COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Title: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18), Copper River Highway, Cordova, Alaska

Copper River Watershed Project
511 1st Street
Cordova, Alaska 99574
January 5, 2021

COPPER RIVER WATERSHED PROJECT

REQUEST FOR PROPOSAL EVOSTC-2021

January 5, 2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

Enclosed is the pertinent information for use in preparing your proposal. The information will be used as a guide in the preparation of any subsequent contract.

A non-mandatory meeting for discussion of the proposal will be held at **3:00 pm AKT, Tuesday January 14th, 2021 using zoom.us**. Interested persons wishing to participate at their own expense via teleconference may contact Kate Morse (kate@copperriver.org, (907)253-4735) no later than **2:45 p.m., Local Time, the day of the meeting** to receive call-in information.

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

To maintain the project schedule, all questions should be submitted in writing (preferably email) no later than **5pm AKT on January 21st, 2021.** All responses to bidder's questions shall be made to all bidders by addendum. For information about the solicitation contact Lisa Docken at 907-424-3334 or at email address lisa@copperriver.org. All correspondence should include the RFP number and title. **Proposals Due February 5th, 2021 by 5pm AKT.**

A proposal (Qualification and Cost) must be received by CRWP prior to the date and time specified above. Copies may be bound or enclosed in folders/binders or e-mailed as the proposer chooses to lisa@copperriver.org with a subject line including the RFP number. Submissions will be acknowledged with a receipt email response to the sender.

If delivering a hard copy, proposals must be received at the Copper River Watershed Project, 511 1st St. PO Box 1560, Cordova Alaska 99574 prior to deadline. Office hours are Monday through Friday, 9:00 am – 12:00 pm and 1:00 pm – 5:00 pm, excluding holidays. Due to COVID-19-related office closures, please arrange for hard copy submissions ahead of time.

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

Sincerely,

Lisa Docken

Lisa Docken, CRWP Executive Director

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Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

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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 three stream simulation culverts that will ensure fish passage by coho salmon at all life stages. The project generally consists of removing and replacing four existing undersized and failing culverts at three locations under the Copper River Highway between mileposts 17.7-18.7. The culverts are in the ADOT&PF Right of Way crossing Chugach National Forest land.

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.

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 Bid 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 four existing undersized and failing culverts at three locations (two crossings included in the base bid, one crossing included in the additive alternate) 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 Section II of Attachment A. For a complete 100% Specifications, refer to Section I of Attachment A.

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)

1.5 Questions

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

Request for Proposal EVOSTC-2021
Lisa Docken, Executive Director
Copper River Watershed Project
P.O. Box 1560
Cordova, AK 99574

Phone: 907-424-3334

E-Mail: lisa@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 January 14th, 2021 at 3 p.m. local time using Zoom.us. Contact Kate Morse (kate@copperriver.org, (907)253-4735) to receive call-in 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:

Lisa Docken, Executive Director
Copper River Watershed Project
P.O. Box 1560
Cordova, AK 99576

lisa@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 six (6) pages numbered BP-1 of 6 through BP-6 of 6. 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. 65)

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.

The Bid Proposal contains basic bid and additive alternate schedules. The Copper River Watershed Project (CRWP) may bypass the additive alternate whose selection would cause the Contract to exceed the funds available.

CRWP will provide:

- Project 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, 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 5, 2021.

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 Lisa Docken, 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-2021

Title: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18), Copper River Highway, Cordova, Alaska

ATTACHMENT A

PROJECT MANUAL

Copper River Watershed Project
511 1st St.
Cordova, Alaska 99574
January 5, 2021

COPPER RIVER WATERSHED PROJECT

REQUEST FOR PROPOSAL EVOSTC-2021

January 5, 2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

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 West Fork 18 Mile Creek, Middle Fork 18 Mile Creek, and East Fork 18 Mile 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 5.6 (COP 20), 6 (COP 22), and 6.6 (COP 25) miles east of the airport in Cordova, Alaska.

Stream Name	ADF&G Site Number	CRWP ID	Latitude	Longitude	HWY MP
West Fork 18 Mile Creek	20100486	COP 20	N60°27'46.50"	W145°19'15.10"	17.7
Middle Fork 18 Mile Creek	20100488	COP 22	N60°27'42.70"	W145°18'28.90"	18.2
East Middle Fork 18 Mile Creek	20100491	COP 25	N60°27'38.30"	W145°17'33.80"	18.7

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

Definition of Roles

Copper River Watershed Project (CRWP) is the Owner and Engineer as referred to in the project specifications. CRWP is the Contractor's primary point of contact.

DOWL is the Engineer of Record and Owner's Field Representative.

Representatives of other agencies (e.g., U.S. Fish and Wildlife Service [USFWS], Alaska Department of Fish and Game [ADF&G], etc.) shall coordinate inspections with the Engineer.

Permits

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

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

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

The Contractor shall obtain permits and approvals from:

- Affected utility companies
- 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 de-watering plans)
- Eyak Permit (if required by final de-watering 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.

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. Develop and submit a Traffic Control Plan for the above road closures to the Engineer for approval.

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 materials 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

Rounded River Rock	Gradation – see table in Section 690-2.01 of Specifications
Waterway Bed Fill	Gradation – see table in Section 690-2.01 of Specifications

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

Other Requirements

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

Work Zone speed limit: Limit speed of vehicles associated with the construction to 25 mph within project limits.

Park within the public right-of-way. Do not block private property.

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

- The initial excavation at the start of the project.
- Diverting stream flows into the diversion channel/culvert.
- 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 permits. 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.

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

MASTER INDEX

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

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MODIFICATIONS & SPECIAL PROVISIONS TO STANDARD SPECIFICATIONS

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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, for the culverts or one year, for vegetation, 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

109-1.04 COMPENSATION FOR ALTERED QUANTITIES. *Delete the second paragraph and substitute the following:*

1. When the final quantity of a Contract Item varies more than 25 percent above or below the bid quantity, either party to the Contract may receive an equitable adjustment, excluding anticipated profits, in the Contract unit price of that item. If the final quantity of work is:

109-1.05 COMPENSATION FOR EXTRA WORK ON TIME AND MATERIAL BASIS. *Delete the first paragraph and substitute the following:*

The Contractor shall use a time and material basis for any changes with a deviation greater than 5 percent from the original contract quantity. When the Engineer orders extra work to be performed on a time and materials basis, compensation will be computed as follows:

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 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 and grubbing 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 and grubbing 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.

Vegetative Mat. Salvage vegetative mats in the vicinity of the project from areas that will be disturbed for other work or areas specified by the Engineer and a USFS representative. Take care not to damage vegetative mats to be salvaged during clearing and grubbing. Remove the mat in at least 12-inch thick sections and preserve intact as possible. If necessary, additional vegetative mats will be made available offsite. The Contractor shall harvest and transport vegetation from an approved offsite location. The Contractor shall notify the Engineer 72 hours in advance of vegetative mat placement, so arrangements can be made for offsite harvest. The Contractor shall place vegetative mats within 1 day of harvesting from the locations (within 5 miles from the project site) approved by Engineer.

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

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(1) Construction Surveying.

Salvaging/harvesting, stockpiling and transporting native organic soils and vegetative mat is subsidiary to pay item 690(12) Waterway Bank Revegetation and Protection.

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

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.

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 7032.09. 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 per cubic yard based on the difference in surveyed quantities of material stockpiles. Contractor shall survey material stockpiles before use on the project and at conclusion of the work after all required material has been placed. Submit survey data for pre-work and post-work to the Engineer. The difference in surveyed volumes shall equate to the quantity of material placed.

203-5.01 BASIS OF PAYMENT *Add the following:*

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

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

Add the following pay item:

Pay Item	Pay Unit
203(5B) Subbase, Grading F	Cubic Yard

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(1) 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(3) 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(5A) Borrow, Selected Material, Type A or pay item 203(5B) Subbase, Grading F.

SECTION 602

STRUCTURAL PLATE PIPE

Special Provisions

602-1.01 DESCRIPTION. *Add the following:*

Contractor shall provide manufacturer-designed culvert bridges (aluminum structural plate culverts) to meet the contract requirements and provide an independent check. Inspect and perform quality acceptance on culvert bridges. Provide design calculations with load ratings for the culvert bridges for review and approval.
Add the following Subsection:

602-1.02 DEFINITIONS.

Culvert Bridge stands for culverts and buried structures meeting the requirements of National Bridge Inspection Standards (NBIS) CFR§650.305; individual culverts and buried structures greater than 10 feet in width, as measured along the centerline of roadway crossing over the structure. When specified in the contract or required by the DOR (Designer of Record), this includes the headwalls, toe walls, wingwalls, and foundation.

Culvert Bridge Design Package (CBDP). DOR design calculations, DOR load ratings, IE design check calculations, IE load ratings, working drawings, and specifications.

Designer of Record (DOR). A civil engineer registered as a Professional Engineer in the State of Alaska, and in responsible charge of the work described. The DOR must have adequate and relevant prior structural design and inspection experience. The DOR may delegate portions of design, quality acceptance, and inspection work, to qualified technicians. The DOR and qualified technicians must not be supervised by, or under the direction of the Contractor's superintendent and work crew.

Independent Design Check (IDC). An independent design check of the design and load rating calculations including but not limited to: design, load ratings, location and dimensions of the foundation, structural members, connections, erection plan and temporary bracing (when required), safety barrier, and independent calculations of design loads, member stress, material properties, hydraulic capacity and scour protection.

Independent Engineer (IE). An engineer registered as Professional Engineer in the State of Alaska, and in responsible charge of the independent design check. The

engineer responsible for the check must have adequate and relevant prior structural design experience.

Add the following Subsection:

602-2.02 GEOTECHNICAL DATA AND HYDROLOGY INFORMATION. The Contactor is responsible for obtaining additional geotechnical data as necessary for the design and construction of the culvert bridge.

The Contractor is responsible for obtaining hydrology and hydraulics data as necessary for the design and construction of the culvert bridge.

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

Add the following Subsection:

602-2.03 DESIGN REQUIREMENTS. Retain the services of a DOR to design and provide a CBDP for each culvert bridge. Retain the services of an IE to perform an IDC of each CBDP.

1. Design culvert bridges according to the following documents:
   a. Alaska DOT&PF Standard Specifications for Highway Construction for recommended construction methods, material properties, and sampling and testing;
   b. AASHTO LRFD Bridge Design Specifications, as modified by Subsection 602-2.03;
   c. Alaska Highway Preconstruction Manual; and the
   d. Alaska Bridges and Structures Manual (BSM).

2. Design culvert bridges that:
   a. Support 100% of HL93 live loads or the Contractor's maximum construction load whichever is greater, without overstress. Follow the most recent version, including interim version, of the AASHTO LRFD Bridge Design Specifications. Indicate governing live load on working drawings;
   b. Meet the design life specified in AASHTO LRFD Bridge Design Specifications after allowing for metal section loss associated with abrasion and pH levels of the substrate and water;
   c. Meet the seismic acceleration values recommended in the AASHTO LRFD Bridge Design Specifications;
   d. Include the capacities and demands of load-supporting members in the design calculations;

e. Meet the dimensions, stations, offsets, and elevations of inverts and riprap requirements shown on the plans, with approved variances as stated in these specifications; and
f. Provide the minimum hydraulic capacity shown on the Plans when openings are required to allow for the passage of water.
g. Provide the minimum horizontal and vertical clearances shown on the Plans when openings are required to allow the passage of traffic. If no vertical clearance is provided, follow the requirements in the Alaska Highway Preconstruction Manual.

3. Provide working drawings for culvert bridges including:
   a. Dimensions controlling the culvert bridge design and erection, including proposed fill depth, corrugation spacing, corrugation depth, gauge thickness, concrete thickness, reinforcing steel size and locations, clear opening sizes, utility size and locations, and similar controlling dimensions;
   b. Design loads and material properties; and
   c. The soil bearing values.

4. Provide load ratings for the culvert bridges according to the most recent version, interim version, of the AASHTO Manual for Bridge Evaluation (MBE) and the BSM. Load rate metal and concrete culvert bridges using the Load Factor Rating (LFR) and Load and Resistance Factor Rating (LRFR) methods.

   Provide load ratings that reflect the bridge culvert final as-constructed condition. Include values for moment, shear and, where applicable, thrust for concrete culvert bridges. Include values for wall area, buckling, and seam strength for metal culvert bridges. Specify live load type, placement for maximum stress, distribution, and impact.

   Include the following cases for LFR load ratings:
   a. Inventory with multiple lanes and impact included
   b. Operating with multiple lanes and impact not included
   c. Operating with one lane centered on the roadway and impact not included.

Add the following Subsection:

602-2.04 DESIGN SUBMITTALS AND REVIEW. Submit the following for review and approval at least 30 days prior to the beginning or construction related to the culvert bridges:

1. The CBDP. The design drawings and load ratings in the CBDP must be stamped with the seal of, dated by, and signed by the DOR;
2. An IDC letter stamped with the seal of, dated by, and signed by the IE certifying: “The Culvert Design Bridge Package meets the AASHTO LRFD Bridge Design

Specifications, the AASHTO Manual for Bridge Evaluation, and the Contract requirements".

Revise and resubmit the CBDP to incorporate any comments received during review. Resubmit the IDC letter after comments have been incorporated.

The approval of the CBDP shall not be construed as complete review but will only indicate that the general method of construction and working drawings are acceptable to the Engineer, that the CBDP appears complete, and that an IDC letter was provided. The Contractor shall remain responsible for all structural calculations and load rating completed for the culvert bridge.

602-3.01 CONSTRUCTION REQUIREMENTS. *Add the following:*

Contractor shall be responsible for shipping and transporting the structural plate aluminum box culverts and aluminum pipe arch overflow culverts to the project site. 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 necessary to complete design and load rating for culvert bridges and meet the submittal requirements stated in this Section is subsidiary to Section 602 pay items.

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

Add the following pay items:

Pay Item	Pay Unit

602(2) Structural Plate Aluminum Pipe Arch, 57” Span, 38” Rise (COP 20)	Linear Foot
602(2) Structural Plate Aluminum Pipe Arch, 64” Span, 43” Rise (COP 22)	Linear Foot
602(2) Structural Plate Aluminum Pipe Arch, 71” Span, 47” Rise (COP 25)	Linear Foot
602(4) Structural Plate Aluminum Box Culvert, 15’-6” Span, 7’-3” Rise (COP 20)	Linear Foot
602(4) Structural Plate Aluminum Box Culvert, 19’-10” Span, 7’-8” Rise (COP 22)	Linear Foot
602(4) Structural Plate Aluminum Box Culvert, 29’-0” Span, 8’-3” Rise (COP 25)	Linear Foot

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. 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. Leave a rough, uneven surface along top of riprap and stream bed material. Cover riprap with 4 inches of topsoil and seed.

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.

SECTION 613

MONUMENTS AND MARKERS

Special Provisions

613-1.01 DESCRIPTION. *Delete the first sentence and replace with the following*: Furnish and install culvert marker posts according to the Plans.

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 1 pound/1,000 square feet or 43 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 must provide the Engineer with seed tags provided by seed supplier showing seed purity and germination in compliance with Section 724 Seed for approval prior to applying seed to project site.

618-4.01 METHOD OF MEASUREMENT. *Add the following:*

The quantity of seeding shall include all cultivation, seeding, limestone if required, and mulching.

618-5.01 BASIS OF PAYMENT. *Add the following:*

Furnishing, mobilizing, modifying, operating, and maintaining all materials and equipment necessary to install seed is subsidiary to pay item 618(2) Seeding. Water for seeding is subsidiary.

SECTION 619

SOIL STABILIZATION

Special Provisions

619-3.02 APPLICATION. *Add the following:*

Apply Arctic Mulch (Blue Joint Reed Grass) generously over all disturbed and newly seeded areas in accordance with recommended application rates specified by the mulch supplier 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.

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(2) 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, Seeding of these specifications. Excess salvaged vegetated mat beyond what is required by the Plans may be used in lieu of topsoil and seeding.

SECTION 630

GEOTEXTILE FOR EMBANKMENT AND ROADWAY SEPARATION, STABILIZATION AND REINFORCEMENT

Special Provision

630-3.01 CONSTRUCTION REQUIREMENTS.

2. b. Reinforcement. *Delete the first two sentences and replace with the following:* Lay the machine direction of the geotextile parallel with the culvert centerline. Join seams parallel with the culvert centerline by overlapping a minimum of 3’; no seams will be allowed perpendicular to the culvert centerline.

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 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.

The 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 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 with 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. 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 pavement 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(14) 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(1) 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(14) 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(1) Construction Surveying	Lump Sum
642(14) 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.

643-3.03 PUBLIC NOTICE. *Add the following:*

1. CRWP Program Director, (907)424-3334, kate@copperriver.org
2. Alaska DOT &PF NR Public Information Officer, (907) 451-530, Caitlin.Frye@alaska.gov
3. DOT&PF M&O Valdez District Superintendent, (907) 834-1039, Robert.Dunning@alaska.gov
4. DOT&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 will be lump sum and shall include preparation of TCPs, 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 TCP, 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 TCP, are subsidiary. Items required by the Contract that are not listed on the bid schedule or not included in other items are subsidiary.

SECTION 644

SERVICES TO BE FURNISHED BY THE CONTRACTOR

Special Provisions

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

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

644-4.01 METHOD OF MEASUREMENT.

Delete the fourth paragraph.

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

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

Replace the following pay item:

Pay Item	Pay Unit
644(15) Nuclear Testing Equipment Storage Shed	Lump Sum

Special Provision

Add the following Section:

SECTION 672

STREAM DIVERSION & DEWATERING

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

672-1.02 GENERAL. A recommended Stream Diversion Plan has been provided in Drawings. The provided Stream Diversion Plan is intended to convey general concepts and locations are approximate. The Contractor can 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.

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 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.

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(1) Stream Diversion & Dewatering.

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(1) Stream Diversion & Dewatering	Lump Sum

Special Provision

Add the following Section:

SECTION 690

WATERWAY

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

Provide a plan and schedule for the waterway bed and waterway bank construction meeting the requirements of the Contract documents (Section 107 Legal Relations and Responsibility to Public - Permits, Section 643 Traffic Maintenance- Construction Phasing Plan and similar).

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)	Section 201
Excavation and Embankment (waterway bed and bank)	Section 203 & 703
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

Rounded River Rock: Rounded rock mined from surrounding glacial outwash plains is acceptable providing the appropriate permits and permissions are in place before mining material. Provide rounded rock that conforms to the specified size requirements after processing, has a specific gravity of at least 2.65, and have no more than 50 percent wear at 500 revolutions as determined by AASHTO T 96. Provide uniformly graded rounded rock that falls within the limits shown in the following gradations:

Rounded River Rock	
Size (inch)	Percent Passing
12 in	100%

9 in	75%
6 in	30%
3 in	15%
1 in	10%
0.75 in	5%
#4	0%
#10 Sand	0%

Waterway Bed Fill: Salvaged existing stream bed material or fill material meeting the following gradation:

Waterway Bed Fill	
Size (inch)	Percent Passing
12 in	100%
9 in	85%
6 in	58%
3 in	49%
1 in	32%
0.75 in	23%
#4	10%
#10 Sand	6%

Mixing the following proportions of material by volume is a recommended starting point for providing the Waterway Bed Fill gradation:

- 40% Porous Backfill, and
- 60% Rounded River Rock

The Contractor is responsible for verifying the final mix meets the gradation requirements for waterway bed fill, whether obtained from salvaged material or produced from mixing other materials. Adjust the waterway bed fill material onsite as directed by the Engineer to meet the required gradation.

Waterway Bank Fill: Native material or Selected Material, Type C mixed with 6-inch to 12-inch bone rock, riprap, or similar stone pieces. Mix two parts of native material or Selected Material, Type C with one part of rock fill by volume. Mix material before placing in stream banks.

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

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

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 18 Mile 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 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 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 18 Mile 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, 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.

Vegetative Mat

1. Stake all areas to be planted with vegetative mats prior to installation. Notify the Engineer of the delineated areas three working days prior to installation. Install only after receiving the Engineer approval.
2. Wet the in-situ soil or topsoil 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(10) Waterway Bed Fill: linear foot of the waterway

Measured between reference points shown on the Plans.

690(12) Waterway Bank Revegetation and Protection: Lump Sum.

690-5.01 BASIS OF PAYMENT.

1. Pay Items 690(10) 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.

2. Pay Item 690(12) includes the materials and all work to salvage/harvest, store, transport, place and maintain organic materials in the state specified (vegetative mat, salvaged vegetation, topsoil, watering, and similar). Watering is subsidiary.

   Waterway Bank Fill material is subsidiary to pay item 690(12) Waterway Bank Revegetation and Protection.

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(10) Waterway Bed Fill	Linear Foot
690(12) Waterway Bank Revegetation and Protection	Lump Sum
690(13) Rounded River Rock	Cubic Yard

SECTION 703

AGGREGATES

Special Provisions

703-2.03 AGGREGATE FOR BASE AND SURFACE COURSE. *Delete the second paragraph and Table 703-2 and substitute the following:*

Aggregate surface course (E-1) shall contain material no larger than one (1) inch in diameter (1-inch minus material).

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 724

SEED

Special Provision

724-2.01 MATERIALS. *Add the following*:
The required seed mix for this project is:

Name	Proportion by Weight
Nortran Tufted Hair grass, *Deschampsia caespitosa*	20%
Arctared' Red Fescue, *Festuca rubra*	60%
Calamogrostis canadensis	20%

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

II

MATERIALS CERTIFICATION LIST

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Materials Certification List

MATERIALS CERTIFICATION LIST (2 pages)			
Project Name: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)			
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			
602 STRUCTURAL PLATE PIPE			
Structural Plate Aluminum Pipe Arch 57" Span, 38" Rise			
Structural Plate Aluminum Pipe Arch 64" Span, 43" Rise			
Structural Plate Aluminum Pipe Arch 71" Span, 47" Rise			
Structural Plate Aluminum Box Culvert 15'-6" Span, 7'-3" Rise			
Culvert Bridge Design Package			
Independent Design Check			
Structural Plate Aluminum Box Culvert 19'-10" Span, 7'-8" Rise			
Culvert Bridge Design Package			
Independent Design Check			
Structural Plate Aluminum Box Culvert 29'-0" Span, 8'-3" Rise			
Culvert Bridge Design Package			
Independent Design Check			
611 RIPRAP			
Riprap, Class I Materials Analysis			
Riprap, Class II Materials Analysis			
623 BLOCK SODDING			

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			
Grade Checker Personnel Qualifications and 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 Material Analysis			
Rounded River Rock Material Analysis			
703 AGGREGATES			
Select Material Type A Analysis			
Select Material Type E1 Analysis			
Subbase, Grading F Material Analysis			
724 SEED			
Seed Mix Certification			
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-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

III

CONTRACT

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C O N T R A C T

Request for Proposal EVOSTC-2021

Contract EVOSTC-2021

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 VII consisting of six (6) pages numbered as _____, **as contained in RFP EVOSTC-2021.**

III. The Contract Performance and Payment Bond, Section V, dated _____.

IV. The Contractor's Certificate of Insurance, Section VI, dated .

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-2021.**

- Modifications & Special Provisions to Standard Specifications, Section I, **as contained in RFP EVOSTC-2021.**

VI. Submittals consisting of two (2) pages, Section II – Materials Certification List, **as contained in RFP EVOSTC-2021.**

VII. The Drawings consisting of ten (10) sheets, Section VIII – Cordova Fish Passage 18 Mile Creek Crossing – COP 22 Plans, **as contained in RFP EVOSTC-2021.**

VIII. The Drawings consisting of ten (11) sheets, Section IX – Cordova Fish Passage 18 Mile Creek Crossing – COP 25 Plans, **as contained in RFP EVOSTC-2021.**

IX. The Drawings consisting of ten (10) sheets, Section X – Cordova Fish Passage 18 Mile Creek Crossing – COP 20 Plans, **as contained in RFP EVOSTC-2021.**

X. Addenda No. __ through ___.

Time being of the essence, the work shall be completed August 15, 2021.

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

COPPER RIVER WATERSHED PROJECT **CONTRACTOR** _____

BY _____ BY _____
Signature Signature

_____ _____
Printed Name of Authorized Designee Printed Name

_____ _____
Date of Signature and Contract Date 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-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

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)

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

V

BID PROPOSAL

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BID PROPOSAL
(CERTIFICATION)

TO: COPPER RIVER WATERSHED PROJECT , 2021
511 1ST STREET
CORDOVA, ALASKA 99574
SUBJECT: Request for Proposal EVOSTC-2021
Copper River Watershed Habitat Enhancement Project,
Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage
Improvements at Mile 18)

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-2021
Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

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 Email Address

Company Physical Address

(if different from mailing address)

City, State, Zip Code

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

BID PROPOSAL

BASE BID

Schedule	Description	Bid Amount
A	Cordova 18 Mile Fish Passage Project – COP 22	
B	Cordova 18 Mile Fish Passage Project – COP 25	

Total Base Bid:

ADDITIVE ALTERNATE

Schedule	Description	Bid Amount
C	Cordova 18 Mile Fish Passage Project – COP 20	

Total Additive Alternate:

Total Base Bid + Additive Alternate:

Date:

Contractor Name:_____

Authorized Representative Signature: _____

Printed Name & Title:_____

BASE BID - SCHEDULE A: Cordova 18 Mile Fish Passage Project – COP 22					
Item No.	**Work Description**	**Pay Unit**	**Unit price**	**Quantity**	**Amount**
201(9)	CLEARING AND GRUBBING	LUMP SUM		ALL REQ'D	
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT		61	
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD		1463	
203(5A)	BORROW, SELECTED MATERIAL, TYPE A	CUBIC YARD		1287	
203(5B)	SUBBASE, GRADING F	CUBIC YARD		528	
301(4)	AGGREGATE SURFACE COURSE, GRADING E-1	CUBIC YARD		55	
602(2)	STRUCTURAL PLATE ALUMINUM PIPE ARCH, 64" SPAN, 43" RISE	LINEAR FOOT		83	
602(4)	STRUCTURAL PLATE ALUMINUM BOX CULVERT, 19'-10" SPAN, 7'-8" RISE	LINEAR FOOT		90	
611(1A)	RIPRAP, CLASS I	CUBIC YARD		121	
611(1B)	RIPRAP, CLASS II	CUBIC YARD		44	
613(2)	CULVERT MARKER POST	EACH		4	
618(2)	SEEDING	POUND		3	
620(1)	TOPSOIL (4")	SQUARE YARD		240	
630(3B)	GEOTEXTILE, REINFORCEMENT, TYPE 2	SQUARE YARD		977	
631(2)	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD		84	
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM		ALL REQ'D	
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM		ALL REQ'D	
642(1)	CONSTRUCTION SURVEYING	LUMP SUM		ALL REQ'D	
642(14)	AS-BUILT PLANS	LUMP SUM		ALL REQ'D	
643(2)	TRAFFIC MAINTENANCE	LUMP SUM		ALL REQ'D	
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM		ALL REQ'D	
672(1)	STREAM DIVERSION & DEWATERING	LUMP SUM		ALL REQ'D	
690(10)	WATERWAY BED FILL	LINEAR FOOT		189	
690(12)	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM		ALL REQ'D	
690(13)	ROUNDED RIVER ROCK	CUBIC YARD		66	

Total Base Bid - Schedule A: _____

Date: Contractor Name: _____

BASE BID - SCHEDULE B: Cordova 18 Mile Fish Passage Project – COP 25					
Item No.	**Work Description**	**Pay Unit**	**Unit price**	**Quantity**	**Amount**
201(9)	CLEARING AND GRUBBING	LUMP SUM		ALL REQ'D	
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT		121	
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD		1254	
203(5A)	BORROW, SELECTED MATERIAL, TYPE A	CUBIC YARD		1331	
203(5B)	SUBBASE, GRADING F	CUBIC YARD		583	
301(4)	AGGREGATE SURFACE COURSE, GRADING E-1	CUBIC YARD		55	
602(2)	STRUCTURAL PLATE ALUMINUM PIPE ARCH, 71" SPAN, 47" RISE	LINEAR FOOT		70	
602(4)	STRUCTURAL PLATE ALUMINUM BOX CULVERT, 29'-0" SPAN, 8'-3" RISE	LINEAR FOOT		76	
611(1A)	RIPRAP, CLASS I	CUBIC YARD		143	
611(1B)	RIPRAP, CLASS II	CUBIC YARD		55	
613(2)	CULVERT MARKER POST	EACH		4	
618(2)	SEEDING	POUND		2	
620(1)	TOPSOIL (4")	SQUARE YARD		220	
630(3B)	GEOTEXTILE, REINFORCEMENT, TYPE 2	SQUARE YARD		1080	
631(2)	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD		117	
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM		ALL REQ'D	
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM		ALL REQ'D	
642(1)	CONSTRUCTION SURVEYING	LUMP SUM		ALL REQ'D	
642(14)	AS-BUILT PLANS	LUMP SUM		ALL REQ'D	
643(2)	TRAFFIC MAINTENANCE	LUMP SUM		ALL REQ'D	
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM		ALL REQ'D	
672(1)	STREAM DIVERSION & DEWATERING	LUMP SUM		ALL REQ'D	
690(10)	WATERWAY BED FILL	LINEAR FOOT		125	
690(12)	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM		ALL REQ'D	
690(13)	ROUNDED RIVER ROCK	CUBIC YARD		99	

Total Base Bid - Schedule B: _____

Date: Contractor Name: _____

ADDITIVE ALTERNATE - SCHEDULE C: Cordova 18 Mile Fish Passage Project – COP 20					
Item No.	**Work Description**	**Pay Unit**	**Unit price**	**Quantity**	**Amount**
201(9)	CLEARING AND GRUBBING	LUMP SUM		ALL REQ'D	
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT		57	
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD		1100	
203(5A)	BORROW, SELECTED MATERIAL, TYPE A	CUBIC YARD		869	
203(5B)	SUBBASE, GRADING F	CUBIC YARD		374	
301(4)	AGGREGATE SURFACE COURSE, GRADING E-1	CUBIC YARD		44	
602(2)	STRUCTURAL PLATE ALUMINUM PIPE ARCH, 57" SPAN, 38" RISE	LINEAR FOOT		66	
602(4)	STRUCTURAL PLATE ALUMINUM BOX CULVERT, 15'-6" SPAN, 7'-3" RISE	LINEAR FOOT		75	
611(1A)	RIPRAP, CLASS I	CUBIC YARD		132	
613(2)	CULVERT MARKER POST	EACH		4	
618(2)	SEEDING	POUND		2	
620(1)	TOPSOIL (4")	SQUARE YARD		180	
630(3B)	GEOTEXTILE, REINFORCEMENT, TYPE 2	SQUARE YARD		681	
631(2)	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD		70	
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM		ALL REQ'D	
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM		ALL REQ'D	
642(1)	CONSTRUCTION SURVEYING	LUMP SUM		ALL REQ'D	
642(14)	AS-BUILT PLANS	LUMP SUM		ALL REQ'D	
643(2)	TRAFFIC MAINTENANCE	LUMP SUM		ALL REQ'D	
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM		ALL REQ'D	
672(1)	STREAM DIVERSION & DEWATERING	LUMP SUM		ALL REQ'D	
690(10)	WATERWAY BED FILL	LINEAR FOOT		117	
690(12)	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM		ALL REQ'D	
690(13)	ROUNDED RIVER ROCK	CUBIC YARD		66	

Total Additive Alternate - Schedule C: _____

Date: Contractor Name: _____:

COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

COP 22 Plans

VI

PLANS (10 SHEETS)

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LOCATION MAP

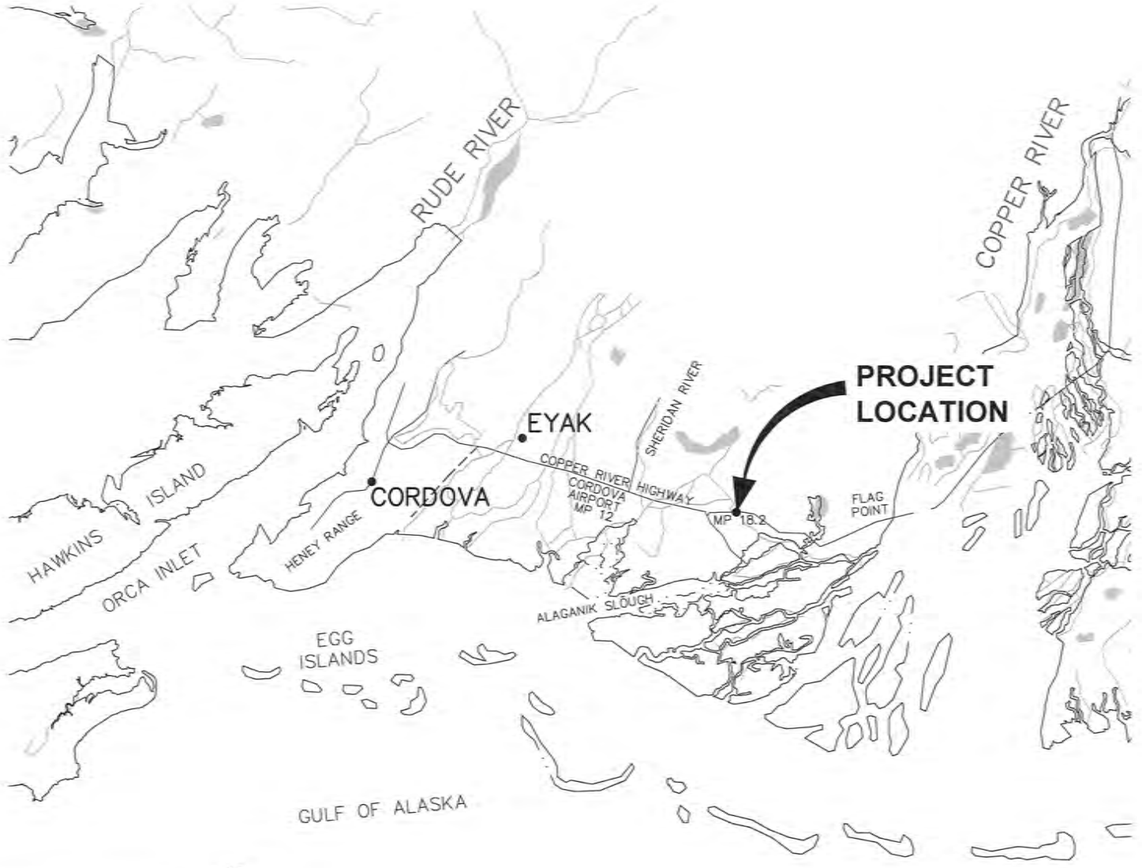
Contract Drawings For

CORDOVA FISH PASSAGE IMPROVEMENT PROJECTS
COPPER RIVER HIGHWAY - MP 18.2
18 MILE CREEK CROSSING - COP 22
U.S. FISH AND WILDLIFE SERVICE

SECTION 30, TOWNSHIP 16 SOUTH, RANGE 1 EAST, COPPER RIVER MERIDIAN, ALASKA
DECEMBER 2020

PROJECT LOCATION		
ADF&G SITE NO.	CRWP ID	COPPER RIVER HWY MP
20100488	COP 22	18.2

DESIGN DESIGNATIONS	
AADT 2015	244



VICINITY MAP
NTS

DRAWING INDEX

PREPARED BY: DOWL

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ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201(9)	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT	61
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	1463
203(5A)	BORROW, SELECTED MATERIAL, TYPE A	CUBIC YARD	1287
203(5B)	SUBBASE, GRADING F	CUBIC YARD	528
301(4)	AGGREGATE SURFACE COURSE, GRADING E-1	CUBIC YARD	55
602(2)	STRUCTURAL PLATE ALUMINUM PIPE ARCH, 64" SPAN, 43" RISE	LINEAR FOOT	83
602(4)	STRUCTURAL PLATE ALUMINUM BOX CULVERT, 19'-10" SPAN, 7'-8" RISE	LINEAR FOOT	90
611(1A)	RIPRAP, CLASS I	CUBIC YARD	121
611(1B)	RIPRAP, CLASS II	CUBIC YARD	44
613(2)	CULVERT MARKER POST	EACH	4
618(2)	SEEDING	POUND	3
620(1)	TOPSOIL (4")	SQUARE YARD	240
630(3B)	GEOTEXTILE, REINFORCEMENT, TYPE 2	SQUARE YARD	977
631(2)	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD	84
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
642(14)	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM	ALL REQUIRED
672(1)	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED
690(10)	WATERWAY BED FILL	LINEAR FOOT	189
690(12)	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED
690(13)	ROUNDED RIVER ROCK	CUBIC YARD	66

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
ROUNDED RIVER ROCK
AGGREGATE SURFACE COURSE, E-1
SELECTED MATERIAL, TYPE A
SUBBASE, GRADING F
SEED
BULK BAG COFFERDAM

ABBREVIATIONS

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
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
STA	STATION
TYP	TYPICAL
VAP	VERTICAL ADJUSTMENT POTENTIAL

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.
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 OVER SATURATED 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.
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 PER STD D-09.00.

THE FOLLOWING DOT&PF STANDARD DRAWING APPLIES TO THIS PROJECT:
D-09.00 CULVERT MARKER POST

TABLE 1
COARSE MATERIAL: RIPRAP, CLASS I

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

TABLE 2
FINE MATERIAL: POROUS BACKFILL

SIZE/SIEVE	% PASSING
3"	100
1"	65
0.75"	50
#4	25
#10	15

TABLE 3
WATERWAY BED FILL

SIZE/SIEVE	% PASSING
12"	100
9"	85
6"	58
3"	49
1"	32
0.75"	23
#4	10
#10	6

TABLE 4
ROUNDED RIVER ROCK

SIZE/SIEVE	% PASSING
12"	100
9"	75
6"	30
3"	15
1"	10
0.75"	5
#4	0
#10	0

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA 14917 Bradley W. Gobin REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK - COP 22
GENERAL NOTES AND QUANTITIES
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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C2 OF C10

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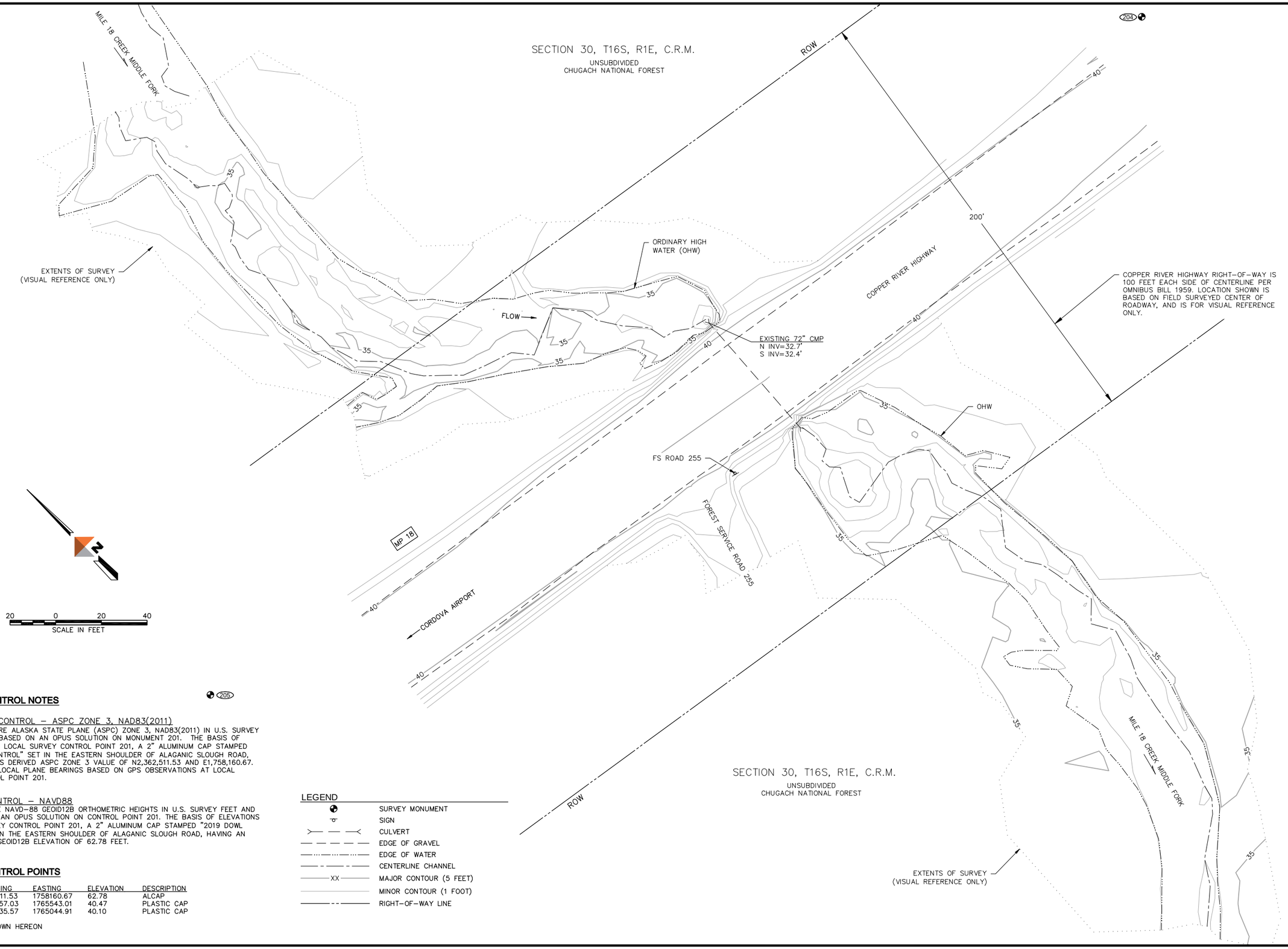

SURVEY CONTROL NOTES

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 ALAGANIC 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 ALAGANIC SLOUGH ROAD, HAVING AN OPUS DERIVED GEOID12B ELEVATION OF 62.78 FEET.

SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
*201	2362511.53	1758160.67	62.78	ALCAP
204	2361357.03	1765543.01	40.47	PLASTIC CAP
205	2361435.57	1765044.91	40.10	PLASTIC CAP

* = NOT SHOWN HEREON

LEGEND

- SURVEY MONUMENT
- SIGN
- CULVERT
- EDGE OF GRAVEL
- EDGE OF WATER
- CENTERLINE CHANNEL
- XX MAJOR CONTOUR (5 FEET)
- MINOR CONTOUR (1 FOOT)
- RIGHT-OF-WAY LINE

REVISIONS

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STATE OF ALASKA * 49TH * WILLIAM STOLL 10396 LAND SURVEYOR DEC. 31, 2020 REGISTERED PROFESSIONAL

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK – COP 22
SURVEY CONTROL

SECTION 30, T16S, R1E, C.R.M. ALASKA
CORDOVA RECORDING DISTRICT, ALASKA

PROJECT 11.36.63087.01
DATE DECEMBER 2020

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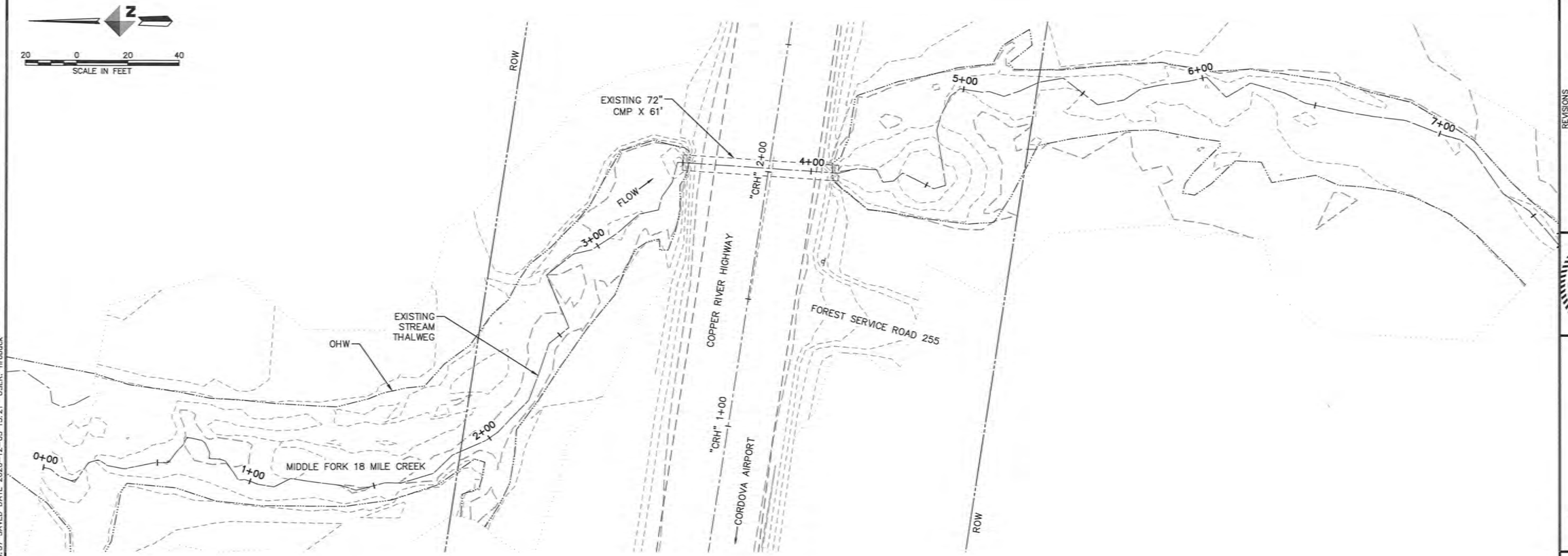

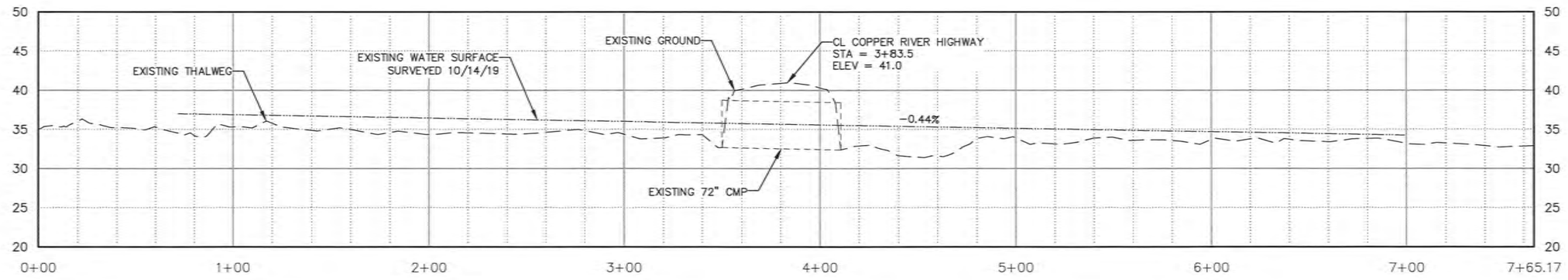

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		REVISIONS	

STATE OF ALASKA
Bradley W. Meloche
REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK – COP 22
EXISTING STREAM PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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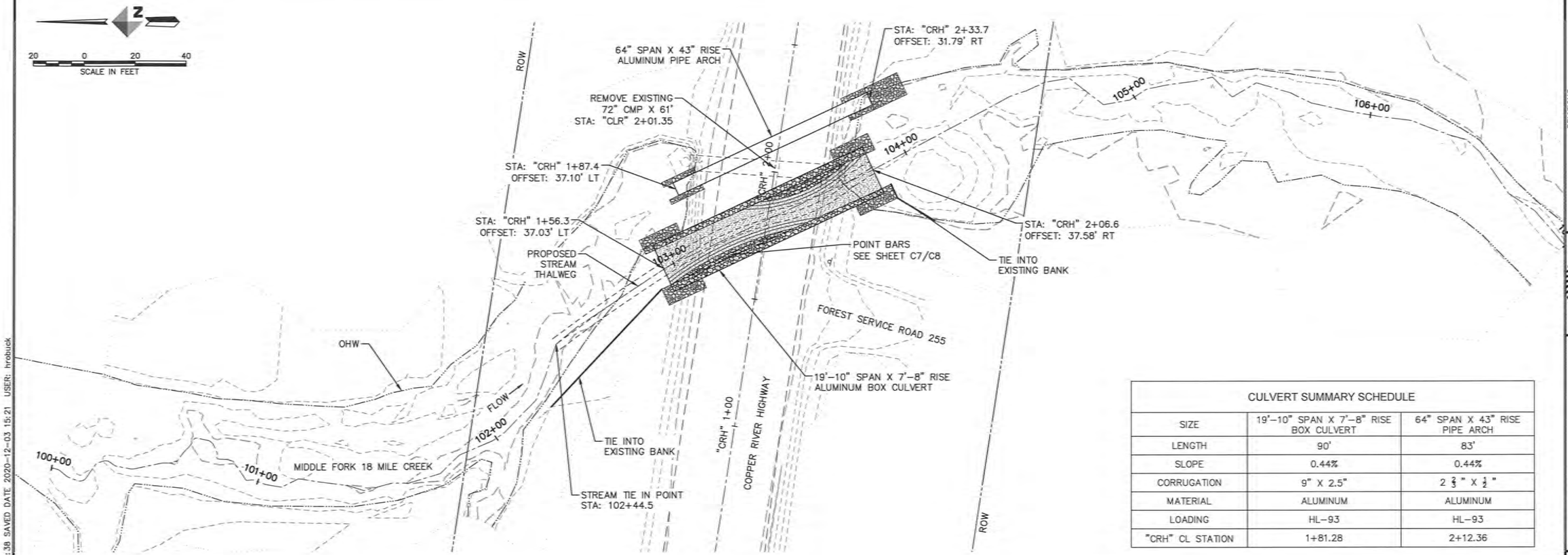
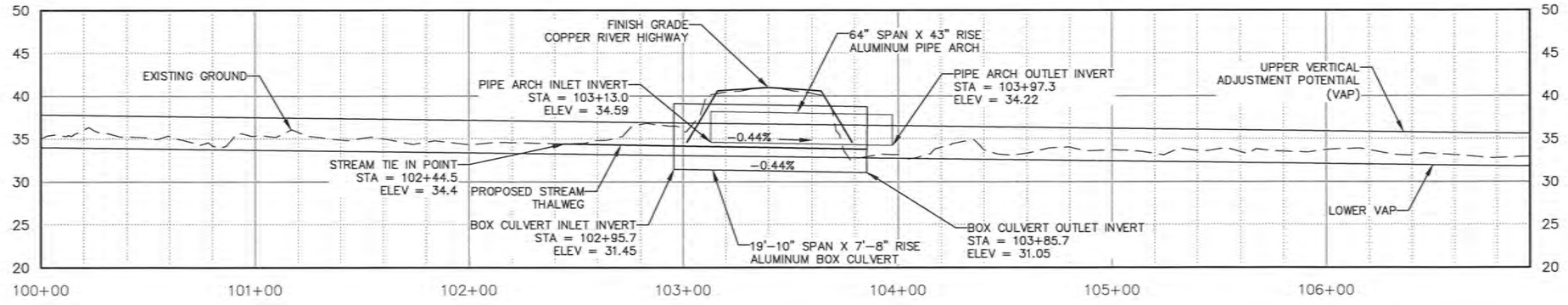


CULVERT SUMMARY SCHEDULE		
SIZE	19'-10" SPAN X 7'-8" RISE BOX CULVERT	64" SPAN X 43" RISE PIPE ARCH
LENGTH	90'	83'
SLOPE	0.44%	0.44%
CORRUGATION	9" X 2.5"	2 2/3" X 1/2"
MATERIAL	ALUMINUM	ALUMINUM
LOADING	HL-93	HL-93
"CRH" CL STATION	1+81.28	2+12.36

CULVERT COORDINATE TABLE				
SIZE	POINT	NORTHING	EASTING	ELEVATION
19'-10" SPAN X 7'-8" RISE BOX CULVERT	INLET INV.	2361406.48	1765273.25	31.45
	OUTLET INV.	2361324.96	1765311.39	31.05
64" SPAN X 43" RISE PIPE ARCH	INLET INV.	2361401.70	1765304.01	34.59
	OUTLET INV.	2361326.47	1765339.07	34.22

HYDROLOGIC & HYDRAULIC SUMMARY					
EXCEEDANCE PROBABILITY	RETURN PERIOD (YEAR)	DESIGN DISCHARGE (CFS)	DESIGN HIGH WATER ELEVATION (FT)	REGULATORY FLOOD	HW/D
50%	2	319	37.80	N/A	0.74
2%	50	413	38.48	N/A	0.87
1%	100	427	38.57	N/A	0.89
DRAINAGE AREA = 1.9 SQUARE MILES					
ANTICIPATED ADDITIONAL BACKWATER = 0 FEET					
ROADWAY OVERTOPPING Q = 598.34 CFS					



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STATE OF ALASKA 49TH PROFESSIONAL ENGINEER Bradley A. Hrobuck 11509 REGISTERED

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK - COP 22
STREAM PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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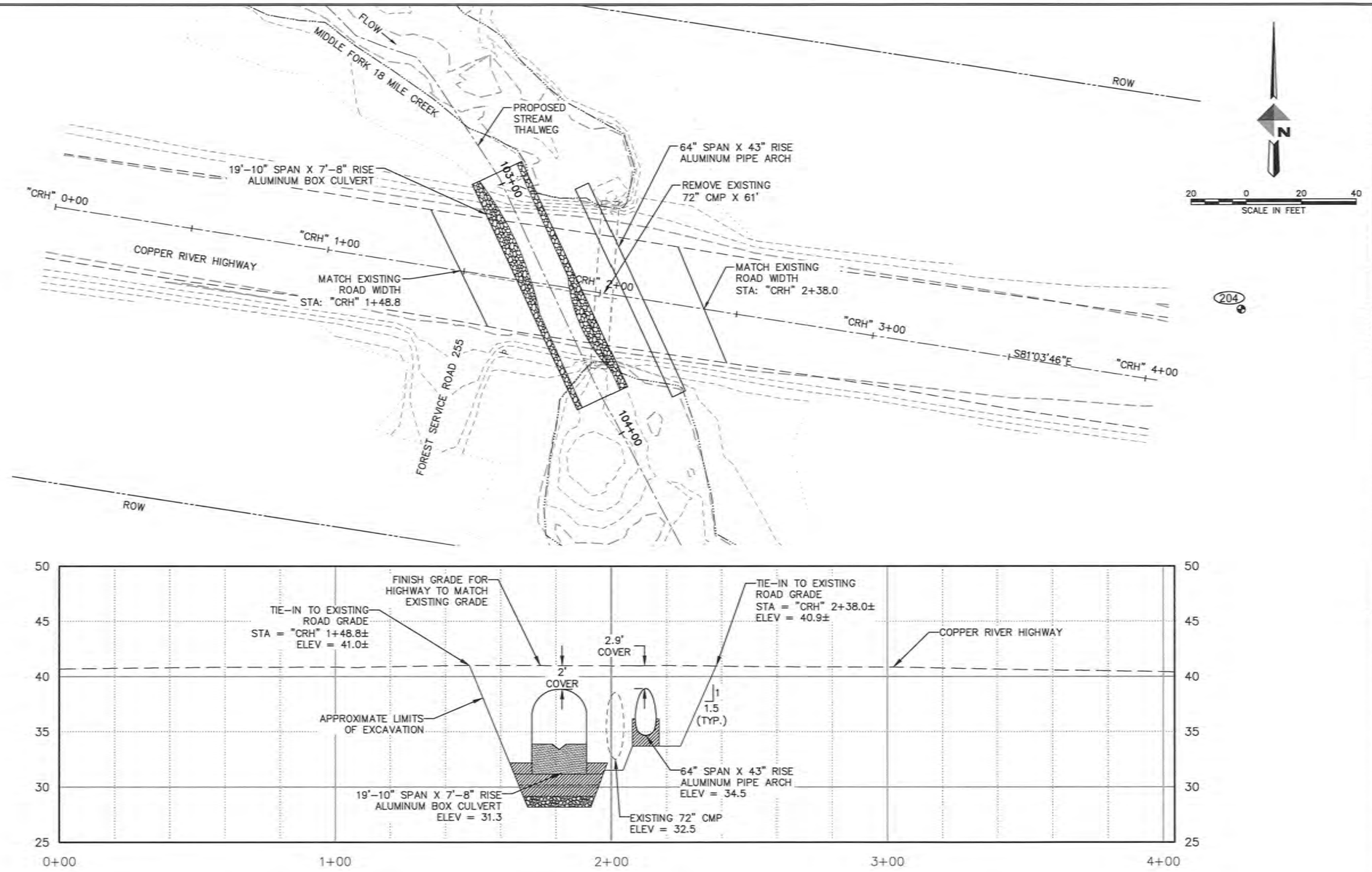
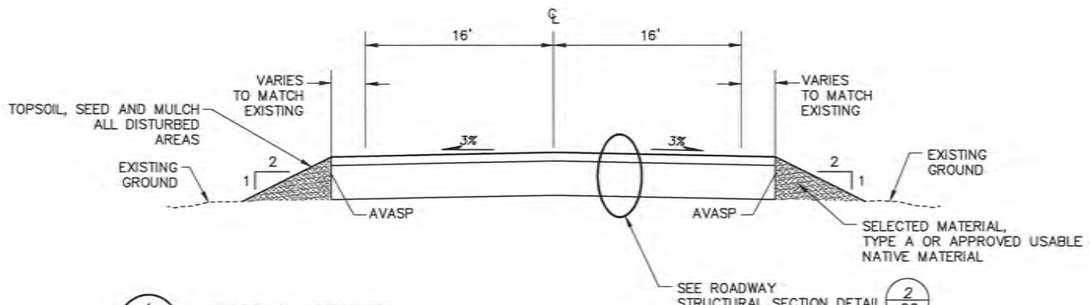
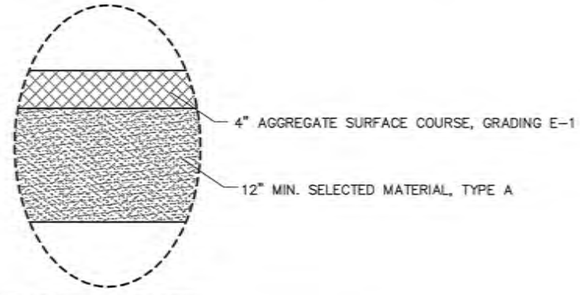




1/C6 ROADWAY SECTION
NTS



2/C6 ROADWAY STRUCTURAL SECTION
NTS

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STATE OF ALASKA — 13249 — REGISTERED PROFESSIONAL ENGINEER — Brian M. Mellick

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MIDDLE FORK 18 MILE CREEK – COP 22
ROADWAY PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63087.01
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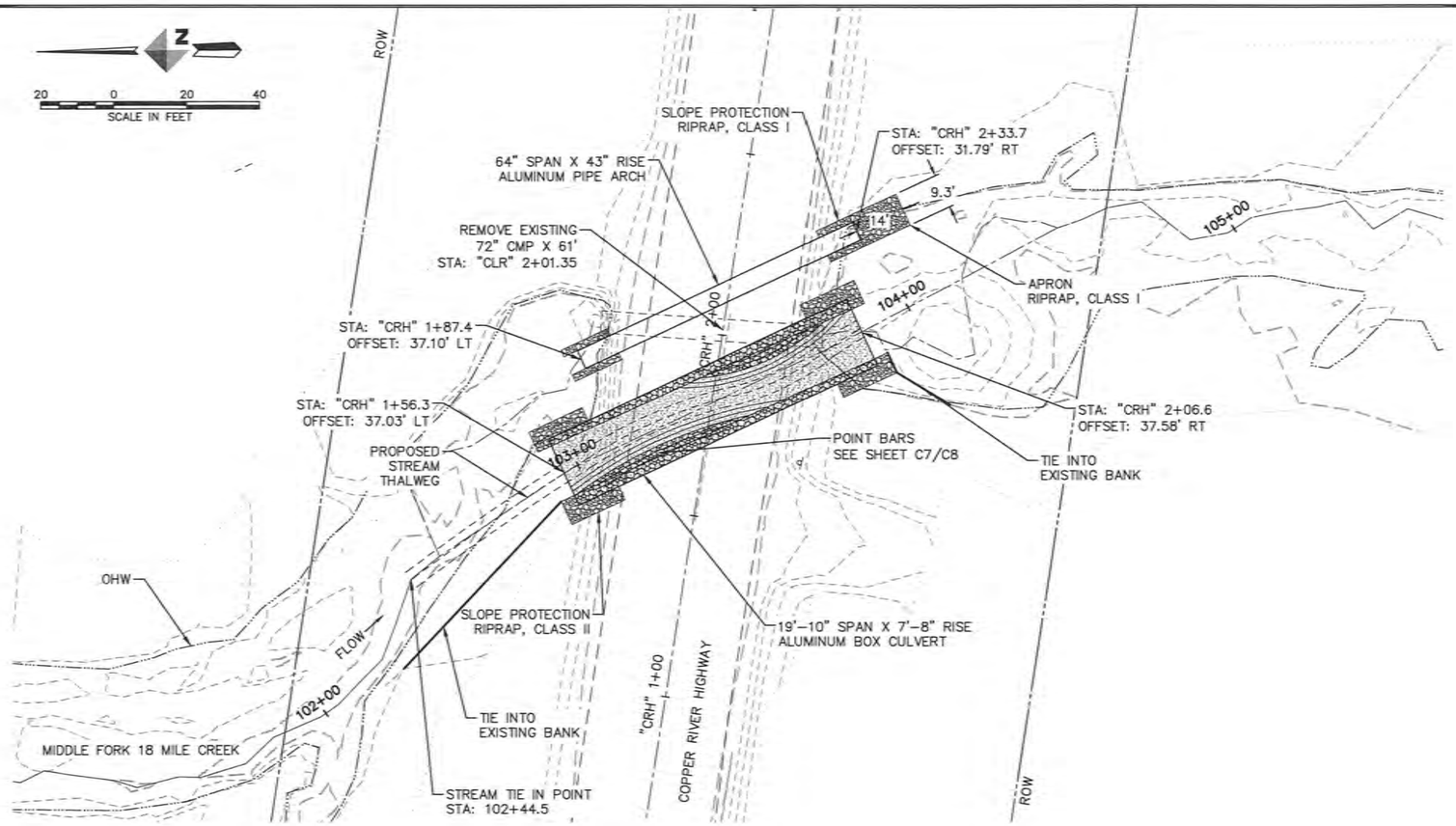
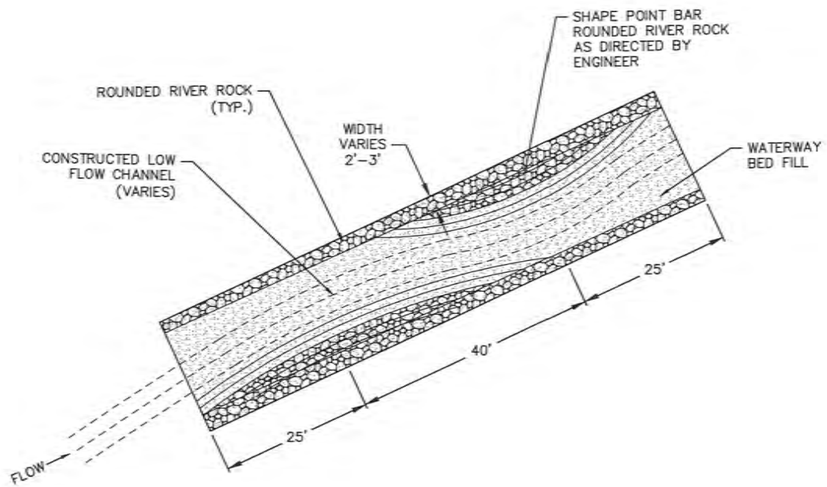


1/C7 STREAM SIMULATION DETAIL - PLAN VIEW



2/C7 CULVERT STREAM DETAIL
NTS

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STATE OF ALASKA
49TH
REGISTERED PROFESSIONAL ENGINEER
Bradley A. Kaltekin
12-4-20

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK – COP 22
STREAM DESIGN DETAILS
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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C7 OF C10

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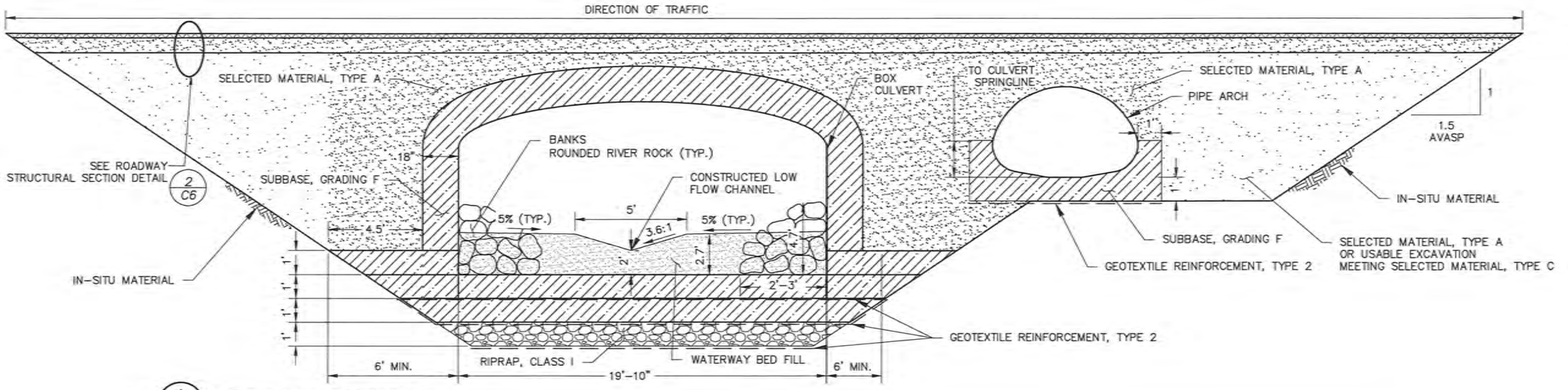
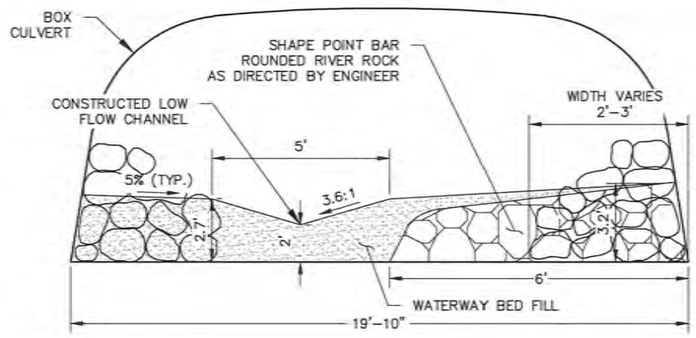


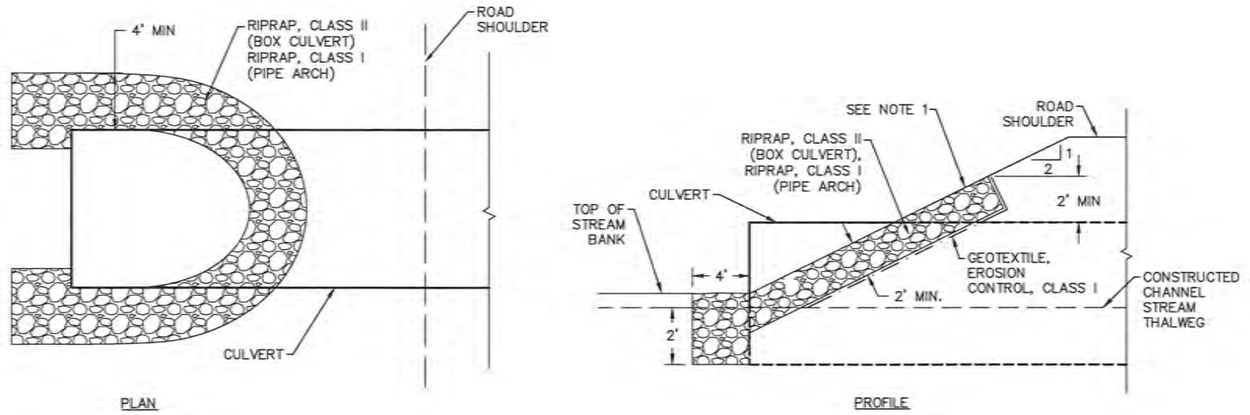
1/C8 TYPICAL CULVERT SECTION
NTS



2/C8 TYPICAL CULVERT SECTION AT ROCK CLUSTERS
NTS

NOTES:

1. GEOTEXTILE REINFORCEMENT, TYPE 2 SHALL BE PLACED BETWEEN IN-SITU MATERIAL AND RIPRAP, CLASS I, PLACED BETWEEN RIPRAP, CLASS I AND SUBBASE, GRADING F, AND PLACED BETWEEN EACH ONE-FOOT LAYER OF SUBBASE, GRADING F.
2. FILL VOIDS IN RIPRAP. MIX RIPRAP WITH FINES PRIOR TO PLACEMENT AND WASH FINES IN AFTER PLACEMENT.



3/C8 RIPRAP SLOPE PROTECTION SECTION
NTS

NOTES:

1. FILL VOIDS IN RIPRAP WITH SELECTED MATERIAL, TYPE A OR USABLE EXCAVATION MEETING SELECTED MATERIAL, TYPE C AND PLACE SALVAGED ORGANIC TOPSOIL AND SEED.

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA 49TH — REGISTERED PROFESSIONAL ENGINEER — Bradley Dale Hrobuk — 12-03-2020

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK – COP 22
STREAM SECTIONS AND DETAILS
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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ROADWAY DIVERSION NOTES:

REFER TO SPECIFICATIONS FOR ROAD CLOSURE AND TRAFFIC CONTROL INFORMATION.

STREAM DIVERSION NOTES:

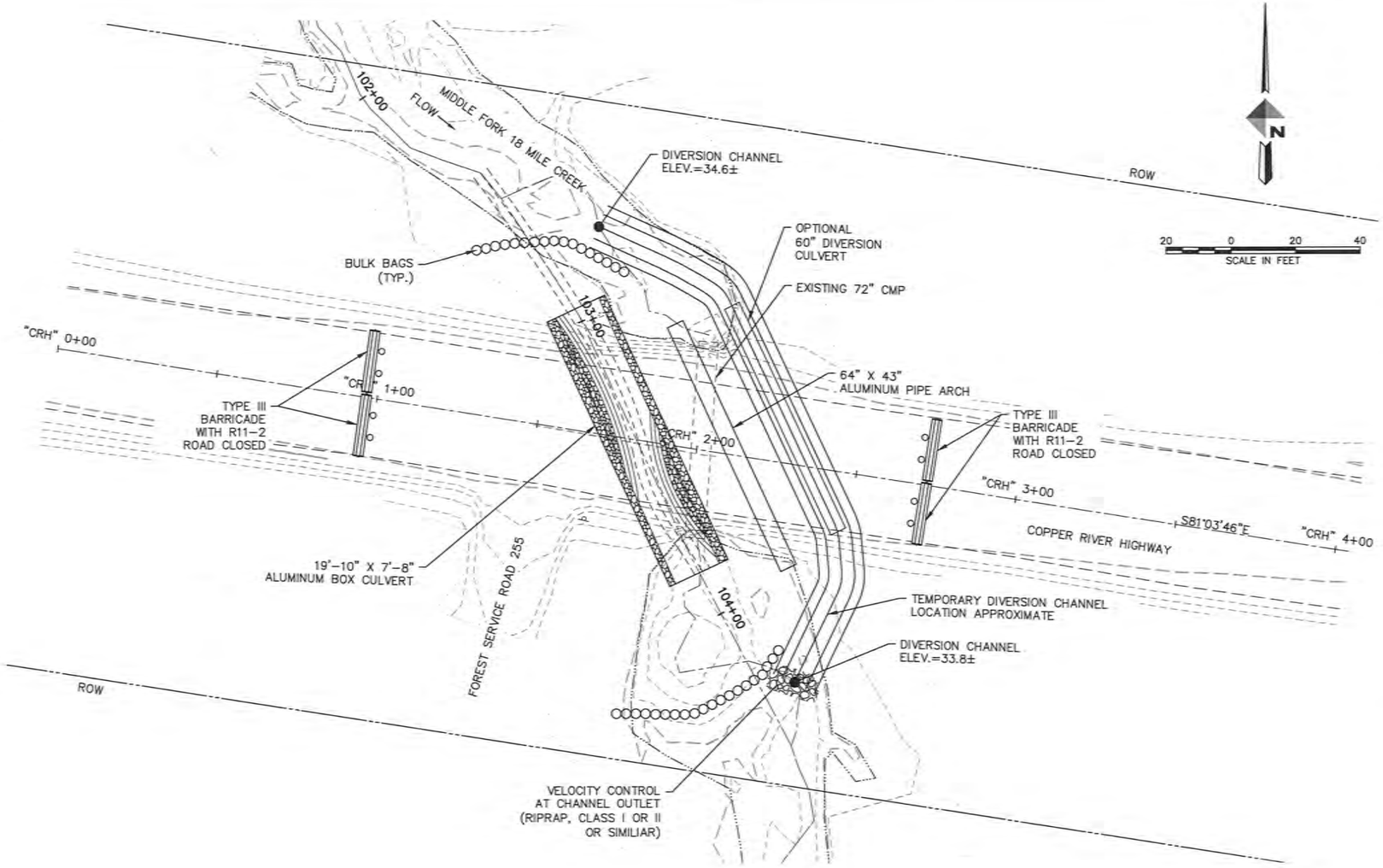
DUE TO PERMISSIVITY OF GRAVELS IN THE 18 MILE AREA, A COFFERDAM MADE OF SHEET PILE MAY BE NEEDED TO REDUCE GROUNDWATER FLOW INTO EXCAVATED AREA. TEMPORARY DIKES OR BERMS MAY BE USED TO ISOLATE THE WORK AREA FROM WATERS OF THE SURROUNDING AREA. THIS WORK MAY REQUIRE A DIVERSION OF STREAM WATER. THE DESIGNERS 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:

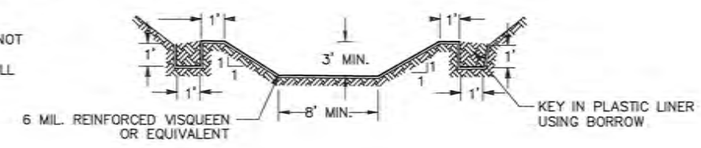
1. PLACE BARRICADES, SIGNS, AND TEMPORARY ROAD DETOUR IN COMPLIANCE WITH SPECIFICATIONS, ADOT&PF, AND MUTCD. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT.
2. CONSTRUCT VISQUEEN LINED DIVERSION CHANNEL EAST OF THE EXISTING CROSSING LOCATION.
3. ONE 60" MINIMUM DIAMETER CULVERT CAN BE USED IN DIVERSION 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 72" CULVERT.
6. CONSTRUCT THE NEW ALUMINUM BOX CULVERT AND ALUMINUM PIPE ARCH OVERFLOW 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.
10. RECONSTRUCT CREEK CHANNEL AND BANKS AS SHOWN IN PLANS.
11. RECONSTRUCT COPPER RIVER HIGHWAY OVER THE NEWLY INSTALLED CULVERTS.
12. STABILIZE AND REVEGETATE ALL REMAINING DISTURBED AREAS.
13. RETURN VEHICULAR TRAFFIC TO COPPER RIVER HIGHWAY.

ESCP AND DEWATERING NOTES:

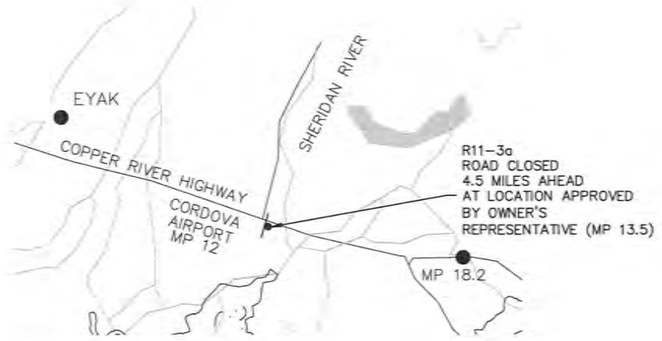
1. DEWATER TRENCH AND WORK AREA WITH PUMP HOSE IF REQUIRED.
2. ALL DISCHARGE POINTS REQUIRE PERMANENT OR TEMPORARY VELOCITY CONTROLS.
3. PROVIDE FOR SEDIMENT REMOVAL FOR ALL DEWATERING ACTIVITY PRIOR TO DISCHARGE FROM THE PROJECT INTO ANY WATER OF THE U.S.
4. PROVIDE SPARE (EXTRA) PUMPS FOR BOTH THE 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 ROADWAY DIVERSION SIGNS
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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK – COP 22
ESCP, STREAM DIVERSION & ROADWAY DIVERSION PLAN
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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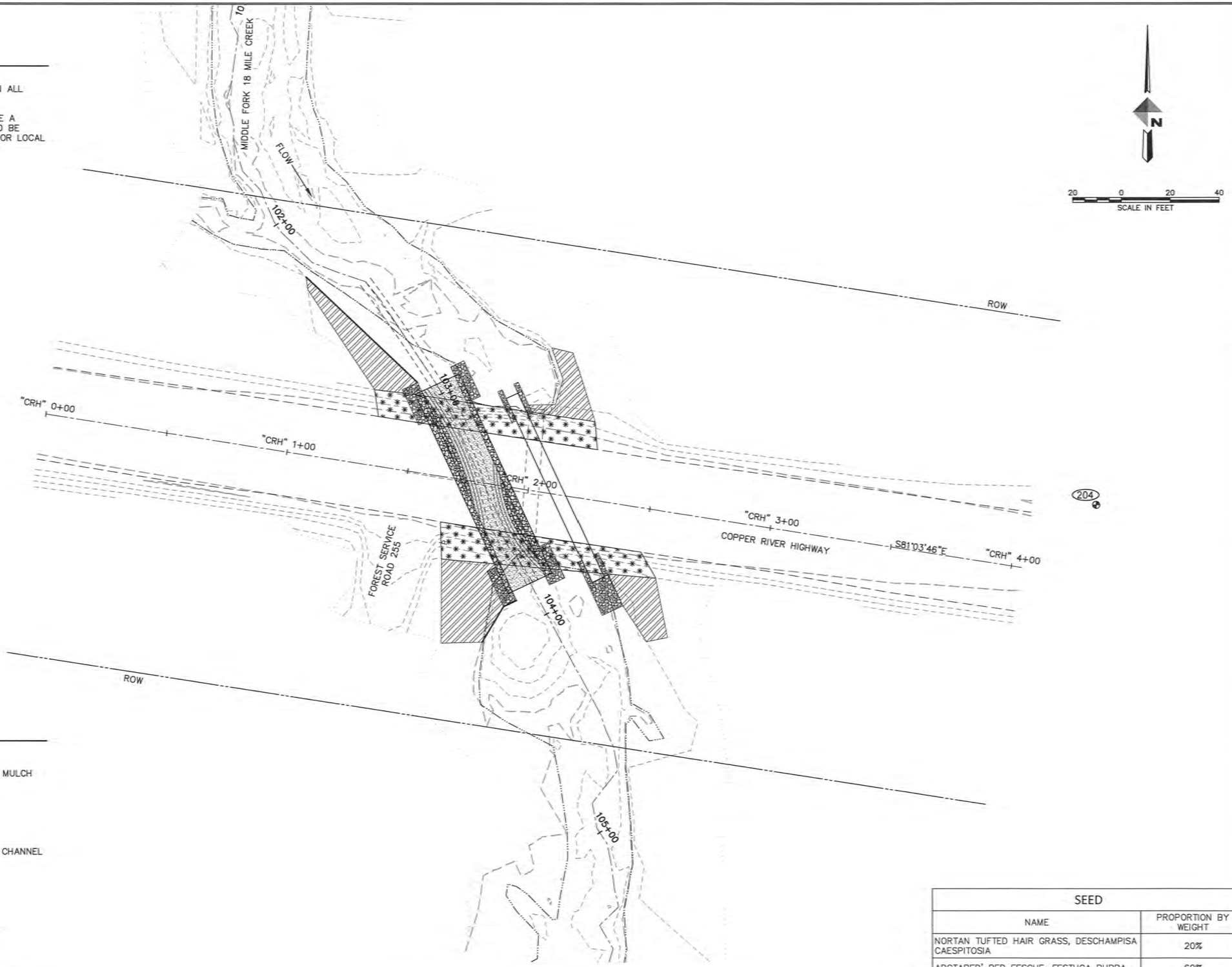
NOTES:

1. VEGETATIVE MAT SHALL BE PLACED ON ALL DISTURBED AREAS OUTSIDE OF THE EMBANKMENT SLOPES.
2. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA AS DIRECTED BY THE ENGINEER.



SITE REVEGETATION

- SEED, FERTILIZER, AND MULCH
- VEGETATIVE MAT
- CONSTRUCTED STREAM CHANNEL WATERWAY BED FILL
- RIPRAP
- ROUNDED RIVER ROCK

1 / C10 REVEGETATION PLAN

SEED	
NAME	PROPORTION BY WEIGHT
NORTAN TUFTED HAIR GRASS, DESCHAMPISA CAESPITOSIA	20%
ARCTARED' RED FESCUE, FESTUCA RUBRA	60%
CALAMANGROTIS CANADENSIS	20%

REVISIONS

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CORDOVA FISH PASSAGE IMPROVEMENTS
MIDDLE FORK 18 MILE CREEK – COP 22
REVEGETATION PLAN
CORDOVA, ALASKA

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

COP 25 Plans

VII

PLANS (11 SHEETS)

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LOCATION MAP

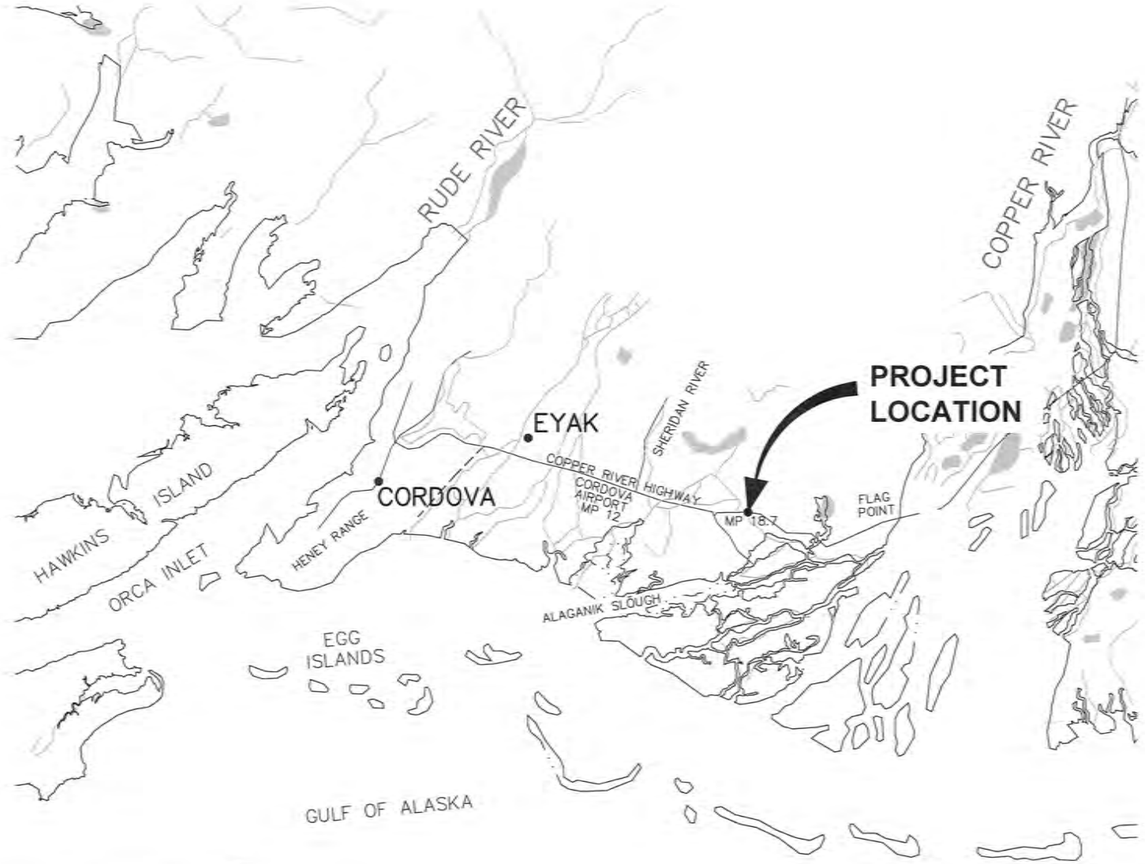
Contract Drawings For

CORDOVA FISH PASSAGE IMPROVEMENT PROJECTS
COPPER RIVER HIGHWAY - MP 18.7
18 MILE CREEK CROSSING - COP 25
U.S. FISH AND WILDLIFE SERVICE

SECTION 30, TOWNSHIP 16 SOUTH, RANGE 1 EAST, COPPER RIVER MERIDIAN, ALASKA
DECEMBER 2020

PROJECT LOCATION		
ADF&G SITE NO.	CRWP ID	COPPER RIVER HWY MP
20100491	COP 25	18.7

DESIGN DESIGNATIONS	
AADT 2015	244



VICINITY MAP
NTS

DRAWING INDEX

PREPARED BY: DOWL

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ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201(9)	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT	121
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	1254
203(5A)	BORROW, SELECTED MATERIAL, TYPE A	CUBIC YARD	1331
203(5B)	SUBBASE, GRADING F	CUBIC YARD	583
301(4)	AGGREGATE SURFACE COURSE, GRADING E-1	CUBIC YARD	55
602(2)	STRUCTURAL PLATE ALUMINUM PIPE ARCH, 71" SPAN, 47" RISE	LINEAR FOOT	70
602(4)	STRUCTURAL PLATE ALUMINUM BOX CULVERT, 29'-0" SPAN, 8'-3" RISE	LINEAR FOOT	76
611(1A)	RIPRAP, CLASS I	CUBIC YARD	143
611(1B)	RIPRAP, CLASS II	CUBIC YARD	55
613(2)	CULVERT MARKER POST	EACH	4
618(2)	SEEDING	POUND	2
620(1)	TOPSOIL (4")	SQUARE YARD	220
630(3B)	GEOTEXTILE, REINFORCEMENT, TYPE 2	SQUARE YARD	1080
631(2)	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD	117
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
642(14)	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM	ALL REQUIRED
672(1)	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED
690(10)	WATERWAY BED FILL	LINEAR FOOT	125
690(12)	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED
690(13)	ROUNDED RIVER ROCK	CUBIC YARD	99

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
ROUNDED RIVER ROCK
AGGREGATE SURFACE COURSE, E-1
SELECTED MATERIAL, TYPE A
SUBBASE, GRADING F
SEED
BULK BAG COFFERDAM

ABBREVIATIONS

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
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
STA	STATION
TYP	TYPICAL
VAP	VERTICAL ADJUSTMENT POTENTIAL

TABLE 1

COARSE MATERIAL: RIPRAP, CLASS I

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

TABLE 2

FINE MATERIAL: POROUS BACKFILL

SIZE/SIEVE	% PASSING
3"	100
1"	65
0.75"	50
#4	25
#10	15

TABLE 3

WATERWAY BED FILL

SIZE/SIEVE	% PASSING
12"	100
9"	85
6"	58
3"	49
1"	32
0.75"	23
#4	10
#10	6

TABLE 4

ROUNDED RIVER ROCK

SIZE/SIEVE	% PASSING
12"	100
9"	75
6"	30
3"	15
1"	10
0.75"	5
#4	0
#10	0

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.
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 OVER SATURATED 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.
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 PER STD D-09.00.

THE FOLLOWING DOT&PF STANDARD DRAWING APPLIES TO THIS PROJECT:
D-09.00 CULVERT MARKER POST

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA — 49TH — REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
EAST FORK 18 MILE CREEK - COP 25
GENERAL NOTES AND QUANTITIES
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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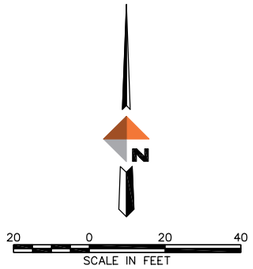
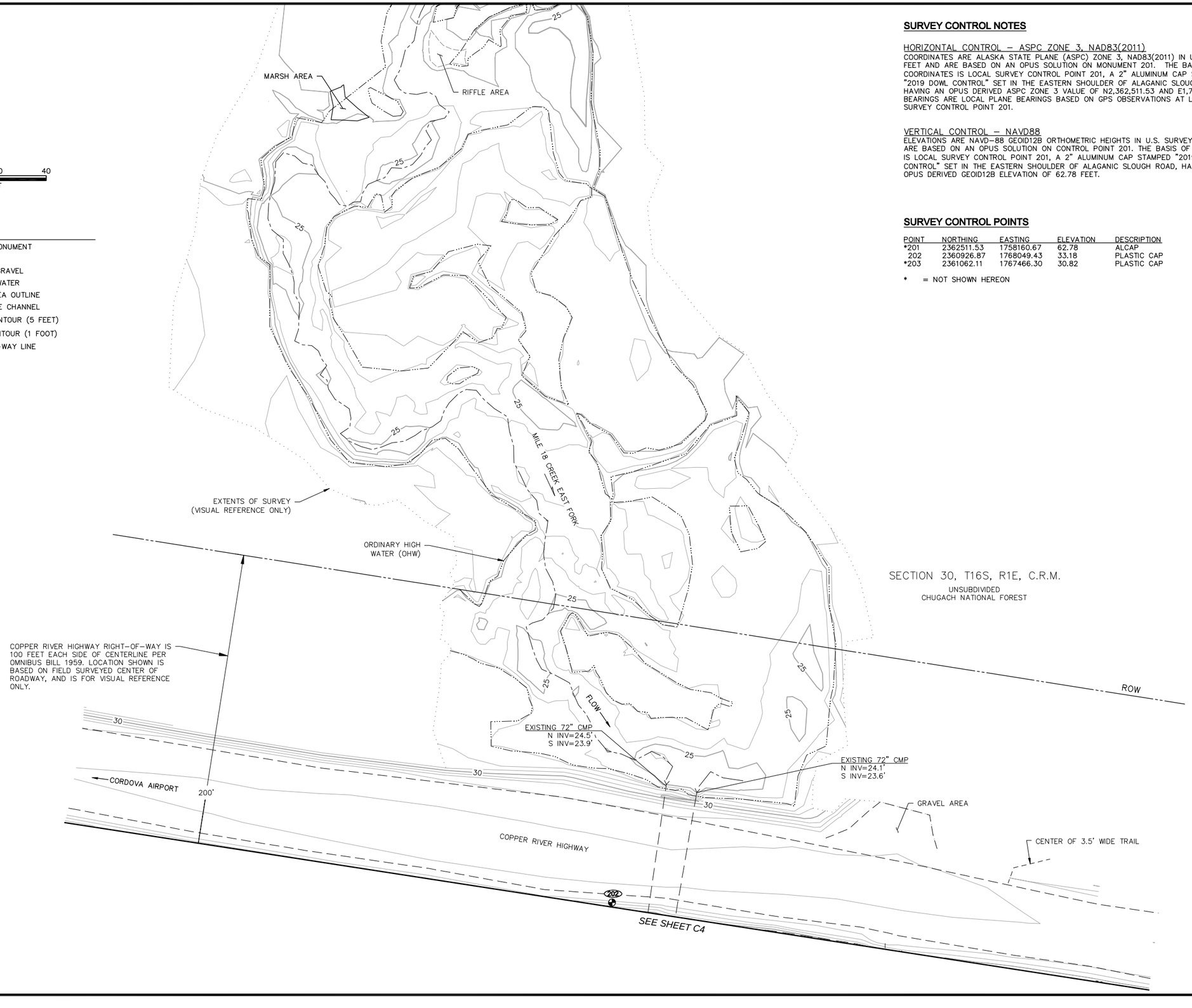


LEGEND

- SURVEY MONUMENT
- CULVERT
- EDGE OF GRAVEL
- EDGE OF WATER
- RIFFLE AREA OUTLINE
- CENTERLINE CHANNEL
- XX MAJOR CONTOUR (5 FEET)
- MINOR CONTOUR (1 FOOT)
- RIGHT-OF-WAY LINE



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 ALAGANIC 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 ALAGANIC SLOUGH ROAD, HAVING AN OPUS DERIVED GEOID12B ELEVATION OF 62.78 FEET.

SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
*201	2362511.53	1758160.67	62.78	ALCAP
202	2360926.87	1768049.43	33.18	PLASTIC CAP
*203	2361062.11	1767466.30	30.82	PLASTIC CAP

* = NOT SHOWN HEREON

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EAST FORK 18 MILE CREEK – COP 25
SURVEY CONTROL
SECTION 30, T16S, R1E, C.R.M. ALASKA
CORDOVA RECORDING DISTRICT, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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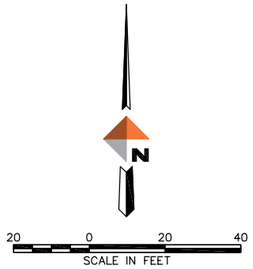

LEGEND

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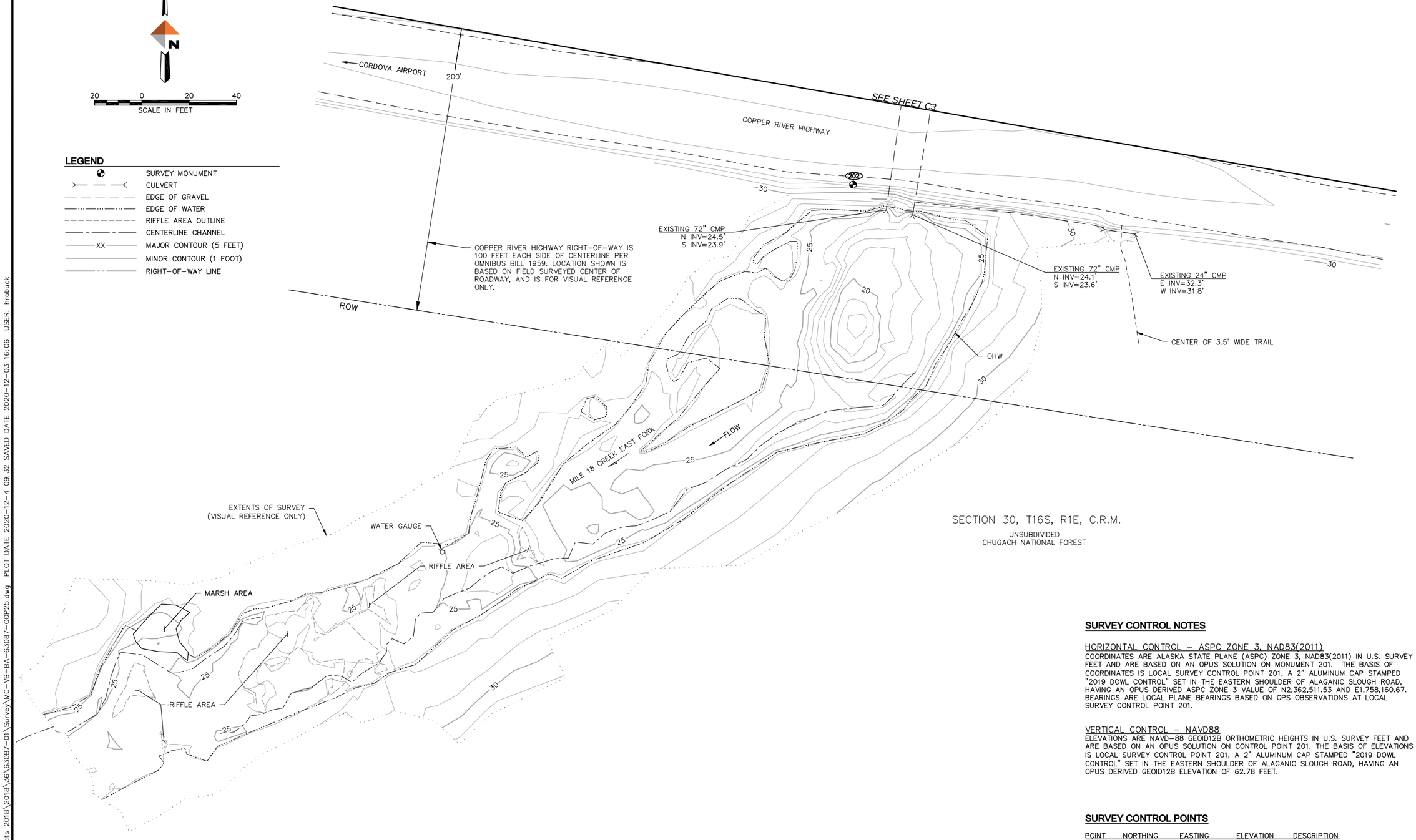

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SURVEY CONTROL NOTES

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STATE OF ALASKA
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A. WILLIAM STOLL
12-4-2020
EXPIRES 12/31/2021

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EAST FORK 18 MILE CREEK – COP 25
SURVEY CONTROL
SECTION 30, T16S, R1E, C.R.M. ALASKA
CORDOVA RECORDING DISTRICT, ALASKA

PROJECT 1136.63087.01
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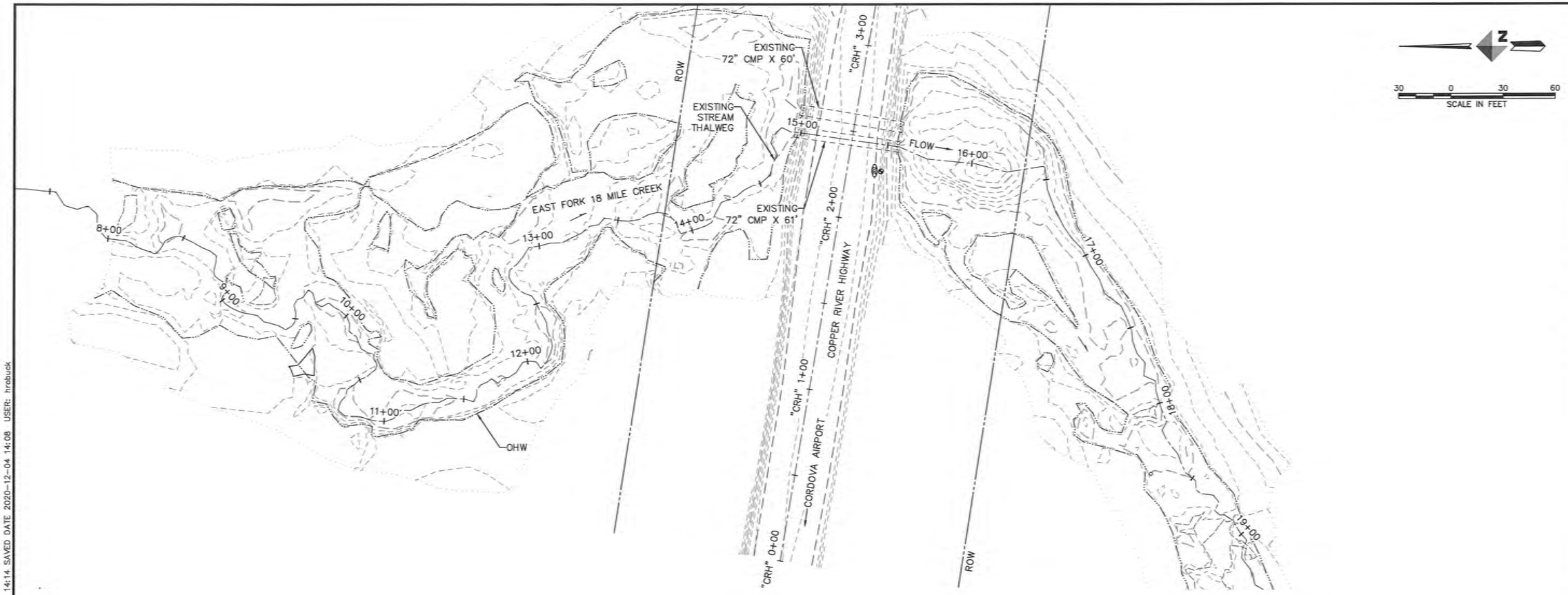

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Bradley VonHatten
12-4-20

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CORDOVA FISH PASSAGE IMPROVEMENTS
EAST FORK 18 MILE CREEK – COP 25
EXISTING STREAM PLAN AND PROFILE

CORDOVA, ALASKA

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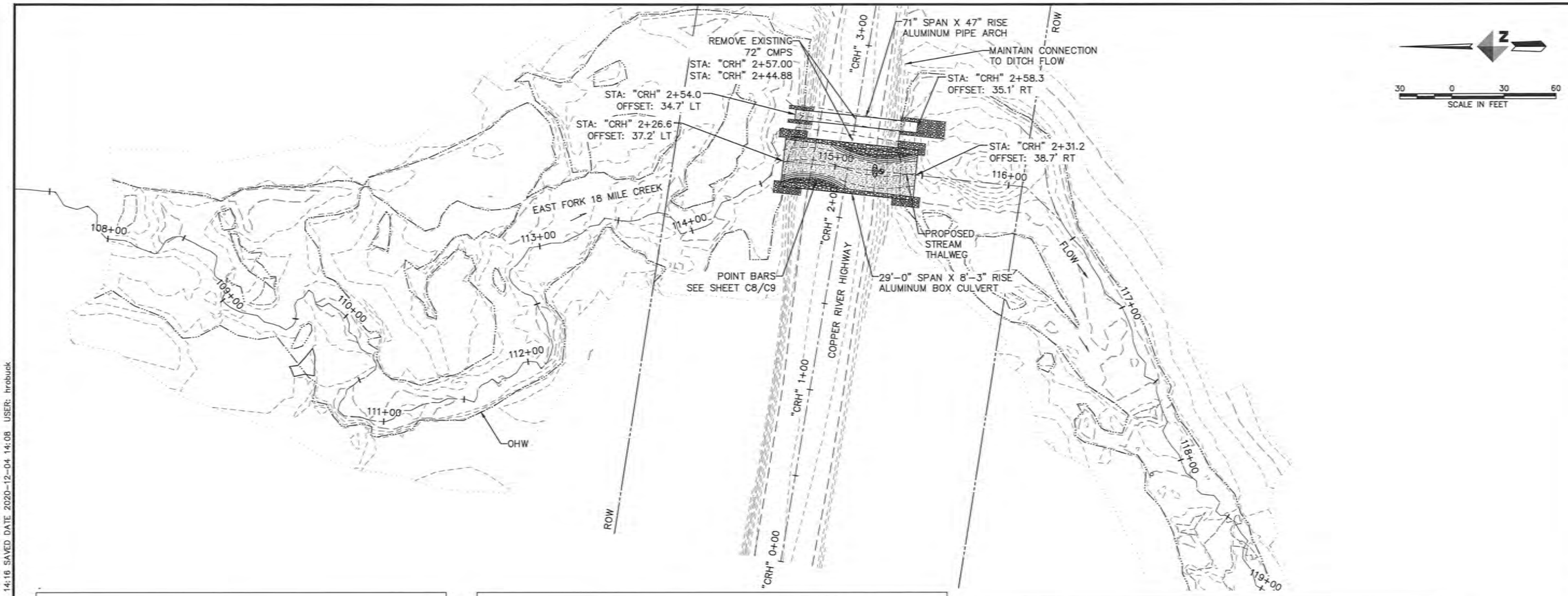
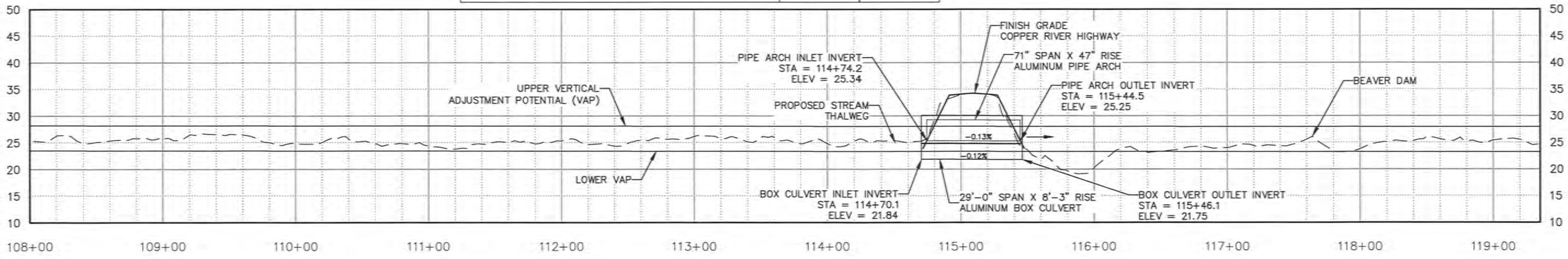


CULVERT SUMMARY SCHEDULE		
SIZE	29'-0" SPAN X 8'-3" RISE BOX CULVERT	71" SPAN X 47" RISE PIPE ARCH
LENGTH	76'	70'
SLOPE	0.12%	0.13%
CORRUGATION	9" X 2.5"	3" X 1"
MATERIAL	ALUMINUM	ALUMINUM
LOADING	HL-93	HL-93
"CRH" CL STATION	2+28.85	2+56.15

HYDROLOGIC & HYDRAULIC SUMMARY					
EXCEEDANCE PROBABILITY	RETURN PERIOD	DESIGN DISCHARGE	DESIGN HIGH WATER ELEVATION	REGULATORY FLOOD	HW/D
	(YEAR)	(CFS)	(FT)		
50%	2	705	29.60	N/A	0.91
2%	50	962	30.56	N/A	1.09
1%	100	1002	30.68	N/A	1.11
DRAINAGE AREA = 2.5 SQUARE MILES					
ANTICIPATED ADDITIONAL BACKWATER = 0 FEET					
ROADWAY OVERTOPPING Q = 1,451.43 CFS					

CULVERT COORDINATE TABLE				
SIZE	POINT	NORTHING	EASTING	ELEVATION
29'-0" SPAN X 8'-3" RISE BOX CULVERT	INLET INV.	2360982.86	1768055.52	21.84
	OUTLET INV.	2360907.31	1768047.35	21.75
71" SPAN X 47" RISE PIPE ARCH	INLET INV.	2360975.86	1768082.17	25.34
	OUTLET INV.	2360906.26	1768074.65	25.25



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		BY

STATE OF ALASKA
Bradley M. Hrobuck
REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
EAST FORK 18 MILE CREEK - COP 25
STREAM PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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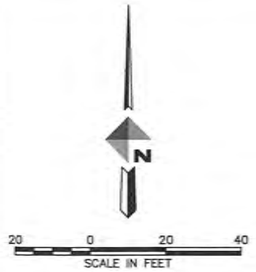
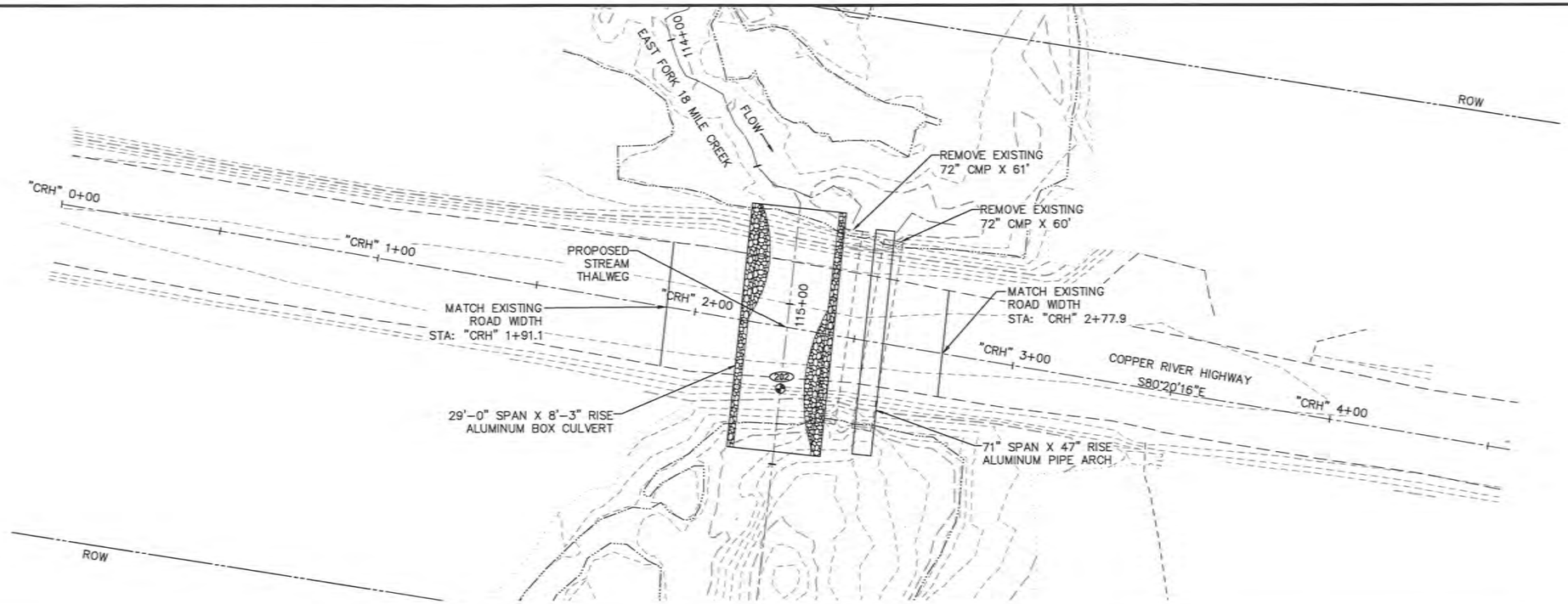
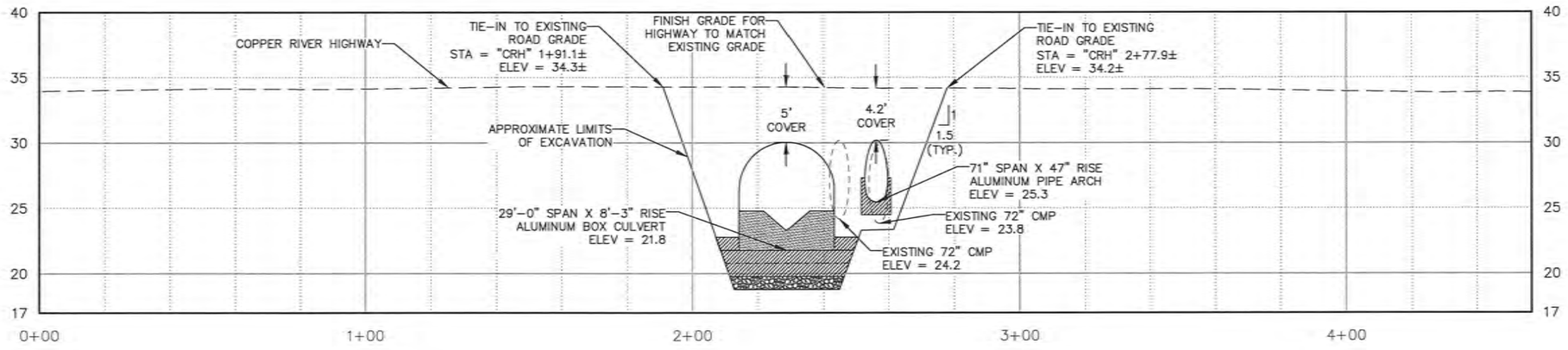
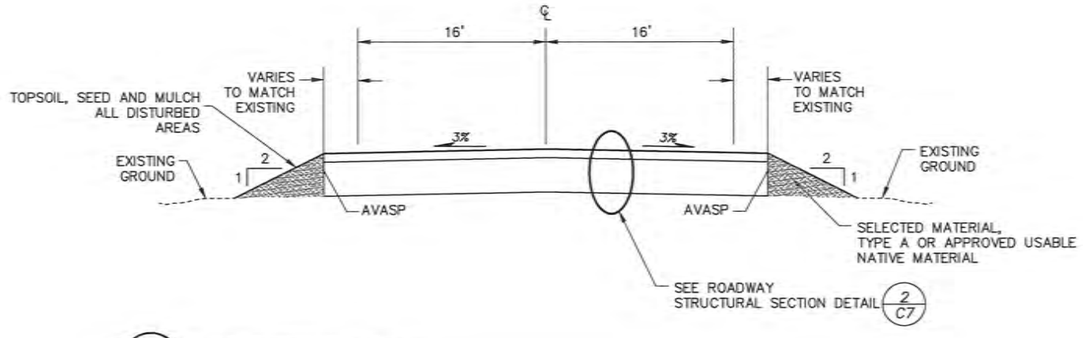
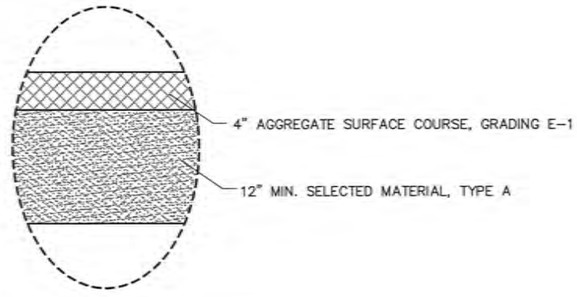








1/C7 ROADWAY SECTION
NTS



2/C7 ROADWAY STRUCTURAL SECTION
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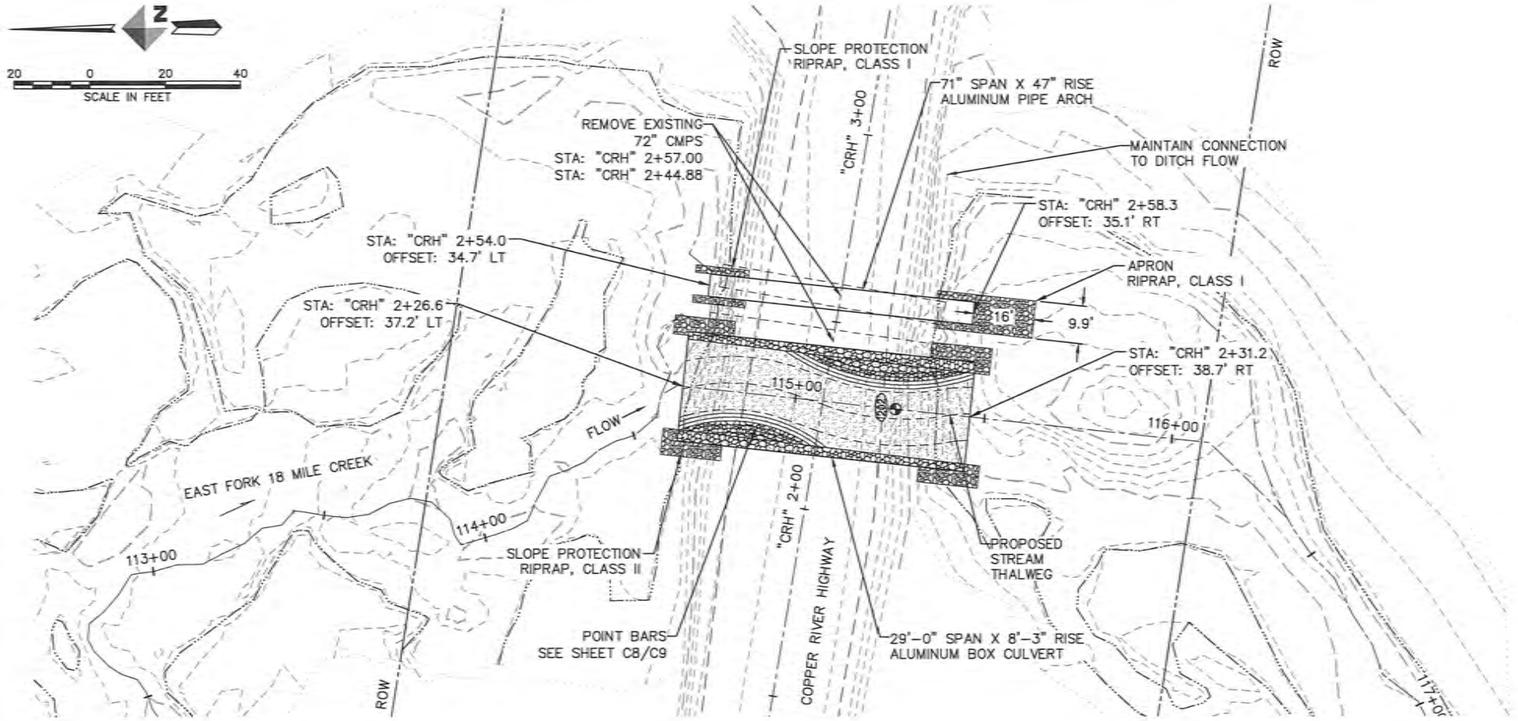
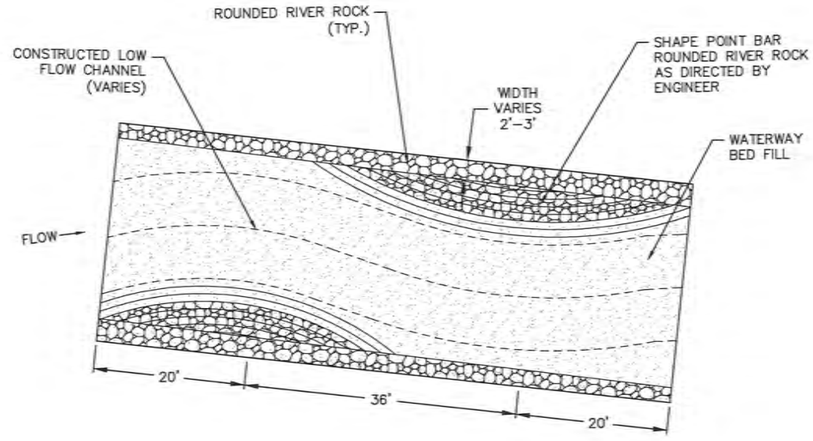


1 / C8 STREAM SIMULATION DETAIL - PLAN VIEW



2 / C8 CULVERT STREAM DETAIL

REVISIONS

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STATE OF ALASKA — 49TH — REGISTERED PROFESSIONAL ENGINEER — Bradley M. Kuhle — 13768

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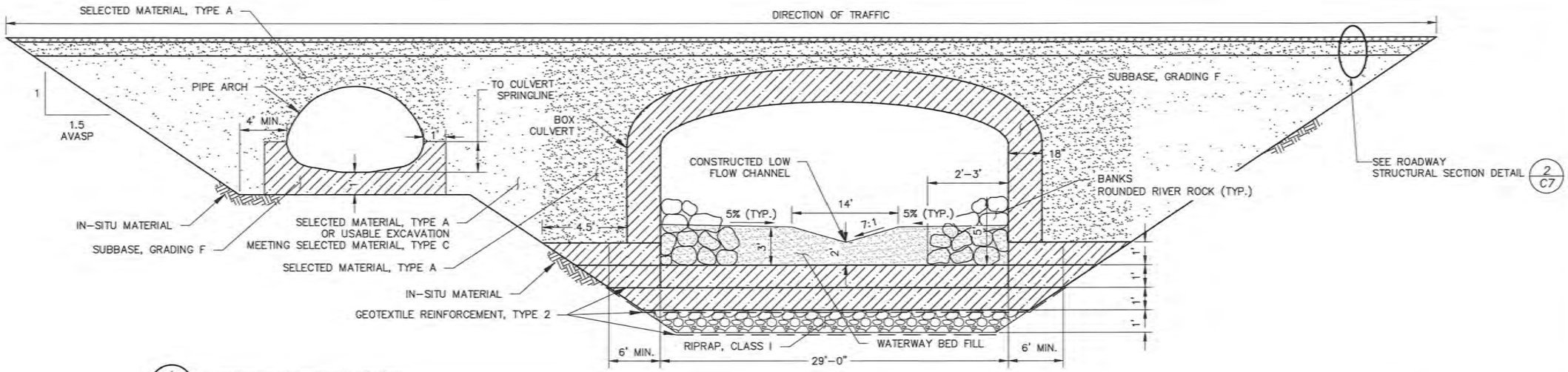
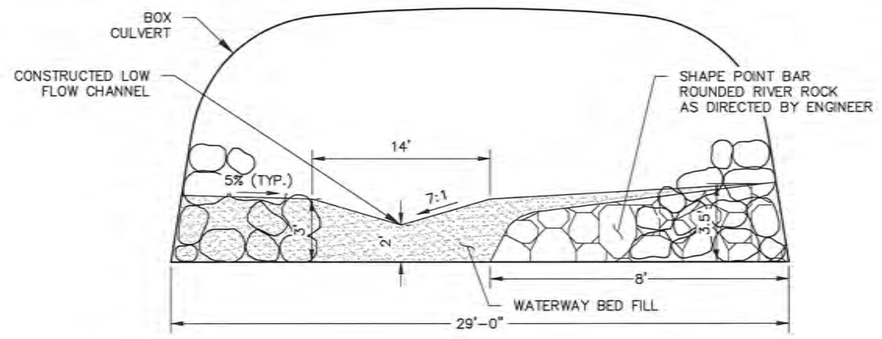


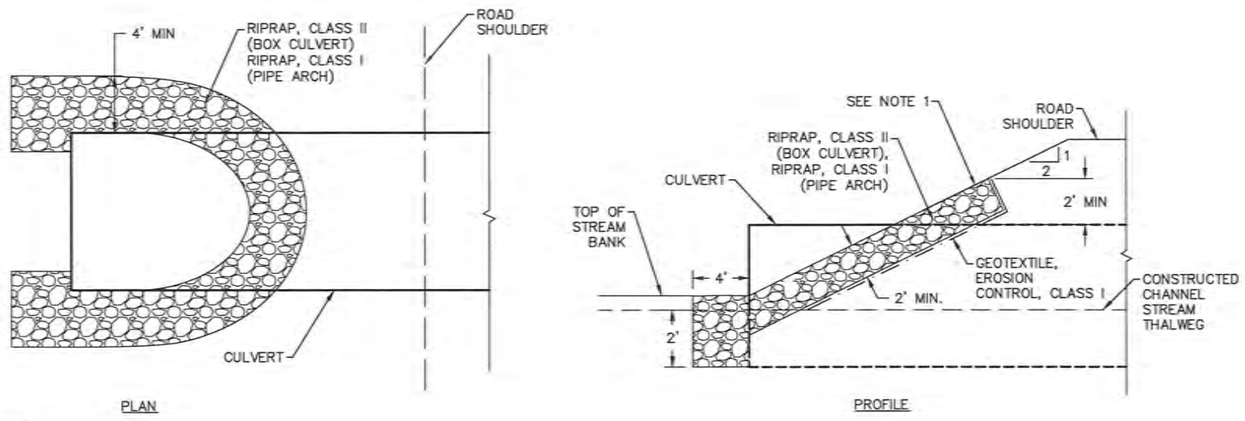
1/C9 TYPICAL CULVERT SECTION
NTS



2/C9 CULVERT SECTION AT ROCK CLUSTER
NTS

NOTES:

1. GEOTEXTILE REINFORCEMENT, TYPE 2 SHALL BE PLACED BETWEEN IN–SITU MATERIAL AND RIPRAP, CLASS I, PLACED BETWEEN RIPRAP, CLASS I AND SUBBASE, GRADING F, AND PLACED BETWEEN EACH ONE–FOOT LAYER OF SUBBASE, GRADING F.
2. FILL VOIDS IN RIPRAP. MIX RIPRAP WITH FINES PRIOR TO PLACEMENT AND WASH FINES IN AFTER PLACEMENT.



3/C9 RIPRAP SLOPE PROTECTION SECTION
NTS

NOTES:

1. FILL VOIDS IN RIPRAP WITH SELECTED MATERIAL, TYPE A OR USABLE EXCAVATION MEETING SELECTED MATERIAL, TYPE C AND PLACE SALVAGED ORGANIC TOPSOIL AND SEED.

REVISIONS

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EAST FORK 18 MILE CREEK – COP 25
STREAM SECTIONS AND DETAILS
CORDOVA, ALASKA

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ROADWAY DIVERSION NOTES:

REFER TO SPECIFICATIONS FOR ROAD CLOSURE AND TRAFFIC CONTROL INFORMATION.

STREAM DIVERSION NOTES:

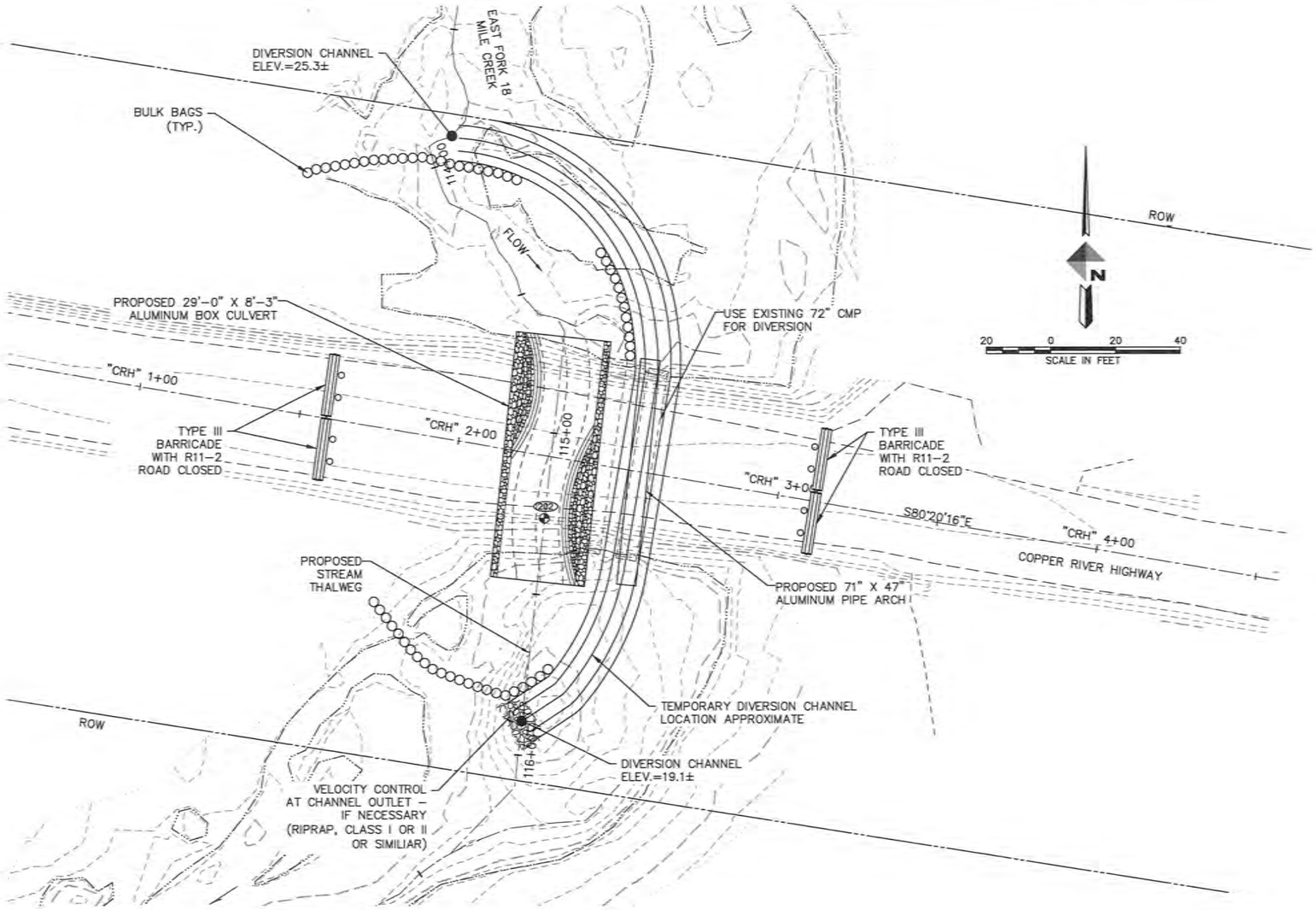
DUE TO PERMISSIVITY OF GRAVELS IN THE 18 MILE AREA, A COFFERDAM MADE OF SHEET PILE MAY BE NEEDED TO REDUCE GROUNDWATER FLOW INTO EXCAVATED AREA. TEMPORARY DIKES OR BERMS MAY BE USED TO ISOLATE THE WORK AREA FROM WATERS OF THE SURROUNDING AREA. THIS WORK MAY REQUIRE A DIVERSION OF STREAM WATER. THE DESIGNERS 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:

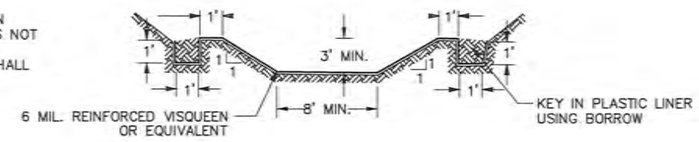
1. PLACE BARRICADES, SIGNS, AND TEMPORARY ROAD DETOUR IN COMPLIANCE WITH SPECIFICATIONS, ADOT&PF, AND MUTCD. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT.
2. CONSTRUCT VISQUEEN LINED DIVERSION CHANNEL.
3. USE EXISTING EAST 72" CMP IN DIVERSION CHANNEL TO PROVIDE VEHICULAR ACCESS. CONSTRUCT DIVERSION 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 WEST 72" 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. REMOVE EXISTING EAST 72" CULVERT.
10. CONSTRUCT THE NEW ALUMINUM PIPE ARCH OVERFLOW CULVERT. FILL DIVERSION CHANNEL.
11. RECONSTRUCT CREEK CHANNEL AND BANKS AS SHOWN IN PLANS.
12. RECONSTRUCT COPPER RIVER HIGHWAY OVER THE NEWLY INSTALLED CULVERTS.
13. STABILIZE AND REVEGETATE ALL REMAINING DISTURBED AREAS.
14. RETURN VEHICULAR TRAFFIC TO COPPER RIVER HIGHWAY.

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 C10 ESCP, STREAM DIVERSION & ROADWAY DIVERSION PLAN



2 C10 DIVERSION CHANNEL
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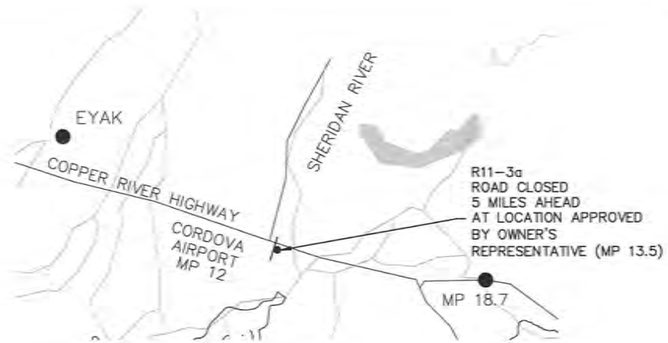

3 C10 ROADWAY DIVERSION SIGNS
NTS

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		REVISIONS	

STATE OF ALASKA
12-4-20
Bradley Lindell
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EAST FORK 18 MILE CREEK - COP 25
ESCP, STREAM DIVERSION & ROADWAY
DIVERSION PLAN
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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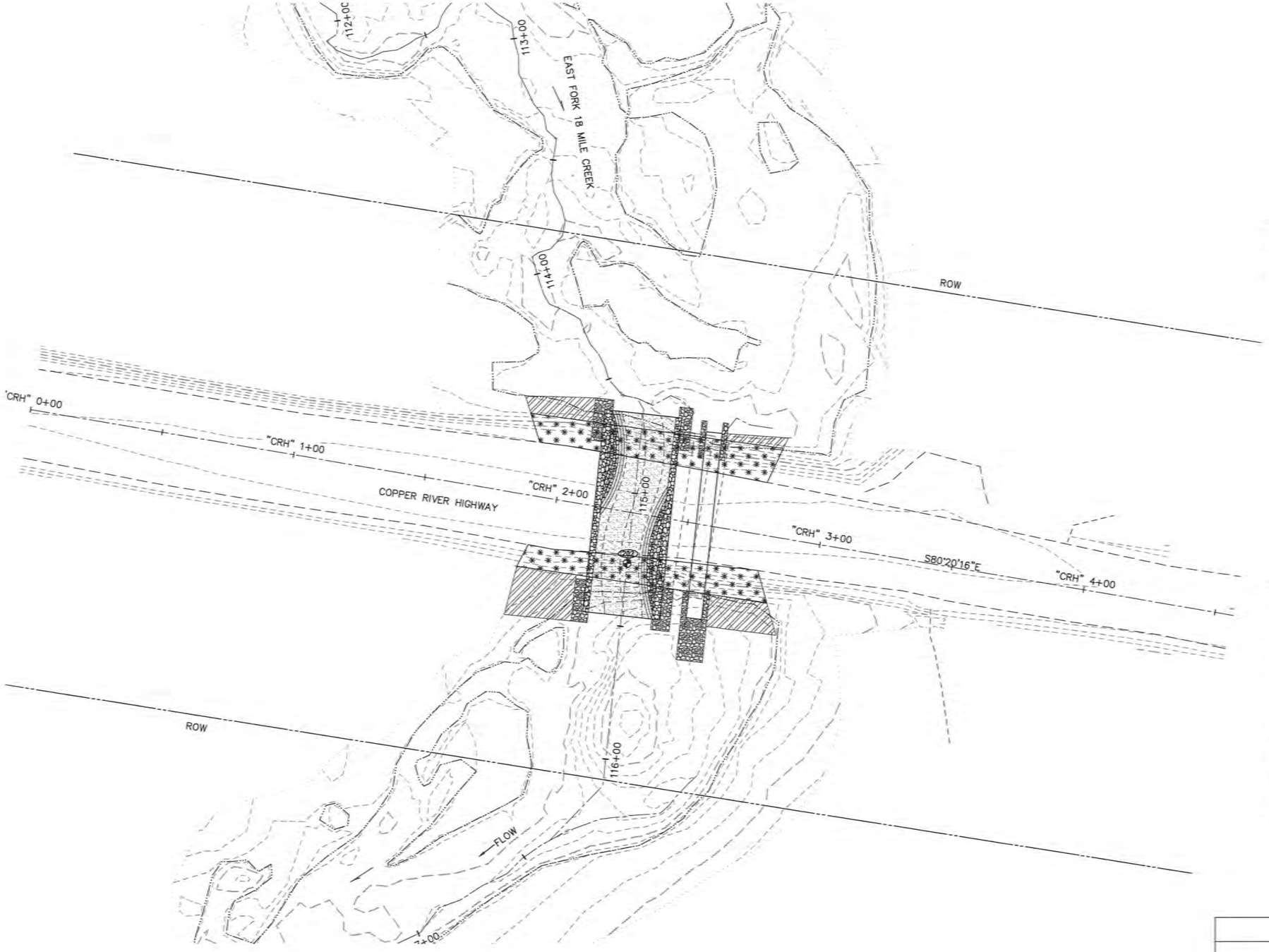

1 / C11 REVEGETATION PLAN

20 0 20 40
SCALE IN FEET

NOTES:

1. VEGETATIVE MAT SHALL BE PLACED ON ALL DISTURBED AREAS OUTSIDE OF THE EMBANKMENT SLOPES.
2. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA AS DIRECTED BY THE ENGINEER.

SITE REVEGETATION

- SEED, FERTILIZER, AND MULCH
- VEGETATIVE MAT
- CONSTRUCTED STREAM CHANNEL WATERWAY BED FILL
- RIPRAP
- ROUNDED RIVER ROCK

SEED	
NAME	PROPORTION BY WEIGHT
NORTAN TUFTED HAIR GRASS, DESCHAMPISA CAESPITOSIA	20%
ARCTARED' RED FESCUE, FESTUCA RUBRA	60%
CALAMANGROTIS CANADENSIS	20%

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STATE OF ALASKA 49TH — REGISTERED PROFESSIONAL ENGINEER — Bradley M. Hrobuck

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REVEGETATION PLAN
CORDOVA, ALASKA

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COPPER RIVER WATERSHED PROJECT

Request for Proposal EVOSTC-2021

Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites COP 20, 22, and 25 (Fish Passage Improvements at Mile 18)

COP 20 Plans

VIII

PLANS (10 SHEETS)

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LOCATION MAP

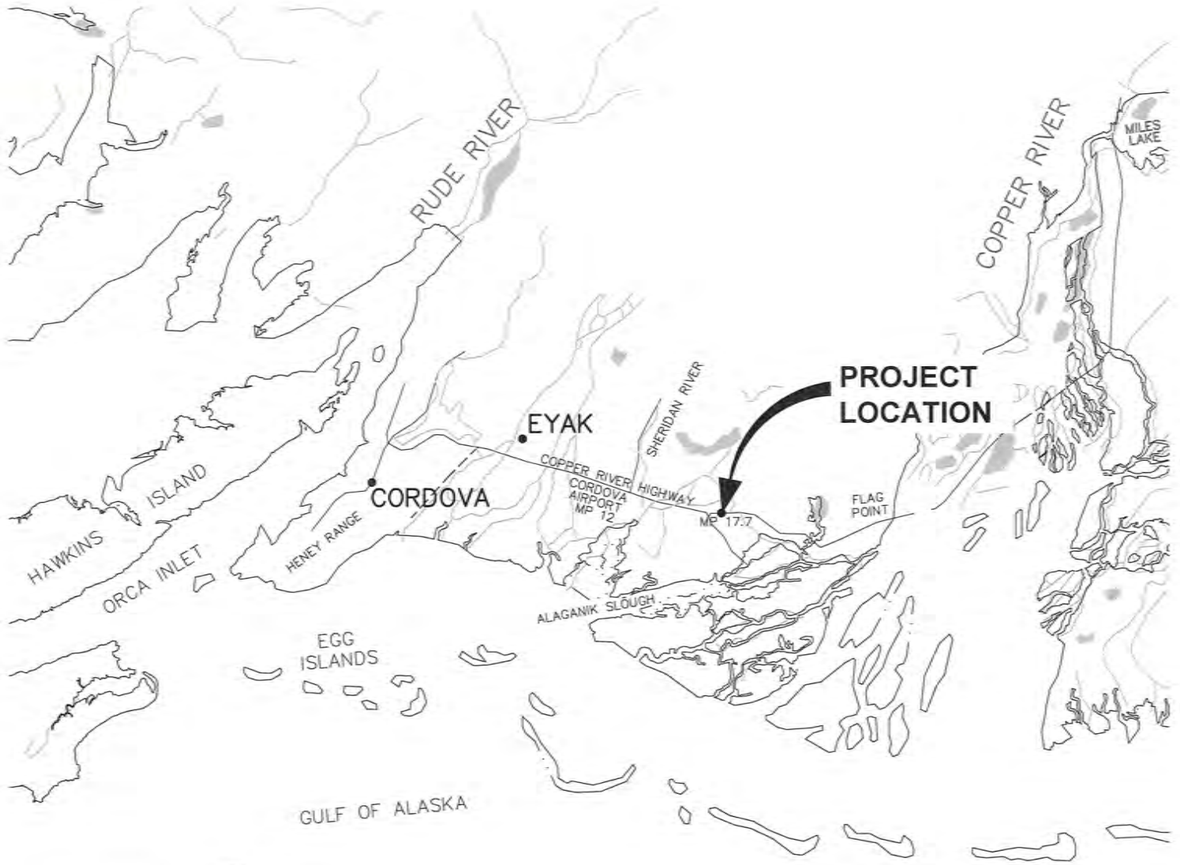
Contract Drawings For

CORDOVA FISH PASSAGE IMPROVEMENT PROJECTS
COPPER RIVER HIGHWAY - MP 17.7
18 MILE CREEK CROSSING - COP 20
U.S. FISH AND WILDLIFE SERVICE

SECTION 24, TOWNSHIP 16 SOUTH, RANGE 1 WEST, COPPER RIVER MERIDIAN, ALASKA
DECEMBER 2020

PROJECT LOCATION		
ADF&G SITE NO.	CRWP ID	COPPER RIVER HWY MP
20100486	COP 20	17.7

DESIGN DESIGNATIONS	
AADT 2015	244



VICINITY MAP
NTS

DRAWING INDEX

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ESTIMATE OF QUANTITIES

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY
201(9)	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED
202(4)	REMOVAL OF CULVERT PIPE	LINEAR FOOT	57
203(3)	UNCLASSIFIED EXCAVATION	CUBIC YARD	1100
203(5A)	BORROW, SELECTED MATERIAL, TYPE A	CUBIC YARD	869
203(5B)	SUBBASE, GRADING F	CUBIC YARD	374
301(4)	AGGREGATE SURFACE COURSE, GRADING E-1	CUBIC YARD	44
602(2)	STRUCTURAL PLATE ALUMINUM PIPE ARCH, 57" SPAN, 38" RISE	LINEAR FOOT	66
602(4)	STRUCTURAL PLATE ALUMINUM BOX CULVERT, 15'-6" SPAN, 7'-3" RISE	LINEAR FOOT	75
611(1A)	RIPRAP, CLASS I	CUBIC YARD	132
613(2)	CULVERT MARKER POST	EACH	4
618(2)	SEEDING	POUND	2
620(1)	TOPSOIL (4")	SQUARE YARD	180
630(3B)	GEOTEXTILE, REINFORCEMENT, TYPE 2	SQUARE YARD	681
631(2)	GEOTEXTILE, EROSION CONTROL, CLASS 1	SQUARE YARD	70
640(1)	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED
641(3)	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED
642(1)	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED
642(14)	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED
643(2)	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED
644(15)	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM	ALL REQUIRED
672(1)	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED
690(10)	WATERWAY BED FILL	LINEAR FOOT	117
690(12)	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED
690(13)	ROUNDED RIVER ROCK	CUBIC YARD	66

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
	ROUNDED RIVER ROCK
	AGGREGATE SURFACE COURSE, E-1
	SELECTED MATERIAL, TYPE A
	SUBBASE, GRADING F
	SEED
	BULK BAG COFFERDAM

ABBREVIATIONS

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
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
STA	STATION
TYP	TYPICAL
VAP	VERTICAL ADJUSTMENT POTENTIAL

TABLE 1

COARSE MATERIAL: RIPRAP, CLASS I

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

TABLE 2

FINE MATERIAL: POROUS BACKFILL

SIZE/SIEVE	% PASSING
3"	100
1"	65
0.75"	50
#4	25
#10	15

TABLE 3

WATERWAY BED FILL

SIZE/SIEVE	% PASSING
12"	100
9"	85
6"	58
3"	49
1"	32
0.75"	23
#4	10
#10	6

TABLE 4

ROUNDED RIVER ROCK

SIZE/SIEVE	% PASSING
12"	100
9"	75
6"	30
3"	15
1"	10
0.75"	5
#4	0
#10	0

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.
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 OVER SATURATED 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.
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 PER STD D-09.00.

THE FOLLOWING DOT&PF STANDARD DRAWING APPLIES TO THIS PROJECT:
D-09.00 CULVERT MARKER POST

REVISIONS

REV	DATE	DESCRIPTION	BY

STATE OF ALASKA 49TH — REGISTERED PROFESSIONAL ENGINEER — Bradley W. Hadock — CA 11598

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CORDOVA FISH PASSAGE IMPROVEMENTS
WEST FORK 18 MILE CREEK - COP 20
GENERAL NOTES AND QUANTITIES
CORDOVA, ALASKA

PROJECT 1136.63087.01
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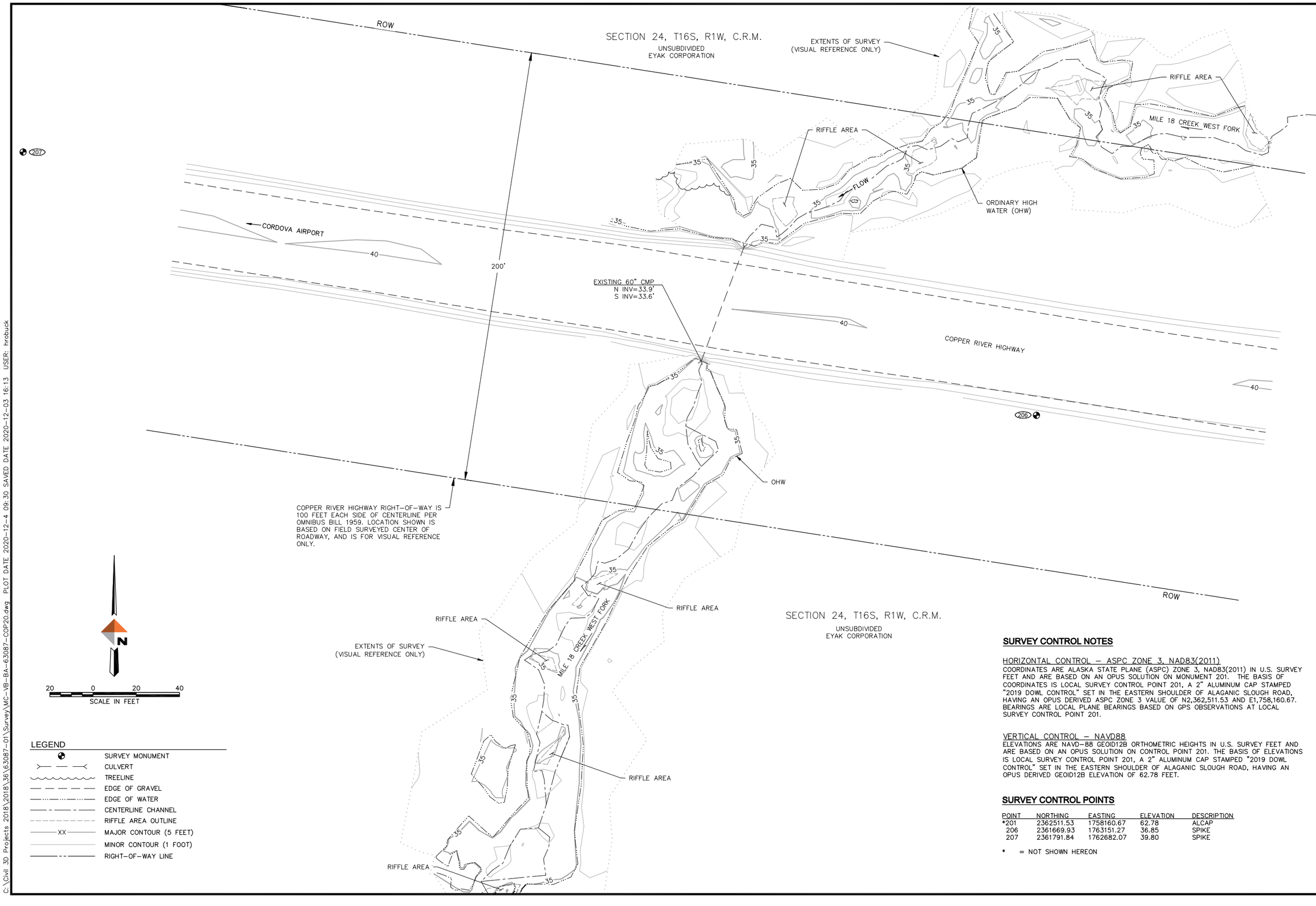

SURVEY CONTROL NOTES

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 ALAGANIC 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 ALAGANIC SLOUGH ROAD, HAVING AN OPUS DERIVED GEOID12B ELEVATION OF 62.78 FEET.

SURVEY CONTROL POINTS

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
*201	2362511.53	1758160.67	62.78	ALCAP
206	2361669.93	1763151.27	36.85	SPIKE
207	2361791.84	1762682.07	39.80	SPIKE

* = NOT SHOWN HEREON

REV	DATE	REVISIONS DESCRIPTION	BY

STATE OF ALASKA * 49TH * A. WILLIAM STOLL 12-3-2020 DOWL LAND DEVELOPMENT PROFESSIONAL

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CORDOVA FISH PASSAGE IMPROVEMENTS
WEST FORK 18 MILE CREEK – COP 20
SURVEY CONTROL

SECTION 24, T16S, R1W, C.R.M. ALASKA
CORDOVA RECORDING DISTRICT, ALASKA

PROJECT 1136.63087.01
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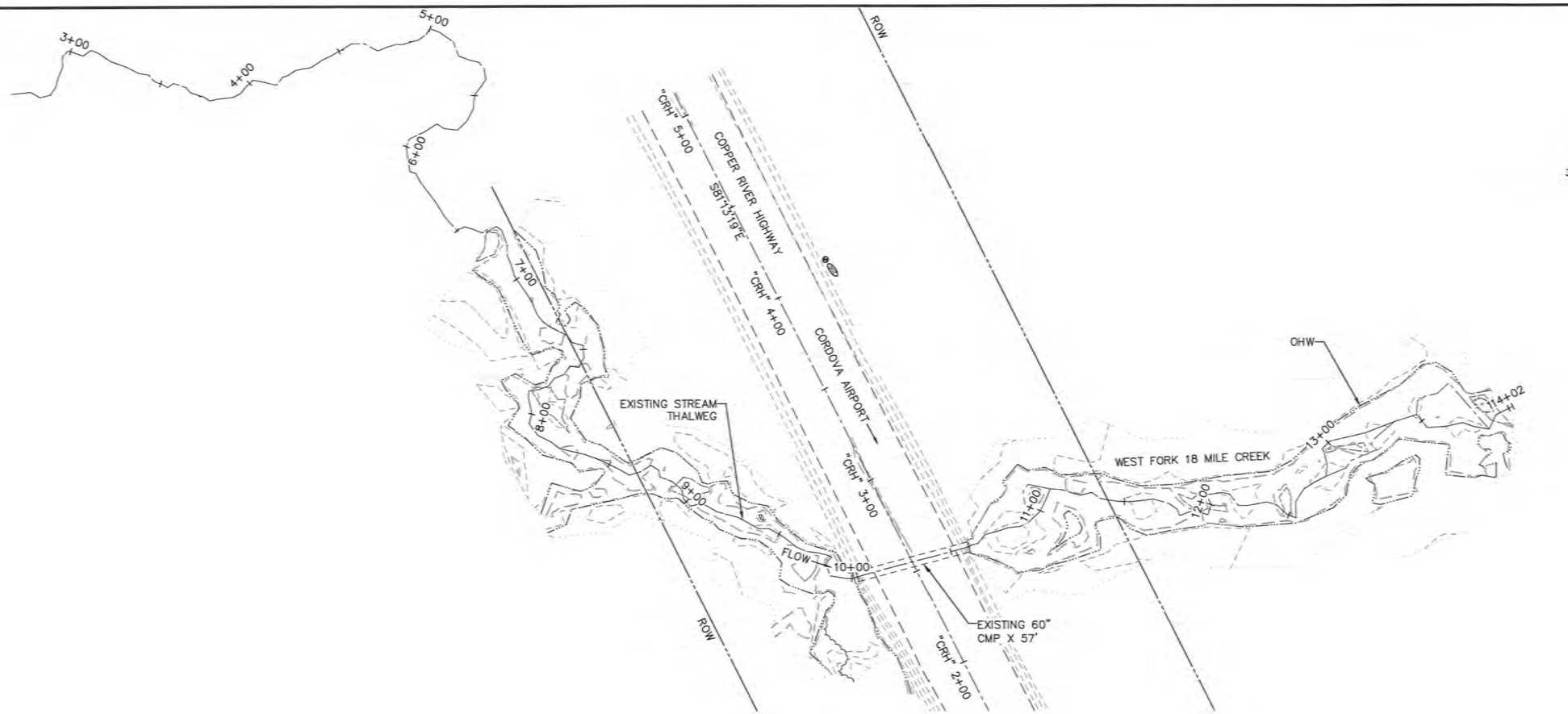

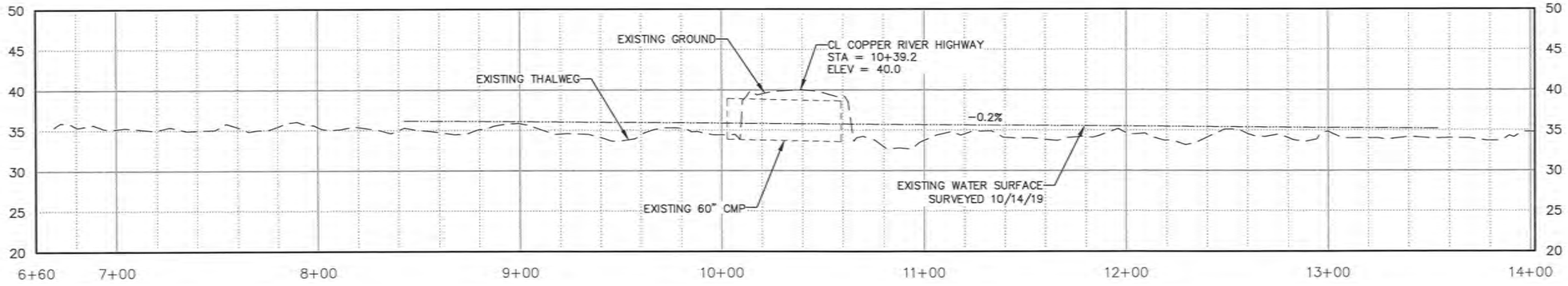

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STATE OF ALASKA
Bradley W. Klabacka
49TH
REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
WEST FORK 18 MILE CREEK – COP 20
EXISTING STREAM PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63087.01
DATE DECEMBER 2020

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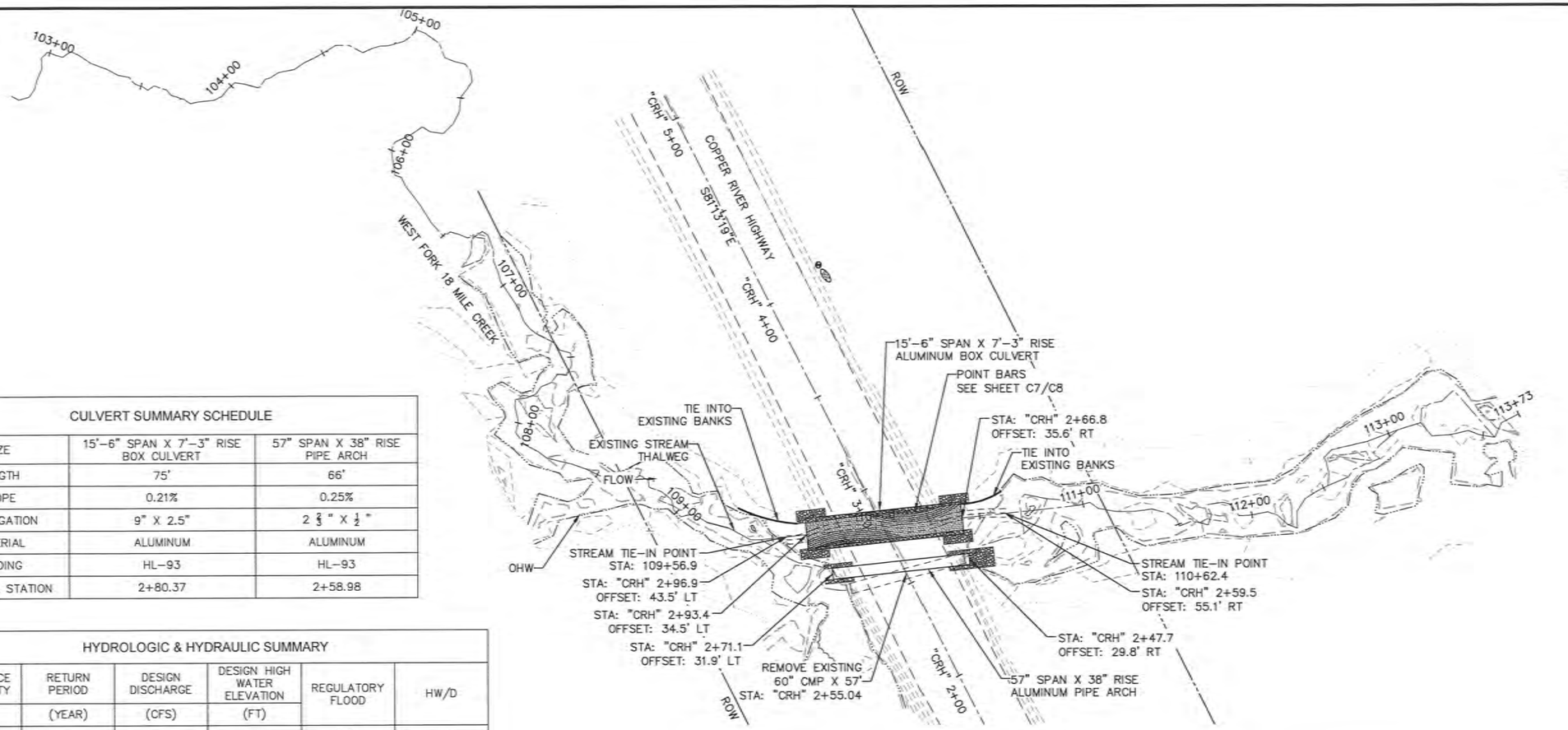
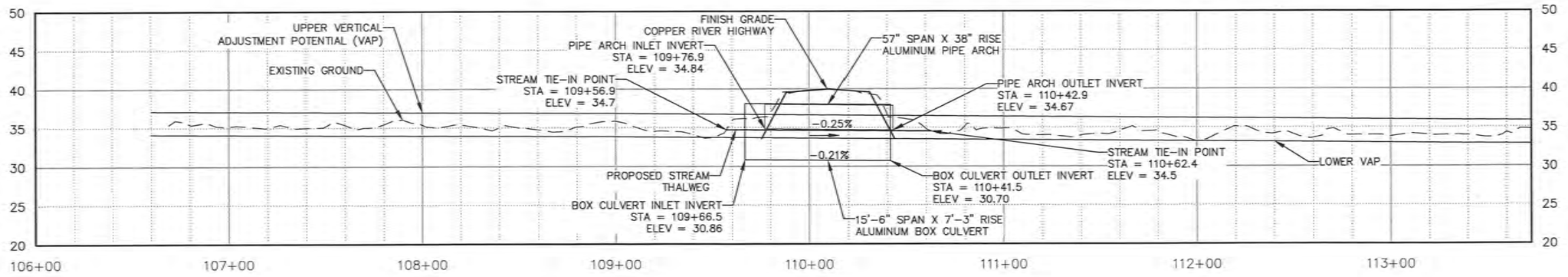


CULVERT SUMMARY SCHEDULE		
SIZE	15'-6" SPAN X 7'-3" RISE BOX CULVERT	57" SPAN X 38" RISE PIPE ARCH
LENGTH	75'	66'
SLOPE	0.21%	0.25%
CORRUGATION	9" X 2.5"	2 2/3" X 1/2"
MATERIAL	ALUMINUM	ALUMINUM
LOADING	HL-93	HL-93
"CRH" CL STATION	2+80.37	2+58.98

HYDROLOGIC & HYDRAULIC SUMMARY					
EXCEEDANCE PROBABILITY	RETURN PERIOD (YEAR)	DESIGN DISCHARGE (CFS)	DESIGN HIGH WATER ELEVATION (FT)	REGULATORY FLOOD	HW/D
50%	2	128	37.07	N/A	0.69
2%	50	168	37.51	N/A	0.82
1%	100	174	37.57	N/A	0.84
DRAINAGE AREA = 0.54 SQUARE MILES					
ANTICIPATED ADDITIONAL BACKWATER = 0 FEET					
ROADWAY OVERTOPPING Q = 276.14 CFS					

CULVERT COORDINATE TABLE				
SIZE	POINT	NORTHING	EASTING	ELEVATION
15'-6" SPAN X 7'-3" RISE BOX CULVERT	INLET INV.	2361750.03	1763049.35	30.86
	OUTLET INV.	2361684.78	1763012.36	30.70
57" SPAN X 38" RISE PIPE ARCH	INLET INV.	2361750.88	1763026.84	34.84
	OUTLET INV.	2361693.46	1762994.29	34.67



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STATE OF ALASKA
4991
REGISTERED PROFESSIONAL ENGINEER

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WEST FORK 18 MILE CREEK - COP 20
STREAM PLAN AND PROFILE
CORDOVA, ALASKA

PROJECT 1136.63087.01
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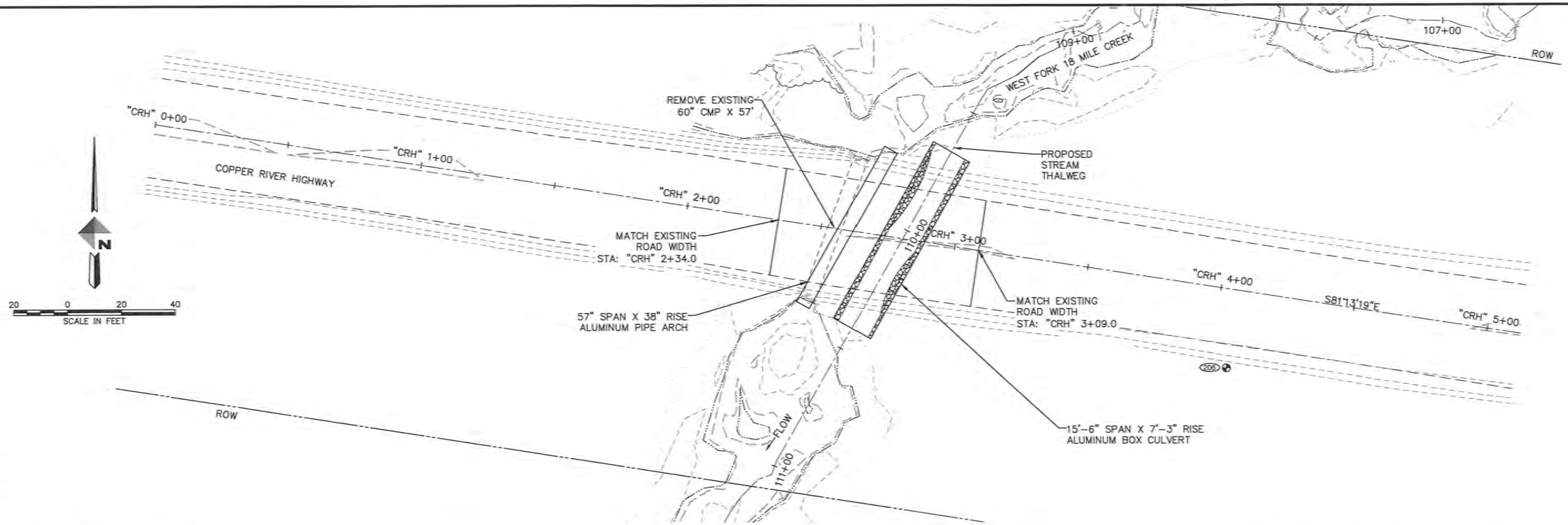
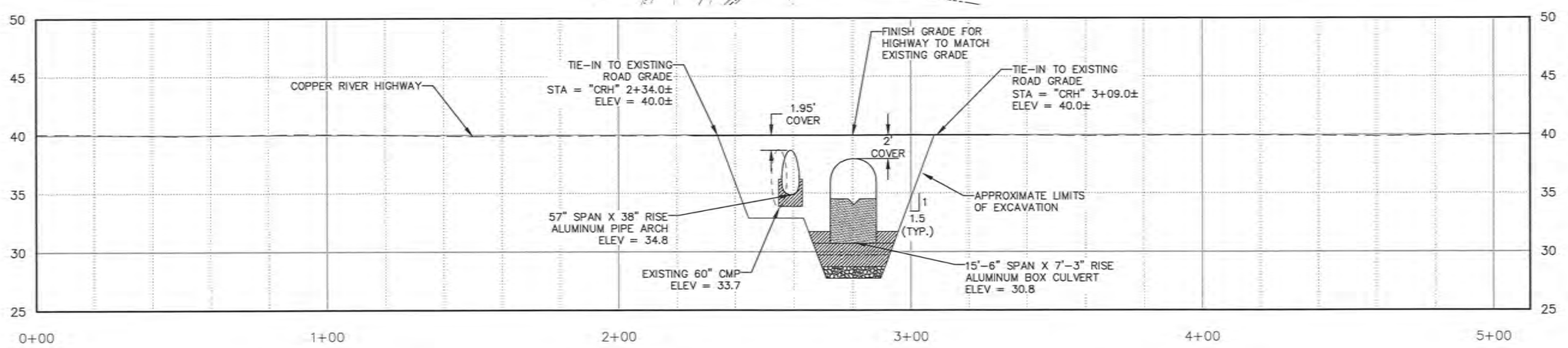
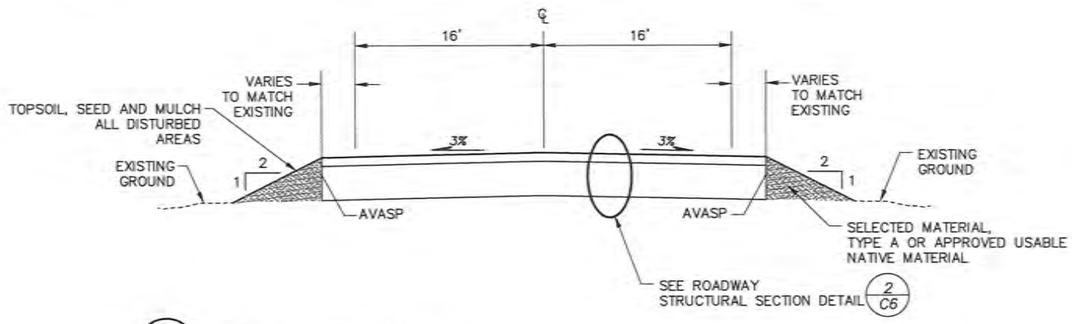
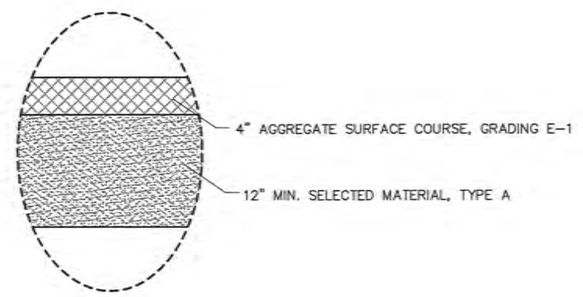






1/C6 ROADWAY SECTION
NTS



2/C6 ROADWAY STRUCTURAL SECTION
NTS

REV	DATE	DESCRIPTION	BY

REVISIONS

STATE OF ALASKA
MATTHEW L. MELOCHE
REGISTERED PROFESSIONAL ENGINEER
Matthew L. Meloche
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ROADWAY PLAN AND PROFILE
CORDOVA, ALASKA

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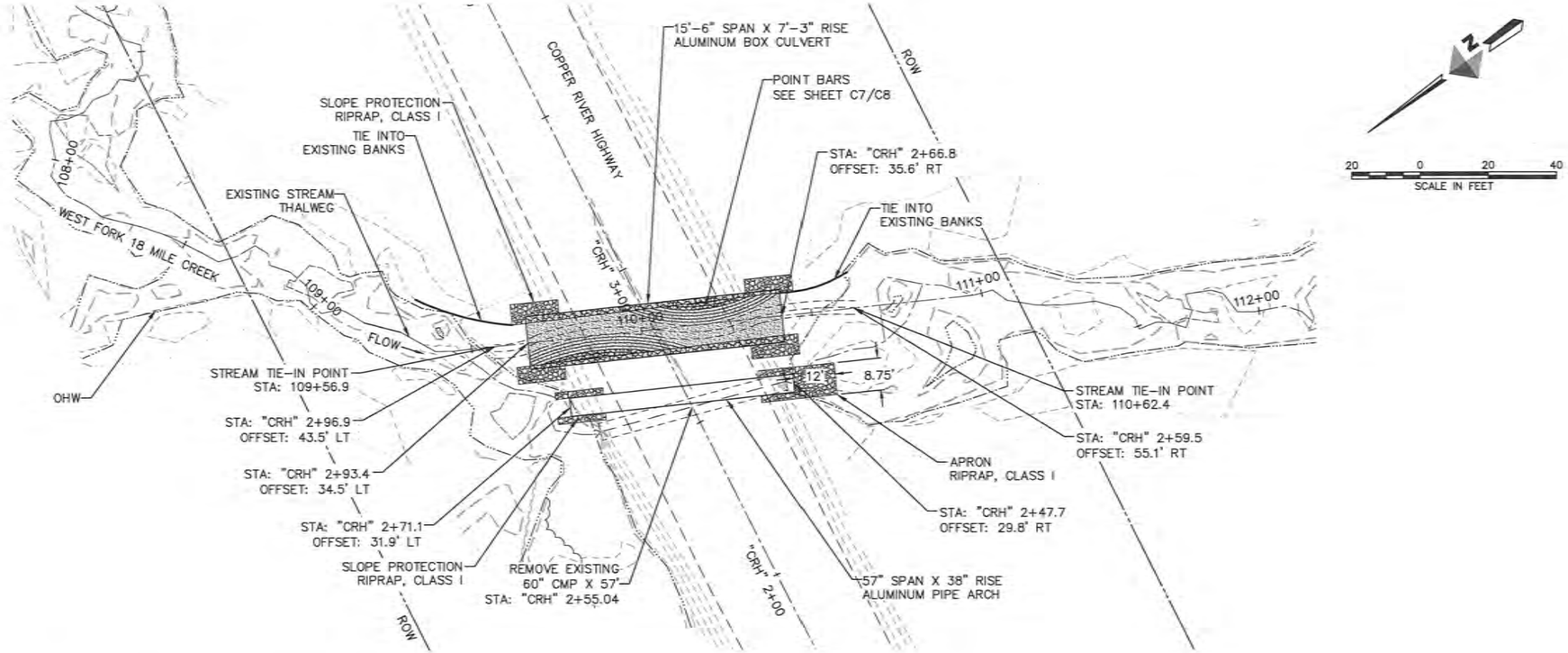
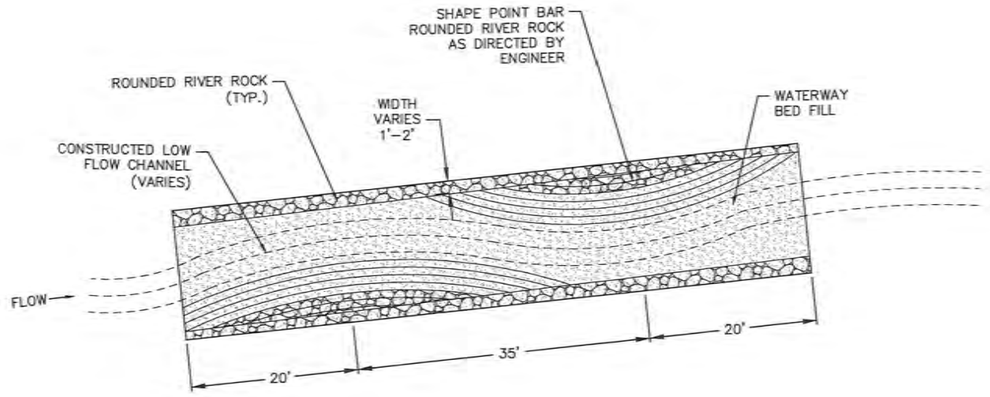


1 / C7 STREAM SIMULATION DETAIL - PLAN VIEW



2 / C7 CULVERT STREAM DETAIL
NTS

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REGISTERED PROFESSIONAL ENGINEER
Bradley M. Hellen
12-4-20

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STREAM DESIGN DETAILS
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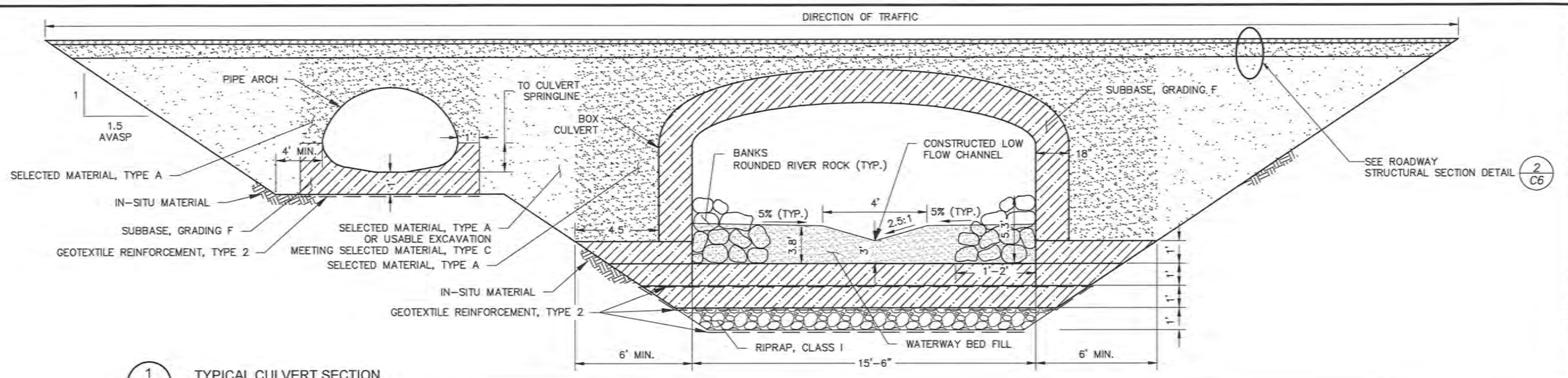
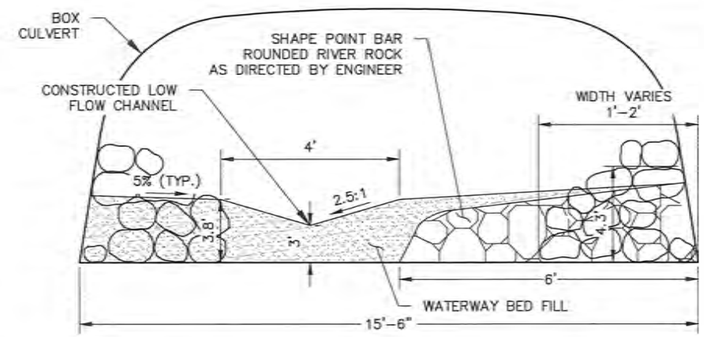


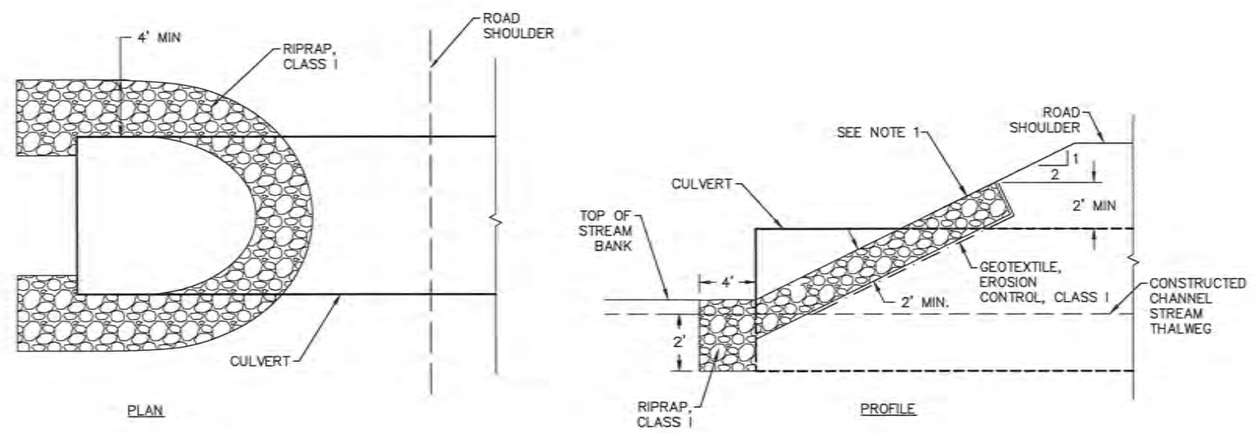
1/C8 TYPICAL CULVERT SECTION
NTS



2/C8 TYPICAL CULVERT SECTION AT ROCK CLUSTERS
NTS

NOTES:

1. GEOTEXTILE REINFORCEMENT, TYPE 2 SHALL BE PLACED BETWEEN IN-SITU MATERIAL AND RIPRAP, CLASS I, PLACED BETWEEN RIPRAP, CLASS I AND SUBBASE, GRADING F, AND PLACED BETWEEN EACH ONE-FOOT LAYER OF SUBBASE, GRADING F.
2. FILL VOIDS IN RIPRAP. MIX RIPRAP WITH FINES PRIOR TO PLACEMENT AND WASH FINES IN AFTER PLACEMENT.



3/C8 RIPRAP SLOPE PROTECTION SECTION
NTS

NOTES:

1. FILL VOIDS IN RIPRAP WITH SELECTED MATERIAL, TYPE A OR USABLE EXCAVATION MEETING SELECTED MATERIAL, TYPE C AND PLACE SALVAGED ORGANIC TOPSOIL AND SEED.

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STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER Bradley Kaleb Lewis CE-17098

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ROADWAY DIVERSION NOTES:

REFER TO SPECIFICATIONS FOR ROAD CLOSURE AND TRAFFIC CONTROL INFORMATION.

STREAM DIVERSION NOTES:

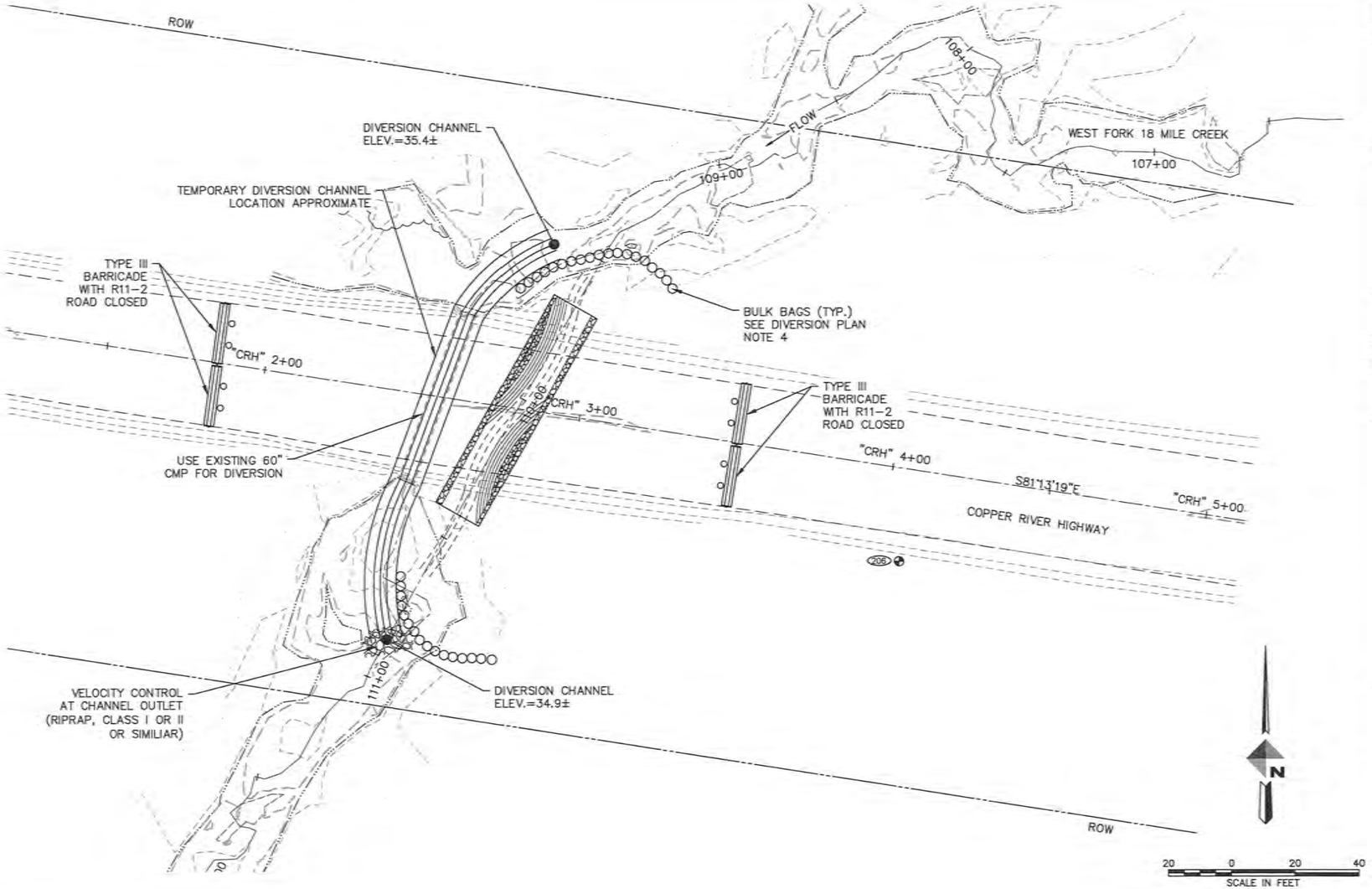
DUE TO PERMISSIVITY OF GRAVELS IN THE 18 MILE AREA, A COFFERDAM MADE OF SHEET PILE MAY BE NEEDED TO REDUCE GROUNDWATER FLOW INTO EXCAVATED AREA. TEMPORARY DIKES OR BERMS MAY BE USED TO ISOLATE THE WORK AREA FROM WATERS OF THE SURROUNDING AREA. THIS WORK MAY REQUIRE A DIVERSION OF STREAM WATER. THE DESIGNERS 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:

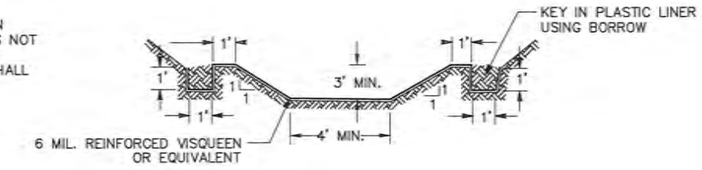
1. PLACE BARRICADES, SIGNS, AND TEMPORARY ROAD DETOUR IN COMPLIANCE WITH SPECIFICATIONS, ADOT&PF, AND MUTCD. COORDINATE WITH OTHER CONTRACTORS WHO MAY BE PRESENT.
2. CONSTRUCT VISQUEEN LINED DIVERSION CHANNEL WEST OF THE EXISTING CROSSING LOCATION.
3. USE EXISTING 60" CMP IN DIVERSION CHANNEL TO PROVIDE 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. CONSTRUCT THE NEW ALUMINUM BOX CULVERT.
6. INFILL CULVERT AND RECONSTRUCT CREEK CHANNEL AS SHOWN IN PLANS.
7. DIVERT CREEK FLOW THROUGH THE NEW ALUMINUM BOX CULVERT.
8. REMOVE EXISTING 60" CMP, FILL DIVERSION CHANNEL, AND INSTALL ALUMINUM PIPE ARCH OVERFLOW CULVERT.
9. RECONSTRUCT CREEK CHANNEL AND BANKS AS SHOWN IN PLANS.
10. RECONSTRUCT COPPER RIVER HIGHWAY OVER THE NEWLY INSTALLED CULVERTS.
11. STABILIZE AND REVEGETATE ALL REMAINING DISTURBED AREAS.
12. RETURN VEHICULAR TRAFFIC TO COPPER RIVER HIGHWAY.

ESCP AND DEWATERING NOTES:

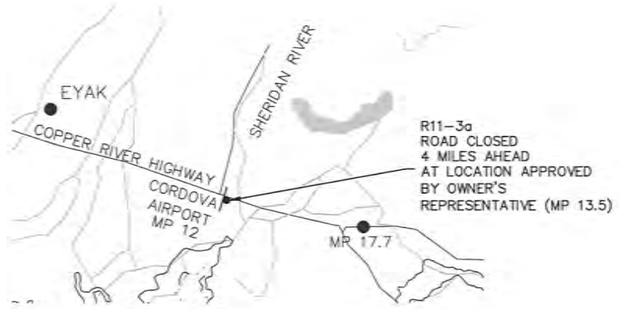
1. DEWATER TRENCH AND WORK AREA WITH PUMP HOSE IF REQUIRED.
2. ALL DISCHARGE POINTS REQUIRE PERMANENT OR TEMPORARY VELOCITY CONTROLS.
3. PROVIDE FOR SEDIMENT REMOVAL FOR ALL DEWATERING ACTIVITY PRIOR TO DISCHARGE FROM THE PROJECT INTO ANY WATER OF THE U.S.
4. PROVIDE SPARE (EXTRA) PUMPS FOR BOTH THE 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 ROADWAY DIVERSION SIGNS
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REVISIONS

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STATE OF ALASKA 49TH Bradley K. Roth REGISTERED PROFESSIONAL ENGINEER

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CORDOVA FISH PASSAGE IMPROVEMENTS
WEST FORK 18 MILE CREEK - COP 20
ESCP, STREAM DIVERSION & ROADWAY DIVERSION PLAN
CORDOVA, ALASKA

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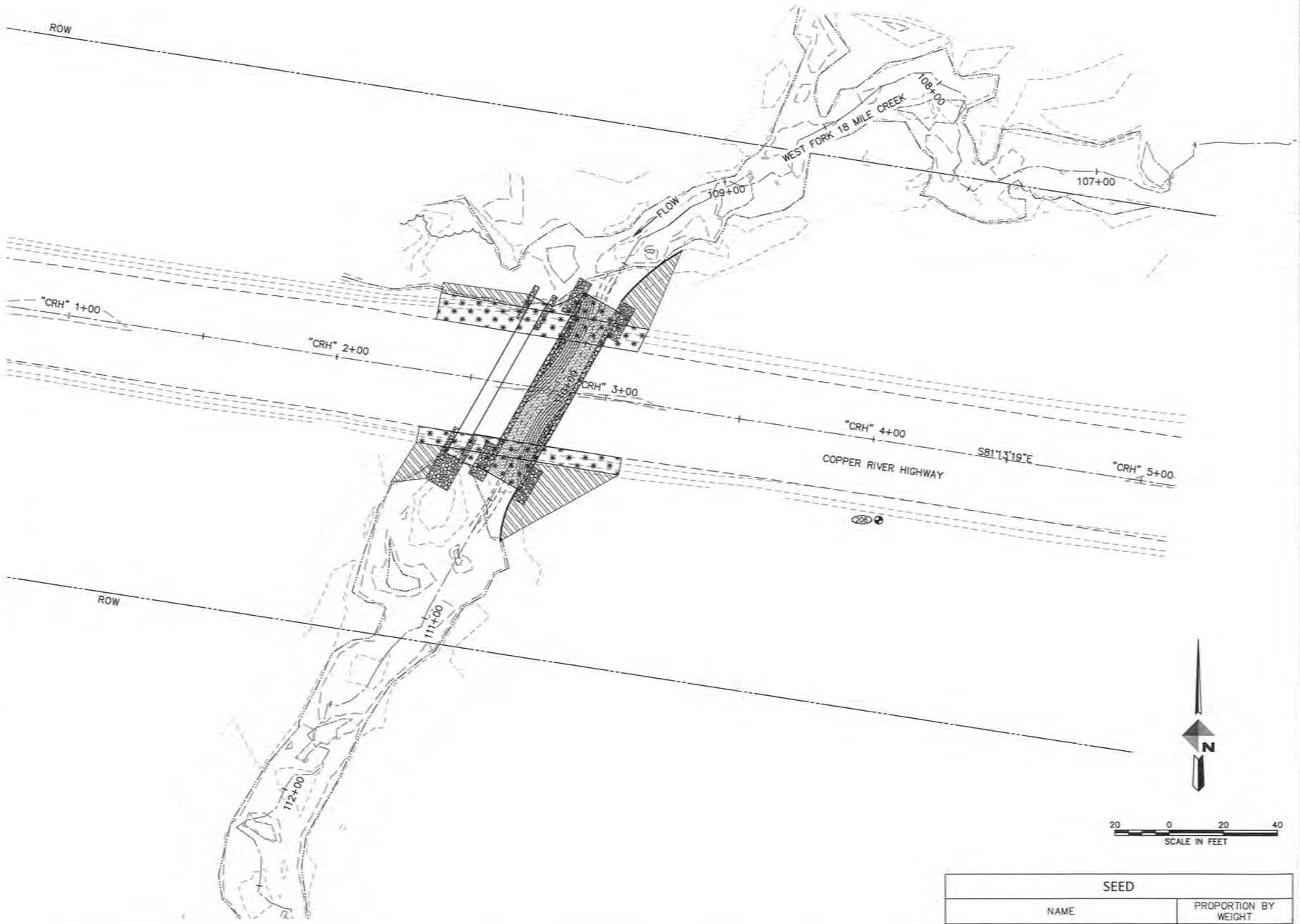

NOTES:

1. VEGETATIVE MAT SHALL BE PLACED ON ALL DISTURBED AREAS OUTSIDE OF THE EMBANKMENT SLOPES.
2. SALVAGED VEGETATIVE MAT MUST HAVE A MINIMUM THICKNESS OF 12 INCHES AND BE SOURCED FROM THE DISTURBED AREA OR LOCAL AREA AS DIRECTED BY THE ENGINEER.

SITE REVEGETATION

- SEED, FERTILIZER, AND MULCH
- VEGETATIVE MAT
- CONSTRUCTED STREAM CHANNEL WATERWAY BED FILL
- RIPRAP
- ROUNDED RIVER ROCK

1/C10 REVEGETATION PLAN

SEED	
NAME	PROPORTION BY WEIGHT
NORTAN TUFTED HAIR GRASS, DESCHAMPISA CAESPITOSIA	20%
ARCTARED' RED FESCUE, FESTUCA RUBRA	60%
CALAMANGROTIS CANADENSIS	20%

REVISIONS

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STATE OF ALASKA — 15249 — REGISTERED PROFESSIONAL ENGINEER — Bradley K. Kilcoyne — 12/11/20

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CORDOVA FISH PASSAGE IMPROVEMENTS
WEST FORK 18 MILE CREEK – COP 20
REVEGETATION PLAN
CORDOVA, ALASKA

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