Contractor's Bid Package
For

Walaluuks Creek Low-Tech Process-Based Restoration

March 12, 2025
Prepared by:

David Lindley | Habitat Coordinator |Yakama Nation Fisheries

1575 Horseshoe Bend Rd | Klickitat, WA, 98628

Mail: P.O. Box 215
Phone: {509} 830.8005
Email: dlindley@ykfp.org

Critical Dates:

Bid Submission Deadline:	April 4, 2025 – 12 pm
Tentative Award Selection:	April 9, 2025
Project Initiation (est):	June 15, 2025
Project Completion (est):	October 30, 2025

TABLE OF CONTENTS

ADVERTISEMENT FOR BIDS

NOTICE IS HEREBY GIVEN that bid proposals will be received by:

Yakama Nation Fisheries

Attn: Latonia Wheeler

RE: Walaluuks Creek LTPBR

PO Box 151 Toppenish, WA 98948

Shipping Address: 401 Fort Rd, Toppenish, WA 98948

12:00 P.M. Pacific Daylight Time on April 4, 2025

Bids must be received in Toppenish by noon on April 4, 2025. It is recommended that all shipping and/or delivery receipts are retained past the bid due date to ensure proof of submission. In addition to the required physical bid submittals, we are also requesting contractors to provide digital copies of their completed bid documents through email submittal directly to the project manager at **dlindley@ykfp.org**. We are encouraging digital copies to be emailed at the same time the physical bid package is mailed to the proper address in Toppenish. This will allow Yakama Nation Fisheries staff to know whether to expect that a hard copy bid has been submitted and will allow Yakama Nation Fisheries staff an opportunity to more quickly score and rank bids for the contract award process.

GENERAL DESCRIPTION

The **Yakama Nation, OWNER,** is soliciting bids for restoration services associated with enhancing instream and riparian habitat in the Walaluuks Creek watershed with Low Tech Process Based Restoration (LTPBR). This project is led by the Yakama Nation Fisheries, **YKFP**, whose staff will be acting as project and construction managers. The goals of the project are to add complexity and diversity to instream and riparian habitat by thinning on-site alder, placing thinned material instream to add structure and to enhance stream flows during the low-precipitation season of the year in Walaluuks Creek, a tributary to Rock Creek. Promoting natural fluvial processes will result in a healthy and resilient riverscape and increase habitat quantity, quality, and diversity for ESA threatened fish.

Walaluuks Creek is a second-order stream system and drains into Rock Creek at river mile 4.1. The center of the project area is located at -120.476236 degrees west by 45.848489 degrees north and includes approximately one mile of creek. The project area will be accessed from the north via the Bickleton Hwy. The access point is 24 miles east of Goldendale, WA on the Bickleton Hwy.

PROJECT BACKGROUND

The overall goal of the habitat enhancement in Walaluuks Creek is to improve the quality and quantity of habitat for threatened steelhead by promoting sustainable fluvial processes that result in healthy and resilient riverscape. Within this broad management goal, objectives for habitat enhancement include:

1. Increase the abundance of log jams and large wood accumulations.
2. Increase in-channel geomorphic diversity.
3. Increase the proportion of the valley bottom composed of active floodplain.
4. Increase wetland and riparian vegetation extent, diversity, and abundance.
5. Increase perennial surface flow extent during low flow periods.
6. Protect spring from cattle trampling and vegetation degradation

Low-Tech Process-Based Restoration (LTPBR) methods will be utilized in Walaluuks Creek to achieve many of project goals and objectives. LTPBR practices use simple, cost-effective, hand-built structures that mimic beaver dams (beaver dam analogs) and large wood accumulations (i.e., post-assisted and post-less log structures).

Three treatments will be utilized in Walaluuks Ck:

1. Enhancements of existing perennial pools by felling trees or pulling in woody debris from the floodplain.
2. Felling trees into the creek where trees are available, and gravel substrate would likely allow the creek to scour new pools.
3. (Felling trees into the creek where they would likely be mobilized by high flows, with the expectation that some of the trees would mobilize and become lodged in other trees, bends, or pools downstream where they would enhance existing pools and provide cover.

CONTRACT OVERVIEW

To achieve the desired future conditions, structural elements are proposed to include B Post-Assisted Log Structures (PALS), unsecured trees/wood accumulations, and fencing of small exclosure to protect a spring. These structure types will be constructed at 17 pre-determined locations using a variety of locally sourced material (from adjacent floodplains and hillslopes) and installed using manual labor that will result in minimal to no impact to existing riparian vegetation and habitat. The size of individual wood pieces will vary but are not likely to exceed

12 inches dbh by 20 feet in length since they will be transported and placed by hand or grip-hoist. Some wood exceeding 12 inches dbh by 20 feet in length may be used if directly sourced from the floodplain or adjacent hillslopes.

There are no maintained roads that lead directly to the project site; however, a two-track dirt road gets close to the project site, and efforts will be made to get a UTV to the project site to shuttle equipment.

Funding for this project is through Bonneville Power Administration Fish and Wildlife Program, Davis-Bacon prevailing wage provisions will apply to this contract. The selected contractor will need to demonstrate compliance with this provision by providing certified payroll in conjunction with submitted invoices. Of the 5-person crew, it should be assumed that at most 2 people will be conducting felling of trees and 3 will be performing general labor duties.

Stream & Riparian Restoration: At the direction of **OWNER** the **CONTRACTOR** will construct Post Assisted Log Structures (PALS) by placing and configuring, primarily by hand, wood in the channel—secured by weaving it around standing trees and reinforcing with the placement of untreated wood posts driven by a hydraulic post pounder (YKFP provided). The **CONTRACTOR,** with assistance from the **OWNER** will transport fencing materials, posts, and hand tools to the project site.

The contract will consist of three main components:

1. LTPBR
    a. 5-person labor crew to assist with LTPBR. Experience & Duties will include:
        i. Skilled sawyer for directional tree felling, in-stream BDA & PALS construction, post driving, and wood hauling.
        ii. Truck, hand tools, and other associated gear to be included in bid.
    b. Felling and transport of ~50-100 logs (~8-10" in diameter and ~15-20 feet long) from floodplain and adjacent upland forest.
    c. Construction of various instream log structures at 17 intervention locations
2. Fencing:
    a. 5-person labor crew to assist with constructing a small exclosure around a spring via designs provided by **OWNER**.

Additional information can be found in Appendix B – Project Maps and Photos.

Awarding of the contract shall be based on a combination of price, equipment specified, project proposal and **CONTRACTOR** experience and background. The **OWNER** shall have the **SOLE** discretion and responsibility for choosing the responsive and responsible **CONTRACTOR.**

CONTRACTOR'S RESPONSIBILITIES

The **CONTRACTOR** shall be responsible for performing their work in a timely, professional manner, and shall abide by all applicable tribal, state, and federal guidelines that govern this project.

The **CONTRACTOR** is **solely responsible** for maintaining safe working conditions near his/her equipment and for the safe operation of his/her equipment. If at any time the **CONTRACTOR** or his/her operators determine that instructions given by the **OWNER** would create a potentially unsafe working condition or would jeopardize the equipment, the **OWNER** shall be **immediately** notified of the problem. The **OWNER** will then work with the **CONTRACTOR** to find an acceptable alternative method to complete the required task.

The **CONTRACTOR** shall assume full financial and legal responsibility for any damage caused by their machinery and/or crews including but not limited to the following:

1- Any equipment becoming stuck due to unstable ground or operator error.
2- Any equipment that is damaged due to unstable ground or operator error.
3- Any environmental damage due to hydraulic, lubricant or coolant leaks.
4- Any damage outside the project area to other property caused during operations.

Payment

Payment shall be considered full compensation for all equipment, labor, tools, materials, and incidentals necessary to complete this work as specified. Payment will be made as specified in the Contract Agreement (Appendix B).

CONSTRUCTION OVERSIGHT

The **OWNER or OWNER'S DESIGNEE** shall be available during all construction activities to provide the **CONTRACTOR** with oversight and information as required to carry out the **CONTRACT**.

The **OWNER** shall have full authority to direct **ALL** work. The **OWNER** must preapprove any deviation from specifications or instructions.

SPECIFICATIONS

The **CONTRACTOR** shall propose tools and equipment that are required to complete the work specified. The **CONTRACTOR** is responsible for assessing all other equipment needs and supplying such equipment.

The **CONTRACTOR** is responsible for providing a truck (for crew transport), hand tools, experienced laborers, chainsaw, and all fuel & lubricants.

The **YKFP** will be onsite and will provide posts, hydraulic post-pounder, two ATVs, and a small

trailer.

Industrial Fire Precaution Level (IFPL)

Work shall be conducted in accordance with the current IFPL level. The IFPL of this project is Zone 609W. Current IFPL level shall be determined by calling 1-800-527-3305 and/or visiting the following website: https://www.dnr.wa.gov/ifpl

ACCESS

Prior to initiating work the **CONTRACTOR** and the **OWNER** shall review all access routes within the project site. See **CONTRACTORS' RESPONSIBILITY** for further requirements.

CONSTRUCTION SCHEDULE

Instream work will be completed in June-October of 2025.

BIDDERS who wish to discuss the site in greater detail can contact David Lindley, Yakama Nation Fisheries Habitat Coordinator (509-830-8005), dlindley@ykfp.org.
Relevant information discussed will be shared with all perspective BIDDERS.

Bids shall be considered **NON-RESPONSIVE** if they fail to provide satisfactory completeness of information requested in the Bid Schedule.

APPENDIX A

BID SCHEDULE

REFERENCES – list references of individuals with whom you've contracted to perform comparable work in the past

1) Name:_____
   Organization:_____

   Phone Number:_____

   Nature of work:_____

   _____

2) Name:_____
   Organization:_____

   Phone Number:_____

   Nature of work:_____

   _____

PROPOSAL - briefly describe project approach and crew availability June - October 2025:

_____
_____
_____
_____
_____
_____
_____
_____

Element	Activity	Unit	Total
LTPBR assistance: 3-5 person crew	Chainsaw work to assist with tree felling, in-stream log structure construction, post driving and wood transport (truck and hand tools including in weekly crew rate) Assist with movement of ~150-200 logs either via ATV, hand carry, or truck to other sites	Weekly Rate	
Spring Fence Exclosure Constrcution	Construct small 3 strand barbed wire fence exclosure with materials provided by the **OWNER**	Weekly Rate	
	Grand Total		

All prices bid herein shall remain in effect through 10/30/2025.

CONTRACTOR shall be required to comply with the requirements as stated in the attached **CONTRACTOR'S BID PACKAGE**.

CONTRACTOR:_____

ADDRESS: _____

_____

LICENSE NUMBER:_____

BY: _____ _____

(Signature and Title) DATE:

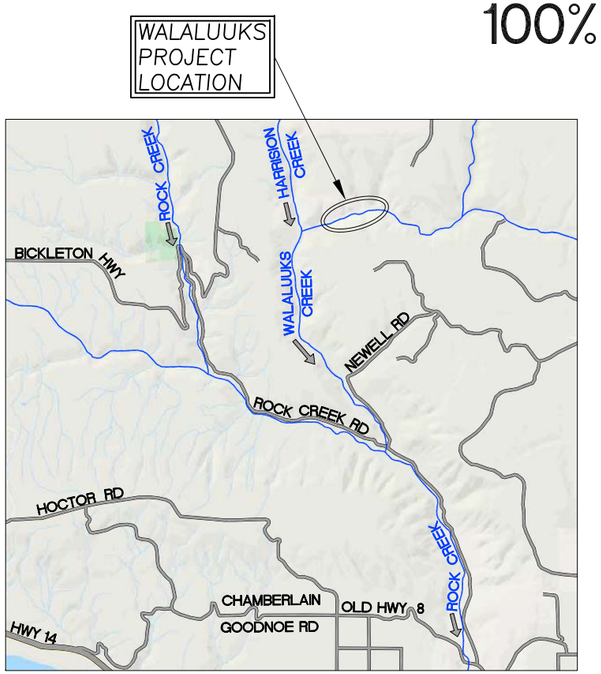
Phone No. _____ **FAX No.** _____ **E-mail** _____

APPENDIX B

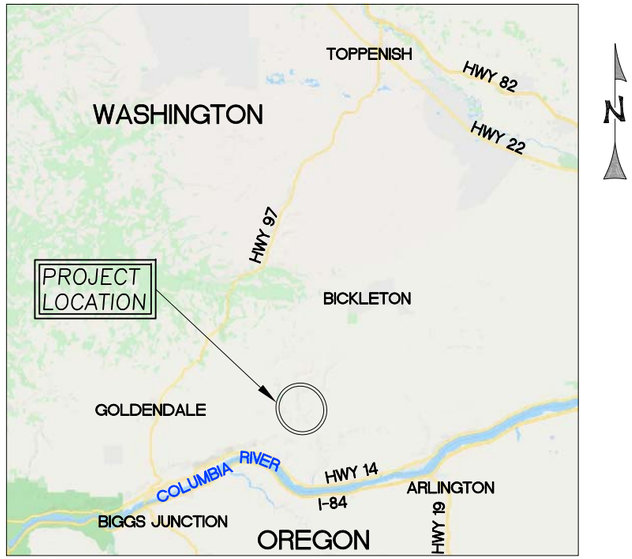
Project Design

WALALUUKS CREEK
HABITAT ENHANCEMENT PROJECT

100% DESIGN SUBMITTAL



VICINITY MAP
N.T.S. (GOOGLE)



REGIONAL MAP
N.T.S. (GOOGLE)

SHEET INDEX

PROJECT DESCRIPTION

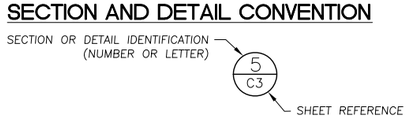
THESE DRAWINGS PROVIDE 100% DESIGN LEVEL DETAILS FOR ENHANCING AQUATIC HABITAT ON ONE REACH OF WALALUUKS CREEK IN KLICKITAT COUNTY, WA.

WORK SHALL CONSIST OF ADDING LOCALLY SALVAGED LARGE WOODY DEBRIS TO THE WETTED CHANNEL, AND ADDING CATTLE EXCLUSION FEATURES AROUND A SPRING NEAR WALALUUKS CREEK.

ABBREVIATIONS

AVG.	AVERAGE
CC	CONCRETE
CY	CUBIC YARDS
DIA.	DIAMETER
E	EXISTING
EG	EXISTING GROUND
ELEV.	ELEVATION
DI	DRAINAGE INLET
FG	FINISHED GRADE
FT	FEET
INV	INVERT
MIN	MINIMUM
N	NEW
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
RC	RELATIVE COMPACTION
RSP	ROCK SLOPE PROTECTION
SPK	SPIKE
SQ.FT.	SQUARE FOOT
T	TREE
T.B.D.	TO BE DETERMINED
TYP	TYPICAL
UNK	UNKNOWN
WSE	WATER SURFACE ELEVATION
YR	YEAR

SECTION AND DETAIL CONVENTION



GENERAL NOTES

1. AERIAL PHOTO SOURCE:
   USDA NRCS NAIP ORTHO IMAGERY
   HTTP://DATAGATEWAY.NRCS.USDA.GOV
   PHOTOGRAPH DATE: 2019
2. LIDAR TOPOGRAPHIC MAPPING WAS PERFORMED BY:
   QUANTUM SPATIAL
   1100 NE CIRCLE BLVD, STE. 126
   CORVALLIS, OR 97330
   SURVEY DATES: FLOWN 2019–2020
3. CONTOUR INTERVAL IS AS NOTED. ELEVATIONS AND DISTANCES SHOWN ARE IN DECIMAL FEET.
4. THIS IS NOT A BOUNDARY SURVEY. PROPERTY LINES ARE NOT SHOWN HEREIN.
5. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE STATE OF OREGON STANDARD SPECIFICATIONS, ISSUED BY THE DEPARTMENT OF TRANSPORTATION (HEREAFTER REFERRED TO AS "STANDARD SPECIFICATIONS").
6. THESE DESIGNS ARE INCOMPLETE WITHOUT THE FINAL STAMPED TECHNICAL SPECIFICATIONS PREPARED BY WATERWAYS CONSULTING, INC. REFER TO TECHNICAL SPECIFICATIONS FOR DETAILS NOT SHOWN HEREON.

** CALL BEFORE YOU DIG **

CONTACT UNDERGROUND SERVICE ALERT (USA)
PRIOR TO ANY CONSTRUCTION WORK 1-800-424-5555 (OR 811)

WATERWAYS CONSULTING INC.
1020 SW TAYLOR STREET, STE. 380
PORTLAND, OR 97205
PH:(503)227-5979 // FAX:(888)819-6847
WWW.WATWAYS.COM

JAKE D. HOFELD — OREGON — 93257 — STATE OF WASHINGTON — PROFESSIONAL ENGINEER
EXPIRES: 4/9/2024

JAKE D. HOFELD

PREPARED AT THE REQUEST OF-
YAKAMA NATION FISHERIES

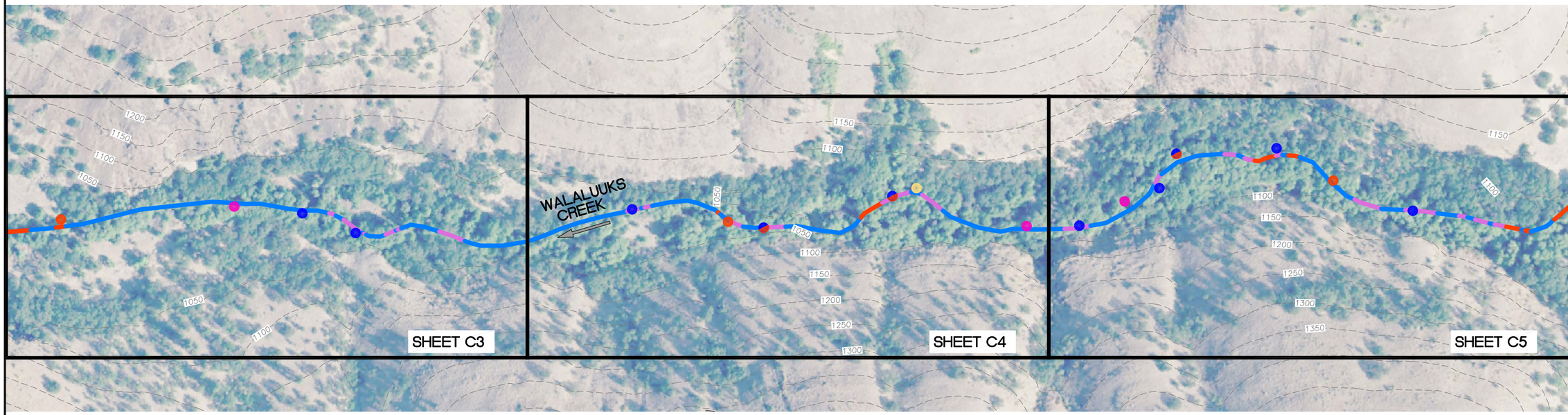
COVER

WALALUUKS CREEK
HABITAT ENHANCEMENT
PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY:	J.H.
DRAWN BY:	C.B.
CHECKED BY:	J.H.
DATE:	3/31/2023
JOB NO.:	20-061

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C1 | 1 OF 8



WALALUUKS REACH OVERVIEW MAP

SCALE: 1" = 150'

LEGEND

- 625 — (E) LIDAR CONTOURS (50' INTERVALS)
- (E) NON-POOL DRY (YAKAMA NATION, 2018)
- (E) NON-POOL WET (YAKAMA NATION, 2018)
- (E) POOL (YAKAMA NATION, 2018)
- (N) POOL COVER ENHANCEMENT
- (N) POOL FORMING/DEEPENING
- (N) LAUNCHABLE WOOD
- (N) SPRING PROTECTION MEASURES

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JAKE D. HOFELD — STATE OF WASHINGTON — 23327 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 4/9/2024

JAKE D. HOFELD

PREPARED AT THE REQUEST OF:
YAKAMA NATION FISHERIES

WALALUUKS REACH OVERVIEW MAP

WALALUUKS CREEK
HABITAT ENHANCEMENT
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0 1"

PROPOSED CONDITIONS WC - DOWNSTREAM

SCALE: 1" = 50'

TABLE 1. WALALUUKS 1 LOG STRUCTURES

STRUCTURE ID	STRUCTURE PURPOSE	FELL TREES WITH ROOTWAD (EA)	SALVAGED FLOOPLAIN WOOD?	MATERIAL AND CONSTRUCTION NOTES
WC-1	CHANNEL SPANNING JAM	12	N	FELL TREES IN A CRISS CROSS PATTERN IN CHANNEL OVER APPROXIMATELY 250 FEET OF CHANNEL.
WC-2	LAUNCHABLE TREES	12	N	FELL TREES INTO CHANNEL RANDOMLY TO ALLOW CREEK TO MOVE DOWNSTREAM INTO CHANNEL SPANNING JAM.
WC-3	ENHANCE POOL COVER	1	N	FELL UNDERMINED ALDER IN CHANNEL POOL WITH ROOTWAD INTACT AND LAY UP BANK TO SELF BALLAST.
WC-4	ENHANCE POOL COVER	2	N	FELL TREES INTO CHANNEL POOL WITH ROOTWAD INTACT AND LAY UP BANK TO SELF BALLAST.
	TOTAL	27		

LEGEND

- (E) LIDAR CONTOURS (5' AND 25' INTERVALS)
- (E) NON-POOL DRY (YAKAMA NATION, 2018)
- (E) NON-POOL WET (YAKAMA NATION, 2018)
- (E) POOL (YAKAMA NATION, 2018)
- (N) POOL COVER ENHANCEMENT
- (N) POOL FORMING/DEEPENING
- (N) LAUNCHABLE WOOD

NOTES:

NO HEAVY EQUIPMENT ACCESS IS AVAILABLE, SO ALL WORK SHALL BE PERFORMED WITH HAND TOOLS USING TREES AND WOODY DEBRIS WITHIN THE PROJECT LIMITS.

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PROPOSED CONDITIONS WC - DOWNSTREAM

WALALUUKS CREEK
HABITAT ENHANCEMENT
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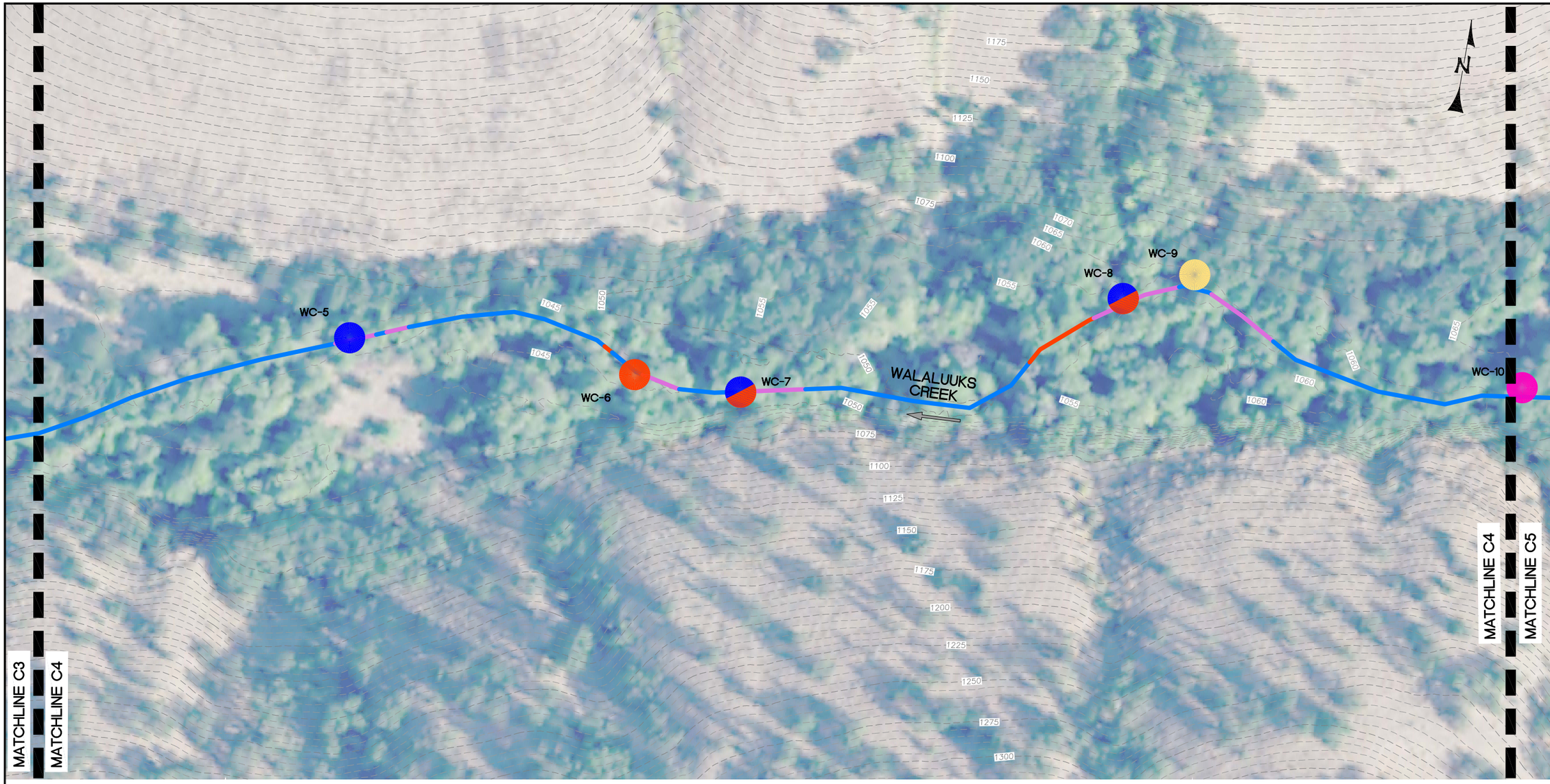

PROPOSED CONDITIONS WC - MIDDLE

SCALE: 1" = 50'

TABLE 2. WALALUUKS 2 LOG STRUCTURES

STRUCTURE ID	STRUCTURE PURPOSE	FELL TREES WITH ROOTWAD (EA)	SALVAGED FLOODPLAIN WOOD?	MATERIAL AND CONSTRUCTION NOTES
WC-5	ENHANCE POOL COVER	–	Y	MOVE FLOODPLAIN WOODY DEBRIS INTO CHANNEL POOL.
WC-6	ENHANCE EXISTING LOG JAM	2	Y	FELL TREES AND ADD FLOODPLAIN WOODY DEBRIS TO ENHANCE AND STABILIZE EXISTING LOG JAM ON LEFT BANK
WC-7	CHANNEL SPANNING JAM AND ENHANCE POOL COVER	4	Y	FELL 2 TREES OVER SALVAGED FLOODPLAIN WOODY DEBRIS FOR A CHANNEL SPANNING JAM DOWNSTREAM OF THE POOL AND FELL 2 TREES FOR POOL COVER
WC-8	CHANNEL SPANNING JAM AND ENHANCE POOL COVER	4	N	FELL TREES FROM RIGHT BANK TO FORM CHANNEL SPANNING LOG AT DOWNSTREAM END OF EXISTING POOL, PREVENT AVULSION INTO HIGH FLOW SIDE CHANNEL, AND ENHANCE POOL COVER.
WC-9	SPRING PROTECTION AND REVEGETATION	2	N	PLACE SALVAGED WOOD OVER AND INSTALL CATTLE EXCLUSION FENCING AROUND EXISTING SPRING. INSTALL WILLOW AND DOGWOOD STAKES WITHIN EXCLUSION AREA. SEE DETAIL 3, SHEET C7.
WC-10	LAUNCHABLE TREES	–	Y	ADD FLOODPLAIN WOODY DEBRIS TO THE CHANNEL FROM RIGHT BANK
	TOTAL	12		

NOTES:

NO HEAVY EQUIPMENT ACCESS IS AVAILABLE, SO ALL WORK SHALL BE PERFORMED WITH HAND TOOLS USING TREES AND WOODY DEBRIS WITHIN THE PROJECT LIMITS.

LEGEND

- (E) LIDAR CONTOURS (5' AND 25' INTERVALS)
- (E) NON-POOL DRY (YAKAMA NATION, 2018)
- (E) NON-POOL WET (YAKAMA NATION, 2018)
- (E) POOL (YAKAMA NATION, 2018)
- (N) POOL COVER ENHANCEMENT
- (N) POOL FORMING/DEEPENING
- (N) LAUNCHABLE WOOD
- (N) SPRING PROTECTION MEASURES

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JAKE HOFELD — WASHINGTON — 23237 — OREGON — STATE REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 4/9/2024

JAKE D. HOFELD

PREPARED AT THE REQUEST OF-
YAKAMA NATION FISHERIES

PROPOSED CONDITIONS WC - MIDDLE

WALALUUKS CREEK HABITAT ENHANCEMENT PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY: J.H.
DRAWN BY: C.B.
CHECKED BY: J.H.
DATE: 3/31/2023
JOB NO.: 20-061

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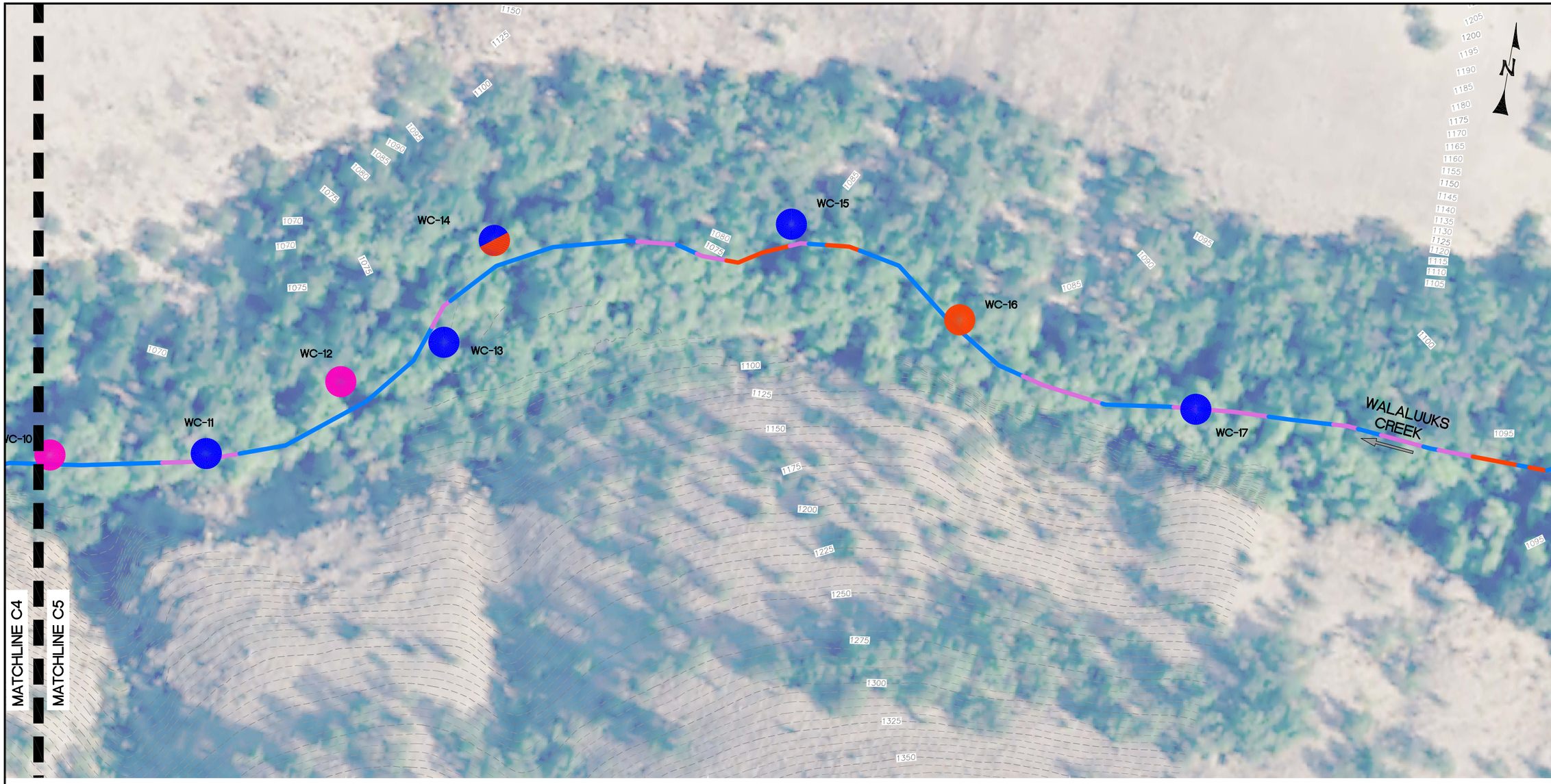
0 1"



PROPOSED CONDITIONS WC - UPSTREAM

SCALE: 1" = 50'

TABLE 3. WALALUUKS 3 LOG STRUCTURES

STRUCTURE ID	STRUCTURE PURPOSE	FELL TREES WITH ROOTWAD (EA)	SALVAGED FLOODPLAIN WOOD?	MATERIAL AND CONSTRUCTION NOTES
WC-11	ENHANCE POOL COVER	2	N	FELL TREES INTO CHANNEL POOL WITH ROOTWAD INTACT, IF POSSIBLE, AND LAY UP BANK TO SELF BALLAST.
WC-12	LAUNCHABLE TREES	–	Y	ADD FLOODPLAIN WOODY DEBRIS TO THE CHANNEL FROM RIGHT BANK
WC-13	ENHANCE POOL COVER	1	Y	FELL ALDER AT DOWNSTREAM OF POOL.
WC-14	CHANNEL SPANNING JAM AND ENHANCE POOL COVER	1	N	FELL LARGE OAK ON ERODING BANK ACROSS CHANNEL TO PROMOTE POOL FORMATION.
WC-15	ENHANCE POOL COVER	1	N	FELL OAK INTO CHANNEL TO CREATE POOL.
WC-16	POOL CREATION	3	N	FELL BANK TREES INTO CHANNEL TO SUPPORT POOL FORMATION.
WC-17	ENHANCE POOL COVER	12	N	FELL TREES INTO CHANNEL POOLS WITH ROOTWAD INTACT, IF POSSIBLE, AND LAY UP BANK TO SELF BALLAST OVER APPROXIMATELY 200 FEET UPSTREAM.
	TOTAL	20		

NOTES:

NO HEAVY EQUIPMENT ACCESS IS AVAILABLE, SO ALL WORK SHALL BE PERFORMED WITH HAND TOOLS USING TREES AND WOODY DEBRIS WITHIN THE PROJECT LIMITS.

LEGEND

- (E) LIDAR CONTOURS (5' AND 25' INTERVALS)
- (E) NON-POOL DRY (YAKAMA NATION, 2018)
- (E) NON-POOL WET (YAKAMA NATION, 2018)
- (E) POOL (YAKAMA NATION, 2018)
- (N) POOL COVER ENHANCEMENT
- (N) POOL FORMING/DEEPENING
- (N) LAUNCHABLE WOOD

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JAKE D. HOFELD — STATE OF WASHINGTON — 23257 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 4/9/2024

PREPARED AT THE REQUEST OF-
YAKAMA NATION FISHERIES

PROPOSED CONDITIONS WC - UPSTREAM

WALALUUKS CREEK
HABITAT ENHANCEMENT
PROJECT
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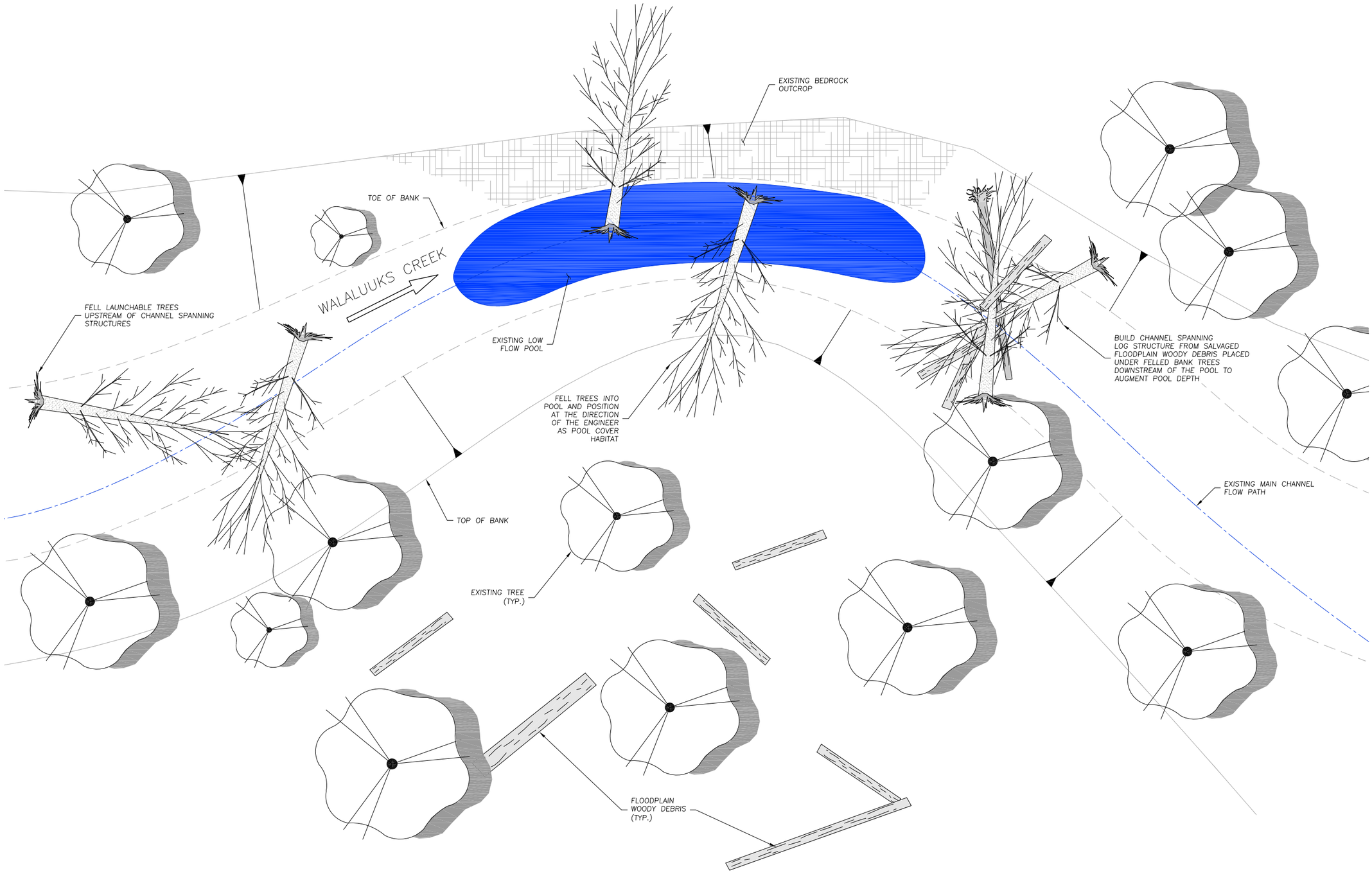
C5 | 5 OF 8



FELLED TREE LOG STRUCTURES (1/C6)

SCALE: N.T.S

WATERWAYS CONSULTING INC.
1020 SW TAYLOR STREET, STE. 380
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JAKE HOFELD — STATE OF WASHINGTON — 23327 — REGISTERED PROFESSIONAL ENGINEER

EXPIRES: 4/9/2024

JAKE D. HOFELD

PREPARED AT THE REQUEST OF:
YAKAMA NATION FISHERIES

FELLED TREE LOG STRUCTURE DETAILS

WALALUUKS CREEK HABITAT ENHANCEMENT PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY:	J.H.
DRAWN BY:	C.B.
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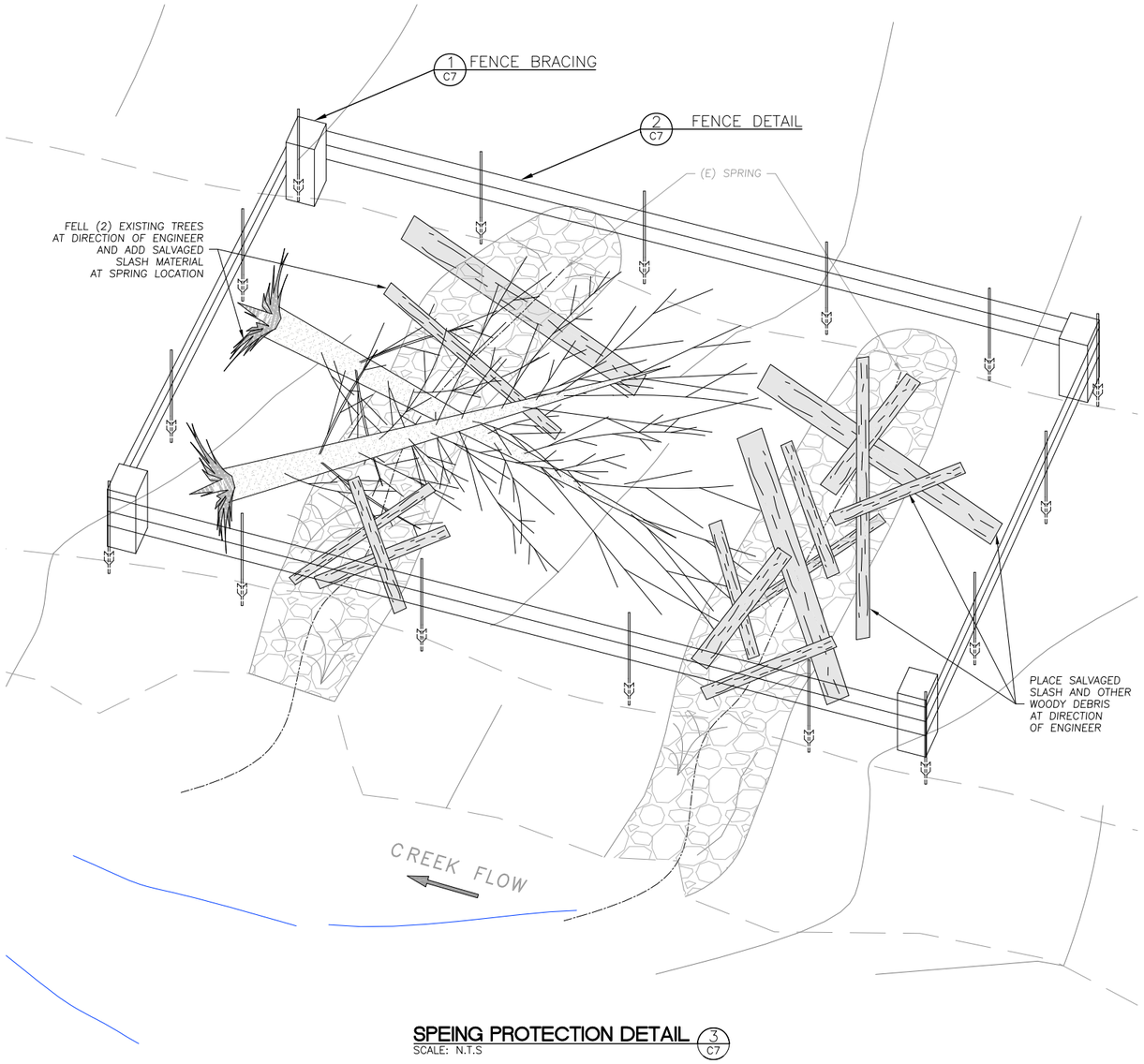
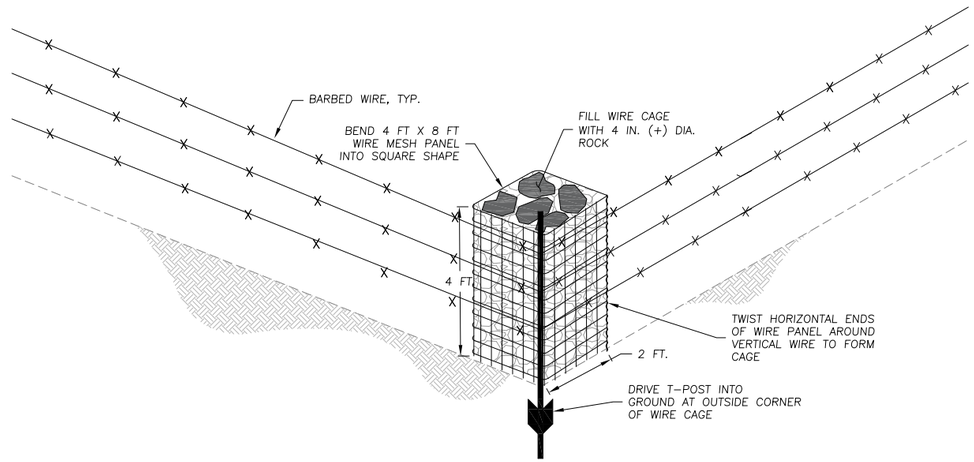
BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"



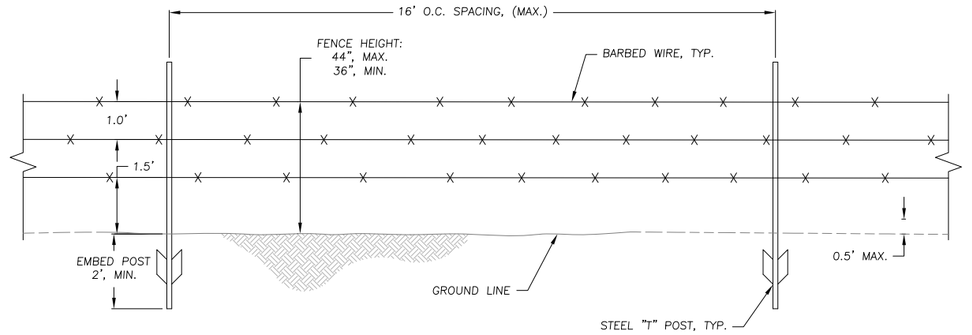
SPEING PROTECTION DETAIL 3 C7

SCALE: N.T.S



FENCE BRACING 1 C7

SCALE: 1" = 2'



FENCE NOTES:

1. STEEL "T" POSTS SHALL BE PAINTED OR GALVANIZED AND SHALL BE A MINIMUM OF 1.25 LBS PER FOOT OF LENGTH.
2. STEEL POSTS MUST BE SET AT SIGNIFICANT HIGH AND LOW POINTS ALONG FENCE TO MAINTAIN PROPER WIRE HEIGHT.
3. BARBED WIRE SHALL BE 12.5 GAGE, 2-STRAND, AND GALVANIZED.
4. WIRE CLIPS OR FASTENERS MUST BE GALVANIZED AND SIMILAR TO STRENGTH OF FENCE WIRE.
5. FENCE BRACING IS REQUIRED AT ALL CORNERS AND MAJOR ANGLES IN THE FENCE.
6. WIRE PANELS SHALL BE GALVANIZED WELDED WIRE WITH 4 IN SQUARE OPENINGS AND 4 GAUGE WIRE.
7. WHEN SPLICING OF WIRE IS NECESSARY, THE "WESTERN UNION" SPLICE WILL BE RECOMMENDED. THIS SPLICE IS MADE BY OVERLAPPING THE ENDS EACH WIRE AND WRAPPING EACH WIRE FIVE TIMES AROUND THE OTHER WIRE.
8. QUANTITIES:

ITEM	COUNT
"T" POSTS	16
WIRE PANELS	4
BARBED WIRE (LF)	540

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JAKE D. HOFELD — 23327 — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 4/9/2024

JAKE D. HOFELD

PREPARED AT THE REQUEST OF:
YAKAMA NATION FISHERIES

SPRING PROTECTION DETAILS

WALALUUKS CREEK HABITAT ENHANCEMENT PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY:	J.H.
DRAWN BY:	C.B.
CHECKED BY:	J.H.
DATE:	3/31/2023
JOB NO.:	20-061

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"

C7

HIP 4 GENERAL CONSERVATION MEASURES APPLICABLE TO ALL ACTIONS

THE ACTIVITIES COVERED UNDER THE HIP ARE INTENDED TO PROTECT AND RESTORE FISH AND WILDLIFE HABITAT WITH LONG-TERM BENEFITS TO ESA-LISTED SPECIES. THE FOLLOWING GENERAL CONSERVATION MEASURES (DEVELOPED IN COORDINATION WITH USFWS AND NMFS) WILL BE APPLIED TO ALL ACTIONS OF THIS PROJECT.

PROJECT DESIGN AND SITE PREPARATION

1. STATE AND FEDERAL PERMITS

1.A. ALL APPLICABLE REGULATORY PERMITS AND OFFICIAL PROJECT AUTHORIZATIONS WILL BE OBTAINED BEFORE PROJECT IMPLEMENTATION.

1.B. THESE PERMITS AND AUTHORIZATIONS INCLUDE, BUT ARE NOT LIMITED TO, NATIONAL ENVIRONMENTAL POLICY ACT, NATIONAL HISTORIC PRESERVATION ACT, THE APPROPRIATE STATE AGENCY REMOVAL AND FILL PERMIT, USACE CLEAN WATER ACT (CWA) 404 PERMITS, CWA SECTION 401 WATER QUALITY CERTIFICATIONS, AND FEMA NO-RISE ANALYSES.

2. TIMING OF IN-WATER WORK

2.A. APPROPRIATE STATE (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)) GUIDELINES FOR TIMING OF IN-WATER WORK WINDOWS (IWW) WILL BE FOLLOWED.

2.B. CHANGES TO ESTABLISHED WORK WINDOWS WILL BE APPROVED BY REGIONAL STATE BIOLOGISTS AND BPA'S EC LEAD.

2.C. BULL TROUT. FOR AREAS WITH DESIGNATED IN-WATER WORK WINDOWS FOR BULL TROUT OR AREAS KNOWN TO HAVE BULL TROUT, PROJECT PROPONENTS WILL CONTACT THE APPROPRIATE USFWS FIELD OFFICE TO INSURE THAT ALL REASONABLE IMPLEMENTATION MEASURES ARE CONSIDERED AND AN APPROPRIATE IN-WATER WORK WINDOW IS BEING USED TO MINIMIZE PROJECT EFFECTS.

2.D. LAMPREY. WORKING IN STREAM OR RIVER CHANNELS THAT CONTAIN PACIFIC LAMPREY WILL BE AVOIDED FROM MARCH 1 TO JULY 1 FOR REACHES <5,000 FEET IN ELEVATION AND FROM MARCH 1 TO AUGUST 1 FOR REACHES >5,000 FEET. 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 DEWATERING AND SALVAGE PROCEDURES (SEE FISH SALVAGE AND ELECTROFISHING SECTIONS) TO MINIMIZE ADVERSE EFFECTS.

2.E. THE IN-WATER WORK WINDOW WILL BE PROVIDED IN THE CONSTRUCTION PLANS.

3. CONTAMINANTS

3.A. EXCAVATION OF MORE THAN 20 CUBIC YARDS WILL REQUIRE A SITE VISIT AND DOCUMENTED ASSESSMENT FOR POTENTIAL CONTAMINANT SOURCES. THE SITE ASSESSMENT WILL BE STORED WITH PROJECT FILES OR AS AN APPENDIX TO THE BASIS OF DESIGN REPORT.

3.B. THE SITE ASSESSMENT WILL SUMMARIZE:

3.B.1. THE SITE VISIT, CONDITION OF THE PROPERTY, AND IDENTIFICATION OF ANY AREAS USED FOR VARIOUS INDUSTRIAL PROCESSES;

3.B.2. AVAILABLE RECORDS, SUCH AS FORMER SITE USE, BUILDING PLANS, AND RECORDS OF ANY PRIOR CONTAMINATION EVENTS;

3.B.3. INTERVIEWS WITH KNOWLEDGEABLE PEOPLE, SUCH AS SITE OWNERS, OPERATORS, OCCUPANTS, NEIGHBORS, OR LOCAL GOVERNMENT OFFICIALS; AND

3.B.4. THE TYPE, QUANTITY, AND EXTENT OF ANY POTENTIAL CONTAMINATION SOURCES.

4. SITE LAYOUT AND FLAGGING

4.A. CONSTRUCTION AREAS TO BE CLEARLY FLAGGED PRIOR TO CONSTRUCTION.

4.B. AREAS TO BE FLAGGED WILL INCLUDE:

4.B.1. SENSITIVE RESOURCE AREAS, SUCH AS AREAS BELOW ORDINARY HIGH WATER, SPAWNING AREAS, SPRINGS, AND WETLANDS;

4.B.2. EQUIPMENT ENTRY AND EXIT POINTS;

4.B.3. ROAD AND STREAM CROSSING ALIGNMENTS;

4.B.4. STAGING, STORAGE, AND STOCKPILE AREAS; AND

4.B.5. NO-SPRAY AREAS AND BUFFERS.

5. TEMPORARY ACCESS ROADS AND PATHS

5.A. EXISTING ACCESS ROADS AND PATHS WILL BE PREFERENTIALLY USED WHENEVER REASONABLE, AND THE NUMBER AND LENGTH OF TEMPORARY ACCESS ROADS AND PATHS THROUGH RIPARIAN AREAS AND FLOODPLAINS WILL BE MINIMIZED.

5.B. VEHICLE USE AND HUMAN ACTIVITIES, INCLUDING WALKING, IN AREAS OCCUPIED BY TERRESTRIAL ESA-LISTED SPECIES WILL BE MINIMIZED.

5.C. 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%, THEN THE ROAD WILL BE DESIGNED BY A CIVIL ENGINEER WITH EXPERIENCE IN STEEP ROAD DESIGN.

5.D. 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).

5.E. AT PROJECT COMPLETION, ALL TEMPORARY ACCESS ROADS AND PATHS WILL BE OBLITERATED, AND THE SOIL WILL BE STABILIZED AND REVEGETATED. ROAD AND PATH OBLITERATION REFERS TO THE MOST COMPREHENSIVE DEGREE OF DECOMMISSIONING AND INVOLVES DECOMPACTING THE SURFACE AND DITCH, PULLING THE FILL MATERIAL ONTO THE RUNNING SURFACE, AND RESHAPING TO MATCH THE ORIGINAL CONTOUR.

5.F. HELICOPTER FLIGHT PATTERNS WILL BE ESTABLISHED IN ADVANCE AND LOCATED TO AVOID TERRESTRIAL ESA-LISTED SPECIES AND THEIR OCCUPIED HABITAT DURING SENSITIVE LIFE STAGES.

6. TEMPORARY STREAM CROSSINGS

6.A. EXISTING STREAM CROSSINGS OR BEDROCK WILL BE PREFERENTIALLY USED WHENEVER REASONABLE, AND THE NUMBER OF TEMPORARY STREAM CROSSINGS WILL BE MINIMIZED.

6.B. TEMPORARY BRIDGES AND CULVERTS WILL BE INSTALLED TO ALLOW FOR EQUIPMENT AND VEHICLE CROSSING OVER PERENNIAL STREAMS DURING CONSTRUCTION. TREATED WOOD SHALL NOT BE USED ON TEMPORARY BRIDGE CROSSINGS OR IN LOCATIONS IN CONTACT WITH OR DIRECTLY OVER WATER.

6.C. FOR PROJECTS THAT REQUIRE EQUIPMENT AND VEHICLES TO CROSS IN THE WET:

6.C.1. THE LOCATION AND NUMBER OF ALL WET CROSSINGS SHALL BE APPROVED BY THE BPA EC LEAD AND DOCUMENTED IN THE CONSTRUCTION PLANS;

6.C.2. VEHICLES AND MACHINERY SHALL CROSS STREAMS AT RIGHT ANGLES TO THE MAIN CHANNEL WHENEVER POSSIBLE;

6.C.3. NO STREAM CROSSINGS WILL OCCUR 300 FEET UPSTREAM OR 100 FEET DOWNSTREAM OF AN EXISTING REDD OR SPAWNING FISH; AND

6.C.4. AFTER PROJECT COMPLETION, TEMPORARY STREAM CROSSINGS WILL BE OBLITERATED AND BANKS RESTORED.

7. STAGING, STORAGE, AND STOCKPILE AREAS

7.A. STAGING AREAS (USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE) WILL BE 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND. STAGING AREAS CLOSER THAN 150 FEET WILL BE APPROVED BY THE EC LEAD.

7.B. 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 THE PLANS THAT AREA IS FOR NATURAL MATERIALS ONLY.

7.C. 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.

7.D. ANY MATERIAL NOT USED IN RESTORATION, AND NOT NATIVE TO THE FLOODPLAIN, WILL BE DISPOSED OF OUTSIDE THE 100-YEAR FLOODPLAIN.

8. EQUIPMENT

8.A. 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).

8.B. EQUIPMENT WILL BE STORED, FUELED, AND MAINTAINED IN AN CLEARLY IDENTIFIED STAGING AREA THAT MEETS STAGING AREA CONSERVATION MEASURES.

8.C. EQUIPMENT WILL BE REFUELED IN A VEHICLE STAGING AREA OR IN AN ISOLATED HARD ZONE, SUCH AS A PAVED PARKING LOT OR ADJACENT, ESTABLISHED ROAD (THIS MEASURE APPLIES ONLY TO GAS-POWERED EQUIPMENT WITH TANKS LARGER THAN 5 GALLONS).

8.D. BIODEGRADABLE LUBRICANTS AND FLUIDS WILL BE USED ON EQUIPMENT OPERATING IN AND ADJACENT TO THE STREAM CHANNEL AND LIVE WATER.

8.E. EQUIPMENT WILL BE INSPECTED DAILY FOR FLUID LEAKS BEFORE LEAVING THE VEHICLE STAGING AREA FOR OPERATION WITHIN 150 FEET OF ANY NATURAL WATER BODY OR WETLAND.

8.F. EQUIPMENT WILL BE THOROUGHLY CLEANED BEFORE OPERATION BELOW ORDINARY HIGH WATER, AND AS OFTEN AS NECESSARY DURING OPERATION, TO REMAIN GREASE FREE.

9. EROSION CONTROL

9.A. TEMPORARY EROSION CONTROL MEASURES INCLUDE:

9.A.1. TEMPORARY EROSION CONTROLS WILL BE IN PLACE BEFORE ANY SIGNIFICANT ALTERATION OF THE ACTION SITE AND APPROPRIATELY INSTALLED DOWNSLOPE OF PROJECT ACTIVITY WITHIN THE RIPARIAN BUFFER AREA UNTIL SITE REHABILITATION IS COMPLETE;

9.A.2. 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;

9.A.3. TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE SEDGE MATS, FIBER WATTLES, SILT FENCES, JUTE MATTING, WOOD FIBER MULCH AND SOIL BINDER, OR GEOTEXTILES AND GEOSYNTHETIC FABRIC;

9.A.4. 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;

9.A.5. SEDIMENT WILL BE REMOVED FROM EROSION CONTROLS ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE CONTROL; AND

9.A.6. ONCE THE SITE IS STABILIZED AFTER CONSTRUCTION, TEMPORARY EROSION CONTROL MEASURES WILL BE REMOVED.

9.B. EMERGENCY EROSION CONTROLS. THE FOLLOWING MATERIALS FOR EMERGENCY EROSION CONTROL WILL BE AVAILABLE AT THE WORK SITE:

9.B.1. A SUPPLY OF SEDIMENT CONTROL MATERIALS; AND

9.B.2. AN OIL-ABSORBING FLOATING BOOM WHENEVER SURFACE WATER IS PRESENT.

10. DUST ABATEMENT

10.A. 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.

10.B. WORK WILL BE SEQUENCED AND SCHEDULED TO REDUCE EXPOSED BARE SOIL SUBJECT TO WIND EROSION.

10.C. DUST-ABATEMENT ADDITIVES AND STABILIZATION CHEMICALS (TYPICALLY MAGNESIUM CHLORIDE, CALCIUM CHLORIDE SALTS, OR LIGNINSULFONATE) WILL NOT BE APPLIED WITHIN 25 FEET OF WATER OR A STREAM CHANNEL AND WILL BE APPLIED SO AS TO MINIMIZE THE LIKELIHOOD THAT THEY WILL ENTER STREAMS. APPLICATIONS OF LIGNINSULFONATE WILL BE LIMITED TO A MAXIMUM RATE OF 0.5 GALLONS PER SQUARE YARD OF ROAD SURFACE, ASSUMING MIXED 50:50 WITH WATER.

10.D. 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 MATERIALS TO A WATERBODY (TYPICALLY THESE WOULD BE AREAS WITHIN 25 FEET OF A WATERBODY OR STREAM CHANNEL; DISTANCES MAY BE GREATER WHERE VEGETATION IS SPARSE OR SLOPES ARE STEEP).

10.E. SPILL CONTAINMENT EQUIPMENT WILL BE AVAILABLE DURING APPLICATION OF DUST ABATEMENT CHEMICALS.

10.F. PETROLEUM-BASED PRODUCTS WILL NOT BE USED FOR DUST ABATEMENT.

11. SPILL PREVENTION, CONTROL, AND COUNTER MEASURES

11.A. A DESCRIPTION OF HAZARDOUS MATERIALS THAT WILL BE USED, INCLUDING INVENTORY, STORAGE, AND HANDLING PROCEDURES WILL BE AVAILABLE ON-SITE.

11.B. WRITTEN PROCEDURES FOR NOTIFYING ENVIRONMENTAL RESPONSE AGENCIES WILL BE POSTED AT THE WORK SITE.

11.C. 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.

11.D. WORKERS WILL BE TRAINED IN SPILL CONTAINMENT PROCEDURES AND WILL BE INFORMED OF THE LOCATION OF SPILL CONTAINMENT KITS.

11.E. ANY WASTE LIQUIDS GENERATED AT THE STAGING AREAS WILL BE TEMPORARILY STORED UNDER AN IMPERVIOUS COVER, SUCH AS A TARPAULIN, UNTIL THEY CAN BE PROPERLY TRANSPORTED TO AND DISPOSED OF AT A FACILITY THAT IS APPROVED FOR RECEIPT OF HAZARDOUS MATERIALS.

11.F. PUMPS USED ADJACENT TO WATER SHALL USE SPILL CONTAINMENT SYSTEMS.

12. INVASIVE SPECIES CONTROL

12.A. PRIOR TO ENTERING THE SITE, ALL VEHICLES AND EQUIPMENT WILL BE POWER WASHED, ALLOWED TO FULLY DRY, AND INSPECTED TO MAKE SURE NO PLANTS, SOIL, OR OTHER ORGANIC MATERIAL ADHERES TO THE SURFACE.

12.B. WATERCRAFT, WADERS, BOOTS, AND ANY OTHER GEAR TO BE USED IN OR NEAR WATER WILL BE INSPECTED FOR AQUATIC INVASIVE SPECIES.

12.C. 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 HAVE BEEN APPROVED BY THE EC LEAD.

CONSTRUCTION AND POST CONSTRUCTION CONSERVATION MEASURES

1. FISH PASSAGE

1.A. FISH PASSAGE WILL BE PROVIDED FOR ADULT AND JUVENILE FISH LIKELY TO BE PRESENT DURING CONSTRUCTION UNLESS PASSAGE DID NOT EXIST BEFORE CONSTRUCTION, THE STREAM IS NATURALLY IMPASSABLE, OR PASSAGE WILL NEGATIVELY IMPACT ESA-LISTED SPECIES OR THEIR HABITAT.

1.B. FISH PASSAGE ALTERNATIVES WILL BE APPROVED BY THE BPA EC LEAD UNDER ADVISEMENT BY THE NMFS HABITAT BIOLOGIST.

2. CONSTRUCTION AND DISCHARGE WATER

2.A. SURFACE WATER MAY BE DIVERTED TO MEET CONSTRUCTION NEEDS ONLY IF DEVELOPED SOURCES ARE UNAVAILABLE OR INADEQUATE.

2.B. DIVERSIONS WILL NOT EXCEED 10% OF THE AVAILABLE FLOW.

2.C. CONSTRUCTION DISCHARGE WATER WILL BE COLLECTED AND TREATED TO REMOVE DEBRIS, NUTRIENTS, SEDIMENT, PETROLEUM HYDROCARBONS, METALS, AND OTHER POLLUTANTS.

3. TIME AND EXTENT OF DISTURBANCE

3.A. EARTHWORK REQUIRING IN-STREAM MECHANIZED EQUIPMENT (INCLUDING DRILLING, EXCAVATION, DREDGING, FILLING, AND COMPACTING) WILL BE COMPLETED AS QUICKLY AS POSSIBLE.

3.B. MECHANIZED EQUIPMENT WILL WORK FROM TOP OF BANK UNLESS WORK FROM ANOTHER LOCATION WILL RESULT IN LESS HABITAT DISTURBANCE (TURBIDITY, VEGETATION DISTURBANCE, ETC.).

4. CESSATION OF WORK

4.A. PROJECT OPERATIONS WILL CEASE WHEN HIGH FLOW CONDITIONS MAY RESULT IN INUNDATION OF THE PROJECT AREA (FLOOD EFFORTS TO DECREASE DAMAGES TO NATURAL RESOURCES PERMITTED).

4.B. WATER QUALITY LEVELS EXCEEDED. SEE CWA SECTION 401 WATER QUALITY CERTIFICATION AND TURBIDITY MEASURES.

5. SITE RESTORATION

5.A. DISTURBED AREAS, STREAM BANKS, SOILS, AND VEGETATION WILL BE CLEANED UP AND RESTORED TO IMPROVED OR PRE-PROJECT CONDITIONS.

5.B. PROJECT-RELATED WASTE WILL BE REMOVED.

5.C. TEMPORARY ACCESS ROADS AND STAGING WILL BE DECOMPACTED AND RESTORED. SOILS WILL BE LOOSENED IF NEEDED FOR REVEGETATION OR WATER INFILTRATION.

5.D. THE PROJECT SPONSOR WILL RETAIN THE RIGHT OF REASONABLE ACCESS TO THE SITE TO MONITOR AND MAINTAIN THE SITE OVER THE LIFE OF THE PROJECT.

6. REVEGETATION

6.A. PLANTING AND SEEDING WILL OCCUR PRIOR TO OR AT THE BEGINNING OF THE FIRST GROWING SEASON AFTER CONSTRUCTION.

6.B. A MIX OF NATIVE SPECIES (INVASIVE SPECIES NOT ALLOWED) APPROPRIATE TO THE SITE WILL BE USED TO REESTABLISH VEGETATION, PROVIDE SHADE, AND REDUCE EROSION. REESTABLISHED VEGETATION SHOULD BE AT LEAST 70% OF PRE-PROJECT CONDITIONS WITHIN THREE YEARS.

6.C. VEGETATION SUCH AS WILLOWS, SEDGES, OR RUSH MATS WILL BE SALVAGED FROM DISTURBED OR ABANDONED AREAS TO BE REPLANTED.

6.D. SHORT-TERM STABILIZATION MEASURE MAY INCLUDE THE USE OF NON-NATIVE STERILE SEED MIX (WHEN NATIVE NOT AVAILABLE), WEED-FREE CERTIFIED STRAW, OR OTHER SIMILAR TECHNIQUES.

6.E. SURFACE FERTILIZER WILL NOT BE APPLIED WITHIN 50 FEET OF ANY STREAM, WATE BODY, OR WETLAND.

6.F. FENCING WILL BE INSTALLED AS NECESSARY TO PREVENT ACCESS TO REVEGETATED SITES BY LIVESTOCK OR UNAUTHORIZED PERSONS.

6.G. INVASIVE PLANTS WILL BE REMOVED OR CONTROLLED UNTIL NATIVE PLANT SPECIES ARE WELL ESTABLISHED (TYPICALLY THREE YEARS POST-CONSTRUCTION).

7. SITE ACCESS AND IMPLEMENTATION MONITORING

7.A. THE PROJECT SPONSOR WILL PROVIDE CONSTRUCTION MONITORING DURING IMPLEMENTATION TO ENSURE ALL CONSERVATION MEASURES ARE ADEQUATELY FOLLOWED, EFFECTS TO LISTED SPECIES ARE NOT GREATER THAN PREDICTED, AND INCIDENTAL TAKE LIMITATIONS ARE NOT EXCEEDED.

7.B. THE PROJECT SPONSOR OR DESIGNATED REPRESENTATIVE WILL SUBMIT THE PROJECT COMPLETION FORM (PCF) WITHIN 30 DAYS OF PROJECT COMPLETION.

8. CWA SECTION 401 WATER QUALITY CERTIFICATION

8.A. THE PROJECT SPONSOR OR DESIGNATED REPRESENTATIVE WILL COMPLETE AND RECORD WATER QUALITY OBSERVATIONS (SEE TURBIDITY MONITORING) TO ENSURE IN-WATER WORK IS NOT DEGRADING WATER QUALITY.

8.B. DURING CONSTRUCTION, WATER QUALITY PROVISIONS PROVIDED BY THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, WASHINGTON DEPARTMENT OF ECOLOGY, IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY WILL BE FOLLOWED.

TURBIDITY MONITORING

A. RECORD THE READING, LOCATION, AND TIME FOR THE BACKGROUND READING APPROXIMATELY 100 FEET UPSTREAM OF THE PROJECT AREA USING A RECENTLY CALIBRATED TURBIDIMETER OR VIA VISUAL OBSERVATION (SEE THE HIP HANDBOOK TURBIDITY MONITORING SECTION FOR A VISUAL OBSERVATION KEY).

B. RECORD THE TURBIDITY READING, LOCATION, AND TIME AT THE MEASUREMENT COMPLIANCE LOCATION POINT.

B.1. 50 FEET DOWNSTREAM FOR STREAMS LESS THAN 30 FEET WIDE.

B.2. 100 FEET DOWNSTREAM FOR STREAMS BETWEEN 30 AND 100 FEET WIDE.

B.3. 200 FEET DOWNSTREAM FOR STREAMS GREATER THAN 100 FEET WIDE.

B.4. 300 FEET FROM THE DISCHARGE POINT OR NONPOINT SOURCE FOR LOCATIONS SUBJECT TO TIDAL OR COASTAL SCOUR.

C. TURBIDITY SHALL BE MEASURED (BACKGROUND LOCATION AND COMPLIANCE POINTS) EVERY 4 HOURS WHILE WORK IS BEING IMPLEMENTED.

D. IF THERE IS A VISIBLE DIFFERENCE BETWEEN A COMPLIANCE POINT AND THE BACKGROUND, THE EXCEEDANCE WILL BE NOTED IN THE PROJECT COMPLETION FORM (PCF). ADJUSTMENTS OR CORRECTIVE MEASURES WILL BE TAKEN IN ORDER TO REDUCE TURBIDITY.

E. IF EXCEEDANCES OCCUR FOR MORE THAN TWO CONSECUTIVE MONITORING INTERVALS (AFTER 8 HOURS), THE ACTIVITY WILL STOP UNTIL THE TURBIDITY LEVEL RETURNS TO BACKGROUND. THE BPA EC LEAD WILL BE NOTIFIED OF ALL EXCEEDANCES AND CORRECTIVE ACTIONS AT PROJECT COMPLETION.

F. IF TURBIDITY CONTROLS (COFFER DAMS, WADDLES, FENCING, ETC.) ARE DETERMINED INEFFECTIVE, CREWS WILL BE MOBILIZED TO MODIFY AS NECESSARY. OCCURRENCES WILL BE DOCUMENTED IN THE PROJECT COMPLETION FORM (PCF).

G. FINAL TURBIDITY READINGS, EXCEEDANCES, AND CONTROL FAILURES WILL BE SUBMITTED TO THE BPA EC LEAD USING THE PROJECT COMPLETION FORM (PCF).

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JAKE D. HOFELD — WASHINGTON — 23327 — REGISTERED PROFESSIONAL ENGINEER — EXPIRES: 4/9/2024

PREPARED AT THE REQUEST OF:
YAKAMA NATION FISHERIES

HIP GENERAL CONSERVATION MEASURES

WALALUUKS CREEK HABITAT ENHANCEMENT PROJECT
100% DESIGN SUBMITTAL

DESIGNED BY:	J.H.
DRAWN BY:	C.B.
CHECKED BY:	J.H.
DATE:	3/31/2023
JOB NO.:	20-061

BAR IS ONE INCH ON ORIGINAL DRAWING, ADJUST SCALES FOR REDUCED PLOTS
0 1"