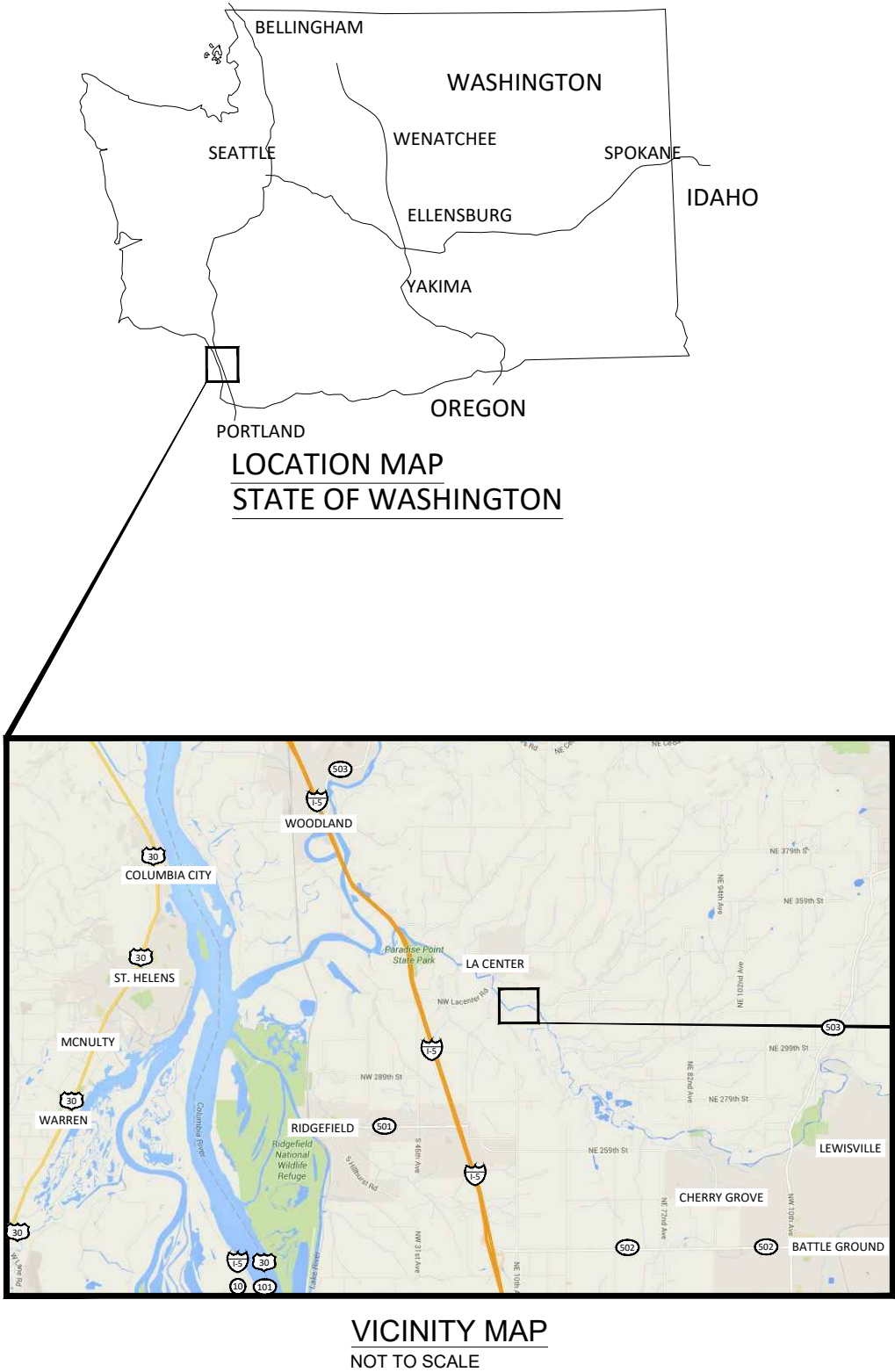


Lower East Fork Lewis River

Ridgefield Pits Restoration Preliminary Design

June 2021



SHEET LIST

- 1 - COVER, LOCATION, AND SHEET LIST
- 2 - GENERAL NOTES
- 3 - EROSION CONTROL NOTES
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- 10 - PROPOSED CONDITIONS - LOWER SIDE CHANNEL
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- 12 - TYPICAL CROSS SECTION
- 13 - TYPICAL DETAILS
- 14 - TYPICAL DETAILS
- 15 - TYPICAL DETAILS
- 16 - PLANTING PLAN

SITE MAP

NOT TO SCALE

COORDINATES:
LATITUDE 45.82389
LONGITUDE -122.62766

SECTION 28, TOWNSHIP 4N, RANGE 2E

WATERBODY: EF LEWIS RIVER
TRIBUTARY OF: LEWIS RIVER

				GS DRAWN	GJ, MR DESIGNED	-- CHECKED	RIDGEFIELD PITS RESTORATION (17-1070) PRELIMINARY DESIGN LOWER EAST FORK LEWIS RIVER	 501 Portway Avenue, Suite 101 Hood River, OR 97031 541.386.9003 www.interfluve.com	COVER, LOCATION, AND SHEET LIST	SHEET 1 of 16
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THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING WITH OWNER AND OWNER'S REPRESENTATIVE PRIOR TO MOBILIZING TO SITE AND BEGINNING CONSTRUCTION.

ALL WORK SHALL CONFORM TO THE CURRENT EDITIONS OF STANDARD PLANS AND SPECIFICATIONS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), AND LOCAL STANDARDS UNLESS INDICATED OTHERWISE BY THE CONTRACT DOCUMENTS. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT WILL PREVAIL.

ALL WORK SHALL BE IN COMPLIANCE WITH REQUIREMENTS STATED IN PERMITS ISSUED FOR THIS PROJECT.

WDFW IN-WATER WORK PERIODS

WORK SHALL OCCUR DURING THE PERMITTED IN-WATER WORK PERIOD STATED IN THE HYDRAULIC PROJECT APPROVAL.

EXISTING DATA

TOPOGRAPHIC DATA WAS COLLECTED BY INTER-FLUVE USING RTK AND TOTAL STATION IN OCTOBER - DECEMBER 2016 AND OCTOBER 2019.

HORIZONTAL DATUM: STATE PLANE NAD83 WASHINGTON SOUTH
VERTICAL DATUM: NAVD88

HYDROLOGY INFORMATION FROM USGS + DOE STREAM GAGES.

HYDRAULIC MODELING BY LOWER COLUMBIA ESTUARY PARTNERSHIP USING TUFLOW.

GIS DATA INCLUDING: AERIAL PHOTOGRAPHY, LIDAR, FISH USE, SURFACE SOILS INFORMATION, LAND OWNERSHIP, AND TRANSPORTATION ROUTES PROVIDED BY VARIOUS AGENCIES.

SOILS

SUBSURFACE SOILS ARE EXPECTED TO BE FINES, SANDS, GRAVELS AND COBBLES. CONTRACTOR SHALL CONDUCT OWN INVESTIGATIONS IF ADDITIONAL DATA IS REQUIRED AT NO ADDITIONAL COST.

MAPPED SOILS IN THE PROJECT AREA ARE INCLUDED IN THE FOLLOWING TABLE. SOILS DATA IS FROM THE USDA - NATURAL RESOURCES CONSERVATION SERVICE, WEB SOIL SURVEY MAPPER, ACCESSED JUNE 2021.

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Rc	Riverwash, cobbly	90.5	25%
W	Water	88.3	24%
WgB	Washougal gravelly loam, 0 to 8 percent slopes	69.4	19%
PuA	Puyallup fine sandy loam, 0 to 3 percent slopes	59.3	16%
HoG	Hillsboro silt loam, 30 to 65 percent slopes	21.5	6%
WaA	Washougal loam, 0 to 3 percent slopes	13.8	4%
WhF	Washougal stony loam, 30 to 60 percent slopes	10.4	3%
PhB	Pilchuck fine sand, 0 to 8 percent slopes	6.9	2%

UTILITIES

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR HAVING UTILITIES LOCATED PRIOR TO CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL CALL (800-424-5555) FOR UTILITY LOCATE PRIOR TO CONSTRUCTION

THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE EFFECTED UTILITY SERVICE TO REPORT ANY DAMAGED OR DESTROYED UTILITIES.

THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND LABOR TO AID THE EFFECTED UTILITY SERVICE IN REPAIRING DAMAGED OR DESTROYED UTILITIES AT NO ADDITIONAL COST.

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C:\Users\johnd\Documents\Projects\Ridgefield Pits Restoration\Drawings\02 Preliminary Design\02 Preliminary Design.dwg, 5/7/21

CONSTRUCTION STAKING

CONTRACTOR WILL PROVIDE STAKING OF PROJECT LIMITS, GRADE STAKES, AND ELEVATION CONTROL POINTS. SOME FIELD ADJUSTMENTS TO THE LINES AND GRADES ARE TO BE EXPECTED.

CONTRACTOR SHALL MEET WITH THE OWNER AND OWNER'S REPRESENTATIVE TO DEFINE AND MARK LIMITS OF DISTURBANCE PRIOR TO MOBILIZATION OF EQUIPMENT OR MATERIALS ONTO THE SITE.

THE CONTRACTOR SHALL REPLACE DAMAGED OR DESTROYED CONSTRUCTION STAKES AT NO ADDITIONAL COST.

CONSTRUCTION MATERIALS

ALL MATERIALS QUANTITIES ARE BASED ON IN-PLACE CONDITION DETERMINED BY A PRE-PROJECT CONDITION SURVEY COMPARED AGAINST A PROJECT CONDITION SURVEY

CONTRACTOR SHALL ALLOW FOR EXPANSION OF EXCAVATED MATERIAL AND COMPACTION OF PLACED MATERIAL AT NO ADDITIONAL MEASURE OR COST. MEASUREMENT AND PAYMENT SHALL NOT BE BASED ON WEIGHT TICKETS OR TRUCK MEASURE WITHOUT PRIOR WRITTEN APPROVAL.

LOCATION, ALIGNMENT, AND ELEVATION OF LOGS AND LOGS WITH ROOT WADS ARE SUBJECT TO ADJUSTMENT BASED ON FIELD CONDITIONS, AND MATERIAL SIZE.

ANY EXCESS MATERIAL SHALL BE STOCKPILED NEATLY IN AN APPROVED LOCATION OF THE STOCKPILE AND STAGING AREA. AT COMPLETION OF WORK, THE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE FOR LEGAL DISPOSAL.

CONSTRUCTION ACCESS/TRAFFIC CONTROL

CONTRACTOR SHALL SUBMIT AN ACCESS, STAGING, AND STOCKPILE PLAN TO THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO MOBILIZATION.

PUBLIC ACCESS TO/ALONG ROADWAYS SHALL BE MAINTAINED AT ALL TIMES.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING ANY REQUIRED TRAFFIC CONTROL OR ACCESS PERMITS.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING ANY REQUIRED TRAFFIC CONTROL INCLUDING, BUT NOT LIMITED TO, SIGNAGE AND FLAGGERS.

ALL SAPLINGS AND TREES TO BE TRANSPLANTED OR REMOVED SHALL BE CLEARLY MARKED AND APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.

ALL EQUIPMENT, MATERIALS AND PERSONNEL SHALL REMAIN WITHIN THE LIMITS OF DISTURBANCE.

THE CONTRACTOR SHALL KEEP THE WORK AREAS IN NEAT CONDITION, FREE OF DEBRIS AND LITTER FOR THE DURATION OF THE PROJECT.

CONTRACTOR SHALL IMPLEMENT MEASURES TO CONTROL AND MINIMIZE WIND BLOWN DUST FROM THE SITE.

ALL DISTURBED AREAS INCLUDING ROADS, DRIVEWAYS AND ACCESS ROUTES SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AND RE-VEGETATED PER PLANS.

ALL DISTURBED AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST.

ANY FENCES REMOVED FOR ACCESS OR CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

STAGING AND STOCKPILE AREAS

STAGING AND STOCKPILE AREAS WILL BE FLAGGED BY THE OWNER.STAGING AREAS USED FOR CONSTRUCTION EQUIPMENT STORAGE, VEHICLE STORAGE, FUELING, SERVICING, AND HAZARDOUS MATERIAL STORAGE SHALL BE 150 FEET OR MORE FROM ANY NATURAL WATER BODY OR WETLAND. NATURAL MATERIALS MAY BE STOCKPILED NEAR INSTALLATION AREAS.

THE EROSION AND SEDIMENT CONTROL (ESC) PLAN PROVIDED IS FOR INFORMATIONAL PURPOSES ONLY, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING EROSION CONTROL MEASURES TO COMPLY WITH APPLICABLE REGULATIONS.

A. THE IMPLEMENTATION OF AN ESC PLAN AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

- B. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- C. ESC FACILITIES AS APPROXIMATELY SHOWN ON THIS PLAN ARE TO BE CONSTRUCTED PRIOR TO CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT ENTER SURFACE WATERS, THE DRAINAGE SYSTEM, OR VIOLATE APPLICABLE WATER STANDARDS.
- D. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED AT NO ADDITIONAL COST FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
- E. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
- F. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A WEEK OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
- G. STABILIZED CONSTRUCTION ENTRANCES AND ADDITIONAL MEASURES MAY BE REQUIRED AND SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT TO ENSURE ALL ACCESS ROADS ARE KEPT CLEAN AT NO ADDITIONAL COST.

ALL ESC FACILITIES SHALL BE INSPECTED, MAINTAINED, AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL ESC FACILITIES SHALL BE INSPECTED DAILY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD AND AFTER EVENTS EXCEEDING 2 HOURS DURATION.

WEEKLY REPORTS SUMMARIZING THE SCOPE OF INSPECTIONS, THE PERSONNEL CONDUCTING THE INSPECTION, THE DATE(S) OF THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN, AND ACTIONS TAKEN AS A RESULT OF THESE INSPECTIONS SHALL BE PREPARED AND RETAINED ON SITE BY THE CONTRACTOR. IN ADDITION, A RECORD OF THE FOLLOWING DATES SHALL BE INCLUDED IN THE REPORTS:

1. WHEN MAJOR GRADING ACTIVITIES OCCUR.
2. DATES OF RAINFALL EVENTS EITHER EXCEEDING 2 HOURS DURATION OR MORE THAN 0.5 INCHES/24 HOURS.
3. WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON SITE, OR ON A PORTION OF THE SITE.
4. WHEN STABILIZATION MEASURES ARE INITIATED FOR PORTIONS OF THE SITE.
5. ESC RECORDS SHALL BE MADE AVAILABLE TO THE OWNER AND OWNER'S REPRESENTATIVE ON REQUEST AND SHALL BE PROVIDED FOR REVIEW AND APPROVAL PRIOR TO APPLICATION FOR PAYMENT.

FROM MAY 1 THROUGH SEPTEMBER 30, ALL EXPOSED SOILS SHALL BE PROTECTED FROM EROSION BY MULCHING, HYDROSEED COVERING, OR OTHER APPROVED MEASURES WITHIN THREE DAYS OF GRADING. FROM OCTOBER 1 THROUGH APRIL 30, ALL EXPOSED SOILS MUST BE PROTECTED WITHIN 2 DAYS OF GRADING. SOILS SHALL BE STABILIZED BEFORE A WORK SHUTDOWN, HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED WITH SEDIMENT TRAPPING MEASURES. HYDROSEED ALL DISTURBED AREAS AS SOON AS PRACTICAL NOT INDICATED IN THE CONTRACT DOCUMENTS FOR OTHER PERMANENT STABILIZATION MEASURES.

DESIGN, CONSTRUCT, AND PHASE CUT AND FILL SLOPES IN A MANNER THAT WILL MINIMIZE EROSION. REDUCE SLOPE VELOCITIES ON DISTURBED SLOPES BY PROVIDING TEMPORARY BARRIERS. STORMWATER FROM OFF SITE SHOULD BE HANDLED SEPARATELY FROM STORMWATER GENERATED ON SITE.

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BEST MANAGEMENT PRACTICES (BMPs) ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED FROM THE SITE OR INCORPORATED INTO FINISHED GRADING. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED

TEMPORARY COFFERDAMS SHALL BE USED TO ISOLATE IN-CHANNEL EXCAVATION AREAS FROM THE RIVER.

DEWATERING OF IN-CHANNEL WORK AREAS SHALL OCCUR CONCURRENT WITH FISH RESCUE. CONTRACTOR SHALL PROVIDE AMPLE TIME TO SCHEDULE FISH RESCUE. IF DIVERSION FAILS DUE TO CONTRACTOR NEGLIGENCE, FISH RESCUE SHALL BE REPEATED AT CONTRACTOR'S EXPENSE.

CONTRACTOR SHALL PERFORM CONSTRUCTION DEWATERING IN SUCH A MANNER AS TO AVOID THE RELEASE OF SEDIMENT-LADEN WATER TO SURFACE WATERS. SEDIMENT LADEN WATER MAY BE PUMPED TO AN UPLAND DISCHARGE LOCATION AND ALLOWED TO SHEET FLOW THROUGH EXISTING VEGETATION BEFORE INFILTRATING INTO THE GROUND. IF THIS METHOD IS NOT SUFFICIENT TO PREVENT RETURN OF TURBID WATER TO THE RIVER, A 'DIRT-BAG' OR SEDIMENT RETENTION STRUCTURE MAY BE REQUIRED AS NECESSARY TO COMPLY WITH LAWS AND PERMIT REQUIREMENTS AT NO ADDITIONAL COST TO THE OWNER.

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 COFFERDAM 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 OPERABLE 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 2014, OR MOST RECENT VERSION). IF THE PUMPING RATE EXCEEDS 3 CUBIC FEET PER SECOND (CFS), A NMFS HYDRO FISH PASSAGE REVIEW WILL BE NECESSARY.

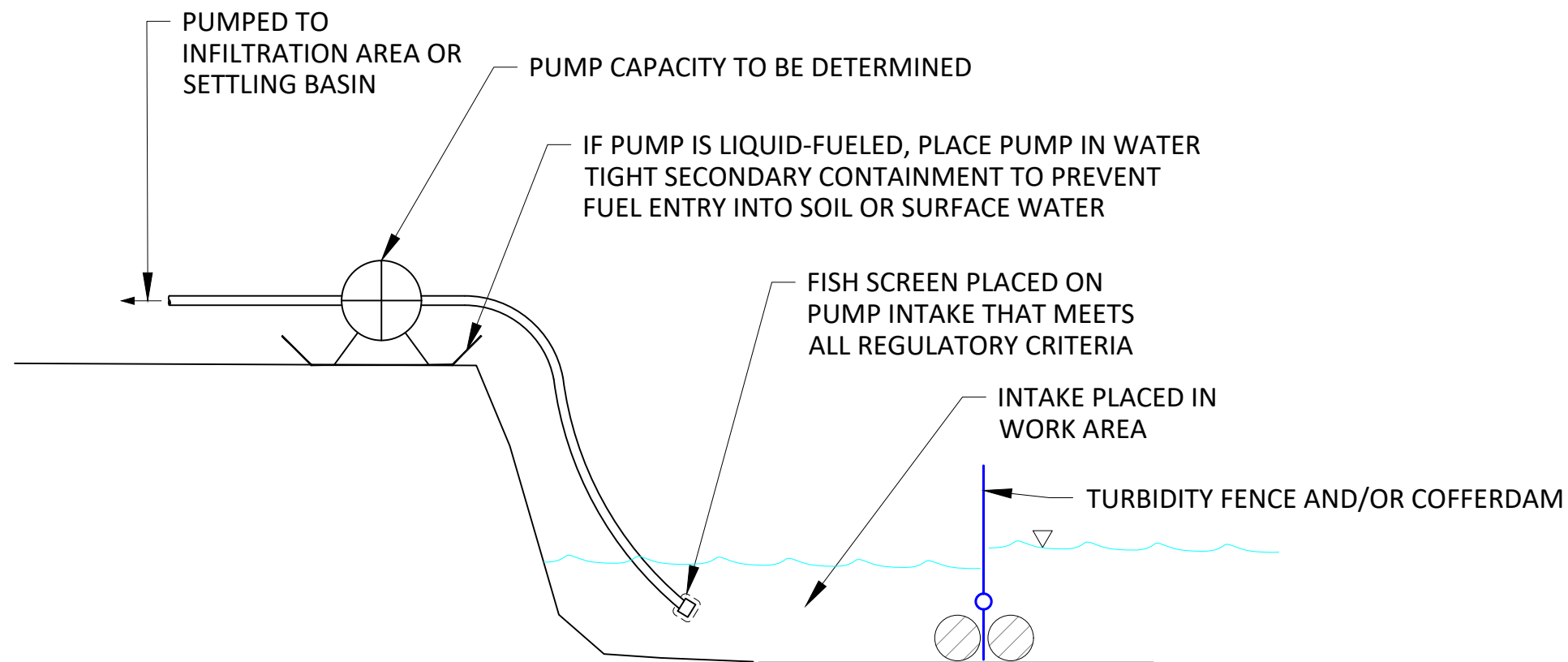
CONTRACTOR SHALL PROVIDE VISQUINE OR GEOTEXTILE LINER OR PLYWOOD OR METAL PLATING AS NECESSARY TO DISSIPATE PUMP DISCHARGE JET TO PREVENT EROSION.

OWNER'S REPRESENTATIVE SHALL APPROVE DEWATERING DISCHARGE LOCATION PRIOR TO IMPLEMENTATION.



1. BULK BAG COFFERDAM SHALL BE CONSTRUCTED OF SEVERAL UNITS OF BULK BAGS FILLED WITH WASHED SPAWNING GRAVEL, AND ABUTTED SIDE BY SIDE TO CREATE A ROW THAT SEPARATES THE CONSTRUCTION SITE FROM THE RIVER.
2. IF WATER DEPTH EXCEEDS 85% OF THE BULK BAG HEIGHT, AN ADDITIONAL TOP ROW OF BULK BAGS SHALL BE INSTALLED, SUPPORTED BY TWO BOTTOM ROWS OF BULK BAGS.
3. BULK BAG COFFERDAM SHALL BE SEALED BY COVERING THE COFFERDAM WITH PLASTIC SHEETING HELD IN PLACE BY SANDBAGS FILLED WITH PEA GRAVEL. PLACED IN ROWS ON TOP OF COFFERDAM, AND AT TOE OF COFFERDAM. THE PLASTIC SHEETING SHALL BE DRAPED ALONG THE CHANNEL BOTTOM ON BOTH SIDES OF THE COFFERDAM WITH OUTWARD EDGE OF SHEETING MINIMUM 2-FEET FROM TOE OF COFFERDAM. THE DRAPED PORTION OF PLASTIC SHEETING SHALL BE PINNED TO THE CHANNEL BED BY MINIMUM TWO ROWS OF STANDARD SANDBAGS.
4. IF POSSIBLE, THE ENDS OF THE COFFERDAM SHALL BE EXTENDED ONTO A DRY GRAVEL BAR. IF THE END MUST BE TERMINATED AT A WET RIVERBANK, THE COFFERDAM SHALL BE TIGHTLY SEALED TO THE GROUND BY PLASTIC SHEETING AND STANDARD SANDBAGS. MULTIPLE LAYERS OF SHEETING AND SANDBAGS MAY BE REQUIRED TO FORM A WATERTIGHT SEAL.
5. BULK BAGS SHALL BE WATERPROOF CUBE-SHAPED POLYPROPYLENE WOVEN FABRIC BAGS WITH FULLY OPEN TOP, FLAT BOTTOM, FOUR LOOPS, MINIMUM 2-TON WEIGHT CAPACITY, MINIMUM 5:1 SAFETY FACTOR.
6. PLASTIC SHEETING SHALL BE MINIMUM 6-MIL THICKNESS. ROLL LENGTH SHALL BE LONG ENOUGH TO ENSURE THAT ENTIRE LENGTH OF COFFERDAM WILL BE COVERED WITHOUT A SEAM. MINIMUM 12-FT WIDE ROLL SHALL BE USED FOR SINGLE LAYER BULK BAG COFFERDAM. TWO LENGTHS OF 12-FT WIDE ROLL SHALL BE USED FOR 2-LAYER STACKED BULK BAG COFFERDAM.
7. CONTRACTOR SHALL PROVIDE PUMPING SUFFICIENT TO LOWER WATER SURFACE IN THE IMPOUNDED AREA IN ORDER TO CAUSE ANY LEAKS UNDER THE COFFERDAM TO PASS WATER TOWARD THE WORK AREA INSTEAD OF FROM THE WORK AREA TO THE RIVER. DISCHARGE TURBID WATER TO UPLAND FLOODPLAIN.
8. BULK BAG COFFERDAM SHALL BE COMPLETELY REMOVED AFTER CONSTRUCTION IS COMPLETED AND TURBIDITY HAS BEEN REMOVED.
9. ALTERNATE COFFERDAM MATERIALS AND CONFIGURATIONS MAY BE ALLOWED BUT SHALL NOT BE IMPLEMENTED WITHOUT REVIEW AND APPROVAL BY THE OWNER. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AND/OR VENDOR CUT SHEETS FOR SUBSTITUTIONS.
10. IF NECESSARY, GAPS BETWEEN BULK BAGS SHALL BE FILLED WITH WASHED GRAVEL TO SEAL AND IMPROVE COFFER DAM. DISPOSAL OF ROCK WASH SHALL BE DETERMINED BY OWNER.

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				----	5/7/21					3 OF 16
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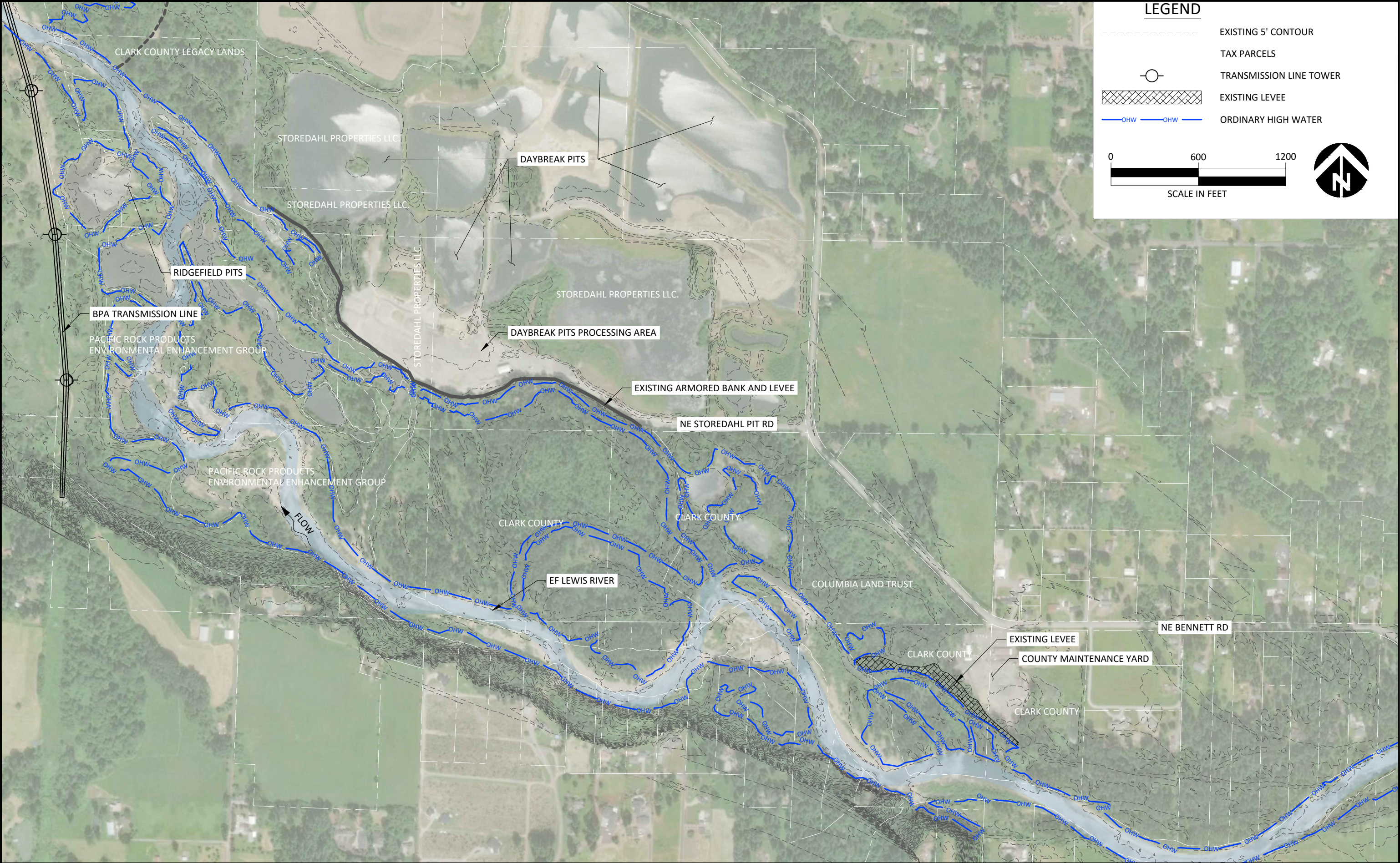


NOTES:

1. PREFERENCE IS TO LAND APPLY WITHOUT DIGGING A SETTLING BASIN. IF LAND APPLICATION SITE IS INADEQUATE TO PREVENT ENTRY OF TURBID WATER INTO STREAM, SETTLING BASIN SHALL BE CONSTRUCTED IN A PREVIOUSLY DISTURBED AREA.
2. SETTLING BASIN SHALL BE MONITORED FOR SILTATION AND REDUCTION IN INFILTRATION RATES WHILE IN USE.

TYPICAL PUMP DETAIL
NOT TO SCALE

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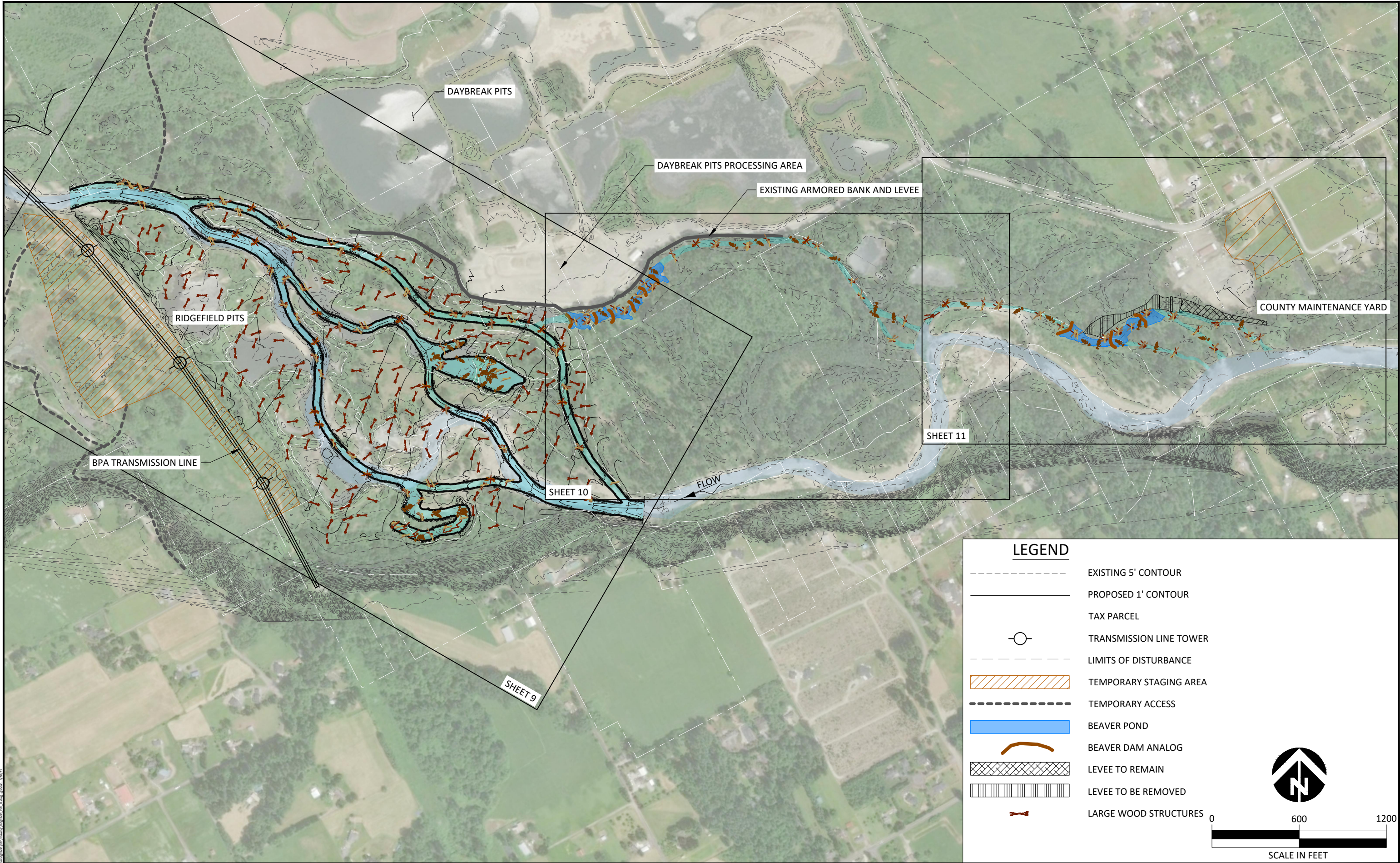
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EXISTING CONDITIONS



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RIDGEFIELD PITS RESTORATION
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LOWER EAST FORK LEWIS RIVER

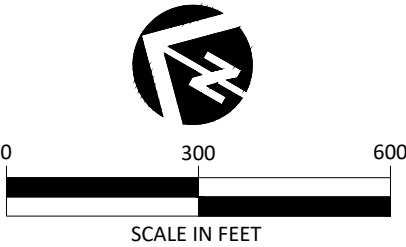


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PROPOSED CONDITIONS OVERVIEW,
ACCESS & STAGING

LEGEND

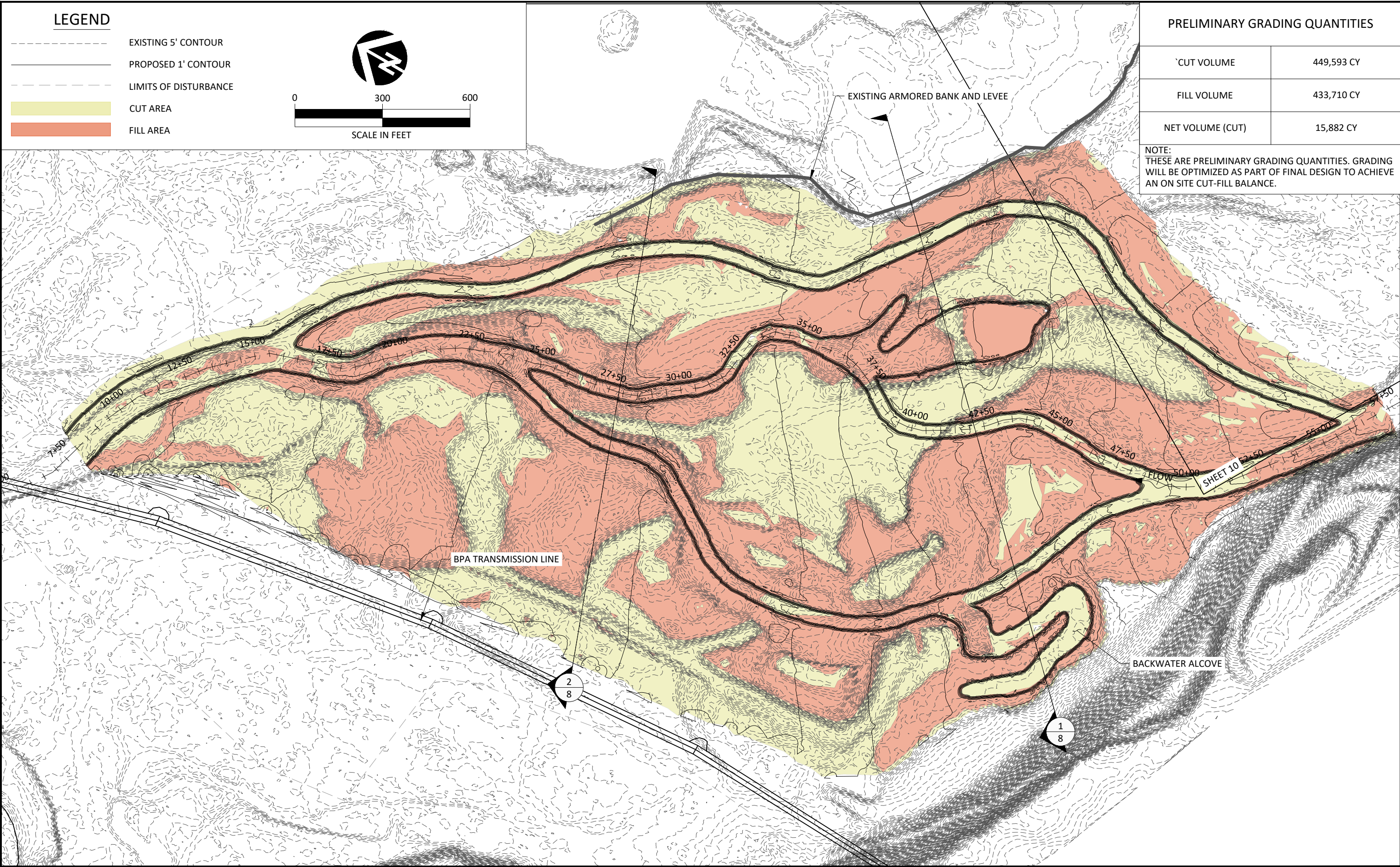
- EXISTING 5' CONTOUR
- PROPOSED 1' CONTOUR
- LIMITS OF DISTURBANCE
- CUT AREA
- FILL AREA



PRELIMINARY GRADING QUANTITIES

'CUT VOLUME	449,593 CY
FILL VOLUME	433,710 CY
NET VOLUME (CUT)	15,882 CY

NOTE:
THESE ARE PRELIMINARY GRADING QUANTITIES. GRADING
WILL BE OPTIMIZED AS PART OF FINAL DESIGN TO ACHIEVE
AN ON SITE CUT-FILL BALANCE.



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RIDGEFIELD PITS RESTORATION
PRELIMINARY DESIGN
LOWER EAST FORK LEWIS RIVER

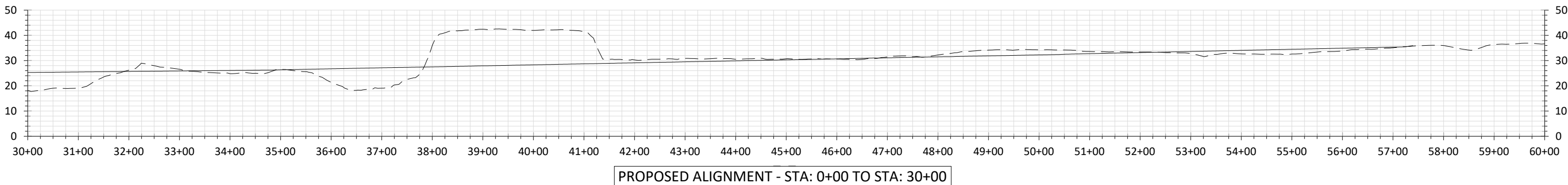
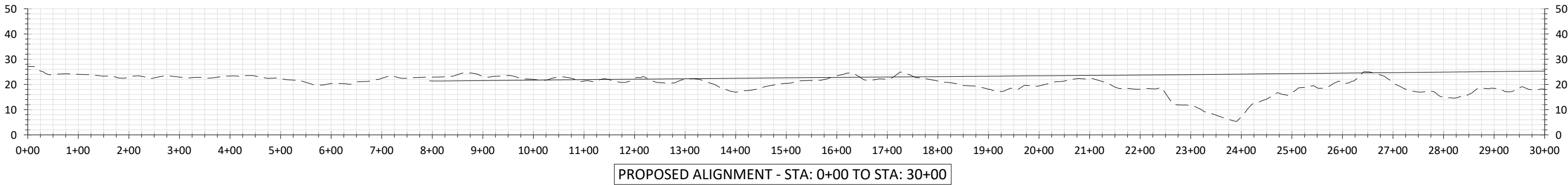


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PRELIMINARY GRADING PLAN -
RIDGEFIELD PITS

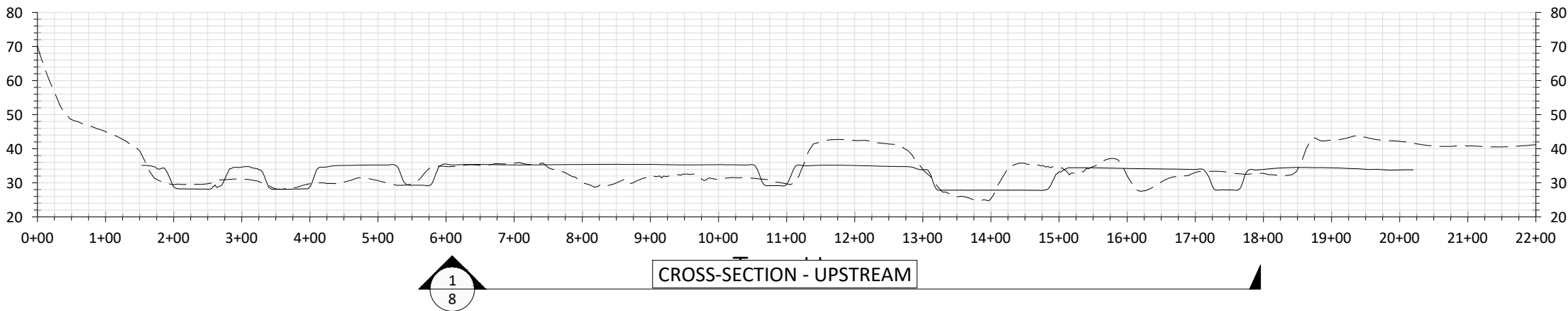
GRADING PROFILES

NOTE: ADDITIONAL LONGITUDINAL PROFILE DETAILS, INCLUDING POOLS, RIFFLES, AND CHANNEL BED COMPLEXITY WILL BE DEVELOPED IN FINAL DESIGN STAGE.



GRADING SECTIONS

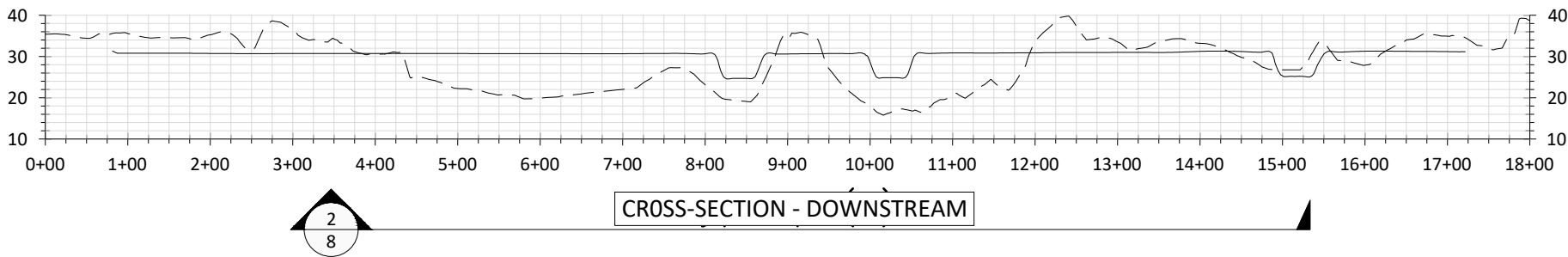
NOTE: ADDITIONAL LONGITUDINAL PROFILE DETAILS, INCLUDING POOLS, RIFFLES, AND CHANNEL BED COMPLEXITY WILL BE DEVELOPED IN FINAL DESIGN STAGE.



LEGEND

--- EXISTING GRADE

— PROPOSED GRADE



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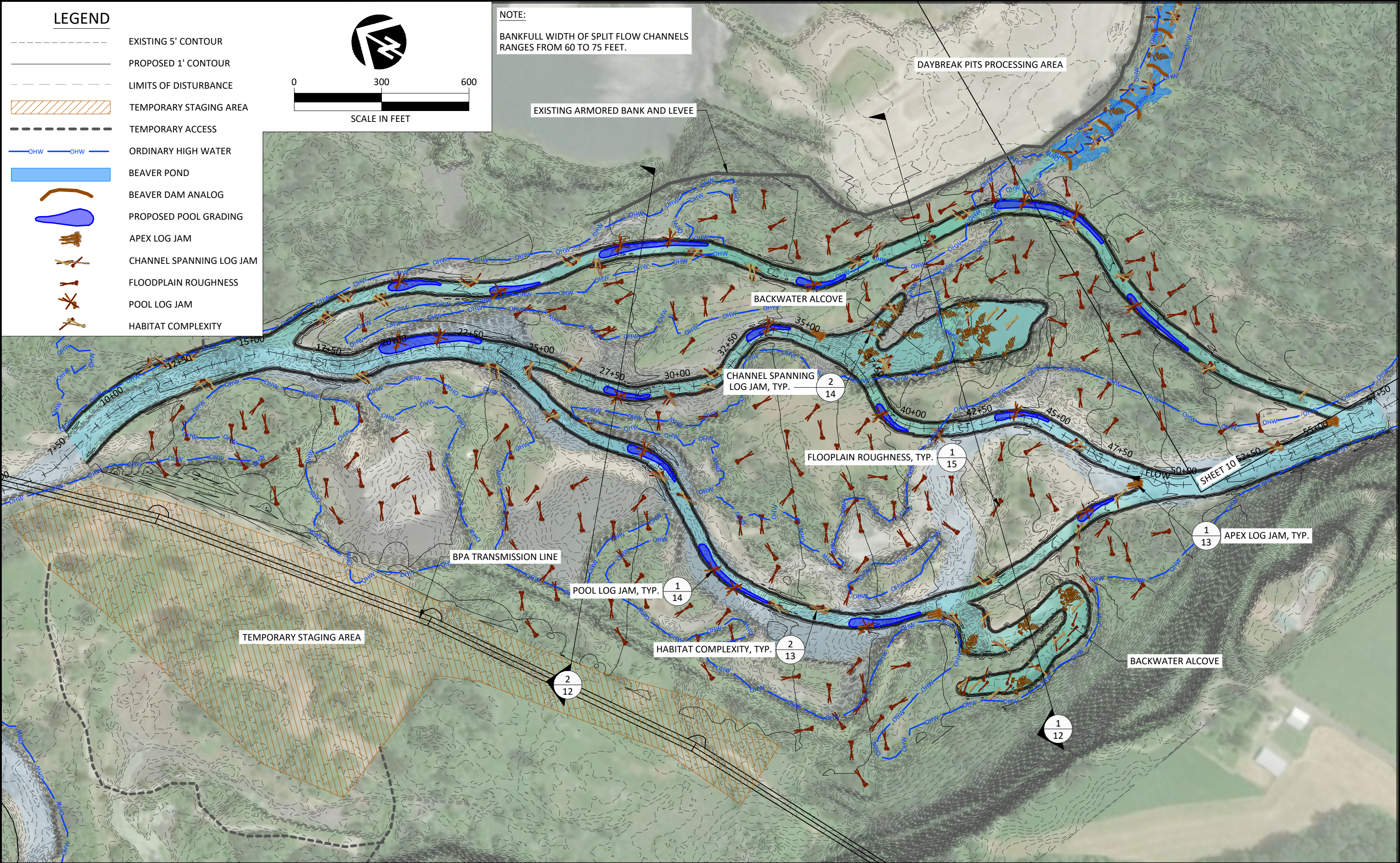
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PRELIMINARY GRADING PROFILES -
RIDGEFIELD PITS



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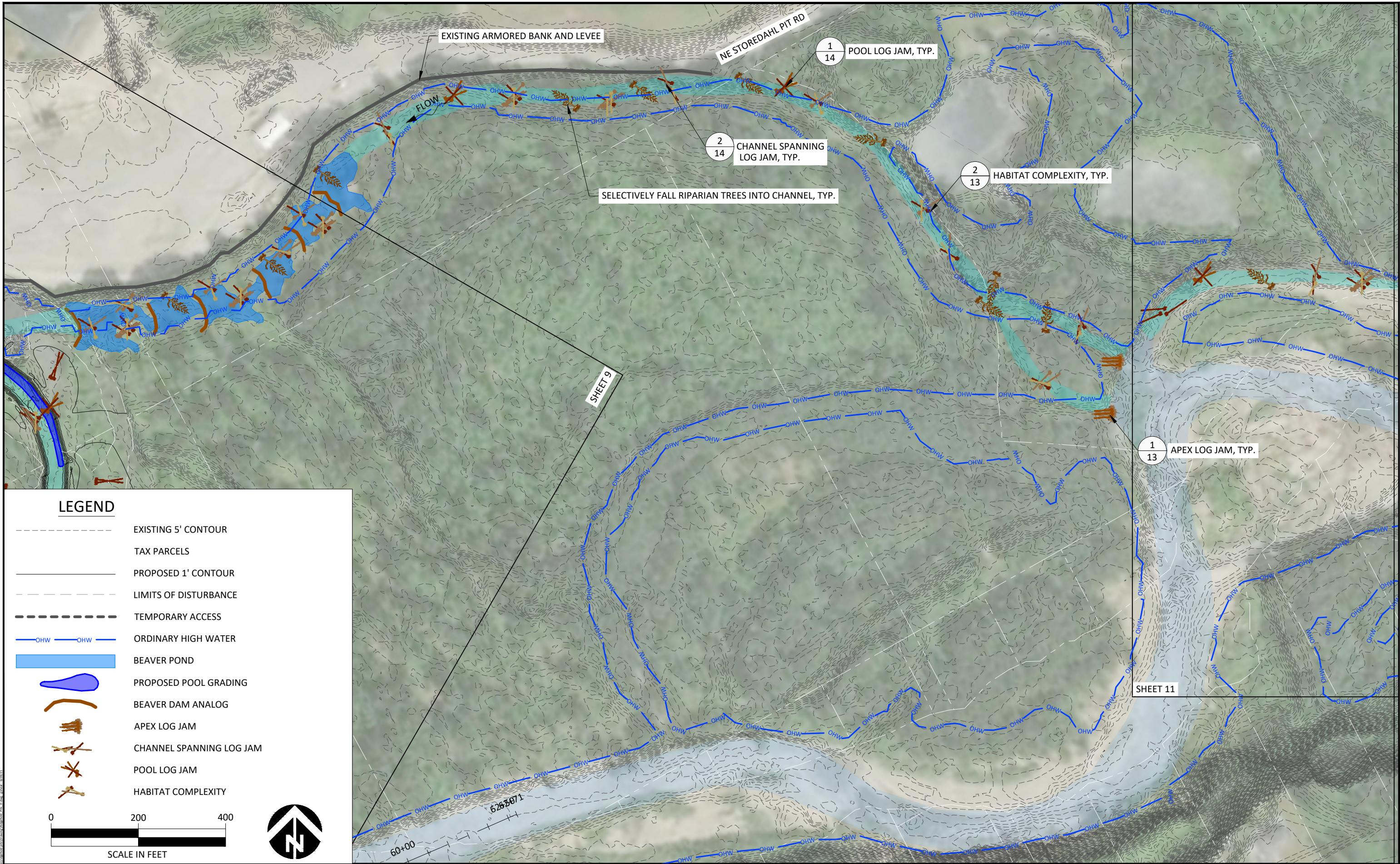
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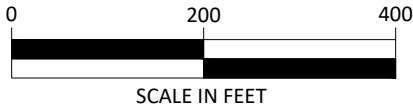
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PROPOSED CONDITIONS -
RIDGEFIELD PITS



LEGEND

- EXISTING 5' CONTOUR
- TAX PARCELS
- PROPOSED 1' CONTOUR
- LIMITS OF DISTURBANCE
- TEMPORARY ACCESS
- OHW — OHW ORDINARY HIGH WATER
- BEAVER POND
- PROPOSED POOL GRADING
- BEAVER DAM ANALOG
- APEX LOG JAM
- CHANNEL SPANNING LOG JAM
- POOL LOG JAM
- HABITAT COMPLEXITY



NO.	BY	DATE	REVISION DESCRIPTION

GS	GJ, MR	--
DRAWN	DESIGNED	CHECKED
---	5/7/21	---
APPROVED	DATE	PROJECT

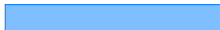
RIDGEFIELD PITS RESTORATION
PRELIMINARY DESIGN
LOWER EAST FORK LEWIS RIVER

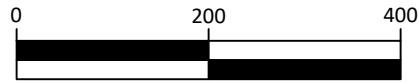


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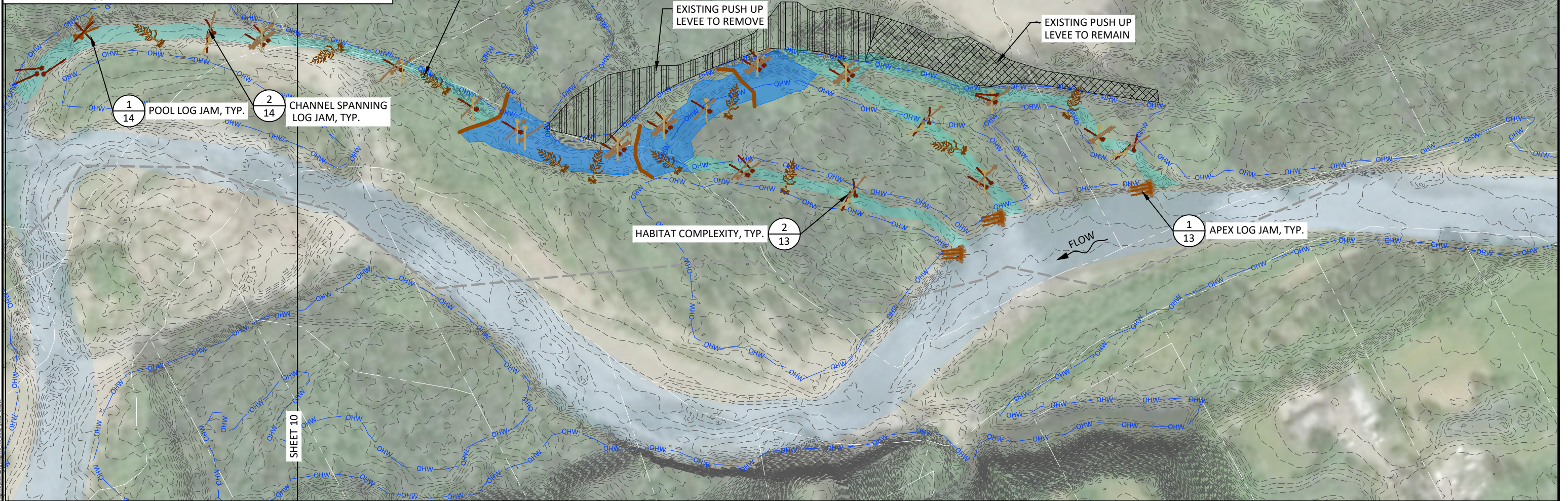
PROPOSED CONDITIONS - LOWER
SIDE CHANNEL

LEGEND

- | | |
|---|--------------------------|
|  | EXISTING 5' CONTOUR |
|  | TAX PARCELS |
|  | PROPOSED 1' CONTOUR |
|  | LIMITS OF DISTURBANCE |
|  | TEMPORARY STAGING AREA |
|  | TEMPORARY ACCESS |
|  | ORDINARY HIGH WATER |
|  | BEAVER POND |
|  | BEAVER DAM ANALOG |
|  | LEVEE TO REMAIN |
|  | LEVEE TO BE REMOVED |
|  | APEX LOG JAM |
|  | CHANNEL SPANNING LOG JAM |
|  | POOL LOG JAM |
| | HABITAT COMPLEXITY |



SCALE IN FEET



<u>GS</u>	<u>GJ, MR</u>	<u>--</u>
DRAWN	DESIGNED	CHECKED
 <u>----</u>	 <u>5/7/21</u>	
APPROVED	DATE	PROJECT

RIDGEFIELD PITS RESTORATION
PRELIMINARY DESIGN
LOWER EAST FORK LEWIS RIVER

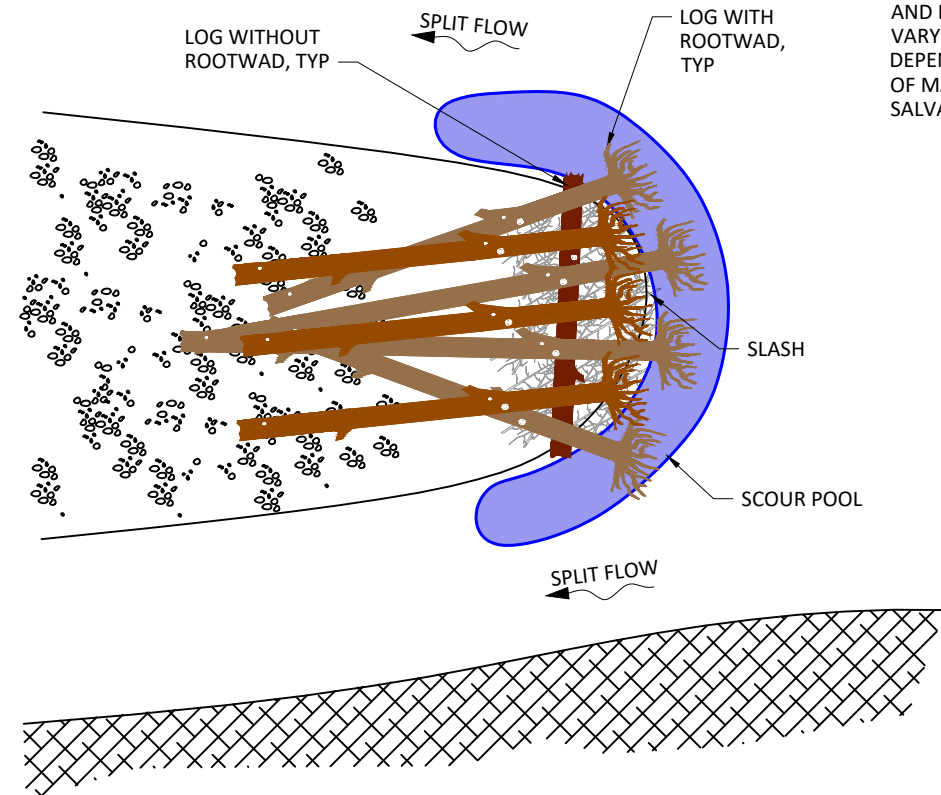


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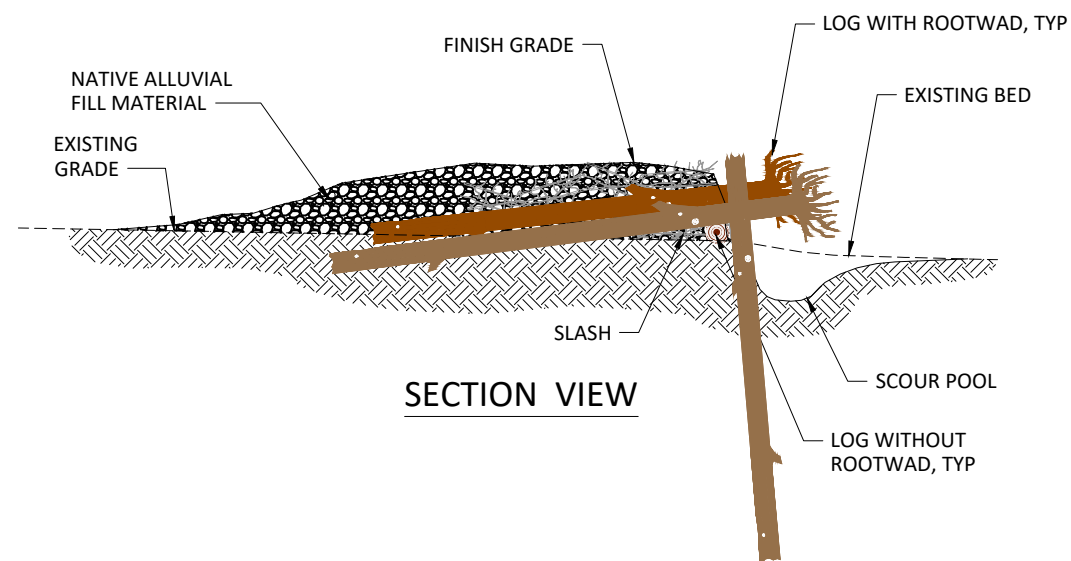
PROPOSED CONDITIONS - MILL AND MANLEY CONFLUENCE AREA

SHEET

11 OF 16



PLAN VIEW

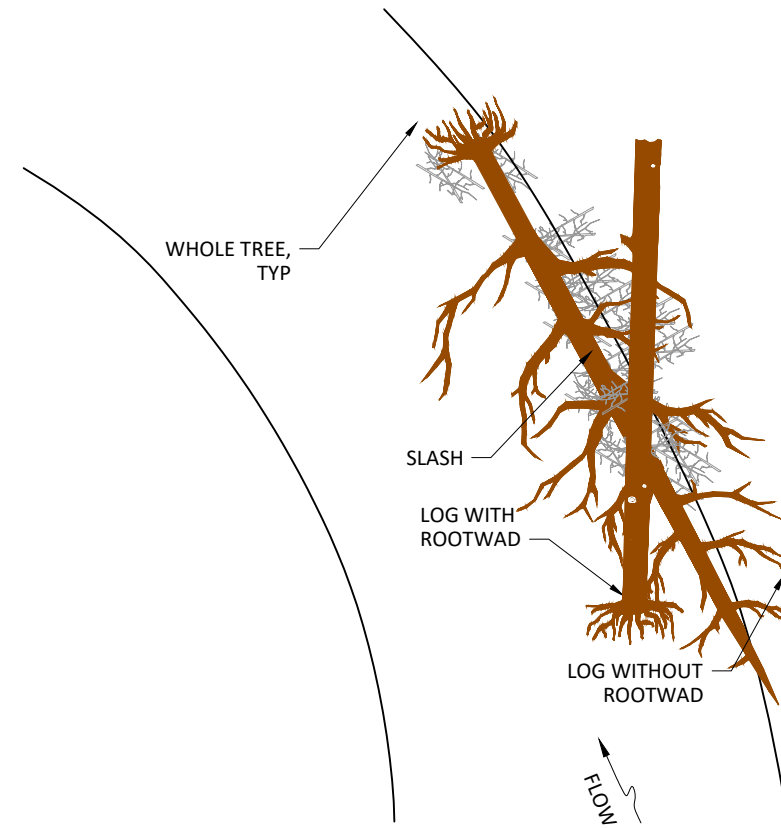


SECTION VIEW

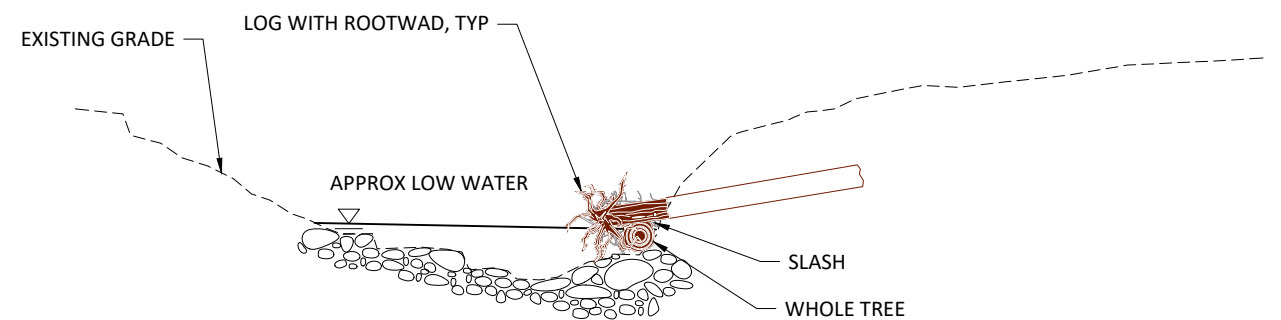
1
13 TYPICAL BAR APEX LOG JAM
NOT TO SCALE

NOTES

SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.



PLAN VIEW



SECTION VIEW

2
13 TYPICAL HABITAT COMPLEXITY LARGE WOOD
NOT TO SCALE

NO.	BY	DATE	REVISION DESCRIPTION

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----	5/7/21	PROJECT
APPROVED	DATE	PROJECT

RIDGEFIELD PITS RESTORATION
PRELIMINARY DESIGN
LOWER EAST FORK LEWIS RIVER

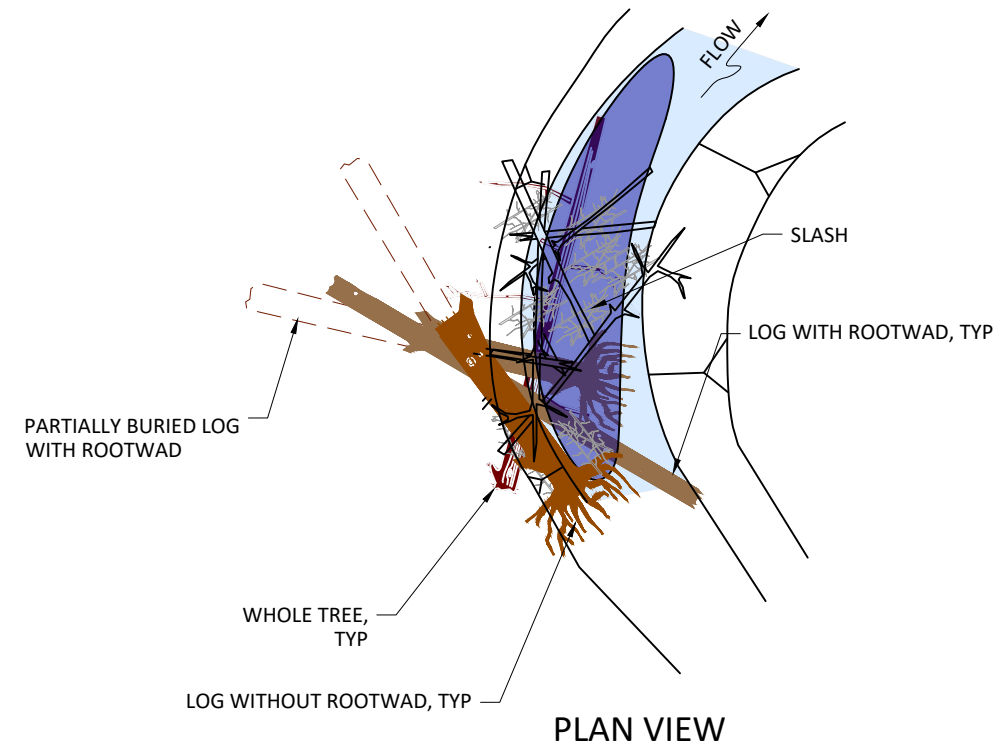


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TYPICAL DETAILS

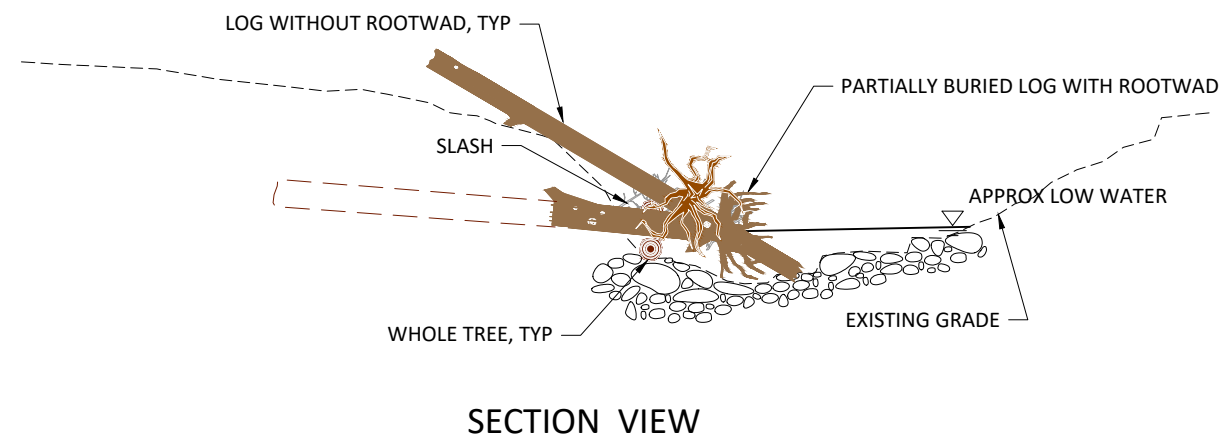
SHEET

13 OF 16

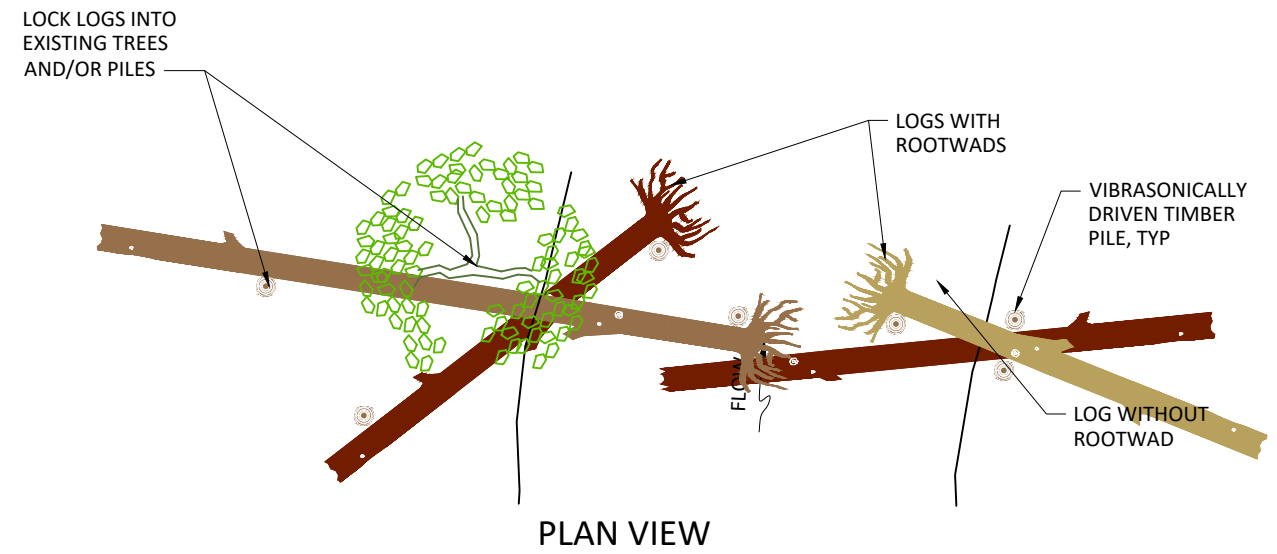


NOTES

SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.



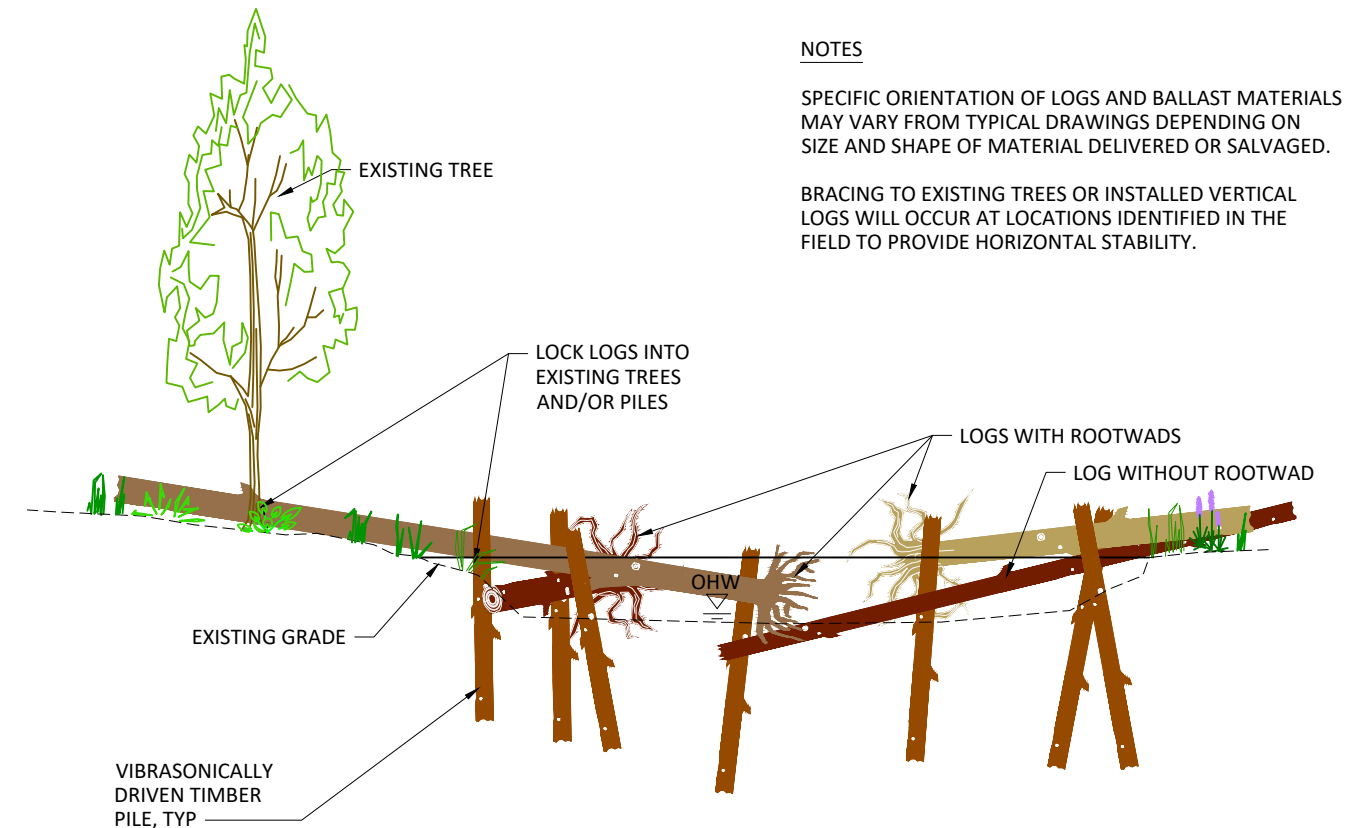
1
14 TYPICAL POOL LOG JAM
NOT TO SCALE



NOTES

SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.

BRACING TO EXISTING TREES OR INSTALLED VERTICAL LOGS WILL OCCUR AT LOCATIONS IDENTIFIED IN THE FIELD TO PROVIDE HORIZONTAL STABILITY.



2
14 TYPICAL CHANNEL SPANNING LARGE WOOD
NOT TO SCALE

NO.	BY	DATE	REVISION DESCRIPTION

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----	5/7/21	
APPROVED	DATE	PROJECT

RIDGEFIELD PITS RESTORATION
PRELIMINARY DESIGN
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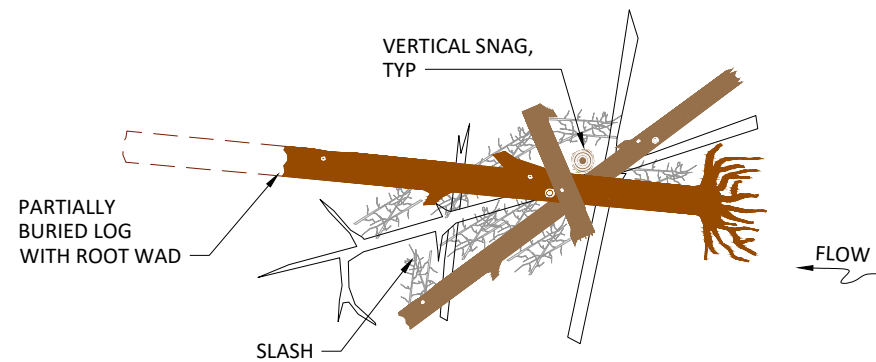


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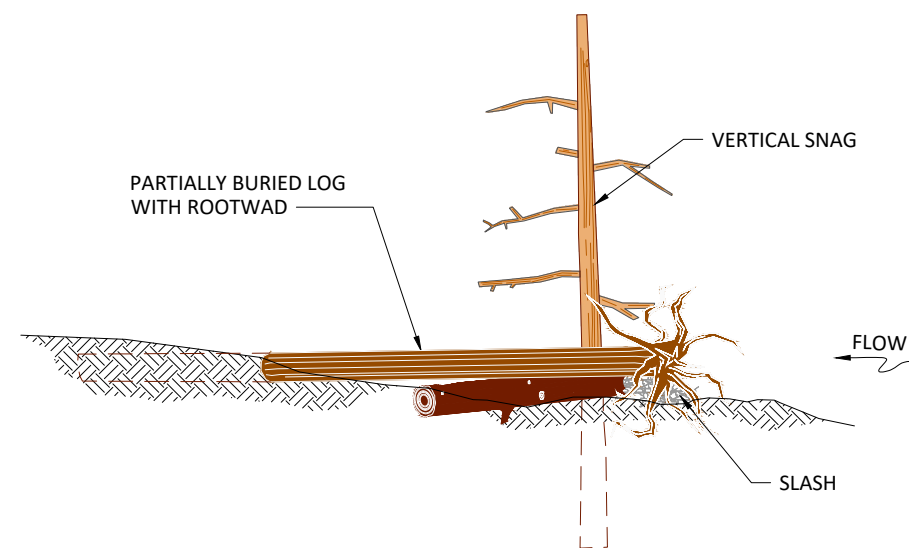
TYPICAL DETAILS

SHEET

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PLAN VIEW



SECTION VIEW

NOTES

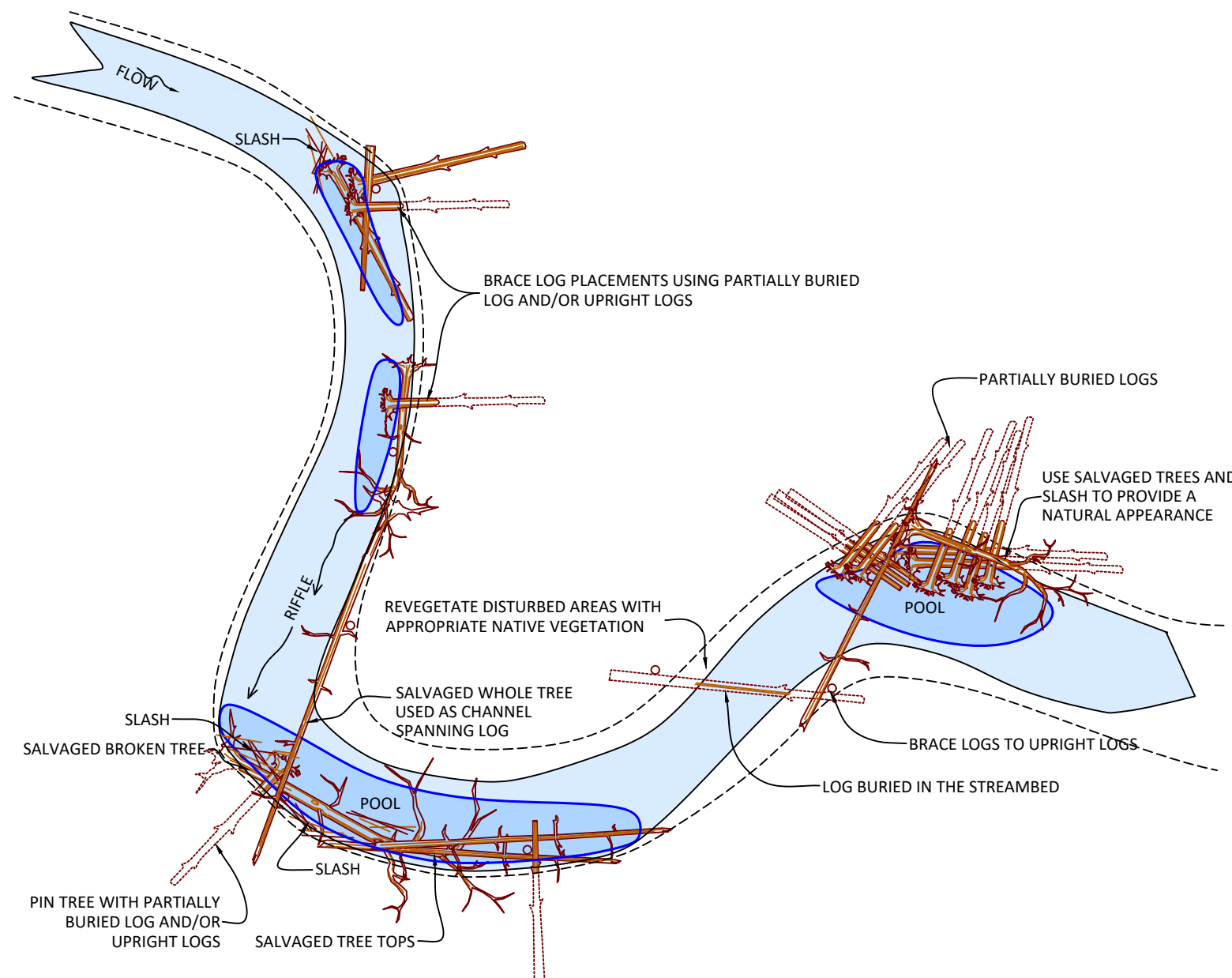
SPECIFIC ORIENTATION OF LOGS AND BALLAST MATERIALS MAY VARY FROM TYPICAL DRAWINGS DEPENDING ON SIZE AND SHAPE OF MATERIAL DELIVERED OR SALVAGED.

BRACING TO EXISTING TREES OR INSTALLED VERTICAL LOGS WILL OCCUR AT LOCATIONS IDENTIFIED IN THE FIELD TO PROVIDE HORIZONTAL STABILITY.

FLOODPLAIN WOOD PHOTO

NOTES:

1. TREES AND SHRUBS WITHIN CLEARING LIMITS SHALL BE SALVAGED AND REUSED AS LOGS AND SLASH IN HABITAT STRUCTURES. TO THE EXTENT PRACTICABLE, PRESERVE BRANCHES AND ROOTS ON TREES REMOVED DURING CLEARING AND GRUBBING.
2. WOOD STRUCTURES SHALL BE STABILIZED. STABILIZATION METHODS INCLUDE PARTIAL BURIAL, BRACING AGAINST STANDING TREES, OR TIMBER PILES.



1
15 TYPICAL FLOODPLAIN ROUGHNESS WOOD
NOT TO SCALE

2
15 TYPICAL SIDE-CHANNEL WOOD PLACEMENT
NOT TO SCALE

NO.	BY	DATE	REVISION DESCRIPTION

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TYPICAL DETAILS

SHEET
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