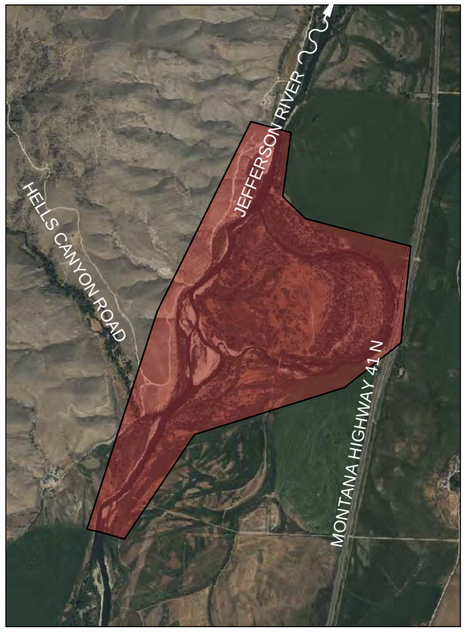
100% DESIGN PLANS

FOR

UPPER JEFFERSON RIVER RESTORATION PROJECT



PROJECT DESCRIPTION
THIS PROJECT REJUVENATES WATERWAYS AND REPAIRS DAMAGED RIPARIAN ZONES TO IMPROVE RIVER/FLOODPLAIN CONNECTIVITY, AUGMENT IRRIGATION WATER DIVERSIONS, AND ENHANCE NATURAL HABITATS ALONG A TWO-MILE STRETCH OF THE JEFFERSON RIVER. WORK WILL INCLUDE: RIVER BANK STABILIZATION; IN-RIVER CONSTRUCTION; SMALL STREAM WORK; DIVERSION AND HEADWORKS REPLACEMENT; AQUATIC HABITAT ENHANCEMENT; AND REVEGETATION.
LATITUDE, LONGITUDE: 45.6229,-112.3197

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COVER SHEET

SHEET: 1

PROJECT NUMBER: RVCD.010 DATE: 12/19/2024

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A. ACCESS

1. Mobilization includes preparatory work and operations performed by the CONTRACTOR, including, but not limited to, those necessary for transportation and movement of personnel, equipment, supplies, and incidentals to and from the project site; for necessary permits; for the establishment of all facilities necessary for work on the project; for premium on contract bonds; for insurance for the contract; and for other work and operations that must be performed or costs incurred before beginning work on the various items on the project site and after the work is completed.
2. Demobilization shall consist of work and operations necessary to disband all mobilized items and restore the site to the pre-construction conditions outside of the work area. The removal of all temporary access ways, signs, temporary fencing, and temporary facilities or works and the restoration of surfaces to an equal or better than existing condition shall also be included as part of demobilization
3. The CONTRACTOR shall access the site using established roads and routes designated by the LANDOWNER
4. Utilities
   a. The CONTRACTOR shall be solely responsible for having utilities located prior to construction activities.
   b. The CONTRACTOR shall immediately contact the affected utility service to report any damaged or destroyed utilities. The CONTRACTOR will provide equipment or labor to aid the affected utility service in repairing damaged or destroyed utilities at no cost to the OWNER.

B. MACHINERY AND EQUIPMENT CLEANING REQUIREMENTS

1. The CONTRACTOR will wash all earthwork equipment to remove seeds, roots, and rhizomes from the equipment prior to initial transport to the site in order to prevent the spread of noxious weeds to the site. (This is not meant to apply to service or employee vehicles that will stay on the roadway traveling frequently in and out of the Project area.) All earthwork equipment shall be pressure cleaned and be completely free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds prior to the initial arrival to the construction site.
2. All CONTRACTOR equipment will arrive at the work site clean and weed-free. The CONTRACTOR will periodically inspect and verify that equipment is arriving free of soil and debris capable of transporting noxious weed seeds, roots, or rhizomes.
3. Equipment will not be sprayed with herbicide chemicals as a preventative measure. Many herbicides target a wide range of vegetation and using herbicides in this way may harm desirable vegetation.
4. The CONTRACTOR will also thoroughly clean and inspect seeding equipment prior to conducting seeding activities.

C. DEWATERING AND DIVERSION CONSIDERATIONS

1. Dewatering may be needed to prevent surface water and subsurface or groundwater from flowing into excavations and from flooding project site and surrounding area. Dewatering shall be adequate to allow proper compaction of subgrade materials.
2. If dewatering is needed, the CONTRACTOR is responsible for obtaining the appropriate DEQ dewatering permits and for providing dewatering equipment and methods as necessary for this project. Work will be performed during low water in the Jefferson River. All costs of dewatering, including permit acquisition, measures to handle the discharge and all related work of cleanup, restoration, etc. shall be incidental to the work.
3. CONTRACTOR is responsible for constructing and maintaining a diversion suitable to divert water around the construction site. The diversion shall be installed to minimize impact to the water way. The diversion shall be removed and channel restored to pre-disturbance conditions and elevations upon completion.

D. EXCAVATION

1. Excavation shall be made to the grade, dimensions and cross sections as shown on the drawings. Care shall be taken to insure that no excavation is made below grade or beyond the dimensions of the planned excavations. In the event that excavation is made beyond the above limits, the CONTRACTOR shall replace the excavated materials and compact the replaced material.
2. Salvaged trees shall be large wood pieces removed from within the project footprint that is deemed acceptable for reuse in project construction by the ENGINEER.
3. Topsoil shall be salvaged and stockpiled separately from the underlying materials.
4. Excavation above the waterline shall proceed such that excavation spoils are carried away from the water, or otherwise collected and contained before being allowed to contact surface waters.

E. GENERAL FILL

1. Fill and backfill shall be an aggregate of native alluvium consisting of sorted gravels, sand, and cobbles native to the site. Backfill shall be well-graded suitable native material free of frozen lumps, concrete, and other debris.
2. Select fill shall be general excavation from within the project footprint that is deemed acceptable for reuse in project construction, including fill within the project limits, bank reconstruction, and backfill of diversion structures.. Select fill shall generally be free of chemical contaminants, stumps, and other deleterious materials or organic material greater than 2 inches in diameter. When identified, select fill shall be stockpiled for eventual use by the CONTRACTOR.
3. Type and amount of material used for backfill, and the manner of placing material shall be subject to approval by the ENGINEER. The CONTRACTOR shall ensure that native soils excavated on site are approved by the ENGINEER before being used as backfill. The ENGINEER reserves the right to reject materials that, in the opinion of the ENGINEER, are determined to be substandard for any reason.
4. Do not place backfill material when either the material or the surfaces on which it is to be placed are frozen.

F. RIPRAP

1. Provide rock that is hard, dense, durable, reasonably well-graded, angular in shape, resistant to weathering and water action, free of cracks, seams, overburden, spoil, shale, structural defects, and organic material and defects that would accelerate degradation by water and/or frost action. Each rock must have its greatest dimension not greater than three times its least dimension. Do not use rounded rock or boulders from a streambed source as riprap. Material shall meet the gradation requirements specified in the design drawings. Bulk density will not be less than 165 pounds per dry cubic foot.
2. Riprap shall be placed on the prepared slope or channel bottom areas in a manner which will produce a reasonably well graded mass of stone with the minimum practicable percentage of voids.
3. Riprap shall be machine placed, unless otherwise stipulated in the DRAWINGS or SPECIFICATIONS.
4. It is the intent of these SPECIFICATIONS to produce a fairly compact riprap protection in which all sizes of material are placed in their proper proportions. Unless otherwise authorized by ENGINEER, the riprap protection shall be placed in conjunction with the construction of embankment or channel bottom with only sufficient delay in construction of the riprap protection, as may be necessary, to allow for proper construction of the portion of the embankment and channel bottom which is to be protected.
5. When riprap is placed on slope, placement shall commence at the bottom of the slope working up the slope.
6. The entire mass of riprap shall be placed on either channel slope or bottom so as to be in conformance with the required gradation mixture and to line, grade, and thickness shown on the DRAWINGS.
7. All material used for riprap protection for channel slope or bottom shall be placed and distributed such that there shall be no large accumulations of either the larger or smaller sizes of stone. Some hand placement may be required to achieve this distribution.
8. The basic procedure shall result in larger materials flush to the top surface with faces and shapes arranged to minimize voids, and smaller material below and between larger materials.
9. Surface grade shall be a plane or as indicated, but projections above or depressions under the finished design grade by more than ten percent (10%) of the rock layer thickness shall not be allowed.
10. Smaller rock shall be securely locked between the larger stone. It is essential that the material between the larger stones not be loose or easily displaced by flow or by vandalism.
11. The stone shall be consolidated by the bucket of the excavator or other means that will cause interlocking of the material.
12. CONTRACTOR shall maintain the riprap protection until accepted by ENGINEER. Any material displaced for any reason shall be replaced to the lines and grades shown on the DRAWINGS at no additional cost to OWNER.

G. LARGE COBBLE

1. Large cobble shall be naturally rounded in shape and will have a naturally smooth surface, such as rock that has as its source a former stream, river, or glacial deposit.
2. Large cobble shall meet the gradation requirements specified in the design drawings. However, the ENGINEER will coordinate with the CONTRACTOR to review rock sources and mixtures and adjust gradations to achieve a desired overall gradation.

H. LARGE WOOD BANK TIE IN TREATMENT

1. Rootwad and Footer logs not already supplied by the OWNER shall be Cottonwood, Douglas fir, Ponderosa Pine, or other species with prior approval by the ENGINEER.
2. Logs and rootwads shall be at least 25 feet in length measured from base to top and the diameter at breast height shall be a minimum of 18 inches. Any deviation in size, species or quality must be pre-approved by the ENGINEER. Logs and rootwads should be cleaned of secondary branches and include only the main trunk and any associated forks. Logs and rootwads should be recently harvested or in a 100% rot free condition, free of fungus, disease, or pests that could contaminate site or infect existing or planted live trees.
3. The total number of logs and rootwads to be installed is estimated to 16 Rootwad logs and 12 Footer logs
4. The Rootwad mass shall have a diameter equal to or greater than three (3) times the log diameter measured at breast height, or otherwise approved by the ENGINEER. The Rootwad mass shall have a length equal to or greater than two (2) times the log diameter measured at breast height, or otherwise approved by the ENGINEER.
5. Installation of Large Wood shall require placing logs on streambanks or partially burying logs using a “fit in the field” approach as directed by the ENGINEER. Logs will be installed individually or in groups. Buried logs shall be buried into the streambank and aligned so that part of the log protrudes from the bank into the stream. Burial shall be through excavating trenches, over excavating streambank, or pushing the woody material directly into the soil. Disturbed ground shall be seeded and mulched.
6. To facilitate efficient movement of logs, the CONTRACTOR shall provide a track excavator with a hydraulic thumb attachment.
7. Excavate as necessary to place large wood while minimizing disturbance to existing grade. Shape, trim, and finish existing grade to allow for placement of large wood as shown on these drawings.

I. BRUSH LAYERING BANK TREATMENT

1. The brush layers will be sourced primarily from live stems cut from willow transplants and from slash and woody material generated from cleaning large wood of secondary branches. Additional willow stem cuttings, if needed, may be taken from live willows within the borrow source area as directed by the ENGINEER.
2. The plant material shall be live, healthy and free from disease and harmful insects. The ENGINEER shall approve brush layer source prior to cutting.
3. The materials shall be cut, transported, and placed immediately in one operation to the fullest extent practical. Any materials requiring salvage and stockpiling for transplanting or other plantings at a later date shall be kept viable by cooling, moistening, or other measures as needed.
4. Place brush layers into the excavation at an angle and depth such that the butt ends of the stems are at or below the baseflow water elevation of the river and the shoot apex extends above finished grade with at least two buds or bud nodes exposed.

J. WILLOW CUTTINGS

1. Willow cuttings shall consist of local willow species. Willow cuttings will be live stems harvested from live deciduous plants.
2. Willow cuttings must be a minimum of 5' long. All cuttings must be greater than 0.5" in diameter at the narrowest portion of the cutting and must be no greater than 1.5" at the widest portion of the cutting. Twenty-five percent of the cuttings must be 1" - 1.5" in diameter.
3. The basal end (bottom) of the cutting must be indicated by a clean, slanted cut. All lateral stems must be removed at the juncture with the main stem. The distal end (top) of the cutting must be indicated by a cut perpendicular to the stem.
4. Willow cuttings must be collected after leaf off and prior to bud swell.
5. Willow cuttings must not be stored for longer than 14 days without approval of ENGINEER.

K. WILLOW TRANSPLANTS

1. Willow transplants shall originate on-site. Transplants shall be harvested in such a manner that most of the root structure and associated soil is retained as a unit (clump).
2. Prior to excavating the willows, the stems shall be cut off and salvaged. Willow clumps shall be cut to a height to ensure that 1'-3' of clump stems are exposed above finished grade while the roots extend to the baseflow elevation of the river.
3. Willow clumps shall be transported and planted directly into a site prepared for the clump planting. Repetitive handling, loading, unloading, and transport of the clump that damages the integrity of the root-soil mass or reduces the viability of the plants shall not be permitted.
4. Transplants shall be thoroughly wetted immediately after placement.
5. Root balls must be placed at a depth that reaches the low water table elevation.
6. Backfill will be placed around willow transplants to ensure proper root contact with soils. Suitable backfill materials include natural channel gravels.

L. GEOTEXTILE FABRICS

1. Non-woven geotextile fabric shall be Propex Geotex 701 or equivalent
2. Coir fabric shall be North American Green C125BN or equivalent

M. CONCRETE

1. All concrete shall have a compressive strength of 4000 psi.
2. Concrete shall have an entrained air content of 5% ± 1%.
3. All exposed edges of concrete shall be chamfered ¾" unless otherwise specified.
4. All concrete shall be made in accordance with an approved mix design.

N. REVEGETATION

1. Seed shall be sown at the rate specified in the seed table on all disturbed areas using broadcast methods. The drill seed rate is half the broadcast application rate. Seeding by hand or mechanical broadcasting will be permitted on areas inaccessible to drills or impractical to seed by other prescribed methods as approved by the ENGINEER. Seed shall be lightly tilled by rake or other means into first inch of topsoil depth.
2. Use native wetland seed or native upland seed mix as indicated in the plans or as directed by the ENGINEER

O. HAUL ROADS / RECLAMATION

1. The CONTRACTOR shall be responsible for maintenance of all haul roads during construction, including snow removal as necessary. The CONTRACTOR shall also be responsible for removal and cleanup of all spillage of excavated materials on all haul routes. Haul roads and all other disturbed areas shall be reclaimed immediately after construction. Restoration shall consist of grading disturbed areas to match surrounding ground elevation. Disturbed areas shall be seeded as specified.

P. CLEANUP AND DISPOSAL

1. Excess material shall either be hauled off site or stockpiled and graded as directed by the LANDOWNER or ENGINEER. Excess material will not be permitted to be accumulated and shall be removed concurrently with the finishing operation. Care will be taken to prevent the entrance of the material into waterways during the construction period.

DRAWN BY: CB
DESIGNED BY: CB, ML, RB, KL
CHECKED BY: MS
DATE: 12/6/24
CCI JOB NO.: RVCD.010
FILE NAME:

REV:	DATE	DESCRIPTION	BY	APP'D
1	12/6/24	100% DESIGN PLANS	CB	MS

UPPER JEFFERSON RIVER RESTORATION PROJECT
100% DESIGN PLANS
RUBY VALLEY CONSERVATION DISTRICT

NOTES AND SPECIFICATIONS

SHEET: 2

PROPOSED BANK STABILIZATION SITE 1 (SHEETS 17-21)

PROPOSED JEFFERSON BUILT OUT LEFT BANK (SHEETS 4-5, 10-11)

PROPOSED REGRADING OF EXISTING SIDE CHANNEL INLET (SHEET 3, 5, 10)

PROPOSED BANK STABILIZATION SITE 2 (SHEETS 22-24)

PROPOSED HELLS CANYON CREEK (SHEET 25-26)

PROPOSED SIDE CHANNEL INLET (SHEETS 4-5, 11)

PROPOSED SIDE CHANNEL HABITAT IMPROVEMENT (SHEETS 4-8, 12)

PROPOSED 1 ACRE GRAVEL BORROW AREA

PROPOSED ROCK RAMP AND HEADGATE DIVERSION (SHEETS 13-16)

HELLS CANYON CREEK

HELLS CANYON CREEK LLC

IHO INVESTMENT TRUST

CHRIST ANTHONY

HORWATH TIM

FORSBERG RONALD & LAURA FAMILY TRUST

HELLS CANYON ROAD

DUSTIN SHAWN D & JANET N

JEFFERSON RIVER

SANDRU RICK R & JODY L

HIGHLAND VIEW LAND & CATTLE

PROPERTY ACCESS ROAD

SIDE CHANNEL

GIDEON-ROOT DITCH

MT HIGHWAY 41 N

CP-1

CP-2

CP-3

N

300 0 300 600

SCALE IN FEET

POINT TABLE

POINT #	NORTHING	EASTING	ELEVATION
CP-1	513806.1640	1249908.3400	4563.915
CP-2	513395.5650	1249588.1770	4562.742
CP-3	512479.6210	1247079.1030	4563.694

LEGEND

- PROPERTY BOUNDARIES
- EXISTING ROADS
- EXISTING IRRIGATION DITCH
- PRELIMINARY REGULATED FLOODPLAIN
- ORDINARY HIGH WATER MARK
- EXISTING MAJOR CONTOUR (10')
- EXISTING MINOR CONTOUR (2')
- EXISTING WETLAND
- EQUIPMENT AND MATERIAL STAGING AREA

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REV.	DATE	DESCRIPTION	BY	APP'D
1	3/12/24	30% CONCEPT DESIGN	KL	MS
2	6/26/24	60% CONCEPT DESIGN	KL	MS
3	9/20/24	90% DESIGN PLANS	CB	MS
4	12/6/24	100% DESIGN PLANS	CB	MS

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OVERALL SITE PLAN

SHEET: 3

NOTES:
1) EXCAVATE GENERAL FILL AND TOPSOIL INTO SEPARATE STOCKPILES
2) USE STOCKPILED GENERAL FILL TO CONSTRUCT PROPOSED SIDE CHANNEL HABITAT FEATURES
3) PLACE STOCKPILED TOPSOIL ON CONSTRUCTED SIDE CHANNEL HABITAT FEATURES
4) PLACE EXCESS MUCK MATERIAL IN UPLANDS ADJACENT TO NEW SIDE CHANNEL ALIGNMENT

STABILIZE RIGHT BANK OF JEFFERSON PER DETAIL 3, SHEET 11

FILL EXISTING SIDE CHANNEL ENTRANCE WITH STOCKPILED RIVER BED MATERIAL AND RESEED WITH UPLAND SEED MIX (SEE SHEET 28)

SIDE CHANNEL HABITAT IMPROVEMENT PER DETAILS ON SHEET 12

CONNECT TO EXISTING CHANNEL

PLACE EXCESS MUCK MATERIAL

JEFFERSON RIVER

PROPOSED JEFFERSON LEFT BANK BUILD OUT PER DETAIL 4, SHEET 11

TYPICAL SIDE CHANNEL SECTION PER DETAIL 2, SHEET 11

SIDE CHANNEL

TRANSITION TO TYPICAL SIDE CHANNEL SECTION

PROPOSED POOL (TYP.)

SIDE CHANNEL INLET PER DETAIL 1, SHEET 11 FROM STA 86+45 TO STA 89+00

N

75 0 75 150
SCALE IN FEET

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1	6/26/24	60% CONCEPT DESIGNS	CB	MS
2	9/20/24	90% DESIGN PLANS	CB	MS
3	12/6/24	100% DESIGN PLANS	CB	MS

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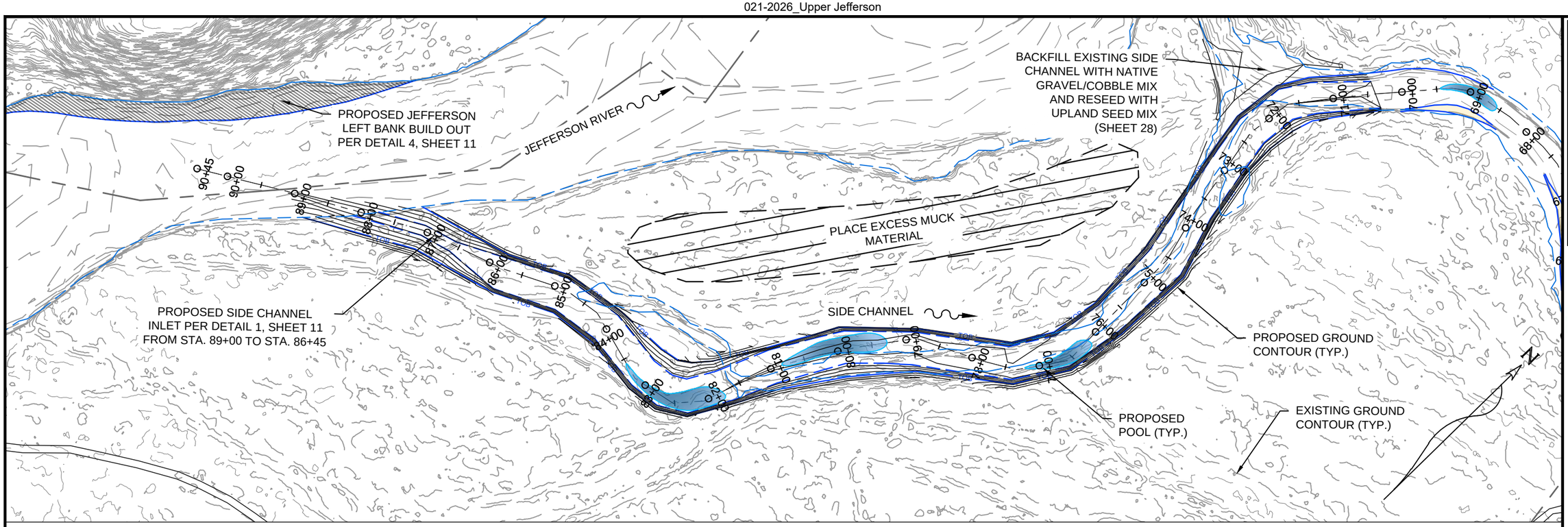
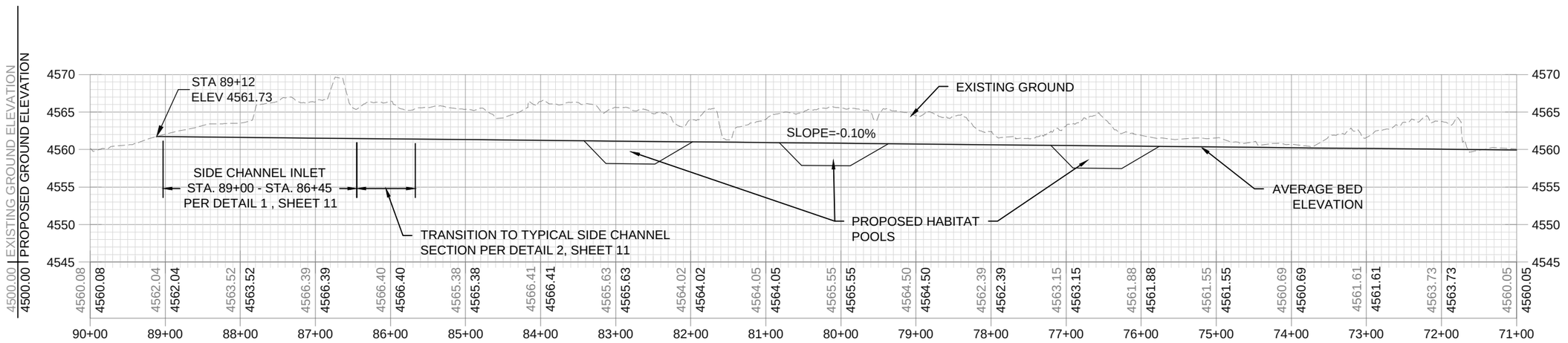
SIDE CHANNEL ACTIVATION SITE PLAN

SHEET: 4



75 0 75 150
SCALE IN FEET

PROPOSED SIDE CHANNEL PLAN AND PROFILE STA. 90+00 - STA. 71+00



1/5 SIDE CHANNEL STA. 90+00 - STA. 71+00
HORIZONTAL SCALE: 1" = 150'
VERTICAL SCALE: 1" = 15'

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REV.	DATE	DESCRIPTION	BY	APP'D
1	3/1/2024	30% CONCEPT DESIGN	KL	MS
2	6/26/24	60% CONCEPT DESIGN	KL	MS
3	9/20/24	90% DESIGN PLANS	CB	MS
4	5/20/24	100% DESIGN PLANS	CB	MS

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SIDE CHANNEL P&P STA 90+00 - STA 71+00

SHEET: 5