



Duncan Creek Stream Channel & Flood Plain Restoration Project

June 24, 2007

**Duncan Creek Stream Channel & Flood Plain Restoration Project
(The Committee to Restore Duncan Creek, Inc.)**

Project Location.

Project located within Kitsap County Right of Way located West of Colchester Drive and East Hemlock Street.
(Encl. 1 –2)

Project Description.

Minor temporary construction of 12” planking to provide access at base of Colchester (South to North line) for ingress and egress. Excavation of native soils to re-grade approximately 200’ feet of existing stream channel. Stream channel floodplain to be contoured into 3:1 slope (Encl. 3) using hand-tools and possibly small Bobcat type loader if donations found.

Excavated soils deposited away from floodplain and evenly distributed within County Right of Ways. Some soils used to form future planting mounds and features for Phase III – site-planting plan (Encl. 5) Phase II to temporarily divert Stream Channel flows to permit excavation of sediments and soils in the stream channel. Replacement of these sediments with approved spawning gravel in locations approved by Washington State Department of Fish and Wildlife during Phase II of project.

Once spawning gravel features completed with approved landscaping and hydraulic work-practices, return stream channel flows to existing stream channel course. Phase III to consist of streamside riparian restoration in newly created flood plan and immediate locations as indicated on planting plan on both sides of existing stream channel. Phase III of project dependent upon donations of plants and other local, state, federal winning of grants to accomplish streamside-planting plan.

Project Timing.

Project start date anticipated to be 4th week of July or 1st week of August 2007. Project JARPA time period is two-years. Request Right of Way Permit to align with potential of two-year project length as recommend by Washington State Department of Fish and Wildlife. One year Right of Way Permit with ability to extend by One-year if needed.

Project Tools & Materials.

Tools used to include shovels, rakes, wheelbarrows and 5-gallon buckets & 2” x 6” planking. Streambed Spawning Gravel, Native Plants, Trees, Bushes and Shrubs. Potential donation of Bobcat type machine for some excavation work possible.

Project Primary Access.

Access to be taken on public lands owned by Manchester Water District. In addition, access to be taken off of Hemlock Street with Kitsap County's Right of Way located at intersection of East Hemlock Street and Colchester Drive. **(Encl. 1 - 2)** Gravel spawning beds to be added and enhanced in Phase II, Native Plantings to be accomplished during Phase III. Access also to be taken, as needed, using Kitsap County Right of Ways on Hemlock Street and Colchester Drive.

Phased Project Timing.

Projected Phase I.

Excavate both sides of stream channel approximately 200 feet in length. Excavate soils to create 3' – 1' 'steeped' channel developing broader stream channel floodplain improving whetted streamside habitat and wetland function. **(Encl. 3 - 4)** Much of the excavated soils will be evenly spread outside the stream floodplain, all within County Right Of Way. Planting mounds of excavated soils also to be constructed in preparing for conifer and other evergreen streamside planting efforts.

Projected Phase II.

Increase depth of stream channel consistent with current average depth and removal of sediment and silts in specific areas identified by Washington State Department of Fish and Wildlife to create spawning habitat. Spawning habitat pockets will be created with addition of spawning gravel using various sized round rock gravel. Weirs to reduce stream speed using various sized rock will substitute for the installation of LWD and SWD (Large Woody Debris/Small Woody Debris) in efforts to create more natural side-channel and primary spawning bed habitat.

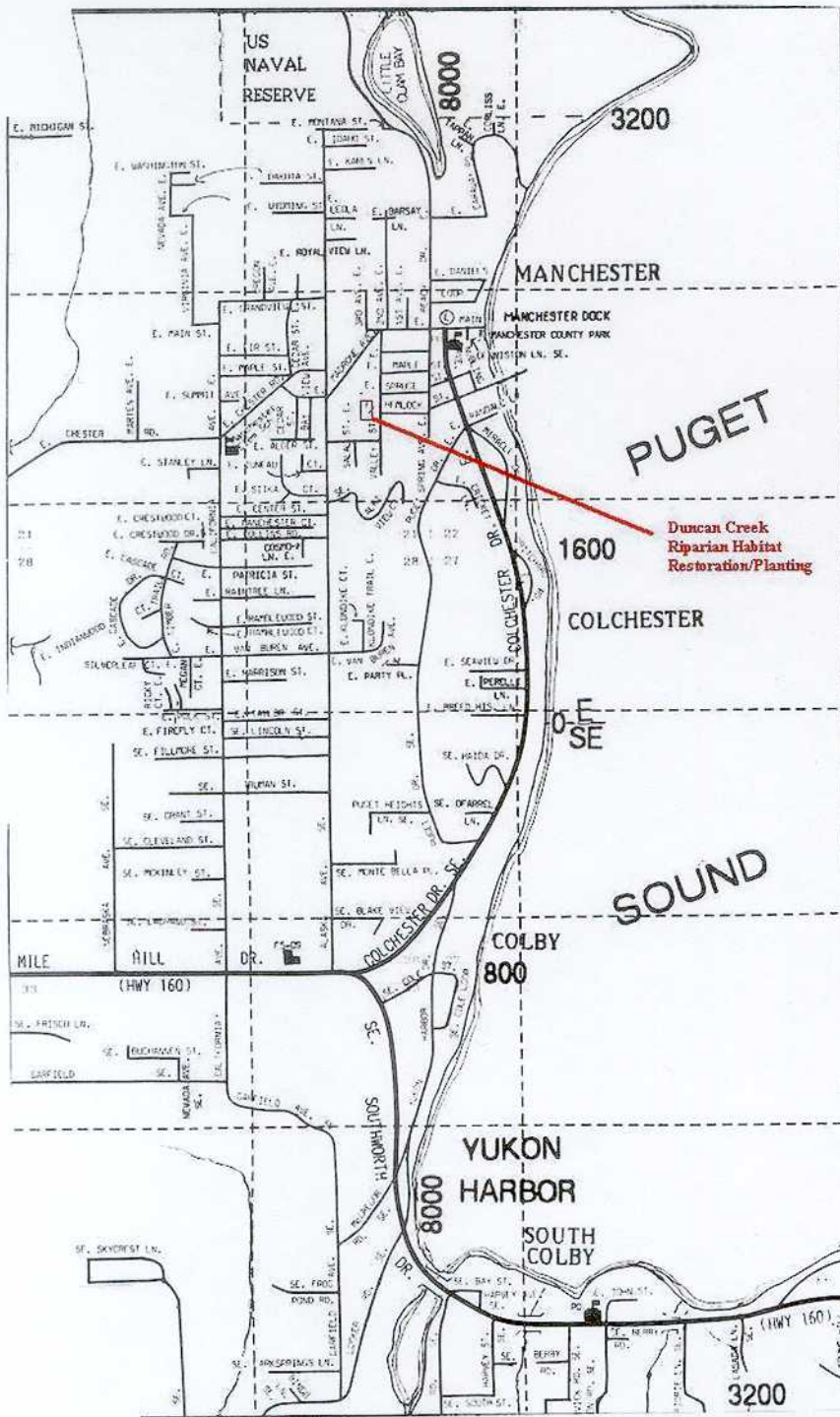
Projected Phase III.

Obtain State, County, or Federal grants to conduct streamside native plantings to improve habitat and increased shading. See planting plan **(Enclosure 5)** attached.

Enclosures.

- 1 – Project Site Vicinity Map
- 2 – Project Site Aerial Views
- 3 - Project Plan View on Section
- 4 - Project Plan Excavation View
- 5 – Project Planting Plan View

VICINITY MAP

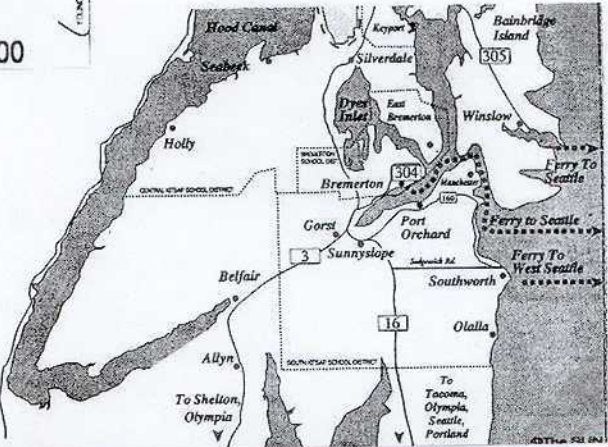


Project: Duncan Creek Riparian Habitat

Location: At Manchester Washington, County of Kitsap, State of Washington At Hemlock St. and Colchester Drive, Manchester, WA 98353

Project Applicant: David A. Kimble, Agent for:
Committee to Restore Duncan Creek, Inc.

Ferry Access Route

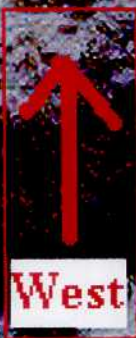


Hemlock

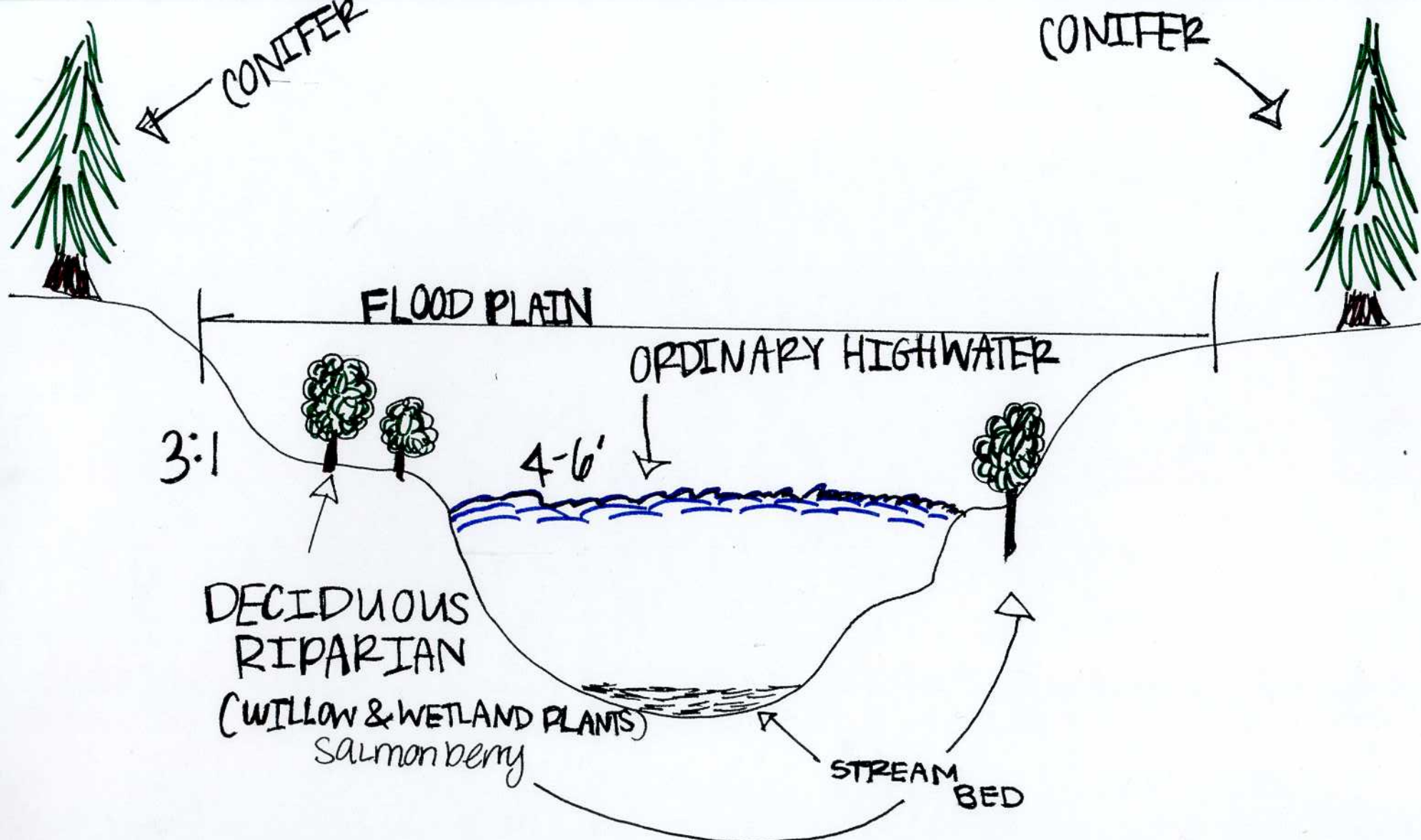
Duncan Crk.



Planting Sites



Street





3:1 SLOPE

200'

/// = EXCAVATION AREAS

~~~~~ = TERRACED ELEVATIONS





Salmon Berry



Trees

200 ft.





**Kitsap County Department of Public Works**

614 Division Street (MS-26)  
Port Orchard, WA 98366-4699  
(360) 337-5777 or (800) 825-4940

PERMIT NUMBER

**APPLICATION TO PERFORM WORK ON COUNTY ROAD RIGHT-OF-WAY**

Applicant: Committee to Rstr. Duncan Creek Contractor: \_\_\_\_\_ Date: \_\_\_\_\_

Tax ID No. 601 847 008 SDAP No. \_\_\_\_\_ Contractor License No: \_\_\_\_\_

The undersigned hereby applies for permission to: Streamside and instream rechannel and remove invasive plant species in prep. for phase II streamside planting of riparian habitat. Install spawning gravel and large woody debris to reduce native species predation. Coordinate with Dept. Health to eliminate discharges of non-point pollution sources entering stream channel.

Pursuant to franchise: \_\_\_\_\_ Dated: \_\_\_\_\_

Or Job No: \_\_\_\_\_ Fire Marshall Approval: \_\_\_\_\_ Liability certificate on file \_\_\_\_\_

The estimated time required for completion of the above work is 8 months which the petitioner agrees to prosecute with all diligence and speed with due regard for the rights, interests and conveniences of the public.

Petitioner further agrees to perform the work in strict compliance with the provisions enumerated below and states that he has read and will adhere to the general provisions applicable to permits contained on the reverse side of this form.

Contact person (avail. 24 hrs): Dave Kimble Phone: 412-335-0389 / 206-277-9034

Mailing Address: Box 25 - Manchester, WA 98353-0025

Signature: David A. Kimble, Pres. / Agent for: Committee to Rstr. Duncn Creek

*David A. Kimble 6-15-07* **PERMIT**

Subject to all the terms, conditions, and provisions written or printed on both sides of this form, and to the current Kitsap County Road Standards. Applicant certifies that 24 hour notice to all utility companies involved where work is to take place will be made. Notice shall include, but not be limited to the following:  
1-Water, 2-Power, 3-Telephone, 4-Gas, 5-TV Cable, 6-Sewer.

**ALL UTILITIES SHALL HAVE 36 INCH MINIMUM COVER UNLESS OTHERWISE APPROVED BY THE ENGINEER**

Permission is hereby granted the above applicant to do above work subject to the following conditions:

- Call 337-4658 before starting and after completing for work inspection
- Do not displace or disturb blacktop
- Open cut with saw
- Backfill open cuts with gravel borrow
- 2" CSTC required
- Import backfill as needed to replace unsuitable material
- Replace patch within 15 days with class B asphalt concrete pavement (ACP)
- Backfill open cuts with control density fill (CDF) and plate immediately
- 36" minimum depth on all driveway pushes
- Backfill and mechanically compact in maximum 6" lifts to 95% density
- Patch immediately with cold mix
- 48" min. depth on roadway pushes & bores
- Applicant is responsible for patch during interim period
- Restore right-of-way areas to original condition or better and stabilize throughout
- Erosion and sedimentation controls required
- Certified Erosion Control Lead required on site
- No open trenches left overnight
- Traffic control is required to WSDOT spec.
- Other (see attached)

A bond and/or fee in the amount of (bond) \_\_\_\_\_ (fee) \_\_\_\_\_ is required to ensure compliance with the above conditions. Said bond is to be kept in full force and effect for a period of \_\_\_\_\_ years following acceptance of work authorized by this permit. No work shall be done under this permit until the party or parties to whom it is granted shall have communicated with and received instructions from the lead County ROW Inspector (48 hour advance notice—call 337-4658).

APPROVED BY: \_\_\_\_\_ Date: \_\_\_\_\_

It is the responsibility of the applicant to notify all utilities and private property owners when such property is liable to injury or damage through the performance of the above work and the applicant shall make all necessary arrangements relative to the protection of such property and/or Utilities.

**UTILITY DAMAGE IS COSTLY—CALL 1-800-424-5555 (TOLL FREE) BEFORE YOU DIG.**





# HYDRAULIC PROJECT APPROVAL

RCW 77.55.021 - Appeal pursuant to Chapter 34.05 RCW

Coastal  
48 Devonshire Road  
Montesano, WA 98563  
(360) 249-4628

Issue Date: July 25, 2007

Control Number: 109280-1

Project Expiration Date: September 30, 2008

FPA/Public Notice #: N/A

## PERMITTEE

Committee to Restore Duncan Creek, Inc.  
ATTENTION: David Kimble  
P.O. Box 25  
Manchester, WA 98353  
206-277-9034  
Fax: 206-277-9087

## AUTHORIZED AGENT OR CONTRACTOR

Project Name: Duncan Creek Habitat Enhancement  
Project Description: Dredge and modify 200' of channel, place spawning gravels and rock weirs, and conduct riparian plantings to enhance fish habitat.

## PROVISIONS

1. Work shall be accomplished per plans and specifications approved by the Washington Department of Fish and Wildlife entitled Duncan Creek Stream Channel and Flood Plain Restoration Project and dated June 24, 2007 and per the Project Description-Projected Phase II (dated June 24, 2007, page 2) the approved spawning gravel and rock weirs shall be placed in locations designated by the AHB.

A copy of the project proposal and plans shall be available on site during construction.

2. NOTIFICATION REQUIREMENT: Area Habitat Biologist (AHB) Jason Kunz shall receive notification by phone at 360-874-7258 or email at [kunzjpk@dfw.wa.gov](mailto:kunzjpk@dfw.wa.gov) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) or the agent/contractor no less than one working day prior to the start of construction activities. The notification shall include the permittee's name, project location, starting date for work, and the control number for this HPA.

3. NOTIFICATION REQUIREMENT: Enforcement Officer Langbehn shall receive written notification by fax at 360-876-1894 or Email at [langbjdl@dfw.wa.gov](mailto:langbjdl@dfw.wa.gov) from the person to whom this Hydraulic Project Approval (HPA) is issued (permittee) or the agent/contractor within seven days of completion of work to arrange for a compliance inspection. The notification shall include the permittee's name, project location, starting date for work or completion date of work, and the control number for this HPA.

4. FRESHWATER TIMING: The project may begin July 27, 2007 and shall be completed by September 30, 2008; Provided: work below the ordinary high water line shall only occur between July 1st and September 30th.

### CHANNEL DREDGING/CHANGE PROVISIONS:

5. Upon completion of the dredging, the streambed shall contain no pits, potholes, or large depressions to avoid stranding of fish.





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6. Dredging shall be accomplished in the dry. Work shall be separated from the stream, if flowing, by use of a temporary bypass.

7. Dredging shall be accomplished by starting at the upstream end of the project boundary and working downstream.

8. The new channel change construction shall excavate and create a 3' wide bed with 1' depth channel constraints and at a minimum, be similar in length and floodplain configuration, and gradient, as the old channel. The new channel shall incorporate fish habitat components, streambed materials, meander configuration, and native or other approved vegetation equivalent to or greater than that which previously existed in the old channel.

9. Spoils removed from the channel construction shall be placed in an approved upland site.

#### STREAMFLOW BY-PASS PROVISIONS:

10. A temporary bypass to divert flow around the work area shall be in place prior to initiation of other work in the wetted perimeter. A gravity type (collapsible or hard) flume shall be the approved bypass method.

11. A sandbag revetment or similar device shall be installed at the bypass inlet to divert the entire flow through the bypass.

12. A sandbag revetment or similar device shall be installed at the downstream end of the bypass to prevent backwater from entering the work area.

13. The bypass shall be of sufficient size to pass all flows and debris for the duration of the project.

14. Prior to releasing the water flow to the project area, all bank protection or armoring shall be completed.

15. Upon completion of the project, all material used in the temporary bypass shall be removed from the site and the site returned to preproject or improved conditions.

16. The permittee shall capture and safely move food fish, game fish, and other fish life from the job site. The permittee shall have fish capture and transportation equipment ready and on the job site. Captured fish shall be immediately and safely transferred to free-flowing water downstream of the project site.

17. Any device used for diverting water from a fish-bearing stream shall be equipped with a fish guard to prevent passage of fish into the diversion device pursuant to RCW 77.57.010 and 77.57.070. The pump intake shall be screened with 1/8-inch mesh to prevent fish from entering the system. The screened intake shall consist of a facility with enough surface area to ensure that the velocity through the screen is less than 0.4 feet per second. Screen maintenance shall be



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adequate to prevent injury or entrapment to juvenile fish and the screen shall remain in place whenever water is withdrawn from the stream through the pump intake.

#### EQUIPMENT RELATED PROVISIONS:

18. Equipment used for this project shall operate stationed on the adjacent stream banks.

19. Equipment used for this project may operate below the ordinary high water line, provided the drive mechanisms (wheels, tracks, tires, etc.) shall not enter or operate below the ordinary high water line.

20. Equipment used for this project shall be free of external petroleum-based products while working around the stream. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and undercarriage of equipment prior to its working below the ordinary high water line. Equipment shall be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities along the stream.

#### WATER QUALITY PROVISIONS:

21. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediate notification shall be made to the Washington Military Department's Emergency Management Division at 1-800-258-5990, and to the Area Habitat Biologist listed below.

22. Every effort shall be taken during all phases of this project to ensure that sediment-laden water is not allowed to enter the stream. This may be accomplished by placing a series of low gravel bag dams downstream of the project. The gravel bag dams shall consist of burlap bags filled with pea gravel. The streambed and dams shall be overlain with filter fabric on the upstream side of the dams. Accumulated silt shall be removed with the filter fabric upon completion of the project and the burlap bags shall be slit to allow the pea gravel to disperse downstream. Where necessary, hand tools may be used to ensure stream flow and fish passage are not impeded by the gravel.

23. Prior to starting work, temporary filter fabric, straw bale, or pea gravel-filled burlap bag check dam(s) shall be installed downstream. Accumulated sediments shall be removed during the project and prior to removing the check dam(s) after completion of work.

24. All waste material such as construction debris, silt, excess dirt or overburden resulting from this project shall be deposited above the limits of flood water in an approved upland disposal site.

25. If high flow conditions that may cause siltation are encountered during this project, work shall stop until the flow subsides.

#### RE-VEGETATION PROVISIONS:





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26. Alteration or disturbance of the bank and bank vegetation shall be limited to that necessary to construct the project. Within seven calendar days of project completion, all disturbed areas shall be protected from erosion using vegetation or other means. Within two years of completing projected phase I and II, the banks, including riprap areas, shall be revegetated with native or other approved woody species (projected phase III). Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

## PROJECT LOCATIONS

### Location #1

|                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                       |                |                              |                           |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------|----------------|------------------------------|---------------------------|-------------------|
| WORK START: July 27, 2007                                                                                                                                                                                                                                                                                                                                                                                                       |                |                       |                | WORK END: September 30, 2008 |                           |                   |
| WRIA:<br>15.0191                                                                                                                                                                                                                                                                                                                                                                                                                |                | Waterbody:<br>Unnamed |                | Tributary to:<br>Puget Sound |                           |                   |
| 1/4 SEC:<br>NE 1/4                                                                                                                                                                                                                                                                                                                                                                                                              | Section:<br>21 | Township:<br>24 N     | Range:<br>02 E | Latitude:<br>N 47.55285      | Longitude:<br>W 122.54344 | County:<br>Kitsap |
| <p><u>Location #1 Driving Directions</u></p> <p>Stream is Duncan Creek. From Port Orchard take Bethel Ave. to SE Mile Hill Rd and head E for 3.7 miles; follow 'Y' to the left and head north on Colchester Drive for about 1.7 miles towards Manchester. Duncan Creek crosses under Colchester Drive just south of E Hemlock St. Park on Hemlock Street and project is just upstream of the Duncan Creek culvert crossing.</p> |                |                       |                |                              |                           |                   |

## APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW (formerly RCW 77.20). Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in a civil penalty of up to one hundred dollars per day and/or a gross misdemeanor charge, possibly punishable by fine and/or imprisonment.





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All Hydraulic Project Approvals issued pursuant to RCW 77.55.021 (EXCEPT agricultural irrigation, stock watering or bank stabilization projects) or 77.55.141 are subject to additional restrictions, conditions or revocation if the Department of Fish and Wildlife determines that new biological or physical information indicates the need for such action. The person(s) to whom this Hydraulic Project Approval is issued has the right pursuant to Chapter 34.04 RCW to appeal such decisions. All agricultural irrigation, stock watering or bank stabilization Hydraulic Project Approvals issued pursuant to RCW 77.55.021 may be modified by the Department of Fish and Wildlife due to changed conditions after consultation with the person(s) to whom this Hydraulic Project Approval is issued: PROVIDED HOWEVER, that such modifications shall be subject to appeal to the Hydraulic Appeals Board established in RCW 77.55.301.

## APPEALS INFORMATION

If you wish to appeal the issuance or denial of, or conditions provided in a Hydraulic Project Approval, there are informal and formal appeal processes available.

A. INFORMAL APPEALS (WAC 220-110-340) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021, 77.55.141, 77.55.181, and 77.55.291: A person who is aggrieved or adversely affected by the following Department actions may request an informal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval; or

(B) An order imposing civil penalties. A request for an INFORMAL REVIEW shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, 600 Capitol Way North, Olympia, Washington 98501-1091 and shall be RECEIVED by the Department within 30 days of the denial or issuance of a Hydraulic Project Approval or receipt of an order imposing civil penalties. If agreed to by the aggrieved party, and the aggrieved party is the Hydraulic Project Approval applicant, resolution of the concerns will be facilitated through discussions with the Area Habitat Biologist and his/her supervisor. If resolution is not reached, or the aggrieved party is not the Hydraulic Project Approval applicant, the Habitat Technical Services Division Manager or his/her designee shall conduct a review and recommend a decision to the Director or his/her designee. If you are not satisfied with the results of this informal appeal, a formal appeal may be filed.

B. FORMAL APPEALS (WAC 220-110-350) OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021 (EXCEPT agricultural irrigation, stock watering or bank stabilization projects) or 77.55.291:

A person who is aggrieved or adversely affected by the following Department actions may request a formal review of:

(A) The denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval;

(B) An order imposing civil penalties; or

(C) Any other 'agency action' for which an adjudicative proceeding is required under the Administrative Procedure Act, Chapter 34.05 RCW.

A request for a FORMAL APPEAL shall be in WRITING to the Department of Fish and Wildlife HPA Appeals Coordinator, shall be plainly labeled as 'REQUEST FOR FORMAL APPEAL' and shall be RECEIVED DURING OFFICE HOURS by the Department at 600 Capitol Way North, Olympia, Washington 98501-1091, within 30-days of the Department action that is being challenged. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, the deadline for requesting a formal appeal shall be within 30-days of the date of the Department's written decision in response to the informal appeal.

C. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO RCW 77.55.021 (agricultural irrigation, stock watering or bank stabilization only), 77.55.141, 77.55.181, or 77.55.241: A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The request for FORMAL APPEAL shall be in WRITING to the Hydraulic Appeals Board per WAC 259-04 at Environmental Hearings Office, 4224 Sixth Avenue SE, Building Two - Rowe Six, Lacey, Washington 98504; telephone 360/459-6327.

D. FORMAL APPEALS OF DEPARTMENT ACTIONS TAKEN PURSUANT TO CHAPTER 43.21L RCW: A person who is aggrieved or adversely affected by the denial or issuance of a Hydraulic Project Approval, or the conditions or provisions made part of a Hydraulic Project Approval may request a formal appeal. The FORMAL APPEAL shall be in





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accordance with the provisions of Chapter 43.21L RCW and Chapter 199-08 WAC. The request for FORMAL APPEAL shall be in WRITING to the Environmental and Land Use Hearings Board at Environmental Hearings Office, Environmental and Land Use Hearings Board, 4224 Sixth Avenue SE, Building Two - Rowe Six, P.O. Box 40903, Lacey, Washington 98504; telephone 360/459-6327.

E. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS results in forfeiture of all appeal rights. If there is no timely request for an appeal, the department action shall be final and unappealable.

ENFORCEMENT: Sergeant Jackson (29) P3

Habitat Biologist  
Jason Kunz

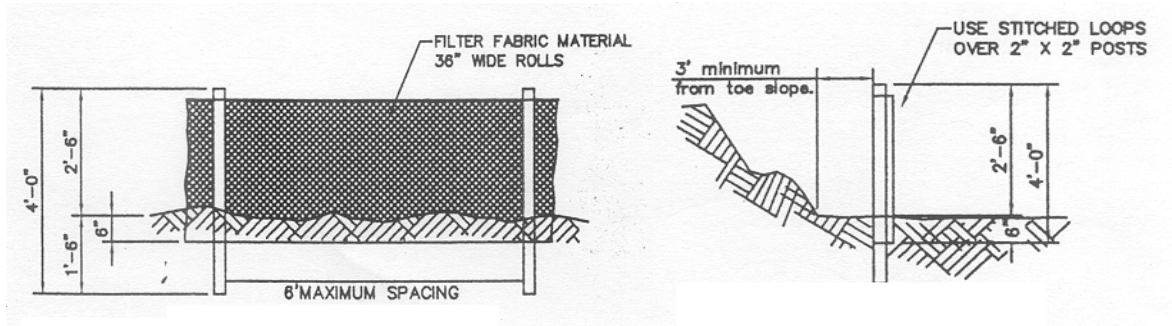
kunzjpk@dfw.wa.gov  
360-874-7258

for Director  
WDFW

CC: Alison O'Sullivan, Suquamish Tribe, Biologist (emailed)  
David Greetham, Kitsap County, Environmental Planner (emailed)



## SILT FENCE & EROSION CONTROL DETAILS



**(FRONT VIEW)**

**(PROFILE)**

### Temporary Erosion Controls

If any sediment laden water exceeding water quality standards leaves site, then additional controls will be implemented. No area larger than can be stabilized at end of workday to be excavated. Soil exposure to be minimized by covering with straw, vegetation, matting, mulch, or other best management practices.

Construction access limited to specified route. Stream flows to be diverted around work areas. The diversion outfall will be protected by securing pipe end, gravel filled bags, and other energy dissipation. Only work area in stream to be dewatered to prevent stranding of fish.

Downstream properties will be protected from any excessive sediment accumulation from worksite. Temporary erosion controls and sediment controls to be removed post field inspection by State and County Agency Representatives. All controls to be inspected and maintained daily.

The anticipated peak flow for term of construction activities is less than 1 CFS - therefore a 12" pipe, drain sleeve, or lined plastic lined trench may be sufficient dependent upon slope and weather conditions. Construction entrance will be maintained using the necessary means such as steel plates, matting to protect existing access road and any adjacent property from equipment damage. Any damage to be repaired to satisfaction of Manchester Water Department and Kitsap County.

### Erosion Control Supplies

Supplies to be Available On-Site:

20 Bales of Hay  
50 Feet Filter Fence  
50 Pounds Sterile Rye Grass Seed  
20 Sand Bags

Bury bottom of filter fabric 6" vertically below grade. 2" x 2" fir, pine, or steel fence posts. Posts to be installed on uphill side of slope. Compact both sides of filter fabric trench.

### Erosion Control Construction Sequence

Set temporary drains (pipe/sleeve) in existing trench. Pipe sized to convey largest anticipated flow during 1<sup>st</sup> phase of construction. Construct coffer dam of sandbags and native soils as approved by Fisheries. Fill over pipe as necessary to accommodate construction access. Excavate and grade widen stream channel per plans. Remove coffer dam gradually in active stream sections to flow enters new creek bed. Water should run clear after approx. 1 minute for each foot of new channel exposed. Remove temporary earth dam and increase flow into widened stream channel until entire flow is delivered. Complete fill and revegetation of widened stream channel.

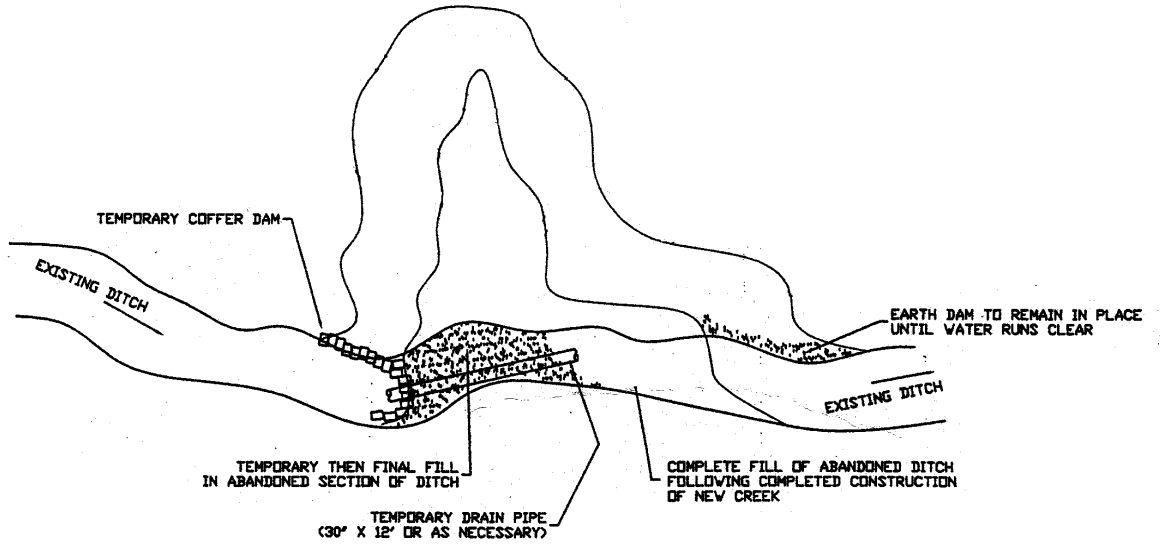
### Revegetation & Mulching During Construction

All exposed soils to be seeded and mulched. Native Riparian Grass mix to be used. Apply at 30 pounds per acre. Rake seed to 1" depth. Spread straw mulch over seeded immediately after seeding. Use dry noxious weed free straw at 3000 pounds per acre. Transplant plants and new plant starts per planting plan in phased plan. Install plant stakes and plant guards as required.



# TEMPORARY FLOW BYPASS DETAIL

## Proposed Widened Stream Channel Widening With Rock Weirs and Side Channel Resting Areas



## Diversion Pipe/Sleeve to Convey Largest Anticipated Flow During Construction

