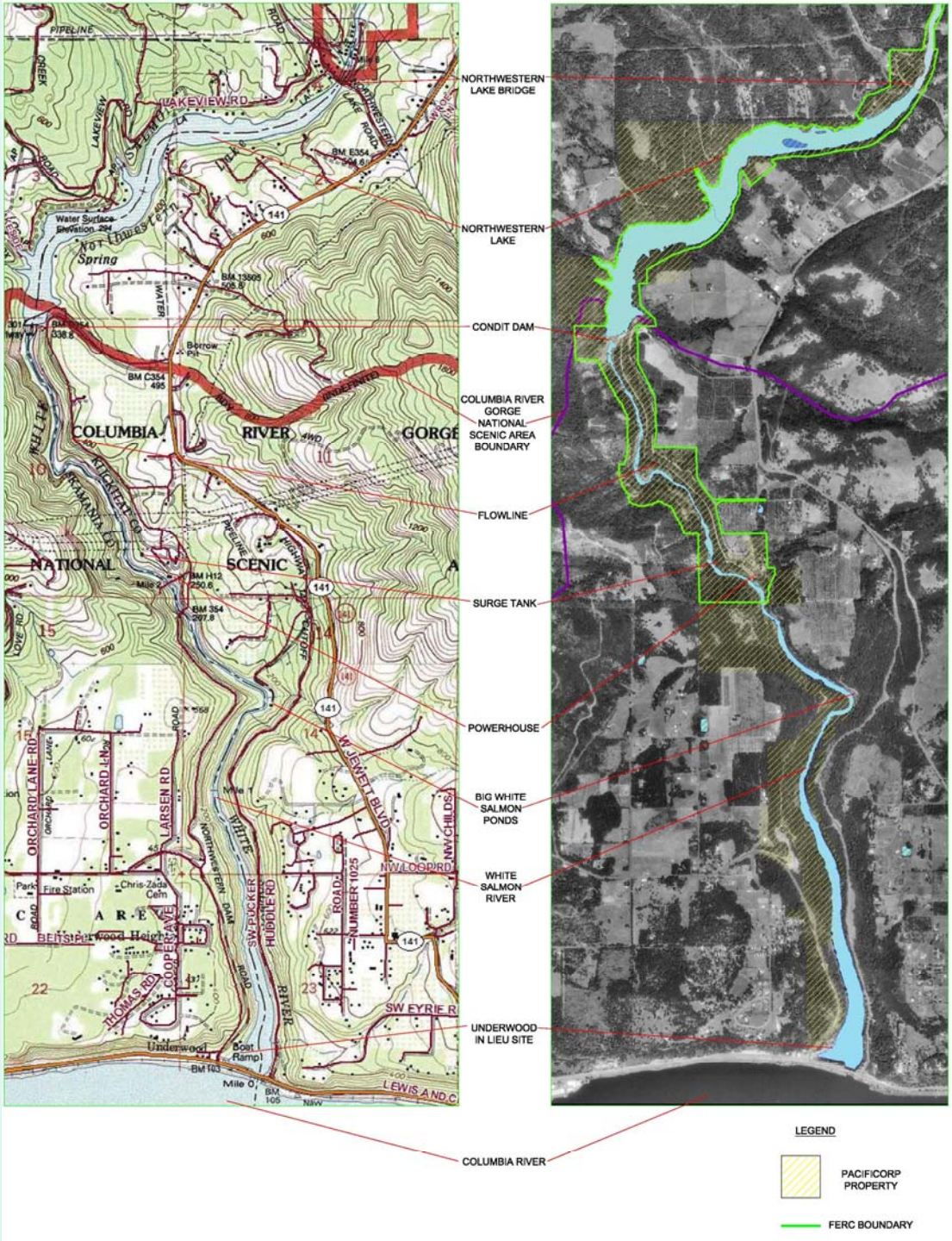
Condit Hydroelectric Project

Presentation for Klickitat & White Salmon Rivers Conference March 2009

Todd Olson
Hydro Program Manager - PacifiCorp



Project Location & Description

- White Salmon River in Klickitat and Skamania Counties in southern Washington
- Constructed in 1913
- 3.3 miles upstream from the confluence with the Columbia River
- Only man-made barrier between Mt. Adams and the Columbia River
- 14.7 megawatt facility – this would power 6,850 households on average
- Run-of-the-river project

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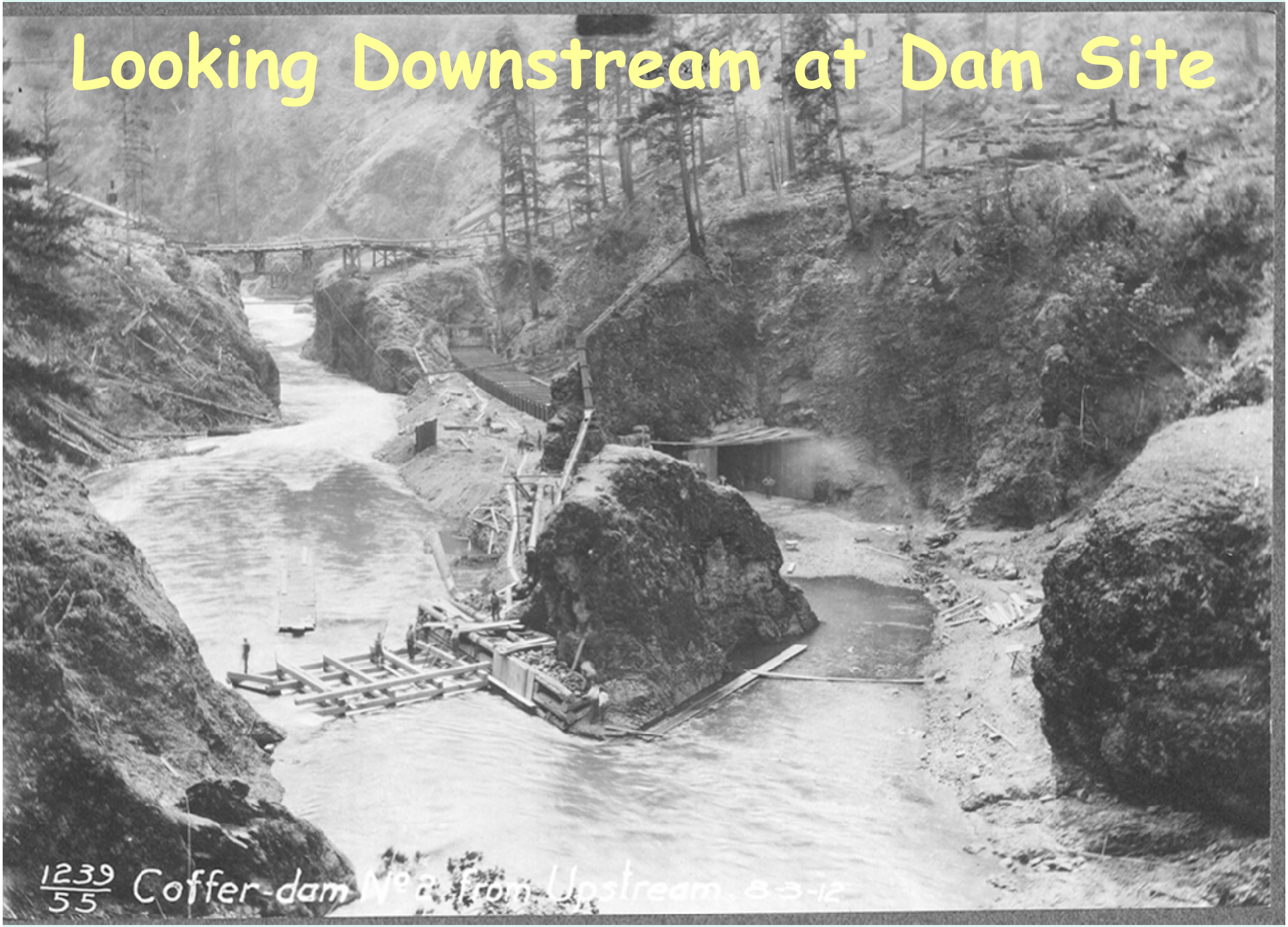
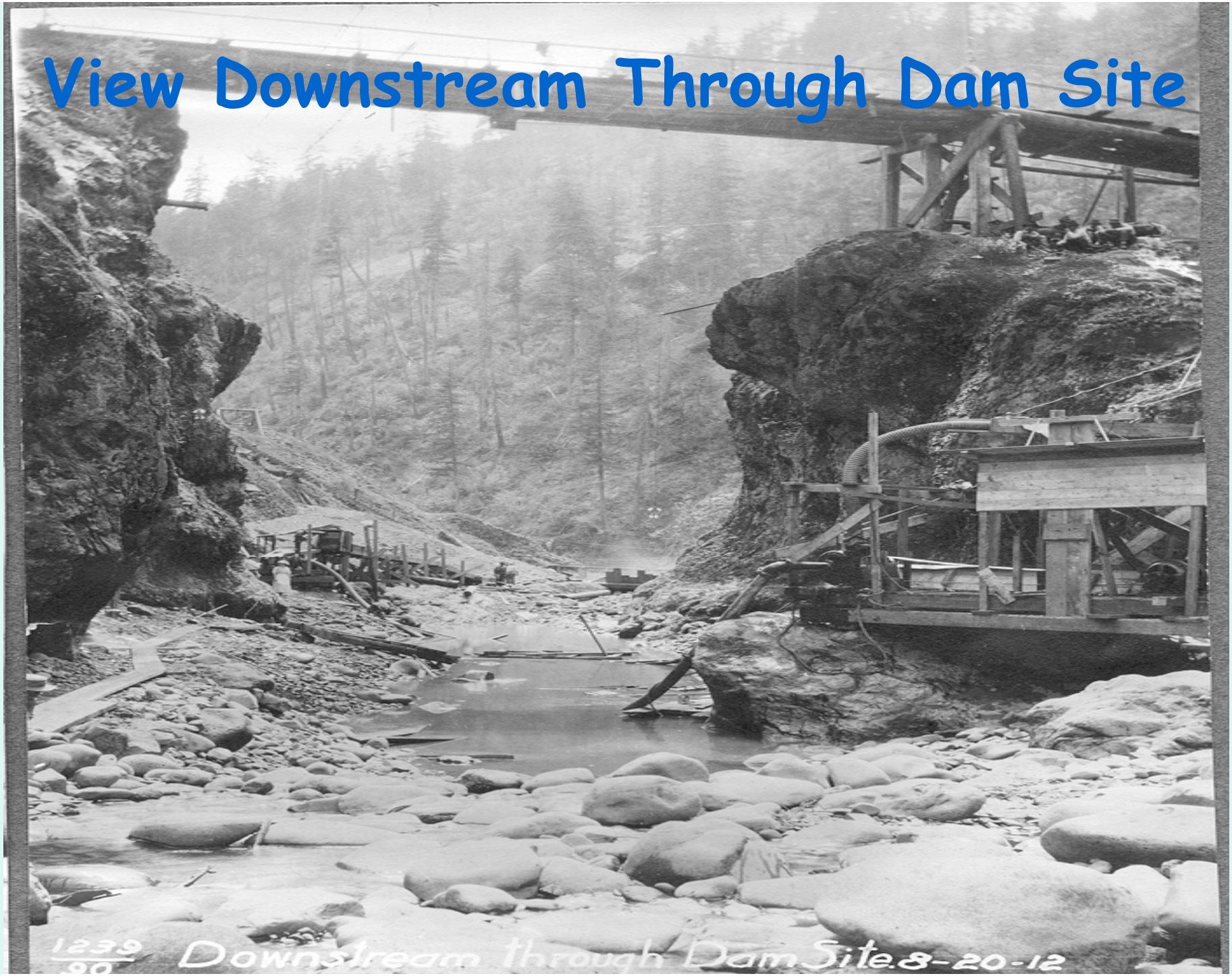
Looking Downstream at Dam Site

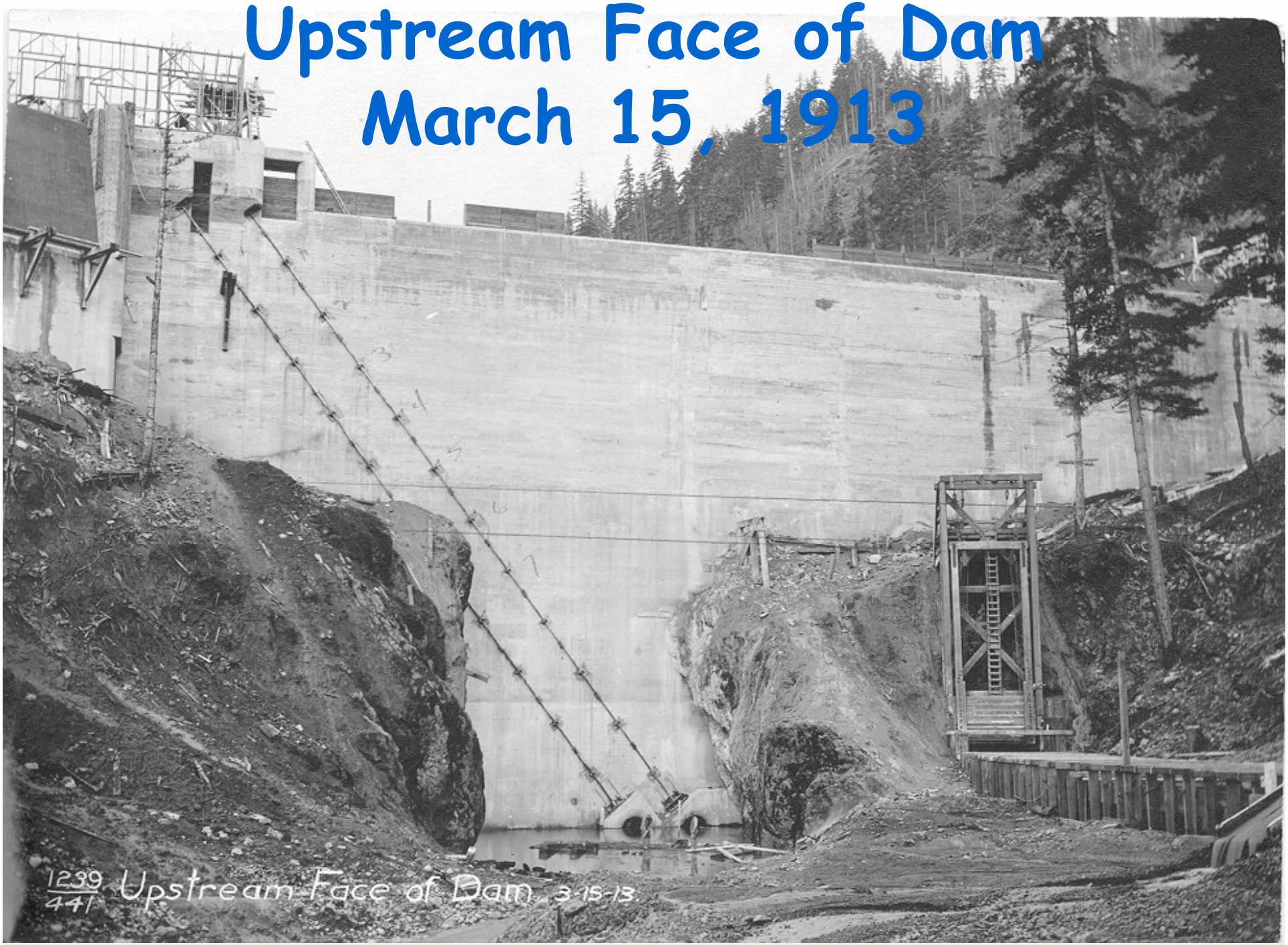


Construction Site Looking Upstream

View Downstream Through Dam Site



Upstream Face of Dam
March 15, 1913



1999 Settlement Agreement Parties and Components

PacifiCorp	National Marine Fisheries Service
American Rivers	Rivers Council of Washington
American Whitewater Affiliation	The Mountaineers
Columbia Gorge Audubon Society	The Sierra Club
Columbia Gorge Coalition	Trout Unlimited
Columbia River Intertribal Fish Commission	U. S. Department of the Interior
Columbia River United	U. S. Forest Service
Federation of Fly Fishers	Washington Department of Ecology
Friends of the Columbia Gorge	Washington Department of Fish and Wildlife
Friends of the Earth	Washington Trout
Friends of the White Salmon River	Washington Wilderness Coalition
	Yakama Nation

- PacifiCorp will complete actions to remove features of the project
- PacifiCorp's financial obligation towards removal is capped at $17,150,000 (1999 $; final $ will be escalated to account for inflation)
- $1,000,000 of cap shall go to the Yakama Nation for "enhancement, supplementation, and conservation of fishery resources"

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Remaining milestones and expected schedule

May 2009	**Department of Ecology issues Clean Water Act 401 Certificate**
June 2009	**USCOE issues 404 permit**
June 2009	**Potential for Challenges/Appeals**
Sept 2009	**FERC issues Surrender Order (absent any appeals)**
October 2010	**Decommissioning begins-Cease generation and drain reservoir**
June 2011	**Complete project demolition**
May 2016	**Complete post-monitoring**

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How will PacifiCorp remove the Condit Hydroelectric Project?

Condit Dam Removal Process

- Removal currently scheduled to begin in October 2010
- All project components (dam, flowline, penstocks, surge tank and cofferdams) will be removed with the exception of the powerhouse
- Reservoir will be drained in approximately six hours via a 12'x18' tunnel drilled through the base of the dam
- If possible and economical, removed material will be recycled on old flowline alignment
- Best management practices will be utilized throughout the entire dam removal and restoration processes
- Short-term impacts will be mitigated by the long-term benefits of dam removal

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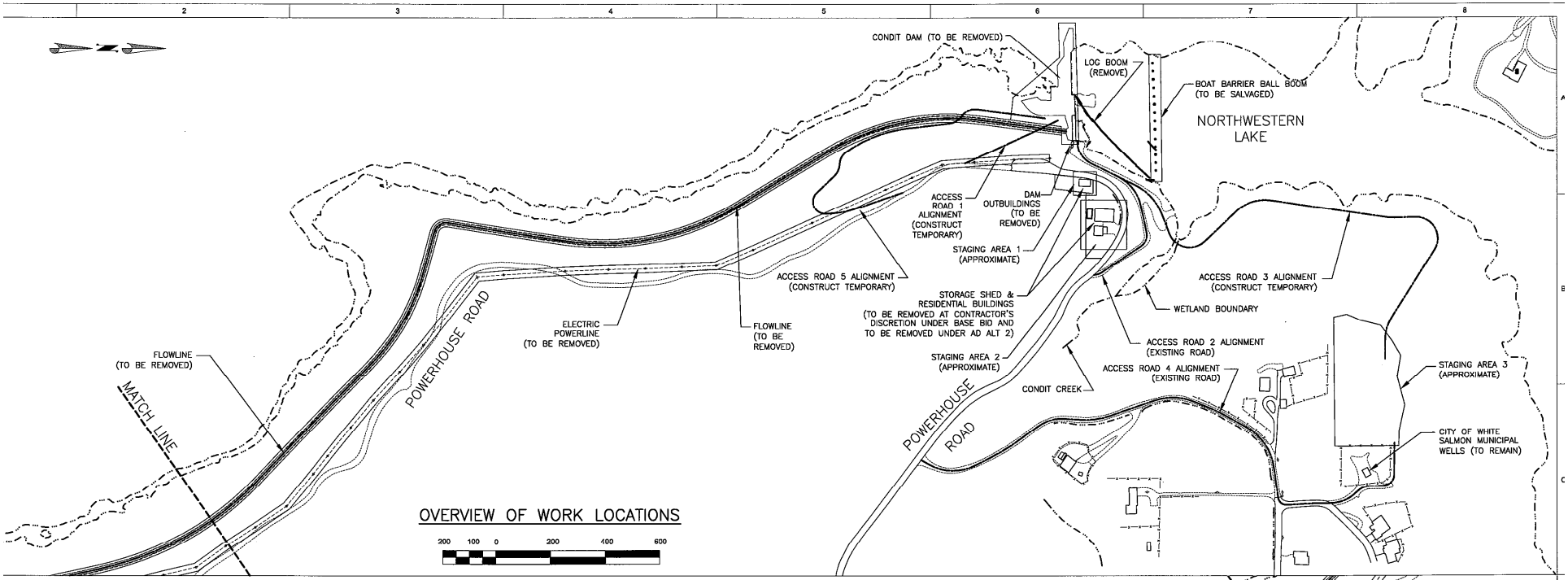
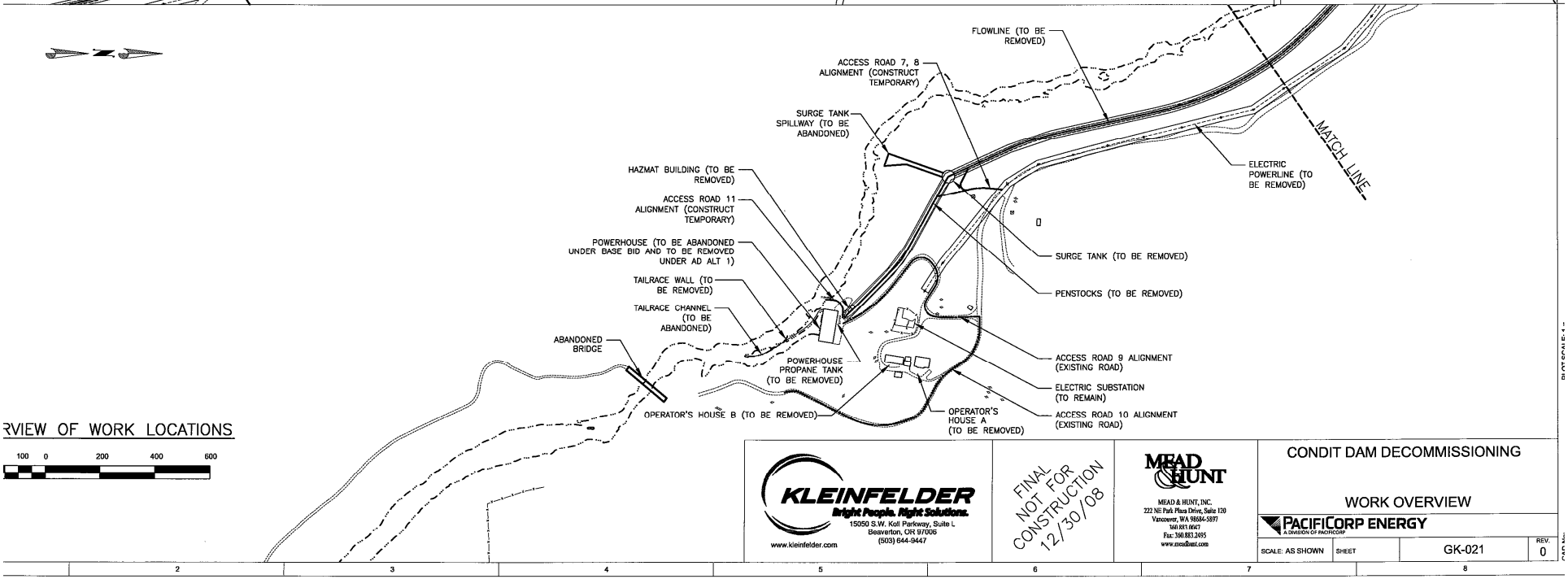


OVERVIEW OF WORK LOCATIONS

200 100 0 200 400 600



RVIEW OF WORK LOCATIONS

100 0 200 400 600

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CONDIT DAM DECOMMISSIONING

WORK OVERVIEW

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SCALE: AS SHOWN	SHEET	GK-021	REV. 0

Condit Dam Removal

Sediment and Woody Debris Removal

Tunnel

Flowline Removal

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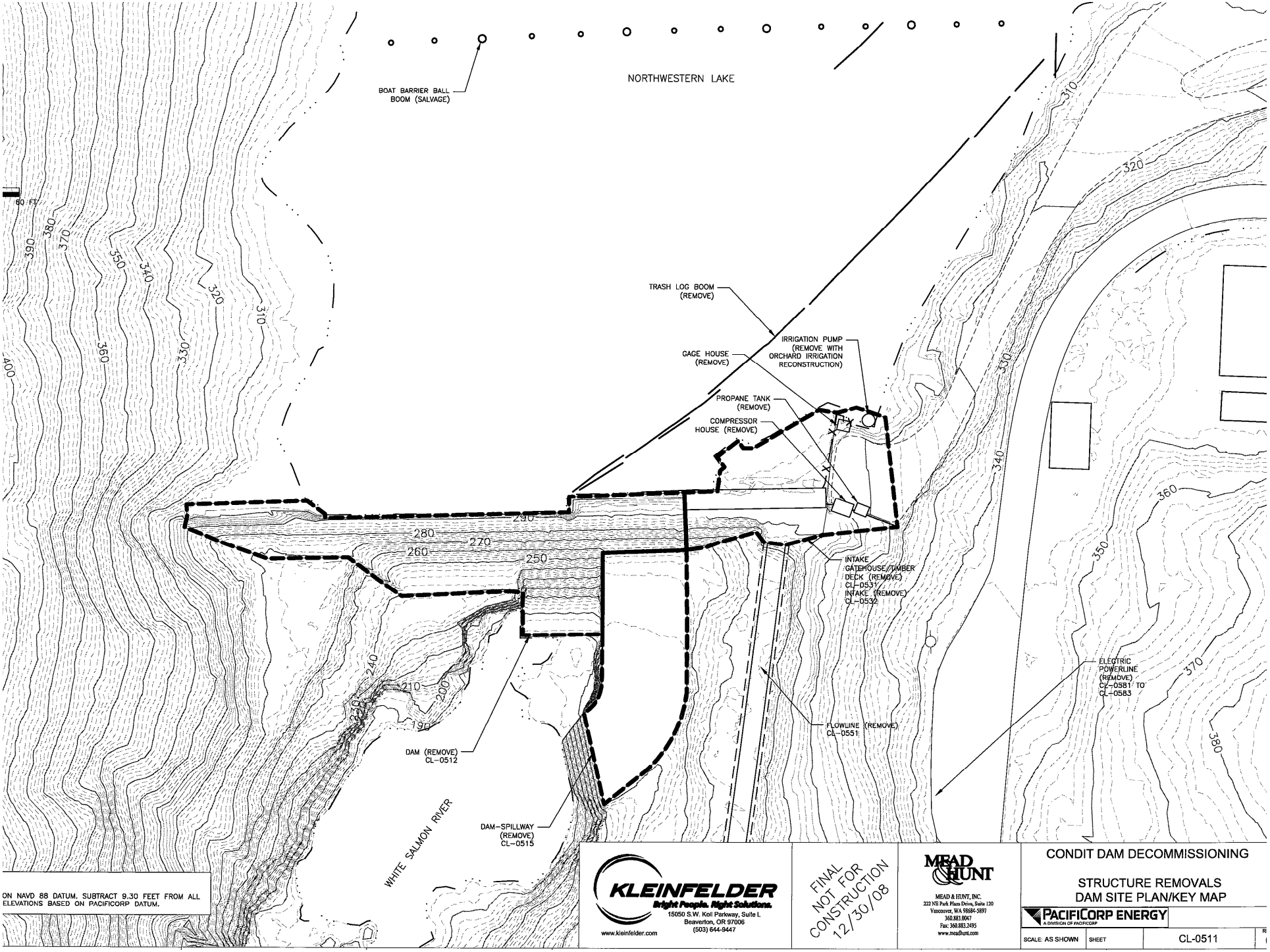
Approximate tunnel location and size



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STRUCTURE REMOVALS
DAM SITE PLAN/KEY MAP

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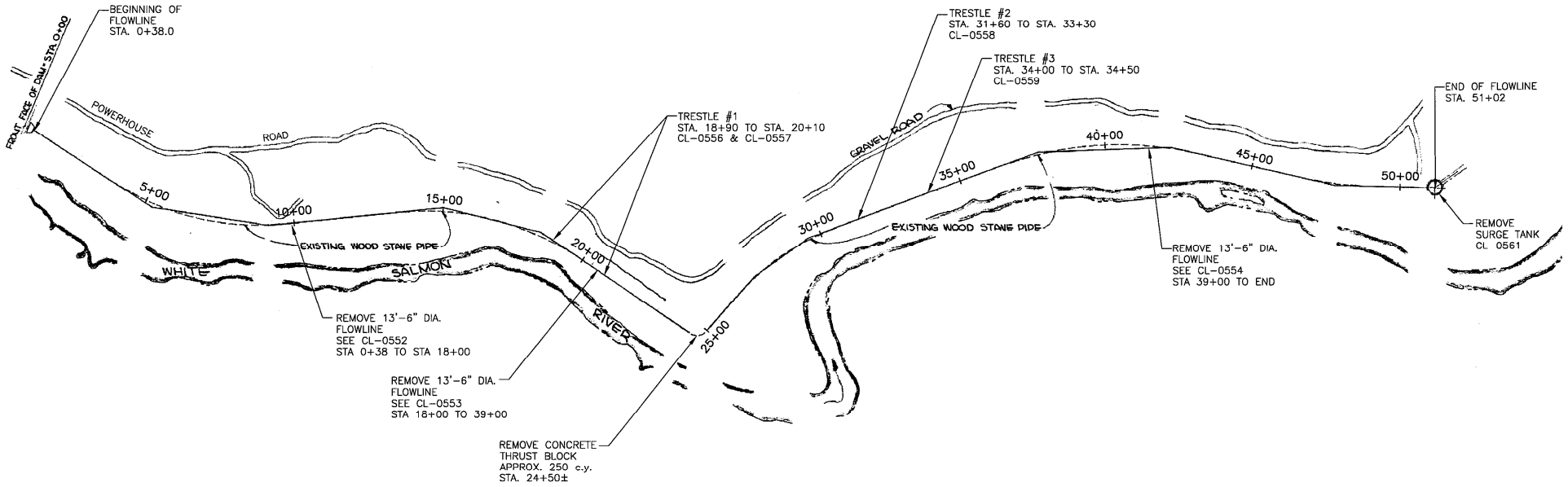
SCALE: AS SHOWN	SHEET	CL-0511



FLOWLINE GENERAL KEY PLAN

0 200 400 600 800 1000 1200 FT

GENERAL NOTES:

1. ALL ELEVATIONS SHOWN ARE FROM PACIFICORP DATUM ELEVATION OF 295.0. ADD 9.30 FEET TO ALL ELEVATIONS SHOWN TO CONVERT TO ELEVATIONS BASED ON NAVD 88 DATUM. SEE BENCHMARK LOCATION ON SHEET CL-0512.
2. DUE TO LIMITATIONS OF THE ORIGINAL DRAWINGS, SCALES SHOWN ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED WHEN MORE DETAILED ACCURACY IS REQUIRED. SPECIFIC DIMENSIONS AND ELEVATIONS NOTED ON THE DRAWINGS SHOULD TAKE PRIORITY OVER THE SCALE SHOWN.

NOTES:

1. TOTAL LENGTH OF 13'-6" DIA. TIMBER STAVE FLOWLINE ≈ 5100'.

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STRUCTURE REMOVALS
FLOWLINE GENERAL KEY PLAN

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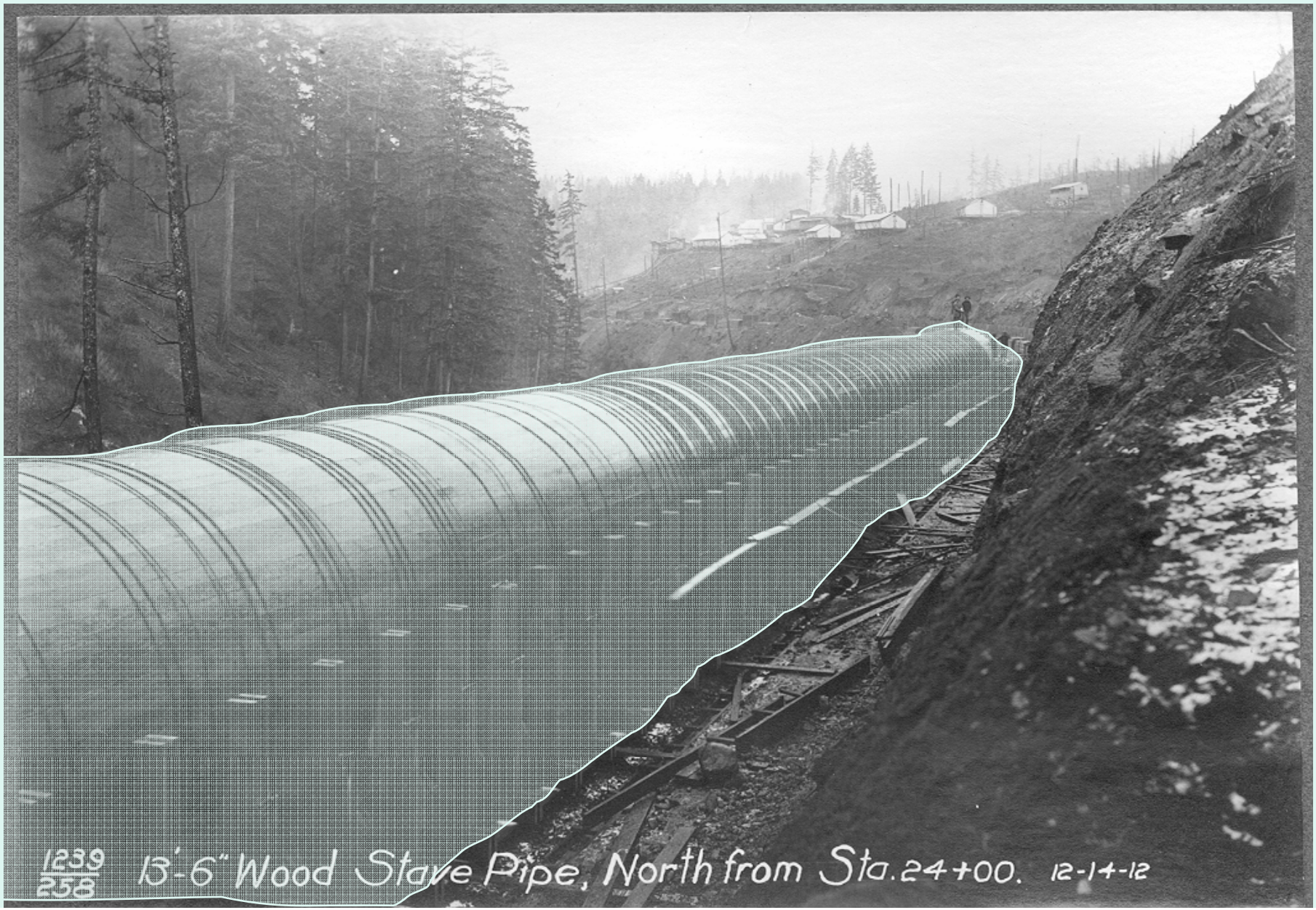
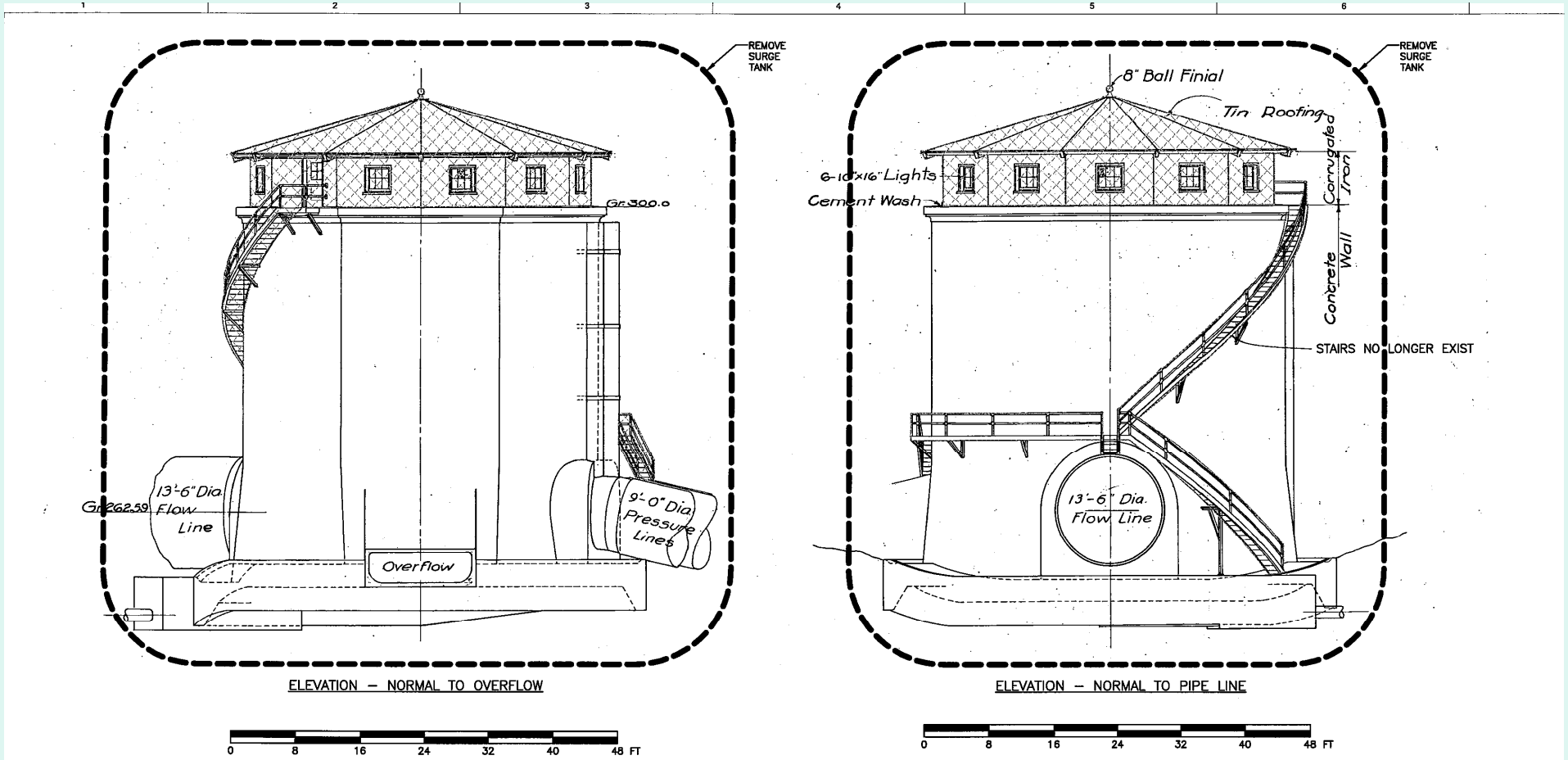
SCALE: AS SHOWN	SHEET	CL-0551	REV. 0

Flowline Removal and Regrade



Surge Tank



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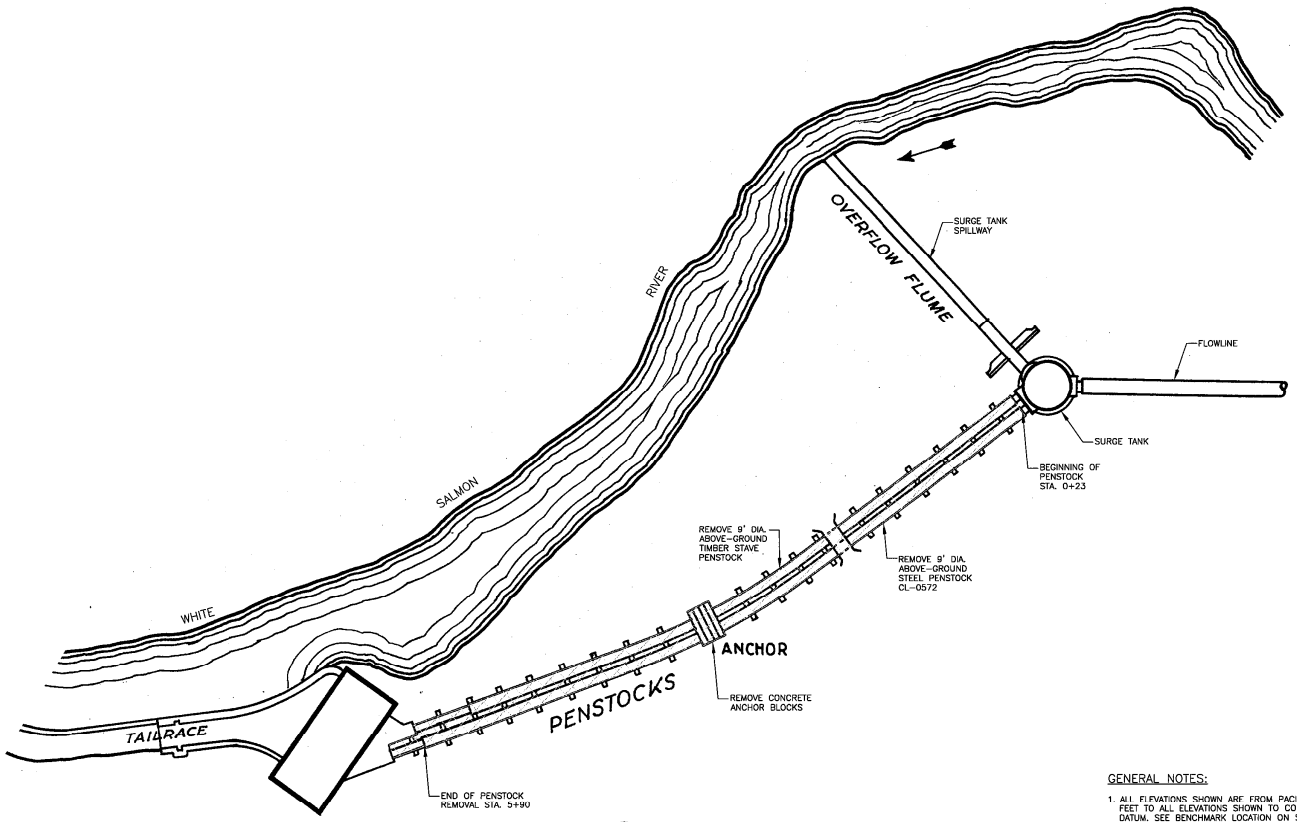
Penstocks, Surge Tank, Powerhouse



PENSTOCK GENERAL KEY PLAN

0 50FT 100FT

GENERAL NOTES:

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NOTE:

1. TOTAL LENGTH OF EACH PENSTOCK (9' DIA. STEEL, 9' DIA. TIMBER STAVE) ≈ 600'.

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CONDIT DAM DECOMMISSIONING

PENSTOCKS GENERAL KEY PLAN

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SCALE: AS SHOWN | SHEET | CL-0571 | REV. 0

REVISION | No. | DATE | BY | CHK | APP

REFERENCE DRAWINGS | DRAWING No.

APPROVAL

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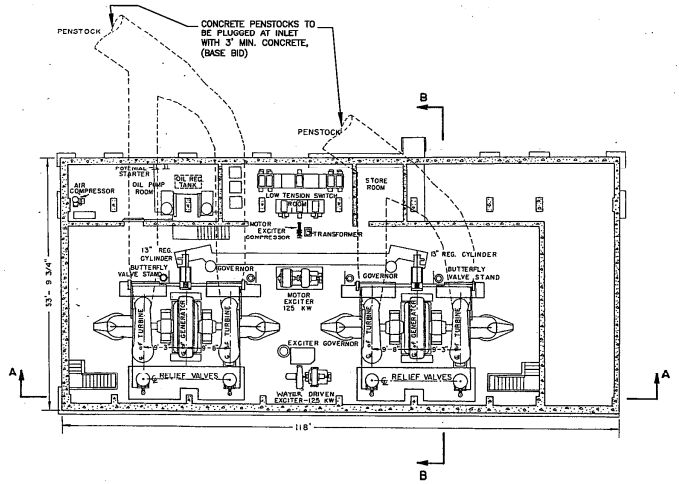
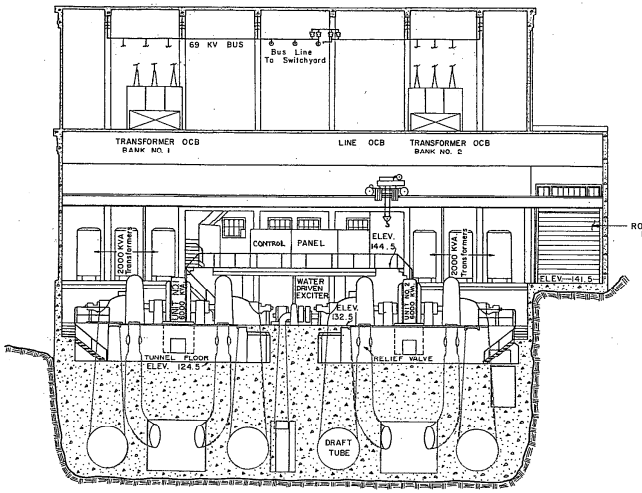
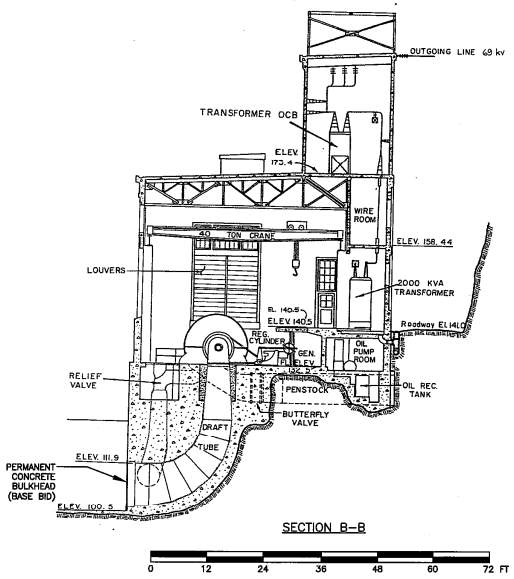
Powerhouse Modifications







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NOTES:

1. TAILRACE CHANNEL ON DOWNSTREAM SIDE OF POWERHOUSE TO BE FILLED TO EL. 119.0+/-. MAXIMUM WATER SURFACE ELEVATION SHALL BE ASSUMED TO BE 132.5.
2. ABANDON POWERHOUSE AS INDICATED UNDER BASE BID. ANY MODIFICATIONS TO EQUIPMENT OR BUILDING MECHANICAL AND ELECTRICAL SYSTEMS BY OTHERS. REMOVE POWERHOUSE UNDER AD ALT 1.

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STRUCTURE REMOVALS
POWERHOUSE MODIFICATIONS

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SCALE: AS SHOWN | SHEET | CL-0591 | REV 0

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DES
JJS
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PLOT SCALE: 1 =

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Removal Effects & Mitigation

- 2.3 million cubic yards of sediment have accumulated behind the dam since 1913
- Based on model studies, the majority of the sediment will be transported downstream the first year
- Assessment of remaining sediment to be conducted immediately after the reservoir is drained and winter flows have subsided
- Sediment slope stabilization an important step in "jump starting" area restoration

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Site Restoration

- Revegetation is anticipated in the first growing season following removal using native seed stock
- A number of plans are in preparation to restore the project area following removal. Some of them are:
  - Erosion Control Plan
  - Revegetation and Wetlands Management Plan
  - Sediment Assessment, Stabilization, and Management Plan
  - Woody Debris Management Plan
  - Aquatic Resources Protection Plan
- Approximately 15 miles of new habitat will be opened to salmon, steelhead, and bull trout

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Sediment Assessment, Stabilization, and Management Plan

- Management of sediment that is retained within the reservoir area after the dam is breached
- Provides specific criteria for:
  - identifying areas that need additional sediment management efforts
  - what approaches could be used to re-contour slopes
  - criteria that will be used to determine when slopes are stable and available for revegetation
  - how conditions will be monitored
- Active sediment management measures such as hydraulic excavation using river water to stabilize and mobilize sediment within the reservoir area

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Revegetation and Wetlands Management Plan

- Revegetative strategy will eventually establish wetland, riparian, and upland forest habitats within the former reservoir area and areas disturbed during decommissioning
- Includes specific planting approaches for herbaceous and woody revegetation after the reservoir sediment is re-contoured to create stable slopes
- Revegetation monitoring to ensure an appropriate level of success
- Identifies potential wetland areas that will be monitored after the reservoir is drained to assess wetland establishment
- Goal of no net-loss of wetland areas
- Contingency actions if post-removal wetland establishment goals are not attained
- Noxious weed control during and after revegetation activities

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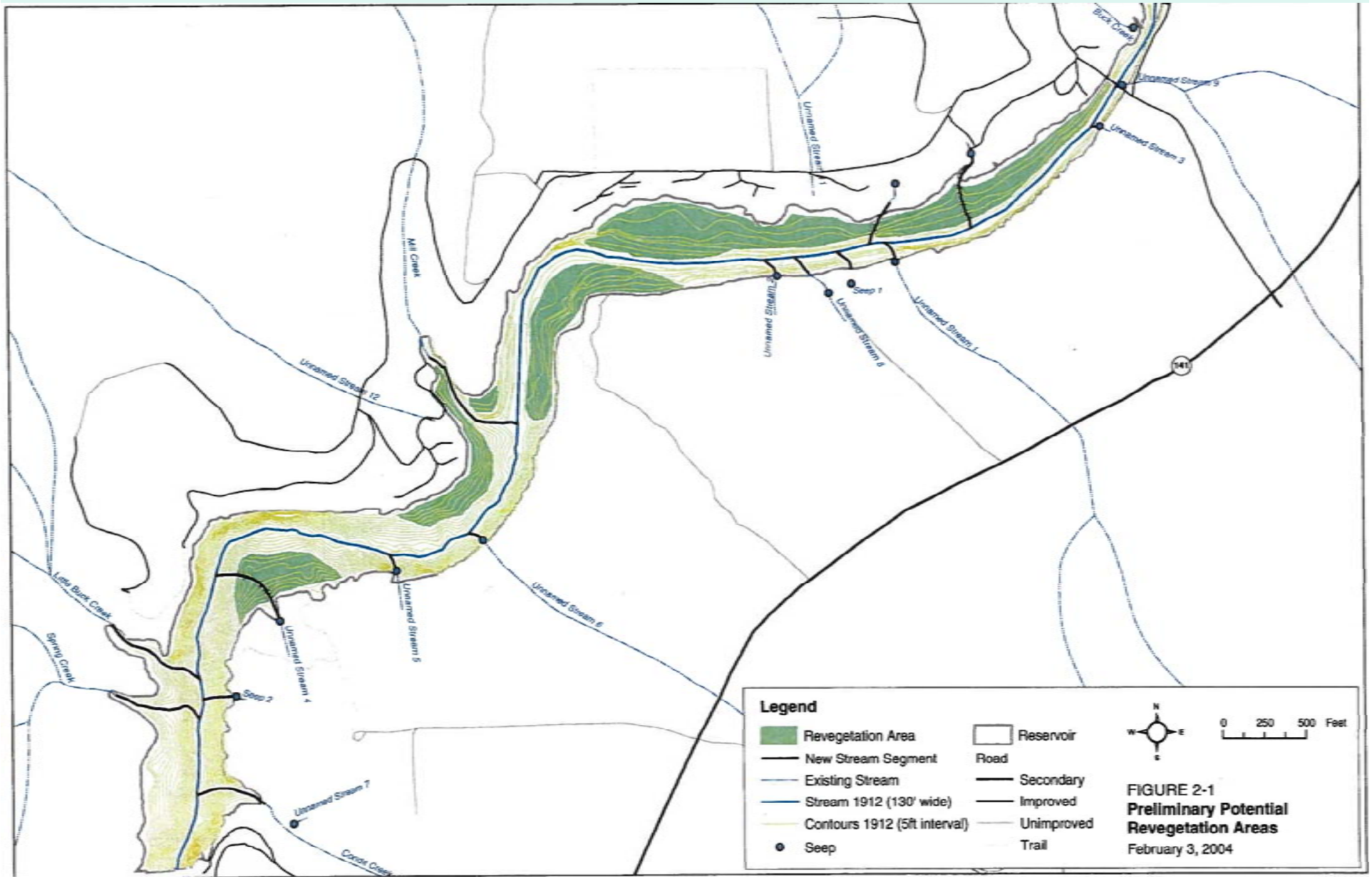
Potential Revegetation Areas



Woody Debris Management Plan

- Addresses woody debris that will be exposed after the reservoir is drained and stored sediment is eroded
- Provides guidance to evaluate when coarse woody debris may impede sediment flow, restrict fish passage, or present a public safety concern
- Specifies how woody debris conditions will be monitored
- Establishes criteria for determining whether woody debris is of sufficient quality that it should be made available for stream restoration work.

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Aquatic Resources Protection Plan and Spring Creek National Fish Hatchery Protection Plan

- Addresses impacts to aquatic resources within White Salmon River that will be affected by project removal and impacts to fish hatchery facilities in the local area
- Describes potential impacts and the measures to address those impacts

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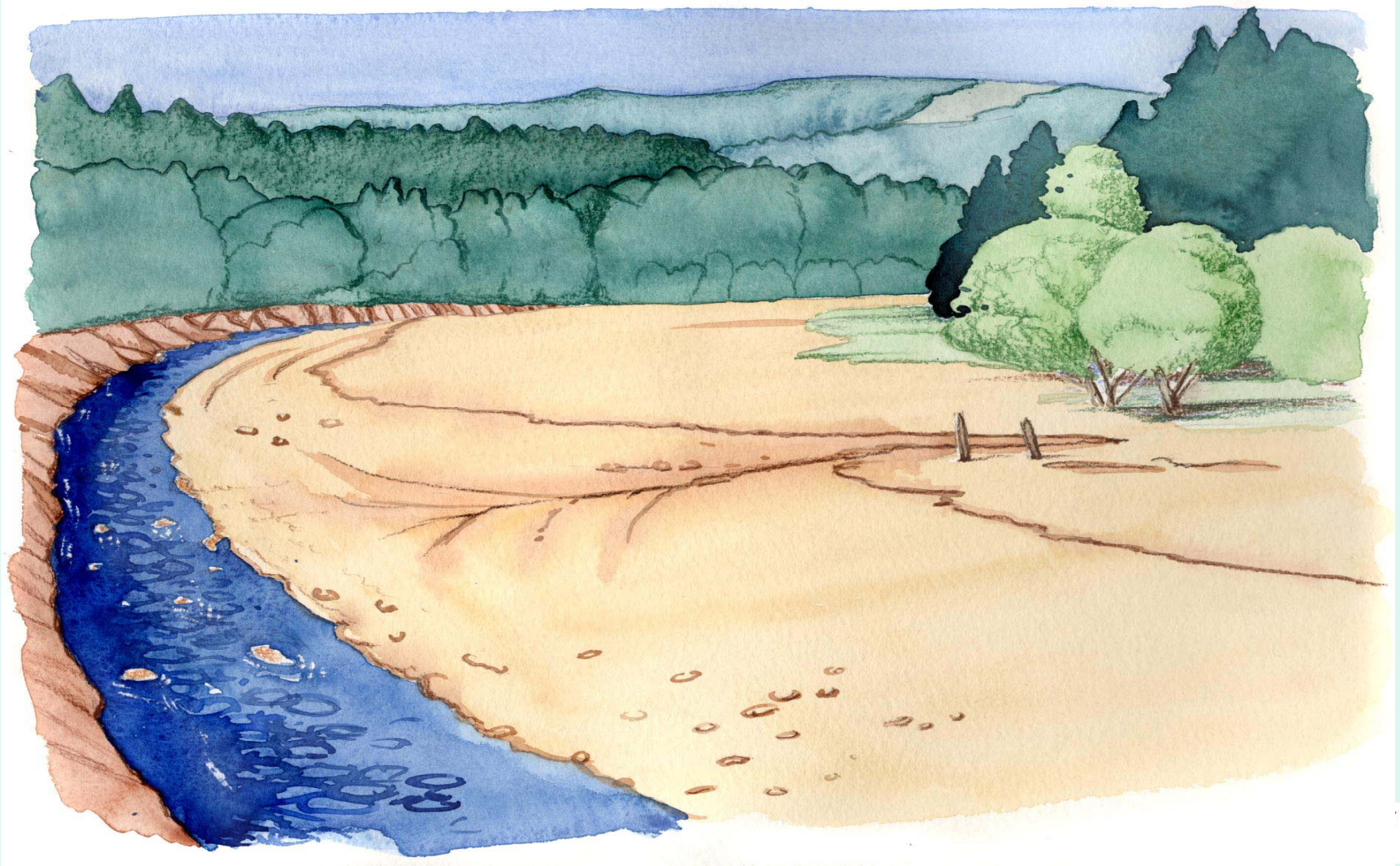
Post-removal landscape



Restored reservoir area

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