8875 8876
8877 8878

Diag. Cht. No. 6156

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Planimetric Air Photographic (Shoreline) T-8875 to T-8878

Field No. ..... *Office No.* .....

LOCALITY

State Oregon and Washington

General locality Columbia River

Locality Reed Island & Vicinity to Pierce Island & Vicinity

1945-'48

CHIEF OF PARTY

R.A.Earle, (Field and Office)

LIBRARY & ARCHIVES

DATE August 28, 1950

B-1870-1 (1)

8875 8876 8877 8878

Form T-1

DATA RECORD

T- 8875

Quadrangle (II): CAMAS, Wash.-Oreg. **Project No. (II):** Ph-17(47)

Field Office: Portland, Ore. **Chief of Party:** R.A. Earle

Compilation Office: Portland, Ore. **Chief of Party:** R.A. Earle

Instructions dated (II III): 12-9-47
Amended 1-29-48

Copy filed in ~~Descriptive Report No. T~~ ~~(VI)~~ Division of Photogrammetry Office Files.

Completed survey received in office: 12-23-48

Reported to Nautical Chart Section: 1-5-49

Reviewed: 2-23-49 **Applied to chart No.** **Date:**

Redrafting Completed: 4-24-50

Registered: 8-9-50 **Published:**

Compilation Scale: 1:10,000 **Published Scale:**

Scale Factor (III): None

Geographic Datum (III): N.A. 1927 **Datum Plane (III):** ~~Mean Sea Level~~ M.H.W. = 5.0 ft. above U.S.E. Adopted Low-Water (See p. 4 Field Insp. Rpt.)

Reference Station (III): COTTONWOOD (Oreg.) 1938 r 1946, 1948

Lat.: 45° - 33' - 32.734" 1010.6m (841.8m) **Long.:** 122°-18'-06.999" 151.8m (1149.5m) **Adjusted** X **Unadjusted**

State Plane Coordinates (VI): Oregon North Zone
Washington South Zone

X = **Y =**

Military Grid Zone (VI)

M-2467-12 (3)

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
9 Lens				
17254 and 17255	8-9-46	11:32	1:10,000	8.4 to 8.9 ft. above M.S.L.
Single lens.				
47-J-170 to 47-J-172 (Inc.)	Nov. 1947	Unknown	1:10,000 (ratio)	Unknown (lower than above)
1330 to 1333 Inc.	7-4-45	10:00	1:10,000 (ratio)	10.3 ft. above M.S.L.
1341 to 1344 Inc.	7-4-45	10:30	1:10,000 (ratio)	10.3 ft. above M.S.L.
1357 to 1360 Inc.	7-10-45	9:55	1:10,000 (ratio)	9.9 ft. above M.S.L.

Tide from (III): Daily readings of the U.S.E. tide guages located at Government Moorings, Ore. and Vancouver, Wash.

Mean Range: **Spring Range:**

Camera: (Kind or source) U.S.C.&G.S. 9 lens, focal length 8.25 inches
K-17, focal length 12 inches
Metrogon lens, focal length 6 inches

Field Inspection by: See Remarks, Page 3 **date:**

Field Edit by: None **date:**

Date of Mean High-Water Line Location (III): August 9, 1946 (Corrected by office inspection to the U.S. Engineers Single lens photographs made on Aug. 31st, Sept. 5th and Sept. 19th, 1948 at low water after the 1948 Columbia River flood.)

Projection and Grids ruled by (III) T.L.J. (Wash. Office) **date:** 2-2-48

" " " **checked by:** T.L.J. (Wash. Office) **date:** 2-2-48

Control plotted by: Frank H. Elrod **date:** 8-23-48

Control checked by: Marie B. Elrod **date:** 8-31-48

Radial Plot by: James L. Harris **date:** 9-17-48

Detailed by: Marie B. Elrod **date:** 10-6-48

Reviewed in compilation office by: J.E. Deal **date:** 10-20-48

~~**Elevations on Field Edit Sheet checked by:**~~ **date:**

STATISTICS (III)

Land Area (Sq. Statute Miles): 6.5

Shoreline (More than 200 meters to opposite shore): 30 Statute miles

Shoreline (Less than 200 meters to opposite shore): 0.5 Statute miles

Number of Recoverable Topographic Stations established: None

Number of Temporary Hydrographic Stations located by radial plot: None

Leveling (to control contours) - miles:

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

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

Remarks:

Interior Field Inspection:	John Winniford John C. Lajoye Royal Sherwood	1-8-48 to 1-13-48
Shoreline Inspection:	John C. Lajoye and John Winniford	1-15-48 to 2-17-48
Recovery of Horizontal Control:	John C. Lajoye John Winniford Charles Hanavich	1-9-48 to 2-10-48
Geographic Names:	John C. Lajoye	1-12-48 to 1-28-48

Form T-1

DATA RECORD

T- 8876

CAMAS, WASH.-OREG. 1:62500
Quadrangle (II): MT. HOOD & VICINITY 1:125000 **Project No. (II):** Ph-17(47)

Field Office: Portland, Oregon **Chief of Party:** R.A. Earle

Compilation Office: Portland, Ore. **Chief of Party:** R.A. Earle

Instructions dated (II III): 12-9-47
Amended 1-~~8~~29-48

Copy filed in ~~Descriptive Report No. T-~~ ~~(VI)~~ Div. Photogr Office Files

Completed survey received in office: 12-28-48

Reported to Nautical Chart Section: 1-5-49

Reviewed: 2-23-49 **Applied to chart No.** **Date:**

Redrafting Completed: 4-24-50

Registered: 8-9-50 **Published:**

Compilation Scale: 1:10,000 **Published Scale:**

Scale Factor (III): None

Geographic Datum (III): N.A. 1927 **Datum Plane (III):** ~~Mean Sea Level~~ M.H.W. = 5.0 Ft above O.S.E. Adopted Low Water

Reference Station (III): SHEPPARD 2 (OREG.) 1938 r 1948

Lat.: 45° - 32'-52.805" 1630.3m (222.1m) **Long.:** 122°-11'-42.096" 913.2m (388.4m) **Adjusted** X **Unadjusted**

State Plane Coordinates (VI): Ore. North Zone Wash. South Zone

X = **Y =**

Military Grid Zone (VI)

M-2467-12(3)

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
9 lens 17252 and 17253	8-9-46	11:30	1:10,000	8.9 ft. to 9.5 ft. above M.S.L.
Single lens 47-J-167 to 47-J-169 Incl.	Nov. 1947	Unknown	1:10,000 Ratio	Unknown (Lower than above)

Tide from (III): Daily readings of the U.S.E. tide guage at Vancouver, Wash.

Mean Range: **Spring Range:**

Camera: (Kind or source) USC&GS 9 lens, focal length 8.25 inches
Metrogen lens, focal length 6 inches

Field Inspection by: See Remarks Page 3 **date:**

Field Edit by: None **date:**

Date of Mean High-Water Line Location (III): Aug. 9, 1946 (Corrected by office inspection to the U.S. Engineers, Single lens photographs made on Aug. 31st, Sept. 5th, and Sept. 19th, 1948 at low water after the 1948 Columbia River flood.)

Projection and Grids ruled by (III) T.L.J. (Wash.Office) **date:** 2-2-48

" " " **checked by:** T.L.J. (Wash. Office) **date:** 2-2-48

Control plotted by: Frank H. Elrod **date:** 8-24-48

Control checked by: Marie B. Elrod **date:** 9-1-48

Radial Plot by: James L. Harris **date:** 9-17-48

Detailed by: Roy A. Davidson **date:** 10-12-48

Reviewed in compilation office by: Ree H. Barron **date:** 10-26-48

~~**Elevations on Field Edit Sheet checked by:**~~ **date:**

STATISTICS (III)

Land Area (Sq. Statute Miles): 4.0

Shoreline (More than 200 meters to opposite shore): 18.0 Statute miles

Shoreline (Less than 200 meters to opposite shore): 3.0 Statute miles

Number of Recoverable Topographic Stations established: None

Number of Temporary Hydrographic Stations located by radial plot: None

Leveling (to control contours) - miles:

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

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

Remarks:

Interior Field Inspection	John Winniford John C. Lajoye Royal Sherwood	1-14-48 to 1-16-48
Shoreline Inspection,	John C. Lajoye & John Winniford	1-20-48 to 2-12-48
Recovery of Horizontal Control	John C. Lajoye John Winniford Charles Hanavich	1-12-48 to 2-12-48
Geographic Names,	John C. Lajoye	1-12-48 to 1-28-48

Form T-1

DATA RECORD

T- 8877

Quadrangle (II): Mt. Hood and Vicinity Scale, 1:125,000 Project No. (II): Ph-17(47)

Field Office: Portland, Oregon Chief of Party: R.A. Earle

Compilation Office: Portland, Oreg. Chief of Party: R.A. Earle

Instructions dated (II III): 12-9-47
Amended 1-~~8~~-47 29

Copy filed in ~~Descriptive~~ Div. Photogr ~~Report No. T-~~ ~~(VI)~~ Office Files.

Completed survey received in office: 12-28-48

Reported to Nautical Chart Section: 1-5-49

Reviewed: 2-23-49 Applied to chart No. Date:

Redrafting Completed: 4-24-50

Registered: 8-9-50 Published:

Compilation Scale: 1:10,000 Published Scale:

Scale Factor (III): None

Geographic Datum (III): N.A. 1927 Datum Plane (III): ~~Mean Sea Level~~ M.H.W. = 5.0 Ft. above U.S.E. Adopted Low Water

Reference Station (III): PRINDLE (Wash.) 1938

Lat.: 45°-35'-50.111" 1547.1 m (305.3 m) Long.: 122°-08'-56.687" 1228.6 m (71.8 m) Adjusted X Unadjusted

State Plane Coordinates (VI): Ore. North Zone Wash. South Zone

X = Y =

Military Grid Zone (VI)

M-2467-12(3)

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
9 lens 17249 to 17250 Inc.	8-9-46	11:28	1:10,000	9.7 ft. to 10.2 ft. above M.S.L.
Single lens 47-J-163 to 47-J-166	Nov.1947	Unknown	1:10,000 (ratio)	Unknown (lower than above)

Tide from (III): Daily reading of the USE tide guage located at Vancouver, Wash.

Mean Range: Spring Range:

Camera: (Kind or source) USC&GS, 9 lens, focal length, 8.25 inches; Metrogon lens, focal length, 6 inches.

Field Inspection by: See remarks, Page 3 date:

Field Edit by: None date:

Date of Mean High-Water Line Location (III): August 9, 1946 (Corrected by office inspection to U.S. Engineers Single lens photographs made on August 31st, September 5th, and September 19th, 1948, at low water after the 1948 Columbia River flood.)

Projection and Grids ruled by (III) T.L.J. (Wash.Office) date: 2-3-48

" " " checked by: T.L.J. (Wash.Office) date: 2-3-48

Control plotted by: Frank H. Elrod date: 8-27-48

Control checked by: Marie B. Elrod date: 9-1-48

Radial Plot by: James L. Harris date: 9-17-48

Detailed by: Carita Wiebe date: 10-25-48

Reviewed in compilation office by: Ree H. Barron date: 11-10-48

~~Elevations on Field Edit Sheet checked by:~~ date:

STATISTICS (III)

Land Area (Sq. Statute Miles): 3.1

Shoreline (More than 200 meters to opposite shore): 18.3 statute miles

Shoreline (Less than 200 meters to opposite shore): 1.5 statute miles

Number of Recoverable Topographic Stations established: None

Number of Temporary Hydrographic Stations located by radial plot: None

Leveling (to control contours) - miles:

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

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

Remarks:

Interior Field: Inspection	John Winniford John C. Lajoye Royal Sherwood	1-16-48 to 2-13-48
Shoreline Inspection:	John C. Lajoye John Winniford	2-13-48 to 2-27-48
Recovery of Horizontal Control:	John C. Lajoye John Winniford Charles Hanavich	2-2-48 to 2-13-48
Geographic Names:	John C. Lajoye	1-14-48 to 1-22-48

Form T-1

DATA RECORD

T- 8878

Quadrangle (II): Mt. Hood and Vicinity Scale, 1:125,000 **Project No. (II):** Ph-17(47)

Field Office: Portland, Oregon **Chief of Party:** R.A. Earle

Compilation Office: Portland, Oreg. **Chief of Party:** R.A. Earle

Instructions dated (II III): 12-9-47 Amended 1-~~7~~9-47

Copy filed in ~~Descriptive Report No. T-~~ ~~(VI)~~ Div. Photogr. Office Files

Completed survey received in office: 12-28-48

Reported to Nautical Chart Section: 1-5-49

Reviewed: 2-23-49 **Applied to chart No.** **Date:**

Redrafting Completed: 4-24-50

Registered: 8-9-50 **Published:**

Compilation Scale: 1:10,000 **Published Scale:**

Scale Factor (III): None

Geographic Datum (III): N.A. 1927 **Datum Plane (III):** ~~Mean Sea Level~~ M.H.W. = 5.0 Ft. above U.S.E. Adopted Low Water

Reference Station (III): WARREN 2 (Ore.) 1938 r 1948

Lat.: 45°-36'-50.944" 1572.8m (279.6m) **Long.:** 122°-00'-28.185" 610.7m (689.3m) **Adjusted** X **Unadjusted**

State Plane Coordinates (VI): Ore. North Zone Wash. South Zone

X = **Y =**

Military Grid Zone (VI)

M-2467-12(3)

JMW

PHOTOGRAPHS (III)

Number	Date	Time	Scale	Stage of Tide
9 lens 17247 and 17248	8-9-46	11:25	1:10,000	10.2 ft. to 10.7 ft. above M.S.L.
Single Lens 47-J-161 to 47-J-163 (Incl.)	Nov. 1947	Unknown	1:10,000 ratio	Unknown (Lower than above)

Tide from (III): Daily reading of the U.S.E. tide guages located at Vancouver, Washington.

Mean Range: **Spring Range:**

Camera: (Kind or source) U.S.C.&G.S., 9 lens, focal length 8.25 inches. Metrogen lens, focal length 6 inches.

Field Inspection by: See remarks, Page 3 **date:**

Field Edit by: None **date:**

Date of Mean High-Water Line Location (III): August 9, 1946 (Corrected by office inspection to U.S. Engineers Single lens photographs made on August 31st., Sept. 5th, and Sept 19th, 1948, at low water after the 1948 Columbia River flood.)

Projection and Grids ruled by (III) T.L.J. (Wash. Office **date:** 2-2-48

" " " **checked by:** T.L.J. (Wash. Office) **date:** 2-2-48

Control plotted by: Frank H. Elrod **date:** 8-26-48

Control checked by: Marie B. Elrod **date:** 9-1-48

Radial Plot by: James L. Harris **date:** 9-17-48

Detailed by: Marie B. Elrod **date:** 10-22-48

Reviewed in compilation office by: Ree H. Barron **date:** 11-1-48

~~**Elevations on Field Edit Sheet checked by:**~~ **date:**

gfw

STATISTICS (III)

Land Area (Sq. Statute Miles): 3.4

Shoreline (More than 200 meters to opposite shore): 13.2 statute miles

Shoreline (Less than 200 meters to opposite shore): 2.8 statute miles

Number of Recoverable Topographic Stations established: none

Number of Temporary Hydrographic Stations located by radial plot: none

Leveling (to control contours) - miles:

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

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

Remarks:

Interior Field Inspection	John Winniford John C. Lajoye Royal Sherwood	1-22-48 to 1-28-48
Shoreline Inspection	John C. Lajoye John Winniford	1-22-48 to 2-4-48
Recovery of Horizontal Control	John C. Lajoye John Winniford Charles Hanavich	1-16-48 to 2-18-48
Geographic Names	John C. Lajoye	1-16-48 to 1-22-48

FIELD INSPECTION REPORT
Project Ph-17(47)

1. Description of the Area:

One combined report is submitted for this Project. The area is comprised of 5 shoreline survey sheets numbered T-8875 to T-8878 inclusive and T-8607. It encompasses the upper part of the Columbia River extending from Washougal, Wn., to the Bonneville Dam, which spans the River between the towns of Bonneville, Ore., and North Bonneville, Wn..

The mean flow of the Columbia River at Bonneville is 200,000 cubic feet per second, the minimum flow is about 40,000 feet c.f.s., and the average annual maximum flow is about 585,000 c.f.s. The low flows occur during the winter and are generally of short duration; the high water periods occur annually during May, June and July, and usually reach their peaks in June.

At the site of the Bonneville Dam the River flows in a westerly direction in two channels separated by Bradford Island. The spillway dam is located in the main or north channel, and the power house and navigation lock are in the south channel, formerly referred to locally as Bradford Slough. Of special interest are the fish ladders - one on Bradford Island and the other on the north side of the River - which provide access for runs of salmon, trout, and other migratory fish to the upriver spawning grounds.

A project for dredging a 27-foot channel between Vancouver and Bonneville is being undertaken by the U.S. Engineers. The navigation lock is designed to accomodate ocean-going craft of about 8000 tons. It is 76 feet in width and 500 feet in length.

The spillway dam is a concrete gravity section about 1450 feet in over-all length. Between concrete piers, spaced 60 feet apart, there are 18 gate openings each 50 feet wide. The piers are 10 feet thick making the length between the abutments 1070 feet. A service road (restricted) at an elevation of 97 feet above MSL surmounts the spillway dam. The width of the spillway or gravity section is 132 feet. A wide concrete apron at the toe of the dam affords protection against the destructive effect of the water pouring down from the spillway section.

In the forebay the normal pool elevation is 72 feet above MSL, but during the spring and summer freshets (May, June and July) the water level in the pool is raised to 82.5 feet above MSL in order to obtain the rated capacity of the powerhouse turbines.

As one proceeds east from the west limits of the Project, the rolling agricultural lands yield rapidly to the rugged, mountainous wilderness of the Cascade Mountains. Through the latter the Columbia River has cut a deep gorge, which is a scenic wonder, and

called the Columbia River Gorge. The area within this gorge can be divided into two distinct topographic units; they are: 1) The low flood plain of the Columbia River, and 2) The rugged, mountainous slopes which rise rapidly in proceeding either north or south of the River.

The flood plain consists of the river channel, several small islands, a low land plain that parallels the river on both sides in discontinuous bands, sedimentary benches and outcrops. Depositional features such as sand and gravel bars and beach ridges are common because of periodical and seasonal floods. The islands, in general, are of sand composition and are covered with scattered brush and low willows. The shorelines of these islands are subject to changes at all times and during the seasonal freshets the changes may become radical. These shoreline movements are either prograding or retrograding.

In the low lands adjacent to the River, the topography is a complex blend of sloughs, intermittent ponds, marshes, and wooded marshes. In most cases, the shore is of earth, sand or gravel interspersed with rocky areas. A general definition is a narrow mud, sand or gravel beach leading to a 6 to 8-foot earth bank. Although the shoreline in some areas along the mainland is subject to change, it is more fixed than the migrating shorelines found on the sandy islands. Where sedimentary benches are found, they are usually about 25 to 30 feet above the river level. The shoreline along these benches is of gravel and may be regarded as fairly well fixed. The vegetation found along the river banks consists of brush and willows.

Immediately behind the flood plain rise the steep slopes of the Cascade Mountains. These slopes are interrupted in various places by precipitous basaltic cliffs and bluffs some of which rise directly from the water's edge. Examples of this topography are found in the vicinity of Cape Horn on the north side of the River or at Crown Point on the south side. This inland area is heavily wooded with coniferous forests and dense brush; however, there are numerous exposed rock peaks and cliffs. Many large perennial streams have cut deep canyons that extend down to the flood plain, or if the streams have failed to do this, they reach the River in picturesque cascades and waterfalls.

Among the principal towns or communities are Washougal and North Bonneville in the State of Washington, and Bridal Veil, Corbett and Springdale in the State of Oregon. They are minor agricultural trade centers and are supported chiefly by sawmills and other small industries. Bonneville, Ore., is a government town which was constructed to accomodate the employees associated with the maintenance of the Bonneville Dam.

Traffic on the River consists mainly of log, gasoline, diesel oil, and wheat shipments, which are usually transported in barges.

The Evergreen Highway (US 830) along the north side of the River and the Columbia River Highway (US 30) along the south side are the principal arterials in the area. The Spokane, Portland and Seattle, and the Union Pacific railroad lines parallel the north and south sides of the River, respectively. Other secondary roads provide access to the River. A new highway which is discussed in side-heading 14, is now under construction along the south side of the River.

2. Completeness of Field Inspection:

The field inspection for the clarification of details on the photographs, and for the classification and identification of roads, shoreline, buildings, et cetera, has been completed in accordance with the instructions for this Project, dated 9 December 1947, and the amendment instructions dated 29 January 1948.

A general site map of the Bonneville Dam has been submitted as a supplement to the field inspection work in this area.

3. Interpretation of the Photographs:

A dense wooded zone of hardwood has a lighter tint (greyish) and greater uniformity of tone than a corresponding area of dense softwood. Hardwoods are confined to the low flat areas along the River whereas the softwoods predominate on terrain of high and rugged relief.

A mottled color of greys is indicative of a mixture of hard and softwoods. Solid light grey tones usually indicate brush areas.

In the photographs, sedimentary rocks appear to be grey, and basaltic formations appear to be black-toned shading to a dark grey.

In the lower areas along the River and on the islands, a light pebbled effect indicates a mixture of brush and small willows. The dark areas in the flood plain usually indicate intermittent ponds, sloughs, marsh or low spots; however, their correct interpretation requires field inspection. White tone areas are indicative of sand and gravel bars, altho scattered willows often give them a speckled appearance.

The various natural features have been identified a sufficient number of times on the field photographs so that the photographic detail should be interpreted correctly by the office personnel.

4. Horizontal Control:

The subject of additional control, established in this area,

is discussed in a special report, "Third and Fourth-Order Control, Project Ph-17(47). Filed in Div. Photogr. General Files.

Recovery notes on Form 526 have been prepared for all USC&GS stations that were recovered or searched-for, with the exception of those stations for which recovery notes had been submitted in 1946 or 1947. This modified procedure is in accordance with side heading 10 of the instructions for this Project. If, however, a station in this last category was recovered and it was found that the 1946 or 1947 recovery note required revision, a new recovery note was prepared.

Recovery notes were prepared for stations of other agencies only when they were recovered and identified for purposes of control.

5. Vertical Control:

This phase of the work was not required in the instructions for this Project.

6. Contours and Drainage:

Contouring is inapplicable for this area.

Altho there were numerous drains in the area; only those in the detail zone, or immediately adjacent thereto, were investigated and indicated on the field photographs.

7. Shoreline Plane of Reference:

Inasmuch as the upper part of the Columbia River is not influenced by tidal action, the term "Shoreline Plane of Reference" was used in place of "Mean High-Water Line" as a side heading.

A profile of the River, which was obtained from the U.S. Engineers, is being submitted with this report. A study of this profile indicates that there is a gradient in the USE Plane of Adopted Low Water between Vancouver, Wn., and the Bonneville Dam. The gradient is fairly constant from Vancouver to Warrendale, Ore., i.e., a rise of about 0.13 foot in a run of 1.0 mile. Between Warrendale and the Dam (a distance of about 3 miles) the gradient increases sharply to where the rise is about 0.85 foot in a run of 1.0 mile. Filed in Div. Photogr. General Files.

In order to use the same reference plane which was established for use on Project CS-322, the 9-lens photographs, which were taken on 9 August 1946, were used for the shoreline inspection work on this Project. An elevation of 4.9 feet was the only reading recorded on the U.S.E. gage in Vancouver on this date. As the zero

of this gage is set at 1.4 feet above M.S.L., the mean high-water line would be 6.3 feet above M.S.L. (5.0 feet above the USE Adopted low Water Line) for these photographs at Vancouver. By applying the difference of about 1.9 feet in gradient (see USE river profile) between Vancouver and Washougal, Wn., the mean high-water line at the west limits of Project Ph-17(47) would be 8.2 feet above M.S.L. In view of these facts, the shoreline plane of reference between Washougal and the Dam, as identified by the field inspector, is 5.0 feet above the USE Plane of Adopted Low Water (refer to their river profile for gradient readings along this Plane).

It should be noted, however, that the notation relative to the datum plane on map T-8709 (this map junctions with the west limits of this Project) should have stated that the mean high-water reading of 6.29 feet is referenced to the gage at the USE Government Moorings at the St. Johns Bridge, Willamette River. The true mean high-water line in the area of this map would then be determined by applying a gradient correction.

Upstream from the Bonneville Dam, the U.S. Engineers maintain a normal pool elevation of 72 feet above MSL (see USE river profile), and this represents the shoreline identified by the field inspector upstream from the Dam to the east limits of the Project. For additional information refer to side heading 1, paragraph 6.

The river level in this area is variable. Where the identified shoreline is not to some extent coincident with and defined by an appreciable bank or bluff, the changes in the shoreline are affected at various increasing stages of the water level above the datum plane. During freshet stages and occasional out-of-season floods, the river and its sloughs will spill over the lower banks to flood the low-lying areas.

For additional information refer to side heading 1.

8. Low-Water Line:

Since there is no tidal action, this item is inapplicable. In general, only the approximate limits of shoal areas were indicated during the shoreline inspection. These were determined by a close study, in the field, of any underwater discolorations or lines that may have been visible on the 9-lens photographs.

The single lens photographs that were taken in November, 1947 were received after the shoreline inspection work was practically completed. The water level on these photographs is at a lower plane than that found on the 9-lens photographs. In view of this

fact, the compilers should utilize these photographs in conjunction with the 9-lens field photographs in delineating the approximate limits of shoal areas.

9. Wharves and Shoreline Structures:

The waterfront areas were carefully investigated during the shoreline inspection. All wharves, loading docks, piling, jetties, log-dumps and other shoreline features were inspected and identified on the 9-lens photographs. All essential and obscured detail has been clarified by markings and appropriate notes.

10. Details Offshore from the Shoreline Plane of Reference:

Dolphins, piling, remains of old docks, foul areas, rocks, and other offshore obstructions or details were inspected, identified, and clarified, by markings and appropriate notes on the 9-lens field photographs, during the shoreline inspection operations.

In areas where the shoreline is rocky, submerged rocks and ledges are suspected. The height of rocks that bare above the plane of reference has been indicated.

11. Landmarks and Aids to Navigation:

A complete investigation of all fixed aids to navigation was made in the field. They were either identified directly on the photographs or, if not previously located by the hydrographic party in 1946 or 1947, were located by instrumental methods.

In the vicinity of Tunnel Point, four new range structures have been built by the U.S. Coast Guard. They are: 1) Rooster Rock Upper Range Front, 2) Rooster Rock Upper Range Rear, 3) Rooster Rock Lower Range Rear, and 4) Cape Horn Range Rear. These structures were located by triangulation methods by the photogrammetric party in 1948. Of these structures, Rooster Rock Upper Range Front was previously located by the hydrographic party in 1947; however, it had been listed on Form 567 as "New Front Range Structure - Nov. 1947." The names of these structures were obtained from Lt. Fullington of the U.S. Coast Guard, Vancouver, Wn. For additional information refer to the "Special Report, Third and Fourth-Order Control, Project Ph-17(47)."

Fashion Reef Light was located in its new position by the hydrographic party in 1947; their position for this light, which was listed on Form 567, was; Latitude 45° 35' 168.0 m, Longitude 122° 08' 516.5 m.

It was ascertained from Lt. Fullington that the "New Front Range Structure Nov. 1947 (485 m. East of New Fashion Reef Light.)", which was listed by the hydrographic party on Form 567, consists of only 4 pilings and he did not know when this range structure would be completed. In view of this fact, the contemplated range structure should be shown as 4 piling in a group (within about a 5-foot radius as verified in the field). The position established by the hydrographic party for this group of piling is: Latitude 45° 35' 210.0 m., Longitude 122° 08' 31.0 m.

The following corrections should be applied:

The position listed on Form 567 by the hydrographic party for "Multnomah Falls Dike 82" is the position for "Multnomah Falls Range Front Light," which has been destroyed as a navigational aid. It should be indicated as a dolphin. The hydrographic position was: Latitude 45° 34' 1702.1 m., Longitude 122° 06' 399.0 m.

"Multnomah Falls Range Front Light" has been replaced by a new light called "Multnomah Falls Dike 82" which is just west of the old light. The hydrographic party's position for this new light listed on Form 567 as "New Front Range Structure - Est. Nov. 1947 (455 meters ENE Multnomah Falls Range Front Light.)" is: Latitude 45° 34' 1693.4 m., Longitude 122° 06' 426.5 m. Incidentally, the hydrographic party should have noted it as being 455 meters ENE of Multnomah Falls Dike 80 Light instead of....ENE of Multnomah Falls Range Front Light.

The position listed on Form 567 by the hydrographic party for Multnomah Falls Range 82 Light is actually the position for Multnomah Falls Dike 80 Light. The position is: Latitude 45° 34' 1552.3 m., Longitude 122° 06' 854.7 m.

The name of the new light (Multnomah Falls Dike 82) was obtained from Lt. Fullington.

The "New Front Range Structure - Nov. 1947 (Approx. 1 mile west of McGowans Lt.)" and the "New Front Range Structure - Nov. 1947 (Approx. 500 m. NNW McGowans Lt.)" as listed by the hydrographic party on Form 567 are named, respectively: McGowans Front Range 83 and Common Front Range (Warrendale Lower Range 87 and Multnomah Falls Upper Range 85). The names for these two range structures were obtained from Lt. Fullington. The hydrographic party's positions for these ranges are, respectively: Latitude 45° 36' 798.0 m. Longitude 122° 03' 340.5 m., and Latitude 45° 36' 1553.5 m., Longitude 122° 02' 30.0 m.

The positions for Bradford Slough Light and Bradford Island Light, which were determined by the hydrographic party in 1947, are, respectively: Latitude 45° 38' 655.0 m., Longitude 121° 56' 31.0 m., and Latitude 45° 38' 881.2 m., Longitude 121° 56' 84.0 m.

No additional nautical landmarks or changes in the list submitted by the hydrographic party were found.

12. Hydrographic Control:

In accordance with side heading 17 of the instructions for this Project, no recoverable topographic stations or photo hydro stations were established.

13. Landing Fields and Aeronautical Aids:

There were no landing fields in the area of this project.

Four aeronautical landmarks which were recommended for charting, have been listed on Form 567 and will be submitted with this report.

14. Road Classification:

All through or connecting public highways, and roads leading from such highways, which provide access to the water, have been classified in accordance with the amendment instructions dated 29 January 1948. All other roads such as private drives and field roads were not classified and should not be shown.

The names and numbers of important roads were obtained from posted signs and noted on the photographs.

A new highway is now under construction along the south side of the Columbia River, between the west limits of this Project and Dodson, Oregon. The construction is in the preliminary stage and the work at the present time consists primarily of clearing and filling the road bed at intermittent points along the proposed highway. It is believed that sufficient and appropriate notes have been made on the field photographs to delineate the approximate location of the new highway. The Oregon State Highway Department was contacted for maps showing the location of the new road but they were unable to release their master construction map. They did, however, furnish a few ties and indicated the approximate location of the new highway, in places where the land had not been cleared.

15. Bridges:

There were no bridges or cable crossings (submarine and overhead) across navigable waters in this area. In the vicinity of the Dam, several overhead transmission lines cross the north channel of the River from the powerhouse to the north. These lines do not cross the navigable portion of the Columbia River as the navigating channel and the navigation lock are found to the south of them.

16. Buildings and Structures:

A complete field investigation was made for all buildings and structures which are located along the waterfront. Inshore from the waterfront, all public buildings, as well as buildings and structures visible from the water, were identified.

17. Boundary Monuments and Lines:

This side heading is not applicable to this Project.

18. Geographic Names:

The investigation of geographic names was accomplished by a special field party and is the subject of a special report "Investigation of Geographic Names, Project Ph-17(47)". Filed in Geographic Names Section, Div. Charts

The local names of important highways, schools, and other public buildings were obtained during the field inspection and have been indicated on the photographs.

19. Power Transmission Lines:

Prominent power transmission lines, which were of landmark value to the navigator, have been indicated on the field photographs.

20. Field Photographs:

The junctions between field photographs, and the legibility and completeness of the inked notes relative to field inspection work, have been checked.

No attempt was made to indicate the limits of each sheet on the photographs.

21. Symbols and Color Scheme:

Standard symbols and procedures, outlined in "Supplemental

Instructions - Shoreline Inspection" dated 18 March 1944, and Photogrammetry Instructions No. 10 with amendments No. 12, No. 15, and No. 17, were used on field photographs. Filed in Div. Photogr. Office Files.

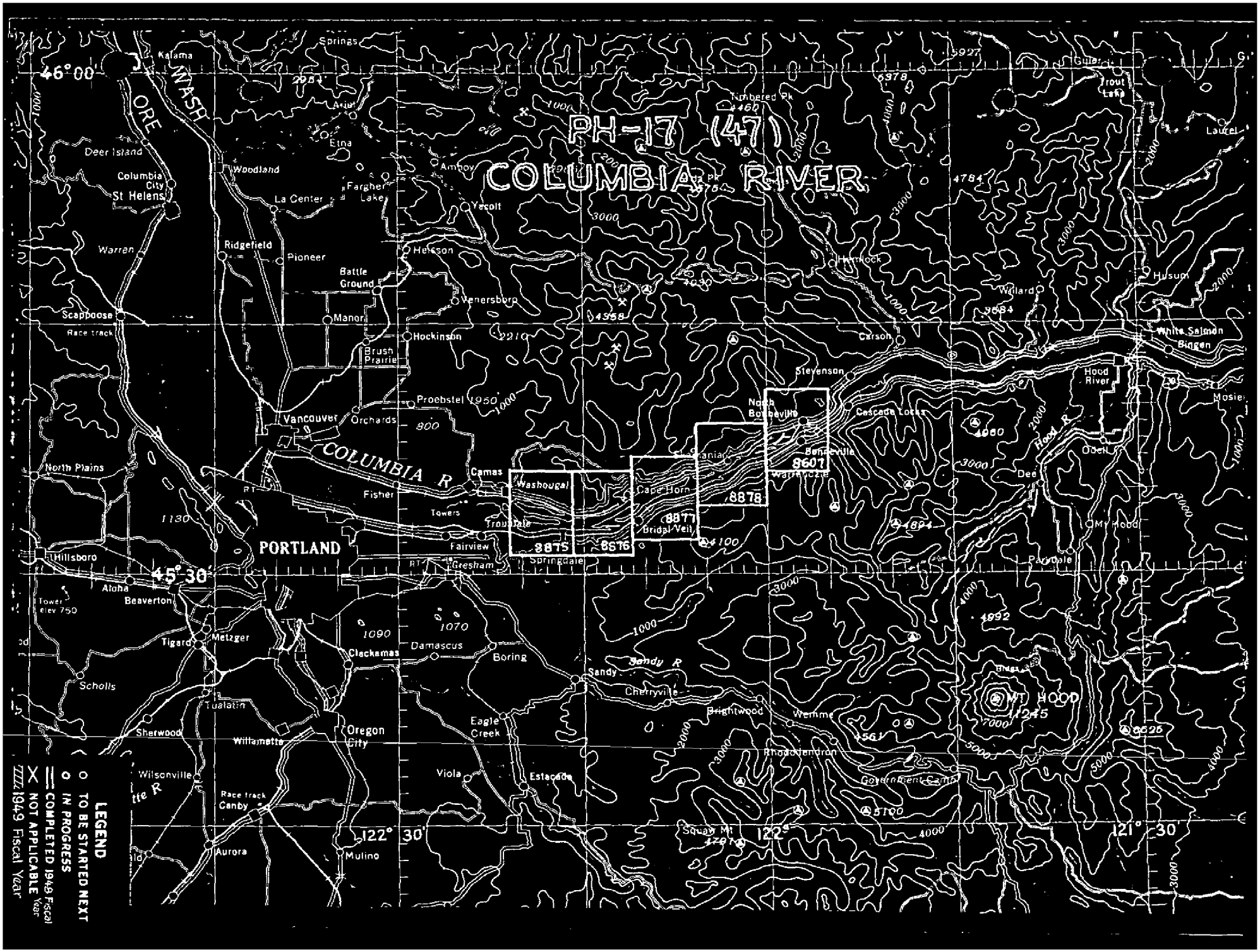
Red ink was used to indicate shoreline, ground control stations, culture, and general notes. Blue ink was used for drainage, and green ink for deletions.

Approved by:

R.A. Earle,
Chief of Party

Respectfully submitted:

Charles Hanavich,
Topographic Engineer


PH-17 (47)
COLUMBIA RIVER
LEGEND
TO BE STARTED NEXT
IN PROGRESS
COMPLETED 1948 Fiscal Year
NOT APPLICABLE
1949 Fiscal Year
PORTLAND
COLUMBIA R
WASH
ORE
Washougal
Cape Horn
Bridal Veil
North Bonneville
Bonneville
Warrendale
Cascade Locks
Stevenson
Carson
Hemlock
Willard
Husum
White Salmon
Bingen
Hood River
Mosier
Odell
Dee
Parkdale
Mt Hood
Hood R
Sandy R
Cherryville
Brightwood
Wemme
Rhododendron
Government Camp
Squaw Mt
Sandy
Boring
Damascus
Clackamas
Oregon City
Eagle Creek
Estacada
Viola
Mulino
Aurora
Canby
Race track
Wilsonville
Willamette
Tualatin
Sherwood
Scholls
Tigard
Metzger
Beaverton
Aloha
Hillsboro
Tower elev 750
North Plains
Scappoose
Race track
Warren
Deer Island
Columbia City
St Helens
Kalama
Woodland
La Center
Ridgefield
Pioneer
Battle Ground
Manor
Brush Prairie
Hockinson
Venersboro
Heisson
Yacolt
Amboy
Etna
Ariel
Springs
Fargher Lake
Proebstel
Orchards
Vancouver
Camas
Fisher
Towers
Troutdale
Fairview
Gresham
Springdale
Trout Lake
Laurel
Guler
Timbered Pk
46°00'
45°30'
122°30'
122°
121°30'

MAP T-8875 PROJECT NO. Ph-17(47) 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)
NEL 2 (USE) (Wash.)	G-4537	NA	45° - 33' - 05.792"	178.8	(1673.6)		✓		Used in radial	
1938	Page 462	1927	122° - 16' - 47.772"	1036.2	(265.2)				plot	
CORBETT LIGHT	G-4537	NA	45° - 32' - 31.693"	978.5	(873.9)		✓		"	"
(Oreg.) 1938	Page465	1927	122° - 17' - 22.985"	498.7	(803.0)					
TROUTDALE, BISSINGER AND CO. WOOL SCOURERY ELEVATED BLACK TANK (Oreg.) 1938	G-4537	NA	45° - 32' - 32.953"	1017.4	(835.0)		beyond limits		"	"
	Page 464	1927	122° - 23' - 02.589"	56.2	(1245.5)		of sheet			
TATE (Wash.)	G-4537	NA	45° - 35' - 41.444"	1279.5	(572.9)		✓		"	"
1938	Page 447	1927	122° - 21' - 12.500"	270.9	(1029.6)					
WASHOUGAL WOOLEN MILLS, ELEVATED SILVER TANK, SMALLER OF TWO (Wash.) 1938	G-4573	NA	45° - 34' - 38.592"	1191.5	(660.9)		✓		"	"
	Page464	1927	122° - 21' - 07.385"	160.1	(1140.8)					
KEY (USE) (Wash.)	G-4537	NA	45° - 34' - 38.390"	1185.2	(667.2)		✓		"	"
1938	Page 461	1927	122° - 21' - 32.305"	700.4	(600.5)					
ELEVATED SILVER TANK, NORTHEAST OF WASHOUGAL (Wash.) 1938	G-4537	NA	45° - 35' - 01.304"	40.3	(1812.1)		✓		"	"
	Page464	1927	122° - 20' - 25.031"	542.6	(758.1)					
FOX (Wash.)	G-4537	NA	45° - 35' - 30.364"	937.4	(915.0)		✓		"	"
1938	Page447	1927	122° - 18' - 40.391"	875.5	(425.0)					
GIBBONS CREEK CHURCH (Wash.) 1901	G-6256	NA	45° - 34' - 30.86 "	952.7	(899.6)		✓		"	"
	Page 710	1927	122° - 18' - 53.35 "	1156.7	(144.2)					
RAILROAD BLOCK SIGNAL No. 214 (Oreg.) 1938	G-4537	NA	45° - 32' - 29.381"	907.1	(945.3)		✓		"	"
	Page465	1927	122° - 16' - 08.380"	181.8	(1119.9)					
COTTONWOOD	G-7298	NA	45° - 33' - 32.734"	1010.6	(841.8)		✓		"	"
1946	Page 2	1927	122° - 18' - 06.999"	151.8	(1149.5)					

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 8/10/48 CHECKED BY J.E.Deal & R.Skadsen DATE 8/13/48

M-2388-12

MAP T-8875 PROJECT NO. Ph-17(47) 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)
LOW (USE)	G-4579	NA	45° - 33' - 09.157"	282.7	(1569.7)		✓		Recovered, not	
1935-38	Page 507	1927	122° - 19' - 16.784"	364.1	(937.4)				used in radial plot	
HIGH (USE)	G-4579	NA	45° - 32' - 24.610"	759.8	(1092.6)		✓		"	"
1935	Page 507	1927	122° - 17' - 55.228"	1198.2	(103.5)					
COR (USE)	G-4579	NA	45° - 32' - 29.023"	896.0	(956.4)		✓		"	"
1935	Page 508	1927	122° - 17' - 29.471"	639.4	(662.3)					
LAR 2 (USE)	G-4579	NA	45° - 32' - 48.755"	1505.2	(347.2)		✓		"	"
1938	Page 508	1927	122° - 20' - 00.590"	12.8	(1288.8)					
BRUSH, (Oreg.)	G-4537	NA	45° - 32' - 06.743"	208.2	(1644.2)		✓		"	"
1938	Page 447	1927	122° - 19' - 46.122"	1000.7	(301.1)					
TUN (USE) (Oreg.)	G-4537	NA	45° - 32' - 34.412"	1062.4	(790.0)		✓		"	"
1938	Page 448	1927	122° - 16' - 26.885"	583.3	(718.4)					
WILL, (Wash.)	G-4537	NA	45° - 33' - 25.181"	777.4	(1075.0)		✓		"	"
1938	Page 448	1927	122° - 16' - 27.711"	607.0	(700.3)					
LAND 2 (USE)	G-4537	NA	45° - 33' - 01.153"	35.6	(1816.8)		✓		"	"
(Wash.) 1938	Page 461	1927	122° - 17' - 38.726"	840.0	(461.5)					
NET 2 (USE)	G-4537	NA	45° - 33' - 28.259"	872.4	(980.0)		✓		"	"
(Oreg.) 1938	Page 461	1927	122° - 20' - 47.056"	1020.6	(280.7)					
REED ISLAND	G-7298	NA	45° - 33' - 19.768"	610.3	(1242.1)		✓		"	"
1946	Page 2	1927	122° - 18' - 58.027"	1258.6	(42.8)					
WHITEWASHED PILE	G-4537	NA	45° - 34' - 08.548"	263.9	(1588.5)		✓		Used in radial	
AT SOUTHEAST CORNER OF OLD DOCK NEAR	Page 465	1927	122° - 20' - 27.767"	602.1	(699.0)				plot.	
OUGH (USE) (Wash.) 1938										

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 9/14/48 CHECKED BY: J.E. Deal & J.L. Harris DATE 9/20/48

M-2388-12

MAP T- 8875 PROJECT NO. Ph-17(47) 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)
DUNCAN (Wash.)	G-4537	NA	45° - 34' - 03.049"	94.1	(1758.2)		✓		Used in radial	
1938	Page 447	1927	122° - 16' - 39.251"	851.2	(450.0)				plot	
RED BARN, CUPOLA, FLAG POLE (Oreg.)	G-7078	NA	45° - 31' - 54.48 "	1682.0	(170.4)		✓		"	"
1946	Page 911	1927	122° - 21' - 37.34 "	810.2	(491.7)					
MILL (Wash.)	G-4537	NA	45° - 35' - 51.579"	1592.4	(260.0)				West of project,	
1938	Page 446	1927	122° - 22' - 39.780"	862.2	(438.2)				not plotted.	
MILL RM#2	Office	NA	45° - 35' - 51.648"	1594.5	(257.9)				"	"
1938	Comp.	1927	122° - 22' - 39.160"	848.8	(451.6)					
TROUTDALE, MULTNOMAH CO. FARM, ELEVATED TANK (Oreg.)	G-7078	NA	45° - 32' - 11.64 "	359.4	(1493.0)				"	"
1945	Page 911	1927	122° - 24' - 20.51 "	445.0	(856.8)					
ROOSTER ROCK UPPER RANGE REAR,	Field	NA	45° - 32' - 31.615"	976.1	(876.3)		✓		New Station	
1948	Comp.	1927	122° - 16' - 21.190"	459.7	(842.0)					
CAPE HORN RANGE	Field	NA	45° - 32' - 29.762"	918.8	(933.6)		✓		"	"
REAR, 1948	Comp.	1927	122° - 16' - 00.890"	19.3	(1282.4)					
ROOSTER ROCK UPPER RANGE FRONT,	Field	NA	45° - 32' - 34.339"	1060.1	(792.3)		✓		"	"
1948	Comp.	1927	122° - 16' - 11.035"	239.4	(1062.3)					
ONION ROCK, LONE TREE (Oreg.)	G-4537	NA	45° - 32' - 31.67 "	977.7	(874.7)		✓		Recovered as	
1938	Page 465	1927	122° - 16' - 00.98 "	21.3	(1280.4)				ONION ROCK PINNACLE	

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 9/14/48 CHECKED BY: J.E. Deal & J.L. Harris DATE 9/20/48

M-2388-12

MAP T-8876 PROJECT NO. Ph-17(47) 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)
CROWN POINT VISTA HOUSE DOME (Oreg.) 1938	G-4537	NA	45° - 32' - 23.028"	710.9	(1141.4)		✓		Used in radial	
	Page 465	1927	122° - 14' - 35.435"	768.8	(533.0)				plot	
BARN, DOWNSTREAM GABLE (Oreg.) 1938	G-4537	NA	45° - 33' - 00.25 "	7.7	(1844.7)		✓		"	"
	Page 470	1927	122° - 11' - 27.57 "	598.0	(703.7)					
RED BARN CUPOLA (Oreg.) 1901	G-6256	NA	45° - 32' - 22.319"	689.1	(1163.3)		✓		"	"
	Page 706	1927	122° - 13' - 32.907"	714.0	(587.8)					
TER (USE) 1935	G-4579	NA	45° - 32' - 54.068"	1669.2	(183.1)		✓		"	"
	Page 509	1927	122° - 13' - 28.216"	612.2	(689.5)					
MT. ZION 2 (Wash.) 1938	G-4537	NA	45° - 34' - 51.169"	1579.7	(272.6)		✓		"	"
	Page 448	1927	122° - 12' - 22.180"	480.9	(819.9)					
ROCKSHED ROOF, SOUTHEAST CORNER (Wash.) 1938	G-4537	NA	45° - 34' - 36.214"	1118.0	(734.3)		✓		"	"
	Page 469	1927	122° - 11' - 37.156"	805.6	(495.3)					
MT. PLEASANT STANDARD SCHOOL, CUPOLA FINIAL (Wash.) 1938	G-4537	NA	45° - 33' - 47.723"	1473.4	(379.0)		✓		"	"
	Page 469	1927	122° - 13' - 43.577"	945.1	(356.2)					
CANDIANA LIGHT (Wash.) 1938	G-4537	NA	45° - 34' - 29.65 "	915.4	(937.0)		✓		"	"
	Page 469	1927	122° - 11' - 19.06 "	413.3	(887.7)					
ROOS (USE) 1935	G-4579	NA	45° - 33' - 29.637"	915.0	(937.4)		✓		"	"
	Page 509	1927	122° - 14' - 29.118"	631.5	(669.8)					
CAPEHORN, AUXILIARY AIRWAY BEACON NO.2 (Wash.) 1938	G-4537	NA	45° - 34' - 01.94 "	59.9	(1792.5)		✓		"	"
	Page 469	1927	122° - 11' - 56.21 "	1219.0	(82.2)					
SHED (USE) 1935	G-4579	NA	45° - 33' - 45.311"	1398.9	(453.5)		✓		"	"
	Page 509	1927	122° - 12' - 39.208"	850.3	(450.9)					
HEN (USE) 1935	G-4579	NA	45° - 33' - 21.474"	663.0	(1189.4)		✓		"	"
	Page 508	1927	122° - 15' - 58.874"	1277.0	(24.4)					

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 9/14/48 CHECKED BY: J.E.Deal & R.Skadsen DATE 9/20/48

N-2388-12

MAP T-8876 PROJECT NO. Ph-17(47) 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)
WHITE BARN, RIVER CUPOLA, (Wash.) 1938	G-4537	NA	45° - 33' - 51.332"	1584.8	(267.6)				Used in radial	
	Page 468	1927	122° - 14' - 48.508"	1052.0	(249.2)				plot	
PORTLAND-SPOKANE AIRWAY BEACON NO. 2 ON ISLAND (Oreg.) 1938	G- 4537	NA	45° - 33' - 27.163	838.6	(1013.8)				"	"
	Page 469	1927	122° - 11' - 52.490"	1138.5	(162.9)					
USGS BENCH MARK	G-4537	NA	45° - 32' - 22.099"	682.3	(1170.1)				Recovered, not	
(Oreg.) 1938	Page 462	1927	122° - 14' - 36.395"	789.6	(512.2)				used in radial plot	
CLIFF 2	G-4537	NA	45° - 32' - 25.162"	776.8	(1075.6)				"	"
(Oreg.) 1938	Page 447	1927	122° - 14' - 34.202	742.0	(559.7)					
GROUT (Wash)	G-4537	NA	45° - 33' - 44.657"	1378.7	(473.7)				"	"
1938	Page 448	1927	122° - 15' - 27.649"	599.7	(701.6)					
CAP (USE)	G4579	NA	45° - 34' - 02.174"	67.1	(1785.3)				"	"
1935	Page 509	1927	122° - 11' - 55.021"	1193.2	(108.0)					
HORN (USE)	G-4537	NA	45° - 34' - 32.807"	1012.9	(839.5)				"	"
(Wash.) 1938	Page 466	1927	122° - 11' - 10.234"	221.9	(1079.0)					
BE (USE)	G-4579	NA	45° - 33' - 19.314"	596.3	(1256.1)				"	"
1935	Page 509	1927	122° - 12' - 22.081"	478.9	(822.5)					
SAND (USE)	G-4579	NA	45° - 32' - 42.256"	1304.6	(547.8)				"	"
1935	Page 509	1927	122° - 14' - 48.762"	1057.8	(243.8)					
SHEPPARD 2 (Oreg.)	G-4537	NA	45° - 32' - 52.805"	1630.3	(222.1)				"	"
1938	Page 448	1927	122° - 11' - 42.096"	913.2	(388.4)					
ROOSTER ROCK LOWER	Field	NA	45° - 32' - 38.480"	1188.0	(664.4)				New station	
RANGE REAR 1948	Comp.	1927	122° - 15' - 11.379"	246.8	(1054.8)					
ROOSTER ROCK POLE	G-4537	NA	45° - 32' - 37.782"	1166.4	(686.0)				Recovered, (Pole	
(Oreg.) 1938	Page 465	1927	122° - 14' - 59.070"	1287.5	(20.2)				missing)	

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 8/10/48 CHECKED BY: J.E. Deal & R. Skadsen DATE 8/13/48

M-2388-12

MAP T-8877 PROJECT NO. Ph-17(47) 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)
BOB (USE) (Wash.)	G-4537	NA	45° - 34' - 55.039"	1699.2	(153.2)				Recovered, not	
1938	Page 466	1927	122° - 10' - 07.948"	172.3	(1128.5)				used in radial plot.	
WED (USE) (Oreg.)	G-4537	NA	45° - 34' - 22.893"	706.8	(1145.6)				"	"
1938	Page 466	1927	122° - 09' - 28.091"	609.1	(691.9)					
PRINDLE (Wash.)	G-4537	NA	45° - 35' - 50.111"	1547.1	(305.3)				"	"
1938	Page 448	1927	122° - 08' - 56.687"	1228.6	(71.8)					
BEN (USE)	G-4579	NA	45° - 34' - 43.759"	1351.0	(501.4)				"	"
1935	Page 510	1927	122° - 07' - 49.037"	1063.2	(237.7)					
ANGEL (Oreg.)	G-4537	NA	45° - 34' - 12.933"	399.3	(1453.1)				"	"
1938	Page 448	1927	122° - 09' - 17.587"	381.4	(919.7)					
REST (Oreg.)	G-4537	NA	45° - 33' - 51.929"	1603.2	(249.2)				"	"
1938	Page 466	1927	122° - 09' - 07.784"	168.8	(1132.4)					
ARCHER (Wash.)	G-4537	NA	45° - 36' - 47.908"	1479.1	(373.3)				"	"
1938	Page 449	1927	122° - 05' - 56.160"	1216.8	(83.2)					
EYE 3	G-7298	NA	45° - 35' - 59.899"	1849.3	(3.1)				"	"
1947	Page 2	1927	122° - 05' - 23.509"	509.6	(790.9)					
ON (USE) (Oreg.)	G-4537	NA	45° - 35' - 12.466"	384.9	(1467.5)				"	"
1938	Page 467	1927	122° - 05' - 06.880"	149.1	(1151.5)					
MULTNOMAH FALLS CREST, (Oreg.)	G-4537	NA	45° - 34' - 33.741"	1041.7	(810.7)				Recovered in 1946, not used	
1938 d.	Page 470	1927	122° - 06' - 50.261"	1089.8	(211.1)				in radial plot	
PHOCA ROCK, highest point, (Wash.)	G-4537	NA	45° - 34' - 20.972"	647.5	(1204.9)				"	"
1938	Page 469	1927	122° - 10' - 49.410"	1071.4	(229.6)					
DOLPHIN NEAR WED	G-4537	NA	45° - 34' - 27.903"	861.4	(990.9)				Used in	
(USE) (Oreg.) 1938	Page 470	1927	122° - 09' - 19.129"	414.8	(886.2)				radial plot	

1 FT. = .3048006 METER

COMPUTED BY F. H. Elrod DATE 8/10/48 CHECKED BY J.E. Deal & R. Skadsen DATE 8/16/48

M-2388-12

MAP T- 8877 PROJECT NO. Ph-17(47) 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)
MULTNOMAH FALLS TAVERN, ROCK CHIMNEY AT EAST END (Oreg.) 1938	G-4537	NA	45° - 34' - 39.40 "	1216.4	(636.0)				Used in radial	
	Page 470	1927	122° - 06' - 58.00 "	1257.5	(43.4)				plot	
RAY 2 (USE)	G-4579	NA	45° - 35' - 09.365"	289.1	(1563.3)				"	"
1935	Page 510	1927	122° - 09' - 27.569"	597.6	(703.0)					
MAX (USE) (Wash.)	G-4537	NA	45° - 35' - 57.449"	1773.6	(78.8)				"	"
1938	Page 467	1927	122° - 06' - 41.439"	898.1	(402.3)					
RAILROAD SEMAPHORE NORTH OF TRACK MIDWAY BETWEEN ONEONTA AND MULTNOMAH FALLS (Oreg.) 1938	G-4537	NA	45° - 35' - 02.11 "	65.1	(1787.2)				"	"
	Page 471	1927	122° - 05' - 38.43 "	833.1	(467.6)					
SON (USE)	G-4579	NA	45° - 35' - 26.063"	804.6	(1047.7)				"	"
1935	Page 510	1927	122° - 07' - 56.877"	1232.9	(67.7)					
TOWER 72,	Field	NA	45° - 35' - 38.90 "	1201.0	(651.4)				Topographic Sta.	
1948	Comp.	1927	122° - 08' - 56.79 "	1230.9	(69.6)				used in radial plot	
TRAIL 1948	Field	NA	45° - 33' - 46.77 "	1443.9	(408.4)				Temp. Sta. established for use	
(TEMPORY STATION)	Comp.	1927	122° - 09' - 26.80 "	581.2	(720.0)				in radial plot	

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 8/10/48 CHECKED BY: J.E. Deal & R. Skadson DATE 8/16/48

M-2388-12

MAP T- 8878 PROJECT NO. Ph-17(47) 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)
SKAMANIA SCHOOL,	G-4537	NA	45° - 37' - 01.043"	32.2	(1820.2)		✓		Used in radial	
CUPOLA, (Wash.) 1938	Page 473	1927	122° - 02' - 52.024"	1127.2	(172.8)				plot	
MAY (USE)	G-4579	NA	45° - 36' - 54.361"	1678.3	(174.1)		✓		"	"
1935	Page 512	1927	122° - 01' - 51.990"	1126.5	(173.6)					
WARRENDALE CANNERY WEST WING, NORTH	G-4537	NA	45° - 36' - 54.174"	1672.5	(179.9)		✓		"	"
GABLE (Oreg) 1938	Page 472	1927	122° - 00' - 14.462"	313.3	(986.7)					
HORSETAIL FALLS, SOUTHEAST CORNER OF	G-4537	NA	45° - 36' - 05.46 "	168.6	(1683.8)		✓		"	"
EAST ONE OF TWO HOUSES (Wash.) 1938	Page 471	1927	122° - 04' - 21.96 "	475.9	(824.4)					
B.M. A 24- 1921	G-4537	NA	45° - 36' - 24.603"	759.6	(1092.8)		✓		"	"
(Oreg.) 1938	Page 449	1927	122° - 02' - 08.310"	180.1	(1120.1)					
McGOWAN LIGHT	G-4537	NA	45° - 36' - 43.115"	1331.1	(521.3)		✓		"	"
(Oreg.) 1938	Page 472	1927	122° - 01' - 35.522"	769.7	(530.4)					
BOAT (USE)	G-4579	NA	45° - 36' - 09.622"	297.1	(1555.3)		✓		"	"
1935	Page 511	1927	122° - 02' - 53.102"	1150.8	(149.5)					
HAMILTON (Wash.)	G-4313	NA	45° - 38' - 59.692"	1842.9	(9.5)		✓		"	"
1938	Page 385	1927	122° - 00' - 15.749"	341.0	(958.2)					
JAY 2	G-7298	NA	45° - 36' - 16.993"	524.6	(1327.7)		✓		"	"
1947	Page 2	1927	122° - 03' - 45.238"	980.4	(319.9)					
HORSETAIL FALLS,	G-4537	NA	45° - 35' - 23.19"	715.9	(1136.4)		✓		"	"
CREST, (Oreg.) 1938	Page 471	1927	122° - 04' - 02.99 "	64.8	(1235.8)					
PORTLAND-SPOKANE AIRWAY BEACON No.	G-4537	NA	45° - 37' - 40.997"	1265.7	(586.7)		✓		"	"
3A (Wash.) 1938	Page 472	1927	122° - 01' - 11.636"	252.1	(1047.7)					
CASTLE ROCK (Wash.)	G-6256	NA	45° - 37' - 40.741"	1257.8	(594.6)		✓		Recovered, not	
1901	Page 70	1927	122° - 01' - 11.521"	249.6	(1050.2)				used in radial	
									plot.	

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 8/10/48 CHECKED BY: J.E. Deal & R. Skadsen DATE 8/13/48

M-2388-12

MAP T- 8878 PROJECT NO. Ph-17(47) 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)
WARREN 2, (Oreg.)	G-4537	NA	45° - 36' - 50.944"	1572.8	(279.6)		✓		Recovered, not	
1938	Page 452	1927	122° - 00' - 28.185"	610.7	(689.3)				used in radial plot.	
LITE (USE) (Oreg.)	G-4537	NA	45° - 36' - 37.670"	1163.0	(689.4)		✓		"	"
1938	Page 467	1927	122° - 01' - 49.633"	1075.5	(224.6)					
RAILROAD SEMAPHORE NORTH ONE OF TWO, EAST OF DODSON (Oreg.) 1938	G-4537	NA	45° - 36' - 27.76 "	857.0	(995.4)		✓		"	"
	Page 471	1927	122° -02' - 02.83 "	61.3	(1238.9)					
FIR (USE) (Oreg.)	G-4537	NA	45° - 36' - 17.070"	527.0	(1325.4)		✓		"	"
1938	Page 467	1927	122° - 02' - 38.721"	839.1	(461.1)					
FLO, 3	G-7298	NA	45° - 35' - 40.535"	1251.4	(600.9)		✓		"	"
1947	Page 2	1927	122° - 04' - 05.054"	109.5	(1191.0)					
ONEONTA 2, (Oreg.)	G-4537	NA	45° - 35' - 21.581"	666.3	(1186.1)		✓		"	"
1938	Page 449	1927	122° - 04' - 30.857"	668.9	(631.7)					
NESMITH,	G-4313	NA	45° - 35' - 15.967"	492.9	(1359.5)		✓		"	"
1938	Page 385	1927	122° - 00' - 21.789"	472.3	(828.3)					
VAR 3,	G-7298	NA	45° - 36' - 04.392"	135.6	(1716.8)		✓		"	"
1947	Page 2	1927	122° - 04' - 28.654"	621.0	(679.4)					
CRIB (USE)	G-4579	NA	45° - 36' - 31.170"	962.3	(890.1)		✓		"	"
1935	Page 511	1927	122° - 03' - 03.504"	75.9	(1224.2)					
OLD (USE)	G-4579	NA	45° - 36' - 37.578"	1160.1	(692.3)		✓		"	"
1935	Page 511	1927	122° - 02' - 47.312"	1025.2	(274.9)					
LOOKOUT (Wash.)	G-4537	NA	45° - 37' - 34.515"	1065.6	(786.8)		✓		"	"
1901 r. 1938	Page 449	1927	122° - 02' - 51.824"	1122.7	(177.1)					
SKA (USE)	G-4579	NA	45° - 36' - 48.881"	1509.1	(343.3)		✓		"	"
1935	Page 512	1927	122° - 02' - 26.225"	568.2	(731.8)					

1 FT. = .3048006 METER

M-2388-12

COMPUTED BY F.H. Elrod DATE 9/15/48 CHECKED BY J.E. Deal & J.L. Harris DATE 9/21/48

MAP T- 8878 PROJECT NO. Ph-17(47) 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)
NEE (USE)	G-4579	NA	45° - 36' - 58.627"	1810.0	(42.4)		✓		Recovered, not used in radial plot	
1935	Page 512	1927	122° - 01' - 34.477"	747.0	(553.0)					
PASS (USE)	G-4579	NA	45° - 37' - 06.466"	199.6	(1652.8)		✓		"	"
1935	Page 512	1927	122° - 01' - 17.803"	385.7	(914.2)					

1 FT. = .3048006 METER

COMPUTED BY: F.H. Elrod DATE 9/15/48 CHECKED BY: J.E. Deal & J.L. Harris DATE 9/21/48

M-2388-12

COMPILATION REPORT
Map Manuscripts T-8875 to T-8878 Inclusive and T-8607
Project Ph-17(47)

26: CONTROL:

From the great number of horizontal control points that are located in the area of these five map manuscripts, the field units selected and identified sixty-three stations. These were more than sufficient to control the radial plot.

The field unit established and identified one temporary station of fourth order accuracy, namely TRAIL, 1948, which was used to supplement the existing horizontal control.

Four "Aids to Navigation", erected in 1947 and 1948, were located by the field units.

All horizontal control stations which were recovered, either by the 1946-1947 hydrographic party or the 1948 field inspection units, have been plotted on the map manuscripts.

The horizontal control stations, shown on the map manuscripts for this project, have been listed on several sheets of Form M-2388-12, which are attached to this descriptive report. Notes, relative to the use of the control stations, have been entered in a special column on these forms.

27: RADIAL PLOT:

One radial plot was run for the five map manuscripts in this project.

Three groups of photographs were furnished to this office for the radial plot and compilation work, namely:

(a) Single lens ratio prints at a scale of 1:10,000 which were taken with the 12 inch camera at a contact scale of 1:17,000. These were located at the west limits of the project and included several flights running north and south.

(b) One flight of 9 lens photographs at a scale of 1:10,000 which covered the entire project. The centers of photographs in this flight lie near and along the banks of the Columbia River.

(c) One flight of single lens ratio prints at a scale of 1:10,000 taken with the 6 inch (metrogon lens) at a scale of

1:20,000. The centers of these photographs lie near and along the north shore of the Columbia River.

The work on the radial plot proceeded as follows:

(1) Conjugate centers were transferred to overlapping photographs.

(2) Azimuth and cross azimuth lines were plotted on all photographs.

(3) All horizontal control stations or substitute stations, which were identified by the field inspection units, were pricked on all photographs on which they appeared. Pass points which had been established in Project C.S. 322 and which fell along the west limits of this radial plot, were transferred to photographs in the area of sheet T-8875.

(4) Well defined pass points, which would be cut in during the running of the radial plot, were then selected and pricked on the office photographs and radial lines were drawn to all points.

(5) Templets were made of the 9 lens photographs on sheets of clear acetate in accordance with Photogrammetric Instructions No. 11, dated 2-28-47, "Corrections to Radial Directions on Nine Lens Photographs for Radial Plotting." The master templet No. 16664 which was furnished this office in April 1948 was used for this work. (After this radial plot was completed, a new calibration templet for No. 16664 dated Sept. 1948 was furnished this office.) Templets of the single lens photographs were drawn directly from the photographs. Inks of various colors were used to designate the azimuth and cross azimuth lines, and the radial lines to horizontal control stations and pass points.

(6) The five map manuscripts were joined together by matching common meridians and parallels. Clear cellulose tape was used to hold the sheets together.

(7) The nine lens templets were first oriented over the entire plot. Any slight errors that were found in the pricking of control stations and pass points, and in the plotting of azimuth lines, were corrected at this time. From these photographs excellent radial intersections were obtained on all pass points, except in places along the flight line where the angles of intersection were very small. The templets of the single lens photographs were then oriented and these could be rigidly fixed by holding to the horizontal control stations and to the pass points already established.

(8) When all of the templets were securely fastened to the joined map manuscripts, the plot was turned over so that the templets were face down on the radial plot table. The locations of all pass points and photograph centers were carefully pricked and indicated with circles in blue ink, on the reverse side of each map manuscript.

(9) An additional check was then made by reorienting the templets for each individual sheet; thus a check on all points was obtained. The results obtained in this radial plot were considered excellent, and it is believed that shoreline manuscripts, which are well within the limits of accuracy for the project, were compiled.

28: DETAILING:

These maps were compiled in accordance with instructions for the project. Features and symbols were shown as indicated in Photogrammetry Instructions No's. 10 and 17.

The transforming printer at the Washington Office was not in proper adjustment at the time the nine lens photographs were printed and they could not be oriented in their entirety at the compilation table when radially plotting various types of pass points. Enough pass points had, however, been established during the radial plot, so that each chamber of each photograph could be separately oriented. For at least two of the chambers on each photograph it was found necessary to de-center the photograph radially, to or from the chamber being oriented, so that the radials to the pass points and horizontal control stations in the chamber would pass through their positions on the map manuscripts.

The field inspection of the photographs was satisfactory and any doubtful points in this part of the work were immediately resolved in this office since most of the field personnel were available for consultation.

Most of the detail was taken from the nine lens photographs which covered the entire project. These were not at the scale of detailing and it was necessary to make considerable adjustment between closely located pass points when compiling from all chambers of the photographs. The main highways, traversing both sides of the river, were obscured in many places by trees and shadows. The curves on the main highways were distorted because of the layback of the steep hillsides along the banks of the Columbia River Gorge, through which the roads meandered.

The ratio prints of the single lens photographs taken with the 12 inch camera were very helpful in completing the compilation at the west limits of the project.

The ratio prints of the single lens photographs, taken with the 6 inch camera, were at a good scale but due to heavy shadows they were of little use in detailing areas lying south of the Columbia River.

To offset these difficulties in photography, the U.S. Engineers were contacted and a set of single lens photographs taken in July 1939 at a scale of 1:20,000 were obtained. With the aid of the vertical projector it was found that the doubtful portions of the main highways that had been detailed from the nine lens photographs were correct. These photographs were also helpful in interpreting other planimetric detail inshore from the south bank of the Columbia River.

In addition, the U.S. Engineers had taken photographs at the height of the 1948 Columbia River flood and during a low-water period after the flood. This office obtained the low-water single lens photographs, which were at a scale of 1:12,-000, and were taken on August 31st, September 5th, and September 19th, 1948. On these dates the Columbia River was from 1.6 ft. to 2.9 ft. below the shoreline plane of reference for this project. By a detailed office examination of these photographs the changes in the shoreline, caused by the 1948 Columbia River flood, were ascertained and applied to the map manuscripts. Additional portions of the new Columbia River Highway had also been graded since the original photographs were taken, and these could be detailed from the U.S.E. photographs. Prints of several of these photographs have been borrowed from the U.S. Engineers and are being submitted with the map manuscripts. Since these photographs are on loan to this office it is suggested that they be examined at once by the review section in Washington and be returned to this office as soon as possible.

A list of changes in planimetric detail which was found during the examination of these U.S.E. photographs is as follows:

In T-8875:

None

In T-8876:

At Lat. 45° 33' 20" and Long. 122° 11' 30" some of the high ground has eroded.

At Lat. 45° 34' 15" and Long. 122° 11' 00" a small island just west of Phoca Rock has disappeared.

In T-8877:

The portion of the small island west of Phoca Rock falling on this map manuscript has been removed.

At Lat. 45° 34' 45" and Long. 122° 06' 30" the shoreline of the river and lake has been changed due to a fill for the new Columbia River Highway. In this area the new Columbia River Highway has been detailed from the U.S. Engineers' photographs.

In T-8878:

At Lat. 45° 36' 00" and Long. 122° 03' 00" a new fill for the Columbia River Highway has been detailed.

At Lat. 45° 35' 00" and Long. 122° 04' 30" there is a new stream bed between Horsetail Creek Falls and Oneonta Creek.

In T-8607:

Changes in shoreline caused by the flood at Lat. 45° 37' 25" and Long. 121° 59' 40" have been indicated on the map manuscript by the unsurveyed shoreline symbol.

At Lat. 45° 38' 07" and Long. 121° 58' 43" a gravel and boulder fill and a No. 7 road have been washed out.

At Lat. 45° 38' 11" and Long. 121° 57' 45" a gravel and boulder dike have washed out.

At Lat. 45° 38' 17" and Long. 121° 56' 30" new construction has been completed on the east end of the locks above Bonneville Dam.

At Lat. 45° 38' 25" and Long. 121° 56' 15" the shoreline has changed. A new channel has been cut by high water, and new shoal areas are evident.

At Lat. 45° 38' 33" and Long. 121° 56' 01", the east end of Bradford Island, a channel has cut through leaving a small rock island.

At Lat. 45° 38' 33" and Long. 121° 55' 45" several changes in islands and rocks, were noted and detailed.

Because it would complicate and obscure the detail, the symbol for areas of seasonal inundation has been omitted over the backshore areas (usually consisting of sand or sand and brush) which lie between the shoreline plane of reference and the marine cliff. A note has been lettered on each map manuscript to indicate that these areas are covered during high-

water periods of the Columbia River. Elsewhere low areas and areas subject to seasonal inundation have been indicated with the proper symbol.

Detailed plans for the location of the new Columbia River Highway were obtained from the Oregon State Highway Commission. The alignment of the highway as shown on the map manuscripts was verified from these plans.

29: SUPPLEMENTAL DATA:

The following maps, plans, and pamphlets, which were used to supplement the photographs, are being forwarded with the map manuscripts.

General Site Map, Bonneville Dam, Scale, 1" = 400'.

Map of Mt. Hood National Forest, Scale, 1" = 2 miles.

Summary Hydrograph, Rating Curve and River Profiles, Columbia River — 1" = 1.5 miles horizontal; 1" = 4 ft. vertical.

Power, Navigation and Fish Facilities on the Columbia River at Bonneville Dam U.S. Engineers 1947.

30: MEAN HIGH-WATER LINE:

A complete discussion of this feature may be found in Paragraph 7 of the "Field Inspection Report - Project Ph-17(47)", which is attached to this descriptive report.

The mean high-water line (River Shoreline at the adopted plane of reference) is shown by a continuous black acid ink line 0.012 inches in thickness at a gradient between 8.2 ft. above Mean Sea Level at the west limits of the project and 13.2 ft. at Bonneville Dam. Where the shoreline is indefinite, such as the offshore limits of changing sand flats and marsh, it has been shown by a black acid ink line, 0.006 inches in thickness. Upstream from Bonneville Dam the shoreline has been shown as a pool 72.0 ft. above Mean Sea Level.

31: LOW-WATER AND SHOAL LINES:

The field inspection units did not indicate any low-water lines within the limits of these five map manuscripts.

Approximate shoal lines have been shown with a light, dashed, black acid ink line, as indicated by the field unit.

32: DETAILS OFFSHORE from the MEAN HIGH-WATER LINE:

Piling, dolphins, rocks, and small sand or rock islands have been shown as indicated by the field units.

33: WARVES and SHORELINE STRUCTURES:

Piers, docks, wharves and other shoreline structures have been shown as indicated by the field unit.

34: LANDMARKS and AIDS TO NAVIGATION:

The landmarks and aids to navigation, shown on the map manuscripts, are located as they were found at the time of the 1948 field inspection. The status of these features, however, is as follows:

This office had been furnished several sheets of Form 567 containing data for the charting of Landmarks and Aids to Navigation which had been submitted by the 1946 and 1947 Hydrographic Parties. At the time of the 1948 field inspection it was found that many of the recommendations made by the 1946 and 1947 hydrographic parties had become obsolete. These changes are discussed in detail in Paragraph 11 of the Field Inspection Report which is attached to this descriptive report. Since the 1948 Field inspection work was accomplished, additional changes have taken place in the location of these features. This was due to the 1948 Columbia River flood and also to the fact that the U.S. Engineers are at present relocating the structures for the lights in this part of the Columbia River. It appears that specific detailed plans had been given to a pile driving contractor for the driving of the new dolphin structures but these had not been followed as directed. The U.S. Engineers are now revising the original plans and computing the locations of the dolphins as erected by the contractor. They have been requested to furnish this office, and the Washington Office, with complete data relative to all aids to navigation, upon completion of this work.

35: HYDROGRAPHIC CONTROL:

All hydrographic control was established by the hydrographic parties previous to the compilation of these shoreline manuscripts.

36: LANDING FIELDS and AERONAUTICAL AIDS:

Form 567 recommending the charting of several objects as aeronautical aids is being submitted. These objects were previously located by triangulation methods. Copy attached.

37: GEOGRAPHIC NAMES:

Geographic names are the subject of a special report "Investigation of Geographic Names, Project Ph-17(47)". This report has been forwarded to Washington.

38: RECOVERABLE TOPOGRAPHIC STATIONS:

In accordance with the instructions for this project, no topographic stations were established.

39: JUNCTIONS:

Junctions between all map manuscripts in this project and between those in this project and Project CS-322 were complete and satisfactory.

44: COMPARISON WITH EXISTING TOPOGRAPHIC SURVEYS:

A visual comparison was made between the following:

Map Manuscripts T-8875 and T-8876 and the Camas, Wash.-Oreg. U.S.G.S., 15 min. Quadrangle, Scale 1:62,500.

Map Manuscripts T-8876, T-8877, T-8878 and T-8607 and the Mt. Hood and Vicinity, U.S.G.S. 30 min. Quadrangle, Scale 1:125,000.

Map Manuscripts T-8876, T-8877 and T-8878 and the Bridal Veil, Washington, Chief of Engineers, 15 min. Quadrangle, Scale 1:50,000.

Map Manuscript T-8607 and the Hood River, Wash.-Oreg. U.S.G.S. 15 min. Quadrangle, Scale 1:62,500.

There have been numerous changes in planimetric features since the quadrangles were made but in general the map manuscripts and quadrangles are in agreement. It appears that the shoreline plane of reference of the quadrangles is higher than that shown for the map manuscripts.

45: COMPARISON WITH NAUTICAL CHARTS:

Comparison was made with Nautical Chart No. 6156, Scale 1:40,000, by use of the vertical projector. There are places where the chart and map manuscripts are in agreement but from this detailed comparison, so many disagreements were noted, that they are too numerous to list. It can best be stated that the shoreline and planimetric features of the present chart are, for the most part, only a generalization of the actual existing conditions.

Approved:

R.A. Earle
Lt. Comdr.-USC&GS
Chief of Party

Respectfully submitted:

J. Edward Deal, Jr.
Photogrammetric Engineer

Form 567
Rev. March 1935

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

Project h-17(47)

LANDMARKS FOR CHARTS
(AERONAUTICAL)

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

Bonneville, Oregon February 48, 19

I recommend that the following objects which have been inspected from seaward to determine their value as landmarks, be charted on the charts indicated.

The positions given have been checked after listing. J.H. Deal

R.A. Earle
Chief of Party.

GENERAL LOCALITY: Columbia River

	NAME AND DESCRIPTION	POSITION LATITUDE ° ′	LATITUDE D. M. METERS	LONGITUDE ° ′	LONGITUDE D. P. METERS	DATUM	METHOD OF LOCATION	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
T-8876	AIRWAY BEACON (△ Airway Beacon Number 2)	45° 33′	838.6	122 11	1138.4	NA 1927	Triangulation	1938				FC 221 269 W-1
T-8878	AIRWAY BEACON (△ Airway Beacon Number 3 A)	45 37	1265.7	122 01	252.0	"	"	"				"
T-8607	AIRWAY BEACON (△ Airway Beacon Number 3 B)	45 39	1435.2	121 55	766.8	"	"	"				"
	* LOOKOUT TOWER (△ ALDRICH) Ore S.P. p. 452 HI	45 39	409.4	121 58	933.1	"	"	1901				"
	* N.B.: When this Lookout Tower was constructed, it was centered or plumbed over triangulation station ALDRICH, 1901											

This form shall be prepared in accordance with 1934 Field Memorandum, "LANDMARKS FOR CHARTS." The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given.

U. S. GOVERNMENT PRINTING OFFICE 69675

GEOGRAPHIC NAMES

Survey No. T-8875

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Oregon									USGB	1
Multnomah County										2
Washington									USGB	3
Clark County										4
Columbia River									USGB	5
Union Pacific										6
Spokane Portland and Seattle										7
Evergreen Highway U.S. No. 830										8
Gary Island										9
Flag Island									USGB	10
Reed Island										11
Taylor Siding										12
Corbett Station										13
Tunnel Point										14
Onion Rock										15
Point Vancouver									USGB	16
Lawton Creek									"	17
Steigerwald Lake										18
Gibbons Creek										19
Gibbons Creek Church										20
Cottonwood Point									USGB	21
Washougal										22
										23
					Names underlined in red are approved. 1/7/49 L. Heck					24
										25
										26
										27

M 234

GEOGRAPHIC NAMES

Survey No. T-8876

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Oregon										1
Multnomah County										2.
Washington										3
Clark County										4
Skamania County										5
Columbia River										6
Union Pacific										7
Spokane Portland and Seattle										8
Evergreen Highway U.S. No. 830										9
Columbia River Highway U.S. No. 30										10
Rooster Rock										11
Crown Point										12
~~Young~~ Young Creek										13
Latourell Falls		(P.O. and all other maps usage this form; Railroad station only is Latourell)								14
Latourell Creek										15.
Guy W. Talbot State Park										16
Shepperds Dell										17
Sand Island										18
Mt. Zion										19
Candiana Light										20
Mt Cape Horn										21
Mt. Pleasant	(mt.)									22
Mt. Pleasant	(village)									23
										24
					Names underlined in red are approved. 1/7/49 L. Heck					25
										26
										27

M 234

GEOGRAPHIC NAMES

Survey No. T-8877

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Oregon									USGB	1
Multnomah County										2
Washington									USGB	3
Skamania County										4
Columbia River									USGB	5
Union Pacific										6
Spokane Portland and Seattle										7
Columbia River Highway U.S. No. 30										8
Evergreen Highway U.S. No. 830										9
New Columbia River Highway										10
Bridal Veil										11
Bridal Veil Lumber Company										12
Bridal Veil Creek										13
Coopey Falls										14
Coopey Creek										15
Fashion Reef										16
Benson Park										17
Wahkeena Creek										18
Multnomah Falls										19
Multnomah Creek										20
Oneonta		(place here or change title)								21
Arthur Lake		(includes the two lakes* see also T-8877								22
St. Cloud										23
Fir Point										24
Prindle										25
Phoca Rock									USGB	26
				Names underlined in red are approved. 1/7/49 L.Heck						27

M 234

GEOGRAPHIC NAMES

Survey No. T-8878

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Oregon									USGB	1
Multnomah County										2
Washington									USGB	3
Skamania County										4
Columbia River									USGB	5
Union Pacific										6
Spokane Portland and Seattle										7
Columbia River Highway U.S. No. 30										8
Evergreen Highway U.S. No. 830										9
New Columbia River Highway										10
Oneonta										11
Oneonta Creek										12
Horsetail Creek										13
Ainsworth State Park										14
Dodson										15
McGowans Light		(not McGowan)								16
Tumalt Creek									USGB	17
Warrendale										18
Pierce Island										19
Hardy Creek										20
Beacon Rock									USGB	21
Woodward Creek										22
Skamania										23
Arthur Lake										24
St. Peters Dome					Names underlined in red are approved. 1/7/49. L. Heck					25
										26
										27

M 234

Division of Photogrammetry

Review Report of

Shoreline Map Manuscripts T-8875 to T-8878 inclusive

Subject numbers not used in this report have been adequately covered in other parts of the descriptive report.

28. Detailing

The flooded symbol, for uncontrolled inundation, has been deleted from the map manuscripts and replaced by the intermittent pond symbol, where so labeled on the field inspection photographs. Other minor corrections and additions were necessary to complete the map manuscripts, including the west limit of this project at the common junction with project C.S. 322. The two projects are now in agreement in all detail common to both.

44. Comparison with Existing Topographic Surveys

7028 a&b	1:10,000	1946-47
7029 a&b	1:10,000	1946-47
7030 a (1:10,000) and b (1:5000)		1946-47

T-8875-8 supersede these surveys for nautical charting purposes.

45. Comparison with Nautical Charts

6156	1:40,000	(48 - 11/22)

There are some minor disagreements between Nautical Chart 6156 and project Fh-17. There is considerable disagreement between the detailing of the insert on chart 6156 of the Bonneville Dam and vicinity (Scale 1:10,000) and the map manuscripts, which should be considered prior to the revision or re-publication of Nautical Chart 6156. (See also Review Report T-8607). The Nautical Chart Branch was notified on 21 February 1949.

51. Application to Nautical Charts

These map manuscripts have not been applied to Nautical Chart 6156 as of the date of this review report. (See recommendation under No. 45).

Reviewed by:

J. J. Streiffer 23 Feb. 1949

Approved by:

S. V. Griffith
S. V. Griffith
Chief, Review Section

H. R. Edmonston
Chief, Nautical Chart Branch
Division of Charts

O. S. Reading
Chief, Div. of Photogrammetry

Wm. Scaife
Chief, Div. of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. T-8875, T-8876, T-8877, T-8878

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
8 Sept 50	6156	Nichols	~~Before~~ After Verification and Review
			Complete application all 4 surveys
			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.