

Condit Hydroelectric Project Decommissioning FERC Project No. 2342

EROSION CONTROL PLAN



Prepared by



Prepared for



March 15, 2011

TABLE OF CONTENTS

1 INTRODUCTION.....	1
1.1 PROJECT DESCRIPTION	1
1.2 BACKGROUND	1
1.3 PROJECT REMOVAL DESCRIPTION	3
1.4 MANAGEMENT PLAN BACKGROUND	4
1.5 REGULATORY AND OTHER REQUIREMENTS.....	5
1.5.1 Clean Water Act Section 401 Certification	7
1.5.2 Clean Water Act Section 404 Permit.....	7
1.5.3 Federal Energy Regulatory Commission Surrender Order	7
1.5.4 National Oceanic Atmospheric Administration - NMFS Biological Opinion.....	7
1.6 PLAN OBJECTIVES	7
1.7 RELATIONSHIP WITH OTHER MANAGEMENT PLANS	8
1.7.1 Sediment Assessment, Stabilization, and Management Plan.....	8
1.7.2 Revegetation and Wetlands Management Plan.....	8
2 IDENTIFICATION OF TREATMENT AREAS	10
2.1 SUBJECT AREAS	10
2.2 AREAS IDENTIFIED FOR BMP INSTALLATION	11
3 APPLICATION OF BEST MANAGEMENT PRACTICES	17
4 SCHEDULES	19
4.1 TIMETABLE AND SCHEDULE FOR IMPLEMENTING THE EROSION CONTROL PLAN	19
4.2 INSPECTION AND MONITORING.....	19
5 REFERENCES.....	20

FIGURES:

Figure 1-1 Site Location Map	2
------------------------------------	---

TABLES:

Table 2-1 Planned Best Management Practices by Construction Activity	11
Table 2-2 Locations for Proposed BMP Installations.....	12

APPENDICES:

- A. Erosion Control Plan View and Erosion Control Details with Access Road 14 Location

1 INTRODUCTION

1.1 PROJECT DESCRIPTION

PacifiCorp Energy owns and operates the Condit Hydroelectric Project, which was completed in 1913 on the White Salmon River in Skamania County and Klickitat County, Washington. The project is regulated by the Federal Energy Regulatory Commission (FERC) as project number 2342. The project is located approximately 3.3-miles upstream from the confluence of the White Salmon and Columbia Rivers. Project facilities consist of a 125-foot high, 471-foot long concrete gravity diversion dam, an intake structure that directs water into a 13.5-foot diameter by 5,100-foot long wood stave flowline, and through a 40-foot diameter concrete surge tank. The flowline bifurcates inside the surge tank into two 9-foot diameter penstocks that supply water to the powerhouse. The powerhouse contains two double horizontal Francis turbines with an installed capacity of 14,700 kilowatts. The project creates a reservoir, Northwestern Lake, which extends 1.8-miles upstream of the dam and covers approximately 92 acres. The project area is shown in Figure 1-1.

1.2 BACKGROUND

In 1968, a new license was issued by the Federal Energy Regulatory Commission for a 25-year term, which expired on December 31, 1993. In 1991, PacifiCorp Energy filed an application with the FERC for a new license authorizing the continued operation and maintenance of the project. PacifiCorp Energy has since been operating the project pursuant to annual licenses, pending determination by the FERC on the status of PacifiCorp Energy's new license issuance. In 1996, the FERC issued a Final Environmental Impact Statement (FEIS) that analyzed the environmental and economic effects of various relicensing alternatives for the project. The FEIS included a recommendation to approve licensing with mandatory conditions, including provisions for establishing fish passage facilities at the project.

PacifiCorp Energy evaluated the economic impacts of the FERC recommendations contained within the FEIS and determined that the mandatory conditions would render the project uneconomic to operate. In 1997, PacifiCorp Energy requested a temporary abeyance of the relicensing procedure in order to investigate the feasibility of various removal alternatives in collaboration with project stakeholders. PacifiCorp Energy and project stakeholders then commissioned the consulting firm of R.W. Beck, Incorporated, to evaluate removal alternatives. In 1998, R.W. Beck, Incorporated, prepared a summary report of project removal engineering considerations that identified the preferred method and schedule for project removal as well as the expected costs and associated environmental and permit issues. In 1999, the Condit Settlement Agreement was signed by PacifiCorp Energy and project stakeholders. The settlement agreement provides for project removal upon the expiration of an extended license term in accordance with the preferred method identified in the R.W. Beck, Incorporated, summary report. The settlement agreement was amended in 2005 to extend the dates for project removal.

In 2002, the FERC prepared a Final Supplemental FEIS addressing project removal, which updated the 1996 FEIS and assessed the effects associated with approval and implementation of the Condit Settlement Agreement. In March 2007, the Washington Department of Ecology

(Ecology) issued the Final SEPA Supplemental Environmental Impact Statement (FSEIS) for the project.



In September 2002, the U.S. Fish and Wildlife Service issued a Biological Opinion finding no jeopardy to bull trout for ongoing project operations and implementation of the Condit Settlement Agreement. In October 2006, the National Marine Fisheries Services issued a Biological Opinion finding that the proposed dam removal action is not likely to jeopardize the continued existence of salmon and steelhead or destroy or adversely modify designated critical habitat.

1.3 PROJECT REMOVAL DESCRIPTION

PacifiCorp Energy proposes to remove the project in accordance with the amended Condit Settlement Agreement and the Project Removal Design Report. Prior to removing the dam, the City of White Salmon's water supply line that crosses the reservoir needs to be relocated and potential impacts to the Northwestern Lake Bridge which is owned by Klickitat County and is at the upper end of the reservoir need to be addressed.

The proposed method for dam removal involves clearing sediment and debris immediately upstream from the tunnel and then drilling and blasting a 12-foot by 18-foot drain tunnel in the base of the dam to within a few feet of the dam's face. During the month of October, sediment and debris immediately upstream from the dam will be cleared to form a pathway and then the remainder of the tunnel will be blasted to drain the reservoir and flush impounded sediments out of the reservoir as rapidly as possible. Following the final tunnel blast, the drain tunnel will discharge at a rate of 10,000 cubic feet-per-second – approximately 25 percent of the estimated peak discharge during the February 1996 flood event on the White Salmon River. This will drain the reservoir in approximately six hours. Rapid draining of the reservoir is expected to mobilize much of the estimated 2.3-million cubic yards of sediment that have accumulated behind the dam since its construction. Previous modeling has indicated that between 1.6 million to 2.2-million cubic yards of sediment will be discharged into the White Salmon River immediately following dam removal and over a number of years as successive high flow events mobilize overbank sediments.

Once the reservoir is drained, the dam will then be excavated and removed along with the flowline, surge tank, and penstocks. Concrete from the dam will either be buried onsite or removed from the site for recycling or disposal. The powerhouse will be left intact. The upstream cofferdam in the White Salmon River present from original dam construction will be removed from the river as soon as practicable after the breach. PacifiCorp Energy expects to complete the dam removal process within one year.

Following project removal, the irrigation water supply intake for the Mount Adams Orchard to the east of the dam will be reconfigured to accommodate a new intake.

Removal of Condit dam is expected to provide the following benefits:

- Anadromous salmonids will be provided access of up to 18 miles of White Salmon River mainstem and tributary habitats that have been inaccessible since the early 1900s. Restoration of natural runs of anadromous fish upstream of the project dam is consistent with the fishery management goals of the National Marine Fisheries

Service (NMFS), U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, and the Yakama Nation.

- Dam removal offers the greatest potential for full utilization of anadromous fish habitat, including habitat inundated by Northwestern Lake, and therefore, full restoration of anadromous salmonids within the White Salmon River basin.
- Dam removal will benefit wildlife dependent upon anadromous fish in the area of the river reach upstream of river mile (RM) 3.3.
- Dam removal will provide increased whitewater recreation opportunities. Whitewater recreation is an important and popular use of the White Salmon River and provides income for the local area.

1.4 MANAGEMENT PLAN BACKGROUND

Removal of Condit dam will require a large construction operation. This Erosion Control Plan (Plan) outlines the Best Management Practices (BMPs) to be utilized during decommissioning to minimize the impacts of construction activities on the site and limit unnecessary sediment and soil erosion from construction activities outside the reservoir sediment management area. The activities covered by this Plan will be for all construction activities involved in the removal of the dam, its appurtenances, and the mitigation of impacted infrastructure. This Plan does not cover the reservoir sediment management area, where active erosion of reservoir sediments may be necessary and desirable. The management of the reservoir sediment management area is detailed in the Sediment Assessment, Stabilization, and Management Plan.

The activities related to the dam decommissioning outside of the dam and reservoir sediment management area covered by this Plan include:

- Construction staging area development
- Construction of temporary and permanent access roads
- Development and maintenance of the concrete disposal area
- Flowline and surge tank removal
- Areas of concrete entombment
- Installation of a new water line for the City of White Salmon
- Construction of the drain tunnel through the base of the dam
- Replacement of the Mt. Adams Orchard irrigation intake and supply piping
- Protection of Northwestern Lake Bridge

During the decommissioning process there will be areas that are currently in a natural state or are within the watershed of the White Salmon River that will not be impacted by the decommissioning process. These areas include the forested areas along the present Northwestern Lake shore area and the forested areas above and below the flowline. Through these areas flow small intermittent or ephemeral streams that drain into the White Salmon River. The erosion control methods outlined in this Plan and detailed on the accompanying plan sheets in Appendix B are primarily designed to protect these natural areas and water features.

1.5 REGULATORY AND OTHER REQUIREMENTS

This plan addresses a number of regulatory and other requirements that have identified the need for measures to mitigate potential impacts associated with erosion that may result from dam removal construction activities. These requirements are outlined below.

At this time, several regulatory programs and permits exist that either directly or indirectly require construction project proponents to manage stormwater discharges into the waters of the State of Washington. Construction activities are regulated to ensure that they have no deleterious effects on stormwater or cause unplanned sediment pulses into the hydrological system. The following are the pertinent regulations and required permits that address erosion control for construction activities in the State of Washington.

The State of Washington Department of Ecology (Ecology) is the authority governing stormwater discharges. The Federal Clean Water Act, the Federal Safe Drinking Water Act, and the State Water Pollution Control Act (Revised Code of Washington 90.48) are the primary federal and state regulations that directly apply to management of stormwater discharges.

Construction Stormwater General Permit - Operators of construction activities are required to seek coverage under the Construction Stormwater General Permit if the activity results in the disturbance of one acre or greater (including clearing, grading, and excavation activities) and also has a discharge of stormwater to a surface water and/or to a storm drain used to convey water to a surface water. The Construction Stormwater General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). An approved SWPPP meets the requirements of the federal and state regulations governing the management of stormwater.

The Stormwater Pollution Prevention Plan (SWPPP) - The SWPPP must detail the various best management practices (BMPs) that will be used during construction to prevent erosion and the release of sedimentation that could impact downstream water quality. This Erosion Control Plan meets the requirements of the SWPPP. The Best Management Practices identified in this plan were selected and designed utilizing the presumptive approach in the Stormwater Management Manual for Eastern Washington.

The following are required in order to meet the Ecology's Construction Stormwater General Permit requirements:

- ◆ Apply for coverage
- ◆ Develop and use a stormwater pollution prevention plan
- ◆ Pay permit fees
- ◆ Monitor stormwater and inspect best management practices
- ◆ Record and report results
- ◆ Terminate the permit

The following steps are necessary in order to apply for permit coverage under the 2005 Construction Stormwater General Permit

- ◆ Submit a completed Notice of Intent (NOI) Application– The NOI is the official permit application. It must be submitted prior to the first public notice and at least **60 days prior to discharging stormwater**. It is not required that a copy of the SWPPP be submitted with the NOI, however the SWPPP must be completed prior to the start of construction.
- ◆ In order to obtain a permit, it is required that two public notices be published in a newspaper that has a general circulation in the county where the construction will take place. Unless otherwise notified by Ecology, permit coverage begins 31 days after the second notice is published.
- ◆ Develop and utilize a Stormwater Pollution Prevention Plan. The critical component of the SWPPP the design, installation, and maintenance of the best management practices necessary to control runoff from the construction site. The SWPPP must be completed and installed prior to construction and it must be kept onsite.
- ◆ The SWPPP must contain the following elements:
 - Preserve natural vegetation and mark clearing limits
 - Establish construction access
 - Control stormwater runoff from the site
 - Install sediment controls
 - Stabilize bare soil
 - Protect slopes
 - Protect drain inlets
 - Stabilize channels and outlets
 - Control pollutants
 - Control de-watering
 - Maintain the installed best management practices
 - Oversee and manage the SWPPP
- ◆ Pay appropriate fees

- ◆ Monitor stormwater and actively inspect. On sites five acres or more in size water sampling with a turbidity meter and pH sampling are required.
- ◆ Monthly reports to the State of Washington Department of Ecology may be required as a condition of the permit. Records must be kept for a period of three years.
- ◆ The permit can be terminated when all soils within the project are stabilized with permanent vegetative cover. A Notice of Termination must be filed.

1.5.1 Clean Water Act Section 401 Certification

Washington Department of Ecology issued the 401 Water Quality Certification on October 12, 2010.

1.5.2 Clean Water Act Section 404 Permit

The Section 404 Permit is pending as of the date of this plan.

1.5.3 Federal Energy Regulatory Commission Surrender Order

On December 16, 2010, the FERC issued an Order Accepting Surrender of License, Authorizing Removal of Project Facilities, and Dismissing Application for New License. On January 14, 2011, PacifiCorp Energy filed a Request for Clarification and Rehearing and Motion for Stay to the Commission. As of the date of this plan, FERC has yet to issue a final order on this matter.

1.5.4 National Oceanic Atmospheric Administration - NMFS Biological Opinion

The Biological Opinion issued by the National Marine Fisheries Service in 2006 relies, in part, on PacifiCorp Energy's implementation of standard erosion control best management practices to minimize the amount of sediment that enters the river downstream of the dam. Thus, this Plan and its execution assures conformance of project actions with the Biological Opinion.

1.6 PLAN OBJECTIVES

The objectives of the Erosion Control Plan are to assure compliance with the State of Washington's stormwater ordinances and to limit the unnecessary input of sediment delivery into the White Salmon River prior to the breaching event. After the breaching, when the sediments currently trapped behind the dam are released into the White Salmon River, the objective of this Plan will be to limit impacts to those wetland and upland areas which are then in a stable and undisturbed state.

The Erosion Control Plan meets the following objectives:

- Pre-construction Assessment – Identification of critical vegetative and hydrological landscape features is shown on the plan view sheets in Appendix B.
- Soil Protection – During the rainy season bare soil will not be left exposed. As work is completed or temporary roads and staging areas decommissioned they will be stabilized.

- Construction Impacts – All construction work will be conducted to avoid impacts to hydrological features outside the reservoir area.
- Minimizing Disturbance – Construction work, road building, and staging area development will be laid out so as to minimize disturbance by avoiding the steepest grades and unnecessary clearing of vegetation. Areas of critical concern are identified on the site plans in Appendix B.

1.7 RELATIONSHIP WITH OTHER MANAGEMENT PLANS

Many of the measures recommended in this plan have effects and objectives that are related to other project management plans including the Sediment Assessment, Stabilization, and Management Plan and the Revegetation and Wetlands Management Plan. The relationship of this plan with the management measures referenced in these other plans is described below.

1.7.1 Sediment Assessment, Stabilization, and Management Plan

The Sediment Assessment, Stabilization, and Management Plan provides guidance for the management and stabilization of the sediments that will remain in the bed of the former reservoir following project removal. A substantial portion of these sediments are expected to be released into the White Salmon River following the breaching of the dam through natural processes. Additionally, active management measures to hasten the erosion of unstable sediments into the White Salmon River are proposed within the former reservoir area. The Erosion Control Plan does not address activities within the reservoir sediment management area where active erosion of unstable sediments is encouraged. However, access roads constructed into the former reservoir area to allow machinery to access these sediments for management will be covered by the Erosion Control Plan when those roads are constructed on stable areas within the reservoir.

1.7.2 Revegetation and Wetlands Management Plan

The Revegetation and Wetlands Management Plan addresses revegetation within the former reservoir area and disturbed staging areas and access roads outside the reservoir. In addition, the mitigation for existing wetlands lost during the Condit dam decommissioning is covered within this plan. Approximately 3.8 acres of existing lake fringe wetlands and one acre of wetlands below the dam will be lost and are targeted for mitigation through the establishment of new wetlands. If it is necessary to construct new wetlands within the footprint of the former reservoir area, all excavating, grading, and shaping activities will occur during the active sediment stabilization process and will not require the application of erosion control measures.

The Revegetation and Wetlands Management Plan has elements associated with erosion control since that plan provides guidance on the establishment of temporary and permanent seedings, noxious weed control, and the development of a revegetation schedule that will provide long-term sediment stability and erosion control benefits. While the Revegetation and Wetlands Management Plan considers primarily the former reservoir area, the best management practices of this Erosion Control Plan will be utilized to reclaim the temporary access roads within the former reservoir area.

The revegetation of the access roads and staging areas is addressed in this Erosion Control Plan. The specific planting mix and species selection is provided in the Revegetation and Wetlands Management if plantings are to be other than temporary or permanent grass seedings.

2 IDENTIFICATION OF TREATMENT AREAS

2.1 SUBJECT AREAS

The best management practices specified in this Erosion Control Plan will be applied to access roads, staging areas, and work areas for the following construction activities:

- Construction staging areas as identified on the Erosion Control Plan drawings including an additional staging area in the Northwestern Lake Park.
- Work areas related to the removal of the flowline, penstocks, surge tank, buildings and associated concrete entombment areas along the existing flowline alignment as shown on the Erosion Control Plan drawings.
- Construction access roads as identified on the Erosion Control Plan drawings including the addition of Access Road 14 located between Powerhouse Road and the two downstream flowline trestles. The location of Access Road 14 is shown on Sheet 1 (Appendix B) of the Erosion Control Plan.
- Construction Entrance locations identified in the Erosion Control Plan and the additional locations listed in Table 2-2.
- Construction and maintenance of all temporary and permanent access roads to ensure proper usage
- Development, establishment, and maintenance of the concrete disposal sites
- Relocation of the City of White Salmon water supply pipeline
- Construction of a new irrigation water intake for the Mt. Adams Orchard
- Protection of Northwestern Lake Bridge
- Construction of the drain tunnel through the dam
- Control of noxious weeds associated with the above activities or temporary or permanent seedings associated with prescribed erosion control methods of the Erosion Control Plan

This Plan is not intended to address revegetation and long-term erosion control measures specified in the Revegetation and Wetlands Management Plan or the Sediment Assessment, Stabilization, and Management Plan.

During the stabilization of the lakebed sediments, temporary access roads will be constructed to facilitate removal of these sediments. The location of these temporary roads on the lakebed are not yet identified. During the removal of the sediments it is not anticipated that these roads will require any erosion control measures. However, upon completion of the lakebed stabilization effort these temporary lakebed roads will be decommissioned and stabilized. It will be important to reestablish stable stream crossings for the newly emergent side channels through the decommissioned temporary roads.

Crossover exists between the Erosion Control Plan and the Revegetation and Wetlands Management Plan. This Erosion Control Plan specifically addresses stormwater affecting activities during the deconstruction phase. The Revegetation and Wetlands Management Plan provides guidance for primarily treating areas beneath the present lake. After deconstruction is completed the access roads, flowline, area of the surge tank, and operator's houses will need to be replanted to native vegetation. Specifications and planting plans for these areas will be provided in the Revegetation and Wetlands Management Plan.

2.2 AREAS IDENTIFIED FOR BMP INSTALLATION

Table 2-1 Planned Best Management Practices by Construction Activity

Construction Activity	Planned Best Management Practices
Staging Areas 1, 2, 3 and 6	SF-Silt Fences, CE-Construction Entrance, TB-Tire Bath (SA-1), SF-Surface Roughening, TS-Temporary Seeding, M-Mulching, PS-Permanent Seeding
Flowline & Penstocks	SF-Silt Fence, TSC-Temporary Stream Crossing, CP-Culvert Protection, ECP-Erosion Control Blanket, SF-Surface Roughening, M-Mulching, PS-Permanent Seeding
Surge Tank	SF-Silt Fence, CE-Construction Entrance, SF-Surface Roughening, M-Mulching, PS-Permanent Seeding
Permanent Access Roads	CP-Culvert Protection
Temporary Access Roads	CP-Culvert Protection, TSC-Temporary Stream Crossing, SF-Silt Fence, SF-Surface Roughening, M-Mulching, PS-Permanent Seeding
Concrete Disposal Areas	SF-Silt Fence, CE-Construction Entrance, SF-Surface Roughening, M-Mulching, PS-Permanent Seeding
White Salmon Water Supply Line	SF-Silt Fence, SBCD-Straw Bale Check Dams, SR-Straw Rolls (wattles), M-Mulching, PS-Permanent Seeding
Mt. Orchard Irrigation Line	SF-Silt Fence, SBCD-Straw Bale Check Dams, PS-Permanent Seeding
Northwestern Lake Bridge	SCB-Spill Control Boom
Condit Dam Drain Tunnel	SCB-Spill Control Boom
Powerhouse Tailrace	ISG-In Stream Gabion, SCB-Spill Control Boom
Operator's Houses Deconstruction (SA-6)	SF-Silt Fence, SBCD-Straw Bale Check Dams, SR-Straw Rolls (wattles), SF-Surface Roughening, M-Mulching, PS-Permanent Seeding

Locations of proposed BMP installations are shown below in Table 2-2. The Identification Code is keyed to the site plans contained in Appendix B.

Table 2-2 Locations for Proposed BMP Installations

ID Code	Latitude	Longitude	Altitude (feet)	Location Notes	Vegetation & Implementation Notes
CD-1	N45°46.042'	W121°32.264'	367	At dam face, north end of flowline	No Erosion Control Plan Interaction
CD-2	N45°45.930'	W121°32.210'	354	Beginning of AR-5	CE - Construction Entrance
CD-3	N45°45.916'	W121°32.202'	335	Below main road culvert outfall on AR-5. Culvert below AR-5 nonfunctional	CIP - Culvert Inlet Protection
CD-4	N45°45.903'	W121°32.223'	312	Small stream crossing AR-5	TSC - Temporary Stream Crossing
CD-5	N45°45.895'	W121°32.246'	295	Creek passes below flowline	CIP - Culvert Inlet Protection
CD-6	N45°45.974'	W121°32.242'	354	Top of AR-1 where it intersects with Powerhouse Road	CE - Construction Entrance
CD-7	N45°45.954'	W121°32.227'	338	Culvert outfall below Powerhouse Road	CIP - Culvert Inlet Protection
CD-8	N45°45.874'	W121°32.228'	344	Ravine on west side of flowline, water flowing	CIP - Culvert Inlet Protection
CD-9	N45°45.841'	W121°32.200'	325	Water flowing in from east side (uphill) side of flowline, flows in culvert below flowline	CIP - Culvert Inlet Protection
CD-10	N45°45.776'	W121°32.184'	276	Water flowing in from east side (uphill) side of flowline, flows below flowline down small ravine to river	CIP - Culvert Inlet Protection
CD-11	N45°45.658'	W121°32.177'	295	Flowline elbow	Land Recontouring and PS - Permanent Seeding
CD-12	N45°45.576'	W121°31.993'	240	Dry watercourse, appearance of possible spring	CIP - Culvert Inlet Protection

ID Code	Latitude	Longitude	Altitude (feet)	Location Notes	Vegetation & Implementation Notes
CD-13	N45°45.555'	W121°31.965'	256	Long culvert from east side of flowline passes under the flowline	CIP - Culvert Inlet Protection
CD-14	N45°45.524'	W121°31.927'	236	Seep on hillside above flowline	CIP - Culvert Inlet Protection
CD-15	N45°45.495'	W121°31.905'	397	Small running creek	CIP - Culvert Inlet Protection
CD-16	N45°45.385'	W121°31.864'	299	Flowline leak, formed channel on downhill side	TSC - Temporary Stream Crossing
CD-17	N45°45.369'	W121°31.848'	315	Drainage channel below flowline	CIP - Culvert Inlet Protection
CD-18	N45°45.336'	W121°31.833'	269	Surge tank, south end of flowline	Land Recontouring and permanent seeding
CD-19	N45°45.342'	W121°31.824'	262	Bottom of AR-7	CE - Construction Entrance
CD-20	N45°45.359'	W121°31.800'	325	Top of AR-7	CE - Construction Entrance
CD-21	N45°45.504'	W121°31.859'	338	Culvert beneath Powerhouse Rd.	CIP - Culvert Inlet Protection
CD-22	N45°45.578'	W121°31.937'	335	Culvert beneath Powerhouse Road., long visible culvert to flowline	CIP - Culvert Inlet Protection
CD-23	N45°45.613'	W121°31.981'	348	Culvert beneath Powerhouse oad.	CIP - Culvert Inlet Protection
CD-24	N45°45.638'	W121°32.043'	322	Culvert beneath Powerhouse Road.	CIP - Culvert Inlet Protection
CD-25	N45°45.770'	W121°32.129'	344	Culvert beneath Powerhouse Road., small road angles to the south	CIP - Culvert Inlet Protection
CD-26	N45°45.798'	W121°32.123'	423	Intersection of AR-13 and Powerhouse Road.	No ESCP Interaction
CD-27	N45°45.839'	W121°32.133'	387	Culvert Outfall	CIP - Culvert Inlet

ID Code	Latitude	Longitude	Altitude (feet)	Location Notes	Vegetation & Implementation Notes
					Protection
CD-28	N45°46.085'	W121°32.215'	305	Bottom intersect of AR-2 & AR-3 intersection	CE - Construction Entrance
CD-29	N45°46.063'	W121°32.140'	344	Top of road from boat launch at dam	CE - Construction Entrance
CD-30	N45°46.050'	W121°32.127'	377	Culvert beneath Powerhouse Road. and north of SA-2	CIP - Culvert Inlet Protection
CD-31	N45°45.983'	W121°32.033'	374	Large culvert (48") beneath Powerhouse Road., creek runs along west side of road	CIP – Culvert Inlet Protection
CD-32	N45°46.033'	W121°32.090'	341	Proposed top of AR-2	CE - Construction Entrance
CD-33	N45°46.066'	W121°32.152'	335	Culvert beneath Powerhouse Road.	CIP - Culvert Inlet Protection
CD-34	N45°46.101'	W121°32.163'	289	Condit Creek in vicinity of proposed AR-3 crossing	Reed canary grass & iris along bottom, cattails, alders. Stream crossing necessary
CD-35	N45°46.043'	W121°32.220'	331	SA-1	CE - Construction Entrance
CD-36	N45°46.071'	W121°32.191'	344	SA-2	CE - Construction Entrance
CD-37	N45°46.066'	W121°32.223'	348	Culvert at south end of SA-2	CIP - Culvert Inlet Protection
CD-38	N45°46.022'	W121°32.237'	348	Painted cross on Powerhouse Road. right of way	No ESCP Interaction
CD-39	N45°45.281'	W121°31.712'	203	Culvert below AR- near powerhouse, concrete box culvert	CIP - Culvert Inlet Protection
CD-40	N45°45.272'	W121°31.705'	161	Powerhouse	No ESCP Interaction
CD-41	N45°45.307'	W121°31.732'	200	Culvert on AR-9	CIP - Culvert Inlet Protection

ID Code	Latitude	Longitude	Altitude (feet)	Location Notes	Vegetation & Implementation Notes
CD-42	N45°45.317'	W121°31.632'	315	Culvert on AR-10	CIP - Culvert Inlet Protection
CD-43	N45°45.315'	W121°31.625'	361	Culvert on AR-10	CIP - Culvert Inlet Protection
CD-44	N45°45.280'	W121°31.622'	292	Culvert on AR-10	CIP - Culvert Inlet Protection
CD-45	N45°45.243'	W121°31.637'	266	End of AR-10	No ESCP Interaction
CD-46	N45°45.959'	W121°31.982'	394	Intersection of lower Forester Lane and Powerhouse Road.	No Erosion Control Plan Interaction
CD-47	N45°46.173'	W121°31.951'	486	Intersection of Forester Lane and Powerhouse Road.	CIP - Culvert Inlet Protection
CD-48	N45°46.211'	W121°32.001'	427	SA-3	CE - Construction Entrance, SF - Silt Fence, PS - Permanent Seeding
CD-49	N45°46.238'	W121°32.085'	387	Top (east end) of AR-3	CE - Construction Entrance,
CD-50	N45°46.257'	W121°32.180'	364	Old Cabin	No Erosion Control Plan Interaction
CD-51	N45°46.215'	W121°32.191'	312	Stream crossing along AR-3	TSC - Temporary Stream Crossing
CD-52	N45°46.183'	W121°32.204'	292	Lake embayment, crossing along AR-3, cedar grove	TSC - Temporary Stream Crossing, Vegetation Protection of the cedar grove
CD-53	N45°46.164'	W121°32.197'	312	Dry crossing along AR-3	TSC - Temporary Stream Crossing
CD-54	N45°45.909'	W121°31.742'	443	Intersection of upper Forrester Lane and Powerhouse Road.	No Erosion Control Plan Interaction
CD-55	N45°46.780'	W121°30.983'	325	Northwestern Lake Park	CE - Construction Entrance,

ID Code	Latitude	Longitude	Altitude (feet)	Location Notes	Vegetation & Implementation Notes
CD-56	45°46'34"N	121°31'43"W	302	Graves Road Entrance to Northwestern Lake	CE-Construction Entrance
CD-57	45°46'29"N	121°31'53"W	300	Existing driveway road intersection with Northwestern Lake	CE-Construction Entrance
CD-58	45°46'31"N	121°31'58"W	414	Lakeview Rd Intersection with existing driveway	CE- Construction Entrance
CD-59	45°46'46"N	121°30'59"W	300	Adjacent to existing boat ramp	CE- Construction Entrance
CD- 60	45°45'40"N	121°32'8"W	350	Top of AR-14	CE- Construction Entrance

3 APPLICATION OF BEST MANAGEMENT PRACTICES

The following are the principal erosion control best management practices that will be applied during decommissioning of the Condit Hydroelectric Project. These best management practices, or alternative measures at least as protective, will be employed to meet the objectives of the Erosion Control Plan. Further details and an elaboration of these practices are shown in the erosion control site plans contained in Appendix B. The recommended best management practices for each specific construction site or activity are listed in Table 2.1 above.

- 1 Construction entrances will be designed to reduce the amount of sediment transported onto paved roads by vehicles or equipment by using aggregate pads at entrances to construction sites. Construction entrances are located in Staging Areas 1, 2, and 3.

- 2 Temporary Access Roads
 - Roads will be constructed away from waterway beds, banks, or riparian zones, except at crossings, as much as practicable.
 - Roads located adjacent to wetlands will be designed and maintained to prevent erosion into waterways and to permit natural movement of surface waters. If a temporary road crosses an area of groundwater seepage, the road will utilize a culvert or permeable gravel road subbase to help convey the water under the road. Stream crossings and wetlands located along the flowline and the access roads are identified on the site plans provided in Appendix B. Site requiring this level of erosion control protection are identified on the site plans as TSC – Temporary Stream Crossings. Stream crossings by access roads will utilize sediment fences and straw bales or culverts as feasible and appropriate. Details for these best management practices are listed in the construction details. Intermittent streams and springs are identified on the site plans.
 - Roads will be designed to conform to the topography of the land and thereby minimize alterations of natural conditions.
 - Access ways will not be built on mid-slope terrains or on slopes greater than 30 percent where practical. As currently configured, none of the planned access roads exceed 25 percent except for the roads which will be used to reach the dam face and the tailrace below the powerhouse. Access roads will be built to minimize disturbance to native vegetation and minimize any potential sediment laden runoff.
 - The alteration of existing native vegetation will be minimized in the construction, use, and maintenance of temporary access roads.
 - Existing roadways or travel paths will be used whenever reasonable.
 - Wherever reasonable, riparian areas will be crossed by vehicles and machinery at right angles to the main channel.
 - Soil disturbance and compaction from temporary roads within approximately 150 feet of waterways will be avoided (where practical), or minimized and mitigated by clearing vegetation to ground level and placing clean gravel over geotextile fabric (or another product serving the same purpose).

- All temporary access roads will be revegetated (using the methods and techniques outlined in the Revegetation and Wetlands Management Plan) once construction activities are completed.
- 3 Erosion stabilization will be provided for all new roads, storage, and construction staging areas wherever they are constructed, whether permanent or temporary, for use by construction traffic. Stabilizing roads and parking areas immediately after grading reduces erosion caused by construction traffic or runoff.
 - 4 Natural vegetation will be preserved to reduce erosion wherever practicable. Natural vegetation will be preserved to the extent possible on steep slopes, near perennial and intermittent watercourses and swales, and at construction sites in wooded areas.
 - 5 Buffer zones (such as an undisturbed area or strip of natural vegetation) will be created to provide a living filter to reduce soil erosion and run-off velocities.
 - 6 High visibility plastic, metal, or wire fences will be used to (1) restrict clearing to approved limits; (2) prevent disturbance of sensitive areas, their buffers, and other areas required to be left undisturbed; and, (3) limit construction traffic to designated construction entrances or roads.
 - 7 Areas that are not utilized or worked for seven days will be stabilized by utilizing approved BMPs from the Ecology Stormwater Management Manual for Eastern Washington. The best management practices listed in Table 2.1 will be utilized.
 - 8 Plastic covering will be used to provide immediate, short term erosion protection to slopes and disturbed areas that are not otherwise protected. Other uses for plastic include:
 - Protection for cut and fill slopes and stockpiles
 - Temporary ditch liners
 - Pond liner in temporary sediment pond
 - Liner for bermed temporary fuel storage area
 - Emergency slope protection during heavy rains
 - Temporary drainpipe used to direct water
 - 9 A supply of erosion control materials (e.g., silt fence and straw bales) will be kept on-site to respond to sediment emergencies. Sterile straw or hay bales will be used to prevent the introduction of noxious weeds.
 - 10 Water pumped from a work isolation area will be treated to meet water quality requirements. Discharge shall occur so that it does not cause erosion.
 - 11 All discharge water created by construction activities will be treated using the best available technology applicable to site conditions.
 - 12 Areas (such as disposal site SA-3 and staging areas) that can not be stabilized at the source shall utilize infiltration and settling ponds. These ponds shall be designed, sized, and located to facilitate the treatment of water to be returned to the White Salmon River so that the discharged water meets water quality standards.

Recommendations for typical construction practices for the most widely used erosion control practices are detailed in Appendix B in the Detail Sheets.

4 SCHEDULES

4.1 TIMETABLE AND SCHEDULE FOR IMPLEMENTING THE EROSION CONTROL PLAN

The best management practices specified by the Erosion Control Plan will be in place for the duration of the project and will be established at the onset of construction activities. At the conclusion of construction activities, staging areas, temporary access roads, and disturbed areas will be revegetated in accordance with the Revegetation and Wetlands Management Plan to provide long-term erosion control.

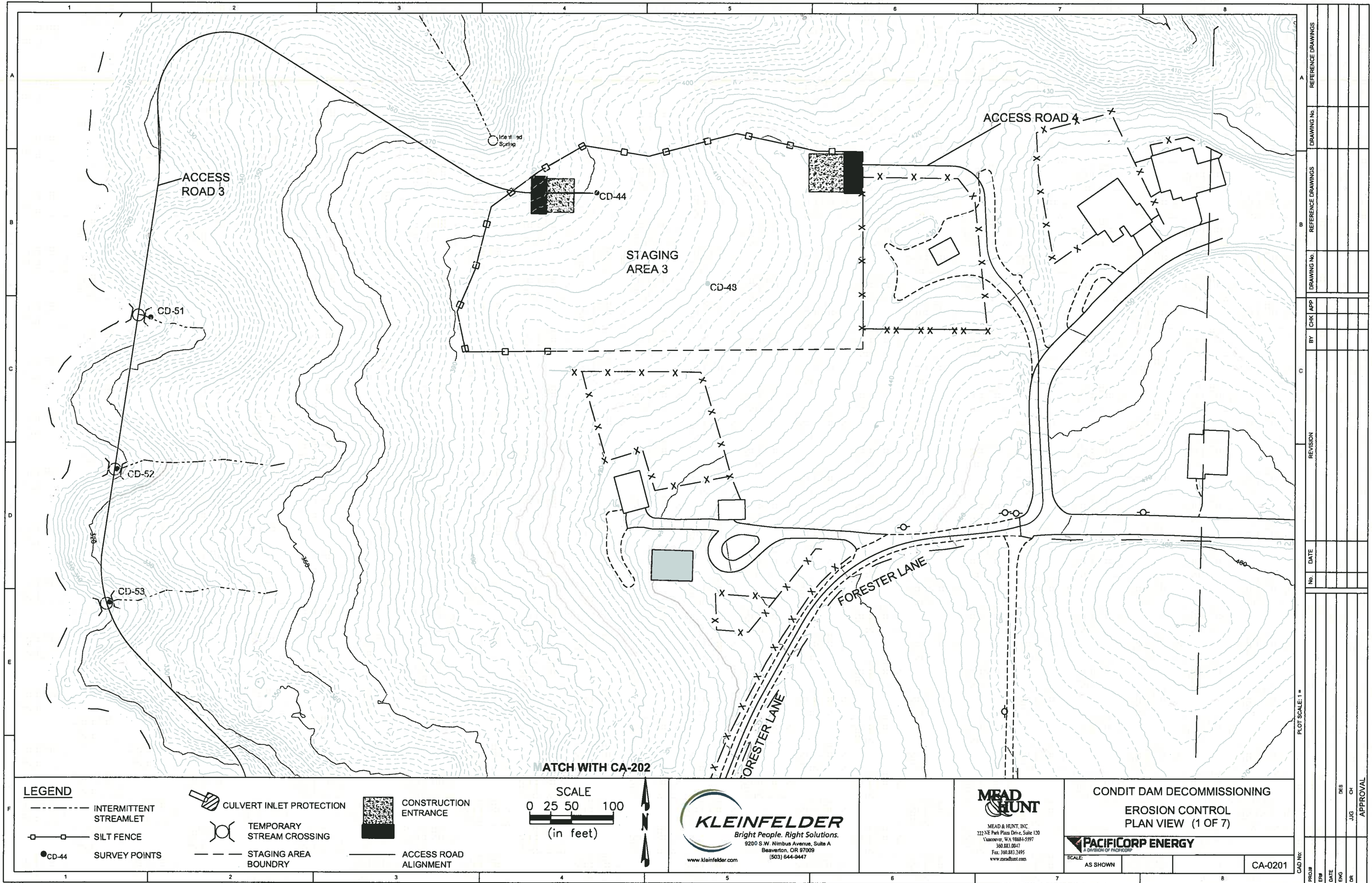
4.2 INSPECTION AND MONITORING

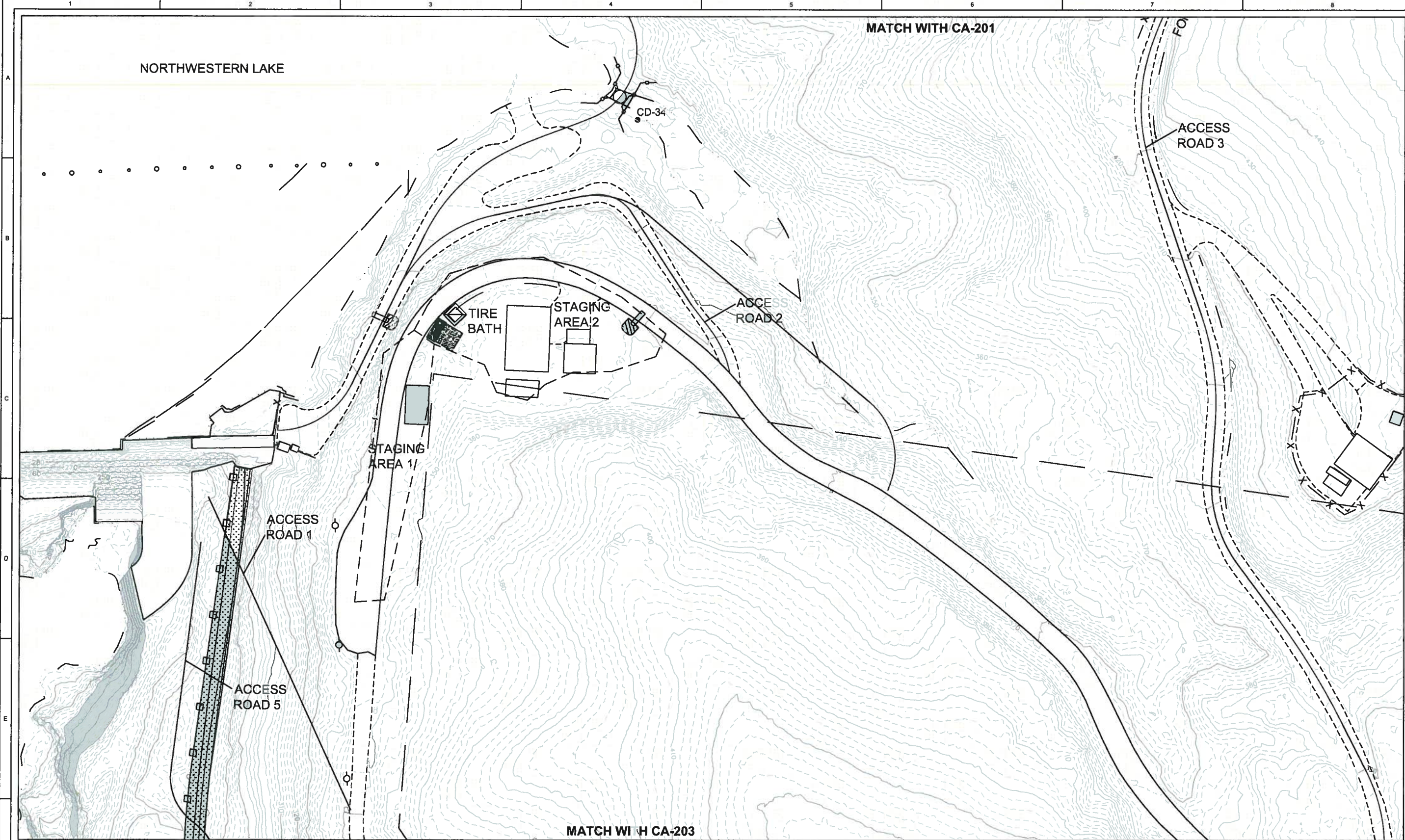
Site inspections will be conducted by a Certified Erosion and Sediment Control Lead (CESCL) certified in the state of Washington. Inspectors will conduct site inspections once a week and within 24 hours of any rainfall event that results in a discharge or produces more than ½ inch of water in a 24-hour period and is likely to result in stormwater discharge. During periods of continuous discharge, inspectors will conduct one inspection per week. Locations that have been temporarily stabilized and are inactive, inspections will be done once a month. An example inspection report is provided in the Stormwater Pollution, Prevention Plan.

Water quality sampling from stormwater will be taken weekly and within 24 hours of rainfall events producing more than ½-inch rainfall in a 24-hour time period. If there is not any discharge from the site there will be not be any water quality sampling. Turbidity will be monitored at discharge points, and pH will be monitored at discharge points adjacent to the concrete entombment area near the flowline. Monitoring reports will be submitted monthly on Washington State Department of Ecology's Discharge Monitoring Form and will be submitted electronically through the WebDMR process

5 REFERENCES

- Federal Energy Regulatory Commission, 2002. Final Supplemental Final Environmental Impact Statement - Condit Hydroelectric Project, Washington (FERC Project No. 2342).
- National Marine Fisheries Service, 2006. Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Consultation. Interim Operation, Decommissioning, and Removal of the Condit Hydroelectric Project FERC No. 2342, Skamania and Klickitat Counties, Washington. NMFS Log Number: 2002/00977, US Government Printing Office. Washington, D.C., October.
- JR Merit and Riverbend Engineering, 2011. Erosion Control Plan Addendum, Prepared for PacifiCorp Energy. FERC Project No. 2342.
- R. W. Beck, 1998. Condit Hydroelectric Project Removal, Summary Report Engineering Considerations.
- Washington State Department of Ecology, 2007. Condit Dam Removal Final SEPA Supplemental Environmental Impact Statement. Ecology Publication # 07-06-012.
- Washington State Department of Ecology, 2004. Stormwater Management Manual for Eastern Washington. Ecology Publication # 04-10-0





LEGEND

- INTERMITTENT STREAMLET
- SILT FENCE
- CD-44 SURVEY POINTS
- CULVERT INLET PROTECTION
- TEMPORARY STREAM CROSSING
- STAGING AREA BOUNDARY
- CONSTRUCTION ENTRANCE
- ACCESS ROAD ALIGNMENT
- AREA OF PERMANENT SEEDING

SCALE

0 25 50 100

(in feet)

MATCH WITH CA-203

KLEINFELDER
Bright People. Right Solutions.
9200 S.W. Nimbus Avenue, Suite A
Beaverton, OR 97009
(503) 644-9447
www.kleinfelder.com

MEAD & HUNT, INC.
222 NE Park Plaza Drive, Suite 120
Vancouver, WA 98684-5997
360.883.0047
Fax: 360.883.2495
www.meadhunt.com

CONDIT DAM DECOMMISSIONING
EROSION CONTROL
PLAN VIEW (2 OF 7)

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

SCALE: AS SHOWN

CAD No: CA-0202

REFERENCE DRAWINGS		BY		CHK		APP	
DRAWING No.							
DATE							
ENG							
DR							
DES							
CH							
JUG							
APPROVAL							



LEGEND

- INTERMITTENT STREAMLET
- o- SILT FENCE
- ACCESS ROAD ALIGNMENT

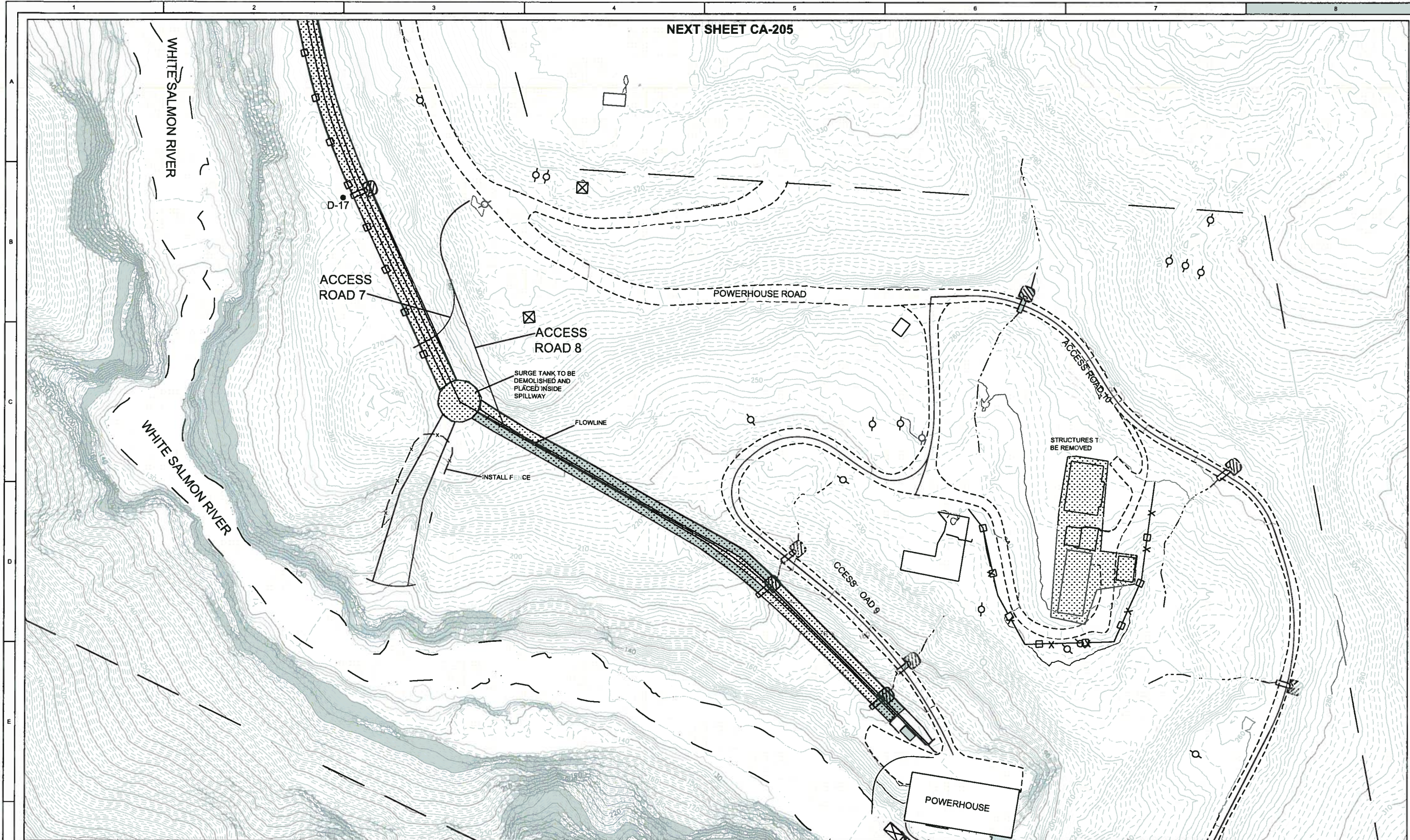
SCALE
0 25 50 100
(in feet)



JR MERIT
INDUSTRIAL CONTRACTORS
4505 NE 68TH DRIVE VANCOUVER, WA 98661
Tel: 360-693-7474 FAX: 360-693-7575
www.jrmerit.com

RIVERBEND ENGINEERING LLC
5929 Pauline St NW Albuquerque, NM 87107
Tel: 505-344-3315 FAX: 505-344-0698
www.riverrestoration.com

CONDIT DAM REMOVAL PROJECT	Sheet
NEAR WHITE SALMON, WA	4
EROSION CONTROL	OF
PLAN VIEW CA-204/CA-205 A	7
ACCESS ROAD 14 LOCATION	
Scale 1" = 50 ft	02/07/2011



- LEGEND**
- INTERMITTENT STREAMLET
 - SILT FENCE
 - CD-44 SURVEY POINTS
 - CULVERT INLET PROTECTION
 - AREA OF PERMANENT SEEDING
 - STAGING AREA BOUNDARY
 - ACCESS ROAD ALIGNMENT

SCALE
0 25 50 100
(in feet)

KLEINFELDER
Bright People. Right Solutions.
9200 S.W. Nimbus Avenue, Suite A
Beaverton, OR 97008
(503) 644-9447
www.kleinfelder.com

MEAD & HUNT
MEAD & HUNT, INC.
322 NE Park Plaza Drive, Suite 120
Vancouver, WA 98684-5997
360.883.0047
Fax: 360.881.3495
www.meadhunt.com

CONDIT DAM DECOMMISSIONING
EROSION CONTROL
PLAN VIEW (7 OF 7)

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

SCALE: AS SHOWN

CA-0206

CAD No.:		PLOT SCALE: 1 =										B		A	
		PROJ.#		DATE		REVISION		BY		CHK APP		DRAWING No.		REFERENCE DRAWINGS	
EPR															
ENG															
DR															