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Diag'd. on Diag. Cht. No. 6157 (Insert)

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Planimetric Air Photographic

Type of Survey Shoreline

Field No. Ph-2 (45) Office No. 8849 to 8852 Inc.
(Area of the first Radial Plot)

LOCALITY

State Washington

General locality Franklin D. Roosevelt Lake

Locality Coulee Dam

1944-'47

CHIEF OF PARTY

J.T. Jarman

LIBRARY & ARCHIVES

DATE July 12, 1949

B-1870-1 (11)

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DATA RECORD

T-8849

Quadrangle (II): WILBUR, WASH. (USE)
30 minute 1:125000

Project No. (II): Ph-2(45)

Field Office: Coulee Dam, Wash. Chief of Party: J.T. Jarman

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

Instructions dated (II III): 4-3-47
PL Supplemental, 15 May, 1947

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

Completed survey received in office: 1 Mar, 1948

Reported to Nautical Chart Section:

Reviewed: 29 Oct. 1948 Applied to chart No. _____ Date:

Redrafting Completed: _____

Registered: 24 June 1949

Published: See "Remarks" p. 3

Compilation Scale: 1:10000

Published Scale:

Scale Factor (III): None

Geographic Datum (III): N.A. 1927

Datum Plane (III): Mean Sea Level

Normal Pool Elevation,
1290' above USCG 1937
(1288.51' USCG 65, 1939)

Reference Station (III): GRANITE (USER), 1934 r 1947

Lat.: $47^{\circ} 57' 16.643''$ (514.1m) Long.: $118^{\circ} 55' 47.751''$ (990.7m) Adjusted x
Unadjusted

State Plane Coordinates (VI): Washington, North Zone

X = 2, 466, 366.98

Y = 353, 983.75

(p. 265)

Military Grid Zone (VI) _____

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Water Level Stage-or-Tide</u>
Nine lens				
17368 to 17371	8-21-46	11:55P.S.T.	1:10000	1289.65 above M.S.L.
17442 to 17444	8-22-46	10:59P.S.T.	1:10000	1289.65 above M.S.L.
17447 to 17450	8-22-46	11:21P.S.T.	1:10000	1289.65 above M.S.L.
U.S.Army				
Single lens				
32-2 to 38-2-493	1944	Unknown	1:20,000	Unknown
65-1 to 71-1-493	1944	Unknown	1:20,000	Unknown

Tide from (III): None

Mean Range: None

Spring Range: None

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

Field Inspection by: J.T.Jarman	date: Summer 1947
Interior, John Winniford	date: 5-20-47
Shoreline, John Lajoye	date: 6-6-47
Field Edit by: None	date:

Date of Mean High-Water Line Location (III): 8-22-46

Projection and Grids ruled by (III) Washington Office date: July 1947

" " " checked by: Washington Office date: July 1947

Control plotted by: J.L.Harris date: July 10, 1947

Control checked by: F.H.Elrod date: July 14, 1947

Radial Plot by: J.L.Harris & J.E.Deal date: July 26, 1947

Detailed by: R.A.Davidson date: Sept. 24, 1947

Reviewed in compilation office by: L. R. H. Barron date: Sept. 30, 1947

Elevations on Field Edit Sheet

checked by: *Not applicable*

date:

STATISTICS (III)

Land Area (Sq. Statute Miles): 33 sq. mi. {Complete detail along shoreline}
(Skeleton detail interior)

Shoreline (More than 200 meters to opposite shore): 26.4

Shoreline (Less than 200 meters to opposite shore): None

Number of Recoverable Topographic Stations established: 1

Number of Temporary Hydrographic Stations located by radial plot: 89

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: *These shoreline maps have an unusual amount of interior highways delineated. At present only 3 copies of each map manuscript have been printed: a mounted Hartman for registration in the Archives; and two on chart paper for the files. Extra copies may be issued to the several small towns in the mapped area for distribution to interested local inhabitants.*

DATA RECORD

T-8850

Quadrangle (II): WILBUR, WASH. (U.S.E.)
30 Minute 1:125,000

Project No. (II): Ph-2(45)

Field Office: Coulee Dam, Wash. Chief of Party: J. T. Jarman

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

Instructions dated (II III): 4/3/47

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

Completed survey received in office: 1 Nov. 1948

Reported to Nautical Chart Section:

Reviewed: 2 Nov. 1948 Applied to chart No. _____ Date:

Redrafting Completed:

Registered: 29 June, 1949

Published:

Compilation Scale: 1:10000

Published Scale:

Scale Factor (III): None

Geographic Datum (III): N. A. 1927

Datum Plane (III): Mean Sea Level

*Normal Pool Elevation,
12.90' above USBR, 1927
(1288.52', USCG 65, 1929)*

Reference Station (III): PLUM, (USBR) 1934 - 1947

Lat.: 47° 54' 31.040" (958.7m) Long.: 118° 49' 01.709" (35.5m) Adjusted x
Unadjusted

State Plane Coordinates (VI): *Washington, North Zone*

X = 2, 444, 435.80

Y = 337, 913.44

(p. 205)

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Water Level</u> <u>Stage of Tide</u>
9 Lens				
17371 to 17374	8-21-46	11:57P.S.T.	1:10000	1289.65 above M.S.L.
17438 to 17441	8-22-46	10:57P.S.T.	1:10000	1289.65 above M.S.L.
17451 & 17452	8-22-46	11:24P.S.T.	1:10000	1289.65 above M.S.L.
U.S. Army				
Single lens				
73-1 & 74-1	1944	Unknown	1:20000	Unknown
27-2 to 31-2	1944	Unknown	1:20000	Unknown
25-2 to 68-2	1944	Unknown	1:20000	Unknown

Tide from (III): None

Mean Range: None

Spring Range: None

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

Field Inspection by: J. T. Jarman date: Summer 1947
Interior, John Winniford date: 5-21-47
Shoreline, John Lajoye date: 6-18-47

Field Edit by: None date:

Date of Mean High-Water Line Location (III): 8-22-46

Projection and Grids ruled by (III) Washington Office date: July 1947

" " " checked by: Washington Office date: July 1947

Control plotted by: J. L. Harris date: July 1947

Control checked by: Frank Elrod date: July 10, 1947

Radial Plot by: J. L. Harris & J. E. Deal date: July 28, 1947

Detailed by: Marie Elrod date: Sept. 12, 1947

Reviewed in compilation office by: Ree H. Barron date: Sept. 29, 1947

Elevations on Field Edit Sheet

checked by: None *Not applicable* date:

Qld.

STATISTICS (III)

Land Area (Sq. Statute Miles): 30 (Complete detail along shoreline)
(Skeleton detail interior)

Shoreline (More than 200 meters to opposite shore): 21.0

Shoreline (Less than 200 meters to opposite shore): None

Number of Recoverable Topographic Stations established: 4

Number of Temporary Hydrographic Stations located by radial
plot: 52

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:

JED

DATA RECORD

T-8851

Quadrangle (II): WILBUR, WASH. (USE)
30 minute 1:125,000

Project No. (II): Ph-2(45)

Field Office: Coulee Dam, Wash. Chief of Party: J.T. Jarman

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

Instructions dated (II III): 4-3-47

Copy filed in *Division of*
~~Descriptive~~
~~Report No. T-~~ (VI)

Photogrammetry Office Files.

Completed survey received in office: 1 Mar. 1948

Reported to Nautical Chart Section:

Reviewed: 15 Nov. 1948 Applied to chart No. _____ Date:

Redrafting Completed:

Registered: 24 June, 1949

Published: _____

Compilation Scale: 1:10,000

Published Scale:

Scale Factor (III): None

Geographic Datum (III): N.A. 1927

Datum Plane (III):

*Normal Pool Elevation,
1290' above USBR 1937
Mean Sea Level
(1288.5 ±' USCGS, 1929)*

Reference Station (III): DEVILS CANYON, U.S.B.R., 1934 & 1947

Lat.: 47° 53' 50.995" (1575.0m) Long.: 118° 43' 28.847" (599.2m) Adjusted x
Unadjusted

State Plane Coordinates (VI): *Washington, North Zone*

X = 2,517,216.02

Y = 334,465.06

(p. 205)

Military Grid Zone (VI)

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage of Tide</u>
9 lens				
17375 to 17377	8-21-46	11:59P.S.T.	1:10000	1289.65 above M.S.L.
17434 to 17438	8-22-46	10:55P.S.T.	1:10000	1289.65 above M.S.L.
17453 to 17456	8-22-46	11:27P.S.T.	1:10000	1289.65 above M.S.L.
17498 to 17500	8-22-46	12:40P.S.T.	1:10000	1289.65 above M.S.L.

U.S.Army

Single lens

27-1 to 80-1	1944	Unknown	1:20000	Unknown
22-2 to 26-2	1944	Unknown	1:20000	Unknown
70-2 to 76-2	1944	Unknown	1:20000	Unknown

Tide from (III): None

Mean Range: None

Spring Range: None

Camera: (Kind or source) USC&GS, 9 lens, focal length 8.25 inches
U.S. Army, Single lens, focal length 8.25 inches

Field Inspection by: J. T. Jarman date: Summer 1947
Interior-John Winniford 5-23-47
Shoreline-John Lajoie 6-26-47

Field Edit by: None date:

Date of Mean High-Water Line Location (III): 8-22-46

Projection and Grids ruled by (III) Washington Office date: July 1947

" " " checked by: Washington Office date: July 1947

Control plotted by: Frank Elrod date: July 15, 1947

Control checked by: James L. Harris date: July 16, 1947

Radial Plot by: James L. Harris & J. E. Deal date: July 28, 1947

Detailed by: Marie Elrod date: Oct. 8, 1947

Reviewed in compilation office by: Ree H. Barron date: Oct. 13, 1947

Elevations on Field Edit Sheet
checked by: None

date:

STATISTICS (III)

Land Area (Sq. Statute Miles): 38 (Complete detail along shoreline)
(Skeleton detail interior)

Shoreline (More than 200 meters to opposite shore): 33.0 statute miles

Shoreline (Less than 200 meters to opposite shore): None

Number of Recoverable Topographic Stations established: 4

Number of Temporary Hydrographic Stations located by radial plot: 55

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:

DATA RECORD

T- 8852

Quadrangle (II): Wilbur, Wash.
 Keller, Wash.
 30 minute 1:125000

Project No. (II): Ph-2(45)

Field Office: Coulee Dam, Wash. Chief of Party: J. T. Jarman

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

Instructions dated (II III): 4-3-47

Copy filed in *Division of*
 Descriptive
 Report No. T- (VI)

Photogrammetry Office Files

Completed survey received in office: 1 Mar. 1948

Reported to Nautical Chart Section:

Reviewed: 19 Nov. 1948 Applied to chart No. _____ Date:

Redrafting Completed:

Registered: 24 June, 1949

Published:

Compilation Scale: 1:10000

Published Scale:

Scale Factor (III): None

Geographic Datum (III): N. A. 1927

Datum Plane (III): *Normal Pool Elevation*
 1290' above US N. 1497 Epoch
 Mean Sea Level
 (1288.5 ± USCGS 1929)

Reference Station (III): STUD(USER) 1936-1947

Lat.: 48°00' 05.384" (166.3m) Long.: 118° 41' 20.995" (435.2m) Adjusted x
 Unadjusted

State Plane Coordinates (VI): *Washington, North Zone*

X = 2,524,868.04

Y = 372,626.35

(P 210)

Military Grid Zone (VI)

de.
 4/10

PHOTOGRAPHS (III)

<u>Number</u>	<u>Date</u>	<u>Time</u>	<u>Scale</u>	<u>Stage-of-Tide</u>
9 lens 17494 to 17498	8-22-46	12:38P.S.T.	1:10000	1289.65 above M.S.L.
U.S.Army Single lens 26-1 to 28-1	1944	Unknown	1:20000	Unknown

Tide from (III): None

Mean Range: None

Spring Range: None

Camera: (Kind or source) USC&GS 9 lens, focal length 8.25 inches
U.S.Army, Single lens, focal length 8.25 inches

Field Inspection by: J.T.Jarman date: Summer 1947
Interior, John Winniford May 29, 1947
Shoreline, John Lajoye June 30, 1947

Field Edit by: None date:

Date of Mean High-Water Line Location (III): 8-22-46

Projection and Grids ruled by (III) Washington Office date: July 1947

" " " checked by: " " date: July 1947

Control plotted by: Frank Elrod date: July 14, 1947

Control checked by: James L. Harris date: July 15, 1947

Radial Plot by: J.L.Harris & J.E.Deal date: July 28, 1947

Detailed by: Carita Wiebe date: Sept. 29, 1947

Reviewed in compilation office by: Ree H. Barron date: Oct. 9, 1947

Elevations on Field Edit Sheet
checked by: None date:

STATISTICS (III)

Land Area (Sq. Statute Miles): 10 (Complete detail along shoreline)
(Skeleton detail over portion of)
(Interior area)

Shoreline (More than 200 meters to opposite shore): 15.0

Shoreline (Less than 200 meters to opposite shore): None

Number of Recoverable Topographic Stations established: 2

Number of Temporary Hydrographic Stations located by radial
plot: 42

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:

MAP T 8849

PROJECT NO Ph-2(45)

SCALE OF MAP 1:10,000

SCALE FACTOR

None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR ψ -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)	REMARKS "FACTOR DISTANCE" FROM GRID OR PROJECTION LINE IN METERS -- FORWARD -- (BACK)
EAST AXIS, 1933 r 1947	G 6760 USBR 1036	N.A. 1927	47° 57' 27.002"	834.0 (1019.2)			Used in Radial
GRANITE, 1934 r 1947	"	"	118 58 15.615	324.0 (920.8)			Plot
			47° 57' 16.643"	514.1 (1339.1)			"
			118 55 47.751	990.7 (254.1)			"
LOVE PINE, 1934 r 1947	G 6760 USBR 1037	"	47° 57' 58.959"	1821.0 (32.2)			"
			118 52 26.437	548.4 (696.2)			"
SPRING CANYON, 1933 r 1947	G 6760 USBR 1036	"	47° 55' 16.656"	514.4 (1338.7)			"
			118 57 09.563	198.5 (1047.2)			"
BASALT, 1933 r 1947	"	"	47° 55' 52.417"	1619.0 (234.2)			"
			118 53 46.989	975.4 (270.0)			"
GRAND COULEE (USER) 1934 r 1947	G 5299 587	"	47° 55' 25.705"	793.9 (1059.2)			"
	USBR Field Data	"	118 59 09.190	190.8 (1054.8)			"
OSBORNE 2, 1935 r 1947	"	"	47° 57' 49.428"	1526.6 (326.6)			"
			118 59 13.534	280.7 (964.0)			"
FIDDLE CREEK (USER), 1934 r 1947	G 5299 587	"	47° 58' 15.946"	492.5 (1360.7)			"
			119 00 47.733	990.0 (254.4)			"
C.P. #8 (UL205 + 74.70) USER, 1934 r 1947	Field Comp.	"	47° 57' 00.668"	20.6 (1832.5)			"
			118 55 27.659	573.9 (671.1)			"
C.P. #19 (UL643 + 67.06) USBR, 1934 r 1947	"	"	47 56' 48.863"	1509.2 (344.0)			"
			118 52 07.257	150.6 (1094.5)			"
C.P. #10 (UL 261+28.02) USBR 1934 r 1947	"	"	47° 57' 20.800"	642.4 (1210.7)			Not used in radial plot
			118° 54' 19.285	400.1 (844.8)			"
C.P. # 12 (UL 300+88.93) USBR 1934 r 1947	"	"	47 57 27.193"	839.9 (1013.2)			"
			118° 53' 27.199"	564.3 (680.5)			"

1 IN. = 3048009 METER

COMPUTED BY: J. L. Harris

DATE June, 1947

CHECKED BY: Carita Wiebe

DATE July, 1947

M-2388-12

MAP T. 8842 PROJECT NO. Ph-2(45) SCALE OF MAP 1:10,000 SCALE FACTOR None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR ν -COORDINATE LONGITUDE OR x -COORDINATE		DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS		DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS		FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS	
C.P. #14 (UL355+66.82) U.S.B.R. 1934	Field Comp.	N.A. 1927	47° 57'	38.673"	1194.5	(658.7)				Not used in	
C.P. #17 (UR591+63.60) 1934	"	"	118 52	16.836	349.3	(895.5)				radial plot	
C.P. #15 (UR499+83.36) 1934	"	"	47° 56'	43.544"	1344.9	(508.3)				Plotted for hydro-	
C.P. #7 (UR252+22.97) 1934	"	"	118 53	02.806	58.2	(1186.9)				graphic use.	
ALPHA (USER) 1933	G 6760 USER 1036	"	47° 56'	20.927"	646.4	(1206.8)				"	
C.P. #4 UL102+03.28		"	118 54	48.098	998.3	(247.0)				"	
C.P. #6 (UL158+03.03)		"	47° 58'	19.895"	614.5	(1238.7)				"	
C.P. #3 (UR95+61.68)		"	118 58	18.145	376.6	(868.7)				"	
C.P. #5 (UR211+64.65)		"	47° 58'	00.844"	26.1	(1827.1)				"	
C.P. #9 (UR299+46.90)		"	118 58	29.827	618.7	(625.9)				"	
C.P. #11 (UR331+40.79)		"	E 103,940.05					1934 Grand Coulee Grid Datum	(Not recovered plotted to estab- lish boundary USBR reservation)		
C.P. #13 (UR398+1032)		"	N 93,988.38					Origin Alpha 1933			
			E 108,460.80								
			N 93,263.21								
			E 95,368.57								
			N 91,919.67								
			E 97,829.23								
			N 91,846.99								
			E 101,775.25								
			N 89,271.40								
			E 104,271.52								
			N 87,468.56								
			E 110,209.01								
			N 88,339.24								

1 FT. = 3048006 METER

COMPUTED BY: J. L. Harris

DATE June 1947

CHECKED BY: Carita Wiebe

DATE July 1947

M-2389-42

Copy 1/2

MAP T. 8850 PROJECT NO. Ph-2(45) SCALE OF MAP 1:10,000 SCALE FACTOR None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR U-COORDINATE LONGITUDE OR X-COORDINATE	DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS	DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS	REMARKS - FACTOR OF PROJECTION FROM GRID OR PROJECTION LINE - IN METERS - FORWARD - - - (BACK) - -
SUGAR LOAF, 1934 r. 1945	G 6760 USER 1037	N.A. 1927	47° 58' 44.446"	1372.8 (480.4)			Used in Radial
LIGHTNING, 1934 r. 1945	"	"	118° 49' 42.034"	871.7 (372.6)			Plot
PLUM, 1934 r. 1945	"	"	47° 55' 55.150"	1703.4 (149.8)			"
	"	"	118° 45' 02.363"	49.0 (1196.4)			"
	"	"	47° 54' 31.040"	958.7 (894.5)			"
GRAVEL PIT, 1933 r. 1945	"	"	118° 49' 01.709"	35.5 (1210.5)			"
	"	"	47° 56' 25.424"	785.2 (1067.9)			"
	"	"	118° 51' 51.371"	1066.2 (179.1)			"
CABLE, SOUTH, CUL WHITE BARN, 1934 r. 1947	G 6760 USER 1067	"	47° 58' 28.686"	886.0 (967.2)			"
	"	"	118° 47' 35.728"	741.0 (503.4)			"
C.P. #16 (UL412 + 39.18) USER, 1934 r. 1947	Field Comp.	"	47° 57' 55.044"	1700.0 (153.1)			"
	"	"	118° 51' 12.306"	255.3 (989.3)			"
C.P. #22 (UL566 + 02.79) USER, 1934 r. 1947	"	"	47° 56' 51.343"	1585.8 (267.4)			"
	"	"	118° 48' 44.276"	918.8 (326.3)			"
C.P. #28 (UL775 + 79.84) USER, 1934 r. 1947	"	"	47° 55' 02.909"	89.8 (1763.3)			"
	"	"	118° 45' 31.943"	663.2 (582.5)			"
C.P. #31 (UL979 + 45.48) USER, 1934 r. 1947	"	"	47° 54' 23.299"	719.6 (1133.5)			"
	"	"	118° 47' 28.110"	583.8 (662.2)			"
C.P. #23 (UR759 + 46.63) USER, 1934 r. 1947	"	"	47° 56' 07.235"	223.5 (1629.7)			"
	"	"	118° 50' 18.559"	385.2 (860.1)			"
C.P. #18 (UL466 + 21.15) USER 1934 r. 1947	"	"	47° 57' 54.925"	1696.4 (156.7)			Not used in radial
	"	"	118° 49' 53.741"	1114.8 (129.8)			Plot
C.P. #20 (UL520 + 19.80) USER 1934 r. 1947	"	"	47° 57' 33.320"	1029.1 (824.0)			"
	"	"	118° 49' 02.951"	61.2 (1183.5)			"

1 FT. = 3048008 METER
COMPUTED BY: J. I. Harris DATE: July, 1947
CHECKED BY: Carita Wiebe DATE: July, 1947
M-2388-12
Copy 1/3

MAP T. 8850

PROJECT NO. Ph-2(45)

SCALE OF MAP 1:10,000

SCALE FACTOR None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR U-COORDINATE LONGITUDE OR X-COORDINATE		DISTANCE FROM GRID IN FEET, OR PROJECTION LINE IN METERS		DATUM CORRECTION	N.A. 1927 - DATUM DISTANCE FROM GRID OR PROJECTION LINE IN METERS		REMARKS "FOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS FORWARD --- (BACK) ---"
C.P. #18 (UL66 + 21.15) USBR, 1934 <i>rev</i>	Field Comp.	N.A. 1927	47° 57'	54.925"	1696.4	(156.7)		<i>Duplicated from</i>		Not used in
C.P. #20 (UL520 + 19.80) USBR, 1934 <i>rev</i>	"	"	118 49	53.741	1114.8	(129.8)		<i>Page 1</i>		Radial Plot
C.P. #21 (UR712 + 44.12) USBR, 1934 <i>rev</i>	"	"	47° 57'	33.320"	1029.1	(824.0)		<i>Duplicated from</i>		"
C.P. #24 (UL649 + 61.45) USBR, 1934 <i>rev</i>	"	"	118 49	02.951	61.2	(1183.5)		<i>Page 1</i>		"
C.P. #25 (UR810 + 56.85) USBR, 1934 <i>rev</i>	"	"	47° 56'	29.950"	925.0	(928.1)				"
C.P. #27 (UR874 + 80.33) USBR, 1934 <i>rev</i>	"	"	118 50	57.987	1203.4	(41.8)				"
C.P. #29 (UR921 + 23.32) USBR, 1934 <i>rev</i>	"	"	47° 55'	42.178"	1302.7	(550.4)				"
C.P. 33 (UR1063 + 35.08) USBR, 1934 <i>rev</i>	"	"	118 48	17.889	371.4	(874.2)				"
C.P. 35 (UR1114 + 02.93) USBR, 1934 <i>rev</i>	"	"	47° 55'	29.248"	903.4	(949.8)				"
C.P. 26 (UL 710 + 42.26) USBR, 1934 <i>rev</i>	"	"	118 49'	52.894	1098.1	(147.5)				"
			47° 54'	58.652"	1811.5	(41.6)				"
			118 49	19.394	402.7	(843.1)				"
			E 140,941.19					1934 Grand Coulee		(Not recovered)
			N 80,759.70					Grid Datum		Plotted to est-
			E 151,492.97					Origin Alpha 1933		abish boundary
			N 77,024.65							USBR reservation)
			E 155,190.20							"
			N 73,897.38							"
			E 146,953.92							"
			N 83,419.87							"
										"
										"
										"
										"

1 FT. = 3048006 METER

COMPUTED BY: J. L. Harris

DATE July, 1947

CHECKED BY: Carita Wiebe

DATE July, 1947

M-2388-12

MAP T. 8851 PROJECT NO. PH-2(45) SCALE OF MAP 1:10,000 SCALE FACTOR None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR ψ -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)	REMARKS PACIFIC OCEAN FROM GRID OR PROJECTION LINE IN METERS --FORWARD-- (BACK)--
SAN POIL I.S. No. 2, 1935	G 6760 USBR 1049	N.A. 1927	47° 57' 53.936" 118 40 11.323	1665.9 (187.3) 234.9 (1009.8)			Used in Radial Plot
SAN POIL I.S. No. 1, 1935	"	"	47° 57' 13.681" 118 43 21.365	422.6 (1430.6) 443.3 (801.6)			"
CLARKE 1934	G 6760 USBR 1032	"	47° 55' 14.527" 118 39 16.999"	448.7 (1404.5) 352.9 (892.8)			"
DEVILS CANYON 1934	G 6760 USBR 1037	"	47° 53' 50.995" 118 43 28.847	1575.0 (278.1) 599.2 (647.1)			"
PENIX CANYON 1934	G 6760 USBR 1038	"	47° 55' 00.592" 118 37 53.716	18.3 (1834.8) 1115.3 (130.5)			"
C.P.S.P. #4 (ULSP41 + 48.70) USBR, 1936	Field Comp.	"	47° 57' 39.971" 118 41 46.719	1234.5 (618.6) 969.2 (275.5)			"
C.P. #32 (UL928 + 07.64) USBR, 1934	"	"	47° 55' 42.473" 118 42 52.113	1311.8 (541.3) 1081.8 (163.7)			"
C.P. #38 - S.P. #1 (UL1124 + 43.14) USBR, 1934	"	"	47° 56' 45.348" 118 39' 48.313	1400.6 (452.5) 1002.6 (242.5)			"
C.P. #40 (1188 + 68.36) USBR, 1934	"	"	47° 56' 21.123" 118 38 24.015	652.4 (1200.8) 498.4 (746.9)			Used in Radial Plot
C.P. #41 (UR1361 + 64.17) USBR, 1934	"	"	47° 55' 36.162" 118 41 19.829	1116.9 (736.3) 411.6 (833.9)			Used in Radial Plot
C.P. #47 (UR1577 + 75.36) USBR, 1934	"	"	47° 55' 16.448" 118 38 02.590	508.0 (1345.1) 53.8 (1191.9)			Used in Radial Plot
C.P.S.P. #3 (SS) USP 1015 + 83.61 USBR, 1936	"	"	47° 57' 34.430" 118 41 00.459	1063.4 (789.8) 9.5 (1235.2)			Used in Radial Plot

1 FT. = 3048006 METER
COMPUTED BY J. L. Harris DATE June, 1947
CHECKED BY Carita Wiebe DATE 17 July 1947
M-2388-12

8851

PROJECT NO. Ph-2(45)

SCALE OF MAP..... 1:10,000

SCALE FACTOR	None
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[illegible]

1 FT - 3048006 MEYER

J. I. Harris

DATE July, 1947

CHECKED BY: Carita Wiebe

DATE 17 July 1947

M-2388-12

MAP T- 8852

PROJECT NO. Ph-2(45)

SCALE OF MAP 1:10,000

SCALE FACTOR

None

STATION	SOURCE OF INFORMATION (INDEX)	DATUM	LATITUDE OR ν -COORDINATE LONGITUDE OR x -COORDINATE	DISTANCE FROM GRID IN METERS OR PROJECTION LINE IN METERS	DATUM CORRECTION	N.A. 1927 - DATUM FROM GRID OR PROJECTION LINE IN METERS	REMARKS FACTOR DISTANCE FROM GRID OR PROJECTION LINE IN METERS
HARLINDA, 1936 r 1947	G 6760 USER 1050	N.A. 1927	48° 01' 51.219"	1582.0 (271.2)			Used in Radial
DICE, 1936 r 1947	G 6760 USER 1049	"	118 40 38.564	799.0 (444.1)			Plot
HEAD, 1936 r 1947	G 6760 USER 1033	"	48° 00' 56.267"	1737.9 (115.3)			"
STUD, 1936 r 1947	G 6760 USER 1049	"	118 39 31.407	650.9 (592.5)			"
KELLER NORTH BASE, 1936 r 1947	G 6760 USER 1050	"	48 04' 54.580"	1685.8 (167.4)			"
WATSON, 1936 r 1947	G 6760 USER 1049	"	118 40 22.293"	461.4 (780.4)			"
C.P.S.P. #10 (ULSP198 + 58.38) Field USER, 1936 r 1947	G 6760 USER 1050	"	48° 00' 05.384"	166.3 (1686.9)			"
C.P.S.P. #12 (ULSP246+03.99) Field USER, 1936 r 1947	"	"	118 41 20.995	435.2 (808.5)			"
C.P.S.P. #14 (ULSP294+09.65) Field USER, 1936 r 1947	"	"	48° 03' 38.001"	1173.7 (679.5)			"
C.P.S.P. #16 (ULSP353+99.35) Field USER, 1936 r 1947	"	"	118 39 57.979	1200.5 (41.8)			"
C.P.S.P. #18 (ULSP409+43.16) Field USER, 1936 r 1947	"	"	48° 03' 40.099"	1238.5 (614.7)			"
C.P.S.P. #20 (ULSP468+15.52) Field USER, 1936 r 1947	"	"	118 39 19.622	406.3 (836.0)			"
			48° 00' 05.233"	161.6 (1691.5)			"
			118 41 05.671	117.6 (1126.2)			"
			E 172 460.26	749.9 (774.1)			Not recovered
			N 116 831.98	558.4 (965.6)			plotted for use
			E 174 654.99	1418.8 (105.2)			by hydrographic
			N 120 978.62	298.3 (1225.7)			party
			E 174 589.22	1398.8 (125.2)			"
			N 126 691.45	515.6 (1008.4)			"
			E 175 673.32	205.2 (1318.8)			"
			N 131 607.42	489.9 (1034.1)			"
			E 174 352.70	1326.7 (197.3)			"
			N 136 731.60	527.8 (996.2)			"

1 FT. = 3048006 METER

COMPUTED BY: J. L. Harris

DATE June, 1947

CHECKED BY: Carita Wiebe

DATE July, 1947

M-2388-12

FIELD INSPECTION REPORT
Area of the First Radial Plot
Project PH-2(45)

1. Description of the Area:

This report pertains to the area of the first radial plot encompassed by the 4 shoreline surveys numbered 8849 to 8852 inclusive along the Franklin D. Roosevelt Lake from Grand Coulee Dam eastward to and including the San Poil River. It should be noted, also, that this report is applicable, in part or in whole, under some of the side headings to the Project as a whole, and should be regarded as the leading report to which the remaining 6 descriptive reports will be referenced. The Project was sub-divided logically into 7 radial plot units to facilitate the field work and the subsequent compilation of the shoreline surveys.

A General Description of the Project Area:

The artificial lake or storage reservoir upstream from the Grand Coulee Dam extends 151 miles up the Columbia River canyon to the Canadian border at which point the elevation determined the height of the Dam; in addition, the reservoir extends 32 miles up the Spokane River, 14 miles up the San Poil River, and 8 miles up the Kettle River. The storage reservoir covers an area of 128 square miles with an estimated total capacity of 10 million acre-feet of water. The Lake averages about 0.8 mile in width with a maximum depth of 400 to 450 feet.

The normal water level of the Lake is 1290 feet above M.S.L. based on the 1937 USBR Datum of Leveling; this normal water table extends upstream from the Dam for about 115 miles before any appreciable gradient is noticeable. Since the water level was raised about 300 feet above the old river level, all lands (mostly privately owned) in the river basin above the dam site and below elevation 1310 (referred to as the "Taking Line") were surveyed, appraised, and acquired by the Government for reservoir purposes before the waters were impounded. Chiefly grazing and pasture lands, and cut-over timber sites were affected. The old townsites of Keller and Kettle Falls were inundated. Several highways and railroads were relocated including the removal of numerous indian graves. The "Taking Line" referred to above is a series of short transit-traverse lines run approximately on the 1310-foot contour line.

The drainage basin of the Columbia River above the Grand Coulee covers an area of 74,100 square miles. Among its principal tributaries are the Kootenai, Clark Fork, and Spokane Rivers; the first two rivers join the Columbia 30 miles and 0.5 mile north of the international boundary, respectively; the latter River joins the Lake about 45 miles east of the Dam. The San Poil and the Kettle Rivers are minor tributaries. Its headwaters are in the high mountain snows, lakes, and ice fields of British Columbia.

The Lake meanders through a deep and wide canyon. Between the Spokane River and Grand Coulee Dam, old and rolling granitic mountains are found on the north side of the Lake. On the south side, it is marked by steep perpendicular walls of basalt with lava-plains on top; inland of this

basalt formation is the wheatland balt. North of the Spokane River, the reservoir area is surrounded by low timber-covered mountains with narrow grass or timber benches adjoining the Lake in many places.

A Description of the First Radial Plot Area:

The Grand Coulee Dam, on the Columbia River, is located at the head of the Grand Coulee, a prehistoric diversion channel which was formed when the flood waters pouring down the Columbia River canyon were blocked by glaciers. The Dam is the largest man-made masonry structure and the highest spillway dam in the world. It is of the straight-gravity type and depends entirely upon its massive weight to resist the pressure of the impounded waters. The length at the crest is 4300 feet, 3000 feet at the base, and 550 feet in height above bedrock. It has a base thickness of 500 feet and tapers to 30 feet at the top. The center section consists of a 1650-foot spillway with a powerhouse and abutment section on each side. 11 drum gates at the crest of the spillway and 60 outlet tunnels, 20 each at three different elevations, control the rate of flow and the amount of water held in storage. The Dam is spanned by concrete arch bridges and a highway which extends the entire length of the dam at the top.

To accomodate the Bureau employees two towns were built near the dam site. Coulee Dam, commonly known in the past as "Engineer's Town", was constructed as a permanent town just below the Dam on the west side of the river by the Bureau of Reclamation. The other town was Mason City; It was opposite Coulee Dam on the east side of the river. Built by a contractor, it was originally designed for temporary use to be dismantled when the Dam was completed in 1942; however, the two towns have been consolidated into one town site which now is officially known as Coulee Dam. Grand Coulee is another small municipality located on the heights just north of and above the dam site. A post office and store, ⁷⁻⁸⁸⁵² and a few buildings mark the new site of Keller at the north end of the San Poil River reservoir.

There are no major U.S. highways in this area. State Highway 4 from Wilbur crosses the Lake at Keller Ferry, which is near the mouth of the San Poil River, and continues northward paralleling the west side of the River. State Highways 2, 2F, 10A, and 10B all radiate out of Coulee Dam. A few gravel and dirt roads provide limited access to the Lake. There is no passenger railroad line in the vicinity. A spur freight line, the I.D.B.R., runs from the Northern Pacific Railway line at Odair to the dam site, and is operated by the Bureau of Reclamation. The Grand Coulee Navigation Company with headquarters at Davenport, Wn., maintains a daily passenger service on the Lake between Miles, Wn., near the mouth of the Spokane River, and Coulee Dam. An air-taxi is available at Coulee Dam; it is operated by the Amphibious Aircraft Association.

On the south side of the Lake, the zone adjacent to the water is interspersed with sedimentary pockets and large granite outcrops. The vegetation consists of sagebrush and greasewood with a scattering of stunted pine trees. Immediately to the south and above this zone is a high lava-flow formation of basalt which parallels the Lake. It is deeply incised by small canyons and valleys, draws and drywashes. Almost throughout the entire length of this formation, the walls of basalt rise vertically or in steep grades for several hundred feet either from the Lake

or just inland as the result of canyon-excavation by glacial and flood waters in the past. From the Lake and to the northward they can be seen as black escarpments. The lava-plains or benches, which have weathered into soil, on top of the layers of basalt are covered with sagebrush and native grass; its topography is rolling. Inland from the basalt formations and extending southward, the area is a large rolling wheat-land plain.

On the north side of the Lake, a rugged and rolling range of granitic mountains rises abruptly. Its thin soil supports a growth of small pine, sagebrush, and greasewood. An occasional agricultural plateau or basalt outcrop is found; they stand out as isolated tracts between the Lake and the mountains to the north. The massive granite bluffs and ledges, found ~~found~~ along the edge of the shore are very irregular; the terrain is rugged and, in several areas, they are sheer bluffs that loom above the Lake. Disintegration by weathering action has deposited rocks and boulders along the shoreline and on the granitic slopes.

Alluvial fans with flat benches on top are found on both sides of and adjacent to the Lake; their banks are generally steep and sloping. In the alluvial areas the soil composition is sand and gravel. The vegetation consists of sagebrush, greasewood, and a few scattered pine trees. Behind the alluvial benches rise the black basalt escarpments or the granitic mountains.

There are numerous coves and inlets found along the lake shore with draws and small canyons extending inland. The well defined drainage pattern that is so evident on the photographs is a remains of an earlier geologic period of heavy rainfall. No drainage should be shown unless noted as such by the field inspector on the field photographs.

The topography of the SanPoil River, which drains from the north, is similar to that on the north side of the Lake; it has little or no relationship to the south side.

The Lake, in addition to providing hydro-electric power for domestic and industrial use, flood control, and irrigation for the Columbia Basin Project, has potential possibilities for the development and use of its navigable waterway.

For additional information refer to side heading 3.

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 cetara, has been completed in accordance with the instructions for this Project dated 3 April 1947 with a few modifications that were minor.

Although the instructions made no mention of interior field investigation (except for cultural features visible from the water) for skeleton details such as roads, railroads, landmark buildings, major drainage and other bodies of water such as lakes and ponds, it was found that an inspection of these features, which was done concurrently with the geographic names investigation, was necessary for the following reasons:

- a. The project instructions requested that a complete and thorough field investigation be made to ascertain all the names in local usage. Since the area within the limits of this Project is comparatively undeveloped, it was felt that the natural and cultural features mentioned in the second paragraph would require investigation in the course of ascertaining and identifying new names and names in local usage.
- b. Existing maps were found to be very inadequate with regard to geographic names, topography, and culture. Many of the geographic names dealt with drainage which did not appear on the maps at all. In view of this, the field inspector on geographic names was instructed to identify and note the correct location of the geographic names on the field photographs.
- c. In rural and undeveloped areas, the names of schools, churches, roads, et cetera, are important since in many cases they are locality names or names that are in extensive local usage.

Sundry maps have been obtained to supplement the field work for the project area.

3. Interpretation of the Photographs:

Each type of vegetation, rock formation, and any other characteristic has been classified a sufficient number of times on the photographs so that the photographic detail should be interpreted correctly by the office personnel.

The following information will assist the draftsman in photographic interpretation:

Vegetation:

- a. Pine covered lands - the pines are easily recognized by their black conical shapes, and are found well apart on the ground.
- b. Sagebrush lands - sagebrush is usually found with native grass in the field, and is identified by a light and mottled tint. It almost gives the appearance of merging with a slightly lighter or darker background. It is very difficult to identify an individual sagebrush.
- c. Greasewood - the individual greasewood bush can be readily identified as a small dark spot - usually against a light background.
- d. Native grasslands - grasslands show as a light grey tint and when mixed with sagebrush, as is often the case, it is very difficult to distinguish between the two.

Rock Formations and Outcrops:

- a. Basalt formation - a dark lava-flow found in large horizontal layers. It shows as a fairly uniform black toned area (striated) shading to a dark grey. On the south side of the Lake, a single formation of basalt may be traced, in many cases, for a distance

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of several miles at an almost constant elevation above the Lake.

- b. Talus slopes - where basalt formations have been incised by streams, numerous vertical bluffs will be found. The talus slopes are found below these bluffs and like their parent rock they are dark grey to black in color. They consist of rocks from 6 inches to 2 feet in diameter which have broken away from the main basalt formation and have come to rest in a slide-like area.
- c. Granitic outcrops - light colored rocks which have been exposed by the erosive action of streams and weathering. Granitic outcrops range from dark grey to grey; they are of irregular formation, mottled in appearance, and studded with small trees and bushes. There is a complete absence of any large, continuous, horizontal exposure.

Scablands:

- a. A lava-plain exposure of basalt sparsely covered with patches of sagebrush and native grass. A typical example of such an area is the high plateau southeast of the town of Grand Coulee.

Other characteristics:

- a. Slide areas along the shore are identified by their light uniform pattern against a darker background.
- b. The shoreline is readily identified by the contrast in color between fast land and water.

Distortions and Displacements:

- a. Because of excessive relief, the distortions and displacements are exaggerated on the photographs.
- b. Any slope facing away from the picture center will tend to be telescoped, and the effect will be exaggerated as the steepness of the grade and/or as the distance from the picture center increases.
- c. Any slope facing toward the picture center will be exaggerated, and the effect will be increased as the slope and/or as the distance from the picture center increases.

4. Horizontal Control:

It was not necessary to establish any additional control. Recovery notes on Form 526 have been prepared for the few USC&GS stations in the area of the first radial plot. The majority of the stations recovered were established by the Bureau of Reclamation.

All the USBR stations that were recovered and identified for the control of the radial plot are of third-order accuracy or better, except for one or two cases. These cases refer to some of their intersection stations, e.g., natural objects such as lone pines, that were classified as of third-order accuracy. It is believed that stations of this type should

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be classified as topographic stations since they do not fall in the category of well defined objects. A notation on the pricking card was made of the few stations in this category that were recovered and identified on the field photographs.

Original descriptions were obtained from the Bureau of Reclamation for the reservoir boundary control points (these are marked stations) established by them along the "Taking Line". For information on the "Taking Line" refer to side heading 1, paragraph 3. These stations were established in accordance with the USC&GS requirements for third-order control. In most cases, they are near the water's edge and about a mile and a half apart. A search was made for most of these stations and a sufficient number of them have been identified to control the plot; those that were recovered but not identified were noted on the field photographs to be plotted for hydrographic use. Since these CP stations in this area are on an independent plane coordinate system (1934 Grand Coulee Grid Datum), the geographic positions for them have been computed. North of the Spokane River, these stations are on the Washington North State System of Plane Coordinates. For additional information on these stations refer to "Special Report on Reservoir Boundary Control Points, Project PH-2(45)". *Filed in Library of Archives under GTZ 7380.*

Recovery notes on Form 526 have been prepared for all USBR stations that were recovered or searched for, and in the case of a reservoir boundary control point, a photostat copy of the original USBR description will be submitted along with the recovery note.

With this additional control along the lake shores, ^{not} all the inland USBR control stations were ~~not~~ searched for as specified in item 12 of the instructions for this Project because of the time and expense involved in recovering them. Most of these stations are inaccessible by truck and require on an average 3 hours to pack to and from the station; this includes the recovery and identification of it.

Some difficulty was encountered in the field in identifying substitute stations that would be plainly visible on other photographs because of insufficient overlap between photographs or else all the photographs had not been made available for field use. In some instances, it was not possible or practical to identify well defined objects which would not be obscured on some of the overlapping photographs in this area with an irregular and rugged terrain that predominates in high relief. It is believed that more than a sufficient number of stations have been identified to offset the difficulties described above so as to adequately control the radial plot.

5. Vertical Control:

The recovery of vertical control is being accomplished in accordance with the supplemental instructions dated 15 May 1947. Since this phase of the work is independent of the field work on shoreline surveys, it will be the subject of a special report to be submitted at a later date.

sent. to U.S.G.S. Dec. 8, 1947.

6. Contours and Drainage:

No contouring is involved in the project area.

Major drainage was located and classified in the field concurrently with

the geographic names investigation. For additional information see side heading 1, next to the last two paragraphs, and side heading 2, paragraph 2.

7. Shoreline Plane of Reference:

The term "Shoreline Plane of Reference" was used in place of "Mean High-Water Line" as the more appropriate side heading.

The U.S. Bureau of Reclamation maintains a normal water level of 1290 feet above M.S.L. at the dam site. This elevation is based on the 1937 USBR Datum of Leveling which is referred to their fixed elevation of 1123.752 feet for BM Osborne #2 located near the Administration building in Coulee Dam. The USC&GS adjusted elevation for this BM is 1122.327 feet.

This normal water table extends upstream from the Dam to Marcus, a distance of about 115 miles. Between this point and the international boundary, there is a gradient which is gradual at first but increases as the Canadian line is approached.

The photographs were taken when the water level was close to normal. Except for an occasional confirming note and the delineation of the shoreline where it was less well defined, it can be identified as seen on the photographs.

The following are the reservoir elevations at the Dam on the dates and times indicated; there were no great fluctuations at any hour of the day during or between these days:

	<u>8:00AM</u>	<u>4:00 PM</u>	<u>12:00 Midnight</u>
7 August 1946	1289.67	1289.67	1289.60
8 " "	.59	.59	.60
9 " "	.56	.52	.52
21 " "	.68	.63	.65
22 " "	.67	.63	.63
27 " "	.60	.67	.70
8 Sept., "	.53	.51	.54

U.S. Army single lens photographs (1:20,000), which were obtained from the Bureau of Reclamation, have been submitted to the Portland Photogrammetric Office to facilitate, if necessary, the interpretation of the shoreline in conjunction with the 9-lens photographs along those areas where the shoreline is not well defined because of pronounced displacements due to relief, and distortion. In a few instances, the shoreline inspection party has found it difficult to distinguish the shoreline because of this which resulted from insufficient field photograph coverage.

These photographs were borrowed from the U.S. Bureau of Reclamation and will have to be returned, eventually. Permission was granted by them to use these photographs for any necessary field inspection or office use. The exposures were taken with a camera focal length of 8.25" at an altitude of 13,750' in the year 1944; the exact date is not known, as they were flown secretly by the Army who did not divulge the date.

It is believed that the shoreline has not changed any, except where

8

slides have occurred. A visual comparison of the lake level between the single lens and the 9-lens photographs was made; the lake level seemed to be the same.

8. Low-Water Line:

In general, only the approximate limits of shoal areas were indicated during the shoreline inspection in the field which was supplemented by a close study of any under-water discolorations that were visible on the photographs.

9. Wharves and Shoreline Structures:

There were no wharves or shoreline structures in the area except for several floating docks, boathouses, or booms near the Dam and Keller Ferry. 7-8851
7-8819

10. Details Offshore from the Shoreline Plane of Reference:

A few offshore rocks have been noted on the photographs. No other offshore obstructions were found.

11. Landmarks and Aids to Navigation:

A selection of the most prominent objects along the shore was made and these were recommended for future charting. In addition, objects of lesser prominence were recommended because of a paucity of landmarks.

A complete investigation of all fixed aids to navigation was made in the field. They were either identified on the photographs if visible or located by sextant fixes and their correct names were verified from the latest edition of the "Light List - Pacific Coast". No discrepancies were found in the Light List with regard to their distinctive markings, et cetera.

One fixed aid to navigation "San Poil Daybeacon 10" was found destroyed. 7-8851
It was noted, also, that the lights and daybeacons in the 1947 edition of the "Light List - Pacific Coast" were listed under Coulee Lake in the sections on "Lights and Fog Signals", "Unlighted Buoys And Daybeacons", and the "Index". This is incorrect as the official name is "Franklin D. Roosevelt Lake". In accordance with the memorandum instructions, No. 6, dated 30 December 1946, Mr. Heck of the Division of Charts has been notified of the name discrepancy and the daybeacon which was found destroyed.

All landmarks recommended for charting and fixed aids to navigation have been reported on Form 567 as well as on Form 524. (*See 34, Compilation Report*)

12. Hydrographic Control:

Photo hydro stations were established in accordance with the instructions for this Project. In areas of overhanging bluffs or cliffs and in areas where there were no identifiable objects on the photographs, photo hydro stations were established by sextant fixes taken to other control stations (photo hydro and triangulation stations in combination) with a check angle taken in each instance.

This practice of locating a photo hydro station by a sextant fix taken

9'

14. Road Classification:

(Only hanger delineated & labeled)

All through or connecting public highways, and roads or major trails leading from such highways which provide access to the Lake, have been classified in accordance with the memorandum instructions, No. 10, dated 14 April 1947. All other roads such as field roads, and temporary logging roads or trails were not classified and should not be shown.

There is one bridge in the area; it spans the Columbia River just below the Dam.

Location: Coulee Dam, Wn.

Kind: Fixed

Channel Span:- Horizontal clearance - 550 feet

Vertical clearance of lowest part above MLW - Not applicable
MLW - 90 feet

Date of Field Measurements: 5/22/47 (Hor. Cl.)

Since the river level in the vicinity of this bridge near and downstream from the site of the Dam is not constant, The vertical clearance was not determined in the field. Mr. George Owens of the Bureau of Reclamation in Coulee Dam was consulted and the average minimum clearance (vertical) was determined from the following data; this clearance is considered to be a better determination than could be obtained by a field measurement:

- a. The elevation at the center of the bridge span is 1061.75 feet above MSL based on the 1937 USER Datum of Leveling. For information on this Datum refer to side heading 7, paragraph 2.
- b. The average maximum elevation of the river level at the bridge is: 971.8 feet above MSL based on the same Datum as in item a. There is an automatic recording gage at the bridge zeroed on this Datum.

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c. The average minimum vertical clearance is, therefore, 90 feet.

There were no overhead or submarine cable crossings over navigable waters within the limits of this area.

16. Buildings and Structures:

A complete field investigation was made of all buildings and structures along the waterfront. Inland only those buildings and structures were identified that were visible from the water.

17. Boundary Monuments and Lines:

In accordance with the Acting Director's letter dated 27 June 1947, on the subject "Plotting of Boundary - Roosevelt Lake Reservation", ozalid prints of the USBR Index Maps SP 1, SP 2, and 1 to 5 inclusive have been obtained from the Bureau of Reclamation for the purpose of plotting the boundary limits of the reservoir. The Bureau has indicated plainly in red and supplemented by pertinent notes on the ozalid prints any changes in their original reservoir boundary line or commonly referred to as the "Taking Line". For the symbol used to indicate the original reservoir boundary lines on the index maps refer to the legend shown on Index Map No. 1. Refer to side heading 1, paragraph 3 for additional information.

Not drawn on T-8851

Since the Bureau of Reclamation's "Taking Line" was surveyed only at an approximate elevation of 1310 feet, the Land Office at a later date determined by surveys the actual 1310-foot contour line along those areas where the "Taking Line" was common to indian reservation lands and the reservoir lands of the Bureau of Reclamation. As a result discrepancies were found which were adjusted out by a Congressional act. The acquisition of additional property, also, has altered the reservoir boundary lines. These new changes in the boundary line have been shown in red as mentioned in the first paragraph.

18. Geographic Names:

814 ✓
The investigation of geographic names for the Project area will be the subject of two special reports. The first report will include 11 shoreline surveys numbered 8849 to 8859 inclusive; the second report will be for the remaining 13 shoreline surveys numbered 8860 to 8872 inclusive.

For additional information refer to side heading 2.

20. Ferries:

One ferry crossing, the Keller Ferry, was investigated and noted on the field photographs. It is state owned and operated on the Lake proper T-8851 near the mouth of the San Poil River.

21. Field Photographs:

The junctions between field photographs and the legibility of the inked notes as well as for the completeness of the field inspection work have been checked by the field inspectors.

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

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For the photographs used for field and shoreline inspection refer to the Data Record, Form No. T-1.

22. Symbols and Color Scheme:

Standard symbols were used on the field photographs for ground and photogrammetric points. The symbolization on the shoreline inspection work was done in accordance with the "Supplemental Instructions - Shoreline Inspection" dated 18 March 1944. Perennial and intermittent drainage was indicated by conventional symbols.

Red ink was used for shoreline, ground and photogrammetric points (photo hydro stations were noted in blue ink in accordance with item 17 of the Project instructions), culture, and general notes. Blue ink was used for drainage and green for deletions.

Approved by:

J. T. Jarman
J. T. Jarman,
Chief of Party

Respectfully submitted:

Charles Hanavich
Charles Hanavich,
Topographic Engineer

COMPILATION REPORT
Map Manuscripts T-8849 to T-8852 Inclusive
Area of the 1st Radial Plot
Project Ph-2(45)

26. Control

Thirty-nine horizontal control stations were recovered and identified by the field parties for use in controlling the radial plot in the area of these four map manuscripts.

Since the field inspection party was furnished only every other nine lens field photograph, in any flight of photographs, they could not comply with Paragraph 13 of the Instructions dated, 3 April 1947. Therefore, when an attempt was made to prick the objects, selected as substitute stations for horizontal control stations, on the office photographs, much difficulty was encountered. Twelve of the thirty-seven identified stations could only be seen on the photograph on which they had been identified by the field party. Of the remaining twenty-five stations, sixteen were plainly visible on a majority of the photographs on which they appeared, but the remaining nine could be identified with surety on not more than two or three office photographs.

The above difficulties were attributed to the fact that the field party, in most cases, selected bushes and other small objects as substitute stations. While these objects were clear and definite in the center chambers, they could not always be identified in the outer chambers of overlapping photographs. Also, many of the objects selected were eliminated, in the outer chambers of adjoining photographs, due to the large amount of displacement caused by decided relief in the area. These difficulties will not occur in succeeding radial plots for this project; as the field party was notified about the trouble encountered and instructed to select more prominent objects for substitute stations.

Insufficient end lap in line of flights also contributed to the difficulty of identifying control and hydrographic signals. In many places it was impossible to obtain stereoscopic vision when viewing a stereoscopic pair. This meant that the use of the stereoscope was limited when transferring signals from one photograph to another. (See paragraph two of letter 711-rs, dated 23 September 1947, on the subject of photographs.)

All horizontal control stations which were recovered by the field party were plotted on the map manuscripts. As stated in item 4, paragraph 5^{not} of the "Field Inspection Report-Area of the First Radial Plot," all USBR second order stations were ~~not~~ recovered.

Several USSR triangulation stations which were not recovered have been plotted on the map manuscripts. In these cases the stations were needed to control the F. D. Roosevelt Lake reservation line, which was transferred from index maps to the map manuscripts. (This reservation line was plotted prior to receipt of letter 711-rs dated 7 November 1947 to Lt. Comdr. Jarman, stating that it was to be omitted.)

All horizontal control stations shown on these four map manuscripts are listed on several sheets of Form M-2388-12, which are attached to this descriptive report.

27. Radial Plot:

Radial Plot No.1, Project Ph-2(45), covers the four map manuscripts included in this descriptive report. The photographs were prepared in the following manner:

- (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 unit, were pricked on all photographs on which they appeared. (See information contained in this descriptive report under Item 26, Control.)
- (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 to all points were drawn.

Templets were then made on sheets of clear acetate in accordance with Photogrammetry Instructions No. 11, dated 2-28-47, "Corrections to Radial Directions on Nine Lens Photographs for Radial Plotting." Inks of various colors were used to designate the azimuth and cross azimuth lines, and the radial lines to horizontal control stations, topographic stations, and pass points.

Four polyconic projections, ruled on acetate, were furnished this office for use as map manuscripts. On these, all horizontal control stations which were recovered and their substitute stations, if they were identified, were plotted. Standard Symbols, listed in Photogrammetry Instructions No. 12 dated 3-17-47, were used to indicate all stations.

*Map State
North Grid
added by
Review Section*

After all plotting was completed and checked, the four map manuscripts were placed on the large radial plot table and joined together by matching common meridians and parallels. Clear cellulose tape was used to hold the four sheets together.

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The templets were oriented directly on the four joined map manuscripts. As many of the horizontal control stations were doubtfully identified on the photographs; notes pertaining to the accuracy of identification were lettered on each templet near the radials to said control stations. Those templets, which contained several clearly identified and well distributed horizontal control stations and which could be rigidly fixed, were then oriented. The remaining templets were oriented by holding to clearly identified control stations, azimuth lines, cross azimuth lines, and pass points which had been established by orienting the rigidly fixed templets. In this manner we could usually determine which of the horizontal control stations were incorrectly identified on any particular photograph. An attempt was then made to correct the pricking of all doubtful stations. If this was impossible, the station was eliminated from the photograph in question.

Indications of small errors in the location of a few of the U. S. B. R. third-order control stations were evident, however this point could not be determined definitely by radial plot methods. In several cases these stations could not be held rigidly with nearby stations in the second-order scheme, even tho identification was positive in each case. In any event the error is not believed to be over two meters.

When the plot was satisfactorily completed and all of the templets were securely fastened to the four joined map manuscripts, it 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 directly on the reverse sides of the four map manuscripts by circles in blue ink.

It is believed that excellent results were obtained in this radial plot and that accurate map manuscripts may be compiled which will be well within the limits of accuracy for the project.

28. Detailing:

These maps were compiled in accordance with instructions for Project Ph-2(45). Features and symbols were shown as indicated in Photogrammetry Instructions No. 10, 12, and 17.

The transforming printer at the Washington Office was not in proper adjustment at the time the 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 manuscript.

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In order to furnish the hydrographic party with shoreline and photo-hydro signals, detailing was divided into two distinct steps. In the first phase of the work all photo-hydro stations and shoreline pass points were located. Because of difficulties which have arisen on other projects and in order to insure the accuracy of the photo-hydro stations, the located positions were checked by a supervisor and all questionable signals were noted. The shoreline was then detailed from those photographs on which it was clearly visible and on which the bluffs were displaced outward from the center. (It might be stated that there were cases, particularly at the heads of narrow coves, where the photograph coverage was not sufficient to accurately delineate the shoreline and where stereoscopic vision could not be obtained. In these doubtful areas the hydrographic party checked the shoreline by running small planetable surveys. If errors were found, the map manuscripts were corrected and notes were lettered nearby designating that part of the shoreline which was located by planetable.) When the above work was completed, prints of the map manuscript were made and forwarded to the hydrographic party.

The second phase of the work, which consisted of interior detailing, was completed after we were certain that sufficient data had been furnished the hydrographic parties in order to complete their surveys.

Because of insufficient photograph coverage interior detailing could not be completed in the following areas:

The northeast part of T-8849
On sheet T-8850 between Latitude $47^{\circ}-52'$ and Latitude $47^{\circ}-53'$
The northeast, northwest, and southwest parts of T-8851
On most of the interior area of T-8852

For the compilation of T-8852, only one flight of nine lens photographs, located close to the banks of the San Poil River, was furnished. In addition, there were three U. S. Army single lens 1:20000 photographs in a short flight which crossed the San Poil River near the south limits of this map manuscript. These single lens photographs were used successfully to supplement the nine lens photographs when radially plotting all types of pass points in the southern part of this map manuscript. In the area north of Latitude $48^{\circ}-00'$, where only nine lens photographs were available, there were places where the angle of intersection of radials, obtained for shoreline pass points and photo hydrographic signals, was weak. The doubtful shoreline pass points and pass points of two radial intersections are shown with green waterproof ink circles on the reverse side of the map manuscript. The doubtful photo-hydro signals have been shown with a question mark (?) after the number. (This map manuscript was detailed prior to the time that instructions for locating photo-hydro signals were revised. On future sheets only those photo-hydro signals which are clearly visible on the photographs and which can be located accurately by the intersection of at least three cuts are shown.)

Whenever possible the stereoscope was used to aid in determining the location of the tops of bluffs along the shoreline. The location of these bluffs could more readily be determined from photographs on which they were displaced away from the water line and the principal point of a photograph. Detail pass points were radially plotted near or along the tops of these bluffs so that they could be compiled as accurately as possible.

In many places it was very difficult to identify sufficient pass points for the compilation of roads. This was particularly true in areas of severe changes in relief and in places where roads wound thru dense woods. Similar conditions caused trouble in compiling the drainage, especially since the use of the stereoscope was very limited in interior areas.

Because of the numerous new roads and many changes in road alignment, it was found easier to compile all through roads, as they appeared on the photographs, rather than to make comparisons with old surveys and quadrangles and compile only the changes as suggested in the instructions for this project.

It is believed that all provisions of Paragraph 32 of the Instructions, relative to drafting, have been applied to the map manuscripts.

29. Supplemental Data:

The following maps or plans, which will be forwarded with the map manuscripts, were used to supplement the photographs:

Black & White Prints--10 each, Index Maps Nos. SP 1, SP 2, and 1	-
to 6 Inc.. (2 copies of Nos. 5 & 6)	
Black & White Prints--Grand Coulee Power Plant, Scale 1" = 60'	-
Grand Coulee Dam, Elevations & Sections	-
Fire Map, Scale 1" = 400' (Approx.)	-
Grand Coulee Power Plant, Scale 1" = 30'	-
Grand Coulee Dam, Vicinity Development,	-
Scale 1" = 250'	
Grand Coulee Dam, Scale 1" = 100'	-
Town of Coulee Dam & Vicinity, Scale 1" = 600'	-
Columbia River Reservoir, Scale Unknown	-

The following map, which was also used, will be forwarded when the project is completed:

Black & White Print---Existing & Relocated Highways and
Railroads, Scale 1" = 4 miles

30. Mean High-Water Line: (Lake shoreline at the adopted plane of reference) *

A complete discussion of this feature may be found in Paragraph 7 of the "Field Inspection Report, Area of the First Radial Plot," which is attached to this descriptive report.

The mean high-water line (Lake shoreline at the adopted plane of reference) is shown by a continuous black acid ink line, 008" in thickness, at a plane 1290.0 ft. above Mean Sea Level. There are no marsh areas bordering the shoreline.

31. Low-Water and Shoal Lines:

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

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

32. Details Offshore from the Mean High-Water Line:

A floating debris net is the only detail offshore from the high-water line within the area of these four map manuscripts. Many rocks, adjacent to the shoreline, have been shown.

33. Wharves and Shoreline Structures:

A small dock, located on the south shore of the F. D. Roosevelt Lake, ^{T-8849} about two miles east of Coulee Dam, is the only shoreline structure within the area of these four map manuscripts. The dam has been completely detailed in accordance with field inspection data and various plans furnished the compilation office by the field party.

34. Landmarks and Aids to Navigation:

Form 567, recommending the charting as landmarks of the following objects, is attached.

HOUSE (North Gable) T-8850 ✓
BARN (South Gable) T-8851 ✓
HOUSE GABLE (Downstream) T-8852 ✓
BARN GABLE (Southwest) T-8852 ✓

Form 567 listing planetable and radially plotted positions of the following non-floating aids to navigation, is attached.

* A profile of the reservoir water-level, from Grand Coulee Dam to the International Boundary, is attached to the Descriptive Report for the Fifth Radial Plot (T-8863 & T-8865).

See also
Sub. No. 38

PINE TREE POINT 1 LIGHT T-8849 ✓
SWAWILLA 3 LIGHT T-8850 ~~T-8849~~
UPPER PLUM FLATS DAYBEACON 5 T-8850 ✓
LOWER CAMEL BLUFF DAYBEACON 6 T-8850 ✓
CAMEL BLUFF 8 LIGHT T-8851 ✓
CHINA BLUFF 11 LIGHT T-8851 ✓

Form 567, recommending the deletion of the following fixed aid to navigation, is attached.

SANPOIL DAYBEACON 10 T-8851

35. Hydrographic Control:

This office had a great deal of trouble locating the objects which had been pricked as hydrographic signals by the field parties. This was occasioned by the fact that the field men pricked small objects which, while they were definite on one photograph, could not be seen on adjacent photographs. This was usually caused by distortion due to relief. Due to the above conditions this office was forced to reject some signals and question others which could not be identified with certainty on enough photographs to obtain a good radial intersection.

In connection with the above it must be remembered that only every other photograph was furnished to the field parties and that inspection on these sheets was accomplished prior to receipt of letter 711-aar, dated June 20, 1947, which stated that future instructions would contain the clause that only well defined relatively permanent objects were to be selected. Because of the difficulty encountered in pricking photo-hydro stations in the area of this plot and in accordance with the above mentioned letter, the field party was requested to select larger objects which they felt would be clearly visible on adjacent photographs. As this was done, it was relatively easy to locate signals in the remaining sheets in this project.

After the hydrography was started the compilation office was informed that the hydrographic party was having difficulty with several of the photo-hydro signals that were believed to be accurately located. At a conference between personnel of the field party and personnel in this office, it was decided to await further investigation by the hydrographic party, of all questionable signals, before making changes on the map manuscript. In accordance therewith, Comdr. Jarman located additional signals and checked the location of many of the photo-hydro signals, during the field season.

On December 18, 1947, Lt. Comdr. Jarman and other personnel of the field party came to the Portland Office for a conference. At this time a thorough study was made of discrepancies and the difficulties encountered, and the following points were noted.

To interpret par. 6, page 19, of this compilation report, which is ambiguous as to which photo-hydro stations were retained on, and which were deleted from, the map manuscripts T-8849 to T-8852 inclusive, Mr. Hanavich, who conducted some of the field operations and who is now in the Washington Office, was consulted, and from his explanation it has been concluded that this paragraph must mean that:

- (1) The photo-hydro stations whose positions were verified in the field were retained on the hydrographic sheet.
- (2) The photo-hydro stations whose positions were found in error or were not verified at all were deleted from the hydrographic sheet.
- (3) The stations in the first category were retained on the map manuscripts and those in the second category were deleted.

Actually, many more photo-hydro stations were located on these maps by radial plotting than were necessary for hydrographic control.

Charles Hanavich, who was a member of the field party and was present at the meeting at the Portland Office on Dec. 18, 1947 (see previous page), was consulted about the paragraph on the opposite page and it was concluded that it must mean:

To aid the reviewer two classes of photo-hydro stations were eliminated from necessary consideration as a result of the field topographic and hydrographic surveys. These two classes were:

- (1) Photo-hydro stations not used by the hydrographic party because they either could not be found on the ground or they were not needed. These were deleted from the map manuscript, and,
- (2) Certain photo-hydro stations whose compiled positions were verified by independent plane-table surveys by Lt. Comdr. Jarman's party. This class was retained on the map manuscript but did not need to be verified during the review.

K.T. Adams
7/5/49

1. Most of photo-hydro positions were verified by planetable methods.

2. Due to distortion of ozalid prints of the map manuscript, some signals had been incorrectly transferred to boat sheets; thus an apparent error had existed.

3. Some small objects which had been pricked far out on the wings of distorted photographs had been misidentified in the compilation office. Similarly there were a few cases where objects were pricked erroneously by the field parties.

4. Due to strong winds in the area, many of the marked points, such as rags on bushes, had been lost; and in some cases the signal building party had erected signals over a nearby object, rather than the located photo-hydro position.

5. In their effort to locate all signals for the hydrographic party the field parties had pricked some indefinite objects; thus straining the limits of accurate photogrammetric compilation and creating a great deal of confusion. Had all field photographs been available many of the doubtful signals would never have been selected.

In order to avoid confusion during review, the hydrographic party deleted all photo-hydro signals, which had been verified, from the topographic sheets. Similarly all photo-hydro signals which were questionable, or which could not be relocated by the signal building party, were eliminated from the map manuscripts.

See
page
opposite

A list of the hydrographic signals, shown on these four map manuscripts, is attached to this descriptive report.

36. Landing Fields and Aeronautical Aids:

A small private seaplane base, The Amphibious Aircraft Association, is located just upstream from the Dam on the north side of the lake.

7-8849

37. Geographic Names:

Geographic Names are the subject of a special report, "Investigation of Geographic Names, Sheets 8849 to 8859 inclusive, Project Ph-2(45)," which has been submitted to the Washington Office by the field party.

38. Recoverable Topographic Stations:

Copies of Form 524 are being submitted for all of the stations listed under Item 34, "Landmarks and Aids to Navigation." The following fixed aids to navigation, which were located by the hydrographic party, were plotted on the map manuscripts:

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PINE TREE POINT 1 LIGHT	7- 8849
SWAWILLA 3 LIGHT	7- 8850
UPPER PLUM FLATS DAYBEACON 5	7- 8850

39. Junctions:

Complete and satisfactory junctions have been made between all map manuscripts in this radial plot, and between map manuscripts T-8851 and T-8853.

40. F. D. Roosevelt Lake Reservation Lines:

The F. D. Roosevelt Lake reservation line was transferred to the map manuscripts, by use of the vertical projector, from ozalid prints of the U. S. B. R. index maps, on which it had been plotted. This was done by matching meridians and parallels and holding triangulation stations which were common to both the map manuscripts and the index maps. The line has been shown on the reverse side of the map manuscripts in red acid ink.

This reservation line was compiled prior to receipt of Director's letter, 711-rs, dated 7 November 1947, stating that it should be omitted. Due to the fact that this line may be of some use, it was not deleted. It will not, however, be compiled on the remaining map manuscripts in this project.

44. Comparisons with Existing Topographic Surveys:

All existing maps of the area were at a much smaller scale and were made before the waters of the F. D. Roosevelt Lake were impounded. Due to these facts only visual comparisons could be made.

45. Comparisons with Nautical Charts:

There are no nautical charts of the area.

Respectfully submitted,

J. Edward Deal Jr.

J. Edward Deal Jr.
Photogrammetric Engineer

Approved after additional
comments were added.

Robert A. Earle

Robert A. Earle
Chief of Party

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEYArea of 1st Radial Plot
Project Ph 2(45)LANDMARKS FOR CHARTS
(Fixed Aids to Navigation)

T-8849 to T8852 Inc.

TO BE CHARTED } STRIKE OUT ONE
TO BE DELETED }

Coulson Dam, Washington

June

477

193

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

The positions given have been checked after listing. *J. T. Jarman*

J. T. Jarman

Chief of Party.

GENERAL LOCALITY		NAME AND DESCRIPTION	POSITION						METHOD OF LOCATION	DATE OF LOCATION	HARBOR CHART	INSHORE CHART	OFFSHORE CHART	CHARTS AFFECTED
			LATITUDE		LONGITUDE		DATUM							
O	I	D. M. METERS	O	I	D. P. METERS									
47	56	(331.2) 1521.9	118	56	(1158.2) 86.9	NA 1927		Plane-table	1947				Area not charted	
47	57	(536.4) 1316.8	118	51	(530.8) 714.7	"		"	"				"	
47	55	(300.4) 1552.7	118	48	(320.5) 925.0	"		"	"				"	
47	54	(1610.2) 842.9	118	46	(1751.7) 1070.3	"		Radial Plot	"				"	
47	54	(1830.8) 22.3	118	42	(12.1) 1234.1	"		"	"				"	
47	56	(401.4) 1451.8	118	41	(757.3) 488.0	"		"	"				"	

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

Area of the 1st Radial Plot
Project PH-2(45)
T-8849 to T-8852 Inc.

TO BE CHARTED
TO BE DELETED

LANDMARKS FOR CHARTS

Coulee Dam, Washington June 1937

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

The positions given have been checked after listing. *Original*

The positions given have been checked after listing. *Journal*

I. T. Tabor.

Chief of Party.

[illegible]

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.

Area of 1st Radial Plot
Project Ph 2 (45)
T-8849 to T-8852 Inc.

LANDMARKS FOR CHARTS (Fixed Aids To Navigation)

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

Coulee Dam, Washington

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4

1987

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

The positions given have been checked after listing.

J. T. Jerman

Chief of Party.

[illegible]

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.

200076

PROJECT Ph-2(45)
Hydrographic Signals - 8849

- 4901 Extreme west tower, Coulee Dam
- 4902 Westerly of two middle towers
- 4903 Easterly of two middle towers
- 4904 Extreme east tower, Coulee Dam
- 4906 Top of sawdust burner
- 4907 U/S end of traffic island in parking area
- 4908 West of two power poles in cove
- 4909 Lath with red and white cloth in hole in concrete block (d)
- 4910 Whitewashed rock on waterline
- 4911 Orange and red cloth on lath near Guard House (d)
- 4912 White rag on bush
- 4914 Red and white cloth on lath on point
- 4915 U/S gable of Seaplane Hanger
- 4916 White washed point of rock
- 4918 Square white banner on point of sand
- 4920 Whitewashed point of rock
- 4922 Whitewashed rock
- 4923 Inverted orange triangle on lath
- 4924 Whitewashed D/S corner flat granite rock
- 4925 Triangular red banner
- 4926 Point of rock, whitewashed
- 4927 Square aluminum mark on rock face
- 4928 D/S corner pumping station
- 4929 White banner with vertical red stripe
- 4931 Whitewashed rock point
- 4932 Whitewashed rock point D/S from Eden Harbor

11 pages original checked JGA

- 4933 Whitewashed "X" on rock
- 4934 Point of rock on north side of Eden Harbor
- 4935 Whitewashed rock on square point
- 4936 Point of rock inside Eden Harbor
- 4937 Trimmed fir marked with white signal cloth
- 4938 Rag on lone bush on basalt
- 4939 Whitewashed point of rock
- 4941 Whitewashed point of rock
- 4942 Whitewashed rock at side of square cut
- 4943 Triangular red banner on rock point
- 4945 Orange rag on greasewood bush
- 4947 Whitewashed "X" on rock face, above point
- 4948 Yellow and white cloth on lath
- 4949 White rag on greasewood bush
- 4950 Red and white cloth on lath on rock bare 1'
- 4952 Yellow and white cloth on lath, U/S corner square rock
- 4953 Whitewashed point of rock
- 4956 East gable, green roofed house
- 4957 Red and white strips of cloth on lath on low sand point
- 4959 Orange rag on greasewood bush
- 4960 White rag on greasewood bush
- 4961 Orange and white strips on lath on rock point
- 4962 White square banner, orange stripe
- 4963 Square orange banner on board on rock point
- 4967 Whitewashed rock point
- 4968 White signal, red stripe, on end of small dock

- 4969 Whitewashed "X" on rock
- 4971 White rag on bush
- 4974 Triangular white banner (d)
- 4975 Whitewashed rock
- 4976 Square white banner on grass point
- 4977 Whitewashed triangle on rock
- 4978 Square red banner on grass point
- 4979 Orange signal cloth on pine
- 4981 Whitewashed triangle on rock
- 4983 White signal on pine
- 4985 Square orange banner on pine
- 4986 Orange rag on sage bush, side of path
- 4987 Base of pine on side of cliff
- 4989 Large white banner with rec "X" on lone pine (*Landmark Pine on m.s.*) m.s.)
- 4990 Whitewashed "X" on rock
- 4994 Red rag on trimmed sage
- 4996 Orange rag on sage bush
- 4998 White rag on bush
- 4904A Red and yellow cloth on lath in bush
- 4906A White flag on bush
- 4908A Orange and white cloth on lath in bush on island
- 4910A Red rag on greasewood bush
- 4912A White signal cloth on end of brush
- 4914A Red rag on bush
- 4916A Orange and white cloth on lath in trimmed greasewood bush
- 4918A White rag on bush

- 4920A Square orange banner on lath
- 4922A White banner at end of fence on 5' bank
- 4924A Orange and red cloth on lath at path intersection
- 4926A Red and white strips on lath
- 4928A White rag on greasewood bush
- 4930A Orange cloth on greasewood bush on top of 10' bluff
- 4936A Orange signal cloth on sage bush
- 4940A Orange banner on stake at greasewood bush
- 4942A Orange cloth on greasewood
- 4944A White rag on greasewood bush
- 4946A Triangular orange banner on U/S end of log

PROJECT Ph-2(45)
Hydrographic Signals - 8850

5001	Yellow strip on lath
5001A	Whitewashed point of rock
5002A	Square red banner on gravel point. Was 4948A
5003	White rag on greasewood bush
5003A	Point of rock between and below whitewash
5005A	Orange rag on greasewood. Was 4997
5006	Whitewashed rock
5007	Orange cloth on lath at end of log on point
5007A	Red and white strips on lath. Was 4999
5008	Whitewashed "X" on rock
5009	White cloth on lath on rock point
5009A	Whitewashed corner of square rock. Was 4901A
5010	Whitewashed triangle on rock point
5012	Red rag on greasewood
5013	Square red banner on stake
5015	White rag on greasewood bush
5018	Orange and white strips on lath at point of grass in slide area
5020	Whitewashed point of high rock
5022A	Lone pine
5023	White rag on greasewood bush
5024	White cloth on snag on island
5025	Orange cloth on greasewood bush

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5026	Orange cloth on greasewood bush
5027	Small square orange banner
5028	Lone pine tree
5029	Red signal cloth on stake in bush
5029A	No description
5034	U/S pine of two
5035	Orange signal cloth on greasewood
5036	U/S granite outcrop of two
5037	Whitewashed rock point
5039	Red and white "X" on stump
5040	Small square orange banner at end of bush and fence
5041	D/S gable of old barn on bench
5042	North gable of unpainted house also submitted as landmark NORTH GABLE
5043	Square white banner on rock
5044	Orange and white signal cloth on lath on rock point
5045	Orange flag on south side of gate
5046	Single pine in granite outcrop
5048	Small square orange banner (d)
5049	Orange flag on fence
5050	Orange flag on deciduous tree
5051	U/S gable on farm house
5054	Red and white strips on lath
5056	Orange and white strips on lath on isolated rock
5057	White signal cloth on bush

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- 5058 Base of bushy cedar
- 5060 White signal cloth on pine at edge of 15' bluff
- 5061 White banner at greasewood bush
- 5063 South gable of concrete house
- 5064 White banner on rock. Transferred from 8851; was 5102 (d)
- 5065 Red and white strips on lath in greasewood bush

HYDROGRAPHIC SIGNALS - T-8851
Project Ph-2(45)

- 5101A White flag on greasewood bush (was 5067)
- 5105 East gable of farm house
- 5107 Whitewashed rock, Devils Pasture
- 5109 White rag on bush, end of point
- 5110 Whitewashed point of rock
- 5112 Orange banner on rock point, at the D/S end of a log
- 5113 Square orange banner on point of rock island
- 5114 White banner on basalt rock
- 5115 Lone pine (not flagged)
- 5117 Pine wrapped with orange signal cloth
- 5118 White signal cloth on Elderberry bush
- 5119 Red flag on granite point
- 5120 Orange cloth on greasewood bush
- 5121 White flag on point
- 5122 Square white banner in bush
- 5124 White rag on greasewood bush
- 5125 White flag on rock point
- 5126 Orange rag on greasewood bush
- 5128 Square orange banner (d)
- 5129 Orange flag on N side of abandoned road at H.W.L.
- 5132 U/S gable of old barn
- 5135 Orange cloth on greasewood bush on hillside.
- 5136 Orange flag at end of greasewood clump
- 5137 White signal cloth on greasewood bush W side of abandoned road

- 5138 Red and white strips on lath in greasewood
- 5139 Red rag on greasewood bush
- 5140 White banner on fence post (d)
- 5141 White signal cloth on bush
- 5142 Lone deciduous tree
- 5143 Square white banner at road corner
- 5145 Orange rag on greasewood bush
- 5146 Orange flag on bush
- 5147 White rag on bush
- 5148 White flag on stake in rock
- 5149 Orange banner at end of fence
- 5150 Lone pine near C.P.S.P. 3, 1936
- 5151 D/S gable of deserted house
- 5152 Red flag in trimmed bush
- 5153 D/S gable of abandoned barn
- 5154 White signal cloth on bush
- 5155 Orange rag on bush
- 5156 Lone pine on side of bank
- 5156A Square orange banner in greasewood bush
- 5157 Orange and white strips on stake in bush
- 5158 White signal cloth on small pine
- 5159 White rag on greasewood
- 5161 Pine on side hill, east of two
- 5163 Red flag on stake in bush
- 5164 Orange signal on D/S pine of 3
- 5165 White flag at end of slide

- 5166 White signal cloth on pine at H.W.L.
- 5168 Orange signal cloth on dead pine at small cove
- 5170 White signal cloth on pine
- 5172 Forked pine near C.P. 47
- 5174 Orange flag on pine

PROJECT Ph-2(45)
Hydrographic Signals - 8852

- 5201 White rag on inshore end of bush
- 5202 Lone pine in field
- 5203 Small square red banner (d)
- 5204 Orange rag on greasewood
- 5205 White signal cloth on lone pine
- 5206 Red flag on fence post (d)
- 5207 Orange signal cloth on pine
- 5208 White rag on greasewood
- 5209 White flag on U/S end of log on point
- 5210 White cloth on pine
- 5211 White signal cloth on pine at log dump
- 5212 Orange signal cloth on greasewood
- 5213 Orange flag at point of clay spot
- 5214 Orange signal cloth on pine
- 5215 White signal on bush
- 5216 Red flag on fence at H.W.L.
- 5217 Yellow flag on greasewood bush (d)
- 5218 White cloth on pine
- 5219 White signal cloth on bush
- 5220 Orange signal cloth on small pine
- 5221 Orange signal cloth on trunk of small pine
- 5222 White flag on small pine
- 5223 White wrapped pine
- 5224 U/S gable, white house; green roof

- 5225 Orange cloth on dead top pine
- 5226 D/S gable of porch roof
- 5227 End of drain pipe
- 5228 Base of tallest pine, marked with red strip
- 5229 Tallest pine marked with red signal cloth
- 5230 Orange signal cloth on small pine
- 5231 White strip on pine
- 5232 White flag on pine at end of fence
- 5233 Orange cloth on pine
- 5234 Lone pine on hillside
- 5235
- 5236 Orange signal cloth on pine at west side of abandoned road
- 5237 Chimney of house
- 5238 Apex of "A" frame at log dump
- 5239 White signal cloth on D/S pine
- 5240 West gable, unpainted house
- 5241 Red and white strips on lath on point
- 5243 White strip on small pine

GEOGRAPHIC NAMES

Survey No. T-8849

GEOGRAPHIC NAMES		Survey No. T-8849									
Name on Survey	<div>On Chart No.</div> <div>On previous survey No.</div> <div>On U. S. quadrangle Maps</div> <div>From local information</div> <div>On local Maps</div> <div>P. O. Guide or Map</div> <div>Rand McNally Atlas</div> <div>U. S. Light List</div>										
	A	B	C	D	E	F	G	H	K		
Columbia River										1.	
Douglas County										2	
Washington*	(for title)									3	
Fiddle Creek										4	
Coulee Dam <i>Town</i>										5	
Grand Coulee <i>Town</i>										6	
Grand Coulee Dam										7	
Washington State Highway 10A										8	
Washington State Highway 10B										9	
Washington State Highway #2										10	
Washington State Highway 2F										11	
Delano										12	
Grant County										13	
Okanogan County										14	
Lincoln County										15	
Franklin D. Roosevelt Lake*										16	
Rattlesnake Canyon										17	
Eden Harbor										18	
Spring Canyon										19	
Seatons Canyon										20	
Pine Tree Point										21	
Plum Point										22	
Community Church										23	
St. Henrys Church										24	
<u>Gibbs Bay</u>	2-16-50: next cove upstream from Eden Harb.									25	
	* - Decis. of BGN									26	
	Approved names underlined.									27	
	10-29-48.										
	a. j. w.									M 234	

GEOGRAPHIC NAMES

Survey No. T-8850

GEOGRAPHIC NAMES		On Chart No.		On previous survey No.		On U. S. quadrangle Maps		From local information		On local Maps		P. O. Guide or Map		Rand McNally Atlas		U. S. Light List	
Name on Survey		A	B	C	D	E	F	G	H	K							
Washington															USGB		1
Franklin D. Roosevelt Lake															"		2
Okanogan County																	3
Ferry County																	4
Lincoln County																	5
Kaufman Flat																	6
Coffman Canyon																	7
Neal Flat																	8
Neal Canyon																	9
Plum Flats																	10
Swawilla Basin																	11
Qui-qui Creek																	12
Sugarloaf Mountain																	13
Swawilla Cove																	14
Cayuse Bay																	15
																	16
																	17
																	18
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																	25
																	26
																	27

at mouth Qui-qui Cr.

near mouth Neal Canyon

Names underlined in red are approved

11/3/48

L. Heck

M 234

GEOGRAPHIC NAMES

Survey No. T-8851

Name on Survey	A	B	C	D	E	F	G	H	K	
Washington									USGB	1
Ferry County										2
Lincoln County										3
Franklin D. Roosevelt Lake									USGB	4
Colville Indian Reservation										5
State Highway No. 4										6
										7
Camel Bluff										8
Devils Canyon										9
Kaufman Flat										10
Devils Pasture										11
Moonbeam Bay		Shift position to next cove upstream (to south) 2-16-50 L.A.								12
China Bluff										13
Keller Ferry										14
Sanpoil River									USGB	15
Thorn Spring										16
Penix Canyon										17
										18
					Names underlined in red are approved. 11/15/48 L. Heck				19	
										20
										21
										22
										23
										24
										25
										26
										27
										M 234

Shift position to next cove upstream
(to south) 2-16-50 LA

Names underlined in red are
approved. 11/15/48 L. Heck

GEOGRAPHIC NAMES

Survey No. **T-8852**

Name on Survey

	A	B	C	D	E	F	G	H	K	
<u>Washington</u>									USGB	1
<u>Ferry County</u>										2
<u>Franklin D. Roosevelt Lake</u>									USGB	3
<u>Sanpoil River</u>									"	4
<u>State Highway No. 4</u>										5
										6
<u>Dick Creek</u>										7
<u>French Johns Lake</u>										8
<u>Manila Creek</u>										9
<u>Johnson Ridge</u>										10
<u>John Tom Creek</u>										11
<u>Silver Creek</u>										12
<u>Watson Ridge</u>										13
<u>Keller (former location)</u>										14
<p><i>New location outside map area.</i></p> <p>Names underlined in red are approved. 11/19/48 L. Heck</p>										15
										16
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										22
										23
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										27

DIVISION OF PHOTOGRAMMETRY
Review Report of
Shoreline Map Manuscripts T-8849 to T-8852
Area of the First Radial Plot, Ph-2(45)

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

26 Control

Unrecovered triangulation stations plotted from local coordinates for the purpose of placing the reservoir boundary have been left on the map manuscript.

Station shown with a recovery date indicates that the coordinate positions have been converted from the 1924 Grand Coulee Grid Datum to geographic positions on the NA 1927 datum.

A list of the recovered and the unrecovered stations (Form 1-2380-12) is attached to the descriptive report.

Coast and Geodetic Survey triangulation stations (adjusted from U. S. Bureau of Reclamation positions) were plotted on the map manuscripts during review, as follows:

T-8849	Center, 1934
	Seaton, 1933
T-8851	San Poil, West Base, 1934
	San Poil, East Base, 1934
	San Poil, 1934
	Sage, 1936
	Steep SS, 1936
	*CPSP No. 8 SS, 1936
T-8852	Dick, 1936
	Hump, I. S.
	Ram, 1936
	Silver, 1936
	Lodden, 1936
	Meadow, 1936

* On page 1072 of Geographic Positions, three stations of this line are listed by number in the following manner: "UISPCP No. 3, SS, 1936". Recovery cards for these stations say that the disks are stamped "CPSP 3 (SS) ULSP 1015 + 83.61, 1936" etc. The stations are Control Points, (Columbia River Project), San Poil line, Subsidiary Stations, Upstream Left, San Poil. Geodesy Division was notified concerning the discrepancy of designations in their listing.

28 Detailing

Few revisions were made during review. Of these, the most noteworthy were:

T-8849 1. Re-drawing the entire length of the road leading to the seismograph station on the southern side of Franklin D. Roosevelt Lake and east of the city of Grand Coulee.

2. Checking the pricking of hydrographic station No. 8842a and drawing new radials. This placed the station in its proper relative position.

T-8851 1. ~~Added "low-bank" delineation to shore from junction with T-8850 to hydrographic station No. 5109, and between station numbers 5170-74.~~

2. Re-drawing bluffs at Devils Pasture area and in the area of hydrographic stations numbers 5170-74.

T-8852 1. Checking the pricking of hydrographic station number 5217 and drawing new radials to place it in its proper relative position.

Several areas of shoreline were located by planetable. These areas were indicated on the map manuscripts by ticks and by notes. The notes have been removed from the map manuscript, but can be seen by consulting the ozalid prints of the maps, which were made prior to review.

→ T-8849 Between Hydrographic stations Nos. 4957-59

→ T-8850 Between hydrographic stations Nos. 5027-34

→ T-8851 Southern shore of Moonbeam Bay

Head of estuary at 47° 55' 53"/118° 40' 44".

The maps meet the required accuracy with respect to shoreline, townsites, and near-shore highway delineation. Interior drainage and roads are well drawn in general, but are less accurate in minute detail.

Note to Drafting Section: The Reservation Boundary, and the boom for debris across Roosevelt Lake near the dam, have been left on the manuscript, but are not to be included on a re-drafted copy, in the first case, because of supplementary instructions; and in the second case, because the boom is not a stationery feature, but is anchored to buoys.

27 Geographic Names

A separate list for each map manuscript (compiled by the Geographic Names Section) is attached to this composite descriptive report.

43 Comparison with Previous Topographic and Contemporary Hydrographic Surveys

There are no previous surveys of the area of Ph-2(45) and the hydrographic survey is in progress.

44 Comparison with Existing Quadrangles

U.S.E.	Coulee City	1:125,000	1920
U.S.E.	Wilbur	1:125,000	1920
U.S.E.	Keller	1:125,000	1920

These are planimetric maps which show the land net, roads, railroads, drainage, county lines and settlement names.

Except for the land net and boundary lines, the present survey supersedes the quadrangles for their common areas. *for charting purposes.*

Reviewed by:

Lena T. Stevens
Lena T. Stevens
T-8849 29 Oct. 1948
T-8850 2 Nov. 1948
T-8851 15 Nov. 1948
T-8852 19 Nov. 1948

Approved by:

A. V. Griffith *14m.*
Chief, Review Section *K. P. M.*

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

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Chief, Division of Photogrammetry

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