



# Confederated Tribes of the Colville Reservation

P.O. Box 150, Nespelem, WA 99155 (509) 634-2277

## Request for Proposals: Construction services for the Antoine Creek enhancement project

### **General Information**

Posted Date: 4/23/2024  
Deadline for Questions: 5/6/2024  
Final Answers Posted: 5/8/2024  
Closing Date: 5/13/2024 at 5:00 p.m., PST

### **1.0 Introduction**

The Habitat Division of the Fish and Wildlife Program is seeking proposals to construct an aquatic restoration project on Antoine Creek, located near Tonasket, Washington. Project elements consist of installing a 32' span bottomless arch culvert & spread footings, constructing 7,100 feet of new stream channel and installing 1,700 logs in a variety of habitat structures. This project is in support of aquatic habitat restoration activities.

The winning contractor will need to show experience completing similar river restoration projects and will be responsible for all aspects of the project construction.

The Colville Confederated Tribes intends to award the construction contract to the highest quality proposal. The performance period for the awarded contract will be between the contract start date and October 30, 2024.

### **About the Colville Tribes**

The Confederated Tribes of the Colville Reservation is a Sovereign Nation. Presidential Executive Order established the Colville Indian Reservation in 1872, with a land base of 1.4 million acres, located in North Central Washington State and additional off-reservation trust lands. The Administrative Headquarters are located at the Colville Indian Agency Campus, approximately 2 miles south of Nespelem, WA with offices located throughout our reservation.

Our business hours are Monday thru Thursday 7:00 and 5:30 p.m. excluding Friday, Saturdays, Sundays, Tribal and Federal holidays.

### **1.02 Proposal Deadline/Address/Contents**

The deadline for receipt of proposals is proposals is 5:00 p.m. on **5/13/2024**, PST and must be received by the Tribes, either by hand delivery, express delivery, **email** or regular mail. All proposals

and accompanying documentation will become the property of the Colville Tribes and will not be returned. Consultant accepts all risk of late deliver of mailed proposal regardless of fault.

Emailed proposals are to be sent to:

[John.Box.FNW@colvilletribes.com](mailto:John.Box.FNW@colvilletribes.com)

Hard copies may be mailed to:

Fish and Wildlife

John Box

P.O. Box 150 Nespelem, WA 99155

### **1.03 Proposal Preparation Instructions and Information Required in Your Proposal**

In order to facilitate the review process and obtain the maximum degree of comparison, proposals should include the following information presented in the order and format shown below: (Davis Bacon wages apply).

#### **1.04 Required Format/Information**

- **Title Page**: Show Request for Proposal (RFP) subject, name of Respondent/Respondents firm(s), address, telephone and fax numbers, name of contact person and date of submission. Attachment A
- **Transmittal Letter**: A one or two page summary stating the Responder's understanding of the work to be done and making a positive commitment to perform the work within the time period required.
- **Table of Contents**: A clear identification of the material by section and page number.
- **Profile of the Respondent/Respondents**: Include location of office(s), number of partners, managers, supervisors, seniors, and other professional staff. Describe the range of activities performed by your firm.
- **Approach**: Provide a detailed and clear description of the approach and methodology for implementing the work.
- **Qualifications and Experience of Staff**: Include a list of personnel to be used for this work and their qualifications. The Responder/Responders must include a statement in the proposal to the effect that "the key personnel assigned to this project as described in this proposal will not be removed from the Project without prior approval of the Tribes' COR."
- **Qualifications and Experience of Firm**: Company experience which is relevant to the proposed work, i.e. experience with other aquatic restoration actions. References: Attachment B
- **Indian Preference**: CTCR shall, to the greatest extent feasible, provide preference to Indian-owned economic enterprises and Indian organizations. Projects developed and operated with assistance under 25 CFR Part 1000 are subject to Section 7(b) of the Indian Self-determination and Education Assistance Act (25 U.S.C. 450e (b)). Section 7(b) provides that to the greatest extent feasible, preference shall be given to Indian organizations and Indian-owned economic enterprises in the award of all contracts and subcontracts. If applicable, please include documentation of Indian enrollment and TERO certification. Preference must be provided in accordance with the requirements set

forth in 24 CFR 1000.48 and Chapter 10-1 Tribal Employment Rights. If applicable, provide documentation of Indian enrollment and TERO certification. In accordance with the adopted TERO Compliance, to be eligible as a tribally owned or Indian owned business, the business shall apply for certification with the Tribal Employment Rights Office (TERO) and must be eligible for certification prior to submitting a proposal. Contact TERO for more information: TERO Director, P. O. Box 150 Nespelem, WA 99155. Phone 509.634.2200

- **Cost Proposal:** Include a cost statement showing mobilization fee personnel and equipment daily rates.. Also, include an itemized listing of all other expenses or fees that are anticipated. Include a total project cost estimate. Attachment A.

### **1.05 Questions Regarding the Project**

Requests for interpretation/clarification of this RFP must be emailed to John Box at [John.Box.FNW@colvilletribes.com](mailto:John.Box.FNW@colvilletribes.com). Unauthorized contact with other tribal employees or by any method than by email regarding this RFP may result in disqualification. Questions submitted by any method other than email may result in disqualification. All oral communications will be considered unofficial and non-binding on the Tribes.

All questions must be submitted no later than **3:00 p.m. 5/6/2024**, PST. All responses will be posted on the Tribes' web site at: <https://www.colvilletribes.com/rfp> within two business days after receipt of the question.

### **2.0 Evaluation Procedures**

The evaluation factors reflect a wide range of considerations. Consequently, the Colville Tribes may select other than the lowest cost solution. The objective is to choose the Contractor capable of providing a reliable and effective solution within a reasonable budget.

An award will be made to a responsible Indian Bidder if within 10% of the lowest non-Indian Proposal Price and defined experience.

Evaluation Criteria: The proposals will be evaluated on the basis of the following criteria and point ranges.

- 1) Responsiveness of the proposal in clearly stating an understanding of the work to be performed. (0-20)
- 2) Reasonableness of overall time estimates (0-10)
- 3) Experience at constructing aquatic enhancement projects of similar scope and scale to the proposed project (0-45)
- 4) Indian preference (0-10)
- 5) TERO certification documented & included (0-5)
- 6) Cost (0-10)

Maximum Points: (100)

### **3.0 Acceptance/Rejection of Proposals**

The CTCR reserves the right to reject any and all proposals, whether or not within applicable cost limits, and to waive any information in the proposals received, whenever such rejection or waiver is in the best interest of the CTCR. In the event of disagreement or grievances regarding contract, it is the CTCR

policy to resolve all contractual issues per adopted Procurement Policy.

#### **4.0 Scope of work and specifications**

##### **4.01 Scope of work**

The winning contractor will be responsible for all aspects of project construction as described in the included design package. The winning contractor must have GPS machine control on at least two excavators and one bulldozer.

The following list of key project actions is provided to aid in project understanding.

- Set erosion control and stormwater management.
- Access road improvement and ongoing maintenance.
- Establish staging areas.
- Work area isolation for instream work.
- Coordinate, purchase and deliver to the site a 32'wide bottomless arch culvert with precast spread footings.
- Assemble and install bottomless arch culvert.
- Install appropriate water bypass system to divert the entirety of the stream for in water work. Expected stream flow is <5 cfs.
- Construct ~30 Beaver Dam Analogues.
- Transport logs from 3 onsite staging areas to final placed locations.
- Install 3" untreated posts and tree tops for floodplain roughness and post assisted log jams.
- Repair all barb wire fence crossings.
- Decompact soils.
- Repair impacted access roads that are used by the public.
- Prepare areas with disturbed soils for planting.
- Continuous dust abatement during the entire construction period.

The attached design package is a draft final plan set. No major changes are expected in the final design package. The final design package and specification sheet will be available to the selected contractor before the contract is signed.

##### **4.02 Respondent Capacity to Conduct the Project**

The Respondent/Respondents shall provide evidence of its ability to furnish all qualified personnel, facilities, equipment, and supplies to conduct an organization-wide financial and compliance audit in accordance with appropriate standards on behalf of the Confederated Tribes of the Colville Reservation.

##### **4.03 Reports Required**

Reserved

##### **4.04 Contract**

Prior to any binding agreement with the successful Respondent(s) for services under this RFP, the successful Respondents will be required to enter into a Tribal Contract for the requested services under this RFP. This RFP does not constitute an obligation or agreement on the part of

the Tribes.

#### **4.05 Governing Law**

This RFP and the project identified shall be subject to the laws of the Confederated Tribes of the Colville Reservation. The proposer consents to the jurisdiction of the Colville Tribes. Nothing in this document, including attachments and exhibits, shall be deemed to waive the sovereign immunity of the Colville Tribes, which is hereby expressly re-affirmed. The terms of this paragraph shall supersede any conflicting or contrary provisions in this RFP, including attachments and exhibits.

#### **4.06 Period of Performance**

Any contract let from this RFP shall be in effect upon the date of award and shall continue to be in effect until the termination of the Contract. It is anticipated that the Project should be completed between August 1st 2024, and October 31st, 2024.

#### **4.07 Key Personnel**

The personnel specified in the Responder/Responder's proposal are considered to be essential to the work being performed hereunder. Prior to changing any of the individuals specified in the proposal, the Responder/Responders shall notify the Contracting Officer reasonably in advance and submit a justification for the proposed substitutions in sufficient detail (including names, titles and résumés) to permit the evaluation of the impact on the quality of work performed. No personnel changes shall be made by the Contractor without the prior written consent of the COR.

#### **4.08 Payment and Submission of Invoices**

Payment for work performed under the contract shall not exceed the agreed upon amount, unless otherwise agreed upon, in writing, by both parties. Payment shall be made to the contractor based on progress achieved. The contractor must submit each invoice in sufficient detail to document progress. Invoices will not be accepted on more frequent intervals than once a month. Invoices requesting payments shall be prepared and submitted in duplicate and contain the following information: contract number, detailed description of services, and total cost.

In the event of abandonment of the work or termination of the contract for any cause, under the respective sections of the contract, the terms of any settlement shall be subject to approval by CTCR Contracting Officer or designee. The CTCR shall not disburse monies after giving notice of abandonment or termination. A settlement may be reached to include may include restitution of funds disbursed for services not performed.

### **5.0 Terms and Conditions**

#### **5.01 Site Visitations**

A site visit will occur on May, 2, 2024 at 10:00 AM. Meeting location will be at the gate at the intersection of Whiskey Creek Rd and Havillah Rd identified in the attached plans. Please send an RSVP to [John.Box.FNW@colvilletribes.com](mailto:John.Box.FNW@colvilletribes.com) if you will be attending the walk through. In order to submit a bid a site visit will be required. By submitting his/her proposal, the Consultant acknowledges that he/she has satisfied him/herself as to the nature of the work.

#### **5.02 Contractor's Cost to Develop Proposals**

Costs for developing proposals in response to the RFP are entirely the obligation of the Consultant and shall not be chargeable in any manner to the Colville Tribes.

### **5.03 Completeness of Proposal**

The Consultant must submit a completed Proposal (Form 1) signed by a Contractor representative authorized to bind the proposing firm contractually. The Consultant must identify on the form any exceptions the Contractor takes to the Tribes RFP, or declare that there are no exceptions taken

### **5.04 RFP Amendments**

The Colville Tribes reserves the right to request any respondent clarify its proposal or to supply any additional material deemed necessary to assist in the evaluation of the proposal.

The Colville Tribes reserves the right to change the RFP schedule or issue amendments to the RFP at any time. The Colville Tribes also reserves the right to cancel or reissue the RFP. All such addenda will become part of the RFP. It is the consultant's responsibility to check the Tribe's website ([www.colvilletribes.com](http://www.colvilletribes.com)) for the issuance of any amendments prior to submitting a proposal response.

### **5.05 Insurance Requirements**

The selected Offeror shall procure and maintain for the duration of its Contract awarded pursuant to this RFP insurance against claims for injuries or damages to property, which may arise from or in connection with the performance of the work by the Offeror, his agents, representatives, employees or subcontractors. The Offeror shall pay the cost of such insurance. Insurance shall meet or exceed the following unless otherwise approved by the Colville Tribes.

- A. Minimum Insurance
  - 1. Commercial General Liability coverage with limits not less than \$1,000,000 per occurrence / \$2,000,000 annual aggregate.
  - 2. Stop Gap/Employers Liability coverage with limits not less than \$ 1,000,000 per accident/disease.
  - 3. Business Automobile Liability coverage with limits not less than \$1,000,000 per accident for any auto.
  - 4. Worker's Compensation coverage as required by the Industrial Insurance Laws of the State of Washington/
- B. Self-Insured Retentions  
Self-insured retentions must be declared to and approved in writing by the Colville Tribes.
- C. Other Provisions  
Commercial General Liability policies shall be endorsed to:
  - 1. Include the Colville Tribes, its officials, employees and volunteers as additional insured.
  - 2. Provide that such insurance shall be primary as respects any insurance or self-insurance maintained by the Colville Tribes.
  - 3. Each insurance policy shall provide that coverage shall not be canceled except after thirty (30) days written notice has be given to the Colville Tribes.
- D. Acceptability of Insurers  
Insurance shall be placed with insurers with a rating acceptable to the Colville Tribes.

- E. **Verification of Coverage**  
Offeror awarded a contract under this RFP shall furnish the Colville Tribes with certificates of insurance required herein. The certificates are to be received and approved by the Colville Tribes before work commences. The Colville Tribes reserves the right to require complete, certified copies of all required insurance policies at any time.
- F. **Subcontractors**  
Subcontractors hired pursuant to this RFP must provide coverage, which complies with the requirements state herein.

Questions regarding insurance requirements can be discussed with the Tribes Risk Management Office, (509) 634-2447.

#### **5.06 Equal Opportunity Requirements**

The Colville Tribes is an equal opportunity employer and requires all Contractors to comply with policies and regulations concerning equal opportunity. The contractor, in the performance of the Contract, agrees not to discriminate in its employment because of the employees or applicant's race, religion, national origin, ancestry, sex, age, or physical handicap.

#### **5.07 Other Compliance Requirements**

In addition to the nondiscrimination and affirmative action compliance requirements previously listed, the Contractor awarded a Contract shall comply with Federal, State, Tribal and local laws, statutes and ordinances relatively to the execution of the work. This requirement includes, but is not limited to, protection of public and employee safety and health; environmental protection; waste reduction and recycling; the protection of natural resources; permits; fees; taxes; and similar subject.

#### **5.09 Ownership of Documents**

All documents, reports, studies, conclusions and summaries prepared by the Consultant shall become the property of the Colville Tribes.

#### **5.10 Confidentiality of Information**

All information and data furnished to the Contractor by the Colville Tribes and all other documents to which the Contractor's employees have access during the term of the Contract, shall be treated as confidential to the Colville Tribes. Any oral or written disclosure to unauthorized individuals is prohibited.

#### **5.11 Hold Harmless**

The Contractor shall hold harmless, defend, and indemnify the Colville Tribes and the Tribes officers, agents, and employees against any liability that may be imposed upon them by reason of the Contractor's failure to provide worker's compensation coverage or liability coverage.

#### **5.12 Safety**

All applicable regulations pertaining to safety, the Contract Manager shall strictly adhere to including Tribal Occupational Safety and Health Act (TOSHA) standards and regulations. Particular care shall be exercised in connection with the operation of vehicle and other equipment on the site.

**5.13 DEBARRED**

Selected consultant must sign a Certification Regarding Debarment and Suspension stating that they are not presently debarred or suspended or declared ineligible for the award of contracts by any Federal, State or any Tribal Government. Attachment B



ATTACHMENT A:

PROPOSAL COVER PAGE: \_\_\_\_\_ Project Title \_\_\_\_\_

Company Name \_\_\_\_\_ Date \_\_\_\_\_

Address \_\_\_\_\_

Contact Person and Title: \_\_\_\_\_

Telephone Number \_\_\_\_\_ Fax Number \_\_\_\_\_

Email address \_\_\_\_\_

Length of time in business \_\_\_\_\_

Gross revenue for the prior fiscal year (in US dollars). \_\_\_\_\_

Total number of similar clients served in similar capacity \_\_\_\_\_

**TOTAL ESTIMATED PRICE OF SERVICES (Attach detailed budget if necessary)**

Cost of Services (Anticipated Total Hours x Rate) \_\_\_\_\_

Overhead costs (describe) \_\_\_\_\_

Necessary travel \_\_\_\_\_

TERO Fees \_\_\_\_\_

Other (describe) \_\_\_\_\_

Total Price \$ \_\_\_\_\_

Authorized Respondent Signature \_\_\_\_\_

Telephone \_\_\_\_\_

ATTACHMENT B:

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS.

A. The Firm/Respondent certifies, to the best of its knowledge and belief, that:

1. The Firm/any of its Principals-

(a) Are ( ) are not ( ) presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency or any Tribal Government.

(b) Have ( ) have not ( ), within a 7 year period preceding this offer, been convicted or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction or records, making false statements, tax evasion, ore receiving stolen property; and

(c) Are ( ) are not ( ) presently indicted for, or otherwise criminally or civilly charged by a government entity with, commission of any of the offenses enumerated in subdivision (A)(1)(b) above.

(d) The Firm has ( ) has not ( ), within a 7-year period preceding this offer, had one or more contracts terminated for default by any Federal agency or any Tribal Government.

2. Principals for the purposes of the certification, mean officers; directors, owners, partners, and persons having primary management or supervisory responsibilities within a business entity (e.g. general manager; plant manager, head of a subsidiary, division, or business segment, and similar positions). If this certification concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under 18 U.S.C. § 1001.

B. The Firm shall provide immediate written notice to the Contract Officer if at any time prior to contract award the Firm learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

C. A certification that any of the items in paragraph (A) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Firm's responsibility. Failure of the Firm to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Firm's proposal non-responsive.

D. Nothing contained in the foregoing shall be construed to require establishment of a system or records in order to render, in good faith, the certification required by paragraph (A) of this provision. The knowledge and information of a Firm is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

E. The certification in paragraph (A) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Firm knowingly rendered an erroneous certification, in addition to the remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

I hereby certify that the information above is true accurate and complete under penalty of fraud.

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Authorized Signature

ATTACHMENT C:

CLIENT REFERENCES (Include additional pages if desired)

Client Reference # 1

Name of Entity/Firm: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Contact Name \_\_\_\_\_  
Title \_\_\_\_\_  
Phone Number \_\_\_\_\_  
Date when work performed: \_\_\_\_\_  
Description of work performed: \_\_\_\_\_  
\_\_\_\_\_

Client Reference # 2

Name of Entity/Firm: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Contact Name \_\_\_\_\_  
Title \_\_\_\_\_  
Phone Number \_\_\_\_\_  
Date when work performed: \_\_\_\_\_  
Description of work performed: \_\_\_\_\_  
\_\_\_\_\_

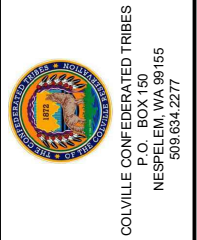
Client Reference # 3

Name of Entity/Firm: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City/State/Zip Code: \_\_\_\_\_  
Contact Name \_\_\_\_\_  
Title \_\_\_\_\_  
Phone Number \_\_\_\_\_  
Date when work performed: \_\_\_\_\_  
Description of work performed: \_\_\_\_\_  
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# ANTOINE CREEK ENHANCEMENT PROJECT

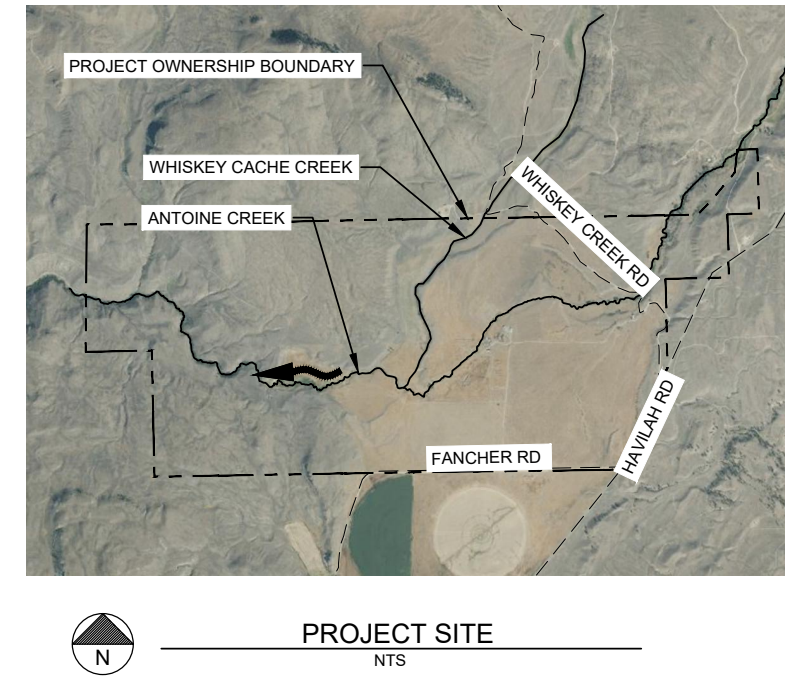
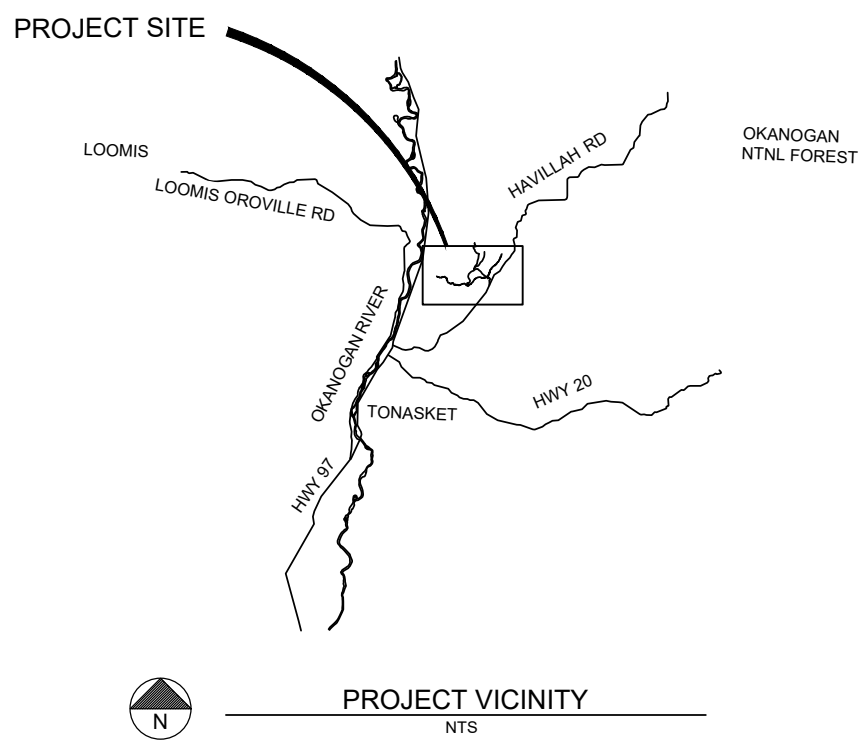
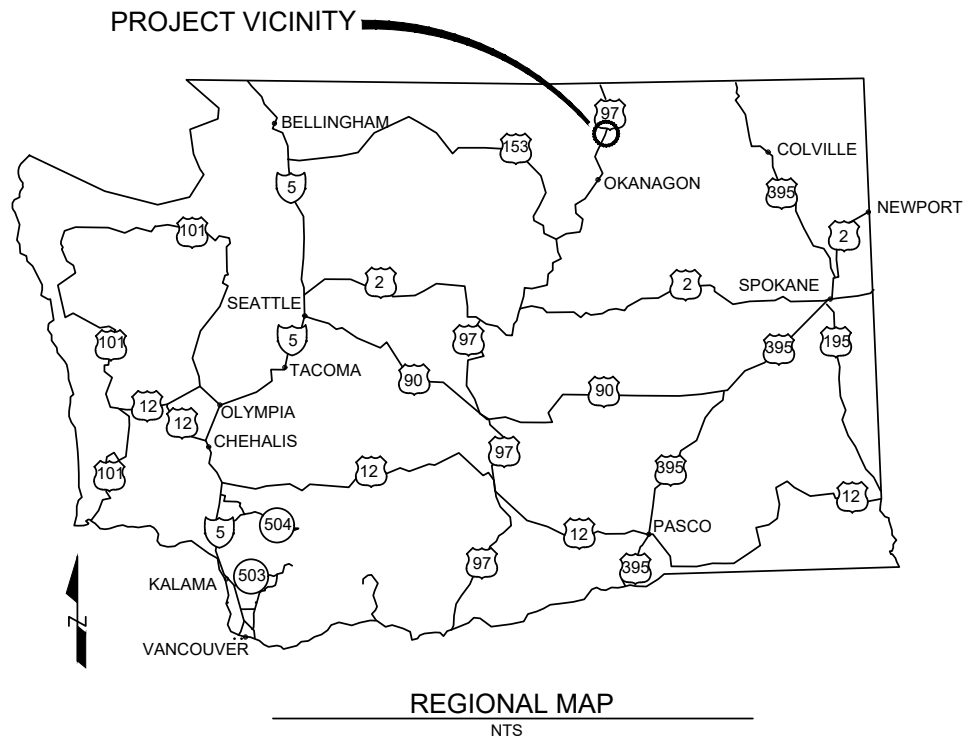
## COLVILLE CONFEDERATED TRIBES

### OKANOGAN COUNTY, WA



COLVILLE CONFEDERATED TRIBES  
**ANTOINE CREEK  
ENHANCEMENT PROJECT**  
OKANOGAN COUNTY, WA

**COVER & SHEET  
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**PROJECT TEAM**

**PROJECT SPONSOR**  
COLVILLE CONFEDERATED TRIBES  
P.O. BOX 150  
NESPELEM, WA 99155  
509.634.2277

JOHN BOX  
john.box.fnw@colvilletribes.com

**ENGINEERING CONSULTANT**  
WOLF WATER RESOURCES, INC.  
1001 SE WATER AVE, SUITE #180  
PORTLAND, OR 97214  
503.207.6688

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srodriguez@wolfwaterresources.com

LUCAS EVANS, PE  
levans@wolfwaterresources.com

HEATHER CLEGG, EIT  
hclegg@wolfwaterresources.com

**PROJECT INFO**

**SPATIAL REFERENCE**  
HORIZONTAL:  
NAD 83 WA STATE PLANE NORTH, US FT  
VERTICAL: NAVD 88  
LIDAR: 2017

**PROJECT SITE LOCATION:**  
OKANOGAN COUNTY, WA  
LATITUDE: 48°44'45" N  
LONGITUDE: -119°21'43" W  
WATERBODY: ANTOINE CREEK



Know what's below.  
Call before you dig.

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**REVISION NUMBER**

No.	Date	Revision

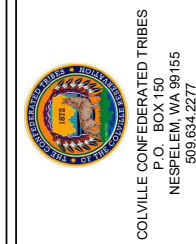
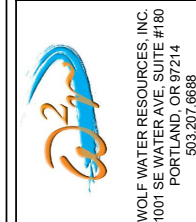
Date	3/11/2024	Designed By	SR, LE
Drawn By	HC	Checked By	SR



JOB NO. 20220046

SHEET NO. G1.0

01 OF 36



COLVILLE CONFEDERATED TRIBES  
ANTOINE CREEK  
ENHANCEMENT PROJECT  
OKANOGAN COUNTY, WA

GENERAL NOTES &  
ABBREVIATIONS

LEGEND AND SYMBOLS

- 5' CONTOUR LINES
- 25' CONTOUR LINES
- TAX LOTS
- PROJECT OWNERSHIP BOUNDARY
- ROAD CENTERLINE
- WETLANDS
- BEAVER DAMS
- EXISTING FENCING
- ORDINARY HIGH WATER BOUNDARY
- EXISTING CULVERT
- CREEK CENTERLINE
- STAGING AREA
- PROPOSED FILL AREA
- PROPOSED CUT AREA
- EXISTING BUILDINGS
- EXISTING FORD
- DIRECTION OF FLOW
- FLOW MONITORING GAGE
- SURVEY CONTROL POINT
- POWER POLE
- BOULDER CLUSTER FOR SALVAGE DEBRIS AND CONCRETE

WHS

- WHS TYPE 1 - SINGLE LOG SC JAM
- WHS TYPE 2 - 2 LOG SC JAM
- WHS TYPE 3 - 3 LOG SC JAM
- WHS TYPE 4 - 4 LOG SC JAM
- WHS TYPE 5 - FLOODPLAIN WOOD
- WHS TYPE 6 - WOOD CLUSTER
- WHS TYPE 7 - SLASH PILE
- WHS TYPE 8 - PALS
- WHS TYPE 9 - BDAS
- SINGLE HABITAT LOGS
- SINGLE KEYED LOG
- HELICOPTER PLACED LARGE WOOD

GENERAL NOTES:

- EXISTING CONDITIONS TOPOGRAPHY DERIVED FROM 2017 LIDAR DEVELOPED BY GEOTERRA AND PROVIDED BY WA DNR.
- AERIAL IMAGERY PROVIDED BY TARA FIRMA AND TAKEN IN MAY 2023.
- HORIZONTAL DATUM IS NAD83 WASHINGTON STATE PLANE NORTH, US SURVEY FT.
- VERTICAL DATUM IS NAVD88, FT.
- ALL SCALES SHOWN ARE FOR 22" X 34" SHEETS.
- ALL EQUIPMENT SHALL BE WASHED PRIOR TO MOBILIZATION TO THE SITE TO MINIMIZE THE INTRODUCTION OF FOREIGN MATERIALS AND FLUIDS TO THE PROJECT SITE. ALL EQUIPMENT SHALL BE FREE OF OIL, HYDRAULIC FLUID, AND DIESEL FUEL LEAKS. TO PREVENT INVASION OF NOXIOUS WEEDS OR THE SPREAD OF WHIRLING DISEASE SPORES. ALL EQUIPMENT SHALL BE CLEANED TO REMOVE MUD AND SOIL PRIOR TO MOBILIZATION INTO THE PROJECT AREA. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT THESE AND ANY ADDITIONAL POLLUTION CONTROL MEASURES HAVE BEEN TAKEN PER THE SPECIFICATIONS.
- THERE WILL BE A SCHEDULED TIME FOR INSPECTION OF ALL EQUIPMENT THAT IS MOBILIZED TO THE SITE BY THE ENGINEER OR OWNER'S REPRESENTATIVE.
- ALL TRASH, DEBRIS AND NON-NATIVE MATERIALS ENCOUNTERED DURING EXCAVATION ACTIVITIES SHALL BE REMOVED FROM THE FLOODPLAIN AND HAULED OFFSITE TO AN APPROVED FACILITY WITH THE EXCEPTION OF ROCK THAT MAY BE USED IN CHANNEL FILL, LWD BALLAST OR HABITAT FEATURES IN LIEU OF IMPORTED ROCK.
- EARTHWORK QUANTITIES ARE BASED ON BANK VOLUMES BETWEEN EXISTING GRADE AND FINISH GRADE SURFACES AND ARE APPROXIMATE. CONTRACTOR SHALL ALLOW FOR EXPANSION OF EXCAVATED MATERIAL AND COMPACTION OF PLACED MATERIAL AT NO ADDITIONAL COST.
- DRIVING DIRECTIONS:  
FROM SEATTLE/I-5: FOLLOW I-90 E FROM SEATTLE, TURN LEFT ON WA-970, CONTINUE ON US-97 N, MERGE ONTO US-2 E/US-97 N TOWARDS WENATCHEE, TAKE US-2 E/US-97 N, CONTINUE ONTO US-97 N TO TONASKET, TURN RIGHT TO HEAD NORTH ON US-2 E/US-97 N TO TONASKET, CONTINUE STRAIGHT ONTO N WHITCOMB, RIGHT ON JONATHAN ST E, CONTINUE ON HAVILLAH RD.

CONSTRUCTION ACCESS/TRAFFIC CONTROL:

REFER TO SHEETS C5.1 FOR DETAILS ON CONSTRUCTION ACCESS, STAGING, AND TEMPORARY EROSION CONTROL REQUIREMENTS.

WORK PERIODS:

- ALL IN-WATER GRADING SHALL BE LIMITED TO WDFW APPROVED IN-WATER WINDOW OF JULY 1ST - MARCH 31ST.

WATER SURFACE ELEVATIONS:

THE ORDINARY HIGH WATER MARK (12 CFS) SHOWN THROUGHOUT THE PLANS WAS DERIVED FROM THE EXISTING CONDITIONS HYDRAULIC MODEL AND VALIDATED WITH FIELD BASED INDICATORS.

Have it read: "For purposes of water management, construction area isolation and stream diversion design, Antoine Creek flows up to 5 CFS should be anticipated during construction."

UTILITIES:

- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CALL 1-800-424-555 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.

FISH SALVAGE:

- CONTRACTOR SHALL COORDINATE WITH CAR TIMING OF STREAM DIVERSION AND WORK ISOLATION ACTIVITIES TO ALLOW FOR FISH EXCLUSION AND SALVAGE ACTIVITIES TO BE PERFORMED.
- ALL FISH RESCUE EFFORTS SHALL BE PERFORMED BY PERSONNEL EXPERIENCED WITH THE COLLECTION AND HANDLING OF SALMONIDS FROM CONSTRUCTIONS SITES.
- NO EXCAVATION OR FILL SHALL OCCUR IN ISOLATED POOLS WITHIN THE WORK AREA UNTIL FISH SALVAGE HAS OCCURRED.
- 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 VOLUMES OF FRESH RIVER WATER.
- CAPTURED FISH SHALL BE IMMEDIATELY RELEASED AT LOCATIONS SELECTED BY EXPERIENCED PERSONNEL.

GRADING SUMMARY TABLE:

LOCATION	CUT VOLUME (CY)	FILL VOLUME (CY)	NET (CY)
UPSTREAM REACH FLOODPLAIN EXCAVATION AND CHANNEL FILL (STA 201+00 TO 218+00)	12990	7930	-5060
WHISKEY CREEK ROAD AND CHANNEL FILL (STA 186+00 TO 198+00)	20	7670	7650
FLOODPLAIN RECONNECTION GRADING (STA 136+50 TO 186+00)	18660	740	-17920
FILL EX BYPASS CHANNEL (SHEET C2.12)	30	9830	9800
FILL EX CHANNEL THROUGH BARNFIELD AND ADJACENT FLOODPLAIN GRADING (STA 118+50 TO 136+50)	7570	8880	1310
ALLUVIAL CANYON FLOODPLAIN EXCAVATION AND CHANNEL FILL (STA 105+00 TO 118+50)	4510	3290	-1220
ALLUVIAL CANYON FLOODPLAIN EXCAVATION AND CHANNEL FILL (STA 80+00 TO 93+00)	480	290	-190
FLOODPLAIN BERMS AND MISCELLANEOUS OR OPTIONAL FILL MOUND	0	5640	5640
<b>TOTALS</b>	<b>44250</b>	<b>44250</b>	<b>0</b>

TEMPORARY GRADING QUANTITIES:

LOCATION	CUT VOLUME (CY)	FILL VOLUME (CY)	NET (CY)
BYPASS ROAD	0	2470	2470

ABBREVIATIONS:

- APPROX APPROXIMATE
- APE APPROXIMATE PROJECT EXTENTS
- BDA BEAVER DAM ANALOGUE
- BMP BEST MANAGEMENT PRACTICE
- CAR CONTRACTING AGENCY REPRESENTATIVE
- CHNL CHANNEL
- CL CENTERLINE
- CONSTR CONSTRUCTION
- CTCR CONFEDERATED TRIBES OF THE COLVILLE RESERVATION
- CY CUBIC YARD
- DBH DIAMETER AT BREAST HEIGHT
- DEPT DEPARTMENT
- DIA DIAMETER
- EG EXISTING GRADE/GROUND
- ELEV, EL ELEVATION
- ESC EROSION AND SEDIMENT CONTROL
- EX, EXIST EXISTING
- FG FINISHED GRADE/GROUND
- FT FEET
- GB GRADE BREAK
- HAB HABITAT
- HIP HABITAT IMPROVEMENT PROGRAM
- IN INCHES
- IE INVERT ELEVATION
- IWW IN WATER WORK
- LW LARGE WOOD
- MIN MINIMUM
- NAD83 NORTH AMERICAN DATUM (1983)
- NAVD88 NORTH AMERICAN VERTICAL DATUM (1988)
- NTS NOT TO SCALE
- OHW ORDINARY HIGH WATER
- OHWM ORDINARY HIGH WATER MARK
- PALS POST-ASSISTED LOG STRUCTURE
- PROP PROPOSED
- TEMP TEMPORARY
- TESC TEMPORARY EROSION AND SEDIMENT CONTROL
- TOB TOP OF BANK
- TOE TOE OF SLOPE
- TOP TOP OF SLOPE
- TYP TYPICAL
- USBR UNITED STATES BUREAU OF RECLAMATION
- VIF VERIFY IN FIELD
- W/ WITH
- W/O WITHOUT
- WA WASHINGTON
- WDFW WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
- WHS WOOD HABITAT STRUCTURE
- WSDOT WASHINGTON DEPARTMENT OF TRANSPORTATION
- WSE WATER SURFACE ELEVATION

LOCATION	WHS TYPE 1 SINGLE LOG SC JAM	WHS TYPE 2-2 LOG SC JAM	WHS TYPE 3-3 LOG SC JAM	WHS TYPE 4-4 LOG SC JAM	WHS TYPE 5 FLOODPLAIN WOOD	WHS TYPE 6 WOOD CLUSTER	SLASH PILE	PALS	BDAS	VALLEY-WIDE BDAs	SINGLE HABITAT LOG
UPSTREAM	20	6	4	1	42	0	53	8	16	0	42
FLOODPLAIN RECONNECTION	62	20	5	1	92	0	102	4	7	4	92
BARN FIELD	11	7	3	0	25	0	45	9	3	0	103
ALLUVIAL CANYON	22	5	14	1	9	10	52	18	5	0	15
DOWNSTREAM CANYON	0	0	0	0	0	0	0	0	0	0	0
<b>TOTALS</b>	<b>115</b>	<b>38</b>	<b>26</b>	<b>3</b>	<b>168</b>	<b>10</b>	<b>252</b>	<b>39</b>	<b>31</b>	<b>4</b>	<b>252</b>

REVISION NUMBER

No.	Date	Revision

Date: 3/11/2024  
Designed By: SR, LE  
Drawn By: HC  
Checked By: SR

SCALE: 1" = 10'

JOB NO. 20220046

SHEET NO. G1.2



## HIP GENERAL CONSERVATION MEASURES APPLICABLE TO ALL ACTIONS

- DOCUMENTATION: TO BE POSTED ONSITE BY THE CONTRACTOR IN A LOCATION VISIBLE TO THE PUBLIC.
- NAME(S), PHONE NUMBER(S), AND ADDRESS(ES) OF THE PERSON(S) RESPONSIBLE FOR OVERSIGHT.
  - A DESCRIPTION OF HAZARDOUS MATERIALS THAT WILL BE USED, INCLUDING INVENTORY, STORAGE, AND HANDLING PROCEDURES.
  - PROCEDURES TO CONTAIN AND CONTROL A SPILL OF ANY HAZARDOUS MATERIAL GENERATED, USED OR STORED ON-SITE, INCLUDING NOTIFICATION OF PROPER AUTHORITIES.
  - A STANDING ORDER TO CEASE WORK IN THE EVENT OF HIGH FLOWS EXCEPT AS NECESSARY TO MINIMIZE RESOURCE DAMAGE (ABOVE THOSE ADDRESSED IN THE DESIGN AND IMPLEMENTATION PLANS) OR EXCEEDANCE OF TAKE OR WATER QUALITY LIMITATIONS.

### PROJECT DESIGN AND SITE PREPARATION

**1) TIMING OF IN-WATER WORK:** FORMAL RECOMMENDATIONS PUBLISHED BY STATE AGENCIES SUCH AS THE OREGON DEPARTMENT OF FISH AND WILDLIFE (ODFW), WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW), IDAHO DEPARTMENT OF FISH AND GAME (IDFG), AND MONTANA FISH WILDLIFE AND PARKS (MFWP), OR INFORMAL RECOMMENDATIONS FROM THE APPROPRIATE STATE FISHERY BIOLOGIST IN REGARD TO THE TIMING OF IN-WATER WORK, WILL BE FOLLOWED.

- BULL TROUT – IN BULL TROUT SPAWNING AND REARING AREAS, EGGS, ALEVIN, AND FRY ARE PRESENT EARLY YEAR ROUND. IN BULL TROUT HABITATS DESIGNATED AS FORAGING, MIGRATION, AND OVERWINTERING (FMO) HABITATS, JUVENILE AND ADULT BULL TROUT MAY BE PRESENT SEASONALLY. SOME PROJECT LOCATIONS MAY NOT HAVE DESIGNATED IN-WATER WORK WINDOWS FOR BULL TROUT, OR IF THEY DO, THEY MAY DIFFER FROM THE IN-WATER WORK WINDOWS FOR SALMON AND STEELHEAD. IF THIS IS THE CASE, THE PROJECT SPONSOR WILL CONTACT THE APPROPRIATE USFWS FIELD OFFICE TO ENSURE THAT ALL REASONABLE IMPLEMENTATION MEASURES ARE CONSIDERED AND AN APPROPRIATE IN-WATER WORK WINDOW IS USED TO MINIMIZE PROJECT EFFECTS.
- LAMPREY – TO MINIMIZE DISTURBANCE TO MIGRANT ADULTS, THE PROJECT SPONSOR AND/OR THEIR CONTRACTORS WILL AVOID WORKING INSTREAM OR RIVER CHANNELS THAT CONTAIN PACIFIC LAMPREY FROM MARCH 1 TO JULY 1 IN LOW- TO MID-ELEVATION REACHES (<5,000 FEET). IN HIGH-ELEVATION REACHES (>5,000 FEET), THE PROJECT SPONSOR WILL AVOID WORKING INSTREAM OR RIVER CHANNELS FROM MARCH 1 TO AUGUST 1. IF EITHER TIMEFRAME IS INCOMPATIBLE WITH OTHER OBJECTIVES, THE AREA WILL BE SURVEYED FOR NESTS AND LAMPREY PRESENCE, AND AVOIDED IF POSSIBLE. IF LAMPREYS ARE KNOWN TO EXIST, THE PROJECT SPONSOR WILL UTILIZE BEST MANAGEMENT PRACTICES (BMPS) FOR DEWATERING AND SALVAGE AS OUTLINED IN USFWS 20101, OR MOST RECENT GUIDANCE. SALVAGE SHOULD INCLUDE SALVAGE OF LARVAL LAMPREY FROM SEDIMENTS. (SEE SECTION "CONSERVATION MEASURES FOR SALVAGE OF NATIVE FISH, LAMPREY, AND MUSSELS").
- A MAXIMUM OF 1 WEEK PAST THE RECOMMENDED IN-WATER WORK WINDOW SHALL BE CONSIDERED AND APPROVED BY THE EC LEAD, ANY OTHER DEVIATION FROM THE IWWW SHALL BE CONSIDERED AND REVIEWED BY THE SERVICES THROUGH THE VARIANCE PROCESS.

**2) CONTAMINANTS:** THE PROJECT SPONSOR WILL COMPLETE A SITE ASSESSMENT WITH THE FOLLOWING ELEMENTS TO IDENTIFY THE TYPE, QUANTITY, AND EXTENT OF ANY POTENTIAL CONTAMINATION FOR ANY ACTION THAT INVOLVES EXCAVATION OF MORE THAN 20 CUBIC YARDS OF MATERIAL:

- A REVIEW OF AVAILABLE RECORDS, SUCH AS FORMER SITE USE, BUILDING PLANS, AND RECORDS OF ANY PRIOR CONTAMINATION EVENTS;
- A SITE VISIT TO INSPECT THE AREAS USED FOR VARIOUS INDUSTRIAL PROCESSES AND THE CONDITION OF THE PROPERTY;
- INTERVIEWS WITH KNOWLEDGEABLE PEOPLE, SUCH AS SITE OWNERS, OPERATORS, AND OCCUPANTS, NEIGHBORS, OR LOCAL GOVERNMENT OFFICIALS; AND
- A SUMMARY, STORED WITH THE PROJECT FILE THAT INCLUDES AN ASSESSMENT OF THE LIKELIHOOD THAT CONTAMINANTS ARE PRESENT AT THE SITE, BASED ON ITEMS 4(A) THROUGH 4(C).

**3) SITE LAYOUT AND FLAGGING:** PRIOR TO CONSTRUCTION, THE PROJECT AREA WILL BE CLEARLY FLAGGED TO IDENTIFY THE FOLLOWING:

- SENSITIVE RESOURCE AREAS, SUCH AS AREAS BELOW ORDINARY HIGH WATER (OHW), SPAWNING AREAS, SPRINGS, AND WETLANDS;
- EQUIPMENT ENTRY AND EXIT POINTS;
- ROAD AND STREAM CROSSING ALIGNMENTS;
- STAGING, STORAGE, AND STOCKPILE AREAS; AND
- NO-HERBICIDE-APPLICATION AREAS AND BUFFERS.

### 4) TEMPORARY ACCESS ROADS AND PATHS:

- EXISTING ACCESS ROADS AND PATHS WILL BE PREFERENTIALLY USED WHENEVER POSSIBLE, AND THE NUMBER AND LENGTH OF TEMPORARY ACCESS ROADS AND PATHS THROUGH RIPARIAN AREAS AND FLOODPLAINS WILL BE MINIMIZED TO LESSEN SOIL DISTURBANCE, SOIL COMPACTION, AND IMPACTS TO VEGETATION.
- VEHICLE USE AND HUMAN ACTIVITIES, INCLUDING WALKING IN AREAS OCCUPIED BY TERRESTRIAL ESALISTED PECIES, WILL BE MINIMIZED.
- TEMPORARY ACCESS ROADS AND PATHS WILL NOT BE BUILT ON SLOPES WHERE GRADE, SOIL, OR OTHER FEATURES SUGGEST A LIKELIHOOD OF EXCESSIVE EROSION OR FAILURE. IF SLOPES ARE STEEPER THAN 30%, THE ROAD WILL BE DESIGNED BY A CIVIL ENGINEER WITH EXPERIENCE IN STEEP ROAD DESIGN.
- THE REMOVAL OF RIPARIAN VEGETATION DURING CONSTRUCTION OF TEMPORARY ACCESS ROADS WILL BE MINIMIZED. WHEN TEMPORARY VEGETATION REMOVAL IS REQUIRED, VEGETATION WILL BE CUT AT GROUND LEVEL (NOT GRUBBED).
- AT PROJECT COMPLETION, ALL TEMPORARY ACCESS ROADS AND PATHS WILL BE DECOMPACTED AND RESHAPED TO MATCH THE ORIGINAL CONTOUR, AND THE SOIL WILL BE STABILIZED AND REVEGETATED.
- HELICOPTER FLIGHT PATTERNS WILL BE ESTABLISHED IN ADVANCE, AND LOCATED TO AVOID TERRESTRIAL ESA-LISTED SPECIES, INCLUDING THEIR OCCUPIED HABITAT AND APPROPRIATE BUFFERS, DURING SENSITIVE LIFE STAGES (I.E. NESTING AND CRITICAL BREEDING PERIODS). SEE SPECIES-SPECIFIC CONSERVATION MEASURES FOR EACH LISTED SPECIES THAT MAY OCCUR WITHIN THE PROJECT AREA FOR MORE INFORMATION.

### 5) TEMPORARY STREAM CROSSINGS:

- EXISTING STREAM CROSSINGS, FORDS, OR BEDROCK WILL BE USED WHENEVER POSSIBLE.
- IF AN EXISTING STREAM CROSSING IS NOT ACCESSIBLE, TEMPORARY CROSSINGS WILL BE INSTALLED. TREATED WOOD SHALL NOT BE USED ON TEMPORARY BRIDGE CROSSINGS OR IN LOCATIONS IN CONTACT WITH OR OVER WATER.
- FOR PROJECTS THAT REQUIRE EQUIPMENT AND VEHICLES TO CROSS IN THE WET:
  - THE LOCATION AND NUMBER OF ALL WET CROSSINGS MUST BE APPROVED BY BPA AND CLEARLY INDICATED ON DESIGN DRAWINGS.
  - VEHICLES AND MACHINERY WILL CROSS STREAMS AT RIGHT ANGLES TO THE MAIN CHANNEL WHEREVER POSSIBLE.
  - NO STREAM CROSSINGS WILL OCCUR 300 FEET UPSTREAM OR 100-FEET DOWNSTREAM OF AN EXISTING REDD OR SPAWNING FISH.
  - AFTER PROJECT COMPLETION, TEMPORARY STREAM CROSSINGS WILL BE OBLITERATED, AND THE BANKS RESTORED.

### 6) STAGING, STORAGE, AND STOCKPILE AREAS:

- STAGING AREAS (USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE) WILL BE 150 FEET OR MORE FROM ANY NATURAL WATERBODY OR WETLAND, OR ON AN ADJACENT ESTABLISHED ROAD AREA IN A LOCATION AND MANNER THAT WILL PRECLUDE EROSION INTO, OR CONTAMINATION OF, THE STREAM OR FLOODPLAIN. STAGING AREAS MAY BE CLOSER THAN 150 FEET IF THE AREA IS ABOVE (ELEVATION) THE 100-YR FLOODPLAIN AND SPILL PREVENTION MEASURES ARE APPROVED BY THE EC LEAD.
- NATURAL MATERIALS USED FOR IMPLEMENTATION OF AQUATIC RESTORATION, SUCH AS LARGE WOOD, GRAVEL, AND BOULDERS, MAY BE STAGED WITHIN 150 FEET IF CLEARLY INDICATED IN PLANS. RECOMMEND REFERRING TO AREA AS "NATURAL MATERIAL STOCKPILE AREA" WITH A NOTE THAT STATES VEHICLE STORAGE, EQUIPMENT STORAGE, HAZARDOUS MATERIALS, FUELING, AND SERVICING NOT PERMITTED IN THIS AREA.
- ANY LARGE WOOD, TOPSOIL, AND NATIVE CHANNEL MATERIAL DISPLACED BY CONSTRUCTION WILL BE STOCKPILED FOR USE DURING SITE RESTORATION AT A SPECIFICALLY IDENTIFIED AND FLAGGED AREA. ANY MATERIAL NOT USED IN RESTORATION, AND NOT NATIVE TO THE FLOODPLAIN, WILL BE REMOVED TO A LOCATION OUTSIDE OF THE 100-YEAR FLOODPLAIN FOR DISPOSAL.

### 7) EQUIPMENT:

- MECHANIZED EQUIPMENT AND VEHICLES WILL BE SELECTED, OPERATED, AND MAINTAINED IN A MANNER THAT MINIMIZES ADVERSE EFFECTS ON THE ENVIRONMENT (E.G., MINIMALLY-SIZED, LOW PRESSURE TIRES; MINIMAL HARD-TURN PATHS FOR TRACKED VEHICLES; TEMPORARY MATS OR PLATES WITHIN WET AREAS OR ON SENSITIVE SOILS). ALL VEHICLES AND OTHER MECHANIZED EQUIPMENT WILL BE:
- STORED, FUELED, AND MAINTAINED IN A VEHICLE STAGING AREA LOCATED 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND, OR ON AN ADJACENT, ESTABLISHED ROAD AREA;
  - REFUELED IN A VEHICLE STAGING AREA LOCATED 150 FEET OR MORE FROM A NATURAL WATERBODY OR WETLAND, OR IN AN ISOLATED HARD ZONE, SUCH AS A PAVED PARKING LOT OR ADJACENT, ESTABLISHED ROAD (THIS MEASURE APPLIES ONLY TO GAS OR DIESEL-POWERED EQUIPMENT WITH TANKS LARGER THAN 5 GALLONS);
  - BIODEGRADABLE LUBRICANTS AND FLUIDS<sup>2</sup> SHALL BE USED ON EQUIPMENT OPERATING IN THE STREAM CHANNEL AND LIVE WATER.
  - INSPECTED DAILY FOR FLUID LEAKS BEFORE LEAVING THE VEHICLE STAGING AREA FOR OPERATION WITHIN 150 FEET OF ANY NATURAL WATER BODY OR WETLAND; AND
  - THOROUGHLY CLEANED BEFORE OPERATION BELOW ORDINARY HIGH WATER (OHW), AND AS OFTEN AS NECESSARY DURING OPERATION, TO REMAIN FREE OF GREASE.

### 8) EROSION CONTROL:

- EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPS) WILL BE PREPARED AND CARRIED OUT, COMMENSURATE WITH THE SCOPE OF THE ACTION THAT MAY INCLUDE THE FOLLOWING:
- TEMPORARY EROSION CONTROL BMPS.
    - TEMPORARY EROSION CONTROL BMPS SHALL BE IN PLACE BEFORE ANY SIGNIFICANT ALTERATION OF THE ACTION SITE, AND SHALL BE APPROPRIATELY INSTALLED DOWNSLOPE OF PROJECT ACTIVITY WITHIN THE RIPARIAN BUFFER AREA UNTIL SITE REHABILITATION IS COMPLETE.
    - IF THERE IS A POTENTIAL FOR ERODED SEDIMENT TO ENTER THE STREAM, SEDIMENT BARRIERS WILL BE INSTALLED AND MAINTAINED FOR THE DURATION OF PROJECT IMPLEMENTATION.
    - TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE SEDGE MATS, FIBER WATTLES, SILT FENCES, JUTE MATTING, WOOD FIBER MULCH WITH SOIL BINDER, OR GEOTEXTILES AND GEOSYNTHETIC FABRIC. BIODEGRADABLE NETTING MAY BE USED SO THAT THEY CAN DECOMPOSE ON SITE.
    - SOIL STABILIZATION UTILIZING WOOD FIBER MULCH AND TACKIFIER (HYDRO-APPLIED) MAY BE USED TO REDUCE EROSION OF BARE SOIL IF THE MATERIALS ARE NOXIOUS-WEED-FREE AND NONTOXIC TO AQUATIC AND TERRESTRIAL ANIMALS, SOIL MICROORGANISMS, AND VEGETATION.
    - SEDIMENT WILL BE REMOVED FROM EROSION CONTROL BMP ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE BMP.
    - ONCE THE SITE IS STABILIZED FOLLOWING CONSTRUCTION, TEMPORARY EROSION CONTROL BMPS WILL BE REMOVED. FOR ADDITIONAL INFORMATION AND SUPPLIERS OF BIODEGRADABLE HYDRAULIC FLUIDS, MOTOR OIL, LUBRICANT, OR GREASE. SEE, ENVIRONMENTALLY ACCEPTABLE LUBRICANTS BY THE U.S. EPA (2011); E.G., MINERAL OIL, POLYGLYCOL, VEGETABLE OIL, SYNTHETIC ESTER; MOBIL® BIODEGRADABLE HYDRAULIC OILS, TOTAL® BIODEGRADABLE HYDRAULIC FLUID, TERRESOLVE TECHNOLOGIES LTD.® BIOBASED BIODEGRADABLE LUBRICANTS, COUGAR LUBRICATION® 2XT BIO ENGINE OIL, SERIES 4300 SYNTHETIC BIO-DEGRADABLE HYDRAULIC OIL, 8060-2 SYNTHETIC BIO-DEGRADABLE GREASE NO. 2, ETC.
  - EMERGENCY EROSION CONTROL BMPS. THE FOLLOWING MATERIALS FOR EMERGENCY EROSION CONTROL WILL BE AVAILABLE AT THE WORK SITE:
    - A SUPPLY OF SEDIMENT CONTROL MATERIALS; AND
    - AN OIL-ABSORBING FLOATING BOOM WHENEVER SURFACE WATER IS PRESENT.

### 3) ABATEMENT:

- THE PROJECT SPONSOR WILL DETERMINE THE APPROPRIATE DUST CONTROL MEASURES BY CONSIDERING SOIL TYPE, EQUIPMENT USAGE, PREVAILING WIND DIRECTION, AND THE EFFECTS CAUSED BY OTHER EROSION AND SEDIMENT CONTROL MEASURES. IN ADDITION, THE FOLLOWING CRITERIA WILL BE FOLLOWED:
- WORK WILL BE SEQUENCED AND SCHEDULED TO REDUCE EXPOSED BARE SOIL SUBJECT TO WIND EROSION.
  - DUST-ABATEMENT ADDITIVES AND STABILIZATION CHEMICALS (TYPICALLY MAGNESIUM CHLORIDE, CALCIUM CHLORIDE SALTS, OR LIGNIN SULFONATE) WILL NOT BE APPLIED WITHIN 25 FEET OF A NATURAL WATERBODY OR WETLAND AND WILL BE APPLIED SO AS TO MINIMIZE THE LIKELIHOOD THAT THEY WILL ENTER STREAMS. APPLICATIONS OF LIGNIN SULFONATE WILL BE LIMITED TO A MAXIMUM RATE OF 0.5 GALLONS PER SQUARE YARD OF ROAD SURFACE, ASSUMING A 50:50 (LIGNIN SULFONATE TO WATER) SOLUTION.
  - APPLICATION OF DUST ABATEMENT CHEMICALS WILL BE AVOIDED DURING OR JUST BEFORE WET WEATHER AND AT STREAM CROSSINGS OR OTHER AREAS THAT COULD RESULT IN UNFILTERED DELIVERY OF THE DUST ABATEMENT CHEMICALS TO A WATERBODY (TYPICALLY THESE WOULD BE AREAS WITHIN 25 FEET OF A NATURAL WATERBODY OR WETLAND; DISTANCES MAY BE GREATER WHERE VEGETATION IS SPARSE OR SLOPES ARE STEEP).
  - SPILL CONTAINMENT EQUIPMENT WILL BE AVAILABLE DURING APPLICATION OF DUST ABATEMENT CHEMICALS.
  - PETROLEUM-BASED PRODUCTS WILL NOT BE USED FOR DUST ABATEMENT.

### 10) SPILL PREVENTION, CONTROL, AND COUNTER

**MEASURES:** THE FOLLOWING MEASURES WILL BE USED TO PREVENT ACCIDENTAL SPILLS OF FUEL, LUBRICANTS, HYDRAULIC FLUID, OR OTHER CONTAMINANTS INTO THE RIPARIAN ZONE OR DIRECTLY INTO THE WATER:

- A DESCRIPTION OF HAZARDOUS MATERIALS THAT WILL BE USED, INCLUDING INVENTORY, STORAGE, AND HANDLING PROCEDURES, WILL BE AVAILABLE ON-SITE.
- WRITTEN PROCEDURES FOR NOTIFYING ENVIRONMENTAL RESPONSE AGENCIES WILL BE POSTED AT THE WORK SITE. FOR ADDITIONAL INFORMATION AND SUPPLIERS OF BIODEGRADABLE HYDRAULIC FLUIDS, MOTOR OIL, LUBRICANT, OR GREASE. SEE, ENVIRONMENTALLY ACCEPTABLE LUBRICANTS BY THE U.S. EPA (2011); E.G., MINERAL OIL, POLYGLYCOL, VEGETABLE OIL, SYNTHETIC ESTER; MOBIL® BIODEGRADABLE HYDRAULIC OILS, TOTAL® HYDRAULIC FLUID, TERRESOLVE TECHNOLOGIES LTD.® BIOBASED BIODEGRADABLE LUBRICANTS, COUGAR LUBRICATION® 2XT BIO ENGINE OIL, SERIES 4300 SYNTHETIC BIO-DEGRADABLE HYDRAULIC OIL, 8060-2 SYNTHETIC BIO-DEGRADABLE GREASE NO. 2, ETC.
- SPILL CONTAINMENT KITS (INCLUDING INSTRUCTIONS FOR CLEANUP AND DISPOSAL) ADEQUATE FOR THE TYPES AND QUANTITY OF HAZARDOUS MATERIALS USED AT THE SITE WILL BE AVAILABLE AT THE WORK SITE.
- WORKERS WILL BE TRAINED IN SPILL CONTAINMENT PROCEDURES AND WILL BE INFORMED OF THE LOCATION OF SPILL CONTAINMENT KITS.
- ANY WASTE LIQUIDS GENERATED AT THE STAGING AREAS WILL BE TEMPORARILY STORED UNDER AN IMPERVIOUS COVER, SUCH AS A TARPULIN, UNTIL THEY CAN BE PROPERLY TRANSPORTED TO, AND DISPOSED OF, AT A FACILITY THAT IS APPROVED FOR RECEIPT OF HAZARDOUS MATERIALS.
- PUMPS USED ADJACENT TO WATER SHALL USE SPILL CONTAINMENT SYSTEMS.

### 11) INVASIVE SPECIES CONTROL:

- THE FOLLOWING MEASURES WILL BE FOLLOWED TO AVOID INTRODUCTION OF INVASIVE PLANTS AND NOXIOUS WEEDS INTO PROJECT AREAS:
- PRIOR TO ENTERING THE SITE, ALL VEHICLES AND EQUIPMENT WILL BE POWER-WASHED, ALLOWED TO DRY FULLY, AND INSPECTED TO MAKE SURE NO PLANTS, SOIL, OR OTHER ORGANIC MATERIAL ADHERES TO THE SURFACE. WATERCRAFT, WADERS, BOOTS, AND ANY OTHER GEAR TO BE USED IN OR NEAR WATER WILL BE INSPECTED FOR AQUATIC INVASIVE SPECIES. WADING BOOTS WITH FELT SOLES ARE NOT TO BE USED DUE TO THEIR PROPENSITY FOR AIDING IN THE TRANSFER OF INVASIVE SPECIES UNLESS DECONTAMINATION PROCEDURES ARE USED.
  -



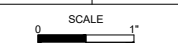
COLVILLE CONFEDERATED TRIBES  
 ANTOINE CREEK  
 ENHANCEMENT PROJECT  
 OKANOGAN COUNTY, WA

HIP  
 CONSERVATION  
 MEASURES 1

#### REVISION NUMBER

No.	Date	Revision

Date: 3/11/2024  
 Drawn By: HC  
 Designed By: SR, LE  
 Checked By: SR



JOB NO. 20220046

SHEET NO. G2.1  
 03 OF 36





COLVILLE CONFEDERATED TRIBES  
ANTONE CREEK  
ENHANCEMENT PROJECT  
OKANOGAN COUNTY, WA

HIP  
CONSERVATION  
MEASURES 2

REVISION NUMBER		
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Date	3/11/2024	Designed By SR, LE
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**WORK AREA ISOLATION**

ANY WORK AREA REQUIRING EXCAVATION OR MOBILIZATION OF SEDIMENT WITHIN THE WETTED CHANNEL WILL BE ISOLATED FROM THE ACTIVE STREAM WHENEVER ESA-LISTED FISH ARE REASONABLY CERTAIN TO BE PRESENT, OR IF THE WORK AREA IS LESS THAN 300- FEET UPSTREAM FROM KNOWN ESA-LISTED FISH SPAWNING HABITATS. IF THE WORK AREA ISOLATION PRACTICES WOULD CAUSE GREATER IMPACTS THAN IT WOULD PREVENT, IS LOCATED IN DEEP OR SWIFTLY FLOWING WATER, OR IF FISH CAN BE EFFECTIVELY EXCLUDED BY NETS OR SCREENS, THEN A VARIANCE TO NOT ISOLATE THE WORK AREA MAY BE PURSUED. WORK AREA ISOLATION & FISH SALVAGE ACTIVITIES ARE CONSIDERED INCIDENTAL TO CONSTRUCTION-RELATED ACTIVITIES AND SHALL OCCUR DURING THE STATE RECOMMENDED IN-WATER WORK WINDOWS. WHEN WORK AREA ISOLATION IS REQUIRED, DESIGN PLANS WILL INCLUDE ALL ISOLATION ELEMENTS, FISH RELEASE AREAS, A PUMP TO BE USED TO DEWATER THE ISOLATION AREA, AND, WHEN FISH ARE PRESENT, A FISH SCREEN THAT MEETS NMFS'S FISH SCREEN CRITERIA (NMFS 2011, OR MOST CURRENT). WIDER MESH SCREENS MAY BE USED AFTER ALL FISH HAVE BEEN REMOVED FROM THE ISOLATED AREA. WORK AREA ISOLATION AND FISH CAPTURE ACTIVITIES TAKE PLACE DURING PERIODS OF THE COOLEST AIR AND WATER TEMPERATURES POSSIBLE, NORMALLY EARLY IN THE MORNING VERSUS LATE IN THE DAY, AND DURING CONDITIONS APPROPRIATE TO MINIMIZE STRESS TO FISH SPECIES PRESENT. A FISH BIOLOGIST WILL DETERMINE HOW TO REMOVE ESA-LISTED FISH, WITH LEAST HARM TO THE FISH, BEFORE IN-WATER WORK BEGINS. THIS WILL INVOLVE EITHER PASSIVE MOVEMENT OF FISH OUT OF THE PROJECT REACH THROUGH SLOW DEWATERING, OR ACTIVELY REMOVING THE FISH FROM THE PROJECT REACH. SHOULD ACTIVE REMOVAL BE WARRANTED, A FISH BIOLOGIST WILL CLEAR THE AREA OF FISH BEFORE THE SITE IS DEWATERED USING ONE OR MORE OF A VARIETY OF METHODS INCLUDING SEINING, DIPPING, OR ELECTROFISHING, DEPENDING ON SPECIFIC SITE CONDITIONS. IN AREAS OCCUPIED BY LARVAL LAMPREY, TO THE EXTENT POSSIBLE, SALVAGE USING GUIDANCE SET FORTH IN USFWS 2010 OR MOST RECENT GUIDANCE. DEPENDENT UPON SITE CONDITIONS, A FISH BIOLOGIST WILL CONDUCT OR SUPERVISE THE FOLLOWING:

- 1) SLOWLY REDUCE WATER FROM THE WORK AREA TO ALLOW SOME FISH TO LEAVE THE WORK AREA VOLITIONALLY;
  - a) IF DEWATERED AREA CONTAINS LARGE FINE/ SANDY SEDIMENT DEPOSITS, LARVAL LAMPREY COULD BE PRESENT, AND POTENTIALLY IN LARGE NUMBERS. IF SO, CONSIDER ELECTROFISHING USING LAMPREY ELECTROFISHING SETTINGS (WHICH DO NOT AFFECT BONY FISH) PRIOR TO OR DURING DRAWDOWN. SEE SECTION FURTHER DOWN ON LAMPREY CONSERVATION MEASURES AND ELECTROFISHING GUIDELINES.
- 1) INSTALL BLOCK NETS;
  - a) BLOCK NETS WILL BE INSTALLED AT UPSTREAM AND DOWNSTREAM LOCATIONS AND MAINTAINED IN A SECURED POSITION TO EXCLUDE FISH FROM ENTERING THE PROJECT AREA.
  - b) BLOCK NETS WILL BE SECURED TO THE STREAM CHANNEL BED AND BANKS UNTIL FISH CAPTURE AND TRANSPORT ACTIVITIES ARE COMPLETE. BLOCK NETS MAY BE LEFT IN PLACE FOR THE DURATION OF THE PROJECT TO EXCLUDE FISH.
  - c) IF BLOCK NETS REMAIN IN PLACE MORE THAN ONE DAY, THE NETS WILL BE MONITORED AT LEAST DAILY TO ENSURE THEY ARE SECURED TO THE BANKS AND FREE OF ORGANIC ACCUMULATION. IF THE PROJECT IS WITHIN BULL TROUT SPAWNING AND REARING HABITAT, THE BLOCK NETS MUST BE CHECKED EVERY 4 HOURS FOR FISH IMPINGEMENT ON THE NET. LESS FREQUENT INTERVALS MUST BE APPROVED THROUGH A VARIANCE REQUEST.
  - d) NETS WILL BE MONITORED HOURLY ANYTIME THERE IS INSTREAM DISTURBANCE.
- 3) CAPTURE FISH THROUGH SEINING, AND RELOCATE TO STREAMS;
  - a) WHILE DEWATERING, ANY REMAINING FISH WILL BE COLLECTED BY HAND OR DIP NETS.
  - b) SEINES WITH A MESH SIZE TO ENSURE CAPTURE OF THE RESIDING ESA-LISTED FISH WILL BE USED.
  - c) MINNOW TRAPS MAY BE LEFT IN PLACE OVERNIGHT AND USED IN CONJUNCTION WITH SEINING.
- 4) ELECTROFISH TO CAPTURE AND RELOCATE FISH NOT CAUGHT DURING SEINING, NMFS ELECTROFISHING GUIDELINES SHALL BE USED. THIS STEP IS TO BE USED AS A LAST RESORT; AFTER ALL PASSIVE TECHNIQUES HAVE BEEN EXHAUSTED.
- 5) CONTINUE TO SLOWLY DEWATER THE STREAM REACH;
- 6) COLLECT ANY REMAINING FISH IN COLD-WATER BUCKETS AND RELOCATE TO THE STREAM;
  - a) LIMIT THE TIME FISH WOULD BE IN A TRANSPORT BUCKET , AND RELEASE THEM AS QUICKLY AS POSSIBLE;
  - b) THE NUMBER OF FISH WITHIN A BUCKET WILL BE LIMITED, AND FISH WILL BE OF RELATIVELY COMPARABLE SIZE TO MINIMIZE PREDATION;
  - c) AERATORS FOR BUCKETS WILL BE USED, OR THE BUCKET'S WATER WILL BE FREQUENTLY CHANGED WITH COLD, CLEAR, WATER AT 15 MINUTE, OR MORE-FREQUENT, INTERVALS.
  - d) BUCKETS WILL BE KEPT IN SHADED AREAS; OR IF IN EXPOSED AREAS, COVERED BY A CANOPY.
  - e) DEAD FISH WILL NOT BE STORED IN TRANSPORT BUCKETS BUT WILL BE LEFT ON THE STREAMBANK TO AVOID MORTALITY COUNTING ERRORS.

**1) NMFS'S ELECTROFISHING GUIDELINES (NMFS 20005)**

- 1) INITIAL SITE SURVEYS AND EQUIPMENT SETTINGS
  - a) IN ORDER TO AVOID CONTACT WITH SPAWNING ADULTS OR ACTIVE REDDS, RESEARCHERS MUST CONDUCT A CAREFUL VISUAL SURVEY OF THE AREA TO BE SAMPLED BEFORE BEGINNING ELECTROFISHING.
  - b) PRIOR TO THE START OF SAMPLING AT A NEW LOCATION, WATER TEMPERATURE AND CONDUCTIVITY MEASUREMENTS SHALL BE TAKEN TO EVALUATE ELECTROFISHER SETTINGS AND ADJUSTMENTS.
  - c) NO ELECTROFISHING SHOULD OCCUR WHEN WATER TEMPERATURES ARE ABOVE 18°C OR ARE EXPECTED TO RISE ABOVE THIS TEMPERATURE PRIOR TO CONCLUDING THE ELECTROFISHING SURVEY.
  - d) WHENEVER POSSIBLE, A BLOCK NET SHOULD BE PLACED BELOW THE AREA BEING SAMPLED TO CAPTURE STUNNED FISH THAT MAY DRIFT DOWNSTREAM.
  - e) EQUIPMENT MUST BE IN GOOD WORKING CONDITION AND OPERATORS SHOULD GO THROUGH THE MANUFACTURER'S PRESEASON CHECKS, ADHERE TO ALL PROVISIONS, AND RECORD MAJOR MAINTENANCE WORK IN A LOGBOOK.
  - f) EACH ELECTROFISHING SESSION MUST START WITH ALL SETTINGS (VOLTAGE, PULSE WIDTH, AND PULSE RATE) SET TO THE MINIMUMS NEEDED TO CAPTURE FISH. THESE SETTINGS SHOULD BE GRADUALLY INCREASED ONLY TO THE POINT WHERE FISH ARE IMMOBILIZED AND CAPTURED, AND GENERALLY NOT ALLOWED TO EXCEED CONDUCTIVITY-BASED MAXIMA.

**2) ELECTROFISHING TECHNIQUE**

- a) SAMPLING SHOULD BEGIN USING STRAIGHT DC. THE POWER NEEDS TO REMAIN ON UNTIL THE FISH IS NETTED WHEN USING STRAIGHT DC. IF FISH CAPTURE IS UNSUCCESSFUL WITH INITIAL LOW VOLTAGE, GRADUALLY INCREASE VOLTAGE SETTINGS WITH STRAIGHT DC.
  - b) IF FISH CAPTURE IS NOT SUCCESSFUL WITH THE USE OF STRAIGHT DC, THEN SET THE ELECTROFISHER TO LOWER VOLTAGES WITH PDC. IF FISH CAPTURE IS UNSUCCESSFUL WITH LOW VOLTAGES, INCREASE PULSE WIDTH, VOLTAGE, AND PULSE FREQUENCY (DURATION, AMPLITUDE, AND FREQUENCY).
  - c) ELECTROFISHING SHOULD BE PERFORMED IN A MANNER THAT MINIMIZES HARM TO THE FISH. STREAM SEGMENTS SHOULD BE SAMPLED SYSTEMATICALLY, MOVING THE ANODE CONTINUOUSLY IN A HERRINGBONE PATTERN (WHERE FEASIBLE) THROUGH THE WATER. CARE SHOULD BE TAKEN WHEN FISHING IN AREAS WITH HIGH FISH CONCENTRATIONS, STRUCTURE WOOD, UNDERCUT BANKS) AND IN SHALLOW WATERS WHERE MOST BACKPACK ELECTROFISHING FOR JUVENILE SALMONIDS OCCURS. VOLTAGE GRADIENTS MAY BE HIGH WHEN ELECTRODES ARE IN SHALLOW WATER WHERE BOUNDARY LAYERS (WATER SURFACE AND SUBSTRATE) TEND TO INTENSIFY THE ELECTRICAL FIELD.
  - d) DO NOT ELECTROFISH IN ONE LOCATION FOR AN EXTENDED PERIOD (E.G., UNDERCUT BANKS) AND REGULARLY CHECK BLOCK NETS FOR IMMOBILIZED FISH.
  - e) FISH SHOULD NOT MAKE CONTACT WITH THE ANODE. THE ZONE OF POTENTIAL INJURY FOR FISH IS 0.5 M FROM THE ANODE.
  - f) ELECTROFISHING CREWS SHOULD BE GENERALLY OBSERVANT OF THE CONDITION OF THE FISH AND CHANGE OR TERMINATE SAMPLING WHEN EXPERIENCING PROBLEMS WITH FISH RECOVERY TIME, BANDING, INJURY, MORTALITY, OR OTHER INDICATIONS OF FISH STRESS.
  - g) NETTERS SHOULD NOT ALLOW THE FISH TO REMAIN IN THE ELECTRICAL FIELD ANY LONGER THAN NECESSARY BY REMOVING STUNNED FISH FROM THE WATER IMMEDIATELY AFTER NETTING.
- 3) SAMPLE PROCESSING AND RECORD KEEPING
    - a) FISH SHOULD BE PROCESSED AS SOON AS POSSIBLE AFTER CAPTURE TO MINIMIZE STRESS. THIS MAY REQUIRE A LARGER CREW SIZE.
    - b) ALL SAMPLING PROCEDURES MUST HAVE A PROTOCOL FOR PROTECTING HELD FISH. SAMPLERS MUST BE AWARE OF THE CONDITIONS IN THE CONTAINERS HOLDING FISH; AIR PUMPS, WATER TRANSFERS, ETC., SHOULD BE USED AS NECESSARY TO MAINTAIN SAFE CONDITIONS. ALSO, LARGE FISH SHOULD BE KEPT SEPARATE FROM SMALLER PREY-SIZED FISH TO AVOID PREDATION DURING CONTAINMENT.
    - c) FISH SHOULD BE OBSERVED FOR GENERAL CONDITION AND INJURIES (E.G., INCREASED RECOVERY TIME, DARK BANDS, AND VISUALLY OBSERVABLE SPINAL INJURIES). EACH FISH SHOULD BE COMPLETELY REVIVED BEFORE RELEASING AT THE LOCATION OF CAPTURE. A PLAN FOR ACHIEVING EFFICIENT RETURN TO APPROPRIATE HABITAT SHOULD BE DEVELOPED BEFORE EACH SAMPLING SESSION. ALSO, EVERY ATTEMPT SHOULD BE MADE TO PROCESS AND RELEASE ESA-LISTED SPECIMENS FIRST.
    - d) PERTINENT WATER QUALITY (E.G., CONDUCTIVITY AND TEMPERATURE) AND SAMPLING NOTES SHOCKER SETTINGS, FISH CONDITION/INJURIES/MORTALITIES) SHOULD BE RECORDED IN A LOGBOOK TO IMPROVE TECHNIQUE AND HELP TRAIN NEW OPERATORS. IT IS IMPORTANT TO NOTE THAT RECORDS OF INJURIES OR MORTALITIES PERTAIN TO THE ENTIRE ELECTROFISHING SURVEY, INCLUDING THE FISH SAMPLE WORK-UP.
    - e) THE ANODE WILL NOT INTENTIONALLY CONTACT FISH.
    - f) ELECTROFISHING SHOULD NOT BE CONDUCTED WHEN THE WATER CONDITIONS ARE TURBID AND VISIBILITY IS POOR. FOR EXAMPLE, WHEN THE SAMPLER CANNOT SEE THE STREAM BOTTOM IN ONE FOOT OF WATER.
    - g) IF MORTALITY OR OBVIOUS INJURY (DEFINED AS DARK BANDS ON THE BODY, SPINAL DEFORMATIONS, DE-SCALING OF 25% OR MORE OF BODY, AND TORPIDITY OR INABILITY TO MAINTAIN UPRIGHT ATTITUDE AFTER SUFFICIENT RECOVERY TIME) OCCURS DURING ELECTROFISHING, OPERATIONS WILL BE IMMEDIATELY DISCONTINUED, MACHINE SETTINGS, WATER TEMPERATURE, AND CONDUCTIVITY CHECKED, AND PROCEDURES ADJUSTED OR ELECTROFISHING POSTPONED TO REDUCE MORTALITY.

**2) DEWATERING:** DEWATERING, WHEN NECESSARY, WILL BE CONDUCTED OVER A SUFFICIENT PERIOD OF TIME TO ALLOW SPECIES TO NATURALLY MIGRATE OUT OF THE WORK AREA AND WILL BE LIMITED TO THE SHORTEST LINEAR EXTENT PRACTICABLE.

- 1) DIVERSION AROUND THE CONSTRUCTION SITE MAY BE ACCOMPLISHED WITH A COFFERDAM AND A BYPASS CULVERT OR PIPE, OR A LINED, NON-ERODIBLE DIVERSION DITCH. WHERE GRAVITY FEED IS NOT POSSIBLE, A PUMP MAY BE USED, BUT MUST BE OPERATED IN SUCH A WAY AS TO AVOID REPETITIVE DEWATERING AND REWATERING OF THE SITE. IMPOUNDMENT BEHIND THE COFFERDAM MUST OCCUR SLOWLY THROUGH THE TRANSITION, WHILE CONSTANT FLOW IS DELIVERED TO THE DOWNSTREAM REACHES.
- 2) ALL PUMPS WILL HAVE FISH SCREENS TO AVOID JUVENILE FISH IMPINGEMENT OR ENTRAINMENT, AND WILL BE OPERATED IN ACCORDANCE WITH NMFS'S CURRENT FISH SCREEN CRITERIA (NMFS 2011, OR MOST RECENT VERSION). IF THE PUMPING RATE EXCEEDS 3 CUBIC FEET PER SECOND (CFS), A NMFS ENGINEERING REVIEW WILL BE NECESSARY. IF THE SCREEN IS IN AN ISOLATED AREA WITH NO FISH (SALMONIDS OR LARVAL LAMPREY), A LARGER MESH SCREEN MAY BE USED.
- 3) DISSIPATION OF FLOW ENERGY AT THE BYPASS OUTFLOW WILL BE PROVIDED TO PREVENT DAMAGE TO RIPARIAN VEGETATION AND/OR STREAM CHANNEL.
- 4) SEEPAGE WATER WILL BE PUMPED TO A TEMPORARY STORAGE AND TREATMENT SITE OR INTO UPLAND AREAS TO ALLOW WATER TO PERCOLATE THROUGH SOIL OR TO FILTER THROUGH VEGETATION PRIOR TO REENTERING THE STREAM CHANNEL.
- 5) IN AREAS OCCUPIED BY LARVAL LAMPREY, TO THE EXTENT POSSIBLE, SALVAGE USING GUIDANCE DESCRIBED IN ABOVE SECTION "CONSERVATION MEASURES FOR SALVAGE OF NATIVE FISH, LAMPREY AND MUSSELS"(WHICH IS BASED ON USFWS 2010) OR MOST RECENT GUIDANCE.
- 6) IN AREAS OCCUPIED BY NATIVE FRESHWATER MUSSELS, TO THE EXTENT POSSIBLE, SALVAGE USING GUIDANCE DEVELOPED BY THE XERCES SOCIETY (BLEVINS ET AL. 2018, 2019).

**3.1.2.4 BULL TROUT ELECTROFISHING CONSERVATION MEASURES**

- 1) FOR SALVAGE OPERATIONS IN KNOWN BULL TROUT SPAWNING AND REARING HABITAT ELECTROFISHING SHALL ONLY OCCUR FROM MAY 1 TO JULY 31. IN FMO HABITATS, ELECTROFISHING MAY OCCUR ANY TIME OF YEAR.
- 2) BULL TROUT ARE VERY TEMPERATURE SENSITIVE AND GENERALLY SHOULD NOT BE ELECTROFISHED OR OTHERWISE HANDLED WHEN TEMPERATURES EXCEED 15°C IN SPAWNING AND REARING HABITATS.
- 3) SALVAGE ACTIVITIES SHOULD TAKE PLACE DURING PERIODS OF THE COOLEST AIR AND WATER TEMPERATURES POSSIBLE, NORMALLY EARLY IN THE MORNING VERSUS LATE IN THE DAY, AND DURING CONDITIONS APPROPRIATE TO MINIMIZE STRESS TO FISH SPECIES PRESENT.

**3) SALVAGE OF NATIVE FISH, LAMPREY AND MUSSELS:**

IN ADDITION TO CONSERVATION RECOMMENDATIONS FOR SALMONIDS, ADDITIONAL EFFORTS WILL BE EMPLOYED TO SALVAGE OTHER NATIVE SPECIES. THE FOLLOWING GUIDELINES ARE DRAFT FROM THE U.S. FISH AND WILDLIFE SERVICE, WITH ASSISTANCE FROM THE XERCES SOCIETY, AND WILL BE USED AS APPROPRIATE AND TO THE EXTENT POSSIBLE.

- 1) CONDUCT NATIVE MUSSEL AND LAMPREY PRESENCE/ ABSENCE; APPROXIMATE NUMBERS FOR SALVAGE TO AID IN PLANNING FOR SALVAGE. PRE-SELECT SITE WHERE SALVAGED MUSSELS WILL BE RELOCATED. SUGGESTED DRAWDOWN: THIS ORDER SHOULD BE ADJUSTED FOR SITE-SPECIFIC CONDITIONS AND NUMBERS OF SPECIES AND INDIVIDUALS- FOR EXAMPLE, IF YOU ONLY HAVE A SMALL NUMBER OF MUSSELS OR VERY LIMITED LARVAL LAMPREY HABITAT, IT MAY BE MOST EFFICIENT TO SALVAGE ONLY DURING DRAWDOWN. IF DRAWDOWN OCCURS DURING COOL, WET WEATHER, AND THE AREA WILL BE REWATERED WITHIN 24-48 HOURS, MUSSELS AND LARVAL LAMPREY MAY SURVIVE IN THE SEDIMENTS, AND NOT REQUIRE SALVAGE. CONVERSELY, IF CONDITIONS ARE WARM OR HOT, LAMPREY CAN EXPIRE WITHIN A COUPLE OF HOURS. DEPENDING ON YOUR SITE AND CIRCUMSTANCES, OTHER ADJUSTMENTS MAY ALSO BE NECESSARY. A GENERALIZED ORDER PRIOR TO DRAWDOWN IS:
  - a) SALVAGE FW MUSSELS BY HAND, LOCATING BY SNORKELING OR WADING. IF MUSSELS ARE NUMEROUS (OR STAFF IS LIMITED), IT MAY BE NECESSARY TO DO THIS STEP IN THE DAYS BEFORE DRAWDOWN, AS RELOCATION/PLACEMENT CAN BE TIME CONSUMING. SALVAGE LARVAL LAMPREY BY E-FISHER UNDER WATERED CONDITIONS WITH LAMPREYSPECIFIC SETTINGS.
  - b) SALVAGE BONY FISH AFTER LAMPREY WITH NETS OR BY E-FISHER WITH APPROPRIATE SETTINGS.
  - c) IF THERE ARE SUFFICIENT NUMBERS OF PEOPLE AND EQUIPMENT, SOME PEOPLE CAN BE DRYSHOCKING DEWATERED AREAS, WHILE OTHERS ARE REMOVING REMAINING MUSSELS, AND OTHERS ARE SALVAGING SALMON.
- 3) CONTINUE SALVAGE LARVAL LAMPREY AND FW MUSSELS BY HAND DURING AND AFTER DRAWDOWN, AS WATER RECEDES AND LAMPREY CONTINUE TO EMERGE FROM SEDIMENTS AND OVERLOOKED MUSSELS BECOME VISIBLE. LARVAL LAMPREY MAY EMERGE HOURS AFTER DEWATERING OCCURS.
- 4) TO ENCOURAGE LARVAL LAMPREY EMERGENCE, "DRY SHOCK"IN AREAS OF FINE/SANDY DEPOSITS THAT ARE LIKELY TO HAVE HIGH LARVAL LAMPREY DENSITIES.
- 5) HOLD ALL FISH IN BUCKETS, FINE MESH BASKETS OR TANKS WITH ADEQUATE TEMPERATURES, SPACE AND OXYGEN. RELEASE ALL FISH THROUGHOUT THE SALVAGE PROCESS IN APPROPRIATE HABITATS TO MINIMIZE STRESS, THERMAL SHOCK AND PREDATION RISK. HOLD MUSSELS IN COOLERS AS DESCRIBED BELOW AND RELOCATE MUSSELS IN A PRE-SELECTED APPROPRIATE HABITAT; PLACEMENT OF EACH INDIVIDUAL IS NEEDED TO ALLOW MUSSELS TO RE-ESTABLISH/BURROW INTO THE NEW HABITAT. ELECTROFISHING SETTINGS FOR LARVAL LAMPREY
  - 1) ELECTROFISHING SHOULD BE PERFORMED IN A MANNER THAT MINIMIZES HARM TO FISHES. HANDLING TECHNIQUES AS DESCRIBED IN NMFS ELECTROFISHING GUIDELINES ARE PROTECTIVE OF LAMPREY. IF THERE IS A CONFLICT BETWEEN CONSERVATION MEASURES FOR ESA-LISTED SALMONIDS AND LAMPREY/MUSSELS NOTIFY EC LEAD AND PRIORITIZE PROTECTIONS TOWARDS THE ESA-LISTED FISH.
  - 2) GENERALLY THREE TYPES OF ELECTROFISHERS ARE SUITABLE FOR LARVAL LAMPREY SAMPLING:
    - a) ABP-2 "WISCONSIN" ELECTROFISHER (ETS ELECTROFISHING, VERONA, WI)
    - b) SMITH-ROOT LR-24 MODEL ELECTROFISHER WITH LAMPREY SETTINGS;
    - c) SMITH ROOT APEX BACKPACK ELECTROFISHER WITH LAMPREY SETTINGS.
  - 3) ELECTROFISHERS USED FOR LARVAL LAMPREY SAMPLING SHOULD BE SET WITH TWO WAVE FORMS, A LOWER FREQUENCY "TICKLE" WAVE FORM TO COAX LARVAL LAMPREYS OUT OF THE SUBSTRATE AND A HIGHER FREQUENCY "STUN" WAVE FORM TO IMMOBILIZE LARVAL LAMPREYS FOR NETTING.
  - 4) EFFECTIVE SAMPLING INVOLVES THIS 2-STAGE METHOD (TABLE 2):
    - a) FIRST STAGE: USE 125V DIRECT CURRENT WITH A 25 PERCENT DUTY CYCLE APPLIED AT A SLOW RATE OF 3 PULSES PER SECOND, TO INDUCE LARVAL LAMPREYS TO EMERGE FROM THE SEDIMENT. AT LOW WATER TEMPERATURE (<10°C), VOLTAGE MAY NEED TO BE RAISED (150-200V) TO MAINTAIN ITS EFFECTIVENESS (GRADUALLY INCREASE VOLTAGE TO FIND THE APPROPRIATE SETTING TO AVOID THE RISK OF ELECTRONARCOSIS).
    - b) USE A PATTERN OF 3 SLOW PULSES FOLLOWED BY A SKIPPED PULSE (BURSTED PULSE) HELPS LARVAL LAMPREYS TO EMERGE.
    - c) SECOND STAGE: IMMEDIATELY AFTER LARVAL LAMPREYS EMERGE, USE A FAST PULSE SETTING OF 30 PULSES PER SECOND TO IMMOBILIZE AND NET THEM. IT IS NOT NECESSARY TO STUN LAMPREY FOR NETTING FOR EXPERIENCED NETTERS.
  - 5) AVOID EXPOSING LARVAL LAMPREYS TO EXTENDED PERIODS OF ELECTROFISHING AS IT HAS ALSO BEEN LINKED TO ELECTRONARCOSIS. RECOVERY FROM ELECTRONARCOSIS TAKES ABOUT 15 MINUTES.
  - 6) USE DIP NETS TO CAPTURE LARVAL LAMPREYS WHERE THEY ARE READILY VISIBLE. WHERE NOT VISIBLE, SEINES MAY BE EFFECTIVE. USING FINE MESH NETS TO "SWEEP"THE WATER ("BLIND-NETTING") MAY INCREASE THE NUMBER OF SMALL LARVAE COLLECTED.
  - 7) WITHIN EACH REACH, ELECTROFISHING SHOULD BE CONDUCTED IN A DOWNSTREAM TO UPSTREAM DIRECTION (FOR THE PURPOSE OF REDUCING TURBIDITY/MAINTAINING VISIBILITY) WITH ONE PERSON OPERATING THE ELECTROFISHER AND AT LEAST ONE PERSON NETTING LARVAL LAMPREYS. EACH REACH SHOULD BE THOROUGHLY AND SLOWLY SAMPLED (60-90 SEC/M), WITH MORE EFFORT DIRECTED AT SUITABLE LAMPREY REARING HABITAT AND LESS EFFORT IN AREAS WITH HARD SUBSTRATES OR HIGH WATER VELOCITY.
  - 8) USING THE 2-STAGE METHOD DESCRIBED ABOVE, THE ELECTROFISHER SHOULD MAINLY BE OPERATED IN THE LOWER FREQUENCY OUTPUT MODE TO IRRITATE LARVAL LAMPREYS OUT OF THE SUBSTRATE. WHEN NECESSARY, THE HIGHER FREQUENCY MODE SHOULD BE ACTIVATED FOR CAPTURING EMERGENT LARVAL LAMPREYS.
  - 9) MULTIPLE ELECTROFISHING PASSES SHOULD BE MADE TO ENSURE A MORE COMPLETE REMOVAL OF LARVAL LAMPREYS. A FIFTEEN MINUTE BREAK BETWEEN PASSES SHOULD BE TAKEN TO REDUCE THE CHANCE OF ELECTRONARCOSIS. SOME RESEARCH INDICATED ON AVERAGE, ONLY 30% LAMPREY EMERGE PER PASS, THUS THE NEED FOR MULTIPLE PASSES.
  - 10) POST-DRAWDOWN: LARVAL LAMPREY MAY CONTINUE TO EMERGE FROM SEDIMENTS AFTER DRAWDOWN. THE FOLLOWING "DRY- SHOCKING"GUIDELINES CAN BE USED TO ENCOURAGE LARVAE TO EMERGE FROM THE SEDIMENTS SO THEY CAN BE SALVAGED.
    - a) DURING AND AFTER DEWATERING, DEWATERED AREAS WHERE LAMPREY MAY BE BURROWED SHOULD BE SHOCKED, AKA "DRY-SHOCKING." DRY SHOCK IN DEPOSITIONAL AREAS OF FINE AND SANDY SEDIMENT FOR LARVAL LAMPREY. JUVENILES (EYED MIGRANTS) AND ADULTS ARE SOMETIMES FOUND BURIED IN ROCKIER AREAS, AND THOSE AREAS SHOULD ALSO BE SHOCKED IF OTHER THESE LIFE STAGES MAY BE PRESENT.
    - b) DRY-SHOCK A SQUARE METER AT A TIME. PLACE THE ANODES ABOUT 1 METER APART AND TICKLE-PULSE FOR 60 TO 90 SECONDS. REMOVE EMERGED LAMPREY ONCE THE SHOCKING HAS STOPPED. MOVE TO NEXT SQUARE METER AND CONTINUE. ADJUST TO LOCAL CONDITIONS IN SOME INSTANCES, 60 SECONDS OF SHOCKING WILL BE SUFFICIENT; IN OTHER AREAS 90 SECONDS IS NEEDED. IN COLD TEMPERATURES, IT CAN BE BENEFICIAL TO RAISE THE VOLTAGE TO INCREASE EFFICIENCY. A GENERAL GUIDELINE IS AT TEMPERATURES LESS THAN 100C, THE VOLTAGE CAN BE INCREASED TO 150-175 V. IF EMERGENCE IS REALLY SLOW (OR ON THE LAST SALVAGE PASS PRIOR TO COMPLETE DEWATERING), THE VOLTAGE CAN BE INCREASED TO 200 V INITIALLY, AND UP TO 400 V IF LOWER VOLTAGE IS NOT EFFECTIVE (DRY SHOCKING ONLY).

**4) FISH SALVAGE NOTICE:**

MONITORING AND RECORDING OF FISH PRESENCE, HANDLING, AND MORTALITY MUST OCCUR FOR THE DURATION OF THE ISOLATION, SALVAGE, ELECTROFISHING, DEWATERING, AND DEWATERING OPERATIONS. ONCE OPERATIONS ARE COMPLETED, A SALVAGE REPORT WILL DOCUMENT PROCEDURES USED, ANY FISH INJURIES OR DEATHS (INCLUDING NUMBERS OF FISH AFFECTED), AND CAUSES OF ANY DEATHS.





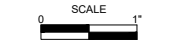
COLVILLE CONFEDERATED TRIBES  
ANTONE CREEK  
ENHANCEMENT PROJECT  
OKANOGAN COUNTY, WA

HIP  
CONSERVATION  
MEASURES 3

REVISION NUMBER

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**4) FISH PASSAGE:** FISH PASSAGE WILL BE PROVIDED FOR ANY ADULT OR JUVENILE FISH LIKELY TO BE PRESENT IN THE PROJECT AREA DURING CONSTRUCTION, UNLESS PASSAGE DID NOT EXIST BEFORE CONSTRUCTION, OR THE STREAM IS NATURALLY IMPASSABLE AT THE TIME OF CONSTRUCTION. IF THE PROVISION OF TEMPORARY FISH PASSAGE DURING CONSTRUCTION WILL INCREASE NEGATIVE EFFECTS ON ESA-LISTED SPECIES OR THEIR HABITAT, A VARIANCE CAN BE REQUESTED FROM THE NMFS BRANCH CHIEF AND THE USFWS FIELD OFFICE SUPERVISOR. PERTINENT INFORMATION, SUCH AS THE SPECIES AFFECTED, LENGTH OF STREAM REACH AFFECTED, PROPOSED TIME FOR THE PASSAGE BARRIER, AND ALTERNATIVES CONSIDERED WILL BE INCLUDED IN THE VARIANCE REQUEST.

**5) CONSTRUCTION AND DISCHARGE WATER:**  
1) SURFACE WATER MAY BE DIVERTED TO MEET CONSTRUCTION NEEDS, BUT ONLY IF DEVELOPED SOURCES ARE UNAVAILABLE OR INADEQUATE.  
2) DIVERSIONS WILL NOT EXCEED 10% OF THE AVAILABLE FLOW.  
3) ALL CONSTRUCTION DISCHARGE WATER WILL BE COLLECTED AND TREATED USING THE BEST AVAILABLE TECHNOLOGY SUITABLE FOR SITE CONDITIONS.  
4) TREATMENTS TO REMOVE DEBRIS, NUTRIENTS, SEDIMENT, PETROLEUM HYDROCARBONS, METALS AND OTHER POLLUTANTS LIKELY TO BE PRESENT WILL BE PROVIDED.

**6) MINIMIZE TIME AND EXTENT OF DISTURBANCE:** EARTHWORK (INCLUDING DRILLING, EXCAVATION, DREDGING, FILLING AND COMPACTING) IN WHICH MECHANIZED EQUIPMENT IS USED IN STREAM CHANNELS, RIPARIAN AREAS, AND WETLANDS WILL BE COMPLETED AS QUICKLY AS POSSIBLE. MECHANIZED EQUIPMENT WILL BE USED IN STREAMS ONLY WHEN PROJECT SPECIALISTS BELIEVE THAT SUCH ACTIONS ARE THE ONLY REASONABLE ALTERNATIVE FOR IMPLEMENTATION, OR WOULD RESULT IN LESS SEDIMENT IN THE STREAM CHANNEL OR DAMAGE (SHORT- OR LONG-TERM) TO THE OVERALL AQUATIC AND RIPARIAN ECOSYSTEM RELATIVE TO OTHER ALTERNATIVES. TO THE EXTENT FEASIBLE, MECHANIZED EQUIPMENT WILL WORK FROM THE TOP OF THE BANK, UNLESS WORK FROM ANOTHER LOCATION WOULD RESULT IN LESS HABITAT DISTURBANCE.

**7) CESSATION OF WORK:** PROJECT OPERATIONS WILL CEASE UNDER THE FOLLOWING CONDITIONS:  
1) HIGH FLOW CONDITIONS THAT MAY RESULT IN INUNDATION OF THE PROJECT AREA, EXCEPT FOR EFFORTS TO AVOID OR MINIMIZE RESOURCE DAMAGE  
2) WHEN ALLOWABLE WATER QUALITY IMPACTS, AS DEFINED BY THE STATE CWA SECTION 401 WATER QUALITY CERTIFICATION OR HIP TURBIDITY MONITORING PROTOCOL, HAVE BEEN EXCEEDED

**8) SITE RESTORATION:** WHEN CONSTRUCTION IS COMPLETE:  
1) ALL STREAMBANKS, SOILS, AND VEGETATION WILL BE CLEANED UP AND RESTORED AS NECESSARY USING STOCKPILED LARGE WOOD, TOPSOIL, AND NATIVE CHANNEL MATERIAL.  
2) ALL PROJECT-RELATED WASTE WILL BE REMOVED.  
3) ALL TEMPORARY ACCESS ROADS, CROSSINGS, AND STAGING AREAS WILL BE DECOMPACTED AND RECONTOURED. WHEN NECESSARY FOR REVEGETATION AND INFILTRATION OF WATER, COMPACTED AREAS OF SOIL WILL BE LOOSENEED.  
4) ALL DISTURBED AREAS WILL BE REHABILITATED IN A MANNER THAT RESULTS IN SIMILAR OR IMPROVED CONDITIONS RELATIVE TO PRE-PROJECT CONDITIONS. THIS WILL BE ACHIEVED THROUGH REDISTRIBUTION OF STOCKPILED MATERIALS, SEEDING, AND/OR PLANTING WITH LOCAL NATIVE SEED MIXES OR PLANTS.

**9) REVEGETATION:** LONG-TERM SOIL STABILIZATION OF DISTURBED SITES WILL BE ACCOMPLISHED WITH REESTABLISHMENT OF NATIVE VEGETATION USING THE FOLLOWING CRITERIA:  
1) PLANTING AND SEEDING WILL OCCUR PRIOR TO OR AT THE BEGINNING OF THE FIRST GROWING SEASON AFTER CONSTRUCTION.  
2) USE A MIX OF SPECIES, APPROPRIATE TO THE SITE THAT WILL ACHIEVE ESTABLISHMENT, SHADE, AND EROSION CONTROL OBJECTIVES. THESE WOULD, PREFERABLY BE FORB, GRASS, SHRUB, OR TREE SPECIES NATIVE TO THE PROJECT AREA OR REGION.  
3) VEGETATION, SUCH AS WILLOW, SEDGE AND RUSH MATS, WILL BE SALVAGED FROM DISTURBED OR ABANDONED FLOODPLAINS, STREAM CHANNELS, OR WETLANDS, AND REPLANTED AT THE SITE IN APPROPRIATE LOCATIONS.  
4) INVASIVE SPECIES WILL NOT BE USED.  
5) SHORT-TERM STABILIZATION MEASURES MAY INCLUDE THE USE OF NON-NATIVE STERILE SEED MIX (WHEN NATIVE SEEDS ARE NOT AVAILABLE), WEED-FREE CERTIFIED STRAW, JUTE MATTING, AND OTHER SIMILAR TECHNIQUES.  
6) SURFACE FERTILIZER WILL NOT BE APPLIED WITHIN 50 FEET OF ANY STREAM CHANNEL, WATERBODY, OR WETLAND.  
7) FENCING WILL BE INSTALLED AS NECESSARY TO PREVENT ACCESS TO REVEGETATED SITES BY LIVESTOCK OR UNAUTHORIZED PERSONS.  
8) RE-ESTABLISHMENT OF VEGETATION IN DISTURBED AREAS WILL ACHIEVE AT LEAST 70% OF PRE-PROJECT CONDITIONS WITHIN 3 YEARS.  
9) INVASIVE PLANTS WILL BE REMOVED OR CONTROLLED UNTIL NATIVE PLANT SPECIES ARE ESTABLISHED (TYPICALLY 3 YEARS POST-CONSTRUCTION).

**10) SITE ACCESS:** THE PROJECT SPONSOR WILL RETAIN THE RIGHT OF REASONABLE ACCESS TO THE SITE IN ORDER TO MONITOR THE SUCCESS OF THE PROJECT OVER ITS LIFE.

**11) IMPLEMENTATION MONITORING:** PROJECT SPONSOR STAFF OR THEIR DESIGNATED REPRESENTATIVE WILL PROVIDE IMPLEMENTATION MONITORING BY FILLING OUT THE PROJECT COMPLETION FORM (PCF) TO ENSURE COMPLIANCE WITH THE APPLICABLE BIOP, DEMONSTRATING THAT:  
1) GENERAL CONSERVATION MEASURES ARE ADEQUATELY FOLLOWED.  
2) EFFECTS TO LISTED SPECIES ARE NOT GREATER THAN PREDICTED AND INCIDENTAL TAKE LIMITATIONS ARE NOT EXCEEDED.  
3) TURBIDITY MONITORING IS BEING CONDUCTED IN ACCORDANCE WITH THE HIP TURBIDITY MONITORING PROTOCOL (SECTION 3.3, PG. 44) AND RECORDED IN THE PCF.

**12) CWA SECTION 401 WATER QUALITY CERTIFICATION:** THE PROJECT SPONSOR OR DESIGNATED REPRESENTATIVE WILL COMPLETE AND RECORD WATER QUALITY OBSERVATIONS TO ENSURE THAT IN-WATER WORK IS NOT DEGRADING WATER QUALITY. DURING CONSTRUCTION, CWA SECTION 401 WATER QUALITY CERTIFICATION PROVISIONS PROVIDED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, WASHINGTON DEPARTMENT OF ECOLOGY, OR IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY WILL BE FOLLOWED.

**13) STAGED REWATERING PLAN:** WHEN APPROPRIATE, THE PROJECT SPONSOR SHALL IMPLEMENT A STAGED REWATERING PLAN FOR PROJECTS THAT INVOLVE INTRODUCING STREAMFLOW INTO RECENTLY EXCAVATED CHANNELS UNDER THE 2A) IMPROVE SECONDARY CHANNEL AND WETLAND HABITAT ACTIVITY CATEGORY OR 2F) CHANNEL RECONSTRUCTION CATEGORIES. THIS PLAN MAY BE ALTERED ACCORDING TO SITE SPECIFIC CONDITIONS WITH COORDINATION AND FEEDBACK FROM BPA AND THE SERVICES.

- 1) PRE-WASH THE NEWLY-EXCAVATED CHANNEL BEFORE REWATERING. TURBID WASH WATER WILL BE DETAINED AND PUMPED TO THE FLOODPLAIN OR INTO A REACH WITH SEDIMENT CAPTURE DEVICES, RATHER THAN DISCHARGING INTO FISH-BEARING WATERS.
- 2) PREPARE NEW CHANNEL FOR WATER BY INSTALLING SEINE NETS AT THE UPSTREAM END TO PREVENT FISH FROM MOVING DOWNSTREAM INTO THE NEW CHANNEL UNTIL 2/3 OF TOTAL STREAMFLOW IS AVAILABLE IN THAT CHANNEL. STARTING IN THE EARLY MORNING, INTRODUCE 1/3 OF THE FLOW INTO THE NEW CHANNEL OVER A PERIOD OF 1-2 HOURS.
- 3) WHEN REINTRODUCING STREAMFLOW INTO A DEWATERED STREAM REACH, MONITOR FOR TURBIDITY:
  - A) A SAMPLE MUST BE TAKEN TO ESTABLISH BACKGROUND TURBIDITY LEVELS PRIOR TO ANTICIPATED TURBIDITY PULSES. TAKE THE SAMPLE AT AN UNDISTURBED AREA APPROXIMATELY 100 FEET UPSTREAM FROM THE NEWLY EXCAVATED CHANNEL.
  - B) TAKE A SECOND SAMPLE OR OBSERVATION, IMMEDIATELY DOWNSTREAM OF THE NEWLY EXCAVATED CHANNEL, APPROXIMATELY:
    - C) 50 FEET DOWNSTREAM FOR STREAMS THAT ARE LESS THAN 30 FEET WIDE;
    - D) 100 FEET DOWNSTREAM FOR STREAMS BETWEEN 30 AND 100 FEET WIDE;
    - E) 200 FEET DOWNSTREAM FOR STREAMS GREATER THAN 100 FEET WIDE; AND
    - F) 300 FEET FROM THE DISCHARGE POINT OR NONPOINT SOURCE FOR LOCATIONS SUBJECT TO TIDAL OR COASTAL SCOUR.
  - G) A SAMPLE MUST THEN BE TAKEN EVERY 2 HOURS DURING REWATERING AND BE COMPARED AGAINST THE BACKGROUND MEASUREMENT.
  - H) AN EXCEEDANCE OCCURS WHENEVER BOTH OF THE FOLLOWING CONDITIONS ARE EXCEEDED:
    - I) DOWNSTREAM TURBIDITY EXCEEDS 40 NTU (FIGURE 1).
    - J) DOWNSTREAM TURBIDITY EXCEEDS 10% ABOVE BACKGROUND.
  - K) IN AN EXCEEDANCE OCCURS FOR TWO CONSECUTIVE READINGS (4 HOURS), STOP WORK IMMEDIATELY AND TAKE MEASURES TO REDUCE TURBIDITY BEFORE CONTINUING TO REINTRODUCE STREAMFLOW.
- 4) PREPARE TO INTRODUCE THE SECOND 1/3 OF THE FLOW (UP TO A TOTAL OF 2/3) TO THE NEW CHANNEL BY INSTALLING SEINE NETS AT THE UPSTREAM END OF THE OLD CHANNEL IN ORDER TO PREVENT FISH, LARVAL LAMPREY AND FRESHWATER MUSSELS FROM MOVING INTO A PARTIALLY-DEWATERED CHANNEL. INTRODUCE THE SECOND 1/3 OF THE FLOW OVER THE NEXT 1-2 HOURS. SALVAGE FISH FROM THE OLD TO THE CONTRACTOR MAY FIND IT USEFUL TO HAVE PREWASHED GRAVEL BAGS AVAILABLE ONSITE TO CONTROL THE FLOW OF WATER. CHANNEL AT THIS TIME, SO THAT THE OLD CHANNEL IS FISH-FREE BEFORE DROPPING BELOW 1/3 OF THE FLOW. NOTE: THE FISH WILL BE TEMPORARILY BLOCKED FROM MOVING DOWNSTREAM INTO EITHER CHANNEL UNTIL 2/3 OF THE FLOW HAS BEEN TRANSITIONED TO THE NEW CHANNEL. THIS BLOCKAGE TO DOWNSTREAM FISH PASSAGE IS EXPECTED TO PERSIST FOR ROUGHLY 12 TO 14 HOURS, BUT FISH WILL STILL BE ABLE TO VOLITIONALLY MOVE OUT OF THE CHANNEL IN THE DOWNSTREAM DIRECTION. PERFORM MONITORING AS IN #3 ABOVE.
- 5) AFTER THE SECOND 1/3 OF FLOW IS INTRODUCED OVER 2 HOURS, AND TURBIDITY IS WITHIN 10% OF THE BACKGROUND LEVEL, REMOVE SEINE NETS FROM THE NEW CHANNEL, AND ALLOW FISH TO MOVE DOWNSTREAM BACK INTO THE CHANNEL. INTRODUCE THE FINAL 1/3 OF FLOW. ONCE 100% OF THE FLOW IS IN THE NEW CHANNEL, INSTALL PLUG TO BLOCK FLOW INTO THE OLD CHANNEL AND REMOVE SEINE NETS FROM THE OLD CHANNEL. ADDITIONAL EFFORTS TO SALVAGE LARVAL LAMPREY EMERGING FROM FINE SEDIMENT DEPOSITS SHOULD BE CONDUCTED AFTER THE FLOW IS GONE AND POSSIBLY FOR A FEW HOURS AFTER FLOW IS GONE, AS THE LARVAE WILL CONTINUE TO EMERGE.

**14) HIP TURBIDITY MONITORING PROTOCOL:** THE PROJECT SPONSOR SHALL COMPLETE AND RECORD THE FOLLOWING WATER QUALITY OBSERVATIONS ON THE HIP 4 PROJECT COMPLETION FORM (PCF). IF THE GEOMORPHOLOGY OF THE PROJECT AREA (E.G., SILTY OR CLAYLIKE MATERIALS) OR THE NATURE OF THE ACTION (E.G., LARGE AMOUNTS OF BARE EARTH EXPOSURE) SHALL PRECLUDE THE SUCCESSFUL COMPLIANCE WITH THESE TRIGGERS, NOTIFY YOUR EC LEAD & THE SERVICES IN ADVANCE OF THE LIKELIHOOD OF AN EXCEEDANCE AND SEEK ADDITIONAL RECOMMENDATIONS.

- 1) TAKE A BACKGROUND TURBIDITY MEASUREMENT APPROXIMATELY 100 FEET UPSTREAM FROM THE PROJECT AREA USING A RECENTLY-CALIBRATED TURBIDIMETER. RECORD THE OBSERVATION, LOCATION, AND TIME OF THE BACKGROUND MEASUREMENT BEFORE MONITORING AT THE DOWNSTREAM POINT, KNOWN AS THE MEASUREMENT COMPLIANCE POINT. IF THE BACKGROUND TURBIDITY IS LESS THAN 20 NTU, THEN USE VISUAL OBSERVATIONS (FIGURE 1).
- 2) TAKE A SECOND MEASUREMENT OR OBSERVATION AT THE MEASUREMENT COMPLIANCE POINT, IMMEDIATELY DOWNSTREAM OF THE DISTURBANCE AREA, APPROXIMATELY:
  - A) 50 FEET DOWNSTREAM FOR STREAMS THAT ARE LESS THAN 30 FEET WIDE;
  - B) 100 FEET DOWNSTREAM FOR STREAMS BETWEEN 30 AND 100 FEET WIDE;
  - C) 200 FEET DOWNSTREAM FOR STREAMS GREATER THAN 100 FEET WIDE; AND
  - D) 300 FEET FROM THE DISCHARGE POINT OR NONPOINT SOURCE FOR LOCATIONS SUBJECT TO TIDAL OR COASTAL SCOUR.
- E) RECORD THE DOWNSTREAM OBSERVATION, LOCATION, AND TIME.
- 3) TURBIDITY SHALL BE MEASURED (STEPS 1-2) EVERY 2 HOURS WHILE WORK IS BEING IMPLEMENTED. THE MONITORING INTERVAL OF 4 HOURS HAS BEEN PROPOSED BUT NOT APPROVED.
- 4) AN EXCEEDANCE OCCURS WHENEVER BOTH OF THE FOLLOWING CONDITIONS ARE EXCEEDED:
  - A) DOWNSTREAM TURBIDITY EXCEEDS 40 NTU,
  - B) DOWNSTREAM TURBIDITY EXCEEDS 10% ABOVE BACKGROUND FIGURE 1 SUGGESTED VISUAL OBSERVATIONAL DIFFERENCES IN TURBIDITY NOTE: FOR ANY STREAM WITH A BACKGROUND TURBIDITY OF 20 NTU OR LESS, IF YOU CANNOT SEE THE BOTTOM IN 2 FEET OF WATER AT EACH 2 HOUR INTERVAL, THEN TURBIDITY HAS LIKELY SURPASSED 40 NTUS AND YOU MUST ADJUST YOUR PROCEDURES. THIS WOULD ALLOW WORK TO CONTINUE WITH A TURBIDITY OF UNDER ABOUT 30-40 NTU. TURBIDITY OVER 40 NTU SHOULD BE AVOIDED.
- 1) IF AN EXCEEDANCE OCCURS THEN ADJUSTMENTS OR CORRECTIVE MEASURES MUST BE TAKEN IN ORDER TO REDUCE TURBIDITY. THE NMFS STAFF BIOLOGISTS OF THE AREA CAN PROVIDE TECHNICAL ASSISTANCE.
- 2) IF EXCEEDANCES OCCUR FOR MORE THAN TWO CONSECUTIVE MONITORING INTERVALS (AFTER 4HOURS), THE ACTIVITY MUST STOP UNTIL THE TURBIDITY LEVEL RETURNS TO BACKGROUND, AND THE EC LEAD MUST BE NOTIFIED AFTER THE PROJECT IS CONCLUDED. THE EC LEAD SHALL DOCUMENT THE REASONS FOR THE EXCEEDANCES AND THE CORRECTIVE MEASURES TAKEN. THIS IS VERY IMPORTANT AS BPA IS REQUIRED TO REPORT TO THE SERVICES UPON ALL EXCEEDANCES



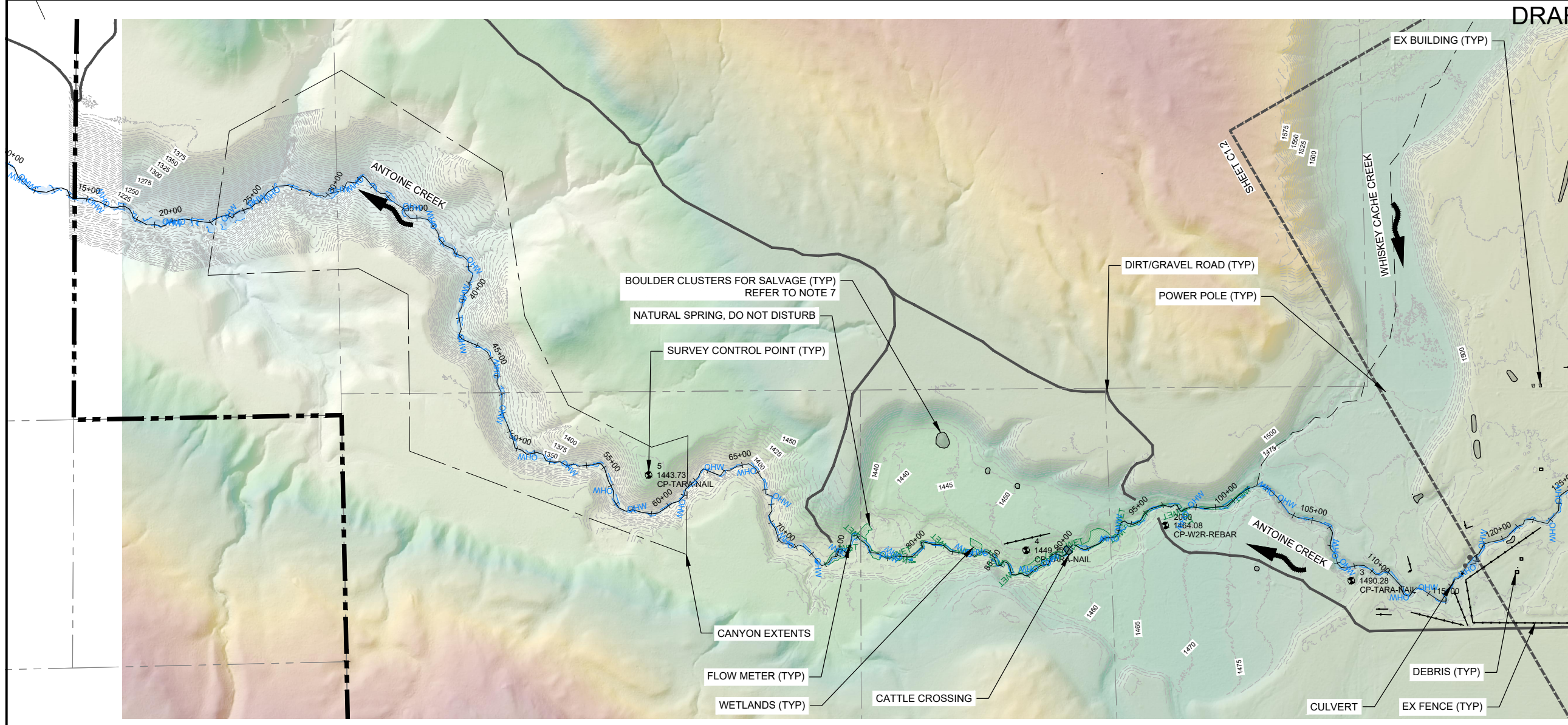


**W2R**  
WOLF WATER RESOURCES, INC.  
1001 SE WATER AVE, SUITE #180  
PORTLAND, OR 97214  
503.207.6688

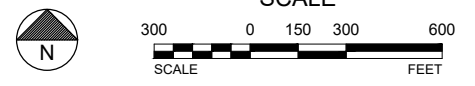
**COLVILLE CONFEDERATED TRIBES**  
P.O. BOX 150  
NESPELEM, WA 99155  
509.634.2277

**COLVILLE CONFEDERATED TRIBES  
ANTOINE CREEK  
ENHANCEMENT PROJECT  
OKANOGAN COUNTY, WA**

**EX CONDITIONS PLAN  
STA 10+00 - STA 120+00**



**EXISTING CONDITIONS**  
SCALE: 1"=300'



**NOTES:**

1. AERIAL IMAGERY COLLECTED BY TARA FIRMA UAV DRONE FLIGHT, APRIL 2023 AND CORRECTED SPATIALLY WITH GROUND CONTROL POINTS SURVEYED BY W2R.
2. ORDINARY HIGH WATER EXTENT APPROXIMATED BY EXISTING CONDITIONS HYDRAULIC MODEL INUNDATION EXTENTS FOR THE 2-YEAR FLOW (12 CFS).
3. TAXLOT BOUNDARIES FROM OKANOGAN COUNTY GIS.
4. EXISTING CONDITIONS TOPOGRAPHY PROVIDED BY GEO TERRA, JULY-OCTOBER 2017 AND ACCESSED FROM THE WA DNR LIDAR PORTAL.
5. EXISTING WETLAND BOUNDARIES DETERMINED BY W2R WETLAND INVESTIGATION PERFORMED IN 2023.
6. CONTRACTOR SHALL DEMOLISH ALL EXISTING STRUCTURES AND FENCING.
7. PILES OF BOULDERS, COBBLES AND OTHER ROCK EXIST WITHIN THE ANTOINE CREEK FLOODPLAIN AND THE BROADER PROJECT AREA. THESE AREAS HAVE BEEN IDENTIFIED ON THIS SHEET AND CALLED OUT. THE CONTRACTOR SHALL SALVAGE AND STOCKPILE THESE EXISTING ROCK PILES FOR USE IN CHANNEL FILL AND FLOODPLAIN GRADING AS DIRECTED BY THE CAR AND SHOWN IN THE PLANS.

**LEGEND**

- 5 --- 5' CONTOUR LINES
- 25 --- 25' CONTOUR LINES
- - - - TAX LOTS
- - - - PROJECT OWNERSHIP BOUNDARY
- ROAD CENTERLINE
- WET — WETLANDS
- - - - EXISTING FENCE
- OHW — ORDINARY HIGH WATER
- - - - CREEK THALWEG
- ▨ EXISTING BUILDING
- EXISTING FORD
- ➔ DIRECTION OF FLOW
- FLOW METER
- ⊕ SURVEY CONTROL POINT
- POWER POLES
- BOULDER CLUSTER FOR SALVAGE
- CULVERT

SURVEY CONTROL POINTS				
Point #	Raw Description	Elevation	Northing	Easting
1	CP-TARA-NAIL	1589.134	642355.4970	1999925.2810
2	CP-TARA-NAIL	1518.832	641154.3039	1996510.4220
3	CP-TARA-NAIL	1490.277	640351.5461	1994886.8060
4	CP-TARA-NAIL	1449.350	640508.1375	1993193.9540
5	CP-TARA-NAIL	1443.731	640895.3324	1991252.1060
1000	CP-W2R-REBAR	1549.045	641830.5175	1997169.8640
2000	CP-W2R-REBAR	1464.078	640635.8742	1993910.1720

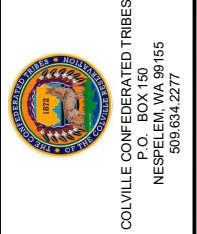
REVISION NUMBER		
No.	Date	Revision

Date: 3/11/2024  
Designed By: SR, LE  
Drawn By: HC  
Checked By: SR

SCALE: 1"=300'  
JOB NO. 20220046  
SHEET NO. C1.1  
06 OF 36

DWG: Z:\Shared\W2R\CAD\20220046-Antoine Creek\DWGS\SHETS\SAC - C1.0 - EXISTING CONDITIONS.dwg USER: hdegg DATE: Mar 11, 2024 3:24pm XREFS:X-TB-W2R-22x34 AC-XR-AERIAL AC-XR-HAWS AC-XR-BASEMAP WBLOCK



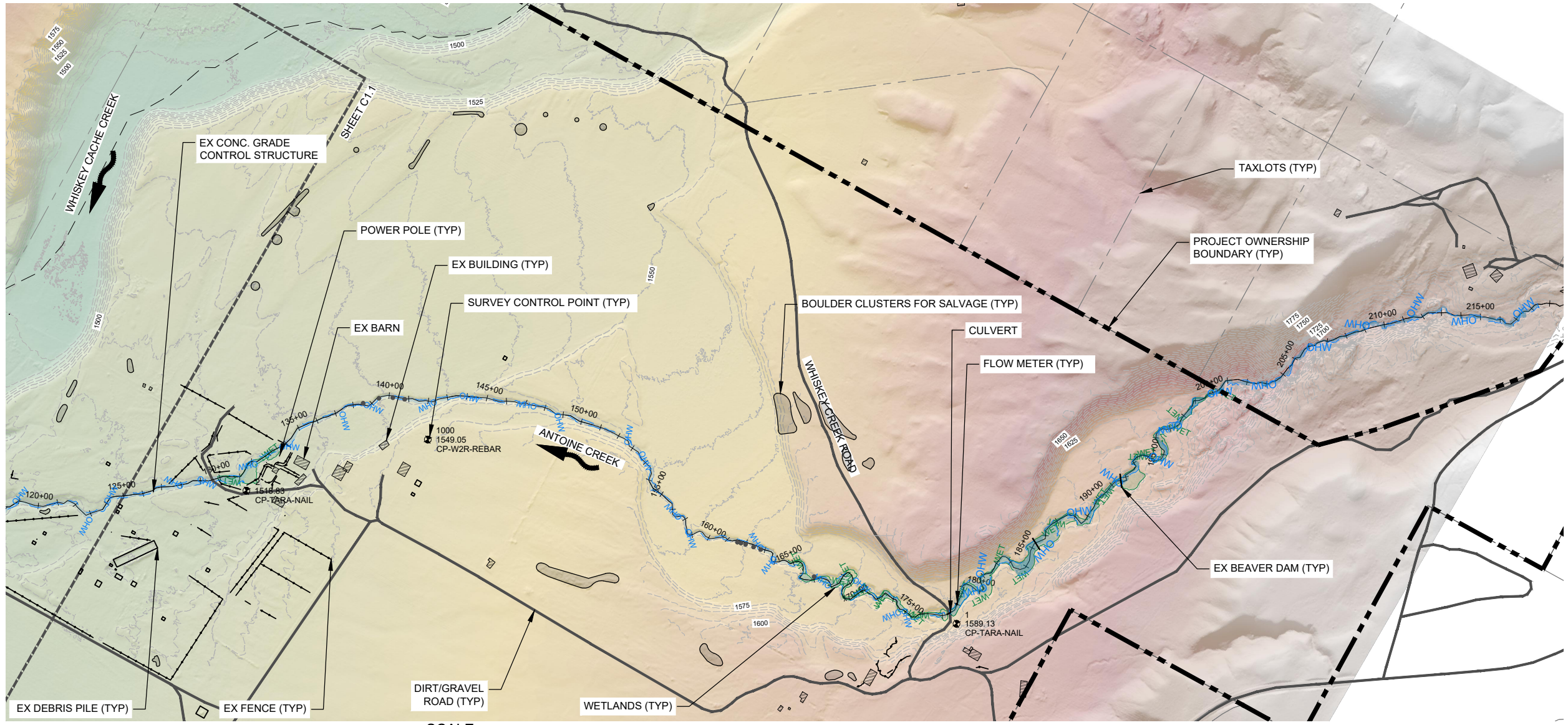


COLVILLE CONFEDERATED TRIBES  
ANTOINE CREEK  
ENHANCEMENT PROJECT  
OKANOGAN COUNTY, WA

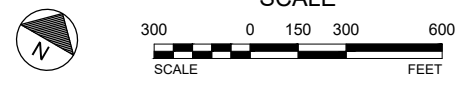
EX CONDITIONS PLAN  
STA 120+00 - STA  
220+00

REVISION NUMBER		
No.	Date	Revision

Date	3/11/2024	Designed By	SR, LE
Drawn By	HC	Checked By	SR
SCALE 1" = 300'			
JOB NO.	20220046		
SHEET NO.	C1.2		
	07 OF 36		



**EXISTING CONDITIONS**  
SCALE: 1"=300'



**LEGEND**

- 5 ----- 5' CONTOUR LINES
- 25 ----- 25' CONTOUR LINES
- TAX LOTS
- WET--- WETLANDS
- EXISTING FENCING
- OHW--- ORDINARY HIGH WATER
- CREEK THALWEG
- ▨ EXISTING BUILDINGS
- EXISTING FORD
- ↔ DIRECTION OF FLOW
- FLOW METER
- ⊕ SURVEY CONTROL POINT
- BOULDER CLUSTER FOR SALVAGE
- - - EXISTING CULVERT

- NOTES:**
- AERIAL IMAGERY COLLECTED BY TARA FIRMA UAV DRONE FLIGHT, APRIL 2023 AND CORRECTED SPATIALLY WITH GROUND CONTROL POINTS SURVEYED BY W2R.
  - ORDINARY HIGH WATER EXTENT APPROXIMATED BY EXISTING CONDITIONS HYDRAULIC MODEL INUNDATION EXTENTS FOR THE 2-YEAR FLOW (60 CFS).
  - TAXLOT BOUNDARIES FROM OKANOGAN COUNTY GIS.
  - EXISTING CONDITIONS TOPOGRAPHY PROVIDED BY GEO TERRA, JULY-OCTOBER 2017 AND ACCESSED FROM THE WA DNR LIDAR PORTAL.
  - EXISTING WETLAND BOUNDARIES DETERMINED BY W2R WETLAND INVESTIGATION PERFORMED IN 2023
  - ALL TRASH, DEBRIS AND NON-NATIVE MATERIALS ENCOUNTERED DURING EXCAVATION ACTIVITIES SHALL BE REMOVED FROM THE FLOODPLAIN AND HAULED OFFSITE TO AN APPROVED FACILITY
  - CONTRACTOR MUST DEMOLISH ALL EXISTING STRUCTURES, CONCRETE PADS AND FENCING.
  - SALVAGED ROCK MAY BE USED IN CHANNEL FILL, LWD BALLAST OR HABITAT FEATURES IN LIEU OF IMPORTED ROCK.

SURVEY CONTROL POINTS				
Point #	Raw Description	Elevation	Northing	Easting
1	CP-TARA-NAIL	1589.134	642355.4970	1999925.2810
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