



2018 Mad River Tillicum Fan Habitat Enhancement Project

Columbia River Honor. Protect. Restore.

OFFICE
P.O. Box 151
401 Fort Road
Toppenish, WA 98948

PHONE
(509) 423-7615

FAX
(509) 423-7616

EMAIL
clec@yakamafish-nsn.gov

WEB
Yakamafish-nsn.gov

Dear Contractor:

March 14, 2018

The Yakama Nation's Upper Columbia Habitat Restoration Project is requesting bids for construction of a **Salmon Habitat Enhancement Project** to be implemented adjacent to the Mad River in July of 2018. The project will involve all work elements and specifications found in the Project Plans attached to this bid packet.

By the close of business on **Thursday, May 3, 2018**, each contractor must have completed and submitted a signed copy of the attached Tillicum Fan Habitat Enhancement Project Bid Sheet & Daily Equipment Standby Rate Form. Please specify in writing on the bid sheets that all bid prices will be valid for at least 150 days. All competitive bid materials must be either hand delivered or sent by parcel delivery service or postal mail to:

**Yakama Nation
Attn: Jackie Olney
RE: Tillicum Fan Habitat Enhancement Project
PO Box 151
Toppenish WA, 98948
(Shipping address: 401 Fort Road, Toppenish, WA 98948)**

All portions of the project will be conducted between **July 16 and July 31, 2018**, to coincide with the permitted in-water work windows negotiated with NOAA, USFWS, and WDFW for this project. The full project will occur when ESA-listed juvenile and adult salmon and steelhead may be present in or near the project area so turbidity control via cofferdam systems will be of the utmost importance. The winning contractor will understand the magnitude of this project and be equipped to perform all necessary elements for a project of this type within a critical habitat stream. The winning contractor will have extensive experience in the following: building cofferdams, de-watering following NMFS fish screening protocols, placing large woody anchored material, excavating engineered channels and minimizing local disturbance.

All contractors submitting bids for this project shall provide and/or demonstrate, at a minimum, the following:

- ***A list of experienced equipment operators that will be on-site during project construction. Please provide details of their work on constructing in-stream habitat work.***
- ***A detailed construction timeline of how you propose to get all project tasks completed within the stated project timeline.***

- ***Experience and preferably examples of the ability to create de-watered work areas through the use of coffering techniques. A cofferdam and surface water diversion plan should be submitted with the bid documents.***
- ***A list of key pieces of heavy equipment that will be used in construction of the project.***

Please note:

- Davis Bacon Wages apply to this contract. The winning contractor will adhere to the Davis Bacon rules and comply and submit all necessary paperwork to the Yakama Nation.
- The Yakama Nation is exempt from state taxes on this project. Please see the attached Treaty Fishery Exempt Cover Letter and Treaty Fishery Exempt Certificate as well as a Certified Payroll Form. The winning contractor will receive signed copies for their records.
- This project has adopted by reference in the Engineer's Planset the 2014 Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge, and Municipal Construction. Please download a digital copy of the WSDOT 2014 Standard Specifications from <http://www.wsdot.wa.gov/publications/manuals/fulltext/M41-10/SS2014.pdf>.
- This project will occur completely on Federal USFS lands.
- Awarded contractor must provide "san-i-can" service as well as dust abatement control measures during all ground disturbing activities.
- It will be the contractor's responsibility to submit a request for an Industrial Fire Precaution Level (IFPL) waiver request in the event of a partial shutdown due to increasing levels.

The attached template Construction Services Agreement provides an overview of the scope of work likely to be incorporated into the awarded contract. Please make note of specific provisions provided in this Construction Services Agreement, including the detailed Exhibits, that may be in addition to the specifications and directions found in the Project Planset.

Also, please note that this project is pending on permitting. The Yakama Nation reserves the right to accept or reject any and all of the proposals received as a result of this request, or to cancel in part or entirely this request if it is in the best interest of the Yakama Nation to do so. This request does not commit the Yakama Nation to pay any costs incurred in the preparation of a proposal.

For questions regarding the site visit, please contact me at the numbers provided below.

Sincerely,

Christopher Clemons

Christopher Clemons
YN Project Manager
(509)-881-5746
clec@yakamafish-nsn.gov

Tillicum Fan Habitat Restoration Project - Exhibit "B" Budget Bid tab Please use the Engineer's Stamped Project Plans and the bid packet to produce your competitive bids.

Item	Quantity	Units	Unit Price	Extended Price
Mobilization	1	LS		
Traffic Control	1	LS		
Clearing and grubbing	1	LS		
ESC, SPCC plan and implementation	1	LS		
Cofferdams	1	LS		
Pumping	1	LS		
Excavation (1)	1	LS		
Fill (2)	1	LS		
LWM (3)	1	LS		
FES lifts	1	LS		
Weed free straw mulch	1	LS		
Subtotal =				
Optional additive items, (4 & 5)				
Excavate Side Channel 1 to subgrade and place in Spoils Placement Berm (6)	250	CY		
Import, mix and place channel substrate (7)	250	CY		
Disassemble existing Fence and stockpile materials for reuse by others.	1300	LF		
Subtotal =				
			Total Bid =	\$
			(do not include tax)	
LS = lump sum, CY = cubic yards, LF = linear feet				

Notes:

- 1) Includes excavation of side channels from existing grade to finished grade
- 2) Includes placement of excavated materials and excess excavated materials displaced by logs into Spoils Placement Berm.
- 3) Includes excavation, placement of logs and backfill. Includes vertical logs and FTR connections.
- 4) Requires Owner's written authorization before work is begun.
- 5) Unit price shall apply without modification to any variation in final quantity.
- 6) Excavation from finished grade to subgrade of Side Channel 1 channel substrate and placement in Spoils Placement Berm
- 7) Includes import, mixing and placement of Side Channel 1 channel substrate.

Company Name:

Date Prepared:

Certification

Printed Name & Title

Signature

By signing and submitting this form you are agreeing to honor the completed bid for a period of up to 150 days from the date this form was prepared.

CONSTRUCTION SERVICES AGREEMENT

BETWEEN:

THE CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION

on behalf of its _____ program or department

P.O. Box 151 / 401 Fort Road

Toppenish, WA 98948

General Phone: (509) 865-5121

Program Phone:

(HEREAFTER "YAKAMA NATION")

AND

[CONTRACTOR NAME]

Address Line 1

Address Line 1

Phone:

(HEREAFTER "CONTRACTOR")

This Construction Services Agreement ("Agreement") is executed by and between Contractor and Yakama Nation, a federally recognized sovereign Nation pursuant to the Treaty with the Yakamas of 1855 (12 Stat. 951). Contractor and Yakama Nation may be collectively referred to herein as the "Parties," and each may be referred to as a "Party."

1. TERM

The effective term of this Agreement shall be from _____, through _____, absent a valid termination action in accordance with the express terms of this Agreement.

2. PERFORMANCE

Contractor agrees to perform the services set forth in the attached scope of work, Exhibit "A" (collectively, the "Services"), which is incorporated by reference in this Agreement.

3. COMPENSATION

A. *Maximum Compensation.* The **total compensation amount** approved by Yakama Nation for this Agreement is limited to, and ***shall not exceed*** _____ (\$_____); which amount shall include any and all compensation for the Services as described herein and set forth in detail in the budget attached as Exhibit "B". If Exhibit "B" describes separate and specific maximum compensation amounts for services and expenses, then at the end of the term of this Agreement, any remaining balance in the amount allocated for expenses may be used by Yakama Nation, at its sole discretion, to cover fees for authorized services, so long as the total compensation amount set forth above is not exceeded.

B. *Invoicing, Progress Reports and Payment of Compensation.* Yakama Nation shall compensate Contractor according to the billing rate(s) and/or fee schedule(s) set forth in Exhibit "C" in an amount not to exceed that stated above. Contractor shall submit monthly invoices and appropriate supporting

documentation to Yakama Nation, including a progress report that provides of brief summary of daily activities associated with services performed and completed by Contractor. Unless the Parties agree in writing to different terms, invoice periods shall begin on the first day of each month and end on the last day of each month. Invoices shall be submitted by Contractor to Yakama Nation's designated staff contact within fifteen (15) days after the end of the month in which the services were provided and/or expenses were incurred. Contractor waives the right to receive full payment on invoices submitted more than sixty (60) days following the end of the proper invoice period. If a question or concern arises regarding an item on an invoice, Yakama Nation shall notify Contractor of the question or concern. Within five (5) business days following such notification, Contractor shall take action to sufficiently explain or correct the item, or Contractor shall be deemed to have waived their right to demand payment for the item.

C. *Availability of Funds.* Notwithstanding any other provisions of this Agreement, Contractor understands and agrees that compensation for services and expenses under the terms of this Agreement shall be contingent upon the availability of funds (a) placed to the credit of Yakama Nation in the Treasury of the United States, (b) appropriated by Congress, or (c) from local funds maintained in the name of Yakama Nation.

D. *Federal & Grant Funds.* Contractor understands and agrees that agreements and contracts funded by federal funds or other grant funds may be subject to certain legal requirements. These may include, but are not limited to, those requirements set forth in the United States Office of Budget Management's Uniform Guidance, 2 C.F.R. Part 200, and/or the terms of an applicable source grant. Contractor agrees to comply with and utilize funds in accordance with all applicable laws, regulations, and guidelines, and with any applicable grant or contract terms, and further understands and agrees that the use of such funds may be subject to audit by the grantor agency. Contractor shall reimburse Yakama Nation for any costs of Contractor that are disallowed by a grantor.

4. PROPERTY DEVELOPED BY CONTRACTOR

Contractor agrees that it will retain no interest in the information, data, proposals, papers, copyrights, patents, or any other material or property developed, discovered, invented, and/or accumulated by Contractor in connection with the performance of this Agreement. Subject to applicable law, Contractor shall turn over such information, data, proposals, papers, copyrights, patents, discoveries, inventions, and other material or property to Yakama Nation upon the expiration or termination of this Agreement or upon request.

5. PUBLICATION OF INFORMATION

The dissemination or publication of documents, information material or other property developed or generated by Contractor during the course of this Agreement shall require the written approval of Yakama Nation.

6. RECORDS

A. *Access.* Subject to applicable law, Yakama Nation will provide Contractor with reasonable access to its personnel, facilities, and records necessary to the performance of this Agreement.

B. *Maintenance & Retention of Records; Financial Management for Accounting and Audits.* Contractor shall maintain and retain auditable records during the term of this Agreement and for a period of at least three (3) years following the expiration or termination of this Agreement. Contractor shall maintain its records to comply with the Audit Act of 1984, P.L. 98-502 (31 U.S.C. § 7501 et. seq., as

amended) and the Office of Management and Budget's Uniform Guidance requirements set forth at, 2 C.F.R. part 200, Subpart F, as amended. Contractor shall adhere to a systematic accounting method that assures timely and appropriate resolution of audit findings and recommendations in compliance with the Uniform Guidance. Subject to applicable law, Contractor agrees that Yakama Nation, the grantor agency (if applicable), the Comptroller General of the United States, or any of their duly authorized representatives, shall have timely access to Contractor's records which are pertinent to the subject matter of this Agreement and the performance of obligations contained herein, for the purpose of conducting an audit and/or examination, and/or creating excerpts and/or transcriptions.

7. INDEPENDENT CONTRACTORS

Contractor shall employ, at its own expense, all personnel and equipment reasonably necessary to perform the Services called for by this Agreement. Such personnel shall not be considered Yakama Nation employees. Contractor shall be responsible to ensure that all personnel engaged in performing Services are fully qualified to undertake the work in accordance with applicable tribal, federal, state, and local laws. Contractor shall at all times in performance of this Agreement operate as, and have the status of, an independent contractor, and will not be an agent or employee of Yakama Nation; nor will Contractor or its personnel be entitled to any employee benefits provided by Yakama Nation. The Parties are not engaged in a joint venture or partnership. Neither party can represent or bind the other. Unless otherwise expressly agreed, Contractor shall be solely responsible to secure and pay for any necessary or appropriate permits, fees, licenses, inspections, or other prerequisites necessary for proper performance of the Services called for by this Agreement.

8. SUBCONTRACTING

A. Contractor shall not be permitted to hire a subcontractor to perform the Services called for by this Agreement without express prior written consent. Any unauthorized attempt by Contractor to subcontract for such Services shall be null and void, and Contractor shall be responsible for all expenses, fees, and costs associated with any such unauthorized subcontract.

B. An award of this Agreement based on a bid or proposal naming specific subcontractors and identifying the portions of the work to be performed by the subcontractors shall constitute prior written consent to the hiring of the named subcontractor(s). Subcontractor selection and subcontractor employment shall be subject to applicable TERO and Indian Preference requirements described above. Contractor shall be responsible to ensure their subcontractors are in compliance with Yakama Nation TERO and Indian Preference requirements.

9. ASSIGNMENT OF INTEREST

Contractor shall not assign its interest in this Agreement, or any part thereof, including its right to receive payment for services performed, to another party. Any attempt by Contractor to assign any obligations, rights, or fees under this Agreement will be null and void, and Contractor shall be responsible for all expenses, fees, and or costs associated with any unauthorized assignment.

10. INDEMNIFICATION

Contractor shall, at its sole expense, hold harmless, indemnify, and defend Yakama Nation and its officers, agents, employees, and assigns against any and all losses, costs, damages, expenses or other liabilities whatsoever, including reasonable attorney's fees and expenses, that arise out of or are connected

with, directly or indirectly, Contractor's actions or omissions, or Contractor's agents' acts or omissions related to this Agreement, including, but not limited to, accidents or injuries to persons or property.

11. SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK

A. Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to:

- (1) Conditions bearing upon transportation, disposal, handling, and storage of materials;
- (2) The availability of labor, water, electric power, and roads;
- (3) Uncertainties of weather, river stages, tides, or similar physical conditions at the site;
- (4) The conformation and conditions of the ground; and
- (5) The character of equipment and facilities needed preliminary to and during work performance.

Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done by Yakama Nation and information available to the public from local government agencies, as well as from the drawings and specifications made a part of this Agreement. Any failure of Contractor to take the actions described and acknowledged in this paragraph will not relieve Contractor from responsibility for properly estimating the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to Yakama Nation.

B. Yakama Nation assumes no responsibility for any conclusions or interpretations made by Contractor based on the information made available by Yakama Nation. Nor does Yakama Nation assume responsibility for any understanding reached or representation made concerning conditions that can affect the work by any of its officers or agents before the execution of this Agreement, unless that understanding or representation is expressly stated in this Agreement.

12. PHYSICAL DATA

Data and information furnished or referred to below or in the attached exhibits is for Contractor's information. Yakama Nation shall not be responsible for any interpretation of or conclusion drawn from the data or information made available to Contractor. Further, Yakama Nation specifically does not warrant construction methodology that may be included in such documents.

- (a) The indications of physical conditions on any drawings or specifications that have been provided are the result of general inspection of the site.

13. SCHEDULE FOR CONSTRUCTION

A. *Construction Schedule.* Unless the construction schedule is specifically addressed elsewhere in this Agreement, Contractor shall, within five (5) days after the work commences on the Agreement or another period of time determined by Yakama Nation, prepare and submit to Yakama Nation three (3) copies of a practicable schedule showing the order in which Contractor proposes to perform the work, and the dates on which Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion

each week during the Agreement period. If Contractor fails to submit a schedule within the time prescribed, Yakama Nation may withhold approval of progress payments until Contractor submits the required schedule. Should Contractor fall behind its schedule, a revised schedule shall be forwarded with the next Contractor's request for progress payment. Additional schedules shall be furnished to Yakama Nation as soon as practicable if so requested.

B. *Rate of Progress.* With any and each partial payment request, Contractor shall submit a copy of the last submitted schedule annotated to indicate actual progress made to date. If at any time, in the opinion of Yakama Nation, Contractor has fallen behind the schedule to an extent which would jeopardize timely completion, Contractor shall take the steps necessary to improve its progress, including those that may be required, to enable timely completion without additional cost to Yakama Nation. Such steps may include, but are not limited to, increasing the number of shifts, the amount of overtime, days of work per week, and/or the amount of construction plant being utilized. Contractor shall submit any supplementary schedules Yakama Nation deems necessary to demonstrate how the rate of progress necessary for timely completion will be regained.

C. *Breach.* Failure of Contractor to comply with the requirements of this section shall be considered a material breach and grounds for a determination by Yakama Nation that Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Agreement. Upon making this determination, Yakama Nation may terminate Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this Agreement.

14. DIFFERING SITE CONDITIONS

Contractor shall promptly, and before the conditions are disturbed, give a written notice to Yakama Nation of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this Agreement, or (2) unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent to the type of work provided for in the Agreement. Unless specifically identified in the Agreement, discoveries of archaeological or historical remains such as graves, fossils, skeletal materials and artifacts protected by the Archaeological Resources Protection Act (36 CFR 1214) are considered type 2 conditions.

15. LAYOUT OF WORK

Contractor shall lay out its work from Yakama Nation established base lines and bench marks indicated on the drawings or any other manner furnished by Yakama Nation. Contractor shall be responsible for all measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the work. Contractor shall be responsible for the execution of the work to the lines and grades that may be established or indicated by Yakama Nation. Contractor shall also be responsible for maintaining and preserving all stakes and other marks established by Yakama Nation until authorized to remove them. If such marks are destroyed by Contractor or through its negligence before their removal is authorized, Yakama Nation may replace them and deduct the expense of the replacement from any amounts due or to become due to Contractor.

16. SPECIFICATIONS, DRAWINGS AND MATERIAL SUBMITTALS

A. Omissions from any drawings and specifications that have been provided, or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, or which are customarily performed, shall not relieve Contractor from performing such omitted or

misdescribed details of the work. Work shall be performed as if fully and correctly set forth and described in the drawings and specifications.

B. Contractor shall check all drawings furnished by Yakama Nation prior to starting work and shall promptly notify Yakama Nation of any discrepancies. Figures marked on drawings shall in general be followed in preference to scale measurements. Large-scale drawings shall in general govern small-scale drawings. Contractor shall compare all drawings and verify the figures before laying out the work, and will be responsible for any errors which might have been avoided thereby.

17. MATERIAL & WORKMANSHIP

A. *Materials.* All equipment, material, and articles incorporated into the work covered by this Agreement shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this Agreement. Use of recycled materials for the manufacture of such products is encouraged. Equipment, material, or articles specified by trade name, make, or catalog number, shall be provided. Equivalent items are not acceptable unless specifically authorized in the specification.

B. *Professional Work.* All work under this Agreement shall be performed in a professional, thorough, skillful, and safe manner, and shall be consistent with relevant professional standards. Yakama Nation may require, in writing, that Contractor remove from the work any employee Yakama Nation deems incompetent, unsafe, or otherwise objectionable.

C. *Legally Compliant Work.* In performing its obligations under this Agreement, Contractor shall comply with all applicable tribal, federal, state and local laws, regulations, guidelines and policies in performance of services under this Agreement. Such laws may include, but are not limited to, the Davis Bacon Act and related federal labor law requirements associated with federally funded construction projects. Contractor represents that it has reviewed, and is familiar with, all laws relevant to the performance of services under this Agreement.

18. SUPERINTENDENCE BY THE CONTRACTOR

At all times during performance of this Agreement, and until the work is completed and accepted, Contractor shall directly superintend the work or assign and have on the worksite a competent superintendent who is satisfactory to Yakama Nation and has authority to act for Contractor.

19. PERMITS AND RESPONSIBILITIES

Unless otherwise provided in this Agreement, Contractor shall, without additional expense to Yakama Nation, be responsible for obtaining any and all necessary licenses and permits, and for complying with any tribal, federal, state, and municipal laws, codes, and regulations applicable to the performance of the work. Contractor shall also be responsible for all damages to persons or property that occur as a result of Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of Yakama Nation and others. Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under this Agreement.

20. OTHER CONTRACTS

Yakama Nation may undertake or award other contracts for additional work, or may utilize in-house construction forces, at or near the site of the work. Contractor shall fully cooperate with such other contractors and Yakama Nation employees, and carefully adapt scheduling and performance of the work under this Agreement to accommodate simultaneous performance, heeding any direction that may be provided by Yakama Nation. Contractor shall not commit or permit any act which will interfere with the performance of work by any other contractors or by Yakama Nation employees.

21. USE AND POSSESSION PRIOR TO COMPLETION

Yakama Nation shall have the right to take possession of or use any completed or partially completed part of the work call for by this Agreement. Before taking possession of or using any work, Yakama Nation shall furnish Contractor a list of items of work remaining to be performed or corrected on those portions of the work that Yakama Nation intends to take possession of or use. However, failure of Yakama Nation to list any item of work shall not relieve Contractor of responsibility for complying with the terms of this Agreement. Yakama Nation's possession or use shall not be deemed an acceptance of any work under this Agreement.

22. CLEANING UP

A. Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the owner of the underlying real property. Upon completing the work, Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to Yakama Nation.

B. Unless specifically set forth in the Agreement, Contractor shall not burn any material on site, on the right-of-way or on the access roads to the sites. All material and debris shall be hauled to an appropriate disposal site.

23. ROAD MAINTENANCE

Contractor shall maintain all roads used by it, and upon completion of the job shall leave them in as good a condition as when first used. A road-grading machine (not a bulldozer) shall be used for maintenance and final grading. In no event shall Contractor interfere with the property owner's use of roads existing prior to Contractor's entry.

24. STOP WORK ORDER

A. Yakama Nation may order Contractor to suspend all or any part of the work call for by this Agreement for the period of time that Yakama Nation determines appropriate for the convenience of Yakama Nation.

B. Contractor shall immediately comply with Yakama Nation's order and take all reasonable steps to minimize the incurring of costs allocable to the work covered by the order.

25. PROTECTION OF EXISTING VEGETATION, STRUCTURES, AND IMPROVEMENTS

A. Contractor shall preserve and protect all structures, equipment, utilities, other improvements, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this Agreement. Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will

remain in place. If any limbs or branches of trees are broken during performance of this Agreement, or by the careless operation of equipment, or by workers, Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by Yakama Nation's representative.

B. If Contractor fails or refuses to repair the damage promptly, Yakama Nation may have the necessary work performed and charge the cost to Contractor.

26. INSURANCE

A. The following minimum kinds and amounts of insurance are applicable in the performance of the work under this Agreement. Contractor shall (subject to applicable law) maintain such insurance, naming Yakama Nation as an additional insured:

(1) *Workers' compensation and employer's liability.* Contractor is required to comply with applicable Federal and State workers compensation and occupational disease statutes. Employer's liability coverage of at least \$100,000 shall be required.

(2) *General liability.* Contractor shall provide general liability insurance of at least \$1,000,000 per occurrence. Any policy aggregate limits which apply, shall be modified to apply to each location and project. The policy shall name Yakama Nation, its officials, officers, employees and agents, as insureds with respect to Contractor's performance of services.

(3) *Automobile liability.* Contractor shall provide automobile liability insurance covering the operation of all automobiles used in the performance of this Agreement. Policies shall provide limits of at least \$1,000,000 per accident and include coverage for all owned, non-owned and hired automobiles. Contractor's policy shall be primary to any insurance of Yakama Nation.

(4) *Environmental impairment liability.* Contractor shall provide environmental impairment liability insurance of at least \$1,000,000 per occurrence. Such insurance will include coverage for the clean up, removal, storage, disposal, transportation and/or use of pollutants. The insurance policy shall name Yakama Nation, its officials, officers, employees and agents as insured. Contractor's policy shall be primary to any insurance of Yakama Nation.

B. Contractor may, with the approval of Yakama Nation, maintain a self-insurance program; provided that, with respect to workers' compensation, Contractor is qualified pursuant to statutory authority.

C. Before commencing work under this Agreement, Contractor shall provide to Yakama Nation certificates of insurance from the insurance company stating the insurance required has been obtained and is in force. The certificate(s) shall identify Contractor and the contract(s) for which coverage is provided, and shall contain a statement that the insurer will give notice of cancellation or any material change to Yakama Nation at least thirty (30) days before the effective date. In addition, Contractor shall provide certificates as the policies are renewed throughout the period of this Agreement. If Contractor's insurance does not cover the subcontractors involved in the work, Contractor shall provide certificates stating that the required insurance has been obtained by the subcontractors.

27. INSPECTION - SERVICES AND CONSTRUCTION

A. Yakama Nation may inspect the work called for by this Agreement at any time and place. Where possible and practicable, Yakama Nation will perform inspections in a manner that will not unduly delay the work.

B. If any of the services do not conform with the requirements of this Agreement, or with applicable laws, regulations or governmental policies, Yakama Nation may require the Contractor to perform the services again in conformity at no cost to Yakama Nation. When the defects in services cannot be corrected by re-performance, Yakama Nation may deduct from the Agreement payments an amount which reflects the reduced value of the services performed.

C. Neither inspection, lack of inspection, acceptance, nor payment shall relieve the Contractor of any of its obligations under this Agreement. Contractor's duty to re-perform non-conforming work is intended to survive the expiration of this Agreement's term, and shall apply even where non-conformance is discovered following its expiration.

D. If Contractor does not promptly replace or correct rejected work, Yakama Nation may (without limiting any other legal or equitable remedies available to it) (1) by contract or otherwise, replace or correct the work and charge the cost to Contractor, and may (2) terminate this Agreement for default.

E. Unless otherwise specified in the Agreement, acceptance by Yakama Nation will be in writing and shall be made as promptly as practicable after completion and inspection of all work called by this Agreement or that portion of the work Yakama Nation determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, non-compliance with applicable law, or Yakama Nation's rights under any warranty or guarantee.

28. WARRANTY - CONSTRUCTION

A. In addition to any other warranties in this Agreement, Contractor warrants, except as provided in paragraph (H)(1) of this clause, that work performed by it and/or its subcontractors under this Agreement conforms to applicable law and to the contract requirements, and is free of any defect in equipment, material, or design furnished, or workmanship performed by Contractor or any subcontractor or supplier at any tier.

B. This warranty shall continue for a period of three (3) years from the date of final acceptance of the work. If Yakama Nation takes possession of any part of the work before final acceptance, this warranty shall continue for a period of three (3) years from the date Yakama Nation takes possession.

C. Contractor shall remedy at Contractor's expense any failure to conform, or any defect. In addition, Contractor shall remedy at Contractor's expense any damage to Yakama Nation-owned or controlled real or personal property, when that damage is the result of:

- (1) Contractor's failure to conform to applicable law or contract requirements; or
- (2) Any defect of equipment, material, workmanship, or design furnished by Contractor.

D. Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. Contractor's warranty with respect to work repaired or replaced will run for three (3) years from the date of repair or replacement.

E. Yakama Nation shall notify Contractor, in writing, within a reasonable time after the discovery of any failure, defect, or damage.

F. If Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, Yakama Nation shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at Contractor's expense.

G. With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this Agreement, Contractor shall:

- (1) Obtain all warranties that would be given in normal commercial practice;
- (2) Require all warranties to be executed, in writing, for the benefit of Yakama Nation, if directed by Yakama Nation; and
- (3) Enforce all warranties for the benefit of Yakama Nation, if directed by Yakama Nation.

H. Unless a defect is caused by the negligence of Contractor or subcontractor or supplier at any tier, Contractor shall not be liable for the repair of any defects of material or design furnished by Yakama Nation nor for the repair of any damage that results from any defect in Yakama Nation-furnished material or design.

- (1) This warranty shall not limit Yakama Nation's rights under the Inspection and Acceptance clause of this Agreement with respect to latent defects, gross mistakes, or fraud.

29. TAXES

The compensation for Services performed under this Agreement shall include all applicable Tribal, Federal, State, and local taxes and duties. Depending on the location and nature of the Services provided, when applicable, Yakama Nation shall provide Contractor a single use Tax Exemption Certificate.

30. TERMINATION

A. *Notice.* Yakama Nation may terminate all or any part of this Agreement, at any time, with or without cause, upon written notice to Contractor. Upon receipt of the termination notice, Contractor shall promptly stop work on the terminated portion of the Agreement. Contractor obligations shall be consistent with those set forth above in the Stop Work Order clause of this Agreement.

B. *Breach.* In the event of termination for breach or violation of the terms and provisions of this Agreement, Yakama Nation, to the extent permitted by applicable law, shall be entitled to enforce its rights under this Agreement, and recover its court costs and reasonable attorney's fees, as determined by the court. The foregoing shall not in any way limit or restrict any right or remedy at law or equity which would otherwise be available to Yakama Nation, including, but not limited to, the right to contract with other qualified persons to complete the performance of services identified in or called for by this Agreement.

C. *Termination By Tribal Council Executive Committee.* Notwithstanding anything herein to the contrary, Contractor understands and agrees that the Yakama Nation Tribal Council Executive Committee may immediately terminate this Agreement by written notice.

D *Effect of Complete Termination.* Upon the complete termination of this Agreement, the liability of the Parties for the further performance of this Agreement shall cease, but the Parties shall not be relieved of the duty to perform their obligations up to the date of termination.

E. *Effect of Partial Termination.* The compensation amount shall be revised as a result of a partial termination under this section. On fixed-price contracts the revised amount shall not exceed the pre-termination contract price plus reasonable termination expenses. On cost-reimbursement contracts the revised amount shall not exceed the total of allowable and allocable costs of performance prior to termination plus termination expenses plus an adjustment of the fee on the terminated portion of the Agreement. No payment will be made for anticipated profits on the terminated portion, or consequential damages, of this Agreement. Contractor shall submit a settlement proposal within thirty (30) days of the notice of termination.

31. FORCE MAJEURE

This Agreement is subject to force majeure, and is contingent on strikes, accidents, acts of God, weather conditions, fire regulations, the actions of any government, including funding and/or budgetary decisions, and other circumstances which are beyond the control of the parties. If the terms and conditions of this Agreement are unable to be performed as a result of any cause of force majeure, then this Agreement shall be void, without penalty to any party for such non-performance.

32. NOTICE

Notice to Contractor shall consist of a letter, delivered postage prepaid, addressed to:

[Contractor's Legal Agent's Name]
[Contractor Name]
[Address No. 1]
[Address No. 2]

Notice to Yakama Nation shall consist of a letter, delivered postage prepaid, addressed to:

JoDe L. Goudy, Chairman
Yakama Tribal Council
PO Box 151 / 401 Fort Road
Toppenish, WA 98948

With courtesy copies to Yakama Nation's Designated Representative detailed below, and the Lead Attorney of Yakama Nation's Office of Legal Counsel at P.O. Box 150, Toppenish, WA 98948.

Either party may from time to time change its designated address for notice, or designated contact(s) for notice, by giving the other party reasonable notice of such change.

33. SUPERVISION OF CONTRACTOR/DESIGNATED REPRESENTATIVE

Contractor shall act under the supervision of the following Designated Representative of Yakama Nation in performing services under this Agreement:

Name:	
Address:	

Phone:	
Email:	

The Designated Representative is designated for project management purposes only, and does not have authority to authorize any changes, modifications or addendums to this Agreement, nor does the Designated Representative have signing authority on behalf of Yakama Nation. Yakama Nation shall provide Contractor reasonable notice if there is a change in the Designated Representative.

34. COMPLIANCE PROVISIONS

A. *Discrimination.* Contractor shall not discriminate against any employee or applicant for employment because of handicap, race, age, religion, or sex. Contractor will take affirmative steps to ensure that applicants are employed, and that employees are treated fairly during employment, without regard to their handicap, race, age, religion, or sex.

B. *Indian Preference.* Notwithstanding the above, Contractor shall, for all work performed on or near the Yakama Reservation pursuant to this Agreement, and consistent with Section 703(i) of the 1964 Civil Rights Act, give preference in employment (including any authorized subcontracts) to equally qualified Indians regardless of their handicap, age, religion or sex. To the extent feasible and consistent with the efficient performance of this Agreement, Contractor shall provide employment and training opportunities to Indians that are not fully qualified to perform under this Agreement, regardless of their handicap, age, religion or sex. Further, Contractor shall comply with any and all applicable Indian preference laws and requirements established by Yakama Nation, including those set forth in the Yakama Nation Tribal Employment Rights Ordinance ("TERO"), as amended (Yakama Revised Law & Order Codes, Title 71).

35. JURISDICTION & VENUE

The validity, interpretation, and performance of this Agreement, and any and all written instruments, agreements, specifications and other writings of whatever nature which relate to or are part of this Agreement, shall be governed by and construed in accordance with the laws of Yakama Nation. Both Parties understand and agree that this Agreement establishes a consensual business relationship between the Parties for purposes of Yakama Tribal Court jurisdiction. Venue of any court action filed to enforce or interpret the provisions of this Agreement shall be exclusively in Yakama Nation Tribal Court(s). In the event of litigation to enforce the provisions of this Agreement, the prevailing party shall be entitled to reasonable legal fees and expenses in addition to any other relief allowed.

36. DISPUTE RESOLUTION

A. *Meet and Confer Meeting.* In the event that a dispute arises between the Parties over the performance, interpretation, or enforcement of this Agreement, the Parties in the first instance shall attempt in good faith to resolve the dispute informally by mutual Agreement in a face-to-face meet and confer meeting. All offers, promises, conduct and statements, whether oral or written, made in the course of the meet and confer meeting by any of the Parties, their agents, employees, experts and attorneys shall be considered confidential, privileged and inadmissible for any purpose, including impeachment, in any other proceeding involving the Parties, provided that evidence that is otherwise admissible or discoverable shall not be rendered inadmissible or non-discoverable as a result of its use in the meet and confer meeting.

B. *By Tribal Council Chairman.* If the Parties are unable to resolve the dispute during the meet and confer meeting, the aggrieved party shall submit the matter, in writing, to the Chairman of the Yakama Nation Tribal Council. A copy of the aggrieved party's submission shall be served upon the other party in accordance with the notice provisions of this Agreement. The Chairman shall promptly convene a meeting of the Parties, which shall be held in Toppenish, Washington, to resolve the matter. The decision of the Chairman shall be final and binding upon both Parties. Provided, however, that nothing shall operate to limit or prohibit Yakama Nation from otherwise enforcing its rights under this Agreement. In the event that the Chairman has a conflict of interest that would prevent her/him from hearing the dispute, s/he may, at her/his sole discretion, either decline to hear the dispute, or appoint an alternate Tribal Leader or Elder to serve in his/her place.

C. Nothing in this section shall operate to prohibit Yakama Nation from enforcing its rights under this Agreement in a court of appropriate jurisdiction. Yakama Nation may at its own election seek recovery of monetary damages from Contractor's breach of any terms in this Agreement.

37. GENERAL TERMS

A. *Headings.* Headings are provided for convenience and do not affect the meaning of the provisions to which they are affixed.

B. *Severability.* If any term of this Agreement is to any extent illegal, otherwise invalid, or incapable of being enforced, such term shall be excluded to the extent of such invalidity or unenforceability; all other terms hereof shall remain in full force and effect; and, to the extent permitted and possible, the invalid or unenforceable term shall be deemed replaced by a term that is valid and enforceable and that comes closest to expressing the intention of such invalid or unenforceable term.

C. *Changes to the Agreement.* No change, amendment, modification, or addendum to this Agreement shall be valid unless it is in writing and executed by authorized representatives of both Parties.

D. *Additional Services.* Except as otherwise provided in this Agreement, no payment for additional services shall be made unless such services and the price therefore have been requested and authorized in advance in writing by Yakama Nation.

E. *Survival.* The requirements of Section 4 (Property Developed by Contractor), Section 6 (Maintenance & Retention of Records; Financial Management for Accounting & Audits), Section 10 (Indemnification), Section 28 (Warranty-Construction) and Section 36 (Dispute Resolution) of this Agreement shall survive termination of this Agreement.

F. *No General Waiver.* Any waiver or failure of the Parties to enforce or insist upon any term in this Agreement does not constitute a general waiver or relinquishment of that term.

G. *No Construction Against Drafter.* Each party has participated in negotiating and drafting this Agreement. If any ambiguity or question of intent or interpretation arises, this Agreement is to be construed as if the Parties had drafted it jointly, as opposed to being construed against one party because it was responsible for drafting one or more provisions.

H. *Execution.* This Agreement may be executed in counterparts, electronically, or by facsimile.

38. ENTIRE AGREEMENT

This Agreement incorporates all the agreements, covenants and understandings between the Parties. No agreement or understanding, verbal or otherwise, of the Parties regarding their responsibilities under this Agreement shall be valid or enforceable unless embodied in this Agreement.

The following Exhibits are incorporated by reference into this Agreement:

- Exhibit "A" – Project Overview & Scope of Work
- Exhibit "B" – Budget
- Exhibit "C" – Payment
- Exhibit "D" – Project Planset
- Exhibit "E" -- Daily Equipment Standby Rate

39. SOVEREIGN IMMUNITY

Notwithstanding any other terms or provisions of this Agreement, Contractor understands and agrees that Yakama Nation, by entering into this Agreement, does not waive its sovereign immunity from suit, nor does it waive, alter, or otherwise diminish its rights, privileges, remedies or services guaranteed by the Treaty with the Yakamas of 1855 (12 Stat. 951).

40. SPECIAL PROVISIONS

In addition to the forgoing terms and conditions, the following requirements are agreed to and shall apply to this Agreement:

A. [Mark as n/a, or insert special provision text.]

IN WITNESS WHEREOF, we set our hands and seals:

[Signature page(s) to follow.]

CONFEDERATED TRIBES & BANDS OF THE YAKAMA NATION:

By:_____

Date:_____

Name: JoDe Goudy (or authorized designee)

Title: Yakama Nation Tribal Council Chairman

CONTRACTOR NAME:

EIN #

By:_____

Date:_____

Name:

Title:

EXHIBIT A

Project Overview and Scope of Work

1. Background:

Yakama Nation Fisheries (Owner) is conducting a salmon habitat restoration project along the Mad River, tributary to the Entiat River known as the Tillicum Fan Habitat Enhancement Project. This project is funded through the Columbia River Fish Accords, which provides dedicated funding from Bonneville Power Administration to Yakama Nation Fisheries for the purposes of protecting and improving salmon habitat in the natal tributaries of the Upper Columbia Basin. This project has been developed under the 2007 Salmon Recovery Plan framework, in coordination with the USFS, the Entiat River Tributary Assessment and the Upper Columbia Salmon Recovery Board Regional Technical Team's Revised Biological Strategy.

The project has been developed by professional engineers. A stamped Engineer's Construction Plan Set has been produced to describe the work being performed under this contract. Taken together, multiple accompanying Exhibits to this Exhibit A provide the full Scope of Work to be executed per the terms of this contract.

The attached **Exhibit B** provides the contract Line Item Budget which is referenced to the work tasks described on the Specifications Sheet in **Exhibit D**. **Exhibit C** provides a payment schedule and requirements associated with this contract.

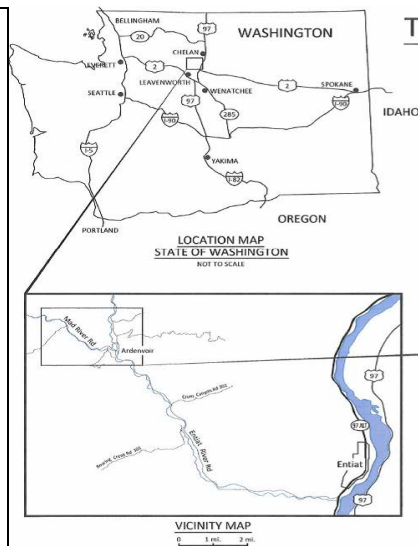
2. Designated Representative:

The Owner's Designated Representatives for this project include Yakama Nation Habitat Biologist Christopher Clemons, as well as other Yakama Nation Habitat Biologists associated with the Yakama Nation Upper Columbia Habitat Restoration Project (UCHRP) and construction oversight staff provided by the engineering firm who produced the project plan set; Interfluve Inc.

3. Location

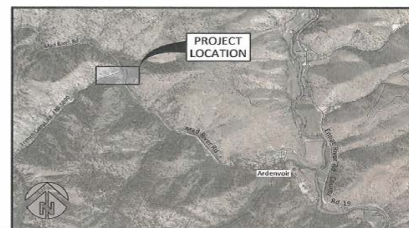
The project will take place on USFS lands at the following address:

Intersection of French Corral Road and the Mad River Road.



TILlicum FAN HABITAT RESTORATION PROJECT

FINAL DESIGN
MARCH 2018



SITE MAP
0 1/4 mi. 1/2 mi.

SHEET LIST

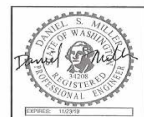
1. Title, Location, and Sheet List
2. General Notes
3. General Notes, Quantities, and Abbreviations
4. Existing Conditions, Property Ownership, and Survey Control
5. Proposed Conditions Overview, Access and Staging
6. Typical Erosion and Sedimentation Control Details
7. Proposed Grading Plan
8. Proposed Grading - Profile Views
9. Proposed Grading - Cross Sections
10. Proposed Grading - Cross Sections
11. Typical WWM Plan and Final Site Stabilization
12. Typical WWM Details
13. Typical WWM Details
14. Typical WWM Details
15. Fabric Encapsulated Soil Lift Details
16. Fabric Encapsulated Soil Lift Details
17. Fabric Encapsulated Soil Lift Details
18. Specifications
19. Specifications

COORDINATES:
LATITUDE 47° 14' 50.42" N
LONGITUDE 120° 23' 39.03" W

SECTION 43, TOWNSHIP 20N, RANGE 19E

WATERBODY: TILlicum CREEK, MAD RIVER

TRIBUTARY OF: ENTIAH RIVER



4. **Project Tasks:**

All tasks will be completed as per **Exhibit D**. Major project elements include but are not limited to the following:

- TESC, SPCC Plan and Implementation
- Mobilization
- Cofferdam
- Pumping
- Large Woody Material Placement
- Channel Excavation Incl. Spoils Placement
- Anchoring
- Excavation
- FESLs creation

5. **Project Schedule and Key Deliverables:**

This project will occur on USFS public lands. Work hours permitted will be from sunrise to sunset. Prior to any work for the project a buck and pole style fence that borders along the French Corral Road will more than likely have to be removed and stacked neatly at an approved location designated by the owner.

Environmental permits for this project require some work be performed during the normal in-water work window for the Mad River to avoid adverse impacts to spawning salmonids and fertilized redds.

Environmental permits will dictate the implementation timeline for portions of the project that could affect aquatic habitats. The typical in-water work window for this portion of the Mad River is July 16 to July 31.

6. **Contractor Obligations:**

The Contractor shall furnish all supervision, labor, equipment and tools necessary to complete the project as described in **Exhibit D**.

7. **Consistent Satisfactory Progress**

Consistent satisfactory progress in this project will be required. Satisfactory progress will be measured by both the quality and quantity of work. If for any reason no work is performed, the Contractor may be given a notice of contract cancellation. Consistent satisfactory progress will also be determined by the Contractor's demonstrated ability to perform all work tasks described in **Exhibit D**. If it appears that the Contractor is unable to complete the project tasks within the permitting work window, the Contractor may

be given a notice of contract cancellation. The Yakama Nation's designated representative will monitor progress closely.

8. Fish Removal

In-water construction activities will require fish removal of all isolated in-water work sites. Fish removal will be conducted in a timely manner by the Owner's Designated Representatives and the time taken to implement proper fish removal protocols will be considered incidental to the contractor's work tasks.

9. Fire Suppression

The contractor will be familiar with and prepared for the requirements associated with IFPL Levels II & III and the restrictions associated with those. The contractor may seek to acquire IFPL shut down exemptions to allow work to continue on schedule.

10. Road Signage

The Contractor will observe all road signage regulations regardless of the project location and as per Exhibit D if applicable. In addition, the contractor will be responsible for keeping equipment out of the right-of-way while on national forest roads. Dust abatement will be of utmost importance and will be required during all ground disturbing activities.

11. Utilities Location

The Contractor will locate all utilities prior to any excavation.

12. Communication with Landowners

The Contractor expressly agrees that Contractor and his staff will not communicate with the Landowner in any manner, whether it be in regard to the project or otherwise, without express permission from, or the presence of the Designated Representative.

13. Exclusivity

During the term of this Agreement, including time taken for mobilization and demobilization of construction equipment, Contractor shall not conduct any work on the property designated in this Agreement unless so directed by the Designated Representative. Contractor shall require in all contracts with subcontractors that subcontractors not conduct any work on the property designated in this Agreement unless so directed by the Designated Representative. Any additional work conducted on the property designated in this Agreement by Contractor without the express consent of the Designated Representative shall constitute a material breach of this Agreement, thereby relieving the Yakama Nation from all payment obligations to the Contractor.

EXHIBIT B

Budget

[Attach the budget for the work to be performed. The total compensation amount shown in this budget must be consistent with the total compensation amount listed in Section 3 of the Agreement.]

[If there are separate subtotal amounts allocated for services and expenses, make sure to note these, along with any applicable hourly rate expectations, or item/activity cost expectations.]

EXHIBIT C

Payment

1. Payment Schedule

- ☐ **Progress:** The Contractor shall submit a separate bill for each major project task element after the work has been completed, reviewed and accepted by Yakama Nation's Designated Representative. The Contractor is encouraged to invoice monthly when payment is necessary.
- ☒ **Percentage:** The Contractor shall invoice monthly and will be allowed to submit a bill for percentage of work completed after the work has been reviewed and accepted by Yakama Nation's Designated Representative.
- ☐ **Actual Work Completed:** The Contractor shall invoice monthly and will be allowed to submit a bill for actual work completed.
- ☐ **Alternative Schedule:** The Contractor shall invoice and be allowed to submit a bill as follow: [alternate payment plan description, e.g., 30% deposit with balance due after work has been reviewed and accepted by Yakama Nation's Designated Representative]

2. Tax Exempt Certificate

Due to the location and nature of the Services being provided by Contractor:

☐ The Contractor **has not** been given a Tax Exemption Certificate

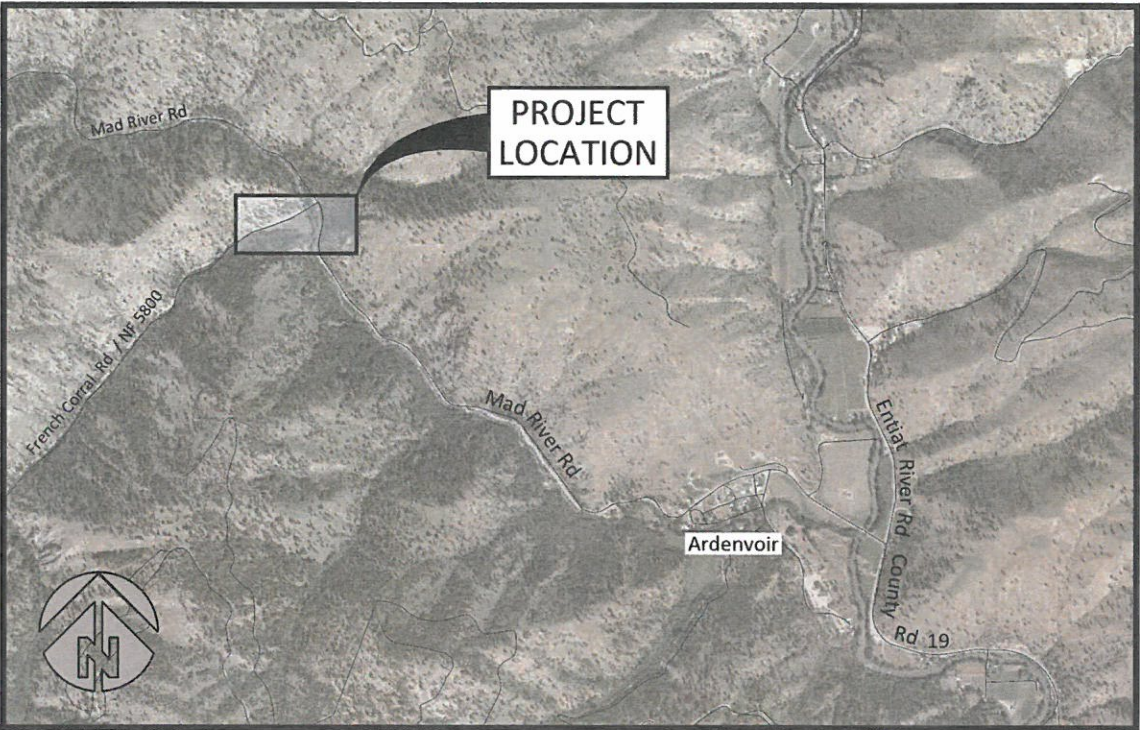
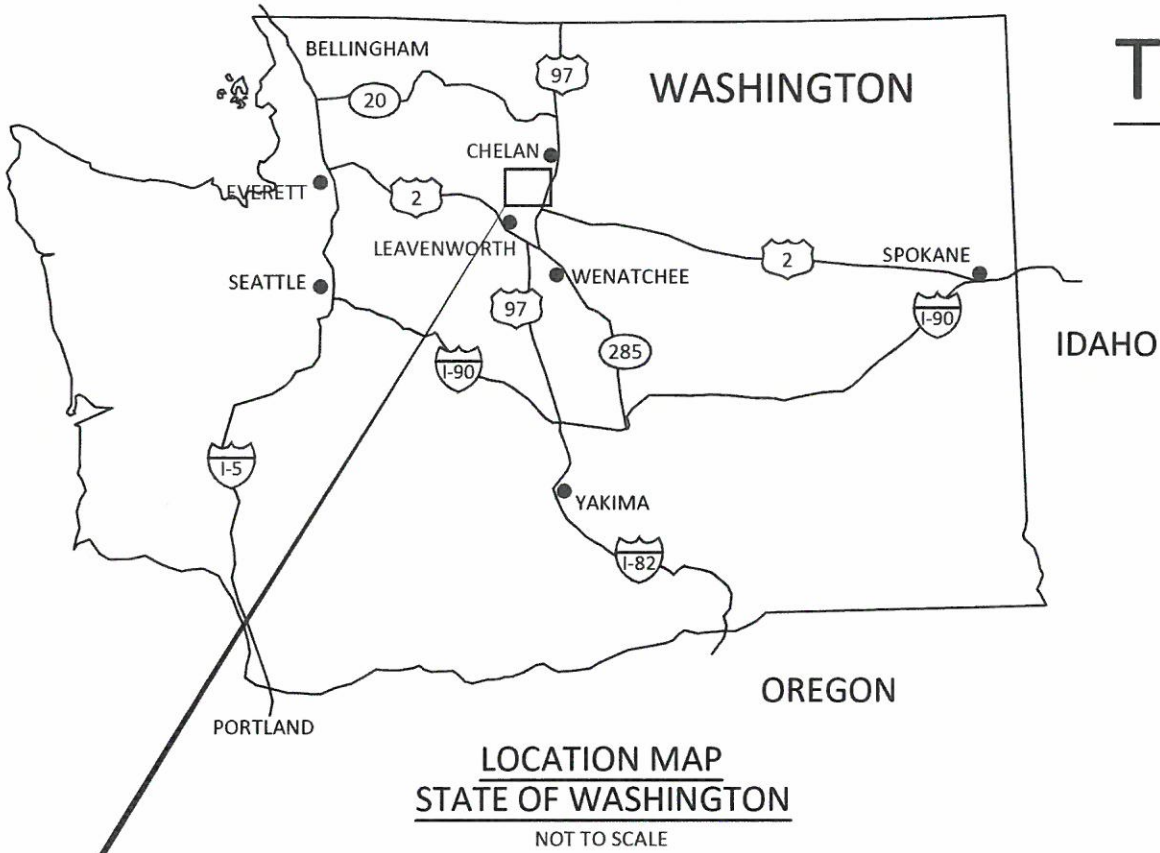
☒ The Contractor **has** been given a single use Tax Exemption Certificate. Due to the nature of this Agreement, as a fisheries enhancement project being undertaken by a federally recognized Treaty Tribe, the Contractor should be allowed to use the tax-exempt certificate that is included with this document.

3. Davis Bacon Wages

Davis Bacon Wages Apply to this contract. The contractor will adhere to the Davis Bacon rules and comply and submit all necessary paperwork and certified payroll to the Yakama Nation with each invoice submitted.

TILLICUM FAN HABITAT RESTORATION PROJECT

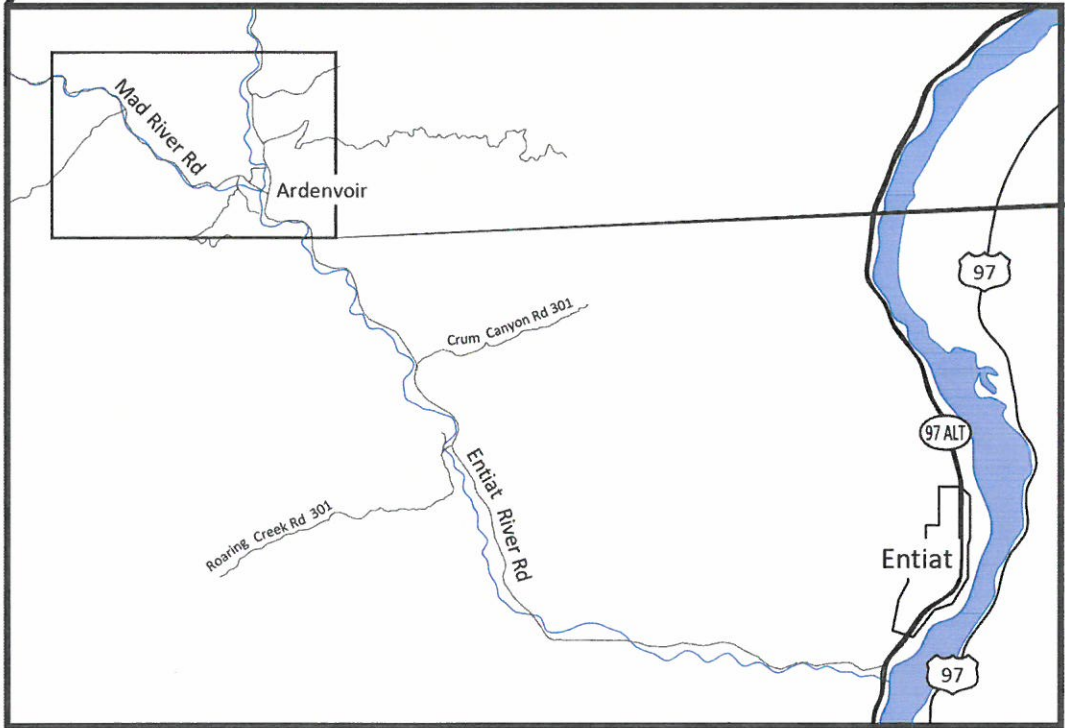
FINAL DESIGN
MARCH 2018



COORDINATES:
LATITUDE 47° 44' 50.42" N
LONGITUDE 120° 23' 39.07" W

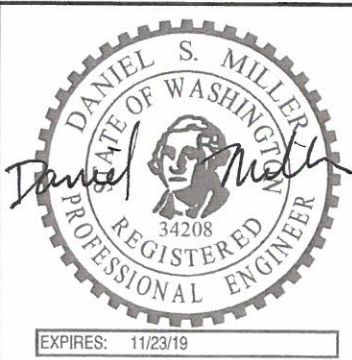
SECTION 13, TOWNSHIP 26N, RANGE 19E

WATERBODY: TILLICUM CREEK, MAD RIVER
TRIBUTARY OF: ENTIAT RIVER



SHEET LIST

- 1 Title, Location, and Sheet List
- 2 General Notes
- 3 General Notes, Quantities, and Abbreviations
- 4 Existing Conditions, Property Ownership, and Survey Control
- 5 Proposed Conditions Overview, Access and Staging
- 6 Typical Erosion and Sedimentation Control Details
- 7 Proposed Grading Plan
- 8 Proposed Grading - Profile Views
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- 11 Proposed LWM Plan and Final Site Stabilization
- 12 Typical LWM Details
- 13 Typical LWM Details
- 14 Typical LWM Details
- 15 Fabric-Encapsulated Soil Lift Details
- 16 Fabric-Encapsulated Soil Lift Details
- 17 Fabric-Encapsulated Soil Lift Details
- 18 Specifications
- 19 Specifications



NO.	BY	DATE	REVISION DESCRIPTION

DF	DM,MR	MM
DRAWN	DESIGNED	CHECKED
DM	3/15/2018	17-02-51
APPROVED	DATE	PROJECT

CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION
MAD RIVER NEAR ARDENVOR, WASHINGTON
TILLICUM FAN HABITAT RESTORATION PROJECT



501 Portway Avenue, Suite 101
Hood River, OR 97031
541.386.9003
www.interfluve.com

TITLE, LOCATION, AND
SHEET LIST

SHEET
1 OF 19

THE OWNER WILL PROVIDE A PRE-BID SITE TOUR. IT IS HIGHLY RECOMMENDED THE CONTRACTOR ATTEND THIS PRE-BID TOUR FOR SITE FAMILIARIZATION AND TO POSE QUESTIONS TO THE OWNER AND OWNER'S REPRESENTATIVE.

THE SELECTED CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH OWNER AND OWNER'S REPRESENTATIVE PRIOR TO MOBILIZING TO SITE AND BEGINNING CONSTRUCTION.

ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND LOCAL STANDARDS UNLESS INDICATED OTHERWISE BY THE CONTRACT DOCUMENTS. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT WILL PREVAIL.

WDFW IN-WATER WORK PERIODS

WORK SHALL OCCUR DURING THE PERMITTED IN-WATER WORK PERIOD STATED IN THE HYDRAULIC PROJECT APPROVAL.

EXISTING DATA

TOPOGRAPHIC DATA WAS COLLECTED BY INTER-FLUVE USING TOTAL STATION IN NOVEMBER 2016 AND NOVEMBER 2017. PROJECT RELATIVE DATUM.

HYDRAULIC MODELING BY INTER-FLUVE USING USACE HEC-RAS (5.0.3 SEPTEMBER 2016).

GIS DATA INCLUDING: AERIAL PHOTOGRAPHY, LAND OWNERSHIP AND TRANSPORTATION ROUTES PROVIDED BY VARIOUS AGENCIES.

SOILS

SOILS WITHIN THE PROJECT AREA CONSIST OF BILLYRIDGE SOILS. BILLYRIDGE SOILS ARE FORMED IN ALLUVIUM ON FANS AND TERRACES WITH SLOPES 0 TO 25 PERCENT AT ELEVATIONS 1,100 FEET TO 1,700 FEET. SOILS ARE WELL DRAINED WITH SLOW RUNOFF AND MODERATE PERMEABILITY. (USDA-NRCS NATIONAL COOPERATIVE SOIL SURVEY)

FIVE SOIL PITS WERE DUG AND DOCUMENTED IN A MEMORANDUM (INTER-FLUVE, DECEMBER 2016) AND IS AVAILABLE FROM YAKAMA NATION.

UTILITIES

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL CALL (800-424-5555) FOR UTILITY LOCATE PRIOR TO CONSTRUCTION

THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE AFFECTED UTILITY SERVICE TO REPORT ANY DAMAGED OR DESTROYED UTILITIES.

THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND LABOR TO AID THE AFFECTED UTILITY SERVICE IN REPAIRING DAMAGED OR DESTROYED UTILITIES AT NO ADDITIONAL COST.

CONSTRUCTION STAKING

OWNER'S REPRESENTATIVE WILL PROVIDE STAKING OF PROJECT LIMITS, GRADE STAKES, AND ELEVATION CONTROL POINTS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADES ARE TO BE EXPECTED.

CONTRACTOR SHALL MEET WITH THE OWNER AND OWNER'S REPRESENTATIVE TO DEFINE AND MARK LIMITS OF DISTURBANCE PRIOR TO MOBILIZATION OF EQUIPMENT OR MATERIALS ONTO THE SITE.

THE CONTRACTOR SHALL REPLACE DAMAGED OR DESTROYED CONSTRUCTION STAKES AT NO ADDITIONAL COST.

CONSTRUCTION MATERIALS

OWNER PROVIDED LOGS, LOGS WITH ROOTWADS AND VERTICAL LOGS WILL BE LOCATED IN THE STOCKPILE/STAGING AREA.

LOCATION, ALIGNMENT, AND ELEVATION OF LOGS AND LOGS WITH ROOT WADS ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS AND MATERIAL SIZE.

ANY EXCESS CONSTRUCTION MATERIALS SHALL BE NEATLY STORED AT AN APPROVED STAGING LOCATION. UPON COMPLETION OF THE PROJECT ANY EXCESS MATERIALS, WITH THE EXCEPTION OF ANY LARGE WOODY MATERIAL (LWM), WILL BECOME THE PROPERTY OF THE CONTRACTOR AND HAULED OFFSITE IN A TIMELY MANNER AND LEGALLY DISPOSED OF.

UPON PROJECT COMPLETION, THE CONTRACTOR WILL BE RESPONSIBLE FOR HAULING ANY EXCESS LWM OFFSITE TO THE YAKAMA NATION'S APPROVED LONG-TERM WOOD STAGING AREA.

CONSTRUCTION ACCESS/TRAFFIC CONTROL

CONTRACTOR SHALL SUBMIT AN ACCESS, STAGING, AND STOCKPILE PLAN TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO MOBILIZATION.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ANY REQUIRED TRAFFIC CONTROL OR ACCESS PERMITS.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ANY REQUIRED TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, SIGNAGE AND FLAGGERS.

ALL SAPLINGS AND TREES TO BE TRANSPLANTED OR REMOVED SHALL BE CLEARLY MARKED AND APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.

ALL EQUIPMENT, MATERIALS AND PERSONNEL SHALL REMAIN WITHIN THE LIMITS OF DISTURBANCE.

THE CONTRACTOR SHALL KEEP THE WORK AREAS IN A NEAT AND SIGHTLY CONDITION FREE OF DEBRIS AND LITTER FOR THE DURATION OF THE PROJECT.

CONTRACTOR SHALL IMPLEMENT MEASURES TO CONTROL AND MINIMIZE WIND BLOWN DUST FROM THE SITE AND ACCESS ROUTES.

AT PROJECT COMPLETION, ROADS AND ACCESS ROUTES SHALL BE CLEANED AND RESURFACED TO PRE-PROJECT CONDITION PER WASHINGTON DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION. CLEANING SHALL BE INCIDENTAL TO MOBILIZATION/DEMOBILIZATION.

ALL DISTURBED AREAS INCLUDING, BUT NOT LIMITED TO: ROADS, DRIVEWAYS, TEMPORARY ACCESS ROUTES, STAGING AREAS AND STRUCTURE LOCATIONS NEED TO BE RESTORED TO PRE-PROJECT CONDITION OR BETTER. THIS WILL INCLUDE, BUT IS NOT LIMITED TO ANY GRADING/BLADING OF DISTURBED AREAS AS WELL AS REMOVAL OF ANY TRASH AND DEBRIS. THE OWNER'S REPRESENTATIVE WILL CONDUCT A FINAL WALK THROUGH WITH THE CONTRACTOR PRIOR TO DEMOBILIZATION.

A SEPARATE INDEPENDENT CONTRACTOR WILL HANDLE ALL REVEGETATION EFFORTS POST PROJECT CONSTRUCTION.

ALL DISTURBED AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST.

SPILL POLLUTION AND PREVENTION PLAN (SPCC)

THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A PROJECT-SPECIFIC SPILL PREVENTION, CONTROL, AND COUNTER MEASURES PLAN (SPCC PLAN) FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL SUBMIT THE PLAN TO THE OWNER'S REPRESENTATIVE NO LATER THAN THE DATE OF THE PRE-CONSTRUCTION CONFERENCE. NO ON-SITE CONSTRUCTION ACTIVITIES MAY COMMENCE UNTIL THE CONTRACTING AGENCY ACCEPTS AN SPCC PLAN FOR THE PROJECT.

EROSION CONTROL

CONTRACTOR SHALL BE SOLELY RESPONSIBLE, AT OWN EXPENSE, FOR PROVIDING AND MAINTAINING ALL NECESSARY EROSION CONTROL FACILITIES TO COMPLY WITH APPLICABLE EROSION CONTROL REGULATIONS AND TO MAINTAIN CLEAN ACCESS ROUTES FOR DURATION OF PROJECT.

DUST CONTROL

...

EROSION/SEDIMENTATION CONTROL PLAN

THE EROSION AND SEDIMENT CONTROL (ESC) PLAN PROVIDED IS FOR INFORMATIONAL PURPOSES ONLY, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING EROSION CONTROL MEASURES TO COMPLY WITH APPLICABLE REGULATIONS.

THE RECOMMENDATIONS FOR AN ESC PLAN INCLUDED HEREIN WILL PROVIDE A GUIDELINE FOR THE CONTRACTOR TO DEVELOP AND IMPLEMENT AN ESC PLAN.

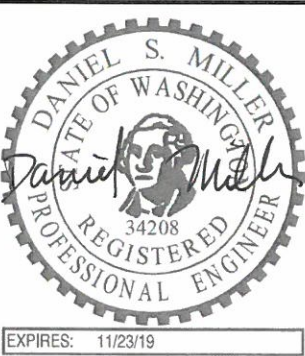
- A. THE IMPLEMENTATION OF AN ESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
- B. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- C. ESC FACILITIES, AS APPROXIMATELY SHOWN ON THIS PLAN, ARE TO BE CONSTRUCTED PRIOR TO CLEARING AND GRADING ACTIVITIES IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER SURFACE WATERS, THE DRAINAGE SYSTEM, OR VIOLATE APPLICABLE WATER STANDARDS.
- D. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED AT NO ADDITIONAL COST FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
- E. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
- F. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD AND AFTER EVENTS EXCEEDING 2 HOURS DURATION.
- G. STABILIZED CONSTRUCTION ENTRANCES AND ADDITIONAL MEASURES MAY BE REQUIRED AND SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT TO ENSURE ALL ACCESS ROADS ARE KEPT CLEAN AT NO ADDITIONAL COST.

CONTRACTOR'S ESC RECORD

WEEKLY REPORTS SUMMARIZING THE SCOPE OF INSPECTIONS, THE PERSONNEL CONDUCTING THE INSPECTION, THE DATE(S) OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN, AND ACTIONS TAKEN AS A RESULT OF THESE INSPECTIONS SHALL BE PREPARED AND RETAINED ON SITE BY THE CONTRACTOR. IN ADDITION, A RECORD OF THE FOLLOWING DATES SHALL BE INCLUDED IN THE REPORTS:

- 1. WHEN MAJOR GRADING ACTIVITIES OCCUR.
- 2. DATES OF RAINFALL EVENTS EITHER EXCEEDING 2 HOURS DURATION OR MORE THAN 0.5 INCHES/24 HOURS.
- 3. WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON SITE, OR ON A PORTION OF THE SITE.
- 4. WHEN STABILIZATION MEASURES ARE INITIATED FOR PORTIONS OF THE SITE.

ESC RECORDS SHALL BE MADE AVAILABLE TO THE OWNER AND OWNER'S REPRESENTATIVE ON REQUEST AND SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO APPLICATION FOR PAYMENT.



					DF DRAWN	DM,MR DESIGNED	MM CHECKED	CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION MAD RIVER NEAR ARDENVOIR, WASHINGTON TILlicum FAN HABITAT RESTORATION PROJECT			501 Portway Avenue, Suite 101 Hood River, OR 97031 541.386.9003 www.interfluve.com	GENERAL NOTES	SHEET
					DM APPROVED	3/15/2018 DATE	17-02-51 PROJECT						2 OF 19
NO.	BY	DATE	REVISION DESCRIPTION										

STABILIZE SOILS AND PROTECT SLOPES

FROM MAY 1 THROUGH SEPTEMBER 30, ALL EXPOSED SOILS SHALL BE PROTECTED FROM EROSION BY MULCHING, HYDROSEED COVERING, OR OTHER APPROVED MEASURES WITHIN 3 DAYS OF GRADING. FROM OCTOBER 1 THROUGH APRIL 30, ALL EXPOSED SOILS MUST BE PROTECTED WITHIN 2 DAYS OF GRADING. SOILS SHALL BE STABILIZED BEFORE A WORK SHUTDOWN, HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES. HYDROSEED ALL DISTURBED AREAS NOT INDICATED IN THE CONTRACT DOCUMENTS FOR OTHER PERMANENT STABILIZATION MEASURES AS SOON AS PRACTICAL.

DESIGN, CONSTRUCT, AND PHASE CUT AND FILL SLOPES IN A MANNER THAT WILL MINIMIZE EROSION. REDUCE SLOPE VELOCITIES ON DISTURBED SLOPES BY PROVIDING TEMPORARY BARRIERS. STORMWATER FROM OFF SITE SHOULD BE HANDLED SEPARATELY FROM STORMWATER GENERATED ON SITE.

AFTER FINAL SITE STABILIZATION

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BEST MANAGEMENT PRACTICES (BMPs) ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED FROM THE SITE OR INCORPORATED INTO FINISHED GRADING. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.

RIVER DIVERSION

DIVERSION MAY BYPASS THE RIVER AROUND SMALLER WORK AREAS AT CONTRACTOR'S DISCRETION.

DEWATERING OF IN-CHANNEL WORK AREA(S) SHALL OCCUR CONCURRENT WITH FISH RESCUE. CONTRACTOR SHALL COORDINATE WITH THE YAKAMA NATION FISHERIES FOR FISH RESCUE. CONTRACTOR SHALL PROVIDE YAKAMA FISHERIES AMPLE TIME TO SCHEDULE FISH RESCUE. IF DIVERSION FAILS DUE TO CONTRACTOR NEGLIGENCE, FISH RESCUE SHALL BE REPEATED BY YAKAMA FISHERIES CREWS AT CONTRACTOR'S EXPENSE.

FISH RESCUE

ALL FISH RESCUE EFFORTS SHALL BE PERFORMED BY A YAKAMA NATION FISHERIES/AQUATIC BIOLOGIST EXPERIENCED WITH THE COLLECTION AND HANDLING OF SALMONIDS FROM CONSTRUCTION SITES.

ALL FISH TRAPPED IN RESIDUAL POOLS WITHIN THE PROJECT AREA WILL BE CAREFULLY COLLECTED BY SEINE AND/OR DIP NETS AND PLACED IN CLEAN TRANSFER CONTAINERS WITH ADEQUATE VOLUME OF FRESH RIVER WATER.

CAPTURED FISH SHALL BE IMMEDIATELY RELEASED DOWNSTREAM OF PROJECT AREA.

TREE SALVAGE

ALL APPROPRIATE TREE SPECIES WITHIN CLEARING LIMITS REMOVED FOR CONSTRUCTION, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL TEMPORARILY BE STOCKPILED WITHIN LIMITS OF DISTURBANCE. STOCKPILED TREE/SLASH SHALL BE REINCORPORATED INTO FINISHED PROJECT.

ANY REMOVED VEGETATION GREATER THAN 6 INCHES DIAMETER AND 15 FEET LONG SHOULD BE INCORPORATED INTO LOG STRUCTURES. SMALLER CLEARING AND GRUBBING DEBRIS SHALL BE USED IN THE PROJECT AS SLASH.

ALL TREES REMOVED WITHIN CLEARING LIMITS SHALL BE REMOVED WHOLE WITH ROOTWAD AND UTILIZED IN THE PROJECT CONSTRUCTION AS DIRECTED BY OWNER'S REPRESENTATIVE.

LIVE TREES

ALL TREES NOT MARKED FOR REMOVAL SHALL BE LEFT STANDING UNDISTURBED. CONSTRUCTION ACTIVITY SHALL NOT DEBARK OR DAMAGE LIVE TREES.

KEEP OUT OF DRIP LINE OF EXISTING TREES TO REMAIN.

CONSTRUCTION DEWATERING

IF ADDITIONAL PUMPING IS REQUIRED TO DEWATER DURING CONSTRUCTION, PUMPED DISCHARGE SHALL RELEASE SEDIMENT-LADEN WATER AT AN UPLAND DISCHARGE LOCATION IN A MANNER THAT DOES NOT CAUSE EROSION, CONTAMINATION, OR INCREASE TURBIDITY OF SURFACE WATERS.

OWNER'S REPRESENTATIVE SHALL APPROVE DEWATERING DISCHARGE LOCATION PRIOR TO IMPLEMENTATION.

CONTRACTOR SHALL PERFORM CONSTRUCTION DEWATERING IN SUCH A MANNER AS TO AVOID THE RELEASE OF TURBID OR SEDIMENT-LADEN WATER IN ORDER TO PREVENT CONTAMINATION OR INCREASE TURBIDITY OF SURFACE WATERS. SEDIMENT LADEN WATER MAY BE PUMPED TO AN UPLAND DISCHARGE LOCATION AND ALLOWED TO SHEET FLOW THROUGH EXISTING VEGETATION BEFORE INFILTRATING INTO THE GROUND. IF THIS METHOD IS NOT SUFFICIENT TO PREVENT RETURN OF TURBID WATER TO SURFACE WATERS OF TILLICUM CREEK AND MAD RIVER AND FLOODPLAIN, A 'DIRT-BAG' OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPLY WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST.

CONTRACTOR WILL PROVIDE ANY PUMPS, HOSES AND FITTINGS NEEDED TO PERFORM THE DEWATERING. THE PUMP EQUIPMENT SELECTED BY THE CONTRACTOR SHALL BE SUFFICIENT TO DEWATER THE SITE THOROUGHLY.

CONTRACTOR SHALL PROVIDE VISQUEEN OR GEOTEXTILE LINER, PLYWOOD, OR METAL PLATING AS NECESSARY TO DISSIPATE PUMP DISCHARGE JET TO PREVENT EROSION.

WETLANDS AND WATERS OF THE US

THE WETLAND BOUNDARIES AND ORDINARY HIGH WATER (OHW) LINES DISPLAYED IN THIS DESIGN PACKAGE WERE DETERMINED BY INTER-FLUVE STAFF. THESE LINES ARE BASED UPON ANALYSIS, MODELING, AND BEST PROFESSIONAL JUDGMENT. WETLAND DELINEATION COMPLETED BY INTER-FLUVE (DECEMBER 2016) IS AVAILABLE FROM YAKAMA NATION.

THESE DO NOT NECESSARILY REPRESENT JURISDICTIONAL BOUNDARIES. WITHIN THE STATE OF WASHINGTON, THE ARMY CORPS OF ENGINEERS AND THE DEPARTMENT OF ECOLOGY HAVE THE FINAL AUTHORITY IN DETERMINING WATERS AND WETLAND BOUNDARIES AND REGULATIONS.

ABBREVIATIONS

APPROX	APPROXIMATE
BMP	BEST MANAGEMENT PRACTICE
CY	CUBIC YARDS
°	DEGREE
DBH	DIAMETER AT BREAST HEIGHT
ESC	EROSION AND SEDIMENT CONTROL
FES	FABRIC ENCAPSULATED SOIL
' or FT	FOOT
GPM	GALLONS PER MINUTE
HWY	HIGHWAY
HRS	HOURS
ID	IDENTIFICATION
" or IN	INCH
LWM	LARGE WOODY MATERIAL
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
OHW	ORDINARY HIGH WATER
OZ	OUNCE
%	PERCENT
LBS	POUNDS
REF	REFERENCE
RD	ROAD
STD	STANDARD
TYP	TYPICAL
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
YD	YARD

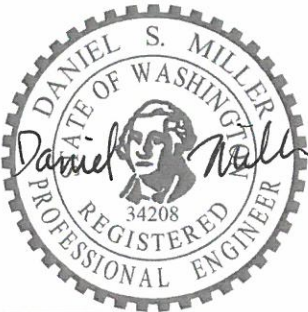
QUANTITIES ESTIMATE

Item	Quantity	Units
Excavation - Mad River Side channel 1 (V _{MR})	5464	CY
Excavation - Tillicum Creek Side channels 2 &3 (V _{Tck})	3699	CY
Fill (spoils placement berm)	9301	CY
Channel and floodplain LWM		
12"-15"x30' vertical logs	52	EA
18"x40' RW	17	EA
15"x40' RW	30	EA
15"x40' straight	45	EA
Sill logs 15"x40'	5	EA
Excavation	400	CY
Backfill (excavation minus log volume)	280	CY
Right bank main stem jam LWM		
18"x40' RW	8	EA
15"x40' straight	4	EA
12-15"x30' vertical logs	10	EA
Excavation	870	CY
Backfill (excavation minus log volume)	852	CY
FES lifts	160	LF
Site restoration		
Upland area	55	MSF
Floodplain bench area	35	MSF
Optional additive item: side channel 1 substrate		
Excavate to subgrade - on site disposal	250	CY
Import and place substrate	250	CY
Optional additive item: Salvage existing buck and pole fence for reuse		
Disassemble fence and stockpile materials for reuse	1300	LF

CY = CUBIC YARDS
EA = EACH
MSF = 1,000 SQUARE FEET
LF = LINEAR FEET

NOTES:
ESTIMATED MATERIAL VOLUMES ARE APPROXIMATE IN-PLACE QUANTITIES AND NOT FACTORED FOR EXPANSION OF EXCAVATED MATERIAL OR COMPACTION OF PLACED MATERIAL. MEASUREMENT AND PAYMENT SHALL NOT BE BASED ON WEIGHT TICKETS OR TRUCK MEASURE WITHOUT PRIOR WRITTEN APPROVAL.

EXCAVATED MATERIAL NOT SUITABLE FOR SALVAGE AND REUSE, OR NOT PLACED IN SPOILS DISPOSAL BERM, SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR LEGAL OFF-SITE DISPOSAL.



EXPIRES: 11/23/19

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CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION
MAD RIVER NEAR ARDENVOIR, WASHINGTON
TILLICUM FAN HABITAT RESTORATION PROJECT



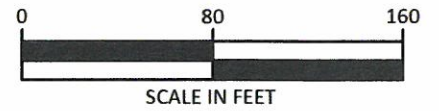
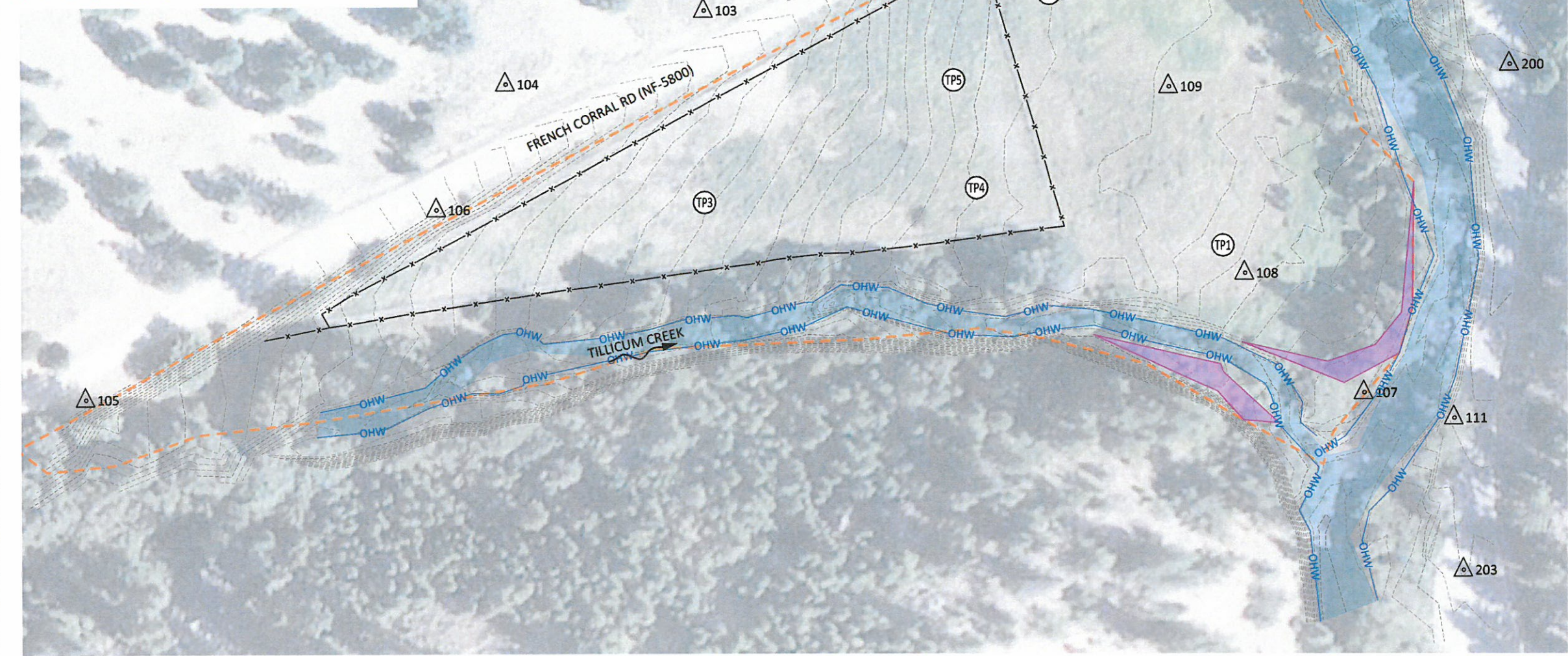
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GENERAL NOTES,
QUANTITIES, AND
ABBREVIATIONS

SHEET
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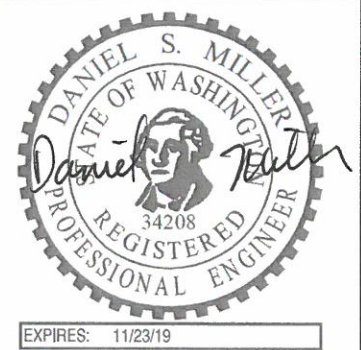
SURVEY CONTROL				
PT NO	NORTHING	EASTING	ELEVATION	DESCRIPTION
101	10069.79	10117.77	97.14	TBM
102	10069.41	10115.89	96.54	TBM
103	9975.94	9887.55	108.41	TBM
104	9928.63	9760.22	120.48	TBM
105	925.82	9489.61	126.33	TBM
106	9847.61	9715.74	115.01	TBM
107	9729.12	10311.26	86.22	TBM
108	9806.36	10234.86	90.84	TBM
109	9926.82	10186.13	92.98	TBM
110	10220.80	10319.90	100.28	NAIL
111	9712.75	10369.44	88.53	TBM
200	9941.24	10405.24	92.77	TBM
201	10104.38	10283.87	95.28	TBM
202	10145.78	10157.06	98.04	TBM
203	9614.55	10375.57	87.20	TBM

PROJECT RELATIVE DATUM



LEGEND

- EXISTING CONTOURS (1FT)
- OHW ORDINARY HIGH WATER
- EXISTING BUCK AND POLE FENCE
- EXISTING CHANNEL
- WETLAND DELINEATION
- WETLAND STUDY AREA
- △101 TEMPORARY SURVEY CONTROL POINT
- TPn SOIL TEST PIT



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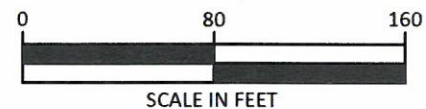
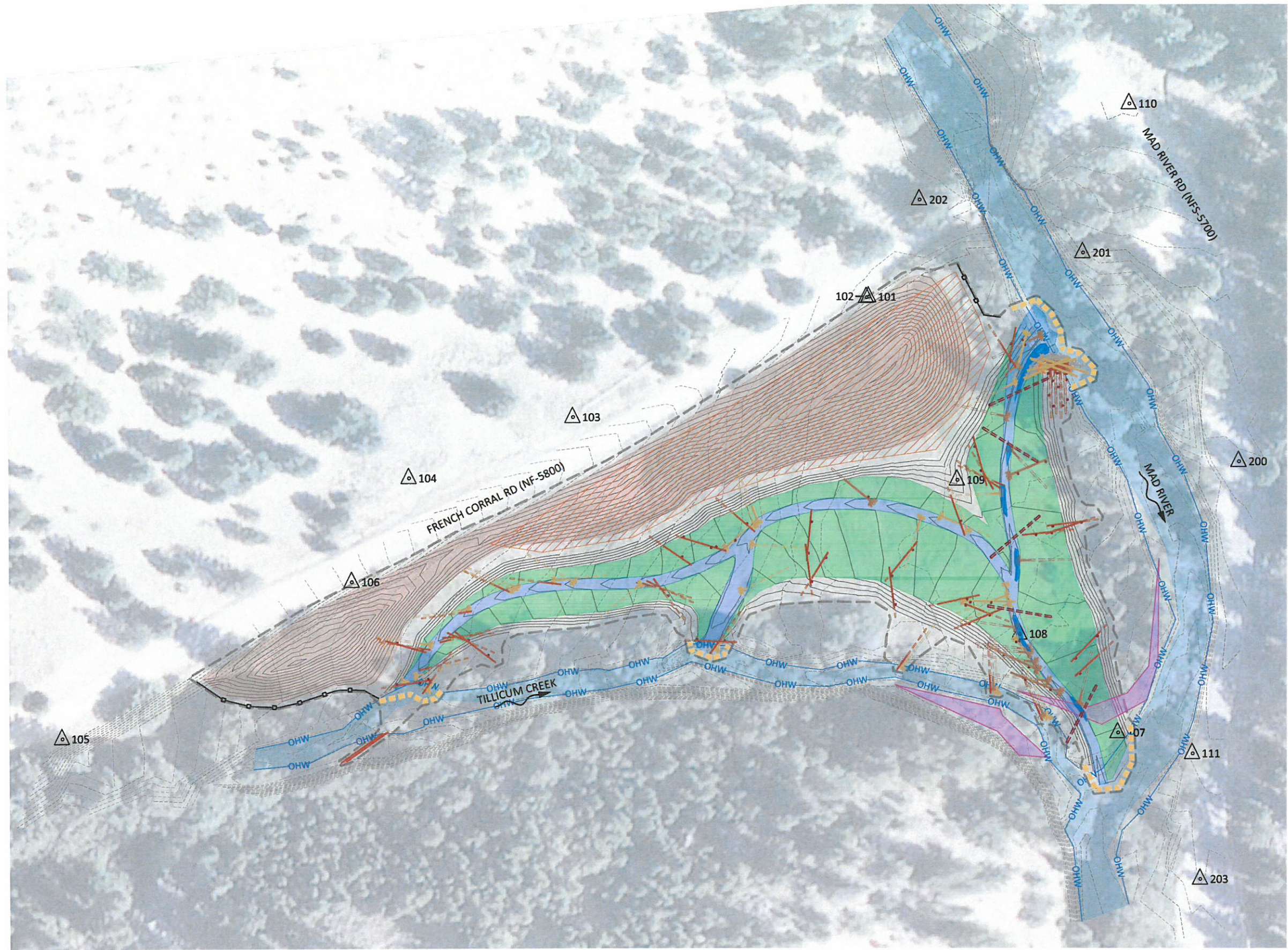
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EXISTING CONDITIONS,
PROPERTY OWNERSHIP,
AND SURVEY CONTROL



LEGEND

- EXISTING CONTOURS (1FT)
- PROPOSED CONTOURS (1FT)
- OHW
- EXISTING CHANNEL
- WETLAND DELINEATION
- PROPOSED CHANNEL
- PROPOSED FLOODPLAIN
- PROPOSED SPOILS PLACEMENT BERM
- LIMITS OF DISTURBANCE
- TEMPORARY STAGING AREA
- SILT FENCE (SEE SHEET 6)
- COFFERDAM (SEE SHEET 6)
- TEMPORARY SURVEY CONTROL POINT
- LWM PLACEMENT (SEE SHEET 11)



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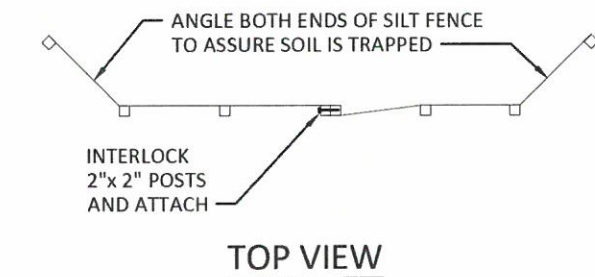
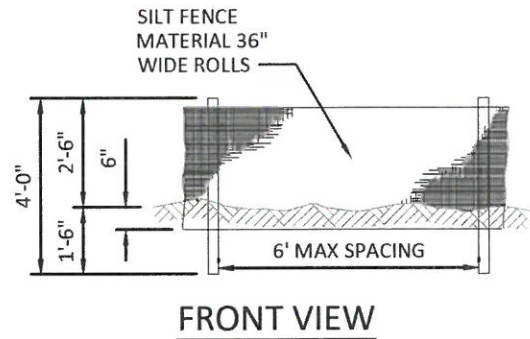
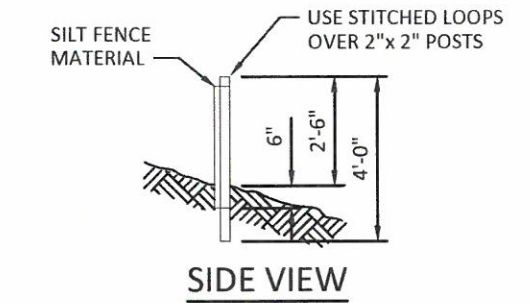
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PROPOSED CONDITIONS
OVERVIEW, ACCESS
AND STAGING

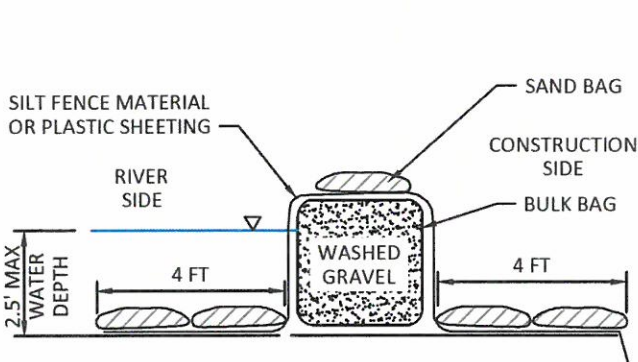
SHEET
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SILT FENCES:

1. THE SILT FENCE SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, SILT FENCE SHALL BE SPICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST. ALTERNATIVELY, OVERLAP AND INTERLOCK TWO POSTS WITH ATTACHED FABRIC AS REQUIRED TO MEET APPLICABLE REGULATIONS.
2. THE SILT FENCE IS TO BE INSTALLED ALONG THE DOWNHILL PERIMETER OF CONSTRUCTION AREAS AS REQUIRED TO MEET REGULATIONS AND PERMIT REQUIREMENTS. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
3. THE SILT FENCE SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM SILT FENCE INSTALLATION SHALL BE BACK-FILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY DUTY SILT FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2 INCHES X 2 INCHES POST INSTALLATION.
5. SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED, OR AS DIRECTED BY OWNER'S REPRESENTATIVE.

1
6
TYPICAL SILT FENCE
NOT TO SCALE

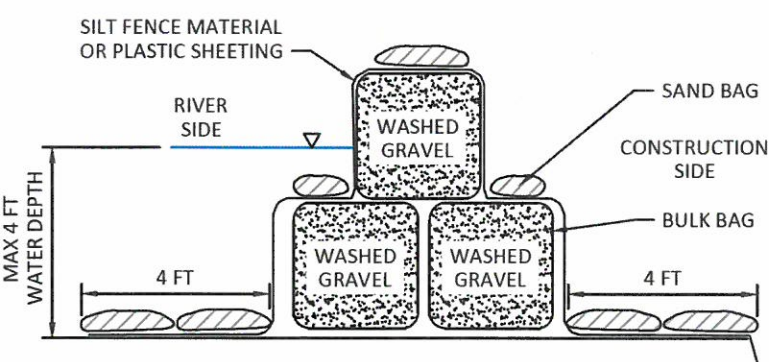


TEMPORARY COFFERDAM
DEPTHS LESS THAN 2.5'

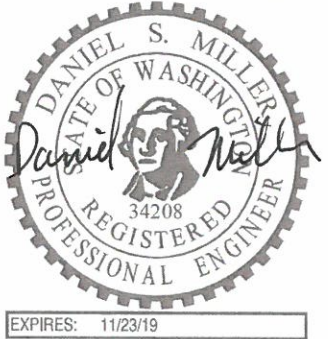
BULK BAG NOTES:

1. BULK BAG COFFERDAM SHALL BE CONSTRUCTED OF SEVERAL UNITS OF BULK BAGS FILLED WITH WDFW APPROVED 3" MINUS WASHED GRAVEL, AND ABUTTED SIDE BY SIDE TO CREATE A ROW THAT ISOLATES THE CONSTRUCTION SITE.
2. IF WATER DEPTH EXCEEDS 85% OF THE BULK BAG HEIGHT, AN ADDITIONAL TOP ROW OF BULK BAGS SHALL BE INSTALLED, SUPPORTED BY TWO BOTTOM ROWS OF BULK BAGS. BULK BAG COFFERDAM SHALL BE SEALED BY COVERING THE COFFERDAM WITH PLASTIC SHEETING HELD IN PLACE BY STANDARD SANDBAGS PLACED IN ROWS ON TOP OF COFFERDAM, AND AT TOE OF COFFERDAM.
3. THE PLASTIC SHEETING SHALL BE DRAPED ALONG THE CHANNEL BOTTOM ON BOTH SIDES OF THE COFFERDAM WITH OUTWARD EDGE OF SHEETING A MINIMUM OF 4- FEET FROM TOE OF COFFERDAM. THE DRAPED PORTION OF PLASTIC SHEETING SHALL BE PINNED TO THE CHANNEL BED BY A MINIMUM OF TWO ROWS OF STANDARD SANDBAGS.
4. THE CONSTRUCTION SIDE EDGE OF PLASTIC SHEETING SHALL BE TOED INTO THE CHANNEL BED A MINIMUM OF 1 FOOT. TOEING IN THE OUTWARD EDGE OF PLASTIC SHEETING SHALL OCCUR AFTER THE COFFERDAM IS CLOSED TO PREVENT TURBIDITY RELEASE TO THE WATERWAY.
5. IF POSSIBLE, THE COFFERDAM SHALL BE EXTENDED ONTO A GRAVEL BAR AND OUT OF THE WATER. IF THE END MUST BE TERMINATED AT THE RIVERBANK, THE COFFERDAM SHALL BE TIGHTLY SEALED TO THE GROUND BY PLASTIC SHEETING AND STANDARD SANDBAGS. MULTIPLE LAYERS OF SHEETING AND SANDBAGS MAY BE REQUIRED TO FORM A WATERTIGHT SEAL.
6. BULK BAGS SHALL BE CUBE-SHAPED POLYPROPYLENE WOVEN FABRIC BAGS WITH FULLY OPEN TOP, FLAT BOTTOM, FOUR LOOPS, MINIMUM 2-TON WEIGHT CAPACITY, MINIMUM 5:1 SAFETY FACTOR.
7. PLASTIC SHEETING SHALL BE MINIMUM 6-MIL THICKNESS. ROLL LENGTH SHALL COVER THE ENTIRE COFFERDAM WITHOUT SEAMS. MINIMUM 12-FT WIDE ROLL SHALL BE USED FOR SINGLE LAYER BULK BAG COFFERDAM. MINIMUM 16-FT WIDE ROLL SHALL BE USED FOR 2-LAYER STACKED BULK BAG COFFERDAM.
8. BULK BAG COFFERDAM SHALL BE COMPLETELY REMOVED AFTER CONSTRUCTION IS COMPLETED AND TURBIDITY HAS BEEN REMOVED. BAGS, SHEETING AND GRAVEL WILL BE HAULED OFFSITE.
9. ALTERNATE COFFERDAM MATERIALS AND CONFIGURATIONS MAY BE ALLOWED BUT SHALL NOT BE IMPLEMENTED WITHOUT REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND/OR VENDOR CUT SHEETS FOR SUBSTITUTIONS.

2
6
TEMPORARY COFFERDAM
NOT TO SCALE



COFFERDAM SECTION IN WATER
DEPTHS GREATER THAN 2.5'



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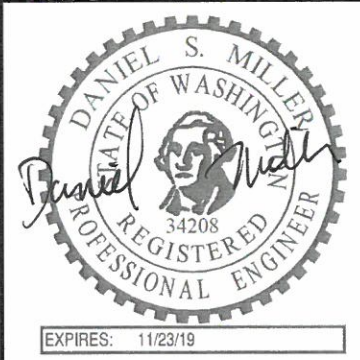
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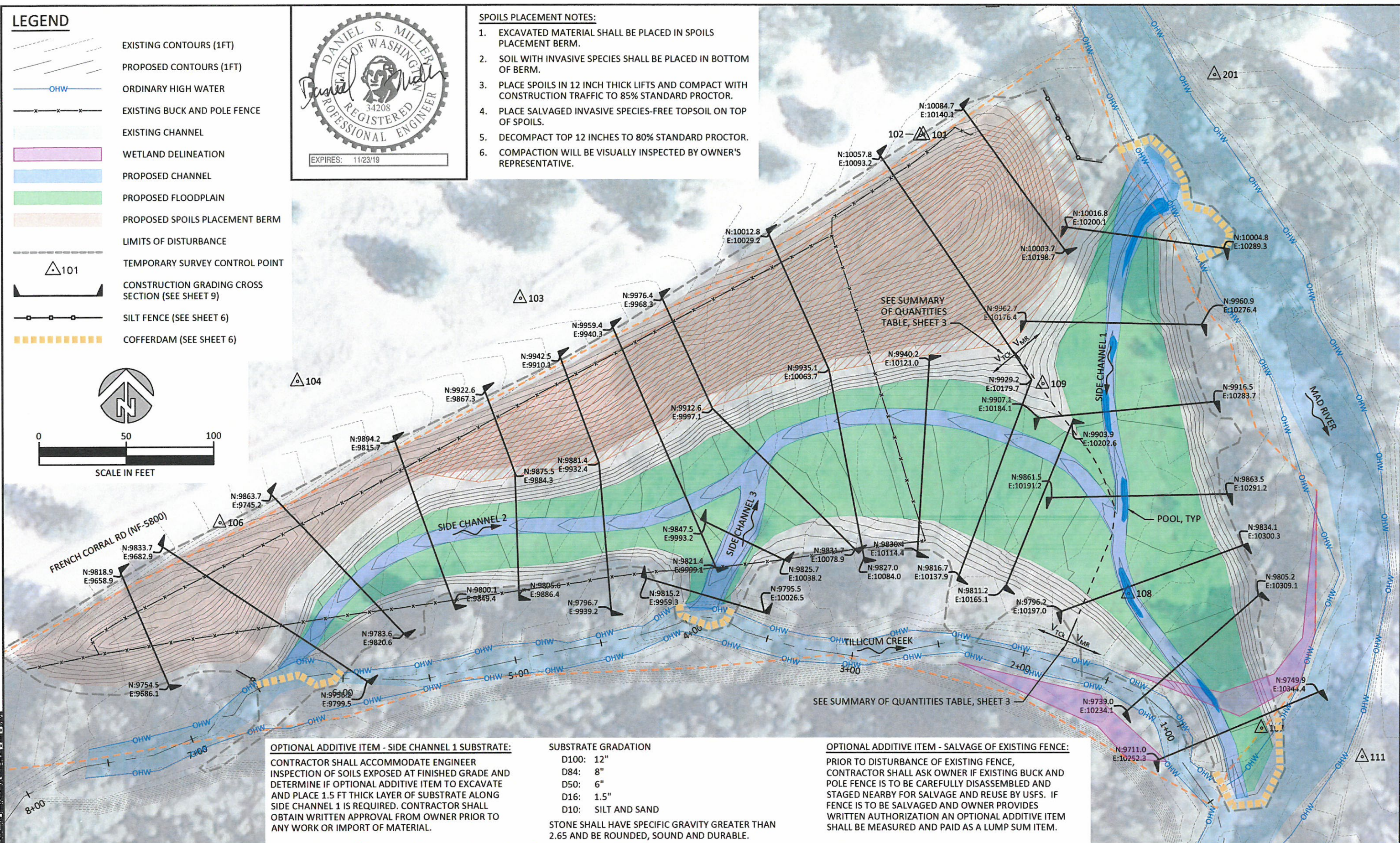
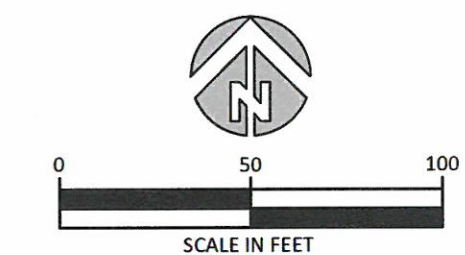
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LEGEND

- EXISTING CONTOURS (1FT)
- PROPOSED CONTOURS (1FT)
- OHW
- EXISTING BUCK AND POLE FENCE
- EXISTING CHANNEL
- WETLAND DELINEATION
- PROPOSED CHANNEL
- PROPOSED FLOODPLAIN
- PROPOSED SPOILS PLACEMENT BERM
- LIMITS OF DISTURBANCE
- TEMPORARY SURVEY CONTROL POINT
- CONSTRUCTION GRADING CROSS SECTION (SEE SHEET 9)
- SILT FENCE (SEE SHEET 6)
- COFFERDAM (SEE SHEET 6)



- SPOILS PLACEMENT NOTES:**
- EXCAVATED MATERIAL SHALL BE PLACED IN SPOILS PLACEMENT BERM.
 - SOIL WITH INVASIVE SPECIES SHALL BE PLACED IN BOTTOM OF BERM.
 - PLACE SPOILS IN 12 INCH THICK LIFTS AND COMPACT WITH CONSTRUCTION TRAFFIC TO 85% STANDARD PROCTOR.
 - PLACE SALVAGED INVASIVE SPECIES-FREE TOPSOIL ON TOP OF SPOILS.
 - DECOMPACT TOP 12 INCHES TO 80% STANDARD PROCTOR.
 - COMPACTION WILL BE VISUALLY INSPECTED BY OWNER'S REPRESENTATIVE.



OPTIONAL ADDITIVE ITEM - SIDE CHANNEL 1 SUBSTRATE:
CONTRACTOR SHALL ACCOMMODATE ENGINEER INSPECTION OF SOILS EXPOSED AT FINISHED GRADE AND DETERMINE IF OPTIONAL ADDITIVE ITEM TO EXCAVATE AND PLACE 1.5 FT THICK LAYER OF SUBSTRATE ALONG SIDE CHANNEL 1 IS REQUIRED. CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM OWNER PRIOR TO ANY WORK OR IMPORT OF MATERIAL.

SUBSTRATE GRADATION
D100: 12"
D84: 8"
D50: 6"
D16: 1.5"
D10: SILT AND SAND

STONE SHALL HAVE SPECIFIC GRAVITY GREATER THAN 2.65 AND BE ROUNDED, SOUND AND DURABLE.

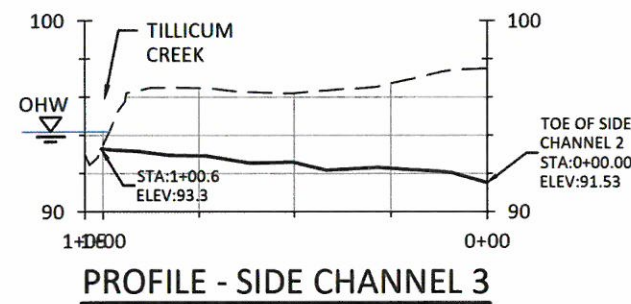
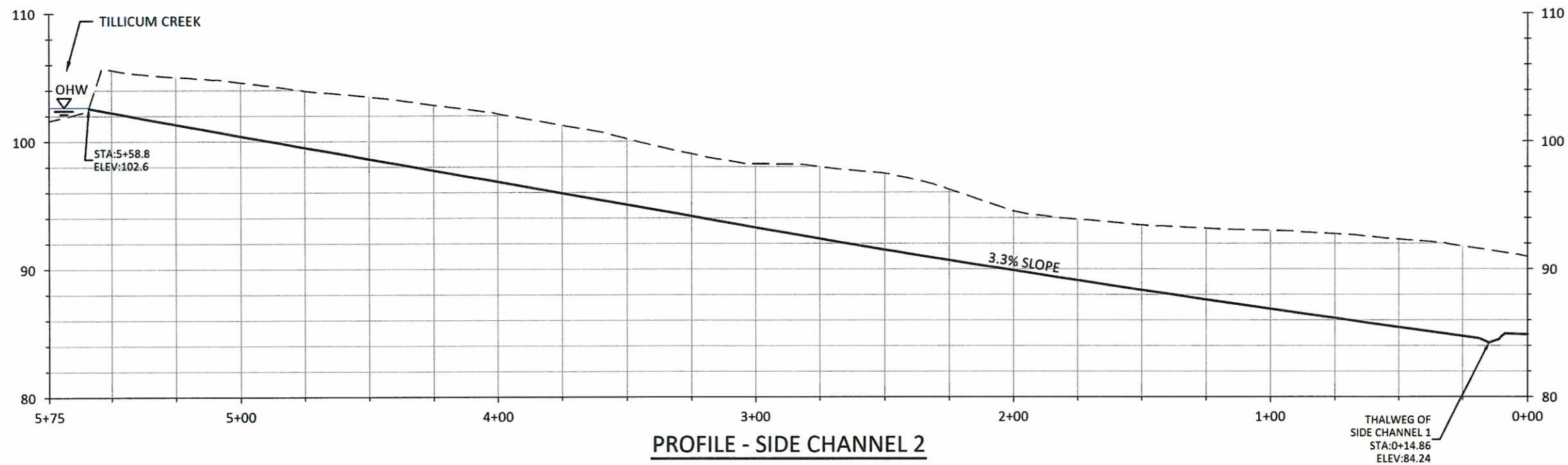
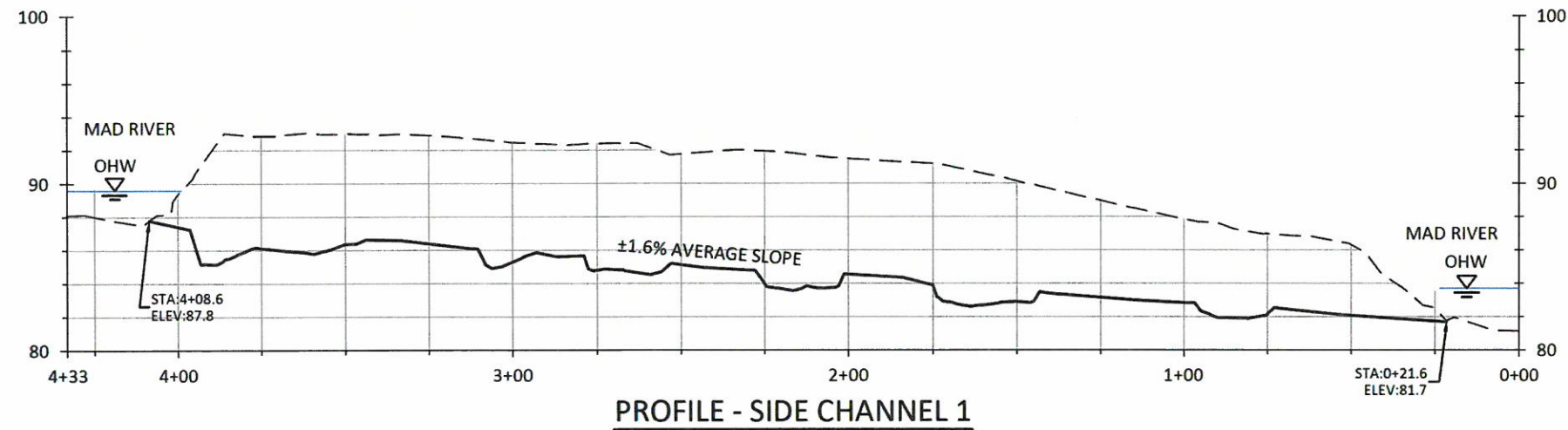
OPTIONAL ADDITIVE ITEM - SALVAGE OF EXISTING FENCE:
PRIOR TO DISTURBANCE OF EXISTING FENCE, CONTRACTOR SHALL ASK OWNER IF EXISTING BUCK AND POLE FENCE IS TO BE CAREFULLY DISASSEMBLED AND STAGED NEARBY FOR SALVAGE AND REUSE BY USFS. IF FENCE IS TO BE SALVAGED AND OWNER PROVIDES WRITTEN AUTHORIZATION AN OPTIONAL ADDITIVE ITEM SHALL BE MEASURED AND PAID AS A LUMP SUM ITEM.

NO.	BY	DATE	REVISION DESCRIPTION

DF	DM,MR	MM
DRAWN	DESIGNED	CHECKED
DM	3/15/2018	17-02-51
APPROVED	DATE	PROJECT

CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION
MAD RIVER NEAR ARDENVOIR, WASHINGTON
TILLICUM FAN HABITAT RESTORATION PROJECT

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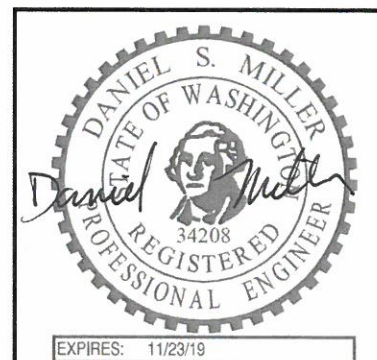


SCALE: 1" = 10'
5x VERTICAL EXAGGERATION
SCALE: 1" = 50'

LEGEND

--- EXISTING GRADE

— PROPOSED GRADE



NO.	BY	DATE	REVISION DESCRIPTION

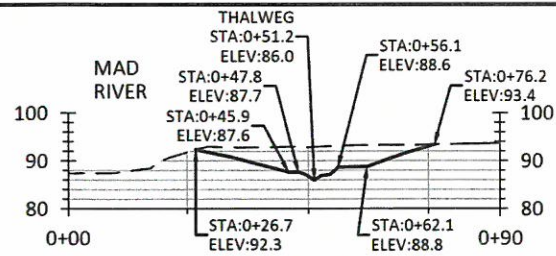
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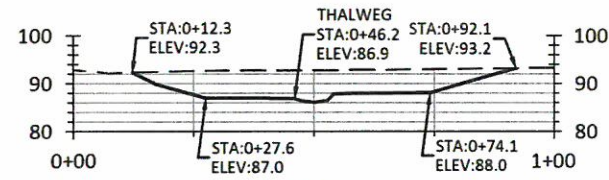


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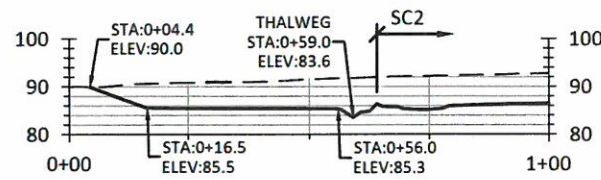
PROPOSED GRADING - PROFILE VIEWS	SHEET 8 OF 19
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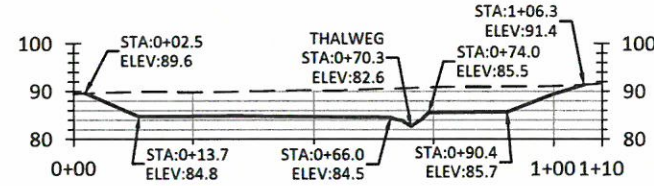
XS-SC1 STA 3+50



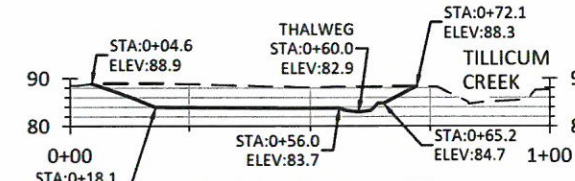
XS-SC1 STA 3+00



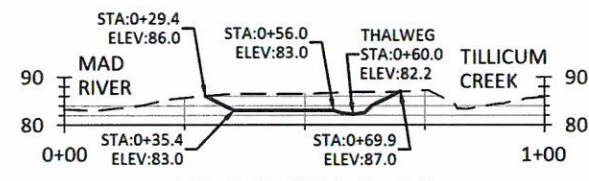
XS-SC1 STA 2+00



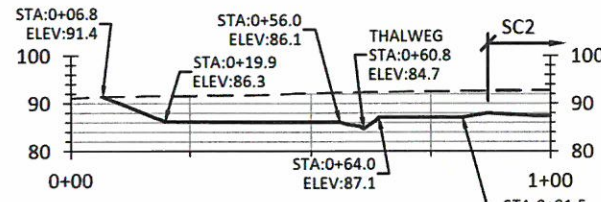
XS-SC1 STA 1+50



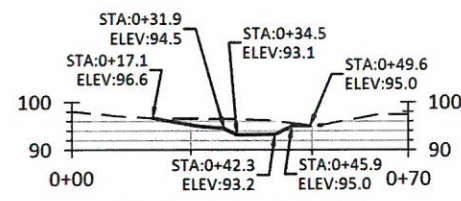
XS-SC1 STA 1+00



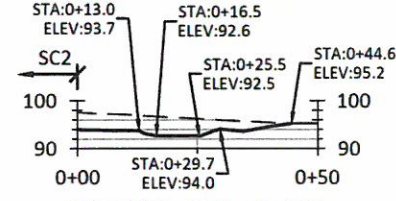
XS-SC1 STA 0+50



XS-SC1 STA 2+50



XS-SC3 STA 0+90



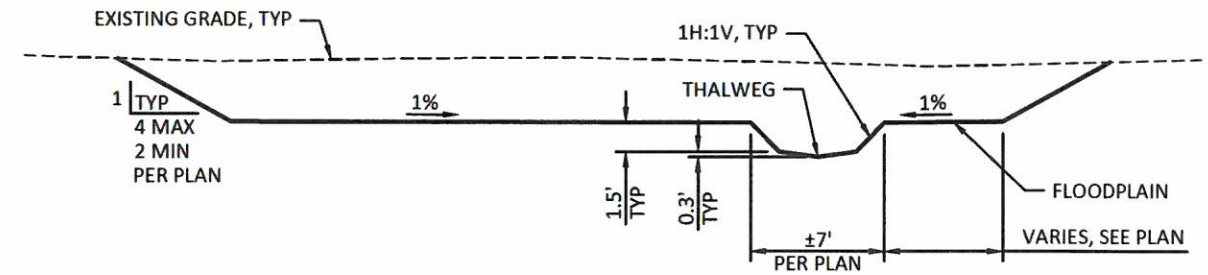
XS-SC3 STA 0+50

SCALE: 1" = 40'
1x VERTICAL EXAGGERATION
SCALE: 1" = 40'

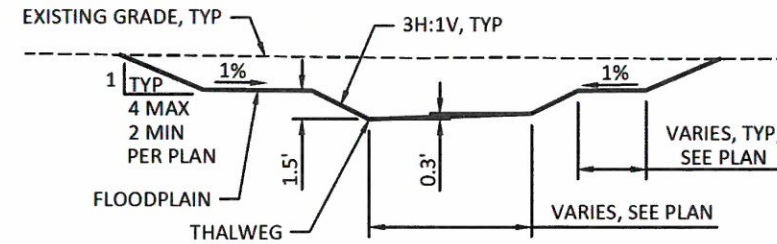
NOTE: VIEW ORIENTATION IS LEFT TO RIGHT LOOKING DOWNSTREAM

LEGEND

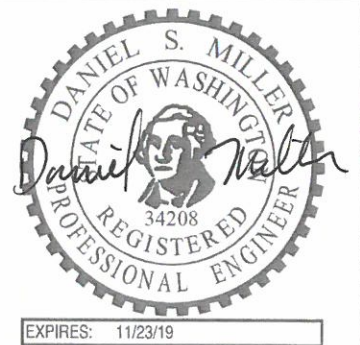
--- EXISTING GRADE
— PROPOSED GRADE



1
9 TYPICAL SECTION - SIDE CHANNEL 1
SCALE: 1" = 10'



2
9 TYPICAL SECTION - SIDE CHANNEL 3
SCALE: 1" = 10'

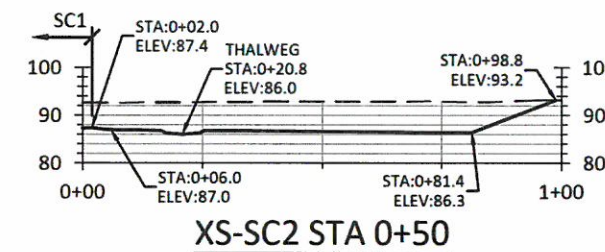
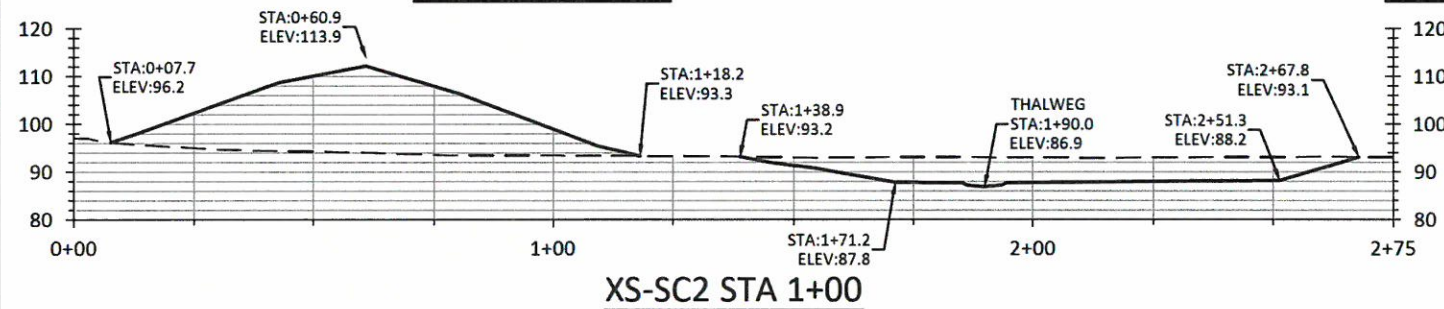
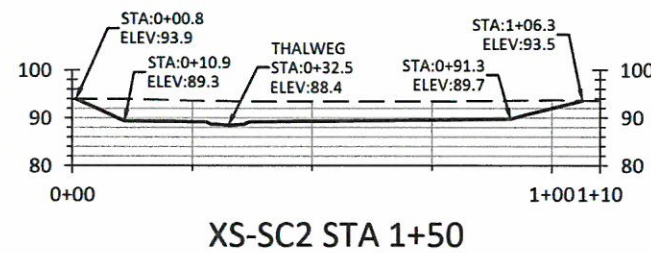
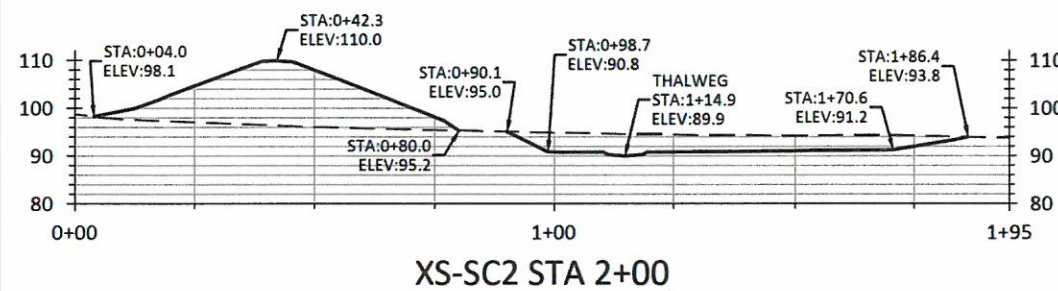
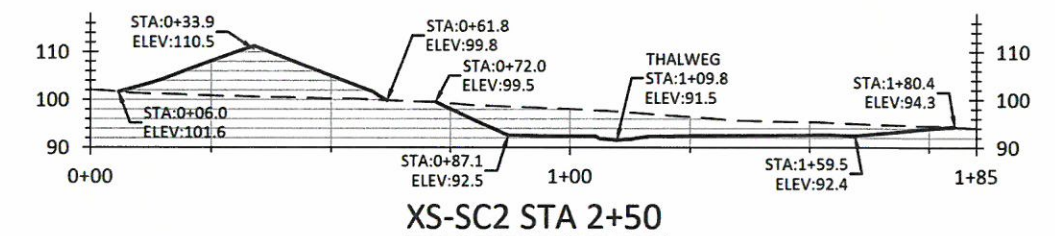
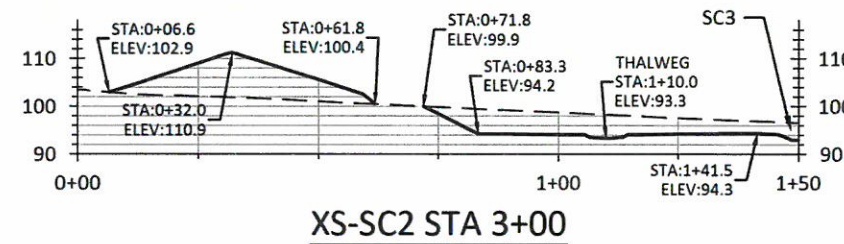
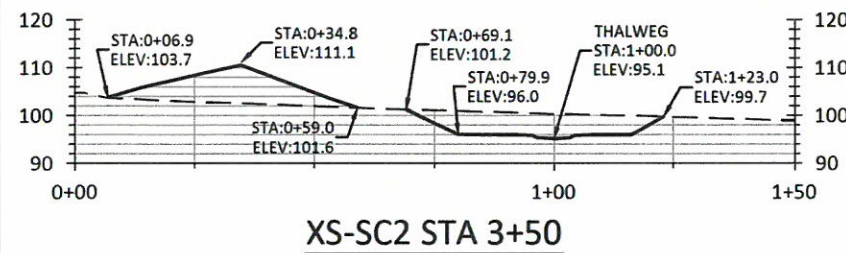
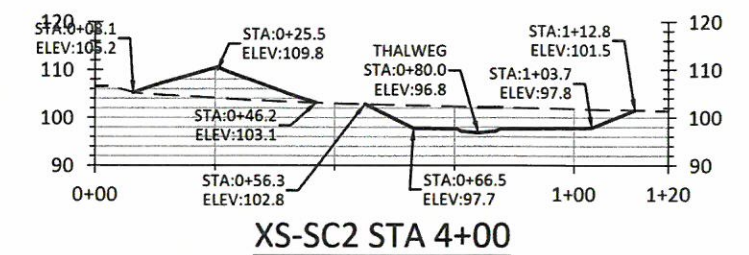
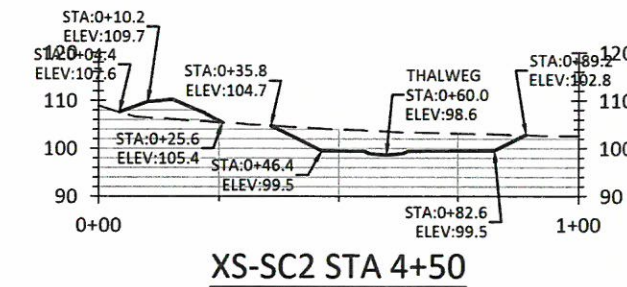
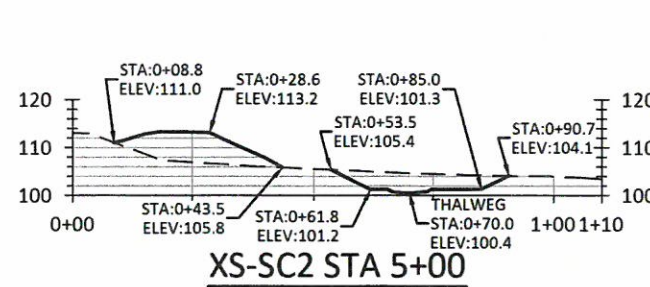
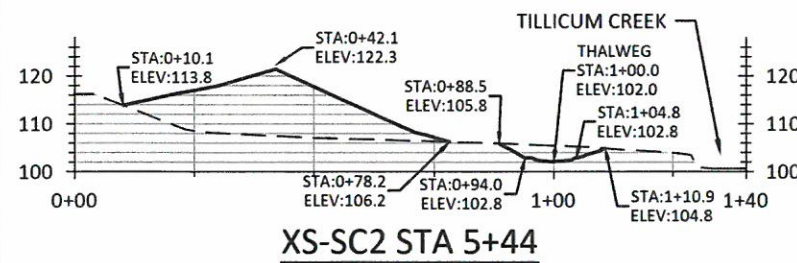


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MAD RIVER NEAR ARDENVOIR, WASHINGTON
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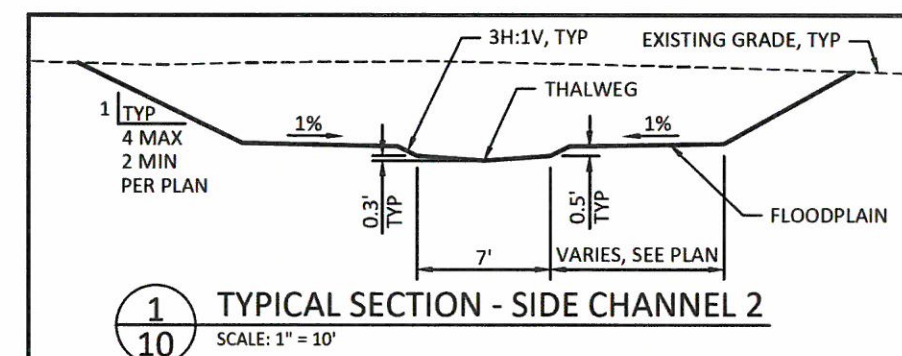
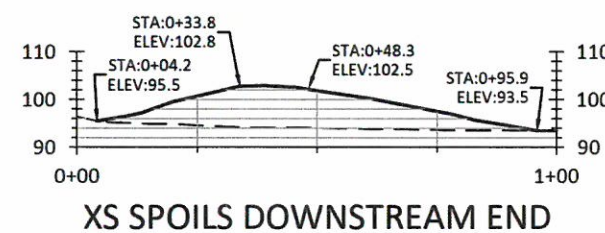
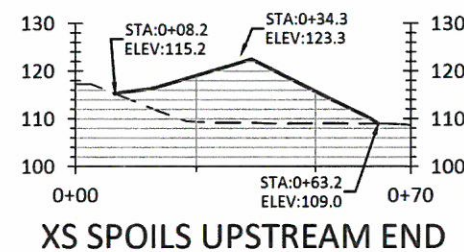
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SCALE: 1" = 40'
1x VERTICAL EXAGGERATION
SCALE: 1" = 40'

NOTE: VIEW ORIENTATION IS LEFT TO RIGHT LOOKING DOWNSTREAM

LEGEND
--- EXISTING GRADE
— PROPOSED GRADE



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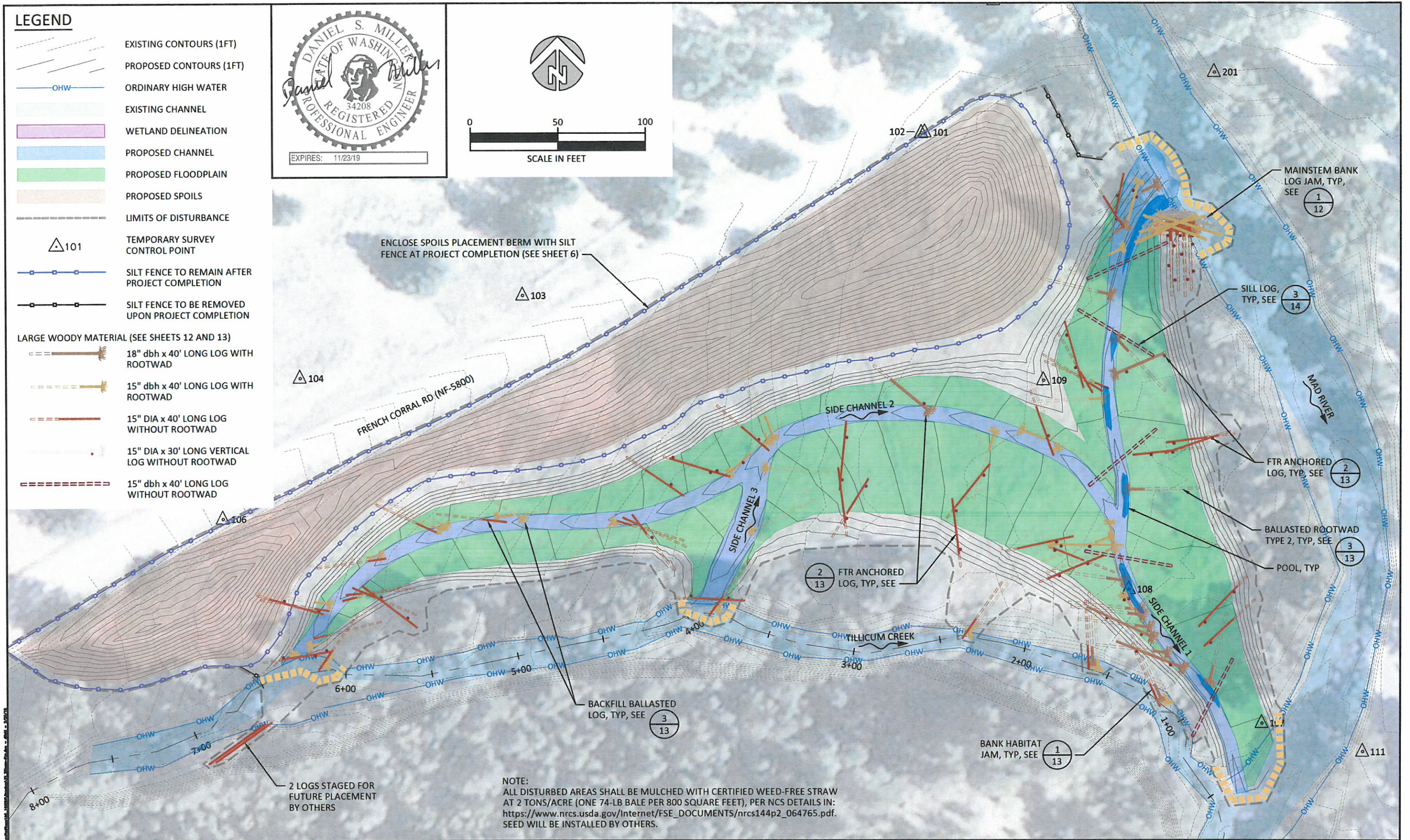
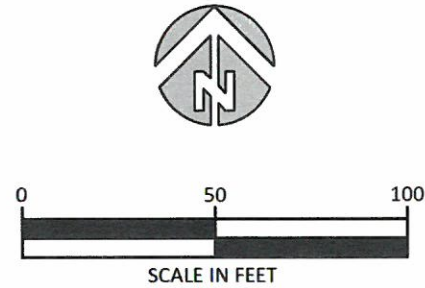
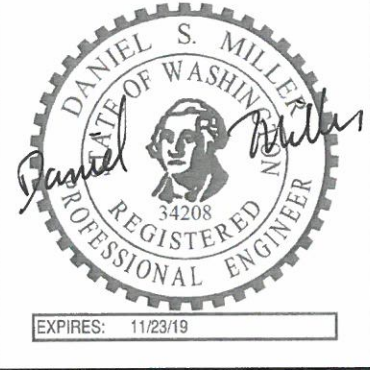
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LEGEND

- EXISTING CONTOURS (1FT)
- PROPOSED CONTOURS (1FT)
- OHW
- EXISTING CHANNEL
- WETLAND DELINEATION
- PROPOSED CHANNEL
- PROPOSED FLOODPLAIN
- PROPOSED SPOILS
- LIMITS OF DISTURBANCE
- △101
- TEMPORARY SURVEY CONTROL POINT
- SILT FENCE TO REMAIN AFTER PROJECT COMPLETION
- SILT FENCE TO BE REMOVED UPON PROJECT COMPLETION
- LARGE WOODY MATERIAL (SEE SHEETS 12 AND 13)
 - 18" dbh x 40' LONG LOG WITH ROOTWAD
 - 15" dbh x 40' LONG LOG WITH ROOTWAD
 - 15" DIA x 40' LONG LOG WITHOUT ROOTWAD
 - 15" DIA x 30' LONG VERTICAL LOG WITHOUT ROOTWAD
 - 15" dbh x 40' LONG LOG WITHOUT ROOTWAD



NO.	BY	DATE	REVISION DESCRIPTION

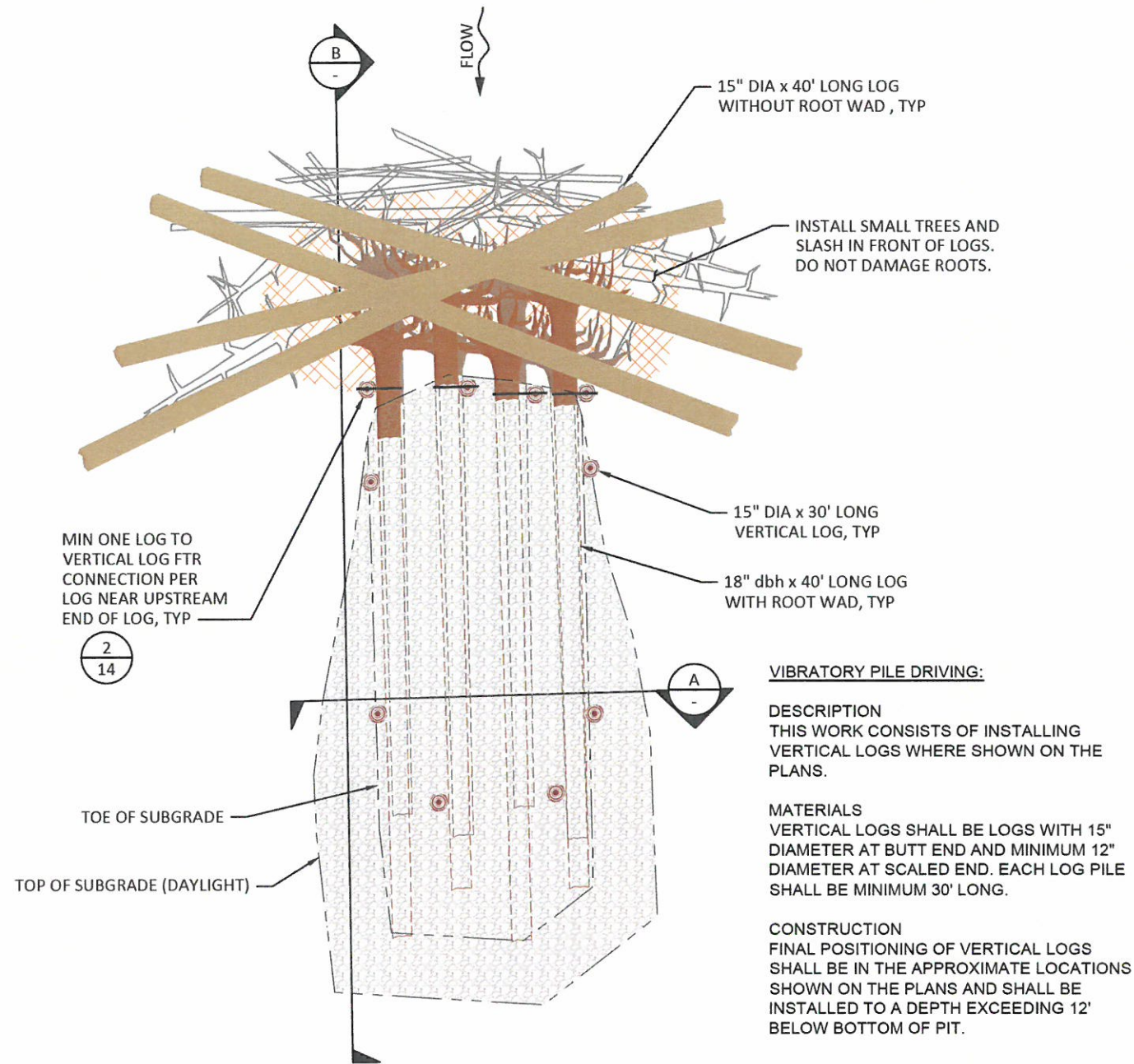
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PROPOSED LWM PLAN
AND FINAL SITE
STABILIZATION



**1
12** MAINSTEM BANK LOG JAM
NOT TO SCALE

SEQUENCE:

1. INSTALL COFFERDAM.
2. EXCAVATE SUBGRADE.
3. INSTALL VERTICAL LOGS AND FIRST TIER OF HORIZONTAL LOGS.
4. BACKFILL OVER FIRST TIER OF HORIZONTAL LOGS.
5. INSTALL ADDITIONAL LAYERS OF LOGS AND BACKFILL EACH LAYER.
6. BACKFILL TO EXISTING GRADE CONTOUR.
7. INSTALL FES LIFTS (SEE SHEETS 15-17).
8. INSTALL SMALL TREES AND SLASH IN ROOTWAD MATRIX. DO NOT DAMAGE ROOTWADS.
9. REMOVE COFFERDAM.

NOTES:

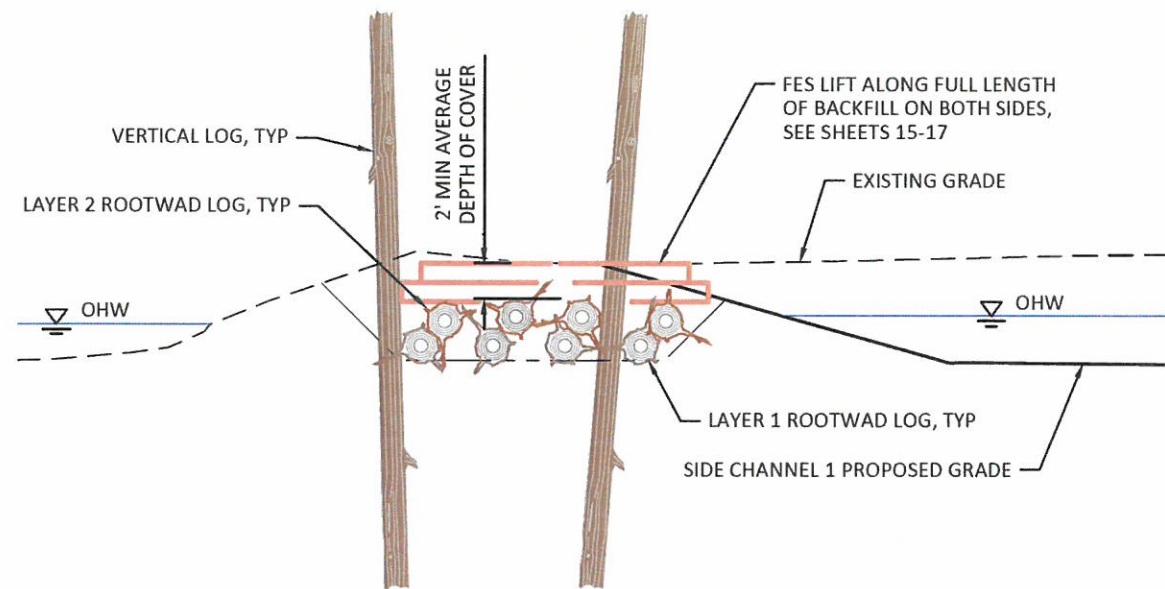
1. SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SITE CONDITIONS & SIZE/SHAPE OF MATERIAL DELIVERED OR SALVAGED AT SITE.
2. LOGS SHALL BE BALLASTED TO RESIST BUOYANCY BY PARTIAL BURIAL AND BRACING TO VERTICAL LOGS.
3. BOLT HORIZONTAL LOGS TO VERTICAL LOGS PER DETAIL.

VIBRATORY PILE DRIVING:

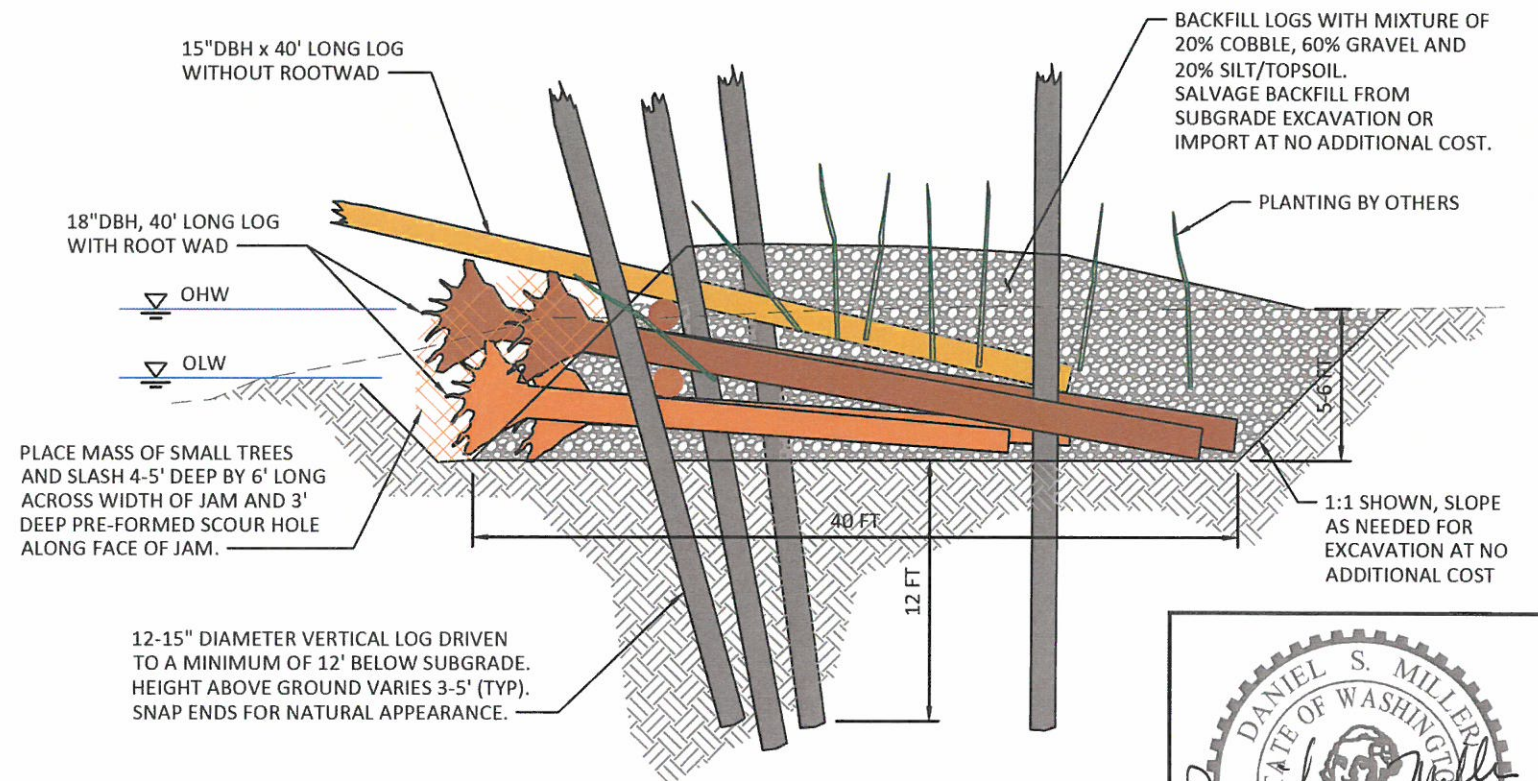
DESCRIPTION
THIS WORK CONSISTS OF INSTALLING VERTICAL LOGS WHERE SHOWN ON THE PLANS.

MATERIALS
VERTICAL LOGS SHALL BE LOGS WITH 15" DIAMETER AT BUTT END AND MINIMUM 12" DIAMETER AT SCALED END. EACH LOG PILE SHALL BE MINIMUM 30' LONG.

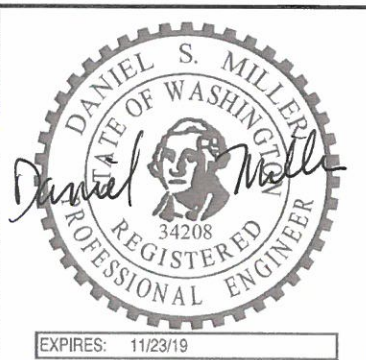
CONSTRUCTION
FINAL POSITIONING OF VERTICAL LOGS SHALL BE IN THE APPROXIMATE LOCATIONS SHOWN ON THE PLANS AND SHALL BE INSTALLED TO A DEPTH EXCEEDING 12' BELOW BOTTOM OF PIT.



**A
12** SECTION
NOT TO SCALE



**B
12** SECTION
NOT TO SCALE



NO.	BY	DATE	REVISION DESCRIPTION

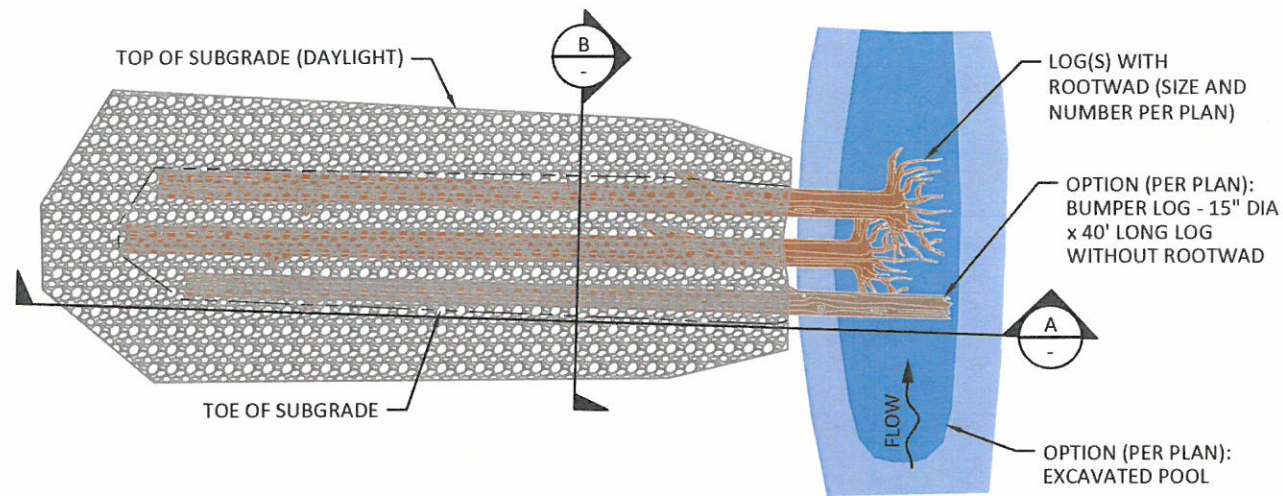
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DM APPROVED	3/15/2018 DATE	17-02-51 PROJECT

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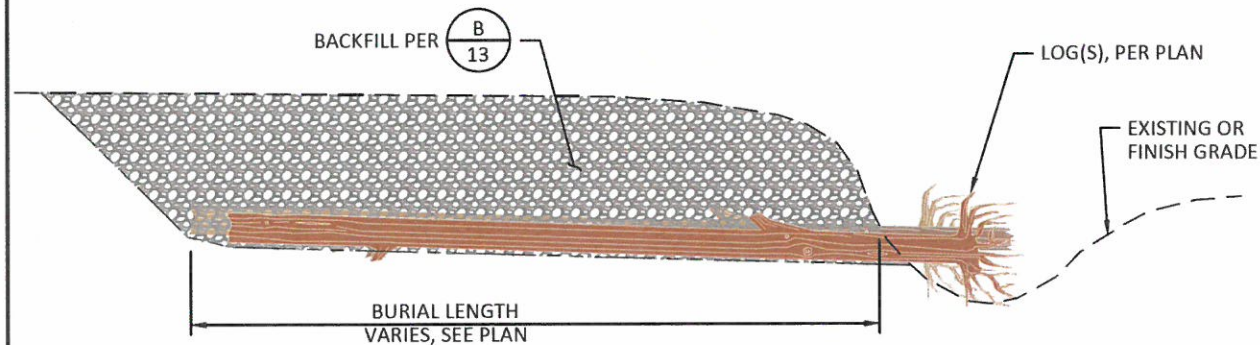


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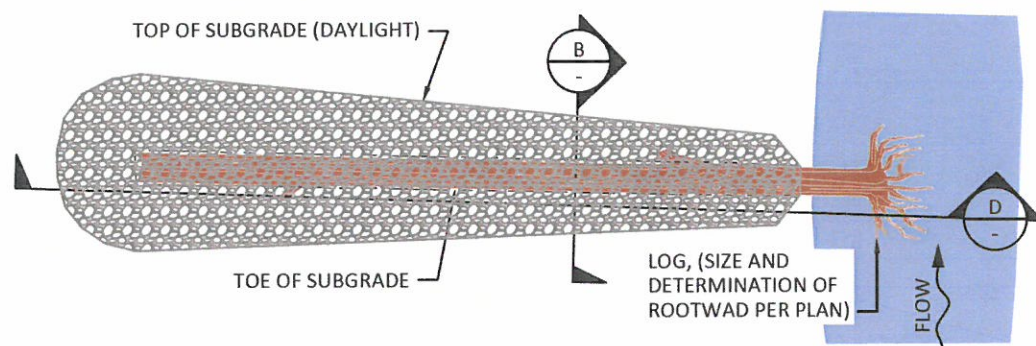
TYPICAL LWM DETAILS



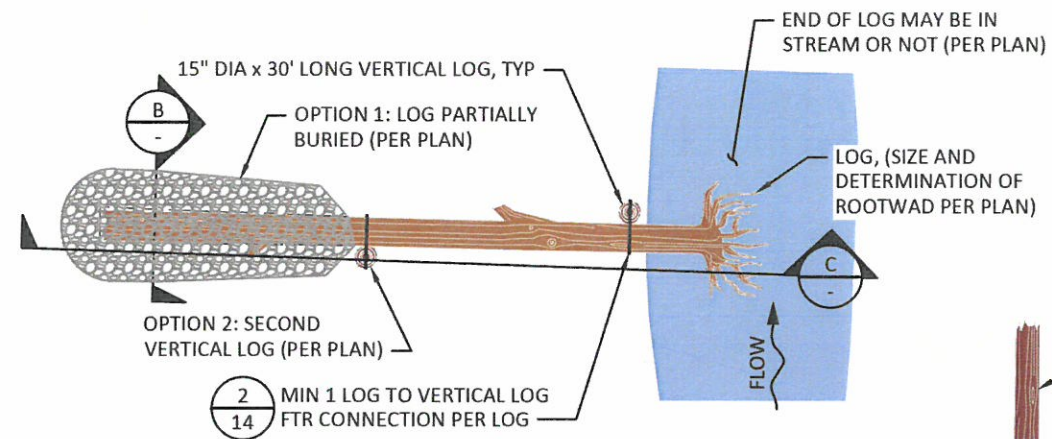
1
13 TYPICAL PLAN - BANK HABITAT JAM
NOT TO SCALE



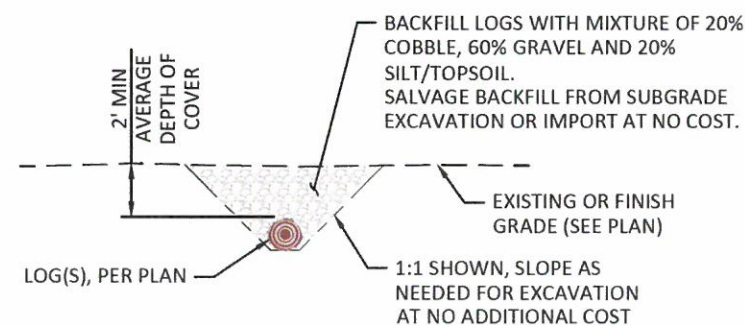
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13 TYPICAL SECTION - BANK HABITAT JAM
NOT TO SCALE



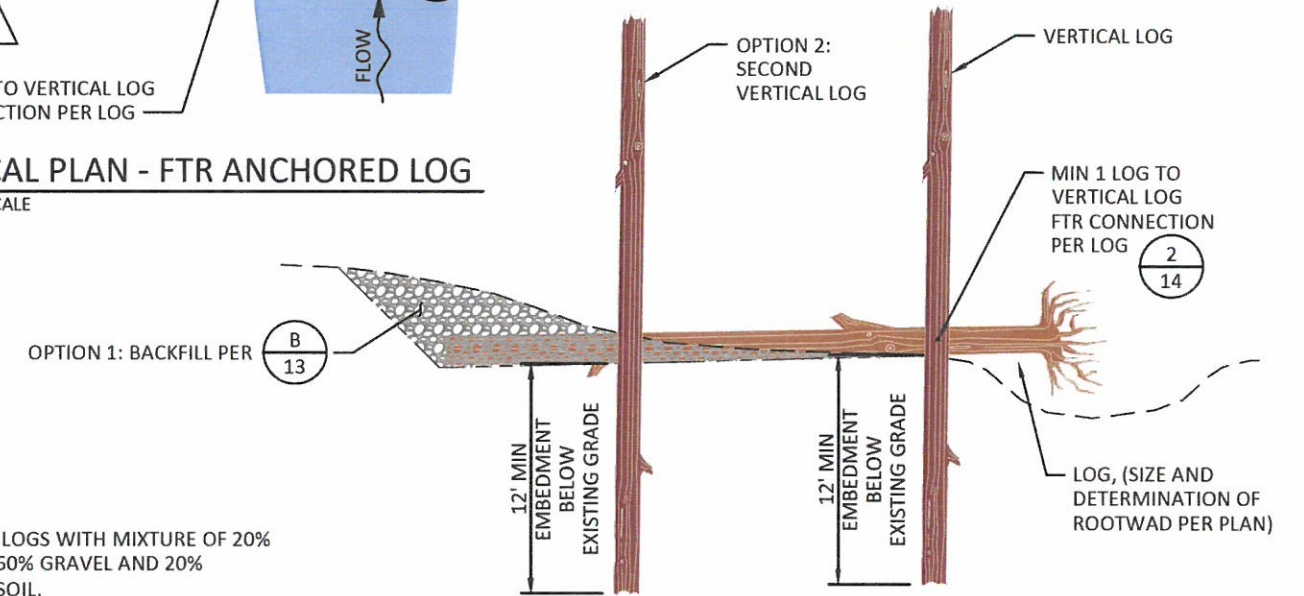
3
13 TYPICAL PLAN - BACKFILL BALLASTED LOG
NOT TO SCALE



2
13 TYPICAL PLAN - FTR ANCHORED LOG
NOT TO SCALE



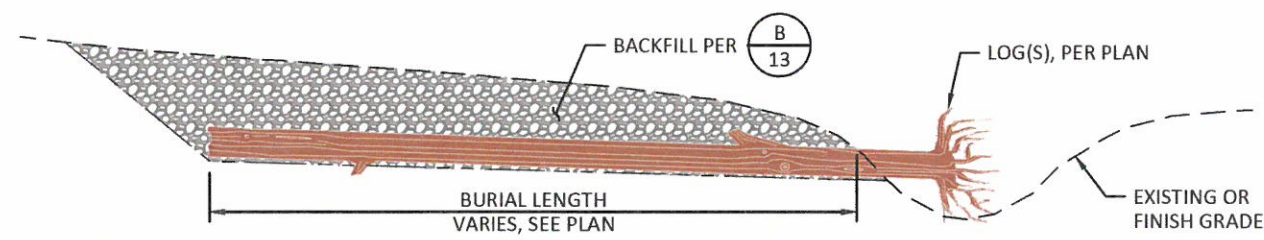
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13 TYPICAL SECTION - TRENCH BACKFILL
NOT TO SCALE



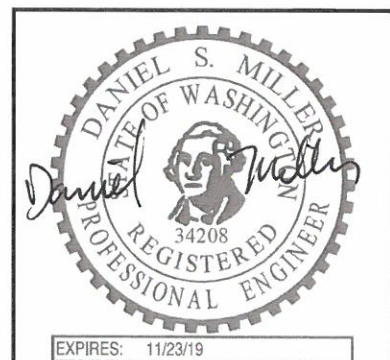
C
13 TYPICAL SECTION - FTR ANCHORED LOG
NOT TO SCALE

NOTES:

1. SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.
2. BRACING TO INSTALLED VERTICAL LOGS OR EXISTING TREES WILL OCCUR AT LOCATIONS IDENTIFIED IN THE FIELD TO PROVIDE HORIZONTAL STABILITY.
3. ALL VERTICAL LOGS SHALL BE INSTALLED USING VIBRATORY PILE DRIVING EQUIPMENT. INSTALLATION BY EXCAVATION, HAMMERING, OR VIBRATORY PLATE COMPACTOR SHALL NOT BE ALLOWED.
4. ACCEPTABLE MINIMUM VIBRATORY PILE DRIVING EQUIPMENT SHALL INCLUDE: 1) HMC MOVAC SONIC SIDE GRIP VIBRATORY PILE DRIVER MODEL SP80, 2) GRIZZLY MG90, OR EQUIVALENT.
5. HEIGHT OF VERTICAL LOGS ABOVE GROUND SHALL BE VARIED. ENDS SHALL BE SNAPPED OFF TO ACHIEVE A NATURAL APPEARANCE.



D
13 TYPICAL SECTION - BACKFILL BALLASTED LOG
NOT TO SCALE



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TYPICAL LWM DETAILS

SHEET

13 OF 19

VERTICAL LOGS

ALL VERTICAL LOGS SHALL BE INSTALLED USING VIBRATORY PILE DRIVING EQUIPMENT. INSTALLATION BY EXCAVATION OR HAMMERING SHALL NOT BE ALLOWED.

RIGGING

RIGGING FOR VERTICAL LOG TESTING SHALL CONFORM TO THE TENSION SCALE MANUFACTURER'S RECOMMENDATIONS.

CHOKERS, CABLES AND AND SHACKLES SHALL HAVE MINIMUM WORKING LOAD RATING OF 12 TONS. FITTINGS SHALL BE SIZED ACCORDINGLY.

TESTING

TESTING OF VERTICAL LOGS SHALL BE PERFORMED IN THE PRESENCE OF THE ENGINEER. UP TO FOUR LOAD TESTS SHALL BE APPLIED TO EACH TESTED VERTICAL LOG. EACH OF THE THREE LOAD TESTS SHALL BE APPLIED TO THE VERTICAL LOG WITH A DIFFERENT INSTALLED DEPTH.

EACH VERTICAL LOG TEST SHALL HAVE UPWARD LOAD GRADUALLY INCREASED AND AS CLOSELY ALIGNED TO AXIS OF LOG AS POSSIBLE. RECORD THE LOG DIAMETER, EMBEDMENT DEPTH AND MAXIMUM FORCE REQUIRED TO MOVE THE LOG VERTICALLY APPROXIMATELY 1 INCH. THEN DRIVE THE VERTICAL LOG TO A NEW DEPTH TO BE DETERMINED BY THE ENGINEER. APPLY NEW LOAD AND RECORD MAX FORCE THAT CAUSES THE LOG TO MOVE VERTICALLY 1 INCH. REPEAT FOR THIRD AND FOURTH TEST.

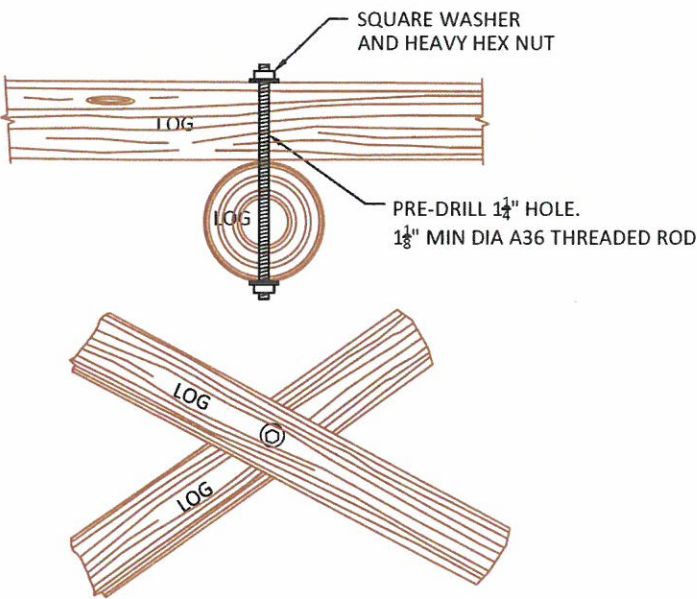
PROOF TESTS SHALL BE MADE AT UP TO FOUR EMBEDMENT DEPTHS FOR EACH VERTICAL LOG. DEPTHS SHALL BE DETERMINED IN THE FIELD. AS A GUIDELINE TEST EMBEDMENT DEPTHS MAY INCLUDE 6', 8', 10', AND 12'.

EXCAVATOR CONDUCTING PULL OUT LOADING SHALL BE POSITIONED NO CLOSER THAN EMBEDMENT DEPTH OF VERTICAL LOG IF POSSIBLE. IF A CLOSER POSITIONING IS REQUIRED, EXCAVATOR SHALL BE NO CLOSER THAN THAT REQUIRED TO GENERATE DESIRED LOADING WITH DISTANCE FROM VERTICAL LOG NOTED IN THE TEST RECORD. LIMIT COMPRESSIVE LOADING OF THE TRACKS ON THE GROUND BY DRIVING THE EXCAVATOR ONTO LOGS LAID ON THE GROUND TO DISTRIBUTE THE WEIGHT OVER A LARGER AREA.

PULL OUT RESISTANCE READING SHALL BE COMPARED AGAINST EXCAVATOR MAX LIFT OFFSET TABLE.

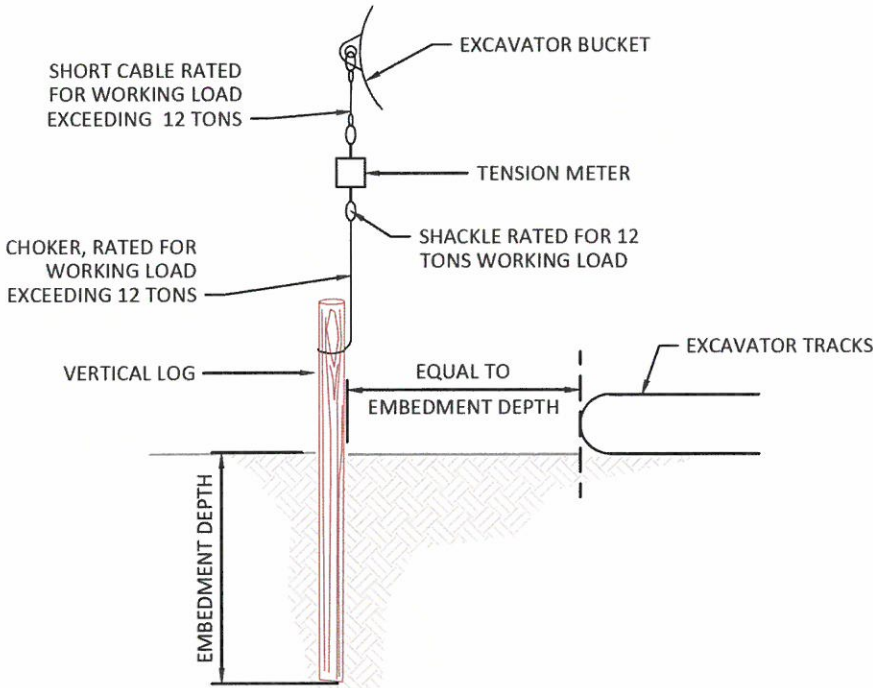
10% OF PRODUCTION VERTICAL LOGS SHALL BE PROOF TESTED. IF RESULTS VARY MORE THAN 50% THEN IT SHOULD BE ANTICIPATED THAT UP TO 25% OF THE PRODUCTION VERTICAL LOGS SHALL BE PROOF TESTED.

CONSTRUCTED DRIVEN VERTICAL LOG EMBEDMENT DEPTH SPECIFIED IN THE PLANS MAY BE REDUCED OR INCREASED, PENDING PULL OUT TEST RESULTS, AT NO ADDITIONAL COST.

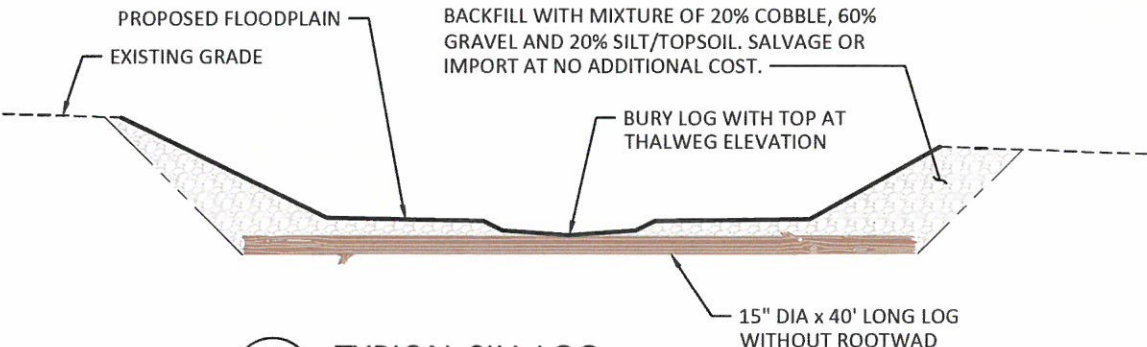


- BOLTED CONNECTION NOTES:**
1. BOLTS SHALL BE MINIMUM 1 1/8" DIAMETER THREADED ROD, GRADE A36 STEEL. WASHERS SHALL BE SQUARE PLATE, 3/8" x 4" x 4" MIN. NUTS SHALL BE HEAVY HEX. ALL HARDWARE SHALL BE HOT-DIP GALVANIZED.
 2. DRILL 1 1/4" HOLE THROUGH LOGS.
 3. INSERT THREADED ROD.
 4. INSTALL PLATE WASHERS AND NUTS. SECURE NUTS BY CHISELING THREADS.
 5. FILE OR GRIND OFF SHARP EDGES.
 6. EACH MAINSTEM STRUCTURE SHALL HAVE AT LEAST 8 FTR CONNECTIONS.

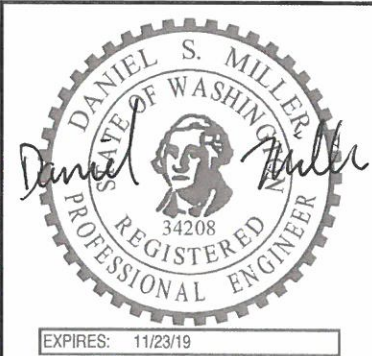
2 14 TYPICAL LOG-LOG CONNECTIONS NOT TO SCALE



1 14 VERTICAL LOG PULLOUT TEST NOT TO SCALE

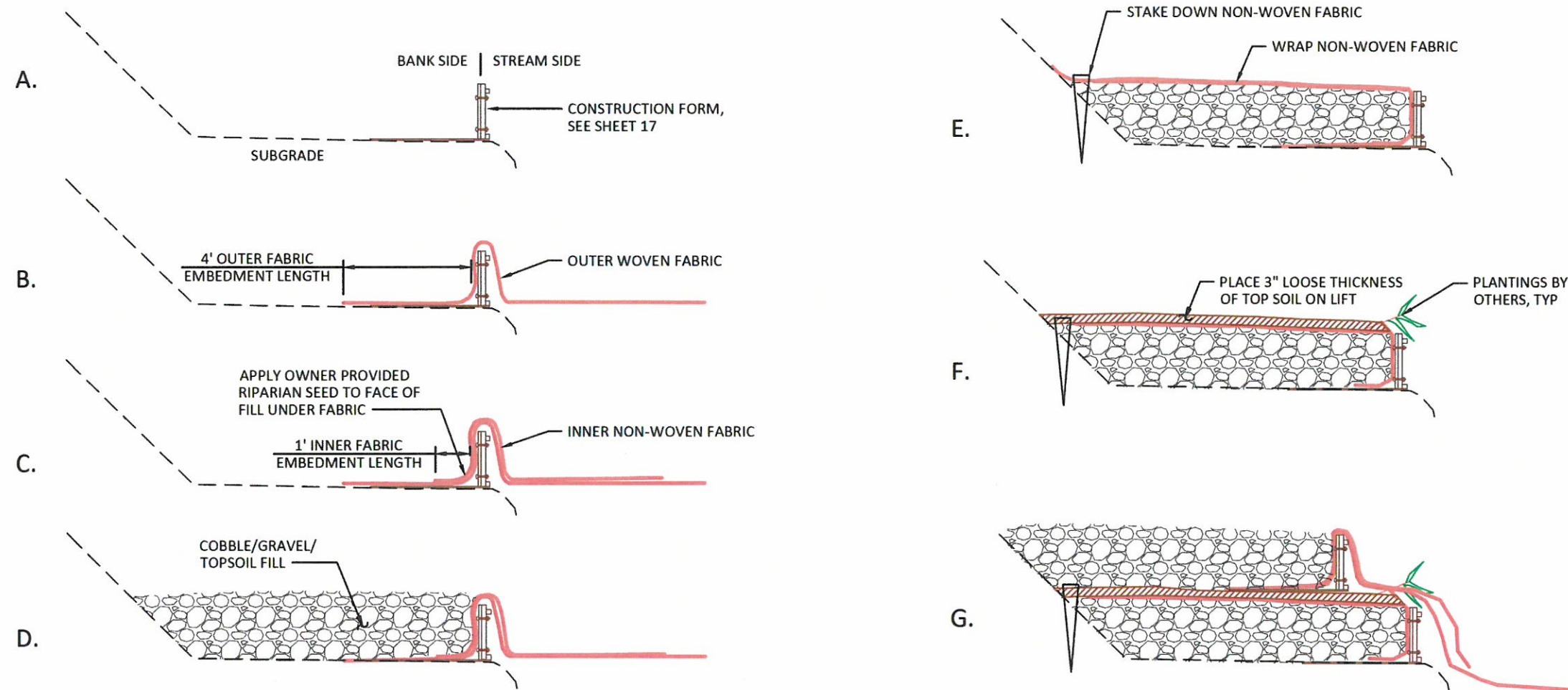


3 14 TYPICAL SILL LOG NOT TO SCALE



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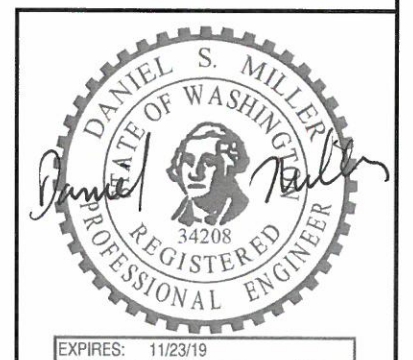
NOTE:
ORDINARY HIGH WATER (OHW) ELEVATION IS BELOW FES LIFTS.

SUGGESTED CONSTRUCTION SEQUENCE FOR FABRIC WRAPPED LIFTS (END VIEW)

NOT TO SCALE

GENERAL INSTRUCTIONS FOR CONSTRUCTING FABRIC WRAPPED LIFTS

- LIFTS WILL BE CONSTRUCTED TO ENCAPSULATE BACKFILL AND ARE ANTICIPATED TO BE ALONG THE FULL LENGTH OF THE BACKFILL IN THE MAD RIVER SIDE CHANNEL (SIDE CHANNEL 1) INLET JAM.
- UNROLL THE OUTER FABRIC (WOVEN COIR) PARALLEL TO THE LONG AXIS OF THE CHANNEL AND POSITION IT SO THAT 4 FEET EXTENDS FOR EMBEDMENT ON THE BANK SIDE OF THE FORMS (FIG B), AND A MINIMUM 3 FEET EXTENDS LENGTHWISE BEYOND THE LAST FORM FOR OVERLAP. DRAPE THE REMAINDER OF THE FABRIC OVER THE TOP OF THE FORMS ON THE STREAM SIDE (FIG B).
- UNROLL THE INNER FABRIC (NON-WOVEN COIR) OVER THE TOP OF THE OUTER FABRIC AND POSITION IT SO THAT AT LEAST 1 FOOT OF THE INNER FABRIC EXTENDS AS AN EMBEDMENT LENGTH ON THE BANK SIDE OF THE FORMS (FIG C). DRAPE THE REMAINDER OF THE FABRIC OVER THE TOP OF THE FORMS ON THE STREAM SIDE AND ALIGN THE LONG EDGES OF THE INNER AND OUTER FABRICS. STRETCH AND PULL THE FABRIC LAYERS TO REMOVE WRINKLES.
- PLACE COBBLE / GRAVEL / TOPSOIL FILL OVER THE FABRIC ON THE BANK SIDE OF THE FORMS TO A COMPACTED DEPTH OF 12 INCHES.
- OWNER PROVIDED RIPARIAN SEED SHALL BE PLACED ON SOIL AND BENEATH FABRIC ON ALL EXPOSED SURFACES.
- FOLD THE LOOSE ENDS OF THE TWO FABRIC LAYERS BACK OVER THE COMPACTED FILL MATERIAL AND STRETCH TIGHTLY TO REMOVE WRINKLES (FIG E). SECURE WITH WOODEN STAKES.
- PLACE 3" OF TOPSOIL ON LIFT. REPEAT 2-6 TO FULL BANK HEIGHT.
- ON THE TOP LIFT, EXCAVATE A KEY TRENCH 1.5 FEET WIDE AND 0.5 FEET DEEP ALONG THE EDGE OF THE OUTER FABRIC LAYER, PARALLEL TO THE FORMS. SECURE FABRIC IN THE KEY TRENCH WITH WOODEN STAKES.
- BACKFILL & COMPACT THE KEY TRENCH WITH TOPSOIL AND CONTINUE TO APPLY TOPSOIL TO SMOOTHLY MERGE WITH EXISTING CONTOURS.



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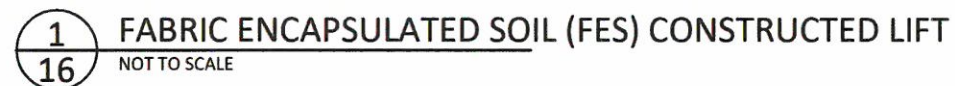
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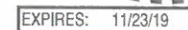
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FABRIC-ENCAPSULATED
SOIL LIFT DETAILS

SHEET
15 OF 19



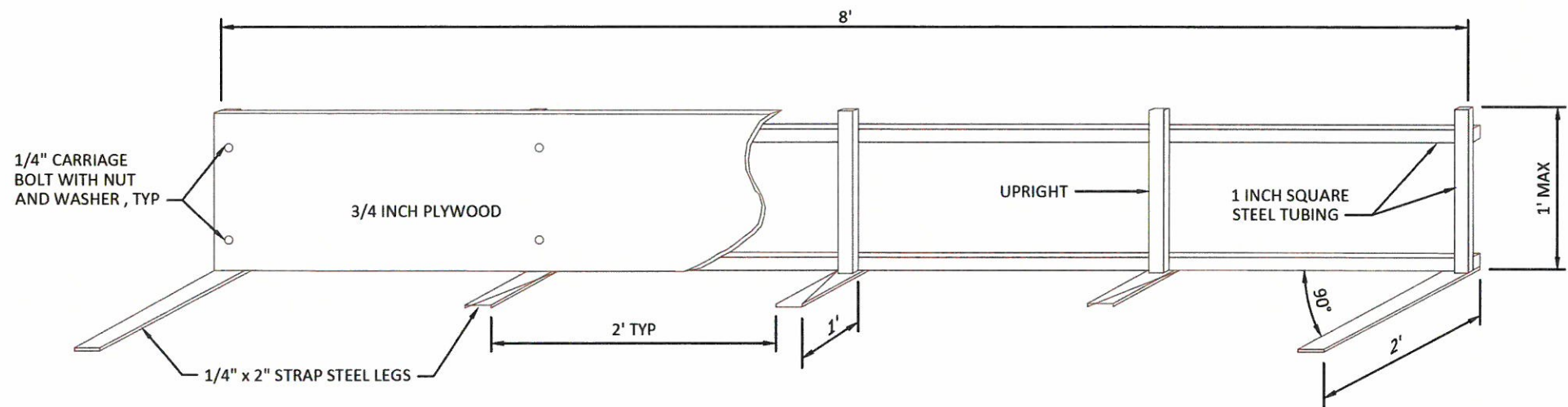
— APPLY OWNER PROVIDED SEED MIX ON TOP OF SOIL BEFORE APPLYING FABRIC



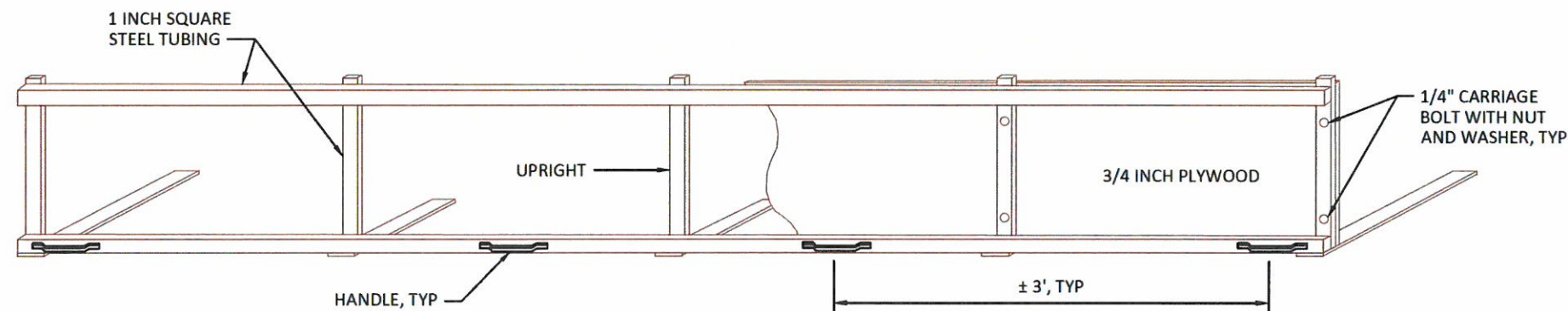
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FABRIC-ENCAPSULATED SOIL LIFT DETAILS

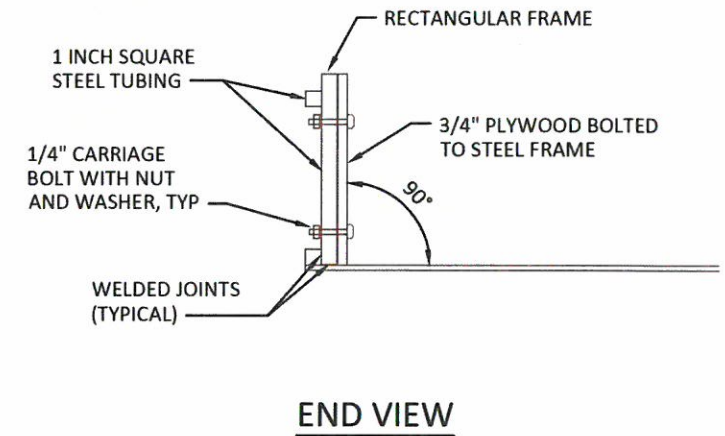


ISOMETRIC VIEW FROM REAR



ISOMETRIC VIEW FROM FRONT

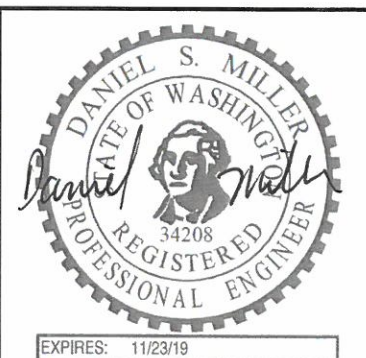
1
17 FABRIC WRAPPED SOIL CONSTRUCTION FORM
NOT TO SCALE



2
17 SUGGESTED BANK CONSTRUCTION FORM
NOT TO SCALE

GENERAL NOTES ON FABRICATION OF FORMS FOR FABRIC WRAPPED SOIL CONSTRUCTION

1. FABRICATE FORMS BY WELDING 1 INCH TUBULAR STEEL TOGETHER TO CREATE A 1x8 FOOT RECTANGULAR FRAMEWORK.
2. WELD LENGTHS OF 1/4x2 INCH STEEL STRAP AT 90 DEGREES TO THE FRAME EVERY 2 FEET.
3. ATTACH A PIECE OF 3/4 INCH PLYWOOD TO THE FRAME USING 1/4 INCH DIAMETER CARRIAGE BOLTS OR EQUIVALENT.
4. REMOVAL AND TRANSPORT OF THE FORMS IS FACILITATED IF HEAVY DUTY HANDLES ARE ATTACHED TO THE FRAME AS SHOWN.



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FABRIC-ENCAPSULATED
SOIL LIFT DETAILS

SHEET

17 OF 19

Provisions

INTRODUCTION

The Washington State Department of Transportation's Standard Specifications for Road, Bridge and Municipal Construction 2018 (WSDOT Standard Specifications) shall apply unless otherwise noted in the following special provisions. The "Contracting Agency" or "Owner" shall be the Confederated Tribes and Bands of the Yakama Nation. Additional specifications in the following contract sections are included for items not covered by the WSDOT Standard Specifications.

DIVISION 1 - GENERAL REQUIREMENTS

Sections 1-02, 1-03, and 1-08 (except 1-08.6, 1-08.7, 1-08.8) of the Standard Specifications do not apply.

ESC, SPCC PLAN AND IMPLEMENTATION

Description

This work shall provide for preparation, implementation, and removal of a temporary Erosion Sediment Control (ESC) plan and for the preparation and implementation of a Spill Prevention Control and Countermeasure (SPCC) plan in accordance with Section 1-07.15 of the Standard Specifications, and as amended by these special provisions.

- 1. Biodegradable hydraulic fluid shall be installed into each piece of heavy machinery working within 50 feet of Streams and created Side Channels.
- 2. Silt fence or cofferdams shall be installed between water and work areas shown in the plans.
- 3. Staging, stockpile, and access areas are shown in the plans. The irregular shape of these areas is intended to provide large areas but that also avoid impacts to existing trees. The owner will flag a corridor to delineate trees that shall be avoided. The contractor shall install high visibility fence along the flagged corridor. Areas within the footprint of project earthwork can also be used as staging & stockpile areas.
- 4. This item includes erosion control measures, including the maintenance or replacement of spent erosion control measures.

Measurement

"ESC, SPCC Plan and Implementation," including the above amendments to the item will be measured by lump sum.

Payment

Payment will be made in accordance with Section 1-09.9 for the following bid items: "ESC, SPCC Plan and Implementation" per lump sum.

MOBILIZATION

This item consists of work in accordance with Section 1-09.7 of the Standard Specifications.

Measurement

"Mobilization" will be measured by lump sum. Demobilization shall be incidental to "Mobilization".

Payment

"Mobilization", lump sum.

TRAFFIC CONTROL

Temporary traffic control requirements shall include barricades, construction signage and flaggers at the entrance to the project site and any other measures per Section 1-10 and local regulations.

Measurement

"Traffic Control" will be measured by lump sum.

Payment

"Traffic Control", lump sum.

DIVISION 2 - EARTHWORK

CLEARING AND GRUBBING

This item consists of clearing and grubbing for construction as shown on the plans including those areas required for temporary access routes and in accordance with Section 2-01 of the Standard Specifications, and as amended by these special provisions.

- 1. Areas for clearing and grubbing shall be the minimum necessary and within the limits of disturbance shown on the plans. These areas will be flagged in the field by the owner prior to clearing and grubbing work. Clearing and grubbing shall not occur outside of the designated limits.
- 2. Disturbance to river banks and riparian vegetation shall be minimized and shall only include those areas marked by the owner.
- 3. Included in this item are the removal and salvage of trees, varying in size. Salvaged trees shall be reused as woody material. Trees to be salvaged will be identified in the field by the owner's representative.
- 4. Shrubs removed during clearing and grubbing shall be used as slash during installation of LWM.
- 5. Vegetation protection and restoration per Section 1-07.16(2) shall be incidental to clearing and grubbing.

Measurement

Removal and salvage of trees and shrubs shall be considered incidental to clearing and grubbing bid item. Measurement and compensation for the installation of salvaged trees is described under "LWM" and paid under that item. No additional compensation will be allowed.

"Clearing and Grubbing," including the above amendments to the item will be measured by lump sum.

Payment

Payment will be made in accordance with Section 1-09.9 for the following bid items: "Clearing and Grubbing" per lump sum.

COFFERDAM

This section is added.

8-31.1 Description

The work consists of furnishing, installing, monitoring, maintaining, and removing cofferdams, and coordinating with the owner for fish salvage relocation activities.

8-31.2 Materials

8-31.2(1) The contractor shall provide all required materials for the project. Materials for bulk bag cofferdam are described in the project plans.

8-31.2(2) If contractor elects to use an alternate method for temporary cofferdam, contractor shall provide to the owner shop drawings and/or vendor cut sheets for substitutions and submit cofferdam/diversion plan for review prior to implementation.

8-31.3 Construction Requirements

8-31.3(1) Cofferdams

The contractor shall isolate the work area from the waterway by installing cofferdams per the plans. No turbidity from construction activities shall enter the waterway. Cofferdams shown on the plans are a suggested method. Contractor shall determine own method and submit a cofferdam and diversion plan for review and approval.

If bulk bag cofferdam is the selected method, bulk bag cofferdam construction requirements are described in the plans.

8-31.3(2) Coordination with Fish Rescue

The contractor shall provide minimum 3 days advance notice to the owner before each cofferdam installation date. The contractor shall understand that cofferdam installation requires coordination with the owner and only after the owner has completed fish rescue can the cofferdams be completed.

8-31.4 Measurement

Measurement will be based on the item from the bid list installed and the work for that portion completed.

"Cofferdam" will be measured by lump sum.

8-31.5 Payment

Payment will be made in accordance with Section 1-09.9 for the following bid items: "Cofferdam" per lump sum.

PUMPING

This section is added.

8-32.1 Description

The work consists of furnishing, monitoring, operating, maintaining, and removing pumps, and installation of control of water BMPs.

8-32.2 Materials

8-32.2(1) One Godwin DriPrime 3" pump. Pumps shall run continuously as needed to prevent turbidity from entering the river. Pumps shall have soundproofing. Electric pumps with generators and quiet packs are a preferred and approved method.

8-32.2(2) 300 feet of 3 inch discharge hose.

8-32.2(3) One or more 2-inch (or larger) trash pumps, with at least 200 feet of discharge hose.

8-32.2(4) Environmental protection measures such as straw bales, perforated pipe for discharge flow distributors, geotextiles, filter bags, or other means of controlling water and turbidity. No turbidity shall be allowed to enter the river or surface waters.

8-32.3 Construction Requirements

8-32.3(1) Pumps

Groundwater and surface waters are expected to be encountered during excavations. Pumping shall prevent groundwater that has mixed with construction water from entering the river and dewater construction areas.

- 1. To help prevent turbidity from leaking through the cofferdams at the downstream end of the project, the contractor shall provide and operate pump(s), up to 3" in size, to lower the water surface within the isolated area and discharge to an infiltration area.
- 2. Construction water shall be pumped away from work areas and be infiltrated into the ground and without entering the waterway.

8-32.3(2) Environmental Protection Measures

If infiltration becomes an ineffective means to control turbidity, additional and alternative methods, such as pumping into stilling basins or filtration geotextile fabric shall be required at the contractor's expense.

8-32.4 Measurement

Measurement will be based on the item from the bid list installed and the work for that portion completed.

"Pumping" will be measured by lump sum.



LWM
This section is added.

8-33.1 Description

All references to large woody material (LWM); logs; logs with root wads; vertical logs; excavation; backfill; imported gravel/cobble with fines or topsoil; salvaged trees; or slash within the plans and these special provisions shall be considered work associated with this item. This item consists of installing LWM and includes movement from stockpiles to installation areas, excavation and backfill to partially bury LWM and installation of vertical logs as shown on the plans.

8-33.2 Materials

8-33.2(1) Logs

Logs will be supplied by the owner to the site and consist of bare logs, logs with root wads, and vertical logs. Quantities of owner supplied logs are shown on sheet 3 quantities estimate.

8-33.2(2) Salvaged Trees

Trees flagged by the owner for clearing from the access route will be alder and miscellaneous species 6inch DBH or greater.

8-33.2(5) Slash

Slash will be brush and small trees up to 6inch DBH cleared from the access route and excavation areas.

8-33.3 Construction Requirements

8-33.3 (1) Locations of logs, logs with root wads and vertical logs shall generally be as indicated on the plans. However, final location will depend upon the size, shape and quantity of material delivered or salvaged. Installation of LWM shall be understood to require a “fit in the field” approach as directed by the owner’s representative.

8-33.3 (2) LWM shall be stabilized as shown in the plans and directed by the owner’s representative.

8-33.3 (3) Vertical logs shall be placed in approximate numbers indicated on the plans at specific locations in the field as directed by the owner’s representative. Vertical logs shall be installed using vibratory pile driving equipment. Pre-approved equipment includes 1) HMC Movac sonic side grip Model SP80, 2) Grizzly MG90, or 3) approved equal. Installation by hammer pile driver, vibratory plate compactor or excavation shall not be allowed. Vertical logs shall require embedment depth as indicated on the plans. Vertical logs will be tested as indicated on the plans. Vertical logs shall have broken tops, and diversity in angles and heights above ground to provide a natural appearance.

8-33.3(4) Slash shall be incorporated into LWM structures or spread onto the constructed surfaces.

8-33.4 Measurement

"LWM" will be measured by lump sum.

Measurement shall include all items required to place and install logs including but not limited to: 1) excavation and on-site disposal of native material, 2) salvage or import of gravel and cobble mixed with approximately 30% of fines or topsoil for burial of logs and 3) installation of LWM, logs, logs with rootwads, vibratory driven vertical logs, vertical log testing and vertical log top treatments.

8-33.5 Payment

Payment will be made for the bid item “LWM” per lump sum.

The unit contract prices for “LWM” shall be full compensation for all costs incurred for equipment, materials and labor for installing and securing LWM as outlined in the plan.

Fabric Encapsulated Soil (FES) Lifts

This section is added.

8-34.1 Description

All reference to fabric encapsulated soil (FES) lifts, FES lifts, FESL or FES shall include placement of biodegradable fabric encapsulated soil lifts along the stream bank face within the back fill area for LWM placements. FES lifts are a combination of excavation, non-woven and woven coir fabrics, construction forms, fill, seeding and wooden stakes arranged as shown on the plans. The contractor shall provide all labor, materials, and equipment necessary for the construction and installation of FES Lifts as shown on the plans.

8-34.2 Materials

8-34.2 (1) Coir Fabric

Coir fabrics shall consist of 100% biodegradable materials. Nylon or synthetic fiber material in any of the coir fabrics is not acceptable. Only those coir fabrics specified will be accepted unless otherwise reviewed and approved by the owner.

Each roll of coir fabric shall be purchased new, packaged individually in a suitable sheet, wrapper, or container to protect the fabric from damage to ultraviolet light, moisture, and mud during normal storage and handling.

Each roll of coir fabric shall be identified with a tag or label securely affixed to the outside of the roll on one end. The label shall include the manufacturer or supplier, the style number, and the roll and lot numbers.

Store all coir fabrics elevated off the ground and ensure that they are adequately covered to protect the material from damage and exposure to moisture and sunlight. Protect coir fabrics from sharp objects which may damage the fabric. Coir fabrics damaged during transport, storage or placement shall be replaced at the contractors expense.

The owner may randomly select and obtain samples from rolls of coir fabric after arrival on the site and prior to installation to compare to previously submitted samples.

8-34.2 (1a) Non-woven Coir Fabric

The non-woven coir fabric shall be North American Green (NAG) style C125BN 100% biodegradable coconut fiber mat or equal as reviewed and approved by the owner. The fabric shall be delivered in 2 meter (minimum) roll widths and shall meet or exceed the following criteria:

Thickness	ASTM D1777	0.251 inches
Dry Tensile Strength	ASTM D4632	20.7 lbs
Elongation	ASTM D463	26.6%
Wet Tensile Strength	ASTM D4632	22.2 lbs
Elongation	ASTM D4632	14.1%
Weight	ASTM D3776	10.7 oz/yd
Open Area	Measured	7%
Roll Width	Measured	2 meters (minimum)
Roll Length	Measured	108 feet

8-34.2 (1b) Woven Coir Fabric

The woven coir fabric shall be a high strength 900 weight coir (100% coconut fiber), continuously woven mat with no seams and the following minimum average roll properties:

Property	Test Method	Units		
		Typical Value		
		MD	CD	
Mass per Unit Area	ASTM D6475	23.14		oz/yd ²
Thickness	ASTM D6525	444		mils
Water Absorption	ASTM D1117	221		%
Light Penetration	ASTM D6567	21		%
Ground Cover	ASTM D6241	79		%
Tensile Strength	ASTM D6818	127.2	64.5	lbs/in
Elongation	ASTM D6818	52.3	40.6	%

Source: Belton Industries, Geocoir 900 product data sheet (11/2011)

MD = machine direction

CD = cross machine direction

The woven coir fabric shall have no seams and shall be Bon Terra CF9, Belton Geocoir 900, Nedia KoirMat 900, Rolanka BioDMat 90 or, approved equal.

8-34.2 (2) Wood Stakes

Wood stakes shall be used to anchor all coir fabrics. Stakes shall be wooden stakes solid and free of knots or defects. Stakes shall be minimum 18" in length. Stakes shall be wedge shaped with a minimum equivalent diameter equal to 1.5" at the top and should come to a point at the bottom. Stakes should be constructed by cutting a standard grade 2"x4" lumber lengthwise along the diagonal to create wedge shaped stakes or by some other method resulting in a stake of dimensions reviewed and approved by the owner.

8-34.3 Construction Requirements

FES lifts shall be constructed as shown on the design plans and specified below.

1. FES lifts shall be placed along the river bank the full length of the inlet jam (subgrade) for placement of LWM.
2. Place forms along the bank in locations to achieve the lines and grades shown on the plans.
3. Roll woven coir fabric along the streambank and place fabric against the subgrade and (vertical) form face with embedment lengths as shown on the plans.
4. Roll non-woven coir fabric along the streambank and place on top of the woven coir fabric to achieve the embedment length shown on the plans.
5. Remove all wrinkles in coir fabric and ensure that fabrics rest tightly against the subgrade and form face with the proper embedment lengths. Allow excess coir fabric to drape over the form toward the stream channel.
6. Apply seed mix provided by the owner to that portion of non-woven coir fabric that is placed against the vertical face of the form.
7. Place the appropriate soil and compact to 85% standard proctor. Soil lift shall be a maximum 1.0 foot thick.
8. Apply seed mix provided by the owner as shown on the plans to the soil lift.
9. Pull coir fabrics that are draped over the form back over seeded soil. Pull coir fabrics tight and stake according to the specifications and plans.
10. Remove forms. Note, forms can be removed by hand, or pried with a bar if necessary. Contractor shall not use equipment to remove forms.
11. Repeat 2-10, above, to achieve the lines and grade shown on the plans.

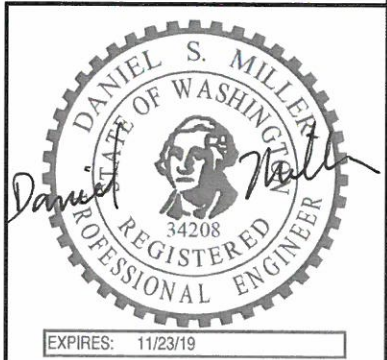
Finished FES lifts shall have no loose coir fabric. Areas with loose coir fabric shall be staked with tapered wooden stakes to hold coir fabrics firmly to underlying soil. If coir fabric folds are required around channel bends, the fold shall be in the direction of flow and coir fabric shall be staked at the folds.

8-34.4 Measurement

Measurement for FES lifts shall be lump sum. All equipment, labor and materials required to complete FES lifts shall be incidental to “FES Lifts”.

8-34.5 Payment

Payment shall be lump sum for item “FES Lifts”.



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SPECIFICATIONS

**(Exhibit-E) Heavy Equipment List and Daily Standby Rates – Tillicum
Fan Habitat Enhancement Project 2018**

#	Item Description	Daily Standby Rate
1		\$
2		\$
3		\$
4		\$
5		\$
6		\$
7		\$
8		\$
9		\$
10		\$
11		\$
12		\$
13		\$
14		\$
15	Example: 160 Series Excavator	\$ 50.00