



Copper River Watershed Project

Upriver and down, salmon are common ground

Addendum #2

Addendum No.: 2 (9 pages)	Date Addendum Issued: March 19, 2024
Issuing Office/Point of Contact: Copper River Watershed Project Kate Morse, Program Director P.O. Box 1560 511 First St. Cordova, AK 99574 (907)424-3334 kate@copperriver.org	Previous Addenda Issued: Addendum #1/March 6, 2024
Project: Copper River Watershed Habitat Enhancement Project, Cordova EVOS Sites CAB 1 and CAB 2 (Fish Passage Improvement at Elsner River Tributary) and Cordova EVOS Sites COP 9 and SHER 1 (Fish Passage Improvement at Sheridan River Tributary)	Due date for bids: March 29, 2024 5pm AKST

The following table outlines the questions and responses received prior to the pre-bid conference.

Number	Asked By	Question	Answer
1a	John Baenen, Wilson	COP 9 & SHER 1: Sheet C2 Table 2 Fine Materials: Porous Backfill % passing has no band plus or minus For example 1" says 65% passing. Would the band be 55-75? And would the 3/4" which is 50 be 40-60?	Removed Table 2 from C2 (COP 9/SHER 1 plans) and referenced DOT&PF Porous Backfill Material 703-10 in Section 690-2.01 of Specifications (pg 41, bold text)

703-2.10 POROUS BACKFILL MATERIAL. Gravel consisting of crushed or naturally occurring granular material containing not more than 1 percent clay lumps or other readily decomposed material (AASHTO T 112). Meet the grading requirements of Table 703-10 as determined by ATM 304.

**TABLE 703-10
AGGREGATE GRADATION FOR POROUS BACKFILL MATERIAL**

SIEVE	PERCENT PASSING BY WEIGHT	
	GRADATION A	GRADATION B
3 in.	100	--
2 in.	--	100
1.5 in.	--	95-100
1 in.	0-10	--
3/4 in.	--	0-20
3/8 in.	--	0-5
No. 200	0-5	0-2

1b	John Baenen, Wilson	Could Sub F be used as porous backfill?	Our preference is to use porous backfill gradation to include more material in the 1 in range.
2	John Baenen, Wilson	Sheet C2: Notes #4 25% 9-inch minus rock(clarification) is this Class 1 riprap? Or is this more like (bonerock from our 13 Mile Pit)?	The material generally follows Class 1 riprap gradation but can be rounded and/or subrounded similar to bone rock.
3	John Baenen, Wilson	In specifications CAB 1 & CAB 2 690-2.01 Waterway Bed Fill 50% selected material, Type C and 50% Riprap Class 1, but in specifications COP 9 & SHER 1 - 690 there is no mention of the specification about material for waterway bedfill except for COP 9, SHER 1 sheet C2 Note 4. The question is are there two different waterway bedfills for COP 9, SHER 1 and CAB 1, CAB 2?	Updated CAB 1/2 Waterway Bed Fill material to match material shown in COP 9/SHER 1. Updated C2 and C9, Section 690-2.01 of Specifications (pg. 36, bold text)

The following table outlines the questions and responses from the pre-bid conference that occurred on Tuesday, March 12, 10am.


Number	Asked By	Question	Answer
4	John Baenen, Wilson	Please provide clarification for scope of weir removal, additional information for add. Alt.	An on-site evaluation with the owner's representative and habitat personnel is necessary to determine how weir will be handled and the extent of the removal/work. For estimating purposes, weir removal will include removal of approximately 6' length of weir (5.5' width, 1' depth) including wood and rock material. This work will be performed while the site is dewatered for culvert construction, match channel profile in plans, additional streambed material may be required, and minimize disturbance.
Photo of weir (looking upstream from CAB 2 culvert).			

Photo of weir material.



C:\dowl_pw\40393483\SC20-CH-DR-63349-COP9-SHR1.dwg PLOT DATE 2024-3-15 14:56 SAVED DATE 2024-03-15 14:55 USER: hrcbuck

ESTIMATE OF QUANTITIES - COP 9

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED	LUMP SUM
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	65	LINEAR FOOT
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	1430	CUBIC YARD
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	495	CUBIC YARD
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	330	CUBIC YARD
205.0005.0000	CONTROLLED LOW-STRENGTH MATERIAL	LUMP SUM	24	CUBIC YARD
206.0001.0000	FILTER BLANKET	LUMP SUM	8	CUBIC YARD
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	72	CUBIC YARD
602.0005.0000	ASSEMBLE AND INSTALL STRUCTURAL PLATE ALUMINUM ARCH CULVERT, 8'-5" SPAN, 6'-3" RISE	LUMP SUM	76	LINEAR FOOT
611.0003.0001	RIPRAP, CLASS I	LUMP SUM	96	CUBIC YARD
613.0002.0000	CULVERT MARKER POST	LUMP SUM	2	EACH
618.0005.0000	SEEDING	LUMP SUM	2	POUND
620.0003.0000	TOPSOIL (4")	LUMP SUM	70	SQUARE YARD
630.0003.0002	GEOTEXTILE, REINFORCEMENT, TYPE 2	LUMP SUM	336	SQUARE YARD
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	LUMP SUM
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0014.0000	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED	LUMP SUM
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	LUMP SUM
644.0015.0000	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM	ALL REQUIRED	LUMP SUM
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED	LUMP SUM
690.2001.0000	WATERWAY BED FILL	LUMP SUM	74	CUBIC YARD
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED	LUMP SUM

ESTIMATE OF QUANTITIES - SHER 1

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED	LUMP SUM
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	104	LINEAR FOOT
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	1650	CUBIC YARD
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	473	CUBIC YARD
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	330	CUBIC YARD
205.0005.0000	CONTROLLED LOW-STRENGTH MATERIAL	LUMP SUM	24	CUBIC YARD
206.0001.0000	FILTER BLANKET	LUMP SUM	8	CUBIC YARD
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	84	CUBIC YARD
602.0005.0000	ASSEMBLE AND INSTALL STRUCTURAL PLATE ALUMINUM ARCH CULVERT, 8'-5" SPAN, 6'-3" RISE	LUMP SUM	78	LINEAR FOOT
611.0003.0001	RIPRAP, CLASS I	LUMP SUM	96	CUBIC YARD
613.0002.0000	CULVERT MARKER POST	LUMP SUM	2	EACH
618.0005.0000	SEEDING	LUMP SUM	3	POUND
620.0003.0000	TOPSOIL (4")	LUMP SUM	180	SQUARE YARD
630.0003.0002	GEOTEXTILE, REINFORCEMENT, TYPE 2	LUMP SUM	323	SQUARE YARD
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	LUMP SUM
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0014.0000	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED	LUMP SUM
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	LUMP SUM
644.0015.0000	NUCLEAR TESTING EQUIPMENT STORAGE SHED	LUMP SUM	ALL REQUIRED	LUMP SUM
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED	LUMP SUM
690.2001.0000	WATERWAY BED FILL	LUMP SUM	215	CUBIC YARD
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED	LUMP SUM

GENERAL NOTES

- 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.
- UTILITIES ARE SHOWN ON THE PLANS TO THE EXTENT THEY ARE KNOWN. BEFORE CONDUCTING ANY GROUND-DISTURBING ACTIVITIES THE CONTRACTOR SHALL VERIFY UTILITY LOCATIONS. CONTACT THE ALASKA DIGLINE AT 1-907-278-3121 OR AT 811AK.COM. LOCATE ALL UTILITIES WITHIN THE PROJECT AND PROTECT THEM FROM DAMAGE THROUGH THE DURATION OF WORK. FIBER OPTIC LINE TO BE RELOCATED BY CORDOVA TELECOM COOPERATIVE (CTC). CONTACT CTC FOR MORE INFORMATION AT 1-907-424-2345.
- COORDINATE CONSTRUCTION STAGING AND MOBILIZATION AREAS AND ACTIVITIES WITH OWNER'S REPRESENTATIVE. COORDINATION WITH DOT&PF LOCAL M&O IS REQUIRED FOR CONCURRENCE.
- EXERCISE CAUTION AND COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS FOR WORKING IN CONFINED AREAS.
- STATIONING IS ALONG CENTERLINE OF STREAM OR ROADWAY.
- VERIFY ELEVATIONS OF ALL PROPOSED STRUCTURES PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES FROM PLANS IMMEDIATELY TO OWNER'S REPRESENTATIVE.
- CULVERT DESIGN LOAD: AASHTO LOADING HL-93, MINIMUM SOIL BEARING CAPACITY: 3,900 PSF.
- EXCAVATION AND COMPACTION:
 - REMOVE AND DISPOSE OF ALL ORGANIC OR OVERSATURATED SOFT MATERIAL, WHICH CANNOT BE COMPACTED.
 - 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.
- CULVERT INSTALLATION:
 - CULVERT INFILL MATERIAL SHALL BE INSTALLED IN PIPE ACCORDING TO PLANS. MANUAL INSTALLATION IS REQUIRED.
- ALL VEGETATION IN THE AREAS NOT AFFECTED BY WORK SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR. SEE REVEGETATION PLAN.
- VEGETATIVE MAT WITHIN THE AREA OF DISTURBANCE SHALL BE SALVAGED, STORED AND CARED FOR AS DIRECTED BY THE OWNER REPRESENTATIVE UNTIL IT CAN BE REINSTALLED.
- STRAW IS PROHIBITED ON THE PROJECT SITE.
- GROUNDWATER ENCOUNTERED AT APPROXIMATELY 7-9 FEET BELOW THE EXISTING GROUND SURFACE AT COP 9 AND 6-6.5 FEET BELOW THE EXISTING GROUND SURFACE AT SHER 1 ON 10/14/2018 AND 10/15/2018 BY NORTHERN GEOTECHNICAL ENGINEERING, INC. TERRA FIRMA TESTING.

LEGEND

SYMBOL	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 VEGETATIVE MAT
---	RIPRAP
---	AGGREGATE SURFACE COURSE, E-1
---	SELECTED MATERIAL, TYPE A
---	SUBBASE, GRADING F
---	ORGANIC SOILS AND VEGETATIVE MAT, AS AVAILABLE; TOPSOIL, SEED, FERTILIZER, AND MULCH, AS NEEDED
---	BULK BAG COFFERDAM
---	WETLAND PLUGS

ABBREVIATIONS

AVASP	AS VERTICAL AS SAFELY POSSIBLE
BFW	BANKFULL WIDTH
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CRH	COPPER RIVER HIGHWAY
CTC	CORDOVA TELECOM COOPERATIVE
ELEV	ELEVATION
ESCP	EROSION AND SEDIMENT CONTROL PLAN
HW/D	HEADWATER TO DEPTH RATIO
MIN	MINIMUM
MP	MILEPOST
NTS	NOT TO SCALE
OHW	ORDINARY HIGH WATER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
Q	FLOW
ROW	RIGHT-OF-WAY
SPP	STRUCTURAL PLATE PIPE
SRT	SHERIDAN RIVER TRIBUTARY
SRT	SHERIDAN RIVER TRIBUTARY 2

STA	STATION
TYP	TYPICAL
VAP	VERTICAL ADJUSTMENT POTENTIAL

NOTES:

- ESTIMATE OF QUANTITIES ARE FOR INFORMATION ONLY AND CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES.
- EXCAVATION AND BACKFILL REQUIRED FOR STREAM DIVERSION AS SHOWN ON SHEET C14 & C15 IS SUBSIDIARY TO PAY ITEM 672.0001.0000 STREAM DIVERSION & DEWATERING.
- AGGREGATE SURFACE COURSE, GRADING E-1 FOR STREAM DIVERSION WILL BE PAID UNDER SECTION 301.
- WATERWAY BED FILL SHALL BE PRODUCED BY MIXING, BY VOLUME, 50% SELECTED MATERIAL, TYPE A, 25% 9-INCH MINUS ROCK, AND 25% POROUS BACKFILL MATERIAL. REFER TO SPECIFICATION SECTION 690 AND DETAIL 2/C13 FOR MORE INFORMATION ABOUT WATERWAY BED FILL MATERIAL.
- BORROW, SELECTED MATERIAL, TYPE A SHALL BE COMMERCIALY SOURCED IF MATERIAL FOUND DURING EXCAVATION DOES NOT MEET CONTRACT SPECIFICATIONS.

TABLE 1

COARSE MATERIAL: RIPRAP, CLASS I		
APPROX. SIZE	MASS (LBS)	% PASSING
10"	50	100
8"	25	50

TABLE 3

WATERWAY BED FILL	
SIZE/SIEVE	% PASSING
12"	100
9"	100
6"	96
4"	88
3"	77
1"	39
0.75"	34
#4	20
#8	11

REV. DATE 3/19/24
 DESCRIPTION DELETE TABLE 2: POROUS BACKFILL
 STATE OF ALASKA
 REGISTERED PROFESSIONAL ENGINEER
 Bradley V. Meloch
 CE 1009
 WWW.DOWL.COM
 DOWL
 CORDOVA FISH PASSAGE IMPROVEMENTS
 SHERIDAN RIVER TRIB - COP 9 & SHER 1
 GENERAL NOTES AND QUANTITIES
 PROJECT 1136.63349.01
 DATE FEBRUARY 2024
 © DOWL 2024
 SHEET
 C2 OF C17

Special Provision

Add the following Section:

SECTION 690

WATERWAY

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

690-1.02 REFERENCES.

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

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

690-2.01 MATERIALS.

Clearing and Grubbing (salvage vegetative mat and wetland plugs)	Section 201
Excavation and Embankment (waterway bed and bank)	Section 203 & 703
Riprap	Section 611
Seeding	Section 201, 618 & 724
Topsoil	Section 620 & 726
Block Sodding (vegetative mat)	Section 623
Erosion, Sediment, and Pollution Control	Section 641
Selected Material	Section 703
Porous Backfill Material	Subsection 703-2.10

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

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

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

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

C:\dow\pw\0393483\SC20-CH-DR-63349-CAB1-CAB2.dwg PLOT DATE 2024-3-18 13:21 SAVED DATE 2024-03-18 13:16 USER: hrbuck

ESTIMATE OF QUANTITIES - CAB 1

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED	LUMP SUM
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	21	LINEAR FOOT
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	20	CUBIC YARD
618.0005.0000	SEEDING	LUMP SUM	2	POUND
619.0002.0000	MATting	LUMP SUM	53	SQUARE YARD
620.0003.0000	TOPSOIL (4")	LUMP SUM	440	SQUARE YARD
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	LUMP SUM
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0014.0000	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED	LUMP SUM
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	LUMP SUM
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED	LUMP SUM
690.2001.0000	WATERWAY BED FILL	LUMP SUM	7	CUBIC YARD
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED	LUMP SUM

ESTIMATE OF QUANTITIES - CAB 2

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
201.0009.0000	CLEARING AND GRUBBING	LUMP SUM	ALL REQUIRED	LUMP SUM
202.0004.0000	REMOVAL OF CULVERT PIPE	LUMP SUM	35	LINEAR FOOT
203.0019.0000	UNCLASSIFIED EXCAVATION	LUMP SUM	561	CUBIC YARD
203.0020.000A	BORROW, SELECTED MATERIAL, TYPE A	LUMP SUM	374	CUBIC YARD
203.0020.000F	SUBBASE, GRADING F	LUMP SUM	110	CUBIC YARD
206.0001.0000	FILTER BLANKET	LUMP SUM	11	CUBIC YARD
301.0004.0000	AGGREGATE SURFACE COURSE, GRADING E-1	LUMP SUM	36	CUBIC YARD
603.0001.0072	ALUMINIZED CORRUGATED STEEL PIPE 72 INCH	LUMP SUM	50	LINEAR FOOT
611.0003.0001	RIPRAP, CLASS 1	LUMP SUM	55	CUBIC YARD
618.0005.0000	SEEDING	LUMP SUM	5	POUND
620.0003.0000	TOPSOIL (4")	LUMP SUM	270	SQUARE YARD
630.0003.0002	GEOTEXTILE, REINFORCEMENT, TYPE 2	LUMP SUM	141	SQUARE YARD
640.0001.0000	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	ALL REQUIRED	LUMP SUM
641.0003.0000	TEMPORARY EROSION, SEDIMENT AND POLLUTION CONTROL	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0001.0000	CONSTRUCTION SURVEYING	LUMP SUM	ALL REQUIRED	LUMP SUM
642.0014.0000	AS-BUILT PLANS	LUMP SUM	ALL REQUIRED	LUMP SUM
643.0002.0000	TRAFFIC MAINTENANCE	LUMP SUM	ALL REQUIRED	LUMP SUM
672.0001.0000	STREAM DIVERSION & DEWATERING	LUMP SUM	ALL REQUIRED	LUMP SUM
690.2001.0000	WATERWAY BED FILL	LUMP SUM	43	CUBIC YARD
690.2003.0000	WATERWAY BANK REVEGETATION AND PROTECTION	LUMP SUM	ALL REQUIRED	LUMP SUM

ADDITIVE ALTERNATE 1 - CAB 2

ITEM NO.	ITEM DESCRIPTION	PAY UNIT	QUANTITY	UNIT
202.0001.0000	REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP SUM	ALL REQUIRED	LUMP SUM

ABBREVIATIONS

ADF&G	ALASKA DEPARTMENT OF FISH AND GAME
ALCAP	ALUMINUM CAP
CFS	CUBIC FEET PER SECOND
CL	CENTERLINE
CLR	CABIN LAKE ROAD
CRWP	COPPER RIVER WATERSHED PROJECT
CSP	CORRUGATED STEEL PIPE
DNR	DEPARTMENT OF NATURAL RESOURCES
ELEV	ELEVATION
ERT	ELSNER RIVER TRIBUTARY
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
OTR	OLD TIMBER ROAD
Q	FLOW
ROW	RIGHT-OF-WAY
STA	STATION
TYP	TYPICAL
USFS	UNITED STATES FOREST SERVICE
USFWS	UNITED STATES FISH AND WILDLIFE SERVICE
VAP	VERTICAL ADJUSTMENT POTENTIAL

NOTES:

- ESTIMATE OF QUANTITIES ARE FOR INFORMATION ONLY AND CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES.
- EXCAVATION AND BACKFILL REQUIRED FOR STREAM DIVERSION AS SHOWN ON SHEET C10 IS SUBSIDIARY TO PAY ITEM 672.0001.0000 STREAM DIVERSION & DEWATERING.
- APPROXIMATELY 55 CY ESTIMATED FOR EXCAVATION AND 55 CY BACKFILL FOR STREAM DIVERSION AS SHOWN ON SHEET C10.
- AGGREGATE SURFACE COURSE, GRADING E-1 FOR STREAM DIVERSION WILL BE PAID UNDER SECTION 301.
- WATERWAY BED FILL SHALL BE PRODUCED BY MIXING, BY VOLUME, 50% SELECTED MATERIAL, TYPE A, 25% 9-INCH MINUS ROCK, AND 25% POROUS BACKFILL MATERIAL. REFER TO SPECIFICATION SECTION 690 AND DETAIL 2/C9 FOR MORE INFORMATION ABOUT WATERWAY BED FILL MATERIAL.
- BORROW, SELECTED MATERIAL, TYPE A AND C SHALL BE COMMERCIALY SOURCED IF MATERIAL FOUND DURING EXCAVATION DOES NOT MEET CONTRACT SPECIFICATIONS.

TABLE 1

COARSE MATERIAL: RIPRAP, CLASS 1		
APPROX. SIZE	MASS (LBS)	% PASSING
10"	50	100
8"	25	50

LEGEND

DESCRIPTION	DESCRIPTION
	APPROXIMATE RIGHT-OF-WAY
	CONTROL POINT
	ORDINARY HIGH WATER
	EXISTING CULVERT
	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 VEGETATIVE MAT
	RIPRAP
	AGGREGATE SURFACE COURSE, E-1
	SELECTED MATERIAL, TYPE A
	SUBBASE, GRADING F
	ORGANIC SOILS AND VEGETATIVE MAT, AS AVAILABLE; TOPSOIL, SEED, FERTILIZER, AND MULCH, AS NEEDED
	BULK BAGS (SUPERSACKS OR SIMILAR)
	WETLAND PLUGS

GENERAL NOTES

- 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.
- UTILITIES ARE SHOWN ON THE PLANS TO THE EXTENT THEY ARE KNOWN. THE CONTRACTOR SHALL VERIFY UTILITY LOCATIONS PRIOR TO CONDUCTING ANY GROUND-DISTURBING ACTIVITIES. CONTACT THE ALASKA DIGLINE AT 1-800-478-3121. LOCATE ALL UTILITIES WITHIN THE PROJECT AND PROTECT THEM FROM DAMAGE THROUGH THE DURATION OF WORK.
- COORDINATE CONSTRUCTION STAGING AND MOBILIZATION AREAS AND ACTIVITIES WITH OWNER'S REPRESENTATIVE. COORDINATION WITH USFS IS REQUIRED FOR CONCURRENCE.
- THERE IS A STATE OF ALASKA 60-FOOT EASEMENT AT CABIN LAKE ROAD AT THE PROJECT LOCATION. ANY WORK OR STAGING OUTSIDE OF THE EASEMENT WILL REQUIRE AUTHORIZATION AND PERMITTING BY THE STATE OF ALASKA DEPARTMENT OF NATURAL RESOURCES (DNR).
- EXERCISE CAUTION AND COMPLY WITH ALL APPLICABLE OSHA REQUIREMENTS FOR WORKING IN CONFINED AREAS.
- STATIONING IS ALONG CENTERLINE OF STREAM OR ROADWAY.
- VERIFY ELEVATIONS OF ALL PROPOSED STRUCTURES PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES FROM PLANS IMMEDIATELY TO OWNER'S REPRESENTATIVE.
- CULVERT DESIGN LOAD: AASHTO LOADING HL-93, MINIMUM SOIL BEARING CAPACITY: 3,900 PSF.
- EXCAVATION AND COMPACTION:
 - REMOVE AND DISPOSE OF ALL ORGANIC OR OVERSATURATED SOFT MATERIAL, WHICH CANNOT BE COMPACTED.
 - BACKFILL SHALL BE PLACED AND COMPACTED WITH CARE AND SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY ON BOTH SIDES OF PIPE.
 - PLACE FILL IN LIFTS OF MAXIMUM DEPTH OF 12-INCHES (UNCOMPACTED) PER SPECIFICATION SECTION 203-3.05.
- CULVERT INSTALLATION:
 - CULVERT INFILL MATERIAL SHALL BE INSTALLED IN PIPE ACCORDING TO PLANS. MANUAL INSTALLATION IS REQUIRED.
- ALL VEGETATION IN THE AREAS NOT AFFECTED BY WORK SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR. SEE REVEGETATION PLAN.
- VEGETATIVE MAT WITHIN THE AREA OF DISTURBANCE SHALL BE SALVAGED AND APPROPRIATELY STORED (OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE) AND CARED FOR UNTIL IT CAN BE REINSTALLED.
- STRAW IS PROHIBITED ON THE PROJECT SITE.
- GROUNDWATER ENCOUNTERED AT APPROXIMATELY 4.5 FEET BELOW THE EXISTING GROUND SURFACE (ON THE DOWNSTREAM SIDE OF THE ROAD ON EITHER SIDE OF THE CULVERT) ON 10/15/2018 BY NORTHERN GEOTECHNICAL ENGINEERING, INC. TERRA FIRMA TESTING.

TABLE 2

WATERWAY BED FILL

SIZE/SIEVE	% PASSING
12"	100
9"	100
6"	96
4"	88
3"	77
1"	39
0.75"	34
#4	20
#8	11

REV	DATE	DESCRIPTION
1	3/18/24	UPDATE TO WATERWAY BED FILL MATERIAL

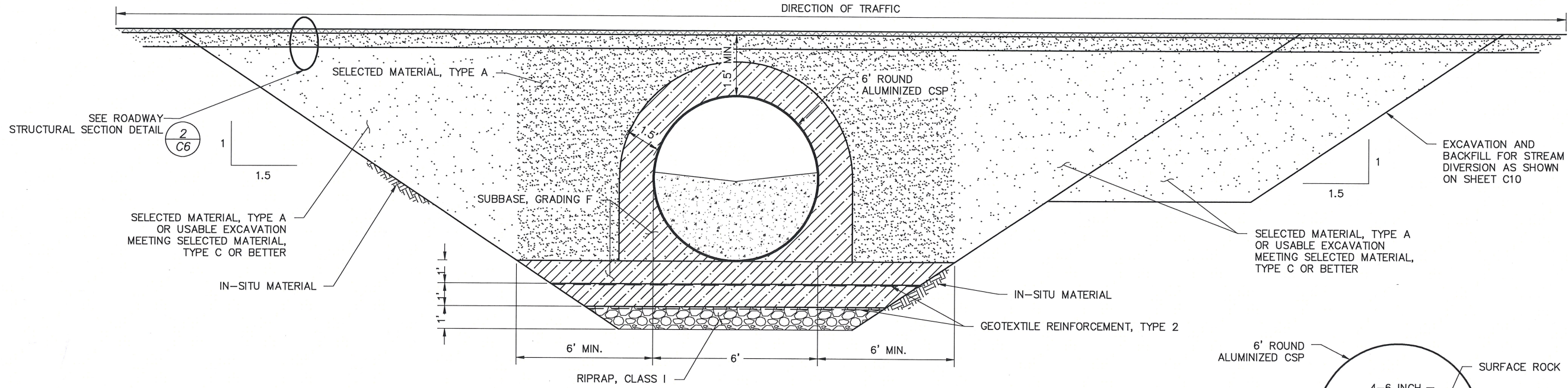


CORDOVA FISH PASSAGE IMPROVEMENTS
 ELSNER RIVER - CAB 1 & CAB 2
 GENERAL NOTES AND QUANTITIES
 CORDOVA, ALASKA

PROJECT 1136.63349.01
 DATE JANUARY 2024

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 SHEET

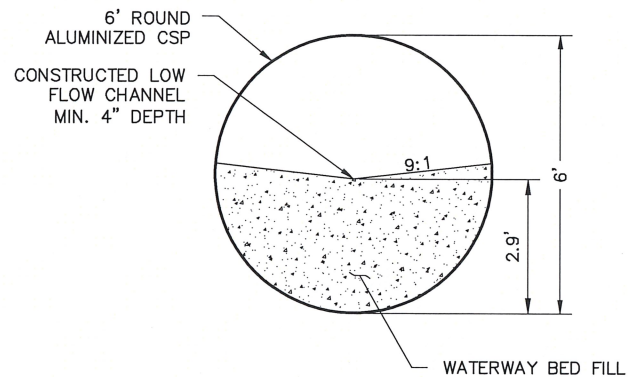
C:\dowl_pw\40393483\SC20-CH-DR-63349-CAB1-CAB2.dwg PLOT DATE 2024-3-15 15:11 SAVED DATE 2024-03-15 15:02 USER: hrbuck



1
C9
TYPICAL CULVERT TRENCH SECTION
NTS

NOTES:

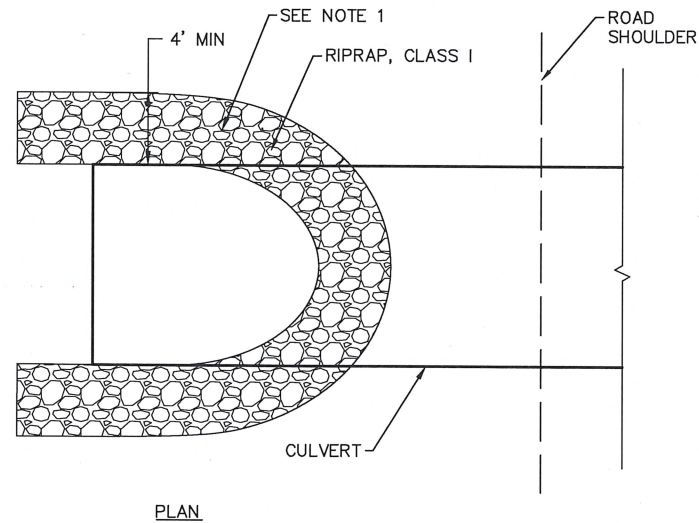
1. GEOTEXTILE REINFORCEMENT, TYPE 2 SHALL BE PLACED BETWEEN RIPRAP, CLASS I AND SUBBASE, GRADING F, AND PLACED BETWEEN EACH ONE-FOOT LAYER OF SUBBASE, GRADING F BENEATH CULVERT INVERT.
2. FOR QUANTITY ESTIMATION PURPOSES, NO USABLE EXCAVATION WAS ASSUMED AND EMBANKMENT QUANTITIES WERE CALCULATED USING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



2
C9
TYPICAL CULVERT INFILL SECTION
NTS

NOTES:

1. MIX MATERIAL FOR WATERWAY BED FILL TO ACHIEVE A WELL GRADED MIXTURE.
2. FILL VOIDS IN RIPRAP FOR WATERWAY BED FILL. MIX RIPRAP WITH FINES PRIOR TO PLACEMENT AND WASH FINES IN AFTER PLACEMENT.
3. PLACEMENT AND SHAPE OF WATERWAY BED FILL SHALL BE COORDINATED WITH HABITAT PERSONNEL (CRWP OR USFWS OR ADF&G) ON SITE.



3
C9
RIPRAP SLOPE PROTECTION SECTION
NTS

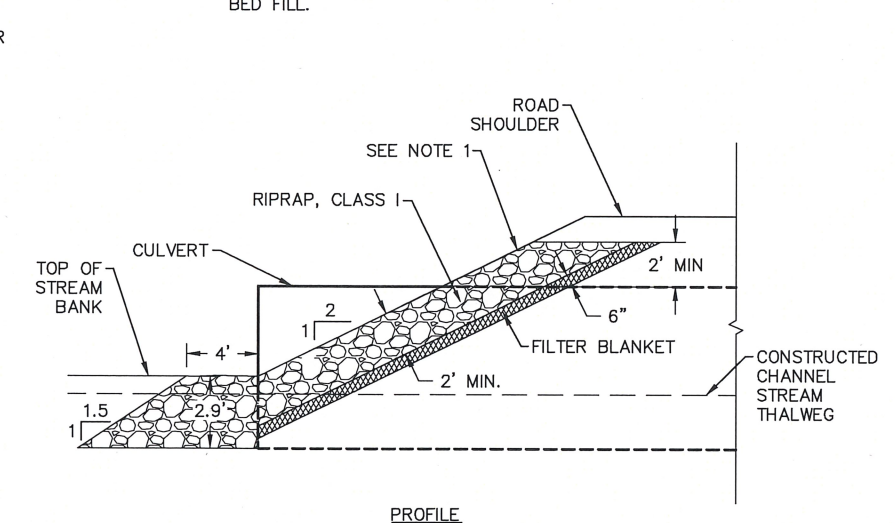
NOTES:

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

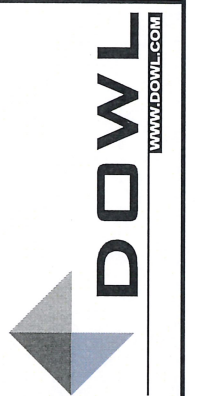
4
C9
ROCK CLUSTER SECTION
NTS

NOTES:

1. SURFACE AND FOOTER ROCKS TO BE 8 TO 12 INCH DIAMETER.
2. ROCK CLUSTERS ARE SUBSIDIARY TO PAY ITEM 690.2001.0000 WATERWAY BED FILL.



REV	DATE	DESCRIPTION	BY
1	3/18/24	UPDATE TO WATERWAY BED FILL MATERIAL	



CORDOVA FISH PASSAGE IMPROVEMENTS
ELSNER RIVER - CAB 1 & CAB 2
CAB 2 STREAM SECTIONS AND DETAILS
CORDOVA, ALASKA

PROJECT 1136.63349.01
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C9 OF C11

Special Provision

Add the following Section:

SECTION 690

WATERWAY

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

690-1.02 REFERENCES.

1. Stream Bank Revegetation and Protection: A Guide for Alaska; published by Alaska Department of Fish and Game; printed copy available from the Department, and electronic copy available on the internet.
Available here: https://www.adfg.alaska.gov/static/home/library/pdfs/habitat/98_03.pdf

690-2.01 MATERIALS.

Clearing and Grubbing (salvage vegetative mat and wetland plugs)	Section 201
Excavation and Embankment (waterway bed and bank)	Section 203 & 703
Riprap	Section 611
Seeding	Section 201, 618 & 724
Topsoil	Section 620 & 726
Block Sodding (vegetative mat)	Section 623
Erosion, Sediment, and Pollution Control	Section 641
Selected Material	Section 703
Porous Backfill Material	Subsection 703-2.10

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

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

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

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