Attachment 2

Application for Streamlined Processing of
FISH HABITAT ENHANCEMENT PROJECTS
Addition to the Joint Aquatic Permit Application (JARPA)

Under RCW 77.55.181 you may qualify for a streamlined permit process with no fees if your project is designed to enhance fish habitat. If your project meets the requirements below, you are entitled to the streamlined Hydraulic Project Approval (HPA) process, exemption from the State Environmental Policy Act (SEPA), and exemption from all local government permits and fees. To apply for the exemption process, you must provide, on the same day, a complete application package to: the Department of Fish and Wildlife (WDFW) and all applicable local government planning and permitting departments. Local governments have 15 days to provide comments to WDFW to aid it in deciding whether your project qualifies (see below for details).

To QUALIFY for the fish habitat enhancement exemption you must check at least one each from A and B and provide a letter of approval from one of the agencies listed in B. It is highly recommended you discuss your proposal with the local Area Habitat Biologist (AHB) prior to submitting your application.

A) My project (check all that apply):

- ☒ Removes a **human-made** fish passage barriers
- ☐ Restores an eroded or unstable stream bank using **bioengineering techniques**
- ☐ Places woody debris or other in-stream structures **that benefit naturally reproducing fish stocks**

B) My project is approved by (check all that apply):

- ☐ WDFW's Salmon Enhancement, or Volunteer Cooperative Fish and Wildlife Enhancement Programs
- ☐ The sponsor of a watershed restoration plan as provided in chapter 89.08RCW
- ☐ WDFW, as a department-sponsored fish enhancement or restoration project
- ☐ Conservation District, where the project complies with design standards established by the Conservation Commission through interagency agreement with the United States Fish and Wildlife Service and the Natural Resource Conservation Service
- ☒ A formal grant program established by the legislature or the Department of Fish and Wildlife for fish habitat enhancement or restoration (currently the Dept. of Transportation is handling grant applications)

To APPLY for the Exemption, submit two copies of a complete application package consisting of the following documents to the local government planning department and WDFW and indicate below which local government agency you are sending your application to and when you are sending it.

Two copies of:

- This addition to the JARPA
- A completed JARPA 2009
- Plan drawings (no larger than 11 x 17 format)
- Letter of approval of your specific project from one of the agencies listed in B

I am sending my application to following local government agency: _____ ***on:*** 5-28-09 ***(date).***

PLEASE NOTE:

- In addition to applying for this streamlined processing, you need to apply for all other applicable Federal and State permits identified in the JARPA.
- If WDFW determines that your project meets the fish habitat enhancement exemption criteria, SEPA and all local government permits and fees are waived. WDFW will process your HPA within 45 days of receiving your complete application.
- If significant concerns are raised during the 15-day comment period regarding adverse impacts from your project that cannot be addressed through HPA conditions, WDFW may determine that the project does not qualify for the exemption process. If WDFW makes that decision, you may re-apply to WDFW, the applicable local government, and any other applicable permitting agency for approval under the full permitting process. If WDFW determines that your project does NOT qualify for the exemption, or if your application is incomplete, you and the local government planning department will be notified.

Applicant Name: _____

Unique Project Identifier (UPI) # (See JARPA section 1a): 790847-09-01

2009
WASHINGTON STATE
Joint Aquatic Resources Permit Application (JARPA) Form [help]

US Army Corps of Engineers
Seattle District

AGENCY USE ONLY

Date received:

Agency reference #: _____

Tax Parcel #(s): RECEIVED

MAY 29 2009

HABITAT PROGRAM

USE BLACK OR BLUE INK TO ENTER ANSWERS IN WHITE SPACES BELOW.

Part 1–Project Identification

Unique project information that makes it easy to identify. [help]

1a. Unique Project Identifier Number (UPI #) [help] • Don't have one yet? Get one at http://www.epermitting.wa.gov or call the Washington Governor's Office of Regulatory Assistance at (800) 917-0043.
790847-09-01
1b. Project Name (Examples: Smith's Dock or Seabrook Lane Development) [help]
Bruton Fish Passage Project

Part 2–Applicant

The person or organization legally responsible for the project. [help]

2a. Name (Last, First, Middle) and Organization (if applicable)
2b. Mailing Address (Street or PO Box)
2c. City, State, Zip

2d. Phone (1)	**2e.** Phone (2)	**2f.** Fax	**2g.** E-mail

Part 3–Authorized Agent or Contact

Person authorized to represent the applicant about the project. (Note: Authorized agent(s) must sign 11b. of this application.) [help]

3a. Name (Last, First, Middle) and Organization (if applicable)
3b. Mailing Address (Street or PO Box)
3c. City, State, Zip

3d. Phone (1)	**3e.** Phone (2)	**3f.** Fax	**3g.** E-mail

Part 4–Property Owner(s) [help]

Contact information for people or organizations owning the property(ies) where the project will occur. [help]

☐ Same as applicant. (Skip to Part 5.)

☐ Repair or maintenance activities on existing rights-of-way or easements. (Skip to Part 5.)

☒ There are multiple property owners. Complete the section below and use JARPA Attachment A for each additional property owner.

4a. Name (Last, First, Middle) and Organization (if applicable)			
4b. Mailing Address (Street or PO Box)			
4c. City, State, Zip			
4d. Phone (1)	**4e.** Phone (2)	**4f.** Fax	**4g.** E-mail
	( )	( )	

Part 5–Project Location(s)

Identifying information about the property or properties where the project will occur. [help]

☐ There are multiple properties or project locations (e.g., linear projects). Complete the section below and use JARPA Attachment B for each additional property.

5a. Street Address (Cannot be a PO Box. If there is no address, provide other location information in 5n.) [help]

5b. City, State, Zip (If the project is not in a city or town, provide the name of the nearest city or town.) [help]

Thorp, WA 98946

5c. County [help]

Kittitas

5d. Provide the section, township, and range for the project location. [help]

¼ Section	Section	Township	Range
NE	5	18 N	17 E

5e. Provide the latitude and longitude of the project location. [help]

- Example: 47.03922 N lat. / -122.89142 W long

47.0821°N; -120.7339° W

5f. List the tax parcel number(s) for the project location. [help]

- The local county assessor's office can provide this information.

639133, 20407, 079133, 139133

5g. Indicate the type of ownership of the property. (Check all that apply.) [help]

☐ State Owned Aquatic Land ☐ Tribal ☒ Private –with BOR easement for maintenance

☐ Other publicly owned (federal, state, county, city, special districts like schools, ports, etc.)

5h. Contact information for all adjoining property owners, lessees, etc. (If you need more space, use JARPA Attachment C.) [help]

Name	Mailing Address	Tax Parcel # (if known)

5i. Is any part of the project area within a 100-year flood plain? [help]

☒ Yes ☐ No ☐ Don't know

5j. Briefly describe the vegetation and habitat conditions on the property. [help]

The project site has very little vegetation as it is confined between a county road bridge, the Interstate 90 bridges, and the dam with associated diversion screening and passage infrastructure. The left bank does have some riparian shrubs and trees that provide limited habitat and shade for the stream bed. The existing dam is about 5 feet tall and with dam boards on top can extend to over 6 feet tall. Sediment has filled the channel upstream of the dam to nearly the top of the crest, but a large scour pool exists on the downstream side of the apron. This scour pool has degraded the bed such that the opening to the downstream side of the fishway is no longer accessible to most fish at most flows; creating a fish passage barrier.

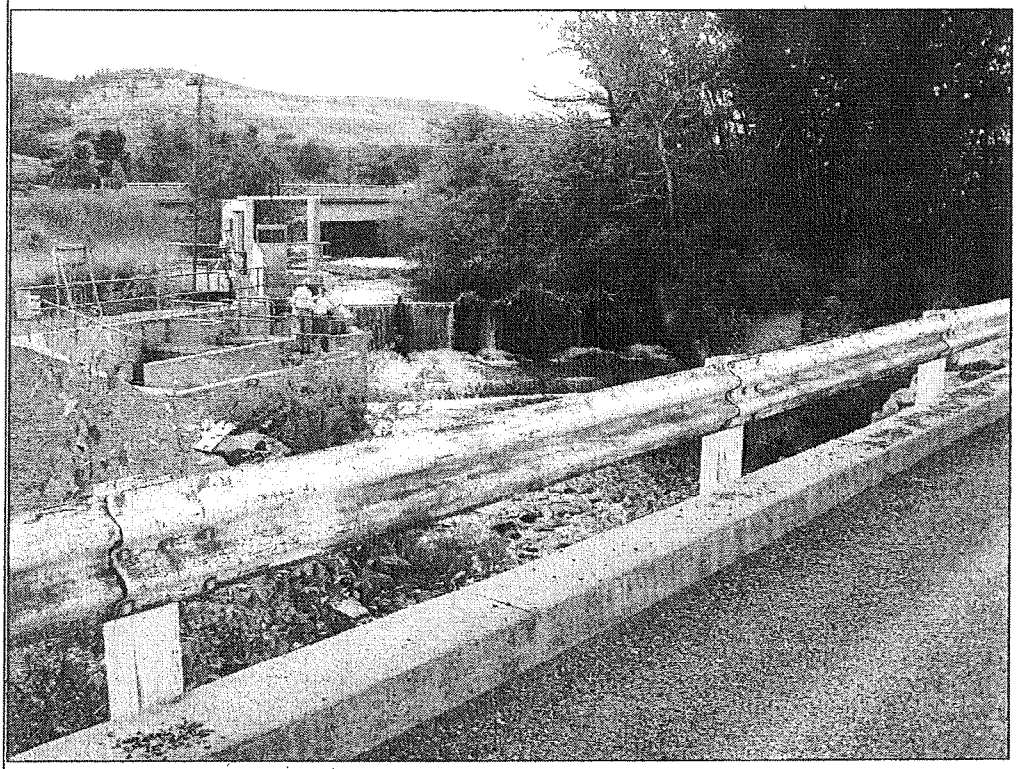

Figure 1. This photo was taken from the Taneum Road bridge, looking upstream at Bruton Dam and associated fish screen and fishway. The westbound bridge of Interstate 90 is also shown, upstream of the Bruton Diversion (about 250 feet from the Taneum Road bridge).

Yakima Tributary Access and Habitat Program (YTAHP) fish monitoring at the Bruton site show that juvenile anadromous fish (coho and Chinook salmon) are using the habitat available downstream of Bruton Dam. The number of juvenile anadromous fish upstream of Bruton Dam is significantly reduced.

Adult salmonids are also present in Taneum Creek and have been documented near Bruton Dam. Radio tagged steelhead have been delayed downstream of Bruton Dam until the flows were sufficient to provide passage in the fishway. Coho salmon have been reseeded in the upper watershed and the first returning adults are expected in 2010. Taneum Creek has also been identified as a potential stream for Bull Trout recovery due to the high quality habitat; although there are no known bull trout populations in the watershed currently.

5k. Describe how the property is currently used. [help]

Bruton Dam was constructed at the time Interstate 90 was built because the original diversion check structure for the Bruton ditch was demolished to accommodate I-90. The Bureau of Reclamation (BOR) is responsible to ensure that the fish passage facilities at this dam do not impede the Bruton water users from getting their irrigation water from Taneum Creek. The BOR maintains the existing fishway and fish screen (see attached agreement from 1988), but the maintenance of the ditch is the responsibility of the water users (there are 5 water users). The water users have stock water rights year round and irrigation water from April 1 to October 15 each year. The irrigated parcels are in pasture grass and hay production.

5l. Describe how the adjacent properties are currently used. [help]

Interstate 90 forms the upstream boundary of the project limits and Taneum Road crosses the proposed roughened channel near the downstream limits of the project area. Rural homes, associated out buildings, and irrigated fields and livestock are located near the project area.

5m. Describe the structures (above and below ground) on the property, including their purpose(s). [help]

The westbound I-90 bridge forms the upstream boundary of the project area. Bruton dam, fishway, and fish screen are located about 140 feet downstream of the freeway bridge. Taneum Road bridge is approximately 110 feet downstream of the existing Bruton Dam. Bruton ditch flows east, starting at the point of diversion, just upstream of the dam. Underground power lines connect a pole near Taneum Road, across the parking area to the fish screen at the head end of the ditch. A natural gas pipeline is located about 80 feet downstream of Taneum Road bridge, and will not be impacted by this project.

5n. Provide driving directions from the closest highway to the project location, and attach a map. [help]

From Interstate 90, take exit 101 and head south for about 0.6 miles, away from Thorp. Turn right (northwest) onto Thorp Cemetery Road and follow it (parallels I-90) for about 5.5 miles; you will cross Taneum Creek. Turn right (east) on Thorp Prairie/Taneum Road and cross over I-90 for about 0.25 miles. Turn right (southeast) onto E. Taneum Road for 0.4 miles. You will cross Taneum Creek again and the parking area will be on your right, immediately after crossing Taneum Creek. Bruton Dam is located at Taneum Creek River Mile 1.2.

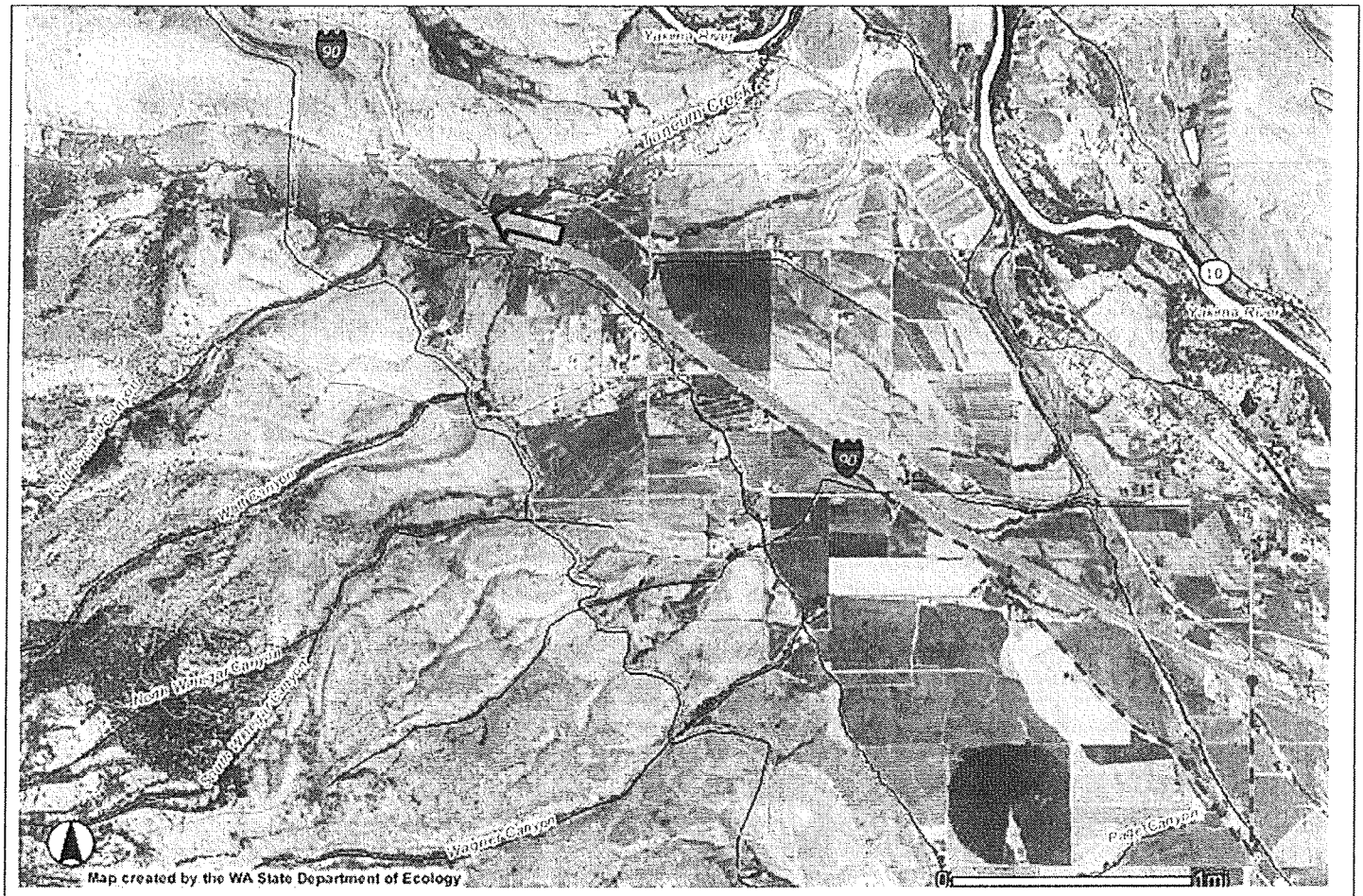

Figure 2. This aerial photo has the driving route from I-90 and project location identified.

Part 6–Project Description

6a. Summarize the overall project. You can provide more detail in 6d. [help]

Taneum Creek is a valuable tributary to the Upper Yakima River with excellent habitat in its headwaters. Taneum Creek is a known steelhead spawning stream and has been identified as a potential bull trout recovery area because of its quality upstream habitat. The proposed project will remove Bruton Dam, a major fish passage barrier to more than 30 miles of habitat, and the related diversion infrastructure. A roughened channel will be constructed below I-90, to about 65 feet downstream of the Taneum Road Bridge and just upstream of the existing gas pipeline crossing. The irrigation water for the Bruton Ditch water users will likely be supplied to them via a pipeline in a separate and somewhat related project proposed by the Bureau of Reclamation (see attached report). The water users' adjudicated stock water right will still be diverted from the existing point of diversion. An instream stock water delivery system will be incorporated into the upstream portion of the roughened channel following guidance from NMFS and WDFW.

Upon project completion, the roughened channel will provide passage for all life stages of fishes and other aquatic organisms. The Upper Taneum Watershed is largely in public ownership and provides excellent fish and wildlife habitat. Radio-tagged steelhead have been tracked into Taneum Creek (Hockersmith et al 1995; Karp et al 2005; Karp et al 2009) to spawn. In 2004, three of seven tagged fish held for over a week below Bruton dam (Karp et al 2005), apparently waiting for adequate flows so that they could move upstream through the fishway to spawn. The Yakama Nation and WDFW have been reintroducing coho salmon to the watershed and adults are expected to return to spawn in fall of 2010. Providing fish passage at Bruton Dam will ensure these returning fish are able to access the

entire watershed.

6b. Indicate the project category. (Check all that apply.) [help]

☐ Commercial ☐ Residential ☐ Institutional ☐ Transportation ☐ Recreational
☐ Maintenance ☒ Environmental Enhancement

6c. Indicate the major elements of your project. (Check all that apply.) [help]

☐ Aquaculture	☐ Culvert	☐ Float	☐ Road
☐ Bank Stabilization	☒ Dam / Weir	☐ Geotechnical Survey	☐ Scientific Measurement Device
☐ Boat House	☐ Dike / Levee / Jetty	☐ Land Clearing	☐ Stairs
☐ Boat Launch	☐ Ditch	☐ Marina / Moorage	☐ Stormwater facility
☐ Boat Lift	☐ Dock / Pier	☐ Mining	☐ Swimming Pool
☐ Bridge	☐ Dredging	☐ Outfall Structure	☐ Utility Line
☐ Bulkhead	☐ Fence	☐ Piling	
☐ Buoy	☐ Ferry Terminal	☐ Retaining Wall (upland)	
☒ Channel Modification	☒ Fishway		

☐ Other: _____

6d. Describe how you plan to construct each project element checked in 6c. Include specific construction methods and equipment to be used. [help]

- Identify where each element will occur in relation to the nearest waterbody.
- Indicate which activities are within the 100-year flood plain.

The entire project will be within the 100 year floodplain of Taneum Creek. Work will occur in 4 main phases, as described below.

Timing: Staging of equipment and materials for implementation could occur as soon as August 2009. Instream work may begin September 1 and will be completed by November 15. In total, the project is expected to take approximately 6 weeks to complete.

Staging and Equipment Limitations: Materials and equipment will be staged in the existing parking area adjacent to the diversion. A tracked excavator or similar piece of equipment will be used for most instream work. All equipment will be washed prior to entering the project area such that is clean of debris and petroleum products. Equipment will be inspected daily for leaks and will have fish friendly fluids in the hydraulic lines for all in channel work on this site. For all phases of construction that require pumping, an adequately sized Pump-Rite screen will be attached to ensure fish protection.

Phase 1:

- The entrance and exit to the fish ladder will be blocked using sandbags and plastic sheeting. Each pool within the fish ladder will be pumped out and fish will be salvaged using dip nets and buckets. Fish will be carefully transported to a suitable downstream location and released.
- A three foot tall sandbag and plastic sheeting dam will be constructed across the Bruton Dam crest and a 24" diameter pipe will be installed to bypass Taneum Creek around the work area (as shown in design drawings). The bypass pipe outlet will be downstream of the downstream limits of the project area. It will provide downstream passage, but upstream passage through the project area will be limited during implementation.
- While gradually dewatering this reach of Taneum Creek, fish salvage will follow NMFS guidelines and the Corps programmatic BO and will be lead by WDFW biologists. Fish will be released downstream of the project area in a suitable location.
- During excavation and grading of this reach for the roughened channel, existing streambed materials will be separated and stockpiled on site for incorporation into the final design. A layer (0.5' thick) of quarry spalls will be placed over the entire excavated area for the roughened channel. A 5' thick layer of 3-7' angular rocks will be randomly distributed over the quarry spalls. Gravel, sand, and fine material will be used to fill the voids between the large rocks. This material will be sluiced and/or rodded into the voids to ensure the channel seals adequately and water will not flow subsurface. Native streambed gravels and cobbles will be placed over the completed roughened channel at an approximate depth of 1 foot. A meander pattern will be constructed into the channel to ensure passage at low flow conditions.
- During this phase of construction the bottom and left bank of the roughened channel will be completed and the fishway will be removed, while avoiding the creek bypass along the north bank. Once this portion is complete, the lowest portion of the existing bypass pipe will be removed to create a new bypass pipe along the southern bank, beginning at the crest of Bruton Dam. The sandbag dam will be reconfigured to divert all flows into the new bypass reach and the flows will water up the new roughened channel along the south bank. The creek bypass along the north bank will be deconstructed.

Phase 2:

- Sandbags will be placed as necessary from the Eastbound I-90 Bridge, downstream to the lower limits of the project area to keep flowing water away from the north bank. Fish salvage will occur in all newly dewatered areas following NMFS protocol and the protocol described in the Corps Programmatic BO and will be lead by WDFW biologists.
- The north bank of the roughened channel will be constructed throughout the entire project length as described above. This will include demolition of the left bank wing wall and part of the reinforced

concrete dam (sandbags will be used to keep the flow away from work areas).

- A 24" PVC pipe will be buried behind the north bank slope to be used as the Phase 3 creek bypass.
- The north bank cleanout for the stock water delivery system will be constructed during phase 2. The pipes will be laid and flange installed ready for connection with the actual screen which will be installed in phase 3.

Phase 3:

- A 3' tall sandbag dam will span Taneum Creek under the I-90 bridges. A pump with a Pump Rite screen connected to a 4" diameter hose will deliver water to the Bruton Ditch during construction so as not to impede the delivery of their adjudicated irrigation water rights.
- The remaining creek flows will be diverted through the buried 24" pipe along the north bank. As this reach of the creek is gradually dewatered, fish salvage following NMFS protocol and the Corps Programmatic BO and will be lead by WDFW biologists.
- The remaining portions of reinforced concrete and other structures associated with Bruton Dam will be removed. All nonnative materials will be recycled if possible or disposed of in a suitable offsite location, outside of the 100 year floodplain.
- The stock water delivery system will be installed toward the top of the project area, just downstream of the I-90 westbound bridge. A 1' gap will be left between the 3-7' rocks in the roughened channel. The intake screen with 0.117 square inch screen openings will be installed with pea gravel all around it (1' wide by 5' deep). A top screen will be anchored with 8" thick concrete in specific locations (based on site conditions) to ensure pea gravel is retained around the intake pipe (see design drawings).
- The south bank cleanout and connecting pipes will be plumbed such that the remainder of the stock water diversion can be completed on dry land within the existing parking area.
- Construct the remaining portions of the roughened channel in the same manner as described above in Phase 1, ensuring continuity between construction phases.
- Reconfigure the sandbags to isolate the phase 3 PVC pipe from creek flow and slowly rewater the entire roughened channel project area; ensure that flow does not go subsurface
- Pull the PVC bypass pipes from the channel banks and plug the holes with suitable size rocks.

Phase 4:

- Complete construction of stock water flow meter, settling basin, and cleanout valves such that stock water (0.1 cfs year round) can be delivered to Bruton Ditch on a year round basis.

Site Restoration: Upon project completion, all areas will be cleaned up, soils de-compacted and replanted with native vegetation where it is appropriate. Riparian vegetation will be planted along the banks and in disturbed areas using local cuttings as much as possible. Erosion control seed mix will be planted in disturbed areas and weed free straw mulch (or equivalent) will be used to minimize short term erosion.

Taneum Creek is sediment starved in the lower reaches because the habitat has been degraded such that there is very little structure to hold substrate in place. Native alluvial material that is excavated from the creek bed will be incorporated into the roughened channel design as much as possible. Approximately 1 foot of streambed gravels and cobbles will be spread over the completed roughened channel. This material is expected to move downstream during high flows and be replaced with sediment from upstream. If excess streambed gravels remain upon project completion, they will be stockpiled on site and added to the creek during high flow events such that gravel will not be mined from the already sediment starved lower reaches of Taneum Creek.

Monitoring: The design engineer has been hired to conduct the construction oversight for this project. This will help to ensure the roughened channel is built as designed and that the voids are properly sealed with fine material. The roughened channel will be monitored over time to ensure it is functioning as designed to provide fish passage and to prevent scour around the Interstate 90 and Taneum Road bridge abutments. YTAHP conducts pre and post project electrofishing surveys around Bruton dam and the YKFP program monitors the upper watershed fairly intensively. We have a good data set of fish use pre-project implementation and these

efforts will continue after this project is implemented.

The stock water delivery system will be operated and maintained by the BOR (per the 1988 agreement) to ensure that the Bruton water users' adjudicated stock water is delivered to the ditch. It will be checked 2-3 times per week on a year round basis. The system will be back-flushed up to two times per year to prevent the gravel layer from plugging up. This is considered to be a routine maintenance action. If this is not adequate and the infiltration system fails, the structure will be abandoned and there will be no instream excavation to repair or replace it. The BOR has committed to an alternate stock water delivery system if the proposed system plugs and is not cleared by using the proposed back flush system.

6e. What are the start and end dates for project construction? (month/year) [help]

- If the project will be constructed in phases or stages, use JARPA Attachment D to list the start and end dates of each phase or stage.

Start date: _August 1, 2009 End date: November 15, 2009_ ☐ See JARPA Attachment D

6f. Describe the purpose of the work and why you want or need to perform it. [help]

The purpose of this project is to provide fish passage to the quality habitat in the Upper Taneum Watershed, especially for anadromous salmonids but resident fish and other aquatic organisms will benefit as well. The fishway associated with Bruton Dam is not compliant with fish passage criteria during most flows and has impeded upstream steelhead migrations in the past. Effectively, Bruton Dam has blocked access to more than 30 miles of quality salmonid habitat in the upper watershed. Taneum Creek has been identified as a priority watershed in the Subbasin Plan, Steelhead Recovery Plan and the draft Bull Trout Recovery Plan. Regional biologists recognize the potential for salmonid production in the Taneum Watershed and there is broad support for the proposed project. Not only will the proposed project provide enhanced fish passage for juvenile and adult salmonids, but the roughened channel approach will provide ecological connectivity for all aquatic species at all life stages. The Kittitas Conservation Trust is proposing this project through the YTAHP and has received grant funding to implement this proposed project. It is critical that the work is preformed in 2009; prior to grant funding drying up and prior to adult coho salmon returning to spawn in upper Taneum Creek in 2010.

While the focus of this project is on fish passage, it will lead to ecosystem restoration. Anadromous salmonids are keystone species in this watershed. Adult coho salmon were reintroduced and forced to spawn in the upper watershed in 2007 and 2008. For the first time in decades, black bear and river otter were documented feeding on salmon carcasses. The marine derived nutrients from salmon restoration projects such as the Bruton fish passage project will benefit the entire ecosystem.

6g. Fair market value of the project, including materials, labor, machine rentals, etc. [help]

$550,000

6h. Will any portion of the project receive federal funding? [help]

- If yes, list each agency providing funds.

☒ Yes ☐ No ☐ Don't know

NMFS thru SRFB, BPA

Part 7–Wetlands: Impacts and Mitigation

☐ Check here if there are wetlands or wetland buffers on or adjacent to the project area.
(If there are none, skip to Part 8.)

7a. Describe how the project has been designed to avoid and minimize adverse impacts to wetlands. [help]

☒ Not applicable

7b. Will the project impact wetlands? [help]

☐ Yes ☐ No ☐ Don't know

7c. Will the project impact wetland buffers? [help]

☐ Yes ☐ No ☐ Don't know

7d. Has a wetland delineation report been prepared? [help]

- **If yes**, submit the report, including data sheets, with the JARPA package.

☐ Yes ☐ No

7e. Have the wetlands been rated using the Western Washington or Eastern Washington Wetland Rating System? [help]

- **If yes**, submit the wetland rating forms and figures with the JARPA package.

☐ Yes ☐ No ☐ Don't know

7f. Have you prepared a mitigation plan to compensate for any adverse impacts to wetlands? [help]

- **If yes**, submit the plan with the JARPA package.

☐ Yes ☐ No ☐ Not applicable

7g. Use the table below to list the type and rating of each wetland that will be impacted; the extent and duration of the impact; and the type and amount of compensatory mitigation proposed. If you are submitting a compensatory mitigation plan with a similar table, you may simply state (below) where we can find this information in the mitigation plan. [help]

Activity causing impact (fill, drain, excavate, flood, etc.)	Wetland type and rating category[1]	Impact area (sq. ft. or acres)	Duration of impact[2]	Proposed mitigation type[3]	Wetland mitigation area (sq. ft. or acres)

[1] Ecology wetland category based on current Western Washington or Eastern Washington Wetland Rating System. Provide the wetland rating forms with the JARPA package.

[2] Indicate the time (in months or years, as appropriate) the wetland will be measurably impacted by the activity. Enter "permanent" if applicable.

[3] Creation (C), Re-establishment/Rehabilitation (R), Enhancement (E), Preservation (P), Mitigation Bank/In-lieu fee (B)

Page number(s) for similar information in the mitigation plan, if available: _____

7h. For all filling activities identified in 7g., describe the source and nature of the fill material, the amount in cubic yards that will be used, and how and where it will be placed into the wetland. [help]

7i. For all excavating activities identified in 7g., describe the excavation method, type and amount of material in cubic yards you will remove, and where the material will be disposed. [help]

7j. Summarize what the compensatory mitigation plan is meant to accomplish, and describe how a watershed approach was used to design the plan. [help]

Part 8–Waterbodies (other than wetlands): Impacts and Mitigation

In Part 8, "waterbodies" refers to non-wetland waterbodies. (See Part 7 for information related to wetlands.) [help]

☒ Check here if there are waterbodies on or adjacent to the project area. (If there are none, skip to Part 9.)

8a. Describe how the project is designed to avoid and minimize adverse impacts to the aquatic environment. [help]

☐ Not applicable

The proposed project has been designed to optimize passage for all aquatic organisms, provide suitable habitat for aquatic insects, and minimize temporary impacts associated with construction. The project has been planned for a time of year when there are not likely to be any incubating salmonids or redds nearby and when there are not likely to be spawning salmonids in the project area. The project is planned to occur during low flow conditions; reducing the disturbance necessary to ensure that the project work area is effectively dewatered. The project is planned in phases to reduce the amount of time and length of dewatered creek as much as possible.

Dewatering the work areas will minimize risks to fish life within the work area and downstream by minimizing turbidity associated with construction. All fines associated with this project will be washed into the bed to minimize turbidity associated with rewatering the work area.

8b. Will your project impact a waterbody or the area around a waterbody? [help]

☒ Yes ☐ No

8c. Summarize impact(s) to each waterbody in the table below. [help]

Activity causing impact (clear, dredge, fill, pile drive, etc.)	Waterbody name	Impact location[1]	Duration of impact[2]	Amount of material to be placed in or removed from waterbody	Area (sq. ft. or linear ft.) of waterbody directly affected
Clearing	Taneum Creek	North Bank	Temporary until vegetation re-establishes		200 linear feet
Fill-sandbags	Taneum Creek	In Channel	Temporary	~50 bags	350 linear feet, phased
Excavate/Dredge	Taneum Creek	In channel and banks	Permanent	~5000 cy native alluvium, riprap, and reinforced concrete	350 linear feet
Fill	Taneum	In	Permanent	~4000 cy native	350 linear feet

	Creek	channel and banks		alluvium ~440 tons quarry spalls ~3600 tons large angular rock	
				~6 cy pea gravel <1 cy concrete	

[1] Indicate whether the impact will occur in or adjacent to the waterbody. If adjacent, provide the distance between the impact and the waterbody and indicate whether the impact will occur within the 100-year flood plain.
[2] Indicate the time (in months or years, as appropriate) the waterbody will be measurably impacted by the work. Enter "permanent" if applicable.

8d. Have you prepared a mitigation plan to compensate for the project's adverse impacts to non-wetland waterbodies? [help]

- If yes, submit the plan with the JARPA package.

☐ Yes ☐ No ☒ Not applicable

8e. Summarize what the compensatory mitigation plan is meant to accomplish. Describe how a watershed approach was used to design the plan.

- If you already completed 7j., you do not need to restate your answer here. [help]

This is a habitat enhancement project and there is no compensatory mitigation plan associated with it. The upper Taneum Watershed is mostly within public ownership and has high quality salmonid spawning and rearing habitat. This project will provide fish passage for all life stages and all species. There is one smaller, seasonal barrier about 1 mile upstream. Designs to improve fish passage at that site are being developed and implementation is planned for 2010. Other habitat restoration actions continue to be developed and implemented throughout the watershed on public and private landownership.

8f. For all activities identified in 8c., describe the source and nature of the fill material, amount (in cubic yards) you will use, and how and where it will be placed into the waterbody. [help]

Clearing: Riparian vegetation will be cleared and grubbed along the north bank between I-90 and Taneum Road Bridge. Existing trees and shrubs will be salvaged as much as possible during implementation. There are a few willows along the south bank that will also likely be removed during implementation.

Fill-sandbags: Up to 50 industrial sized sandbags (about 1 cubic yard each) may be temporarily placed in Taneum Creek at any given time during implementation. These will be used to temporarily dewater sections of the creek where work will occur. Sand will be obtained from local quarries and/or the native alluvium will be used to fill some of the bags. Sandbag material may be incorporated into the roughened channel construction to fill the voids

Excavate/Dredge: Approximately 5,000 cubic yards of streambed material (native alluvium, existing riprap, and reinforced concrete) will be removed from the channel bed and banks during implementation. Streambed material and riprap will be separated and stockpiled for incorporation into the roughened channel design.

Fill: Approximately 4,000 cubic yards of native streambed materials will be incorporated back into the design of the roughened channel, either in fine material to fill the voids of the large angular rock, or as gravels and cobbles on top of the constructed channel. If there is excess fine material, it may be hauled off site to a suitable disposal site, but gravels and cobbles from the streambed will be incorporated into the design. All native material will be washed into the channel to minimize turbidity upon channel rewatering.

About 440 tons of quarry spalls will be trucked in from a local source to form the base of the roughened channel.

Approximately 3600 tons of large angular rock (3-7') will be incorporated into the roughened channel design. The fine material from channel excavation will be used to fill the voids between the boulders and help seal the bed.

About 6 cubic yards of pea gravel will be placed in the channel to bed the stock water delivery screen. Less than 1 cubic yard of concrete will be used to help seal in the gravels and maintain integrity of the roughened channel around the fish screen.

8g. For all excavating or dredging activities identified in 8c., describe the method for excavating or dredging, type and amount of material you will remove, and where the material will be disposed. [help]

A tracked excavator, or similar piece of equipment, will be used for excavation of the streambed materials. Work will occur from the banks and in dewatered sections as much as possible to minimize in-water work. Excavated material will be sorted and stored on site for use in the reconstructed channel. Concrete, metal and other debris will be hauled offsite and disposed of in a suitable location; material will be recycled if possible.

Part 9–Additional Information

Any additional information you can provide helps the reviewer(s) understand your project.

9a. If you have already worked with any government agencies on this project, list them below. [help]

Agency Name	Contact Name	Phone	Most Recent Date of Contact
Army Corps of Engineers			April 8, 2009
NMFS			May 19, 2009 May 13, 2009
USFWS			May 19, 2009

WDFW			April 28, 2009

Technical Work Group on April 14, 2009—Attendee List Included in Application Packet

Technical Work Group on May 13, 2009—Attendee List included in Application Packet

9b. Are any of the wetlands or waterbodies identified in Part 7 or Part 8 on the Washington Department of Ecology's 303(d) List? [help]

- **If yes, list the parameter(s) below.**
- If you don't know, use Washington Department of Ecology's Water Quality Assessment tools at: http://www.ecy.wa.gov/programs/wq/303d/.

☒ Yes ☐ No

Taneum Creek-Temperature, Instream Flow, Fecal Coliform, Dissolved Oxygen

9c. What U.S. Geological Survey Hydrological Unit Code (HUC) is the project in? [help]

- Go to http://cfpub.epa.gov/surf/locate/index.cfm to help identify the HUC.

17030001

9d. What Water Resource Inventory Area Number (WRIA #) is the project in? [help]

- Go to http://www.ecy.wa.gov/services/gis/maps/wria/wria.htm to find the WRIA #.

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9e. Will the in-water construction work comply with the State of Washington water quality standards for turbidity? [hel

- Go to http://www.ecy.wa.gov/programs/wq/swqs/criteria.html for the standards.

☒ Yes ☐ No ☐ Not applicable

9f. If the project is within the jurisdiction of the Shoreline Management Act, what is the local shoreline environment de

- If you don't know, contact the local planning department.
- For more information, go to: http://www.ecy.wa.gov/programs/sea/sma/laws_rules/173-26/211_designations.html.

☒ Rural ☐ Urban ☐ Natural ☐ Aquatic ☐ Conservancy ☐ Other _____

9g. What is the Washington Department of Natural Resources Water Type? [help]

- Go to http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_watertyping.aspx for the Forest Practices

☒ S ☐ F ☐ Np ☐ Ns

9h. Will this project be designed to meet the Washington Department of Ecology's most current stormwater manual?

- If no, provide the name of the manual your project is designed to meet.

☒ Yes ☐ No

Name of manual: Stormwater Management Manual for Eastern Washington

9i. If you know what the property was used for in the past, describe below. [help]

The surrounding property has been used for agriculture and rural residences in the past. The freeway was constructe been irrigated using Taneum Creek water for several decades.

9j. Has a cultural resource (archaeological) survey been performed on the project area? [help]

- If yes, attach it to your JARPA package.

☐ Yes ☒ No, BPA made a NE determination based on existing disturbance in the area; Letter of Concurrence

9k. Name each species listed under the federal Endangered Species Act that occurs in the vicinity of the project area

Middle Columbia River Steelhead
Columbia River Bull Trout
Ute Ladies'-tresses

9l. Name each species or habitat on the Washington Department of Fish and Wildlife's Priority Habitats and Species

Biodiversity Areas & Corridors, Riparian, Instream, Bull Trout, Chinook Salmon, Rainbow Trout/Steelhead, Westslope

Part 10–Identify the Permits You Are Applying For

Use the resources and checklist below to identify the permits you are applying for.

- Online Project Questionnaire at http://apps.ecy.wa.gov/opas/.
- Governor's Office of Regulatory Assistance at (800) 917-0043 or help@ora.wa.gov.

10a. Compliance with the State Environmental Policy Act (SEPA). (Check all that apply.) [help]

- For more information about SEPA, go to www.ecy.wa.gov/programs/sea/sepa/e-review.html.

☐ A copy of the SEPA determination or letter of exemption is included with this application.

☐ A SEPA determination is pending with _____ (lead agency). The expected decision date is _____.

☒ I am applying for a Fish Habitat Enhancement Exemption. (Check the box below in 10b.)

- Submit the Fish Habitat Enhancement Project form with this application. The form can be found at http://www.epermitting.wa.gov/Portals/_JarpaResourceCenter/images/default/fishenhancement.doc

☐ This project is exempt (choose type of exemption below).

☐ Categorical Exemption. Under what section of the SEPA administrative code (WAC) is it exempt?

_____

☐ Other: _____

☐ SEPA is pre-empted by federal law. [help]

10b. Indicate the permits you are applying for. (Check all that apply.) [help]

LOCAL GOVERNMENT

Local Government Shoreline permits:

☐ Substantial Development ☐ Conditional Use ☐ Variance

☒ Shoreline Exemption Type (explain): WAC 173-27-040 (2) (p) Fish Passage/Habitat Enhancement____

Other city/county permits:

☒ Floodplain Development Permit ☒ Critical Areas Ordinance

STATE GOVERNMENT

Washington Department of Fish and Wildlife:

☒ Hydraulic Project Approval (HPA) ☒ Fish Habitat Enhancement Exemption

Washington Department of Ecology:

☒ Section 401 Water Quality Certification

Washington Department of Natural Resources:

☐ Aquatic Resources Use Authorization

FEDERAL GOVERNMENT

United States Department of the Army permits (U.S. Army Corps of Engineers):

☒ Section 404 (discharges into waters of the U.S.) ☐ Section 10 (work in navigable waters)

United States Coast Guard permits:

☐ General Bridge Act Permit ☐ Private Aids to Navigation (for non-bridge projects)

Part 11–Authorizing Signatures

Signatures required before submitting the JARPA package.

11a. Applicant Signature (required) [help]

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities, and I agree to start work only after I have received all necessary permits.

I hereby authorize the agent named in Part 3 of this application to act on my behalf in matters related to this application. _____ (initial)

By initialing here, I state that I have the authority to grant access to the property. I also give my consent to the permitting agencies entering the property where the project is located to inspect the project site or any work related to the project. _____ (initial)

Applicant _____(Gerth) Date 26 MAY 2009

11b. Authorized Agent Signature [help]

I certify that to the best of my knowledge and belief, the information provided in this application is true, complete, and accurate. I also certify that I have the authority to carry out the proposed activities and I agree to start work only after all necessary permits have been issued.

Authorized Agent _____ Date _____

11c. Property Owner Signature (if not applicant) [help]

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

Property Owner _____(Wiedmeier) Date 5/27/09

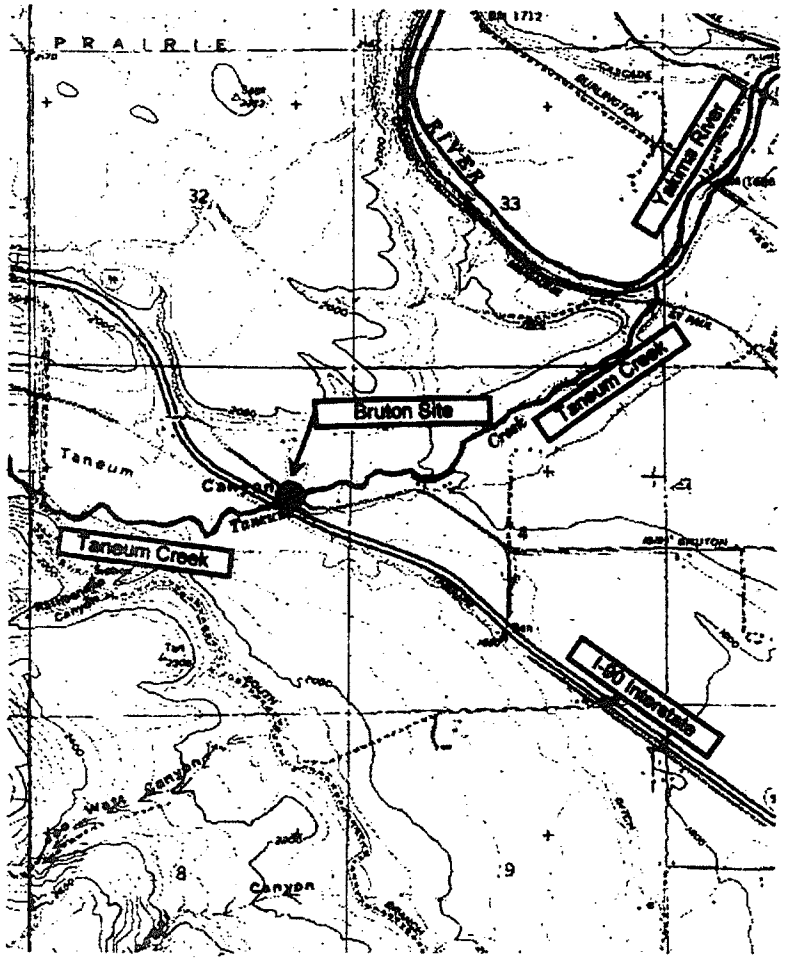
11c. Property Owner Signature (if not applicant) [help]

I consent to the permitting agencies entering the property where the project is located to inspect the project site or any work. These inspections shall occur at reasonable times and, if practical, with prior notice to the landowner.

Property Owner _____(Fischer) Date 26-May 2009

18 U.S.C §1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious, or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious, or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than 5 years or both.

If you require this document in another format, contact The Governor's Office of Regulatory Assistance (ORA). People with hearing loss can call 711 for Washington Relay Service. People with a speech disability can call (877) 833-6341.
ORA publication number: ENV-019-09



LOCATION FOR THE "TANEUM CREEK FISH PASSAGE @ BRUTON" PROJECT IS ABOUT 10 MILES NORTHWEST OF ELLENSBURG, WASHINGTON. SITE ACCESS IS OFF EAST TANEUM ROAD INTO AN EXISTING PARKING AREA ADJACENT TO BRUTON DAM (U.S. BUREAU OF RECLAMATION DIVERSION DAM TO BRUTON CANAL).

MAP SCALE: 1" = 2,000' (FROM DeLORME 1999).

TANEUM CREEK FISH PASSAGE @ BRUTON

DRAWING LIST:

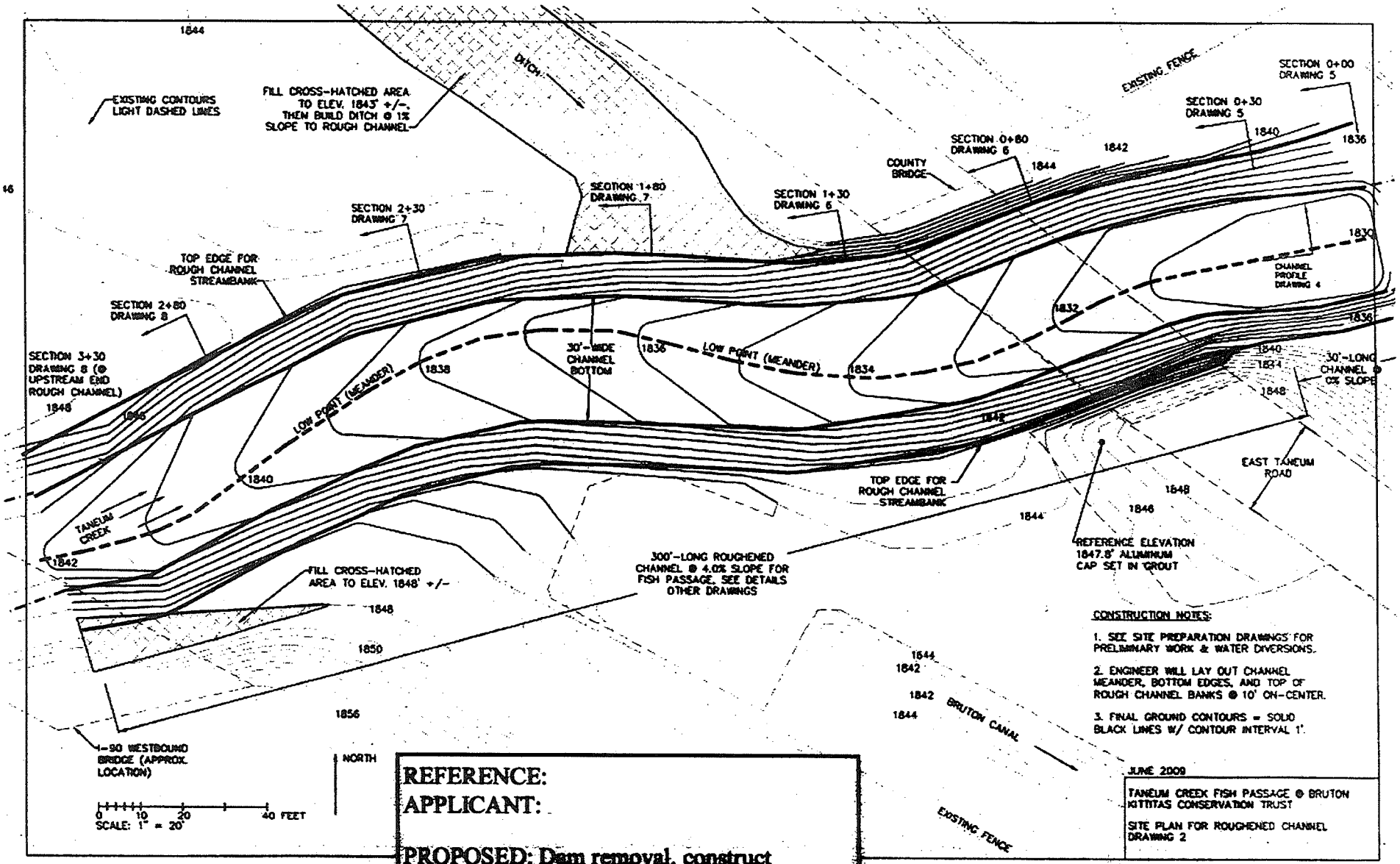
PROJECT LOCATION ABOUT 10 MILES NORTHWEST OF ELLENSBURG, WASHINGTON

JUNE 2009

TANEUM CREEK FISH PASSAGE @ BRUTON
KITTITAS CONSERVATION TRUST

PROJECT LOCATION & DRAWING LIST
DRAWING 1

PURPOSE: Fish Passage DATUM: N/A ADJACENT PROPERTY OWNERS:	NAME: APPLICANT REFERENCE: SITE LOCATION ADDRESS:	PROPOSED: Dam removal, construct roughened channel, install fish screen IN: Taneum Creek NEAR/AT: Thorp COUNTY: Kitttias STATE: WA SHEET 1 OF 10 DATE: May 6, 2009

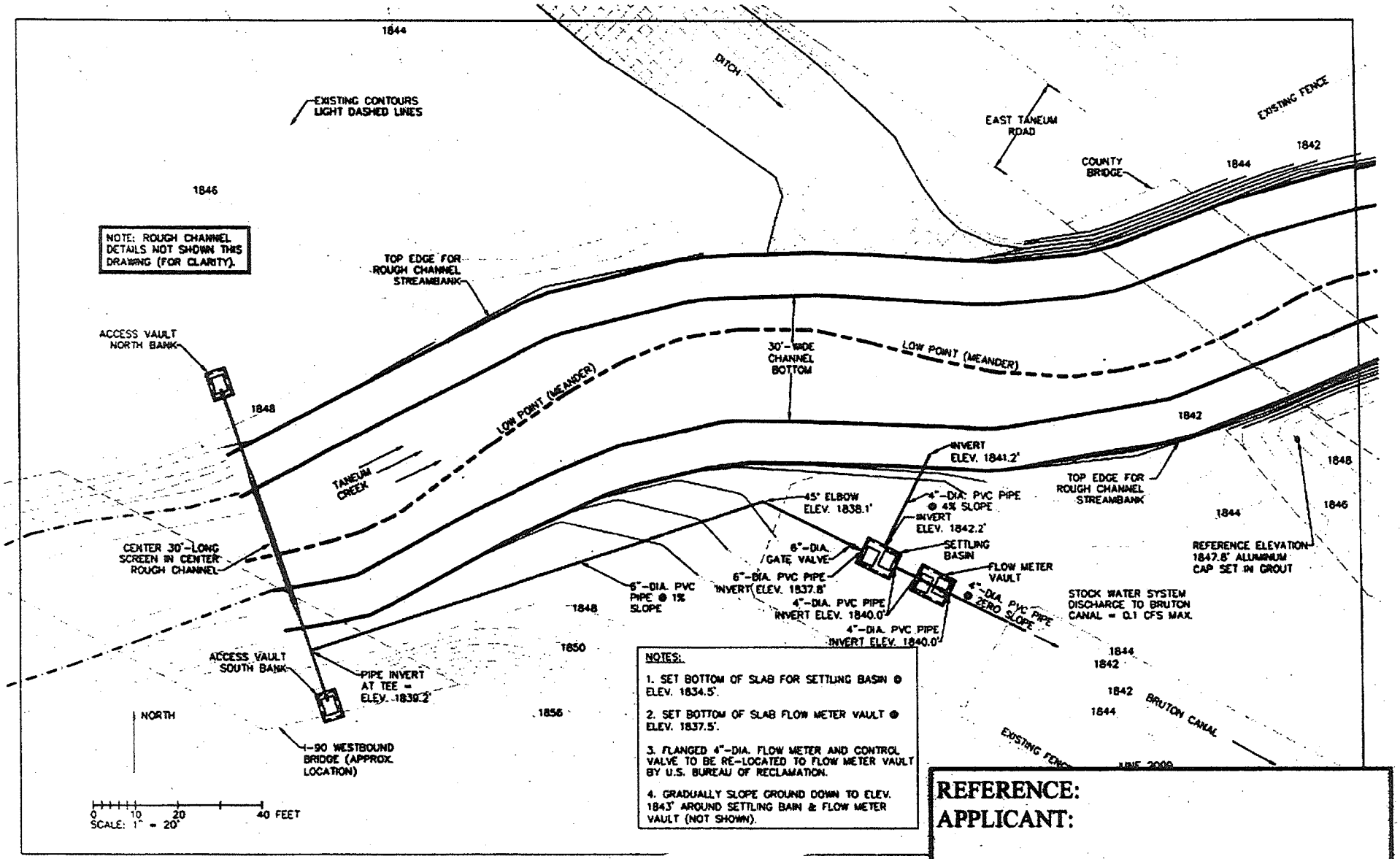


REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 2 of 10 **DATE: 5-6-09**



REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 3 of 10 **DATE: 5-6-09**

REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 4 of 10 DATE: 5-6-09

UPSTREAM END ROUGH CHANNEL @ 10' FROM I-90 BRIDGE

NOTE: VERTICAL DATUM USED FOR BRUTON SITE DESIGN = 4.2' HIGHER THAN VERTICAL DATUM USED FOR WSDOT DESIGN I-90 BRIDGES. DESIGN I-90 BRIDGE ELEVATIONS HAVE BEEN INCREASED 4.2' TO MATCH BRUTON SITE VERTICAL DATUM.

BURIED GAS PIPELINE 50' +/- DOWNSTREAM FROM ROUGH CHANNEL

10'

ROUGH CHANNEL 300'-LONG @ 4.0% SLOPE

I-90 BRIDGE WESTBOUND (APPROX.)

DECK ELEV. 1857' +/- (VARIES)

BOTTOM BEAMS ELEV. 1851.5' +/- (VARIES)

BRUTON DAM

COUNTY BRIDGE EAST TANEUM ROAD

DECK ELEV. 1849' +/- (VARIES)

BOTTOM BEAMS ELEV. 1845.3'

EXISTING STREAMBED

CONCRETE CREST ELEV. 1842.4'

EXISTING STREAMBED

UPSTREAM LOW POINT OF CHANNEL = ELEV. 1842.0' FOR 0.5' +/- HEADCUT INTO EXISTING STREAMBED

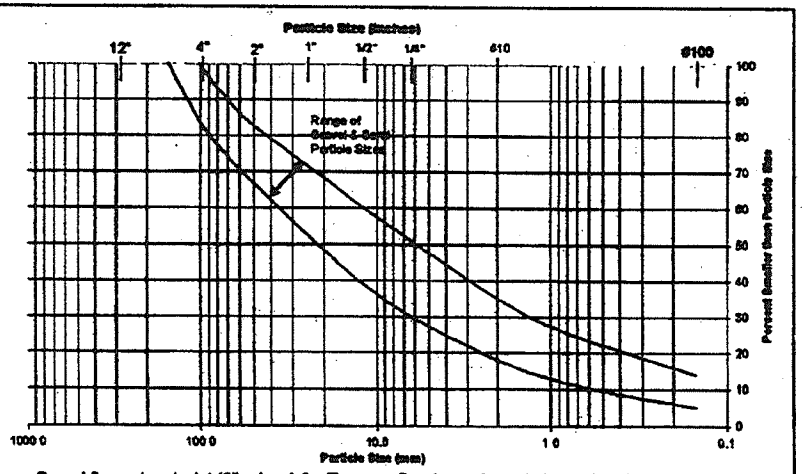
CHANNEL PROFILE

DOWNSTREAM LOW POINT OF CHANNEL = ELEV. 1830.0' FOR 2' +/- COUNTERSINK INTO EXISTING STREAMBED

BOTTOM OF NORTH FOOTING (HIGHEST FOOTING) FOR WESTBOUND I-90 = ELEV. 1838.8'.

BOTTOM OF NORTH FOOTING (HIGHEST FOOTING) FOR EASTBOUND I-90 = ELEV. 1842.0'

NOTE: LARGE ROCKS FOR THE CHANNEL ARMOR LAYER MAY BE BOULDERS (PREFERRED) OR ANGULAR ROCK, DEPENDING ON THE AVAILABILITY AND PRICE FOR BOULDERS FOR THE TANEUM CREEK LOCATION.



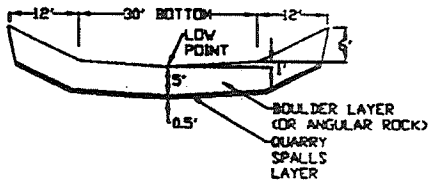
Gravel & sand material (6"-minus) for Taneum Creek roughened channel, to fill voids between boulders (36" to 72" size) for streambed armor layer.

SEQUENCE TO CONSTRUCT TYPICAL ROUGH CHANNEL (SHOWN THESE VIEWS):

1. AFTER SITE PREPARATION (SEE OTHER DRAWING), EXCAVATE, FILL, AND/OR RE-GRADE ON-SITE SOILS AND DE-WATERED STREAMBED (AND BANKS) TO BUILD CHANNEL SUBGRADE FOR PLACEMENT OF QUARRY SPALLS. PLACE 0.5'-THICK LAYER QUARRY SPALLS OVER ENTIRE ROUGH CHANNEL AREA.

2. PLACE 5'-THICK LAYER OF 36" TO 72" SIZE BOULDERS (OR ANGULAR ROCK), WITH RANDOM DISTRIBUTION OF SIZES WITHIN THIS RANGE, OVER QUARRY SPALLS. TOPS OF BOULDERS OR ANGULAR ROCK SHALL BE WITHIN 0.5' OF GRADE FOR CHANNEL BOTTOM, AND WITHIN 1' OF GIVEN DIMENSIONS FOR CHANNEL SIDE SLOPES.

3. FILL ALL VOIDS BETWEEN LARGE BOULDERS OR ROCK WITH GRAVEL & SAND (SEE CHART THIS DRAWING). GRAVEL & SAND WILL NEED TO BE SLUICED AND/OR ROBBED INTO VOIDS. USE CREEK WATER RECYCLED WITHIN DE-WATERED REACH OF TANEUM CREEK FOR GRAVEL & SAND SLUICING INTO BOULDER OR ROCK VOIDS.



TYPICAL CROSS-SECTION

0 10 20 40 FEET
SCALE: 1" = 20'
(VERTICAL SCALE = HORIZONTAL SCALE)

MARCH 2009

TANEUM CREEK FISH PASSAGE @ BRUTON
KITTITAS CONSERVATION TRUST

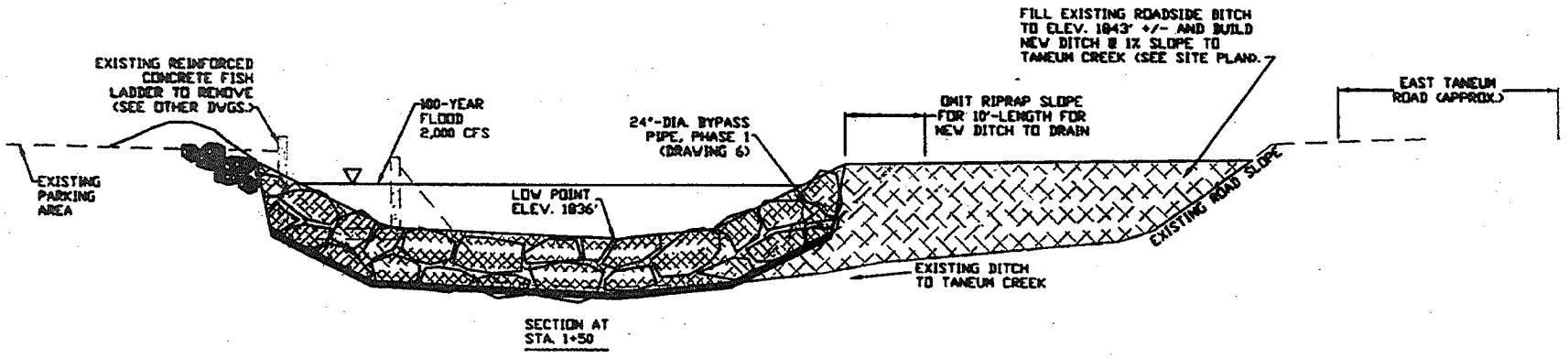
ROUGHENED CHANNEL PROFILE
DRAWING 2 OF 6

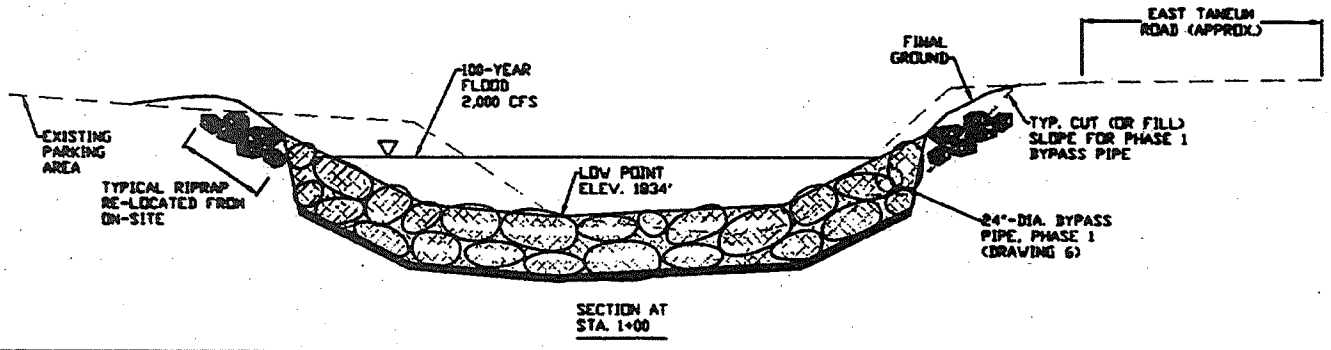
REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 6 of 10 DATE: 5-6-09





0 5 10 20 FEET
SCALE: 1" = 10'

MARCH 2009

TANEUM CREEK FISH PASSAGE @ BRUTON
KITTITAS CONSERVATION TRUST

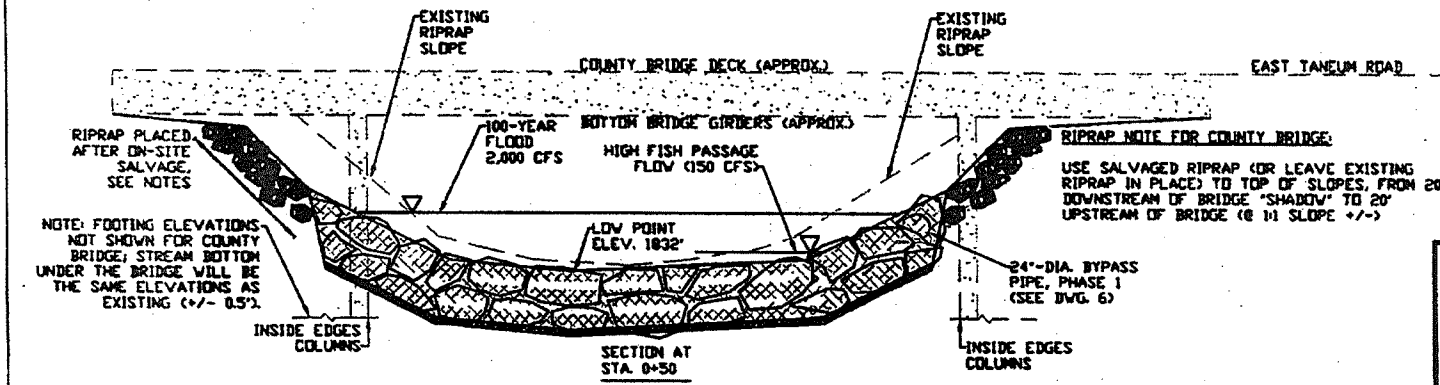
ROUGHENED CHANNEL SECTIONS
DRAWING 4 OF 6

REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 5 of 10 DATE: 5-6-09



RIPRAP NOTE FOR COUNTY BRIDGE:

USE SALVAGED RIPRAP (OR LEAVE EXISTING RIPRAP IN PLACE) TO TOP OF SLOPES, FROM 20' DOWNSTREAM OF BRIDGE "SHADOW" TO 20' UPSTREAM OF BRIDGE (@ 1:1 SLOPE +/-)

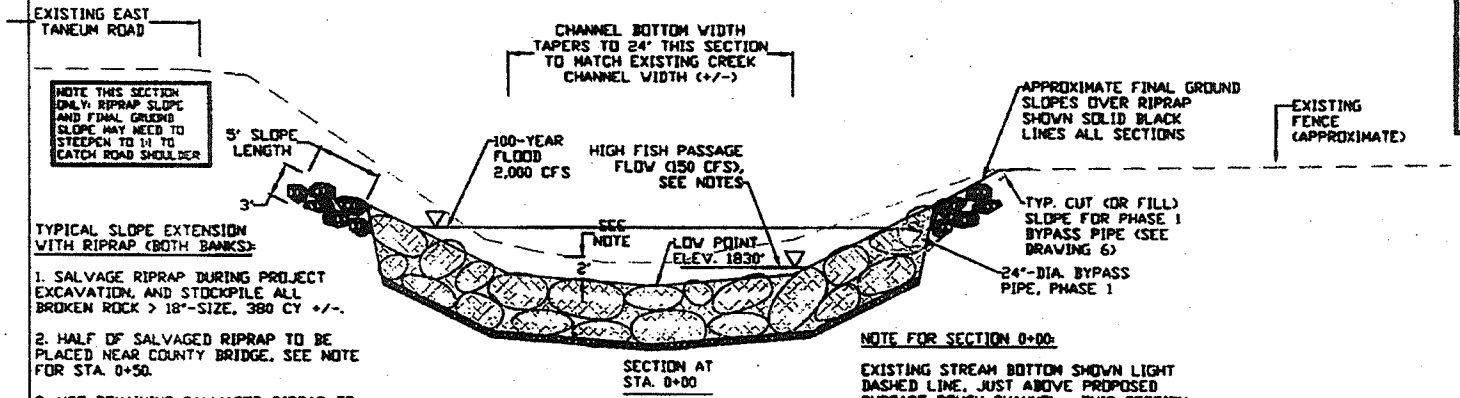
NOTES FOR ALL SECTIONS:

1. LOW POINT MEANDERS TO WITHIN 8' FROM BOTTOM OF BANK SLOPES EACH SIDE, SEE SITE PLAN.

2. WATER DEPTH AT LOW FISH PASSAGE FLOW (1 CFS) WOULD BE LESS THAN 0.5'-DEEP.

3. WATER DEPTH AT HIGH FISH PASSAGE FLOW (150 CFS) WOULD BE 1.6'-DEEP (AVERAGE DEPTH @ THALWEG).

4. ARMOR LAYER MATERIALS FOR ROUGH CHANNEL CONSTRUCTION MAY BE BOULDERS OR ANGULAR ROCK (NOT YET DECIDED). ALTERNATE SECTIONS ARE SHOWN WITH EACH OF THESE MATERIALS FOR PRELIMINARY DESIGN.



TYPICAL SLOPE EXTENSION WITH RIPRAP (BOTH BANKS):

1. SALVAGE RIPRAP DURING PROJECT EXCAVATION, AND STOCKPILE ALL BROKEN ROCK > 18"-SIZE, 380 CY +/-.

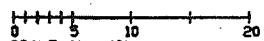
2. HALF OF SALVAGED RIPRAP TO BE PLACED NEAR COUNTY BRIDGE, SEE NOTE FOR STA. 0+50.

3. USE REMAINING SALVAGED RIPRAP TO EXTEND 2:1 BANK SLOPES 5' EACH BANK, AND PLACE 3'-THICK RIPRAP LAYER.

4. BURY RIPRAP WITH 12"-LAYER MINIMUM NATIVE SOILS AND GRADE LANDWARD.

NOTE FOR SECTION 0+00:

EXISTING STREAM BOTTOM SHOWN LIGHT DASHED LINE, JUST ABOVE PROPOSED SURFACE ROUGH CHANNEL. THIS SECTION SHOWS 2' COUNTERSINK OF NEW CHANNEL AT DOWNSTREAM END ROUGH CHANNEL.



MARCH 2009

TANEUM CREEK FISH PASSAGE @ BRUTON
KITTITAS CONSERVATION TRUST

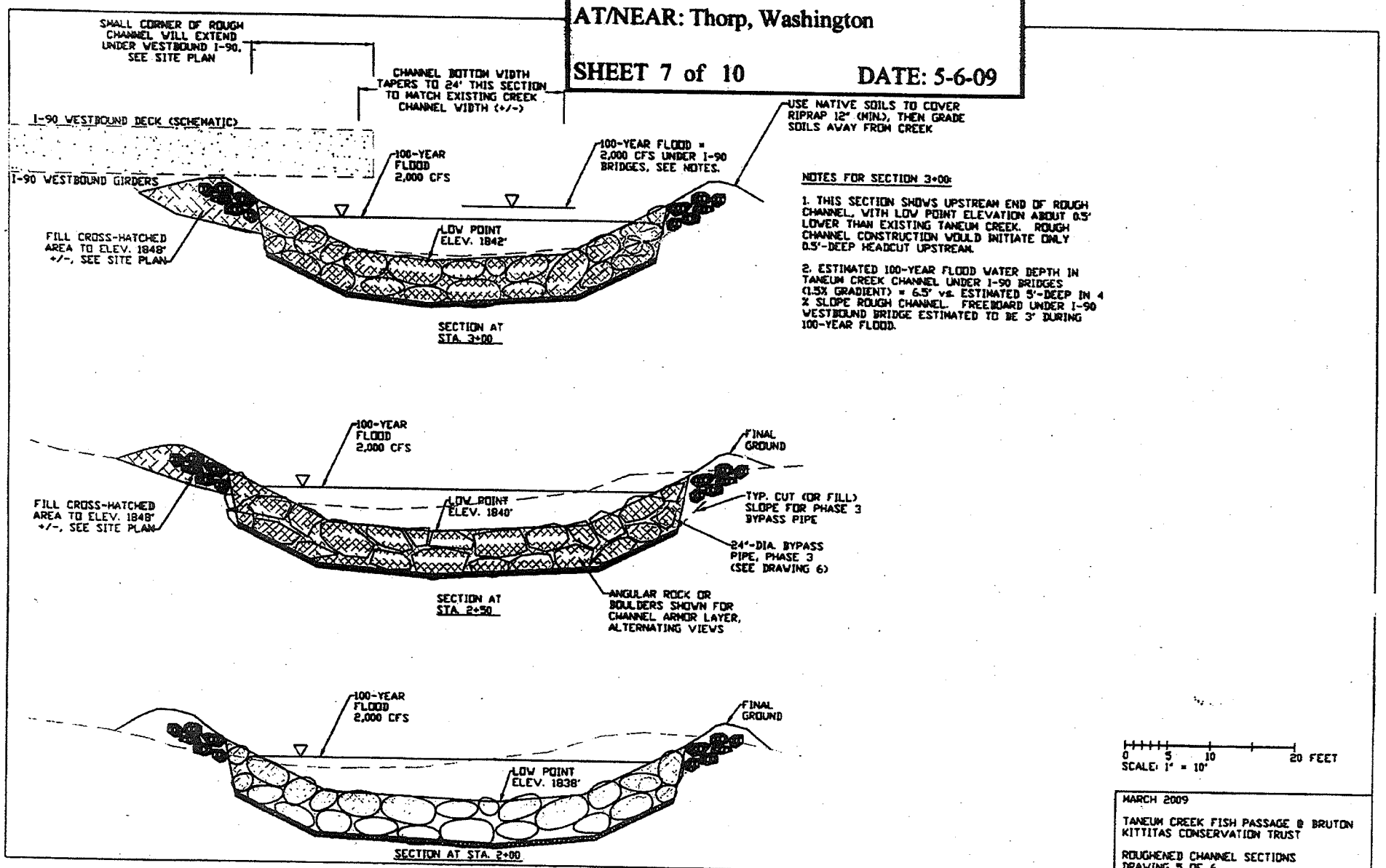
ROUGHENED CHANNEL SECTIONS
DRAWING 3 OF 6

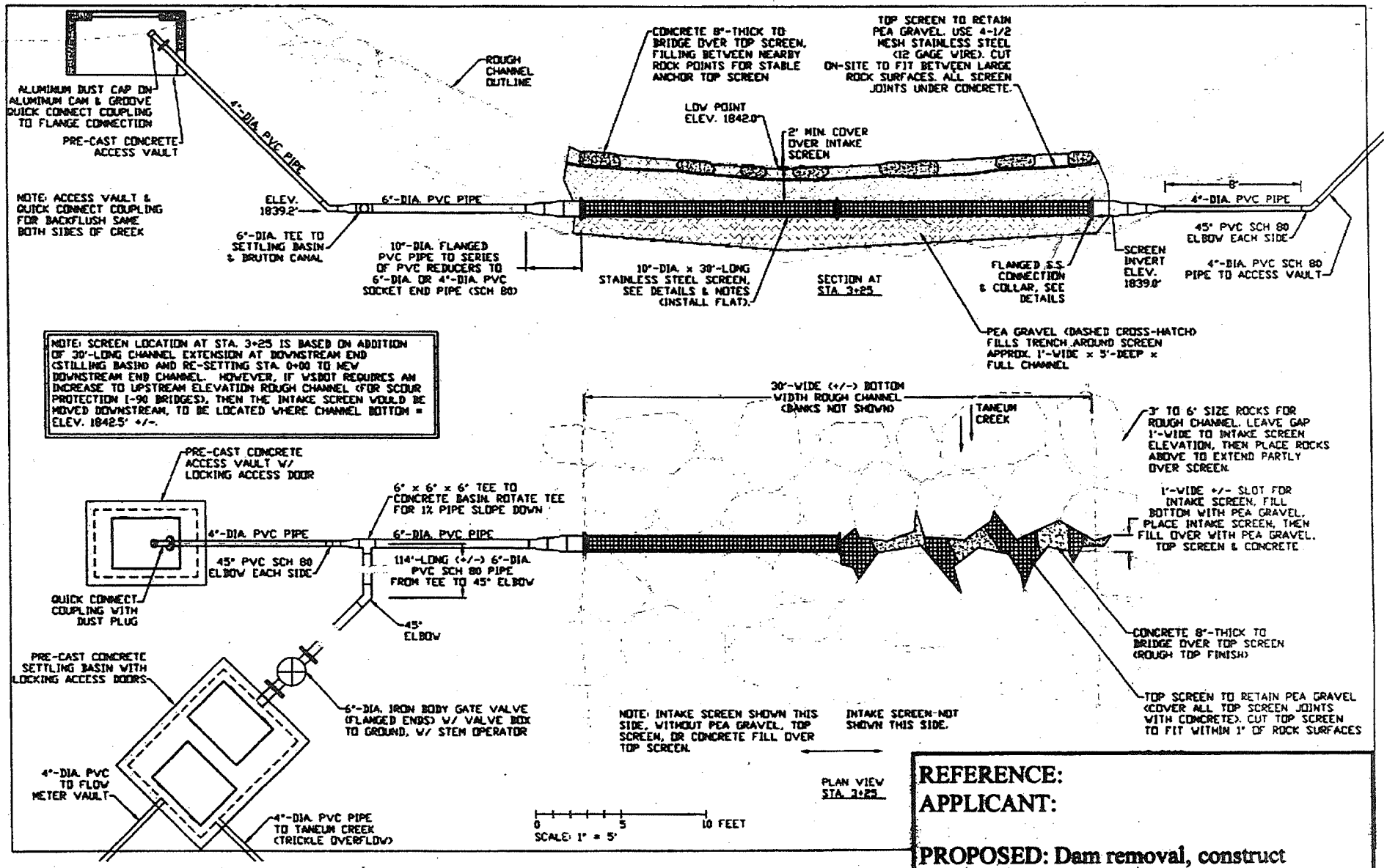
REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 7 of 10 **DATE: 5-6-09**





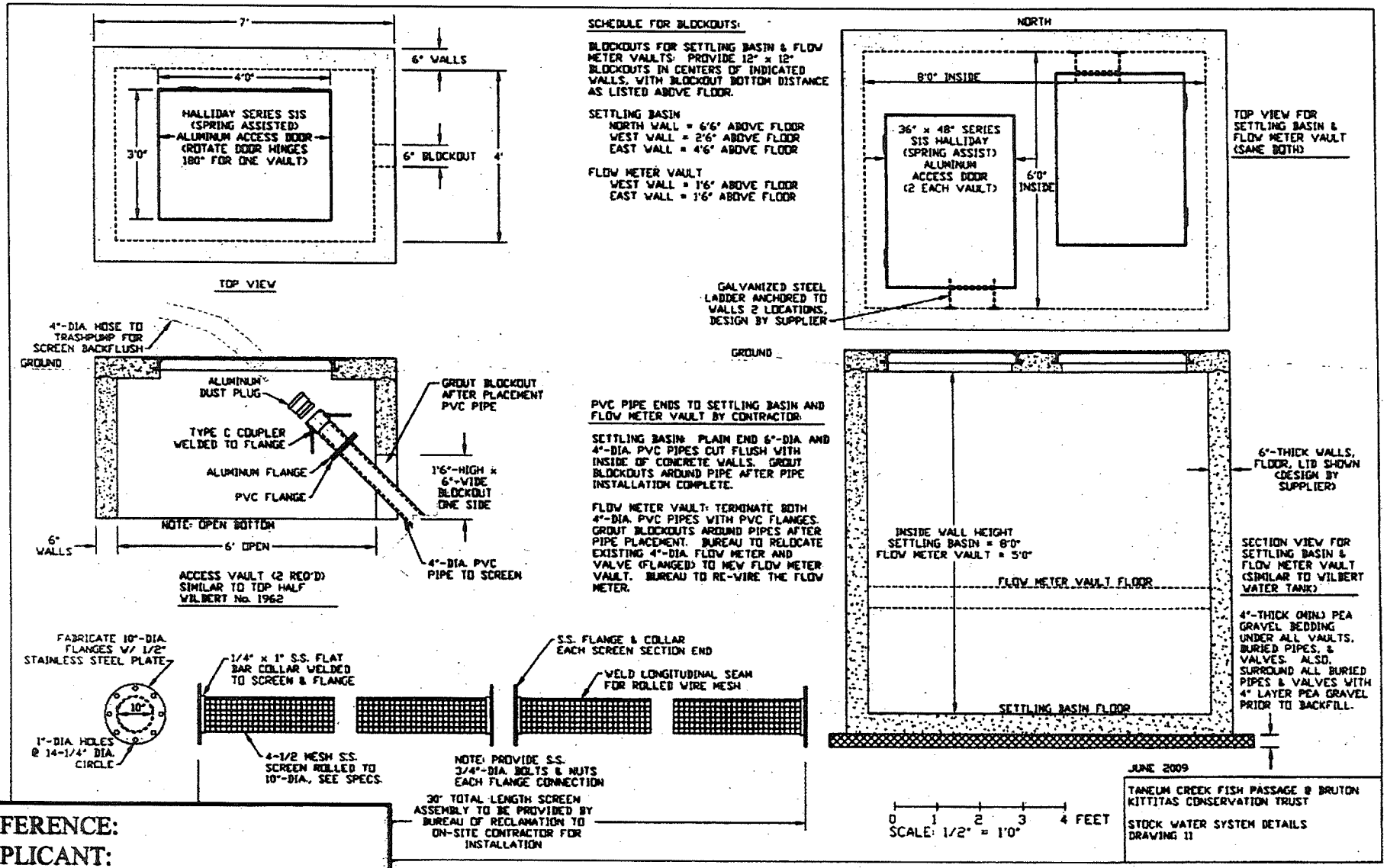
REFERENCE:

APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 8 of 10 **DATE: 5-6-09**



REFERENCE:
APPLICANT:

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 9 of 10 DATE: 5-6-09

Rough Channel Construction Sequence and Notes:

1. Use existing parking area near Bruton Dam for construction mobilization, staging of equipment and supplies, and for material stockpiles.

2. Clear areas along north bank of Taneum Creek as shown this drawing, to prepare areas for rough channel or creek bypass construction. All clearing debris shall be disposed off-site.

3. Shut down electric power supply to the existing intake.

4. Channel construction shall be accomplished in the following phases with work sequence as listed.

5. **Phase 1**: Block existing fish ladder from flow, then pump out each pool and collect fish. Demolish and remove the concrete fish ladder from Bruton Dam downstream. Leave the Bruton Canal intake intact (until later) for delivery of irrigation water.

6. Grade the alignment for the Phase 1 creek bypass (from Bruton Dam crest downstream) as shown, and install 24"-dia. PVC pipe for creek bypass. Build a 3'-high sandbag dam across Bruton Dam crest, and divert all of Taneum Creek into bypass pipe.

7. Gradually de-water stream sections within the Phase 1 bypass length, and carefully remove fish for re-location downstream. Complete de-watering of bypass reach by pumping.

8. Build bottom and south bank of rough channel from Sta. 0+00 to Sta. 1+50 as sketched this drawing. See other drawings for rough channel construction sequence.

9. During excavation and grading for rough channel, separately stockpile riprap (broken rock > 18"-size). Also, separately stockpile streambed materials, to supply 1,400 CY gravel & sand to fill rough channel voids. Native soils, excess streambed materials, etc. shall be combined into a separate stockpile area. Surplus soils and streambed material may be used to fill the ditch north of Bruton Dam during Phase 1 operations (see other drawings).

10. Use 30'-long PVC pipe from downstream end of Phase 1 bypass to build an inclined pipe from the south crest of Bruton Dam to the new channel low point near Sta. 1+50 (this pipe not shown on drawing). Re-distribute sandbags along dam crest to divert all Taneum Creek flow into the new rough channel (low flows will not spill outside the bottom of channel). Then, remove the Phase 1 creek bypass pipe.

11. **Phase 2**: Build the north bank of the rough channel for the entire 300'-length of the new channel, including the boulder banks and riprap slope extension. This construction will require demolition and removal of the north concrete wingwall at Bruton Dam, and removal of part of the reinforced concrete dam (use sandbags to keep the creek away).

12. The irrigation intake and water diversion into Bruton Canal remain in-place through Phase 2 construction.

13. During construction of the north bank of the rough channel from Sta. 1+50 to Sta. 3+00, bury a 24"-dia. PVC pipe behind the boulder slope bank. This pipe will be the Phase 3 creek bypass.

14. **Phase 3**: Install a 3'-high sandbag dam across Taneum Creek under the I-90 westbound bridge, then install a pump upstream of the sandbag dam (under I-90 bridge) to deliver water into Bruton Canal via 4"-diameter flexible hose along the south shore (outside rough channel perimeter).

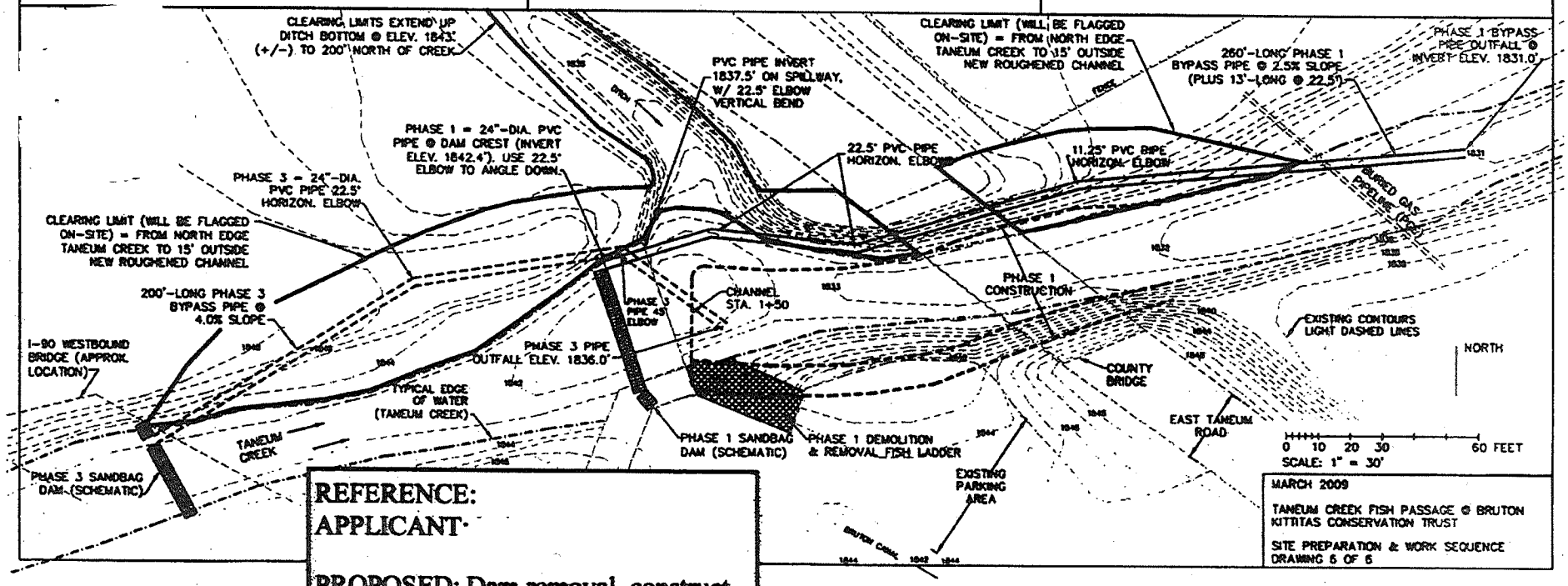
15. Divert all creek flow into the buried 24"-dia. PVC pipe along the north channel bank. Use sandbags in the rough channel near Sta. 1+50 to prevent backflow of creek water into upstream areas.

16. Gradually de-water stream sections within the Phase 3 bypass length, and carefully remove fish for re-location downstream. Complete de-watering of bypass reach by pumping.

17. Remove remaining portions of reinforced concrete and other structures for Bruton Dam, fish ladder, and intake to Bruton Canal. All removed structures shall be recycled or disposed off-site.

18. Construct the rough channel bottom and south bank from Sta. 1+50 through Sta. 3+00.

19. Use sandbags to isolate the Phase 3 PVC pipe from creek flow, and release all creek flow down the completed rough channel. Pull the PVC pipe out of the channel banks and plug these holes with boulders or angular rock, then remove the PVC pipe.



REFERENCE:
APPLICANT·

PROPOSED: Dam removal, construct roughened channel, install fish screen

AT/NEAR: Thorp, Washington

SHEET 10 of 10 DATE: 5-6-09