

Appendix H
Cordova EVOS Sites COP 9 and SHER 1
(Fish Passage Improvements at Sheridan River Tributary)
Specifications

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COPPER RIVER WATERSHED PROJECT REQUEST FOR PROPOSAL EVOSTC-2024

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 9 and SHER 1 (Fish Passage Improvements at Sheridan River Tributary)

SCOPE OF WORK

General

This project's purpose is to supply all labor, equipment, materials, and supplies required to install new culvert structures at the existing culvert locations identified on Copper River Highway at the Sheridan River Tributary (COP 9 and SHER 1).

All construction shall be completed in accordance with the current Alaska Department of Transportation and Public Facilities (ADOT&PF) Standard Specifications for Highway Construction (SSHC) 2020 Edition. Project specific special provisions are provided in the following sections. The requirements contained in these specifications and special provisions are hereby made a part of this solicitation and resultant contract.

The crossings are located on the Copper River Highway, approximately 3.25 (COP 9) and 3.38 (SHER 1) miles east of the Merle K. (Mudhole) Smith Airport in Cordova, Alaska.

Stream Name	ADF&G Site Number	CRWP ID	Latitude	Longitude	HWY MP
Sheridan River Tributary	20100475	COP 9	N60.47446°	W145.38876°	15.31
Sheridan River Tributary	20101903	SHER 1	N60.47397°	W145.38562°	15.43

Contractor shall provide resources to complete this project without any adjustments in the original bid amount or contract time.

Work shall be performed in one continuous time period. Contractor shall complete the work no more than 60 Working Days after commencing operations. Time is of the essence. All work below the Ordinary High Water (OHW) mark must be completed between June 1 and July 31, 2024 or as stipulated by the Alaska Department of Fish and Game Fish Habitat Permit. All construction activities shall be completed by August 15, 2024.

Definition of Roles

Copper River Watershed Project (CRWP) is the Owner and the Contractor's primary point of contact. CRWP will retain an Owner's Field Representative to be on site full-time. All reference to "Engineer" within the project manual and specifications refers to the Owner's Field Representative.

DOWL is the Engineer of Record for the design of the project.

ADOT&PF is a Right-of-Way (ROW) owner responsible for the maintenance of the Copper River Highway.

Permits

The Contractor shall coordinate permitting with the Owner to obtain or transfer permits to the Contractor, including but not limited to:

- ADF&G Fish Habitat Permit
- ADF&G Aquatic Resource Permit
- U.S. Army Corps of Engineers Alaska District (ACOE) Section 404 Wetland Permit
- Landowner (ADOT&PF) Special Use Permit
- Alaska Department of Natural Resources (ADNR) Temporary Water Use Permit

Before any excavation begins on the Copper River Highway, the Contractor shall have a copy of and fully execute all permit requirements.

The Contractor shall obtain permits and approvals from:

- Affected utility companies (Cordova Telecom Cooperative)
- ADOT&PF for traffic control and road closure (this is required to be submitted to Engineer for completion of ADOT&PF Special Use Permit application)
- Alaska Department of Environmental Conservation (ADEC) SWPPP Permit
- ADF&G Special Area Permit (if required by final dewatering plans)

If more than one (1) acre of land is being disturbed, the Contractor shall obtain (the latest version) Construction General Permit, develop a SWPPP based on that permit and submit a Notice of Intent (NOI) to ADEC. A Construction General Permit and NOI will not be required if less than (1) acre of land is disturbed. However, the Contractor shall still develop a SWPPP and follow best management practices under that SWPPP when less than (1) acre of land is disturbed.

Notify regulatory agencies a minimum of 14 calendar days (2 weeks) before beginning work.

Utility Locates

Contractor shall verify locations of all underground utilities present at the site. Request utility locates from the utilities having facilities in the area. Use the Alaska Digline, Inc. Locate Call Center for the utility locates. Provide documented locations of all known utility locations, including relevant sketches, redlines, and detailed information regarding the utilities and proposed work.

Road Closures

Contractor shall coordinate traffic control and road closures with ADOT&PF. Full Road closures of the Copper River Highway must be approved by ADOT&PF as documented in the ADOT&PF Special Use Permit. All traffic control and road closures shall comply with permit stipulations.

Materials Testing Requirement

Prior to construction the Contractor is responsible for acceptance testing and quality control (QC) testing for all materials, including aggregates and topsoil. Contractor shall submit the test results to the Engineer for approval. The material testing submittals shown in the table below are required for acceptance of materials prior to use on the project. All test results shall be submitted to the Engineer a minimum of 14 days prior to placement of materials. If material testing submittals are not accepted, and additional reviews are required, additional review periods will be necessary.

Material	Submittals Required	AASHTO Test Number
Useable Excavation/Selected Material, Type C	Plasticity Index Gradation Proctor Compaction Curve	ATM 205 T27 T180
Selected Material, Type A	Plasticity Index Gradation Proctor Compaction Curve	ATM 205 T27 T180
Subbase, Type F	Test Results for Properties in Table 703-8 Plasticity Index Gradation Proctor Compaction Curve	ATM 205 T27 T180
Aggregate Surface Course (E-1)	Test Results for Properties in Table 703-1 Gradation Proctor Compaction Curve	T27 T180
Topsoil (Imported)	% Organic Content Gradation Nutrient Composition pH	ATM 203 Section 726 or specification/special provision
Riprap	Gradation Wear – AASHTO T96	Section 611 or specification/special provision T96
Controlled Low-Strength Material	Mix Design	

Contractor is responsible for providing a nuclear testing equipment storage shed in accordance with Section 644.

Other Requirements

Contractor must wash all trucks and equipment in accordance with Section 203 prior to mobilization to or from the City of Cordova to ensure that the spread of invasive species is prevented.

Work Zone speed limit: Limit speed of vehicles associated with the construction to 25 mph within project limits. Park within the public right-of-way. Do not block private property.

Contractor shall notify ADF&G and the Engineer a minimum of 72 business hours prior to the following construction milestones and obtain the approval of the Engineer prior to proceeding.

- The initial excavation at the start of the project.
- Diverting stream flows into the diversion channel/culvert.
- Fish trapping.
- Placement of new culverts to allow for inspection of bedding materials and finish grade.
- Backfill of culvert above the spring line (to verify the invert elevations).
- Placement of Waterway Bed Fill prior to placement of materials within the constructed culvert and channel to allow for inspection of materials.
- Rewatering of the installed culvert and stream bed (diverting stream flows back into the constructed channel and culvert, flooding the constructed channel and culvert by removing or turning off dewatering pumps, etc.).

The Contractor is responsible for relocating trapped fish in accordance with the ADF&G Aquatic Resource Permit. The Engineer and agency personnel (e.g., ADF&G, USFS, USFWS, etc), at their discretion, may elect to be onsite during stream diversion and rewatering of the installed culvert to relocate trapped fish. Notify the Owner to coordinate appropriate fish trapping collaboration and assistance in advance of stream diversion and rewatering.

Final acceptance by the Owner (or others appointed by the Owner) is required for the following project elements:

- Culvert
- Roadway
- Waterway bed fill (stream channel grading and material)
- Waterway revegetation (habitat work)

The Engineer will not issue the letter of project completion until all work has been approved by the Owner, or Owner's appointee(s), in accordance with requirements stated in the project manual, specifications, and permits. Straw is prohibited on the project site.

The Contractor is required to have a supervisor with authority to make construction-related decisions on-site at all times to coordinate with the Owner's Field Representative.

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2024

**Copper River Watershed Habitat Enhancement Project,
Cordova EVOS Sites COP 9 and SHER 1 (Fish Passage
Improvements at Sheridan River Tributary)**

I

**MODIFICATIONS & SPECIAL PROVISIONS TO 2020 STANDARD
SPECIFICATIONS FOR HIGHWAY CONSTRUCTION**

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U.S. FISH AND WILDLIFE SERVICE

STANDARD MODIFICATIONS

to the

ALASKA

DEPARTMENT OF TRANSPORTATION

AND PUBLIC FACILITIES

STANDARD

SPECIFICATIONS

FOR HIGHWAY CONSTRUCTION

2020 EDITION

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SECTION 102
BIDDING REQUIREMENTS AND CONDITIONS

Special Provision

102-1.03 INTERPRETATION OF QUANTITIES. Delete the text of this subsection in its entirety and replace with:

Bidders shall determine the quantities of work to be done and materials to be furnished under the Contract. Bidders shall base their bid price on their estimated quantities.

Any quantities shown in the Contract Documents were used by CRWP to develop the Engineer's cost estimate. CRWP assumes no responsibility for such quantities or any incidental information in the bid package that may be construed as a quantity of work or materials. Bidders shall accept their Bid Price as full compensation for providing all quantities of work and materials necessary to complete the project as specified.

102-1.05 PREPARATION OF BID. Delete:

"Item 2. Enter a unit price for each contract item for which a quantity is given;"

"Item 3. Enter the products of the respective unit prices and quantities in the column provided;"

Delete and replace item 5 with:

5. Enter the lump sum amount of the basic bid equal to all lump sum items and, when specified, for any alternates.

SECTION 104 SCOPE OF WORK

Special Provision

104-1.01 INTENT OF CONTRACT

The Contractor shall designate a Quality Control (QC) Manager to ensure materials and workmanship meet the contract requirements on a daily basis. Qualifications of the QC Manager shall be submitted to the Engineer for approval. The QC Manager shall prepare daily reports which shall be provided to the Engineer on a daily basis. The daily reports shall contain the following information at a minimum: work performed, equipment and personnel on site, survey notes, quality control activities, test results, submittal information including submittals approved, and delays or predicted delays.

104-1.02 CHANGES. Delete description in item 1.a. and replace with:

If the changed work does not materially differ in character or cost from specified Contract work, the Contractor shall perform the work at the original Contract Price.

In item 1.b. in the first sentence, delete the word:

"unit"

In item 3, Cost and Pricing Data, add the following last sentence:

The Contractor shall explain any price deviation from the schedule of values for similar work.

SECTION 105
CONTROL OF WORK

Special Provision

105-1.18 WARRANTIES. Add the following:

If within two years after the date of the Project Completion or such longer period of time as may be prescribed elsewhere by the Contract, any work is found to be defective, the Contractor shall promptly and without cost to the CRWP, and in accordance with the Engineer's written instructions, either correct defective work, or, if it has been rejected by the Engineer, remove it from the site and replace it with conforming work. Defective work includes the presence of highly invasive species in Cordova listed below that have been introduced as a result of construction activities:

Common Name	Scientific Name	Invasive Rank
Bohemian Knotweed	<i>Fallopia xbohemica</i> (J. Chrtek & Chrtkov) J.P. Bailey	87
Reed Canarygrass	<i>Phalaris arundinacea</i> L. (cultivar)	83
Orange Hawkweed	<i>Hieracium aurantiacum</i> L.	79
Bird Vetch	<i>Vicia cracca</i> L. ssp. <i>cracca</i>	73
Butter and Eggs Flower	<i>Linaria vulgaris</i> Mill.	69
Oxeye Daisy	<i>Leucanthemum vulgare</i> Lam.	61
Narrowleaf Hawksbeard	<i>Crepis tectorum</i> L.	56

If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the CRWP may have the defective work corrected or the rejected work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be borne by the Contractor.

SECTION 109

MEASUREMENT AND PAYMENT

Special Provisions

109-1.03 SCOPE OF PAYMENT. Delete the text of this subsection in its entirety and replace with:

The Contract will be paid on a lump sum basis and the Contract lump sum price shall constitute full compensation for furnishing all plant, labor, equipment, materials, and performing all operations required to complete the work as specified in all of the Contract Documents and as shown on the drawings or otherwise directed. Notwithstanding the omission or mention of any incident or incidental Work, the Contract price and payment shall also constitute full compensation for all Work incident or incidental to completion of the items. In the event the Contract Documents require any Work, but is not identified as being directly incident or incidental to the completion of any Contract item, the contract price for all enumerated items shall also constitute full compensation of such work.

The Contractor shall accept the Contract Price as full payment for furnishing all resources necessary to complete all work under the Contract in a complete and acceptable manner. The Contractor shall assume all liability for risk, loss, damage, or expense resulting from the work, subject to Subsection 107-1.18.

109-1.04 COMPENSATION FOR ALTERED QUANTITIES. Delete the text of this subsection in its entirety and replace with:

Except as provided in Subsection 104-1.02, no allowance shall be made to the Contractor for any increased expenses, loss of expected reimbursement or loss of anticipated profits suffered or claimed, from alterations in quantities.

109-1.05 COMPENSATION FOR EXTRA WORK. Item 4, delete second sentence and replace with:

No percentage will be paid on work covered under the original Contract.

109-1.08 FINAL PAYMENT. Add the following paragraph:

Final payment will be withheld until as-built plans have been submitted in accordance with the requirements stated in Section 642 and the Engineer has approved the as-built plans.

SECTION 201 CLEARING AND GRUBBING

Special Provisions

201-1.01 DESCRIPTION. Add the following:

Selectively cut and remove trees as needed to complete the work. The Contractor shall give the Owner 72-hour notice and cut only the trees approved for removal.

Salvage and stockpile native organic soils, woody debris, and vegetative mat.

201-3.01 GENERAL. Add the following:

The Contractor shall perform the work necessary to preserve and/or restore land monuments and property corners from damage. A land monument or property corner that is disturbed shall be restored according to Section 642 at the Contractor's expense. An undisturbed area five feet in diameter may be left around existing monuments and property corners.

Clearing is not permitted within the migratory bird window of May 1 to July 15; except as permitted by Federal, State and local laws when approved by the Engineer. The Contractor is responsible for completing clearing prior to May 1 as necessary to complete the in-stream (below Ordinary High Water) work within the work window permitted by the ADF&G Fish Habitat Permit.

Topsoil. Stockpile organic soils removed during grubbing. Place stockpiled organic soils on finished slopes as topsoil prior to seeding in accordance with Section 618.

Vegetative Mat. Salvage vegetative mat in accordance with Section 690. Take care not to damage vegetative mats to be salvaged during clearing and grubbing.

Wetland Plugs. Salvage wetland plugs in accordance with Section 690. Take care not to damage wetland plugs to be salvaged during clearing and grubbing.

201-5.01 BASIS OF PAYMENT. Add the following:

The work required to preserve and restore land monuments and property corners is subsidiary to pay item 642.0001.0000 Construction Surveying.

Salvaging/harvesting, stockpiling, and transporting native organic soils, vegetative mat, woody debris, and wetland plugs is subsidiary to pay item 690.2003.0000) Waterway Bank Revegetation and Protection.

Placing salvaged organic soils as topsoil on riprap slopes shall be paid under Section 620.

Replace the Pay Item table with the following:

Pay Item	Pay Unit
201.0009.0000 Clearing and Grubbing	Lump Sum

SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Special Provision

202-3.01 GENERAL. Add the following:

Existing Culvert Pipe. The existing culvert pipes shall be legally disposed of offsite. Upon request from ADOT&PF, all undamaged culverts removed shall be salvaged and delivered to Cordova ADOT&PF M&O Maintenance Yard.

Past projects along Copper River Highway have encountered timber bridge components within the roadway prism that were not located within the geotechnical borings. If timber bridge components are encountered during construction, they shall be removed to an elevation as directed by the Engineer.

202-5.01 BASIS OF PAYMENT. Add the following:

All work including labor, materials, and equipment necessary to remove timber bridge components encountered in the roadway during excavation is subsidiary to pay item 202.0004.0000 Removal of Culvert Pipe.

Replace the Pay Item table with the following:

Pay Item	Pay Unit
202.0004.0000 Removal of Culvert Pipe	Lump Sum

SECTION 203

EXCAVATION AND EMBANKMENT

Special Provisions

203-3.01 GENERAL. Add the following:

All excavation, trench excavation for installation of culverts/structures, and placement of culvert infill material shall be completed in accordance with applicable Occupational Safety & Health Administration (OSHA) requirements. Contractor is responsible for knowing all applicable OSHA requirements and maintaining safe working conditions at all times on the project site.

Inspect excavation for hazardous conditions before worker entry daily and as conditions change. Inspections are to be completed by a competent person as defined by OSHA.

Pressure wash all tracked equipment, excavation equipment, and excavation hauling equipment prior to mobilization to ensure that the spread of invasive species is minimized. Clean equipment so that no invasive species would have the chance of being spread or imported into the site. At a minimum, there should be no visible soil, organics, or vegetative material on equipment.

Contractor is responsible for initial acceptance testing of all materials, including aggregates and topsoil, and submitting test results to the Engineer. The Contractor shall submit the test results to the Engineer for approval two weeks prior to planned activities that use the subject materials. If material sources change, or if the provided material is visibly different than past material, updated tests are required.

If additional material is required, supplement with borrow to maintain the side slopes and elevations as shown on the drawings. Fill all ditches and low areas to prevent ponding (unless required for drainage). Grade the disturbed adjacent areas to drain into the new channels; grade all other disturbed areas to the approximate original ground contour and assure proper drainage.

203-3.03 EMBANKMENT CONSTRUCTION. Delete the first paragraph and add the following:

Prior to any excavation of the existing embankment at or below the existing water level, install a cofferdam using bulk bags (e.g., Super Sacks) and/or other methods as shown on the drawings. Use only approved materials in construction of road embankment and culvert backfill.

Delete the second paragraph and add the following:

Borrow materials for the new embankment shall be Selected Material, Type A for backfill and Subbase, Grading F for bedding; all meeting the requirements of Subsection 703-2.07 and 703-2.09. Selected Material, Type A and Subbase, Grading F materials shall be obtained from borrow sources that have been laboratory tested and meet the project gradation requirements. The

Contractor is responsible for obtaining all necessary laboratory tests for materials. Submit results of laboratory tests to Engineer for approval before using material.

203-3.06 COMPACTION BY PROOF ROLLING. Add the following:

Proof-roll the base of excavation and where the embankment crosses previously undisturbed ground, prior to placing new embankment material, to the extent that ensures the first lift of material placed upon it can be compacted to the specified density. Omit proof rolling only if approved by the Engineer and if necessary, to prevent liquefaction of surface soils.

203-4.01 METHOD OF MEASUREMENT Add the following:

Earthwork quantities shall be paid on a lump sum basis.

203-5.01 BASIS OF PAYMENT Add the following:

All materials testing shall be subsidiary to Section 203, 301, and 620 pay items, accordingly.

Required surveys of material stockpiles necessary to compute quantities places shall be subsidiary to pay items under this section.

Replace the Pay Item table with the following:

Pay Item	Pay Unit
203.0019.0000 Unclassified Excavation	Lump Sum
203.0020.000A Borrow, Selected Material, Type A	Lump Sum
203.0020.000F Subbase, Grading F	Lump Sum

SECTION 204
STRUCTURE EXCAVATION FOR CONDUITS AND MINOR STRUCTURES

Special Provisions

204-5.01 BASIS OF PAYMENT. Delete the third paragraph and substitute the following:

When pay item 204.0001.____ Structure Excavation does not appear in the bid schedule, structure excavation required to complete other items of work will be paid for under pay item 203.0019.0000 Unclassified Excavation.

Delete the fourth paragraph and substitute the following:

Any borrow material required whose source is other than project excavation will be paid for at the contract price for pay item 203.0020.000A Borrow, Selected Material, Type A or pay item 203.0020.000F Subbase, Grading F.

SECTION 205
EXCAVATION AND FILL FOR MAJOR STRUCTURES

Special Provisions

204-1.01 DESCRIPTION. Add the following:

Controlled Low-Strength Material (CLSM) item shall include all work necessary to gain access to, prepare and place stabilized CLSM in accordance with these Specifications, as shown on the Plans and as directed by the Engineer. The CLSM shall be used as pipe bedding.

205-3.06 CONTROLLED LOW-STRENGTH MATERIAL.

Add the following after the last paragraph:

After completing the work, the Contractor shall remove from the project site any excess CLSM that resulted from spillage, et cetera, and restore the project site to a condition that is acceptable to the Engineer.

205-4.01 METHOD OF MEASUREMENT. Delete 4 and replace with the following:

4. Controlled Low-Strength Material. Lump Sum.

205-5.01 BASIS OF PAYMENT. Replace the Pay Item table with the following:

Pay Item	Pay Unit
205.0005.0000 Controlled Low-Strength Material	Lump Sum

SECTION 301
AGGREGATE BASE AND SURFACE COURSE

Special Provisions

301-5.01 BASIS OF PAYMENT. Replace the Pay Item table with the following:

Pay Item	Pay Unit
301.0004.0000 Aggregate Surface Course, Grading E-1	Lump Sum

SECTION 602

STRUCTURAL PLATE PIPE

Special Provisions

602-1.01 DESCRIPTION. Add the following:

The Owner shall procure manufacturer-designed culvert bridges (aluminum structural plate culverts) to meet the contract requirements for installation by Contractor.

The Contractor shall install the aluminum structural plate culverts provided by the Owner at the locations shown on the Drawings. Install in accordance with details, specifications, and instructions provided by manufacturer.

Add the following Subsection:

602-2.02 GEOTECHNICAL DATA AND HYDROLOGY INFORMATION.

The Engineer shall freely provide available geotechnical and hydrology data and reports previously completed in support of this project.

602-3.01 CONSTRUCTION REQUIREMENTS. Add the following:

Contractor shall be responsible for receiving, off-loading, storing the culvert upon arrival to Cordova. The contractor is also responsible for inventorying and transporting the structural plate aluminum pipe arches to the project site. The contractor is responsible for inventorying and certifying receipt of all culvert parts and pieces on a materials transfer form at time of offloading. Contractor is responsible for assembling and installing the structural plate aluminum pipe arch culverts as shown in the Plans. Contractor shall follow manufacturer's recommendations when moving and transporting assembled culverts.

If requested by the Engineer, provide the Engineer access to manufacturer's installation recommendations such as attendance at the pre-construction meeting or written literature.

The Engineer shall approve of the culvert foundation elevations and material prior to placement of the culverts in the final locations as shown on the Plans. Final elevations of the culvert inverts shall be within 1 inch, plus or minus, of the elevations shown in the Plans. Structural culvert invert elevations outside the 1-inch plus or minus tolerance shall be cause for resetting of the culverts at the Contractor's expense. Notify the Engineer a minimum of 72 hours before scheduled placement of the culverts.

Obtain the Engineer's approval before over-excavating in-situ materials.

602-5.01 BASIS OF PAYMENT. Delete the first sentence and replace with the following:

Excavation, borrow, and bedding are paid for under Sections 203 and 301, accordingly.

All work including labor, materials, and equipment associated with receiving, transporting, assembling, inspecting, and installing culvert bridges is subsidiary to Section 602 pay items.

Replace the Pay Item table with the following:

Pay Item	Pay Unit
602.0005.0000 Assemble and Install Structural Plate Aluminum Arch Culvert, 8'-5" Span, 6'-3" Rise (COP 9)	Lump Sum
602.0005.0000 Assemble and Install Structural Plate Aluminum Arch Culvert, 8'-5" Span, 6'-3" Rise (SHER 1)	Lump Sum

SECTION 611
RIPRAP

Special Provisions

611-3.01 CONSTRUCTION REQUIREMENTS. Add the following:

Use riprap to construct revetment to the lines and grades shown in the Plans. Refer to Section 690 Waterway.

Riprap placed within the stream channel shall have a rough, uneven surface where exposed.

Riprap placed at or above the stream banks, including the slope protection around the exposed culvert ends, shall have voids filled to provide a smooth surface suitable for placing topsoil and seed. Use borrow or salvaged organic soil to fill voids in the riprap to the satisfaction of the Engineer. Borrow or salvaged organic soil shall not prevent rock to rock contact. Cover riprap with 4 inches of topsoil and seed in accordance with Sections 618 and 620.

611-5.01 BASIS OF PAYMENT. Add the following:

Topsoil and seed placed on riprap revetment shall be paid under Sections 618 and 620, accordingly.

Selected Material, Type A and useable excavation to fill voids in placed riprap according to the Plans is subsidiary.

Replace the Pay Item table with the following:

Pay Item	Pay Unit
611.0003.0001 Riprap, Class I	Lump Sum

Delete Section 613 in its entirety and substitute the following:

SECTION 613
MONUMENTS AND MARKERS

613-1.01 DESCRIPTION. This work consists of furnishing and installing culvert marker posts in conformance with the Plans and Specifications or as directed.

613-2.01 MATERIALS. Steel mounting supports shall conform to the requirements of ASTM A 36. Steel mounting supports and fasteners for culvert marker posts shall be galvanized in accordance with AASHTO M 232.

Culvert marker posts shall be Carsonite CIB-380 flexible markers, or approved equal.

613-3.01 CONSTRUCTION REQUIREMENTS. Culvert marker posts shall be installed as detailed on the Plans.

613-4.01 METHOD OF MEASUREMENT. The quantities paid for shall be the actual number of culvert marker posts furnished, installed, and accepted.

If Item 613.0002._____ does not appear on the bid schedule all costs associated with providing and installing culvert marker posts shall be considered subsidiary to culvert installation and will not be measured or paid for separately.

613-5.01 BASIS OF PAYMENT. Culvert marker posts shall be paid for at the contract price, per unit of measurement, for the pay item shown in the bid schedule.

Payment will be made under:

Pay Item	Pay Unit
613.0002.0000 Culvert Marker Post	Lump Sum

SECTION 618

SEEDING

Special Provisions

618-1.01 DESCRIPTION. Delete subsection in entirety and replace with the following:

Topsoil and seed all new or disturbed slopes, riprap slope protection, and other areas directed by the Engineer. Track the soil and apply seed, mulch, and water. Provide a living ground cover on slopes as soon as possible.

618-3.01 SOIL PREPARATION. Add the following:

Apply seed as detailed in subsection 618-3.03 immediately after the shaping of the slopes. Cover all slopes to be seeded with topsoil according to Section 620. Complete slope preparation as soon as topsoil is placed on the slopes.

618-3.03 APPLICATION. Add the following:

Place the seed mix over disturbed areas. Apply at 2 pound/1,000 square feet or 87 pounds/acre. Do not apply fertilizer. Use mulch per Section 619.

Evenly mix the seeds in a sack immediately before dispersing or adding to a hydroseeding solution, and then evenly mix the seeds into solution. Water lightly and keep top 1/8" soil moist until final acceptance of the Project is received.

Water for seeding shall be performed on seeded areas per seed supplier's recommendations.

Contractor is responsible for applying owner furnished seed to the project site.

618-4.01 METHOD OF MEASUREMENT. Add the following:

Seeding by Lump Sum. The quantity for Seeding shall include all cultivation, seeding, limestone if required, and mulching.

618-5.01 BASIS OF PAYMENT. Add the following:

Furnishing, mobilizing, modifying, operating, and maintaining all materials and equipment necessary to install seed is subsidiary to pay item 618.0005.0000 Seeding. Water for seeding is subsidiary.

Replace the Pay Item table with the following:

Pay Item	Pay Unit
618.0005.0000 Seeding	Lump Sum

SECTION 619
SOIL STABILIZATION

Special Provisions

619-3.02 APPLICATION. *Add the following:*

Apply Wood Cellulose Fiber or Natural Wood Fiber mulch meeting the requirements of Subsection 727-2.01 Mulch over all disturbed areas as part of work specified in Section 618 Seeding. Mulch can be placed concurrently with seed if the Hydraulic Method is used for seeding as specified in Subsection 618-3.03 Application. Straw is not an approved soil stabilization material and is prohibited on the project site.

Apply mulch at 40 pounds/1,000 square feet.

Delete Subsections 619-4.01 and 619-5.01 in their entirety, and add the following new subsections:

619-4.01 METHOD OF MEASUREMENT.

No measurement will be made for mulch, application, water, maintenance, or repair.

619-5.01 BASIS OF PAYMENT.

Mulch, application, water, maintenance, and repair are subsidiary to pay item 618.0005.0000 Seeding.

SECTION 620
TOPSOIL

Special Provision

620-3.01 PLACING. Add the following:

Place native organic soils (salvaged from clearing and grubbing and excavation work) or topsoil meeting the requirements of Section 726 to a thickness of 4 inches (or as approved by the Engineer) on all disturbed soil away from the road prism and noted for seeding according to Section 618. Excess salvaged vegetated mat beyond what is required by the Plans may be used in lieu of topsoil and seeding.

620-5.01 BASIS OF PAYMENT. Replace the Pay Item table with the following:

Pay Item	Pay Unit
620.0003.0000 Topsoil (4")	Lump Sum

SECTION 630
GEOTEXTILE FOR EMBANKMENT AND ROADWAY
SEPARATION, STABILIZATION AND REINFORCEMENT

Special Provision

630-3.01 CONSTRUCTION REQUIREMENTS.

1. b. Delete the first two sentences and replace with the following:

Lay the machine rolled direction of the geotextile parallel with the culvert centerline. Join seams parallel with the culvert centerline by overlapping a minimum of 3 feet. No seams will be allowed perpendicular to the culvert centerline.

630-5.01 BASIS OF PAYMENT. Replace the Pay Item table with the following:

Pay Item	Pay Unit
630.0003.0002 Geotextile, Reinforcement, Type 2	Lump Sum

SECTION 640 MOBILIZATION AND DEMOBILIZATION

Special Provision

640-3.01 CONSTRUCTION REQUIREMENTS. Add the following:

Pressure wash all tracked equipment, excavation equipment, and excavation hauling equipment prior to every mobilization to ensure that the spread of invasive species is minimized. Clean equipment so that no invasive species would have the chance of being spread or imported into the site. At a minimum, there should be no visible dirt on equipment.

All equipment must be washed before entering and leaving Cordova and before and after long hauls from site in accordance with Section 203.

640-4.01 METHOD OF MEASUREMENT. Delete the fourth paragraph and substitute the following:

3. The remaining balance of the amount bid for Mobilization and Demobilization will be paid after all submittals required under the Contract are received and approved, the as-built plans have been submitted in accordance with Section 642, and the Engineer has approved the as-built plans to meet the requirements stated in Section 642.

640-5.01 BASIS OF PAYMENT. Add the following:

All labor, equipment, and materials necessary for Quality Control Manager are subsidiary to pay item 640.0001.0000 Mobilization and Demobilization.

SECTION 641

EROSION SEDIMENT AND POLLUTION CONTROL

Special Provisions

641-1.01 DESCRIPTION. Add the following:

Provide project administration and Work relating to control of erosion, sedimentation, and discharge of pollutants, according to this section and applicable local, state, and federal requirements.

641-1.03 PLAN AND PERMIT SUBMITTALS. Add the following:

Partial and incomplete submittals will not be accepted for review. Any submittal that is resubmitted or revised after submission, but before the review is completed, will restart the submittal review timeline. No additional Contract time or additional compensation will be allowed due to delays caused by partial or incomplete submittals or required re-submittals.

Storm Water Pollution Prevention Plan. Submit an electronic copy and three hard copies of the SWPPP to the Engineer for approval. Deliver these documents to the Engineer at least 21 days before beginning Construction Activity.

CRWP will review the SWPPP submittals within 14 days after they are received. Submittals will be returned to the Contractor and marked as either “rejected” with reasons listed or as “approved” by the CRWP. When the submittal is rejected, the Contractor must revise and resubmit the SWPPP. The 14-day review period will restart when the Contractor submits an electronic copy and three hard copies of the revised SWPPP to the Engineer for approval.

After the SWPPP is approved by the CRWP, the Contractor must sign and certify the approved SWPPP.

ADEC SWPPP Review.

1. Transmit a copy of the CRWP approved SWPPP to ADEC if more than one (1) acre of land is being disturbed
2. Transmit a copy of the delivery receipt confirmation to the Engineer within (7) days of receiving the confirmation
3. Retain a copy of delivery receipt confirmation in the SWPPP

641-1.06 RESPONSIBILITY FOR STORM WATER PERMIT COVERAGE. Delete this subsection in its entirety and replace with the following:

1. CRWP and the Contractor are jointly responsible for permitting and permit compliance with the project zone.
2. The Contractor is responsible for permitting and permit compliance outside of project zone. The Contractor has sole responsibility for compliance with all federal, state, and local requirements, and for securing all necessary clearances, rights, and permits.

3. An entity, that owns or operates material source or disposal site outside of project zone, is responsible for permitting and permit compliance. The Contractor has sole responsibility to verify that the entity has appropriate permit coverage.
4. The CRWP is not responsible for permitting or permit compliance, and is not liable for fines resulting from noncompliance with permit conditions:
 - a. For areas outside the project zone
 - b. For construction activity and support activities outside of project zone and;
 - c. For commercial plants, commercial material sources, and commercial disposal sites.

641-2.04 RESPONSIBILITY AND AUTHORITY OF THE SWPPP MANAGER. Add the following:

The SWPPP Manager must be available at all times to administer SWPPP requirements and be physically present within the project zone or the project office, for at least eight hours per day when construction activities are occurring.

The SWPPP Manager shall have the Contractor's complete authority and be responsible for suspending construction activities that do not conform to the SWPPP.

SECTION 642

CONSTRUCTION SURVEYING AND MONUMENTS

Special Provisions

642-1.01 GENERAL. Add the following:

The Contractor shall submit for approval the qualifications of all persons engaged in grade control. The lead person establishing and checking grades in the field must have a minimum of 2 years of relative experience and be assigned to the project with the primary responsibility of grade control. Equipment operators or other personnel with other project responsibilities cannot be responsible for grade control duties. At least one person competent in setting, adjusting and recording grades shall always be on site during streambed excavation, culvert placement, and backfill operations.

Contractor is responsible for verifying the survey control prior to use. The horizontal and vertical positions of the monuments will be verified by two methods: RTK positions will be collected on all site control points, and a closed differential level loop including all site survey control will be completed. Provide documentation, through written memo, of control point verification to the Engineer prior to beginning earthwork activities. GPS calibration shall be based on a minimum of three points. If the horizontal or vertical position of the survey control varies from record values by more than 0.1 foot, the contractor while on site will provide the surveyor of record the requested reporting for a resolution.

Prepare as-built plans to submit at project completion.

642-3.01 GENERAL. Add the following:

As-Built Plans. Prepare a complete set of red lined as-built plans and keep them current during construction. Detail in the as-built plans all construction changes made to the Plans. Include the following information on the appropriate sheets

1. Culvert elevations at inlet and outlet. Final culvert invert elevations shall be within 1 inch, plus or minus, of the elevations listed on the Plans as stated in Section 602. If elevations are outside of the given tolerance, contact the Engineer immediately.
2. Stream channel thalweg elevations at inlet, outlet, and tie-in points
3. Final road elevation at tie-in points and directly over the proposed culvert, including centerline and edge of roadway elevations.

Furnish a copy of the as-built plans at the completion of construction. As-built plans shall be sealed by a professional land surveyor licensed in the State of Alaska. Furnish any additional information required to clarify the as-built plans and correct all discrepancies. Submit as-built plans within 14 days of substantial completion.

642-4.01 METHOD OF MEASUREMENT. Add the following:

Item 642.0014.0000 As-Built Plans. No measurement of quantities will be made

642-5.01 BASIS OF PAYMENT. Delete this subsection in its entirety and replace with the following:

Construction Surveying includes field and office work required to accomplish the work, including furnishing necessary personnel, equipment, transportation and supplies.

Traffic control devices necessary for the survey parties are considered subsidiary to pay item 642.0001.0000 Construction Surveying

Payment for Traffic Control Plans will be paid under Section 643, Traffic Maintenance

All labor, equipment, and materials necessary to prepare as-built plans are subsidiary to pay item 642.0014.0000 As-Built Plans.

Survey efforts to verify control point elevations are subsidiary to pay items under this section. Establishment of additional survey control and/or coordination with surveyor of record is subsidiary to pay item 642.0001.0000 Construction Surveying

Payment will be made under:

Pay Item	Pay Unit
642.0014.0000 As-Built Plans	Lump Sum

SECTION 643

TRAFFIC MAINTENANCE

Special Provisions

643-1.03 TRAFFIC CONTROL PLAN. Add the following:

The Contractor shall submit for approval to ADOT&PF and the Engineer a Traffic Control Plan prepared under the supervision of a Traffic Control Supervisor assigned to this project. No work shall begin on the project site until the Traffic Control Plan is approved.

Traffic Control Plan shall include signage to post at the ADF&G 7.5 Mile sign about upcoming road closures.

Develop and submit a Traffic Control Plan for proposed road closures to the Engineer for approval. Road closures are only allowed for installation of culvert work. Road closure times for each culvert installation shall be minimized to either 3 consecutive 12-hour closures, or a single consecutive 36-hour closure, with start and stop times approved by ADOT&PF. Road closure intervals may include one or several culverts and work may be performed on several pipes simultaneously. The road must be open to traffic for 3 calendar days after 3 consecutive 12-hour closures or a single 36-hour closure before another road closure can be scheduled. During such break from closures, the Contractor shall have at least 1 lane of road open for traffic. Requests for any additional closures must be accompanied by a work plan and resourcing commitment.

Road closures shall be coordinated with and approved by the Engineer two weeks in advance of each closure so that proper public notice may be given. See special provisions 643-3.03 for notification requirements.

643-3.03 PUBLIC NOTICE. Add the following:

1. CRWP Program Director, (907) 424-3334, kate@copperriver.org
2. ADOT&PF NR Public Information Officer, (907) 451-5311, John.Perreault@alaska.gov
3. ADOT&PF M&O Valdez District Superintendent, (907) 834-1039, Robert.Dunning@alaska.gov
4. ADOT&PF Cordova Foreman M&O, (907) 424-3202, Robert.Mattson@alaska.gov

643-4.01 METHOD OF MEASUREMENT. Delete items 1 through 16 and add the following:

Traffic Maintenance. At the contract lump sum price and including preparation of Traffic Control Plans and all labor, materials, traffic control devices, and equipment required to implement the Traffic Control Plans as specified and as directed. Temporary construction signs, Flagging, and Pilot Car, if required by Traffic Control Plans, will be subsidiary.

643-5.01 BASIS OF PAYMENT. Delete paragraphs 1 through 17 and add the following:

Traffic Maintenance. The contract price includes all resources required to provide all required Traffic Control Plans and public notices, and the maintenance of all roadways, approaches, crossings, intersections, and pedestrian and bicycle facilities, as required. This item also includes any temporary construction signs and traffic control devices required but not shown on the bid schedule. Flagging and Pilot Car, if required by Traffic Control Plans, are subsidiary. Items required by the Contract that are not listed on the bid schedule or not included in other items are subsidiary.

SECTION 644
SERVICES TO BE FURNISHED BY THE CONTRACTOR

Special Provisions

644-2.06 NUCLEAR TESTING EQUIPMENT STORAGE SHED. Add the following:

The Contractor shall coordinate with the Engineer for approval of the location of the storage shed. The storage shed shall be located within the normal commute of the Owner's Field Representative between the project site(s) and the local community. After the initial location is identified and the shed installed, the Owner's Field Representative may request the storage shed be moved once during the project to an alternate location (i.e. to a closer location to the work activities). One storage shed can serve multiple project sites so long as the location of the storage shed meets the requirements of this Section.

644-4.01 METHOD OF MEASUREMENT.

Delete the fourth paragraph.

644-5.01 BASIS OF PAYMENT. Delete the seventh paragraph and replace with the following:

Nuclear Testing Equipment Storage Shed. At the contract lump sum price to include all labor, materials, tools, equipment and supplies required to furnish and install the shed before commencement of construction, to maintain it for the duration of the project and to remove the shed after project completion.

Replace the following pay item:

Pay Item	Pay Unit
644.0015.0000 Nuclear Testing Equipment Storage Shed	Lump Sum

Special Provision

Add the following Section:

SECTION 672

STREAM DIVERSION & DEWATERING

672-1.01 DESCRIPTION. The Work under this Section consists of performing all operations pertaining to the dewatering of Work areas or diversion of surface and subsurface water flows for excavation and backfill during construction operations.

672-1.02 GENERAL. A recommended Stream Diversion Plan has been provided in Drawings. The provided Stream Diversion Plan is intended to convey general concepts and locations are approximate. The Contractor shall adjust the locations of bulk bags (e.g. Super Sacks), coffer dams, temporary culverts, diversion channels, detour roads, and related items as needed to fit field conditions. The Contractor shall review this plan and submit any changes to the Engineer in writing for approval prior to implementing a modified plan. Divert and dewater per permits. Limit diversion to three weeks or less.

The Contractor shall notify ADF&G and the Engineer before:

1. Diverting stream flows into the diversion channel.
2. Diverting stream flows into the reconstructed channel and new culvert.

Provide notification a minimum of 72 hours before diverting stream flows or as required by permits, whichever is greater.

672-2.01 MATERIALS. Contractor shall be responsible for obtaining, mobilizing, operating, and maintaining all materials and equipment necessary to complete dewatering operations, including machinery, bulk bags, sandbags, hoses, pumping facilities, piping, temporary culverts, and the like.

672-3.01 CONSTRUCTION. Comply with construction design, installation, and operation of dewatering systems with current safety and environmental regulations. Work must be performed in dry conditions. Minimize disturbance of undisturbed ground. Engineer must approve placement of pads for dewatering equipment. Dewatering casings shall be placed at least 10 feet from the proposed culvert inlet or outlet.

Maintain 24-hour pump operation for trench dewatering until backfill is at least one (1) foot above the groundwater elevation. Provide a redundant pump onsite during dewatering activities and maintain adequate fuel levels for dewatering pumps to function overnight or whenever the site is not attended. Contact the Engineer immediately if pumping operations cease before backfill is placed the required elevation.

672-3.02 DEWATERING. Acceptance of Contractor's Stream Diversion Plan by the Engineer does not relieve Contractor of responsibility for the exercise of reasonable precaution, prudent construction practices, overloading or misuse of existing or new structures, the adequacy and safety of such works, and potential damage or undermining of existing or completed works.

Relocate fish contained within any coffer/diversion dams, the scour pool, or the old channel before the site is completely dewatered. Place relocated fish in the closest pool upstream of the construction area. If trash pumps are used for stream diversion, the intake must be operated and maintained to prevent fish entrapment, entrainment, or injury with the use of perforated or slotted plate and woven wire with a mesh size not greater than 3/32 inch or a profile bar and wedgewire with openings not greater than 1/16 inch. Approach velocities shall not exceed a passive velocity of 0.2 feet per second (fps) or an active velocity 0.4 fps.

Water resulting from Contractor's dewatering effort may not be pumped or otherwise diverted into creeks unless required permits, including, but not limited to, ADNIR, ADEC and the U.S. Environmental Protection Agency, are obtained. Under no circumstances will the Contractor be allowed to divert water from the excavation onto roadways. Contractor is to provide a disposal site for excess water in accordance with all necessary permits.

Maintain the dewatering pumping operations to ensure return flow does not exceed State of Alaska water quality standards. Water pumped from the construction site may require additional filtration by filter fabrics, settling, or other methods to prevent turbid water from directly entering the stream. Turbid water pumped from the work site for the purpose of lowering the water table in the trench during stream channel reconstruction shall be discharged at least 100 feet, or as far as reasonably practical if 100 feet cannot be obtained, from stream flows onto riprap velocity dissipators to reduce downstream turbidity, except when performing rewatering procedures described in the next subsection.

672-3.03 REWATERING. Conduct rewatering activities to minimize sediment movement downstream of the site upon completion of in-stream work. Prior to re-diverting full stream flows to reconstructed channel (including culvert), wet the channel to wash fines into stream bed. Slowly wet the channel through use of pumps or by diverting a small portion of stream flows into the reconstructed channel. Provide means for collecting sediment and turbid water at downstream end of reconstructed channel. Capture and pump turbid water from downstream end of channel back to upstream end of channel until fines are washed into stream bed and water runs clear as determined by the Engineer. After the initial sediment pulse is removed, slowly breach the coffer/diversion dams to avoid a large pulse of water being sent through the newly constructed channel.

672-4.01 METHOD OF MEASUREMENT. Section 109.

At the contract lump sum price and including preparation of Stream Diversion Plan and all labor, material, traffic control devices, and equipment required to implement the Stream Diversion Plan as specified and directed. Excavation, backfill, temporary culverts, pumps, hoses, stilling basins,

sandbags, bulk bags (e.g., Super Sacks), plastic liners, temporary rock and riprap, and other materials will not be measured for payment.

672-5.01 BASIS OF PAYMENT. At the contract lump sum price for administration of all work. The contract price includes (but not limited to) all resources required to provide Stream Diversion Plan and plan.

All other materials, equipment, and labor necessary to complete the scope of work as specified under this section and not paid for under other items on the bid schedule, including temporary culverts, pumps, hoses, stilling basins, sandbags, bulk bags (e.g., Super Sacks), plastic liners, temporary rock and riprap, are subsidiary to pay item 672.0001.0000 Stream Diversion & Dewatering.

Excavation and backfill required to complete the scope of work as specified under this section are subsidiary to pay item 672.0001.0000 Stream Diversion & Dewatering.

Aggregate Surface Course, Grading E-1 is paid under pay item 301.0004.0000 Aggregate Surface Course, Grading E-1.

Pumping efforts to maintain trench dewatering, including pumps and fuel, are subsidiary to pay items under this section.

Payment will be made under:

Pay Item	Pay Unit
672.0001.0000 Stream Diversion & Dewatering	Lump Sum

Special Provision

Add the following Section:

SECTION 690 WATERWAY

690-1.01 DESCRIPTION. Construct a waterway bed (stream bed, river bed, creek bed, and or similar), and waterway bank (protection and revegetation), at the locations shown on the Plans.

690-1.02 REFERENCES.

1. Stream Bank Revegetation and Protection: A Guide for Alaska; published by Alaska Department of Fish and Game; printed copy available from the Department, and electronic copy available on the internet.

Available here: https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/98_03.pdf

690-2.01 MATERIALS.

Clearing and Grubbing (salvage vegetative mat and wetland plugs)	Section 201
Excavation and Embankment (waterway bed and bank)	Section 203 & 703
Riprap	Section 611
Seeding	Section 201, 618 & 724
Topsoil	Section 620 & 726
Block Sodding (vegetative mat)	Section 623
Erosion, Sediment, and Pollution Control	Section 641
Selected Material	Section 703

Waterway Bed Fill: Salvaged existing stream bed material or Waterway Bed Fill produced by mixing, by volume, 50% Selected Material, Type A, 25% 9-inch minus rock, and 25% porous backfill material. Mix material on site before placing. Submit a gradation for produced Waterway Bed Fill to the Engineer for approval. The Engineer's approval of the Waterway Bed Fill must be obtained before placing Waterway Bed Fill. Adjust the gradation of Waterway Bed Fill mix onsite as directed by the Engineer.

Selected Material, Type C with at least 15% passing the #10 sieve may be used in place of Selected Material, Type A in Waterway Bed Fill as approved by the Engineer. Add fines as needed to meet this requirement.

Gradation testing is required for materials listed in the Materials Testing Requirements table included in the Request for Proposal.

Wetland Plugs: Wetland plugs shall be harvested within the project limits and transplanted within 24 hours along the channel on the upstream side of the culvert as shown in the Drawings. Wetland plugs shall include native plants and shrubs with root systems as intact as possible. Wetland plugs shall be harvested using clam digging shovels or similar.

Salvaged Organic Soil: Salvaged topsoil, overburden material, or useable excavation high in organics and fines.

690-3.01 CONSTRUCTION REQUIREMENTS. Provide equipment of a size and type to efficiently complete the work with the least impact on the waterway. Submit to the Engineer a list of equipment to be used during construction for review and approval.

Notify the Engineer 72 hours before beginning Waterway work to provide opportunity for the Engineer to coordinate having one person with fish habitat experience (CRWP, USFWS, USFS, ADF&G, or similar) on site during construction of waterway bed and bank reconstruction.

The Engineer shall approve Waterway Bed Fill prior to placement of material. Notify the Engineer a minimum of 72 hours before scheduled placement of Waterway Bed Fill.

The Engineer shall approve waterway bank limits prior to construction of banks. Notify the Engineer a minimum of 72 hours before scheduled bank construction.

690-3.02 EXCAVATION. Excavate to the dimensions shown on the Plans. Control excavated material to minimize disturbance to the channel and banks.

690-3.03 WATERWAY BED. Place Waterway Bed Fill material in the Sheridan River Tributary channel by methods that do not cause segregation or damage. Place the fill in lifts of maximum depth of 8-inches. Fill voids by machine or hand tamping after placing each lift. Compact bed materials, each lift, by mechanical means as approved by the Engineer. Make waterway bed surface roughness similar to the natural waterway bed.

Fill all voids left during placement of fill material and bank reconstruction with Selected Material, Type A or useable excavation meeting the requirements of Selected Material, Type C. Use water pressure, metal tamping rods, and similar hand operated equipment to force material into all surfaces. If voids are present after water compaction, add additional Selected Material, Type A or useable excavation meeting the requirements of Selected Material, Type C and water compact until water is flowing on the surface of the waterway bed.

690-3.04 WATERWAY BANK. Tie the ends of constructed banks to the existing Sheridan River Tributary banks. Modify bank height and width as necessary to create a smooth transition from constructed bank to natural bank.

Place the bank reconstruction materials as shown on the Plans. Place the salvaged backfill material or topsoil and vegetative mat such that the top of the bank, the vegetated mat, is tapered and at the same elevation as the existing bank.

Vegetative Mat. The Contractor shall harvest, transport, and store vegetative mats from an approved onsite or offsite location coordinated with CRWP and USFS. The Contractor shall prioritize salvaging vegetative mats from the project site or in the vicinity of the project from areas that will be disturbed for other work. Notify the Owner 72 hours in advance of harvesting vegetative mat. The preferred method for harvesting vegetative mat from identified sites on USFS lands is with hand tools at all times possible. Remove the mat in at least 12-inch-thick sections and preserve intact as possible. The Contractor shall notify the Owner 72 hours in advance of vegetative mat placement. The Owner must approve vegetative mat prior to placement. The Contractor shall place vegetative mats harvested from offsite locations within one (1) day of harvesting. Install vegetative mat in the follow sequence:

1. Stake all areas to be planted with vegetative mats prior to installation. Notify the Engineer of the delineated areas three working days prior to installation. Install only after receiving the Engineer approval.
2. Wet the in-situ soil or topsoil matrix that the vegetative mat will be placed on.
3. If the vegetative mat has lost topsoil, such that the in-place thickness of the mat will not be 12 inches thick, place additional topsoil, filling voids, and increasing the effective mat thickness to 12 inches.
4. Place vegetative mats tightly together, without gaps, with full contact of the root mass to the soil surface below, tamp into place.
5. In disturbed areas less than 6 feet wide, use only the width of vegetative mat necessary to extend to existing vegetation.
6. In disturbed areas more than 6 feet wide, place vegetative mat to extend at least 6 feet from edge of bank.
7. Place any remaining small mobile woody debris material and slash on top of stream banks to provide overbank habitat.

Wetland Plugs. The Contractor shall notify the Owner 72 hours in advance of wetland plug placement. The Owner must approve wetland plugs prior to placement. The Contractor shall place wetland plugs harvested from offsite locations within one (1) day of harvesting. Install wetland plugs at 12-inches on-center.

690-3.05 MAINTENANCE. Deep water vegetative mat immediately after planting. Deeply water again at least twice a week for two weeks, then weekly for 6 weeks or as directed by the Engineer. Deep watering shall provide water penetration throughout the entire layer, to the top of the

waterway bank fill, with minimum runoff. Rain will not be considered a substitute for deep watering unless permitted by the Engineer.

690-3.06 ESTABLISHMENT PERIOD Establishment periods extend for one complete growing season following acceptable planting. Employ all possible means to preserve the vegetative mat in a healthy and vigorous condition to ensure successful establishment. During this period, perform the necessary weeding to keep the area of disturbance free from invasive species. Water as frequently as necessary to keep the immediate root area moist at all times.

The engineer may, but is not required to, determine the Project is complete except for the period of establishment, and issue a letter of final acceptance. After final acceptance, work or materials due under this subsection during any remaining period of establishment are considered warranty obligations that continue to be due following final acceptance in accordance with Subsection 105-1.16

690-4.01 METHOD OF MEASUREMENT. Section 109.

690.2001.0000 Waterway Bed Fill: Lump Sum.

690.2003.0000 Waterway Bank Revegetation and Protection: Lump Sum.

690-5.01 BASIS OF PAYMENT.

1. Pay Item 690.2001.0000 include the materials and all work to place and maintain the materials in place, including but not limited to, excavation, placement/backfilling, benching, compacting, filling voids and similar. All work to grade placed fill in culvert to match constructed channels upstream and downstream, including any minor exaction and placement of Waterway Bed Fill, is subsidiary. All material and work to place Waterway Bed Fill in scour pool is subsidiary.

2. Pay Item 690.2003.0000 includes the materials and all work to salvage/harvest, store, transport, place and maintain organic materials in the state specified (vegetative mat, salvaged vegetation, wetland plugs, woody debris, topsoil, watering, and similar). Watering is subsidiary.

Filling voids left during placement of fill material and bank reconstruction with Selected Material, Type A or useable excavation meeting the requirements of Selected Material, Type C, including compaction and water washing, is subsidiary.

Hauling, stockpiling, and disposal of unsuitable and surplus material are subsidiary to Section 690 pay items.

Seeding is paid under Section 618.

Water diversion is paid under Section 672.

Payment will be made under:

Pay Item	Pay Unit
690.2001.0000 Waterway Bed Fill	Lump Sum
690.2003.0000 Waterway Bank Revegetation and Protection	Lump Sum

SECTION 703
AGGREGATES

Special Provisions

703-2.09 SUBBASE. Add the following:

Subbase, Grading F. Aggregate containing no muck, frozen material, roots, sod, or other deleterious matter and with a plasticity index not greater than 6 as tested by ATM 204 and ATM 205. Meet the following gradation as tested by ATM 304:

SIEVE	PERCENT PASSING BY WEIGHT
2 in	100
No. 4	15 – 65
No. 200	0 – 6

SECTION 727
SOIL STABILIZATION MATERIAL

Special Provision

Add the following Subsection:

727-2.04 SEDIMENT RETENTION FIBER ROLLS (SRFRs). Fiber rolls, also referred to as wattles. Manufacture of photodegradable or biodegradable fabric netting without preservative treatment, evenly woven, free of crusted material, cuts, and tears. Fiber rolls shall contain no plastic netting. Manufacture stakes of photodegradable or biodegradable material (wood stakes, except as approved by the Owner).

1. Filter Sock (Wattle)
 - a. Biodegradable, fabric netting.
 - b. Filled with wood fiber, straw, flax, rice, coconut fiber material.
 - c. Minimum diameter 5 inches.
2. Compost Sock.
 - a. Extra Heavy weight fabric netting with a minimum strand width of 5 mils.
 - b. Filled with coarse compost.
 - c. Minimum diameter 8 inches.
3. Coir Log.
 - a. Woven wrap bristle coir twine netting.
 - b. Filled with 100% coconut (coir) fiber uniformly compacted.
 - c. Segments maximum length 20 foot, diameter as suited to the application and a density of 7 lbs/pcf or greater.
 - d. Coir twine strength equal to 80 lb minimum weaved to a 2 inch x 2 inch opening pattern.
 - e. Ties made of hemp rope by 1/4 inch diameter.