0)	
NEHALEM RIVER, DAYBEACON 4, 1954	Field	"	45 41 19.855			613.0	(1239.4)	
	Comp.	"	123 54 01.139			24.6	(1273.7)	
DEAN POINT, 1954	"	"	45 41 53.005			1636.4	( 216.0)	
	"	"	123 53 16.410			355.0	( 943.1)	
NEHALEM RIVER, DAYBEACON 5, 1954	"	"	45 41 42.002			1296.7	( 555.7)	
	"	"	123 52 49.830			1078.1	( 220.0)	
WHEELER LEWIS SHINGLE CO. SPAR 1954	"	"	45 41 38.034			1174.2	( 678.2)	
	"	"	123 52 47.426			1026.2	( 272.1)	
J-97, 1954	"	"	45 41 25.291			780.8	(1071.6)	
	"	"	123 52 49.890			1079.5	( 218.8)	
BEND, 1875	G-6596	"	45 41 16.30			503.2	(1349.2)	21
	P-824	"	123 53 35.69			772.3	( 526.0)	









## COMPILATION REPORT

Map Manuscripts T-11456 thru T-11462

Project 2727 (6132B)

31. Delineation:

These map manuscripts were compiled on the Kelsh Instrument. At first work sheets were used on the Kelsh table and the compilation was then traced on the map manuscripts. This method was abandoned and compilation was done directly on the map manuscript oriented to the Kelsh model. The projected scale of 1:3000 was reduced to a scale of 1:5000 at the time of compilation by use of the pantograph attached to the Kelsh Tracing Table. All of T-11456 and T-11457, parts of T-11458 and T-11459 were recompiled directly on the map manuscripts on which the results of the control extension by stereoplanigraph made in the Washington office were shown.

T-11456, T-11457 and T-11459 thru T-11462 were scribed on white coated Mylar by tracing from the pencil compilation on a light table. White backed type stick-up and the regular symbol stick-up was applied directly to these scribed sheets. The compiled details for T-11458 were transferred to a yellow coated Mylar sheet by the Blue Water Cote method. Lines were scribed on the yellow coated Mylar and a contact film positive on polystyrene was made. Type and symbol stick-up was applied to the contact positive.

Since all map manuscripts were completely scribed and stick-up applied previous to the control extension by stereoplanigraph it was necessary to revise Map Manuscripts T-11456 thru T-11460. The three white sheets were revised by painting out detail and re-scribing. The contact positive was revised by erasing with Farmers Reducer and drawing new lines with Pelican ink.

The shoreline on these revised manuscripts was previously compiled from 1954 photography and field inspection data. The 1955 photographs were taken at higher water and delineation of a mean high-water line from these would entail numerous changes in the previously compiled and drafted line. The mean high-water line was revised only where the results of the stereoplanigraph control extension changed the location of the previously compiled line and not where the water level of the 1955 photography indicated a slightly wider water area.

Triangulation station NEHALEM RIVER, UNPAINTED BARN, SOUTH CABLE, 1954 is plotted about 0.2 mm in error on the projection used in the control extension made in the Washington office on the stereoplanigraph. The correct plotting is shown by a small prick hole just north and east of the erroneous plotting. It is assumed

that this station was held in the control extension work and because the planimetry is considered to be well within the accuracy requirements no attempt was made to adjust the control extension plot to accommodate the correct plotting of this station. On this scale the error appears large to the eye and any line of planimetry running north and south near this station would show a difference if compiled from each of the plottings.

32. Control:

The horizontal control was adequate.

33. Supplemental Data:

None.

34. Contours and Drainage:

Contours are not applicable. Drainage was delineated by field inspection and verified during compilation by Kelsh Plotter and with topographic quadrangles of the area.

35. Shoreline and Alongshore Details:

The mean high-water line was compiled from locations furnished by the field inspection and from a detailed delineation at time of compilation. The 1954 photographs were taken when the predicted tide was just below mean high-water and the line could be easily seen on these photographs. The 1955 photographs were taken when the predicted tide was just above mean high-water and it is believed that the mean high-water line is covered on these photographs. Approximate low-water lines and tidal flat areas have been detailed by office examination and field notes where they were visible on the photographs. Foreshore areas have been detailed and are shown by symbols or lettered notes. Alongshore details have been carefully delineated by field inspection and office examination.

36. Offshore Details:

Refer to Item "8", "Offshore Features" of the field inspection report. All field data was carefully examined and entered on the map manuscripts.

37. Landmarks and Aids:

Forms 567 for the entire project were submitted at the time of field inspection. A supplement to this previously submitted form listing two fixed aids to navigation located at the compilation office is submitted with this report.

38. Control for Future Surveys:

Forms 524 are submitted for two recoverable topographic stations which are also fixed aids to navigation.

There were 136 photo hydro stations located at the compilation office.

Lists of control for future surveys have been prepared for each map manuscript in this project under Item 49, "Notes to the Hydrographer".

39. Junctions:

Satisfactory junctions have been made with all adjoining map manuscripts.

40. Horizontal and Vertical Accuracy:

There are no areas of sub normal horizontal accuracy.

Vertical accuracy is not applicable.

46. Comparison with Existing Maps:

Comparison was made with the following:

15 minute A.M.S. V792 Nehalem, Oregon Quadrangle, Scale 1:5000, 2nd edition 1947.

15 minute A.M.S. V792 Cape Falcon, Oregon Quadrangle, Scale 1:5000, 2nd Edition 1947.

47. Comparison with Nautical Charts:

Comparison was made with nautical chart No. 6122, Nehalem River, Scale 1:20,000, published Nov. 1938 last corrected 10/13/52.



Items to be Applied to Nautical Charts Immediately.

None.

Items to be Carried Forward.

None.

Forwarded:



Fred Natella  
Comdr., C&G Survey  
Officer-in-Charge

Respectfully submitted:



J. Edward Deal  
Cartographer  
C&GS

T-11456.Geographic Names.ManzanitaNeahkanieNeahkanie Golf CourseNeahkanie J.,nctionOregonOregon Coast HighwayU.S. 101Pacific OceanTillamook CountyViewpoint Parking

Names approved 9-4-56

L. Heck

T-11457

Geographic Names.

Manzanita

Neahkanie Golf Course

Nehalem

Nehalem River

Nehalem Grade School

Oregon

Oregon Coast Highway

US 101

Fine Grove Grade School

Tillamook County

Union High School

Names approved 9-4-56  
L. Heck

Map Manuscript T-11458

Project 2727 (6132B)

48. Geographic Names:

The geographic names shown on this map manuscript were obtained from existing Army Map Service quadrangle, nautical charts and field inspection.

Anderson Creek

Coal Creek

Necanicum Highway Oregon State 53

Nehalem River

North Fork Nehalem River

McDonald Road

Names approved  
12-15-58  
L. Heck

T-11459.

Geographic Names.

Deans Point

(not Dean Point)

Fishery Point

Gallagher Slough

Lazarus Island

Manzanita

Neacanicum Highway

State No. 53

Nehalem

Nehalem Bay

Nehalem Junction

Nehalem River

Oregon

Oregon Coast Highway

U.S. 101

Pacific Ocean

Southern Pacific

Sunset Beach

Tideland Road

Tillamook County

Wheeler

Names approved 9-4-56  
L. Heck

T-11460.

Geographic Names.

Gallagher Slough

Mohler

Neacanicum Highway  
Nehalem River

State 53

Oregon

Southern Pacific

Tideland Road  
Tillamook County

Names approved 9-4-56  
L. Heck

T-11461

Geographic Names.

Brighton  
Brighton Creek

Harvey E. Rinehart Memorial Hospital  
Hoever

Jetty Creek

Nehalem Beach  
Nehalem River  
Nehalem River Entrance

Oregon  
Oregon Coast Highway

U.S. 101

Pacific Ocean

Southern Pacific  
Sunset Beach

Tillamook County

Names approved 9-4-56  
L. Heck

T-11462

Geographic Names

Crescent Lake

Lake Lytle

McMillan Creek

Manhattan Beach

(used almost universally on available maps,  
except as name of railway station which is  
Manhattan)

Neahkanie High School

Oregon

Oregon Coast Highway

US 101

Pacific Ocean

Southern Pacific

Tillamook County

Names approved 9-4-56  
L. Heck



Map Manuscript T-11456

Project 2727 (6132B)

49. Notes to Hydrographer:

Please refer to Item 10 of Field Inspection Report. Following is a list of Photo-Hydro Signals located at the compilation Office.

Photo hydro stations located are:

No.	Photo No.	Description
5601	54W2106	Brick chimney on south corner of 2 story white house with green roof (60 ft.)
5602	54W2106	Boulder with highest elevation in group of large boulders (10 ft.)
5603	54W2106	West gable, green-shingled garage apartment (40 ft.)
5604	54W2106	Top, red brick chimney on south end of gray shingled house with green roof "SAC TIME" lettered on south end (50 ft.)

## Map Manuscript T-11457

Project 2727 (6132B)

49. Notes to the Hydrographer:

Please refer to Item 10 of Field Inspection Report. Following is a list of Photo-Hydro Signals located at the Compilation Office.

Photo hydro stations located are:

No.	Photo. No.	Description
5701	54W2102	Offshore end of 30 ft. log, southwest of 20 ft. spruce (1 ft.)
5702	"	Double piling 120 ft. northeast of ramp (10 ft.)
5703	"	Southeast gable "Diamond Fish Resort" (30 ft.)
5704	"	Northwest corner of roots on end of log
5705	"	Offshore end of log on south side of slough
5706	"	Spruce with trunk in horizontal position, 2 meters west of east end
5707	"	West end of large log (1 ft.)
5708	"	Piling at northeast end of row. Woodpeckers hole 1 ft. below top
5709	"	Southwest tip of bank at mean high-water line. 60 ft. south of 20 ft. bushy spruce.
5710	"	Top of black stump (3ft.)
5711	"	North end, uprooted stump, moss on top roots (6ft.)
5712	"	Southeast tip of bank
5713	"	Single piling (6ft.) 190 ft. northeast of ramp to float
5714	"	<del>Originally #5901 East gable of cinder block building (20ft.)</del> N.E. tip of bank at M.H.W.
5715	54W2101	Originally #5825 Piling with small fir tree growing on top (5ft.)
5716	54W2102	Originally #5855 East end of roots one meter from small spruce growing on log.
5717	54W2101	Originally #5824. South gable, tan house, with white trim (20ft.)
5718	"	Originally #5826, Seven foot stump with bush on top (9ft.)

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## Map Manuscript T-11457

No.	Photo. No.	Description
5719	54W2101	Originally #5851, Southeast gable, yellow barn (35ft.)
5720	"	Originally #5823, Most northeasterly piling in row. Piling is only one on channel side of boom (8ft.)

## Map Manuscript T-11458

Project 2727 (6132B)

49. Notes to the Hydrographer:

Please refer to Item 10 of Field Inspection Report. Following is a list of Photo-Hydro Signals located at the Compilation Office.

Photo hydro station located are:

No.	Photo. No.	Description
5801	54W2075	Not located. Falls outside of project limits
5802	"	Single Pile (8ft.)
5803	"	Tallest pile in ruin. Has metal cap (25ft.)
5804	"	Most southerly piling in row (6 ft.)
5805	"	Dolphin at northeast corner of brush covered ruins (2ft.)
5806	"	South tip of cattail patch (0ft.)
5807	"	West edge of dike at fence post (2ft.)
5808	"	Southerly of two tall piles
5809	"	North gable, unpainted house, one window in end (30ft.)
5810	"	West gable, long low white house (40ft.)
5811	"	Single pile, east most of row (6ft.)
5812	"	Single pile. Two broken piles are west of this one (6ft.)
5813	"	Four foot snag 130 ft. west of 40 ft. bushy fir @ M.H.W.L. (4ft.)
5814	"	Northwest end of overturned stump (5ft.)
5815	"	Sharp tip of bank (2ft.)
5816	"	Top of sharp topped black stump (15ft.)
5817	"	Broken piling, two together (5ft.)
5818	"	Top of 3 pile dolphin at leaning tree (12ft.)
5819	"	Broken piling 200 feet southwest of overhanging tree (5ft.)
5820	54W2101	Single pile with triangular blaze on south side (10ft.)
5821	"	Broken dolphin 300 feet west of a dike crossing slough
5822	"	Ten foot dolphin
5823	"	Now #5720. See map manuscript T-11457
5824	"	West edge of blackberry briars at west corner of dike (2ft.)
5825	"	Stump with branches at top (6ft.)

## Map Manuscript T-11458

No.	Photo. No.	Description
5826	54W2101	Northeasterly of two stumps (5ft.)
5827	"	South end of short log on bank (4ft.)
5828	"	North end, long log (3ft.)
5829	"	South gable of short addition to house (15ft.)
5830	"	Black stump 10 ft. tall (15ft.)
5831	"	Southwest gable of dilapidated barn (30ft.)
5832	"	West gable, small unpainted barn (40ft.)
5833	"	Brick chimney, center of white house (35ft.)
5834	"	Northeast end of short log on bank (3ft.)
5835	"	Bush at Mean High-water Line
5836	"	North gable, large unpainted barn (35ft.)
5837	"	East gable, small red house (20ft.)
5838	"	Top end of stump (2ft.)
5839	"	Stump with hold burned through (8ft.)
5840	"	North gable red barn (30ft.)
5841	"	Black stump 15 feet high (20ft.)
5842	"	Dead snag at mean high-water line (0ft.)
5843	"	Large stump (15ft.)
5844	"	Six ft. stump with salal bush on top (12ft.)
5845	"	Large stump on edge of bank (10ft.)
5846	"	North end of long log with roots attached (4ft.)
5847	"	Center of top of silo (40ft.)
5848	"	Northwest gable, white house with two brick chimneys (35ft.)
5849	"	North corner of short pier (5ft.)
5850	"	Top edge of bank at end of fence (8ft.)
5851	"	West most of 3 piling (15ft.)
5852	"	Southeast gable of unpainted house (30ft.)

## Map Manuscript T-11459

Project 2727 (6132B)

49. Notes to the Hydrographer:

Please refer to Item 10 of Field Inspection Report. Following is a list of Photo-Hydro Signals located at the Compilation Office.

Photo hydro stations located are:

No.	Photo. No.	Description
5901	54W2102	East gable of cinder block building
5902	"	South end of leaning stump imbedded in mud
5903	"	Piling, northwesterly of 3 broken piles
5904	54W2091	East gable, 2 story white house with dark roof
5905	"	Highest part of log with roots
5906	"	East gable, one-story white house
5907	"	Second pile from north end of row
5908	"	North end of fender
5909	"	South end of fender
5910	"	Dolphin
5911	"	Dolphin
5912	"	Piling with board nailed near top
5913	"	Northeast end of log with roots and green brush
5914	"	Top of black stump
5915	"	Long pile
5916	"	Dolphin
5917	"	Three-pile dolphin
5918	"	Center of root end of large, overturned stump
5919	"	Southeast end of bulkhead
5920	"	Corner of bulkhead
5921	54W2082	Southwest corner, Wheeler Public Dock
5922	"	West corner, green building at northeast corner of intersection
5923	"	Center of north end of rotten log with salal brush growing on top
5924	"	Southeast end of stump on bank
5925	"	Northwest gable, Assembly of God Church Green below eaves, white above
5926	"	Northwest corner of railroad bridge(see 11461)
5927	"	East gable, red building with galvanized roof
5928	"	Tallest pile along edge of ruin

## Map Manuscript T-11459

No.	Photo. No.	Description
5929	54W2082	East end, mass of roots with small tree growing on top
5930	"	Center of root end of log with brush and grass growing on top
5931	"	South corner log, trees on top
5932	"	Southerly of 2 long logs with growing brush on top. West corner of roots at M.H.W.
5933	"	Center of north end of rotten log with salal brush growing on top
5934	54W2084	Small fir tree on stump
5935	"	Northwest corner of trestle
5936	"	Northwest corner of grass bump
5937	"	Center of grass bump

Map Manuscript T-11460

Project 2727 (6132B)

49. Notes to the Hydrographer:

Please refer to Item 10 of Field Inspection Report. Following is a list of Photo-Hydro Signals located at the Compilation Office.

Photo Hydro stations located are:

No.	Photo. No.	Description
6001	54W2101	Northeast gable, unpainted barn (30ft.)
6002	"	Center of 15 foot bush at mean high-water line
6003	54W2093	Southwest gable unpainted barn (30ft.)
6004	"	Twenty foot piling, 5 meters offshore
6005	"	Base of snag at mean high-water line. Snag leans over water at end of fence (0ft.)
6006	"	Southeasterly and shortest of 3 piling (7ft.)
6007	"	Center of south face of center pier (0ft.)
6008	"	Northwest gable with terra cotta flue up center of end (35ft.)
6009	"	Base of 10 foot Alder bush leaning toward bridge (2ft.)
6010	"	Base of 10 foot leaning Willow (3ft.)



Map Manuscript T-11461

Project 2727 (6132B)

49. Notes to the Hydrographer:

Please refer to Item 10 of Field Inspection Report.

The following recoverable topographic stations were located.

NEHALEM RIVER ENTRANCE RANGE 2 FRONT DAYBEACON, 1954  
NEHALEM RIVER ENTRANCE RANGE 2 REAR DAYBEACON, 1954

The following photo hydro stations were located at the Compilation Office.

No.	Photo. No.	Description
6101	54W2084	West gable, 2-story white house, red roof
6102	54W2117	South gable, 1-story house, white above eaves, red below
6103	"	West gable, yellow house with green trim
6104	"	South gable, 2-story white house with red roof, sign "Apartment - Boats for Rent"
6105	54W2118	Northwest corner of railroad trestle
6106	"	North gable, 2-story unpainted building
6107	"	South gable, small unpainted building with white window frames
6108	"	North gable, low green building
6109	"	Top center of offshore rock
6110	"	West gable, white house. West gable is lower than north and south gables
6111	54W2117	Sign "Cable Crossing" (center)
6112	"	Southwest tip of salal on south side of pines
6113	"	Center of small patch of dense vegetation on dune covered with wild strawberries
6114	"	Highest part of small grass-covered dune
6115	54W2084	Center of grass on small dune

Map Manuscript T-11462

Project 2727 (6132B)

49. Notes to the Hydrographer:

Please refer to Item 10 of Field Inspection Report.

There were no recoverable topographic stations or photo-hydro stations located for this map manuscript.

47

Review Report of  
Shoreline Surveys T-11456 thru T-11462  
December 1958

62. Comparison with Registered Topographic Surveys:

T-1416 <sup>b</sup>	1:10000	1875
T-1417	1:10000	1875
T-4228	1:20000	1926
T-4229	1:20000	1926

There are considerable differences between subject surveys and above-listed registered topographic surveys; particularly in the shoreline - west and south of Nehalem Bay, southward along both shores of Nehalem River and below the mouth of said river along the coast of the Pacific Ocean. T-11456 thru T-11462 are to supersede previously registered topographic surveys of common areas for nautical charting purposes.

63. Comparison with Maps of Other Agencies:

Nehalem, Oregon 1:50000, Ed. of 1947, Army Map Service  
Nehalem, Oregon 1:62500, 1955, U. S. Geological Survey  
The Army Map Service quadrangle was compiled from aerial photography of 1937 and differs considerably from subject surveys. However, the Geological Survey quadrangle of 1955 (aerial Photography of 1953 with field check of 1955) is in good agreement with subject surveys.

64. Comparison with Contemporary Hydrographic Surveys:

H-8346	1:10000	1956
H-8368	1:5000	1957 (not verified)

Shoreline, Foreshore and Offshore information of subject surveys was furnished for and utilized in the compilation of the two listed hydrographic surveys. Minor differences (in position of several rocks only) were resolved in favor of the hydrographic surveys. Differences in elevations of rocks were not changed on subject surveys since some of these were admittedly estimated during areal field inspection - see item 8, page 11.

65. Comparison with Nautical Charts:

5902	1:185238	Revised to 9/22 58
6122	1:20000	Revised to 1/27 58

-2-

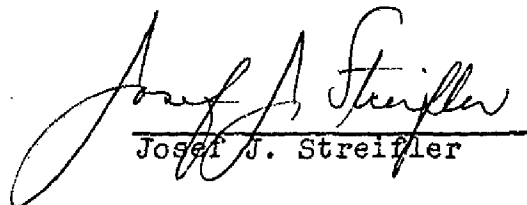
65. cont'd

The smaller-scaled chart (5902) appears adequate in consideration of the purpose of such a chart, though some of the major shoreline changes may be applied at the next revision. Chart 6122 warrants the earliest possible consideration for the application of changes available. These changes extend all along the ocean front as well as in Nehalem River and Nehalem Bay.


66. Adequacy of Results and Future Surveys:


These surveys were compiled in accordance with project instructions and ~~on~~<sup>no</sup> inaccuracies or inadequacies are indicated.


Reviewed by


  
Josef J. Streifler

Approved by:

  
Chief, Review & Drafting Section  
Photogrammetry Division

  
Chief, Nautical Chart Branch  
Charts Division

  
Chief, Photogrammetry Division

  
Chief, Coastal Surveys Division

20 July 59 BJD

## NAUTICAL CHARTS BRANCH

SURVEY NO. T-11456 thru T-11462

### Record of Application to Charts

[illegible]

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.