

Draft Environmental Assessment

**Cedar River Side Channel
Replacement Project**

**King County, Washington
Summer 2003**



**US Army Corps
of Engineers®**
Seattle District

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Summer 2003

Draft Environmental Assessment

Responsible Agencies: The responsible agency for this maintenance work is the U.S. Army Corps of Engineers, Seattle District.

Abstract: This document evaluates the impacts of the Cedar River Side Channel Replacement Project. The United States Army Corps of Engineers (USACE), with the city of Renton as the local project sponsor, constructed the Cedar River Section 205 Flood Control Project between 1998 and 2000. The project consisted of dredging within, and constructing concrete floodwalls and earthen levees along the lower 1.25 miles of the Cedar River. A groundwater-spawning channel constructed near River Mile 5.0 of the Cedar River (within Ron Regis Park) was also constructed during this time period to serve as mitigation for the assumed loss of salmonid spawning habitat in the lower 1.25 miles of the Cedar River following the initial and maintenance river dredging operations. Maintenance dredging was assumed to occur every 3 to 10 years to maintain the flood protection benefits. During the February 28, 2001 Nisqually Earthquake, a landslide occurred adjacent to the groundwater spawning channel and resulted in the loss of the channel's function as off-channel habitat. In response, the City of Renton requested and obtained assistance from the USACE under Public Law 84-99 to replace the channel to provide the long-term mitigation required for the Cedar River Section 205 Flood Damage Control Project. During the summer of 2003, the Corps is planning to construct the Cedar River Side Channel Replacement Project. The proposed work includes replacing the earthquake-damaged side channel with a new river-fed channel containing habitat features suitable for salmonid spawning and rearing located between River Mile 3.4 and 3.6.

THE OFFICIAL COMMENT PERIOD ON THIS ENVIRONMENTAL ASSESSMENT is May 1, 2003 through May 31, 2003.

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1. INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA), this Environmental Assessment evaluates the impacts of construction of a side channel near river mile (RM) 3.4 and 3.6 along the Cedar River in the City of Renton, King County Washington. The goal of the project is to create off-channel spawning and rearing habitat for salmonids (primarily sockeye and Chinook) within the Cedar River basin. The new spawning and rearing habitat (about 10,000 square feet) will serve as a direct replacement for the groundwater channel that was destroyed as a result of the 2001 Nisqually Earthquake. The groundwater channel was originally constructed as mitigation for the United States Army Corps of Engineers Cedar River Section 205 Flood Hazard Reduction Project.

1.1 Location

This project is located in the floodplain along the left bank between RM 3.4 and 3.6 on the Cedar River in the City of Renton, King County Washington (T21N, R05E, Section 21). The project location is east of the Royal Hills Neighborhood; west of the Maple Garden Neighborhood within City owned property.

1.2 Background

The United States Army Corps of Engineers (USACE), with the city of Renton as the local project sponsor, constructed the Cedar River Section 205 Flood Control Project between 1998 and 2000. The project consisted of dredging within, and constructing concrete floodwalls and earthen levees along the lower 1.25 miles of the Cedar River.

A groundwater-spawning channel constructed near River Mile 5.0 of the Cedar River (within Ron Regis Park) was also constructed during this time period to serve as mitigation for the assumed loss of salmonid spawning habitat in the lower 1.25 miles of the Cedar River following the initial and maintenance river dredging operations. Maintenance dredging was assumed to occur every 3 to 10 years to maintain the flood protection benefits.

During the February 28, 2001 Nisqually Earthquake, a landslide occurred adjacent to the groundwater spawning channel and resulted in the loss of the channel's function as off-channel habitat. In response, the City of Renton requested and obtained assistance from the USACE under Public Law 84-99 to replace the channel to provide the long-term mitigation required for the Cedar River Section 205 Flood Damage Control Project.

The City of Renton Surface Water Utility will be required to monitor and maintain the channel to provide spawning and rearing habitat. Monitoring may include: adult and redd counts, fry production surveys, and riparian habitat monitoring. Maintenance may include: cleaning and/or repair of entire channel including intake structure and outlet.

1.3 Project Purpose and Need

This project is necessary to reestablish a salmonid spawning and rearing side-channel to the Cedar River to fulfill the mitigation agreements between the USACE and the Washington Department of Fish and Wildlife.

1.4 Authority

The Cedar River Side Channel Project is authorized by Public Law 84-99 (USCA 701n). Corps rehabilitation and restoration work under this authority is limited to flood control works damaged or destroyed by flood. The rehabilitated structure will normally be designed to provide the same degree of protection as the original structure. Because the 1988 groundwater-fed side channel was an essential feature of the Section 205 Cedar River Flood Control Project, the PL 84-99 authority authorizes its rehabilitation or replacement.

2. PROPOSED ACTION AND ALTERNATIVES ANALYSIS

2.1 Description of the Proposed Action

The project consists of the following construction elements:

- The construction of an intake structure (consisting of concrete box culvert, trash rack, control valve, geogrids, and approximately 140 feet of pipe) at the upstream end of the channel to convey flow from the Cedar River.
- The construction of an open-channel outlet approximately 1,200 feet downstream from the intake structure in order to allow flow to re-enter the Cedar River and adult/juvenile fish to migrate to or from the channel.
- The excavation of approximately 6,000 cubic yards of floodplain sediments (i.e., gravel, sand and silts) and shaping for a distance of 1,000 feet within the existing drainage course in order to create the replacement channel.
- The addition of large woody debris – approximately 5 to 10 clusters of three pieces of wood – to create rearing pools and to stabilize banks within the constructed channel.
- The addition 600-900 cubic yards of gravel to create spawning habitat.
- The construction of a 12-foot wide gravel-surfaced maintenance path adjacent to the west side of the channel for the length of the project.
- The installation of native trees, shrubs and plants at two locations – along the new channel and between the Cedar River and the new channel within an existing disturbed area – in order to mitigate for vegetation disturbance and tree removal (approximately 50 to 100 cottonwood and alder trees) resulting from the construction of the channel and maintenance road.
- The installation of a gate across the access road to deter illegal vehicular access.
- The installation of educational signs to inform the public of salmon within the Cedar River basin as well as the impacts of illegal activities on the habitat area.

Project construction is anticipated to be between June through November of 2003 for work outside of the river and between June 15th through August 15th of 2003 for in-river construction. Future maintenance work may be necessary for cleaning and/or repair of the channel, including the intake structure and outlet.

2.2 Alternatives

No Action. The no action alternative would not repair or replace the groundwater-spawning channel constructed near River Mile 5.0 of the Cedar River (within Ron Regis Park) that was altered as a result of a landslide triggered by the February 28, 2001 Nisqually Earthquake. However, the landslide changed the main flow of the river resulting in the loss of the channel's function as off-channel salmonid spawning and rearing habitat.

Repair of the Earthquake Damaged Channel. This alternative would have required the moving of approximately 40,000 cubic yards of slide debris to reopen the river channel and then some work to develop a control structure on the up stream end of the original channel. This alternative was not selected because of the high threat of additional slides closing the main river channel again.

Modification to the Existing Elliot Channel. This alternative would involve modification of the existing Elliot Spawning and Rearing Channel, in an attempt to increase the available productivity of existing channel. This would include supplementing the existing project with more large woody debris, plantings, and spawning gravel as necessary. However, this channel is currently functioning with an adequate rate of production and modification to the channel might have adverse affects to sockeye production and other fish and wildlife species.

Creation of a new Channel at the Renton Elks Club This alternative would have created a replacement spawning/rearing side-channel on the Renton Elks Club property. The problem with this site was that it was adjacent to an actively sliding area and there was concerns that any new projects near this site were likely to be eliminated in a future slide.

3. EXISTING ENVIRONMENT

3.1 Geology/Soils/Sediments

The northwest/southeast trending valleys that contain the Cedar River, and Lake Sammamish and Washington were formed by the most recent retreat of glaciation approximately 10,000 years ago. The soils are generally glacially deposited, such as till, outwash or glaciolacustrine deposits. The Cedar River valley is composed primarily of alluvium deposited with the meanderings of the Cedar River across its floodplain. Gravels are deposited in many areas of the floodplain, and flow from the river through these gravel deposits manifests itself in the form of

groundwater flow where floodplain soils have been excavated. The floodplain soils at the project site are a mix of gravels, sands, and silts from successive flooding events. The project site lies along the southern shore of the Cedar River and occupies a low bench below a steep valley slope. The riverbank is abrupt and appears stable. One swale runs immediately at the base of the valley slope. Another occupies a linear depression at the base of a minor terrace escarpment midway between the valley slope and the river. The proposed spawning channel would be occupying the second swale, which becomes more defined toward the downstream end of the site. At its highest, the terrace rises about 10 feet above the left side (looking downstream) of the swale.

3.2 Water Quality

Water quality in the Cedar River is considered Class AA (extraordinary) in the vicinity of the proposed rearing/spawning channel (RM 3.1). During heavy rainstorms and floods there are temporary periods of high turbidity, but otherwise there are no other water quality issues. The floodplain where the rearing/spawning channel will be constructed currently receives river water during flows greater than about 5,500 CFS, which is about a 5-10 year recurrence interval flow.

3.3 Vegetation

The most prevalent community that occurs throughout the site is a cottonwood/alder forest with an understory of snowberry, salmonberry, and sword fern. In places, vine maple, blackberry, Indian plum, Japanese knotweed, bleeding heart, giant horsetail, and Pacific waterleaf occur. New growth of buttercup and nettle was just becoming evident at the time of field investigations. There is a 300 square foot wetland on site consisting of snowberry, salmonberry, and sword fern. The wetland occupies a relatively long, narrow low spot in the central swale. Approximately 60 to 100 cottonwoods (greater than 6-inch diameter) will be felled to construct the channel and maintenance path.

3.4 Fish

According to the Final Environmental Impact Study for the Cedar River 205 Flood Control Project prepared in August of 1997, there are at least 22 species of fish present in the Cedar River. In the vicinity of the project site there are sockeye salmon, chinook salmon, coho salmon, steelhead trout, rainbow trout, cutthroat trout, mountain whitefish, northern squawfish, peamouth chub, three-spine stickleback, largescale sucker, longnose dace, bork lamprey, Pacific lamprey, and several species of sculpin. Bull trout have not been observed in the vicinity of the proposed project, but may occur. The Cedar River adjacent to the proposed project is heavily utilized for spawning by adult sockeye, chinook and coho salmon. The existing natural side channels downstream of the Elliot levee are utilized for rearing by sockeye fry, chinook fry and juveniles, coho and steelhead smolts. Three species listed as threatened under the Endangered Species Act are likely to occur in the project area, including Bald Eagle, Puget Sound ESU chinook salmon, and Puget Sound/Western Washington ESU bull trout. In addition, coho salmon, a candidate species, are also located in the vicinity of the site.

Sockeye

Sockeye salmon typically spawn in streams that flow into large lakes systems to allow juvenile sockeye to rear for a year or more in a deepwater lake environment before migrating to sea. Prior to the 1930s, Lake Washington was famous for its large populations of kokanee (the freshwater form of the sockeye), but sea-run sockeye salmon were thought to be absent. In the year 1916, the ship canal was opened to serve as a new outlet for Lake Washington and to provide the water needed to operate the just completed Hiram M. Chittenden Locks at Ballard. This combined the extensive spawning grounds of the Cedar River with a large lake-rearing environment, provided an opportunity to develop a major sockeye salmon population in the waters of southern Puget Sound.

Sockeye were introduced into the Lake Washington watershed in 1935 (and subsequent years) from the Baker River. The first documented adult returns to Lake Washington were in 1940 when 9,099 sockeye were counted at the Washington Department of Fisheries hatchery on Issaquah Creek. The run gradually increased, and in 1970 an escapement goal of 350,000 spawners was adopted and in 1971 the first directed fisheries occurred. Since then, sockeye returns have significantly fluctuated despite supplementation efforts and harvest restrictions, theoretically due to freshwater and ocean survival constraints, and because of an increased frequency in damaging winter floods (WDFW 2002).

3.5 Wildlife

Wildlife species likely to be present at the site and surrounding area are black-tailed deer, cougar, muskrat, coyote, raccoon, Eastern gray squirrel, opossum, beaver, cottontail rabbits, striped skunk, Norway rats, various small rodents, and feral dogs and cats. Red tailed hawks and bald eagles utilize the taller cottonwoods for perching and foraging. Mergansers, mallards and other waterfowl are also present.

3.6 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 in vicinity of the project (see Table 1.).

A Biological Assessment (BA) was prepared and submitted to National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) on July 30, 2002. The BA concluded that the proposed project is *not likely adversely affect* any species protected under the Act, largely because construction will occur when chinook and bull trout are least likely to be present in the project area, and during a portion of the year when bald eagles are most tolerant of disturbance. The individual effect determinations made in the BA are summarized in Table 2. The Corps will not proceed with the proposed work until letters concurring with the determinations made in the BA have been received.

Table 1. Protected Species Potentially Occurring in the Project Vicinity

Species	Listing Status	Critical Habitat
Bald Eagle <i>Haliaeetus leucocephalus</i>	Threatened	—
Coastal/Puget Sound Bull Trout <i>Salvelinus confluentus</i>	Threatened	—
Puget Sound Chinook Salmon <i>Oncorhynchus tshawytscha</i>	Threatened	Designated
Puget Sound/Strait of Georgia Coho Salmon <i>Oncorhynchus kisutch</i>	Candidate	—

Table 2. Determination Summary Table

Species	Effect Determination	Critical Habitat Determination
Bald Eagle	Not likely to adversely affect	—
Bull Trout	Not likely to adversely affect	—
Chinook	Not likely to adversely affect	Not likely to adversely affect

3.7 Cultural Resources and Native American Concerns

A USACE archeologist in coordination with Mukleshoot Tribe and the State Historic Preservation Office conducted a cultural resources survey resulting in the determination that there are no known cultural resources in the project area.

3.8 Landuse

The project site and adjacent property to the south and east is owned by the City of Renton. All City of Renton property (i.e. site and adjacent parcels) is considered a natural zone area. The proposed location has a City of Renton zoning designation as a *Resource Conservancy*. Located to the west of the project site is a City of Seattle right of way for the East Side Supply Line.

3.9 Air Quality and Noise

Air Quality

In accordance with the Clean Air Act and its amendments, National Ambient Air Quality Standards (NAAQS) have been established by the Environmental Protection Agency (EPA) for several criteria pollutants including lead (Pb), ozone (O3), carbon monoxide (CO), sulfur dioxide (SO2), nitrogen dioxide (NO2), total suspended particulates (TSP), and particulates with aerodynamic diameters of less than 10 microns (PM10 and PM2.5). Three agencies have jurisdiction over air quality in the project area: the EPA, Ecology, and

the Puget Sound Clean Air Agency. These agencies establish regulations that govern both the concentrations of pollutants in the outdoor air and contaminant emissions from air pollution sources. Although their regulations are similar in stringency, each agency has established its own standards. Unless the state or local jurisdiction has adopted more stringent standards, the EPA standards apply. The project area is classified as an attainment area for all criteria pollutants except CO, ozone, and PM 10. For CO and ozone, the region is classified as a maintenance area, which is a provisional attainment status that must be maintained for several years before being reclassified as full attainment. There are three pockets of PM10 non-attainment areas in the region, including industrial areas in Seattle, Kent, and the Tacoma Tidelands. The project site is located outside of these areas.

Noise

State, county, and local noise regulations specify standards that restrict both the level and duration of noise measured at any given point within a receiving property. The maximum permissible environmental noise levels depend on the land use of the property that contains the noise source (e.g., industrial, commercial, or residential) and the land use of the property receiving that noise. The King County noise standards would be applicable to the restoration project in question. The King County noise standards are shown in Table 3.

Table 3. King County Environmental Noise Limits

King County Environmental Noise Limits (dBA)

District of Noise Source	District of Receiving Property			
	Rural Day/Night	Residential Day/Night	Commercial	Industrial
Rural	49/39	52/42	55	57
Residential	52/42	55/45	57	60
Commercial	55/45	57/47	60	65
Industrial	57/47	60/50	65	70

Source: King County Code Chapter 12.88.

3.10 Transportation

Currently, a gate located on the existing utility road restricts vehicular access to the proposed project site. However, illegal entry by motorized vehicles is not uncommon.

3.11 Recreation

The current use of the proposed location is an open space with limited public hiking/walking trails. However, current legitimate use is limited and illicit use common.

3.12 Aesthetics

The proposed project area is located in the wooded flood plain across the Cedar River from several City of Renton residents. Currently, these residents enjoy the view of a wooded stand of mature cottonwoods and occasional wildlife sightings.

4. ENVIRONMENTAL EFFECTS

4.1 Geology and Hydrology

About 6,000 cubic yards of floodplain deposits will be excavated to construct a new spawning and rearing channel within the existing floodplain. The channel will be aligned along the course of a former side channel. The excavated material will be removed from the site.

The minimum critical Cedar River flow is 97 cfs per the City of Seattle Habitat Conservation Plan. At this flow rate about 5 to 10 cfs will be conveyed into the new channel.

The maximum design flow in the new channel is about 50 cfs. This flow would occur when Cedar River flows are at about 5,500 cfs just prior to levee overtopping.

Flow from the Cedar River will enter the channel at the inlet of the new channel and return to the Cedar River after flowing within the new channel system for a distance of about 1,200 ft.

4.2 Water Quality

A wetland delineation and description prepared by the U.S. Army Corp of Engineers Environmental Resources Section dated June 5, 2002 was included with the submitted materials. Based on this assessment, there is a wetland situated along the south side of the riverbank in the vicinity of the proposed channel location. The wetland occupies a long, narrow spot and is approximately 300 square feet in size. The proposal includes the excavation of approximately 150 cubic yards of wetland material in order to construct the channel. Pursuant to the wetland criteria under the City's Critical Areas Regulations, the identified wetland area is exempt from regulations requiring mitigation (i.e., replacement and/or restoration).

The wetland assessment concludes that outside of this wetland area, the remainder of the site appears to be well drained and the steep riverbank precludes any sort of wetland fringe associated with the shoreline.

The project will utilize best management practices, such as silt fencing and other erosion control measures, to ensure no sediments enters the river during construction, and all cleared areas will be mulched, seeded and planted to prevent storm water runoff after construction. The project is limited to in-river construction between the dates of July 15 and August 15 in order to reduce impacts to salmonids.

With the exception of the inlet and outlet structures, the project will be constructed without any in-water work. This means that Cedar River water quality will not be impacted during the clearing/grading and excavation work elements related to channel construction.

There are no adverse impacts to water quality anticipated from the proposed project.

4.3 Vegetation

Native trees and shrubs (that have been observed on-site) will be planted in disturbed areas as mitigation for construction of the channel and maintenance path. Additional native planting will occur in an existing disturbed area between the Cedar River and the new channel.

The channel and maintenance road were designed to minimize the impact on the existing vegetation. Specifically, all trees (with greater than 6-inch diameter) within 25 feet (in both directions) of the centerline were tagged, surveyed, and located on the construction drawings.

Native trees and shrubs will be planted to reduce and control surface water runoff. The trees and shrubs will be planted in two locations. First, planting will occur in areas that are disturbed to construct the new channel with the exception of the channel bottom. Second, an existing disturbed area between the Cedar River and new channel will be planted to control runoff and deter access along a beaten path to the river.

4.4 Fish

According to the Final Environmental Impact Study for the Cedar River 205 Flood Control Project prepared in August of 1997, there are at least 22 species of fish present in the Cedar River. In the vicinity of the project site there are sockeye salmon, chinook salmon, coho salmon, steelhead trout, rainbow trout, cutthroat trout, mountain whitefish, northern squawfish, peamouth chub, three-spine stickleback, largescale sucker, longnose dace, bork lamprey, Pacific lamprey, and several species of sculpin. Bull trout have not been observed in the vicinity of the proposed project, but may occur. The Cedar River adjacent to the proposed project is heavily utilized for spawning by adult sockeye, chinook and coho salmon. The existing natural side channels downstream of the Elliot levee are utilized for rearing by sockeye fry, chinook fry and juveniles, coho and steelhead smolts. Three species listed as threatened under the Endangered Species Act are likely to occur in the project area, including Bald Eagle, Puget Sound ESU chinook salmon, and Puget Sound/Western Washington ESU bull trout. In addition, coho salmon, a candidate species, are also located in the vicinity of the site.

4.5 Threatened and Endangered Species

Construction will occur when chinook and bull trout are least likely to be present in the action area, and during a portion of the year when bald eagles are more tolerant of disturbance. The in-water work is scheduled to occur between July 16 and mid- to late-September, in accordance with the fish windows created by WDFW.

Table 4. Determination Summary Table

Species	Effect Determination	Critical Habitat Determination
Bald Eagle	Not likely to adversely affect	—
Bull Trout	Not likely to adversely affect	—
Chinook	Not likely to adversely affect	Not likely to adversely affect

4.6 Cultural Resources and Native American Concerns

No known cultural or historic sites occur in the project area. If any artifacts or cultural resources are discovered during construction, all work will be stopped and the USACE archeological and cultural resources staff will further investigate the site and alert the appropriate authorities.

4.7 Landuse

The project site and adjacent property to the south and east is owned by the City of Renton. All City of Renton property (i.e. site and adjacent parcels) is considered a natural zone area. This project will not change the landuse of the project area and it will continue to be considered a natural zone.

4.8 Air Quality and Noise

There will be a temporary increase in noise during construction, but it will be well within urban limits. Exhaust from the equipment will emit a minor amount of exhaust. Equipment will have mufflers and exhaust systems in accordance with State and Federal standards. Following construction, there will be no change in air quality, noise or light parameters.

4.9 Transportation

Vehicle traffic in the area will increase during construction, as dump trucks will be needed to transport the materials excavated during the creation of the channel. However, this increase in traffic will be localized and of short duration, with no long-term effects. The project also includes improvements to the gate across City of Seattle right-of-way that is expected to deter illegal vehicular traffic near the project site.

4.10 Recreation

During construction, public access will be restricted on the site. Following construction, the site will be available for passive recreation as appropriate for a natural area. Interpretive signs will be placed on-site to provide information the following issues: wildlife poaching; trail use impact; salmonid spawning; and benefits of project.

4.11 Aesthetics

Significant efforts and consideration have been made to maintain the project locations aesthetics, as well as maintain the wooded view for City of Renton residents who live across the Cedar River from the project site. The location of the channel has been designed to minimize the number of large diameter trees that will be removed during construction. Final alignments of the channel will be field engineered to help preserve the maximum amount of large diameter trees. Native plants and trees will be planted in the disturbed area, with the exception of the channel bottom. In addition, an existing disturbed area along the river will be planted with native trees and shrubs to maintain a buffer of river riverside that will allow for a wooded view for the

residents located across the river from the project location. Wildlife sightings in the area are also likely increase due to the projected abundance of salmon in the channel.

5. UNAVOIDABLE ADVERSE EFFECTS

Unavoidable adverse effects associated with this project included: (1) a temporary and localized increase in noise, which may disrupt wildlife in the area, (2) a temporary and localized disruption of local traffic by construction vehicles, and (3) a temporary and localized increase in turbidity levels during construction of the intake and outlet structures in the Cedar River, which may have affect aquatic organisms in the area. However, these potential impacts will be short in duration and considered insignificant.

6. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The irreversible and irretrievable commitment of resources is the use of materials, resources, or land during implementation of an alternative that makes these resources unavailable for other uses, given known technology and reasonable economics.

No federal resources were be irreversibly and irretrievably committed to this project until the “Finding of No Significant Impact” (FONSI) is signed.

7. CUMULATIVE IMPACTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this evaluation. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate evaluations.

Seattle Public Utilities proposes to construct and operate a sockeye hatchery and associated facilities on the Cedar River. The project would consist of a hatchery, as system to supply virus-free water for hatchery operations, and broodstock collection and spawning facilities. The new hatchery would be located within King County, about 2 miles northeast of Ravensdale and 3 miles southeast of Maple Valley. The broodstock collection facility would be located on the lower Cedar River, possibly within several hundred feet of the USACE proposed replacement side-channel.

8. COORDINATION

Coordination was conducted with the following resource agencies and their comments integrated into this document.

City of Renton
King County
Muckleshoot Indian Tribe
U.S. Fish and Wildlife Service
National Marine Fisheries Service
Washington Department of Fish and Wildlife
Washington Department of Ecology

9. ENVIRONMENTAL COMPLIANCE

9.1 National Environmental Policy Act

This Environmental Assessment (EA) satisfies the documentation requirements of NEPA. After the comment period for this document has ended, a Finding of No Significant Impact (FONSI) will be prepared for inclusion with a Final EA.

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 and NMFS on July 31, 2002. The Corps expects to receive letters of concurrence with the determinations made in the Biological Evaluation.

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. A 404(b)(1) evaluation is being prepared by the USACE and a 401 water quality certification is under review with the Washington Department of Ecology.

9.4 Coastal Zone Management Act Consistency

The Coastal Zone Management Act of 1972, as amended, requires Federal agencies to carry out their activities in a manner, which is consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Zone Management Program. A statement of consistency will be prepared that shows the project is consistent with the King County Shoreline Management Plan.

9.5 Hydraulic Permit Approval

A Hydraulic Permit Approval (HPA) from the Washington Department of Fish and Wildlife is not required for federal work that involves construction within state waters, since there has been no waiver of sovereign immunity by the Federal government to require or allow such regulation of Federal agencies by local governments. The Corps has coordinated the project with WDFW and has made efforts to incorporate their comments into the project design.

9.6 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 PL84-99 work.

9.7 National Historic Preservation Act

The National Historic Preservation Act (16 USC 470) requires that the effects of proposed actions on sites, buildings, structures, or objects included or eligible for the National Register of Historic Places must be identified and evaluated. A query of the Washington State Office of Archaeology and Historical Preservation database indicated that no sites listed on the National Register of Historic Places are located in the project section. The Corps expects to receive a letter from the Washington State Office of Archaeology and Historic Preservation stating that no resources included in or eligible for inclusion in the National Register of Historic Places have been recorded in the project area.

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

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

10. CONCLUSION

Based on this assessment and on coordination with Federal and State agencies, it is considered that the proposed project would not result in significant adverse environmental impacts. The proposed project is not considered a major Federal action having a significant impact on the human environment and does not require preparation of an environmental impact statement supplement. A finding of no significant impact (FONSI) is anticipated to be prepared

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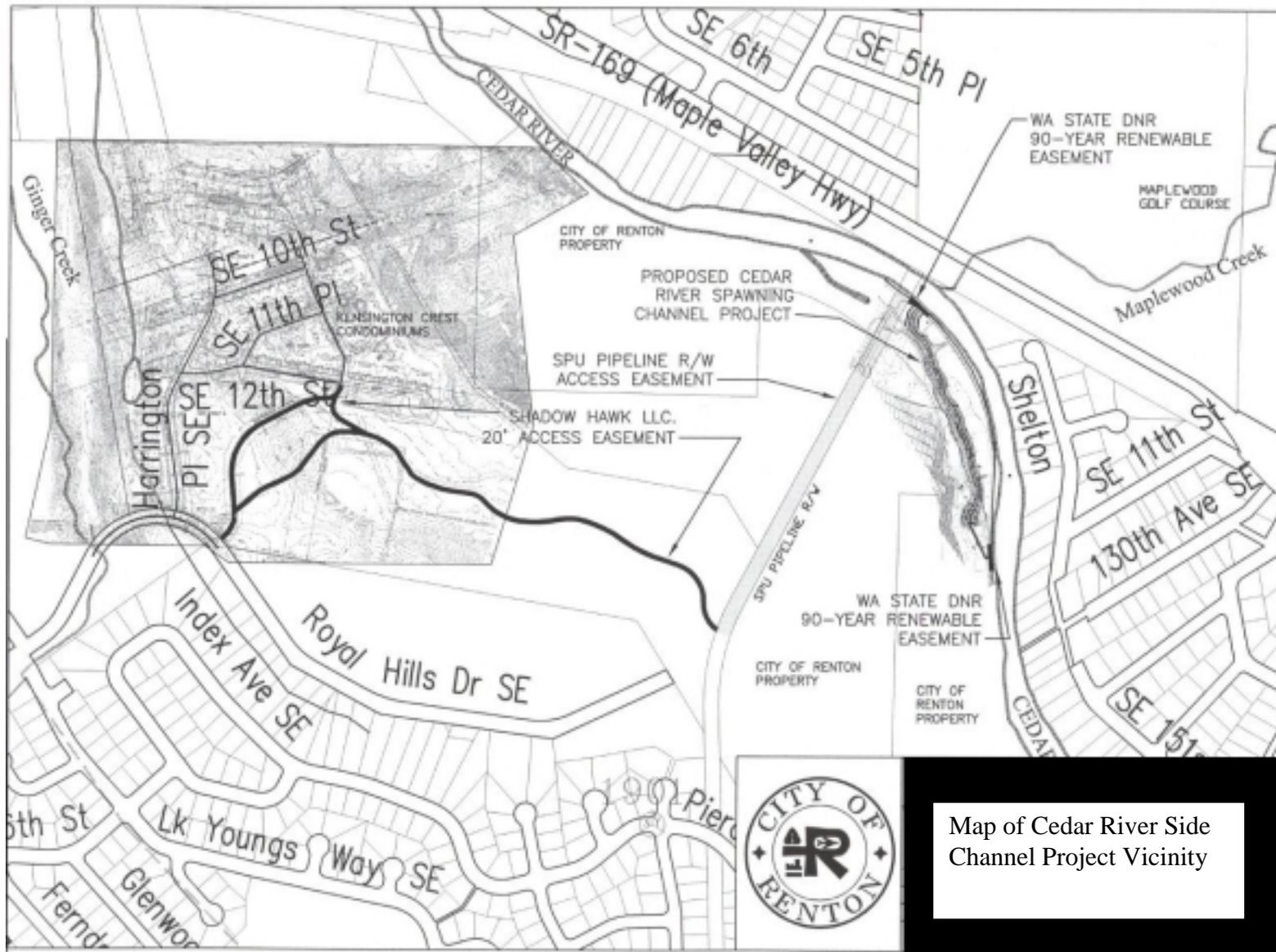
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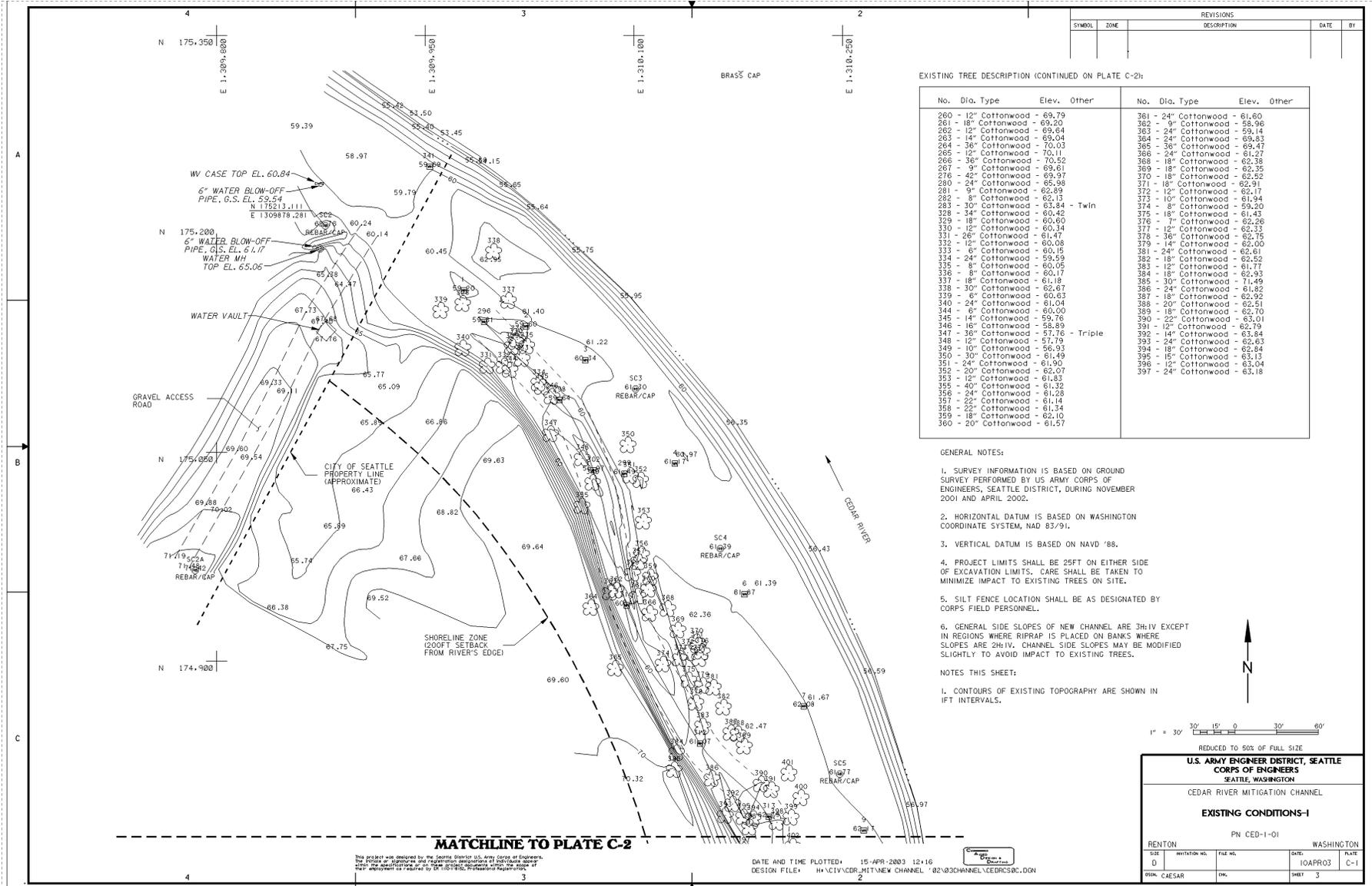
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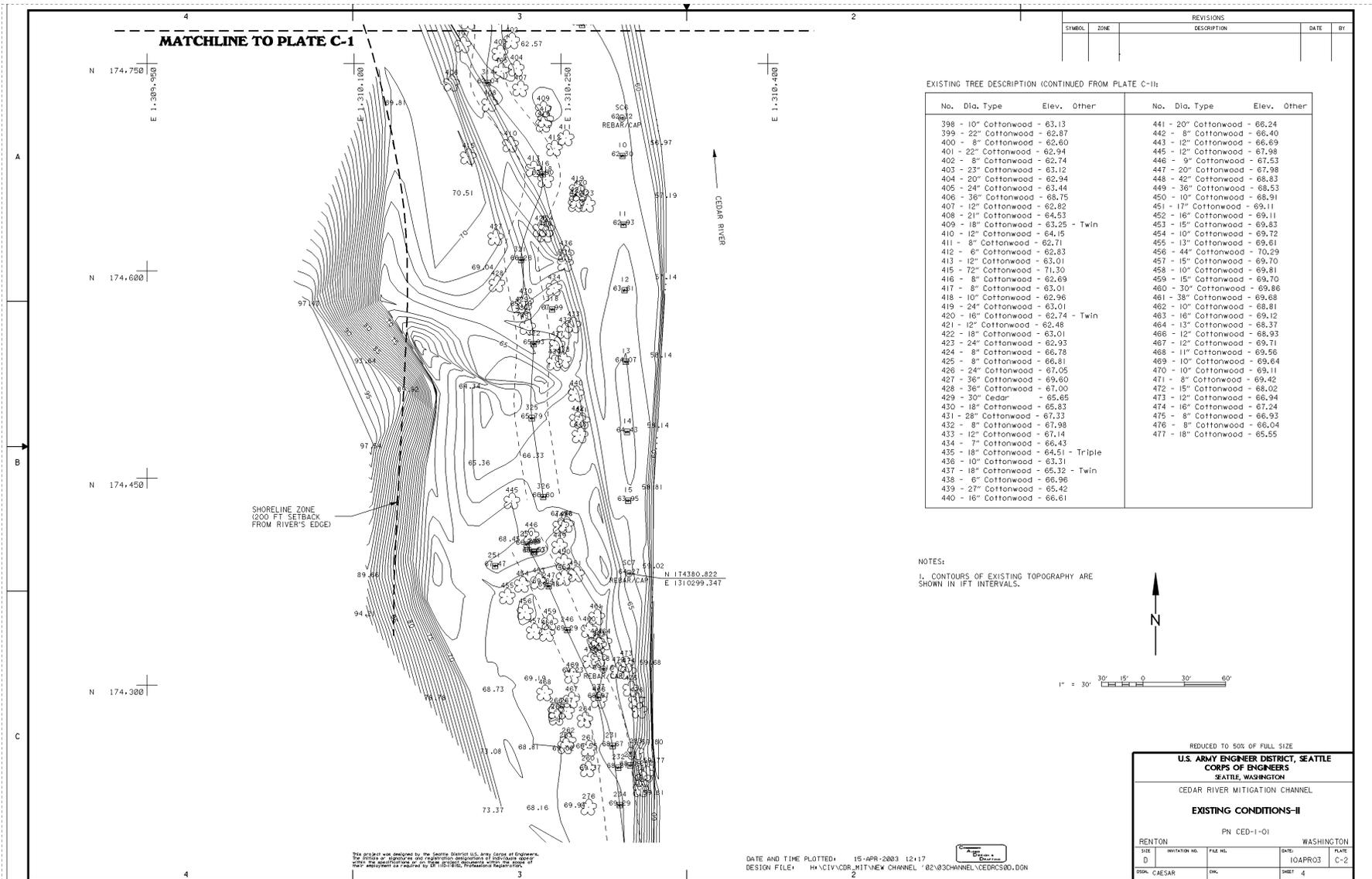
Appendix A

Maps and Design Drawings



Map of Cedar River Side Channel Project Vicinity



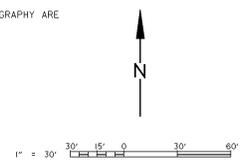


SYMBOL		ZONE	REVISIONS	DESCRIPTION	DATE	BY

EXISTING TREE DESCRIPTION (CONTINUED FROM PLATE C-I):

No.	Dia.	Type	Elev.	Other	No.	Dia.	Type	Elev.	Other
398	10"	Cottonwood	63.13		441	20"	Cottonwood	66.24	
399	22"	Cottonwood	62.87		442	8"	Cottonwood	66.40	
400	8"	Cottonwood	62.60		443	12"	Cottonwood	66.69	
401	22"	Cottonwood	62.94		445	12"	Cottonwood	67.98	
402	8"	Cottonwood	62.74		446	9"	Cottonwood	67.53	
403	23"	Cottonwood	63.12		447	20"	Cottonwood	67.98	
404	20"	Cottonwood	62.94		448	42"	Cottonwood	68.83	
405	24"	Cottonwood	63.44		449	38"	Cottonwood	68.53	
406	36"	Cottonwood	68.75		450	10"	Cottonwood	68.91	
407	12"	Cottonwood	62.82		451	17"	Cottonwood	69.11	
408	21"	Cottonwood	64.53		452	16"	Cottonwood	69.11	
409	18"	Cottonwood	63.25	- Twin	453	18"	Cottonwood	69.83	
410	12"	Cottonwood	64.15		454	10"	Cottonwood	69.72	
411	8"	Cottonwood	62.71		455	13"	Cottonwood	69.61	
412	6"	Cottonwood	62.83		456	44"	Cottonwood	70.29	
413	12"	Cottonwood	63.01		457	15"	Cottonwood	69.70	
415	72"	Cottonwood	71.30		458	10"	Cottonwood	69.81	
416	8"	Cottonwood	62.89		459	15"	Cottonwood	69.70	
417	8"	Cottonwood	63.01		460	30"	Cottonwood	69.86	
418	10"	Cottonwood	62.96		461	38"	Cottonwood	69.88	
419	24"	Cottonwood	63.01		462	10"	Cottonwood	68.81	
420	16"	Cottonwood	62.74	- Twin	463	16"	Cottonwood	69.12	
421	12"	Cottonwood	62.48		464	13"	Cottonwood	68.37	
422	18"	Cottonwood	63.01		466	12"	Cottonwood	68.93	
423	24"	Cottonwood	62.93		467	12"	Cottonwood	69.71	
424	8"	Cottonwood	66.78		468	11"	Cottonwood	69.56	
425	8"	Cottonwood	66.81		469	10"	Cottonwood	69.64	
426	24"	Cottonwood	67.05		470	10"	Cottonwood	69.11	
427	36"	Cottonwood	69.60		471	8"	Cottonwood	69.42	
428	36"	Cottonwood	67.00		472	15"	Cottonwood	68.02	
429	30"	Cedar	65.65		473	12"	Cottonwood	66.94	
430	18"	Cottonwood	65.83		474	16"	Cottonwood	67.24	
431	28"	Cottonwood	67.33		475	8"	Cottonwood	66.93	
432	8"	Cottonwood	67.98		476	8"	Cottonwood	66.04	
433	12"	Cottonwood	67.14		477	18"	Cottonwood	65.55	
434	7"	Cottonwood	66.43						
435	18"	Cottonwood	64.51	- Triple					
436	10"	Cottonwood	63.31						
437	18"	Cottonwood	65.32	- Twin					
438	6"	Cottonwood	66.96						
439	27"	Cottonwood	65.42						
440	16"	Cottonwood	66.61						

NOTES:
1. CONTOURS OF EXISTING TOPOGRAPHY ARE SHOWN IN 1FT INTERVALS.



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

CEDAR RIVER MITIGATION CHANNEL

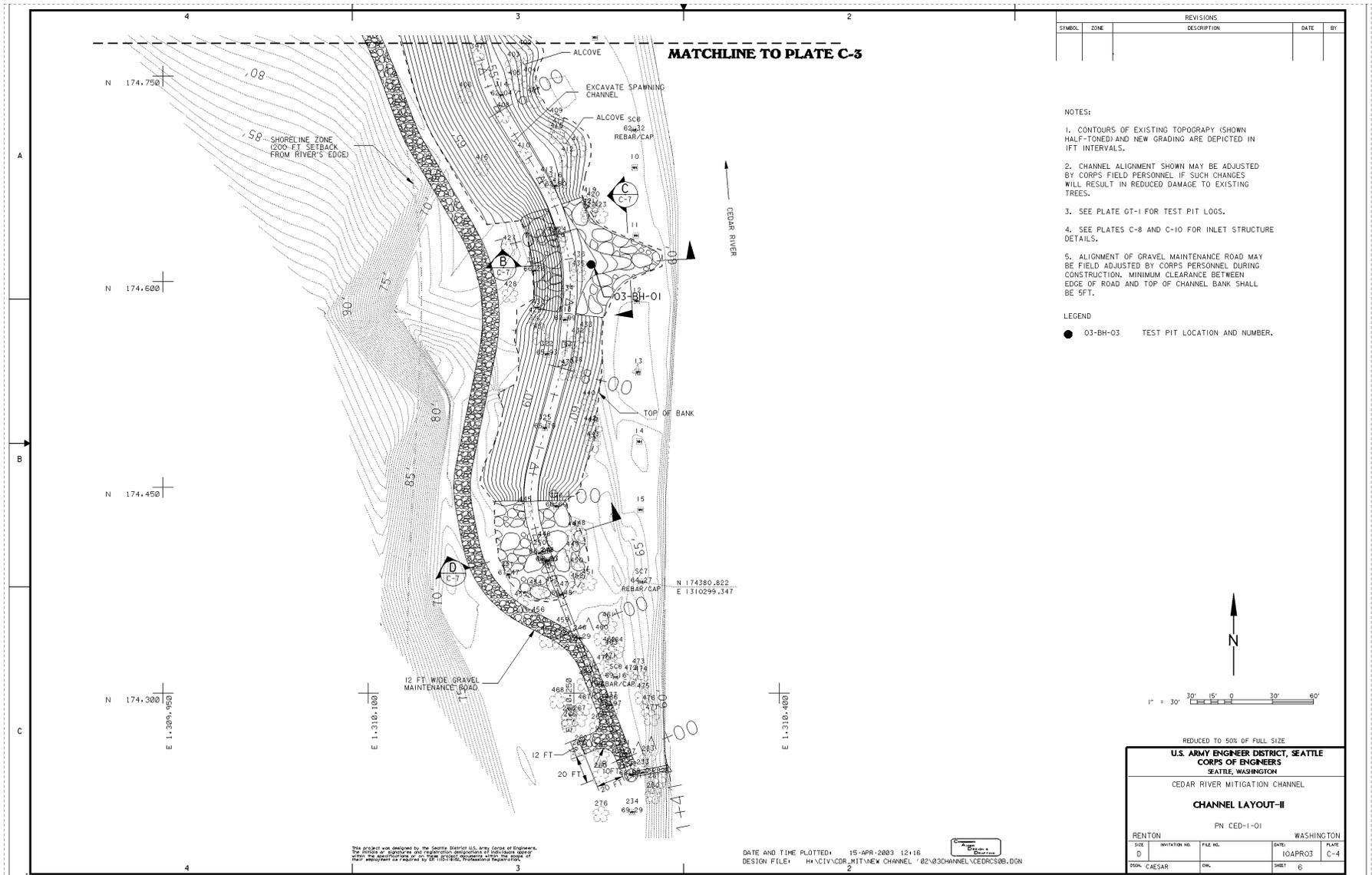
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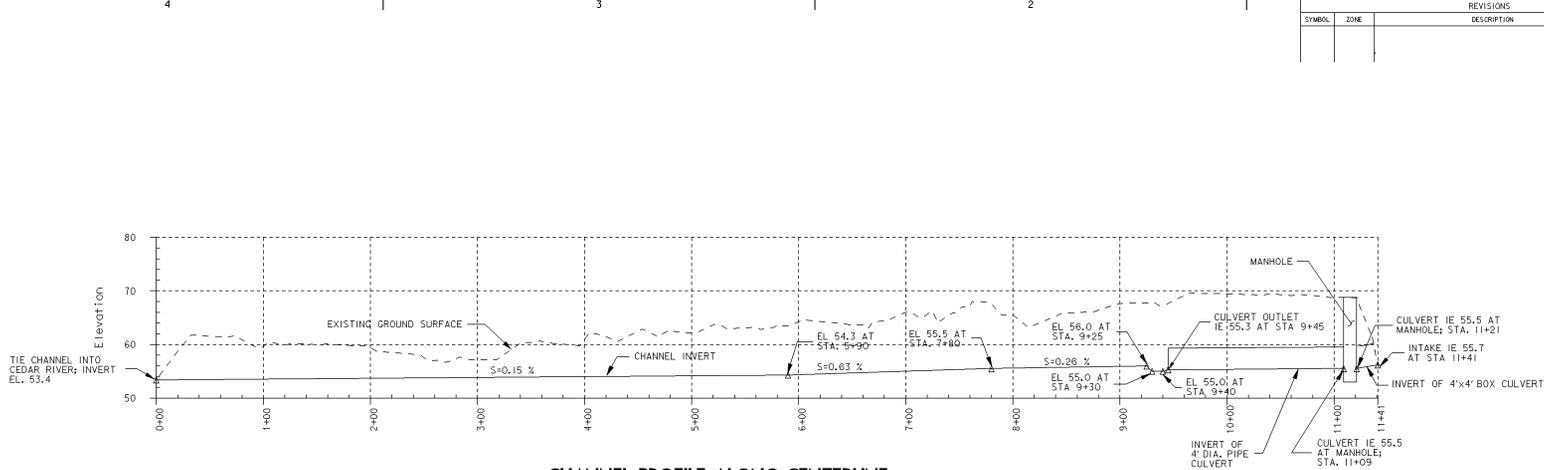
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CHANNEL PROFILE ALONG CENTERLINE



SPANNING CHANNEL HORIZONTAL ALIGNMENT:

Element:	Linear	STATION	NORTHING	EASTING
POB	0+00.00	175260.13	1309997.28	
PC	0+52.30	175210.64	1309980.37	
Tangent Direction: 18°51'45.62 W				
Tangent Length: 62.3				
Element:	Circular	STATION	NORTHING	EASTING
PC	0+52.30	175210.64	1309980.37	
CC	1+41.34	175127.21	1310080.8	
PT	1+41.34	175127.21	1309996.81	
Radius: 85				
Delta: 60°01'19.24 Left				
Degree of Curvature(Arc): 67°24'24.48				
Length: 89.04				
Element:	Linear	STATION	NORTHING	EASTING
PT	1+41.34	175127.21	1309996.81	
PC	2+25.73	175063.88	1310052.35	
Tangent Direction: 41°09'33.62 E				
Tangent Length: 84.39				
Element:	Circular	STATION	NORTHING	EASTING
PC	2+25.73	175063.88	1310052.35	
CC	3+03.82	174994.43	1310086.49	
PT	3+03.82	174994.43	1310086.49	
Radius: 150				
Delta: 29°49'35.62 Right				
Degree of Curvature(Arc): 38°11'49.87				
Length: 18.09				
Element:	Linear	STATION	NORTHING	EASTING
PT	3+03.82	174994.43	1310086.49	
PC	3+66.00	174933.46	1310098.71	
Tangent Direction: 11°19'58.00 E				
Tangent Length: 62.18				
Element:	Circular	STATION	NORTHING	EASTING
PC	3+66.00	174933.46	1310098.71	
CC	4+42.59	174865.35	1310131.87	
PT	4+42.59	174865.35	1310131.87	
Radius: 150				
Delta: 29°15'14.28 Left				
Degree of Curvature(Arc): 38°11'49.87				
Length: 16.59				

Element:	Linear	STATION	NORTHING	EASTING
PT	4+42.59	174865.35	1310131.87	
PC	4+65.63	174847.85	1310146.86	
Tangent Direction: 40°35'12.28 E				
Tangent Length: 23.04				
Element:	Circular	STATION	NORTHING	EASTING
PC	4+65.63	174847.85	1310146.86	
CC	5+23.28	174766.52	1310051.94	
PT	5+23.28	174766.52	1310173.14	
Radius: 125				
Delta: 28°25'38.37 Right				
Degree of Curvature(Arc): 45°50'11.84				
Length: 57.66				
Element:	Linear	STATION	NORTHING	EASTING
PT	5+23.28	174766.52	1310173.14	
PC	5+67.99	174753.75	1310184.07	
Tangent Direction: 14°09'33.91 E				
Tangent Length: 44.71				
Element:	Circular	STATION	NORTHING	EASTING
PC	5+67.99	174753.75	1310184.07	
CC	6+97.17	174726.89	1310195.21	
PT	6+97.17	174726.89	1310195.21	
Radius: 100				
Delta: 16°43'06.93 Left				
Degree of Curvature(Arc): 57°17'44.81				
Length: 29.18				
Element:	Linear	STATION	NORTHING	EASTING
PT	6+97.17	174726.89	1310195.21	
PC	8+57.84	174674.82	1310226.35	
Tangent Direction: 30°52'40.84 E				
Tangent Length: 60.67				
Element:	Circular	STATION	NORTHING	EASTING
PC	8+57.84	174674.82	1310226.35	
CC	7+51.63	174584.9	1310211.05	
PT	7+51.63	174584.9	1310211.05	
Radius: 150				
Delta: 35°49'29.81 Right				
Degree of Curvature(Arc): 38°11'49.87				
Length: 93.79				

Element:	Linear	STATION	NORTHING	EASTING
PT	7+51.63	174584.9	1310247.05	
PC	7+82.81	174553.84	1310244.36	
Tangent Direction: 4°56'48.97 W				
Tangent Length: 31.18				
Element:	Circular	STATION	NORTHING	EASTING
PC	7+82.81	174553.84	1310244.36	
CC	7+97.14	174539.75	1310241.85	
PT	7+97.14	174539.75	1310241.85	
Radius: 80				
Delta: 10°15'54.42 Right				
Degree of Curvature(Arc): 71°37'11.01				
Length: 14.33				
Element:	Linear	STATION	NORTHING	EASTING
PT	7+97.14	174539.75	1310241.85	
PC	8+74.38	174465.21	1310221.59	
Tangent Direction: 15°12'43.39 W				
Tangent Length: 77.24				
Element:	Circular	STATION	NORTHING	EASTING
PC	8+74.38	174465.21	1310221.59	
CC	9+26.36	174414.08	1310223.65	
PT	9+26.36	174414.08	1310223.65	
Radius: 85				
Delta: 35°02'18.66 Left				
Degree of Curvature(Arc): 67°24'24.48				
Length: 51.98				
Element:	Linear	STATION	NORTHING	EASTING
PT	9+26.36	174414.08	1310223.65	
PC	9+45.23	174396.33	1310230.05	
Tangent Direction: 9°49'35.27 E				
Tangent Length: 18.87				

DEPTH OF EXCAVATION (TO CHANNEL INVERT) AT CENTERLINE OF CHANNEL:

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1+00	6.06
2+00	5.57
3+00	3.27
4+00	6.95
5+00	7.98
6+00	9.85
7+00	10.94
8+00	10.00
9+00	11.66

This product was developed by the Seattle District U.S. Army Corps of Engineers. The design of structures and preparation of specifications of construction are the responsibility of the design engineer. The design of structures and preparation of specifications of construction are the responsibility of the design engineer.

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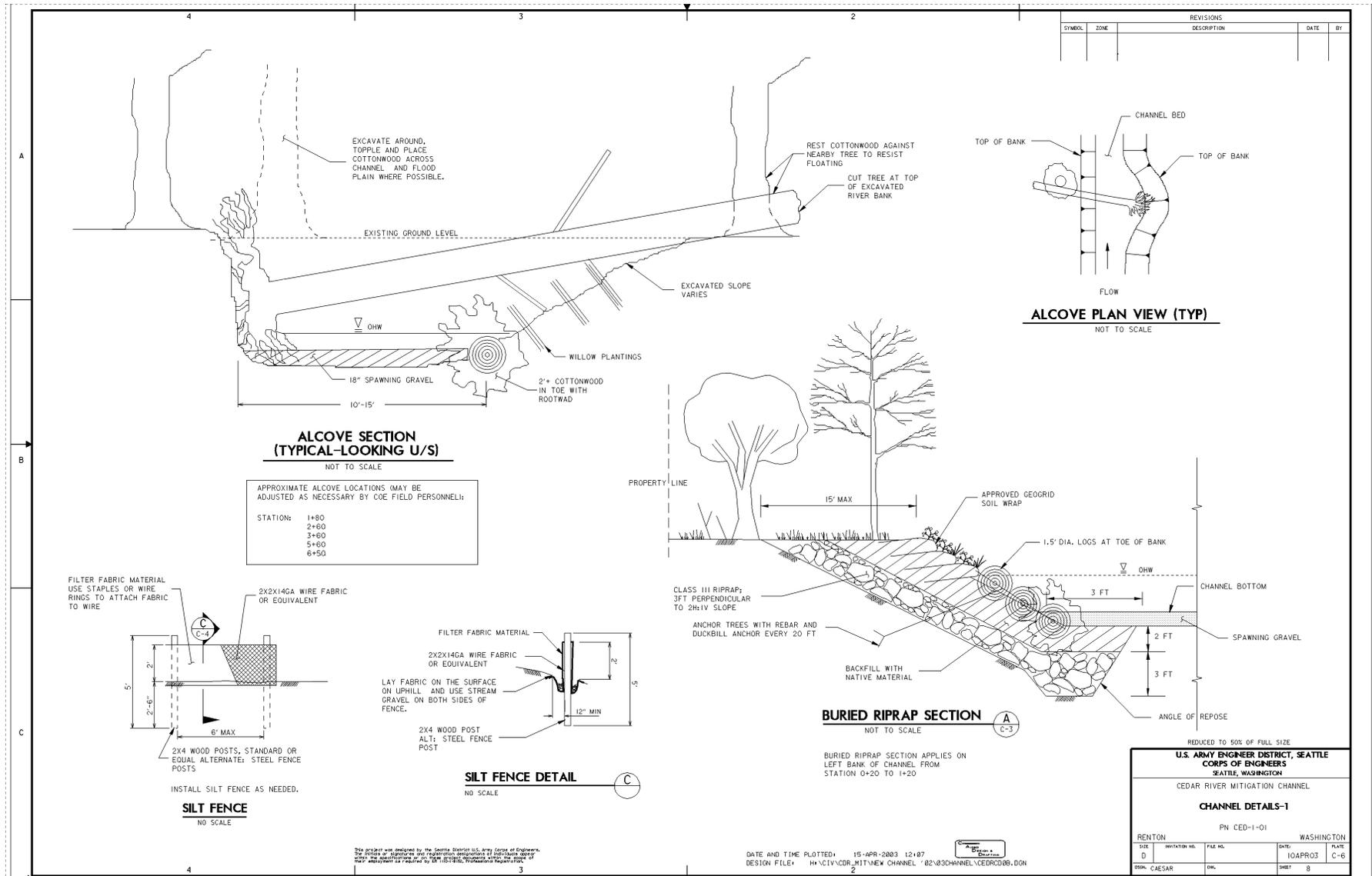
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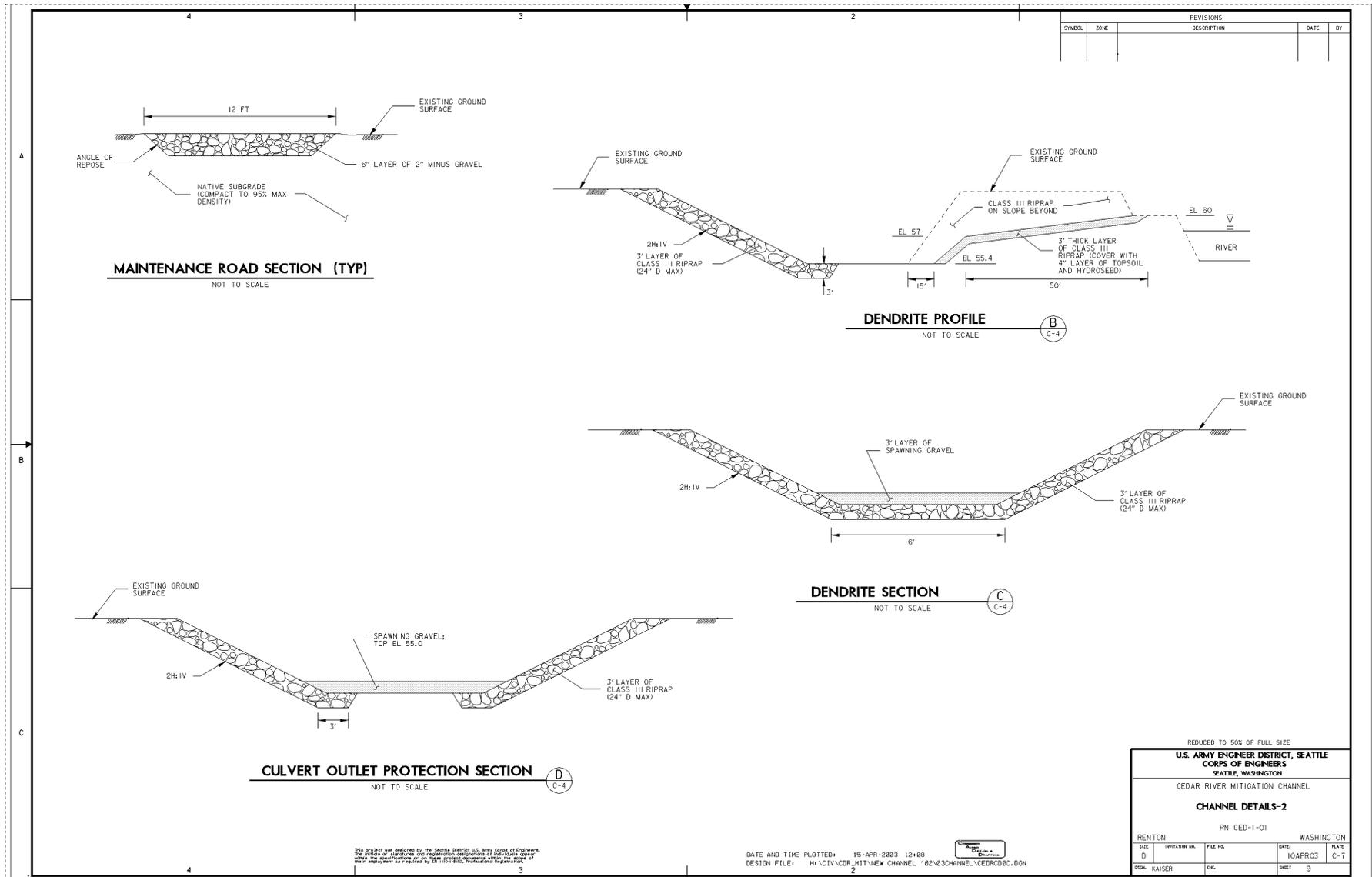
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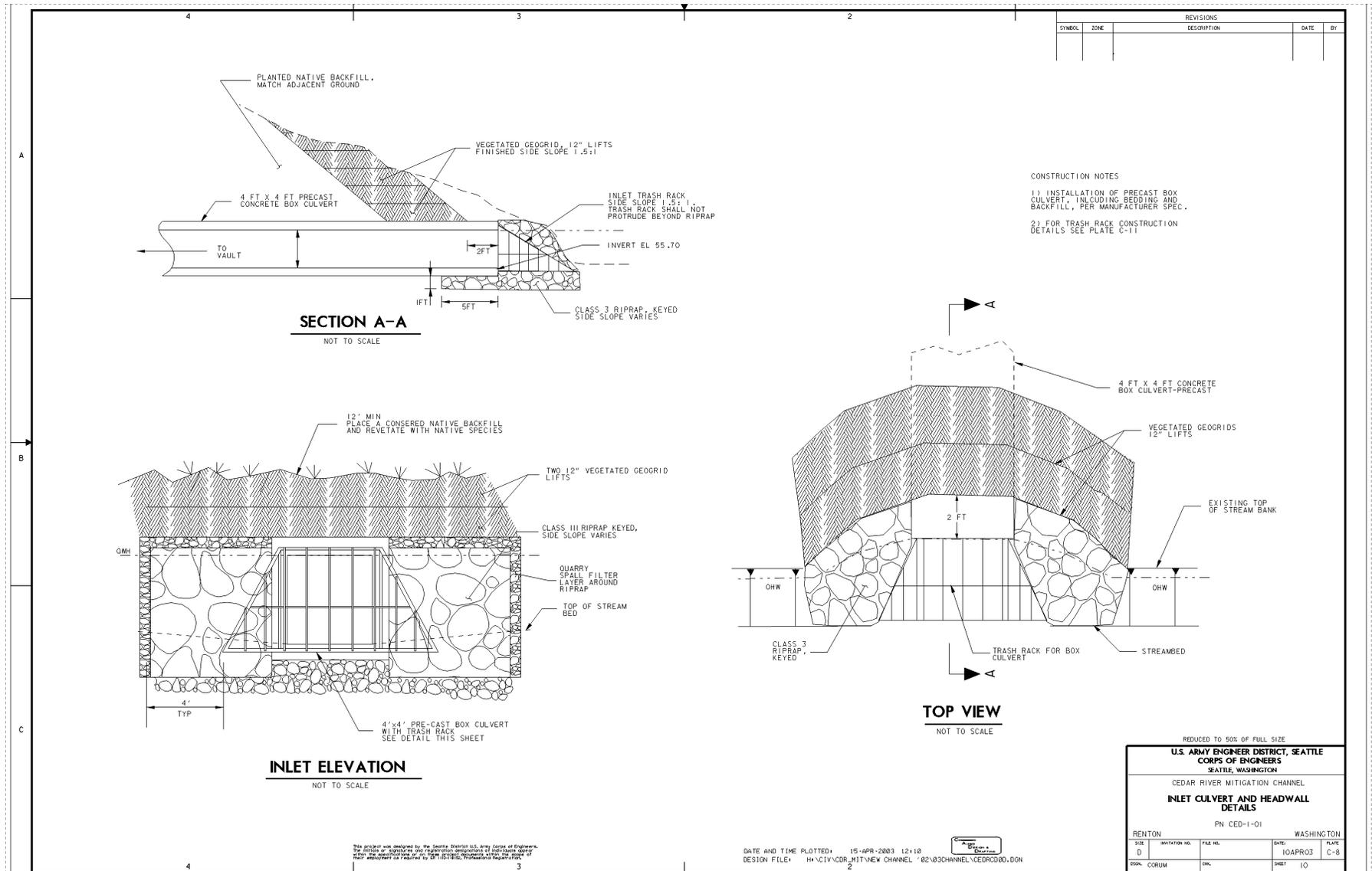
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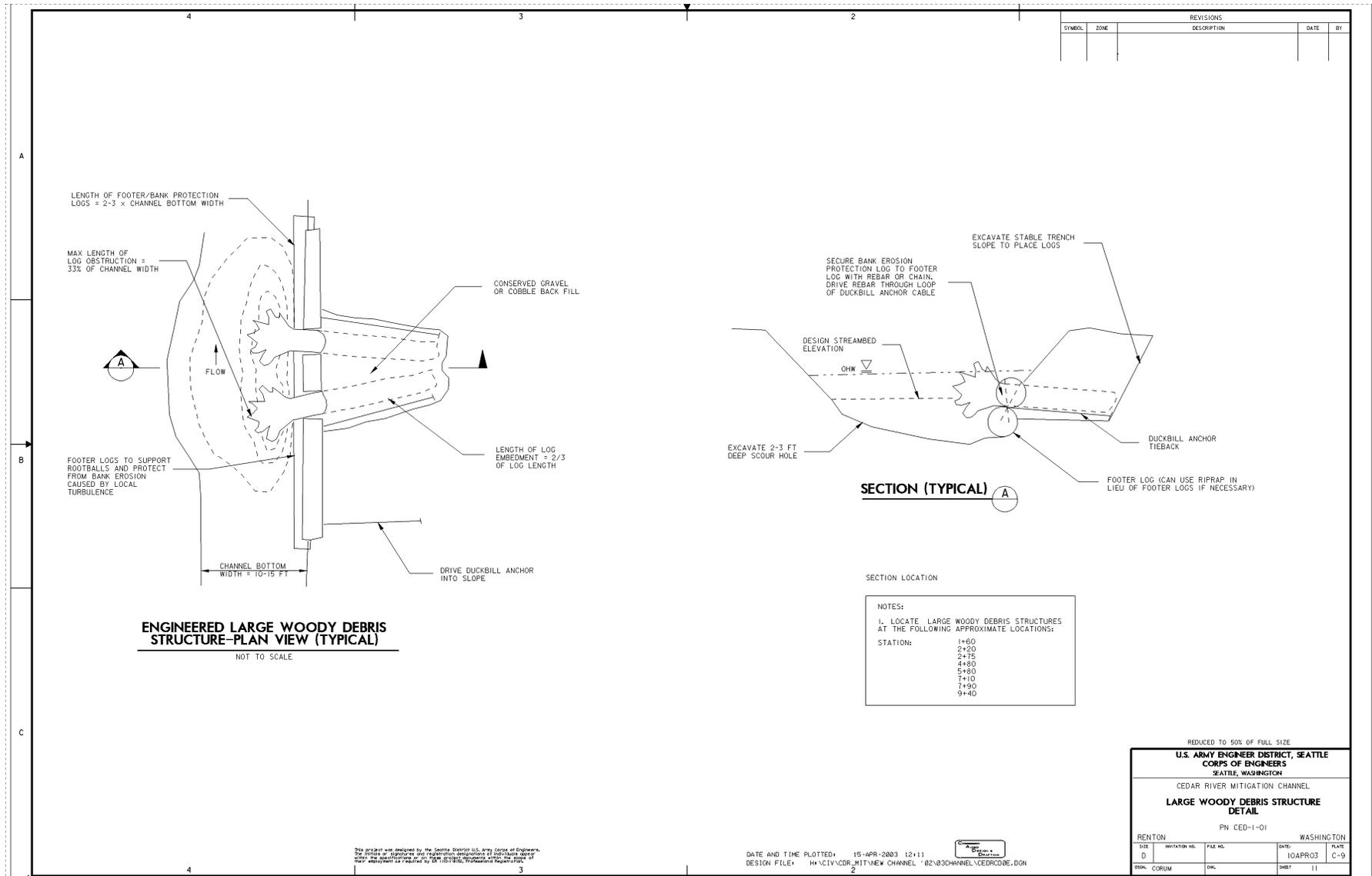
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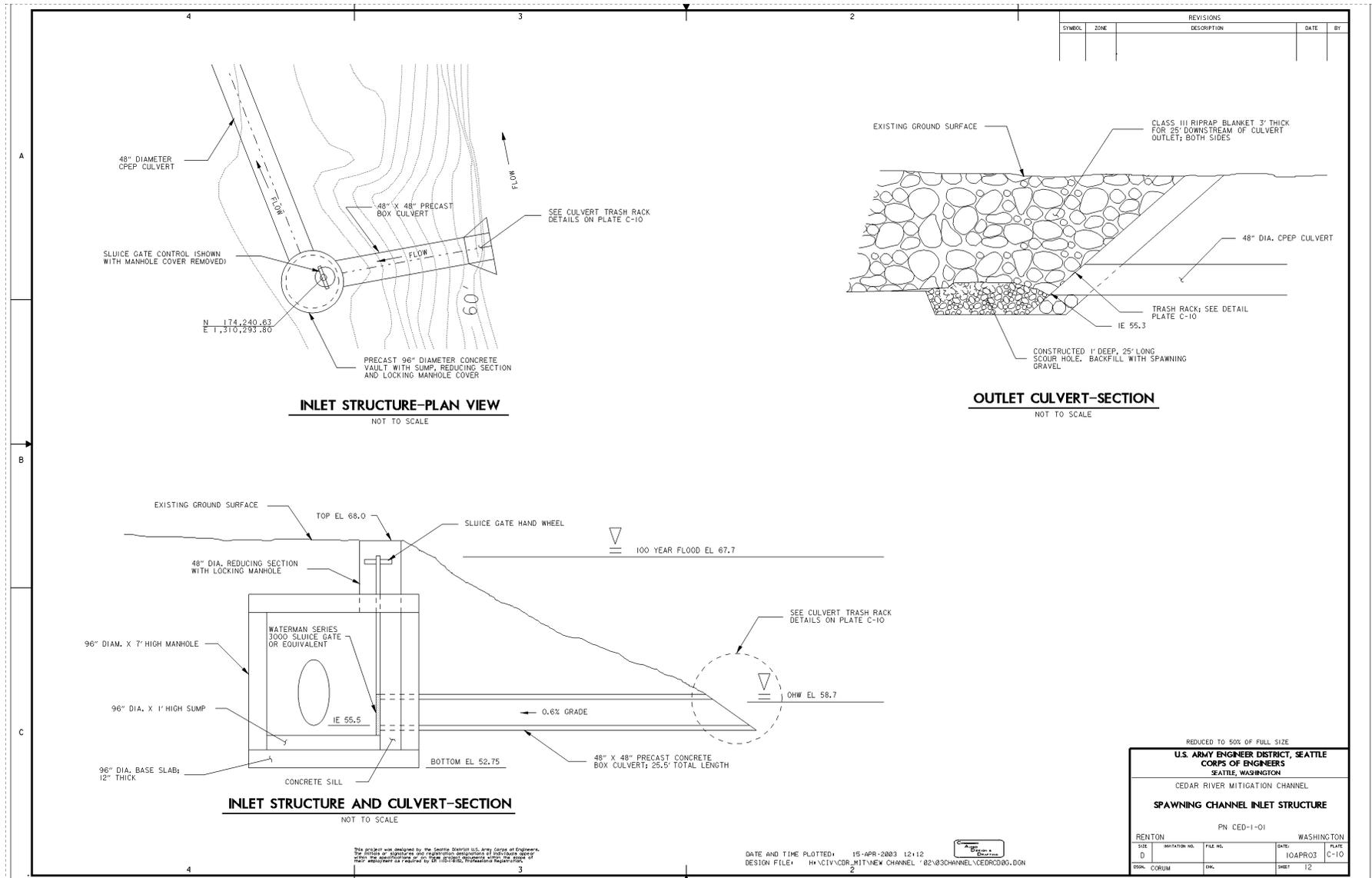
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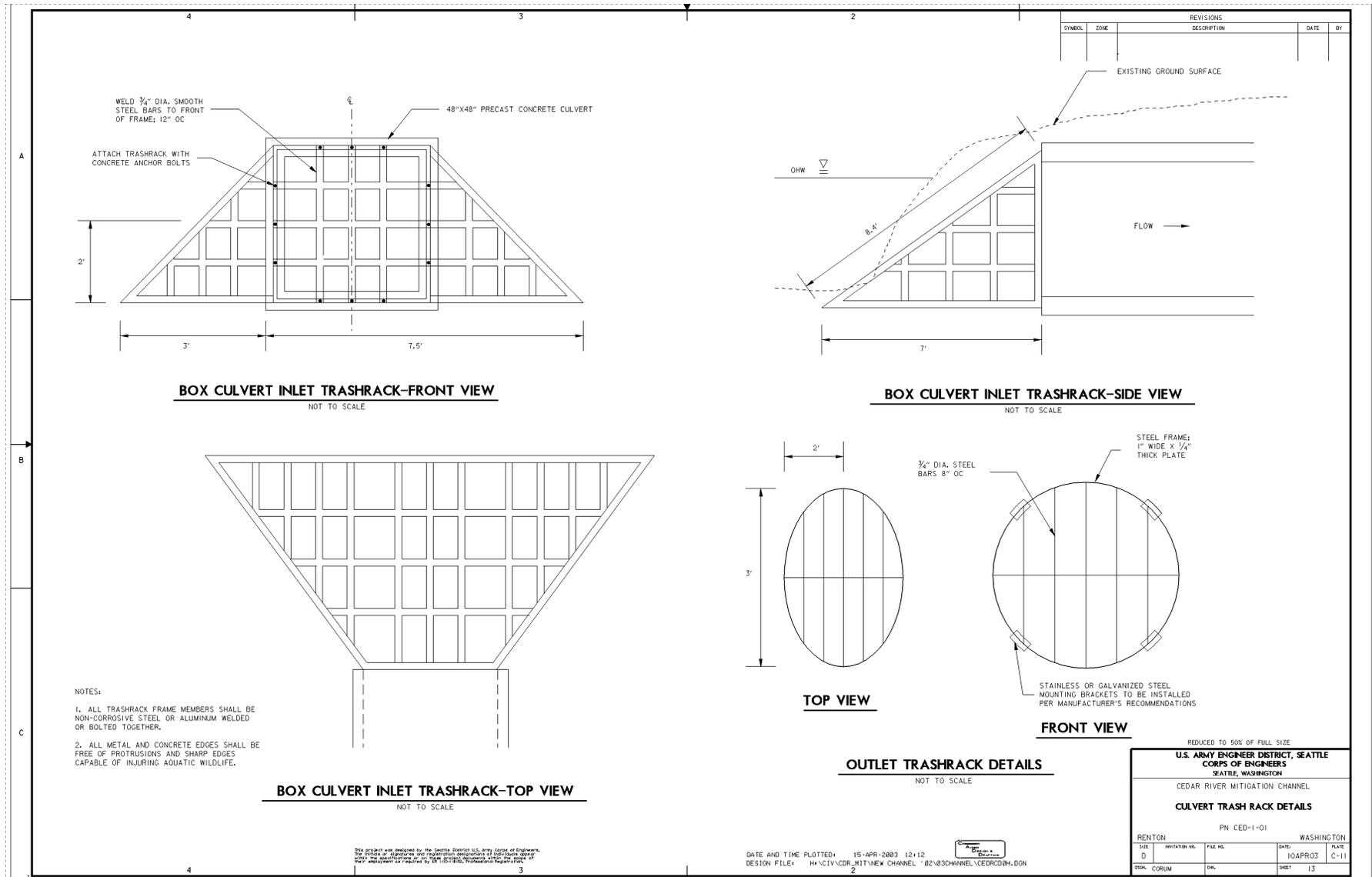


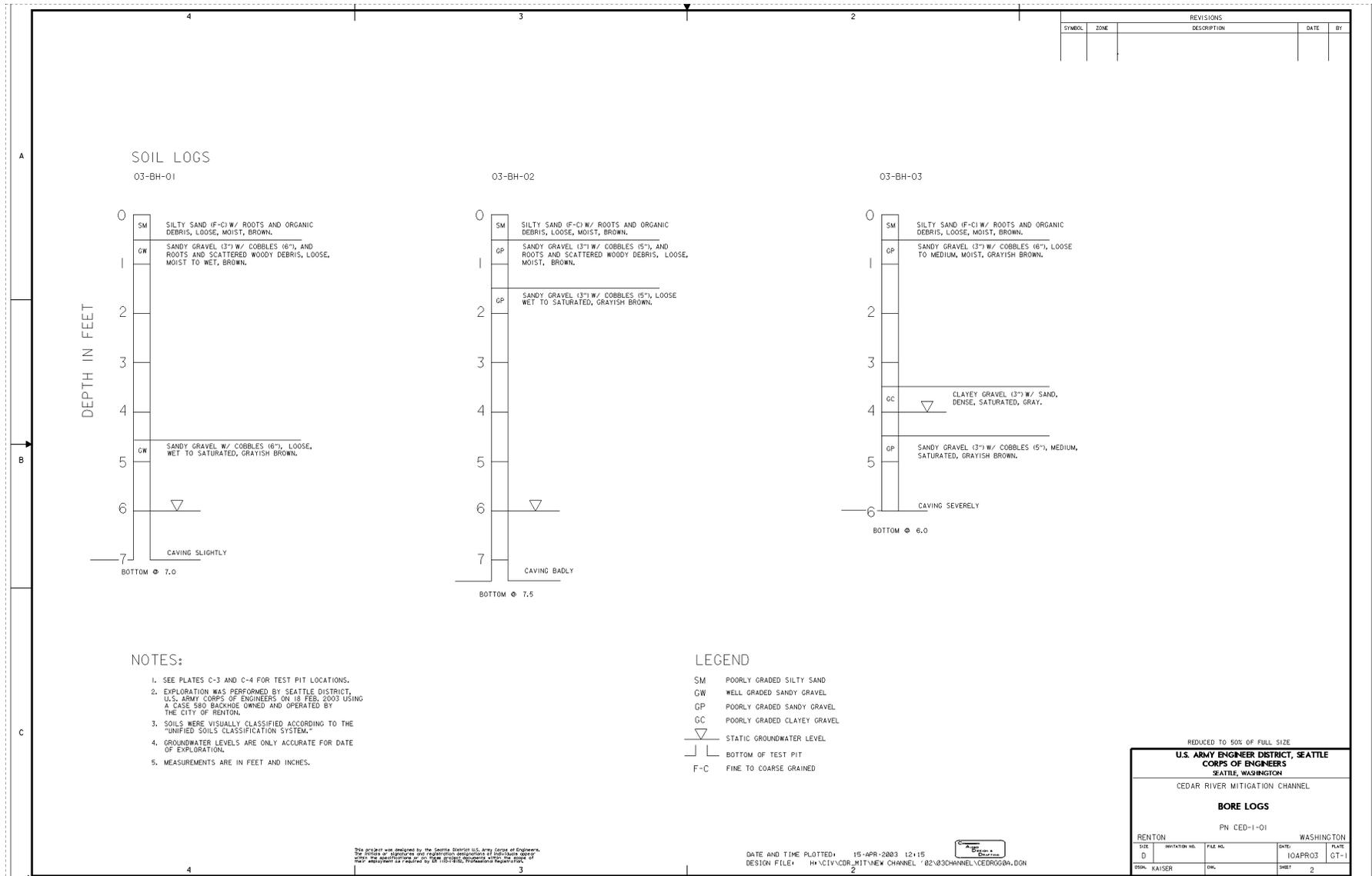


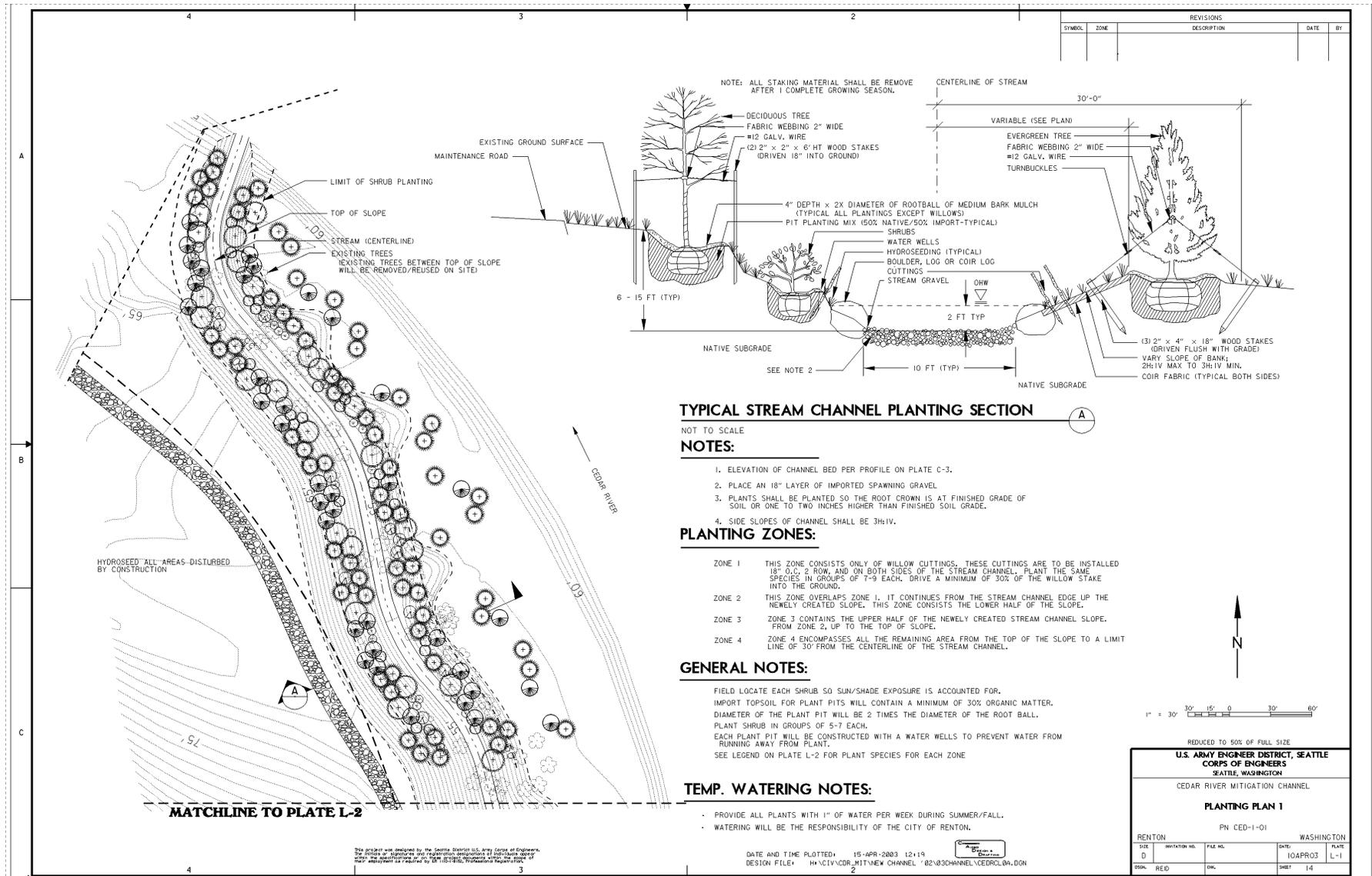


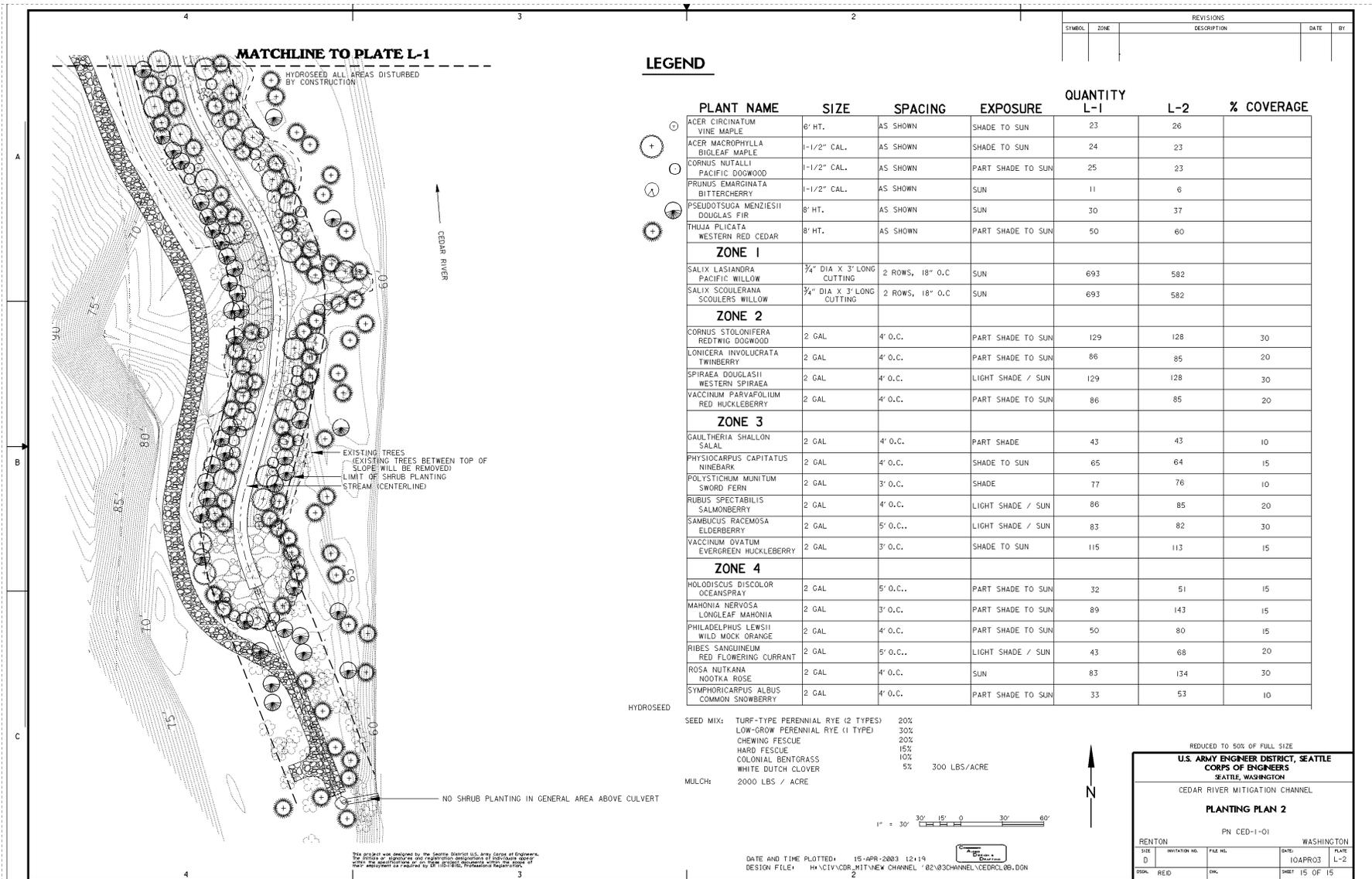












MATCHLINE TO PLATE L-1

HYDROSEED ALL AREAS DISTURBED BY CONSTRUCTION

↑ CEDAR RIVER

EXISTING TREES (EXISTING TREES BETWEEN TOP OF SLOPE WILL BE REMOVED) LIMIT OF SHRUB PLANTING STREAM CENTERLINE

NO SHRUB PLANTING IN GENERAL AREA ABOVE CULVERT

LEGEND

PLANT NAME	SIZE	SPACING	EXPOSURE	QUANTITY		% COVERAGE
				L-1	L-2	
ACER CIRCINATUM VINE MAPLE	8' HT.	AS SHOWN	SHADE TO SUN	23	26	
ACER MACROPHYLLA BIGLEAF MAPLE	1-1/2" CAL.	AS SHOWN	SHADE TO SUN	24	23	
CORNUS NUTTALLII PACIFIC DOGWOOD	1-1/2" CAL.	AS SHOWN	PART SHADE TO SUN	25	23	
PRUNUS EMARGINATA BITTERCHERRY	1-1/2" CAL.	AS SHOWN	SUN	11	6	
PSEUDOTSUGA MENZIESII DOUGLAS FIR	8' HT.	AS SHOWN	SUN	30	37	
THUJA PLICATA WESTERN RED CEDAR	8' HT.	AS SHOWN	PART SHADE TO SUN	50	60	
ZONE 1						
SALIX LASIANDRA PACIFIC WILLOW	3/4" DIA X 3' LONG CUTTING	2 ROWS, 18" O.C	SUN	693	582	
SALIX SCOULERANA SCOULEERS WILLOW	3/4" DIA X 3' LONG CUTTING	2 ROWS, 18" O.C	SUN	693	582	
ZONE 2						
CORNUS STOLONIFERA REDTIG DOGWOOD	2 GAL	4' O.C.	PART SHADE TO SUN	129	128	30
LONICERA INVOLUCRATA TWINBERRY	2 GAL	4' O.C.	PART SHADE TO SUN	86	85	20
SPIRAEA DOUGLASII WESTERN SPIRAEA	2 GAL	4' O.C.	LIGHT SHADE / SUN	129	128	30
VACCINIUM PARVAFOLIUM RED HUCKLEBERRY	2 GAL	4' O.C.	PART SHADE TO SUN	86	85	20
ZONE 3						
GAULTHERIA SHALLON SALLAL	2 GAL	4' O.C.	PART SHADE	43	43	10
PHYSOCARPUS CAPITATUS NINEBARK	2 GAL	4' O.C.	SHADE TO SUN	65	64	15
POLYSTICHUM MUNITUM SWORD FERN	2 GAL	3' O.C.	SHADE	77	76	10
RUBUS SPECTABILIS SALMONBERRY	2 GAL	4' O.C.	LIGHT SHADE / SUN	86	85	20
SAMBUCUS RACEMOSA ELDERBERRY	2 GAL	5' O.C.	LIGHT SHADE / SUN	83	82	30
VACCINIUM OVATUM EVERGREEN HUCKLEBERRY	2 GAL	3' O.C.	SHADE TO SUN	115	113	15
ZONE 4						
HOLODISCUS DISCOLOR OCEANSPRAY	2 GAL	5' O.C.	PART SHADE TO SUN	32	51	15
MAHONIA NERVOSA LONGLEAF MAHONIA	2 GAL	3' O.C.	PART SHADE TO SUN	89	143	15
PHILADELPHUS LEWISII WILD MOCK ORANGE	2 GAL	4' O.C.	PART SHADE TO SUN	50	80	15
RIBES SANGUINEUM RED FLOWERING CURRANT	2 GAL	5' O.C.	LIGHT SHADE / SUN	43	68	20
ROSA NUTKANA NOOTKA ROSE	2 GAL	4' O.C.	SUN	83	134	30
SYMPHORICARPUS ALBUS COMMON SNOWBERRY	2 GAL	4' O.C.	PART SHADE TO SUN	33	53	10

SEED MIX: TURF-TYPE PERENNIAL RYE (2 TYPES) 20%
 LOW-GROW PERENNIAL RYE (1 TYPE) 30%
 CHEWING FESCUE 20%
 HARD FESCUE 15%
 COLONIAL BENTGRASS 10%
 WHITE DUTCH CLOVER 5%
 300 LBS/ACRE

MULCH: 2000 LBS / ACRE



REDUCED TO 50% OF FULL SIZE

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

CEDAR RIVER MITIGATION CHANNEL

PLANTING PLAN 2

PN CED-1-01

RENTON		WASHINGTON	
DATE	15-APR-2003	DATE	10APR03
DESIGNER	H:\CIV\CDR_MIT\NEW CHANNEL\02\03CHANNEL\CEDRCL08.DGN	PLATE	L-2
DRAWN	REG	SHEET	15 OF 15