Draft ENVIRONMENTAL ASSESSMENT
Shoreline Stabilization
Pend Oreille River – 10-BR-94

PRIEST RIVER WILDLIFE MANAGEMENT AREA

BONNER COUNTY, IDAHO: PHASE 1

US ARMY CORPS OF ENGINEERS
SEATTLE DISTRICT

MAY 2005

US Army Corps
of Engineers
Seattle District

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Pend Oreille River 10-BR-94
Shoreline Stabilization Project (Phase I)

Bonner County, Idaho
Winter 2006

Draft Environmental Assessment

Responsible Agencies: The agency responsible for this project is the U.S. Army Corps of Engineers – Seattle District.

Abstract: This Draft Environmental Assessment (EA) evaluates the environmental, cultural and social effects of a Pend Oreille River Shoreline Stabilization intended to prevent loss of an important prehistoric archaeological site within the Priest River Wildlife Management Area. Erosion from wave action has caused incremental bank failure along the north shore (right bank) of the Pend Oreille River within the boundaries of archaeological site 10-BR-94, determined eligible for the National Register of Historic Places in 2005. The compact clayey sediments at the site are subjected to inundation during full pool elevation (2,062+/-) of the reservoir and are stricken energetically by large waves caused by high winds or boat traffic during that period. Although water pressure holds the soil in place at high pool, when the pool is drawn down for the winter, the temporarily stabilized soils erode or slough off onto the beach vacated by the receding shoreline, especially when saturated by heavy fall precipitation. Tracks of a local spur of the Burlington Northern Santa Fe Railroad (BNSFR) and Montana Rail Link (MRL) run along the north edge of the site. The erosion and bank failure not only are adversely affecting the National Register-eligible archaeological site 10-BR-94, but have progressed within approximately 500 lineal feet of the railroad, and thus ultimately threaten that line.

The shoreline stabilization project would be implemented in two phases. Phase I is described within this report. Phase I requires a different construction approach due to the high bank condition and urgency of implementation. Phase II would be implemented at an undetermined future date pending funding and bioengineering monitoring results. Separate NEPA, ESA and Section 106 documents would be prepared for Phase II.

The primary focus of the project is the construction of rock riprap bank stabilization along approximately 600 lineal feet of the shoreline. When complete, the structure will provide protection against erosion to an elevation of 2067.0 feet (MSL) or 5.5 feet above the regulated summer pool level. Access for the project would require construction of a temporary haul road approximately 500 lineal feet and staging area. The haul road would follow the alignment of an existing earthen path. One temporary railroad crossings will be installed to provide access to the work site during construction. The work will take place within easement areas acquired by the Corps of Engineers (Corps) for the purpose

of bank stabilization on public and railroad-owned lands being impacted by shoreline erosion.

The project will not constitute a major federal action and will not significantly affect the quality of the human or natural environment. The Corps will use best management practices to minimize potential adverse effects to aquatic and terrestrial resources. Impacts to air quality, noise, and water quality will generally be highly localized and short in duration.

THE OFFICIAL COMMENT PERIOD ON THIS ENVIRONMENTAL ASSESSMENT ENDS 24 JUNE 2005.

This document is available online at: http://www.nws.usace.army.mil/ers/envirdocs.html.

Please send request for additional information to:

Mr. Matt Bennett, Environmental Resources Section
U.S. Army Corps of Engineers
P.O. Box 3775
Seattle, Washington 98124-3755
Matthew.j.Bennett@usace.army.mil
(206) 764-3428

1. INTRODUCTION

This Draft Environmental Assessment (EA) evaluates the environmental, cultural and social effects of a Pend Oreille River Shoreline Stabilization intended to prevent loss of an important prehistoric archaeological site within the Priest River Wildlife Management Area. Erosion from wave action has caused incremental bank failure along the north shore (right bank) of the Pend Oreille River within the boundaries of archaeological site 10-BR-94, determined eligible for the National Register of Historic Places in 2005. The compact clayey sediments at the site are subjected to inundation during full pool elevation (2,062+/-) of the reservoir and are stricken energetically by large waves caused by high winds or boat traffic during that period. Although water pressure holds the soil in place at high pool, when the pool is drawn down for the winter, the temporarily stabilized soils erode or slough off onto the beach vacated by the receding shoreline, especially when saturated by heavy fall precipitation. Tracks of a local spur of the Burlington Northern Santa Fe Railroad (BNSFR) and Montana Rail Link (MRL) run along the north edge of the site. The erosion and bank failure not only are adversely affecting the National Register-eligible archaeological site 10-BR-94, but have progressed within approximately 500 lineal feet of the railroad, and thus ultimately threaten that line. Section 9 on the Flood Control Act of 1946 authorizes repair, relocation, restoration or protection of highways, railways or utilities being damaged or destroyed by operation of any dam under control of the Department of the Army (1.2 Authority).

The shoreline stabilization project would be implemented in two phases. Phase I is described within this report. Phase I requires a different construction approach due to the high bank condition and urgency of implementation. Phase II would be implemented at an undetermined future date pending funding and bioengineering monitoring results. Separate NEPA, ESA and Section 106 documents would be prepared for Phase II.

The primary focus of the project is the construction of rock riprap bank stabilization along approximately 600 lineal feet of the shoreline. When complete, the structure will provide protection against erosion to an elevation of 2067.0 feet (MSL) or 5.5 feet above the regulated summer pool level. Access for the project would require construction of a temporary haul road approximately 500 lineal feet and a staging area. The haul road would follow the alignment of an existing earthen path. One temporary railroad crossings will be installed to provide access to the work site during construction. The work will take place within easement areas acquired by the Corps of Engineers (Corps) for the purpose of bank stabilization on public and railroad-owned lands being impacted by shoreline erosion.

Comments on this Draft EA may be sent to Matt Bennett, 4735 East Marginal Way South Seattle, Washington 98134-2385 or via email Matt.J.Bennett@NWS02.usace.army.mil or phone 206-764-3428. Comments received by 13 June 2005 will be part of the final record.

1.1 Background

The mainline tracks of the Burlington Northern Santa Fe Railroad (BNSFRR) and Montana Rail Link (MRL) run adjacent to the north shore of the site. The BNSFRR/MRL railroad lines provides transport of cargo in the mid and western United States. If the erosion is not stopped, there is the potential for interruption of the mainline railroad. In addition, the site has been identified as eligible for the National Register of Historic Places (Site 10-BR-94). Operation of the Albeni Falls Dam project is having an adverse effect on the Registerable site, as the operation is causing shoreline erosion that results in loss of important archaeological data for understanding the prehistory of the area and the culture history of several Indian tribes.

The site is also located within the boundaries of the Priest River Wildlife Management area. The Priest River Wildlife Management area was acquired in 1953 from private owners by the Corps of Engineers as fee simple title lands in connection with the operations of Albeni Falls Dam. In 1955, under the authority of the Flood Control Act of 1950, Public Law 516, the site was licensed to the Idaho Department of Fish and Game for the conservation, maintenance and management of wildlife, wildlife resources and habitat. In 1984 the license was renegotiated and signed for a 25-year term. While the land is under license to the Idaho Department of Fish and Game for wildlife purposes, the Army Corps of Engineers (Corps) still owns title to the site.

1.2 Authority

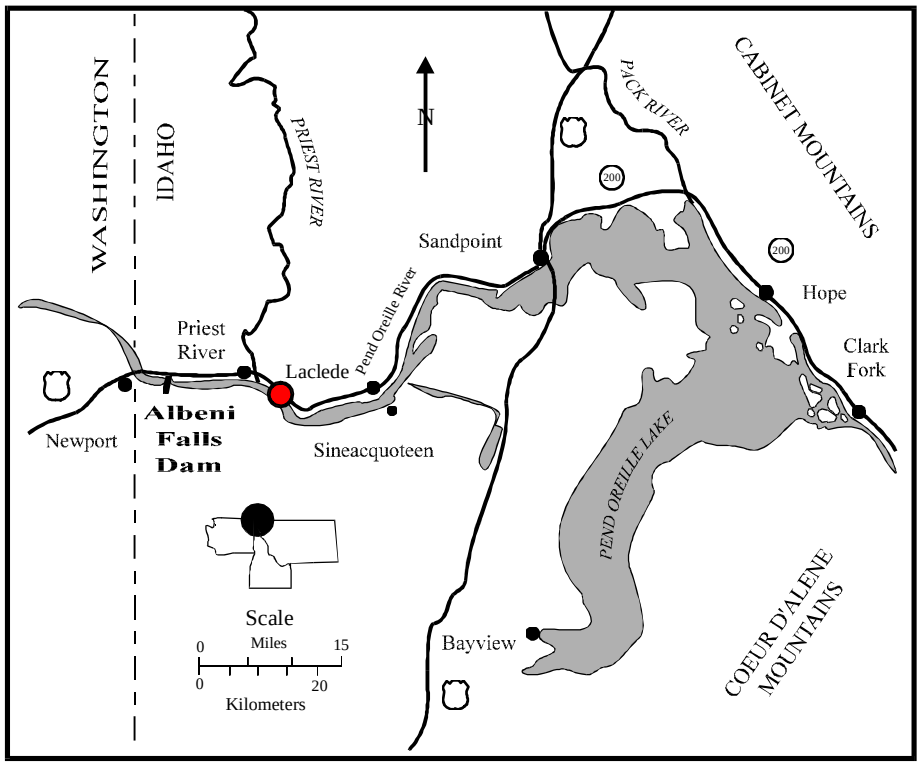
The Albeni Falls Dam project was authorized under the Flood Control Act of 17 May 1950 (Public Law 516, 81st Congress, 2nd Session) in accordance with Senate Document 9, 81st Congress, First Session, as part of a comprehensive plan for the development of the Columbia River System. Funds are allocated each year via Congress for Operation and Maintenance of the Albeni Falls Dam Project.

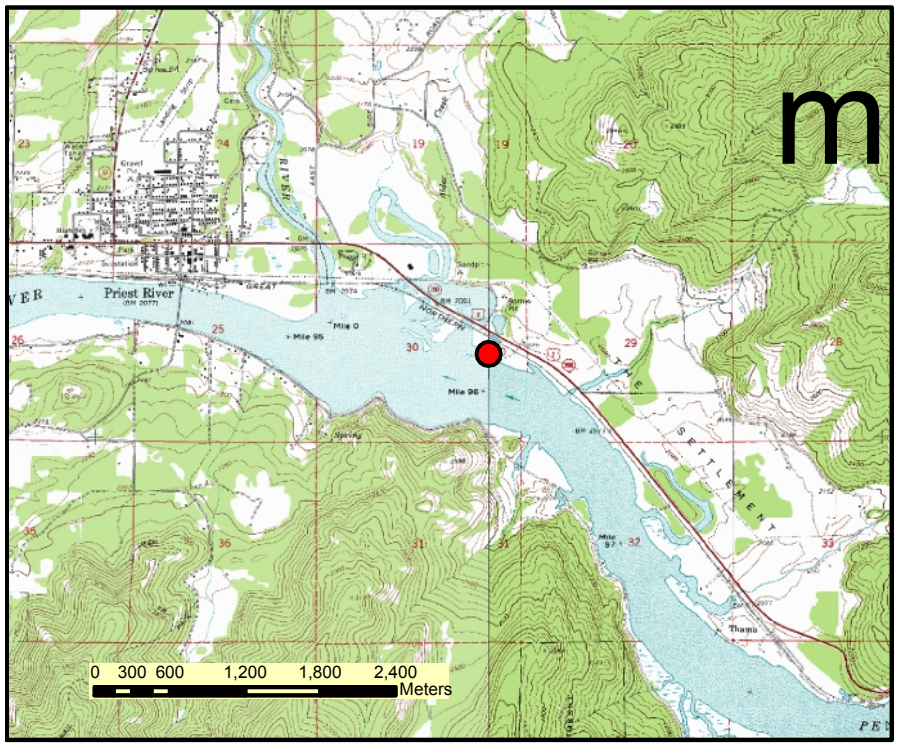
The authority for this proposed project is Section 9 of the Flood Control Act of 1946, 33 USC 701(q):

"When the Chief of Engineers shall find that any highway, railway, or utility has been or is being damaged or destroyed by reason of the operation of any dam or reservoir project under the control of the Department of the Army, he may utilize any funds available for the construction, maintenance or operation of the project involved for the repair, relocation, restoration or protection of such highway, railway or utility".

2.0 PROPOSED ACTION

The proposed project is to stabilize approximately 600 linear feet of Pend Oreille River shoreline. The stabilization will prevent further encroachment into BNSFRR/MRL and prevent further shoreline erosion that results in loss of important archaeological data.





= Site Location

Figure 1. Vicinity Maps

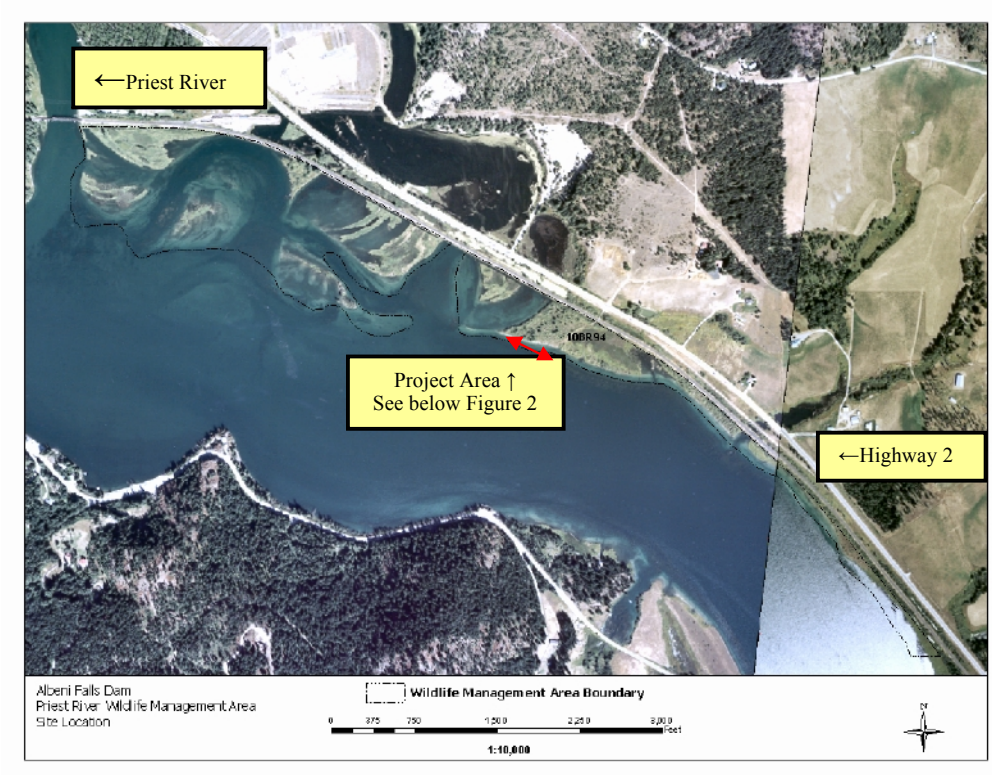


Figure 2. Aerial Photograph, Project Vicinity

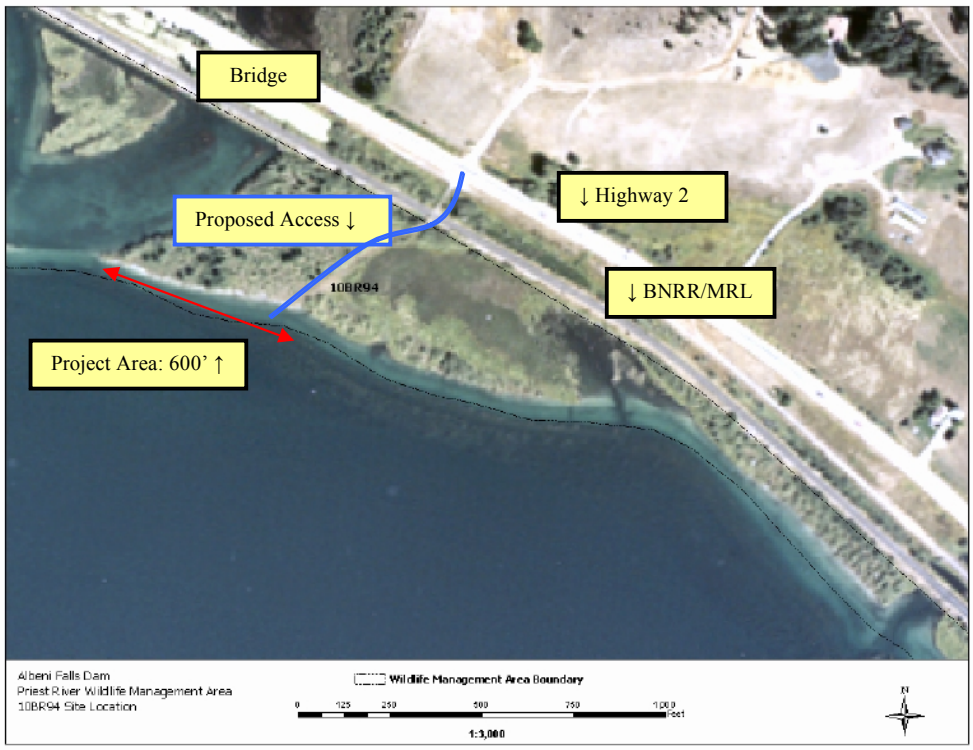


Figure 3. Aerial Photograph, Project Area

2.1 ALTERNATIVES

There were three alternatives considered for the proposed project. The no action alternative and the preferred alternative were carried through the alternatives analysis. Those two alternatives are discussed below. The third alternative, Bioengineering, was not carried through the analysis due to the high bank shoreline, inability for shoreline excavation (due to culturally sensitive materials) and costs.

2.1.1 NO ACTION

Under the no action alternative the shoreline would continue to erode and in the future would place the Burlington Northern Santa Fe Railroad (BNSFRR) and Montana Rail Link (MRL) in jeopardy. This action could also lead to the immediate loss of important archaeological data for understanding the prehistory of the area and the culture history of several Indian tribes.

2.1.2 PREFERRED ALTERNATIVE

Bank stabilization was chosen at the proposed project site to prevent further erosion and encroachment onto BNSFRR properties, Wildlife Management Area, and National Register eligible Archeological site 10-BR-94. This alternative was also chosen to comply with Section 9 of the Flood Control Act of 1946, 33 USC 701(q) any highway, railway, or utility that has been or is being damaged or destroyed by reason of the operation of any dam or reservoir project the Corp may repair, relocate, restore or protect such highway, railway, or utility.

Construction plans of the following construction procedures are contained in Appendix C and D of this report. The diagrams specify the amount of material, machinery used and provide cross sections of the stabilization structure. Due to bank geometry, drainage features, and environmental concerns, there are seven separate sections that comprise the project. A general description of the construction procedures are as follows: Filter fabric would be placed following the contours of the shoreline to provide support and prevent fine sediment from entering the river. This process would be similar to the method used to stabilize the eroding shoreline at Riley Creek Campground in 2000. Filter fabric would be covered with a pit-run crushed rock material to establish a 2:1 slope. Once the slope is established, Class IV riprap or smaller diameter spall rock would be placed approximately 3-feet deep. Upon completion, all materials used for haul road construction would be removed. Any incidental native vegetation cleared for construction would be replanted with the same or similar plant species.

Construction material would consist of biodegradable filter fabric, Class IV riprap, 4”-Spalls, 3-inch minus Crushed Stone, and Granular Fill. All rock material would be obtained from a state permitted source. Machinery used for construction includes a D-4 dozer with 6-way blade and 3-prong ripper or equivalent, 200 Series excavator with thumb or equivalent and dump trucks. A temporary haul road would be constructed for access. The haul road would follow the alignment of the existing access trail leading from Highway 2 to the eastern terminus of the project area (Figure 3 and Appendix C). The distance of the road is approximately 500 lineal feet with a 14-foot width. Two turnouts of 10-feet wide by 30-feet long will also be constructed. A temporary easement

would be obtained from Montana Rail Link and authorized by BNSF railroad for access across the railroad grade. Access would involve placement of a temporary construction platform over the tracks. Wetland boundaries would be delineated and construction fencing installed to prevent any road encroachment in the wetland area. Staging would occur at the terminus of the access road near the top of bank where an existing clearing in vegetation occurs. In order to reduce clearing of riparian vegetation, rock placement would be accomplished from the shoreline instead of top of bank. A temporary haul road would be accessed from the staging area and be aligned near the toe of slope within the exposed shoreline. Construction would avoid any excavation into the bank to avoid any disturbance to embedded culturally sensitive material.

Habitat features incorporated into the design include willow plantings and riparian plantings (See Appendix D, Plate C-2). Willow plantings would be placed at the summer high pool elevation (2,062.5+/1). Willow cuttings would be placed horizontally on 6-inches of dirt with approximately 25% of the cutting exposed. Following willow placement, 6 additional inches of dirt would cover the plantings to maintain soil-willow contact. Smaller diameter rock would aid in soil retention by reducing interstitial spaces created by larger diameter riprap. At the top of bank, native conifer and deciduous trees would be planted. Planting will occur within a 15-foot wide zone with black cottonwood (Populus balsamifera) and Pondersoa pine (Pinus ponderosa) placed randomly in a rough linear formation. Planting will occur in autumn to enable the plants to acclimate before winter. The bareroot plant material will benefit from spring precipitation as irrigation is not feasible on this site. Planting methods will utilize a hand-pick to minimize disturbance if culturally sensitive materials are encountered. Installation will also be overseen by an archeologist and a biologist experienced in native plant installation techniques.

In order to keep quantity of rock at a bare minimum, Large Woody Debris (LWD) has been omitted from this project. LWD would require more rock to stabilize the structure, thus resulting in further rock encroachment into the shoreline. In addition, toeing the wood into the bank would require excavation that is prohibited given the culturally sensitive nature of this project.

There would be approximately 1,167 cubic yards of material (riprap, pitrun gravel, spalls, crushed) placed below the OHW mark to assist in bank stabilization with the remaining 779 cubic yards above OHW to complete the bank stabilization project. In addition, 1200 cubic yards of Class IV rip-rap and 900 cubic yards of pit-run, spalls and crushed rock would be used for the access road to top of bank. No other alternative was least damaging to the environment than the preferred alternative, or less costly.

3.0 EXISTING ENVIRONMENT

3.1 Hydrology and Geology

The Pend Oreille River at Albeni Falls Dam has a watershed of about 24,200 square miles, which supplies an average stream flow of about 25, 930 cubic feet per second.

The Clark Fork River is the Pend Oreille Lake's largest tributary and contributes about 86 percent of the total flow. Pend Oreille Lake is one of the deepest and largest lakes in the western United States. Conditions in Pend Oreille Lake, such as the stage of the lake and timing of the inflow, are influenced not only by Albeni Falls dam, but also by the operation of upstream flood control projects and basin hydrologic factors. The segment of the Clark Fork River draining Pend Oreille Lake is now designated the Pend Oreille River.

As the water level of Lake Pend Oreille fluctuates between summer elevations (2,062.5 feet above mean sea level (m.s.l.) and winter elevations (2,053 feet above m.s.l.) soils that are normally not subjected to long-duration flooding are being inundated for many weeks. The saturation weakens soil structure and kills off vegetation that normally would help stabilize the bank. Bare banks during the lengthy high summer elevation are attacked directly by wake- and wind- generated waves, and by undercutting the sediment column with subsequent collapse of the overlying strata (see Appendix B – Photos). Site soils are also affected by erosion within pipes created by burrowing animals. Both overland flow and hydraulic overpressure from wave action at the pipe entrance in the pool are leading to fairly rapid sediment loss.

3.2 Ecology

The action area consists of a riparian shoreline located within the Priest River Wildlife Management Area upstream of the Albeni Falls dam. This area contains scattered Ponderosa pine (Pinus ponderosa) trees with dense undergrowth comprised of black hawthorne (Crataegus douglasii), serviceberry (Amelanchier alnifolia) and snowberry (Symphoricarpos albus). Ground cover is comprised of common upland grasses and forbes including the invasive species, spotted knapweed (Centaurea maculosa). A Palustrine emergent wetland contiguous with the river also occurs in the action area. The riparian corridor is somewhat encroached by roads, railways and agricultural activities.

The Pend Oreille river supports a large number of birds, some of which are permanent residents. The area is a major stop for migratory waterfowl in both spring and fall. This area also contains a high population of bald eagles that not only winter over but also nest in the area. Bull trout (Salvelinus confluentus), lake trout (Salvelinus namaycush), white fish and Kokanee (Oncorhynchus nerka) also occur in the Pend Oreille Lake and River systems.

3.3 Water Quality

The Pend Oreille River is part of the Pend Oreille/Clark Fork Watershed. The Clark Fork and its tributaries drain the Rocky Mountains in Western Montanan and Northern Idaho. The Clark Fork empties into Lake Pend Oreille and the Pend Oreille River begins at the outlet of the lake. Albeni Falls Dam occurs along the Pend Oreille River at RM 90. There is no apparent change in downstream water quality (turbidity or temperature) as a result of the operation of the dam.

The Pend Oreille River is listed for temperature on the state of Idaho's 1998 303(d) list of impaired waters (Ecology, 2004). Water quality data from the Pend Oreille River shows that water temperatures exceed the site-specific criterion of 20ºC from the state water quality standards. In addition to Idaho, the entire Pend Oreille River in Washington is also considered impaired for temperature. High water temperatures limit bull trout distribution. Bull trout spawning and rearing is extremely limited due to high summer temperatures that are above the thermal tolerance for bull trout. However, bull trout from the Priest River do use it as a migration corridor in the fall and spring to migrate to and from Pend Oreille Lake (Corps, 2005, Terr-Burns, 2005).

Localized turbidity due to wave erosion and sloughing of unconsolidated shoreline materials during summer pool levels is evident between Lake Ponderay and Albeni Falls Dam. The project area contributes to localized turbidity.

3.4 Vegetation

Most of the area that comprises the approximately 600 feet of shoreline and associated riparian corridor consists of scattered Ponderosa pine (Pinus ponderosa) trees with dense undergrowth comprised of black hawthorne (Crataegus douglasii), serviceberry (Amelanchier alnifolia) and snowberry (Symphoricarpos albus). Ground cover is comprised of common upland grasses and forbes including the invasive species, spotted knapweed (Centaurea maculosa).

A Palustrine emergent wetland contiguous with the Pend Oreille River occurs adjacent to the project area. The wetland is dominated by cattail (Typha latifolia) with sub-dominant native sedges (Carex spp., Scirpus spp.) and rushes (Juncus spp.). The perimeter of the wetland is dominated by willows (Salix spp.) and red-osier dogwood (Cornus sericia). Access to the site will be designed to avoid any impacts or disturbance to the wetland.

3.5 Fish

The most important fishery in the lake is for the Kokanee salmon, but the lake sustains populations of rainbow (Kamloops) trout, Dolly Varden char (Bull Trout), and other species of fish.

Lake Pend Oreille and the Pend Oreille River is home to a variety of native and non-native fish and supports a significant recreational and sports fishery. Major species include the Bull Trout, Rainbow Trout, Lake Trout (Mackinaw), Cutthroat Trout, Kokanee (Sockeye Salmon), Bass, Whitefish, and Perch and Sunfish. Cold-water species tend to occupy the deeper waters of the main lake while the warm water species are more prevalent in the near-shore areas and the Pend Oreille River between Sandpoint and the Dam. The project area provides some habitat value, especially to the warm-water species. The shoreline is characterized by shallow water at summer pool and is exposed and dry during most of the drawdown period.

3.6 Wildlife

State and Federal agencies intensively monitor waterfowl for their importance to hunting as a recreational activity. The number of ducks can range from 47,500 to as high as 142,600 in the Pend Oreille Lake and River basin.

While most of the 23 species of waterfowl recorded are migrants or winter residents, several resident species of ducks and Canada geese nest and rear their young on and around the shorelines of the lake and river. Mallards, three species of teal, widgeons, coots, and pied-billed grebes are among the many species reported to nest along the shoreline and/or in adjacent marshes.

Birds of prey such as hawks, owls, and bald eagles are associated with the Pend Oreille riparian areas. Bald eagles have been nesting in this area for as long as recorded history goes back. Ospreys (Pandion haliaetus) are found in the area from Mid-march through October. The osprey population of northern Idaho and northeastern Washington constitute the largest nesting concentration in the western states and perhaps the entire country.

3.7 Threatened and Endangered Species

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed and proposed threatened or endangered species. Several species listed as either threatened or endangered are potentially found near the project areas (see Table 1.).

Table 1. Threatened & Endangered Species of the Pend Oreille Lake & Albeni Fall Dam.

Scientific Name	Common Name	Listing Status
Haliaeetus leucocephalus	Bald Eagle	Threatened
Salvelinus confluentus	Bull trout	Threatened
Spiranthes diluvialis	Ute ladies'-tresses	Threatened
Canus lupus	Gray Wolf	Endangered
Lynx canadensis	Lynx	Threatened

Bald eagles and bull trout are known to occur in the vicinity of the project. The Gray wolf, Ute ladies'-tresses, wolverine, and Lynx do not have sufficient habitat to occur within the project vicinity.

Information on known occurrences of endangered and threatened species in the project vicinity, and the potential impacts of the proposed projects on these species are addressed in a separate Biological Evaluation submitted to USFWS on 20 April 2005.

3.8 Cultural and Native American Concerns

3.8.1. ARCHEOLOGY AND PREHISTORY

Archaeological site 10-BR-94 is an extensive deposit of prehistoric and historic occupation debris on a broad fluvial terrace along the right bank of the Pend Oreille River slightly upstream from its confluence with the Priest River. Site 10-BR-94 is in and on very hard lakebed clays and fine silts with Mazama ash overlain by river- and wind-deposited layers of silt and fine sand. Tested in 1979 and the 1990's, the part of 10-BR-94 that is permanently above the pool was found to have three cultural components: one below the Mazama ash layer (dated to about 7,000 years ago), which may be up to 10,000 years old; another dating from about 6,000 to around 2,000 years ago; and a recent historic occupation. The younger prehistoric component currently is a habitation site, most likely a central base. The testing contractors have suggested that the prehistoric components of the site were eligible for the National Register of Historic Places based on their age, condition, and potential to contribute important information for regional prehistory (criterion D), and the site is a contributing member of the Upper Pend Oreille Archaeological District, now in the process of a consensus determination of eligibility. Interests of the State of Idaho in preservation and management of the site are represented by the State Historic Preservation Officer.

3.8.2 NATIVE AMERICAN CONCERNS

The site and proposed undertaking are within the lands ceded to the United States by the Kalispel Tribe of Indians. The Kootenai Tribe of Idaho, Coeur d'Alene Tribe, Confederated Salish and Kootenai Tribes of the Flathead Reservation, and Spokane Tribe of Indians also have cultural interests in the area. The site is an ethnographically-reporting central base of the Kalispel Tribe. The site may be eligible for the National Register of Historic Places based on criteria other than D.

3.9 Land Use

Land use in the project area is not expected to change significantly as a result of the construction work. The underlying land will remain under license to the Idaho Department of Fish and Game and continue to be managed within the Priest River Wildlife Management area. The Corps will continue to own title to the site.

3.10 Utilities and Public Service

There is an easement for a buried waterline for an adjacent property owner on the eastern end of the subject property. The utility, however, is well beyond the construction zone. There are no known additional utilities at the proposed project site. During construction, the rail line will remain active. Coordination with Montana Rail Link and their lessee, Montana Rockies Rail Tours, will ensure that impacts on their operations is minimized.

3.11 Air Quality and Noise

Air quality meets the standards as set forth by the Idaho Department of Environmental Quality and will not be affected by the construction of the bank stabilization structure.

Maintenance of unpaved haul roads and work during the winter months will minimize fugitive dust. Noise will be intermittent along the haul route and will vary at the work site depending on the type of equipment operating during construction. Work will be limited to daylight hours only thus eliminating disturbing noise during the nighttime hours. All noise factors have been addressed for their effect on threatened and endangered species.

3.12 Transportation

Trucks hauling material for this project will utilize public highways and secondary roads as necessary to travel to and from the quarry or materials pit. The number of trucks, and the time between loads will allow the haul to proceed with little or no impact on normal traffic during the winter season. Temporary access roads will be constructed at the beginning of the project. All temporary roads will be removed following construction. The temporary haul road will be closed to the public and blocked when not in use by the Corps contractors. Temporary roads placed on the railroad right-of-way will be restored or removed to satisfy the requirements of MRL. Temporary crossings will be removed by the railroad to prevent unauthorized access.

3.13 Socio-Economic

The project is located near the town of Priest River, Bonner County, Idaho. The immediate area is located within the Priest River Wildlife Management Area. The management area is used recreationally for hunting and fishing. The placement of riprap will not impact the area used for recreation. The proposed project area holds no other significant socio-economic impact to the area.

3.14 Recreation

Recreation is very important industry for the local community and county governments. Fishing, water skiing, snow skiing, hunting, camping, and bird watching are important recreational activities. The public uses the shoreline area that is being protected by the bank stabilization project for recreation and hunting. A stabilized shoreline, and improved access along the maintenance trail may help to provide economic benefits t to the local community by providing access to the Pend Oreille River shoreline, subject to restrictions imposed by the Corps and Idaho Department of Fish & Game.

3.15 Aesthetics

The proposed project area has the appearance of a shoreline without development but one that is in a state of constant erosion. Trees and other vegetation are continually sloughing off and a near-constant turbidity is present at high pool. The remaining upland riparian area is threatened if erosion is not curtailed.

4.0 ENVIRONMENTAL EFFECTS

4.1 Geology and Hydrology

All of the work will be conducted in the dry for this proposed project. All applicable Best Management Practices will be in effect throughout the construction process. What

may occur over time with the reduction of sediment from the erosion process would be the potential for the area immediately in front of the bank stabilization structure to be deepened. As the wave and winds work this area after construction there is potential for the sediment that has settled in the shallow area to disperse into the deeper portions of the pool reservoir. This sediment will disperse rapidly with the current and should pose no problem with hydrology or the geology of this location.

4.2 Ecology

There will be a loss of approximately 0.4 acre of mud flat when the project is completed. But at the rate of three tenths of an acre each year the result will be a 3 to 4 acre loss of existing habitat within 10 years. The project when completed will prevent the long-term further loss of a National Register eligible archeological site and the existing riparian, wetlands and under story habitat from eroding into the river.

4.3 Water Quality

Since no in-water work will occur, no significant adverse water quality impacts are expected to result from the proposed construction activities. However, a 404(b)(1) has been prepared and a 401 certification will be obtained from Idaho Department of Environmental Quality. The following management actions would be implemented during construction activities. These conditions are included in the project Construction Management Plan; a Corps inspector would be on-site to ensure that contractors abide by these requirements.

1. All grading and placement work will be accomplished in the dry;
2. Petroleum products and other toxic material will be stored in a staging area above summer pool elevation, and will be prevented from entering surface waters. Refueling of equipment will be restricted to areas at least 100 feet from the lakebed.
3. If the contractor observes distressed or dead fish, or any obvious sign of contamination such as oil sheen or odor, all work will cease and the inspector shall be notified;
4. A spill response plan will be prepared as required by the Corps, and the contractor(s) working on the placement of the rock will be required to have spill kits and trained employees on site at all times during active construction.

Beneficial impacts to water quality from construction activities include the curtailment of sediment plumes associated with the sloughing bank.

4.4 Vegetation

Care will be taken to minimize impact on vegetation along haul routes, and along the shoreline where the riprap will be placed. Disturbed areas associated with the temporary access roads will be replanted with native woody vegetations to re-establish cover and prevent erosion.

4.5 Fish

Potential impacts to fishery resources were considered during the design of the proposed work, and steps have been taken to minimize construction impacts: no in-water work will

occur during construction. Storm water run-off will be controlled via best management practices.

4.6 Wildlife

Several bird species inhabit the local bird population. However, these activities should not have a significant effect on the local bird population. No nesting or roosting habitat will be physically altered. Prey availability in any forging habitat in the project area would be only temporally affected, if at all.

4.7 Threatened and Endangered Species

Potential impacts of the proposed projects on threatened and endangered species are addressed in a separate Biological Evaluation (BE) submitted to the USFWS on 20 April 2005. This BE provides the Corps' rationale for the effect determinations briefly described below and summarized in Table 2.

Bald eagles are known to winter over and feed in the area near the project site. A nest site is not located with a 1.5-mile radius. Due to the concern for impacts on wintering bald eagles, the area near the construction work will be monitored on a daily basis for wintering eagles; no work will be conducted if it appears there will be a disturbance to eagles. Work will be monitored from January 1st through March 1st, the end of the bald eagle wintering over period. Ute Ladies-tresses, gray wolf, and Lynx, are not known to inhabit the area where the project is located and the project will have no effect on these species. There will be no in-water work so the project will not likely adversely affect bull trout. The project will not likely adversely affect bald eagles.

Table 2. Effect Determination Summary

Scientific Name	Common Name	Effect Determination
Haliaeetus leucocephalus	Bald Eagle	Not likely to adversely affect
Salvelinus confluentus	Bull Trout	Not likely to adversely affect
Canus lupus	Gray Wolf	No effect
Spiranthes diluvialis	Ute Ladies-tresses	No effect
Lynx canadensis	Lynx	No effect

4.8 Historic Properties ("Cultural Resources") and Indian Tribal Concerns

Federal, State and Indian tribal archaeologists have reviewed the proposed work and have concluded that construction has potential to affect site 10-BR-94, which is recommended as eligible for the National Register of Historic Places. The Corps has conducted archaeological investigations in all construction impact areas to identify whether the planned work actually would affect 10-BR-94, and if so, in what ways. The Corps has determined that earth disturbances associated with the construction on the eroded beach will not affect 10-BR-94 as the archaeological deposits on the beach have no integrity.

Treatment of the intact bank will be done in such a way that the work will not degrade the qualities of the site that make it eligible for the National Register. The current design for the project causes no direct losses of undisturbed parts of the archaeological site, and construction of the project in fact would protect the site from further losses now being caused by bank erosion and slope failure.

The Corps has determined that the proposed Federal action falls within the scope of the 1991 Federal Columbia River Power System Hydroelectric Operations Programmatic Agreement attached to an environmental impact analysis of the Intertie Development and Use program ("IDUPA"). In accordance with the provisions of that agreement, specifically Stipulation 3, Interim Management, the Corps will follow the procedures of 36 CFR Part 800 in effect in 1991 when the IDUPA was signed, in addition to other provisions of the IDUPA that may apply. The Corps has discussed the cultural and historic aspects of the proposed action with the Albeni Falls Dam cultural resource management Cooperating Group, a technical-level panel of Federal, tribal, state, and local subject-matter experts, and is communicating about the project separately with Indian tribal governments. The Corps has recommended that the proposed work proceed with a "no adverse effect" finding. To assure that the proposed work adheres to the conditions for "no adverse effect", the Corps will continue to monitor the design and construction. However, should any previously undiscovered historic properties or human remains inadvertently be encountered during construction, all work in the affected area will cease. The Corps promptly will notify the Idaho State Historic Preservation Officer and local Indian Tribes and will work with them to develop and coordinate a plan for treating the properties or remains.

4.9 Land Use

The construction activities will not change the land use designations on the property. The property will remain within Corps ownership and remain within the Priest River Wildlife Management Area. Idaho Department of Fish and Wildlife will continue to manage the area for conservation, maintenance and management of wildlife, wildlife resources and habitat.

4.10 Utilities and Public Service

The proposed construction will have no effect on telephone, cable, or electric utilities as none are present in the project vicinity. The existing waterline is beyond the construction area and will be entirely avoided.

4.11 Air Quality and Noise

During construction, there would be a temporary and localized reduction in air quality due to emissions from equipment operation during hauling, access road development, and general construction of the bank stabilization. However, these effects would be temporary and localized, and would occur only during daylight hours. As a result, impacts would be deminimus.

4.12 Transportation

Construction vehicles may interrupt local traffic when entering or leaving the construction area and while on the city truck route. Interruptions are expected to be minimal. Any damages that may occur to the truck route (Highway 2) will be repaired at Corps expense. Repairs and restoration will be to a condition as good as that which was present prior to the start of the Corps work on this project. The temporary haul roads will be removed and replanted with native vegetation. A pedestrian access path with be retained.

4.13 Socio-Economic

Construction activities associated with this project will not adversely impact the two major sectors of the economy - tourism and recreation. The proposed project should have a positive economic effect in that contract equipment will be hired to perform the work, materials will be purchased from local quarries and other suppliers, and services and facilities in the greater Priest River/Ponderay/Kootenai/ Sandpoint area will be utilized in support of the effort. The work will be done in the winter months, normally a slow period in the construction industry. Another positive effect would be the railway would continue to operate without interruption allowing BNSFRR to pursue their economic goals.

4.14 Recreation

There will be no negative impact on recreation due primarily to the season of the year – winter – and the fact the work will be done "in-the-dry" during annual reservoir drawdown. Recreation may benefit from the project somewhat due to elimination of sediment entering the water and stabilization of the shoreline.

4.15 Aesthetics

During construction, there would be some disturbance from heavy equipment. Such disturbance is not expected to be significant. After construction is complete the site will look different immediately near the shoreline with a riprap bank stabilization structure in place of the eroding bank. However, this structure will prevent further loss of shoreline and will maintain the remaining habitat and cultural resources in place. In the course of the landscape adjusting to the structure, the disturbance that will occur during construction will be negligible.

5.0 UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects of the proposed projects include: 1) the disruption of local and tourist traffic by construction vehicles; 2) disruption to local birds in the area due to noise of construction activities; and 3) the loss of 0.4 acre of mudflat habitat. Birds are the most prevalent species on site. Some small mammals may also be disturbed. For reason discussed in this document, the Corps has determined that these effects are not significant.

6.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

No federal resources will be irreversibly and irretrievably committed to the projects until the EA is finalized and the FONSI has been signed.

7.0 CUMULATIVE IMPACTS

Any cumulative impacts of this maintenance project would be highly localized, and would not significantly affect the quality of the natural or built environments. In both cases, the inconvenience of minor short-term disruptions is outweighed by long-term potential benefits from bank stabilization and protection of cultural resources.

Some of the short-term disruptions are increased vehicular traffic, increased noise during construction hours, and change of appearance of the immediate area. The long-term potential benefits are an increase in use of the area by avian species, protecting cultural resources, and maintaining the riparian habitat that currently exist at the project site.

Based on Corps ownership and current management of this area within the Priest River Wildlife Management Area (managed by Idaho Department of Fish & Wildlife), future development in this area is not anticipated and highly unlikely.

8.0COORDINATION

The following agencies and entities have been involved with the environmental coordination of the proposed project:

- U.S. Fish and Wildlife Service (USFWS)
- Idaho Department of Fish and Game (IDFG)
- Idaho Department of Lands (IDL)
- Idaho Department of Environmental Quality (IDEQ)
- Kalispel Tribe

The issue of concern was the timing window of construction. Construction must occur during the winter months when the water level has drawn down and the ground is frozen to provide access. Based on the USFWS concern for wintering eagles monitoring will occur daily during construction prior to the start of the day for eagles that may be within ¼ mile of the project area. It was also noted there is one eagle nests approximately two miles from the project site.

9.0 ENVIRONMENTAL COMPLIANCE

9.1 National Environmental Policy Act

This Environmental Assessment, prepared May 2005, is a compilation of environmental information on the project related to Pend Oreille River 10-BR-94 Shoreline Stabilization. Any comments or concerns will be contained and addressed in the forthcoming Final Environmental Assessment.

9.2 Endangered Species Act Section 7 Consultation

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed or proposed threatened or endangered species. A Biological Evaluation was submitted to USFWS on 20 April 2005 for their concurrence of findings. The BE was coordinated with state, federal, and local agencies.

9.3 Clean Water Act Compliance

A 404(b)(1) evaluation, which demonstrates compliance with the substantive requirements of the CWA, is required for work involving discharge of fill material into the waters of the United States. Since no in-water work, but a portion of the structure, will become wet during full pool a 404(b)(1) evaluation was prepared for this project. A 401 Water Quality Certification request was submitted to Idaho Department of Environmental Quality on 11 June 2005. An erosion control plan will be developed and put into action prior to the beginning of construction.

9.4 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC 470) requires that wildlife conservation receive equal consideration and be coordinated with other features of water resource development projects. This goal is accomplished through Corps funding of U.S. Fish and Wildlife Service habitat surveys evaluating the likely impacts of proposed actions, which provide the basis for recommendations for avoiding or minimizing such impacts. A Fish and Wildlife Coordination Act Report is not required for maintenance work.

9.5 National Historic Preservation Act

The National Historic Preservation Act (16 USC 470) requires that the effects of proposed Federal undertakings or actions on properties (such as archaeological sites, buildings, structures, or objects) included in or eligible for inclusion in the National Register of Historic Places must be considered. Affected State and/or Tribal Historic Preservation Officers (SHPO) and the Advisory Council on Historic Preservation (ACHP) must be afforded an opportunity to comment on the undertaking, and the agency also must consult with affected Indian tribes. The proposed undertaking as described in this EA was reviewed by archaeologists of both the Corps and the Kalispel Tribe's Natural Resources Department, as well as by other interested tribes and the Idaho State Historic Preservation Officer. The review findings have been taken into account to develop management measures that will prevent adverse effects of construction on the

site. A letter of support from the Kalispel Tribe of Indians was received on October 08, 2003.

9.6 Executive Order 12898, Environmental Justice

Executive Order 12898 directs every federal agency to identify and address disproportionately high and adverse human health or environmental effects of agency programs and activities on minority and low-income populations.

The potentially affected community does include a minority and/or low-income population. A query of the Idaho Census for 1998 indicated that Bonner County contained a population of 98% Caucasian, and less than 16% of Bonner County's population had income below the poverty level.

The project does not involve the sighting of a facility that will discharge pollutants or contaminants, so no human health effects would occur. Maintenance of this structure would not negatively affect property values in the area, or socially stigmatize local residents or businesses in any way. No interference with local Native American Nation's treaty rights would result from the proposed project; construction activities would not physically interfere with fishing, or impact fishery resources.

Since no health and adverse effects are anticipated to result from the project, the Corps has determined that no disproportional impacts would occur.

10.0 CONCLUSION

Based on the above analysis, this project is not a major Federal action significantly affecting the quality of the human or natural environment, and therefore does not require preparation of an environmental impact statement.

11.0 REFERENCES

Associates, Inc. Draft Report for the U.S. Army Corps of Engineers, Seattle District. Seattle.

Idaho Department of Environmental Quality. <http://www2.state.id.us/deq

Idaho State Census. <http://www.venus.census.gov/

Renk, N.F. 2001. National Register of Historic Places Evaluation of the Panhandle Smelting and Refining Company Facility, Ponderay Idaho. Northwest Archaeological Inc. Draft Report for the U.S. Army Corps of Engineers, Seattle District. Seattle.

Ecology (Washington State Department of Ecology), 2004. Quality Assurance Project Plan Pend Oreille River Temperature Total Maximum Daily Load Technical Study, Publication No. 04-03-109. Olympia, WA.

Appendix A: Draft Finding of No Significant Impact (FONSI)

Draft FINDING OF NO SIGNIFICANT IMPACT
and
404 (b)(1) DETERMINATION

Pend Oreille River 10-BR-94 Shoreline Stabilization Project
Bonner County, Idaho

1. Proposed Action. This Draft Environmental Assessment (EA) evaluates the environmental, cultural and social effects of a Pend Oreille River Shoreline Stabilization intended to prevent loss of an important prehistoric archaeological site within the Priest River Wildlife Management Area. Erosion from wave action has caused incremental bank failure along the north shore (right bank) of the Pend Oreille River within the boundaries of archaeological site 10-BR-94, determined eligible for the National Register of Historic Places in 2005. The compact clayey sediments at the site are subjected to inundation during full pool elevation (2,062+/-) of the reservoir and are stricken energetically by large waves caused by high winds or boat traffic during that period. Although water pressure holds the soil in place at high pool, when the pool is drawn down for the winter, the temporarily stabilized soils erode or slough off onto the beach vacated by the receding shoreline, especially when saturated by heavy fall precipitation. Tracks of a local spur of the Burlington Northern Santa Fe Railroad (BNSFR) and Montana Rail Link (MRL) run along the north edge of the site. The erosion and bank failure not only are adversely affecting the National Register-eligible archaeological site 10-BR-94, but have progressed within approximately 500 lineal feet of the railroad, and thus ultimately threaten that line.

The primary focus of the project is the construction of rock riprap bank stabilization along approximately 600 lineal feet of the shoreline. When complete, the structure will provide protection against erosion to an elevation of 2067.0 feet (MSL) or 5.5 feet above the regulated summer pool level. Access for the project would require construction of a temporary haul road approximately 500 lineal feet and staging area. The haul road would follow the alignment of an existing earthen path. One temporary railroad crossings will be installed to provide access to the work site during construction. The work will take place within easement areas acquired by the Corps of Engineers (Corps) for the purpose of bank stabilization on public and railroad-owned lands being impacted by shoreline erosion.

The attached Environmental Assessment (EA) and 404(b)(1) evaluation describe the expected environmental impacts of the proposed action. The placement of riprap will result in temporary disruption of water quality, air quality, and noise. All of these impacts will be minor. Construction will occur at times when monitoring of bald eagles will be required but at low pool to avoid impacts to fishery species. No threatened and/or endangered species use the project site to the extent that they would be adversely impacted by this project. The Biological Evaluation was submitted to U.S. Fish and

Wildlife Service on 20 April 2005. Commercial and sport fishing would not be affected significantly by the project. Cultural resources and Native American concerns would not be affected significantly by the project. The section 404(b)(1) evaluation prepared for the project determined that the project includes appropriate and practicable steps to minimize adverse impacts to the aquatic ecosystem, and that there is no practicable alternative that would have less impact on the aquatic environment. A 401 water quality certification was requested from the Idaho Department of Environmental Quality on 11 May 2005.

Agency coordination was accomplished with the local Tribes, U.S. Fish and Wildlife Service, Idaho Department of Environmental Quality, Idaho Department of Fish and Wildlife, and Idaho Department of Lands. No in-water work will occur during construction. The base riprap of approximately two feet will be inundated when the lake is at summer pool level.

Based on the above reasons, and the EA and the Section 404(b)(1) evaluation, I have determined that the proposed action will not result in significant adverse environmental impacts. The proposed action is not a major federal action significantly affecting the quality of the human environment, and therefore does not require preparation of an environmental impact statement.

_____ _____

Date

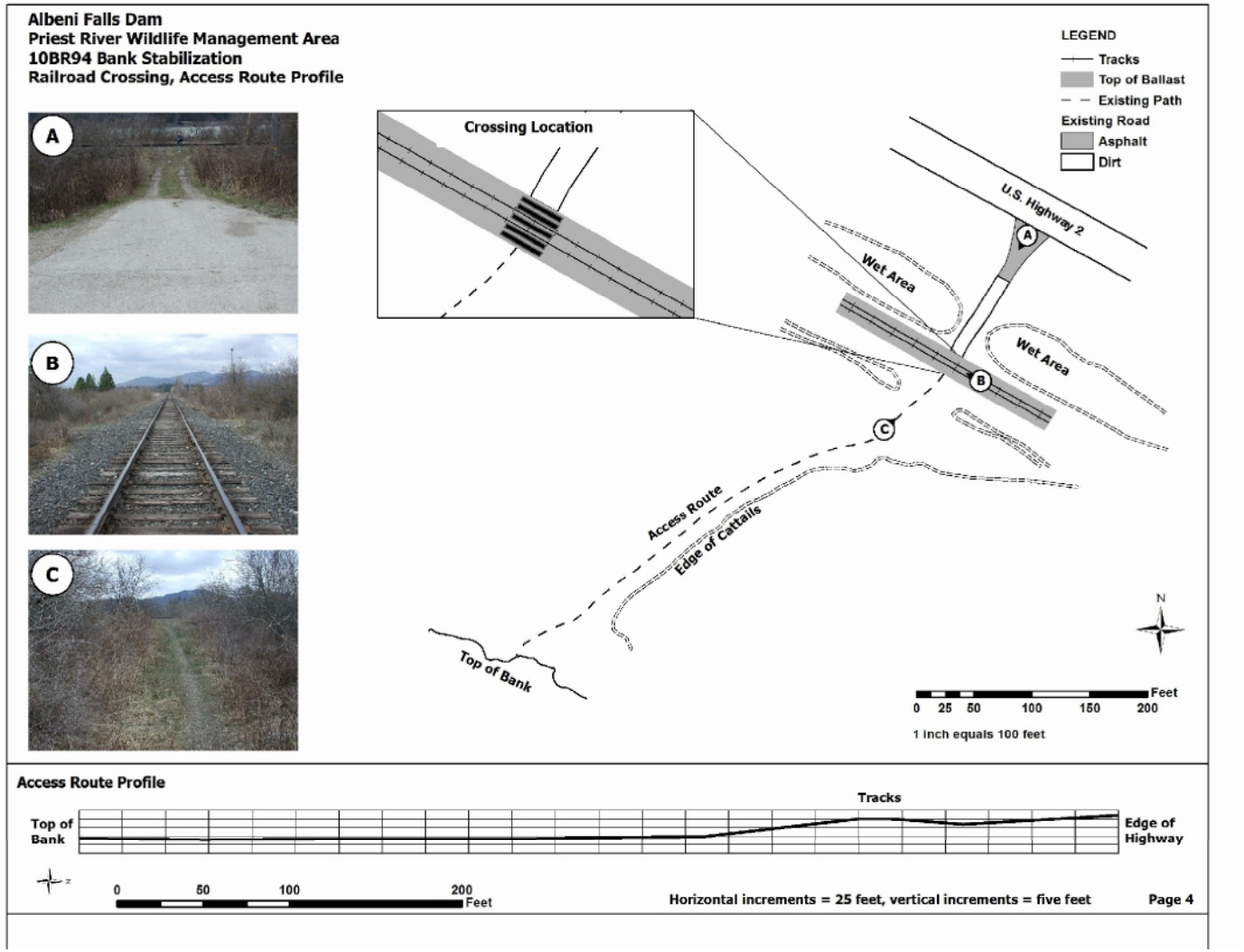
Debra M. Lewis
Colonel, Corps of Engineers
District Engineer

Appendix B: Photos

Photo 1. Sloughing bank following receding high pool elevations. Exposed bank material risks exposure of culturally sensitive material.

Photo 2. Sloughing bank following receding high pool elevations. Exposed bank material risks exposure of culturally sensitive material.

Appendix C: Railroad Crossing & Access Route Profile


Albeni Falls Dam
Priest River Wildlife Management Area
10BR94 Bank Stabilization
Railroad Crossing, Access Route Profile
A
B
C
Crossing Location
LEGEND
Tracks
Top of Ballast
Existing Path
Existing Road
Asphalt
Dirt
U.S. Highway 2
Wet Area
Wet Area
Access Route
Edge of Cattails
Top of Bank
N
Feet
0 25 50 100 150 200
1 inch equals 100 feet
Access Route Profile
Tracks
Top of Bank
Edge of Highway
0 50 100 200 Feet
Horizontal increments = 25 feet, vertical increments = five feet
Page 4

Appendix D: Design Drawings

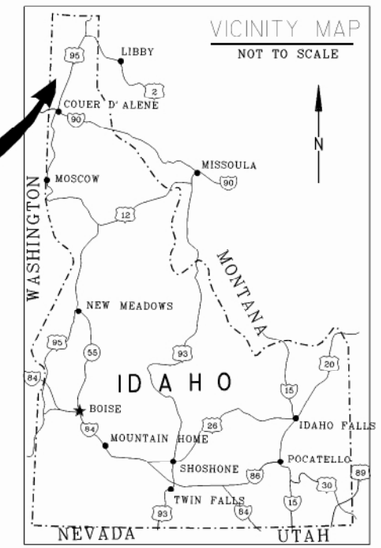
US Army Corps
of Engineers
Seattle District

PEND ORIELLE SHORELINE STABILIZATION & HISTORIC PROPERTY (10-BR-94) PROTECTION

PRIEST RIVER, IDAHO

DRAWING INDEX		
SHEET NO.	PLATE NO.	TITLE
1	G-1	TITLE, VICINITY MAP, AND DRAWING INDEX
2	C-1	OVERALL SITE PLAN
3	C-2	PLANTING DETAIL
4	C-3	SECTIONS A & B
5	C-4	SECTIONS C & D
6	C-5	SECTIONS E & F
7	C-6	SECTION G

PRIEST RIVER



PRIEST RIVER WILDLIFE MANAGEMENT AREA
PEND ORIELLE HABITAT EROSION PROTECTION

REDUCED TO 50% OF FULL SIZE

SAFETY PAYS

FY05

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DATE AND TIME PLOTTED: 12-APR-2005 12:25
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PREPARED: XX
DESIGN MANAGER
REVIEWED: XX
CHIEF, TECH ENGINEERING AND REVIEW SECTION
SUBMITTED: XX
CHIEF, DESIGN BRANCH
RECOMMENDED: XX
CHIEF, ENGINEERING & CONSTRUCTION DIVISION
APPROVED: XX
FOR CORPS OF ENGINEERS: DISTRICT ENGINEER

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

TITLE, VICINITY MAP, AND DRAWING INDEX

PRIEST RIVER IDAHO

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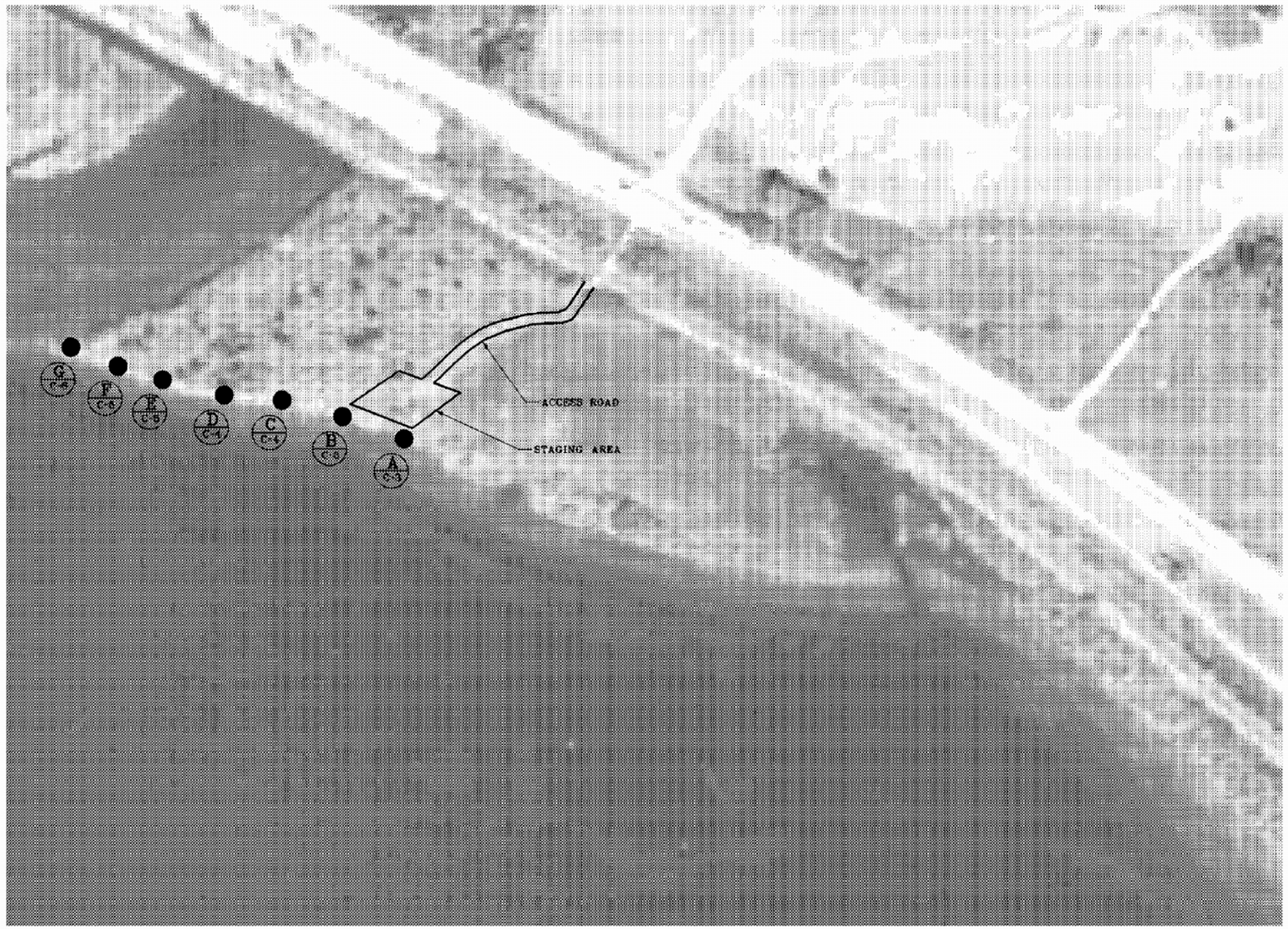
D			12APR05	G-1
DSGN. DGM	CHK.		SHEET 1	



REVISIONS				
SYMBOL	ZONE	DESCRIPTION	DATE	BY

ACCESS:

A ROAD WILL NEED TO BE PIONEERED FROM RAILROAD CROSSING TO SITE FOR APPROXIMATELY 500 LF. TO KEEP TRUCKS RUNNING TWO TURNOUTS ARE REQUIRED. ASSUME CONDITIONS SIMILAR TO WHAT WAS EXPERIENCED AT THE BLACK ROCK JOB SITE & THE FOLLOWING IS NEEDED:

500 LF x 14 FT WIDE x 18 IN LIFT OF 4 INCH MINUS QUARRY SPALLS + 2 TURNOUT OF 10 FT WIDE x 30 FT LONG OF 4 INCH MINUS QUARRY SPALLS. ALL TO BE TOPPED WITH 2 INCH MINUS CRUSHED ROCK. NO FILTER FABRIC SO ROAD CAN BE SCARIFIED WITH RIPPER BLADES AT CONCLUSION.

CLASS IV RIPRAP= 2000 CY

3" MINUS PITRUN GRAVEL= 1500 CY

4"-SPALLS: (500LF x 1.5 FT x 14 FT) / 27 CF/CY = 400 CY
(2 x 30 LF x 1.5 FT x 10 FT) / 27 CF/CY = 35 CY
TOTAL = 450 CY

2"-CRUSHED: (500 LF x 0.5 FT x 14 FT) / 27 CF/CY = 130 CY
(2 x 30 LF x 0.5 FT x 10 FT) / 27 CF/CY = 15 CY
TOTAL = 150 CY

EQUIPMENT: D-4 DOZER W/ 6 WAY BLADE & THREE PRONG RIPPER OR EQUIVALENT.
200 SERIES EXCAVATOR W/ THUMB OR EQUIVALENT.

ASSUME 12 DAYS @ 10 HRS TO COMPLETE WORK.

1" = 100' 100' 50' 0 100' 200'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

OVERALL SITE PLAN

PRIEST RIVER IDAHO

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D			12APR05	C-1
DESIGN: DGM	CHK:	SHEET 2		

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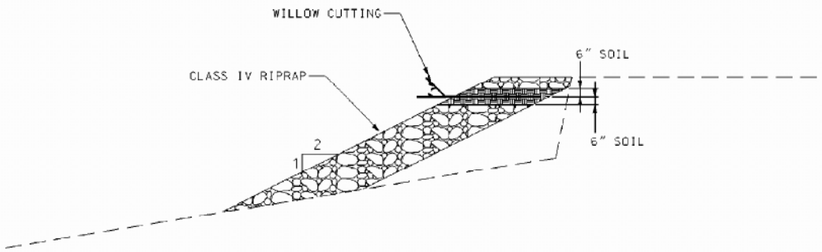
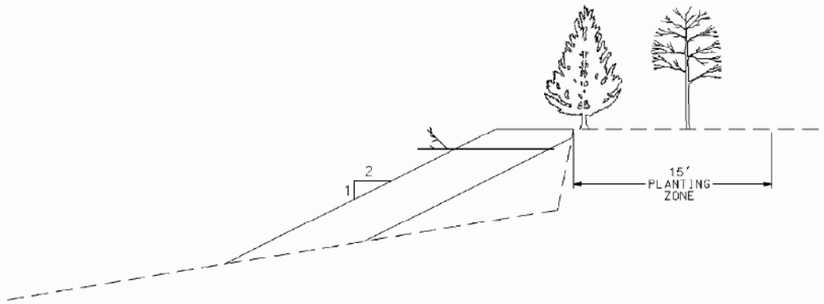


WILLOW LIFT DETAIL



TREE PLANTING DETAIL

RIPARIAN PLANTING				
SPECIES	SCIENTIFIC NAME	TYPE	SPACING	QUANTITY
SITKA WILLOW	SALIX SITCHENSIS	CUTTING	6"	1200
PACIFIC WILLOW	SALIX LUCIDA var. LASIANDRA	CUTTING	6"	1200

WILLOW LIFT NOTES:

1. WILLOW STAKES SHALL BE CUT FROM APPROVED SOURCES USING A SHARP TOOL. LIVE WILLOW STAKES SHALL BE FROM 3' TO 5' IN LENGTH WITH A BASAL END OF NO LESS THAN 0.5" IN DIAMETER. THE TOP ENDS SHALL BE BLUNT; BUTT ENDS SHALL BE ANGLED AT 45 DEGREES. STAKES SHALL BE STRIPPED OF ALL STEMS AND LEAVES, TAKING CARE TO MINIMIZE SCARRING OR BRUISING OF THE WILLOW STAKES. IMMEDIATELY UPON CUTTING, WILLOW STAKES WILL BE PLACED IN WATER IN A SHADED AREA.

2. THE CONTRACTOR SHALL PROVIDE FOR THE PROPER COLLECTION, CARE, STORAGE, AND HANDLING OF PLANT MATERIALS BEFORE PLANTING. DURING ALL STAGES, THE PLANT MATERIALS SHALL BE PROTECTED FROM EXPOSURE TO WIND AND DIRECT SUNLIGHT.

3. THE FOLLOWING TWO SPECIES MUST BE PLANTED IN AT LEAST A 40:60 RATIO & 6" APART AT SUMMER POOL ELEVATION:
   PACIFIC WILLOW (SALIX LUCIDA var. LASIANDRA)
   SITKA WILLOW (SALIX SITCHENSIS)

4. ALTERNATIVE SPECIES MUST BE AUTHORIZED BY THE CORPS OR ENGINEERS ENVIRONMENTAL COORDINATOR MATT BENNETT.

RIPARIAN PLANTING				
SPECIES	SCIENTIFIC NAME	TYPE	SPACING	QUANTITY
BLACK COTTONWOOD	POPULUS BALSAMIFERA	BAREROOT	6'	100
PONDEROSA PINE	PINUS PONDEROSA	BAREROOT	6'	100

RIPARIAN PLANTING NOTES:

1. PLANTS TO BE PLANTED AS BAREROOT IN LATE AUTUMN 2005.

2. PLANTING TO USE SPADE TO MINIMIZE SURFACE SOIL DISTRUBANCE.

3. ALL PLANTING WILL BE SUPERVISED BY A TRIBAL ARCHEOLOGIST.

4. ALL PLANTING WILL BE SUPERVISED BY A BIOLOGIST EXPERIENCED WITH PROPER INSTALLATION & HANDLING TECHNIQUES.

** PLANTING NOTES APPLY TO ENTIRE 600' CONSTRUCTION AREA. **

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REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

PLANTING DETAIL

PRIEST RIVER IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE	PLATE
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REVISIONS				
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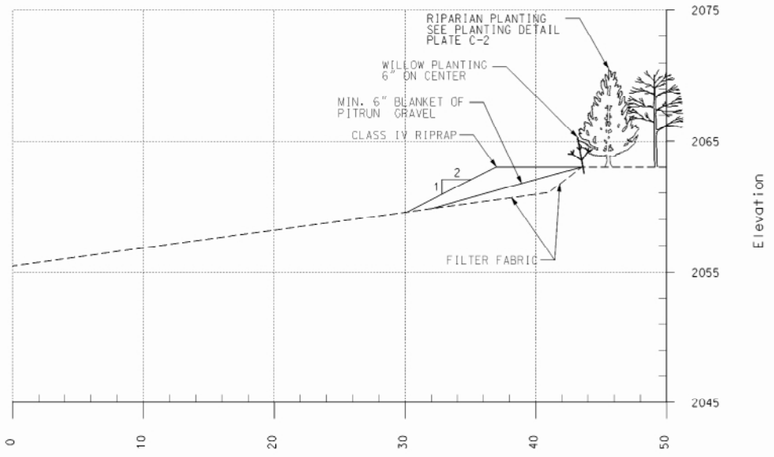

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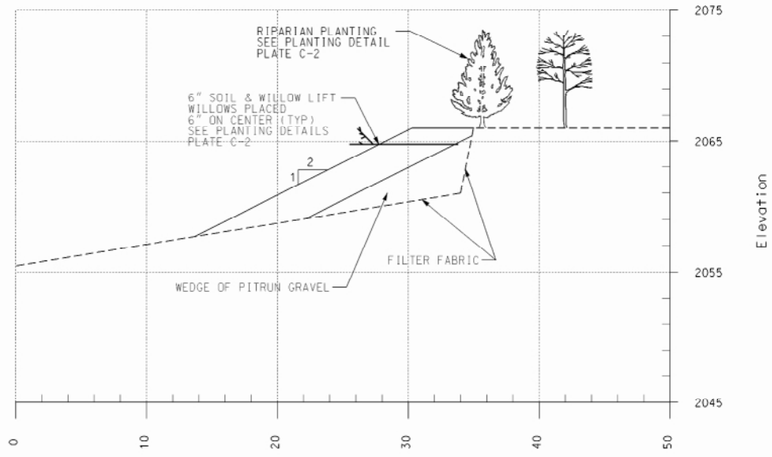

POINT "B" — B / C-1

1" = 5' 5' 0 5' 10'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

SECTIONS A & B

PRIEST RIVER IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE	PLATE
D			12APR05	C-3
DSGN. DGM	CHK.		SHEET 4	

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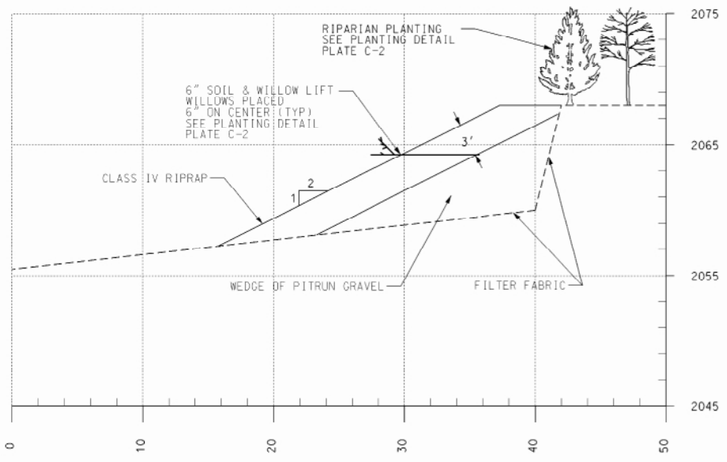
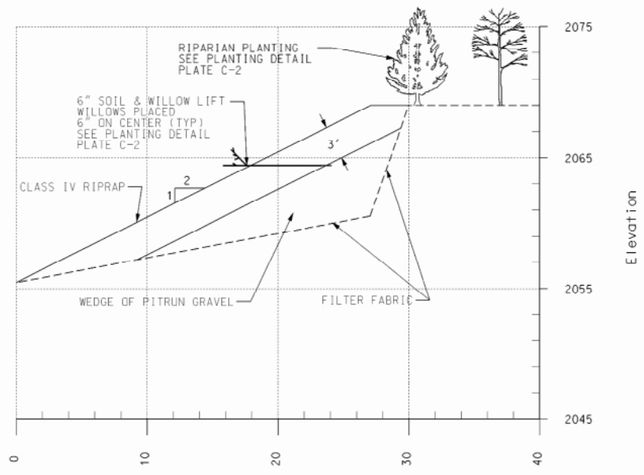


POINT "C" C C-1



POINT "D" D C-1

1" - 5' 5' 0 5' 10'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

SECTIONS C & D

PRIEST RIVER IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE:	PLATE
D			12APR05	C-4
DSGN. DGM	CHK.		SHEET 5	

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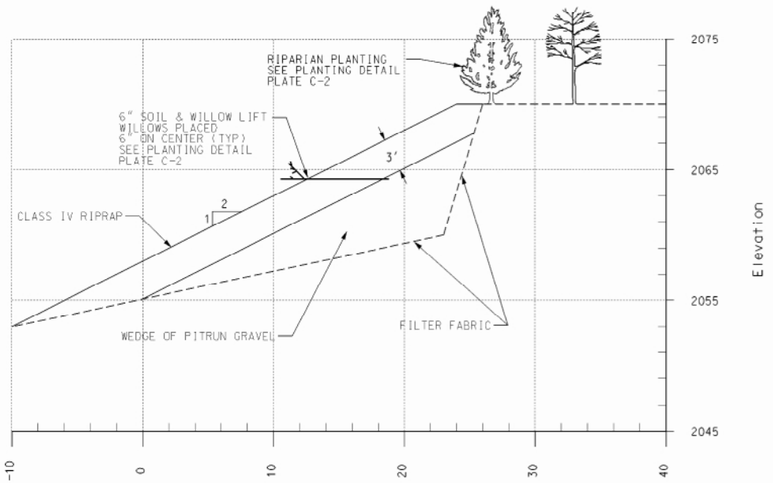
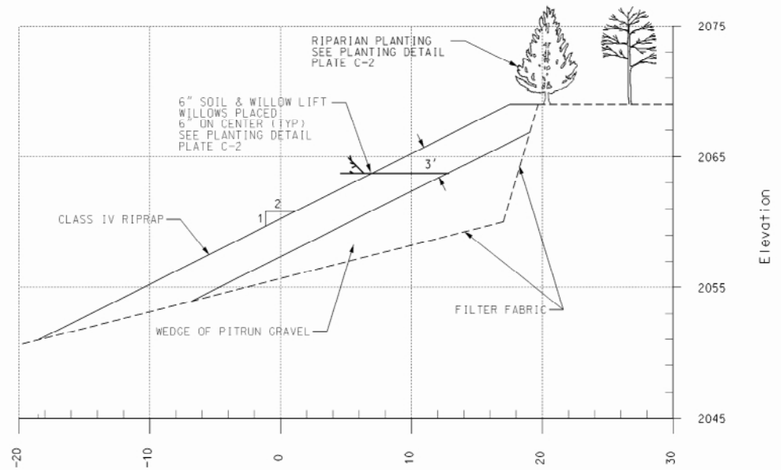
DATE AND TIME PLOTTED: 12-APR-2005 12:28
DESIGN FILE: S:\CIV\PRIEST RIVER\SHT5.DGN

REVISIONS				
SYMBOL	ZONE	DESCRIPTION	DATE	BY



POINT "E" E C-1



POINT "F" F C-1

1" = 5' 5' 0 5' 10'

REDUCED TO 50% OF FULL SIZE

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

SECTIONS E & F

PRIEST RIVER IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE	PLATE
D			12APR05	C-5
DSGN. DGM	CHK.		SHEET 6	

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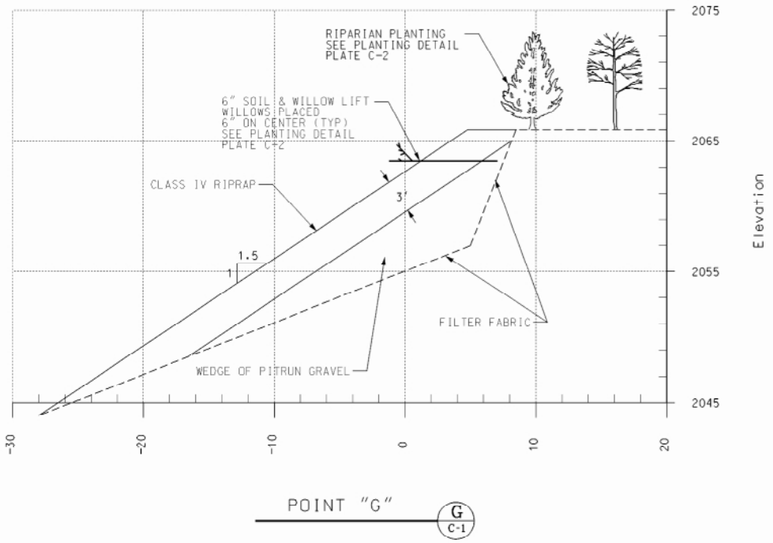
DATE AND TIME PLOTTED: 12-APR-2005 12:28
DESIGN FILE: S:\CIV\PRIEST RIVER\SHT6.DGN

REVISIONS				
SYMBOL	ZONE	DESCRIPTION	DATE	BY



POINT "G" (G, C-1)

1" = 5' 5' 0 5' 10'

REDUCED TO 50% OF FULL SIZE

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CORPS OF ENGINEERS
SEATTLE, WASHINGTON

PEND ORIELLE SHORELINE STABILIZATION
& HISTORIC PROPERTY (10-BR-94) PROTECTION

SECTION G

PRIEST RIVER IDAHO

SIZE	INVITATION NO.	FILE NO.	DATE	PLATE
D			12APR05	C-6
DSGN. DGM	CHK.		SHEET 7	

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DATE AND TIME PLOTTED: 12-APR-2005 12:28
DESIGN FILE: S:\CIV\PRIEST RIVER\SHT7.DGN