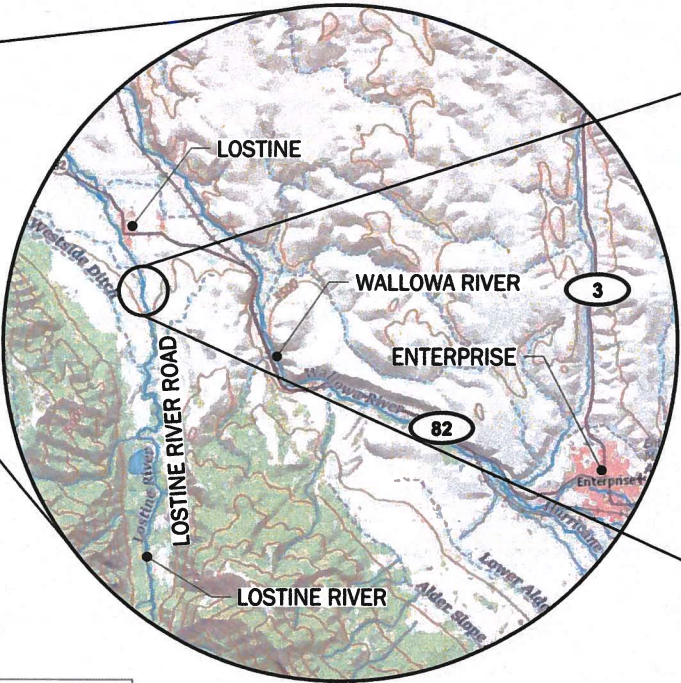


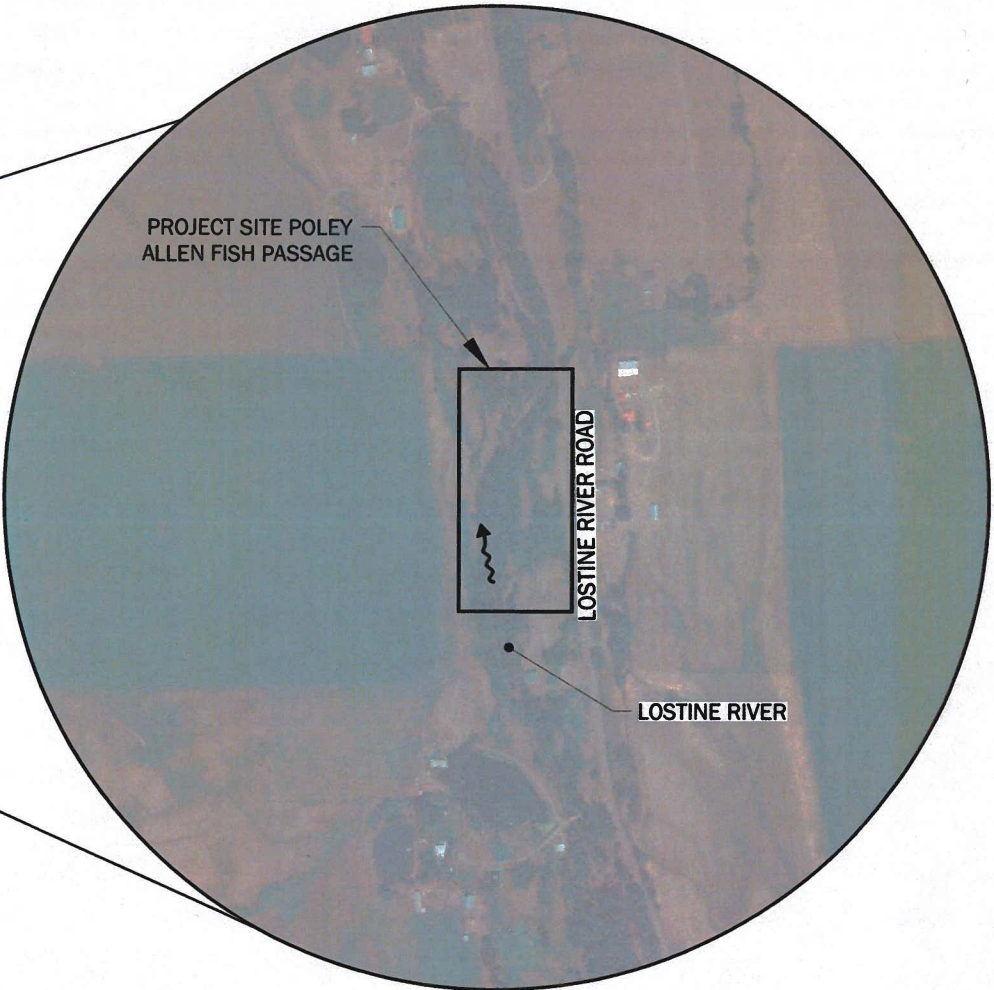
LOSTINE RIVER POLEY ALLEN FISH PASSAGE

FINAL DESIGN

WALLOWA COUNTY, OREGON



NOT TO SCALE



NOT TO SCALE

SHEET INDEX

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CONTACT INFORMATION

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EXPIRES: DEC. 31, 2023

NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

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DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



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LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

COVER SHEET

DRAWING NUMBER:

1.1

SHEET: 1 OF 19

P:\0057102\102101River Restoration Design\01_Final Design\057102101_Sht 2_1.2 [General Notes, Quantities and Legends].dwg
Plotted: 07/12/2023, 12:34 | svl

GENERAL NOTES:

1. THESE DESIGNS AND DRAWINGS HAVE BEEN PREPARED FOR THE EXCLUSIVE USE OF THE NEZ PERCE TRIBE (NPT) AND THEIR AUTHORIZED AGENTS. NO OTHER PARTY MAY RELY ON THE PRODUCT OF OUR SERVICES UNLESS GEOENGINEERS INC. (GEOENGINEERS) AGREES IN WRITING IN ADVANCE OF SUCH USE.
2. THE DRAWINGS CONTAINED WITHIN SHOULD NOT BE APPLIED FOR ANY PURPOSE OR PROJECT EXCEPT THE LOSTINE RIVER POLEY ALLEN FISH PASSAGE AS SHOWN IN THE PROJECT AREA LOCATED ON DRAWING 1.1.
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4. NPT IS ADVISED TO OBTAIN THE NECESSARY PERMITS AND APPROVALS FROM ALL APPROPRIATE REGULATORY AGENCIES (LOCAL, STATE, AND FEDERAL) PRIOR TO CONSTRUCTION.
5. GEOMORPHIC CONDITIONS CAN CHANGE AND THESE DESIGNS ARE BASED ON CONDITIONS THAT EXISTED AT THE TIME THE DESIGN WAS PERFORMED. THE RESULTS OF THESE DESIGNS MAY BE AFFECTED BY THE PASSAGE OF TIME, BY MANMADE EVENTS SUCH AS CONSTRUCTION ON OR ADJACENT TO THE SITE, OR BY NATURAL EVENTS SUCH AS FLOODS, EARTHQUAKES, SLOPE INSTABILITY OR GROUNDWATER FLUCTUATIONS. ALWAYS CONTACT GEOENGINEERS BEFORE APPLYING THESE DESIGNS TO DETERMINE IF THEY REMAIN APPLICABLE.
6. ALL RIVERS, STREAMS, ROCKS AND FISH PASSAGE STRUCTURES ARE POTENTIALLY DANGEROUS. THESE PROPOSED IMPROVEMENTS ARE INTENDED TO ADDRESS FISH PASSAGE CONSTRAINTS. THESE STRUCTURES ARE INHERENTLY DANGEROUS TO PEOPLE IN OR AROUND THEM. NPT AND THE PROPERTY OWNER SHOULD ADDRESS SAFETY CONCERNS APPROPRIATELY.
7. POTENTIAL REGULATORY CHANGES TO FLOOD ELEVATIONS AND FLOOD EXTENTS RESULTING FROM THE PROPOSED ENHANCEMENTS HAVE NOT BEEN ADDRESSED BY GEOENGINEERS AS PART OF THIS PROJECT.
8. IN GENERAL, THE PROPOSED ENHANCEMENTS ARE INTENDED TO RESULT IN MORE STABLE STREAMBEDS, BANKS AND FLOODPLAINS. HOWEVER, CHANNEL EROSION, CHANNEL MIGRATION AND/OR AVULSIONS CAN BE EXPECTED TO OCCUR OVER TIME. THESE CHANNEL PROCESSES ARE NATURAL AND APPROPRIATE FOR THESE STREAM SYSTEMS.
9. DESIGN SPECIFICS FOR STRUCTURES SHALL BE CONFIRMED AND/OR VERIFIED BY A QUALIFIED ENGINEER PRIOR TO OR DURING CONSTRUCTION AT EACH PROPOSED STRUCTURE LOCATION.
10. THESE FIGURES WERE ORIGINALLY PRODUCED IN COLOR.

VISION

MAXIMIZE FISH PASSAGE AT THE POLEY ALLEN DIVERSION FOR ALL LIFE HISTORY STAGES OF BULL TROUT, STEELHEAD, AND CHINOOK SLAMON, WHILE MAINTAINING ACCESS TO IRRIGATION WATER FOR CURRENT WATER RIGHTS HOLDERS.

GOAL

PROMOTE NATURAL RIVER AND FLOODPLAIN CONDITIONS WHILE MAINTAINING IRRIGATION ACCESS THROUGH CONSTRUCTION OF A ROUGHENED CHANNEL WITH BANK STABILIZATION PROVIDED BY LARGE WOODY MATERIAL STRUCTURES. BOULDERS WITHIN THE ROUGHENED CHANNEL WILL INCREASE HYDRAULIC COMPLEXITY AND ROUGHNESS.

OBJECTIVES

1. DEVELOP AND SELECT FISH PASSAGE DESIGN FOR JUVENILE AND ADULT BULL TROUT, STEELHEAD AND SPRING CHINOOK SALMON DURING PERIODS OF MIGRATION THAT ACHIEVE OREGON DEPARTMENT OF FISH AND WILDLIFE (ODFW) AND NATIONAL MARINE FISHERIES SERVICE (NMFS) FISH PASSAGE CRITERIA TO THE GREATEST EXTENT PRACTICAL.
2. DEVELOP FISH PASSAGE DESIGNS THAT MAINTAIN ACCESS AND USE OF IRRIGATION WATER FOR WATER RIGHTS HOLDERS AND IRRIGATORS.
3. PROVIDE A SUSTAINABLE, PERMITTABLE, AND EASILY MAINTAINED PROPOSED CONDITION AT A REASONABLE COST.

CONSTRUCTION NOTES:

1. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BARRICADES, SAFETY DEVICES AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA.
2. ALL MATERIAL AND WORKMANSHIP FURNISHED ON OR FOR THE PROJECT MUST MEET THE MINIMUM REQUIREMENTS OF PROJECT PERMITS, APPROVING AGENCIES, SPECIFICATIONS AS SET FORTH HEREIN, OR WHICHEVER IS MORE RESTRICTIVE.
3. ALL FEDERAL, STATE AND LOCAL PERMITS SHALL BE OBTAINED BY THE CLIENT PRIOR TO CONSTRUCTION ACTIVITY COMMENCEMENT.
4. THE CONTRACTOR SHALL INSTALL AND MAINTAIN APPROPRIATE EROSION AND SEDIMENT CONTROL DEVICES THROUGHOUT THE WHOLE PROJECT SITE, INCLUDING THOSE ASSOCIATED WITH CONSTRUCTION ACCESS, STAGING AND STOCKPILE AREAS THROUGHOUT THE PROJECT'S CONSTRUCTION PERIOD. TEMPORARY CONSTRUCTION AND PERMANENT EROSION CONTROL MEASURES SHALL BE DESIGNED, CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
5. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE CONSTRUCTION AREAS AND ACCESS ROUTES TO MINIMIZE DISTURBANCE OF THE EXISTING VEGETATION AND LANDSCAPE. ALL PUBLIC AND PRIVATE PROPERTY EITHER INSIDE OR OUTSIDE THE CONSTRUCTION LIMITS IMPACTED BY CONSTRUCTION SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO THE CONSTRUCTION. NO CONSTRUCTION-RELATED MATERIALS, DEBRIS, GARBAGE, EQUIPMENT, FUEL, PROVISIONS OF ANY KIND SHALL REMAIN ON SITE AFTER CONSTRUCTION. NO STOCKPILES OR EXCAVATIONS ARE TO REMAIN AFTER CONSTRUCTION UNLESS AUTHORIZED BY NPT. THE SITE WILL BE GRADED TO APPEAR NATURAL AND CONFORM TO THE NATURAL TOPOGRAPHY.
6. CONSTRUCTION SHALL MINIMIZE DISTURBANCE TO, AND MAXIMIZE REUSE OF, EXISTING RIPARIAN VEGETATION TO REMAIN AND SALVAGE.
7. ONLY APPROPRIATE APPROVED NATIVE RIPARIAN VEGETATION SHALL BE USED FOR CUTTINGS AND TRANSPLANTING. VEGETATION CUTTING, TRANSPLANTING, PLANTING AND IRRIGATION SHALL BE MANAGED BY AN APPROPRIATE PROFESSIONAL.
8. CONSTRUCTION RECORDS AND AS-BUILT INFORMATION SHALL BE ACCURATELY RECORDED BY THE CONTRACTOR AND SUPPLIED TO THE OWNER AND GEOENGINEERS, REFERENCE AND MONITORING. SUBMITTAL OF RECORD INFORMATION IS A CONDITION OF FINAL ACCEPTANCE.
9. THIS DESIGN HAS BEEN PERFORMED AND THESE PLANS HAVE BEEN PREPARED WITH THE EXPRESS UNDERSTANDING THAT GEOENGINEERS WILL BE ON-SITE DURING CONSTRUCTION TO HELP THE CONTRACT INTERPRET THE DESIGN PLANS AND INTENT.
10. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING TURBIDITY MONITORING AS INDICATED IN THE BONNEVILLE POWER ADMINISTRATION HIP GUIDELINES. MEASURE BASELINE DATA APPROXIMATELY 100 FEET UPSTREAM OF THE PROPOSED DISTURBANCE USING A TURBIDIMETER. RECORD READINGS ON THE STANDARD PROJECT COMPLETION FORM. MEASURE TURBIDITY APPROXIMATELY 50 FEET DOWNSTREAM OF THE DISTURBANCE AREA EVERY 2 HOURS WHILE WORK IS BEING IMPLEMENTED.

Item Description	Units	No. of Units
Mobilization and Demobilization	LS	1
Pollution Control	LS	1
Sawcut Sill Abutment	LS	1
Clearing, Grubbing, Stockpile and Disposal	AC	1
Excavation and Stockpile	CY	775
Earthfill - Stockpiled Material	CY	444
Earthfill - Stockpiled Habitat Boulders	CY	233
Earthfill - Imported Habitat Boulders	CY	211
Earthfill - Imported Streambed Sediment	CY	222
Concrete Repair	CY	8
Work Zone Isolation and Dewatering	LS	1
Large Woody Material Structures	EA	20
Permanent Seeding, Fertilizing and Mulching	AC	1
Planting	EA	260

LEGEND (EXISTING)

- EXISTING MAJOR (5-FT) CONTOUR LINE
- EXISTING MINOR (1-FT) CONTOUR LINE
- LOSTINE RIVER ALIGNMENT
- PARCEL BOUNDARY
- EXISTING IRRIGATION DITCH
- EXISTING SIDE CHANNEL
- EXISTING APPROXIMATE OHW (1.5-YR)
- EXISTING APPROXIMATE 100-YR
- SURVEY BENCHMARK
- FLOW DIRECTION

LEGEND (PROPOSED)

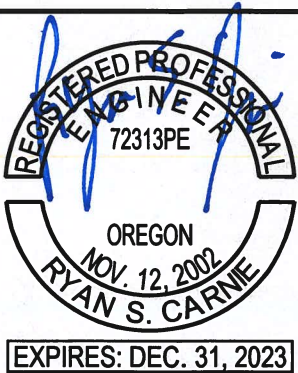
- PROPOSED MAJOR (10-FT) CONTOUR LINE
- PROPOSED MINOR (2-FT) CONTOUR LINE
- EXCAVATION LIMITS
- PROPOSED ROUGHENED CHANNEL
- TEMPORARY CONSTRUCTION ACCESS
- TEMPORARY CONSTRUCTION STAGING
- DEMOLITION LIMITS
- TEMPORARY STREAM ISOLATION
- PROJECT DISTURBANCE LIMITS
- TEMPORARY STOCKPILING LOCATION
- PROPOSED WILLOW STAKES
- PROPOSED NATIVE SEED MIX
- LWM - TYPE A - ROOTWAD
- LWM - TYPE B - WHOLE TREE
- LWM - TYPE C - SWEEPER
- LWM - TYPE D - BANK ROOTWAD

CROSS SECTION NAME



DRAWING LOCATION CALLOUT

DRAWING LOCATION



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
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DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



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WALLOWA COUNTY, OREGON

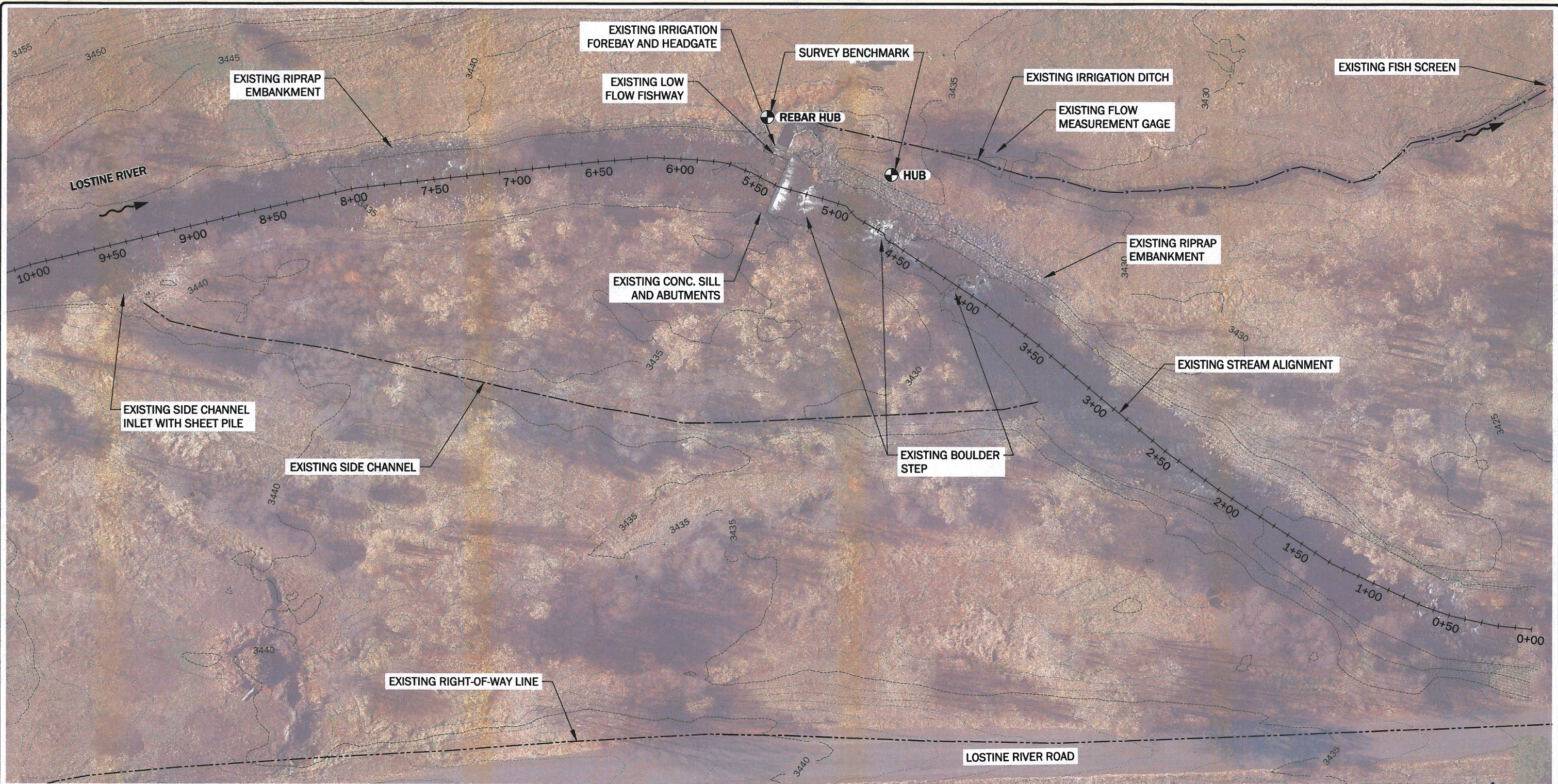
GENERAL NOTES, QUANTITIES AND LEGENDS

DRAWING NUMBER:

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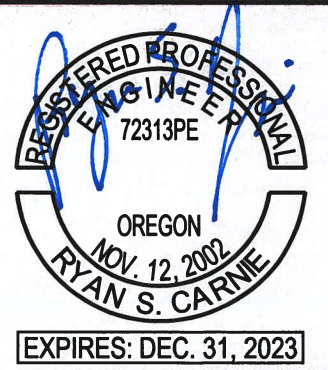
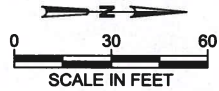
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Plotted: 07/12/2023, 12:34 | syf



SURVEY BENCHMARKS

POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
100	3436.95	673593.62	8990262.14	REBAR HUB
101	3437.06	673668.79	8990296.93	HUB



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WALLOWA COUNTY, OREGON

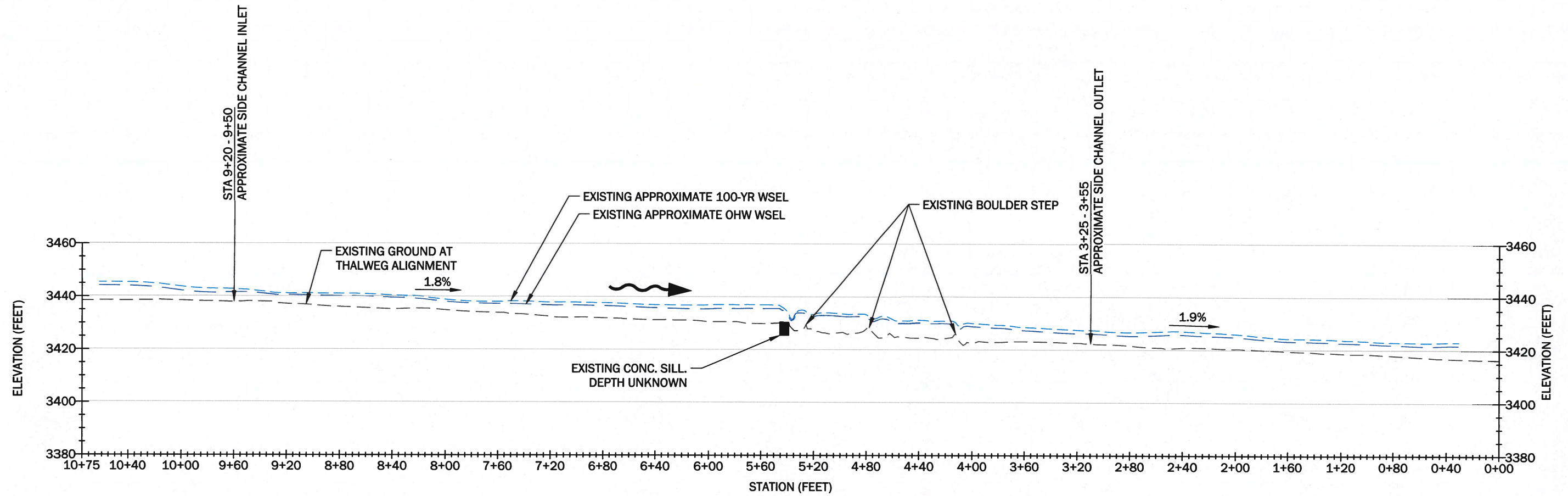
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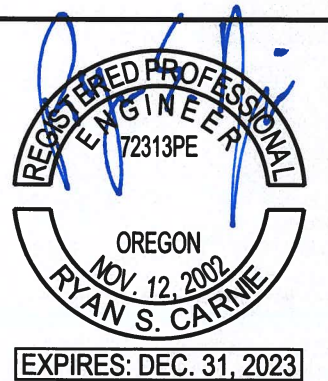
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EXISTING CONDITIONS LONG PROFILE

2X VERT. EXAGGERATION



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WALLOWA COUNTY, OREGON

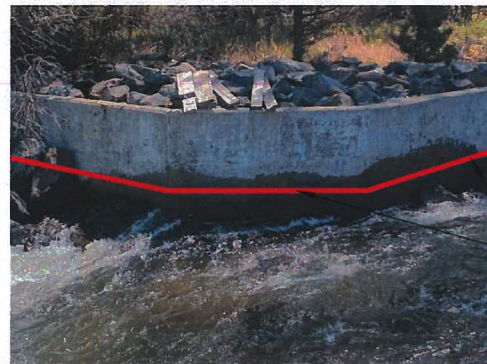
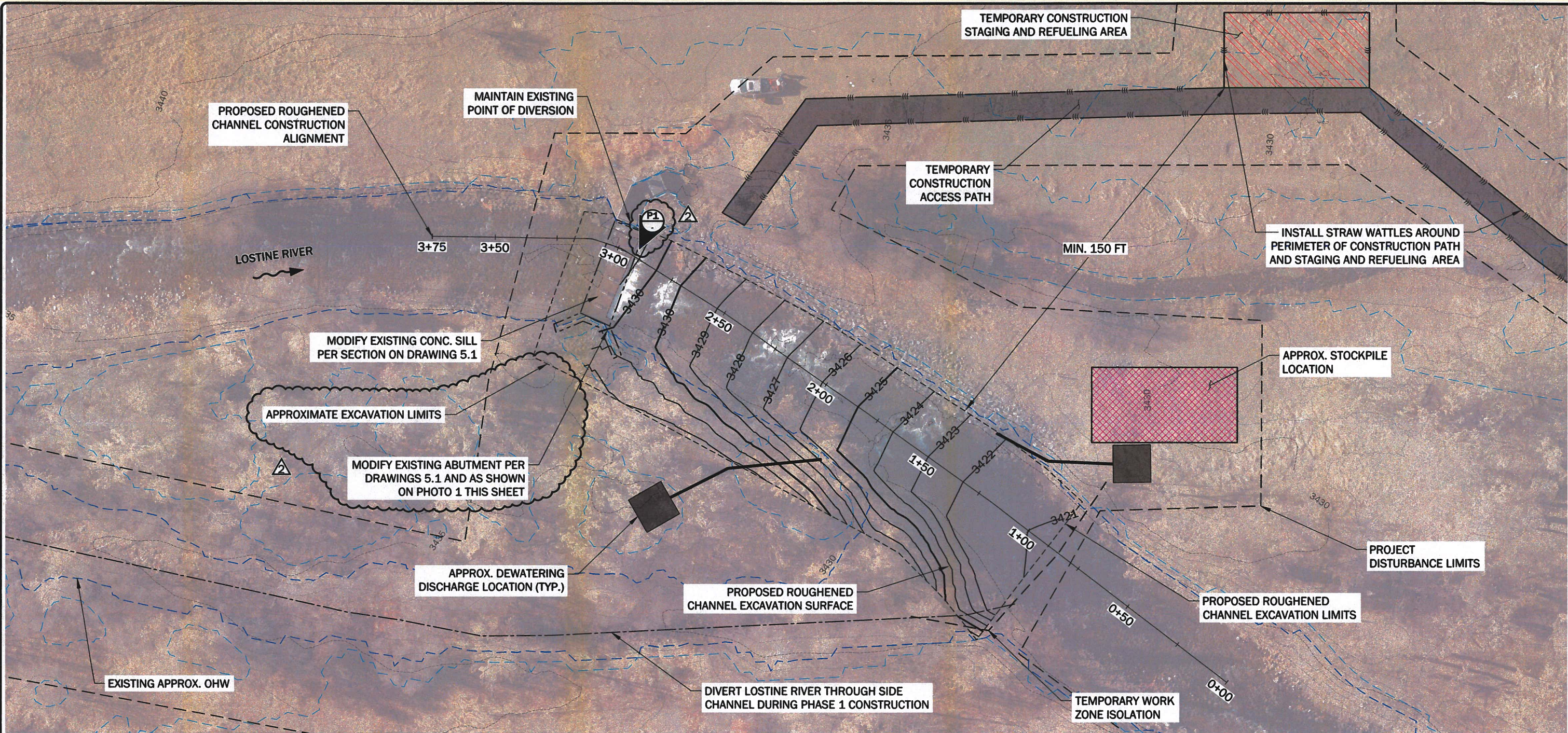
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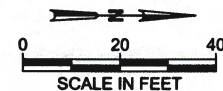
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SHEET: 4 OF 19

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SAWCUT CONCRETE ABUTMENT WALL AT TOP OF BOARD SLOT ELEVATION



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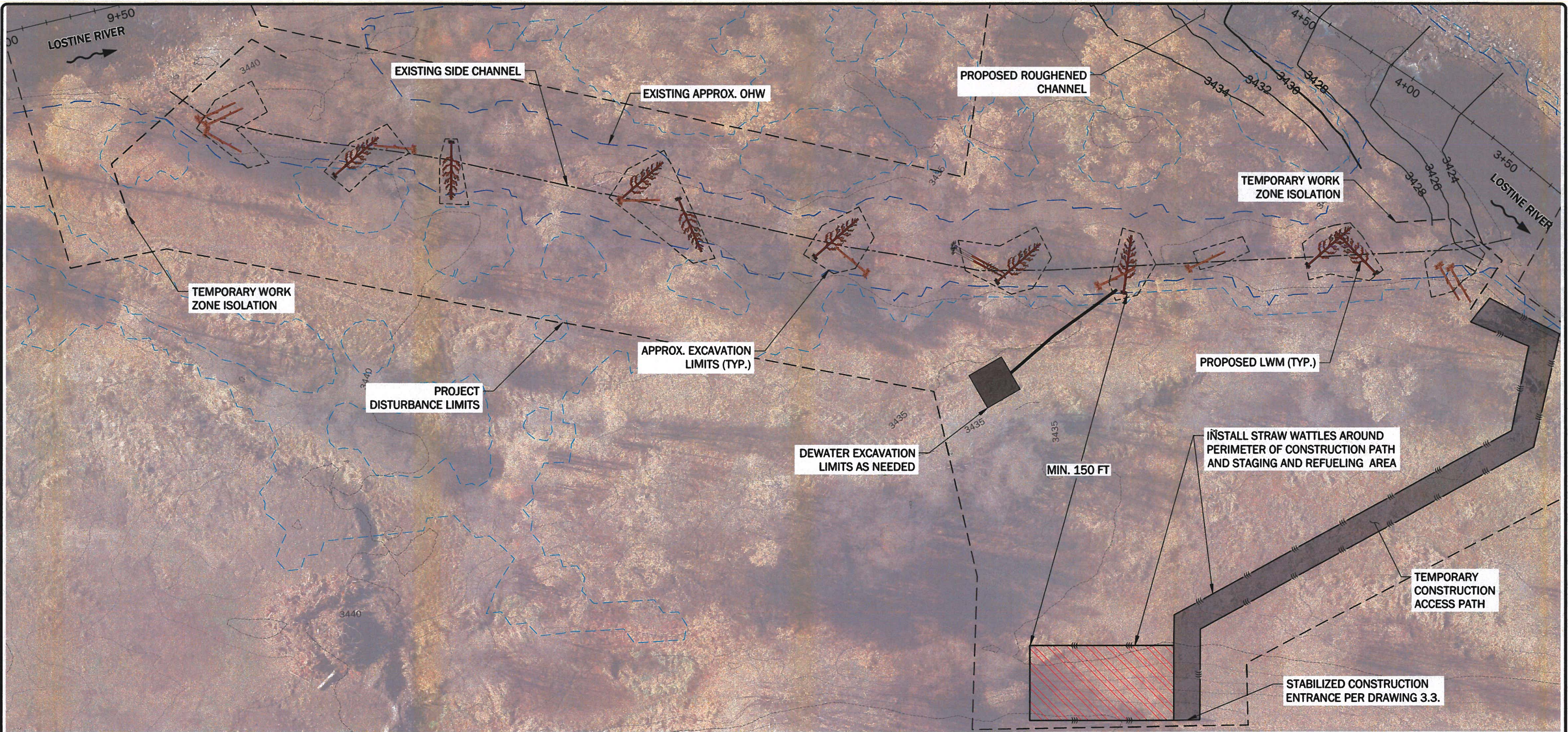
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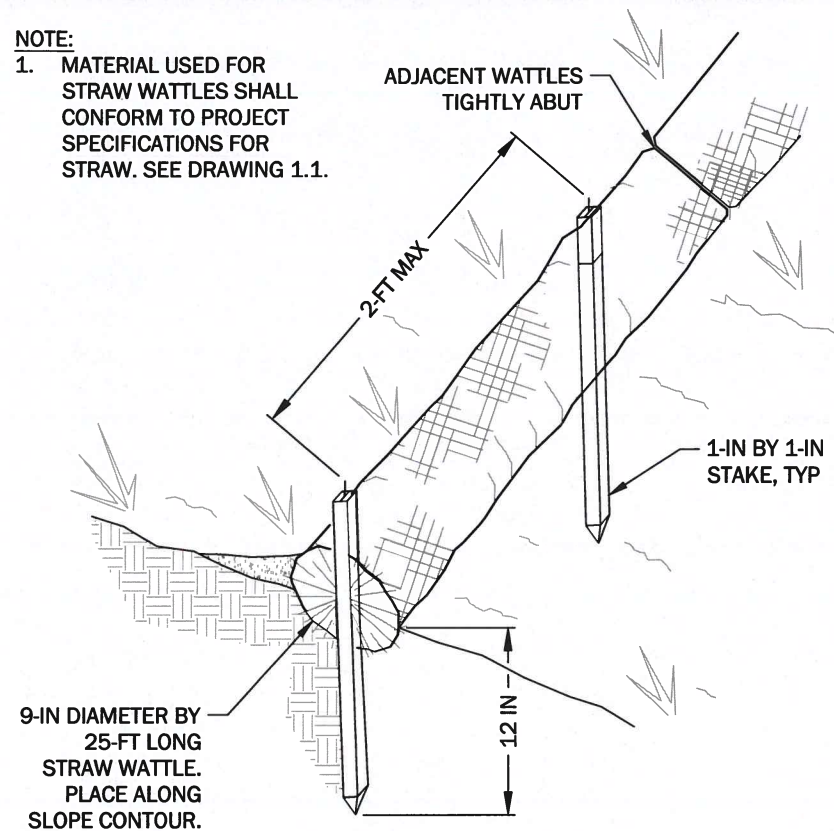
LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON
EXCAVATION, DEMOLITION, AND EROSION
CONTROL PLAN - ROUGHENED CHANNEL

DRAWING NUMBER:
3.1
SHEET: 5 OF 19

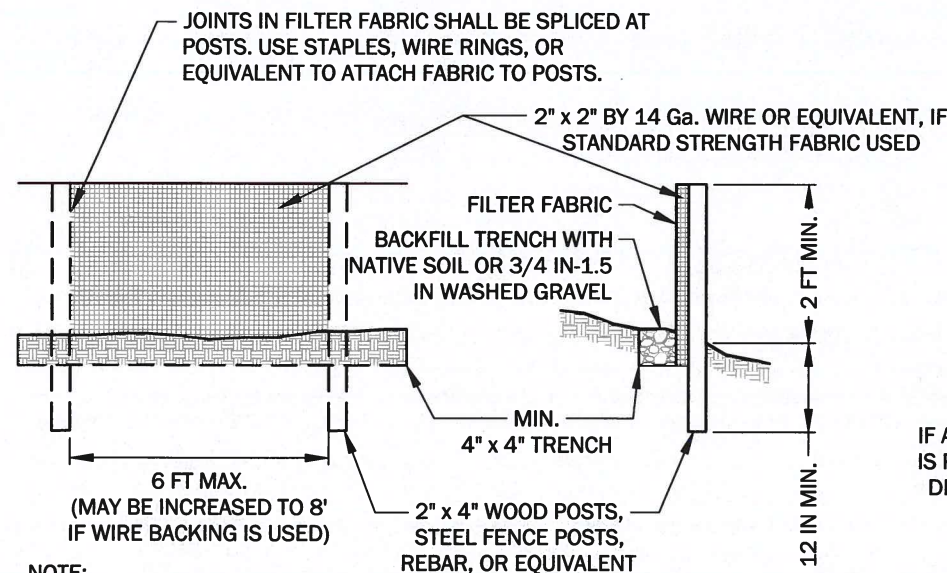
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Plotted: 07/12/2023, 12:35 | syj



NOTE:
1. MATERIAL USED FOR STRAW WATTLES SHALL CONFORM TO PROJECT SPECIFICATIONS FOR STRAW. SEE DRAWING 1.1.



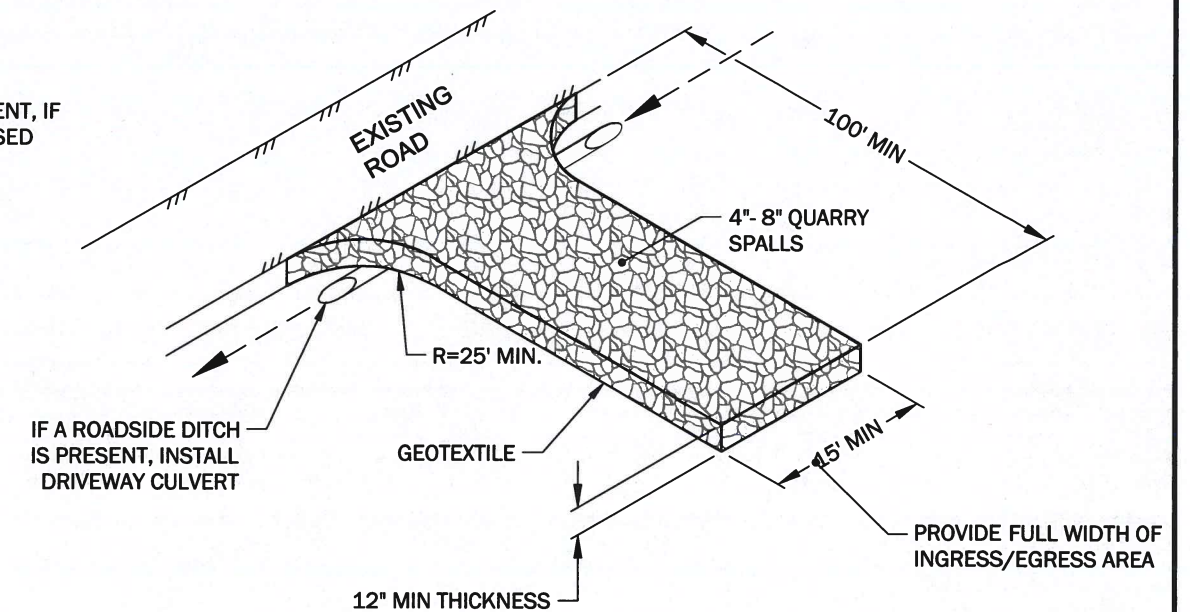
STRAW WATTLE
SCALE: NOT TO SCALE
3.3



NOTE:
1. FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE.

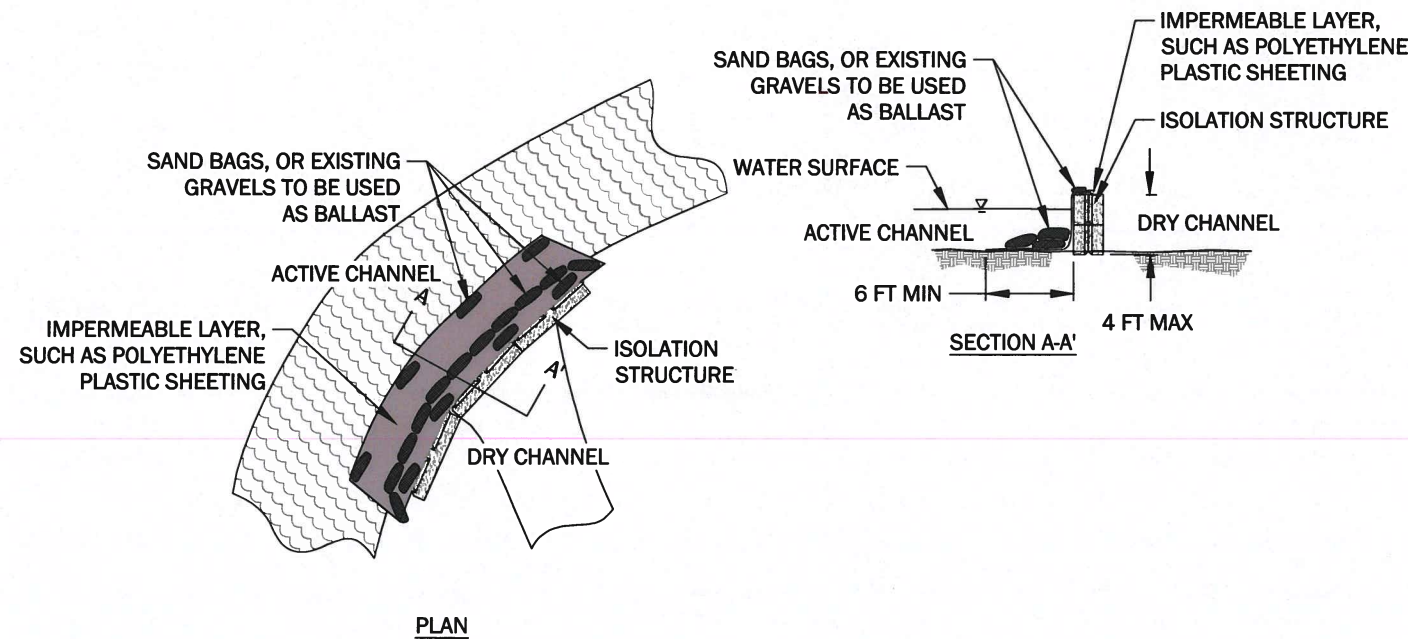
SEDIMENT FENCE DETAIL
SCALE: NOT TO SCALE
3.3

- NOTES:
1. SEDIMENT FENCE TO HAVE STITCHED LOOPS AROUND 2" x 2" POSTS.
 2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
 3. 3" MIN x 2" x 2" FIR, PINE OR STEEL FENCE POSTS.
 4. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
 5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.



STABILIZED CONSTRUCTION ENTRANCE DETAIL
SCALE: NOT TO SCALE
3.3

- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
 4. WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.



WORK ZONE ISOLATION STRUCTURE
SCALE: NOT TO SCALE
3.3



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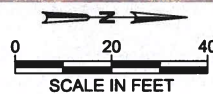
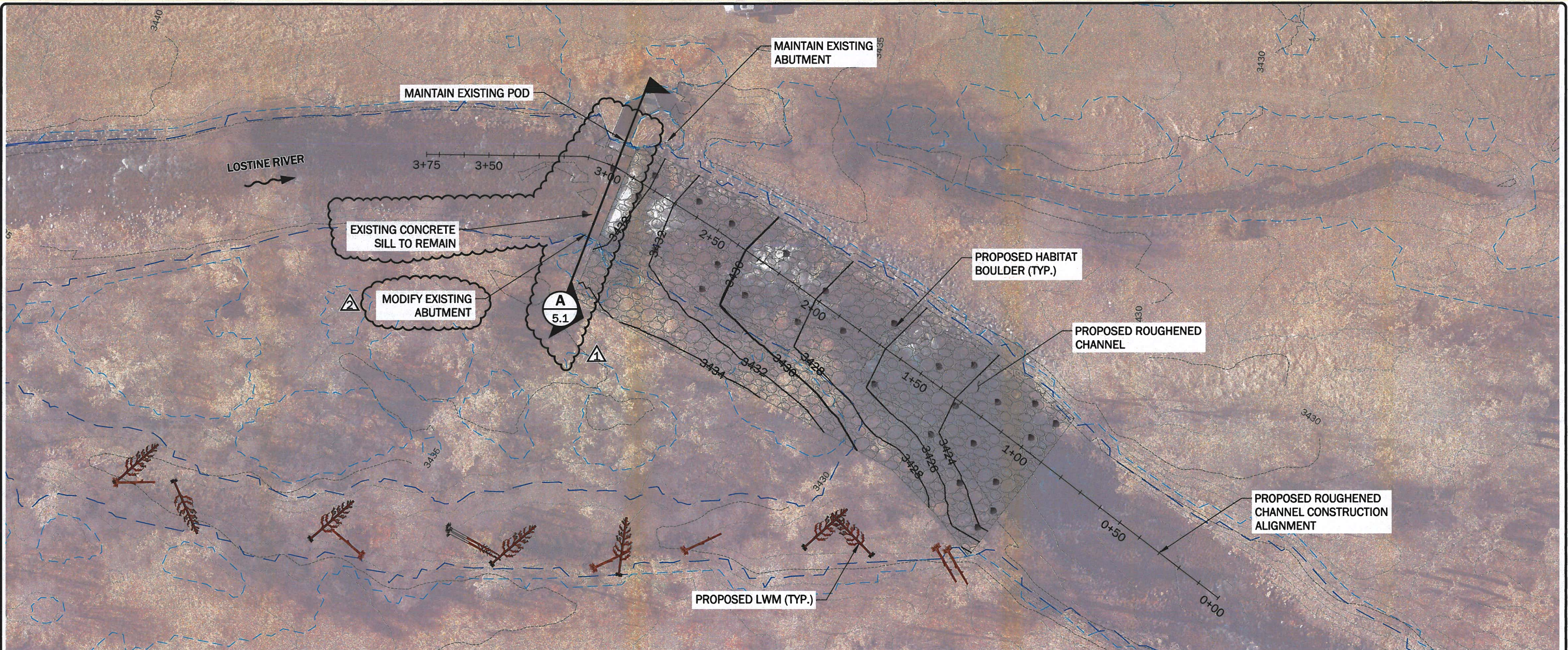
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LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON
EROSION AND SEDIMENT CONTROL DETAILS

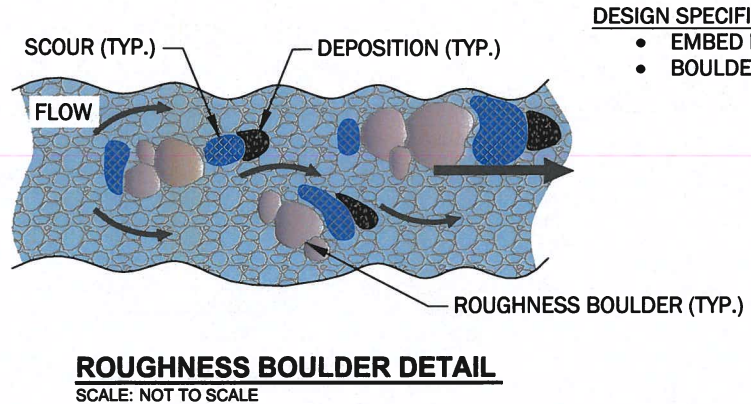
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SHEET: 7 OF 19

P:\00571021\CAD\01\River Restoration Design\01_Final Design\057102101_Sht 8.4.1 [Proposed Conditions Roughened Channel Plan].dwg
Plotted: 07/12/2023, 12:36 | syi



START STATION	START NORTHING (FT)	START EASTING (FT)	LINE/CHORD DIRECTION	CURVE RADIUS	LENGTH	END STATION
0+00	673842.1	8990465.7	S37° 28' 46.13"W		117.9	1+18
1+18	673748.5	8990394.0	S35° 34' 27.55"W		61.3	1+79
1+79	673698.7	8990358.3	S35° 02' 11.39"W		70.7	2+50
2+50	673640.8	8990317.7	S32° 05' 43.40"W		43.0	2+93
2+93	673604.4	8990294.9	S25° 20' 03.31"W	50	11.8	3+05
3+05	673593.7	8990289.8	S18° 34' 23.21"W		4.1	3+09
3+09	673589.8	8990288.5	S09° 41' 38.18"W	15	4.6	3+13
3+13	673585.2	8990287.7	S00° 48' 53.15"W		61.7	3+75

CONSTRUCTION ALIGNMENT STAKING TABLE



- DESIGN SPECIFICS:
- EMBED BOULDERS 2/3 IN CHANNEL BED
 - BOULDER DIAMETER 24 TO 48 INCHES.



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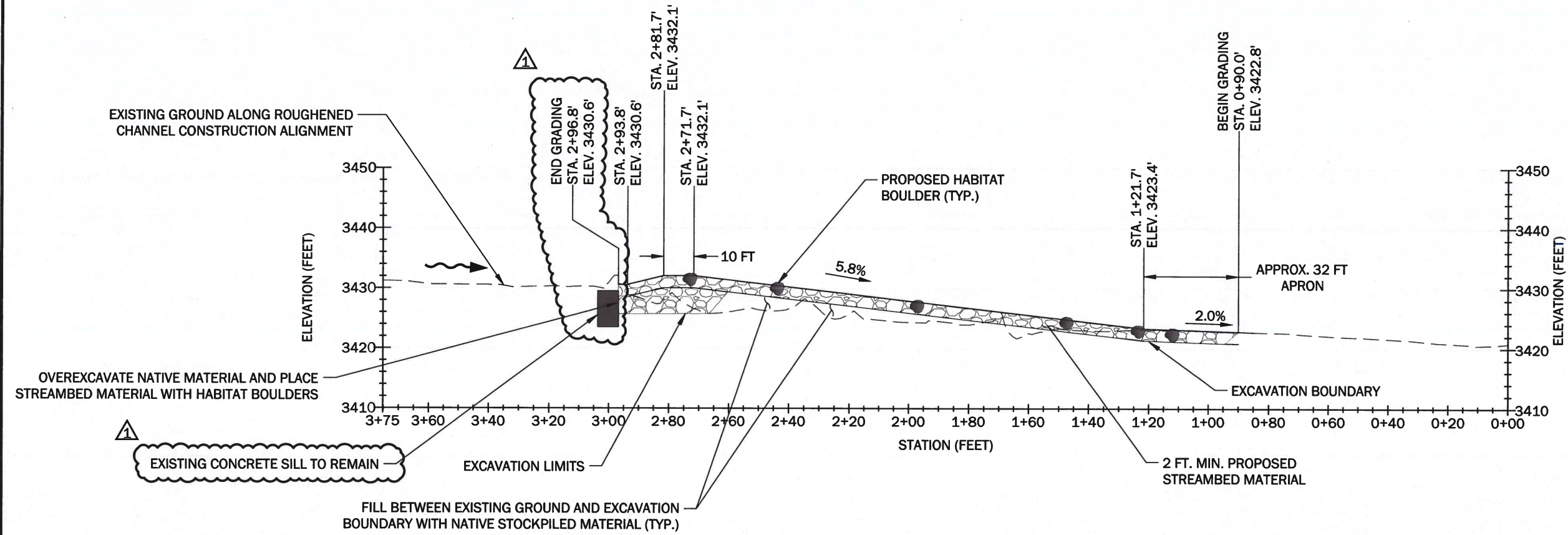
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NEZ PERCE
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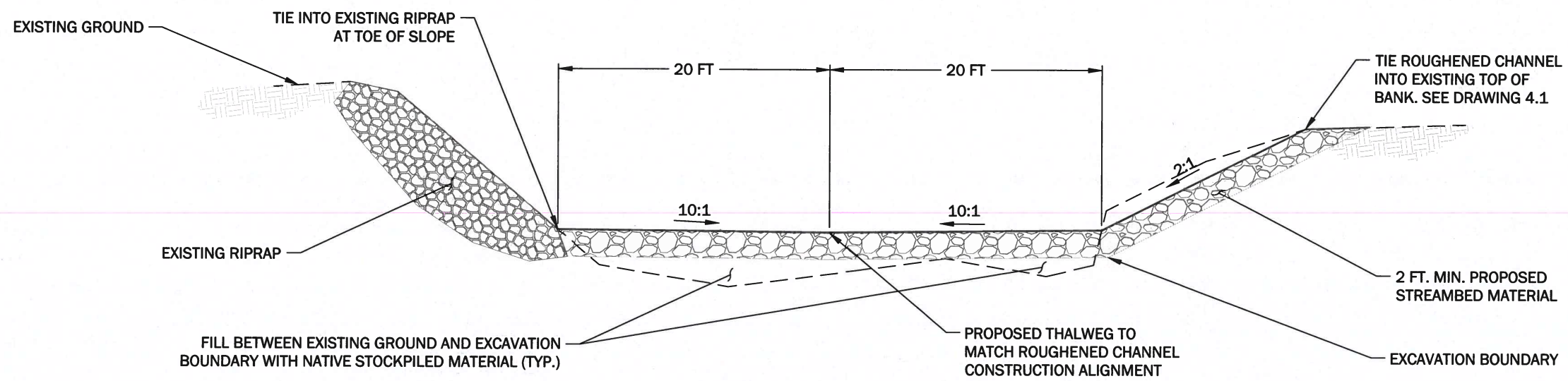
LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON
PROPOSED CONDITIONS ROUGHENED CHANNEL PLAN

DRAWING NUMBER:
4.1
SHEET: 8 OF 19

P:\057102\104\01\River Restoration Design\01_Final Design\057102101_Sht 9_4.2 [Proposed Conditions Roughened Channel Profile and Typical Section].dwg
Plotted: 07/12/2023, 12:36 | svt



PROPOSED CONDITIONS ROUGHENED CHANNEL PROFILE
2X VERT. EXAGGERATION
0 20 40
SCALE IN FEET



TYPICAL ROUGHENED CHANNEL SECTION
NOT TO SCALE

NOTE: TYPICAL SECTION VIEW IS LOOKING DOWNSTREAM



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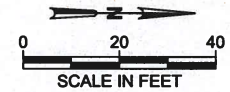
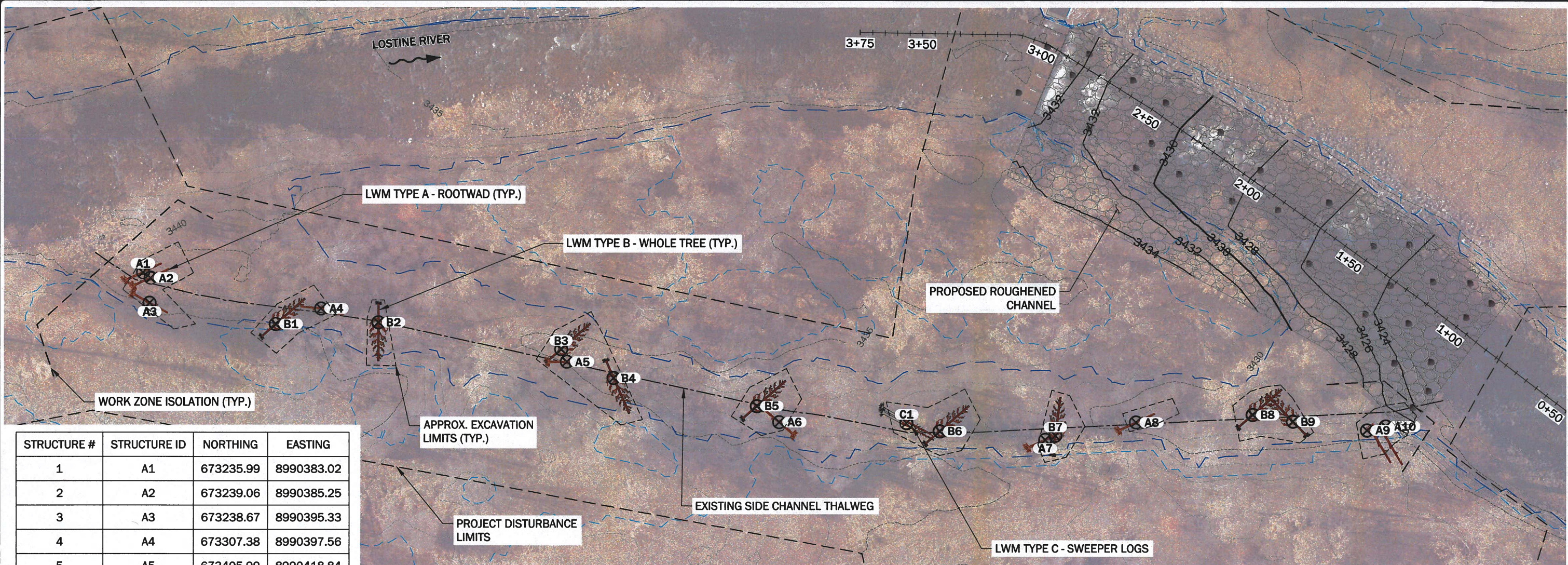
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LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON
**PROPOSED CONDITIONS ROUGHENED CHANNEL PROFILE
AND TYPICAL SECTION**

DRAWING NUMBER:
4.2
SHEET: 9 OF 19

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Plotted: 07/12/2023, 12:37 | syj



STRUCTURE #	STRUCTURE ID	NORTHING	EASTING
1	A1	673235.99	8990383.02
2	A2	673239.06	8990385.25
3	A3	673238.67	8990395.33
4	A4	673307.38	8990397.56
5	A5	673405.99	8990418.84
6	A6	673491.36	8990443.02
7	A7	673597.98	8990450.08
8	A8	673634.47	8990443.10
9	A9	673727.04	8990446.25
10	A10	673734.53	8990444.64
11	B1	673289.23	8990403.81
12	B2	673330.30	8990403.10
13	B3	673403.74	8990413.82
14	B4	673424.76	8990425.33
15	B5	673482.34	8990436.60
16	B6	673555.74	8990446.65
17	B7	673602.09	8990448.45
18	B8	673681.22	8990440.06
19	B9	673697.47	8990442.73
20	C1	673542.45	8990443.42

STRUCTURE STAKING TABLE

STRUCTURE TYPE	STRUCTURE DESCRIPTION	NO. OF STRUCTURES	LOG TYPE 1	LOG TYPE 2	LOG TYPE 3
A	ROOTWAD	10	1		
B	WHOLE TREE	9			1
C	SWEEPER LOGS	1		2	
	TOTAL	20	10	2	9

LWM SCHEDULE

LOG TYPE	LENGTH (FT)	MIN. DIA (IN)	MAX. DIA (IN)	AVG. DIA (IN)	ROOTWAD (Y/N)
1	30	12	18	15.0	Y
2	30	9	12	10.5	N
3	30	12	18	15.0	Y

LOG SIZING TABLE



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:

NEZ PERCE
TRIBE



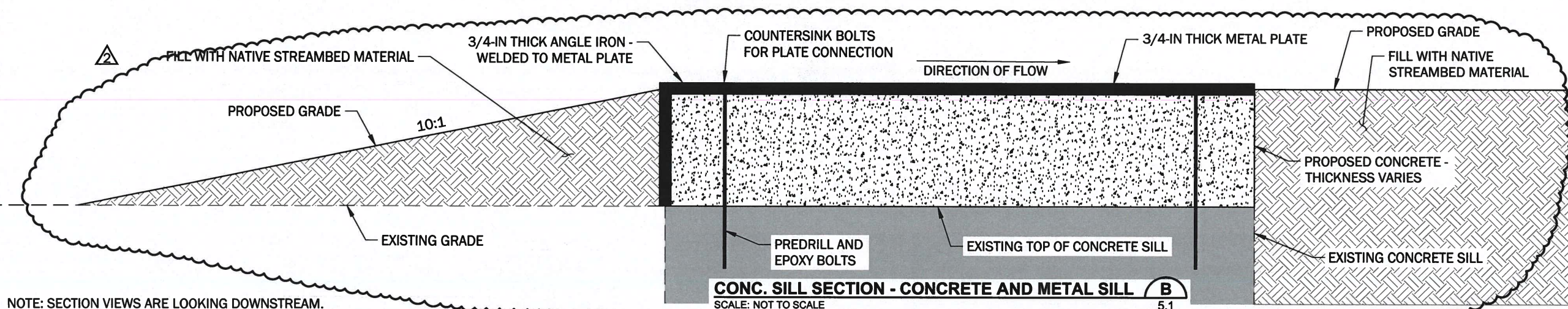
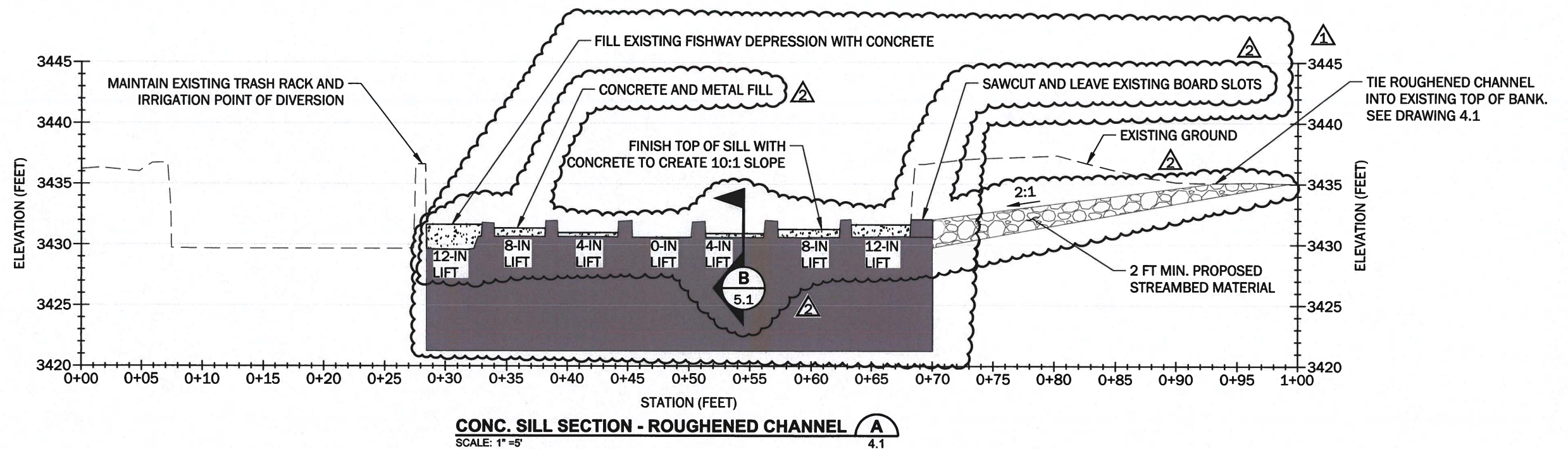
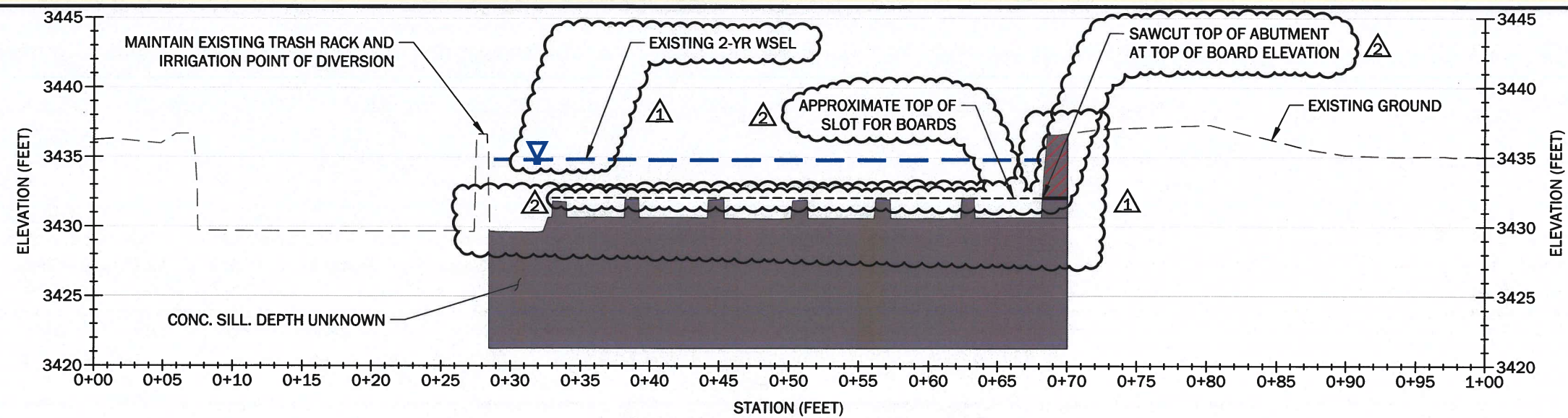
LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

PROPOSED CONDITIONS SIDE CHANNEL PLAN

DRAWING NUMBER:

4.3

SHEET: 10 OF 19



NOTE: SECTION VIEWS ARE LOOKING DOWNSTREAM.



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:
NEZ PERCE TRIBE



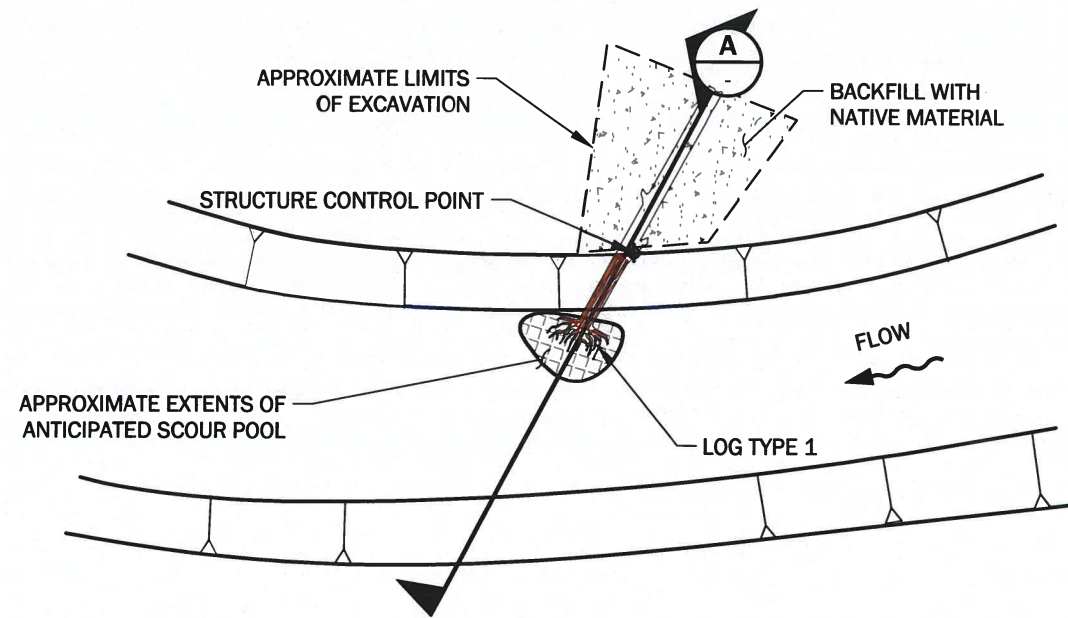
LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

CONCRETE SILL MODIFICATIONS

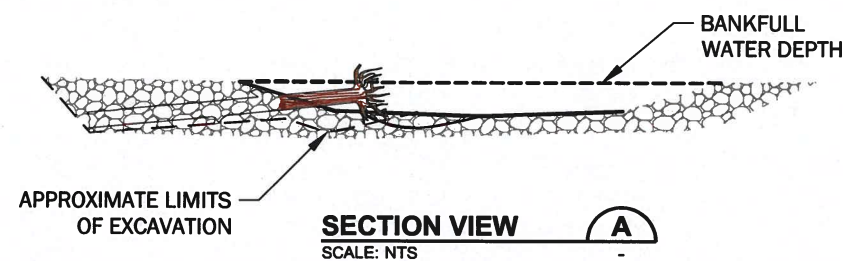
DRAWING NUMBER:

5.1

SHEET: 11 OF 19

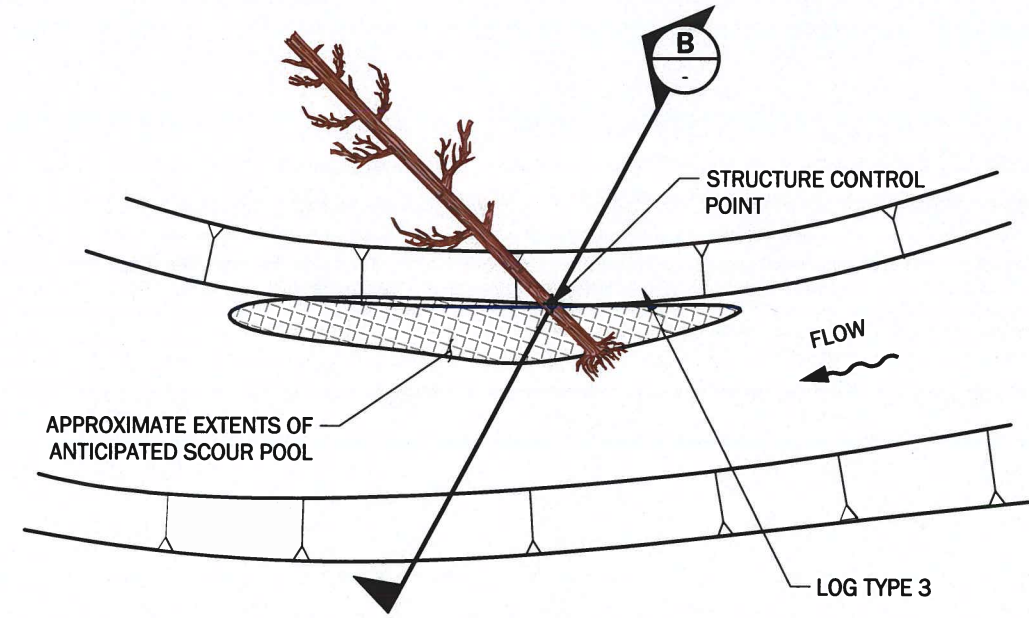


PLAN VIEW
SCALE: NOT TO SCALE

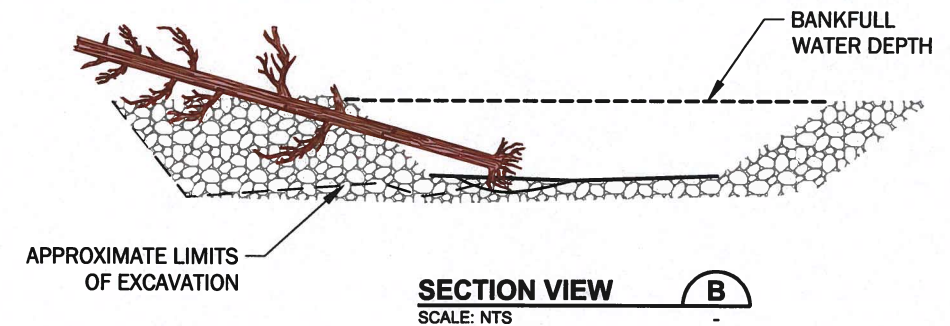


SECTION VIEW
SCALE: NTS

LWM TYPE A - ROOTWAD DETAIL

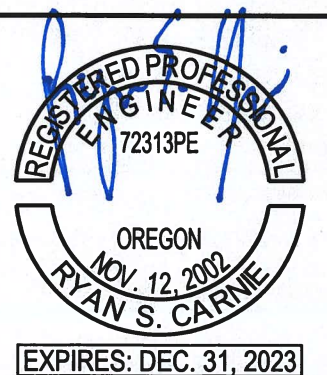


PLAN VIEW
SCALE: NOT TO SCALE



SECTION VIEW
SCALE: NTS

LWM TYPE B - WHOLE TREE DETAIL



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



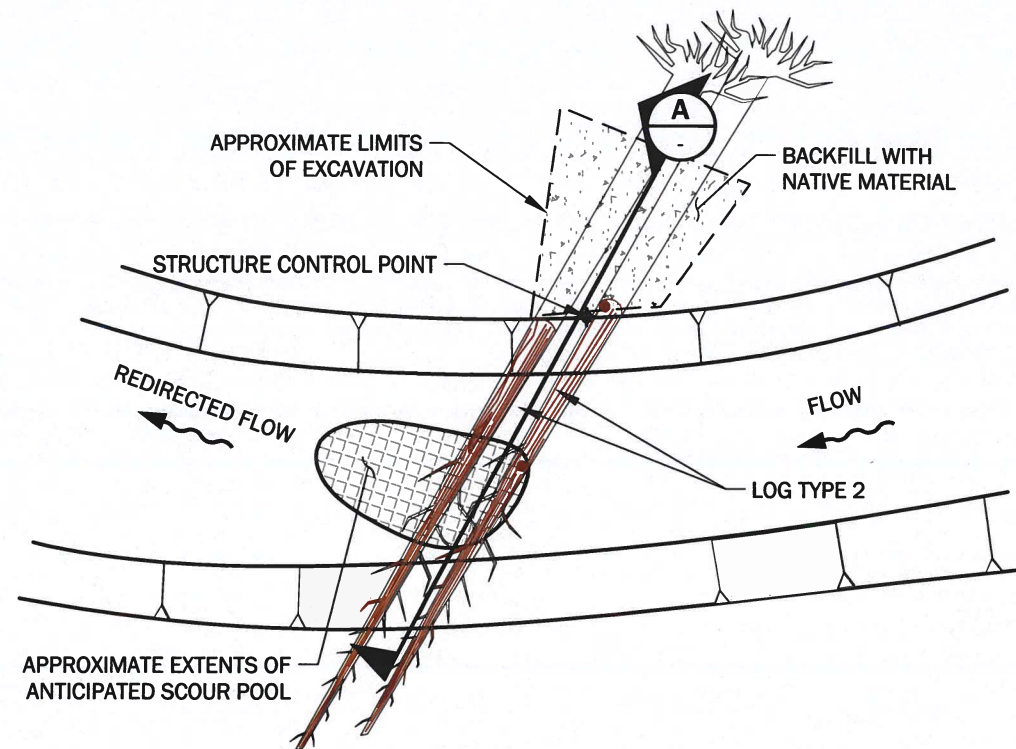
PREPARED FOR:
NEZ PERCE
TRIBE



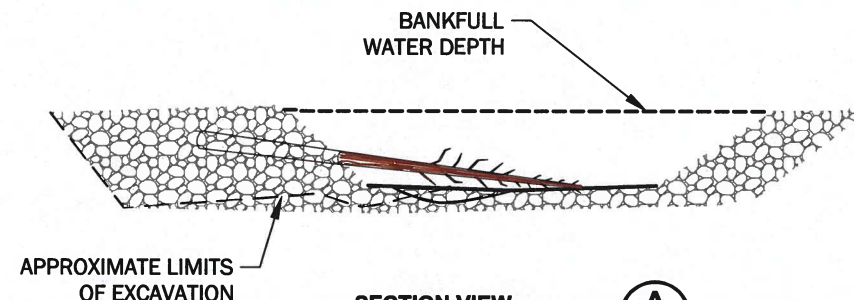
LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

TYPICAL DETAILS

DRAWING NUMBER:
5.2
SHEET: 12 OF 19

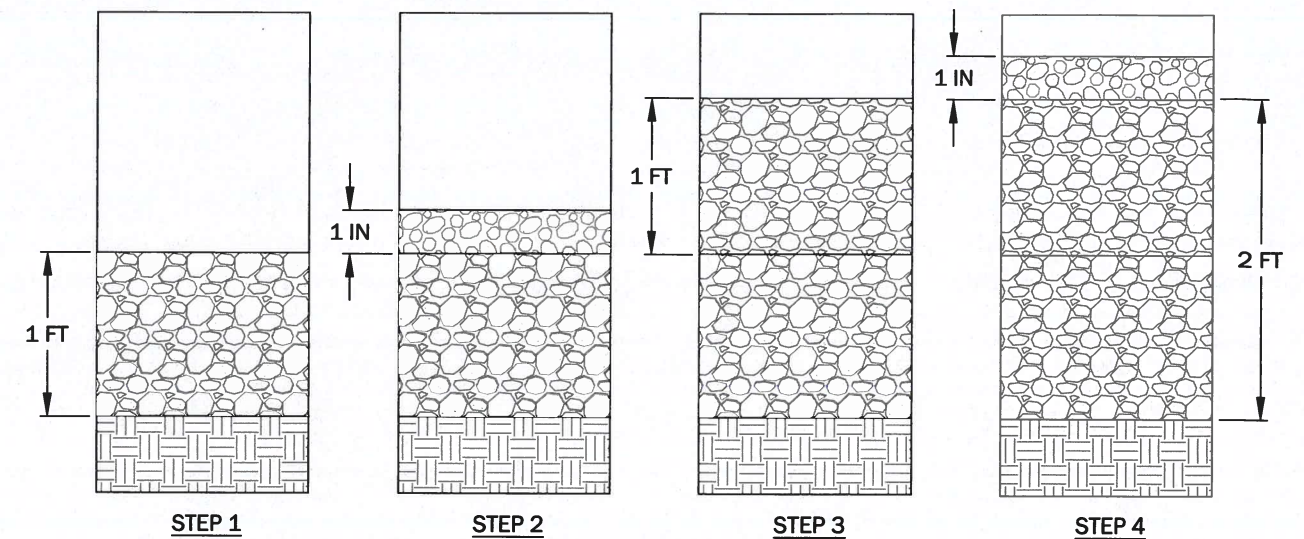


PLAN VIEW
SCALE: NOT TO SCALE



SECTION VIEW
SCALE: NTS

LWM TYPE C - SWEEPER DETAIL



STREAMBED CHANNEL PREPARATION NOTES:

- STEP 1. EXCAVATE CHANNEL TO ACCOMMODATE STREAMBED MATERIAL, PLACE 1 FT LIFT OF STREAMBED MATERIAL.
- STEP 2. PLACE 1 IN OF NATIVE STREAMBED SEDIMENT UNIFORMLY OVER STREAMBED MATERIAL. APPLY WATER TO WASH IN NATIVE AND IMPORTED STREAMBED SEDIMENT. PLACE HABITAT BOULDERS. SEE HABITAT BOULDER DETAIL.
- STEP 3. PLACE 1 FT LIFT OF STREAMBED TO PROPOSED SURFACE.
- STEP 4. PLACE 1 IN OF NATIVE AND IMPORTED STREAMBED SEDIMENT UNIFORMLY OVER ROUGHENED CHANNEL MATERIAL. APPLY WATER TO WASH IN STREAMBED FINE SEDIMENT.

ROUGHENED CHANNEL STREAMBED MATERIAL GRADATION

GRAIN-SIZE-STATISTIC	GRAIN-SIZE-SIZE
D ₁₀₀	48.0
D ₈₅	35.2
D ₆₀	16.5
D ₁₈	2.0

ROUGHENED STREAMBED MATERIAL NOTES:

1. ROUGHENED CHANNEL MATERIAL SHALL BE COMPRISED OF APPROXIMATELY 20 PERCENT STREAMBED SEDIMENT (2-IN MINUS), APPROXIMATELY 40 PERCENT STREAMBED COBBLES (SORTED NATIVE OR IMPORTED 10-IN TO 12-IN) AND APPROXIMATELY 40 PERCENT 28-IN TO 48-IN HABITAT BOULDERS (IMPORTED OR SORTED NATIVE).
2. PLACE HABITAT BOULDERS ON EITHER THE EXCAVATED SURFACE OR ON THE FIRST 12-IN LIFT OF STREAMBED MATERIAL AND COMPLETE THE PREPARATION AS DESCRIBED IN THE DETAIL ABOVE.

ROUGHENED CHANNEL STREAMBED DETAIL



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NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:
NEZ PERCE
TRIBE

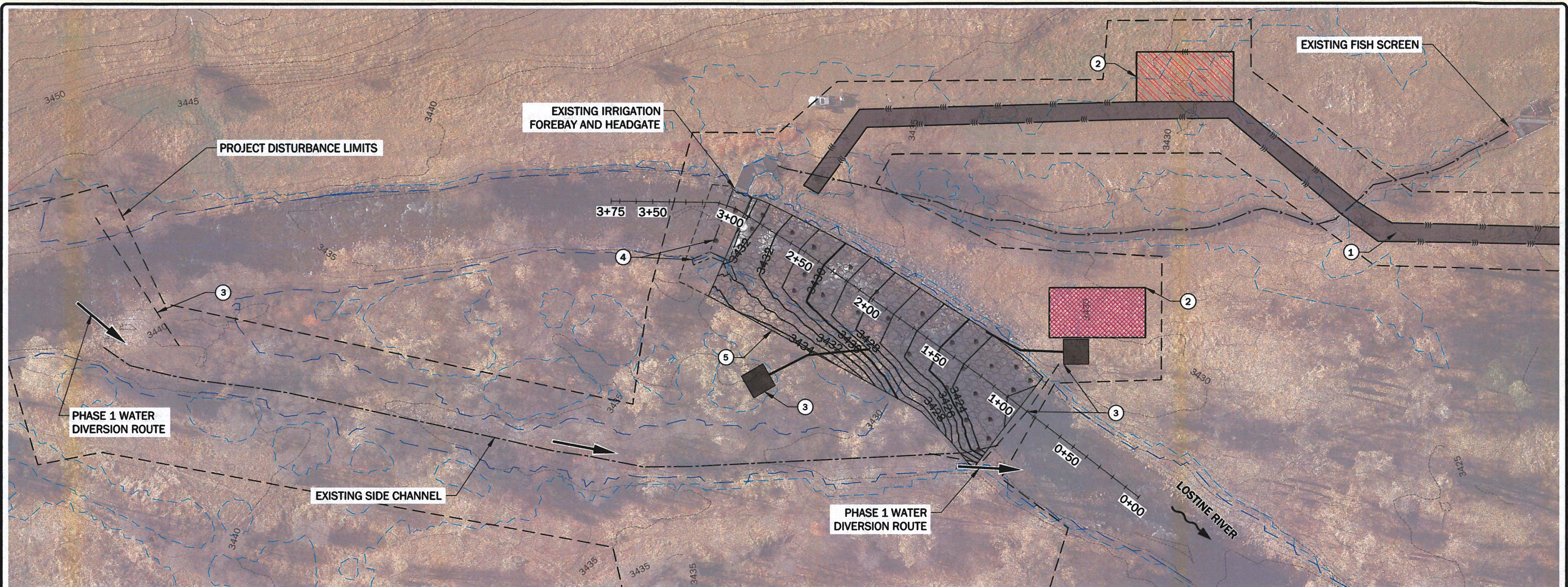


LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

TYPICAL DETAILS

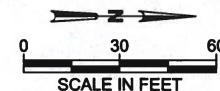
DRAWING NUMBER:
5.3
SHEET: 13 OF 19

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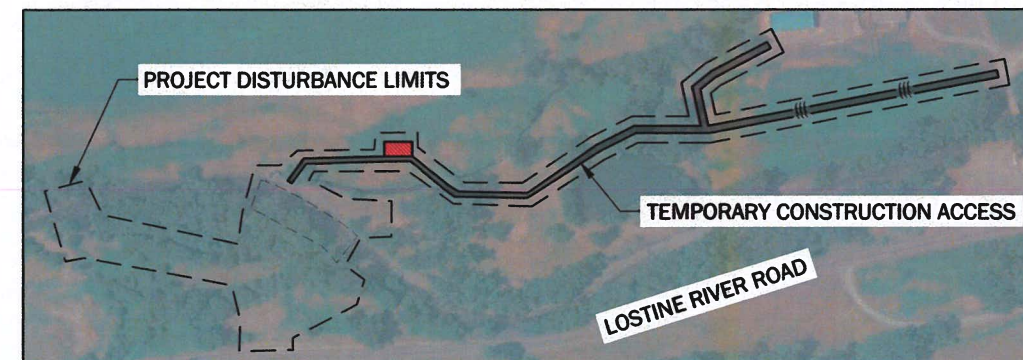


CONSTRUCTION SEQUENCING AND DEWATERING GENERAL NOTES

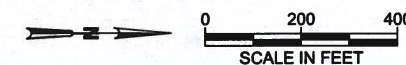
ALL IN-WATER WORK SHALL OCCUR BETWEEN JULY 15 - AUGUST 15 OR AS OTHERWISE SPECIFIED IN ENVIRONMENTAL PERMITS.



- ① (1.1) ACCESS SITE FROM PRIVATE PROPERTY. (1.2) ESTABLISH TEMPORARY ACCESS ROUTES THROUGHOUT THE SITE AS SHOWN. TEMPORARY ACCESS ROUTES SHALL MINIMIZE DISTURBANCE TO NATIVE VEGETATION AND THE PRIVATE LAND OWNERS PROPERTY. PRIVATE ROADS MUST BE CLEAR OF ALL CONSTRUCTION DEBRIS AT ALL TIMES. (1.3) ROADS SHALL BE RESTORED TO EXISTING CONDITION OR BETTER PRIOR TO COMPLETION OF THE PROJECT.
- ② (2.1) ESTABLISH STAGING AND STOCKPILE LOCATIONS AS SHOWN. ALL FUEL STORAGE AND REFUELING ACTIVITIES SHALL OCCUR AT A MINIMUM OF 150 FEET FROM THE EDGE OF WATER. (2.2) INSTALL PERIMETER SEDIMENT CONTROLS AROUND STAGING AREAS AND STABILIZE ANY TEMPORARY STOCKPILES.
- ③ (3.1) ISOLATE WORK ZONE FOR CONSTRUCTION OF ROUGHENED CHANNEL. (3.2) CONDUCT FISH SALVAGE WITHIN THE MAIN CHANNEL PRIOR TO DEWATERING. (3.3) DEWATER THE MAIN CHANNEL AND ALLOW FOR CONTINUOUS DOWNSTREAM PASSAGE THROUGH THE DURATION OF ISOLATION. AFTER FISH SALVAGE WATER WITHIN THE WORK AREA SHALL BE PUMPED OUT AND DISCHARGED IN AN UPLAND LOCATION TO AVOID EXCESS TURBIDITY.
- ④ (4.1) REMOVE CONCRETE ABUTMENT AND MODIFY CONCRETE SILL PER DRAWINGS 4.1 THROUGH 5.1. (4.2.) EXCAVATE ROUGHENED CHANNEL FOOTPRINT TO EXCAVATION LIMITS, FILLING IN VOIDS WITH NATIVE MATERIAL. (4.3.) HAUL ALL REMOVED MATERIALS OFF-SITE AND DISPOSE ACCORDINGLY.
- ⑤ (5.1) CONSTRUCT ROUGHENED CHANNEL PER DRAWINGS 4.1 THROUGH 5.1.
- ⑥ (6.1) RESTORE DISTURBED AREAS WITHIN THE FLOODPLAIN GRADING LIMITS ACCORDING TO THE REVEGETATION PLAN ON DRAWING 7.1. (6.2) STABILIZE WITH NATIVE SEED MIX AND LIVES STAKES AFTER CHANNEL EXCAVATION AND LOG STRUCTURE INSTALLATION IS COMPLETE. RESTORE ALL DISTURBED AREAS WITHIN PRIVATE PROPERTY TO EXISTING CONDITIONS OR BETTER.



TEMPORARY CONSTRUCTION ACCESS - OVERVIEW



EXPIRES: DEC. 31, 2023

NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



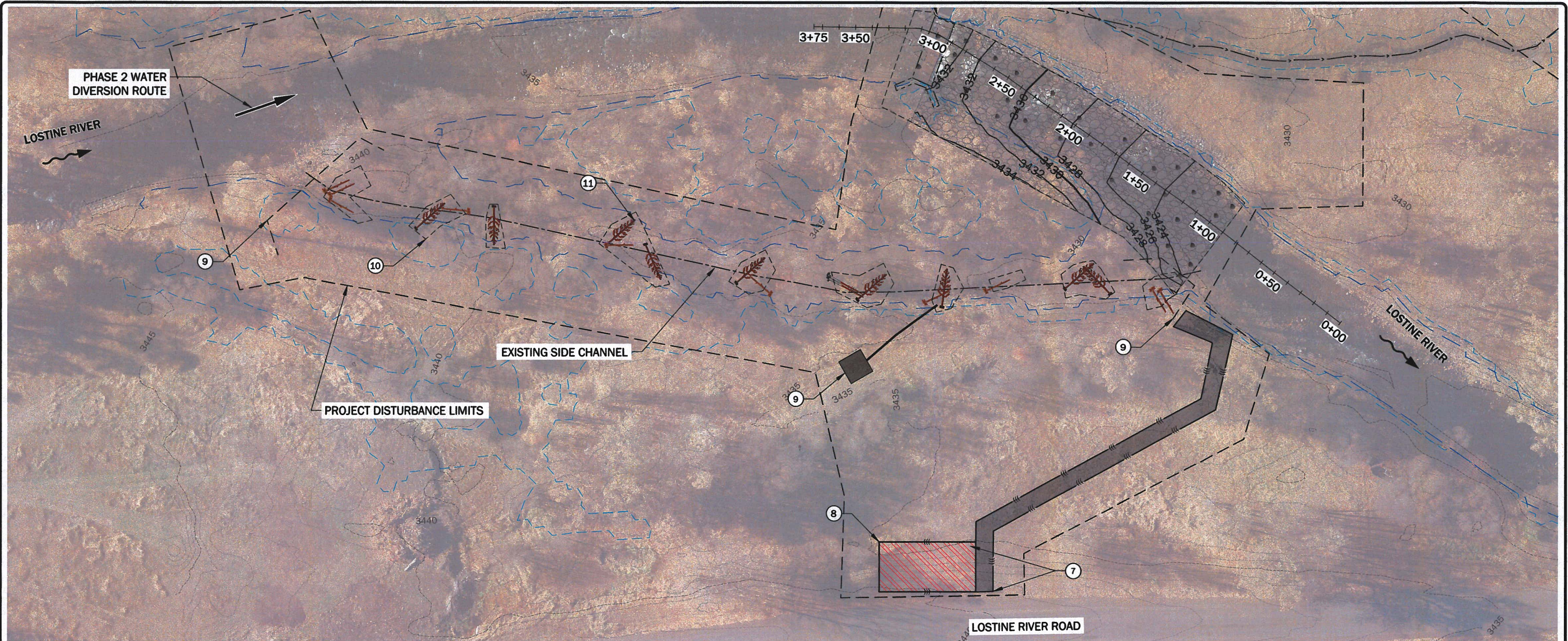
PREPARED FOR:
NEZ PERCE
TRIBE



LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON
**PHASE 1 CONSTRUCTION ACCESS, STAGING, AND
SEQUENCING PLAN**

DRAWING NUMBER:
6.1
SHEET: 14 OF 19

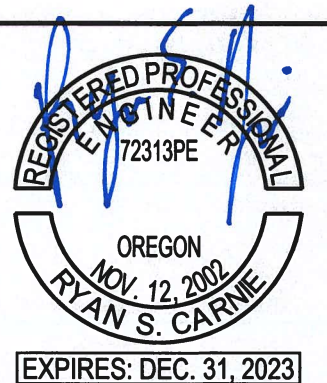
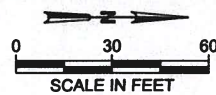
P:\0571021CAD\01River Restoration Design\01_Final Design\057102101_Sht 15_6.2 [Phase 2 Construction Access, Staging, and Sequencing Plan].dwg
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CONSTRUCTION SEQUENCING AND DEWATERING GENERAL NOTES

ALL IN-WATER WORK SHALL OCCUR BETWEEN JULY 15 - AUGUST 15 OR AS OTHERWISE SPECIFIED IN ENVIRONMENTAL PERMITS.

- ⑦ (1.1) ACCESS SITE FROM LOSTINE RIVER ROAD. (1.2) ESTABLISH TEMPORARY ACCESS ROUTES THROUGHOUT THE SITE AS SHOWN. TEMPORARY ACCESS ROUTES SHALL MINIMIZE DISTURBANCE TO NATIVE VEGETATION AND THE PRIVATE LAND OWNERS PROPERTY. PRIVATE ROADS MUST BE CLEAR OF ALL CONSTRUCTION DEBRIS AT ALL TIMES. (1.3) ROADS SHALL BE RESTORED TO EXISTING CONDITION OR BETTER PRIOR TO COMPLETION OF THE PROJECT.
- ⑧ (2.1) ESTABLISH STAGING AND STOCKPILE LOCATIONS AS SHOWN. ALL FUEL STORAGE AND REFUELING ACTIVITIES SHALL OCCUR AT A MINIMUM OF 150 FEET FROM THE EDGE OF WATER. (2.2) INSTALL PERIMETER SEDIMENT CONTROLS AROUND STAGING AREAS AND STABILIZE ANY TEMPORARY STOCKPILES.
- ⑨ (3.1) ISOLATE WORK ZONE FOR CONSTRUCTION OF LARGE WOOD STRUCTURES. (3.2) CONDUCT FISH SALVAGE WITHIN THE SIDE CHANNEL PRIOR TO DEWATERING. (3.3) DEWATER THE SIDE CHANNEL AND ALLOW FOR CONTINUOUS DOWNSTREAM PASSAGE THROUGH THE DURATION OF ISOLATION. AFTER FISH SALVAGE WATER WITHIN THE WORK AREA SHALL BE PUMPED OUT AND DISCHARGED IN AN UPLAND LOCATION TO AVOID EXCESS TURBIDITY.
- ⑩ (4.1) EXCAVATE EXISTING MATERIAL FOR LARGE WOODY MATERIAL STRUCTURES AS INDICATED ON THE DESIGN DRAWINGS.
- ⑪ (5.1) CONSTRUCT LARGE WOOD STRUCTURES PER DRAWINGS 4.1 THROUGH 3.3.
- ⑫ (6.1) RESTORE DISTURBED AREAS WITHIN THE FLOODPLAIN GRADING LIMITS ACCORDING TO THE REVEGETATION PLAN ON DRAWING 7.1. (6.2) STABILIZE WITH NATIVE SEED MIX AND LIVES STAKES AFTER CHANNEL EXCAVATION AND LOG STRUCTURE INSTALLATION IS COMPLETE. RESTORE ALL DISTURBED AREAS WITHIN PRIVATE PROPERTY TO EXISTING CONDITIONS OR BETTER.



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



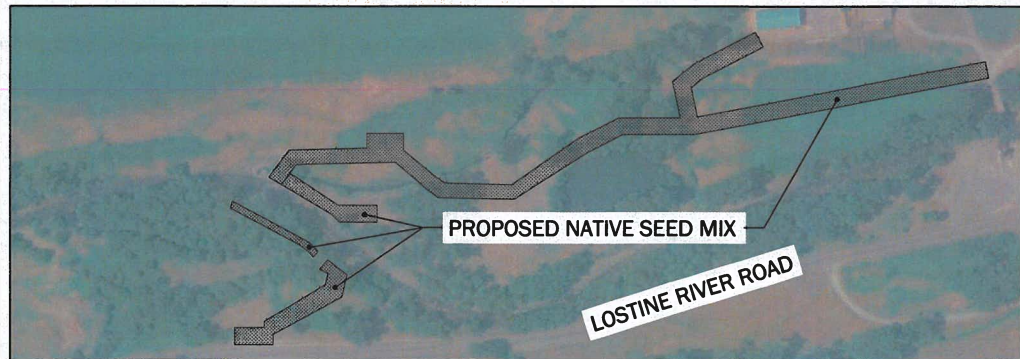
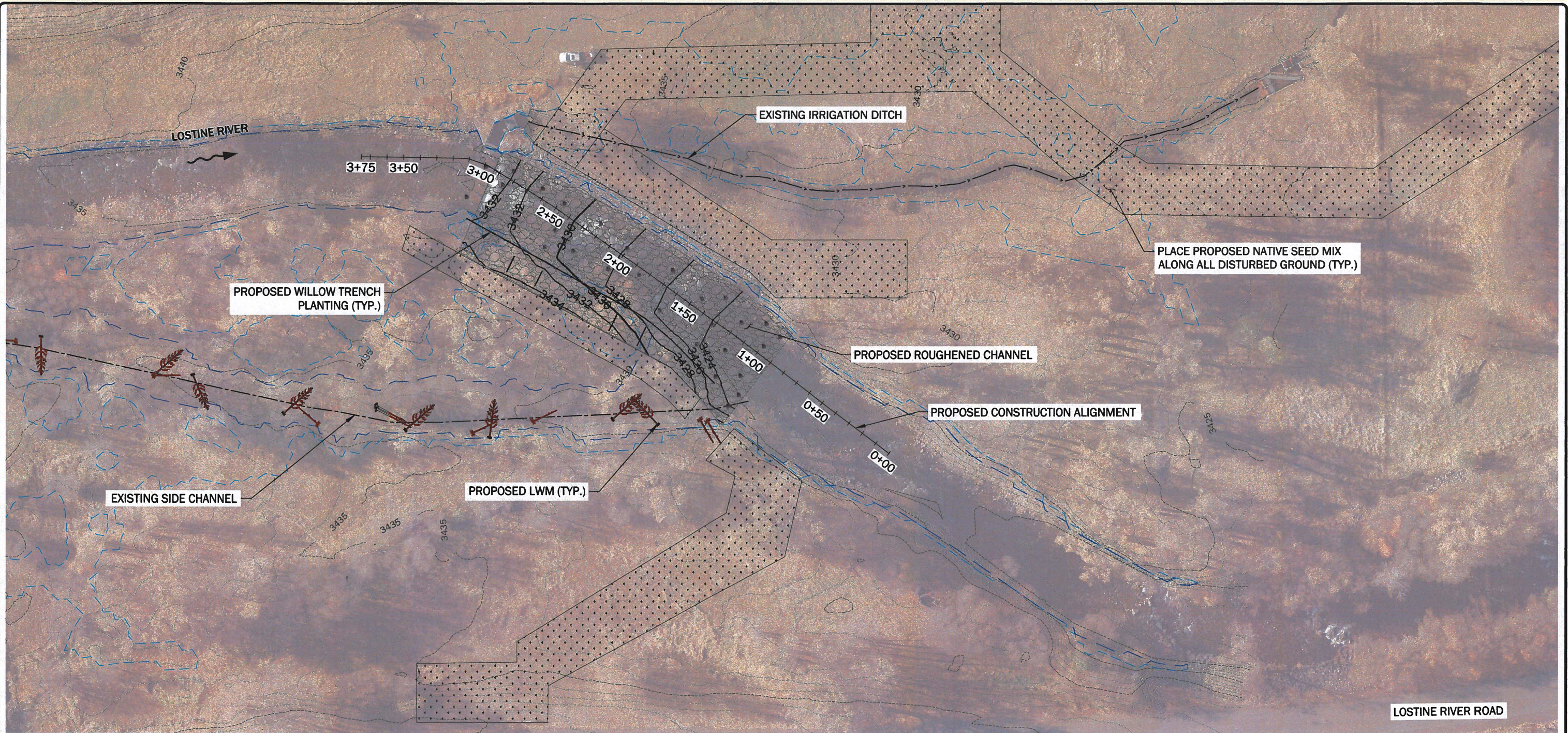
PREPARED FOR:
NEZ PERCE
TRIBE



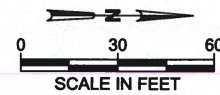
LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON
**PHASE 2 CONSTRUCTION ACCESS, STAGING, AND
SEQUENCING PLAN**

DRAWING NUMBER:
6.2
SHEET: 15 OF 19

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Plotted: 07/12/2023, 12:38 | syj



REVEGETATION PLAN - OVERVIEW



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:
NEZ PERCE
TRIBE



LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

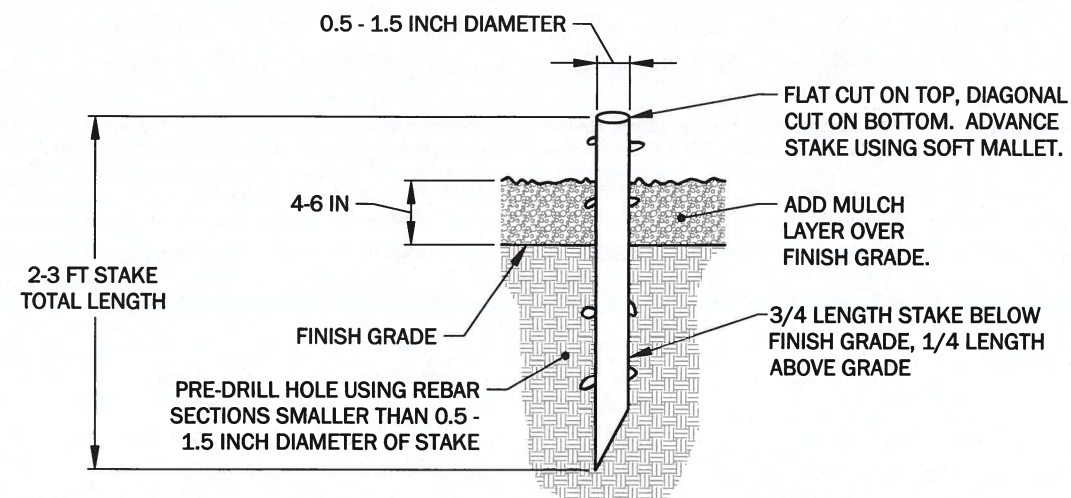
REVEGETATION PLAN

DRAWING NUMBER:

7.1

SHEET: 16 OF 19

P:\057102\1CAD\01River Restoration Design\01_Final Design\057102101_Sht 17_7.2 [Revegetation Details].dwg
Plotted: 07/12/2023, 12:39 | syl



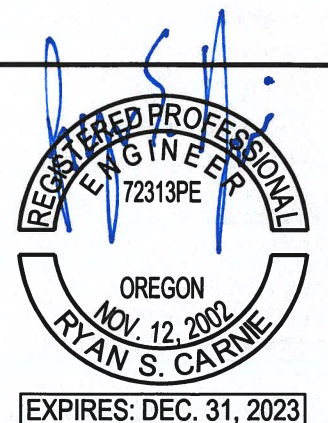
TYPICAL WILLOW STAKE DETAIL

Seed Mix Includes Approximately 0.8 Acres			
Species	Size	lbs/acre	Quantity
Annual Ryegrass	Seed	10	8.0
Idaho Fescue	Seed	3	2.4
Blue Wildrye	Seed	10	8.0
Mountain Brome	Seed	12	9.6

SEEDING NOTES:

- 1) THE SEED MIX IS SUGGESTED BASED ON PAST WORK BUT CAN BE SUBSTITUTED WITH SIMILAR MIX AND WILL BE PROVIDED BY THE NEZ PERCE TRIBE.
- 2) INSTALL CUTTINGS BETWEEN APPROXIMATELY 1.5 AND 3.0 VERTICAL FEET ABOVE THE TOE OF SLOPE. CONFIRM STEMS INTERCEPT SHALLOW GROUNDWATER AT LOW FLOW CONDITIONS.

Willow Trench Planting					
Species	Total Trench Length (ft)	Stake Size		Spacing (ft.)	Quantity
		Length (ft.) (Min)	Diameter (inch) (Min/Max)		
Willow (Salix sp.)-Floodplain	260	4	0.5/1.5	1	260



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DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:
NEZ PERCE TRIBE



LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

REVEGETATION DETAILS

DRAWING NUMBER:

7.2

SHEET: 17 OF 19

P:\00571021\CAD\01\River_Restoration_Design\01_Final_Design\0571021\01_Sht 18_8.1 [HIP IV - General Conservation Measures].dwg
Plotted: 07/12/2023, 12:39 | svt

HIP 4 GENERAL AQUATIC CONSERVATION MEASURES APPLICABLE TO ALL ACTIONS

THE ACTIVITIES COVERED UNDER THE HIP IV ARE INTENDED TO PROTECT AND RESTORE FISH AND WILDLIFE HABITAT WITH LONG-TERM BENEFITS TO ESA-LISTED SPECIES. TO MINIMIZE THESE SHORT-TERM ADVERSE EFFECTS AND MAKE THEM PREDICTABLE FOR THE PURPOSES OF PROGRAMMATIC ANALYSIS, BPA WILL INCLUDE IN ALL PROJECTS IMPLEMENTED UNDER THIS HIP IV PROPOSED ACTION THE FOLLOWING GENERAL CONSERVATION MEASURES (DEVELOPED IN COORDINATION WITH USFWS AND NMFS).

PROJECT DESIGN AND SITE PREPARATION.

1) STATE AND FEDERAL PERMITS. ALL APPLICABLE REGULATORY PERMITS AND OFFICIAL PROJECT AUTHORIZATIONS WILL BE OBTAINED BEFORE PROJECT IMPLEMENTATION. THESE PERMITS AND AUTHORIZATIONS INCLUDE, BUT ARE NOT LIMITED TO, NATIONAL ENVIRONMENTAL POLICY ACT, NATIONAL HISTORIC PRESERVATION ACT, AND THE APPROPRIATE STATE AGENCY REMOVAL AND FILL PERMIT, USACE CLEAN WATER ACT (CWA) 404 PERMITS, AND CWA SECTION 401 WATER QUALITY CERTIFICATIONS.

2) TIMING OF IN-WATER WORK. APPROPRIATE STATE (OREGON DEPARTMENT OF FISH AND WILDLIFE (ODFW), GUIDELINES FOR TIMING OF IN-WATER WORK WINDOWS (IWWW) WILL BE FOLLOWED.

A) BULL TROUT - WHILE UTILIZING THE APPROPRIATE STATE DESIGNATED IN-WATER WORK PERIOD WILL LESSEN THE RISK TO BULL TROUT, THIS ALONE MAY NOT BE SUFFICIENT TO ADEQUATELY PROTECT LOCAL BULL TROUT POPULATIONS. THIS IS ESPECIALLY TRUE IF WORK IS OCCURRING IN SPAWNING AND REARING AREAS BECAUSE EGGS, ALEVIN, AND FRY ARE IN THE SUBSTRATE OR CLOSELY ASSOCIATED HABITATS NEARLY YEAR ROUND. SOME AREAS MAY NOT HAVE DESIGNATED IN-WATER WORK WINDOWS FOR BULL TROUT OR IF THEY DO, THEY MAY CONFLICT WITH WORK WINDOWS FOR SALMON AND STEELHEAD. IF THIS IS THE CASE, OR IF PROPOSED WORK IS TO OCCUR WITHIN BULL TROUT SPAWNING AND REARING HABITATS, PROJECT PROPONENTS WILL CONTACT THE APPROPRIATE USFWS FIELD OFFICE TO INSURE THAT ALL REASONABLE IMPLEMENTATION MEASURES ARE CONSIDERED AND AN APPROPRIATE IN-WATER WORK WINDOW IS BEING USED TO MINIMIZE PROJECT EFFECTS.

B) LAMPREY - THE PROJECT SPONSOR AND/OR THEIR CONTRACTORS WILL AVOID WORKING IN STREAM OR RIVER CHANNELS THAT CONTAIN PACIFIC LAMPREY FROM MARCH 1 TO JULY 1 IN LOW TO MID ELEVATION REACHES (<5,000 FEET). IN HIGH ELEVATION REACHES (>5,000 FEET), THE PROJECT SPONSOR WILL AVOID WORKING IN STREAM OR RIVER CHANNELS FROM MARCH 1 TO AUGUST 1. IF EITHER TIMEFRAME IS INCOMPATIBLE WITH OTHER OBJECTIVES, THE AREA WILL BE SURVEYED FOR NESTS AND LAMPREY PRESENCE, AND AVOIDED IF POSSIBLE. IF LAMPREYS ARE KNOWN TO EXIST, THE PROJECT SPONSOR WILL UTILIZE DEWATERING AND SALVAGE PROCEDURES OUTLINED IN US FISH AND WILDLIFE SERVICE BEST MANAGEMENT PRACTICES TO MINIMIZE ADVERSE EFFECTS TO PACIFIC LAMPREY (2010).

C) EXCEPTIONS TO ODFW, WDFW, MFWP, OR IDFG IN-WATER WORK WINDOWS WILL BE REQUESTED THROUGH THE VARIANCE PROCESS (PAGE 2).

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

A) A REVIEW OF AVAILABLE RECORDS, SUCH AS FORMER SITE USE, BUILDING PLANS, AND RECORDS OF ANY PRIOR CONTAMINATION EVENTS;

B) A SITE VISIT TO INSPECT THE AREAS USED FOR VARIOUS INDUSTRIAL PROCESSES AND THE CONDITION OF THE PROPERTY;

C) INTERVIEWS WITH KNOWLEDGEABLE PEOPLE, SUCH AS SITE OWNERS, OPERATORS, AND OCCUPANTS, NEIGHBORS, OR LOCAL GOVERNMENT OFFICIALS; AND

D) A SUMMARY, STORED WITH THE PROJECT FILE THAT INCLUDES AN ASSESSMENT OF THE LIKELIHOOD THAT CONTAMINANTS ARE PRESENT AT THE SITE, BASED ON ITEMS 4(A) THROUGH 4(C).

4) SITE LAYOUT AND FLAGGING. PRIOR TO CONSTRUCTION. THE ACTION AREA WILL BE CLEARLY FLAGGED TO IDENTIFY THE FOLLOWING:

A) SENSITIVE RESOURCE AREAS, SUCH AS AREAS BELOW ORDINARY HIGH WATER, SPAWNING AREAS, SPRINGS, AND WETLANDS;

B) EQUIPMENT ENTRY AND EXIT POINTS;

C) ROAD AND STREAM CROSSING ALIGNMENTS;

D) STAGING, STORAGE, AND STOCKPILE AREAS; AND

E) NO-SPRAY AREAS AND BUFFERS.

5) TEMPORARY ACCESS ROADS AND PATHS.

A) EXISTING ACCESS ROADS AND PATHS WILL BE PREFERENTIALLY USED WHENEVER REASONABLE, AND THE NUMBER AND LENGTH OF TEMPORARY ACCESS ROADS AND PATHS THROUGH RIPARIAN AREAS AND FLOODPLAINS WILL BE MINIMIZED TO LESSEN SOIL DISTURBANCE AND COMPACTION, AND IMPACTS TO VEGETATION.

B) TEMPORARY ACCESS ROADS AND PATHS WILL NOT BE BUILT ON SLOPES WHERE GRADE, SOIL, OR OTHER FEATURES SUGGEST A LIKELIHOOD OF EXCESSIVE EROSION OR FAILURE. IF SLOPES ARE STEEPER THAN 30%, THEN THE ROAD WILL BE DESIGNED BY A CIVIL ENGINEER WITH EXPERIENCE IN STEEP ROAD DESIGN.

C) THE REMOVAL OF RIPARIAN VEGETATION DURING CONSTRUCTION OF TEMPORARY ACCESS ROADS WILL BE MINIMIZED. WHEN TEMPORARY VEGETATION REMOVAL IS REQUIRED, VEGETATION WILL BE CUT AT GROUND LEVEL (NOT GRUBBED).

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

E) TEMPORARY ROADS AND PATHS IN WET AREAS OR AREAS PRONE TO FLOODING WILL BE OBLITERATED BY THE END OF THE IN-WATER WORK WINDOW.

1) TEMPORARY STREAM CROSSINGS.

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

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

C) EQUIPMENT AND VEHICLES WILL CROSS THE STREAM IN THE WET ONLY WHERE:

I. THE STREAMBED IS BEDROCK; OR

II. MATS OR OFF-SITE LOGS ARE PLACED IN THE STREAM AND USED AS A CROSSING.

D) VEHICLES AND MACHINERY WILL CROSS STREAMS AT RIGHT ANGLES TO THE MAIN CHANNEL WHEREVER POSSIBLE.

E) THE LOCATION OF THE TEMPORARY CROSSING WILL AVOID AREAS THAT MAY INCREASE THE RISK OF CHANNEL RE-ROUTING OR AVULSION.

F) POTENTIAL SPAWNING HABITAT (I.E., POOL TAILOUTS) AND POOLS WILL BE AVOIDED TO THE MAXIMUM EXTENT POSSIBLE.

G) NO STREAM CROSSINGS WILL OCCUR AT ACTIVE SPAWNING SITES, WHEN HOLDING ADULT LISTED FISH ARE PRESENT, OR WHEN EGGS OR ALEVINS ARE IN THE GRAVEL. THE APPROPRIATE STATE FISH AND WILDLIFE AGENCY WILL BE CONTACTED FOR SPECIFIC TIMING INFORMATION.

H) AFTER PROJECT COMPLETION, TEMPORARY STREAM CROSSINGS WILL BE OBLITERATED AND THE STREAM CHANNEL AND BANKS RESTORED.

7) STAGING, STORAGE, AND STOCKPILE AREAS.

A) STAGING AREAS (USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE) WILL BE 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND, OR ON AN ADJACENT, ESTABLISHED ROAD AREA IN A LOCATION AND MANNER THAT WILL PRECLUDE EROSION INTO OR CONTAMINATION OF THE STREAM OR FLOODPLAIN.

B) NATURAL MATERIALS USED FOR IMPLEMENTATION OF AQUATIC RESTORATION, SUCH AS LARGE WOOD, GRAVEL, AND BOULDERS, MAY BE STAGED WITHIN THE 100-YEAR FLOODPLAIN.

C) ANY LARGE WOOD, TOPSOIL, AND NATIVE CHANNEL MATERIAL DISPLACED BY CONSTRUCTION WILL BE STOCKPILED FOR USE DURING SITE RESTORATION AT A SPECIFICALLY IDENTIFIED AND FLAGGED AREA.

D) ANY MATERIAL NOT USED IN RESTORATION, AND NOT NATIVE TO THE FLOODPLAIN, WILL BE REMOVED TO A LOCATION OUTSIDE OF THE 100-YEAR FLOODPLAIN FOR DISPOSAL.

8) EQUIPMENT. MECHANIZED EQUIPMENT AND VEHICLES WILL BE SELECTED, OPERATED, AND MAINTAINED IN A MANNER THAT MINIMIZES ADVERSE EFFECTS ON THE ENVIRONMENT (E.G., MINIMALLY-SIZED, LOW PRESSURE TIRES; MINIMAL HARD-TURN PATHS FOR TRACKED VEHICLES; TEMPORARY MATS OR PLATES WITHIN WET AREAS OR ON SENSITIVE SOILS). ALL VEHICLES AND OTHER MECHANIZED EQUIPMENT WILL BE:

A) STORED, FUELED, AND MAINTAINED IN A VEHICLE STAGING AREA PLACED 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND OR ON AN ADJACENT, ESTABLISHED ROAD AREA;

B) REFUELED IN A VEHICLE STAGING AREA PLACED 150 FEET OR MORE FROM A NATURAL WATERBODY OR WETLAND, OR IN AN ISOLATED HARD ZONE, SUCH AS A PAVED PARKING LOT OR ADJACENT, ESTABLISHED ROAD (THIS MEASURE APPLIES ONLY TO GAS-POWERED EQUIPMENT WITH TANKS LARGER THAN 5 GALLONS).

C) BIODEGRADABLE LUBRICANTS AND FLUIDS SHALL BE USED ON EQUIPMENT OPERATING IN AND ADJACENT TO THE STREAM CHANNEL AND LIVE WATER.

D) INSPECTED DAILY FOR FLUID LEAKS BEFORE LEAVING THE VEHICLE STAGING AREA FOR OPERATION WITHIN 150 FEET OF ANY NATURAL WATER BODY OR WETLAND; AND

E) THOROUGHLY CLEANED BEFORE OPERATION BELOW ORDINARY HIGH WATER, AND AS OFTEN AS NECESSARY DURING OPERATION, TO REMAIN GREASE FREE.

9) EROSION CONTROL. EROSION CONTROL MEASURES WILL BE PREPARED AND CARRIED OUT, COMMENSURATE IN SCOPE WITH THE ACTION, THAT MAY INCLUDE THE FOLLOWING:

A) TEMPORARY EROSION CONTROLS.

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

II. IF THERE IS A POTENTIAL FOR ERODED SEDIMENT TO ENTER THE STREAM, SEDIMENT BARRIERS WILL BE INSTALLED AND MAINTAINED FOR THE DURATION OF PROJECT IMPLEMENTATION.

III. TEMPORARY EROSION CONTROL MEASURES MAY INCLUDE FIBER WATTLES, SILT FENCES, JUTE MATTING, WOOD FIBER MULCH AND SOIL BINDER, OR GEOTEXTILES AND GEOSYNTHETIC FABRIC.

IV. SOIL STABILIZATION UTILIZING WOOD FIBER MULCH AND TACKIFIER (HYDRO-APPLIED) MAY BE USED TO REDUCE EROSION OF BARE SOIL IF THE MATERIALS ARE NOXIOUS WEED FREE AND NONTOXIC TO AQUATIC AND TERRESTRIAL ANIMALS, SOIL MICROORGANISMS, AND VEGETATION.

V. SEDIMENT WILL BE REMOVED FROM EROSION CONTROLS ONCE IT HAS REACHED 1/3 OF THE EXPOSED HEIGHT OF THE CONTROL.

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

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

I. A SUPPLY OF SEDIMENT CONTROL MATERIALS; AND

II. AN OIL-ABSORBING FLOATING BOOM WHENEVER SURFACE WATER IS PRESENT.

10) DUST ABATEMENT. THE PROJECT SPONSOR WILL DETERMINE THE APPROPRIATE DUST CONTROL MEASURES BY CONSIDERING SOIL TYPE, EQUIPMENT USAGE, PREVAILING WIND DIRECTION, AND THE EFFECTS CAUSED BY OTHER EROSION AND SEDIMENT CONTROL MEASURES. IN ADDITION, THE FOLLOWING CRITERIA WILL BE FOLLOWED:

A) WORK WILL BE SEQUENCED AND SCHEDULED TO REDUCE EXPOSED BARE SOIL SUBJECT TO WIND EROSION.

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

C) APPLICATION OF DUST ABATEMENT CHEMICALS WILL BE AVOIDED DURING OR JUST BEFORE WET WEATHER, AND AT STREAM CROSSINGS OR OTHER AREAS THAT COULD RESULT IN UNFILTERED DELIVERY OF THE DUST ABATEMENT MATERIALS TO A WATERBODY (TYPICALLY THESE WOULD BE AREAS WITHIN 25 FEET OF A WATERBODY OR STREAM CHANNEL; DISTANCES MAY BE GREATER WHERE VEGETATION IS SPARSE OR SLOPES ARE STEEP).

D) SPILL CONTAINMENT EQUIPMENT WILL BE AVAILABLE DURING APPLICATION OF DUST ABATEMENT CHEMICALS.

E) PETROLEUM-BASED PRODUCTS WILL NOT BE USED FOR DUST ABATEMENT.

11) SPILL PREVENTION, CONTROL, AND COUNTER MEASURES. THE USE OF MECHANIZED MACHINERY INCREASES THE RISK FOR ACCIDENTAL SPILLS OF FUEL, LUBRICANTS, HYDRAULIC FLUID, OR OTHER CONTAMINANTS INTO THE RIPARIAN ZONE OR DIRECTLY INTO THE WATER. ADDITIONALLY, UNCURED CONCRETE AND FORM MATERIALS ADJACENT TO THE ACTIVE STREAM CHANNEL MAY RESULT IN ACCIDENTAL DISCHARGE INTO THE WATER. THESE CONTAMINANTS CAN DEGRADE HABITAT, AND INJURE OR KILL AQUATIC FOOD ORGANISMS AND ESA-LISTED SPECIES. THE PROJECT SPONSOR WILL ADHERE TO THE FOLLOWING MEASURES:

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

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

C) SPILL CONTAINMENT KITS (INCLUDING INSTRUCTIONS FOR CLEANUP AND DISPOSAL) ADEQUATE FOR THE TYPES AND QUANTITY OF HAZARDOUS MATERIALS USED AT THE SITE WILL BE AVAILABLE AT THE WORK SITE.

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

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

12) INVASIVE SPECIES CONTROL. THE FOLLOWING MEASURES WILL BE FOLLOWED TO AVOID INTRODUCTION OF INVASIVE PLANTS AND NOXIOUS WEEDS INTO PROJECT AREAS:

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

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

C) WADING BOOTS WITH FELT SOLES ARE NOT TO BE USED DUE TO THEIR PROPENSITY FOR AIDING IN THE TRANSFER OF INVASIVE SPECIES.



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:
NEZ PERCE
TRIBE



LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

HIP IV - GENERAL CONSERVATION MEASURES

DRAWING NUMBER:

8.1

SHEET: 18 OF 19

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Plotted: 07/12/2023, 12:39 | syj

WORK AREA ISOLATION & FISH SALVAGE.

ANY WORK AREA WITHIN THE WETTED CHANNEL WILL BE ISOLATED FROM THE ACTIVE STREAM WHENEVER ESA-LISTED FISH ARE REASONABLY CERTAIN TO BE PRESENT, OR IF THE WORK AREA IS LESS THAN 300-FEET UPSTREAM FROM KNOWN SPAWNING HABITATS. WHEN WORK AREA ISOLATION IS REQUIRED, DESIGN PLANS WILL INCLUDE ALL ISOLATION ELEMENTS, FISH RELEASE AREAS, AND, WHEN A PUMP IS USED TO DEWATER THE ISOLATION AREA AND FISH ARE PRESENT, A FISH SCREEN THAT MEETS NMFS'S FISH SCREEN CRITERIA (NMFS 2011, OR MOST CURRENT). WORK AREA ISOLATION AND FISH CAPTURE ACTIVITIES WILL OCCUR DURING PERIODS OF THE COOLEST AIR AND WATER TEMPERATURES POSSIBLE, NORMALLY EARLY IN THE MORNING VERSUS LATE IN THE DAY, AND DURING CONDITIONS APPROPRIATE TO MINIMIZE STRESS AND DEATH OF SPECIES PRESENT.

- NATIONAL MARINE FISHERIES SERVICE. 2011. ANADROMOUS SALMONID PASSAGE FACILITY DESIGN. NORTHWEST REGION. AVAILABLE ONLINE AT: [HTTP://WWW.NWR.NOAA.GOV/SALMON-HYDROPOWER/FERC/UPLOAD/FISH-PASSAGE-DESIGN.PDF](http://www.nwr.noaa.gov/salmon-hydropower/ferc/upload/fish-passage-design.pdf)

- U.S. FISH AND WILDLIFE SERVICE. 2010. BEST MANAGEMENT PRACTICES TO MINIMIZE ADVERSE EFFECTS TO PACIFIC LAMPREY.

[HTTP://WWW.FWS.GOV/PACIFIC/FISHERIES/SPHABCON/LAMPREY/PDF/BEST%20MANAGEMENT%20PRACTICES%20FOR%20PACIFIC%20LAMPREY%20APRIL%202010%20VERSION.PDF](http://www.fws.gov/pacific/fisheries/sphabcon/lamprey/pdf/best%20management%20practices%20for%20pacific%20lamprey%20april%202010%20version.pdf)

FOR SALVAGE OPERATIONS IN KNOWN BULL TROUT SPAWNING AND REARING HABITAT, ELECTROFISHING SHALL ONLY OCCUR FROM MAY 1 TO JULY 31. NO ELECTROFISHING WILL OCCUR IN ANY BULL TROUT OCCUPIED HABITAT AFTER AUGUST 15. BULL TROUT ARE VERY TEMPERATURE SENSITIVE AND GENERALLY SHOULD NOT BE ELECTROSHOCKED OR OTHERWISE HANDLED WHEN TEMPERATURES EXCEED 15 DEGREES CELSIUS. SALVAGE ACTIVITIES SHOULD TAKE PLACE DURING PERIODS OF THE COOLEST AIR AND WATER TEMPERATURES POSSIBLE, NORMALLY EARLY IN THE MORNING VERSUS LATE IN THE DAY, AND DURING CONDITIONS APPROPRIATE TO MINIMIZE STRESS TO FISH SPECIES PRESENT.

SALVAGE OPERATIONS WILL FOLLOW THE ORDERING, METHODOLOGIES, AND CONSERVATION MEASURES SPECIFIED BELOW IN STEPS 1 THROUGH 6. STEPS 1 AND 2 WILL BE IMPLEMENTED FOR ALL PROJECTS WHERE WORK AREA ISOLATION IS NECESSARY ACCORDING TO CONDITIONS ABOVE. ELECTROFISHING (STEP 3) CAN BE IMPLEMENTED TO ENSURE ALL FISH HAVE BEEN REMOVED FOLLOWING STEPS 1 AND 2, OR WHEN OTHER MEANS OF FISH CAPTURE MAY NOT BE FEASIBLE OR EFFECTIVE. DEWATERING AND REWATERING (STEPS 4 AND 5) WILL BE IMPLEMENTED UNLESS WETTED IN-STREAM WORK IS DEEMED TO BE MINIMALLY HARMFUL TO FISH, AND IS BENEFICIAL TO OTHER AQUATIC SPECIES. DEWATERING WILL NOT BE CONDUCTED IN AREAS KNOWN TO BE OCCUPIED BY LAMPREY, UNLESS LAMPREYS ARE SALVAGED USING GUIDANCE SET FORTH IN US FISH AND WILDLIFE SERVICE (2010)3.

1) ISOLATE.

A) BLOCK NETS WILL BE INSTALLED AT UPSTREAM AND DOWNSTREAM LOCATIONS AND MAINTAINED IN A SECURED POSITION TO EXCLUDE FISH FROM ENTERING THE PROJECT AREA.

B) BLOCK NETS WILL BE SECURED TO THE STREAM CHANNEL BED AND BANKS UNTIL FISH CAPTURE AND TRANSPORT ACTIVITIES ARE COMPLETE. BLOCK NETS MAY BE LEFT IN PLACE FOR THE DURATION OF THE PROJECT TO EXCLUDE FISH.

C) IF BLOCK NETS REMAIN IN PLACE MORE THAN ONE DAY, THE NETS WILL BE MONITORED AT LEAST DAILY TO ENSURE THEY ARE SECURED TO THE BANKS AND FREE OF ORGANIC ACCUMULATION. IF THE PROJECT IS WITHIN BULL TROUT SPAWNING AND REARING HABITAT, THE BLOCK NETS MUST BE CHECKED EVERY FOUR HOURS FOR FISH IMPINGEMENT ON THE NET. LESS FREQUENT INTERVALS MUST BE APPROVED THROUGH A VARIANCE REQUEST.

D) NETS WILL BE MONITORED HOURLY ANYTIME THERE IS INSTREAM DISTURBANCE.

2) SALVAGE. AS DESCRIBED BELOW, FISH TRAPPED WITHIN THE ISOLATED WORK AREA WILL BE CAPTURED TO MINIMIZE THE RISK OF INJURY, THEN RELEASED AT A SAFE SITE:

A) REMOVE AS MANY FISH AS POSSIBLE PRIOR TO DEWATERING.

B) DURING DEWATERING, ANY REMAINING FISH WILL BE COLLECTED BY HAND OR DIP NETS.

C) SEINES WITH A MESH SIZE TO ENSURE CAPTURE OF THE RESIDING ESA-LISTED FISH WILL BE USED.

D) MINNOW TRAPS WILL BE LEFT IN PLACE OVERNIGHT AND USED IN CONJUNCTION WITH SEINING.

E) IF BUCKETS ARE USED TO TRANSPORT FISH:

I. THE TIME FISH ARE IN A TRANSPORT BUCKET WILL BE LIMITED, AND WILL BE RELEASED AS QUICKLY AS POSSIBLE;

II. THE NUMBER OF FISH WITHIN A BUCKET WILL BE LIMITED BASED ON SIZE, AND FISH WILL BE OF RELATIVELY COMPARABLE SIZE TO MINIMIZE PREDATION;

III. AERATORS FOR BUCKETS WILL BE USED OR THE BUCKET WATER WILL BE FREQUENTLY CHANGED WITH COLD CLEAR WATER AT 15 MINUTE OR MORE FREQUENT INTERVALS.

IV. BUCKETS WILL BE KEPT IN SHADED AREAS OR WILL BE COVERED BY A CANOPY IN EXPOSED AREAS.

V. DEAD FISH WILL NOT BE STORED IN TRANSPORT BUCKETS, BUT WILL BE LEFT ON THE STREAM BANK TO AVOID MORTALITY COUNTING ERRORS.

F) AS RAPIDLY AS POSSIBLE (ESPECIALLY FOR TEMPERATURE-SENSITIVE BULL TROUT), FISH WILL BE RELEASED IN AN AREA THAT PROVIDES ADEQUATE COVER AND FLOW REFUGE. UPSTREAM RELEASE IS GENERALLY PREFERRED, BUT FISH RELEASED DOWNSTREAM WILL BE SUFFICIENTLY OUTSIDE OF THE INFLUENCE OF CONSTRUCTION.

G) SALVAGE WILL BE SUPERVISED BY A QUALIFIED FISHERIES BIOLOGIST EXPERIENCED WITH WORK AREA ISOLATION AND COMPETENT TO ENSURE THE SAFE HANDLING OF ALL FISH.

3) ELECTROFISHING. ELECTROFISHING WILL BE USED ONLY AFTER OTHER SALVAGE METHODS HAVE BEEN EMPLOYED OR WHEN OTHER MEANS OF FISH CAPTURE ARE DETERMINED TO NOT BE FEASIBLE OR EFFECTIVE. IF ELECTROFISHING WILL BE USED TO CAPTURE FISH FOR SALVAGE, THE SALVAGE OPERATION WILL BE LED BY AN EXPERIENCED FISHERIES BIOLOGIST AND THE FOLLOWING GUIDELINES WILL BE FOLLOWED:

A) THE NMFS'S ELECTROFISHING GUIDELINES (NMFS 2000).

B) ONLY DIRECT CURRENT (DC) OR PULSED DIRECT CURRENT (PDC) WILL BE USED AND CONDUCTIVITY MUST BE

TESTED.

I. IF CONDUCTIVITY IS LESS THAN 100 MS, VOLTAGE RANGES FROM 900 TO 1100 WILL BE USED.

II. FOR CONDUCTIVITY RANGES BETWEEN 100 TO 300 MS, VOLTAGE RANGES WILL BE 500 TO 800.

III. FOR CONDUCTIVITY GREATER THAN 300 MS, VOLTAGE WILL BE LESS THAN 400.

C) ELECTROFISHING WILL BEGIN WITH A MINIMUM PULSE WIDTH AND RECOMMENDED VOLTAGE AND THEN GRADUALLY INCREASE TO THE POINT WHERE FISH ARE IMMOBILIZED.

D) THE ANODE WILL NOT INTENTIONALLY CONTACT FISH.

E) ELECTROFISHING SHALL NOT BE CONDUCTED WHEN THE WATER CONDITIONS ARE TURBID AND VISIBILITY IS POOR. THIS CONDITION MAY BE EXPERIENCED WHEN THE SAMPLER CANNOT SEE THE STREAM BOTTOM IN ONE FOOT OF WATER.

F) IF MORTALITY OR OBVIOUS INJURY (DEFINED AS DARK BANDS ON THE BODY, SPINAL DEFORMATIONS, DE-SCALING OF 25% OR MORE OF BODY, AND TORPIDITY OR INABILITY TO MAINTAIN UPRIGHT ATTITUDE AFTER SUFFICIENT RECOVERY TIME) OCCURS DURING ELECTROFISHING, OPERATIONS WILL BE IMMEDIATELY DISCONTINUED, MACHINE SETTINGS, WATER TEMPERATURE AND CONDUCTIVITY CHECKED, AND PROCEDURES ADJUSTED OR ELECTROFISHING POSTPONED TO REDUCE MORTALITY.

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

A) DIVERSION AROUND THE CONSTRUCTION SITE MAY BE ACCOMPLISHED WITH A COFFER DAM AND A BY-PASS CULVERT OR PIPE, OR A LINED, NON-ERODIBLE DIVERSION DITCH. WHERE GRAVITY FEED IS NOT POSSIBLE, A PUMP MAY BE USED, BUT MUST BE OPERATED IN SUCH A WAY AS TO AVOID REPETITIVE DEWATERING AND REWATERING OF THE SITE. IMPOUNDMENT BEHIND THE COFFERDAM MUST OCCUR SLOWLY THROUGH THE TRANSITION, WHILE CONSTANT FLOW IS DELIVERED TO THE DOWNSTREAM REACHES.

B) ALL PUMPS WILL HAVE FISH SCREENS TO AVOID JUVENILE FISH IMPINGEMENT OR ENTRAINMENT, AND WILL BE OPERATED IN ACCORDANCE WITH NMFS'S CURRENT FISH SCREEN CRITERIA (NMFS 2011.4, OR MOST RECENT VERSION). IF THE PUMPING RATE EXCEEDS 3 CUBIC FEET SECOND (CFS), A NMFS HYDRO FISH PASSAGE REVIEW WILL BE NECESSARY.

C) DISSIPATION OF FLOW ENERGY AT THE BYPASS OUTFLOW WILL BE PROVIDED TO PREVENT DAMAGE TO RIPARIAN VEGETATION OR STREAM CHANNEL.

D) SAFE REENTRY OF FISH INTO THE STREAM CHANNEL WILL BE PROVIDED, PREFERABLY INTO POOL HABITAT WITH COVER, IF THE DIVERSION ALLOWS FOR DOWNSTREAM FISH PASSAGE.

E) SEEPAGE WATER WILL BE PUMPED TO A TEMPORARY STORAGE AND TREATMENT SITE OR INTO UPLAND AREAS TO ALLOW WATER TO PERCOLATE THROUGH SOIL OR TO FILTER THROUGH VEGETATION PRIOR TO REENTERING THE STREAM CHANNEL.

4 NATIONAL MARINE FISHERIES SERVICE. 2011. ANADROMOUS SALMONID PASSAGE FACILITY DESIGN. NORTHWEST REGION. AVAILABLE ONLINE AT:

[HTTP://WWW.NWR.NOAA.GOV/SALMON-HYDROPOWER/FERC/UPLOAD/FISH-PASSAGE-DESIGN.PDF](http://www.nwr.noaa.gov/salmon-hydropower/ferc/upload/fish-passage-design.pdf)

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

CONSTRUCTION AND POST-CONSTRUCTION CONSERVATION MEASURES.

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

2) CONSTRUCTION AND DISCHARGE WATER.

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

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

C) ALL CONSTRUCTION DISCHARGE WATER WILL BE COLLECTED AND TREATED USING THE BEST AVAILABLE TECHNOLOGY APPLICABLE TO SITE CONDITIONS.

D) TREATMENTS TO REMOVE DEBRIS, NUTRIENTS, SEDIMENT, PETROLEUM HYDROCARBONS, METALS AND OTHER POLLUTANTS LIKELY TO BE PRESENT WILL BE PROVIDED.



NO.	DATE	BY	ISSUE / DESCRIPTION
1	03/21/2023	RSC	MODIFIED CONCRETE SILL
2	07/07/2023	RSC	MODIFIED CONCRETE SILL

DESIGNED BY: AKM
DRAWN BY: AKM/SCY
APPROVED BY: RSC
REVISION NO.: -
DATE: 7/12/23



PREPARED FOR:

NEZ PERCE
TRIBE



LOSTINE RIVER POLEY ALLEN FISH PASSAGE
WALLOWA COUNTY, OREGON

HIP IV - GENERAL CONSERVATION MEASURES

DRAWING NUMBER:

8.2

SHEET: 19 OF 19