

PRE-PROPOSAL FORM

Lewis River Aquatic Fund

1. Applicant organization.

Lower Columbia Fish Enhancement Group

2. Organization purpose

Our program was established in 1990 by the Washington State Legislature as a 501-c3 non-profit organization responsible for restoring salmon and steelhead populations to healthy, harvestable levels.

3. Project manager (name, address, telephone, email, fax).

Tony Meyer
12404 SE Evergreen Hwy
Vancouver, WA 98683
360-882-6671; cwfish@comcast.net

4. Project Title

NF Lewis RM 13.5 Side-Channel Habitat Enhancement

5. Summary of Project proposal

The project site is located along the east bank of the NF Lewis River near river mile 13.5, in reach Lewis 5, a Tier 1 reach according to the Lower Columbia Salmon Recovery and Fish & Wildlife Subbasin Plan (LCFRB 2004). Previous design funding was provided as part of SRFB Project #08-2059 "North Fork Lewis Side-Channel Design". Final designs have been completed and the project has been approved by LCFRB for funding by SRFB. Pending final approval by SRFB in January 2011, the LCFEG is requesting additional project support/match by the Lewis River Aquatic Fund to purchase/transport LWD.

The project will create and enhance important spawning, rearing, and adult holding habitat for ESA-listed steelhead, Chinook, Coho and Chum populations in the North Fork Lewis River. Currently, connected side-channel habitat and LWD complexity have been reduced in this reach of the Lewis River due to past channel clean-outs, riparian clearing, hydro-regulation, and instream gravel mining. The project will enhance key habitat for ESA-listed salmonids through the construction of a 2,500 foot long side-channel with pool-riffle habitat, LWD placements, and connected off-channel (backwater) habitat. The project will also include the rehabilitation of approximately 200 feet of a perennial spring-fed tributary using channel re-grading and LWD placements. This project will also restore native riparian and floodplain vegetation within the disturbance limits of the project.

The following restoration objectives helped to guide the project design approach:

- 1) Promote channel complexity and habitat-forming processes.
- 2) Increase the abundance and complexity of off-channel and side-channel habitat.
- 3) Increase pool habitat quality and quantity.
- 4) Increase LWD quantities to increase the availability of rearing and holding cover, complexity, and velocity refuge.
- 5) Restore a native streambank, riparian, wetland, and floodplain vegetation community to provide stability, shade, wildlife habitat, and future LWD recruitment.
- 6) Restore passage and habitat complexity to a perennial spring-fed tributary

6. Project location (including River/Stream and Lat/Long coordinates if available).

Mainstem Lewis River approximately River Mile 13.5; river left bank

Latitude: 122° 39' 7" W Longitude: 45° 55' 41" N

7. Expected products and results (Please attach any drawings).

The desired future condition is a stream reach that provides the habitat quantity and complexity that better resembles the conditions to which Lewis River fish populations have adapted to over time. Expected products include the implementation of the following elements. See attached design drawings:

1. Creation of 50,000 square feet of side-channel habitat connected to the mainstem Lewis River. The side-channel area will be constructed in an abandoned meander-scar of the historical mainstem Lewis River.
2. Elimination of existing stranding risk. The perennial tributary currently flows into an abandoned Lewis River channel. The relic Lewis River pool forms a ponded area that does not have an outlet to the mainstem that allows for fish passage. Furthermore, the ponded area creates a stranding risk to fish that seek velocity refuge and forage habitat on the floodplain and become trapped in the ponded area as flood stage recedes.
3. Restoration of fish passage into the perennial tributary. Reconnecting the off-channel area will also restore fish access to the tributary. A failed culvert near the mouth of the tributary will also be removed to improve passage conditions.
4. Restoration of the native riparian plant community. Riparian areas will be planted with site-adapted native riparian species. Invasive/noxious species will be removed, primarily Japanese knotweed and Scotch Broom.

8. Benefits of proposed Project

This project benefits fish recovery in the NF Lewis River, with priority given to federal ESA-listed species. Side-channel construction and placement of LWD pieces will directly benefit the Lewis ESA-listed Chinook, coho, steelhead, and chum populations.

The quantity and quality of LWD has been reduced as a result of historical streambank clearing, in-stream snagging, basin-wide riparian harvest, reduction in channel dynamics, and interruption of fluvial wood transport due to the hydrosystem (Interfluve et al 2008). This project will restore wood quantity and quality to within the range of historical conditions. Recovery of native riparian forest vegetation will also ensure that long-term benefits are provided.

9. Project partners and roles.

Project partners and roles are described below:

- Lower Columbia Fish Enhancement Group: LCFEG will provide project management and coordination. The LCFEG has conducted numerous stream habitat projects in the region and will play an active role in design and implementation of enhancements.
- Lower Columbia Fish Recovery Board: Approval is pending for Salmon Recovery Funding Board (SRFB) funds for the side-channel habitat improvement elements associated with this project. The LCFRB staff and TAC have assisted with review of the proposed treatments and will be an important cooperator throughout project implementation.
- Sam Kysar (east bank landowner): Sam remembers coho salmon spawning in the tributary. He is very supportive of this effort and has indicated his interest in providing project support in the form of labor and materials and long-term maintenance and monitoring. The Kysars have also expressed interest in placing a conservation easement on their floodplain property to protect salmon recovery investments.
- Inter-Fluve: Inter-Fluve will perform construction oversight services and effectiveness monitoring. Inter-Fluve has already conducted survey, analysis, and design work for the project.

10. Community involvement (to date and planned).

The LCFEG and Inter-Fluve have worked closely with primary landowners at the project site. These landowners will be important and active partners. We will ensure that other community interests, including recreation interests, are factored directly into design criteria for the project. Currently, LCFEG has already coordinated with WDFW, Pacificore and Clark County and posted permanent signage at boat ramps to inform recreational users of the restoration activities in the area.

11. Procedure for monitoring and reporting on results.

Implementation monitoring will be performed to ensure design criteria are met. Implementation monitoring metrics include amount of connected off-channel habitat created, pieces of LWD installed, and density and survival of riparian plantings. As-built drawings will be developed and a long-term monitoring plan will be created in order to measure project success and guide maintenance activities. Before and after photo points will be established.

12. Project schedule (anticipated start date, major milestones, completion date).

Start: April/May 2011

Survey, design and permitting: Design is complete, permitting is underway as part of the 2011 funded SRFB project.

Construction: July-Sept 2011 & 2012

ACC Proposal

**Lower Columbia Fish Enhancement Group
October 4, 2010**

Completion: Winter 2013. Riparian maintenance to extend to 2013.

13. Funding requested.

Item	Cost	Description
LWD Purchase/transport	\$47,500	Purchase and transport of LWD to project site.
Misc. tools/ materials	\$15,000	Drills, drill bits, plants, tubes, stakes, threaded rod, nuts, washers etc.
Total request	\$62,500	

14. Type and source of other contributions (Identify cash (C) and/or in-kind (IK), and status, pending (P) or confirmed (Co)).

Salmon Recovery Funding Board (SRFB) – Pending 2011 funding equaling \$531,520 (C) for construction of side-channel project components.

Sam Kysar (landowner) – labor, materials, maintenance TBD (IK) (P)

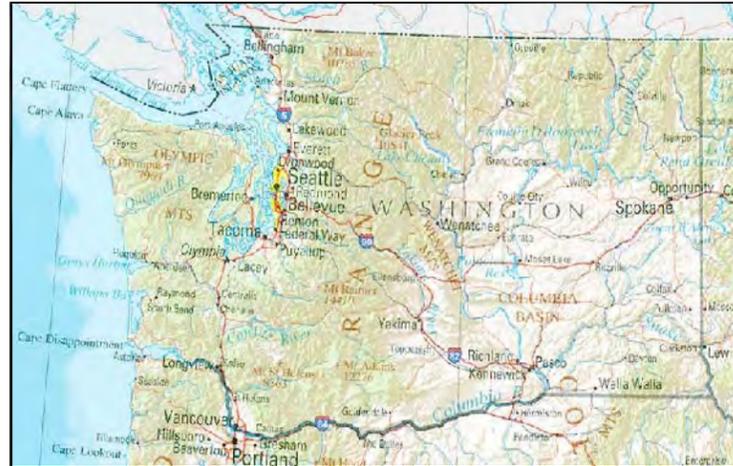
LCFEG – \$15,000 labor and materials (IK) (Co)

15. If you have technical assistance needs for this project, please briefly describe such needs.

Inter-Fluve, Inc has produced the final design and will assist in implementation of this project.



Lewis River (River Mile 13-14) Habitat Enhancement Project



**LOCATION MAP
STATE OF WASHINGTON**



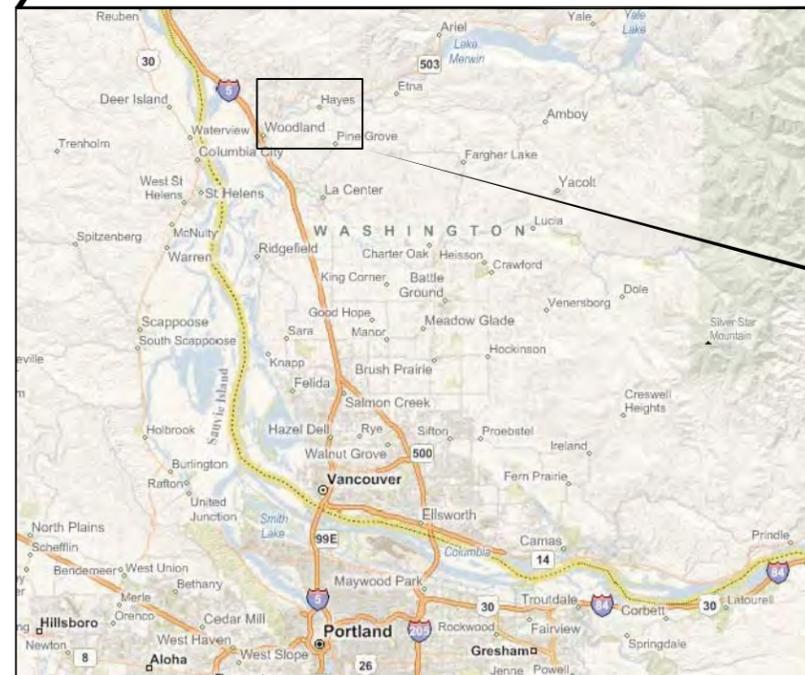
LEWIS RIVER SITE MAP

2600 NE CEDAR CREEK ROAD
CITY OF WOODLAND, CLARK COUNTY, WA 98674

LAT: 45° 55' 47" N
LON: 122° 39' 5" W

NW & SW 1/4 S11 T5N R1E

*Preliminary Not
For Construction*



VICINITY MAP

SHEET INDEX

1. COVER, SHEET INDEX AND VICINITY MAP
2. PROJECT SITES
3. SIDE CHANNEL PLAN & PROFILE (STA 3+50 - 17+50)
4. SIDE CHANNEL PLAN & PROFILE (STA 17+50 - 32+60)
5. SIDE CHANNEL PLAN, PROFILE, & INLET CONTROL DETAILS (STA 30+00 - 33+00)
6. SIDE CHANNEL TYPICAL SECTIONS VIEWS NEW BACKWATERED CHANNEL (STA 3+50 - 23+00)
7. SIDE CHANNEL TYPICAL SECTIONS VIEWS (STA 23+00 - 32+00)
8. TRIBUTARY REALIGNMENT PLAN, PROFILE, & SECTION VIEWS
9. PLANTING PLAN

NO.	BY	DATE	REVISION DESCRIPTION	RP, MM DRAWN GJ APPROVED	MM, GJ DESIGNED 03-30-09 DATE	GJ CHECKED PROJECT

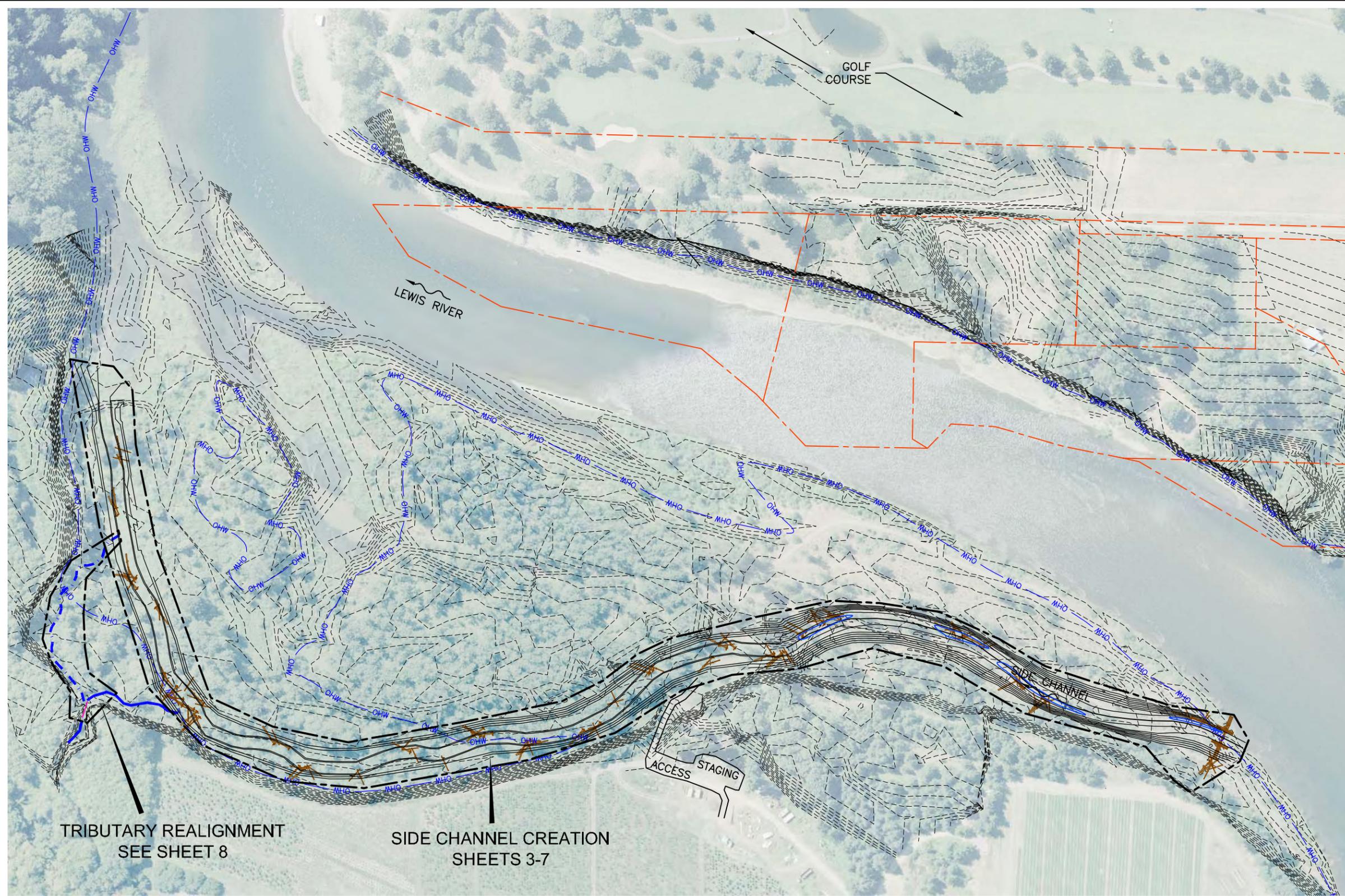
Lewis River (River Mile 13-14)
Habitat Enhancement Project
Lower Columbia Fish Enhancement Group



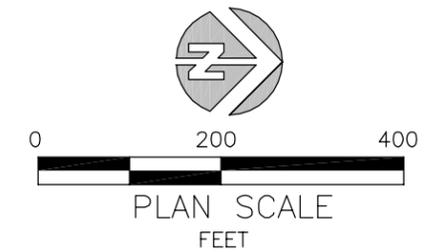
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www.interfluve.com

Cover Sheet, Vicinity Maps,
and Sheet Index

SHEET
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- LEGEND**
- PROPERTY LINE
 - PROJECT LIMITS
 - OHW ORDINARY HIGH WATER LINE



TRIBUTARY REALIGNMENT
SEE SHEET 8

SIDE CHANNEL CREATION
SHEETS 3-7

PROJECT SITE MAP



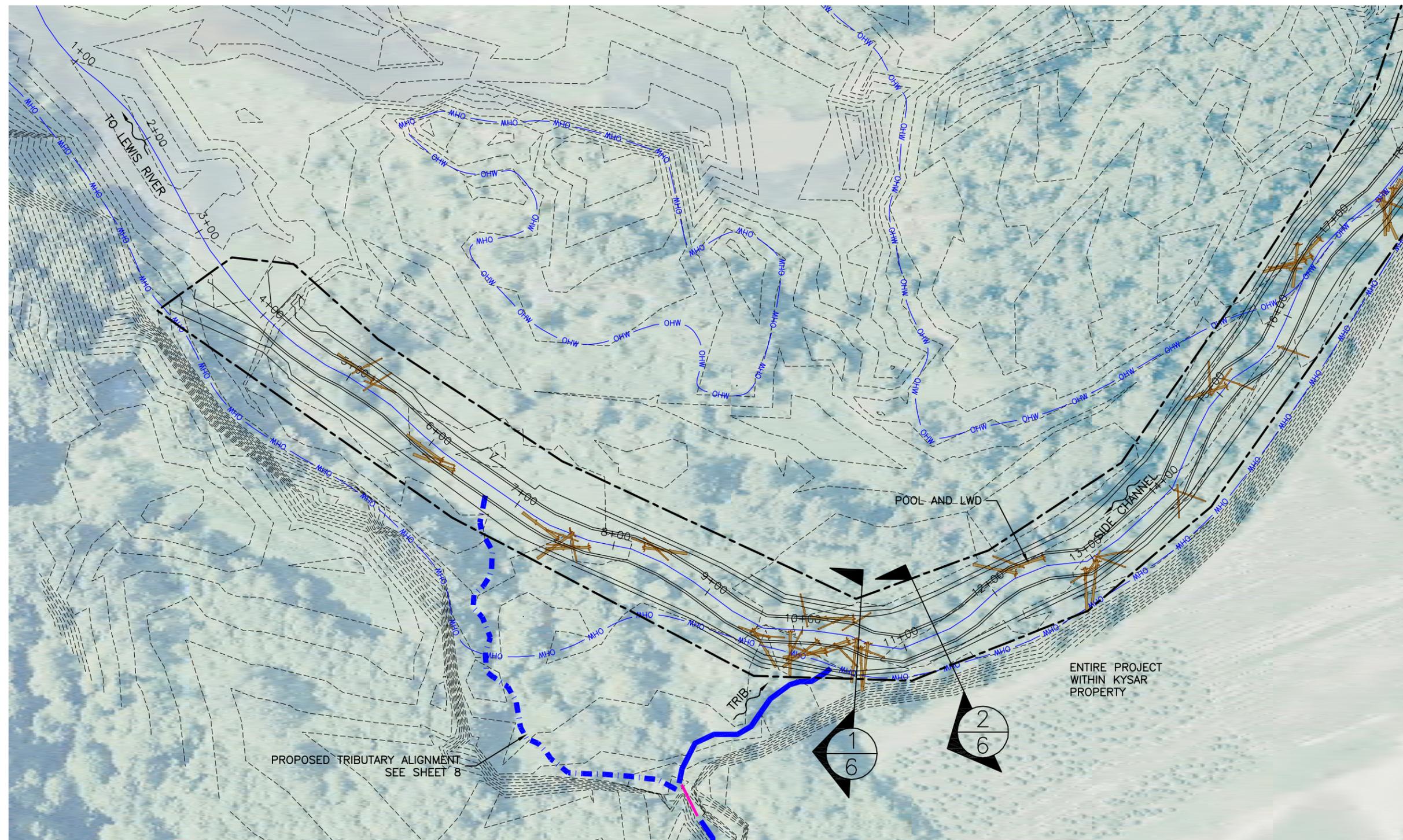
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DRAWN	DESIGNED	CHECKED
GJ	03-30-09	
APPROVED	DATE	PROJECT

Lewis River (River Mile 13-14)
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Lower Columbia Fish Enhancement Group

Project Site Map

SHEET
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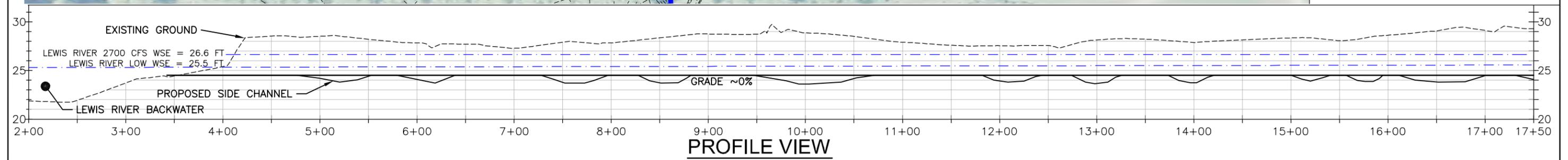
LEGEND

-  WOOD PLACEMENTS
-  EXISTING GROUND CONTOUR
-  PROPOSED GROUND CONTOUR



PLAN SCALE
FEET

PLAN VIEW



PROFILE VIEW

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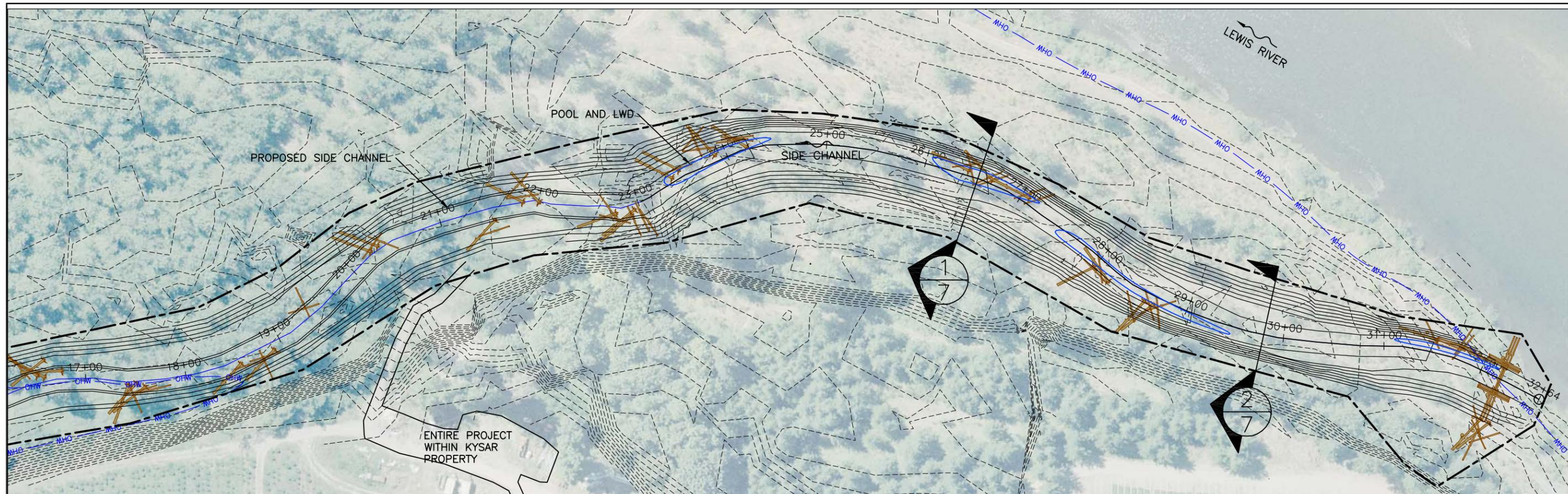
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SIDE CHANNEL
STA 2+00 TO 17+50
PLAN & PROFILE

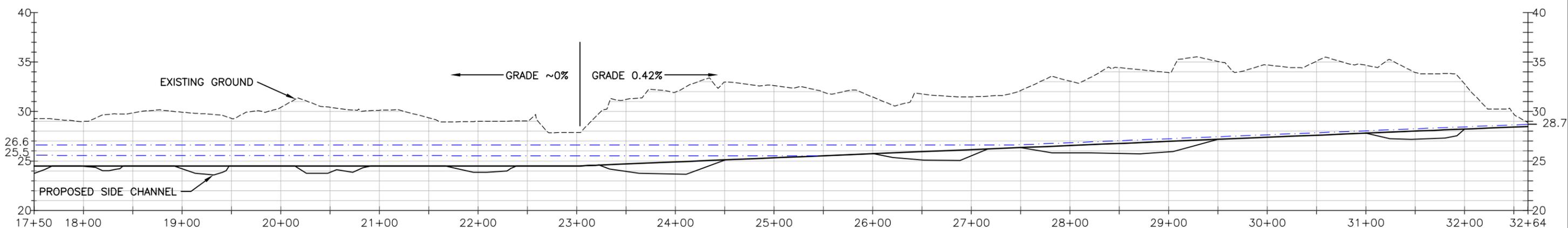
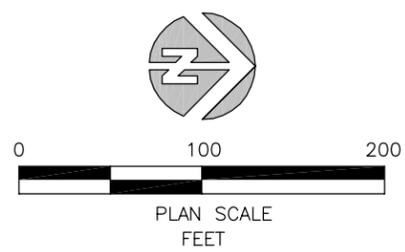
SHEET
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PLAN VIEW

LEGEND

-  WOOD PLACEMENTS
-  EXISTING GROUND CONTOUR
-  PROPOSED GROUND CONTOUR



PROFILE VIEW

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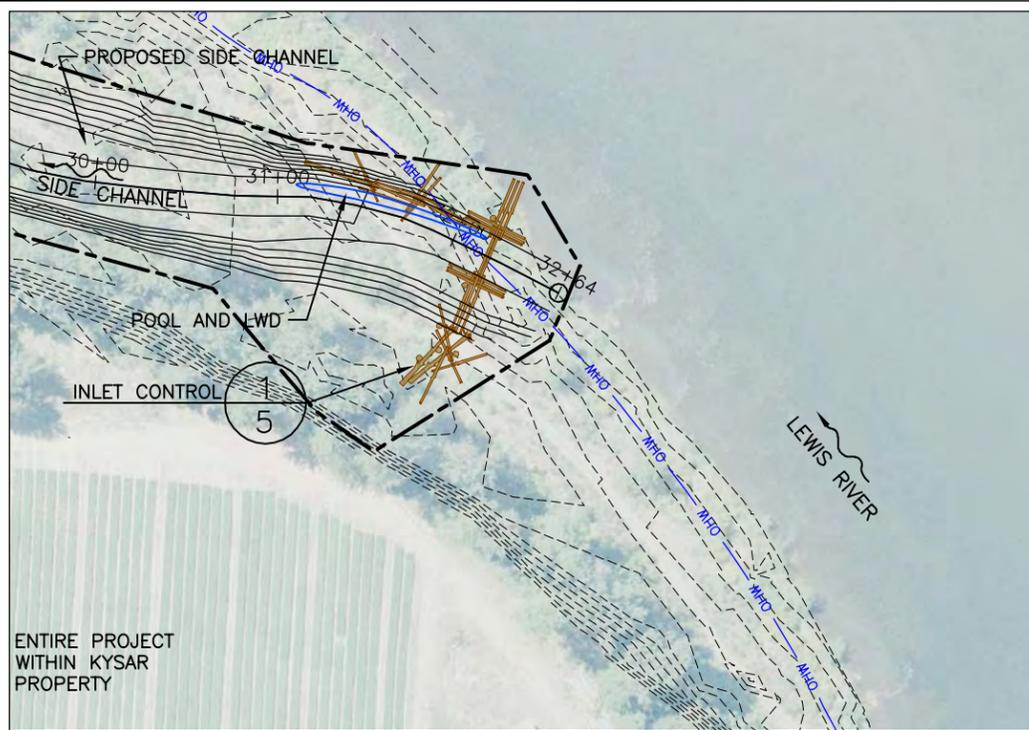
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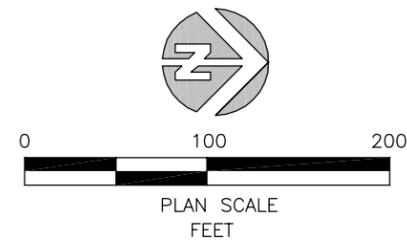


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SIDE CHANNEL
 STA 17+50 TO 32+64
 PLAN & PROFILE

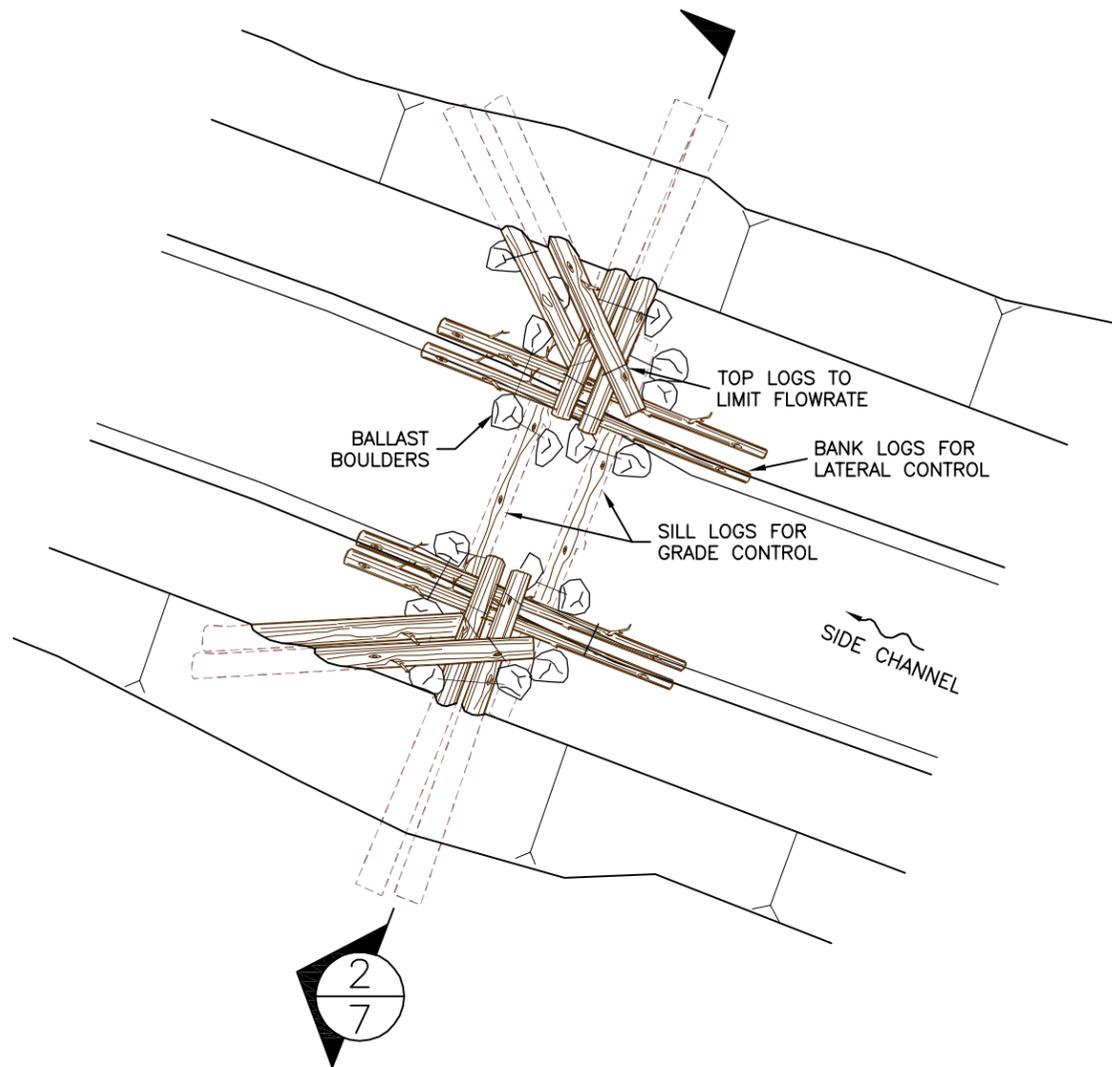


PLAN VIEW

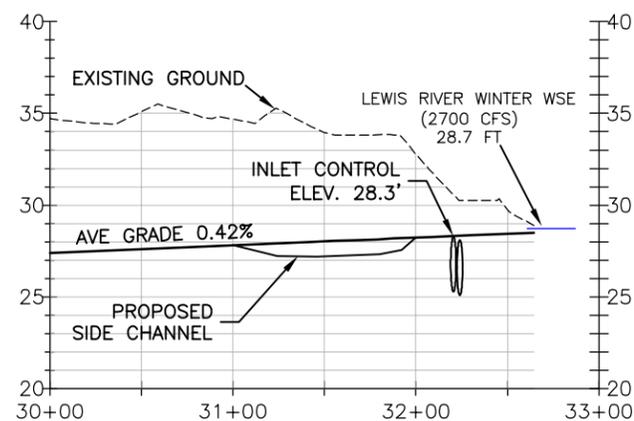
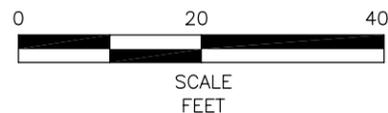


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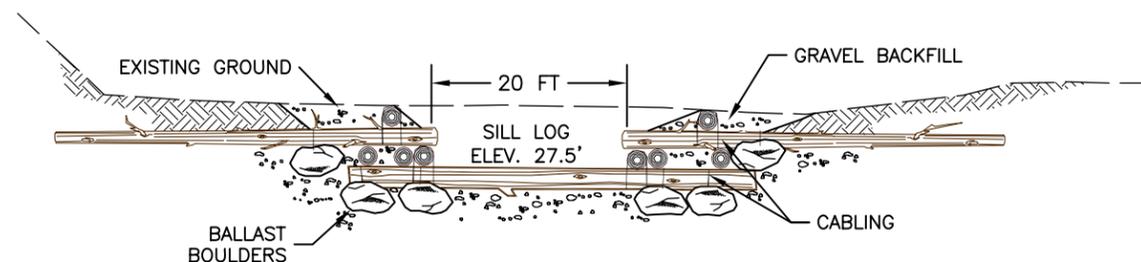
-  WOOD PLACEMENTS
-  EXISTING GROUND CONTOUR
-  PROPOSED GROUND CONTOUR



1 PLAN VIEW
5 INLET CONTROL



PROFILE VIEW



2 SECTION VIEW
5 INLET CONTROL

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APPROVED	DATE	PROJECT

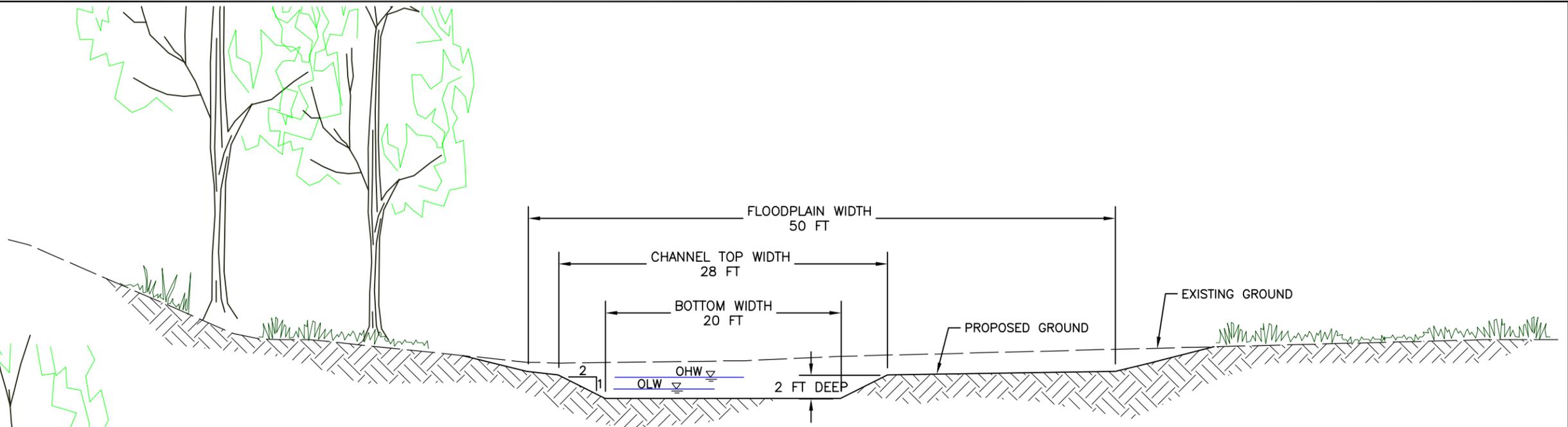
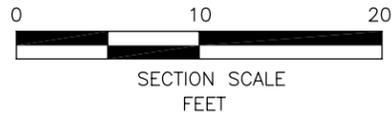
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SIDE CHANNEL
STA 30+00 TO 35+00
PLAN, PROFILE & DETAILS

SHEET
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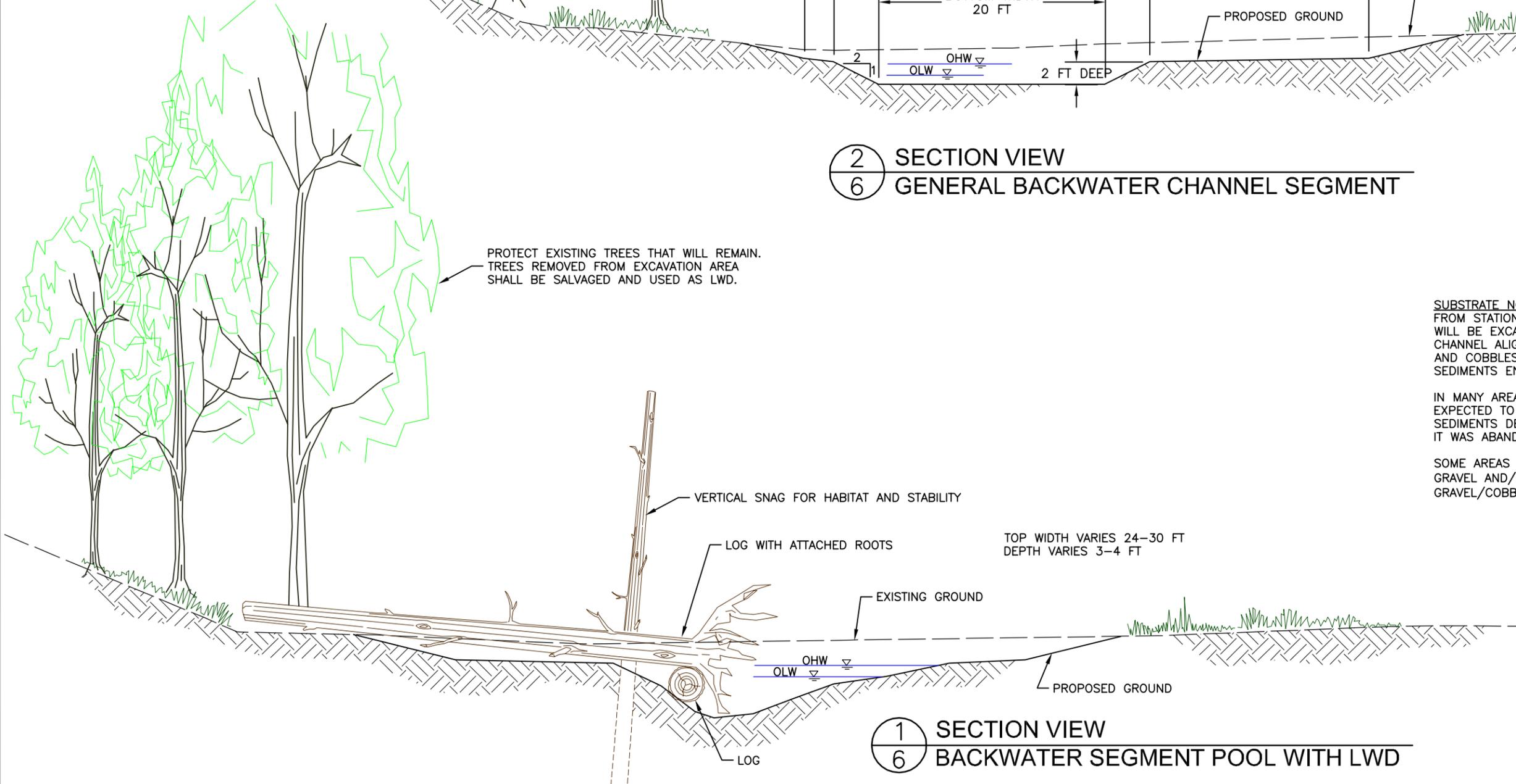
2 SECTION VIEW
6 GENERAL BACKWATER CHANNEL SEGMENT

PROTECT EXISTING TREES THAT WILL REMAIN. TREES REMOVED FROM EXCAVATION AREA SHALL BE SALVAGED AND USED AS LWD.

SUBSTRATE NOTES:
FROM STATION 3+50 TO 23+00, THE SIDE CHANNEL WILL BE EXCAVATED INTO A RELIC LEWIS RIVER CHANNEL ALIGNMENT WHERE NATIVE RIVER GRAVELS AND COBBLES ARE EXPECTED TO BE THE PREVALENT SEDIMENTS ENCOUNTERED AT THE DESIGN SURFACE.

IN MANY AREAS, THE UPPER 2 FT OF EXCAVATION IS EXPECTED TO CONTAIN FINE GRAINED FLOODPLAIN SEDIMENTS DEPOSITED IN THE RELIC CHANNEL AFTER IT WAS ABANDONED BY THE RIVER.

SOME AREAS MAY REQUIRE DEEPER EXCAVATIONS TO GRAVEL AND/OR PLACEMENT OF SALVAGED GRAVEL/COBBLE MATERIAL.



1 SECTION VIEW
6 BACKWATER SEGMENT POOL WITH LWD

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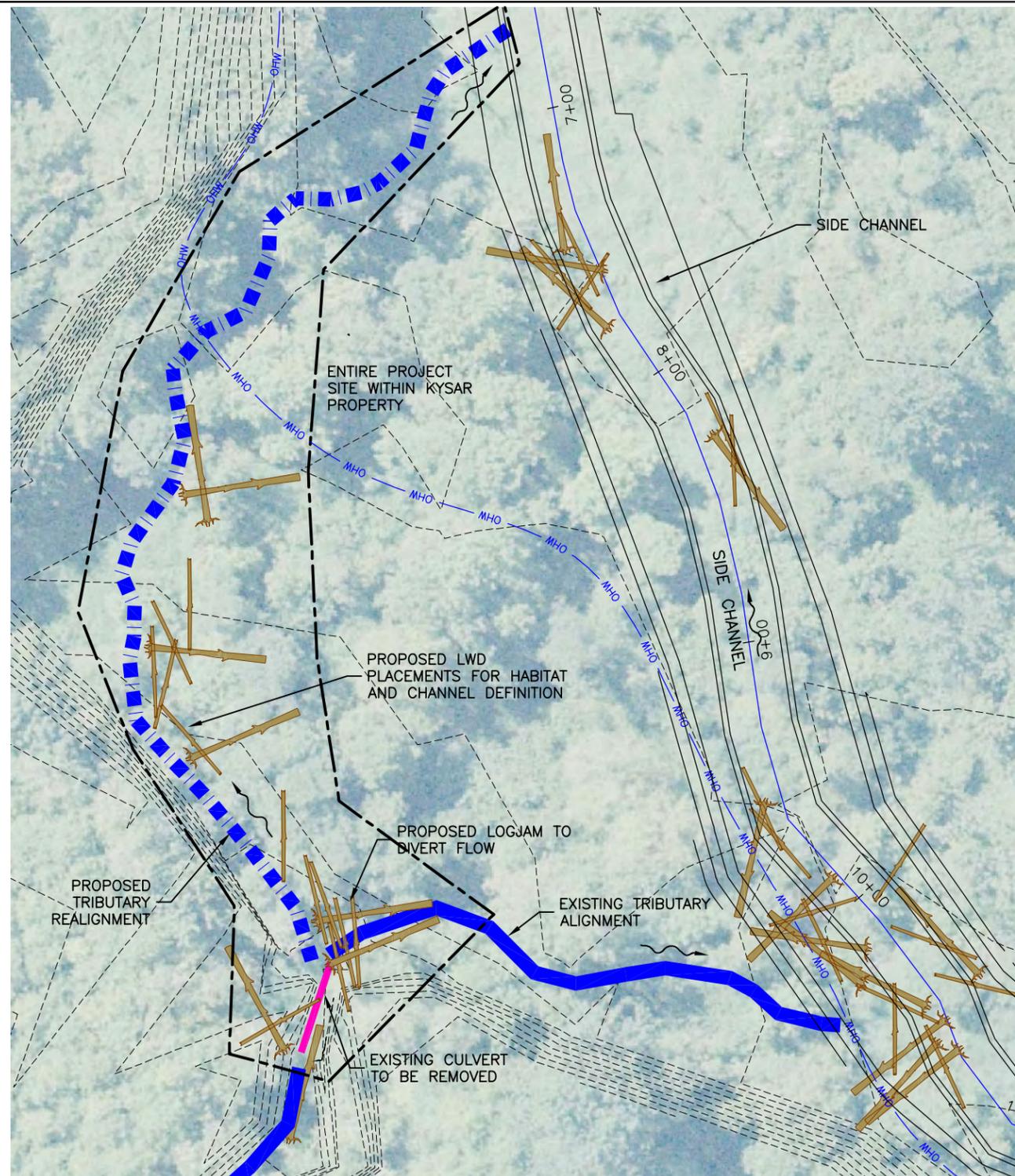
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SIDE CHANNEL
STA 3+50 TO 23+00
SECTION VIEWS



PLAN VIEW



PLAN SCALE
FEET

LEGEND



WOOD PLACEMENTS



EXISTING GROUND
CONTOUR



PROPOSED GROUND
CONTOUR

NO.	BY	DATE	REVISION DESCRIPTION

REP	GJ	GJ
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TRIBUTARY REALIGNMENT

SHEET

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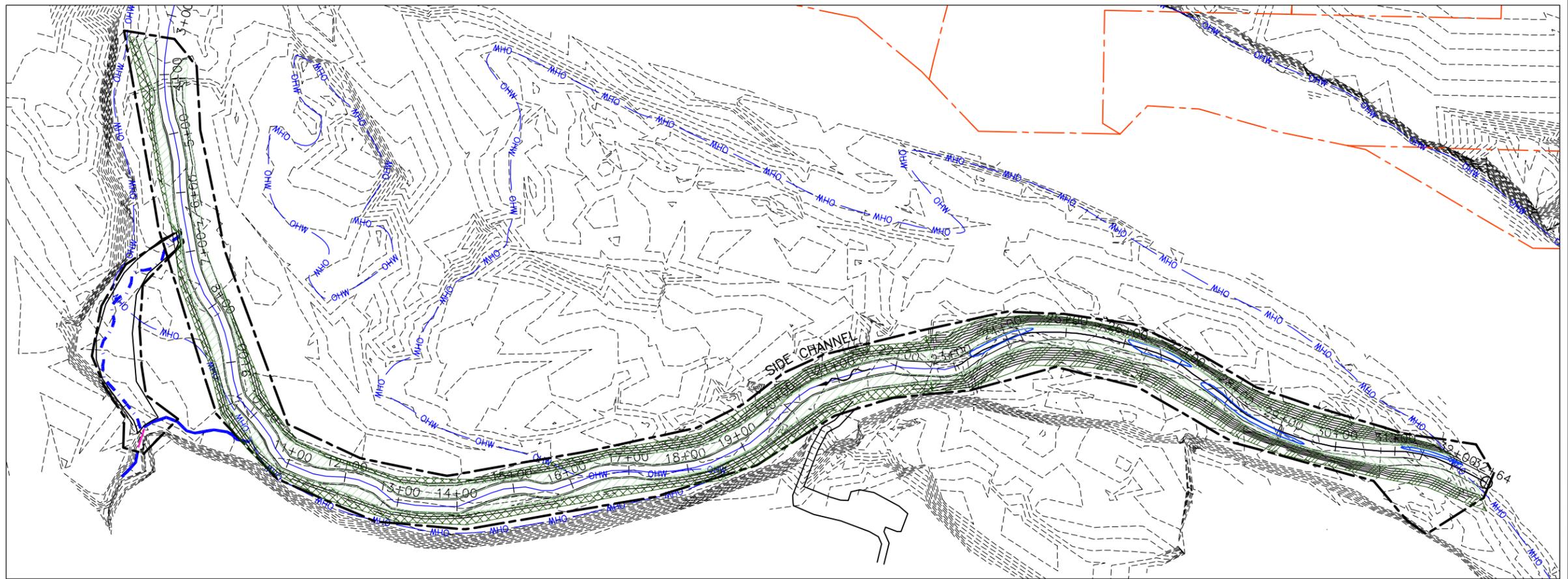
LEGEND

-  LIMITS
-  EXISTING GROUND CONTOUR
-  PROPOSED GROUND CONTOUR
-  PLANTING ZONE A
-  PLANTING ZONE B
-  PLANTING ZONE C
-  PLANTING ZONE D



PLAN SCALE
FEET

PLAN VIEW



Planting Zone A - Gravel Bar Restoration Area (1.10 acres)

Species	Plant Form	Minimum Size	Spacing	Number
Black Cottonwood (<i>Populus trichocarpa</i>)	Cuttings	36"	20'	60
Red Alder (<i>Alnus rubra</i>)	B. Root	2'	20'	60
sitka willow (<i>Salix lasiandra</i>)	Cuttings	36"	10'	100
Pacific willow (<i>Salix lasiandra</i>)	Cuttings	36"	10'	100
Snowberry (<i>Symphoricarpos alba</i>)	B. Root	18-24"	10'	75
Salmonberry (<i>Rubus spectabilis</i>)	B. Root	24-36"	10'	100
Serviceberry (<i>Amelanchier alniflora</i>)	B. Root	18-24"	10'	100
Total Plantings				595

Planting Zone B - Forested Restoration Area (1.65 acres)

Species	Plant Form	Minimum Size	Spacing	Number
Western red cedar (<i>Thuja plicata</i>)	B. Root	18-24"	12'	100
Douglas fir (<i>Pseudotsuga menziesii</i>)	B. Root	18-24"	12'	50
Red alder (<i>Alnus rubra</i>)	B. Root	18-24"	12'	100
Big leaf Maple (<i>Acer macrophyllum</i>)	B. Root	18-24"	12'	100
Black cottonwood (<i>Populus balsamifera</i>)	Cuttings	36"	15'	150
Bitter Cherry (<i>Prunus emarginata</i>)	B. Root	18-24"	8'	100
Vine maple (<i>Acer circinatum</i>)	B. Root	18-24"	8'	50
Snowberry (<i>Symphoricarpos alba</i>)	B. Root	18-24"	8'	100
Ocean Spray (<i>holodiscus discolor</i>)	B. Root	18-24"	8'	125
Indian Plum (<i>Oemleria cerasiformis</i>)	B. Root	18-24"	8'	100
sitka willow (<i>Salix lasiandra</i>)	Cuttings	36"	8'	200
Pacific willow (<i>Salix lasiandra</i>)	Cuttings	36"	8'	200
Red-Osier Dogwood (<i>Cornus stolonifera</i>)	B. Root	18"	8'	150
Total Plantings				1525

Planting Zone C - Upstream flood plains (0.55 acres)

Species	Plant Form	Minimum Size	Spacing	Number
Black cottonwood (<i>Populus balsamifera</i>)	Cuttings	36"	15'	160
Scouler willow (<i>Salix scoulerana</i>)	Cuttings	36"	8'	100
Pacific willow (<i>Salix lasiandra</i>)	Cuttings	36"	8'	150
Red-Osier Dogwood (<i>Cornus stolonifera</i>)	Cuttings	36"	8'	125
Total Plantings				535

Planting Zone D - Downstream floodplains (1.24 acres)

Species	Plant Form	Minimum Size	Spacing	Number
Trees				
Oregon ash (<i>Fraxinus latifolia</i>)	B. Root	18-24"	12'	175
Black cottonwood (<i>Populus balsamifera</i>)	Cuttings	36"	12'	200
Red-Osier Dogwood (<i>Cornus stolonifera</i>)	Cuttings	36"	8'	195
Nootka rose (<i>Rosa nutkana</i>)	B. Root	18-24"	8'	200
Scouler willow (<i>Salix scoulerana</i>)	Cuttings	36"	8'	300
Douglas Spiraea (<i>Spiraea douglasii</i>)	Cuttings	36"	8'	150
Total Plantings				1220

Restoration Seed Mix
Seeding rate = 35 lbs/acre

Scientific Name	Common Name	Pure Live Seed % per lb.
<i>Elymus glaucus</i>	Blue wildrye	40
<i>Festuca rubra</i>	Red Fescue	25
<i>Deschampsia caespitosa</i>	Tufted hairgrass	20
<i>Bromus carinatus</i>	California Brome	10
<i>Lupinus polyphyllus</i>	Large leaf lupine	5

Notes:

- Apply to disturbed areas including the access road and staging area.
- Apply via broadcast seeding to be uniformly and evenly distributed.
- Seed mix shall be well-mixed before and during application to ensure even distribution of all species.
- Total acreage = 4.54 acres; total lbs = 159 lbs

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PLANTING PLAN

SHEET

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