



Janna Brown <janna.brown@bonnercountyid.gov>

[EXT SENDER] Proffered Department of Army Permit, NWW-2007-01218 (Idaho Club Marina and Lakeshore Community)

1 message

Schock, Garrett N CIV USARMY CENWW (USA) <Garrett.N.Schock@usace.army.mil>

Tue, Sep 30, 2025 at 9:14 AM

To: "william.haberman@me.com" <william.haberman@me.com>

Cc: Pierre Bordenave <pbord2025@outlook.com>, Certification requests <certificationrequests@deq.idaho.gov>, "rachel.basnaw@deq.idaho.gov" <rachel.basnaw@deq.idaho.gov>, Tyler Warner <twarner@idl.idaho.gov>, Mike Ahmer <mahmer@idl.idaho.gov>, "Christine.Harmon@deq.idaho.gov" <christine.harmon@deq.idaho.gov>, Dan McCracken <dan.mccracken@deq.idaho.gov>, "Barnes, Emily" <Emily.Barnes@idwr.idaho.gov>, "Fischer, Steven M CIV USCG D13 (USA)" <steven.m.fischer3@uscg.mil>, Bonner Planning <planning@bonnercountyid.gov>, "Hacker, Christina M" <christina_hacker@fws.gov>, "Urbanek, Kelly J CIV USARMY CENWW (USA)" <Kelly.J.Urbanek@usace.army.mil>, "Joyner, James M CIV USARMY CENWW (USA)" <James.M.Joyner@usace.army.mil>, "Unbehaun, Kathryn A CIV (USA)" <Kathryn.A.Unbehaun@usace.army.mil>

Mr. Haberman,

Please find the attached Proffered Letter and Permit. Kindly examine all documents carefully, as they outline the specific terms and conditions for the work to be completed. If you have any questions or need further clarification, please don't hesitate to reach out.

Thanks,

Garrett Schock

Regulatory Project Manager

U.S. Army Corps of Engineers, Walla Walla District

Coeur d'Alene Regulatory Office

1910 Northwest Blvd., Suite 210

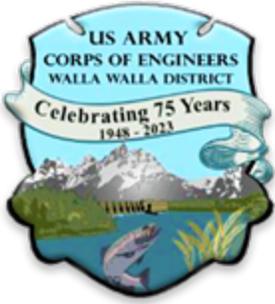
Coeur d'Alene, ID 83814

Email: Garrett.N.Schock@usace.army.mil

Work Phone: (986) 810-0175

Work Cell: (208) 818-5790

<https://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/>



6 attachments

-  **20250911_NWW-2007-01218_Final_Proffered_Permit_Ltr signed.pdf**
406K
-  **IdahoClub-Marina&Lakeshore-USACE-ProfferedPermit-Executed_1 signed.pdf**
551K
-  **20250904_NWW-2007-01218_Request_For_Appeal_Form_Proffered_Permit.pdf**
147K
-  **20240719_NWW-2007-01218_Project_Designs.pdf**
7801K
-  **20250905_NWW-2007-01218_NBTC_Designs.pdf**
14828K
-  **20250911_NWW-2007-01218_Final_Proffered_Permit_Ltr signed.pdf**
406K



**DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
COEUR D'ALENE REGULATORY OFFICE
1910 NORTHWEST BOULEVARD, SUITE 210
COEUR D'ALENE, IDAHO 83814-2676**

September 29, 2025

Regulatory Division

SUBJECT: NWW-2007-01218, The Idaho Club Marina and Lakeshore Community

William Haberman
Valiant Idaho, LLC,
151 Clubhouse Way
Sandpoint, Idaho 83864

William Haberman
Valiant Idaho II, LLC
151 Clubhouse Way
Sandpoint, Idaho 83864

Dear Mr. Haberman:

Enclosed is the signed Department of the Army Permit NWW-2007-01218 authorizing you to construct a commercial marina and armor the shoreline along Lake Pend Oreille and also realign the North Branch Trestle Creek. The project site is located at 88 North Park Road, within Sections 16 and 21, of Township 57 North, Range 1 East, near latitude 48.283458° N and longitude -116.353176°, Hope, Bonner County, Idaho

Also enclosed is a *Notice of Authorization* which should be posted in a prominent location near the authorized worksite.

If changes to the plans or location of the work are necessary for any reason, these changes must be submitted to us immediately. Federal law requires approval of any changes before construction begins.

We actively use feedback to improve our delivery and provide you with the best possible service. If you would like to provide feedback, please take our online survey¹. If you have questions or if you would like a paper copy of the survey, please contact the

¹ <https://regulatory.ops.usace.army.mil/customer-service-survey/>

Walla Walla District Regulatory. For more information about the Walla Walla District Regulatory program, you can visit us online².

If you have any questions or need additional information about this permit authorization, you can contact me by phone at (986) 810-0175, by mail at the address in the letterhead, or email at Garrett.N.Schock@usace.army.mil.

Sincerely,



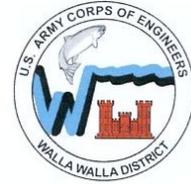
Kelly J. Urbanek
Chief, Regulatory Division
U.S. Army Corps of Engineers
Walla Walla District

² <http://www.nww.usace.army.mil/Business-With-Us/Regulatory-Division/>

COMPLIANCE CERTIFICATION



**US Army Corps of Engineers
Walla Walla District**



Permit Number: NWW-2007-01218

Name of Permittee: William Haberman, Valiant Idaho LLC & Valiant Idaho II LLC

Date of Issuance: September 29, 2025

Upon completion of the activity authorized by this permit, and any mitigation required by the permit, please sign this certification and return it to the following address:

U.S. Army Corps of Engineers
Walla Walla District
Coeur d'Alene Regulatory Office
1910 Northwest Blvd, Suite 210
Coeur d'Alene, ID 83814

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with all terms and conditions of this permit, the permit is subject to suspension, modification, or revocation and you are subject to an enforcement action by this office.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit. The required mitigation was also completed in accordance with the permit conditions.

Signature of PERMITEE
Date

DATE



**This notice of authorization must be
conspicuously displayed at the site of work.**

United States Army Corps of Engineers

Lake Pend Oreille/ North Branch Trestle Creek

A permit to: The proposed work will include the driving of 526 steel piles, each 10 inches in diameter, using a vibratory hammer and the installation of 88 steel-frame, light-penetrating fixed pier docks totaling 13,324 square feet (sq. ft.), as well as 8 individual steel-frame, light-penetrating pier docks totaling 1,920 sq. ft. Additionally, a 358-foot-long by 10-foot-wide steel-frame, light-penetrating breakwater will be constructed, spanning 3,580 sq. ft. The project also includes the installation of a boat pump-out station, the excavation of 139,640 sq. ft. of shoreline resulting in the excavation of 12,500 cubic yards of material, and the stabilization of 3,830 linear feet of shoreline on Lake Pend Oreille, resulting in the discharge of 2,915 cubic yards (CY) of rock riprap fill, to armor the shoreline and construct a new commercial marina. The work also includes the removal of existing wooden piles, docks, boardwalks, decking, and a concrete boat ramp, all demolished materials will be properly disposed of at a designated waste facility.

Work will also include the realignment of the North Branch of Trestle Creek (NBTC) with the main stem of Trestle Creek to enhance fish passage and improve aquatic habitat connectivity. These restoration activities will involve the discharge of approximately 279 CY of native excavated material and 140 CY of rock below the ordinary high-water mark (OHWM) across 0.09 acres of the NBTC, 0.01 acres of palustrine emergent (PEM) wetlands, and 0.04 acres of palustrine forested (PFO) wetlands.

at: 88 North Park Road, within Sections 16 and 21, of Township 57 North, Range 1 East, near latitude 48.283458° N and longitude -116.353176°, Hope, Bonner County, Idaho

has been issued to: William Haberman, Valiant Idaho, LLC and Valiant Idaho II LLC

on: September 29, 2025 **and expires on:** September 29, 2028

Address of Permittee: 151 Clubhouse Way, Sandpoint, ID 83864

Permit Number:

NWW-2007-01218

**FOR: *District Commander
Kelly J. Urbanek
CHIEF, REGULATORY DIVISION
USACE, WALLA WALLA DISTRICT***

DEPARTMENT OF THE ARMY PERMIT

Permittee: William Haberman, Valiant Idaho, LLC & Valiant Idaho, LLC II

Permit No.: NWW-2007-01218

Issuing Office: Walla Walla District

NOTE — The term “*you*” and its derivatives, as used in this permit, means the permittee or any future transferee. The term “*this office*” refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer. You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The proposed work will include the driving of 526 steel piles, each 10 inches in diameter, using a vibratory hammer and the installation of 88 steel-frame, light-penetrating fixed pier docks totaling 13,324 square feet (sq. ft.), as well as 8 individual steel-frame, light-penetrating pier docks totaling 1,920 sq. ft. Additionally, a 358-foot-long by 10-foot-wide steel-frame, light-penetrating breakwater will be constructed, spanning 3,580 sq. ft. The project also includes the installation of a boat pump-out station, the excavation of 139,640 sq. ft. of shoreline resulting in the excavation of 12,500 cubic yards (CY) of material, and the stabilization of 3,830 linear feet of shoreline on Lake Pend Oreille, resulting in the discharge of 2,915 CY of rock riprap fill, to armor the shoreline and construct a new commercial marina. The work also includes the removal of existing wooden piles, docks, boardwalks, decking, and a concrete boat ramp, all demolished materials will be properly disposed of at a designated waste facility.

Work will also include the realignment of the North Branch of Trestle Creek (NBTC) with the main stem of Trestle Creek to enhance fish passage and improve aquatic habitat connectivity. These restoration activities will involve the discharge of approximately 279 CY of native excavated material and 140 CY of rock below the ordinary high-water mark (OHWM) across 0.09 acres of the NBTC, 0.01 acres of palustrine emergent (PEM) wetlands, and 0.04 acres of palustrine forested (PFO) wetlands.

Attachments:

20250904_NWW-2007-01218_Drawings; pages 1 through 16.

20250904_NWW-2007-01218_NBTC_Drawings; pages 1 through 10.

August 20, 2025, Section 401 WQC

July 30, 2025, FWS Letter of Concurrence

Project Location: The project site is located at 88 North Park Road, within Sections 16 and 21, of Township 57 North, Range 1 East, near latitude 48.283458° N and longitude -116.353176°, Hope, Bonner County, Idaho.

This authorization is subject to the following:

General Conditions:

1. The time limit for completing the work authorized ends on September 29, 2028. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration **at least 1 month before** the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity, or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archaeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, the new owner shall make a request in writing to the Walla Walla District Regulatory Office which issued this authorization, that the Letter of Permission be transferred OR re-issued to them.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such a condition.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

Special Condition 1: Permittee shall complete compensatory mitigation in accordance with and as specified in the mitigation plan titled "20250828_NWW-2007-01218_IdahoClub_MitigationPlan", dated August 28, 2025, and according to the drawings dated August 28, 2025. Mitigation shall be accomplished concurrent with or prior to the discharge of fill material authorized by this permit.

Special Condition 2: Prior to discharging dredged or fill materials into WOTUS associated with the Project, the Permittee shall, in conjunction with USACE and compliant with 33 CFR 332.3(n), submit proposed financial assurances amounts and mechanism(s) for compensatory mitigation required by this DA permit; and receive written approval from USACE that the financial assurances requirements have been satisfied. At any given time during the Project, sufficient financial assurances required under 33 CFR part 332 for compensatory mitigation for impacts to WOTUS shall be provided prior to those impacts occurring. Financial assurances applicable to the compensatory mitigation required under this permit condition shall only be released upon USACE determining success, as required by permit condition 1.

Special Condition 3: This Corps permit does not authorize you to take an endangered species, in particular the Bull trout (*Salvelinus confluentus*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA); e.g. an ESA Section 10 permit or Biological Opinion under ESA Section 7, with "incidental take" provisions with which you must comply.

In their Letter of Concurrence dated July 30, 2025, the U.S. Fish and Wildlife Service (USFWS) agreed that the potential impacts of your project may affect but are not likely to adversely affect Bull trout or their designated critical habitat.

Your authorization under this Corps permit is conditional upon your compliance with the special conditions in this permit and following the construction procedures described in your application and Biological Assessment (BA).

Failure to comply with these conditions or variance of the construction procedures that result in a take of listed species under the ESA, would constitute an unauthorized take and non-compliance with your Corps permit. To ensure ESA compliance, any changes or deviation from your permit or the action as described in our BA may necessitate re-initiation of consultation with the USFWS.

Special Condition 4: The permittee understands and agrees that, if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or their authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alternation.

Special Condition 5: The permittee shall install and maintain at the permittee's expense, any safety lights and signals, as prescribed by the U.S. Coast Guard, through regulations or otherwise, on authorized facilities in navigable waters of the United States.

Special Condition 6: The permittee is responsible for all work done by any contractor. The permittee shall ensure any contractor who performs the work is informed of and follows all the terms and conditions of this authorization, including any Special Conditions listed above. The permittee shall also ensure these terms and conditions are incorporated into the engineering plans and contract specifications.

FURTHER INFORMATION:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

(X) Section 404 of the Clean Water Act (33 U.S.C. 1413)

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1344)

2. Limits of this Authorization:

(a) This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

(b) This permit does not grant any property rights or exclusive privileges.

(c) This permit does not authorize any injury to the property or rights of others.

(d) This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this Letter of Permission, the Federal Government does not assume any liability for the following:

(a) Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

(b) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

(c) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

- (d) Design or construction deficiencies associated with the permitted work.
- (e) Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Re-evaluation of Permit Decision: This office may re-evaluate its decision on this Letter of Permission at any time the circumstances warrant. Circumstances that could require a re-evaluation include, but are not limited to, the following:

- (a) You fail to comply with the terms and conditions of this permit.
- (b) The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
- (c) Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a re-evaluation may result in a determination that it is appropriate to use the suspension, modification, or revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office.

6. Extensions: General Condition 1 establishes a time limit for completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a re-evaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

APPLICANT SIGNATURE:

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.



William Haberman,
Valiant Idaho, LLC
Valiant Idaho, LLC II
151 Clubhouse Way
Sandpoint, Idaho 83864

DATE: 9/29/25

DEPARTMENT OF ARMY SIGNATURE:

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



FOR: District Commander
Kelly J. Urbanek
Chief, Regulatory Division
US Army Corps of Engineers
Walla Walla District

DATE: September 29, 2025

TRANSFER OF PERMIT

When the structures or work authorized by this Department of Army Permit, **NWW-2007-01218, The Idaho Club Marina and Lakeshore Community**, are still in existence at the time the property is transferred. The terms and conditions of this permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

TRANSFeree

DATE:

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: William Haberman		File Number: NWW-2007-01218	Date: September 29, 2025
Attached is:			See Section Below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of Permission)		A
X	PROFFERED PERMIT (Standard Permit or Letter of Permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations (JD) associated with the permit.

OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit,

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS:

Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:
U.S. Army Corps of Engineers, Walla Walla District
ATTN: Kelly Urbanek, Chief, Regulatory Division
720 East Park Boulevard, Suite 245
Boise, Idaho 83712-7757
Telephone (208) 433-4464
Email: Kelly.J.Urbanek@usace.army.mil

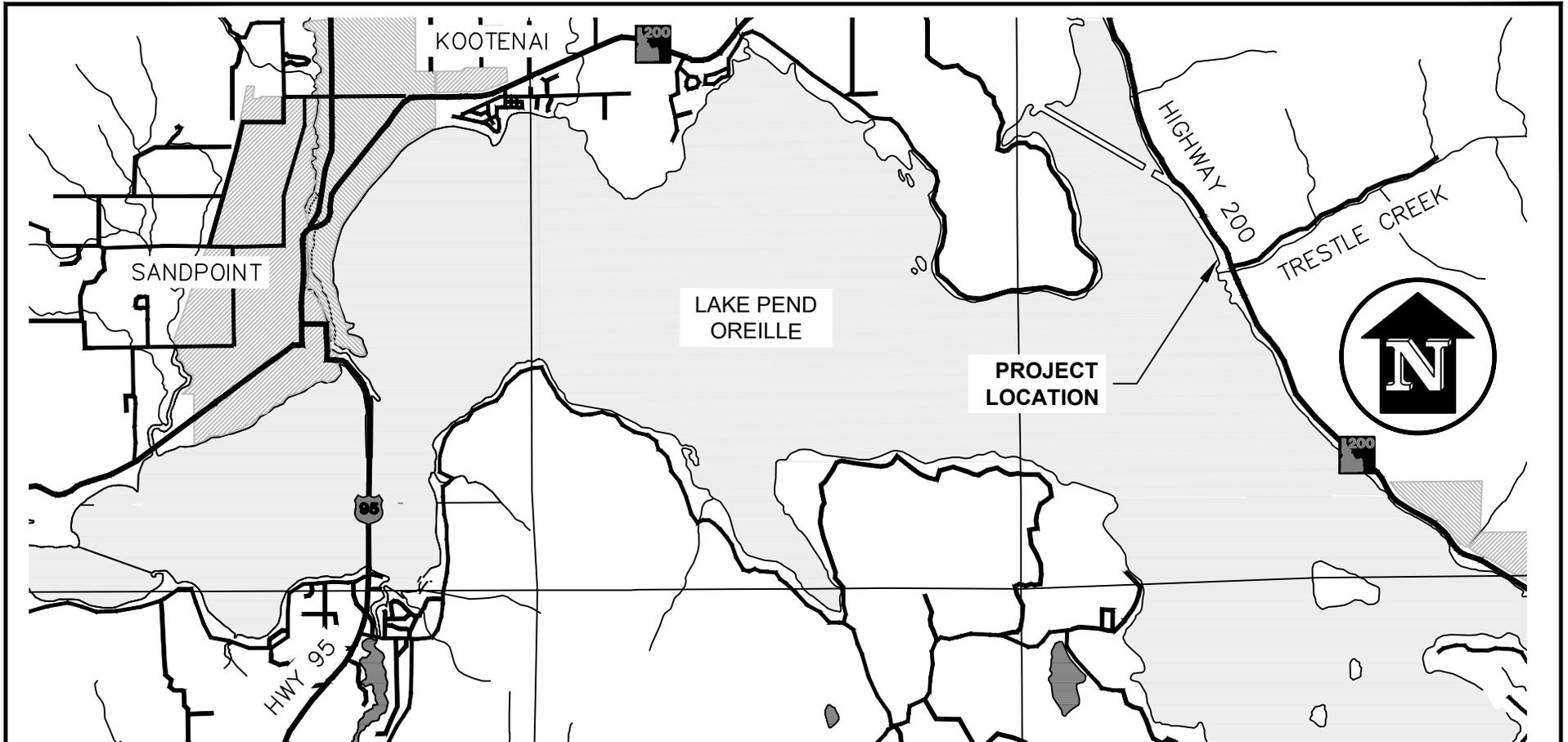
If you only have questions regarding the appeal process you may also contact:
U.S. Army Corps of Engineers, Northwestern Division
ATTN: Melinda Larsen, Appeals Review Officer
1201 NE Lloyd Blvd., Suite 400
Portland, Oregon 97208-2870
Telephone (503) 808-3888
Email: Melinda.M.Larsen@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent:

Date:

Telephone:



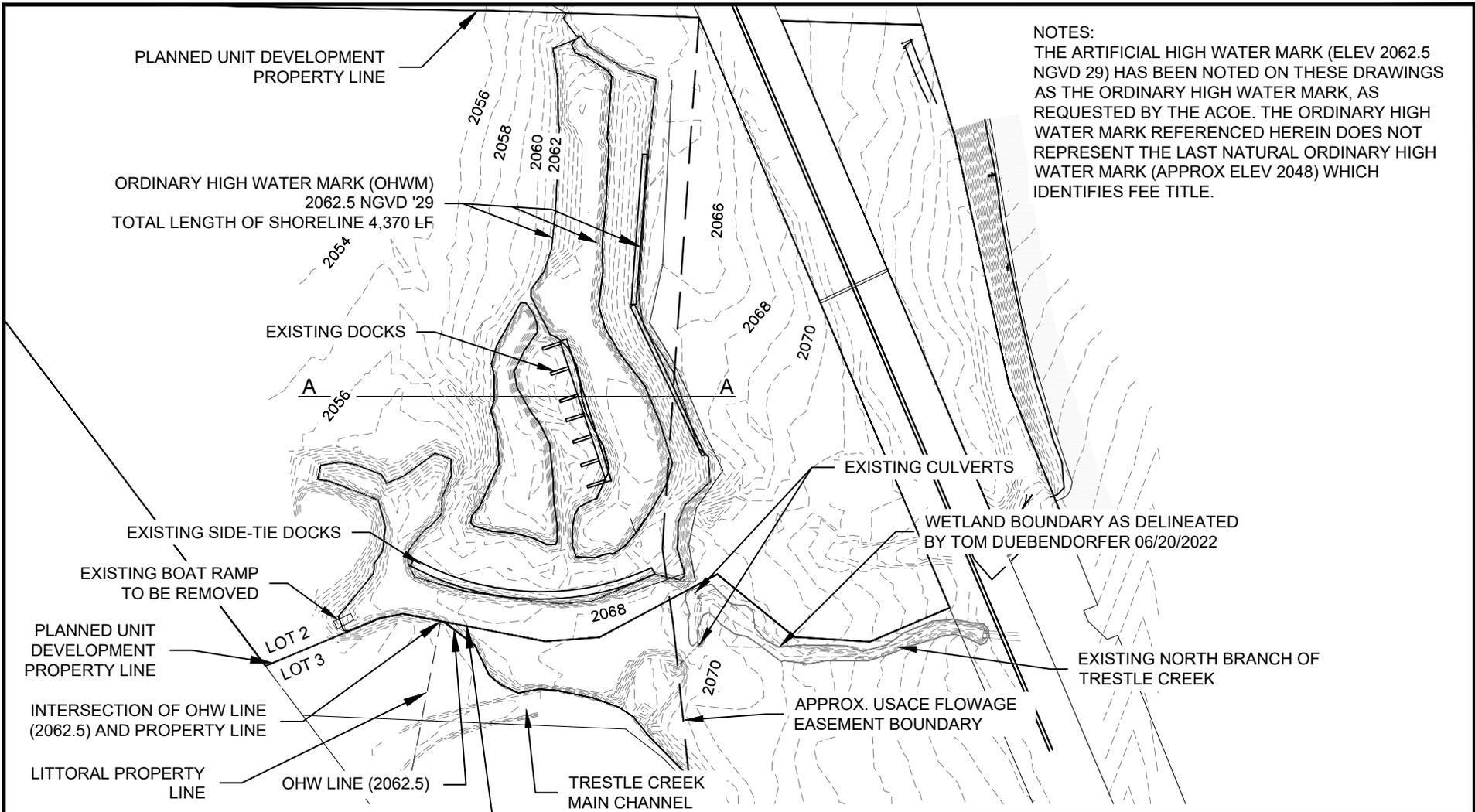
NOT TO SCALE

SHEET INDEX

SHEET #	SHEET TITLE
1	VICINITY MAP
2	EXISTING SITE CONDITIONS
3	EXCAVATION PLAN
4	SHORELINE PROTECTION PLAN
5	MARINA SITE PLAN
6	SITE CROSS SECTION
7	SHORELINE PROTECTION CROSS SECT.
8	DOCK PLAN
9	DOCK CROSS SECTION
10	BREAKWATER CROSS SECTION
11	BREAKWATER CROSS SECTION
12	BRIDGE CROSS SECTION
13	BOAT PUMP OUT STATION PLAN
14	BOAT PUMP OUT STATION DETAIL
15	PRELIMINARY SWPPP PHASE 1
16	PRELIMINARY SWPPP PHASE 2



Applicant: William Haberman, Valiant Idaho, LLC
 and Valiant Idaho II, LLC
 File No.: NWW-2007-01218
 Waterway: Lake Pend Oreille/NBTC
 Proposed Activity: Marina, Bank Stabilization,
 Restoration
 PLSS: Sec. 16 & 21, T. 57 N, R. 1 E
 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 1 of 16
 Date: September 04, 2025



NOTES:
THE ARTIFICIAL HIGH WATER MARK (ELEV 2062.5 NGVD 29) HAS BEEN NOTED ON THESE DRAWINGS AS THE ORDINARY HIGH WATER MARK, AS REQUESTED BY THE ACOE. THE ORDINARY HIGH WATER MARK REFERENCED HEREIN DOES NOT REPRESENT THE LAST NATURAL ORDINARY HIGH WATER MARK (APPROX ELEV 2048) WHICH IDENTIFIES FEE TITLE.



SCALE IN FEET
CONTOUR INTERVAL IS 1'
DATUM: NGVD '29

NOTE: SOME ELEVATIONS, CONTOUR LINES, AND ORIGINAL HIGH WATER MARK DEPICTED IN THIS DRAWING IS PER 2017 TOPOGRAPHIC SURVEY PREPARED BY WELCH-COMER ENGINEERS AND SURVEYORS

Applicant: William Haberman, Valiant Idaho, LLC and Valiant Idaho II, LLC
File No.: NWW-2007-01218
Waterway: Lake Pend Oreille/NBTC
Proposed Activity: Marina, Bank Stabilization, Restoration
PLSS: Sec. 16 & 21, T. 57 N, R. 1 E
Lat: 48.2834 N , Long: -116.3531 W
Sheet 2 of 16
Date: September 04, 2025

 PROPOSED ISLAND, STREAM AND BANK EXCAVATION ABOVE THE ORDINARY HIGH WATER MARK

 PROPOSED EXCAVATION AND CONTOURING BELOW THE ORDINARY HIGH WATER MARK

ORDINARY HIGH WATER MARK (OHWM) 2062.5 NGVD '29

ESTIMATED AREA OF EXCAVATION/CONTOURING

ORDINARY HIGH WATER MARK 2062.5 (NGVD '29)

EXISTING PENINSULA

LOT 2

LOT 3

PLANNED UNIT DEVELOPMENT PROPERTY LINE

TRESTLE CREEK MAIN CHANNEL

PLANNED UNIT DEVELOPMENT PROPERTY LINE

EXISTING SLACK CHANNEL

UPLAND CONTOURING TO OBTAIN A 3:1 SLOPE OR LESS (TYP)

ESTIMATED AREA OF EXCAVATION/CONTOURING BELOW THE OHWM

WETLAND BOUNDARY AS DELINEATED BY TOM DUEBENDORFER 06/20/2022

EXISTING NORTH BRANCH OF TRESTLE CREEK

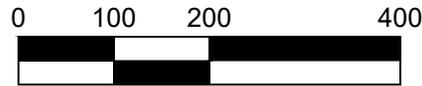
STREAM REALIGNMENT AND RESTORATION (SEE PLANS PREPARED BY RIVER DESIGN GROUP)

EXCAVATION ABOVE THE OHWM

LOCATION	AREA (SF) AT OHWM	VOLUME (CY) ABOVE OHWM
1	3,540	240
2	2,170	150
3	5,040	630
4	5,910	520
5	2,230	350
6	N/A	1,310
7	5,080	300
TL	23,970	3,500

EXCAVATION BELOW THE OHWM

LOCATION	AREA (SF) FIN GRADE	VOLUME (CY) BELOW OHWM
7	139,640	12,500



SCALE IN FEET
CONTOUR INTERVAL IS 1'
DATUM: NGVD '29

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Applicant: William Haberman, Valiant Idaho, LLC and Valiant Idaho II, LLC

File No.: NWW-2007-01218

Waterway: Lake Pend Oreille/NBTC

Proposed Activity: Marina, Bank Stabilization, Restoration

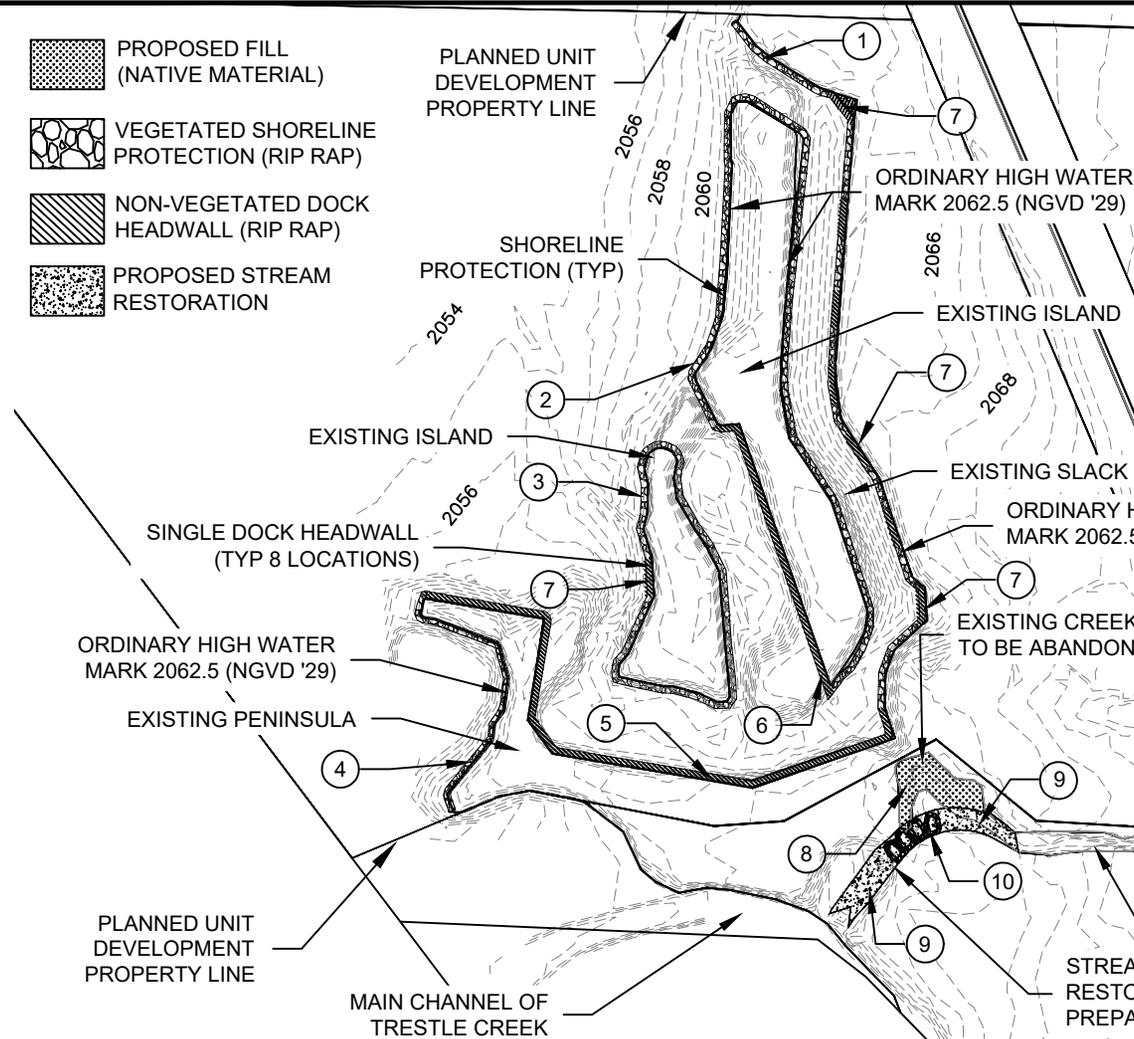
PLSS: Sec. 16 & 21, T. 57 N, R. 1 E

Lat: 48.2834 N, Long: -116.3531 W

Sheet 3 of 16

Date: September 04, 2025

-  PROPOSED FILL (NATIVE MATERIAL)
-  VEGETATED SHORELINE PROTECTION (RIP RAP)
-  NON-VEGETATED DOCK HEADWALL (RIP RAP)
-  PROPOSED STREAM RESTORATION



VEGETATED SHORELINE PROTECTION

LOCATION	LENGTH (LF)	AREA (SF)	VOLUME (CY) BELOW OHW	VOLUME (CY) ABOVE OHW
1	550	4,950	450	100
2	1,040	8,680	790	190
3	630	4,950	450	110
4	300	1,500	150	30
TL	2,520	20,080	1,840	430

NON-VEGETATED ROCK HEADWALL

LOCATION	LENGTH (LF)	AREA (SF)	VOLUME (CY) BELOW OHW	VOLUME (CY) ABOVE OHW
5	680	6,120	550	130
6	310	2,790	250	60
7	320	3,120	275	70
TL	1,310	12,030	1,075	260

NATIVE FILL MATERIAL

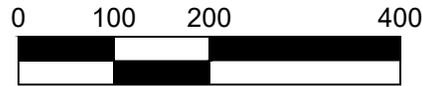
LOCATION	AREA (SF)	VOLUME (CY) BELOW OHW	VOLUME (CY) ABOVE OHW
8	3,640	N/A	300

STREAMBED FILL

LOCATION	AREA (SF)	(NO FILL BELOW THE OHWM)	JURISDICTIONAL FILL (CY)
9	5,080	N/A	90

CAT-1 AND CAT-2 ROCK (STEP POOLS)

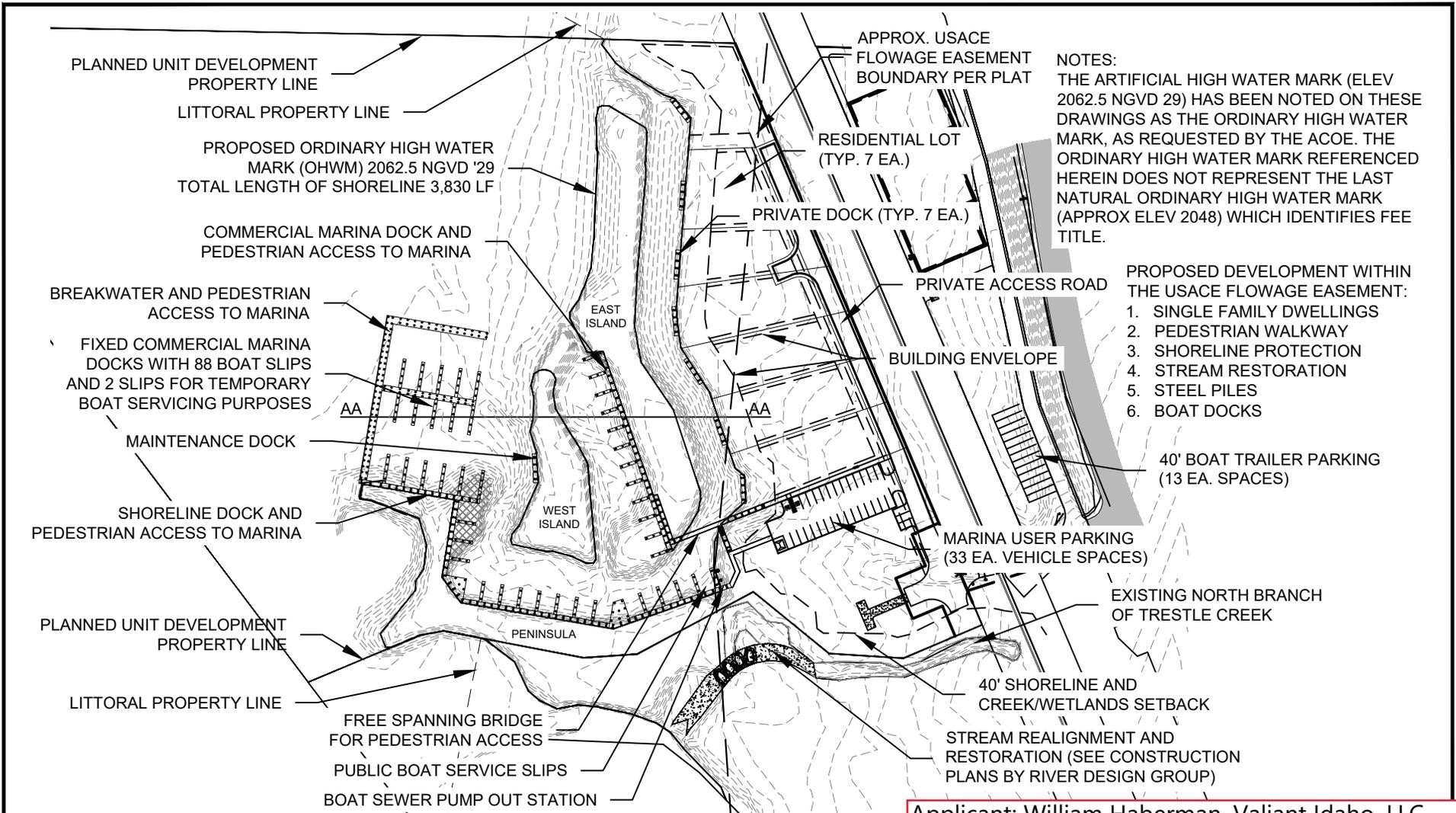
LOCATION	AREA (SF)	VOLUME (CY) BELOW OHW	VOLUME (CY) ABOVE OHW
10	1,450	N/A	130



SCALE IN FEET
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DATUM: NGVD '29

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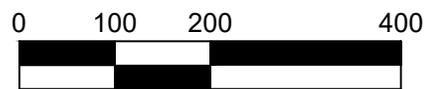
Applicant: William Haberman, Valiant Idaho, LLC and Valiant Idaho II, LLC
 File No.: NWW-2007-01218
 Waterway: Lake Pend Oreille/NBTC
 Proposed Activity: Marina, Bank Stabilization, Restoration
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 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 4 of 16
 Date: September 04, 2025



NOTES:
 THE ARTIFICIAL HIGH WATER MARK (ELEV 2062.5 NGVD 29) HAS BEEN NOTED ON THESE DRAWINGS AS THE ORDINARY HIGH WATER MARK, AS REQUESTED BY THE ACOE. THE ORDINARY HIGH WATER MARK REFERENCED HEREIN DOES NOT REPRESENT THE LAST NATURAL ORDINARY HIGH WATER MARK (APPROX ELEV 2048) WHICH IDENTIFIES FEE TITLE.

- PROPOSED DEVELOPMENT WITHIN THE USACE FLOWAGE EASEMENT:
1. SINGLE FAMILY DWELLINGS
 2. PEDESTRIAN WALKWAY
 3. SHORELINE PROTECTION
 4. STREAM RESTORATION
 5. STEEL PILES
 6. BOAT DOCKS

THIS DRAWING IS TO BE USED FOR PERMITTING PURPOSES - NOT FOR CONSTRUCTION

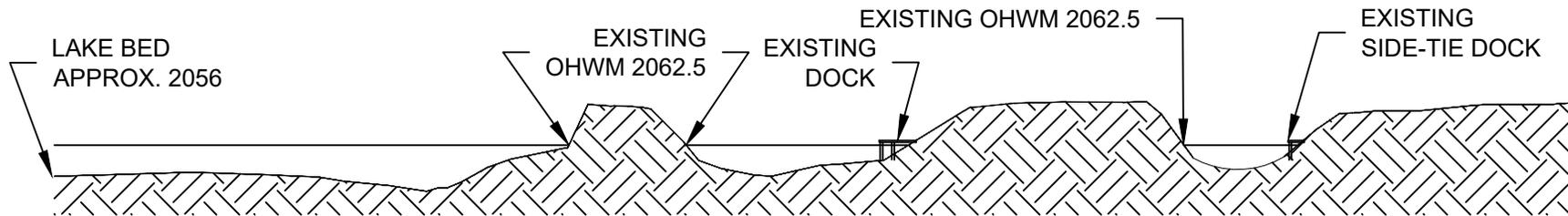


SCALE IN FEET
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 DATUM: NGVD '29

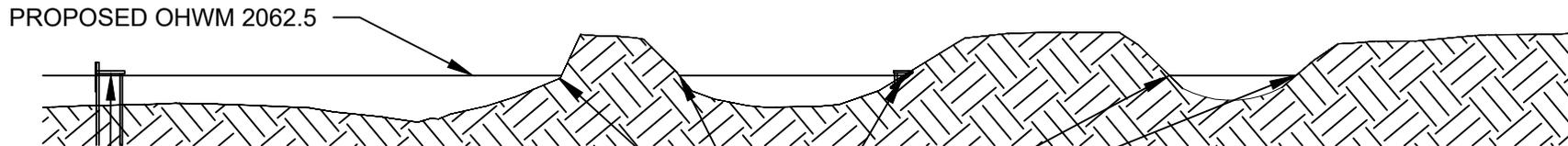
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 Sheet 5 of 16
 Date: September 04, 2025

A



AA



BREAKWATER SECTION A SEE SHEET 11

SEE SHORELINE PROTECTION CROSS SECTION SHEET 7

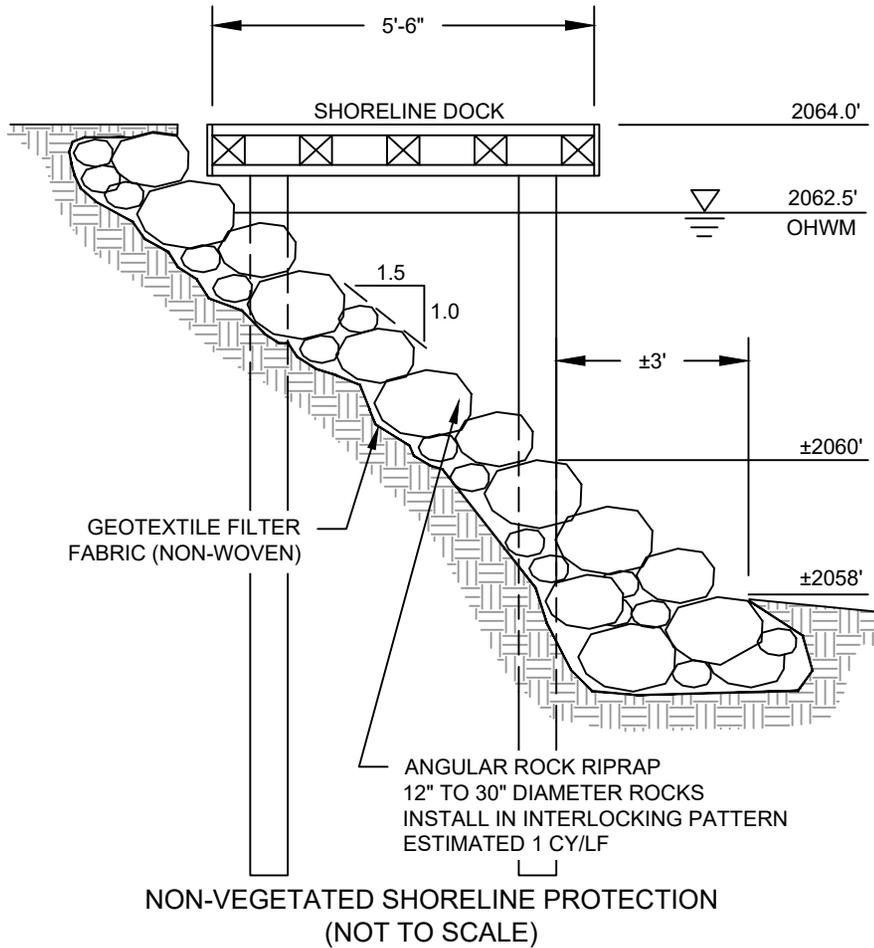
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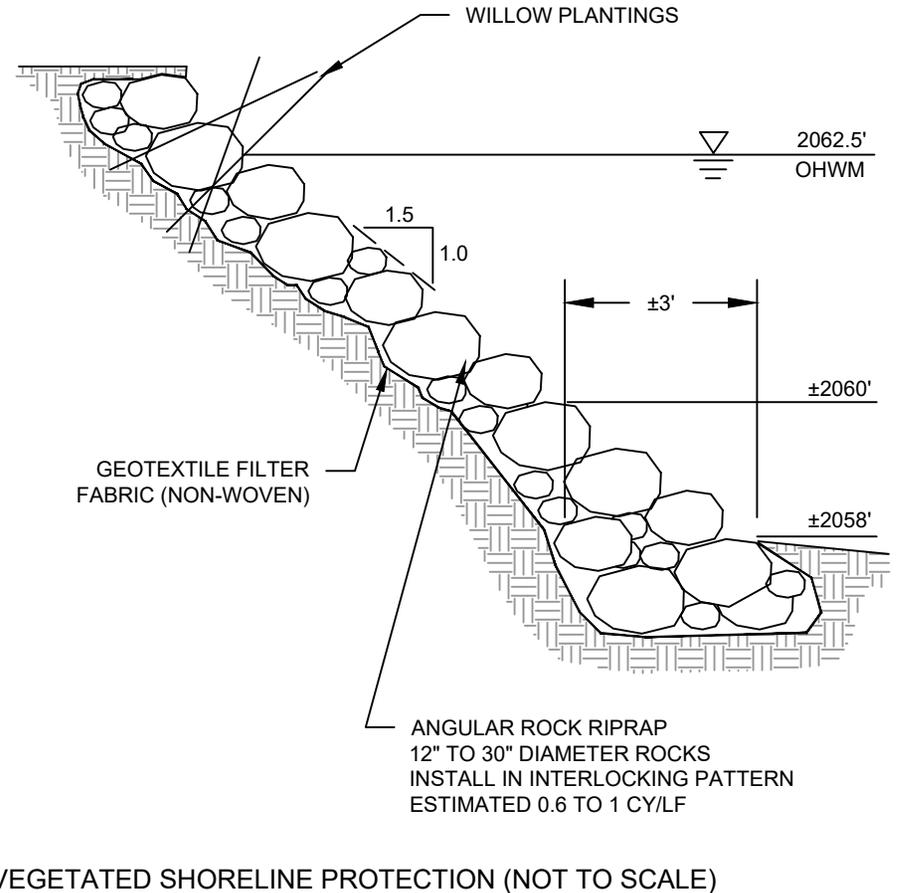
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Sheet 6 of 16
Date: September 04, 2025

NOTE: ELEVATIONS SHOWN ARE BASED ON NGVD 29 DATUM



NOTE: ELEVATIONS SHOWN ARE BASED ON NGVD 29 DATUM



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Lat: 48.2834 N , Long: -116.3531 W
Sheet 7 of 16
Date: September 04, 2025

COMMERCIAL MARINA BOAT SLIP SCHEDULE

SLIP LENGTH	TOTAL NO.	SLIP NUMBERS
24'	22 EACH	1-22
28'	32 EACH	23-54
28'	2 EACH	SERVICE SLIPS
40' NARROW	32 EACH	55-76, 79-88
40' WIDE	2 EACH	77-78

PRIVATE BOAT SLIP SCHEDULE

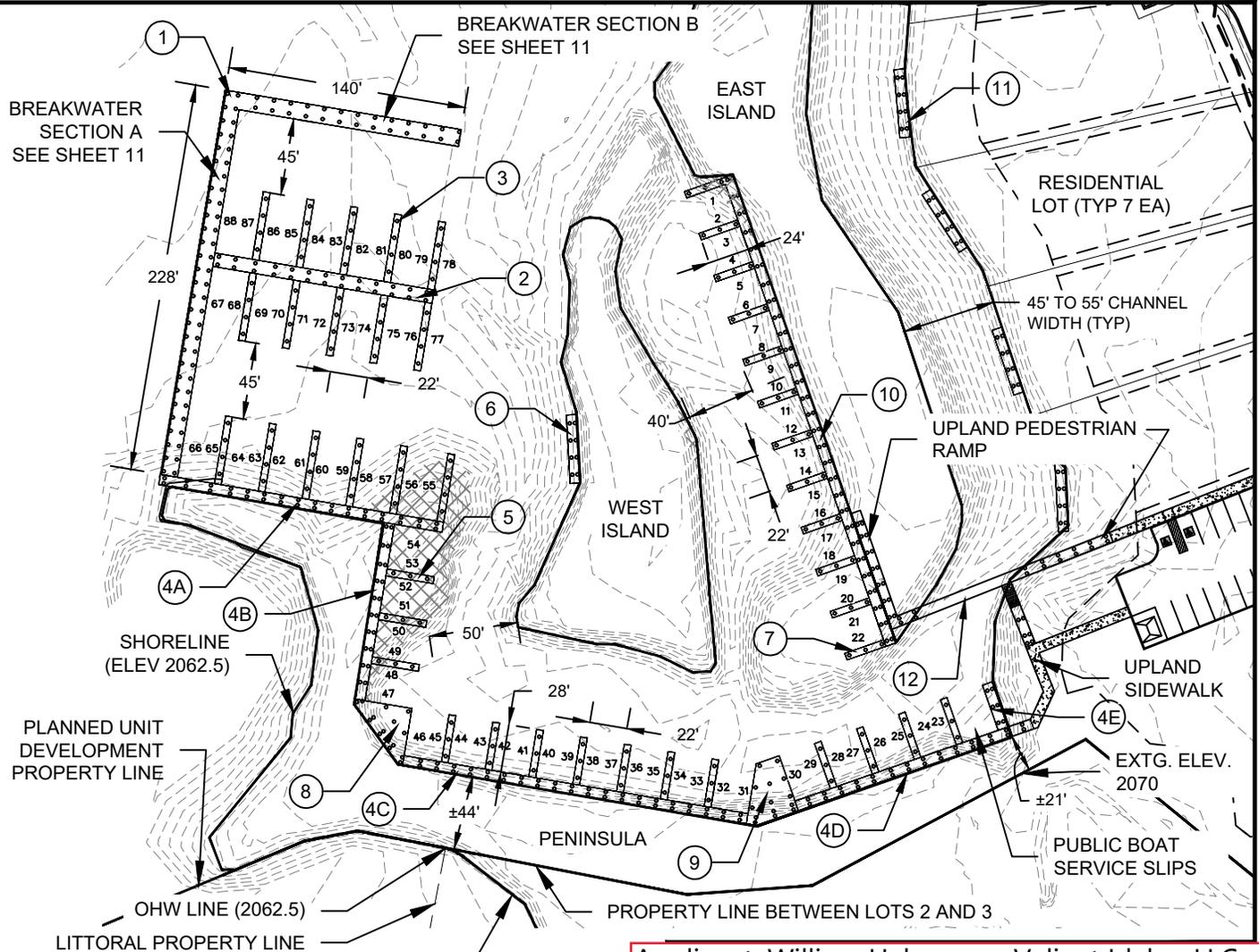
SLIP LENGTH	TOTAL NO.	SLIP NUMBERS
40' SIDE-TIE	8 EACH	N/A

BREAKWATER AND DOCK SIZES

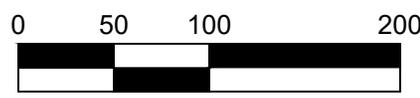
ID #	LENGTH (FT)	WIDTH (FT)	QTY (EA)	AREA (SF)	PILES (EA)
1	358	10	1	3,580	84
2	130	8	1	1,040	26
3	40	4	16	2,560	64
4A	168	6	1	1,008	30
4B	105	6	1	630	22
4C	204	6	1	1,224	42
4D	132	6	1	792	28
4E	28	6	1	168	6
5	28	4	14	1,568	42
6	40	6	1	240	8
7	24	4	12	1,152	36
8	N/A	N/A	1	656	10
9	N/A	N/A	1	786	14
10	290	6	1	1,740	58
11	40	6	7	1,680	56
TL				18,824	526

FREE SPANNING BRIDGE SIZE

ID #	LENGTH (FT)	WIDTH (FT)	QTY (EA)	AREA (SF)	PILES (EA)
12	70	6	1	420	4



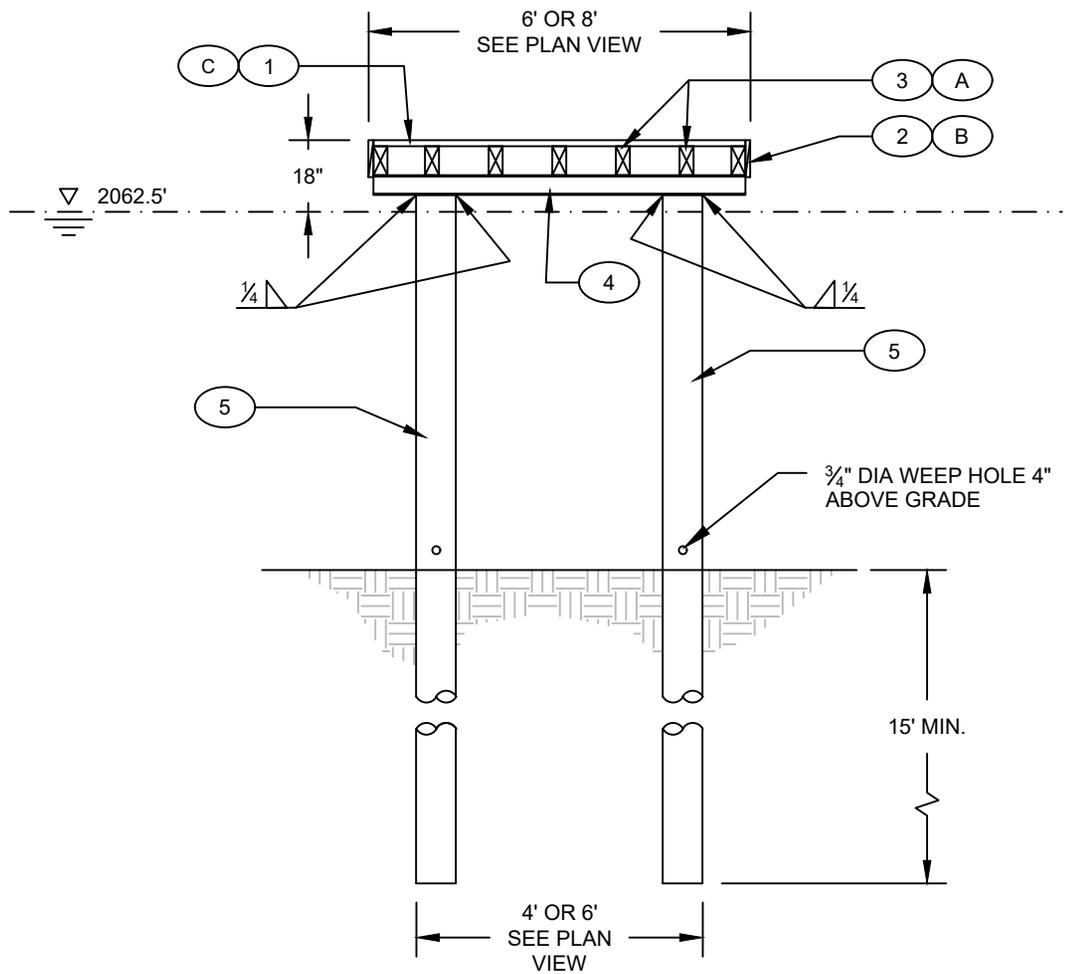
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 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 8 of 16
 Date: September 04, 2025



MATERIAL LEGEND

- 1 LIGHT PENETRATING DECKING
- 2 2 X 10 CEDAR FASCIA BOARD OR EQUIV.
- 3 4 X 8 JOISTS AT 16" O.C.
- 4 W 5 X 16 STEEL I-BEAM
- 5 10" DIA SCH. 40 STEEL PILING AT 10' O.C. (WALL: ~3/8")

FASTENER LEGEND

- A JOISTS TO STEEL: 1/2" X 10" GALV. BOLTS WITH WASHERS AND NUTS THROUGH DRILLED HOLES AT EACH BEARING POINT. RECESS BOLT HEADS IN JOISTS.
- B FACIA: TWO #10 X 3" SCREWS EVERY 12" ALONG JOISTS AND EVERY CROSS TIE BEARING. SPACE SCREWS 1 1/2" FROM END OF FACIA.
- C DECKING: INSTALL PER MANUFACTURER.

DOCK STRUCTURE CROSS SECTION
NOT TO SCALE

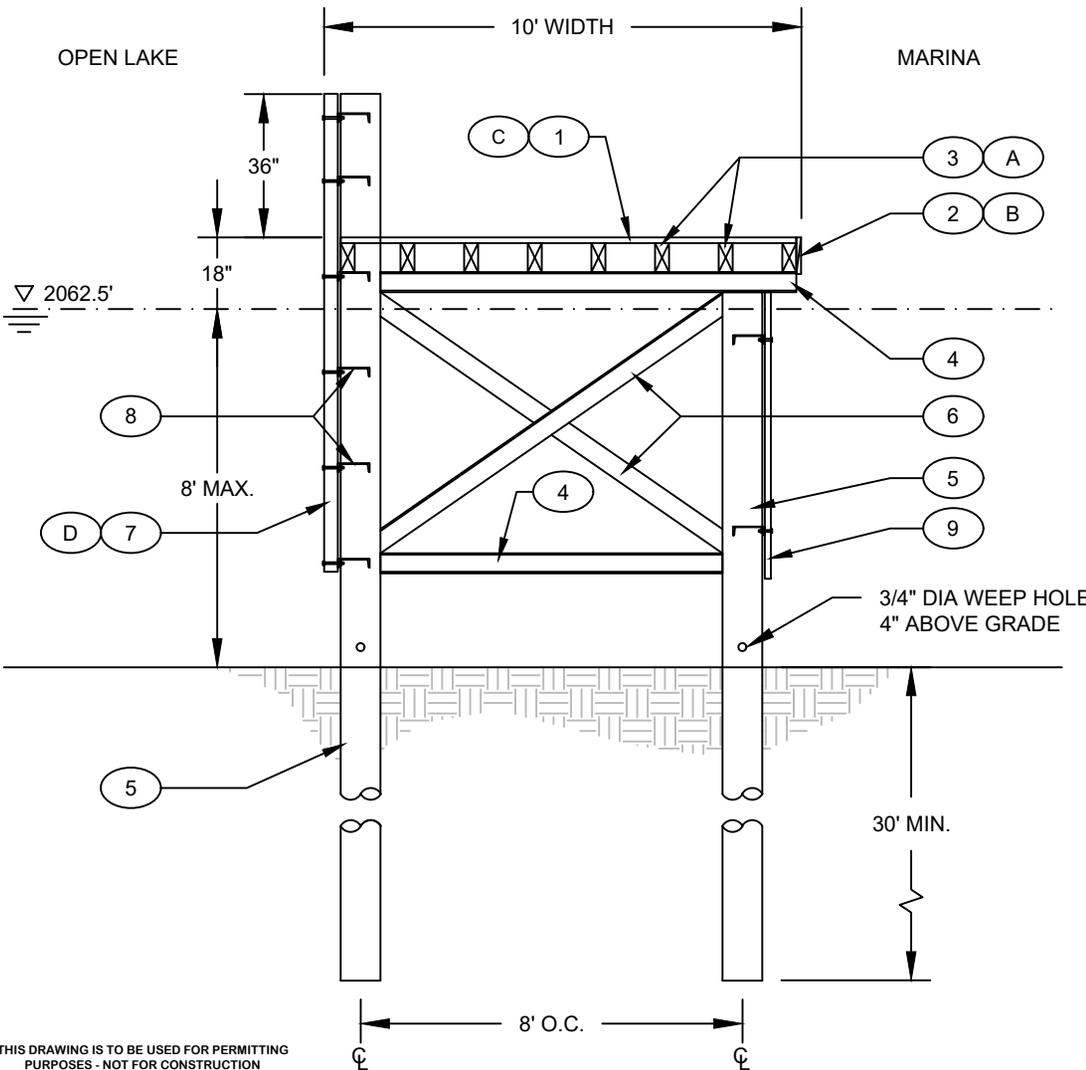
NOTES:

1. ALL DOCKS SHALL HAVE A LEVEL DECK THAT IS 1'-6" ABOVE THE HIGH WATER LEVEL
2. ALL DIMENSIONAL LUMBER (EXCEPT FACIA BOARD AND DECKING) SHALL BE DOUG FIR/HEM FIR, GRADE-NO.2 OR BETTER, PRESSURE TREATED WITH WATERBORNE SALT-CCA, TO A RETENTION LEVEL OF .40pct (SWPB-LP22). FACIA BOARD AND DECKING SHALL BE CEDAR, GRADE-NO.2 OR BETTER.
3. ALL SCREWS SHALL HAVE A RUST PROOF FINISH SUCH AS HOT-DIP GALVANIZED ALUMINUM OR STAINLESS STEEL. ALL OTHER FASTENERS, INCLUDING LAG BOLTS, MACHINE BOLTS, WASHERS AND NUTS SHALL HAVE A SIMILAR RUST PROOF FINISH.

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 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 9 of 16
 Date: September 04, 2025



MATERIAL LEGEND

- 1 LIGHT PENETRATING DECKING
- 2 2 X 10 CEDAR FASCIA BOARD OR EQUIV.
- 3 4 X 8 JOISTS AT 16" O.C.
- 4 W 5 X 16 STEEL I-BEAM
- 5 10" DIA SCH. 40 STEEL PILING AT 8' O.C. (WALL: ~ 3/8"), CAP TALL PILES
- 6 L 5" X 5" X 3/8" STEEL ANGLE
- 7 4 X 6 PT HEM-FIR VERTICAL BOARDS AT 7" O.C. WITH 1-1/2" GAPS
- 8 C 8 X 11.5 STEEL CHANNEL, TYP. AS SHOWN 24" O.C. VERTICAL SPACING OR AS SHOWN
- 9 2 X 6 PT HEM FIR VERTICAL BOARDS AT 7" O.C. WITH 1-1/2" GAPS

STEEL CONNECTION NOTES:

ALL STEEL MEMBERS SHALL BE COPE TO FIT TIGHT AND CONNECTED WITH 1/4" FILLET OR EQUIVALENT WELDS ALONG THE ENTIRE PERIMETER OF THE CONNECTED PART.

FASTENER LEGEND

- A JOISTS TO STEEL: 1/2" X 10" GALV. BOLTS WITH WASHERS AND NUTS THROUGH DRILLED HOLES AT EACH BEARING POINT. RECESS BOLT HEADS IN JOISTS.
- B FACIA: TWO #10 X 3" SCREWS EVERY 12" ALONG JOISTS AND EVERY CROSS TIE BEARING. SPACE SCREWS 1 1/2" FROM END OF FACIA.
- C DECKING: INSTALL PER MANUFACTURER.
- D VERTICAL BOARDS TO STEEL: 1/2" X 5" OR 3" GALV. BOLTS WITH WASHERS AND NUTS THROUGH DRILLED HOLES AT 7" O.C.

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NOT TO SCALE

NOTES:

1. ALL SCREWS SHALL HAVE A RUST PROOF FINISH SUCH AS HOT-DIP GALVANIZED ALUMINUM OR STAINLESS STEEL. ALL OTHER FASTENERS, INCLUDING LAG BOLTS, MACHINE BOLTS, WASHERS AND NUTS SHALL HAVE A SIMILAR RUST PROOF FINISH.

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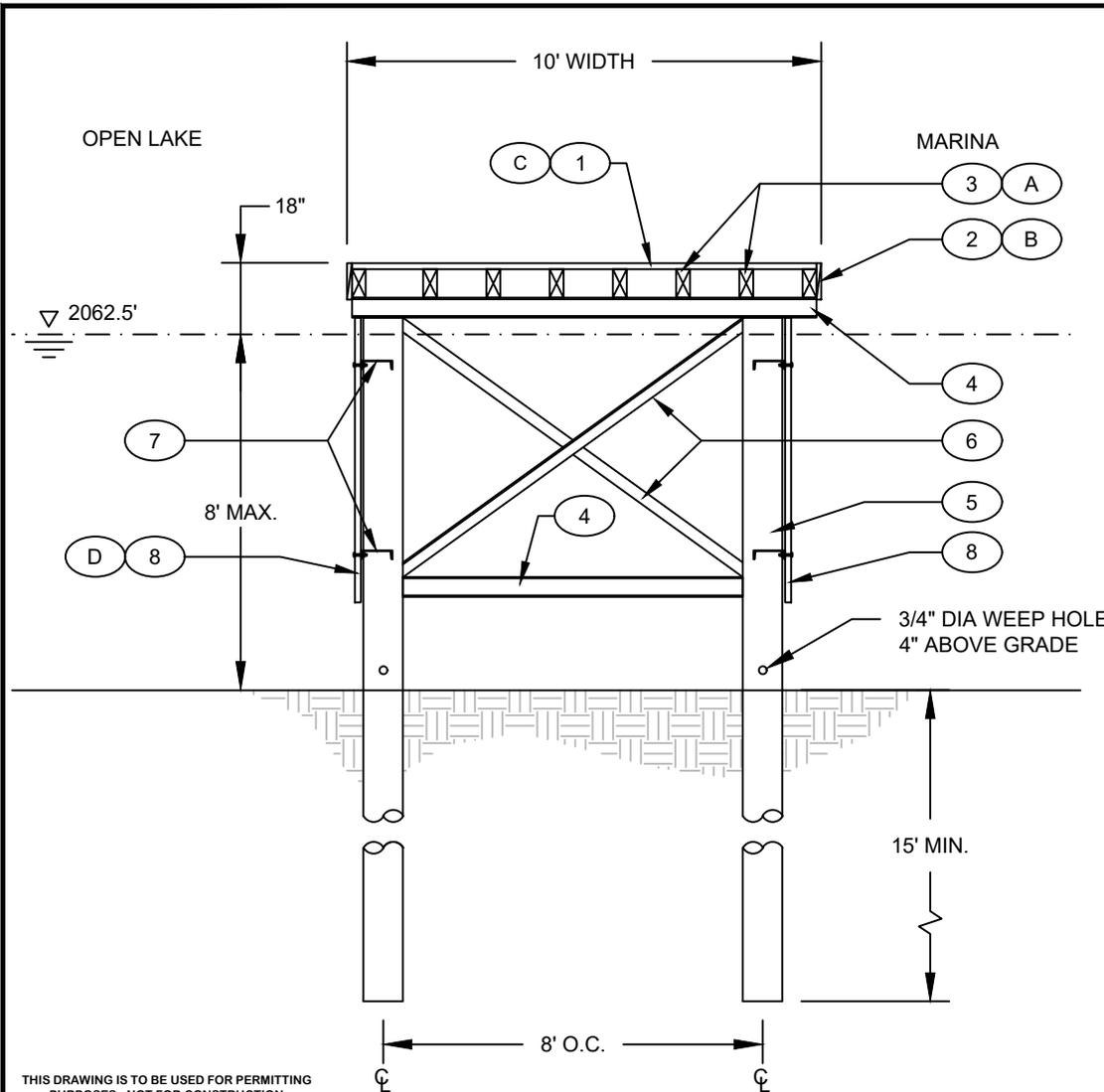
Proposed Activity: Marina, Bank Stabilization, Restoration

PLSS: Sec. 16 & 21, T. 57 N, R. 1 E

Lat: 48.2834 N, Long: -116.3531 W

Sheet 10 of 16

Date: September 04, 2025



MATERIAL LEGEND

- 1 LIGHT PENETRATING DECKING
- 2 2 X 10 CEDAR FASCIA BOARD OR EQUIV.
- 3 4 X 8 JOISTS AT 16" O.C.
- 4 W 5 X 16 STEEL I-BEAM
- 5 10" DIA SCH. 40 STEEL PILING AT 10' O.C. (WALL: ~3/8"), CAP TALL PILES
- 6 L 3" X 3" X 3/8" STEEL ANGLE
- 7 C 8 X 11.5 STEEL CHANNEL, TYP. AS SHOWN 48" O.C. VERTICAL SPACING AND 12" FROM EACH END
- 8 2 X 6 PT HEM FIR VERTICAL BOARDS AT 7" O.C. WITH 1-1/2" GAPS

STEEL CONNECTION NOTES:

ALL STEEL MEMBERS SHALL BE COPE TO FIT TIGHT AND CONNECTED WITH 1/4" FILLET OR EQUIVALENT WELDS ALONG THE ENTIRE PERIMETER OF THE CONNECTED PART.

FASTENER LEGEND

- A JOISTS TO STEEL: 1/2" X 10" GALV. BOLTS WITH WASHERS AND NUTS THROUGH DRILLED HOLES AT EACH BEARING POINT. RECESS BOLT HEADS IN JOISTS.
- B FACIA: TWO #10 X 3" SCREWS EVERY 12" ALONG JOISTS AND EVERY CROSS TIE BEARING. SPACE SCREWS 1 1/2" FROM END OF FACIA.
- C DECKING: INSTALL PER MANUFACTURER.
- D VERTICAL BOARDS TO STEEL: 1/2" X 3" GALV. BOLTS WITH WASHERS AND NUTS THROUGH DRILLED HOLES AT 7" O.C.

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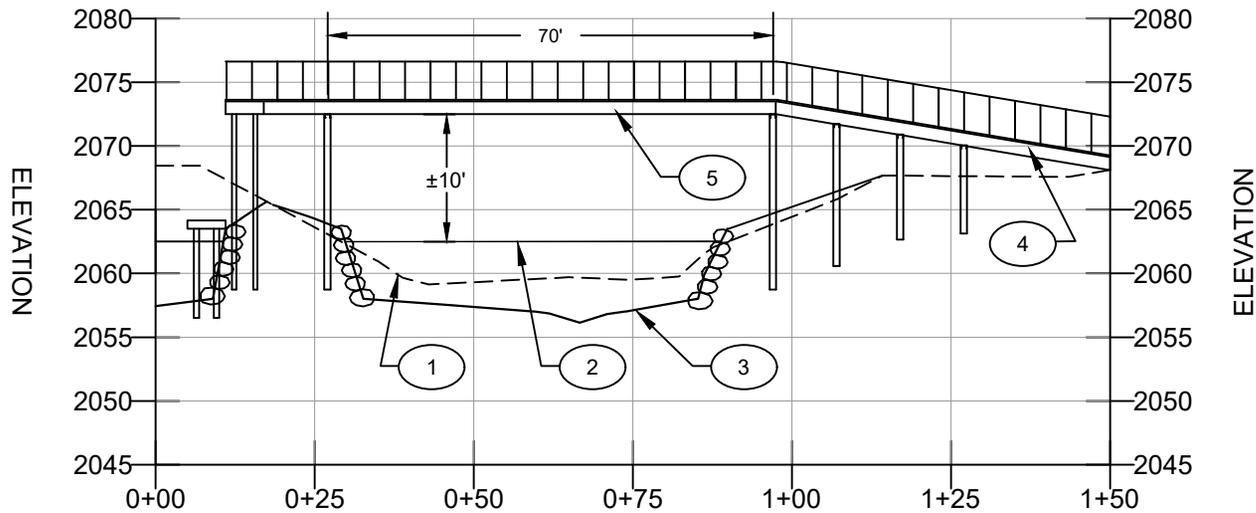
BREAKWATER STRUCTURE CROSS SECTION B

NOT TO SCALE

NOTES:

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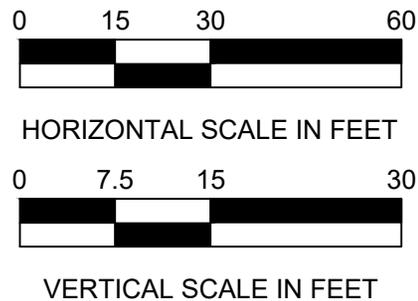
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 Sheet 11 of 16
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KEY NOTES

- 1 EXISTING CHANNEL CROSS SECTION
- 2 ORDINARY HIGH WATER MARK (2062.5 NGVD '29)
- 3 PROPOSED CHANNEL CROSS SECTION
- 4 PEDESTRIAN RAMP (MAX. 1:12)
- 5 FREE SPANNING BRIDGE WITH LIGHT PENETRATING DECKING

BRIDGE STRUCTURE CROSS SECTION
NOT TO SCALE

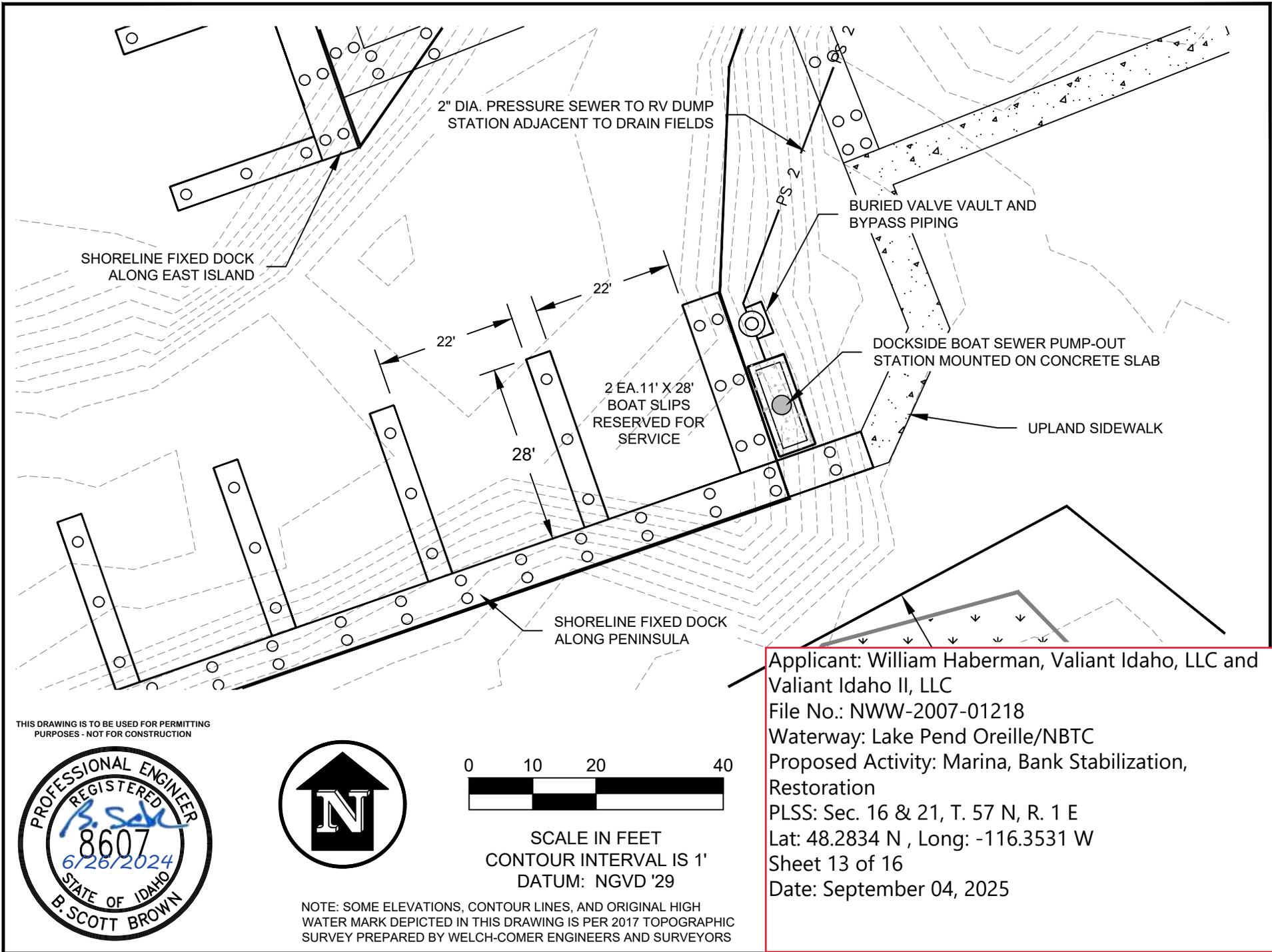


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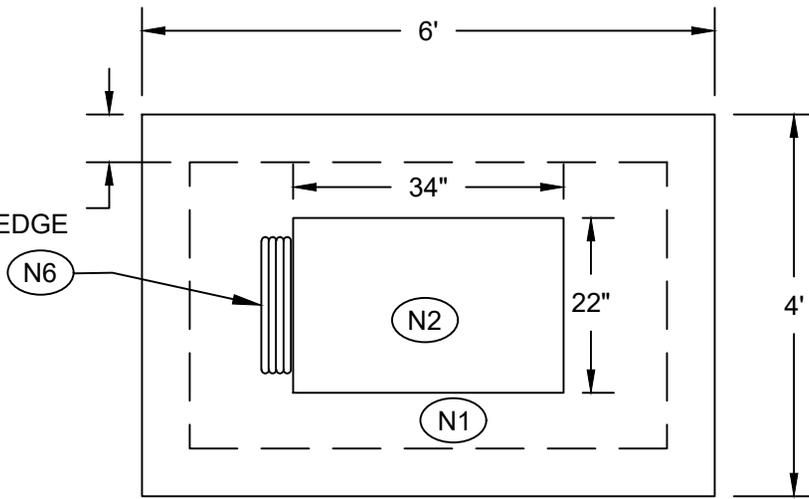


SCALE IN FEET
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 DATUM: NGVD '29

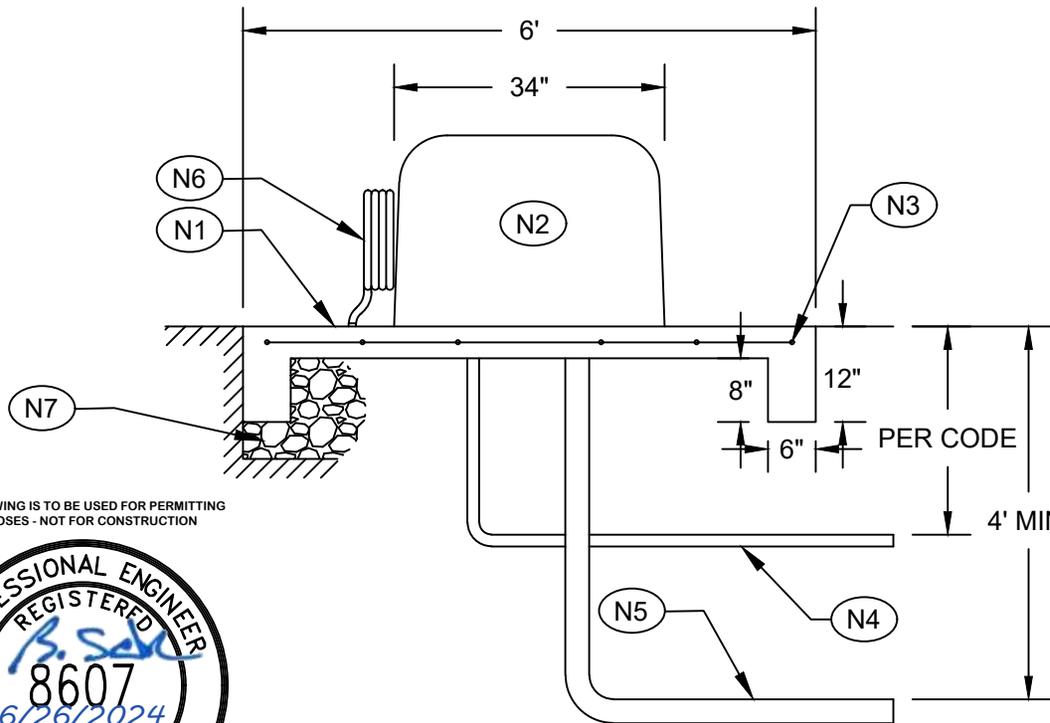
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 Sheet 13 of 16
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2" X 12"
THICKENED EDGE



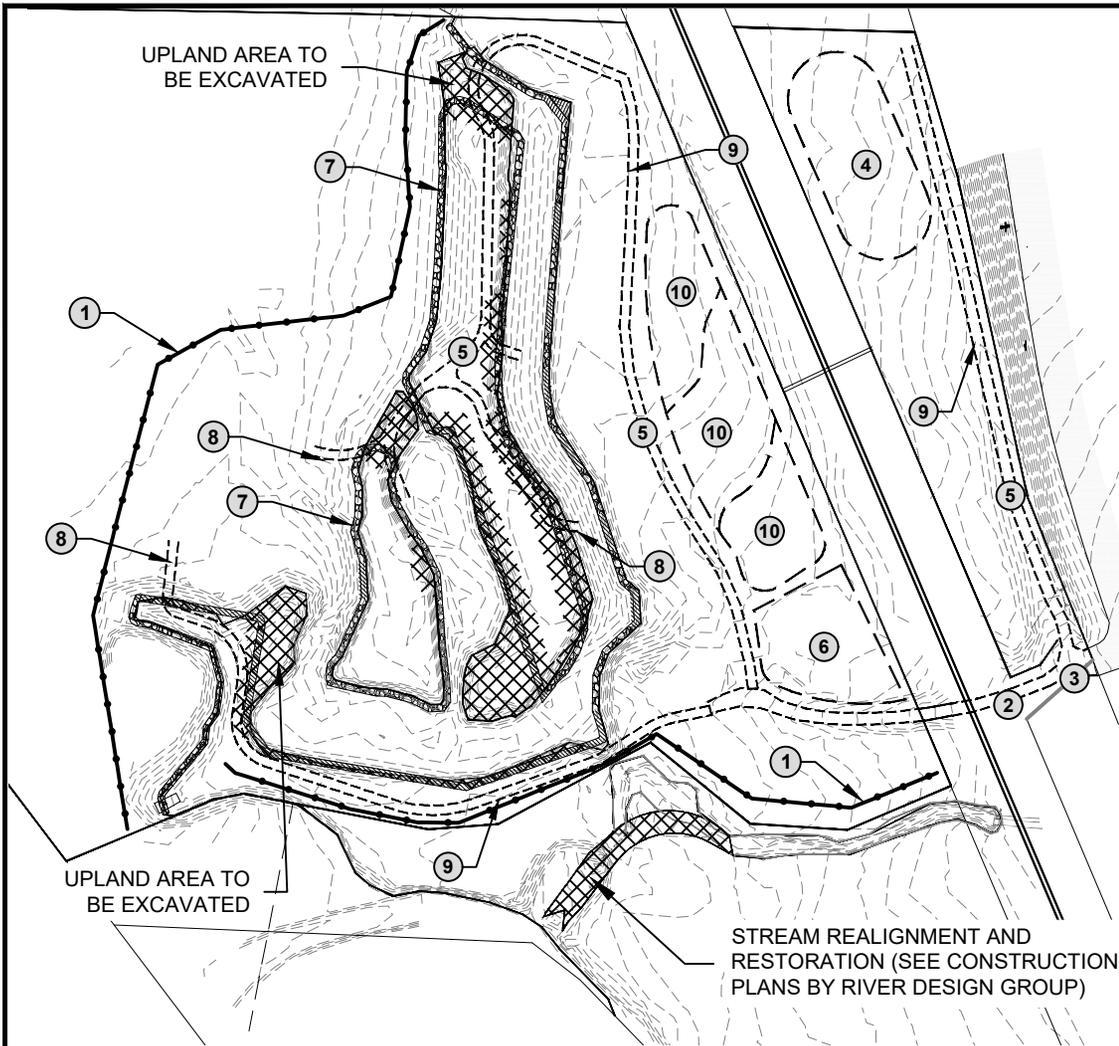
- (N1) 4" REINFORCED CONCRETE SLAB
- (N2) KECO 900.M 34-D 2-HP FIXED DOCKSIDE PUMP OUT STATION (OR APPROVED EQUAL)
- (N3) #4 REINFORCEMENT BARS @ 18" O.C.E.W.
- (N4) ELECTRICAL CONDUIT
- (N5) 2" DIA. CLASS 200 HDPE DISCHARGE PIPE
- (N6) FLEXIBLE SUCTION PIPE (SUPPLIED BY MANUFACTURER)
- (N7) 3/4" - MINUS BASE ROCK COMPACTED TO 95% RELATIVE DENSITY



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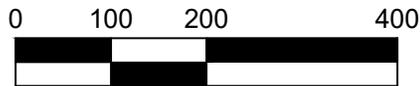




KEY NOTES

- ① INSTALL WIRE REINFORCED SILT FENCE (AKA SEDIMENT FENCING) AT THE BEGINNING OF PROJECT, AND MAINTAIN DURING ENTIRE PROJECT. SILT FENCE TO BE INSTALLED AT 3' AND 10' INTERVALS WATER-WARD FROM THE FURTHEST EXTENT OF EXCAVATION AND ALONG THE TOP OF EMBANKMENTS NOT BEING EXCAVATED. DO NOT INSTALL SILT FENCE AS A BARRIER FOR CHANNELIZED FLOW LEAVING THE SITE. REMOVE ALL SILT FENCE AFTER FINAL STABILIZATION. SEE BMP 65: SILT FENCE.
- ② CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE BEFORE BEGINNING PROJECT.
SEE BMP 40: VEHICLE SEDIMENT CONTROL
- ③ PREVENT MATERIAL TRACKING ONTO PUBLIC STREETS DURING ALL PHASES OF CONSTRUCTION, BY UTILIZING STABILIZED CONSTRUCTION ENTRANCE, VEHICLE WASHING AND STREET SWEEPING. SEE BMP 40: VEHICLE SEDIMENT CONTROL, BMP 47: CONSTRUCTION EQUIPMENT WASHING AND MAINTENANCE, AND BMP 75: STREET SWEEPING.
- ④ GENERAL MATERIAL STOCK PILE & CONSTRUCTION MATERIAL STORAGE AREA, SEE BMP 44: STOCKPILE MANAGEMENT AND BMP 37: STAGING AREAS
- ⑤ BMP 43: DUST CONTROL SHALL BE IMPLEMENTED DURING DRY TIMES WHEN SOIL IS ANTICIPATED TO BECOME AIR BORN.
- ⑥ VEHICLE EQUIPMENT REFUELING, CLEANING, MAINTENANCE AND REPAIR PER BMP 83 AND BMP 84.
- ⑦ SHORELINE RIPRAP PROTECTION PER BMP 53 AND BMP 56.
- ⑧ TRUCK AND EQUIPMENT ACCESS POINTS PER BMP 62.
- ⑨ STABILIZED CONSTRUCTION ROAD AND STAGING AREAS CROSSING PER BMP 41.
- ⑩ DE-WATERING PER BMP 73. INSTALL TEMPORARY SEDIMENTATION AND DE-WATERING INFILTRATION SURFACE STRUCTURES OR BASINS. TO BE IMPLEMENTED BY THE CONTRACTOR AFTER SEDIMENT PERIMETER PROTECTIONS ARE IN PLACE, BUT BEFORE MAJOR SITE DISTURBANCES HAVE BEGUN.

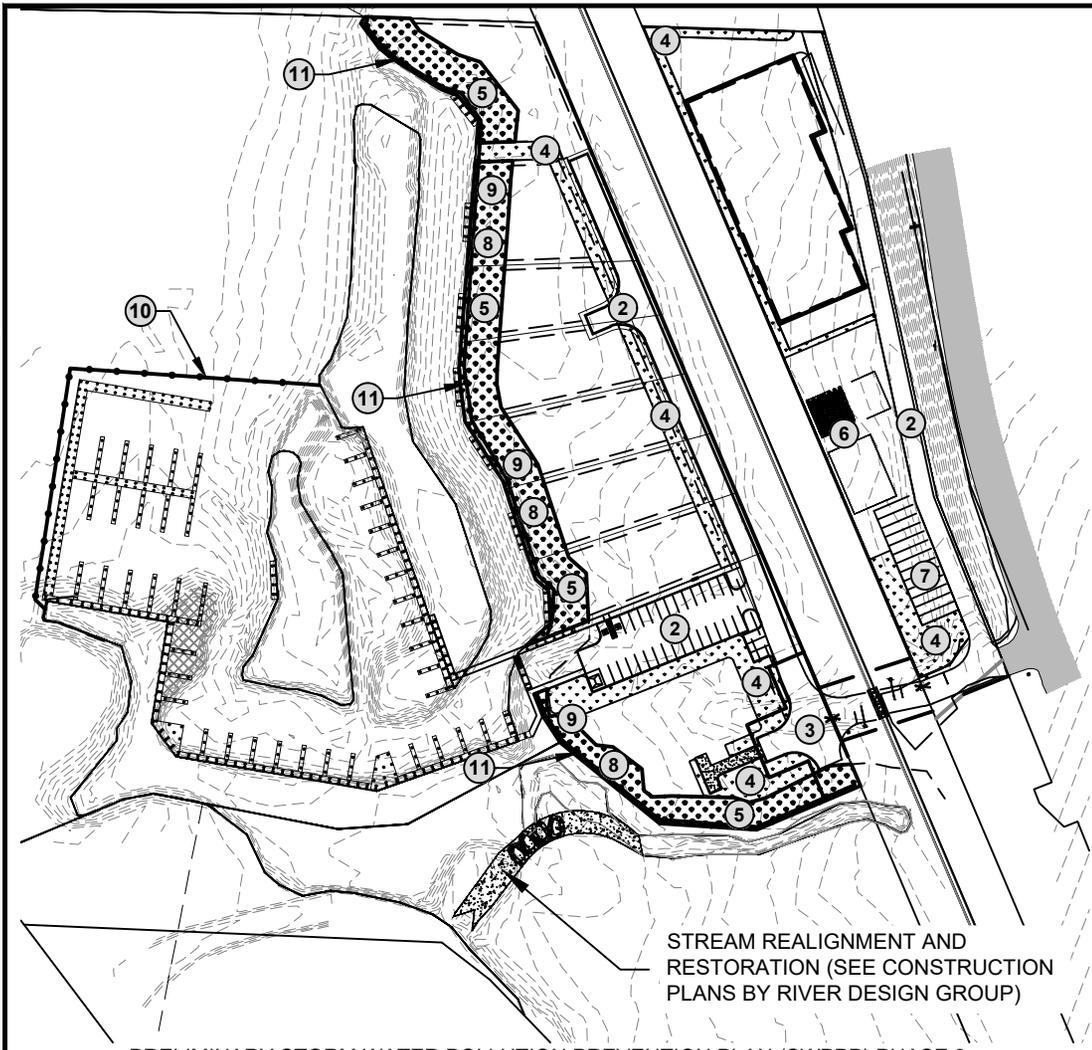
PRELIMINARY STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PHASE 1



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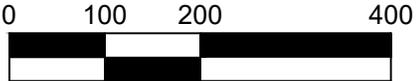
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 Proposed Activity: Marina, Bank Stabilization, Restoration
 PLSS: Sec. 16 & 21, T. 57 N, R. 1 E
 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 15 of 16
 Date: September 04, 2025



STREAM REALIGNMENT AND RESTORATION (SEE CONSTRUCTION PLANS BY RIVER DESIGN GROUP)

PRELIMINARY STORM WATER POLLUTION PREVENTION PLAN (SWPPP) PHASE 2

THIS DRAWING IS TO BE USED FOR PERMITTING PURPOSES - NOT FOR CONSTRUCTION



SCALE IN FEET
CONTOUR INTERVAL IS 1'
DATUM: NGVD '29

NOTE: SOME ELEVATIONS, CONTOUR LINES, AND ORIGINAL HIGH WATER MARK DEPICTED ON THIS DRAWING ARE PER 2017 TOPOGRAPHIC SURVEY PREPARED BY WELCH-COMER ENGINEERS AND SURVEYORS.

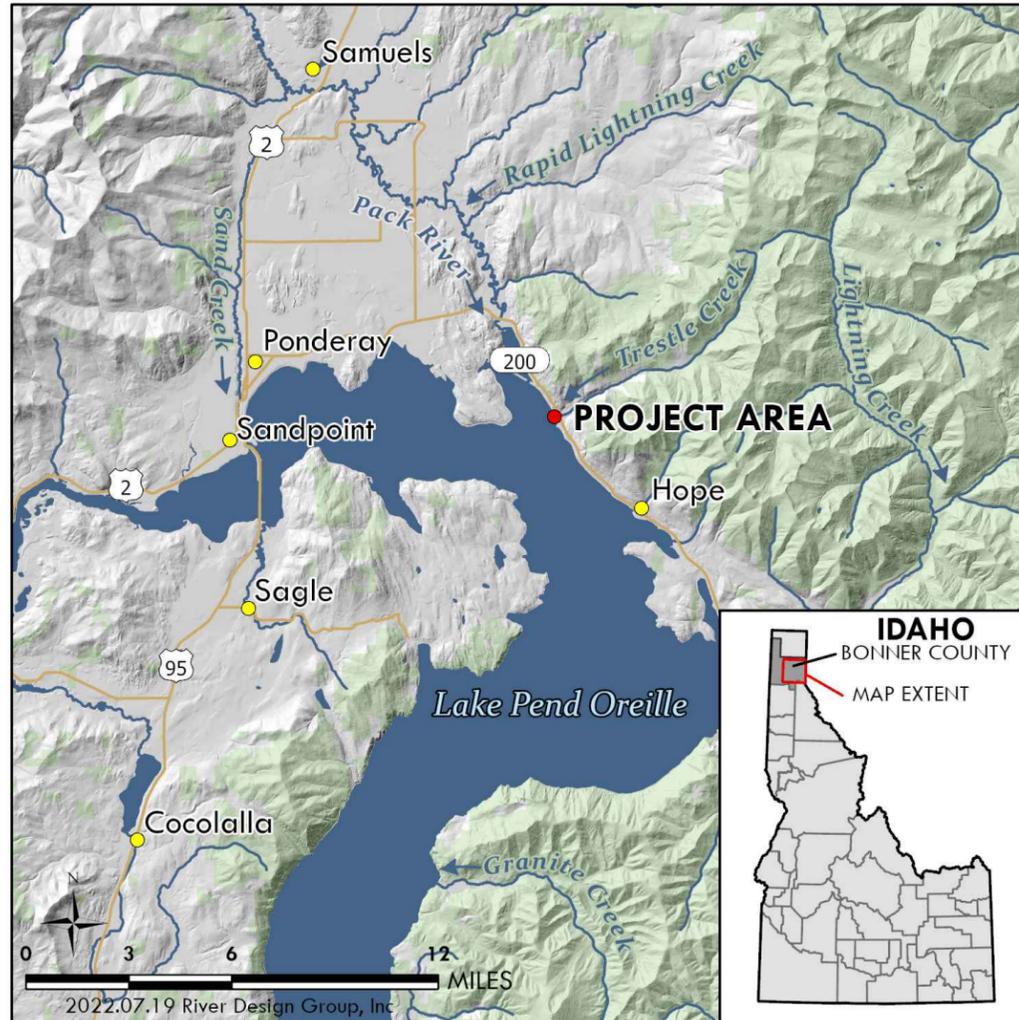
KEY NOTES

- ① BMP 43: DUST CONTROL SHALL BE IMPLEMENTED DURING DRY TIMES WHEN SOIL IS ANTICIPATED TO BECOME AIR BORN.
- ② IMPERVIOUS SURFACE, SEE BMP 71.
- ③ CONCRETE WASHOUT AREA. SEE BMP 49: CONCRETE WASTE MANAGEMENT
- ④ CONSTRUCT TREATMENT SWALE PER BMP 9
- ⑤ 40-FT WIDE VEGETATED BUFFER (PLANTINGS PER COUNTY CODE)
- ⑥ SANITARY AND SEPTIC WASTE PER BMP 50.
- ⑦ VEHICLE EQUIPMENT REFUELING, CLEANING, MAINTENANCE AND REPAIR PER BMP 83 AND BMP 84.
- ⑧ ALL AREAS WITHIN 100' OF OPEN WATER THAT ARE DISTURBED SHALL BE SEEDED AND COVERED WITH EITHER CLEAN, WEED FREE ANCHORED STRAW, EROSION BLANKET, OR HYDRO-SEEDING MULCH WITH BONDED FIBER MIX WITHIN 24 HOURS OF REACHING FINISH GRADE PER BMP 32 AND 52.
- ⑨ ALL AREAS WITHIN 100' OF OPEN WATER, BUT NOT AT FINAL GRADE, WILL BE PROTECTED AT THE END OF EACH DAY WITH A TEMPORARY MULCH COVER SIMILAR TO NOTE 14 ABOVE, IF THEY ARE TO BE LEFT UNWORKED FOR MORE THAN 24 HOURS PER BMP 52.
- ⑩ FLOATING TURBIDITY CURTAIN TO BE INSTALLED AND ADJUSTED AS NEEDED DURING BARGE PILE DRIVING AND DOCK WORK PER BMP 71.
- ⑪ INSTALL WIRE REINFORCED SILT FENCE (AKA SEDIMENT FENCING) AT THE BEGINNING OF PROJECT, AND MAINTAIN DURING ENTIRE PROJECT. SILT FENCE TO BE INSTALLED AT 3' AND 10' INTERVALS WATER-WARD FROM THE FURTHEST EXTENT OF EXCAVATION AND ALONG THE TOP OF EMBANKMENTS NOT BEING EXCAVATED. DO NOT INSTALL SILT FENCE AS A BARRIER FOR CHANNELIZED FLOW LEAVING THE SITE. REMOVE ALL SILT FENCE AFTER FINAL STABILIZATION. SEE BMP 65: SILT FENCE.

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 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 16 of 16
 Date: September 04, 2025

EAST BRANCH TRESTLE CREEK RESTORATION PROJECT FINAL DESIGN PLAN SET

TRESTLE CREEK VICINITY MAP



DRAWING INDEX

- 1.0 COVER PAGE AND NOTES
- 2.0 SITE PLAN
- 2.1 DEWATERING PLAN
- 3.0 SPECIFICATIONS
- 3.1 MATERIALS AND QUANTITIES
- 4.0 PLAN VIEW AND DATA SHEET
- 4.1 GRADING PLAN AND PROFILE
- 5.0 DESIGN CHANNEL CROSS SECTIONS
- 6.0 BOULDER CASCADE DETAIL
- 6.1 CONSTRUCTED CHANNEL STREAMBED DETAIL
- 6.2 VEGETATED WOOD MATRIX DETAIL
- 7.0 WETLAND IMPACTS

PROJECT PARTNERS



Valiant Idaho II, LLC
The Idaho Club
151 Clubhouse Way
Sandpoint, ID 83864

PROJECT DESCRIPTION

THE NORTH BRANCH OF TRESTLE CREEK (NBTC) WAS ARTIFICIALLY CONSTRUCTED AS AN IRRIGATION CANAL IN THE EARLY 1900S. PRESENTLY, RESIDENTIAL DEVELOPMENT, CLEARING OF INSTREAM WOOD, AND FISH PASSAGE BARRIERS ASSOCIATED WITH THE OUTFALL TO LAKE PEND OREILLE, US HIGHWAY 200 AND THE MONTANA RAIL LINK TRACKS HAVE DEGRADED STREAM CORRIDOR HABITAT CONDITIONS AND IMPEDED THE PASSAGE OF KOKANEE *ONCORHYNCHUS NERKA* (KOKANEE), SALVELINUS *CONFLUENTUS* (BULL TROUT), AND OTHER FISH SPECIES INTO NBTC FROM LAKE PEND OREILLE.

IN EARLY 2022, THE LAKE PEND OREILLE IDAHO CLUB EXPRESSED INTEREST IN IMPROVING FISH PASSAGE AND RE-NATURALIZING A PORTION OF THE NORTH BRANCH TRESTLE CREEK (NBTC) FOR THE BENEFIT OF KOKANEE, BULL TROUT AND OTHER FISH SPECIES. RIVER DESIGN GROUP WAS RETAINED TO PRODUCE A FINAL DESIGN FOR THIS PROJECT AREA USING THE MOST RECENT DESIGN STANDARDS. THE PRIMARY GOAL OF THIS PROJECT IS TO ENHANCE THE AESTHETICS OF THE EXISTING NBTC CHANNEL BY CONSTRUCTING A NATURALLY FUNCTIONING CHANNEL AND FLOODPLAIN CONFIGURATION THROUGH THE PROPOSED IDAHO CLUB PROPERTY.

STANDARD OF PRACTICE

SWCA ENVIRONMENTAL CONSULTANTS WORKS EXCLUSIVELY IN THE RIVER ENVIRONMENT AND UTILIZES THE MOST CURRENT AND ACCEPTED PRACTICES AVAILABLE FOR PLANNING AND DESIGN OF RIVER, FLOODPLAIN, AND AQUATIC HABITAT RESTORATION PROJECTS. CURRENT STANDARDS FOR THE DESIGN OF RESTORATION PROJECTS VARY DEPENDING ON PROJECT GOALS.

REUSE OF DRAWINGS

THESE DRAWINGS, THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE THE PROPERTY OF SWCA ENVIRONMENTAL CONSULTANTS (SWCA) AND ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF SWCA. LIKEWISE, THESE DRAWINGS MAY NOT BE ALTERED OR MODIFIED WITHOUT AUTHORIZATION OF SWCA. DRAWING DUPLICATION IS ALLOWED IF THE ORIGINAL CONTENT IS NOT MODIFIED.



COVER PAGE AND NOTES
EAST BRANCH TRESTLE CREEK RESTORATION PROJECT
NEAR SANDPOINT, IDAHO

ON	CHK	DESIGN	REVISION
		NW	NW

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PLSS: Sec. 16 & 21, T. 57 N, R. 1 E
Lat: 48.2834 N, Long: -116.3531 W
Sheet 1 of 12
Date: September 04, 2025

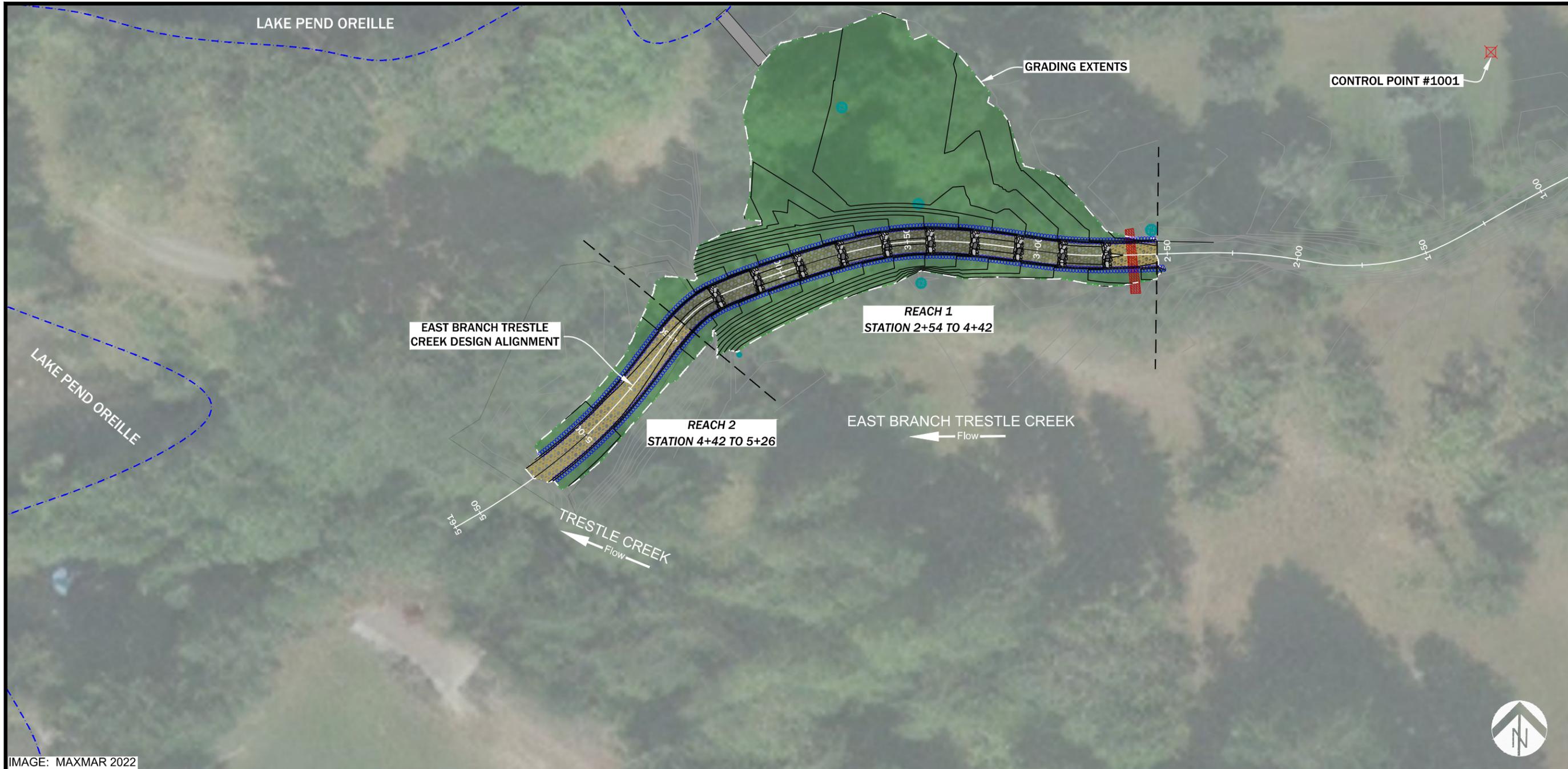


IMAGE: MAXMAR 2022

1 SITE PLAN



DETAIL LEGEND	
SYMBOL	DETAIL SHEET #
	RIPARIAN SEED AREA
	EXISTING TREE TO BE PRESERVED
	BOULDER CASCADE 6.0
	CONSTRUCTED CHANNEL STREAMBED 6.1
	VEGETATED WOOD MATRIX 6.2

PROJECT DATUM

THE PROJECT COORDINATES ARE BASED ON THE FOLLOWING:

HORIZONTAL PROJECTION: IDAHO STATE
 HORIZONTAL DATUM: NAD83 (2011)
 UNITS: US SURVEY FEET
 VERTICAL DATUM: NAVD29 (GEOID)

TOPOGRAPHY AND CROSS SECTION GROUNDS ON SURVEY WORK PERFORMED BY RDG INC.

CONTROL POINTS

POINT NUMBER	EASTING	NORTHING	POINT ELEVATION
1001	2478328.5410'	2412772.5490'	2075.504'

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 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 2 of 12
 Date: September 04, 2025

DESCRIPTION	CHK
L DESIGN	NW

DEWATERING AND CONSTRUCTION SEQUENCE:

1. MAINTAIN ALL FLOW WITHIN THE EXISTING CHANNEL.
2. CONSTRUCT REACH 1 AND REACH 2 LEAVING AN EARTHEN PLUG AT STATION 2+73.
3. STAGE EXCAVATED MATERIAL FROM REACH 1 AND 2 ADJACENT TO THE EXISTING CHANNEL.
4. REMOVE THE PLUG AT STATION 2+73 AND INCREMENTALLY TURN THE FLOW INTO THE DESIGN CHANNEL.
5. CONSTRUCT THE REMAINDER OF REACH 1 IN THE WET AND FILL THE EXISTING CHANNEL TO DESIGN ELEVATION WITH STAGED MATERIAL.



1 EAST BRANCH TRESTLE CREEK PLAN VIEW
 1" = 20'

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 Lat: 48.2834 N , Long: -116.3531 W
 Sheet 3 of 12
 Date: September 04, 2025

CHK	NW	NW		
GN				
LAN				

M:\Projects\2022\rdg-22-170 trestle creek\DWG\Trestle Creek Plan.dwg

GENERAL NOTES

1. CONTOUR INTERVAL IS NOTED ON DRAWINGS.
2. SLOPES DESIGNATED AS 2:1, 1.5:1, ET CETERA, ARE THE RATIOS OF HORIZONTAL DISTANCE TO VERTICAL DISTANCE.
3. DIMENSIONS ARE GIVEN IN FEET AND TENTHS OF A FOOT.
4. TOPOGRAPHY AND CROSS SECTION GROUND LINES ARE BASED ON SURVEY WORK PERFORMED IN JUNE, 2022 BY RDG.
5. ALL EXISTING CONDITIONS ARE TO BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION AND ANY ADJUSTMENTS TO THE DRAWINGS SHALL BE MADE AS DIRECTED BY THE ENGINEER.
6. EXISTING PRIVATE IMPROVEMENTS, WHICH LIE WITHIN THE CONSTRUCTION LIMITS, UNLESS OTHERWISE NOTED WILL BE REMOVED BY THE OWNER PRIOR TO CONSTRUCTION OR ABANDONED IN PLACE.
7. PROTECT ALL TREES AND LAND AREAS NOT LOCATED WITHIN THE PROJECT CONSTRUCTION, STAGING OR EARTHWORK LIMITS. EXERCISE CARE IN AREAS NOT SO MARKED TO AVOID UNNECESSARY DAMAGE TO NATURAL VEGETATION.

8. THE PROJECT SPONSOR IS RESPONSIBLE FOR COMPLYING WITH ALL PERMITS AND EASEMENTS INCLUDING ALL FEDERAL, STATE, COUNTY, AND LOCAL PERMIT CONDITIONS.
9. EXCAVATION, TRENCHING, SHORING, AND SHIELDING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR PERFORMING THE WORK, THESE DRAWINGS ARE NOT INTENDED TO PROVIDE MEANS OR METHODS OF CONSTRUCTION.
10. EXCAVATION SHALL MEET THE REQUIREMENTS OF OSHA 29 CFR PART 1926, SUBPART P, EXCAVATIONS. ACTUAL SLOPES SHALL NOT EXCEED THE SLOPES AS INDICATED ON DRAWINGS.
11. ENGINEER WILL PROVIDE SURVEY CONTROL AND GRADING SURFACES FOR EQUIPMENT WITH GPS MACHINE CONTROL CAPABILITY. ENGINEER SHALL PROVIDE SURVEY STAKING AND LAYOUT FOR CONSTRUCTION.
12. VERTICAL TOLERANCE FOR CONSTRUCTION COMPLIANCE WILL BE 0.3 FEET. HORIZONTAL TOLERANCE WILL BE 1.0 FEET.
13. CONTRACTOR SHALL CONFIRM QUANTITIES. REPORTED VOLUMES ARE NEATLINE AND DO NOT INCLUDE ADJUSTMENTS FOR COMPACTION OR OTHER FACTORS.

GENERAL SPECIFICATIONS

1. THE PROJECT SHALL BE CONSTRUCTED ACCORDING TO THE PLAN SET. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY CHANGES PRIOR TO IMPLEMENTATION. THE CONSTRUCTION MANAGER FOR THIS PROJECT SHALL BE A DESIGNATED RIVER DESIGN GROUP REPRESENTATIVE.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ALL UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CALL U-DIG PRIOR TO CONSTRUCTION.
3. COSTS INCURRED DUE TO PROJECT DELAYS RESULTING FROM FAILURE OF THE CONTRACTOR TO MEET THE REQUIREMENTS OF THE GENERAL SPECIFICATIONS, CONTRACTOR QUALIFICATIONS, CONSTRUCTION SPECIFICATIONS, MATERIALS SPECIFICATIONS AND REVEGETATION SPECIFICATIONS SHALL BE THE EXPENSE OF THE CONTRACTOR.

CONTRACTOR QUALIFICATIONS

1. THE CONTRACTOR SHALL HAVE AT LEAST TWO (2) YEARS OF RIVER RESTORATION CONSTRUCTION EXPERIENCE AND SHALL HAVE COMPLETED AT LEAST FIVE (5) RIVER RESTORATION PROJECTS. OR, THE CONTRACTOR SHALL HAVE AT LEAST ONE (1) YEAR OF RIVER RESTORATION EXPERIENCE, SHALL HAVE COMPLETED AT LEAST THREE (3) RIVER RESTORATION PROJECTS, AND SHALL HAVE COMPLETED AN APPROVED RIVER RESTORATION TRAINING CLASS. APPROVED TRAINING CLASSES INCLUDE THOSE SPONSORED BY WILDLAND HYDROLOGY, INC., OR A SIMILARLY QUALIFIED PRACTITIONER OF NATURAL CHANNEL DESIGN STREAM RESTORATION PRINCIPLES.
2. IF THE CONTRACTOR CHOOSES TO DESIGNATE AN EMPLOYEE WITHOUT QUALIFIED STREAM RESTORATION EXPERIENCE, THE CONTRACTOR SHALL BE ON-SITE AT ALL TIMES WHEN THE EMPLOYEE IS PERFORMING RIVER RESTORATION WORK. FAILURE TO ABIDE BY THIS CONDITION WITHOUT PREVIOUS AGREEMENT WITH THE CONSTRUCTION MANAGER WOULD BE GROUNDS FOR TERMINATION.
3. THE CONTRACTOR SHALL MAINTAIN AT LEAST \$2,000,000 IN LIABILITY INSURANCE AND HAVE PROOF OF LIABILITY INSURANCE ON-SITE DURING THE ENTIRETY OF PROJECT CONSTRUCTION.
4. THE CONTRACTOR SHALL HAVE PROOF OF WORKER'S COMPENSATION INSURANCE ON-SITE DURING THE ENTIRETY OF PROJECT CONSTRUCTION.
5. COPIES OF ALL PROJECT PERMITS SHALL BE POSTED ON-SITE IN A VISIBLE LOCATION. THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF THE PERMITS. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY KNOWN CHANGES OR ACTIVITIES THAT COULD VIOLATE PERMIT REQUIREMENTS PRIOR TO IMPLEMENTATION. THE CONSTRUCTION MANAGER SHALL BE RESPONSIBLE FOR ALL CORRESPONDENCE WITH PERMIT AGENCIES.

TEMPORARY DIVERSION PROCEDURES

1. TEMPORARY DIVERSIONS SHALL BE ACTIVATED OR DEACTIVATED INCREMENTALLY IN TWO STAGES TO ALLOW RESIDENT AQUATIC LIFE TO EXIT THE DEWATERED AREA.
2. A PERIOD OF APPROXIMATELY ONE HOUR SHALL BE ALLOWED BETWEEN THE TWO STAGES.
3. EFFORTS SHALL BE MADE TO LIMIT TURBIDITY DURING DIVERSION ACTIVATION AND DEACTIVATION. MATERIAL USED TO DIVERT FLOW DURING STAGED DIVERSIONS SHALL BE CLEAN AND DEVOID OF FINES.
4. EFFORTS SHALL BE MADE TO LIMIT DISTURBANCE TO VEGETATION.
5. EFFORTS SHALL BE MADE TO AVOID FATALITIES OF AQUATIC LIFE.

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCTION SHALL OCCUR IN ACCORDANCE WITH THE PLAN SET, CONSTRUCTION SPECIFICATIONS, EQUIPMENT SPECIFICATIONS, MATERIAL SPECIFICATIONS, REVEGETATION SPECIFICATIONS AND GENERAL SPECIFICATIONS.
2. CONSTRUCTION ACCESS SHALL BE DETERMINED BY THE CONSTRUCTION MANAGER. THE CONTRACTOR SHALL LEAVE ALL GATES, WHETHER OPEN OR CLOSED, AS FOUND.
3. STREAM CROSSINGS SHALL BE MINIMIZED DURING CONSTRUCTION. CONTRACTOR SHALL USE CULVERTS AT STREAM CROSSINGS SO THAT EQUIPMENT CAN CROSS THE STREAM WITHOUT GENERATING EXCESS TURBIDITY.
4. STRAW BALES AND SILT FENCING SHALL BE AVAILABLE AND INSTALLED BY THE CONTRACTOR IF DEEMED NECESSARY BY THE CONSTRUCTION MANAGER. CONSTRUCTION FENCING (LIMITS OF DISTURBANCE) SHALL BE INSTALLED BY THE CONTRACTOR IF DEEMED NECESSARY BY THE CONSTRUCTION MANAGER.
5. INITIALLY, THE CONTRACTOR SHALL EXCAVATE THE CHANNEL TO APPROXIMATE DESIGN DIMENSIONS. EXCAVATION SHALL COMPLY WITH CONSTRUCTION STAKES AND THE PLAN SET. EXCAVATION SHALL ESTABLISH CHANNEL ELEVATIONS WITHIN ONE-HALF FOOT OF FINAL ELEVATIONS. THE CONSTRUCTION MANAGER SHALL INSPECT THE CHANNEL EXCAVATION FOR COMPLIANCE WITH THE PLAN SET. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON-SITE, ABOVE THE BANKFULL CHANNEL UNTIL HAULED OFF-SITE OR USED ON-SITE. DISTURBANCE TO RIPARIAN VEGETATION, CHANNEL BANKS AND SOD SHALL BE MINIMIZED. EXCAVATED SOD AND RIPARIAN SHRUB TRANSPLANTS SHALL BE CAREFULLY STOCKPILED AND REUSED FOR PLANTING FLOODPLAINS OR STREAM BANKS.
6. AFTER EXCAVATING THE CHANNEL, THE CONTRACTOR SHALL INSTALL BANK STABILIZATION AND HABITAT STRUCTURES USING THE EXCAVATOR. EACH STRUCTURE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LOCATIONS AND SPECIFICATIONS PROVIDED IN THE PLAN SET. THE CONSTRUCTION MANAGER SHALL INSPECT AND APPROVE ALL STRUCTURES PRIOR TO BACKFILLING.
7. AFTER ALL STRUCTURES ARE INSTALLED, THE CHANNEL WILL BE SHAPED TO WITHIN 0.3 FEET OF THE FINAL ELEVATIONS SPECIFIED ON THE PLAN SET USING AN EXCAVATOR. THE CONSTRUCTION MANAGER SHALL CHECK THE FINAL ELEVATIONS FOR COMPLIANCE WITH THE PLAN SET. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON-SITE, ABOVE THE BANKFULL CHANNEL UNTIL HAULED TO AN ON-SITE REPOSITORY DESIGNATED BY THE CONSTRUCTION MANAGER. DISTURBANCE TO RIPARIAN VEGETATION, CHANNEL BANKS AND SOD SHALL BE MINIMIZED.
8. THE CONTRACTOR SHALL REMOVE EXCESS MATERIALS, TEMPORARY CULVERTS AND EQUIPMENT FROM THE SITE. THE CONTRACTOR SHALL REGRADE DISTURBED AREAS AND CONSTRUCTION ACCESS ROADS TO THEIR ORIGINAL GRADES. THE CONTRACTOR SHALL TREAT COMPACTED SOIL AREAS INCLUDING ACCESS ROADS AND MATERIAL STOCKPILE AREAS TO PREVENT EROSION AND SOIL LOSS.

EQUIPMENT SPECIFICATIONS

1. THE CONTRACTOR SHALL FURNISH ALL EQUIPMENT NECESSARY TO CONSTRUCT THE PROJECT. THE CONTRACTOR SHALL MOBILIZE ALL EQUIPMENT TO THE PROJECT AREA AS DIRECTED BY THE CONSTRUCTION MANAGER.
2. AT A MINIMUM, THE CONTRACTOR SHALL PROVIDE THE FOLLOWING EQUIPMENT FOR THIS PROJECT:

EXCAVATOR - ONE (1) EXCAVATOR SHALL BE REQUIRED. THE EQUIPMENT SHALL BE MINIMUM 200 CLASS. THE BUCKET VOLUME SHALL BE MINIMUM OF ONE (1) CUBIC YARD. THE BUCKET SHALL BE EQUIPPED WITH A HYDRAULIC THUMB FOR GRASPING LOGS, ROCKS, AND OTHER MATERIALS. THE EQUIPMENT MUST BE CAPABLE OF CROSSING WATER AND WORKING ON OR ADJACENT TO STEEP SLOPES. A CHAIN OR STRAP SHALL BE AVAILABLE FOR ATTACHING CULVERTS, PUMPS AND OTHER EQUIPMENT OR MATERIALS TO THE BUCKET FOR TRANSPORT ON-SITE.

ALL SURFACE VEHICLE - ONE (1) ALL-SURFACE VEHICLE (ASV) SHALL BE REQUIRED. THE EQUIPMENT SHALL BE EQUIPPED WITH SOD TRACKS TO MINIMIZE DISTURBANCE TO FRAGILE AREAS.

CHAINSAW - ONE (1) CHAINSAW SHALL BE REQUIRED. THE CHAINSAW MUST BE CAPABLE OF COMPLETELY SAWING LOGS OF THE DIAMETER SPECIFIED IN THE MATERIAL SPECIFICATIONS.

3. 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 POWER WASHED OR CLEANED TO REMOVE MUD AND SOIL PRIOR TO MOBILIZATION INTO THE PROJECT AREA. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT ADEQUATE MEASURES HAVE BEEN TAKEN.

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 Sheet 4 of 12
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SPECIFICATIONS
 EAST BRANCH TRESTLE CREEK RESTORATION PROJECT
 NEAR SANDPOINT, IDAHO

CHK	NW			
N	EN			

TOTAL WOOD QUANTITIES

ITEM	QUANTITY	DIAMETER	LENGTH	ROOTWAD
CATEGORY 2 WOOD	68	2-4 IN	20 FT	OPTIONAL
CATEGORY 3 WOOD	1,088	< 2 IN	10-12 FT	OPTIONAL
WILLOW CUTTINGS	1,632	0.25-1.0 IN	8 FT	NO

NOTE:
CATEGORY 2 WOOD LENGTHS SHOWN WILL PRODUCE THE PROPER AMOUNT MATERIAL FOR STRUCTURES WHEN SPLIT INTO APPROPRIATE SIZES DURING CONSTRUCTION. IT IS CONTRACTOR'S RESPONSIBILITY TO CUT WOOD INTO APPROPRIATE SIZE LENGTHS TO FIT STRUCTURE DIMENSIONS.

TOTAL ROCK QUANTITIES

ITEM	QUANTITY (EA)	DIAMETER (IN)
CATEGORY 1 ROCK	120	24-30
CATEGORY 2 ROCK	202	10-12

ITEM	QUANTITY (CY)	GRADATION	
STREAMBED/STREAMBANK FILL	140	SIZE (IN)	
		PERCENT PASSING	
		6	90-95
		4	50-80
		3	30-50
1	10-30		
0.08	10		

TOTAL EARTHWORK QUANTITIES

ITEM	QUANTITY (CY)
CUT	515
BACKFILL	279
NET	236

NOTE:
VOLUMES ARE NEATLINE, CONTRACTOR TO APPLY EXPANSION FACTORS TO DETERMINE A MORE ACCURATE BACKFILL VOLUME.

TOTAL MISCELLANEOUS QUANTITIES

ITEM	QUANTITY
SHRUB SALVAGE AND TRANSPLANT	12 (AS AVAILABLE)
RECLAMATION SEED	6.05 (PLS LBS)

BOULDER CASCADE QUANTITIES	
ITEM	QUANTITY
BOULDER CASCADES	10 (EA)
CATEGORY 1 ROCK	120 (EA)
STREAMBED FILL	10 (CY)

CONSTRUCTED CHANNEL STREAMBED QUANTITIES	
ITEM	QUANTITY
CONSTRUCTED RIFFLE	252 (LF)
CATEGORY 2 ROCK	202 (EA)
STREAMBED FILL	76 (CY)

VEGETATED WOOD MATRIX QUANTITIES	
ITEM	QUANTITY
VEGETATED WOOD MATRIX	544 (LF)
CATEGORY 2 WOOD	136 (EA)
CATEGORY 3 WOOD	1,088 (EA)
WILLOW CUTTINGS	1,632 (EA)
STREAMBED FILL	54 (CY)

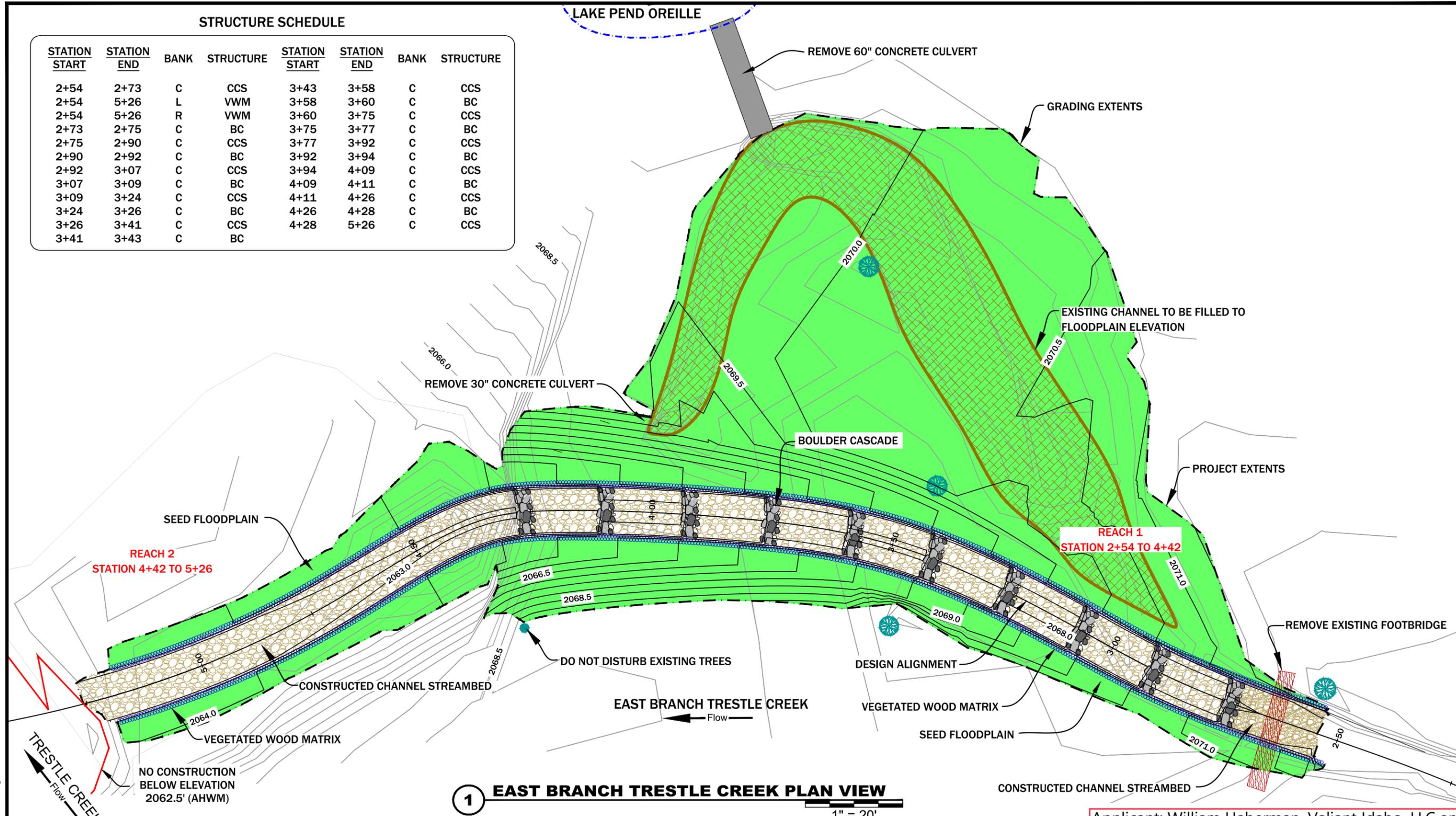
RIPARIAN SEEDING SCHEDULE				
LOCATION	SPECIES		PLS LBS/ACRE	TOTAL PLS LBS
FLOODPLAIN 0.25 ACRES	SLENDER WHEATGRASS	ELYMUS TRACHYCAULUS	10.59	2.69
	BLUEJOINT REEDGRASS	CALAMAGROSTIS CANADENSIS	4.71	1.20
	TUFTED HAIRGRASS	DESCHAMPSIA CAESPITOSA	1.18	.30
	MEADOW BARLEY	HORDEUM BRACHYANTHERUM	7.35	1.87
	TOTAL			

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 Sheet 5 of 12
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CHK	NW

STRUCTURE SCHEDULE

STATION START	STATION END	BANK	STRUCTURE	STATION START	STATION END	BANK	STRUCTURE
2+54	2+73	C	CCS	3+43	3+58	C	CCS
2+54	5+26	L	VWM	3+58	3+60	C	BC
2+54	5+26	R	VWM	3+60	3+75	C	CCS
2+73	2+75	C	BC	3+75	3+77	C	BC
2+75	2+90	C	CCS	3+77	3+92	C	CCS
2+90	2+92	C	BC	3+92	3+94	C	BC
2+92	3+07	C	CCS	3+94	4+09	C	CCS
3+07	3+09	C	BC	4+09	4+11	C	BC
3+09	3+24	C	CCS	4+11	4+26	C	CCS
3+24	3+26	C	BC	4+26	4+28	C	BC
3+26	3+41	C	CCS	4+28	5+26	C	CCS
3+41	3+43	C	BC				



1 EAST BRANCH TRESTLE CREEK PLAN VIEW
1" = 20'

CASCADE THALWEG ELEVATIONS

CASCADE NUMBER	STA	THALWEG ELEV.	CASCADE NUMBER	STA	THALWEG ELEV.
1	2+73	2073.80	6	3+58	2070.30
	2+75	2073.10	7	3+60	2069.60
2	2+90	2073.10		3+75	2069.60
	2+92	2072.40	8	3+77	2068.90
3	3+07	2072.40		3+92	2068.90
	3+09	2071.70	9	3+94	2068.20
4	3+24	2071.70		4+09	2068.20
	3+26	2071.00	10	4+11	2067.50
5	3+41	2071.00		4+26	2067.50
	3+43	2070.30		4+28	2066.80

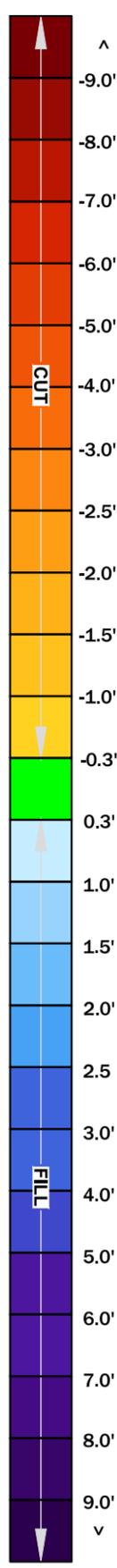
CHANNEL TOP OF BANK ELEVATIONS

STATION START	ELEVATIONS (FT)	STATION START	ELEVATIONS (FT)	STATION START	ELEVATIONS (FT)
2+54	2071.6	3+41	2068.6	4+26	2065.2
2+73	2071.3	3+58	2067.9	4+42	2064.6
2+90	2070.6	3+75	2067.3	4+50	2064.5
3+07	2069.9	3+92	2066.6	4+98	2063.9
3+24	2069.3	4+09	2065.9	5+26	2063.6

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 PLSS: Sec. 16 & 21, T. 57 N, R. 1 E
 Lat: 48.2834 N, Long: -116.3531 W
 Sheet 6 of 12
 Date: September 04, 2025

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CHK	DESCRIPTION	DATE
NW	VAL DESIGN	

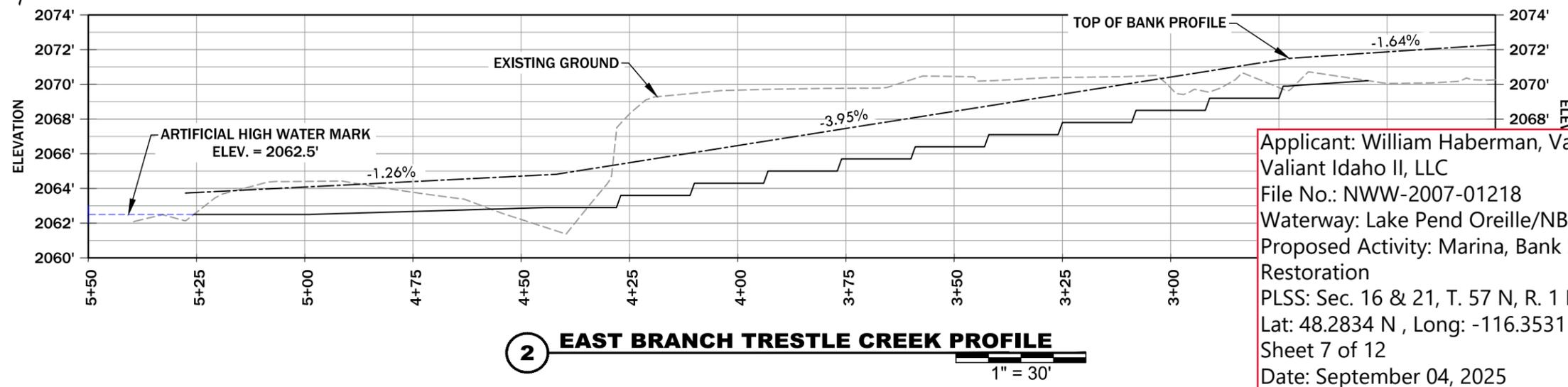
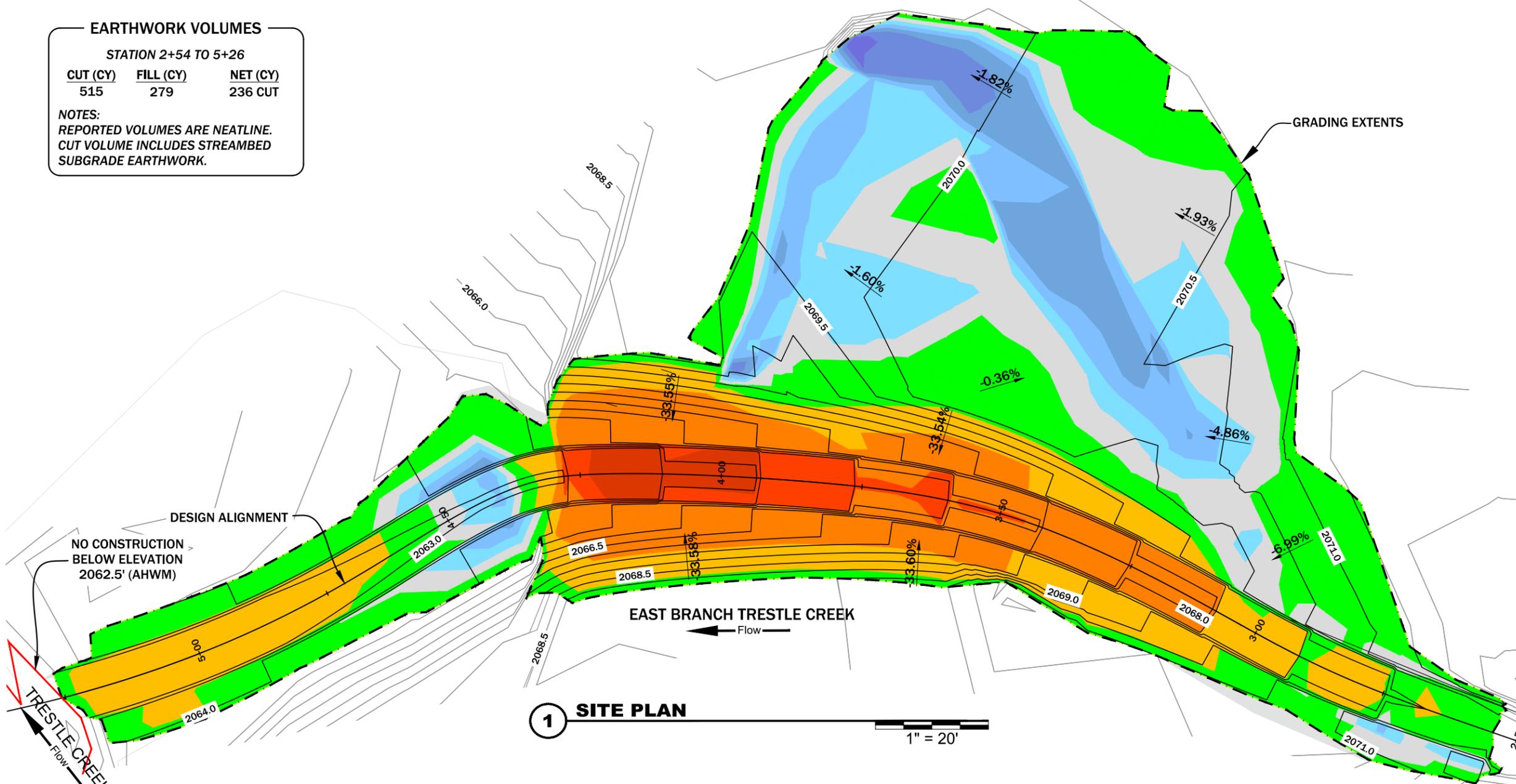


EARTHWORK VOLUMES

STATION 2+54 TO 5+26

CUT (CY)	FILL (CY)	NET (CY)
515	279	236 CUT

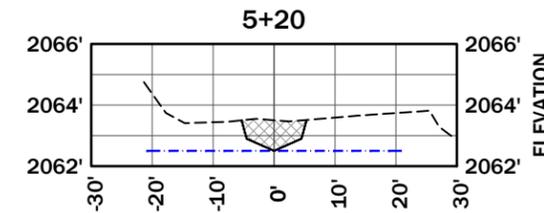
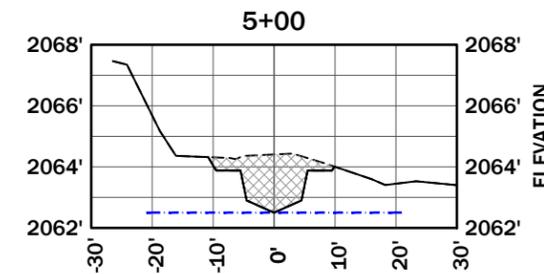
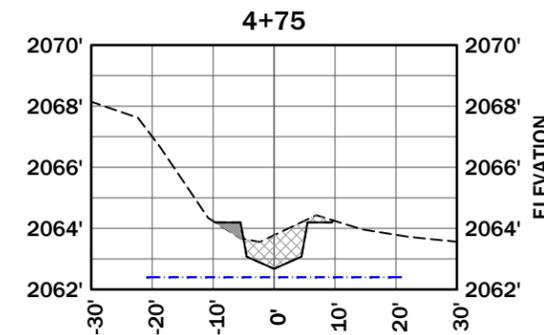
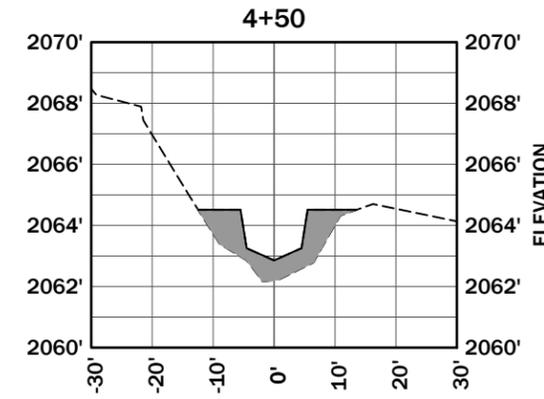
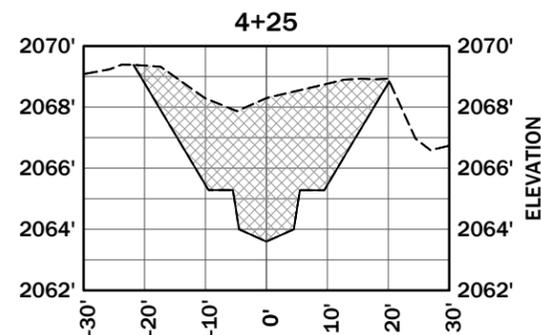
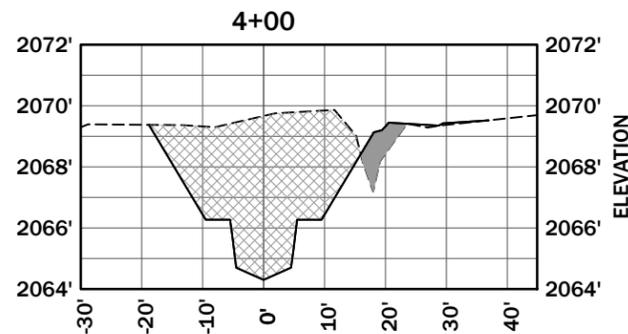
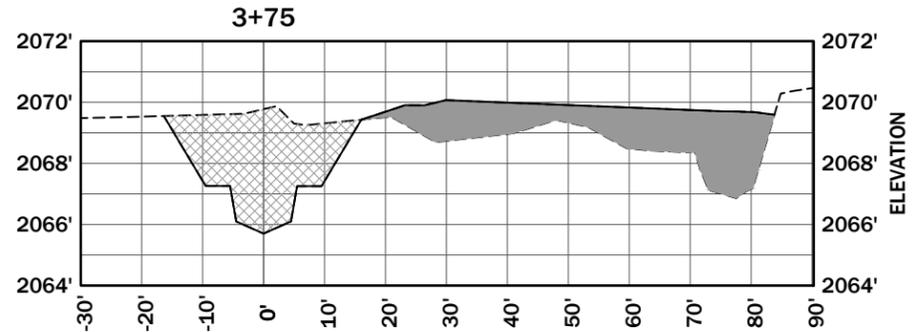
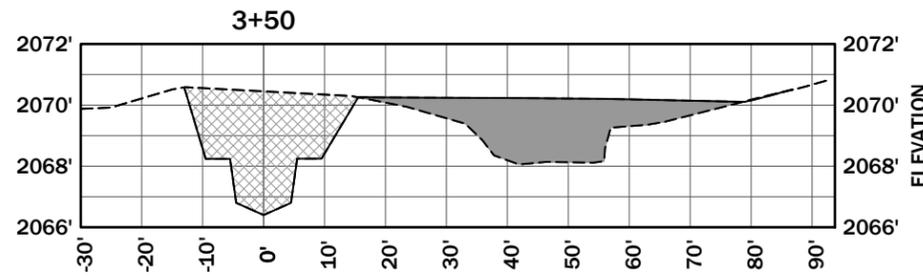
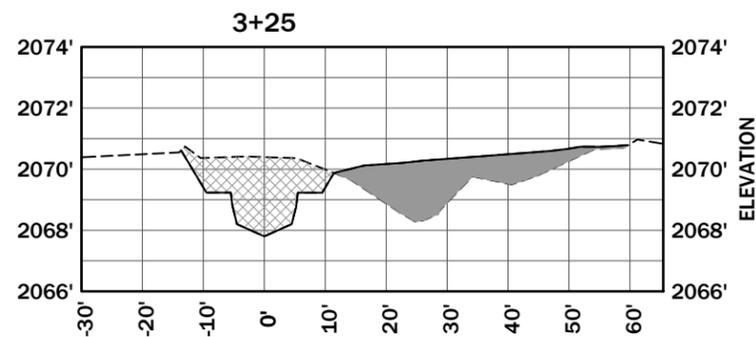
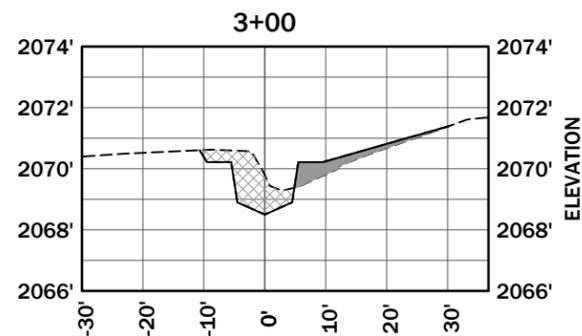
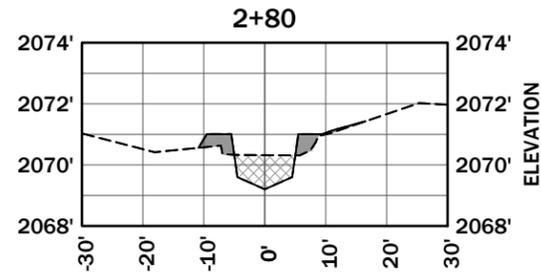
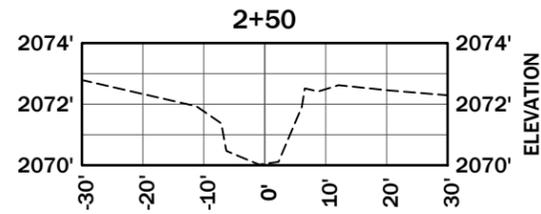
NOTES:
 REPORTED VOLUMES ARE NEATLINE.
 CUT VOLUME INCLUDES STREAMBED
 SUBGRADE EARTHWORK.



GRADING PLAN AND PROFILE
 EAST BRANCH TRESTLE CREEK RESTORATION PROJECT
 NEAR SANDPOINT, IDAHO

CHK	CRIPION	L DESIGN	NW

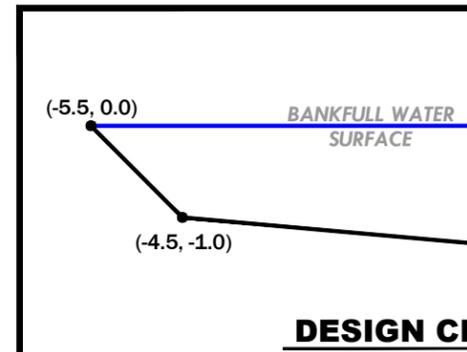
Applicant: William Haberman, Valiant Idaho, LLC and Valiant Idaho II, LLC
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 Lat: 48.2834 N, Long: -116.3531 W
 Sheet 7 of 12
 Date: September 04, 2025



1 CHANNEL CROSS SECTIONS

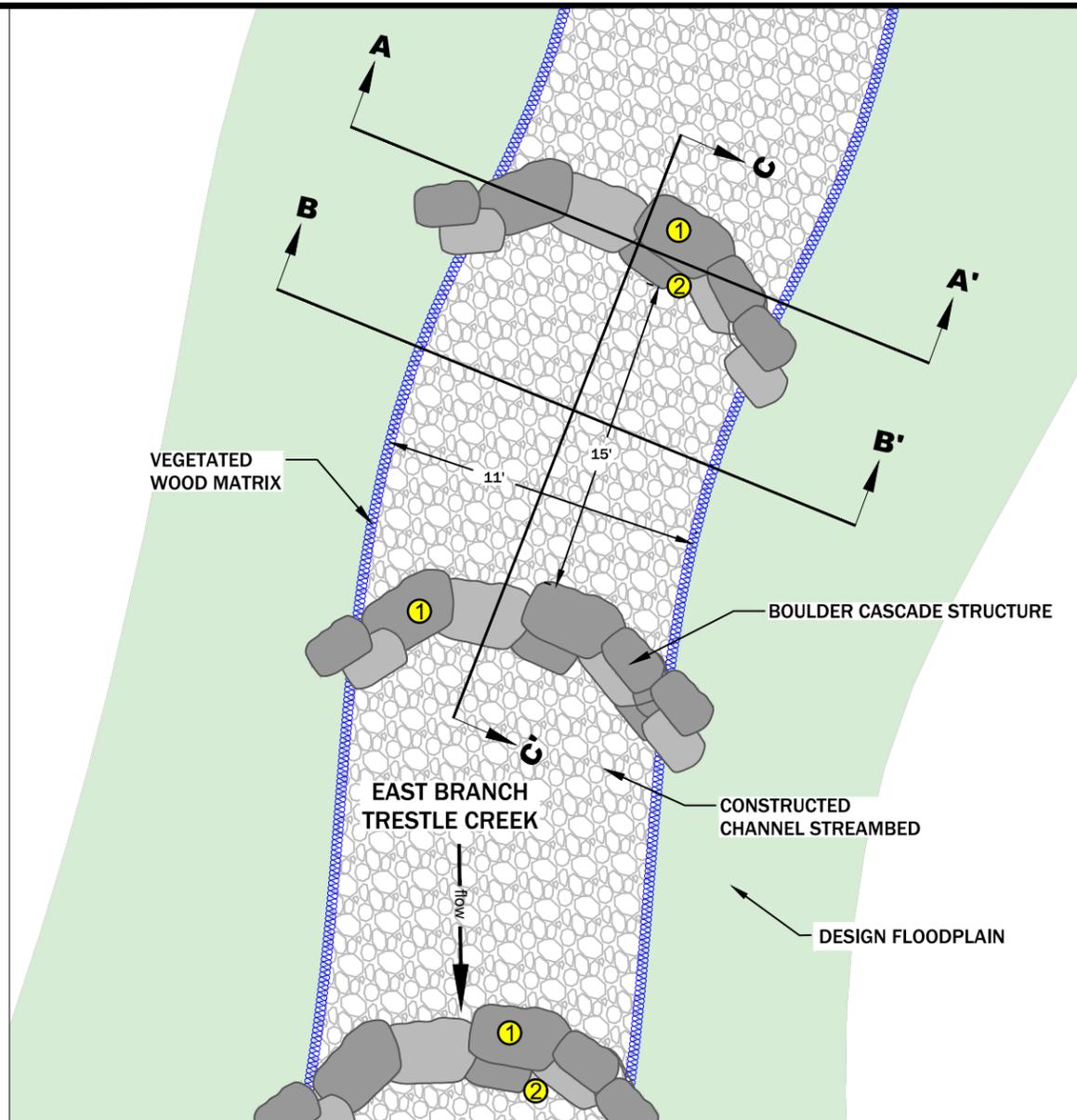
SECTION LEGEND

EXISTING GROUND ELEVATION		CUT
FINISHED GRADE		FILL
ARTIFICIAL HIGH WATER MARK		

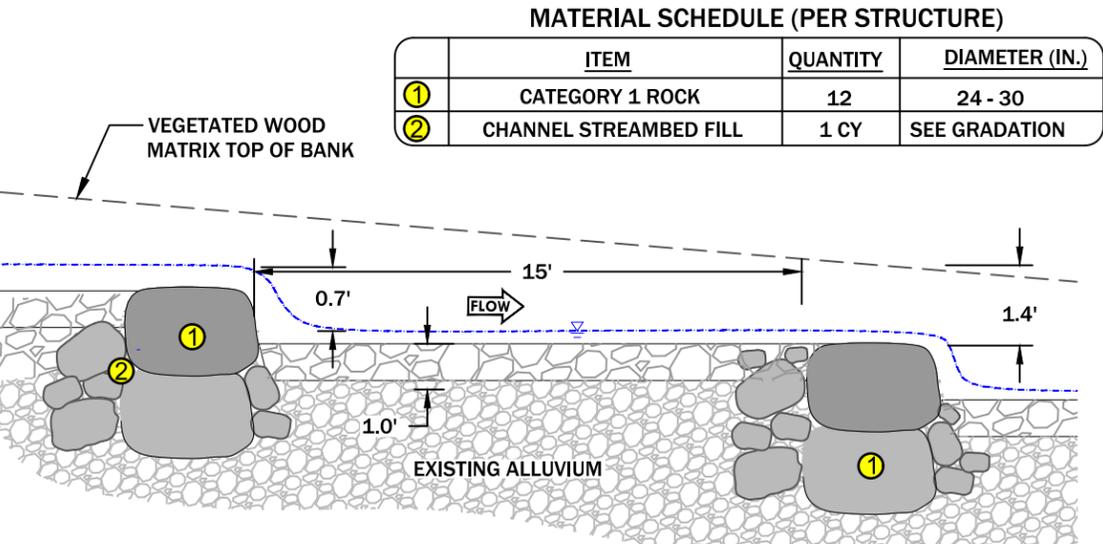


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 Sheet 8 of 12
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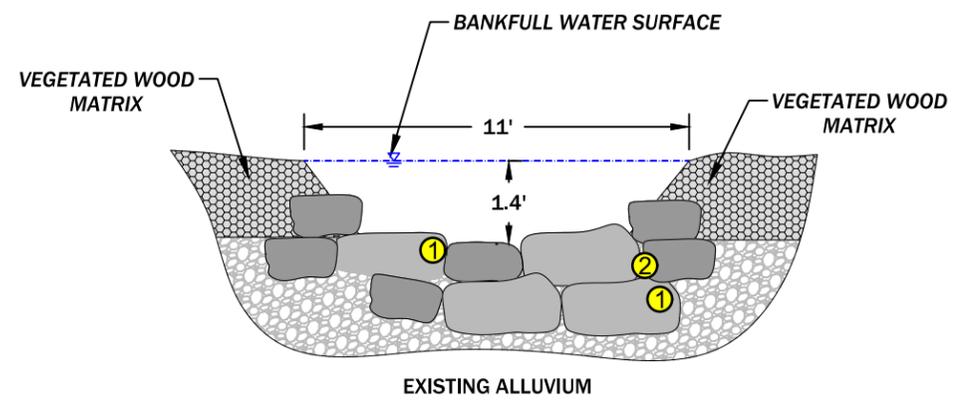
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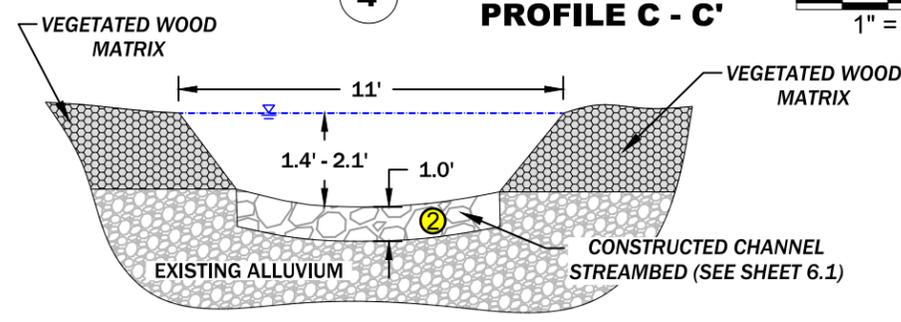
1 BOULDER STEP POOL PLAN VIEW
1" = 6'



4 BOULDER STEP POOL PROFILE C - C'
1" = 5'



2 BOULDER STEP WEIR SECTION A - A'
1" = 5'



3 CONSTRUCTED CHANNEL SECTION B - B'
1" = 5'

GENERAL NOTES

1. THE INTENT OF THE BOULDER CASCADE IS TO PROVIDE VERTICAL AND LATERAL STABILITY FOR ENTRENCHED STREAM TYPES EXHIBITING STEEP GRADIENTS WHERE DEEP POOLS ARE NOT DESIRED DUE TO POTENTIAL FISH STRANDING. THE STRUCTURE CONSISTS OF ALTERNATING GRADE CONTROL STEPS. VELOCITY AND ENERGY DISSIPATION IS CONTROLLED BY STEP SPACING WHICH IS DETERMINED AS A FUNCTION OF GRADIENT RELATIVE TO CHANNEL WIDTH. STEP HEIGHT IS DESIGNED TO MAINTAIN UPSTREAM FISH PASSAGE AT ALL FLOW STAGES.
2. ANY CHANGES TO THE CONSTRUCTION SEQUENCE MUST BE APPROVED BY ENGINEER.
3. ENGINEER SHALL MARK THE GENERAL CONSTRUCTION LOCATIONS FOR EACH BOULDER STEP POOL STRUCTURE PRIOR TO CONSTRUCTION.

NOTES ON BOULDER CASCADE

1. EXCAVATE TO THE EXCAVATION LIMITS AS SHOWN ON THE DRAWING. SALVAGE COBBLE FROM THE EXISTING CHANNEL AND STOCK PILE ON THE FLOODPLAIN OUTSIDE OF THE IMMEDIATE WORK AREA.
2. PREPARE THE BASE OF THE EXCAVATION BY PLACING AND BUCKET COMPACTING STREAMBED FILL TO SUBGRADE ELEVATIONS SHOWN ON THE DRAWINGS.
3. CASCADES SHALL BE CONSTRUCTED FROM ROCKS WITH THE DIMENSIONS SHOWN IN THE MATERIAL SCHEDULE. PREFERRED ROCK IS RECTANGULAR IN SHAPE FROM SOURCE APPROVED BY ENGINEER AND SHALL BE SOUND, DENSE (SG=2.65 MIN.) AND FREE FROM CRACKS, SEAMS OR OTHER DEFECTS THAT CAN ACCELERATE WEATHERING.
4. PLACE CAT 1 ROCKS ACCORDING TO THE LAYOUT AND ELEVATIONS SHOWN ON SITE PLAN. FOOTER ROCKS SHALL BE PLACED UNDER ALL CAP ROCKS UNLESS CAP ROCKS EXTEND BELOW SCOUR DEPTH. ALL ROCKS SHALL BE PLACED ON SUITABLE SUBGRADE CONSISTING OF COARSE ALLUVIUM AS APPROVED BY ENGINEER. ROCK SHALL BE EQUIPMENT-PLACED SO THAT LARGER ROCKS ARE UNIFORMLY DISTRIBUTED WITH NO GAPS BETWEEN BOTH FOOTER ROCKS AND CAP ROCKS. STREAMBED FILL SHALL BE PLACED IN VOIDS AROUND FOOTER ROCKS AND CAP ROCKS.
5. THE STRUCTURE LOCATION WILL BE STAKED IN THE EXISTING STREAMBED BY ENGINEER. STRUCTURE TIE-IN LOCATIONS MAY BE STABILIZED WITH BOULDERS AND STREAMBED FILL AS DIRECTED BY ENGINEER.

MATERIAL SCHEDULE (PER STRUCTURE)

ITEM	QUANTITY	DIAMETER (IN.)
① CATEGORY 1 ROCK	12	24 - 30
② CHANNEL STREAMBED FILL	1 CY	SEE GRADATION

STREAMBED FILL GRADATION	
SIZE (IN)	PERCENT PASSING
6	90-95
4	50-80
3	30-50
1	10-30
0.08	10

NOTE: MIX SALVAGED MATERIAL AND IMPORTED MATERIAL TO ACHIEVE SPECIFIED GRADATION

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 Sheet 9 of 12
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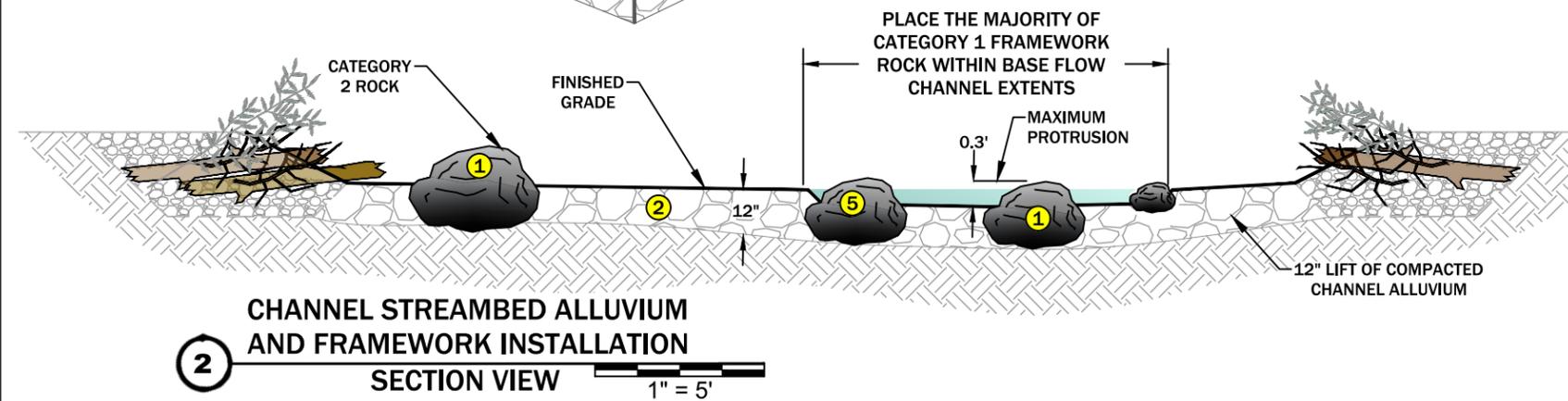
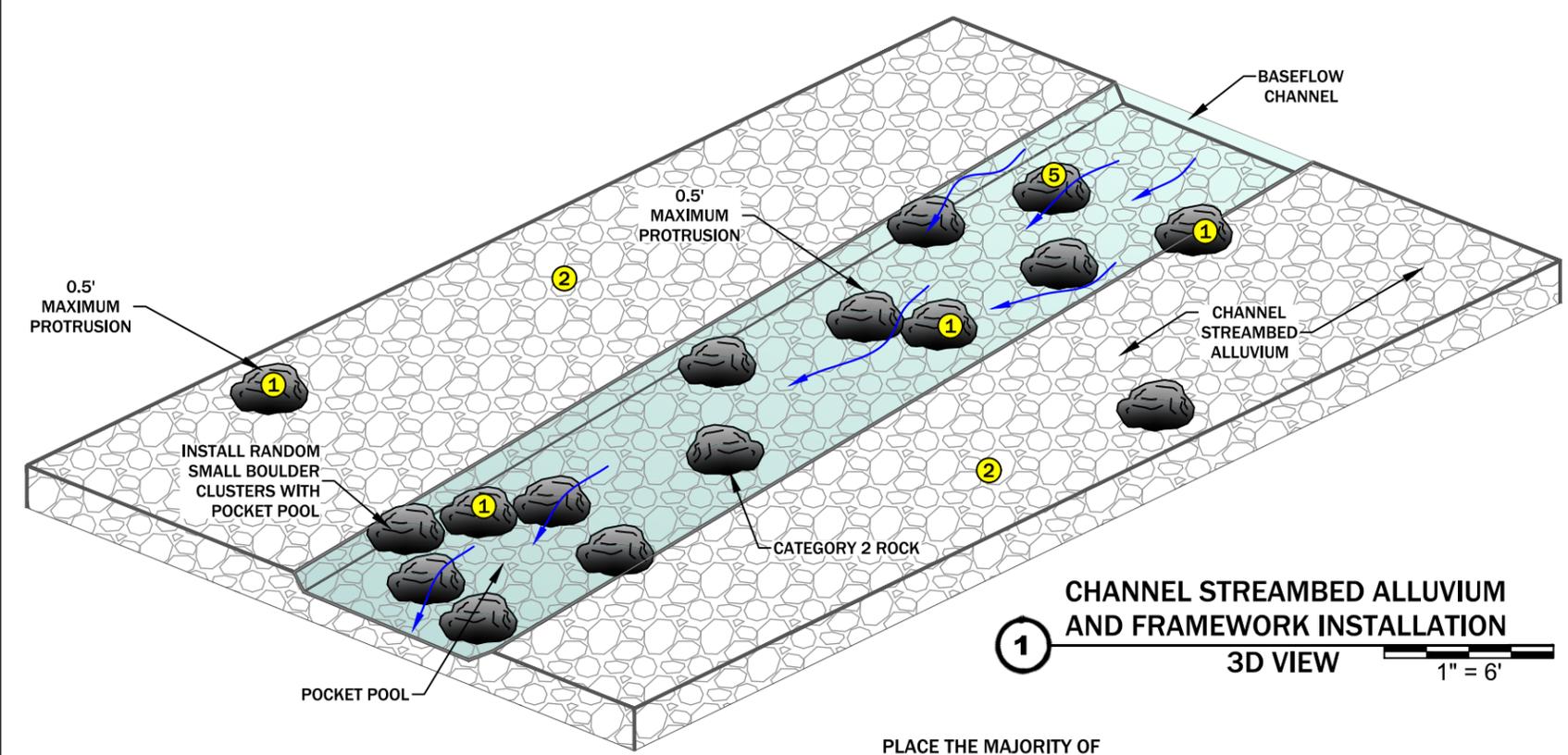
CHK	NW		
ON	IGN		

GENERAL NOTES

1. CONSTRUCTION OF THE CHANNEL STREAMBED WILL OCCUR AFTER THE CHANNEL SUBGRADE IS PREPARED.
2. ANY CHANGES TO THE CONSTRUCTION SEQUENCE MUST BE APPROVED THE CONSTRUCTION MANAGER.
3. CONTRACTOR SHALL MARK THE UPSTREAM AND DOWNSTREAM EXTENTS OF THE LOCATIONS OF THE CONSTRUCTED CHANNEL STREAMBED STRUCTURES.
4. ALL **SUBGRADE EXCAVATION SHALL TERMINATE AT ELEVATION 2062.5'**. CONSTRUCTION MANAGER SHALL IDENTIFY LIMITS DURING CONSTRUCTION.

NOTES ON CONSTRUCTED CHANNEL STREAMBED INSTALLATION

1. PRIOR TO CONSTRUCTION OF THE CHANNEL STREAMBED, CONSTRUCTION MANAGER SHALL VERIFY CHANNEL SUBGRADE ELEVATIONS. CHANNEL SUBGRADE SERVES AS THE FOUNDATION FOR THE CONSTRUCTED CHANNEL STREAMBED.
2. CONTRACTOR SHALL STOCKPILE CHANNEL ALLUVIUM PER SPECIFICATIONS NOTED ON THE DRAWING.
3. PREPARE THE FRAMEWORK. CONTRACTOR SHALL PLACE 10-INCH TO 12-INCH BOULDERS (CATEGORY 2 ROCK) ON THE SURFACE OF THE CHANNEL SUBGRADE PRIMARILY WITHIN THE LOW FLOW CHANNEL AS INDICATED ON THE DRAWING. DUE TO THE INHERENT VARIABILITY IN MATERIALS, BOULDER ELEVATIONS SHALL BE ADJUSTED TO ASSURE BOULDER PROTRUSION ABOVE FINISH GRADE WILL BE NO GREATER THAN 0.5-FT.
4. CONTRACTOR MAY INSTALL 10-INCH TO 12-INCH BOULDERS (CATEGORY 2 ROCK) IN CLUSTERS, AS DIRECTED BY THE CONSTRUCTION MANAGER, TO CREATE A COMPLEX SERIES OF POCKET POOLS THAT EFFECTIVELY DISSIPATE ENERGY AND PROVIDE PATHWAYS FOR FISH MOVEMENT. BOULDER ELEVATIONS SHALL BE ADJUSTED TO ASSURE BOULDER PROTRUSION ABOVE FINISH GRADE IS NO GREATER THAN 0.3-FT.
5. PREPARE THE MATRIX. AFTER THE FRAMEWORK, BOULDER CLUSTERS, AND SMALL BOULDER RIBS ARE INSTALLED AND INSPECTED BY CONSTRUCTION MANAGER, PLACE APPROPRIATE CHANNEL STREAMBED ALLUVIUM GRADATION AND WASH FINES INTO STREAMBED. CHANNEL STREAMED ALLUVIUM SHALL BE PLACED TO THE FULL COURSE THICKNESS OF 12-INCHES TO FINISHED GRADE.



MATERIAL SCHEDULE (PER LINEAR FOOT)

ITEM	DIA.	QUANTITY
1 CATEGORY 2 ROCK	10" - 12"	0.8 EA
2 CHANNEL STREAMBED ALLUVIUM	6" MINUS	0.3 CY

STREAMBED FILL GRADATION

SIZE (IN)	PERCENT PASSING

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 Lat: 48.2834 N, Long: -116.3531 W
 Sheet 10 of 12
 Date: September 04, 2025

NOTES ON VEGETATED WOOD MATRIX INSTALLATION

- EXCAVATE TO THE EXCAVATION LIMITS AS SHOWN. EXCAVATED MATERIAL SHALL BE STOCKPILED ON THE FLOODPLAIN OUTSIDE OF THE IMMEDIATE WORK AREA.
- PREPARE THE BENCH OF THE STRUCTURE BY PLACING CHANNEL STREAMBED ALLUVIUM FROM THE BASE OF THE EXCAVATION DEPTH/BOTTOM OF EXCAVATION TO WITHIN 1.0-FT. OF FINISHED GRADE.
- CATEGORY 2 AND CATEGORY 3 WOOD, AND CHANNEL STREAMBED ALLUVIUM SHALL BE PLACED IN ALTERNATING LAYERS AND BUCKET COMPACTED UP TO THE TOP OF BANK ELEVATION AS SHOWN BELOW IN THE INSTALLATION SEQUENCE. PLACE SIX (6) FT TO EIGHT (8) FT. DORMANT WILLOW CUTTINGS AT A DENSITY OF 3 PER LINEAR FT ALONG THE TOP OF BANK LINE ELEVATION. WILLOW CUTTINGS SHALL SLOPE AT AN APPROXIMATE 1:1 SLOPE AS SHOWN IN SECTION VIEW. STEMS MAY OVERLAP. THE CUT ENDS SHALL BE PLACED AT THE BASE OF THE SLOPES WITH THE UN-CUT ENDS EXTENDING BEYOND THE EDGE OF THE TRENCH SO NO GREATER THAN ONE-THIRD OF THE TOTAL CUTTING LENGTH IS EXPOSED BEYOND THE TOP OF BANK EDGE. WILLOW CUTTINGS SHOULD INTERCEPT THE DESIGN TOP OF BANK LINE AS SHOWN IN STEP 5 OF THE INSTALLATION SEQUENCE.
- THE UPSTREAM AND DOWNSTREAM ENDS OF THE STRUCTURE SHALL TRANSITION SMOOTHLY INTO ADJACENT STREAMBANK STRUCTURES TO MINIMIZE EROSION, FLANKING, AND BANK FAILURE. STRUCTURE ENDS MAY BE STABILIZED WITH ADDITIONAL CATEGORY 1 ROCK AS APPROVED BY ENGINEER.
- AFTER INSTALLATION OF THE VEGETATED WOOD MATRIX, BACKFILL THE STRUCTURE WITH STOCKPILED MATERIAL TO FINISHED GRADE, AND BUCKET COMPACT.

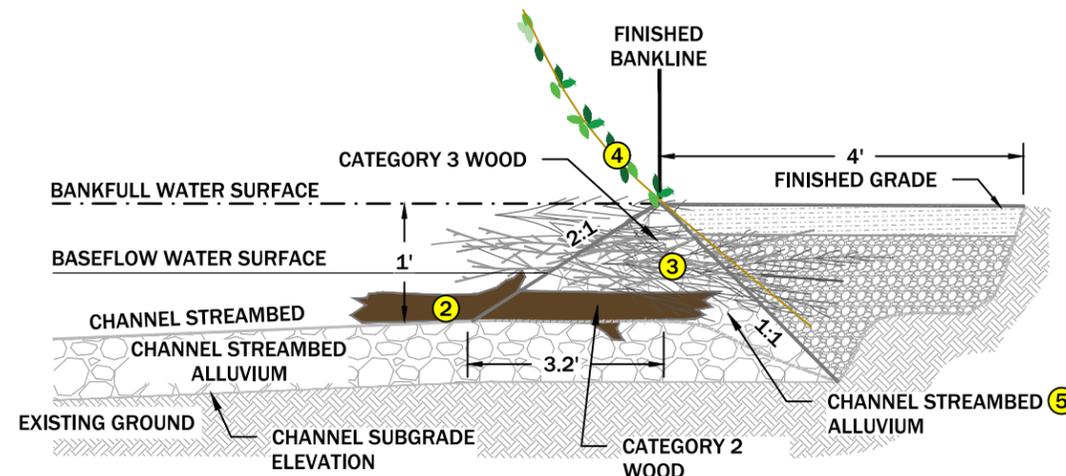
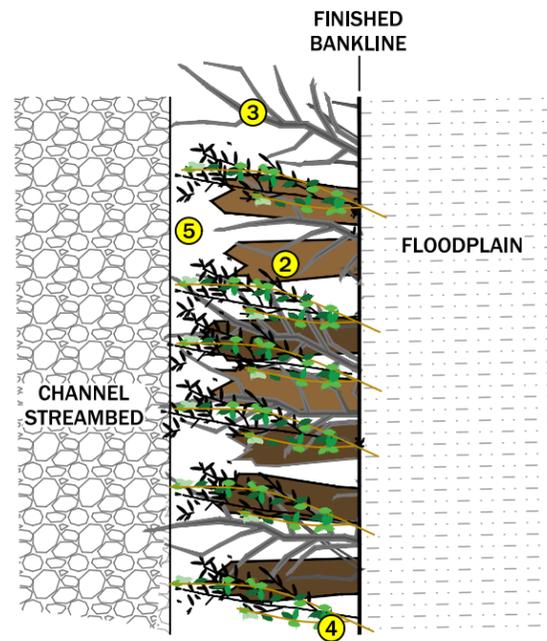
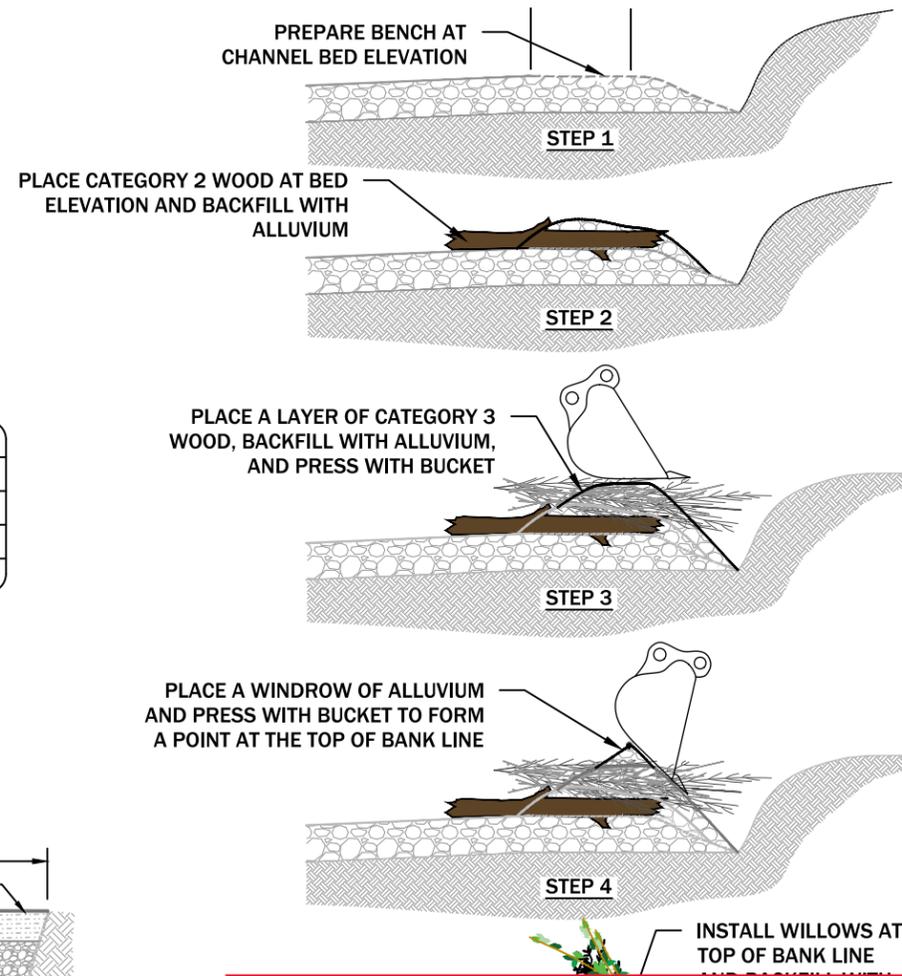
GENERAL NOTES

- CONSTRUCTION OF THE VEGETATED WOOD MATRIX WILL OCCUR AFTER THE CHANNEL AND FLOODPLAIN BACKFILL IS PLACED AND THE CHANNEL STREAMBED IS CONSTRUCTED.
- IF VEGETATED WOOD MATRIX STRUCTURES ARE INSTALLED PRIOR TO OCTOBER 1, LEAVE BACK TRENCH UNFILLED AND COMPLETE STRUCTURE WHEN DORMANT WILLOWS ARE AVAILABLE.
- IT IS CONTRACTOR'S RESPONSIBILITY TO CUT WOOD INTO APPROPRIATE SIZE LENGTHS TO FIT STRUCTURE DIMENSIONS.
- ANY CHANGES TO THE CONSTRUCTION SEQUENCE MUST BE APPROVED BY CONSTRUCTION MANAGER.
- CONTRACTOR SHALL MARK AND CONSTRUCTION ENGINEER SHALL APPROVE THE GENERAL LOCATION FOR EACH VEGETATED WOOD MATRIX STRUCTURE PRIOR TO CONSTRUCTION.
- ALL **SUBGRADE EXCAVATION SHALL TERMINATE AT ELEVATION 2062.5'**. CONSTRUCTION MANAGER SHALL IDENTIFY LIMITS DURING CONSTRUCTION.

STREAMBANK FILL GRADATION	
SIZE (IN)	PERCENT PASSING
6	90-95
4	50-80
3	30-50
1	10-30
0.08	10

NOTE: MIX SALVAGED MATERIAL AND IMPORTED MATERIAL TO ACHIEVE SPECIFIED GRADATION

MATERIAL SCHEDULE (PER LINEAR FOOT)			
ITEM	DIA.	QUANTITY	
②	CATEGORY 2 WOOD	2" - 4"	0.25
③	CATEGORY 3 WOOD	< 2"	2
④	WILLOW CUTTINGS	0.25" - 1"	3
⑤	STREAMBANK ALLUVIUM	6" MINUS	0.1 CY



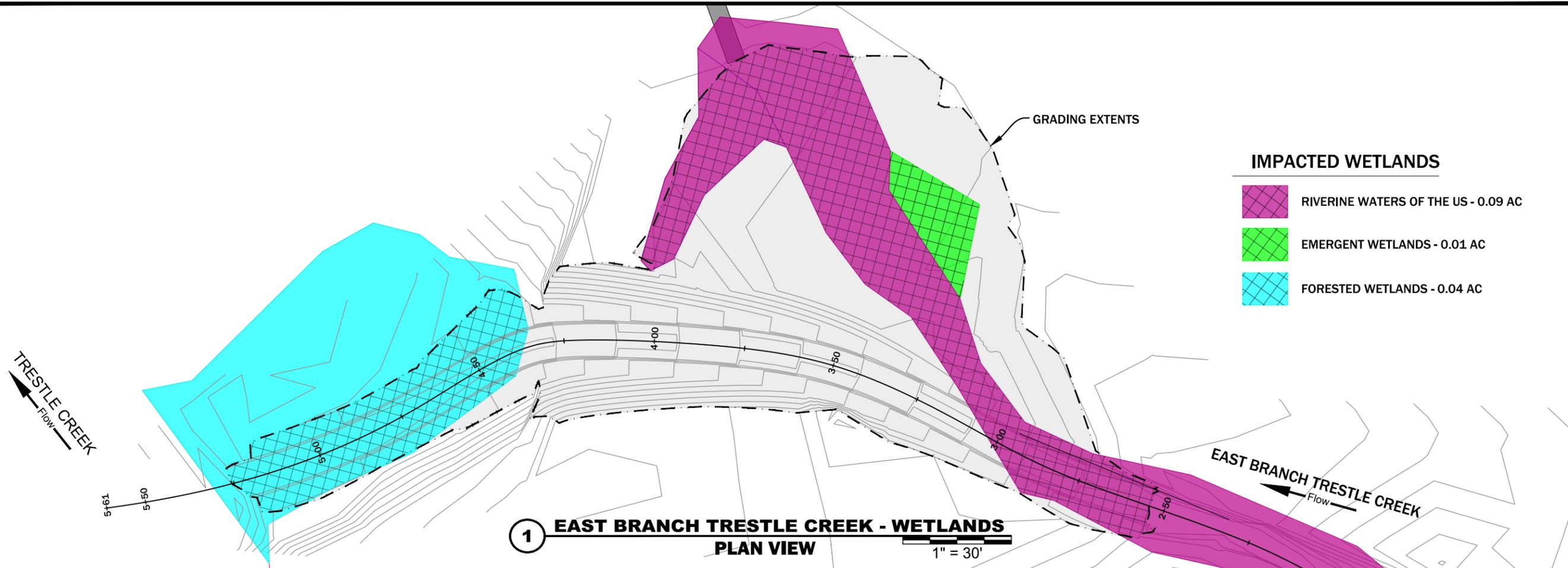
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 Lat: 48.2834 N, Long: -116.3531 W
 Sheet 11 of 12
 Date: September 04, 2025

① **VEGETATED WOOD MATRIX**
PLAN VIEW
NTS

② **VEGETATED WOOD MATRIX**
SECTION VIEW
NTS

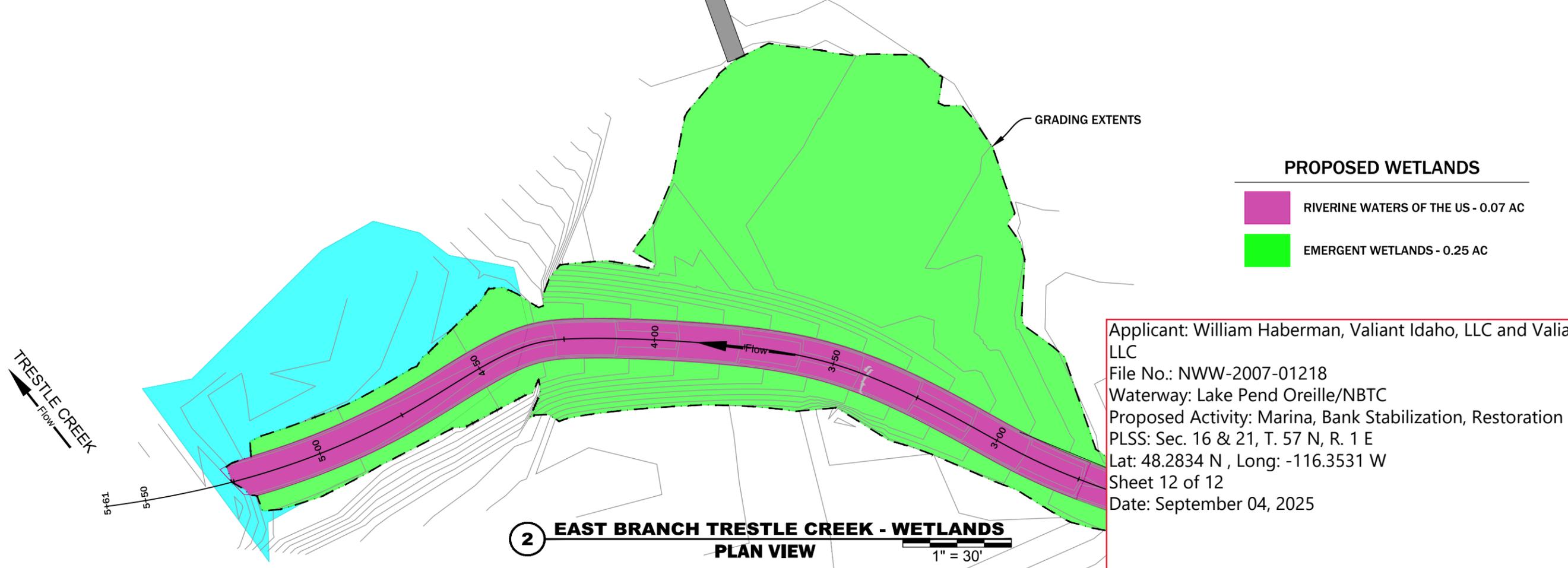
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**1 EAST BRANCH TRESTLE CREEK - WETLANDS
PLAN VIEW**
1" = 30'

- IMPACTED WETLANDS**
- RIVERINE WATERS OF THE US - 0.09 AC
 - EMERGENT WETLANDS - 0.01 AC
 - FORESTED WETLANDS - 0.04 AC



**2 EAST BRANCH TRESTLE CREEK - WETLANDS
PLAN VIEW**
1" = 30'

- PROPOSED WETLANDS**
- RIVERINE WATERS OF THE US - 0.07 AC
 - EMERGENT WETLANDS - 0.25 AC

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 Sheet 12 of 12
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FINAL DESIGN	NW