COPPER RIVER WATERSHED PROJECT

Advertisement for Bids RFP# EVOSTC-2023

Title: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

Copper River Watershed Project
511 1st Street
Cordova, Alaska 99574
January 27, 2023

Copper River Watershed Project

January 27, 2023.
Advertisement for Bids EVOSTC-2023
Fish Passage Improvement at
Sheridan River Tributary and Black Hole Creek,
Copper River Highway, Cordova, Alaska

Enclosed is the pertinent information for use in preparing your bid. The information will be used as a guide in the preparation of any subsequent contract. A **non-mandatory pre-bid conference** will be held on **February 9th, 2023** at **2pm AKT** at the Copper River Watershed Project (CRWP) office, 511 1st St. Cordova, Alaska 99574, for information on site locations for proposed work. All responses to bidder's questions shall be made to all bidders by addendum. Contact Kate Morse (Kate@copperriver.org), (907)424-3334 for a Zoom link to participate.

We recommend but do not require a site visit prior to the submission of your fish passage improvement project bids/proposal.

To maintain the project schedule, all questions must be submitted no later than **5pm AKT** on **February 17th, 2023.**

Bids must be received at the Copper River Watershed Project, 511 1st St. PO Box 1560, Cordova Alaska 99574 prior to **February 27, 2023 by 5pm AKT.** Office hours are Monday through Friday, 9:00 am – 12:00 pm and 1:00 pm – 5:00 pm, excluding holidays.

For information about the solicitation, contact Kate Morse at 907-424-3334 or by email address: kate@copperriver.org. All correspondence should include the RFP number.

Please submit your proposal and any supplementary material by email to Kate Morse at kate@copperriver.org with a subject line including the RFP number. Submissions will be acknowledged with a receipt email response to the sender.

CRWP expressly reserves the right to waive minor informalities, negotiate changes or reject any and all bids, and to not award the proposed project bid, if in its best interest. "Minor Informalities" means matter of form rather than substance which are evident from the submittal, or are inconsequential matters that have negligible effect on price, quantity, delivery, or contractual conditions and can be waived or corrected without prejudice to other bidders.
Sincerely,

Lisa Docken
Executive Director, Copper River Watershed Project

Copper River Watershed Project

Advertisement for Bids EVOSTC-2023
Fish Passage Improvement at Sheridan River Tributary and Black Hole Creek, Copper River Highway, Cordova, Alaska

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1.0 GENERAL INFORMATION

1.1 Purpose

The Copper River Watershed Project (CRWP), a non-profit organization working to ensure the long-term sustainability of the Copper River watershed's salmon-based economy and culture, is seeking bids for construction services. CRWP is working with Alaska Department of Fish & Game, Chugach National Forest, U.S. Fish & Wildlife Service, National Oceanic and Atmospheric Administration (NOAA), and Alaska Department of Transportation & Public Facilities (ADOT&PF) to install two stream simulation culverts that will ensure fish passage by Coho Salmon and Cutthroat Trout at all life stages. The project generally consists of removing and replacing two existing undersized and failing culverts under the Copper River Highway between mileposts 12.7 -20.6. The culverts are in the ADOT&PF Right of Way crossing The Eyak Corporation lands.

Included herein are instructions governing the proposals, a description of the work to be performed, requirements that shall be met to be eligible for consideration, evaluation criteria, and other requirements to be met by each Proposer/Bidder (hereafter referred to as proposer).

The purpose of this RFP solicitation is to select a Contractor to complete the referenced project. Proposals shall consist of: (1) a Qualifications Proposal, including experience and qualifications, and (2) a Cost Proposal indicating all costs necessary to complete the Work as outlined in this RFP.

Funding for the installation of these culverts was provided by the Exxon Valdez Oil Spill Trustee Council.

1.2 General Statement of Work

The Work presented in this RFP is for the construction services for replacing two culvert replacements consisting of furnishing all labor, equipment, materials, supervision, and other facilities necessary to complete the Work set forth in the terms of the Contract.

1.3 Specifications, Codes, Ordinances, and Standards

The Contractor shall perform all construction in accordance with the Contract Documents, which include the current Alaska Department of Transportation and Public Facilities (ADOT&PF) Standard Specifications for Highway Construction (SSHC) 2020 Edition, as herein revised and supplemented. All Work under this Contract shall comply with the latest edition of all applicable codes, ordinances, standards, and all associated addenda. Refer to Material Certification List in **Appendix A**. For a complete 100% Specifications, refer to **Appendix B.**

1.4 List of permits acquired by CRWP

a. ADF&G Fish Habitat Permit (pending)

b. ADF&G Aquatic Resource Permit (pending)

c. U.S. Army Corps of Engineers Alaska District (ACOE) Section 404 Wetland Permit (pending)

d. Landowner (ADOT&PF) Special Use Permit (pending)

e. Alaska Department of Natural Resources (ADNR) Temporary Water Use Permit (pending)

f. Aviation Leasing (Cop 1)

1.5 Questions

Any questions regarding this proposal are to be submitted in writing to:

Request for Proposal # EVOSTC_2023
Kate Morse, Program Director
Copper River Watershed Project
P.O. Box 1560
Cordova, AK 99574
Phone: 907-424-3334
E-Mail: kate@copperriver.org (preferred method of contact)

Please identify the project/title RFP number in the subject line of any correspondence.

CRWP's Office hours of operation are: 9:00 a.m. to noon; 1:00 p.m. to 5:00 p.m. local time Monday through Friday, excluding CRWP holidays. Due to time constraints on this project, all questions regarding the scope of work should be received prior to the deadline indicated on the RFP cover letter.

1.6 Preparation Costs

CRWP shall not be responsible for proposal preparation costs, nor for costs including attorney fees associated with any (administrative, judicial or otherwise) challenge to the determination of the highest ranked proposer and/or award of contract and/or rejection of proposal. By submitting a proposal each proposer agrees to be bound in this respect and waives all claims to such costs and fees.

2.0 RULES GOVERNING COMPETITION

2.1 Examination of Proposals

Proposers should carefully examine the entire RFP and any addenda thereto, and all related materials and data referenced in the RFP. Proposers should become fully aware of the nature of the work and the conditions likely to be encountered in performing the work.

2.2 Proposal Acceptance Period

Award of this proposal for construction is anticipated to be announced within 30 calendar days, although all offers must be complete and irrevocable for 60 days following the submission date. A pre-bid conference will be held on February 9th, 2023 at 2 p.m. local time at the CRWP office allowing for bidders to visit the proposed site and return for in-house questions. For out of town bidders who will not be able to have a site visit before bidding, you may connect via Zoom. Contact Kate Morse (kate@copperriver.org, (907)424-3334) to receive Zoom information.

Attendance at the pre-bid conference is highly recommended but not mandatory. Responses to Bidders' questions shall be made to all bidders by addendum.

2.3 Proposal Format

Proposals are to be prepared in such a way as to provide a straight-forward, concise delineation of the proposer's capabilities to satisfy the requirements of this RFP. Emphasis should concentrate on:

1. Conformance to the RFP instructions;
2. Responsiveness to the RFP requirements; and
3. Completeness and clarity of content.

Marketing and/or company brochures included as part of the proposal response shall be considered general information and not a response to these RFP requirements. Such material shall be submitted only as attachments and shall not be used as a substitute for written responses. In case of a conflict between the content in any attachments and the contractor's answers in the body of the proposal, the latter shall prevail.

2.4 Signature Requirements

All proposals must be signed. A proposal may be signed: by an officer or other agent of a corporate contractor, if authorized to sign contracts on its behalf; a member of a partnership; the owner of a privately-owned contractor; or other agent if properly authorized by a power of attorney or equivalent document. Signature on the 'Letter of Transmittal' will meet this requirement.

Failure to sign the Proposals is grounds for rejection. The name and title of the individual(s) signing the proposal must be clearly shown immediately below the signature.

2.5 Proposal Submission Requirements

A proposal (Qualification and Cost) must be received by the CRWP prior to the date and time specified in the cover letter. Copies may be bound or enclosed in folders/binders or e-mailed as the proposer chooses.

The Proposal shall, at a minimum, contain the following information:

1. Fully executed Proposal
2. Items required under Section 3 - Proposal and Submission Requirements

All proposals should be plainly marked as a Request for Proposal Response with the Number and Title prominently displayed on the outside of the package.

Proposals must be delivered, mailed or emailed to:

Kate Morse, Program Director
Copper River Watershed Project
P.O. Box 1560
Cordova, AK 99576
kate@copperriver.org

2.6 Disposition of Proposals

All materials submitted in response to this RFP will become the property of CRWP.

2.7 Oral Change/Interpretation

No oral change or interpretation of any provision contained in this RFP is valid whether issued at a pre-proposal conference or otherwise. Written addenda will be issued when changes, clarifications, or amendments to proposal documents are deemed necessary by CRWP and USFWS.

2.8 Modification/Withdrawal of Proposals

A Proposer may withdraw a proposal at any time prior to the final submission date by sending written notification of its withdrawal, signed by an agent authorized to represent the agency. The respondent may thereafter submit a new proposal prior to the final submission date; or submit written modification or addition to a proposal prior to the final submission date. Modifications offered in any other manner, oral or written will not be considered. A final proposal cannot be changed or withdrawn after the time designated for receipt, except for modifications requested by CRWP after the date of receipt and following oral presentations.

2.9 Late Submissions

Proposals not received prior to the date and time specified in the cover letter will not be considered and will be returned unopened after recommendation of the award.

2.10 Rejection of Proposals

CRWP reserves the right to reject any or all proposals if determined to be in the best interest of the CRWP.

3.0 PROPOSAL AND SUBMISSION REQUIREMENTS

3.1 Bidder's Checklist/Instructions to Bidder

Bidders are advised that notwithstanding any instructions or implications elsewhere in this Request for Proposal only the documents shown and detailed on this sheet need be submitted with and made part of their proposal. Other documents may be required to be submitted after proposal time, but prior to award. Bidders are hereby advised that failure to submit the documents shown and detailed on this sheet shall be justification for rendering the proposal nonresponsive.

The submission for the RFP shall consist of two proposals: A Qualifications Proposal and a Bid Proposal. The Qualifications Proposal and Bid Proposal must be sealed in separate envelopes, each indicating the name of the contractor, project name and number, stating respectively, 'Qualifications Proposal' and 'Bid Proposal.' *The two sealed envelopes shall be contained within a third sealed envelope.* If submitting by email, please attach the Qualifications Proposal and the Bid Proposal labeled accordingly as separate .pdf files.

REQUIRED DOCUMENTS TO BE SUBMITTED WITH THE PROPOSAL:

X **Qualification Proposal.** To achieve a uniform review process and obtain the maximum degree of comparability, it is required that the proposals be organized in the manner specified below in Sections 3.2 through 3.9. Proposals shall not exceed ten (10) pages in length (excluding letter of transmittal, resumes, title page(s), index/table of contents, resumes, forms, attachments, or dividers). Past Performance Evaluation Questionnaire Form included in RFP Section 6.0 - QUALIFICATION PROPOSAL FORMS **(REQUIRED)** is also not included in the ten (10) page maximum count. Information in excess of those allowed will not be evaluated. One page shall be interpreted as one side of single-spaced, typed, 8-1/2" X 11", piece of paper.

X **Bid Proposal**. Proposal consisting of five (5) pages numbered BP-1 of 5 through BP-5 of 5. The bid proposal summary page and the final page of each schedule must be signed where indicated in the bid proposal. (see Section V of Attachment A, pg. 60)

X **Addenda.** All issued addenda shall be acknowledged in the space provided on the Proposal sheet (BP-1) or by manually signing the Addenda sheet and submitting it prior to the proposal opening.

3.2 Title Page

Show the RFP number and subject, the name of your firm, address, telephone number(s), name of contact person, and date.

3.3 Table of Contents

Clearly identify the materials by section and page number.

3.4 Letter of Transmittal

Limited to two (2) pages, briefly state your firm's understanding of the services to be performed and make a positive commitment to provide the services as specified.

Give the name(s) of the person(s) who are authorized to make representations for your firm, their titles, address, and telephone numbers.

The letter must be signed by a corporate officer or other individual who has the authority to bind the firm.

3.5 Fish Passage Culvert Experience

Provide a list of fish passage culvert replacement projects completed in the last five years. For each project, prepare a project summary including a project description, contract award amount, total cost of change orders, construction schedule, key contractor personnel, and the Contracting Officer and Project Engineer phone number and email. Fish Passage Culvert Project Experience Form included in RFP Section 6.0 - QUALIFICATION PROPOSAL FORMS.

3.6 Firm Profile and Professional Qualifications

Provide a table or chart that shows organizational structure, chain of supervision, decision authority, and communications. Include both the respondent firm and any subcontractors. Provide professional qualifications and resumes of the firm’s proposed Project Manager, Superintendent, and other key personnel. Include all personnel that will actively be involved with performing the work, to include a listing of all subcontractors, if any, with an explanation of purpose. Indicate any experience that key contractor or subcontractor personnel have in constructing fish passage culverts.

3.7 Project Understanding/Project Approach

Narrative submittal must address construction schedule, dewatering approach, method for shipping materials to the site, heavy equipment, quality control, unloading and transport of materials, and traffic control. Contractor should include a clear plan to complete construction within the habitat permit window.

3.8 Past Performance

Past performance will be evaluated based on previous contracts with Government agencies and private industry in terms of cost control, quality of work, and compliance with performance schedules. Complete Past Performance Evaluation Contact Information table for each project

(minimum of 3, up to a total of 5) for similar services performed for work in Alaska during the last five years, with name, email, and phone numbers of Contracting Officer and Project Engineer for each contract. Past Performance Evaluation Information included in RFP Section 6.0 - QUALIFICATION PROPOSAL FORMS **(REQUIRED)**.

3.9 Cost

Provide Costs as indicated on the Bid Proposal Form within a sealed separated envelope, or if emailed, as a separate .pdf attachment.

4.0 EVALUATION CRITERIA AND PROCESS

4.1 Criteria

The Proposer shall be evaluated under two major areas Qualifications and Cost. The criteria to be considered during evaluations, and the associated point values, are as follows:

Qualifications:

1. Fish Passage Culvert Experience	15 Points
2. Firm Profile and Professional Qualifications	15 Points
3. Project Understanding/Project Approach	10 Points
4. Past Performance	15 Points
5. Cost	45 Points
Total Points Available	**100 Points**

4.2 Qualitative Rating Factor

Firms will be ranked on the non-cost components of the proposal using the following qualitative rating factors for each RFP criteria:

1.0 Outstanding
0.75 Good
0.50 Average
0.25 Poor
0.0 Unsatisfactory

The rating factor for each criteria category will be multiplied against the points available to determine the total points for that category.

EXAMPLE: For the evaluation of the Fish Passage Culvert Experience factor if the evaluator determines the response as provided was “Good” a “qualitative rating factor” of 0.75 would be assigned for that criterion. The final score for that criterion would be determined by multiplying the qualitative rating factor of 0.75 by the maximum points available 15 and the resulting score of 11.25 would be assigned to the experience factor. This process would be repeated for each criterion.

4.3 Quantitative Rating Factor

The Proposer with the lowest total costs submitted receives the 45 points maximum. All other proposers receive points based on their submitted costs, as it relates to the lowest costs, using the following formula:

(Lowest Bid Proposal/Bid Proposal) x 45 Points

Example: Contractor A, submitted cost $450,000 (low)
Contractor B, submitted cost $500,000
Contractor C, submitted cost $550,000
Contractor D, submitted cost $600,000

Contractors receive points as follows:

Contractor A, 45.00 points
Contractor B, 40.50 points
Contractor C, 36.82 points
Contractor D, 33.75 points

The evaluation committee may disqualify bids that are so low they are insufficient to cover the direct costs associated with the contract requirements.

4.4 Evaluation Process

A committee of individuals representing CRWP, ADOT&PF, and the Engineer will perform an independent evaluation of the qualification proposals and will not receive information regarding bid amounts. Initially the committee will rank each Qualifications Proposal as submitted. A Proposer must receive a minimum score of 30 points on the Qualifications Proposal (Items 1-4) in order for the correlative Bid Proposal to be evaluated and scored and added to the Qualification Proposal to yield a Total Score. The purpose of minimum score requirement is to ensure that the proposer has a high level of experience and qualifications with which to accurately and efficiently complete the Work on time. The Cost Proposal of any proposer that does not receive a minimum score of 30 points as a result of the Qualifications Proposal will not be opened.

CRWP reserves the right to request oral interviews to discuss the Qualifications Proposals with the highest ranked Contractors. If interviews are conducted, a maximum of three (3) Contractors may be short-listed. A new evaluation sheet will be used to score those Contractors interviewed. The final evaluation of the short-listed Qualifications Proposals will be based upon the scores achieved at the second evaluation. The same categories and allowable point ranges will be used during the second evaluation as for the first.

5.0 SELECTION PROCESS

The proposer with the highest total evaluation score (Items 1-5) will be eligible to be awarded a contract with CRWP. However, CRWP reserves the right to not award a contract with the successful proposer should it be in the CRWP's best interest. CRWP reserves the right to reject any and all proposals submitted.

CRWP will provide:

- Project design Drawings and Specifications.
- Culverts to be installed and Seed mix to be applied to design Drawings and Specifications
- Project inspector to ensure the project is built to specifications.

5.1 Bid Requirements

1. Bidders will not be required to furnish bid bonds or bid security. No additional time will be allowed for providing the required bonds.
2. A Certificate of Insurance for Worker's Compensation and general liability is required before a job contract will be signed.
3. A complete construction schedule using the critical path method (CPM) shall be submitted to and approved by CRWP before a job contract will be signed.
4. Performance and payment bonds will be required from the selected bidder before a job contract will be signed.
5. A pre-construction meeting will be required for contractor to meet with project inspector, CRWP, USFWS, ADF&G, NOAA, USFS, The Eyak Corporation, and ADOT&PF.
6. Contractor shall perform work to the satisfaction of the CRWP and project inspector.
7. No bid will be accepted from any contractor who is not licensed in accordance with the provisions of the Contractor's State license law.

All bids are due in our office by 5 PM AKT on February 27, 2023.

A response will be sent immediately when proposals are received. It is the contractor's responsibility to ensure delivery of its proposal. Any specific questions about this project or proposal contents can be directed to Kate Morse, 907-424-3334, or address above.

6.0 QUALIFICATION PROPOSAL FORMS

Attached.

FISH PASSAGE CULVERT EXPERIENCE FORM (*one form per job)

Project Title:	
Project Location:	
Project Owner (Name of organization):	
Contracting Officer (Name and Phone No.)	
Project Engineer (Name and Phone No.)	
Key Contractor Personnel (Name and Phone No.)	
Contract Cost (Bid Cost):	
Total Cost of Change Orders:	
Brief Description of Scope of Work:	
Project Start and End Dates:	
Describe any scheduling challenges and how they were met. Was contract completed on schedule? If not, please explain reason for any delays.	

PAST PERFORMANCE EVALUATION BACKGROUND:

Each reference provided for past performance (minimum of 3, maximum of 5) will be asked to evaluate work of the contractor in the following areas:

A. Compliance of deliverables to specification requirements and standards of good workmanship.

B. Effectiveness of project management (to include use and control of subcontractors).

C. Timeliness of performance for contract completion.

D. Effectiveness in controlling costs.

E. Commitment to customer satisfaction and business-like concern for its customers' interest.

F. General comments. Provide any other relevant performance information.

References will be asked to use the following categories to describe contractor's performance:

Outstanding: Performance meets contractual requirements and exceeds many requirements that benefit the end user. Work was accomplished with few, if any, minor problems for which corrective actions taken by the contractor were highly effective. **Explanation requested.**

Good: Performance meets contractual requirements and exceeds some requirements that benefit the end user. Work was accomplished with some minor problems for which corrective actions taken by the contractor were effective.

Average: Performance meets contractual requirements. Work was accomplished with some minor problems for which corrective actions taken by the contractor were satisfactory.

Poor: Performance does not meet some contractual requirements. Serious problems with contractor performance were experienced for which the contractor has either not yet identified corrective actions or the corrective actions taken appear only marginally effective. **Explanation requested.**

Unsatisfactory: Performance does not meet most contractual requirements. Serious problems with contractor performance were experienced for which the corrective actions were ineffective. **Explanation requested.**

PAST PERFORMANCE EVALUATION CONTACT INFORMATION:

(1) Descriptive Job Title & Contract number:	
Date(s) of project implementation:	
Point of Contact (Name):	
Title (ex: Project Manager):	
Job Contact Information: (Agency, Phone No., E-mail Address)	
Project Engineer (Name and Phone No.)	
Contract Cost (Bid Cost):	
Total Cost with Change Orders:	

(2) Descriptive Job Title & Contract number:	
Date(s) of project implementation:	
Point of Contact (Name):	
Title (ex: Project Manager):	
Job Contact Information: (Agency, Phone No., E-mail Address)	
Project Engineer (Name and Phone No.)	
Contract Cost (Bid Cost):	
Total Cost with Change Orders:	

(3) Descriptive Job Title & Contract number:	
Date(s) of project implementation:	
Point of Contact (Name):	
Title (ex: Project Manager):	
Job Contact Information: (Agency, Phone No., E-mail Address)	
Project Engineer (Name and Phone No.)	
Contract Cost (Bid Cost):	
Total Cost with Change Orders:	

(4) Descriptive Job Title & Contract number:	
Date(s) of project implementation:	
Point of Contact (Name):	
Title (ex: Project Manager):	
Job Contact Information: (Agency, Phone No., E-mail Address)	
Project Engineer (Name and Phone No.)	
Contract Cost (Bid Cost):	
Total Cost with Change Orders:	

(5) Descriptive Job Title & Contract number:	
Date(s) of project implementation:	
Point of Contact (Name):	
Title (ex: Project Manager):	
Job Contact Information: (Agency, Phone No., E-mail Address)	
Project Engineer (Name and Phone No.)	
Contract Cost (Bid Cost):	
Total Cost with Change Orders:	

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Title: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

Attachment A

Project Manual

Copper River Watershed Project
511 1st Street
Cordova, Alaska 99574
January 27, 2023

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COPPER RIVER WATERSHED PROJECT

REQUEST FOR PROPOSAL EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

SCOPE OF WORK

General

This project's purpose is to supply all labor, equipment, materials, and supplies required to install aluminum box culvert structures at the existing culvert locations identified on Copper River Highway at the Sheridan River Tributary and Black Hole Creek.

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 0.67 (COP 1) and 8.75 (COP 33) miles east of the airport in Cordova, Alaska.

Stream Name	ADF&G Site Number	CRWP ID	Latitude	Longitude	HWY MP
Sheridan River Tributary	20100467	COP 1	N60.49168°	W145.45538°	12.7
Black Hole Creek	20100499	COP 33	N60.44520°	W145.24436°	20.6

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, 2023 or as stipulated by the Alaska Department of Fish and Game Fish Habitat Permit. All construction activities shall be completed by August 15, 2023.

Contractor shall participate in weekly construction update meeting with the Owner and their representatives.

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
- Aviation Leasing (if required)

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
- 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)
- Eyak 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.

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. Following the 3-day break, an additional closure may be implemented.

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.

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
Useable Excavation	Plasticity Index Gradation Proctor Compaction Curve
Selected Material, Type A	Plasticity Index Gradation Proctor Compaction Curve
Subbase, Type F	Test Results for Properties in Table 703-8 Plasticity Index Gradation Proctor Compaction Curve
Aggregate Surface Course (E-1)	Test Results for Properties in Table 703-1 Gradation Proctor Compaction Curve
Topsoil (Imported)	% Organic Content Gradation Nutrient Composition pH
Riprap	Gradation Wear – AASHTO T96

Selected Material, Type C	Gradation

Contractor is responsible for QC compaction testing during placement and compaction of material. At a minimum, two acceptable QC compaction tests shall be completed and documented per lift of placed material. QC compaction test results shall be submitted to the Owner's Field Representative within 2 days of placement of materials.

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:

- 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).

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 wattles with plastic netting are prohibited on the project site.

Copper River Watershed Project

Request for Proposal EVOSTC-2023

Title: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

MASTER INDEX

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

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 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. 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.

109-1.08 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 Engineer 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 vegetive 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.

Woody Debris. Salvage woody debris in accordance with Section 690.

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 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 that 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 and compaction 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 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 box culverts and aluminum pipe arch overflow culverts 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 box culverts and aluminum pipe arch overflow culverts as shown in the Plans.

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, 18'-0" Span, 11'-4" Rise (COP 33)	Lump Sum
602.0006.0000 Assemble and Install Structural Plate Aluminum Box Culvert, 16'-8" Span, 7'-6" Rise (COP 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
611.0003.0002 Riprap, Class II	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. Contractor is required to provide mulch.

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:*

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.

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.

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
2. Transmit a copy of the delivery receipt confirmation to the Engineer within (7) days of receiving the confirmation; and
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 existing survey control point elevations using two methods: RTK survey and completing a survey loop between control points using a laser and level, total station, or similar means. Provide documentation of control point verification to the Engineer prior to beginning earthwork activities. Contact the Engineer immediately if control point verification indicates control point elevations are more than 0.1 foot different from values shown in the Plans.

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.

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.

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, Danielle.Tessen@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.

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 (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, ADNR, 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.

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.

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

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.

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 fill material produced by mixing, by volume, 50% Selected Material, Type C and 50% Riprap, Class I. 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 gradation must be obtained before placing Waterway Bed Fill. Adjust the gradation of Waterway Bed Fill onsite as directed by the Engineer.

Reinforced Bank: A blend, by volume, of50% Riprap, Class I and 50% Riprap, Class II for COP 33 and 100% Riprap, Class I for COP 1. Mix Riprap and fines material on site before placing to obtain a well graded mixture; 60% Riprap and 40% Type C is the recommended starting point. After placing material, fill any additional voids in material with Selected Material, Type C until the bed is well sealed and water pools on the surface. Wash the fines into the void spaces in the Riprap to ensure the voids are completely filled. See https://www.youtube.com/watch?v=Ymwy5q9pxEI for a demonstration of this technique

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 means.

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

Woody Debris: Sticks, branches, roots, and slash harvested or collected in the vicinity of the project and meeting the length and diameter requirements stated in the plans. Materials may be harvested from shrubs and trees, including willow, rose, alder, dogwood, and cottonwood. Material does not include soft and herbaceous materials such as grass, cow parsnip, fireweed, ferns, etc.

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 and Black Hole Creek 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 and Black Hole Creek 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, woody debris, and vegetative mat such that the top of the bank, the vegetated mat, is fairly flat and at the same elevation as the existing bank.

Woody Debris Bank Construction

1. Install erosion control measures before beginning soil-disturbing work.
2. Determine tie-in point between constructed stream bank and existing stream bank to minimize disturbance to intact stream bank.
3. Salvage/harvest and stockpile vegetative mat.
4. Excavate bench for constructed bank. If bench wall at tie-in point is not perpendicular to flow, complete the following additional steps at the tie-in location:
    a) Create planting hole at least 12 inches into bench wall using a shovel or rebar and hammer.
    b) Insert a branch into the hole. The branch should be roughly perpendicular to the wall, angled onto the bench. Trim if the branch extends more than 6 inches outside the bank line.
    c) Repeat every 6 inches along the edge of the bench until the point where the bench is at least 4 feet wide, measured perpendicular to the final bank line.
5. Place woody debris at random angles on the bench, crisscrossing individual pieces. Trim any branches that extend more than 6 inches past the final bank line.
6. Place waterway bank fill over woody debris. Fill all voids between woody debris. Tamp to compact.
7. Repeat the staking (if necessary), woody debris placement, and soil fill until a disorderly jumble of woody debris is created, with debris ends aligned within 6 inches of the final bank line, all void spaces filled by topsoil, and the top elevation 6 to 12 inches below the final bank elevation.
8. Top woody debris with salvaged vegetative mat.

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. The Contractor shall identify source location for vegetative mats to the Owner and gain approval from the Owner prior to harvesting vegetative mats. Notify the Owner 72 hours in advance of harvesting vegetative mat. 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, topsoil, or woody debris/soil 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.

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.

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.

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

II

MATERIALS CERTIFICATION LIST

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Materials Certification List

MATERIALS CERTIFICATION LIST (2 pages)			
Project Name: Copper River Watershed Habitat Enhancement Project - COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)			
DESCRIPTION	CONSTRUCTION PROJECT ENGINEER	DESIGN ENGINEER OF RECORD	MANUFACTURER / REMARKS
104 SCOPE OF WORK			
Quality Control Manager Qualifications			
Daily Quality Control Reports			
108 PROSECUTION AND PROGRESS			
Preconstruction Conference Submittals			
202 REMOVAL OF STRUCTURE AND OBSTRUCTIONS			
Disposal plan, waiver of claims, permission and/or permits			
203 EXCAVATION AND EMBANKMENT			
Usable Excavation Materials Analysis			
611 RIPRAP			
Riprap, Class I Materials Analysis			
Riprap, Class II Materials Analysis			
623 BLOCK SODDING			
623 Vegetated Mat Salvage and Replanting, Work Plan			
640 MOBILIZATION AND DEMOBILIZATION			
Record As-Built Drawings			
641 EROSION SEDIMENT AND POLLUTION CONTROL			
Storm Water Pollution Prevention Plan (SWPPP)			
eNOI			
eNOT and Final SWPPP			
SWPPP Inspection Reports			
642 CONSTRUCTION SURVEYING AND MONUMENTS			
Survey Personnel Qualifications & Equipment List			
Survey Field Notes			
643 TRAFFIC MAINTENANCE			
Traffic Control Plan			
Construction Phasing Plan			
Traffic Control Supervisor and Flagger Certifications			
646 CMP SCHEDULING			
Project Schedule			
672 STREAM DIVERSION AND DEWATERING			
Stream Diversion and Dewatering Plan			
690 WATERWAY			

Waterway Bed Fill - Coarse Material Analysis Riprap, Class I			
Waterway Bed Fill - Coarse Material Analysis Riprap, Class II			
703 AGGREGATES			
Select Material Type A Analysis			
Select Material Type E1 Analysis			
Subbase, Grading F Material Analysis			
726 TOPSOIL			
Topsoil Certification			
729 GEOSYNTHETICS			
Geotextile, Reinforcement - Type 2			
Geotextile, Erosion Control, Class 1			

NOTE: The above materials certification list is not all inclusive. In addition to the above, the Contractor is required to comply with all submittal requirements as required or identified in the plans, specifications, ADOT&PF Standard Specifications for Highway Construction (SSHC) 2020 Edition, or as directed by the Engineer.

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

III

CONTRACT

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C O N T R A C T

Request for Proposal EVOSTC-2023

Contract EVOSTC-2023

NAME AND ADDRESS OF CONTRACTOR: _____

_____

_____

Check appropriate box:
[X] Incorporated in the State of AK

COPPER RIVER WATERSHED PROJECT, acting through (hereinafter the Owner).

Contract for _____

BID SCHEDULES	ITEMS	PLAN SHEET FILE NUMBERS	AMOUNT
			$

Total Amount: $

TOTAL AMOUNT OF CONTRACT EXPRESSED IN WORDS:

AND 00/100 DOLLARS.

THIS CONTRACT, entered into by the COPPER RIVER WATERSHED PROJECT, acting through the Owner named above, and the individual, partnership, or corporation named above, hereinafter called the Contractor, WITNESSETH that the parties hereto do mutually agree as follows:

Statement of Work: The Contractor shall furnish all labor, equipment and materials and perform the Work above described, for the amount stated, in strict accordance with the Contract Documents.

CONTRACT DOCUMENTS

I. This CONTRACT consists of **4** pages.

II. The Bid Proposal, Section V consisting of five (5) pages **as contained in RFP EVOSTC-2023.**

III. The Contract Performance and Payment Bond, Section IV,

IV. The Contractor's Certificate of Insurance,

V. Specifications consisting of the following:

- Alaska Department of Transportation and Public Facilities (ADOT&PF) Standard Specifications for Highway Construction (SSHC) 2020 Edition, incorporated by reference, **as contained in RFP EVOSTC-2023.**
- Modifications & Special Provisions to Standard Specifications, Section I, **as contained in RFP EVOSTC-202**3**.**

VI. Submittals consisting of two (2) pages, Section II – Materials Certification List, **as contained in RFP EVOSTC-2023.**

VII. The Drawings consisting of twelve (12) sheets, Section VI – Cordova Fish Passage Sheridan River Tributary – COP 1 Plans, **as contained in RFP EVOSTC-2023.**

VIII. The Drawings consisting of eleven (11) sheets, Section VII – Cordova Fish Passage Black Hole Creek – COP 33 Plans, **as contained in RFP EVOSTC-2023.**

IX. Addenda No. __ through ___.

Time being of the essence, the work shall be completed August 15, 2023.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the Contract Date entered below:

COPPER RIVER WATERSHED PROJECT **CONTRACTOR** _____

BY _____
Signature

_____
Printed Name of Authorized Designee

_____
Date of Signature and Contract Date

BY _____
Signature

_____
Printed Name

_____
Title

_____
Date

CONTRACT AND PERFORMANCE AND PAYMENT BOND SIGNATURE INSTRUCTIONS

1. The full name and business of the Contractor shall be inserted on Page 1 of the Contract and on the Performance and Payment Bond, hereinafter the Bond.

2. Two copies of the Contract and the Bond shall be manually signed by the Contractor. If the Contractor is a partnership or joint venture, all partners or joint ventures shall sign the Contract and the Bond except that one partner or one joint venturer may sign for the partnership or joint venture when all other partners or joint venturers have executed a Power-of-Attorney authorizing one partner or joint venturer to sign. The Power-of-Attorney shall accompany the executed contract and the Bond.

3. If the Contractor is a corporation, the President of the corporation shall execute the Contract and the Bond unless a Power-of-Attorney or corporate resolution shall accompany the executed Contract and Bond.

4. The Bond shall be returned to the Copper River Watershed Project. The Contract Date shall be inserted on the Contract when the Copper River Watershed Project signs the Contract and the Bond shall be dated the same as the Contract Date.

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

IV

CONTRACT PERFORMANCE AND PAYMENT BOND

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CONTRACT PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS, That we

of

as Principal, and

a corporation organized under the laws of the

and authorized to transact surety business in the State of Alaska, of as Surety, are held and firmly bound unto the COPPER RIVER WATERSHED PROJECT, as

Obligee, in the full and just sum of ($_____) Dollars, lawful money of the UNITED STATES, for the payment which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITIONS OF THIS OBLIGATION IS SUCH, that whereas the principal has entered into a certain contract dated the date of 20 , with the Obligee for the construction of

which contract is hereby referred to and made a part hereof as fully and to the same extent as if copied at length herein.

NOW THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract, and shall promptly make payments to all persons supplying labor and material in the prosecution of the work provided for in said contract, during the original term of said contract and any extensions or modifications thereof that may be granted by the Copper River Watershed Project, with or without notice to the Surety, then this obligation to be void; otherwise to remain in full force and effect.

This obligation is made for the use of said Obligee and also for use and benefit of all persons who may perform any work or labor or furnish any material in the execution of said Contract and may be sued on thereby in the name of said Obligee.

The said Surety, for the value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same, shall in anywise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

Whenever Principal shall be, and declared by Obligee to be in default under the Contract the Obligee having performed Obligee's obligations thereunder, the Surety may promptly remedy the default or shall promptly:

1. Complete the Contract in accordance with its terms and conditions, or
2. Obtain a bid or bids for submission to Obligee for completing the Contract in accordance with its terms and conditions and upon determination by Surety of the lowest responsible bidder, or, if the Obligee elects, upon determination by Obligee and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Obligee and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price but not exceeding, including other costs and damages for which the Surety may be liable hereunder the amount set forth in the first paragraph hereof. The term "balance of the contract price" as used in this paragraph, shall mean the total amount payable by Obligee to Principal under the Contract and any amendments thereto, less the amount properly paid by Obligee to Principal.

IN TESTIMONY WHEREOF, the parties hereunto have caused the execution hereof in original counterparts as of the day of , 20_____.

WITNESS AS TO PRINCIPAL:

_____ _____
Principal Name

_____
Principal Signature

Corporate Surety

(AFFIX CORPORATE SEAL) _____

Surety Business Address

BY:

(Attorney-In-Fact)

(AFFIX SURETY SEAL)

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

V

BID PROPOSAL

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BID PROPOSAL
(CERTIFICATION)

TO: COPPER RIVER WATERSHED PROJECT , 2023
511 1ST STREET
CORDOVA, ALASKA 99574
SUBJECT: Request for Proposal EVOSTC-2023
Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 & 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

Pursuant to and in compliance with subject Request for Proposals, and other bid documents relating thereto, the bidder hereby proposes to furnish all labor and materials and to perform all work for the construction of the above referenced project in strict accordance with the bid documents at the prices established in the Bid Proposal, page BP-1 through BP-6 submitted herewith.

The bidder agrees, if awarded the contract, to commence and complete the work within the time specified in the bid documents.

The bidder acknowledges receipt of the following addenda:

Addenda No.	Date of Addenda
Addenda No.	Date of Addenda
Addenda No.	Date of Addenda

Type of Business Organization
The bidder, by checking the applicable box, represents that it operates as ( ) a corporation incorporated under the laws of the State of Alaska, ( ) an individual, ( ) an LLC, ( ) a partnership, ( ) a nonprofit organization, or ( ) a joint venture. If a partnership or joint venture, identify all parties on a separate page.

_____

Company Name

BID PROPOSAL
(CERTIFICATION)
Continued

SUBJECT: Request for Proposal EVOSTC-2023
Copper River Watershed Habitat Enhancement Project, Cordova
EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

Date

Alaska Contractor's License Number

Contractor Name

Employer's Tax Identification Number

Authorized Representative Signature

Printed Name & Title

Company Mailing Address

Company Phone Number

City, State, Zip Code

Company Fax Number

Company Physical Address

(if different from mailing address)

Company Email Address

City, State, Zip Code

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

BID PROPOSAL

BASE BID

Schedule	Description	Bid Amount
A	Cordova EVOS Site – COP 1	
B	Cordova EVOS Site – COP 33	

Total Base Bid:

Date: _____

Contractor Name: _____

Authorized Representative Signature: _____

Printed Name & Title: _____

BASE BID - SCHEDULE A: Cordova Sheridan River Tributary – COP 1 (SITE 20100467)						
Item No.	**Work Description**	**Pay Unit**	**Unit**	**Unit price**	**Quantity**	**Amount**
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	LUMP SUM		ALL REQUIRED	
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	LINEAR FOOT		78	
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	CUBIC YARD		1760	
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	CUBIC YARD		847	
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	CUBIC YARD		440	
206.0001.0000	FILTER BLANKET	LUMP SUM	CUBIC YARD		11	
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	CUBIC YARD		192	
602.0006.0000	ASSEMBLE AND INSTALL STRUCTURAL PLATE ALUMINUM BOX CULVERT, 16'-8" SPAN, 7'-6" RISE	LUMP SUM	LINEAR FOOT		90	
611.0003.0001	RIPRAP, CLASS I	LUMP SUM	CUBIC YARD		253	
613.0002.0000	CULVERT MARKER POST	LUMP SUM	EACH		2	
618.0005.0000	SEEDING	LUMP SUM	POUND		21	
620.0003.0000	TOPSOIL (4")	LUMP SUM	SQUARE YARD		1130	
630.0003.0002	GEOTEXTILE, REINFORCEMENT TYPE 2	LUMP SUM	SQUARE YARD		473	
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	LUMP SUM		ALL REQUIRED	
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	LUMP SUM		ALL REQUIRED	
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	LUMP SUM		ALL REQUIRED	
642.0014.0000	AS-BUILT PLANS	LUMP SUM	LUMP SUM		ALL REQUIRED	
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	LUMP SUM		ALL REQUIRED	
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	LUMP SUM		ALL REQUIRED	
690.2001.0000	WATERWAY BED FILL	LUMP SUM	CUBIC YARD		160	
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	LUMP SUM		ALL REQUIRED	
				TOTAL BASE BID - Schedule A		

Date:_____ Contractor Name:_____

BASE BID - SCHEDULE B: Cordova Black Hole Creek – COP 33 (SITE 20100499)						
Item No.	**Work Description**	**Pay Unit**	**Unit**	**Unit price**	**Quantity**	**Amount**
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	LUMP SUM		ALL REQUIRED	
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	LINEAR FOOT		77	
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	CUBIC YARD		1760	
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	CUBIC YARD		1650	
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	CUBIC YARD		440	
206.0001.0000	FILTER BLANKET	LUMP SUM	CUBIC YARD		13	
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	CUBIC YARD		144	
602.0005.0000	ASSEMBLE AND INSTALL STRUCTURAL PLATE ALUMINUM ARCH CULVERT, 18'-0" SPAN, 11"-4" RISE	LUMP SUM	LINEAR FOOT		88	
611.0003.0001	RIPRAP, CLASS I	LUMP SUM	CUBIC YARD		231	
611.0003.0002	RIPRAP, CLASS II	LUMP SUM	CUBIC YARD		220	
613.0002.0000	CULVERT MARKER POST	LUMP SUM	EACH		2	
618.0005.0000	SEEDING	LUMP SUM	POUND		25	
620.0003.0000	TOPSOIL (4")	LUMP SUM	SQUARE YARD		1340	
630.0003.0002	GEOTEXTILE, REINFORCEMENT TYPE 2	LUMP SUM	SQUARE YARD		484	
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	LUMP SUM		ALL REQUIRED	
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	LUMP SUM		ALL REQUIRED	
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	LUMP SUM		ALL REQUIRED	
642.0014.0000	AS-BUILT PLANS	LUMP SUM	LUMP SUM		ALL REQUIRED	
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	LUMP SUM		ALL REQUIRED	
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	LUMP SUM		ALL REQUIRED	
690.2001.0000	WATERWAY BED FILL	LUMP SUM	CUBIC YARD		477	
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	LUMP SUM		ALL REQUIRED	
				TOTAL BASE BID - Schedule B		

Date:_____ Contractor Name:_____

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

VI

Plans (Cop 1: 12 pages)

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LOCATION MAP

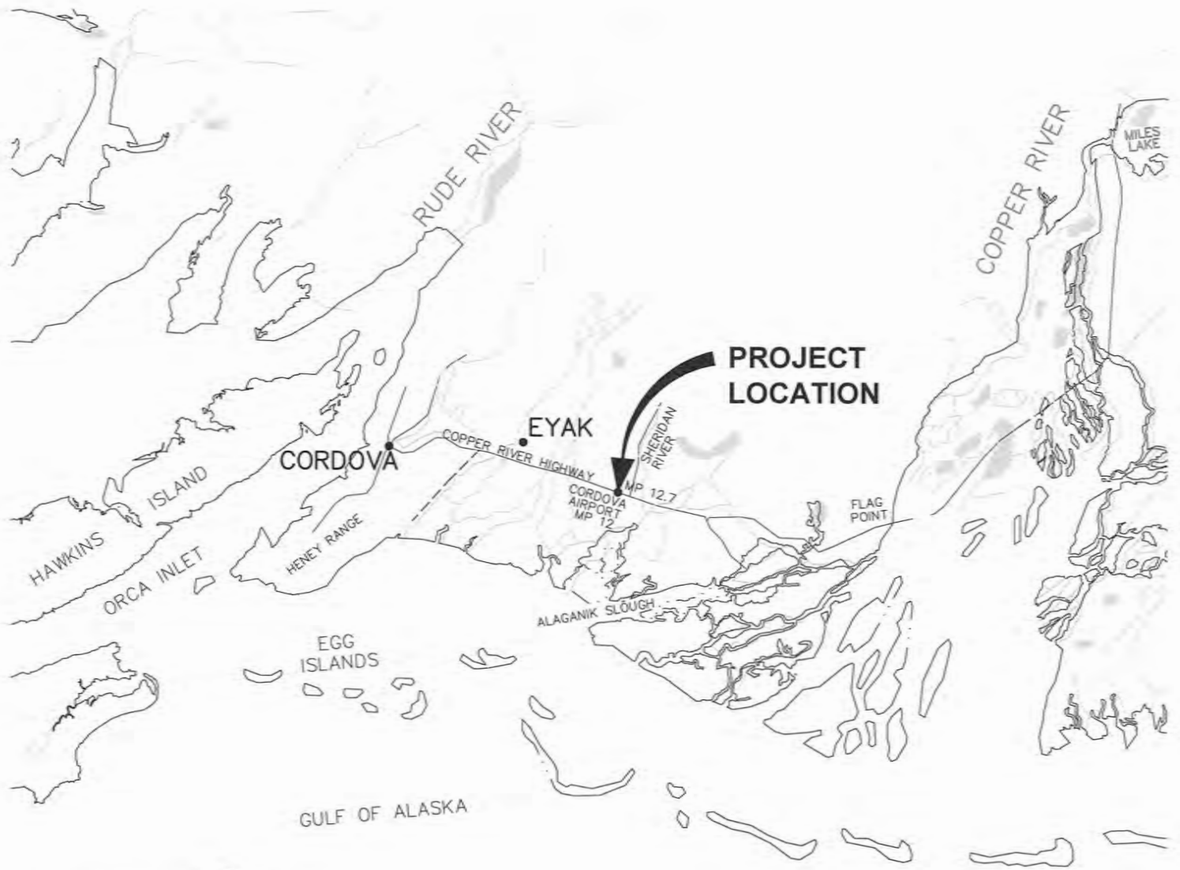
Contract Drawings For

CORDOVA FISH PASSAGE IMPROVEMENT PROJECTS
COPPER RIVER HIGHWAY - MP 12.7
SHERIDAN RIVER TRIBUTARY - COP 1
U.S. FISH AND WILDLIFE SERVICE

SECTION 8, TOWNSHIP 16 SOUTH, RANGE 1 WEST, COPPER RIVER MERIDIAN, ALASKA
OCTOBER 2022

PROJECT LOCATION		
ADF&G SITE NO.	CRWP ID	COPPER RIVER HWY MP
20100467	COP 1	12.7

DESIGN DESIGNATIONS	
AADT 2020	300



VICINITY MAP
NTS

DRAWING INDEX

PREPARED BY: DOWL

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED	LUMP SUM
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	78	LINEAR FOOT
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	1760	CUBIC YARD
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	847	CUBIC YARD
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	440	CUBIC YARD
206.0001.0000	FILTER BLANKET	LUMP SUM	11	CUBIC YARD
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	192	CUBIC YARD
602.0006.0000	ASSEMBLE AND INSTALL STRUCTURAL PLATE ALUMINUM BOX CULVERT, 16'-8" SPAN, 7'-6" RISE	LUMP SUM	90	LINEAR FOOT
611.0003.0001	RIPRAP, CLASS I	LUMP SUM	253	CUBIC YARD
613.0002.0000	CULVERT MARKER POST	LUMP SUM	2	EACH
618.0005.0000	SEEDING	LUMP SUM	21	POUND
620.0003.0000	TOPSOIL (4")	LUMP SUM	1130	SQUARE YARD
630.0003.0002	GEOTEXTILE, REINFORCEMENT, TYPE 2	LUMP SUM	473	SQUARE YARD
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	LUMP SUM
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0014.0000	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED	LUMP SUM
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	LUMP SUM
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED	LUMP SUM
690.2001.0000	WATERWAY BED FILL	LUMP SUM	160	CUBIC YARD
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED	LUMP SUM

NOTES:

1. ESTIMATE OF QUANTITIES ARE FOR INFORMATION ONLY AND CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES.
2. EXCAVATION AND BACKFILL REQUIRED FOR STREAM DIVERSION AS SHOWN ON SHEET C9 IS SUBSIDIARY TO PAY ITEM 672.0001.0000 STREAM DIVERSION & DEWATERING.
3. APPROXIMATELY 595 CY ESTIMATED FOR EXCAVATION AND BACKFILL FOR STREAM DIVERSION AS SHOWN ON SHEET C9.
4. TIE-IN AT STA "CRH" 3+28.7 ASSUMES STREAM DIVERSION CHANNEL AS SHOWN ON SHEET C9.
5. AGGREGATE SURFACE COURSE, GRADING E-1 FOR STREAM DIVERSION WILL BE PAID UNDER SECTION 301.
6. REFER TO SPECIFICATION SECTION 690 FOR WATERWAY BED FILL GRADATION.

ABBREVIATIONS

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ADF&G	ALASKA DEPARTMENT OF FISH AND GAME
ALCAP	ALUMINUM CAP
AVASP	AS VERTICAL AS SAFELY POSSIBLE
BFW	BANKFULL WIDTH
BOF	BOTTOM OF FOOTING
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CRH	COPPER RIVER HIGHWAY
CRWP	COPPER RIVER WATERSHED PROJECT
ELEV	ELEVATION
ESCP	EROSION AND SEDIMENT CONTROL PLAN
HW/D	HEADWATER TO DEPTH RATIO
INV	INVERT ELEVATION
MIN	MINIMUM
MP	MILEPOST
NTS	NOT TO SCALE
OHW	ORDINARY HIGH WATER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
Q	FLOW
ROW	RIGHT-OF-WAY
SPP	STRUCTURAL PLATE PIPE
SRT	SHERIDAN RIVER TRIBUTARY
STA	STATION
TYP	TYPICAL
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE
VAP	VERTICAL ADJUSTMENT POTENTIAL

TABLE 1

COARSE MATERIAL: RIPRAP, CLASS I

APPROX. SIZE	MASS (LBS)	% PASSING
10"	50	100
8"	25	50

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL SITE FEATURES. IF THE CONTRACTOR DISCOVERS CONDITIONS OTHER THAN THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE.
2. COORDINATE CONSTRUCTION STAGING AND MOBILIZATION AREAS AND ACTIVITIES WITH OWNER'S REPRESENTATIVE. COORDINATION WITH DOT&PF LOCAL M&O IS REQUIRED FOR CONCURRENCE.
3. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT.
4. EXERCISE CAUTION AND COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS FOR WORKING IN CONFINED AREAS.
5. STATIONING IS ALONG CENTERLINE OF STREAM OR ROADWAY.
6. VERIFY ELEVATIONS OF ALL PROPOSED STRUCTURES PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES FROM PLANS IMMEDIATELY TO OWNER'S REPRESENTATIVE.
7. CULVERT DESIGN LOAD: AASHTO LOADING HL-93, MINIMUM SOIL BEARING CAPACITY: 3,900 PSF.
8. EXCAVATION AND COMPACTION:
   A. REMOVE AND DISPOSE OF ALL ORGANIC OR OVERSATURATED SOFT MATERIAL, WHICH CANNOT BE COMPACTED.
   B. BACKFILL SHALL BE PLACED AND COMPACTED WITH CARE AND SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY ON BOTH SIDES OF PIPE. MATERIAL TO BE COMPACTED TO 95% MAXIMUM DENSITY.
   C. PLACE FILL IN LIFTS OF MAXIMUM DEPTH OF 8-INCHES PER SPECIFICATION SECTION 203-3.05.
9. CULVERT INSTALLATION:
   A. CULVERT JOINTS SHALL NOT LEAK.
   B. CULVERT INFILL MATERIAL SHALL BE INSTALLED IN PIPE ACCORDING TO PLANS. MANUAL INSTALLATION IS REQUIRED.
10. ALL VEGETATION IN THE AREAS NOT AFFECTED BY WORK SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR. RESEED ALL DISTURBED AREAS.
11. TWO CULVERT MARKERS WILL BE INSTALLED AT EACH CULVERT AS SHOWN ON SHEET C12.
12. STRAW WATTLES ARE PROHIBITED ON THE PROJECT SITE.

LEGEND

DESCRIPTION

- APPROXIMATE RIGHT-OF-WAY
- CONTROL POINT
- ORDINARY HIGH WATER
- EXISTING CULVERT
- EDGE OF PAVEMENT
- EDGE OF GRAVEL/SHOULDER
- EDGE OF VEGETATION
- EXISTING THALWEG
- TOP OF BANK
- TOE OF SLOPE
- PROPOSED CULVERT
- WATERWAY BED FILL
- WATERWAY BANK REVEGETATION AND PROTECTION
- RIPRAP
- AGGREGATE SURFACE COURSE, E-1
- SELECTED MATERIAL, TYPE A
- SUBBASE, GRADING F
- SEED
- BULK BAG COFFERDAM
- WETLAND PLUGS

REV	DATE	REVISIONS DESCRIPTION	BY

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CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
GENERAL NOTES AND QUANTITIES
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET C2 OF C12

HORIZONTAL & VERTICAL CONTROL MONUMENTS

POINT	STATION	OFFSET	NAD83(2011) GEODETIC COORDINATES LATITUDE	NAD83(2011) GEODETIC COORDINATES LONGITUDE	ASPZ 3 NORTHING	ASPZ 3 EASTING	NAVD 88 ELEVATION	DESCRIPTION
* 201	N/A	N/A	N 60° 27' 54.7702"	W 145° 20' 51.3061"	2362511.5300	1758160.6700	62.78	ALCAP
212	N/A	N/A	N 60° 29' 34.4666"	W 145° 27' 29.1077"	2372452.8220	1738135.2310	45.20	CTRL/SETN.GPSS.RPC-DOWL-12
213	N/A	N/A	N 60° 29' 21.9465"	W 145° 27' 03.6146"	2371192.2470	1739422.7390	43.14	CTRL /SETN.GPSS.RPC-DOWL-13

* NOT SHOWN HEREON

SURVEY CONTROL NOTES

HORIZONTAL CONTROL – ASPC ZONE 3, NAD83(2011)

COORDINATES ARE ALASKA STATE PLANE (ASPC) ZONE 3, NAD83(2011) IN U.S. SURVEY FEET AND ARE BASED ON AN OPUS SOLUTION ON MONUMENT 201. THE BASIS OF COORDINATES IS LOCAL SURVEY CONTROL POINT 201, A 2" ALUMINUM CAP STAMPED "2019 DOWL CONTROL" SET IN THE EASTERN SHOULDER OF ALAGANIK SLOUGH ROAD, HAVING AN OPUS DERIVED ASPC ZONE 3 VALUE OF N2,362,511.53 AND E1,758,160.67. BEARINGS ARE LOCAL PLANE BEARINGS BASED ON GPS OBSERVATIONS AT LOCAL SURVEY CONTROL POINT 201.

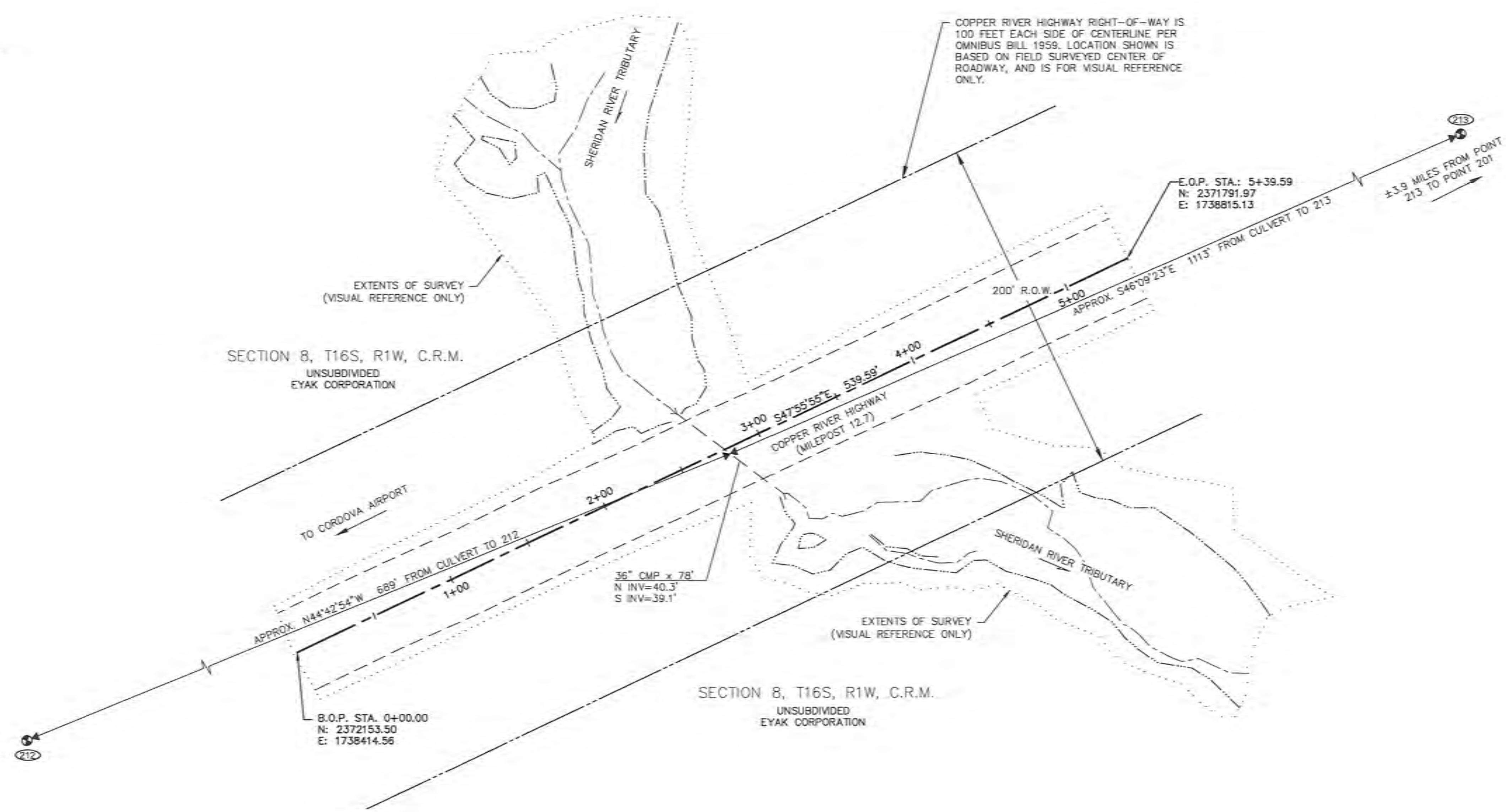
VERTICAL CONTROL – NAVD88

ELEVATIONS ARE NAVD-88 GEOID12B ORTHOMETRIC HEIGHTS IN U.S. SURVEY FEET AND ARE BASED ON AN OPUS SOLUTION ON CONTROL POINT 201. THE BASIS OF ELEVATIONS IS LOCAL SURVEY CONTROL POINT 201, A 2" ALUMINUM CAP STAMPED "2019 DOWL CONTROL" SET IN THE EASTERN SHOULDER OF ALAGANIK SLOUGH ROAD, HAVING AN OPUS DERIVED GEOID12B ELEVATION OF 62.78 FEET.

40 0 40 80
SCALE IN FEET

LEGEND

- SURVEY MONUMENT
- CULVERT
- EDGE OF GRAVEL
- EDGE OF WATER
- CENTERLINE CHANNEL
- RIGHT-OF-WAY LINE
- 10+00 PROJECT ALIGNMENT



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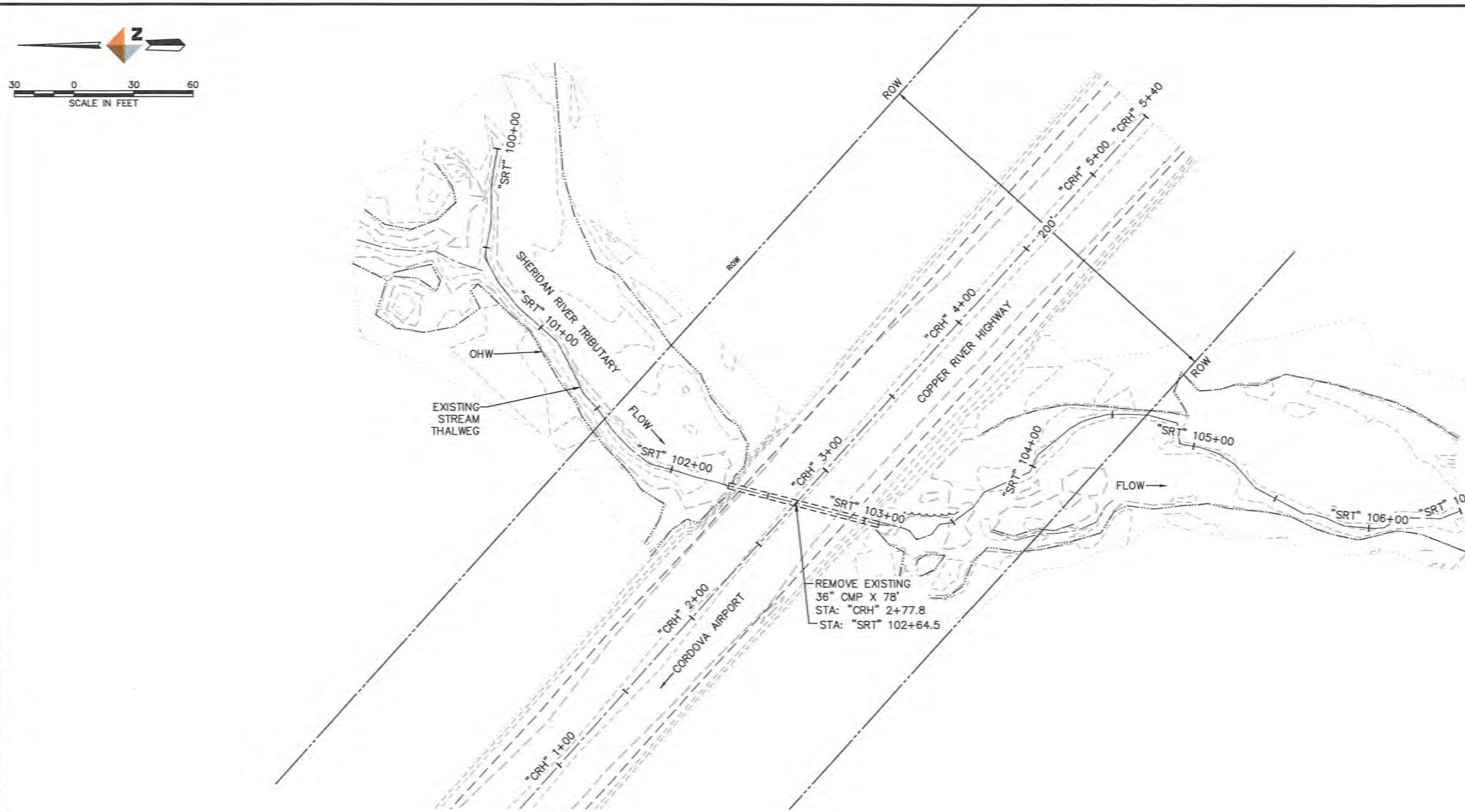
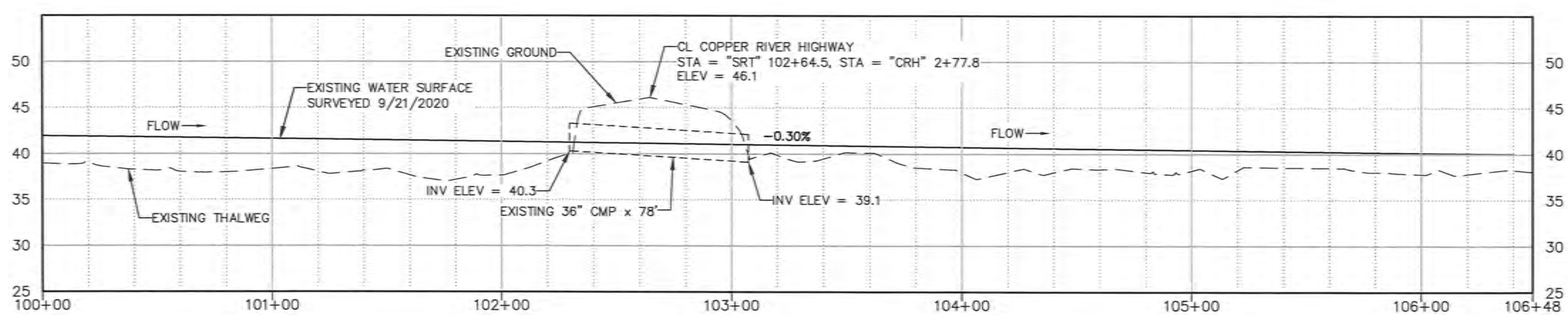
CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
SURVEY CONTROL

SECTION 8, T16S, R1W, COPPER RIVER MERIDIAN
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET
C3 OF C12





REV	DATE	REVISIONS DESCRIPTION	BY

STATE OF ALASKA 49TH Bradley J. Melocik CE 11098 REGISTERED PROFESSIONAL ENGINEER

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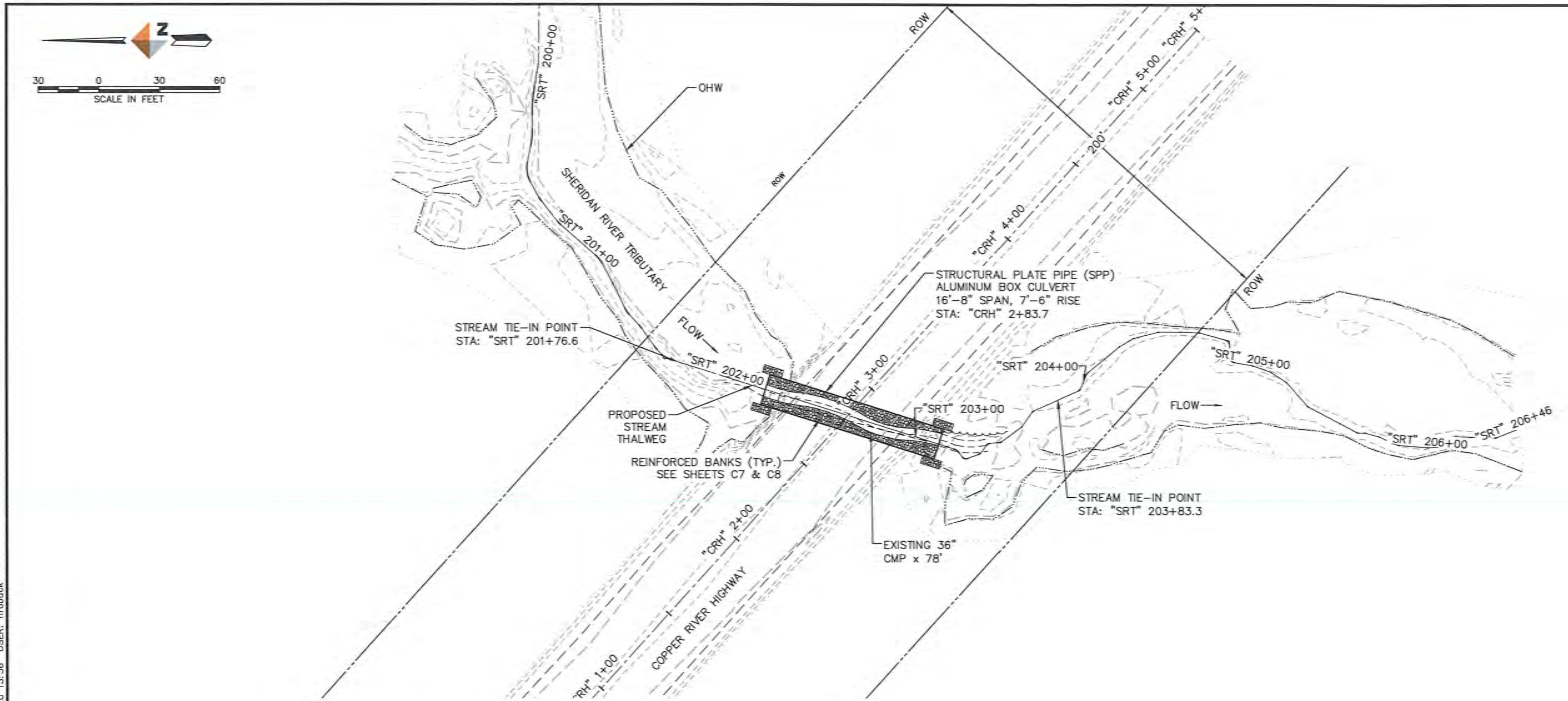
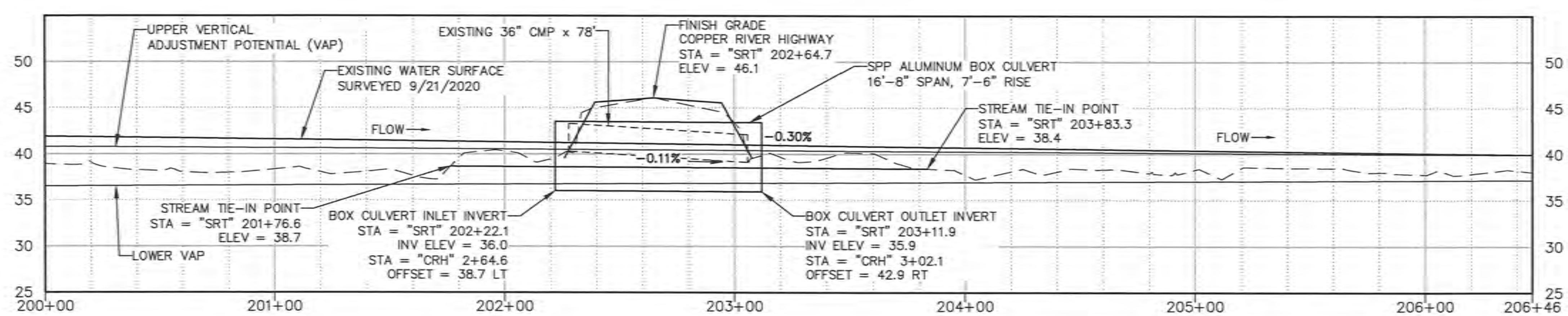
CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
EXISTING STREAM PLAN AND PROFILE

CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET C4 OF C12





CULVERT COORDINATE TABLE

SIZE	POINT	NORTHING	EASTING	ELEVATION
16'-8" SPAN X 7'-6" RISE ALUMINUM BOX CULVERT	INLET INV.	2372004.98	1738636.94	36.00
	OUTLET INV.	2371919.25	1738610.06	35.90

CULVERT SUMMARY SCHEDULE

SIZE	16'-8" SPAN X 7'-6" RISE BOX CULVERT
LENGTH	90'
THICKNESS	0.150" (HAUNCH) 0.125" (CROWN)
SLOPE	0.11%
CORRUGATION	9" X 2.5"
MATERIAL	ALUMINUM
LOADING	HL-93
"CRH" CL STATION	2+82.40

HYDROLOGIC & HYDRAULIC SUMMARY

EXCEEDANCE PROBABILITY	RETURN PERIOD	DESIGN DISCHARGE	DESIGN HIGH WATER ELEVATION	REGULATORY FLOOD	HW/D
	(YEAR)	(CFS)	(FT)		
50%	2	100	40.88	N/A	0.46
2%	50	193	42.01	N/A	0.69
1%	100	210	42.20	N/A	0.73
DRAINAGE AREA = 0.91 SQUARE MILES					
ANTICIPATED ADDITIONAL BACKWATER = 0 FEET					
ROADWAY OVERTOPPING Q = 525 CFS					

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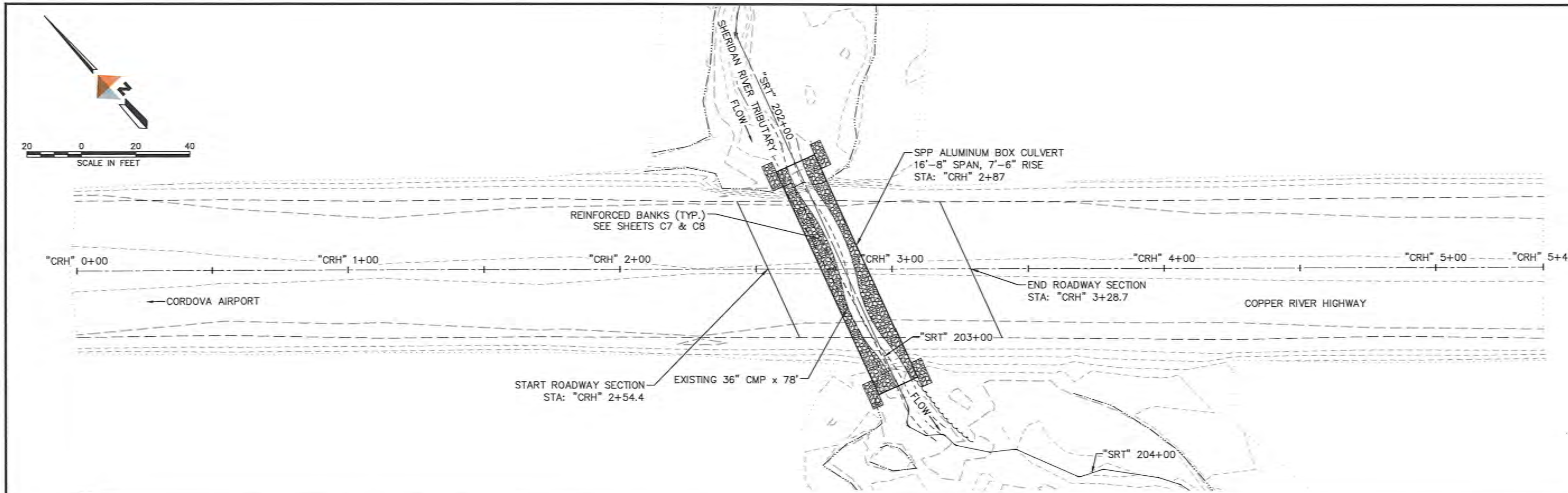
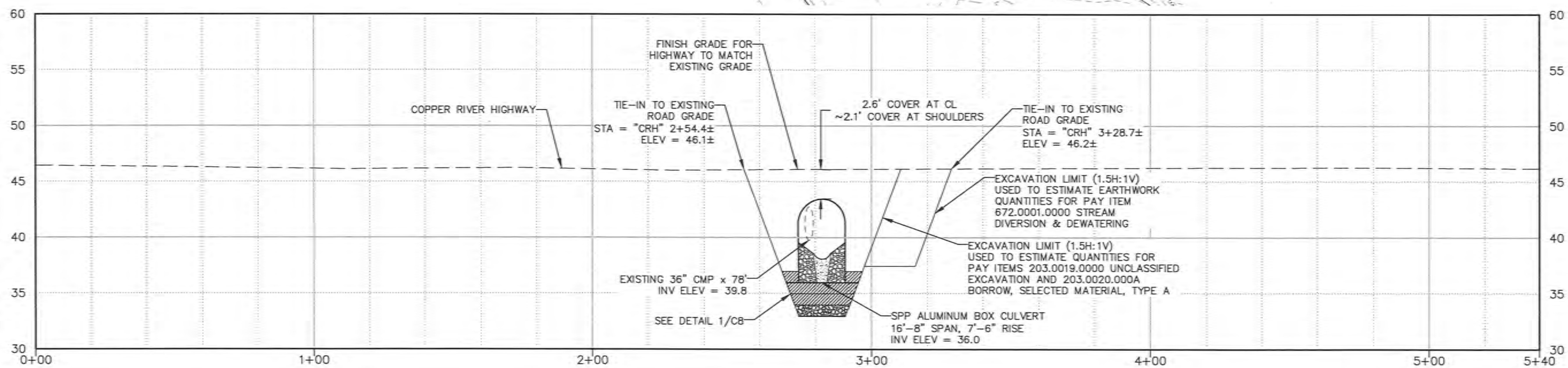
CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
STREAM PLAN AND PROFILE

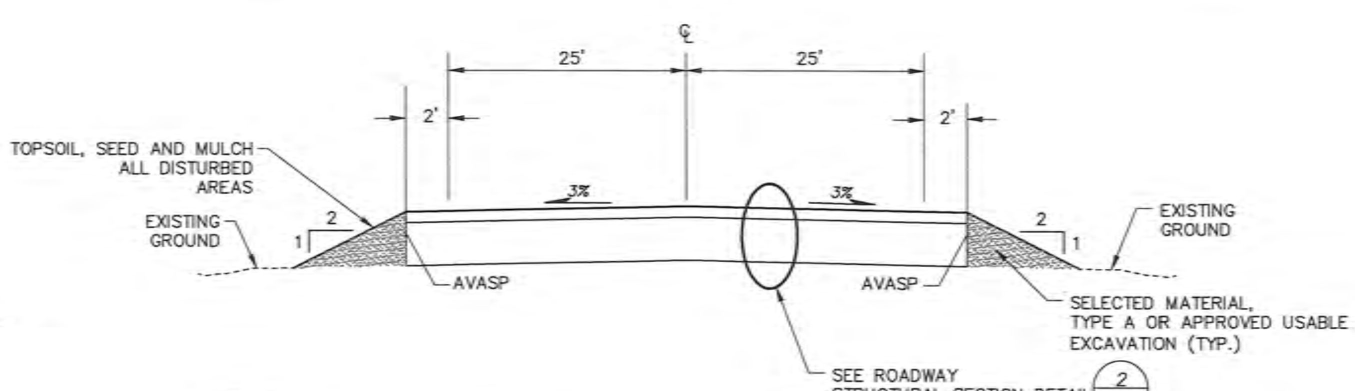
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

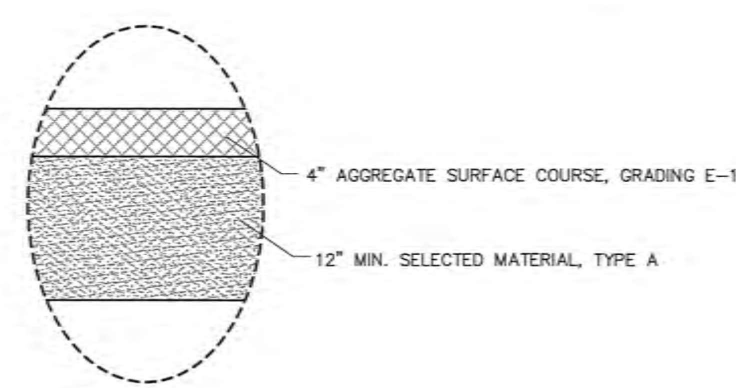
SHEET
C5 OF C12







1/C6 ROADWAY SECTION
STA "CRH" 2+54.4 TO "CRH" 3+28.7



2/C6 ROADWAY STRUCTURAL SECTION
NTS

NOTES:

1. TRANSITION ROADWAY SECTION TO EXISTING WIDTH WITHIN 10 FEET OF WORK LIMITS.
2. TRANSITION SECTION SHALL BE SUBSIDIARY TO 203 AND 301 PAY ITEMS.

REV	DATE	REVISIONS DESCRIPTION	BY

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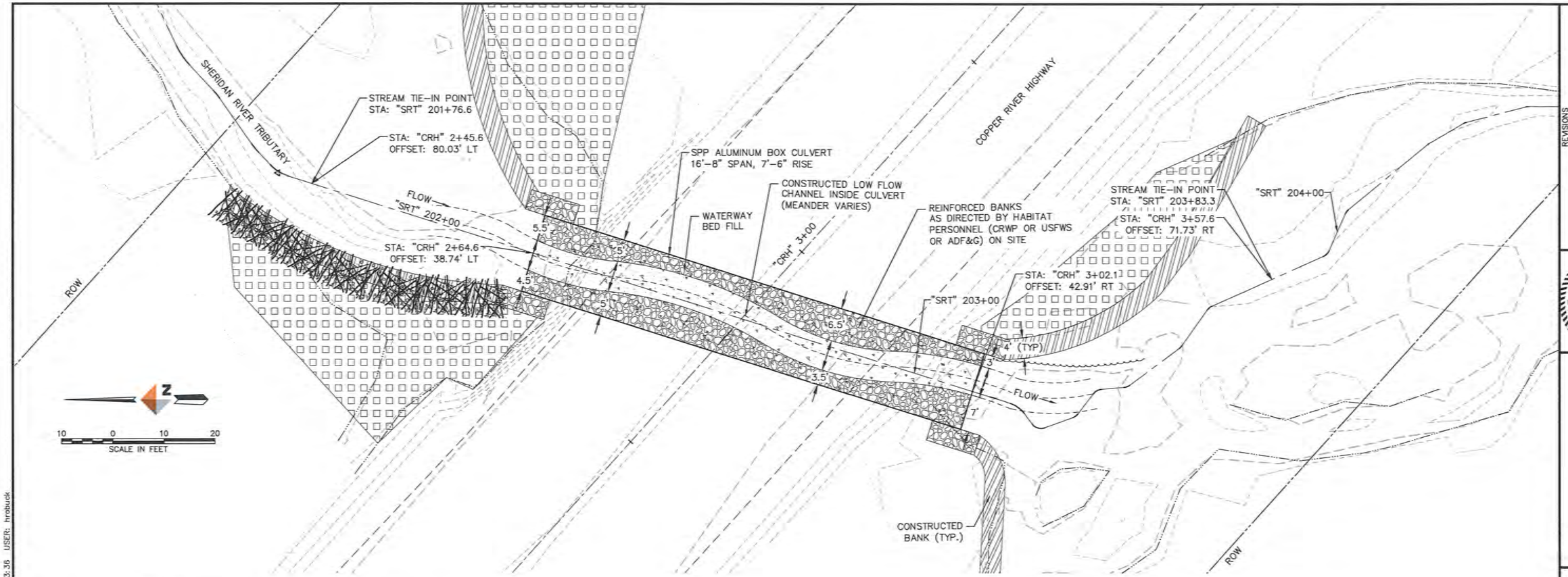
CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
ROADWAY PLAN AND PROFILE
CORDOVA, ALASKA

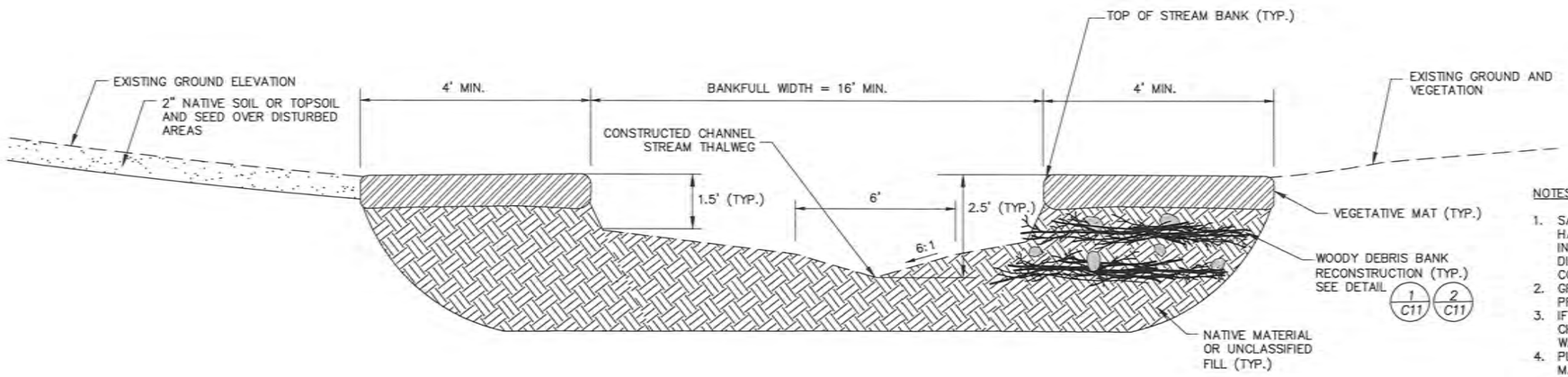
PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET
C6 OF C12

C:\dowl_pw\d0391916\SC20-CH-DR-63248-COP-1.dwg PLOT DATE 2022-10-28 13:56 SAVED DATE 2022-09-20 13:36 USER: hrobuck



1 / C7 STREAM DESIGN DETAIL - PLAN VIEW



2 / C7 CONSTRUCTED BANK
NTS

NOTES:

1. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA COORDINATED WITH CRWP AND USFS.
2. GRADE TO STREAM THALWEG SHOWN IN PROFILE ON C5.
3. IF FILL REQUIRED TO CONSTRUCT CHANNEL TO DIMENSIONS SHOWN, USE WATERWAY BED FILL MATERIAL.
4. PLACEMENT OF WATERWAY BED FILL MATERIAL FOR CONSTRUCTED BANK DETAIL IS SUBSIDIARY TO PAY ITEM 690.2001.0000.
5. WOODY DEBRIS BANK RECONSTRUCTION TO BE PLACED IN LOCATIONS SHOWN ON SHEET C10.

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA — 49TH — REGISTERED PROFESSIONAL ENGINEER

DOWL
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CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
STREAM DESIGN DETAILS
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET
C7 OF C12

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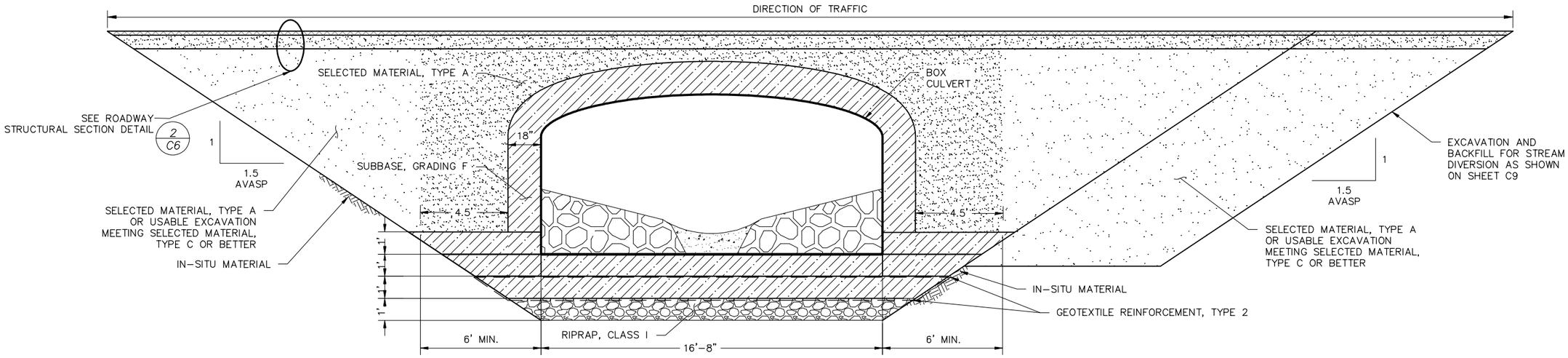
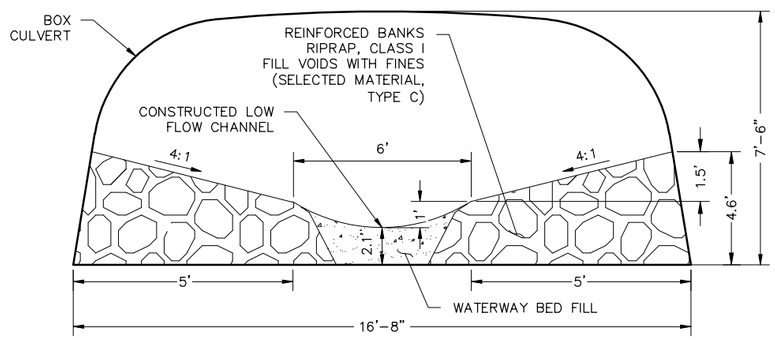


1/C8 TYPICAL CULVERT TRENCH SECTION

NTS

NOTES:

1. GEOTEXTILE REINFORCEMENT, TYPE 2 SHALL BE PLACED BETWEEN RIPRAP, CLASS I AND SUBBASE, GRADING F, AND PLACED BETWEEN EACH ONE-FOOT LAYER OF SUBBASE, GRADING F BENEATH CULVERT INVERT.
2. FOR QUANTITY ESTIMATION PURPOSES, NO USABLE EXCAVATION WAS ASSUMED AND EMBANKMENT QUANTITIES WERE CALCULATED USING SELECTED MATERIAL, TYPE A.

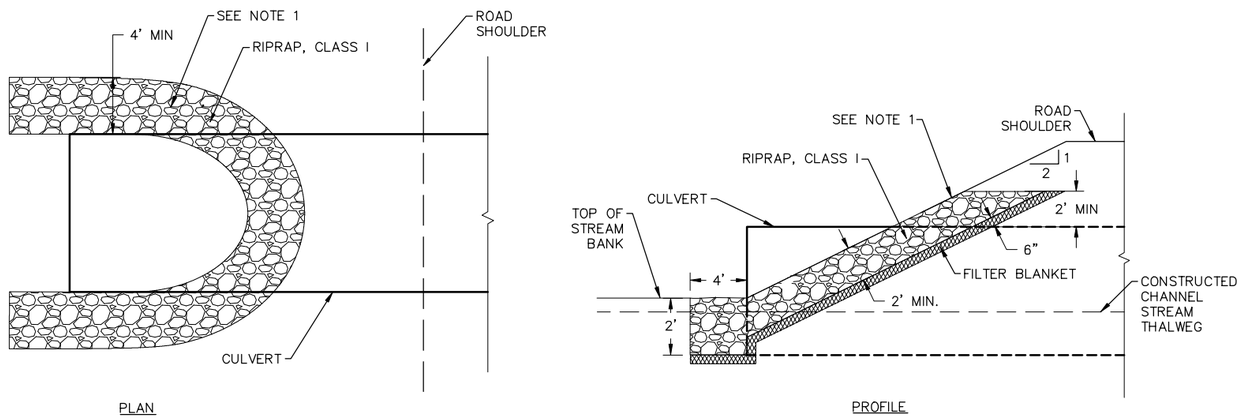


2/C8 TYPICAL CULVERT INFILL SECTION

NTS

NOTES:

1. FILL VOIDS IN RIPRAP FOR REINFORCED BANKS. MIX RIPRAP WITH FINES (SELECTED MATERIAL, TYPE C) PRIOR TO PLACEMENT AND WASH FINES IN AFTER PLACEMENT.
2. PLACEMENT AND SHAPE OF REINFORCED BANKS TO BE COORDINATED WITH HABITAT PERSONNEL (CRWP OR USFWS OR ADF&G) ON SITE.



3/C8 RIPRAP SLOPE PROTECTION SECTION

NTS

NOTES:

1. FILL VOIDS IN RIPRAP SLOPE PROTECTION WITH SELECTED MATERIAL, TYPE A OR USABLE EXCAVATION MEETING SELECTED MATERIAL, TYPE C.
2. PLACE SALVAGED ORGANIC TOPSOIL AND SEED ON SURFACE OF PLACED RIPRAP PER SPECIFICATION SECTIONS 611-3.01 AND 620-3.01.

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA 49TH PROFESSIONAL ENGINEER
Bradley M. Wenck
CE 11098
1/26/23
REGISTERED PROFESSIONAL ENGINEER

DOWL
WWW.DOWL.COM

CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY - COP 1
STREAM SECTIONS AND DETAILS
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET
C8 OF C12

ROADWAY DIVERSION NOTES:

1. REFER TO SPECIFICATIONS FOR ROAD CLOSURE AND TRAFFIC CONTROL INFORMATION.
2. DETOUR ROAD PLAN SHALL BE SUBMITTED BY CONTRACTOR FOR APPROVAL BY OWNER AND DOT&PF.

STREAM DIVERSION NOTES:

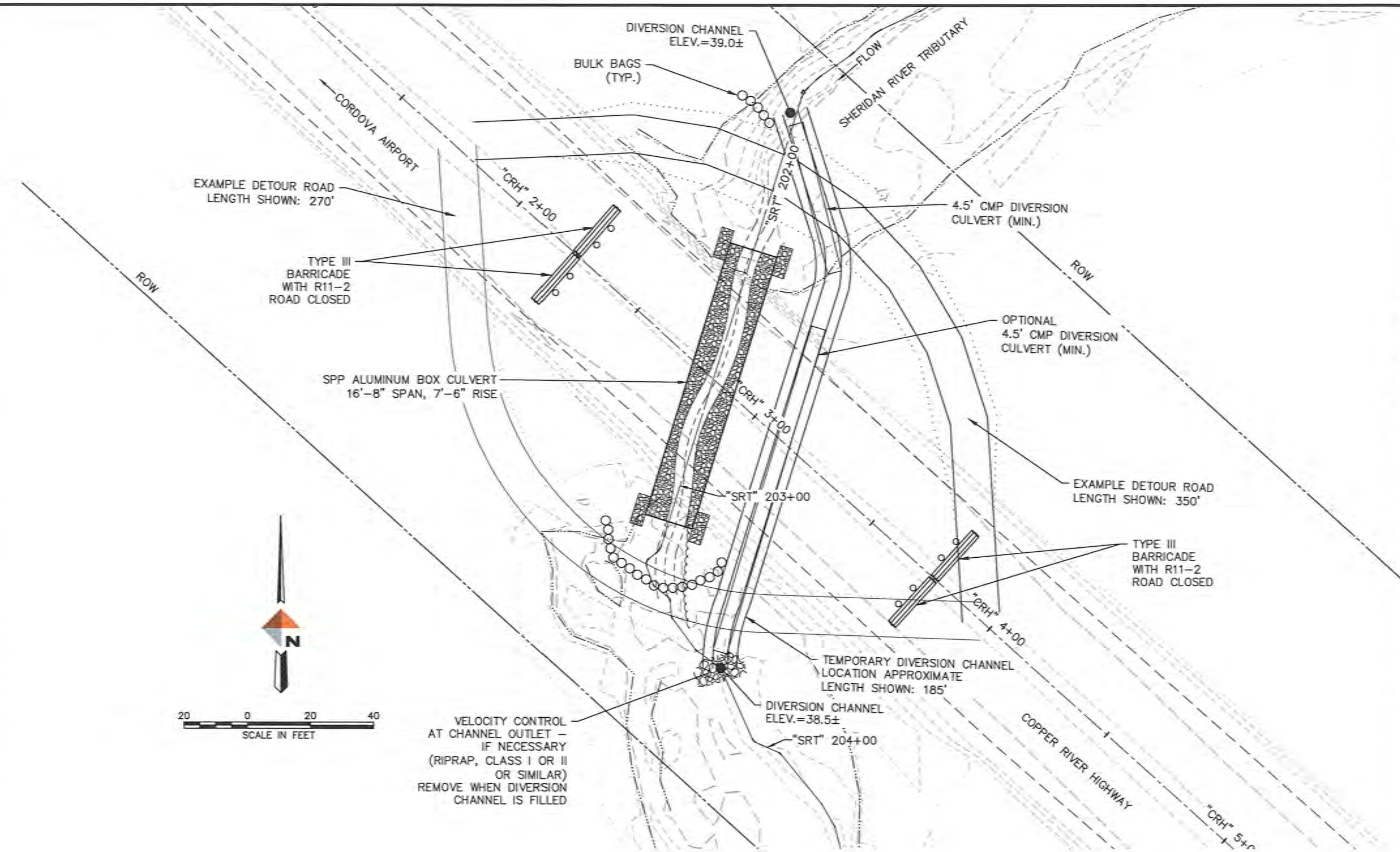
A COFFERDAM MADE OF SHEET PILE MAY BE NEEDED TO REDUCE GROUNDWATER FLOW INTO EXCAVATED AREA. TEMPORARY DIKES OR BERMS MAY BE USED TO ISOLATE THE WORK AREA FROM WATERS OF THE SURROUNDING AREA. THIS WORK MAY REQUIRE A DIVERSION OF STREAM WATER. THE DESIGNERS RECOGNIZE THAT DIFFERENT CONTRACTORS WILL HAVE VARIOUS APPROACHES FOR CONTROLLING WATER AND CONSTRUCTION SEQUENCING. THIS DIVERSION PLAN HAS BEEN DEVELOPED TO CHECK FOR CONTRACTIBILITY AND AS A STARTING POINT FOR A CONTRACTOR-GENERATED PLAN. CONTRACTOR MUST SUBMIT DIVERSION PLANS TO ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION.

DIVERSION PLAN:

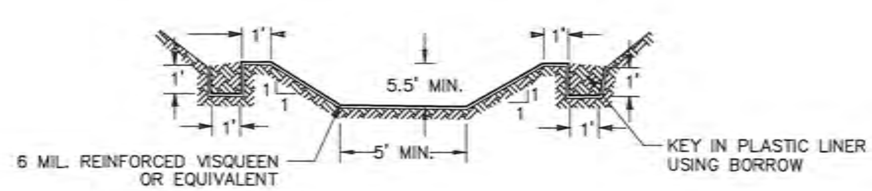
1. PLACE BARRICADES, SIGNS, AND TEMPORARY ROAD DETOUR IN COMPLIANCE WITH SPECIFICATIONS, ADOT&PF, AND MUTCD. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT IN AREA AND USING COPPER RIVER HIGHWAY FOR CONSTRUCTION ACCESS.
2. CONSTRUCT VISQUEEN LINED DIVERSION CHANNEL EAST OF THE EXISTING CROSSING LOCATION.
3. ONE 54" MINIMUM DIAMETER (OR LARGER) CULVERT CAN BE USED IN DIVERSION CHANNEL TO PROVIDE VEHICULAR ACCESS. CONSTRUCT DIVERSION CHANNEL BANKS TO BE MINIMUM 1' HIGHER THAN THE TOP OF THE DIVERSION PIPE, IF USED.
4. USE BULK BAGS (SUPERSACKS) TO DIVERT STREAM FLOW THROUGH DIVERSION CHANNEL. LOCATION OF DIVERSION CHANNEL IS APPROXIMATE AND SUBJECT TO SITE CONDITIONS.
5. EXCAVATE ROADWAY TO REMOVE EXISTING 36" CULVERT.
6. CONSTRUCT THE NEW ALUMINUM BOX CULVERT.
7. INFILL CULVERT AND RECONSTRUCT CREEK CHANNEL AS SHOWN IN PLANS.
8. DIVERT CREEK FLOW THROUGH THE NEW ALUMINUM BOX CULVERT.
9. FILL DIVERSION CHANNEL/COPPER RIVER HIGHWAY.
10. RECONSTRUCT CREEK CHANNEL AND BANKS AS SHOWN IN PLANS.
11. RECONSTRUCT COPPER RIVER HIGHWAY OVER THE NEWLY INSTALLED CULVERT.
12. RETURN VEHICULAR TRAFFIC TO COPPER RIVER HIGHWAY. REMOVE DETOUR ROAD AND FILL REMAINING PORTION OF DIVERSION CHANNEL.
13. STABILIZE AND REVEGETATE ALL REMAINING DISTURBED AREAS.

ESCP AND DEWATERING NOTES:

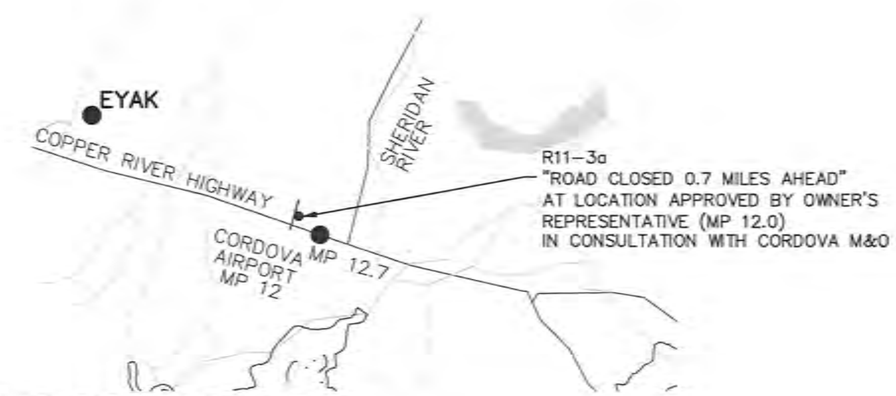
1. DEWATER TRENCH AND WORK AREA WITH PUMP HOSE IF REQUIRED.
2. ALL DISCHARGE POINTS REQUIRE PERMANENT OR TEMPORARY VELOCITY CONTROLS.
3. PROVIDE FOR SEDIMENT REMOVAL FOR ALL DEWATERING ACTIVITY PRIOR TO DISCHARGE FROM THE PROJECT INTO ANY WATER OF THE U.S.
4. PROVIDE SPARE (EXTRA) PUMPS FOR BOTH THE STREAM BYPASS PUMP AND DETWATERING PUMP.
5. EXISTING RIPARIAN VEGETATION SHOULD BE PROTECTED TO MINIMIZE DISTURBANCE.
6. SILT FENCING TO BE USED TO PREVENT DISTURBED SEDIMENT FROM ENTERING THE WATERBODY. ADJUST LOCATION AS NECESSARY AND AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION.
7. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS. MAINTENANCE SHALL INCLUDE REMOVAL AND DISPOSAL OF ACCUMULATED SEDIMENT, CLEANING AND REPAIR OF DAMAGED SEDIMENT CONTROL DEVICES.
8. ALL DISTURBED GROUND CAPABLE OF SUPPORTING VEGETATION SHALL BE REVEGETATED FOR FINAL STABILIZATION. ALL AREAS NOT REVEGETATED SHALL BE 100% COVERED BY ROCK OR OTHER PERMANENT NON-ERODIBLE MATERIAL. FINAL STABILIZATION SHALL BE AS APPROVED BY THE ENGINEER.



1 C9 ESCP, STREAM DIVERSION & ROADWAY DIVERSION PLAN



2 C9 DIVERSION CHANNEL
NTS



3 C9 TRAFFIC CONTROL SIGNS
NTS

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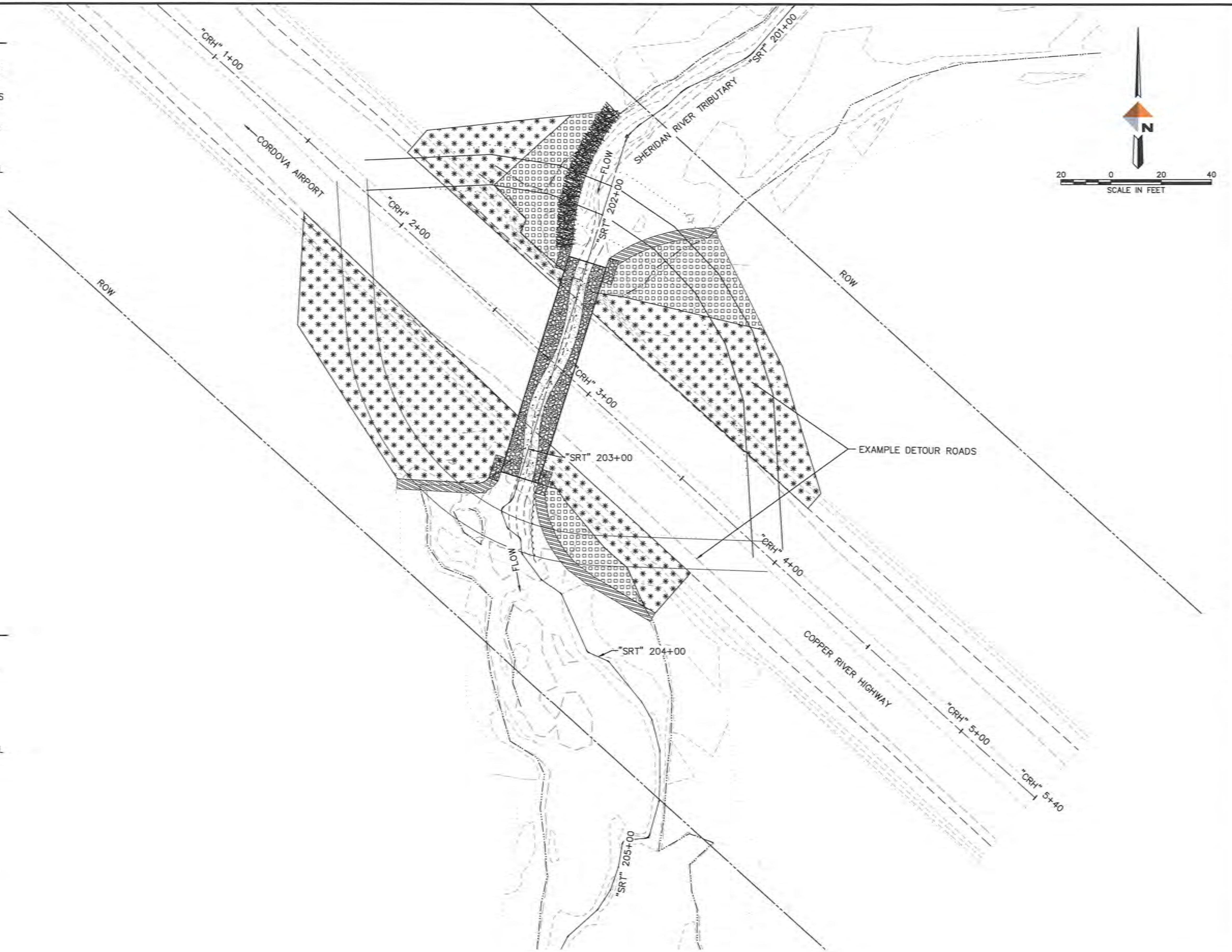
CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
STREAM DIVERSION & TRAFFIC CONTROL PLAN
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET C9 OF C12

NOTES:

1. VEGETATIVE MAT OR WETLAND PLUGS SHALL BE PLACED ON DISTURBED AREAS OUTSIDE OF THE SEEDING AREAS AS SHOWN ON THE PLANS.
2. VEGETATIVE MAT AND WETLAND PLUG LOCATIONS MAY VARY BASED ON SITE CONDITIONS DURING CONSTRUCTION AND SHOULD BE COORDINATED WITH HABITAT PERSONNEL (CRWP OR USFWS OR ADF&G) ON SITE.
3. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA AS COORDINATED WITH THE ENGINEER.
4. DETOUR ROAD IS SHOWN FOR LIMITS OF DISTURBANCE PURPOSES.
5. REFER TO SPECIFICATION SECTION 690 FOR ADDITIONAL BANK REVEGETATION INFORMATION.



SITE REVEGETATION

- SEED, FERTILIZER, AND MULCH
- VEGETATIVE MAT
- CONSTRUCTED STREAM CHANNEL WATERWAY BED FILL
- RIPRAP
- WETLAND PLUGS
- WOODY DEBRIS BANK RECONSTRUCTION

1 / C10 REVEGETATION PLAN

C:\dowl_pw\d0391916\SC20-CH-DR-63248-COP-1.dwg PLOT DATE 2022-10-28 14:48 SAVED DATE 2022-09-20 13:36 USER: hrobuck

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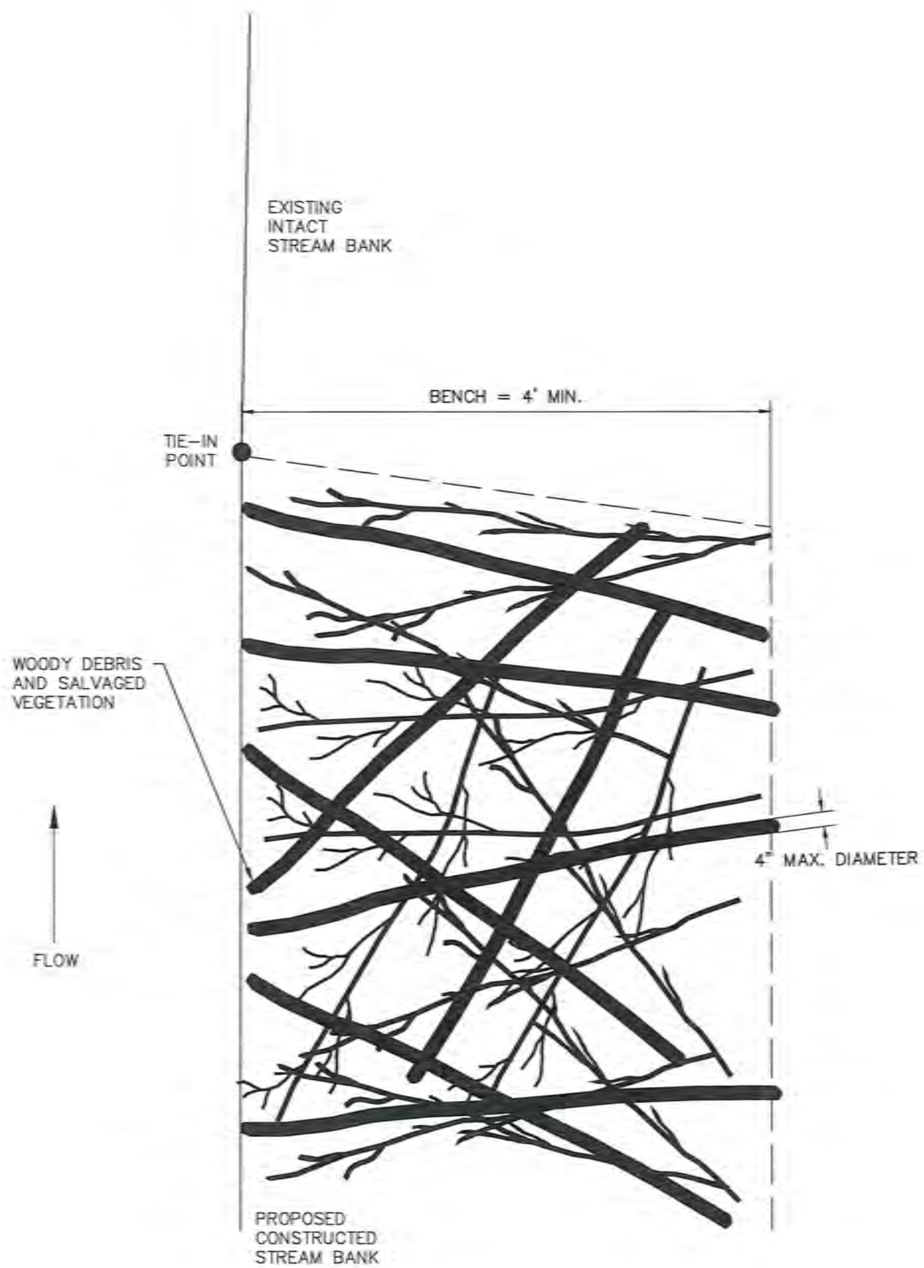
CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
REVEGETATION PLAN
CORDOVA, ALASKA

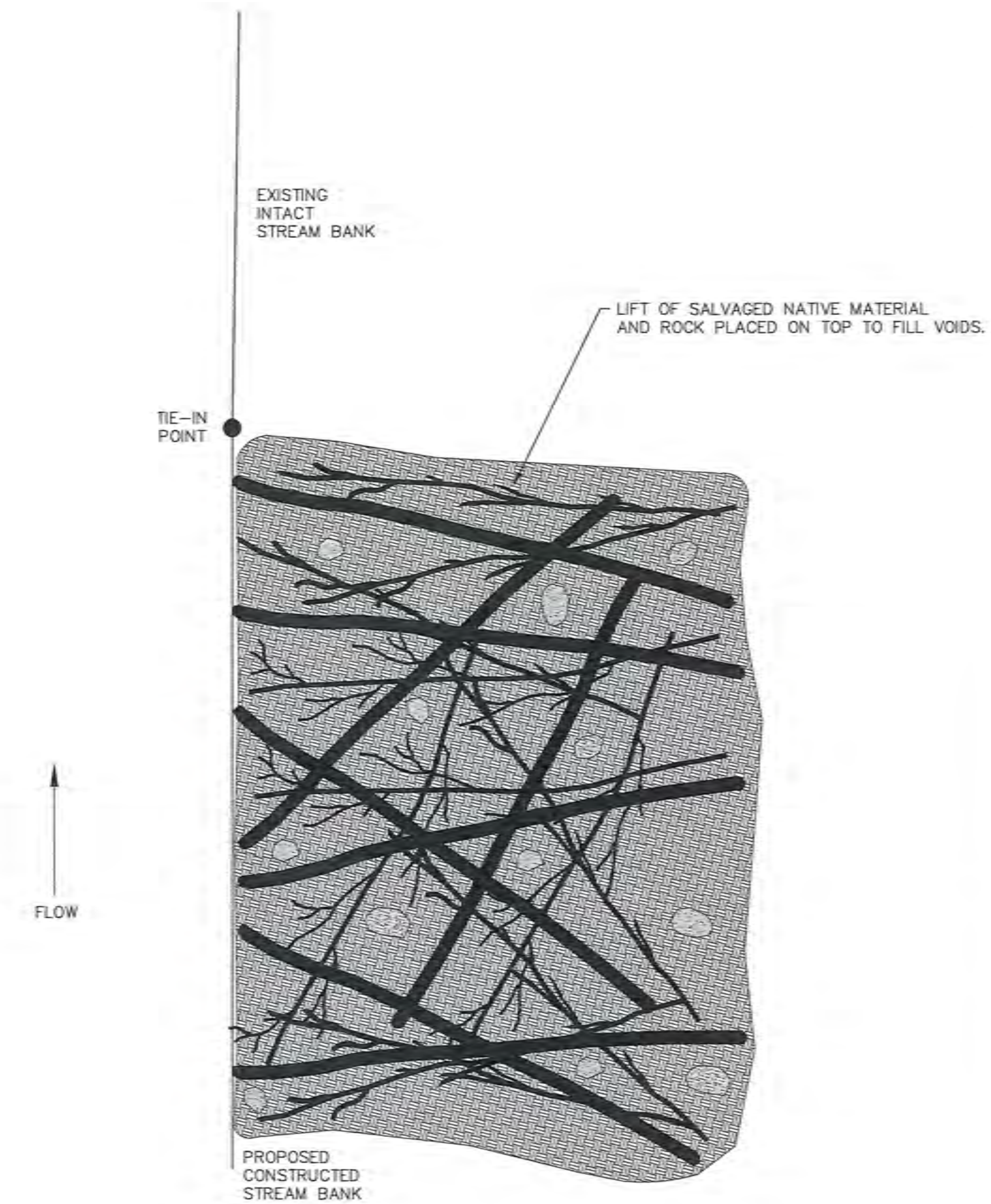
PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET C10 OF C12



1 / C11 WOODY DEBRIS BANK RECONSTRUCTION

NTS



2 / C11 WOODY DEBRIS BANK RECONSTRUCTION

NTS

NOTES:

WOODY DEBRIS BANK RECONSTRUCTION CONSISTS OF CRISS-CROSSED WOODY DEBRIS AND SALVAGED IN-SITU SOIL MIXED WITH ROCK, TOPPED WITH VEGETATIVE MAT.

WOODY DEBRIS CONSTRUCTION SEQUENCE

1. DETERMINE CONSTRUCTED STREAM BANK AND EXISTING STREAM BANK TIE-IN POINT.
2. EXCAVATE 4 FOOT MINIMUM WIDTH BENCH. DO NOT DISTURB EXISTING INTACT EXISTING STREAMBANKS OUTSIDE OF TIE-IN POINT.
3. PLACE WOODY DEBRIS ON BENCH AT RANDOM ANGLES IN 12 INCH LIFT. DO NOT PLACE PARALLEL TO FLOW. PLACE ENDS AT INTENDED BANK LINE.
4. ADD SALVAGED NATIVE MATERIAL WITH 6 INCHES TO 12 INCHES ROCK TO FILL VOIDS. TAMP TO COMPACT.
5. REPEAT STEPS 3-4 UNTIL 12 INCHES BELOW FINAL TOP OF BANK ELEVATION.
6. TOP WOODY DEBRIS WITH 12 INCH VEGETATIVE MAT.

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CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY - COP 1
WOODY DEBRIS DETAILS

CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET C11 OF C12

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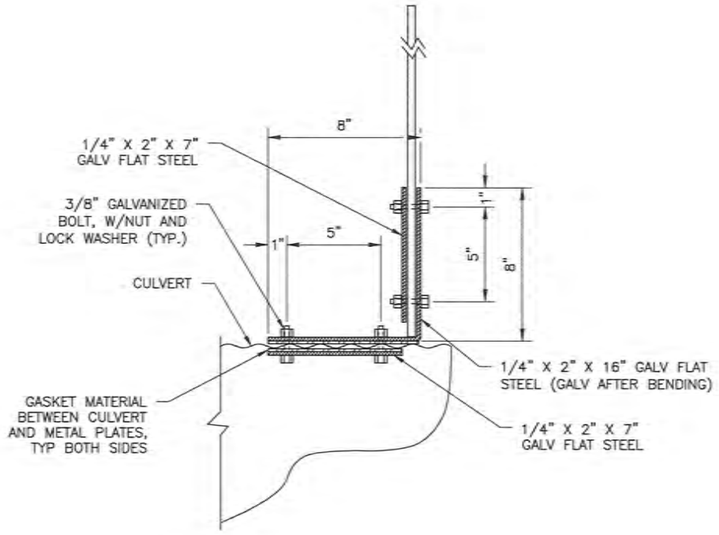
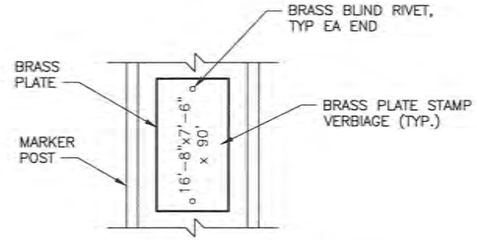
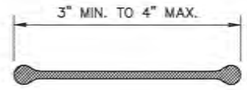


2 / C12 BRACKET DETAIL
NTS

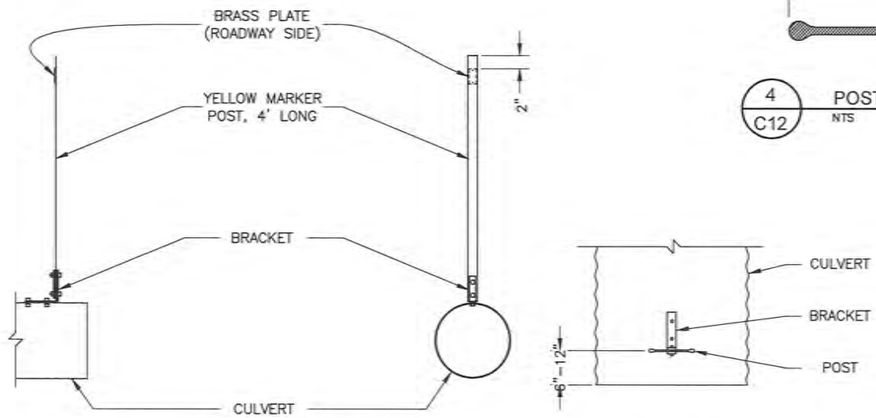


STAMP STATION AND PIPE SIZE, USING 3/8" HIGH MINIMUM LETTERS INTO A 2" X 4" X 0.064" THICK BRASS PLATE. FASTEN PLATE TO THE SIDE FACING THE ROADWAY WITH TWO 1/8" BRASS BLIND RIVETS.

3 / C12 BRASS PLATE DETAIL
NTS



4 / C12 POST CROSS SECTION
NTS



1 / C12 CULVERT MARKER POST DETAIL
NTS

NOTES:

1. MARKER POSTS ARE TO BE INSTALLED ON ALL PROJECT CULVERTS.
2. DRILL ALL BOLT HOLES. COAT HOLES WITH ZINC RICH PAINT. FLAME CUTTING SHALL NOT BE PERMITTED.
3. GASKET MATERIAL SHALL BE PLACED BETWEEN DISSIMILAR METALS. GASKET MATERIAL SHALL BE APPROVED PRIOR TO INSTALLATION.

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
SHERIDAN RIVER TRIBUTARY – COP 1
CULVERT MARKERS
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET
C12 OF C12

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2023

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 1 and 33 (Fish Passage Improvements at Sheridan River Tributary and Black Hole Creek)

VII

Plans (Cop 33: 11 pages)

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LOCATION MAP

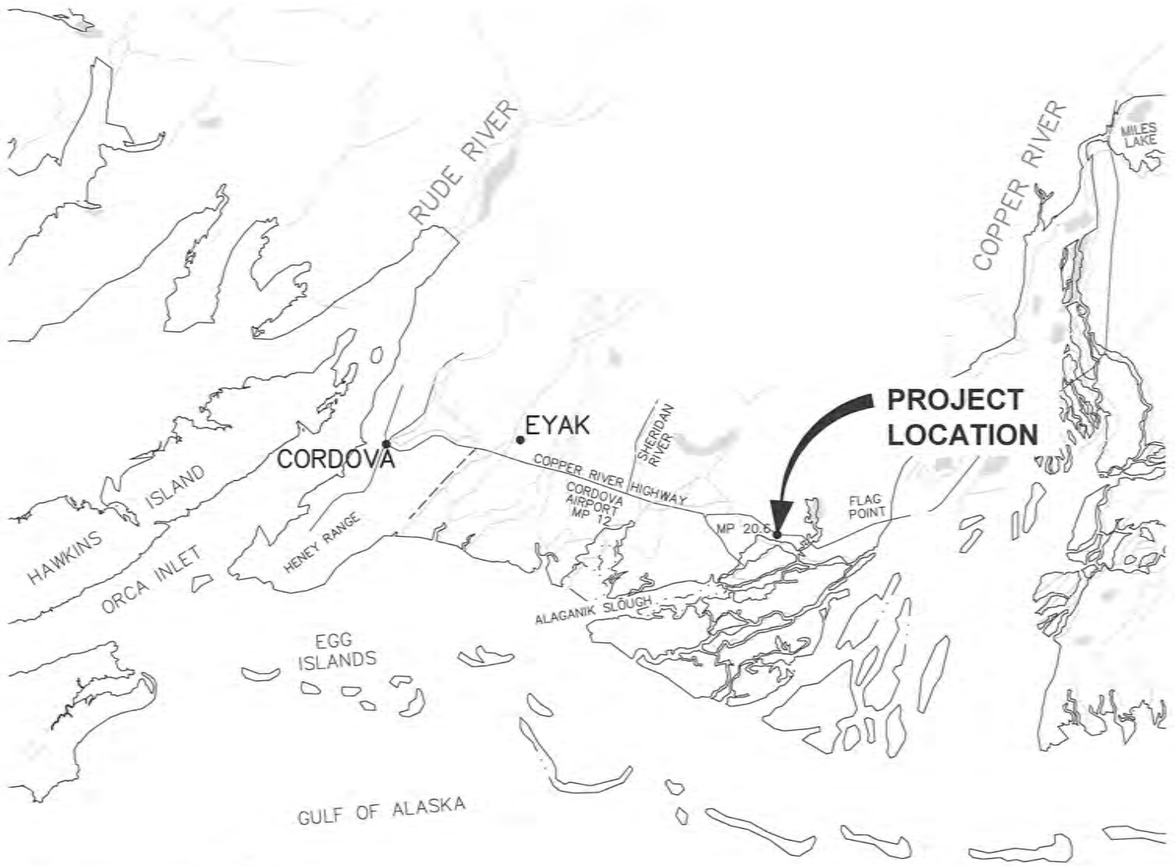
Contract Drawings For

CORDOVA FISH PASSAGE IMPROVEMENT PROJECTS
COPPER RIVER HIGHWAY - MP 20.6
BLACK HOLE CREEK - COP 33
U.S. FISH AND WILDLIFE SERVICE

SECTION 32, TOWNSHIP 16 SOUTH, RANGE 1 EAST, COPPER RIVER MERIDIAN, ALASKA
OCTOBER 2022

PROJECT LOCATION		
ADF&G SITE NO.	CRWP ID	COPPER RIVER HWY MP
20100499	COP 33	20.6

DESIGN DESIGNATIONS	
AADT 2020	170



VICINITY MAP
NTS

DRAWING INDEX

PREPARED BY: DOWL

ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED	LUMP SUM
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	77	LINEAR FOOT
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	1760	CUBIC YARD
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	1650	CUBIC YARD
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	440	CUBIC YARD
206.0001.0000	FILTER BLANKET	LUMP SUM	13	CUBIC YARD
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	144	CUBIC YARD
602.0005.0000	ASSEMBLE AND INSTALL STRUCTURAL PLATE ALUMINUM ARCH CULVERT, 18'-0" SPAN, 11'-4" RISE	LUMP SUM	88	LINEAR FOOT
611.0003.0001	RIPRAP, CLASS I	LUMP SUM	231	CUBIC YARD
611.0003.0002	RIPRAP, CLASS II	LUMP SUM	220	CUBIC YARD
613.0002.0000	CULVERT MARKER POST	LUMP SUM	2	EACH
618.0005.0000	SEEDING	LUMP SUM	25	POUND
620.0003.0000	TOPSOIL (4")	LUMP SUM	1340	SQUARE YARD
630.0003.0002	GEOTEXTILE, REINFORCEMENT, TYPE 2	LUMP SUM	484	SQUARE YARD
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	LUMP SUM
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0014.0000	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED	LUMP SUM
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	LUMP SUM
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED	LUMP SUM
690.2001.0000	WATERWAY BED FILL	LUMP SUM	477	CUBIC YARD
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED	LUMP SUM

NOTES:

1. ESTIMATE OF QUANTITIES ARE FOR INFORMATION ONLY AND CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES.
2. EXCAVATION AND BACKFILL REQUIRED FOR STREAM DIVERSION AS SHOWN ON SHEET C9 IS SUBSIDIARY TO PAY ITEM 672.0001.0000 STREAM DIVERSION & DEWATERING.
3. APPROXIMATELY 1,345 CY ESTIMATED FOR EXCAVATION AND BACKFILL FOR STREAM DIVERSION AS SHOWN ON SHEET C9.
4. TIE-IN AT STA "CRH" 2+86.2 ASSUMES STREAM DIVERSION CHANNEL AS SHOWN ON SHEET C9.
5. AGGREGATE SURFACE COURSE, GRADING E-1 FOR STREAM DIVERSION WILL BE PAID UNDER SECTION 301.
6. REFER TO SPECIFICATION SECTION 690 FOR WATERWAY BED FILL GRADATION.

ABBREVIATIONS

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ADF&G	ALASKA DEPARTMENT OF FISH AND GAME
ALCAP	ALUMINUM CAP
AVASP	AS VERTICAL AS SAFELY POSSIBLE
BFW	BANKFULL WIDTH
BHC	BLACK HOLE CREEK
BOF	BOTTOM OF FOOTING
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CRH	COPPER RIVER HIGHWAY
CRWP	COPPER RIVER WATERSHED PROJECT
ELEV	ELEVATION
ESCP	EROSION AND SEDIMENT CONTROL PLAN
HW/D	HEADWATER TO DEPTH RATIO
INV	INVERT ELEVATION
MIN	MINIMUM
MP	MILEPOST
NTS	NOT TO SCALE
OHW	ORDINARY HIGH WATER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
Q	FLOW
ROW	RIGHT-OF-WAY
SPP	STRUCTURAL PLATE PIPE
STA	STATION
TYP	TYPICAL
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE
VAP	VERTICAL ADJUSTMENT POTENTIAL

TABLE 1

COARSE MATERIAL: RIPRAP, CLASS I

APPROX. SIZE	MASS (LBS)	% PASSING
10"	50	100
8"	25	50

TABLE 2

COARSE MATERIAL: RIPRAP, CLASS II

APPROX. SIZE	MASS (LBS)	% PASSING
20"	400	100
16"	200	50

GENERAL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL SITE FEATURES. IF THE CONTRACTOR DISCOVERS CONDITIONS OTHER THAN THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE.
2. COORDINATE CONSTRUCTION STAGING AND MOBILIZATION AREAS AND ACTIVITIES WITH OWNER'S REPRESENTATIVE. COORDINATION WITH DOT&PF LOCAL M&O IS REQUIRED FOR CONCURRENCE.
3. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT.
4. EXERCISE CAUTION AND COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS FOR WORKING IN CONFINED AREAS.
5. STATIONING IS ALONG CENTERLINE OF STREAM OR ROADWAY.
6. VERIFY ELEVATIONS OF ALL PROPOSED STRUCTURES PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES FROM PLANS IMMEDIATELY TO OWNER'S REPRESENTATIVE.
7. CULVERT DESIGN LOAD: AASHTO LOADING HL-93, MINIMUM SOIL BEARING CAPACITY: 3,900 PSF.
8. EXCAVATION AND COMPACTION:
   A. REMOVE AND DISPOSE OF ALL ORGANIC OR OVERSATURATED SOFT MATERIAL, WHICH CANNOT BE COMPACTED.
   B. BACKFILL SHALL BE PLACED AND COMPACTED WITH CARE AND SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY ON BOTH SIDES OF PIPE. MATERIAL TO BE COMPACTED TO 95% MAXIMUM DENSITY.
   C. PLACE FILL IN LIFTS OF MAXIMUM DEPTH OF 8-INCHES PER SPECIFICATION SECTION 203-3.05.
9. CULVERT INSTALLATION:
   A. CULVERT JOINTS SHALL NOT LEAK.
   B. CULVERT INFILL MATERIAL SHALL BE INSTALLED IN PIPE ACCORDING TO PLANS. MANUAL INSTALLATION IS REQUIRED.
10. ALL VEGETATION IN THE AREAS NOT AFFECTED BY WORK SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR. RESEED ALL DISTURBED AREAS.
11. TWO CULVERT MARKERS WILL BE INSTALLED AT EACH CULVERT AS SHOWN ON SHEET C11.
12. STRAW WATTLES ARE PROHIBITED ON THE PROJECT SITE.

LEGEND

DESCRIPTION

- APPROXIMATE RIGHT-OF-WAY
- CONTROL POINT
- ORDINARY HIGH WATER
- EXISTING CULVERT
- EDGE OF PAVEMENT
- EDGE OF GRAVEL/SHOULDER
- EDGE OF VEGETATION
- EXISTING THALWEG
- TOP OF BANK
- TOE OF SLOPE
- PROPOSED CULVERT
- WATERWAY BED FILL
- WATERWAY BANK REVEGETATION AND PROTECTION
- RIPRAP
- AGGREGATE SURFACE COURSE, E-1
- SELECTED MATERIAL, TYPE A
- SUBBASE, GRADING F
- SEED
- BULK BAG COFFERDAM
- WETLAND PLUGS

REV	DATE	REVISIONS DESCRIPTION	BY

STATE OF ALASKA REGISTERED PROFESSIONAL ENGINEER

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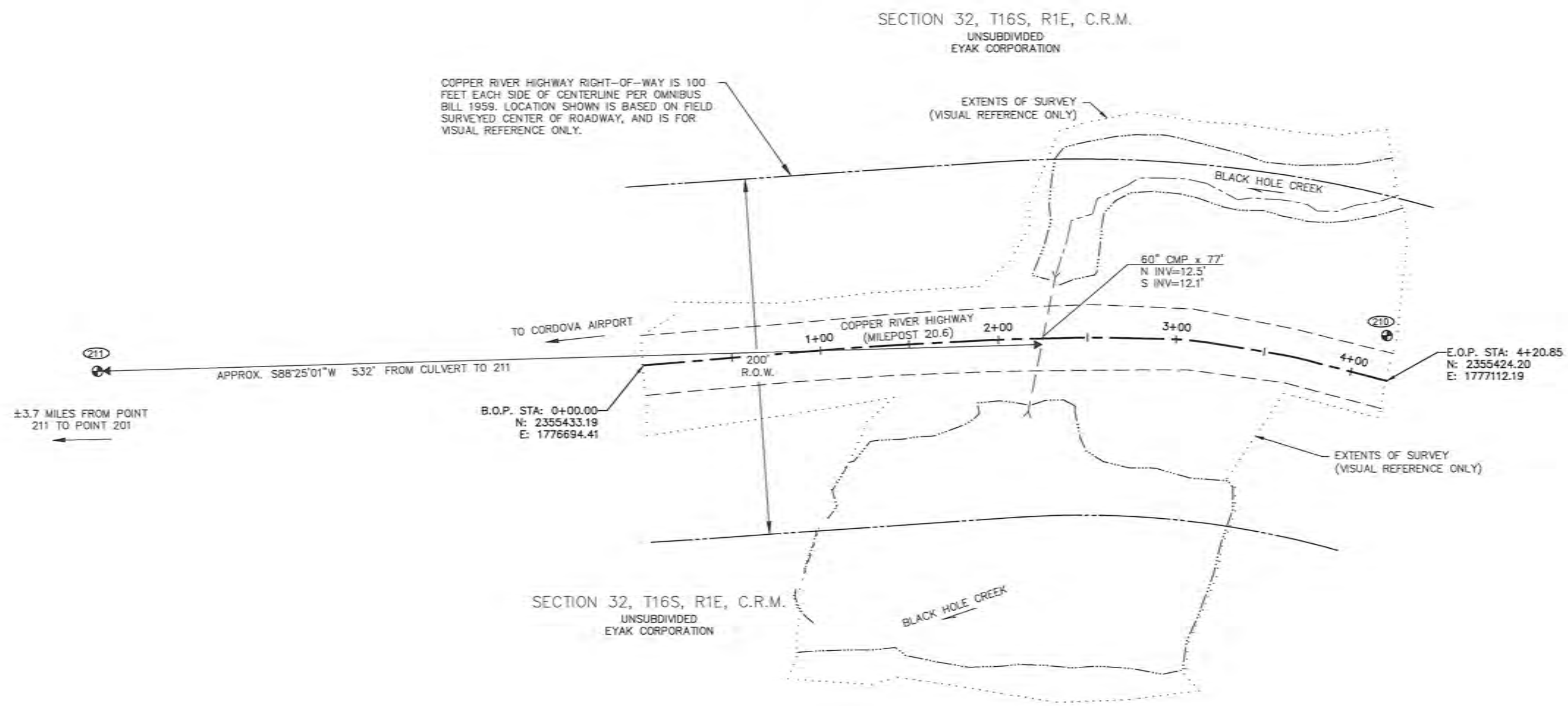
CORDOVA FISH PASSAGE IMPROVEMENTS
BLACK HOLE CREEK – COP 33
GENERAL NOTES AND QUANTITIES
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET C2 OF C11

HORIZONTAL & VERTICAL CONTROL MONUMENTS								
POINT	STATION	OFFSET	NAD83(2011) GEODETIC COORDINATES LATITUDE	NAD83(2011) GEODETIC COORDINATES LONGITUDE	ASPZ 3 NORTHING	ASPZ 3 EASTING	NAVD 88 ELEVATION	DESCRIPTION
211	N/A	N/A	N 60° 26' 43.1152"	W 145° 14' 49.3902"	2355430.2040	1776386.8060	22.83	CTRL /SETN.GPSS.RPC-DOWL-11
*201	N/A	N/A	N 60° 27' 54.7702"	W 145° 20' 51.3061"	2362511.5300	1758160.6700	62.78	ALCAP
210	4+14.73	24.74' LT	N 60° 26' 43.2251"	W 145° 14' 34.9211"	2355449.6830	1777112.4550	19.04	CTRL /SETN.GPSS.RPC-DOWL-10

* NOT SHOWN HEREON



LEGEND

⊘	SURVEY MONUMENT
>— — —<	CULVERT
— — — —	EDGE OF GRAVEL
——··——	EDGE OF WATER
—·—·—	CENTERLINE CHANNEL
——·——	RIGHT-OF-WAY LINE
—+— 10+00	PROJECT ALIGNMENT

SURVEY CONTROL NOTES

HORIZONTAL CONTROL – ASPC ZONE 3, NAD83(2011)
COORDINATES ARE ALASKA STATE PLANE (ASPC) ZONE 3, NAD83(2011) IN U.S. SURVEY FEET AND ARE BASED ON AN OPUS SOLUTION ON MONUMENT 201. THE BASIS OF COORDINATES IS LOCAL SURVEY CONTROL POINT 201, A 2" ALUMINUM CAP STAMPED "2019 DOWL CONTROL" SET IN THE EASTERN SHOULDER OF ALAGANIK SLOUGH ROAD, HAVING AN OPUS DERIVED ASPC ZONE 3 VALUE OF N2,362,511.53 AND E1,758,160.67. BEARINGS ARE LOCAL PLANE BEARINGS BASED ON GPS OBSERVATIONS AT LOCAL SURVEY CONTROL POINT 201.

VERTICAL CONTROL – NAVD88
ELEVATIONS ARE NAVD-88 GEOID12B ORTHOMETRIC HEIGHTS IN U.S. SURVEY FEET AND ARE BASED ON AN OPUS SOLUTION ON CONTROL POINT 201. THE BASIS OF ELEVATIONS IS LOCAL SURVEY CONTROL POINT 201, A 2" ALUMINUM CAP STAMPED "2019 DOWL CONTROL" SET IN THE EASTERN SHOULDER OF ALAGANIK SLOUGH ROAD, HAVING AN OPUS DERIVED GEOID12B ELEVATION OF 62.78 FEET.

REV	DATE	REVISIONS DESCRIPTION	BY

STATE OF ALASKA 49TH A. WILLIAM STOLL LS 12041 REGISTERED PROFESSIONAL LAND SURVEYOR 10/31/22

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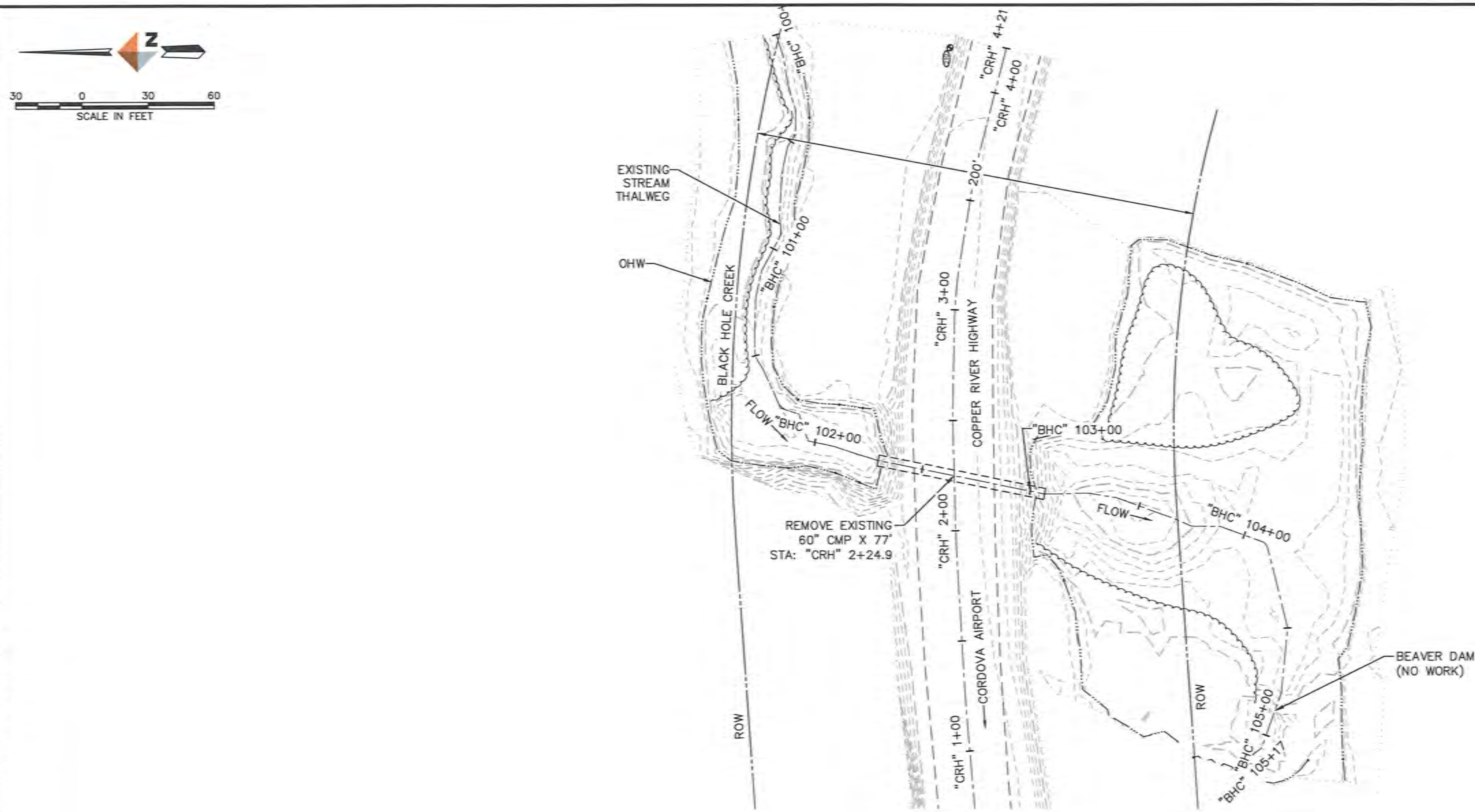
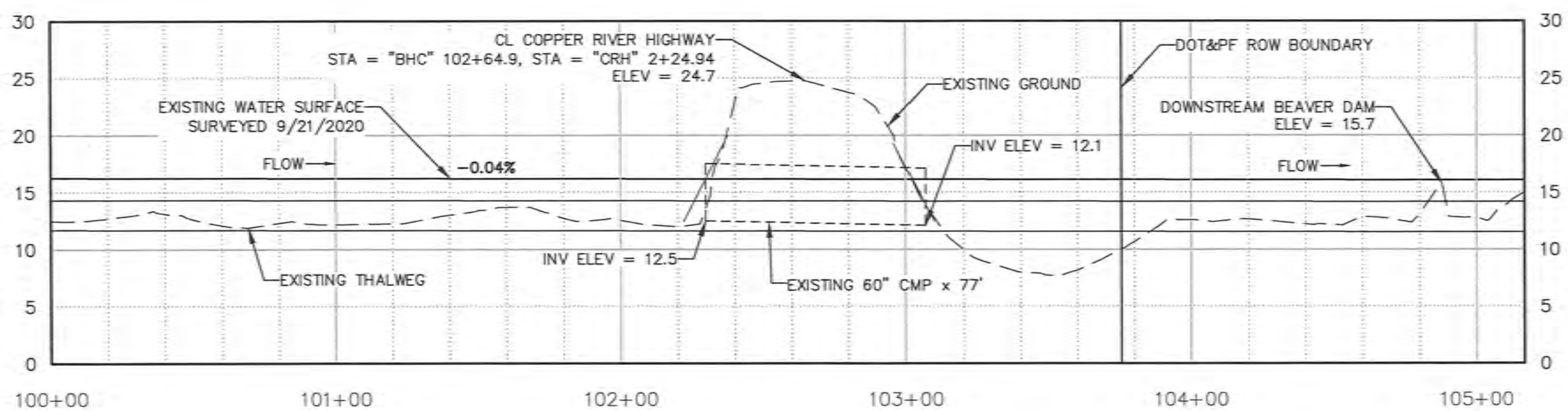
CORDOVA FISH PASSAGE IMPROVEMENTS
BLACK HOLE CREEK – COP 33
SURVEY CONTROL

SECTION 32, T16S, R1E, COPPER RIVER MERIDIAN
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

SHEET
C3 OF C11





CORDOVA FISH PASSAGE IMPROVEMENTS
BLACK HOLE CREEK – COP 33
EXISTING STREAM PLAN AND PROFILE

CORDOVA, ALASKA

REV	DATE	REVISIONS DESCRIPTION	BY

STATE OF ALASKA 49TH Bradley J. Melocik CE 11099 REGISTERED PROFESSIONAL ENGINEER 10/28/22

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PROJECT 1136.63248.01
DATE OCTOBER 2022

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SHEET C4 OF C11

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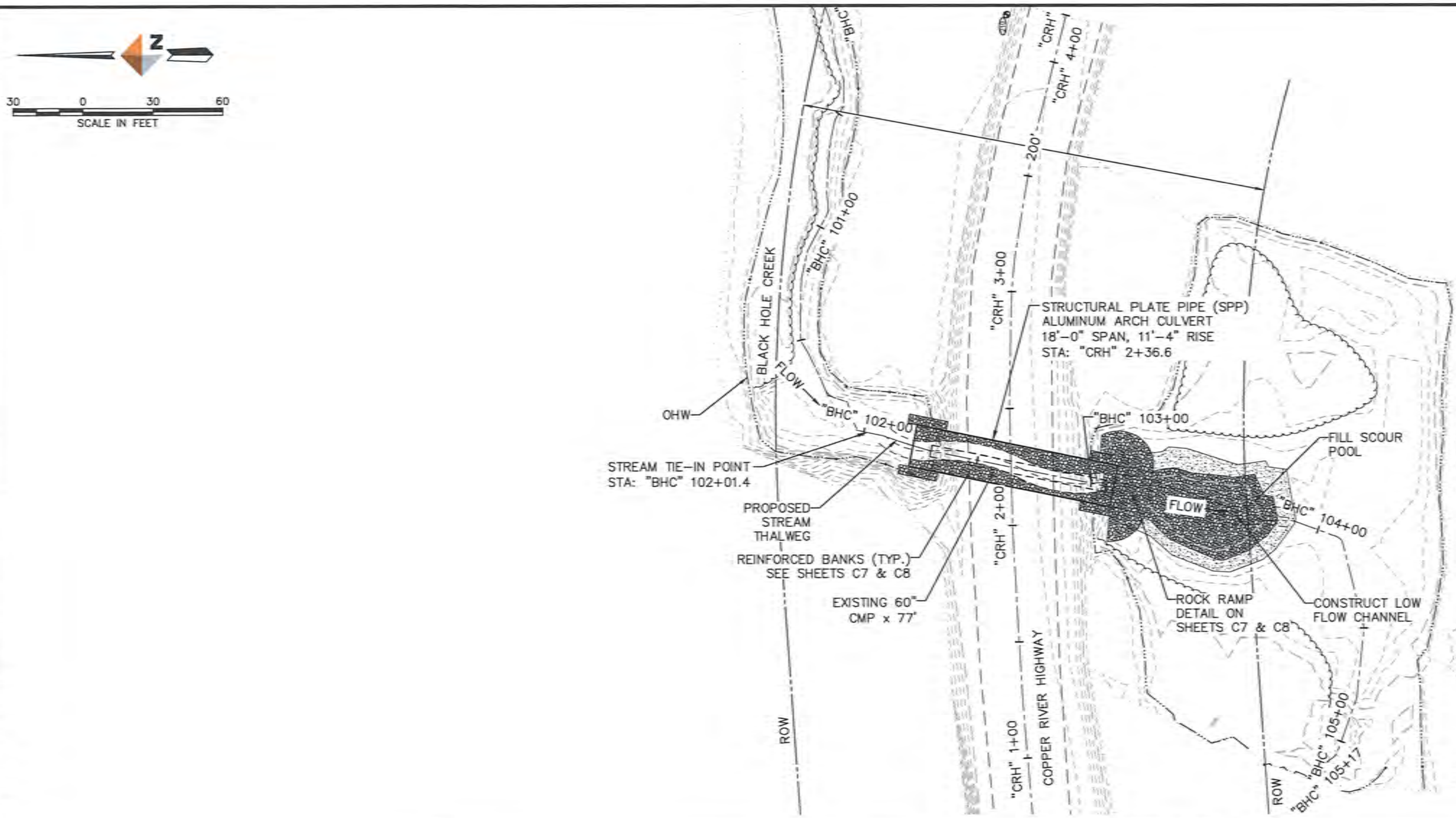

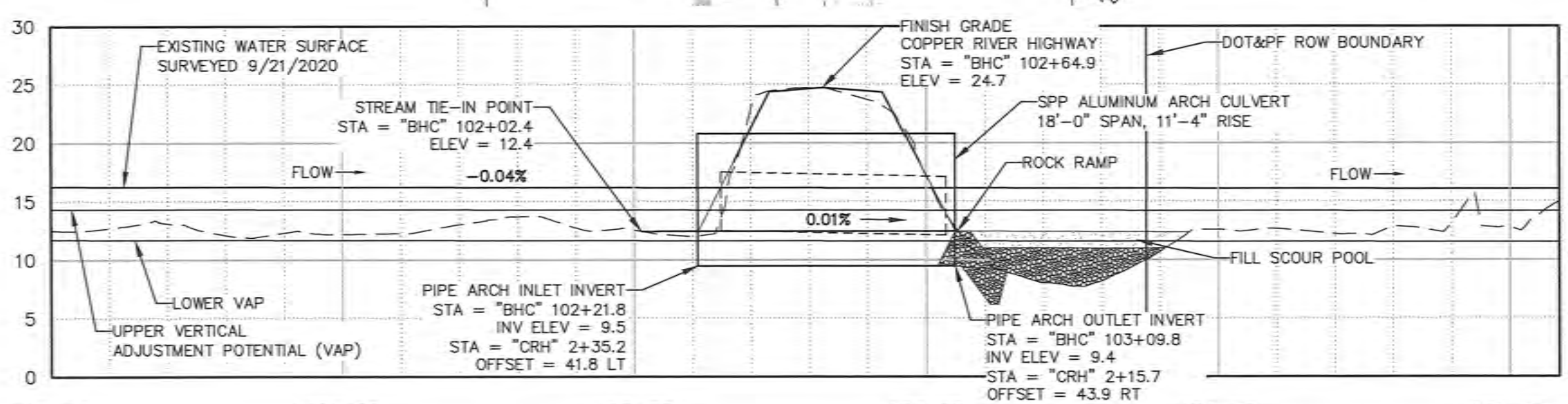

CULVERT COORDINATE TABLE				
SIZE	POINT	NORTHING	EASTING	ELEVATION
18'-0" SPAN X 11'-4" RISE ALUMINUM ARCH CULVERT	INLET INV.	2355490.21	1776928.05	9.50
	OUTLET INV.	2355404.07	1776910.60	9.40

CULVERT SUMMARY SCHEDULE	
SIZE	18'-0" SPAN X 11'-4" RISE ARCH CULVERT
LENGTH	88'
THICKNESS	0.125"
SLOPE	0.01%
CORRUGATION	9" X 2.5"
MATERIAL	ALUMINUM
LOADING	HL-93
"CRH" CL STATION	2+24.90

HYDROLOGIC & HYDRAULIC SUMMARY					
EXCEEDANCE PROBABILITY	RETURN PERIOD	DESIGN DISCHARGE	DESIGN HIGH WATER ELEVATION	REGULATORY FLOOD	HW/D
	(YEAR)	(CFS)	(FT)		
50%	2	267	16.85	N/A	0.53
2%	50	522	18.95	N/A	0.78
1%	100	566	19.28	N/A	0.82
DRAINAGE AREA = 1.2 SQUARE MILES					
ANTICIPATED ADDITIONAL BACKWATER = 0 FEET					
ROADWAY OVERTOPPING Q = 1,335 CFS					

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CORDOVA FISH PASSAGE IMPROVEMENTS
BLACK HOLE CREEK - COP 33
STREAM PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63248.01
DATE OCTOBER 2022

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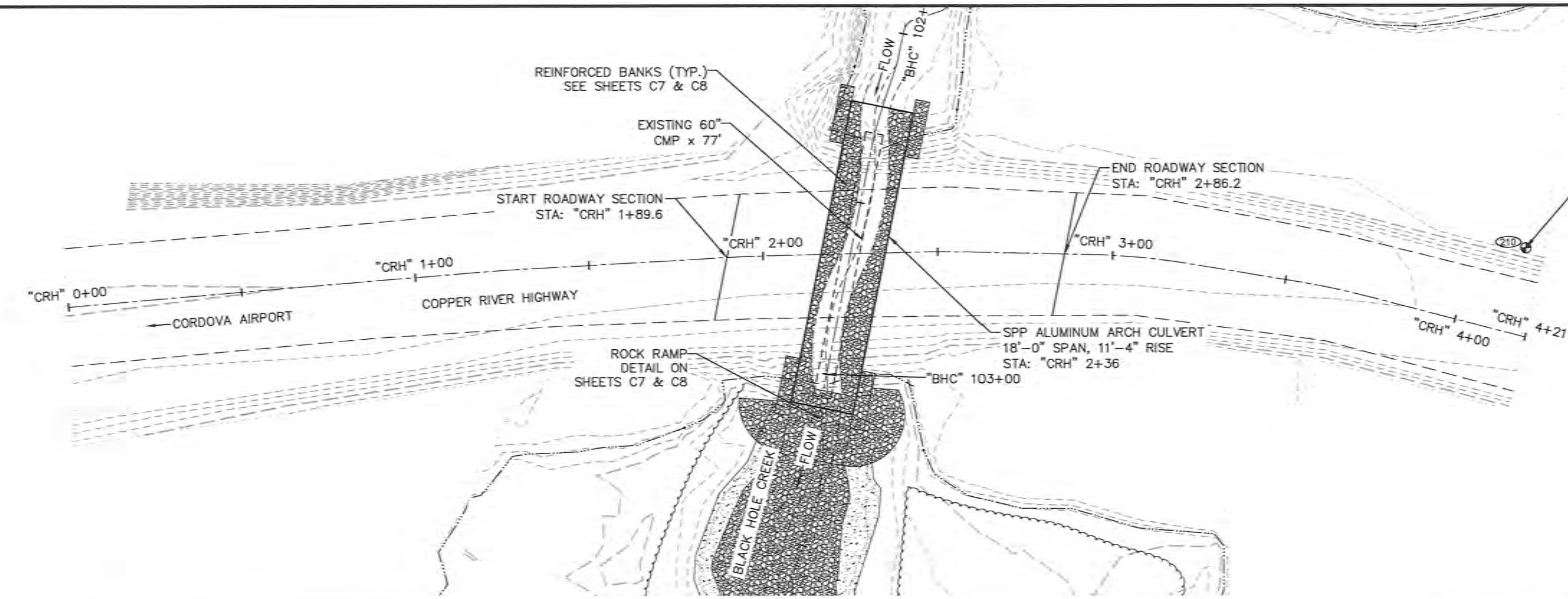
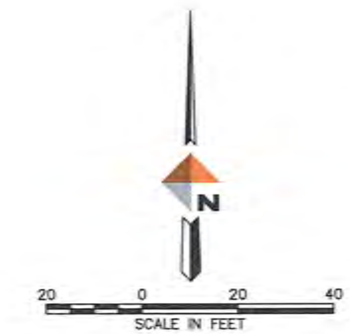
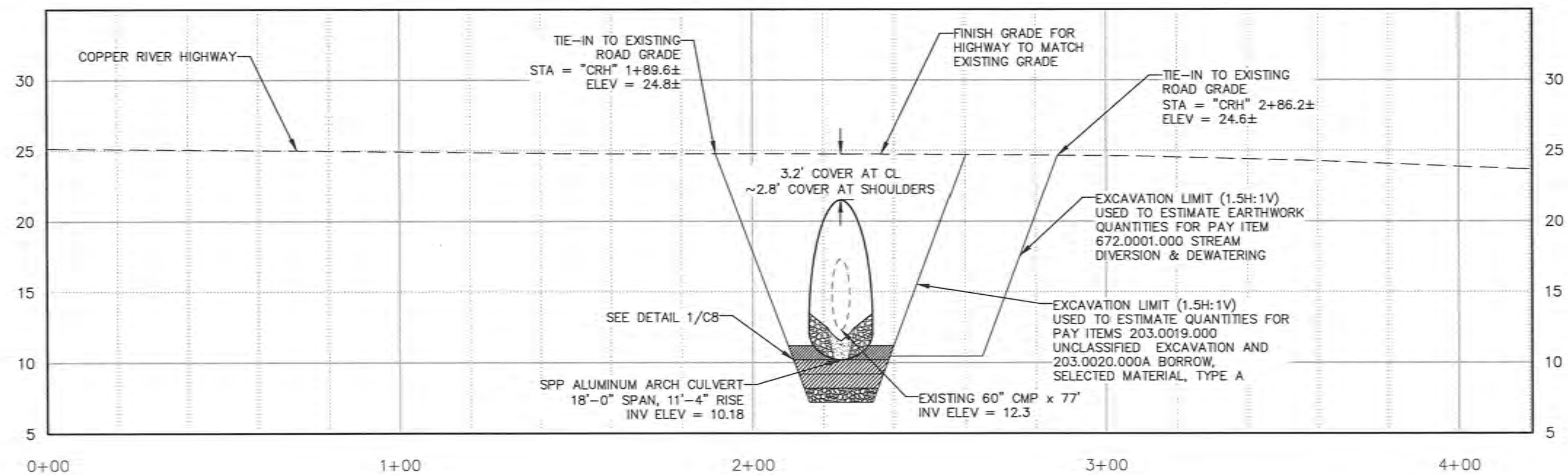
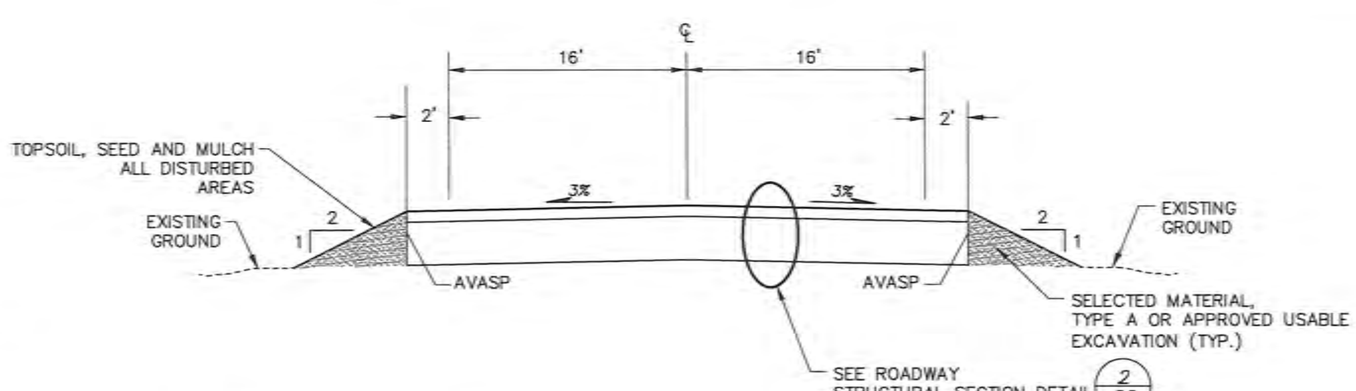
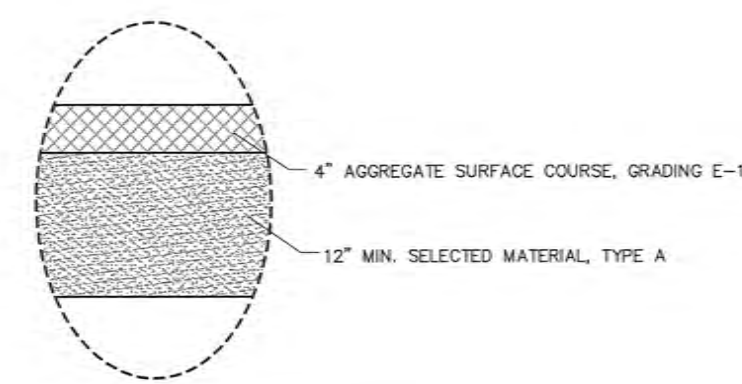








1/C6 ROADWAY SECTION
STA "CRH" 1+89.6 TO "CRH" 2+86.2



2/C6 ROADWAY STRUCTURAL SECTION
NTS

NOTES:

1. TRANSITION ROADWAY SECTION TO EXISTING WIDTH WITHIN 10 FEET OF WORK LIMITS.
2. TRANSITION SECTION SHALL BE SUBSIDIARY TO 203 AND 301 PAY ITEMS.

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BLACK HOLE CREEK – COP 33
ROADWAY PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63248.01
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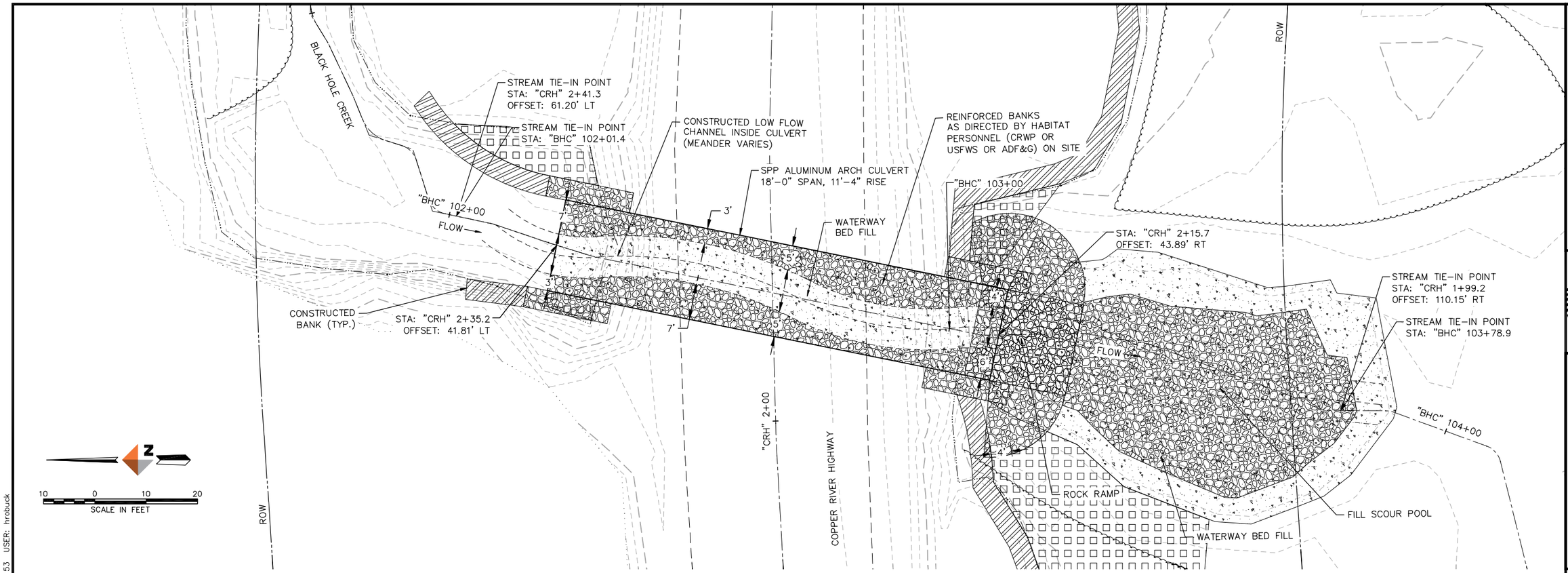
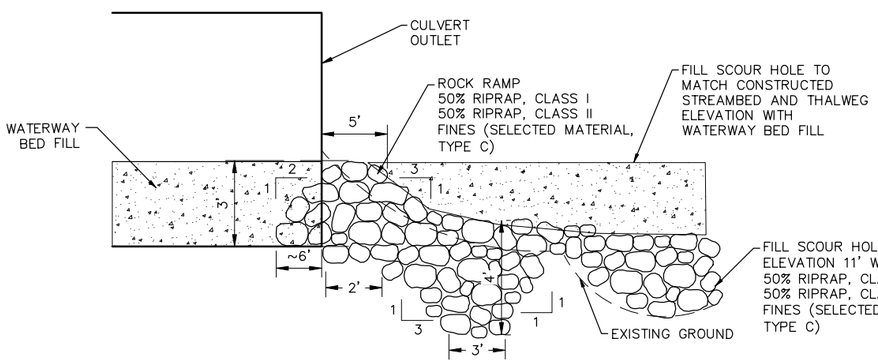


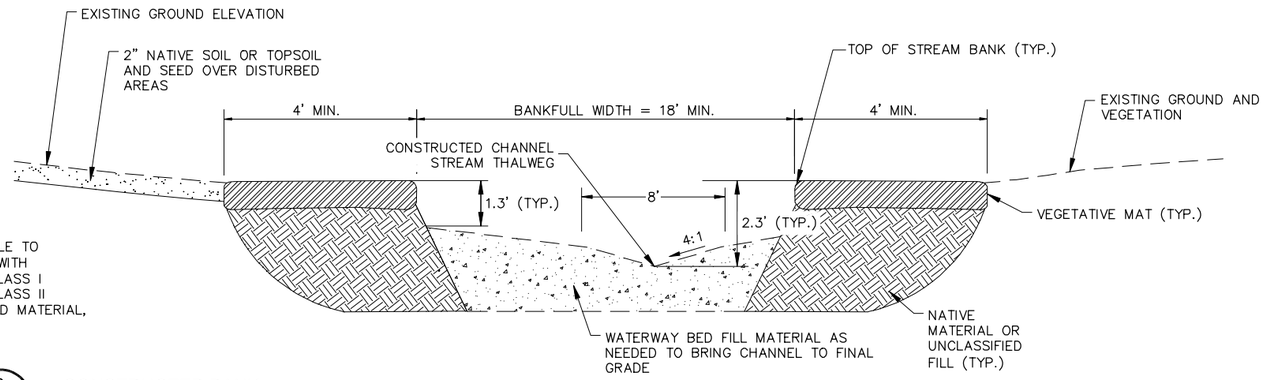
1 C7 STREAM DESIGN DETAIL - PLAN VIEW



2 C7 ROCK RAMP
NTS

NOTES:

1. MIX RIPRAP, CLASS II AND RIPRAP, CLASS I WITH FINES (SELECTED MATERIAL, TYPE C) FOR ROCK RAMP TO ACHIEVE A WELL GRADED MIXTURE.
2. CONSTRUCT LOW FLOW CHANNEL IN ROCK RAMP TO MATCH CONSTRUCTED LOW FLOW CHANNEL SHOWN ON DETAIL 4/C8.



3 C7 CONSTRUCTED BANK
NTS

NOTES:

1. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA COORDINATED WITH CRWP AND USFS.
2. CONSTRUCTED CHANNEL BED TO HAVE MINIMUM THICKNESS OF 2 FEET OVER FINE SOILS, DISSIMILAR TO INFILL MATERIAL. USE ONLY DEPTH OF MATERIAL NECESSARY WHEN PLACING INFILL MATERIAL ON INSITU NATIVE BED MATERIAL TO BRING CHANNEL UP TO GRADE. REFER TO SPECIFICATION SECTION 690–2.01 FOR WATERWAY BED FILL GRADATION.
3. PLACEMENT OF WATERWAY BED FILL MATERIAL FOR CONSTRUCTED BANK DETAIL IS SUBSIDIARY TO PAY ITEM 690.2001.0000.

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BLACK HOLE CREEK – COP 33
STREAM DESIGN DETAILS
CORDOVA, ALASKA

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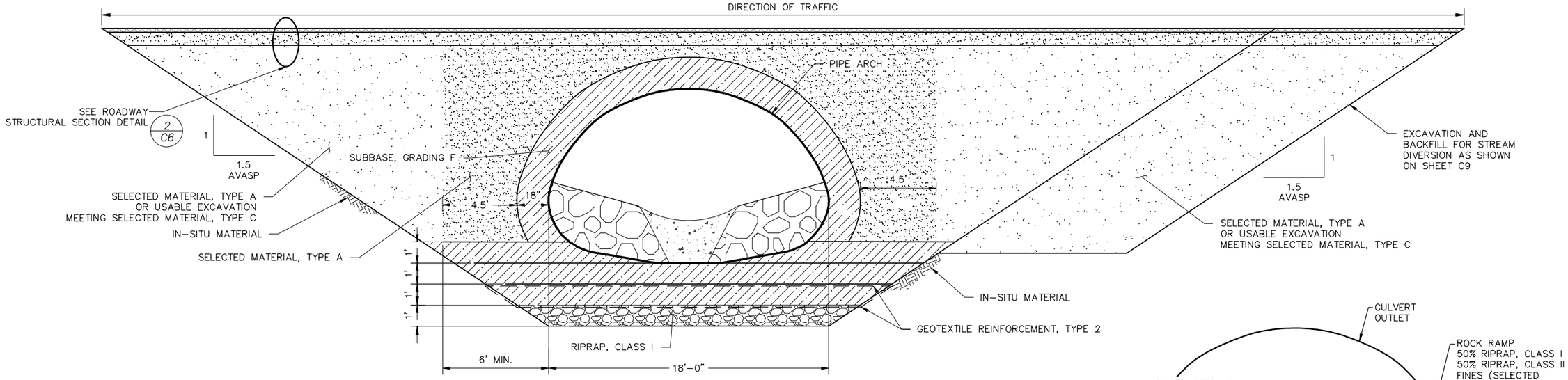
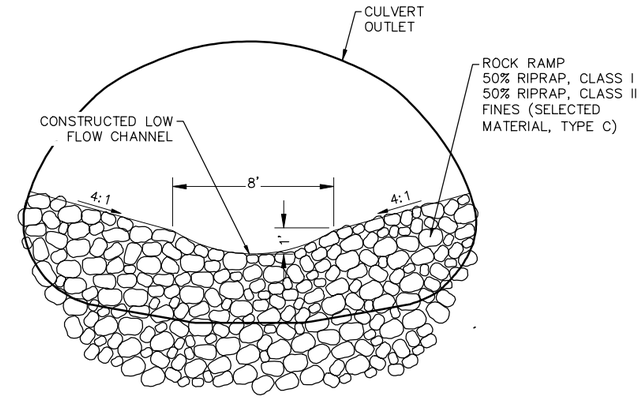


1 C8 **TYPICAL CULVERT TRENCH SECTION**

NTS

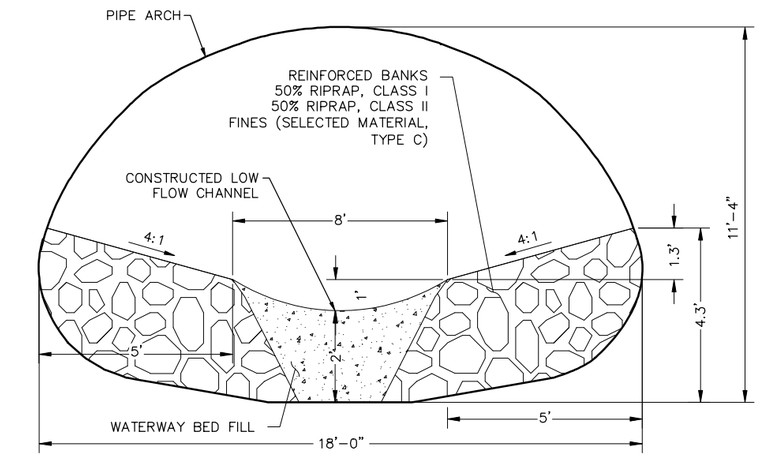
NOTES:

1. GEOTEXTILE REINFORCEMENT, TYPE 2 SHALL BE PLACED BETWEEN RIPRAP, CLASS I AND SUBBASE, GRADING F, AND PLACED BETWEEN EACH ONE-FOOT LAYER OF SUBBASE, GRADING F BENEATH CULVERT INVERT.
2. FOR QUANTITY ESTIMATION PURPOSES, NO USABLE EXCAVATION WAS ASSUMED AND EMBANKMENT QUANTITIES WERE CALCULATED USING SELECTED MATERIAL, TYPE A.



4 C8 **ROCK RAMP AT CULVERT OUTLET SECTION**

NTS

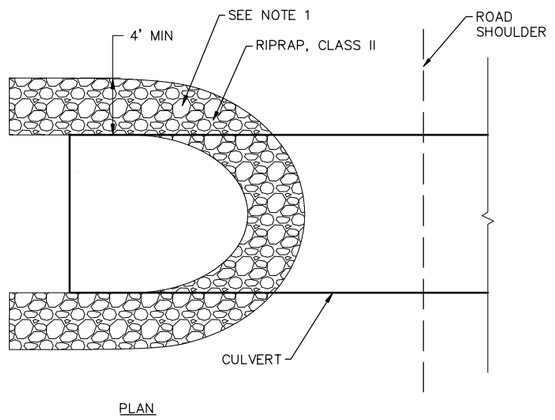


2 C8 **TYPICAL CULVERT INFILL SECTION**

NTS

NOTES:

1. MIX RIPRAP, CLASS II AND RIPRAP, CLASS I WITH FINES (SELECTED MATERIAL, TYPE C) FOR REINFORCED BANKS TO ACHIEVE A WELL GRADED MIXTURE.
2. FILL VOIDS IN RIPRAP FOR REINFORCED BANKS. MIX RIPRAP WITH FINES PRIOR TO PLACEMENT AND WASH FINES IN AFTER PLACEMENT.
3. PLACEMENT AND SHAPE OF REINFORCED BANKS TO BE COORDINATED WITH HABITAT PERSONNEL (CRWP OR USFWS OR ADF&G) ON SITE.



3 C8 **RIPRAP SLOPE PROTECTION SECTION**

NTS

NOTES:

1. FILL VOIDS IN RIPRAP SLOPE PROTECTION WITH SELECTED MATERIAL, TYPE A OR USABLE EXCAVATION MEETING SELECTED MATERIAL, TYPE C.
2. PLACE SALVAGED ORGANIC TOPSOIL AND SEED ON SURFACE OF PLACED RIPRAP PER SPECIFICATION SECTIONS 611-3.01 AND 620-3.01.

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STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER Bradley M. Hetrick CE 11098 1/26/23

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CORDOVA FISH PASSAGE IMPROVEMENTS
BLACK HOLE CREEK – COP 33
STREAM SECTIONS AND DETAILS
CORDOVA, ALASKA

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ROADWAY DIVERSION NOTES:

1. REFER TO SPECIFICATIONS FOR ROAD CLOSURE AND TRAFFIC CONTROL INFORMATION.
2. DETOUR ROAD PLAN SHALL BE SUBMITTED BY CONTRACTOR FOR APPROVAL BY OWNER AND DOT&PF.

STREAM DIVERSION NOTES:

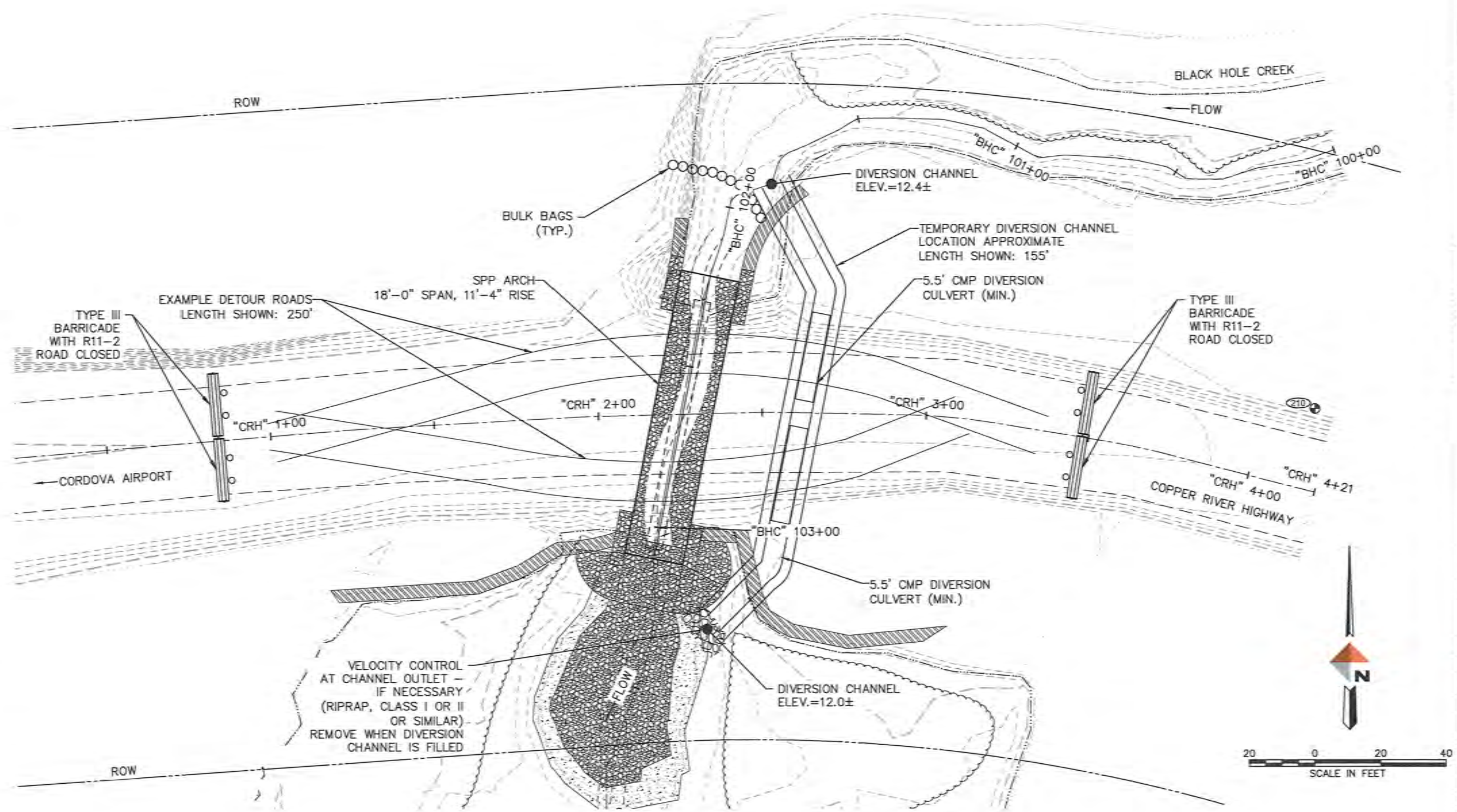
A COFFERDAM MADE OF SHEET PILE MAY BE NEEDED TO REDUCE GROUNDWATER FLOW INTO EXCAVATED AREA. TEMPORARY DIKES OR BERMS MAY BE USED TO ISOLATE THE WORK AREA FROM WATERS OF THE SURROUNDING AREA. THIS WORK MAY REQUIRE A DIVERSION OF STREAM WATER. THE DESIGNERS RECOGNIZE THAT DIFFERENT CONTRACTORS WILL HAVE VARIOUS APPROACHES FOR CONTROLLING WATER AND CONSTRUCTION SEQUENCING. THIS DIVERSION PLAN HAS BEEN DEVELOPED TO CHECK FOR CONSTRUCTABILITY AND AS A STARTING POINT FOR A CONTRACTOR-GENERATED PLAN. CONTRACTOR MUST SUBMIT DIVERSION PLANS TO ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION.

DIVERSION PLAN:

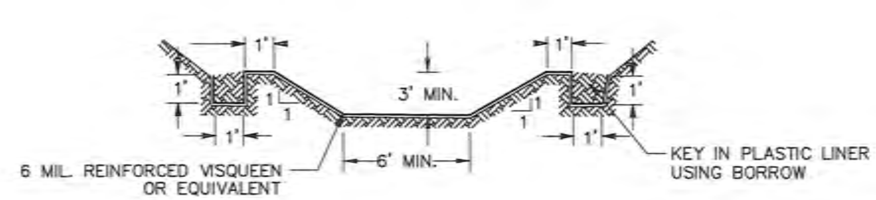
1. PLACE BARRICADES, SIGNS, AND TEMPORARY ROAD DETOUR IN COMPLIANCE WITH SPECIFICATIONS, ADOT&PF, AND MUTCD. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT IN AREA AND USING COPPER RIVER HIGHWAY FOR CONSTRUCTION ACCESS.
2. CONSTRUCT VISQUEEN LINED DIVERSION CHANNEL EAST OF THE EXISTING CROSSING LOCATION.
3. ONE 66" MINIMUM DIAMETER (OR LARGER) CULVERT CAN BE USED IN DIVERSION CHANNEL TO PROVIDE VEHICULAR ACCESS. CONSTRUCT DIVERSION CHANNEL BANKS TO BE MINIMUM 1' HIGHER THAN THE TOP OF THE DIVERSION PIPE, IF USED.
4. USE BULK BAGS (SUPERSACKS) TO DIVERT STREAM FLOW THROUGH DIVERSION CHANNEL. LOCATION OF DIVERSION CHANNEL IS APPROXIMATE AND SUBJECT TO SITE CONDITIONS.
5. EXCAVATE ROADWAY TO REMOVE EXISTING 60" CULVERT.
6. CONSTRUCT THE NEW ALUMINUM PIPE ARCH CULVERT.
7. INFILL CULVERT AND RECONSTRUCT CREEK CHANNEL AS SHOWN IN PLANS.
8. DIVERT CREEK FLOW THROUGH THE NEW ALUMINUM PIPE ARCH CULVERT.
9. FILL DIVERSION CHANNEL/IN COPPER RIVER HIGHWAY.
10. RECONSTRUCT CREEK CHANNEL AND BANKS AS SHOWN IN PLANS.
11. RECONSTRUCT COPPER RIVER HIGHWAY OVER THE NEWLY INSTALLED CULVERT.
12. RETURN VEHICULAR TRAFFIC TO COPPER RIVER HIGHWAY. REMOVE DETOUR AND FILL REMAINING PORTION OF DIVERSION CHANNEL.
13. STABILIZE AND REVEGETATE ALL REMAINING DISTURBED AREAS.

ESCP AND DEWATERING NOTES:

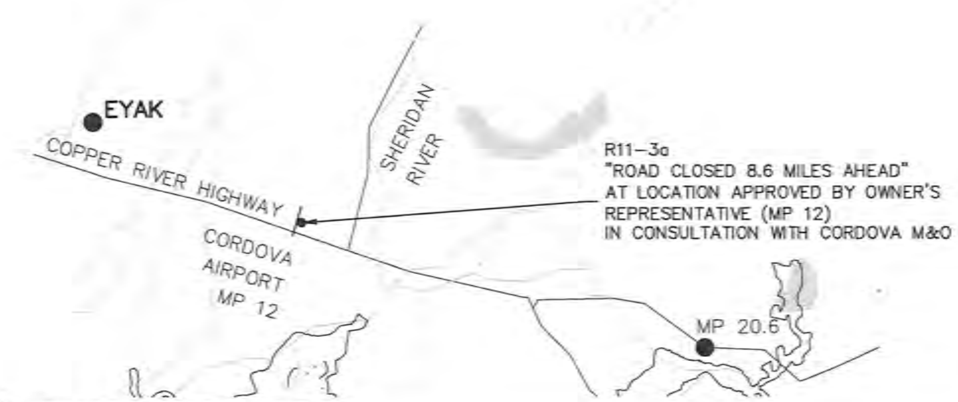
1. DEWATER TRENCH AND WORK AREA WITH PUMP HOSE IF REQUIRED.
2. ALL DISCHARGE POINTS REQUIRE PERMANENT OR TEMPORARY VELOCITY CONTROLS.
3. PROVIDE FOR SEDIMENT REMOVAL FOR ALL DEWATERING ACTIVITY PRIOR TO DISCHARGE FROM THE PROJECT INTO ANY WATER OF THE U.S.
4. PROVIDE SPARE (EXTRA) PUMPS FOR BOTH THE STREAM BYPASS PUMP AND DETWATERING PUMP.
5. EXISTING RIPARIAN VEGETATION SHOULD BE PROTECTED TO MINIMIZE DISTURBANCE.
6. SILT FENCING TO BE USED TO PREVENT DISTURBED SEDIMENT FROM ENTERING THE WATERBODY. ADJUST LOCATION AS NECESSARY AND AS DIRECTED BY THE ENGINEER DURING CONSTRUCTION.
7. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS. MAINTENANCE SHALL INCLUDE REMOVAL AND DISPOSAL OF ACCUMULATED SEDIMENT, CLEANING AND REPAIR OF DAMAGED SEDIMENT CONTROL DEVICES.
8. ALL DISTURBED GROUND CAPABLE OF SUPPORTING VEGETATION SHALL BE REVEGETATED FOR FINAL STABILIZATION. ALL AREAS NOT REVEGETATED SHALL BE 100% COVERED BY ROCK OR OTHER PERMANENT NON-ERODIBLE MATERIAL. FINAL STABILIZATION SHALL BE AS APPROVED BY THE ENGINEER.



1 / C9 ESCP, STREAM DIVERSION & ROADWAY DIVERSION PLAN



2 / C9 DIVERSION CHANNEL
NTS



3 / C9 TRAFFIC CONTROL SIGNS
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BLACK HOLE CREEK – COP 33
STREAM DIVERSION & TRAFFIC CONTROL PLAN
CORDOVA, ALASKA

PROJECT 1136.63248.01
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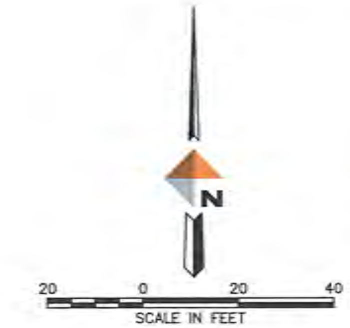
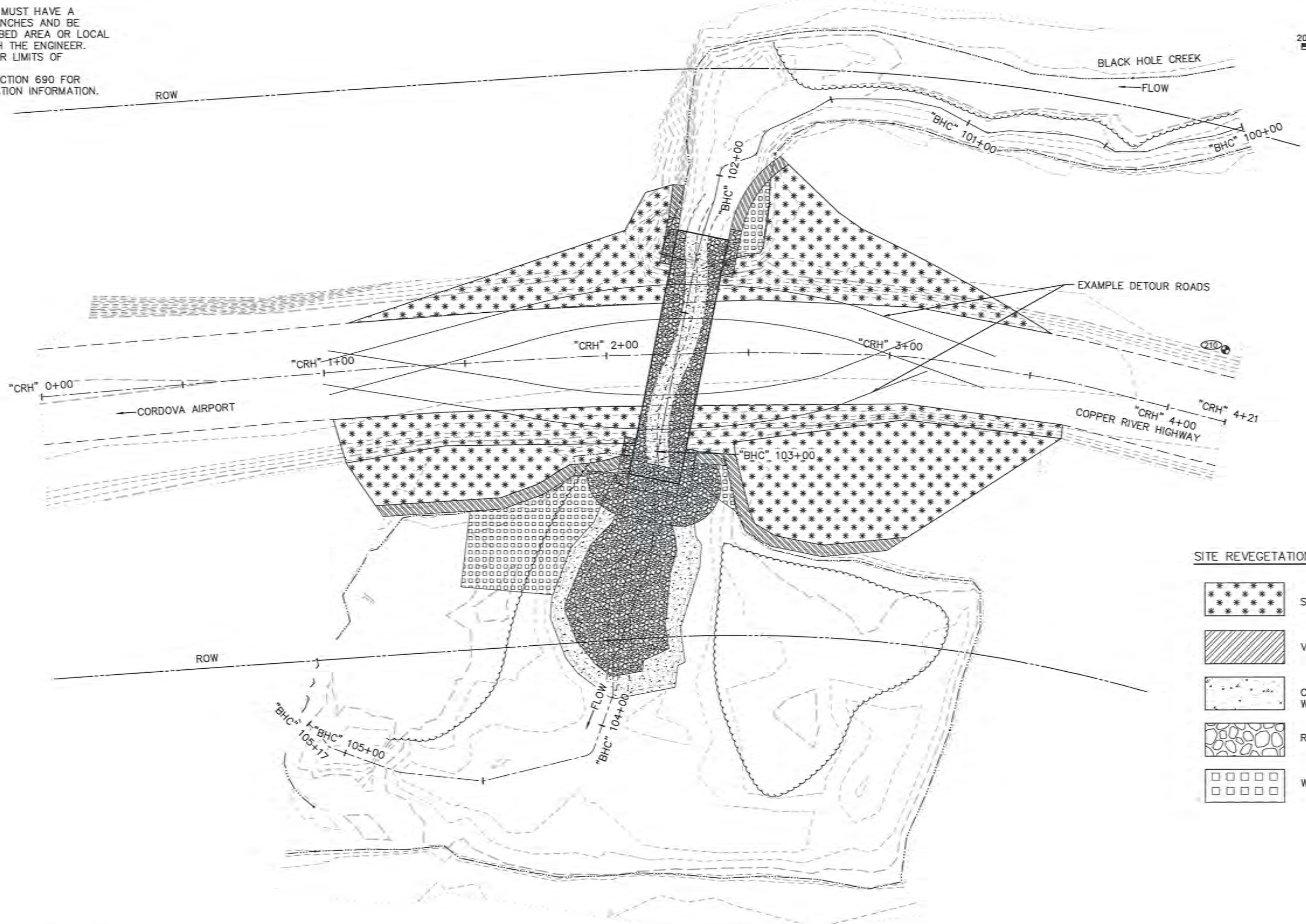
NOTES:

1. VEGETATIVE MAT OR WETLAND PLUGS SHALL BE PLACED ON ALL DISTURBED AREAS OUTSIDE OF THE SEEDING AREAS.
2. VEGETATIVE MAT AND WETLAND PLUG LOCATIONS MAY VARY BASED ON SITE CONDITIONS DURING CONSTRUCTION AND SHOULD BE COORDINATED WITH HABITAT PERSONNEL (CRWP OR USFWS OR ADF&G) ON SITE.
3. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA AS COORDINATED WITH THE ENGINEER.
4. DETOUR ROAD IS SHOWN FOR LIMITS OF DISTURBANCE PURPOSES.
5. REFER TO SPECIFICATION SECTION 690 FOR ADDITIONAL BANK REVEGETATION INFORMATION.





SITE REVEGETATION

- SEED, FERTILIZER, AND MULCH
- VEGETATIVE MAT
- CONSTRUCTED STREAM CHANNEL WATERWAY BED FILL
- RIPRAP
- WETLAND PLUGS

1 / C10 REVEGETATION PLAN

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BLACK HOLE CREEK – COP 33
REVEGETATION PLAN
CORDOVA, ALASKA

PROJECT 1136.63248.01
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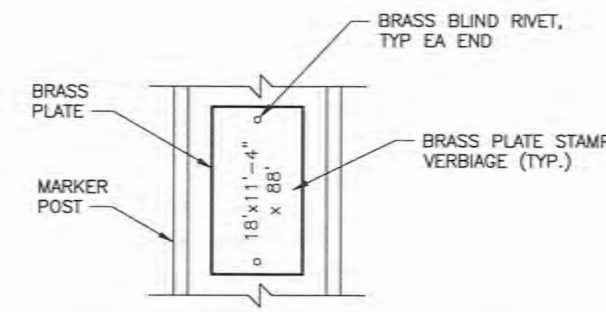
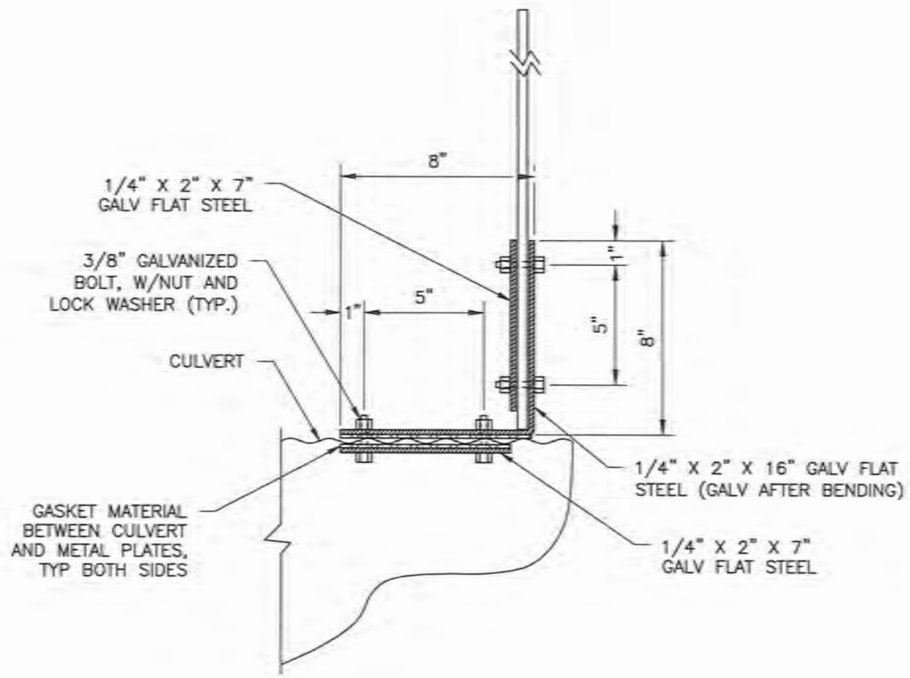
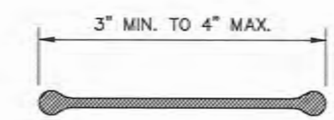


STAMP STATION AND PIPE SIZE, USING 3/8" HIGH MINIMUM LETTERS INTO A 2" X 4" X 0.064" THICK BRASS PLATE. FASTEN PLATE TO THE SIDE FACING THE ROADWAY WITH TWO 1/8" BRASS BLIND RIVETS.

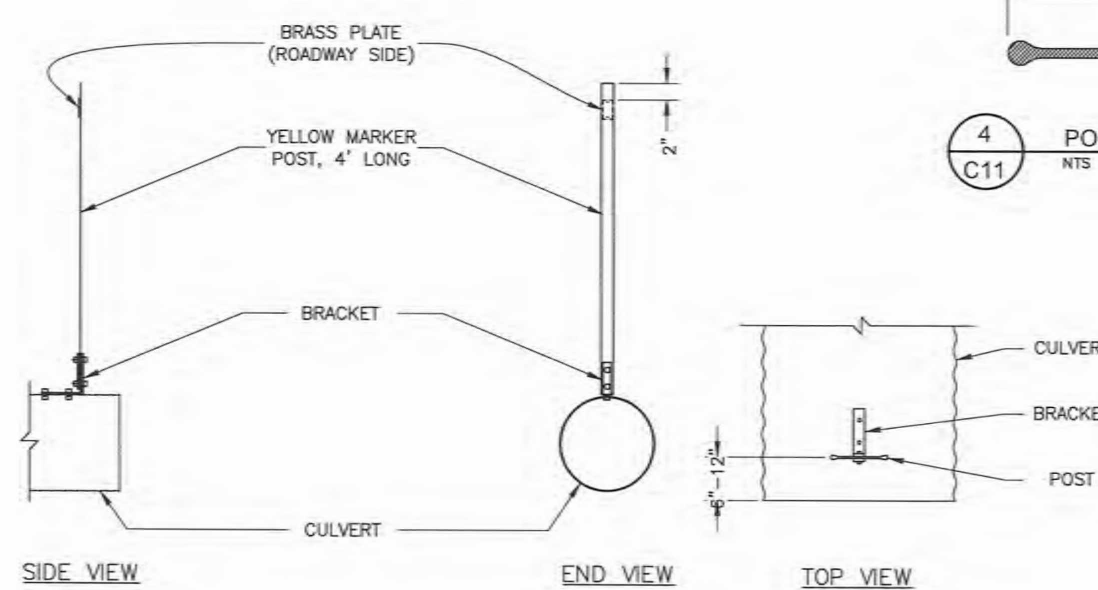
3 / C11 BRASS PLATE DETAIL
NTS



2 / C11 BRACKET DETAIL
NTS



4 / C11 POST CROSS SECTION
NTS



1 / C11 CULVERT MARKER POST DETAIL
NTS

NOTES:

1. MARKER POSTS ARE TO BE INSTALLED ON ALL PROJECT CULVERTS.
2. DRILL ALL BOLT HOLES. COAT HOLES WITH ZINC RICH PAINT. FLAME CUTTING SHALL NOT BE PERMITTED.
3. GASKET MATERIAL SHALL BE PLACED BETWEEN DISSIMILAR METALS. GASKET MATERIAL SHALL BE APPROVED PRIOR TO INSTALLATION.

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BLACK HOLE CREEK – COP 33
CULVERT MARKERS
CORDOVA, ALASKA

PROJECT 1136.63248.01
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