

OREGON

PROJECT IMPLEMENTED IN COOPERATION WITH THE FOLLOWING PARTNERS:



NORTH FORK JOHN DAY WATERSHED COUNCIL

INDEX OF DRAWINGS

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DRAWINGS FOR THE CONSTRUCTION OF THE:
Kuckucéepe téekin (Bull Run Creek RM 3)
Phase 2 Adjustments
CONFEDERATED TRIBES OF THE
UMATILLA INDIAN RESERVATION
Department of Fisheries and Natural
Grant County, Oregon

GENERAL NOTES

1. The Contractor will comply with the Terms & Conditions from Bonneville Power Administration's HIP III Biological Opinion that requires the utmost care is taken when construction activity is taking place in or near the waterway.
2. The contractor is responsible for procuring and complying with all permits and easements including all federal, state, county, and local permits.
3. Excavation, trenching, shoring, and shielding shall be the responsibility of the contractor performing the work, these drawings are not intended to provide means or methods of construction.
4. All existing conditions are to be verified in the field prior to construction and any adjustments to the drawings shall be made as directed by the project engineer.
5. Excavation shall meet the requirements of OSHA 29 CFR Part 1926, Subpart P, Excavations. Actual slopes shall not exceed the slopes as indicated on drawings.
6. Protect all trees and land areas marked for protection. Exercise care in areas not so marked to avoid unnecessary damage to natural vegetation.
7. Existing private improvements, which lie within the construction limits, unless otherwise noted will be removed by the owner thereof or abandoned in place.
8. The GRMW makes no representations as to the existence or non-existence of utilities. It is the responsibility of landowners or operators to comply with the provisions of ORS 757.541 to 757.571. Landowners or operators and contractors will be liable for any damage resulting from disruption of service caused by construction activities.
9. These drawings and the associated written specifications represent the construction documents. Any deviations from these drawings and associated specifications without written approval from The GRMW may result in this project not meeting specifications and may affect the terms and conditions of the construction contract.
10. All construction activities are to be performed and completed with ODF&W in-stream work period for the Whiskey Creek; July 1st - October 15th.
11. All excess materials and excavation to be placed at location identified by the project sponsor with coordination with the contractor.



PROJECT LOCATION MAP

This project was designed to comply with Bonneville Program Administration's Habitat Improvement Program (HIP 4) Programmatic Biological Opinion for Compliance with Section 7 of the Endangered Species Act. Activity Category 2: River, Stream, Floodplain, and Wetland Restoration

Designated	CTUIR, NEIDWC, WWNF	Date	8 July 2024
Drawn			
Checked			
Approved			
Title			

Kuckucéepe téekin (Bull Run Creek RM 3) Phase II
Grant County, Oregon
Department of Natural Resources, Fish Habitat Enhancement Program



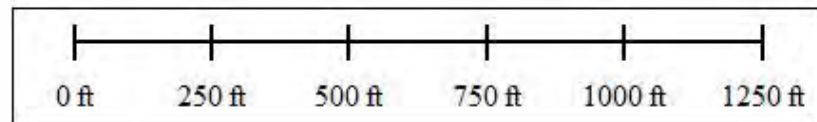
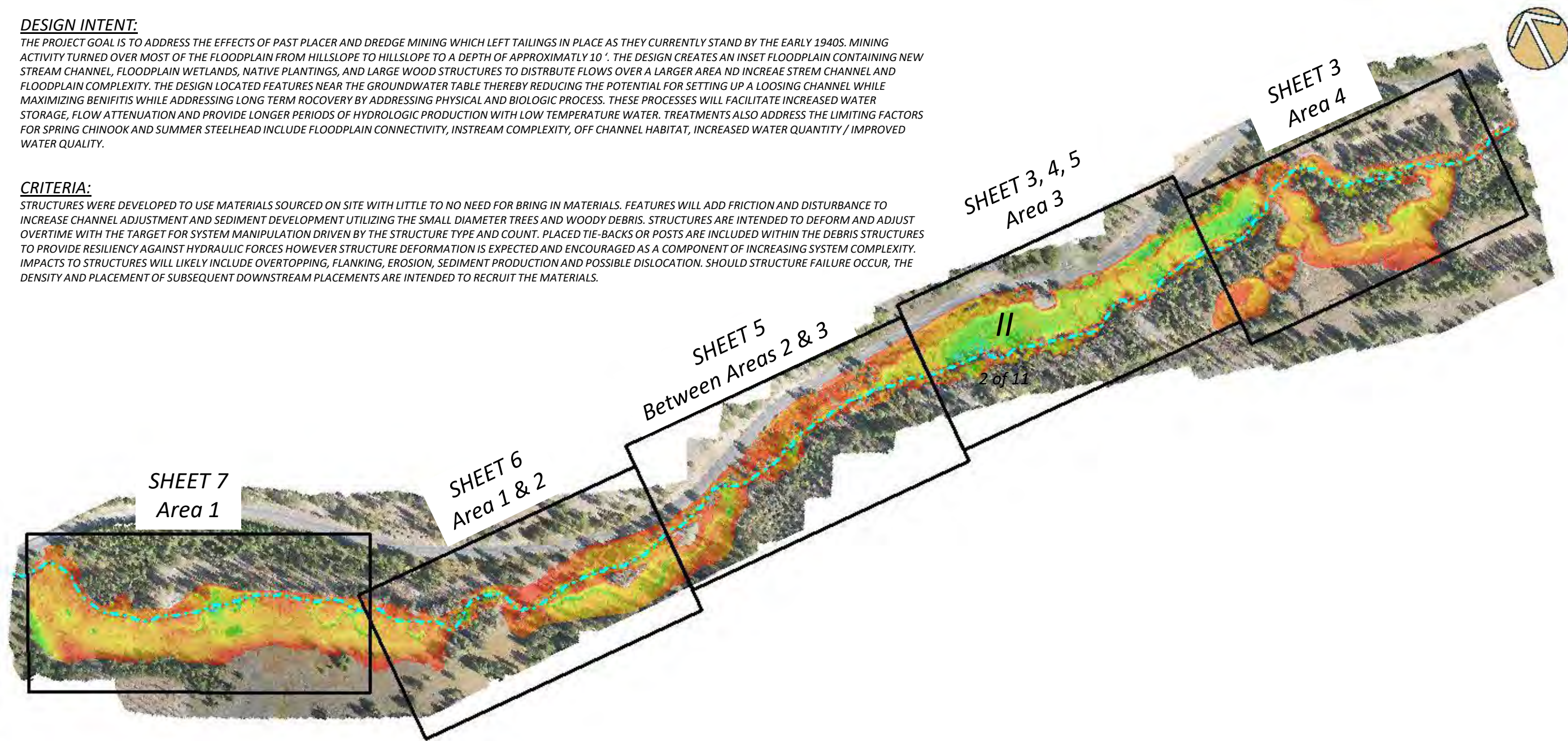
Drawing No. **1**

DESIGN INTENT:

THE PROJECT GOAL IS TO ADDRESS THE EFFECTS OF PAST PLACER AND DREDGE MINING WHICH LEFT TAILINGS IN PLACE AS THEY CURRENTLY STAND BY THE EARLY 1940S. MINING ACTIVITY TURNED OVER MOST OF THE FLOODPLAIN FROM HILLSLOPE TO HILLSLOPE TO A DEPTH OF APPROXIMATELY 10'. THE DESIGN CREATES AN INSET FLOODPLAIN CONTAINING NEW STREAM CHANNEL, FLOODPLAIN WETLANDS, NATIVE PLANTINGS, AND LARGE WOOD STRUCTURES TO DISTRIBUTE FLOWS OVER A LARGER AREA AND INCREASE STREAM CHANNEL AND FLOODPLAIN COMPLEXITY. THE DESIGN LOCATED FEATURES NEAR THE GROUNDWATER TABLE THEREBY REDUCING THE POTENTIAL FOR SETTING UP A LOSING CHANNEL WHILE MAXIMIZING BENEFITS WHILE ADDRESSING LONG TERM RECOVERY BY ADDRESSING PHYSICAL AND BIOLOGIC PROCESSES. THESE PROCESSES WILL FACILITATE INCREASED WATER STORAGE, FLOW ATTENUATION AND PROVIDE LONGER PERIODS OF HYDROLOGIC PRODUCTION WITH LOW TEMPERATURE WATER. TREATMENTS ALSO ADDRESS THE LIMITING FACTORS FOR SPRING CHINOOK AND SUMMER STEELHEAD INCLUDE FLOODPLAIN CONNECTIVITY, INSTREAM COMPLEXITY, OFF CHANNEL HABITAT, INCREASED WATER QUANTITY / IMPROVED WATER QUALITY.

CRITERIA:

STRUCTURES WERE DEVELOPED TO USE MATERIALS SOURCED ON SITE WITH LITTLE TO NO NEED FOR BRING IN MATERIALS. FEATURES WILL ADD FRICTION AND DISTURBANCE TO INCREASE CHANNEL ADJUSTMENT AND SEDIMENT DEVELOPMENT UTILIZING THE SMALL DIAMETER TREES AND WOODY DEBRIS. STRUCTURES ARE INTENDED TO DEFORM AND ADJUST OVERTIME WITH THE TARGET FOR SYSTEM MANIPULATION DRIVEN BY THE STRUCTURE TYPE AND COUNT. PLACED TIE-BACKS OR POSTS ARE INCLUDED WITHIN THE DEBRIS STRUCTURES TO PROVIDE RESILIENCY AGAINST HYDRAULIC FORCES HOWEVER STRUCTURE DEFORMATION IS EXPECTED AND ENCOURAGED AS A COMPONENT OF INCREASING SYSTEM COMPLEXITY. IMPACTS TO STRUCTURES WILL LIKELY INCLUDE OVERTOPPING, FLANKING, EROSION, SEDIMENT PRODUCTION AND POSSIBLE DISLOCATION. SHOULD STRUCTURE FAILURE OCCUR, THE DENSITY AND PLACEMENT OF SUBSEQUENT DOWNSTREAM PLACEMENTS ARE INTENDED TO RECRUIT THE MATERIALS.



Total Project Reach ~ 1.1 Miles

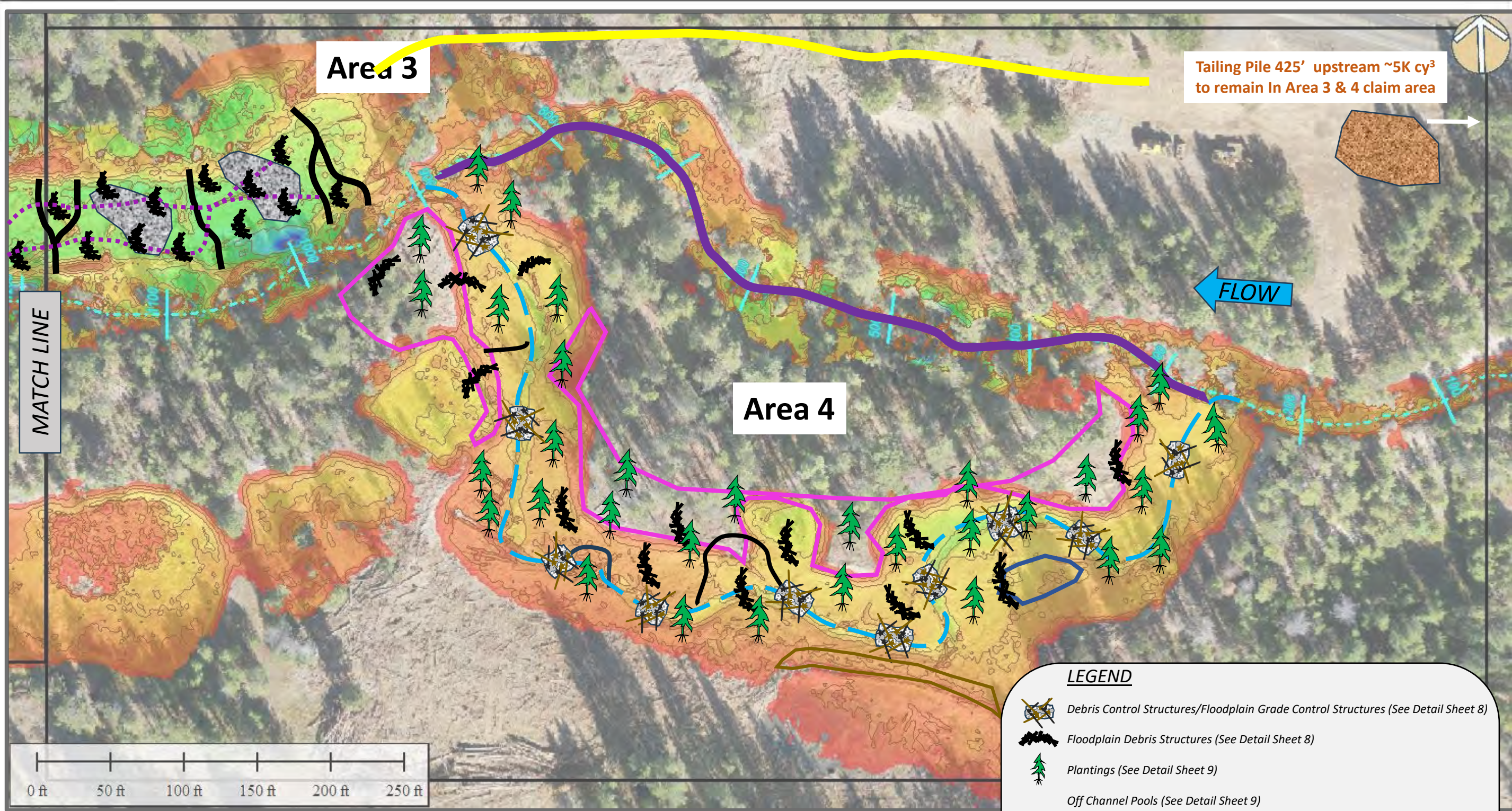
Base Imagery Provided by NFJWC With Digital Terrain Surface Processed by Grande Ronde Model Watershed

Date
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Kuckucépe téélin (Bull Run Creek RM 3) Phase II
Grant County, Oregon
Department of Natural Resources, Fish Habitat Enhancement Program



Drawing No.
2
1 of 10



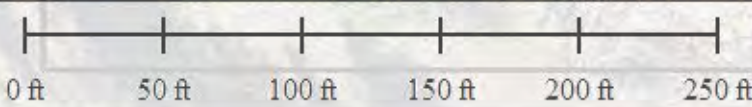
Area 3

Area 4

Tailing Pile 425' upstream ~5K cy³ to remain in Area 3 & 4 claim area

FLOW

MATCH LINE



LEGEND

- Debris Control Structures/Floodplain Grade Control Structures (See Detail Sheet 8)
- Floodplain Debris Structures (See Detail Sheet 8)
- Plantings (See Detail Sheet 9)
- Off Channel Pools (See Detail Sheet 9)
- Tailing Excavation (See Detail Sheet 9)
- Swale (See Detail Sheet 10)
- Berm Recontour (See Detail Sheet 10)
- Stream Meander (See Detail Sheet 9)
- Existing Channel Fill (See Original Design Sheet Set for Specifications)
- Access Road

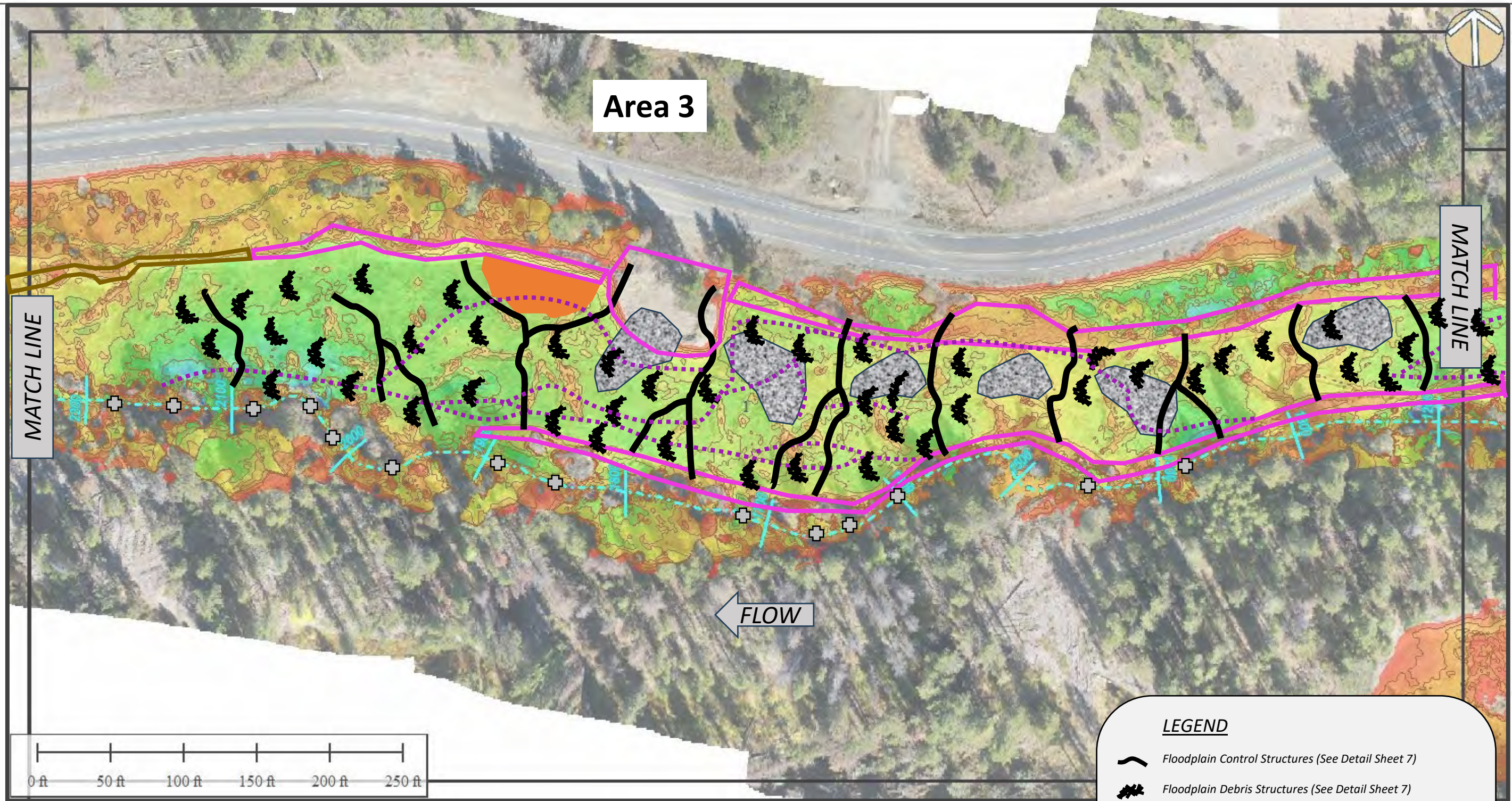
CONTOUR INTERVAL = 1 FT. (Based on Relative Elevation Model)

Design	CTUIR, NFDJWC, WWNF	Date	8 July 2024
Drawn			
Checked			
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STRUCTURE LAYOUT
 Kuckucéepe téékin (Bull Run Creek RM 3) Phase II
 Grant County, Oregon
 Department of Natural Resources, Fish Habitat Enhancement Program



Drawing No.
3



LEGEND

- Floodplain Control Structures (See Detail Sheet 7)
- Floodplain Debris Structures (See Detail Sheet 7)
- Gravel Patches (See Detail Sheet 8)
- Tailing Excavation (See Detail Sheet 8)
- Berm Recontour (See Detail Sheet 10)
- Alluvial Fan (See Detail Sheet 7)
- Approximate 2023 High Flow Paths
- Area 3 In-Channel Large Wood

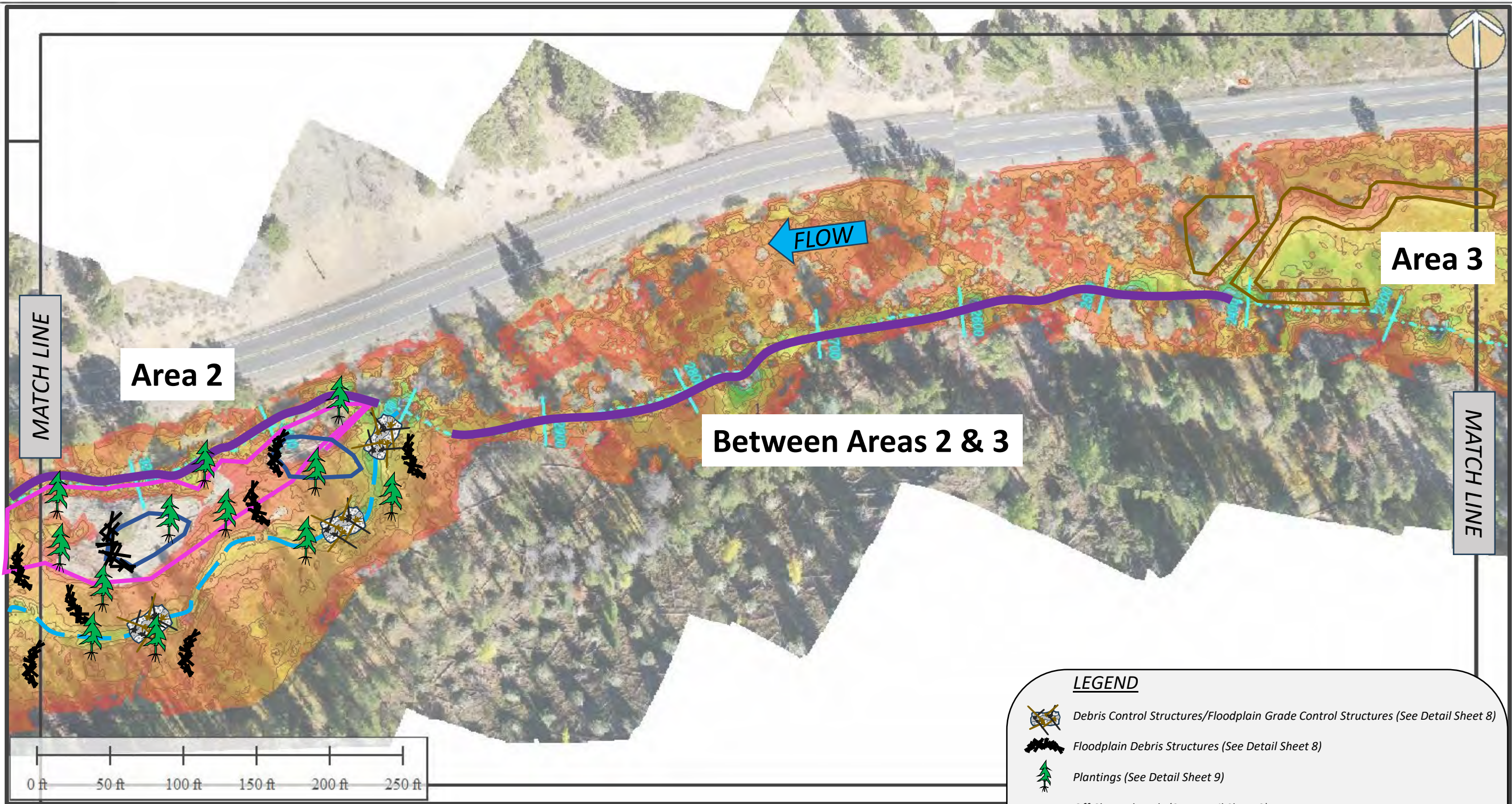
CONTOUR INTERVAL = 1 FT. (Based on Relative Elevation Model)

Designated: CTUIR, NF:IDWC, WWNF
 Date: 8 July 2024

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STRUCTURE LAYOUT
 Kuckucéepe téekin (Bull Run Creek RM 3) Phase II
 Grant County, Oregon
 Department of Natural Resources, Fish Habitat Enhancement Program





Between Areas 2 & 3

Area 2

Area 3











MATCH LINE

MATCH LINE

FLOW

0 ft 50 ft 100 ft 150 ft 200 ft 250 ft

LEGEND

-  Debris Control Structures/Floodplain Grade Control Structures (See Detail Sheet 8)
-  Floodplain Debris Structures (See Detail Sheet 8)
-  Plantings (See Detail Sheet 9)
-  Off Channel Pools (See Detail Sheet 9)
-  Tailing Excavation (See Detail Sheet 9)
-  Swale (See Detail Sheet 10)
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-  Access Road

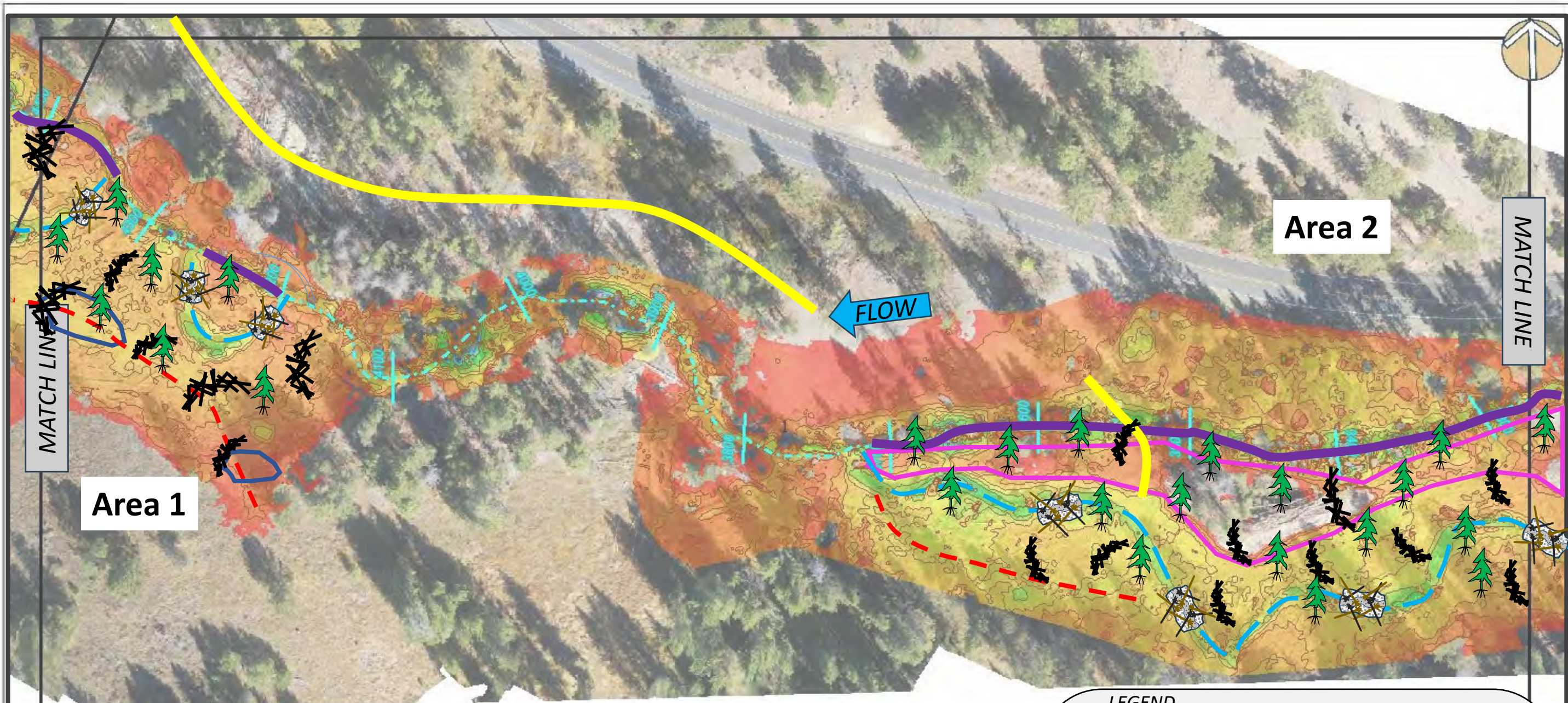
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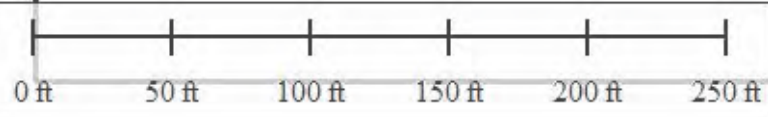
Drawing No.
5



Area 1

Area 2

FLOW



LEGEND

- Debris Control Structures/Floodplain Grade Control Structures (See Detail Sheet 8)
- Floodplain Debris Structures (See Detail Sheet 8)
- Plantings (See Detail Sheet 9)
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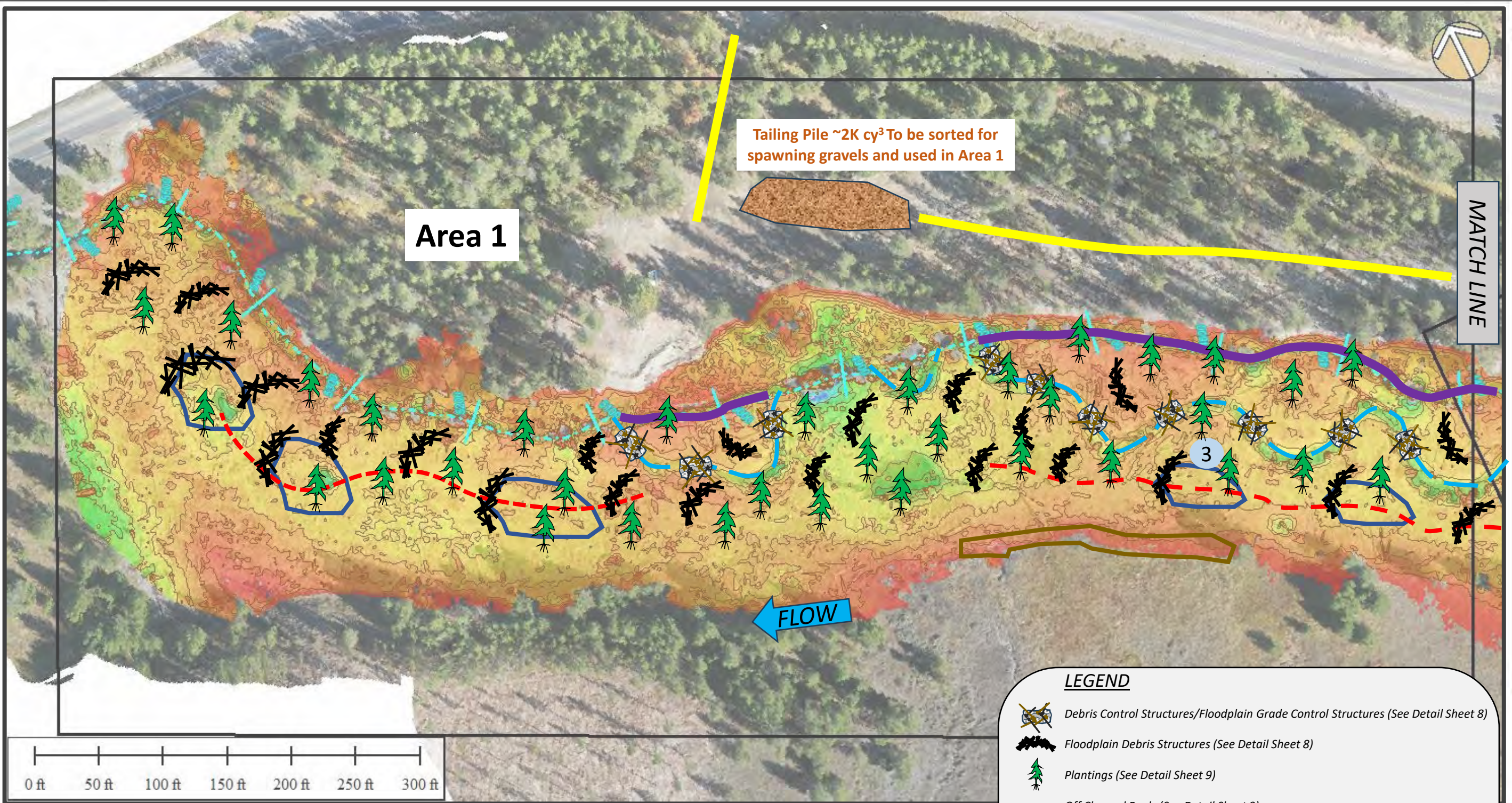
CONTOUR INTERVAL = 1 FT. (Based on Relative Elevation Model)

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STRUCTURE LAYOUT
 Kuchucéape téekin (Bull Run Creek RM 3) Phase II
 Grant County, Oregon
 Department of Natural Resources, Fish Habitat Enhancement Program



Drawing No.
6

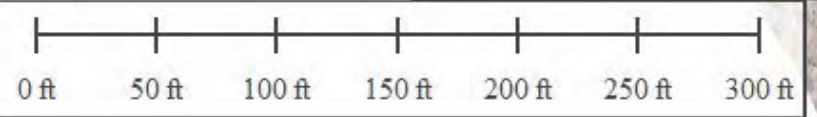


Tailing Pile ~2K cy³ To be sorted for spawning gravels and used in Area 1

Area 1

MATCH LINE

FLOW



LEGEND

- Debris Control Structures/Floodplain Grade Control Structures (See Detail Sheet 8)
- Floodplain Debris Structures (See Detail Sheet 8)
- Plantings (See Detail Sheet 9)
- Off Channel Pools (See Detail Sheet 9)
- Tailing Excavation (See Detail Sheet 9)
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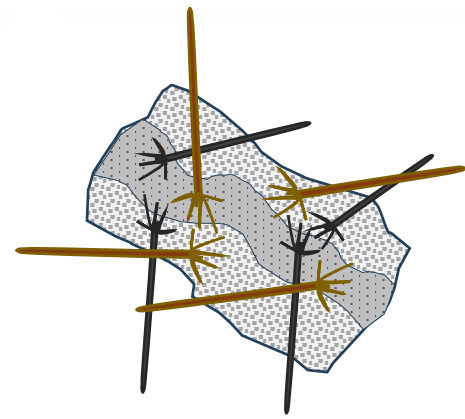
CONTOUR INTERVAL = 1 FT. (Based on Relative Elevation Model)

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STRUCTURE LAYOUT
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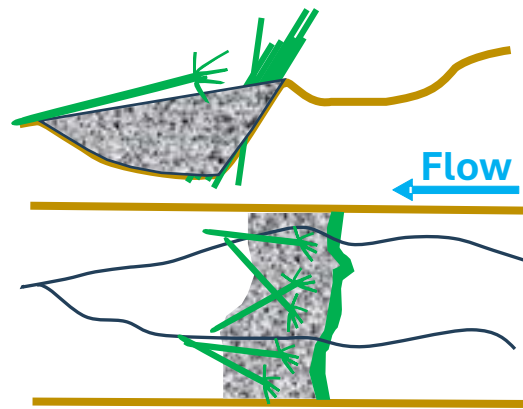
Drawing No.
7



Debris Control Structure

Streams within the Bull Run and Granite Creek basin are typically composed of an alluvial lens atop deep sands or clays. In 2023, tailing excavation identified well sorted persistent sands (native below those sorted by mining activity) or clays throughout much of the project site. In Area 1 & 2 the new channel's substrate is primarily composed of sand with little evidence of gravels and cobble contained within while Area 4 is a mix of sorted sands, tailings, native clays, and bedrock. Structures will provide short term channel and flowpath stability and hydraulic control and are considered a habitat unit.

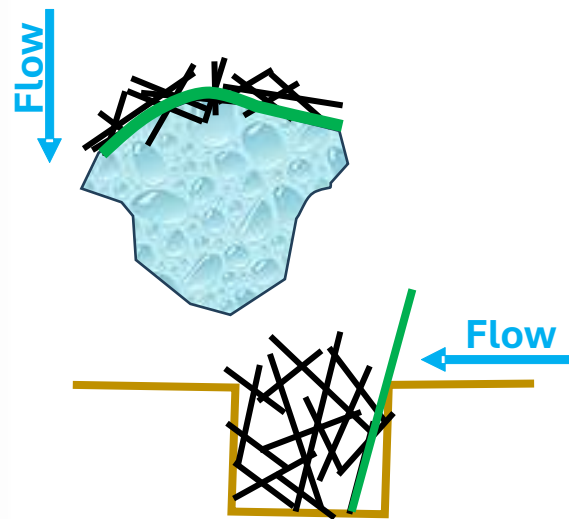
- Excavate to 2' beneath the channel, 3' on either side, and 8' or more along the channel's length.
- Backfill with $D_{50} = 2.5''$ tailings in 1' lifts with finer material washed into each lift unless compaction allows for flows over the feature.
- Place wood such that wood wads are level with the pre-excavation channel substrate's elevation with bole buried and finish backfill with tailings washing in fine material. Wood will consist of main members (brown) atop or upstream of smaller members (black). Slash may be incorporated into banks or loosely placed on or near wood.
- Place cuttings or potted plants aside large wood in such a manner that water is available.



Floodplain Control Structure

In Area 3, buried floodplain spanning structures will create more durable areas within well sorted sands and small gravel through the placement of tailings and/or large wood and native hardwoods topped by the excavated material and large wood. Their placement reflects floodplain slope to reduce the potential for head cuts greater than ~1'. These structures will contribute to the creation of a heterogenous surface and subsurface mix of tailings, large wood, sand and gravel, and native vegetation.

- Excavate pit across the inset floodplain at least 2.5' deep and 5' wide between the excavated floodplain's limits tailings. Excavation on the upstream side may need to be deeper to ensure cuttings are placed within saturated material (preferred) or as wet as possible.
- Place cuttings at 0.3' intervals along the upstream side of the trench. Cuttings should be placed in saturated materials where possible although cuttings have survived in well wetted though unsaturated materials.
- Using 1' foot lifts of tailings (intermixed large wood is permissible) mixed with excavated material and compacted. Note, excavated material may need to be washed in if large amounts of large wood are used.
- After the structure reaches floodplain surface sprinkle excavated material atop and place large wood as available. Remaining excavated material will need to be wasted within the mining claim.



Floodplain Debris Structures

Floodplain Debris Structures are comprised of small to large wood pieces and slash, tailings, and willow or cottonwood cuttings. Large wood (12" or larger) may be surface placed as part of this structure. The structure will serve to interrupt flows across the floodplain, create sub-critical ponded areas, and increases flow residence time upon the floodplain surface. Efforts should be made to place structures such that they deflect flows into one another and placed downstream of ponds for stability and to accentuate ponds. Note, structures called out in Area 3 are smaller may include a 15' excavation or something smaller as directed by CTCTUIR staff.

- Excavate a trench beneath the structure's location 2' to 5' deep and 3' wide to form the basic V-shape of the structure with the apex facing downslope. Make the trench deep enough to ensure plantings maintain contact with groundwater and/or areas where sufficient water is available to support cuttings. Excavation depth for wood placement may be less than that for cuttings.
- Average length of each structure is 30' with 11 cy^3 of large wood and slash used in conjunction with tailings. Structure length will vary according to location with broader areas receiving longer features.
- Within the trench, place cuttings on the upstream side of the trench on 0.2' centers with tops above ground. Note some areas such as upper and lower Area 1 may require longer cuttings than other areas.
- Fill the trench with large wood, slash with tailings and excavated material used to lock woody material in place. This may require multiple lifts to lock wood into place and compression with excavator buckets. Final structure should not exceed 2' above floodplain surface. Do not completely bury cuttings during backfill. Fill should leave tailings readily evident at floodplain surface.
- Using excavated floodplain material sprinkle atop fill to camouflage.
- If available, place two or more main members with additional racking, slash, and tailings such that pieces are bound together and resistant to flows.
- If desired, push posts into the structure downstream of the structure, angled upstream, and break off 1.5' above the material being pinned may also be used.

Area	# Features
4	13
2	18
1	30
Total	61

Date: 8 July 2024
 Designed: CTUIR, NFDWC, WWNF
 Drawn:
 Checked:
 Approved:
 Title:

STRUCTURE DETAILS
 Kuckucéape tééin (Bull Run Creek RM 3) Phase II
 Grant County, Oregon
 Department of Natural Resources, Fish Habitat Enhancement Program



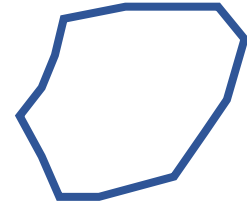
Drawing No. 8



Plantings

Willow and/or cottonwood cuttings or potted plants will be placed individually or incorporated into Floodplain Debris Structures with the intent to developed floodplain complexity and shade in time.

- Individual placements indicated by the symbol to the left will consist of trenches or single bucket width excavation to groundwater or sufficiently wet materials with the cutting/plant placed within. Spacing will be no more than 1' between plantings with their top above ground surface after placement in sufficient length to encourage growth.
- Plantings will be placed and used as previously noted in all structures containing large wood.



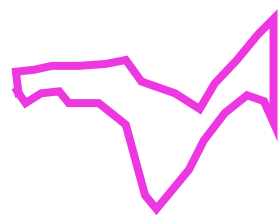
Off-Channel Pools

Off-channel pools or ponds will be developed to increase residence time of flows across the floodplain and promote seasonal or permeant refuge for wildlife in conjunction with floodplain wood. Pool location will take advantage of previously developed features and low areas within the floodplain and excavated to various depths depending on location and function. For instance, those identified for upper Area 1 were placed to slow and capture flow from Pasture Creek in such a manner that it doesn't compromise streambank stability, which it did in early 2024, until vegetation is capable of doing so. In lower Area 1, ponds were placed to slow sheet flows across the floodplain and create differential velocities where small depressions were developed in 2023. Pool size will depend upon available area for development while depth will vary between 0.5' and below summer groundwater surface elevations. In dryer locations such as upper and lower Area 1 pool depths will need to be deeper if pools are to remain wet throughout the summer. Pools will include vegetative plantings as directed by CTUIR staff.

Ponds Area 1			
#	Dia	Depth	Vol
1	30	3	51
2	35	2.5	58
3	30	1.5	26
4	25	1	12
5	20	1.5	11
6	15	1	4
7	15	1.5	6
Total Volume			168

Ponds Area 2			
#	Dia	Depth	Vol
1	35	2.5	58
2	25	1.5	18
Total Volume			76

Ponds Area 4			
#	Dia	Depth	Vol
1	40	1.5	35
Total Volume			35



Tailing Excavation

The original design's extent of tailing excavation was based on a cut-balance comparison which left high tailing piles between the existing channel and excavated floodplain in Areas 2 and 4. In the future this will be avoided as it's geomorphically odd, unsightly, and decreases potential floodplain width. Additional excavation has been identified which would address tailing piles between the excavated floodplain and Bull Run Creek, conditions not identified during design, and minimize disturbance when spoiling staged materials within the site. Excavation will occur in all areas with materials used nearby to the extent possible. Tailings not used, including those previously staged and not used, will be moved to an off-site repository.

Area	Estimated Cut (cy3)
4	3,678
2	2,316
Total	5,994



Gravel Patches

Gravel patches are composed of sorted tailings from spawning gravel amendments and are intended to be deformable during high flows. While it will provide some sense of durability at high flow its mobilization and deposition over time will contribute to channel form and rearing and spawning habitat as the site evolves. Sorted tailings will be spread on the excavated floodplain's surface and tooth raked in. The final product should not look like an excavated tailing surface.

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Drawing No.
9

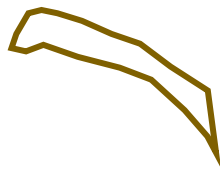


Swales

Swales will be developed such that they encourage preferential flow into and between off-channel ponds developed in 2023 or lows areas within the excavated floodplain and not be developed as channels. Excavation width will not exceed 8' wide or depths of 0.2' deep although local excavation may be deeper to get past high areas to connect ponds or low areas in the floodplain. Buried or surface placed wood and woody structures will be placed within the swale to create complex flow paths. Buried wood may be used in these features.

Channel Meander

Meanders are intended to address shortened channel length where constraining factors were identified during the 2023 implementation. Developed channels will adhere to Phase 1 design specifications.



Low Berm

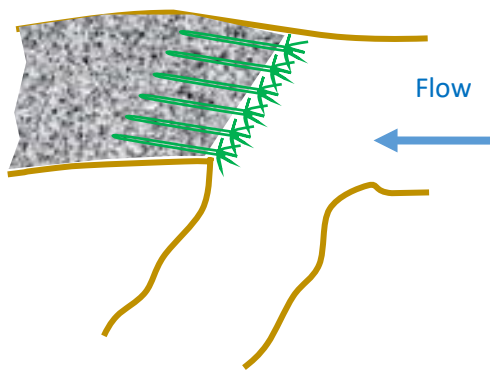
Low berms will be created between existing wetlands or depressions and constructed features such as stream channels or floodplains. Final berm width and depth will depend upon specific locations and be field fit by CTUIR staff on site. Final form will be low and broad, left up to 1' above the surrounding constructed surface, 3' wide, and use materials in the immediate vicinity. The exception may be the berm between Boundary Creek and the constructed floodplain where the final product will consist of grading an existing berm and buttressing a portion by importing/reorganizing materials from the general vicinity.

Area	Est Berm Fill (cy3)
4	25
3	40
1	164
Total	188

In-Stream Wood

Additional instream channel wood will be placed, as available, to increase flow complexity, increase refuge for aquatic species, encourage floodplain inundation, and stabilize streambanks until robust vegetation takes hold. Developed structures will adhere to Phase 1 & 2 specifications with input from the design engineer. Between Areas 2 & 3 and Area 3 Large wood will be spaced at 110' intervals where bank heights are 1.5' or more and placed such that it has the potential to support future beaver dam consyrction. This does not preclude additional wood placement between potential beaver dam locations.

Plug directing flows into the new channel

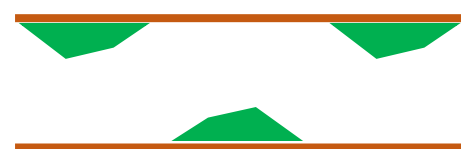


Existing Channel Fill

Fill used for the existing channel will consist of tailings and wood sourced from within the site. Wood may be used in conjunction with wood throughout the fill area. Wood will be integrated into the upstream extent of fill and an alcove left where new channel rejoins the old. Given the limited amount of fine materials available on site, the contractor will be responsible for sourcing silts/clays in a volume adequate seal the upper 50' of fill (~25cy³/location) to be washed progressively into 1' lifts. Fines may be washed into channel fill downstream of the upstream plug if available or will be compacted by equipment accessing the area or excavator if fill occurs from the side in 1' lifts. Fill within Area 4 will be continuous throughout the existing channel. Fill within all other areas may not be continuous as depressional wetlands along the existing stream path are desirable wetland opportunities. Depression locations will be directed by CTUIR staff and may reflect difficult access.

Between Areas 2 and 3, as available, coir logs impregnated with sedge or willow may be placed along fill margins to create wedges that narrow the active. These will be staked in place by willow cuttings with large wood placed atop or nearby to increase stability. A channel 0.4' deep and 10' wide will be created through the use of tailings, large wood, and coir logs as available. Use of partially buried wood within the channel fill is encouraged. Fine material may be washed into 1' lifts unless compression of fill maintains surface flow. An alternative to washing in fines at every 1' lift is compression of fill with washing in fines at the last two lifts.

Characterization of sedge or willow coir logs and/or large wood placed to narrow the active channel once filled.



Area	P2 Estimated Fill (cy3)
4	3,850
Btwn 2 & 3	1,270
2	670
1	480
Total	6,270

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Drawing No. **10**