Matanuska-Susitna Borough

350 EAST DAHLIA AVE, PALMER, ALASKA 99645-6488 • PHONE: (907) 745-4801
DEPARTMENT OF FINANCE

Received

December 4, 2012

U.S. Fish and Wildlife Service
Anchorage Fish & Wildlife Field Office
Attn: William J. Rice, Project Officer
605 West 4th Avenue, Room G-61
Anchorage, Alaska 99501

Subject: FWS Agreement Number: 70181BJ007 / F11AC00657-0001-00W4
Culvert Replacement in Little Susitna/Big Lake Watersheds & Hydroseeding of Past Projects

Dear Mr. Rice:

As required by the agreement for the Culvert Replacement in Little Susitna/Big Lake Watersheds & Hydroseeding of Past Projects grant, we hereby submit the enclosed FINAL financial and progress reports. There were reimbursable expenditures for the period of October 1, 2012 through November 30, 2012 in the amount of $13,769.87.

If you have any questions, please contact Eileen Pickett at (907) 745-9585, Kathy Thornlow at (907) 745-9620, or e-mail grantsadmin@matsugov.us.

Sincerely,

Cherón Mané Simeroth
Accounting Specialist

Enc.

c: Jim Jenson, Operations & Maintenance Division Manager

Matanuska-Susitna Borough Quarterly Project Report

Report Period: 07/01/2012- 09/30/2012 Today's Date: 12/03/12
Project Name: Culvert Repl Little Su/Big Lake Watershed & Hydroseed
Grantor: USFWS Project Number: 30107-7102
Expiration Date: 12/31/2012 Grant Number: F11AC00657

FINAL GRANT REOPRT

- GPS survey equipment delivered and invoiced
- All funds have been expended

2012 3rd QUARTER GRANT REPORT SUMMARY

- Maintenance work on Coyote Creek completed
- Scope of deliverables is being prepared for solicitation

2012 2nd QUARTER GRANT REPORT SUMMARY

- Permission given to purchase inspector supplies & surveying equipment
- Coyote Creek maintenance project low quote is Western Construction

2012 1st QUARTER GRANT REPORT SUMMARY

- No project scheduled to use these monies on
- Annual SF425 will be submitted with March, 2012 report

2011 4th QUARTER GRANT REPORT SUMMARY

- Closed out PO#2011-4295 to Enstar Natural Gas Company

2011 3rd QUARTER GRANT REPORT SUMMARY

- Sunrise Road Culvert Replacement completed
- Meadow Lake Loop Culvert Replacement is complete
- Hydroseeding is complete

2011 2nd QUARTER GRANT REPORT SUMMARY

These monies have been encumbered to the following projects:

- Sunrise Road Culvert Replacement $123,208.31
- Hydro-Seeding $5,865
- Meadow Lake Loop Culvert Replacement $105,926.69

Match requirements have been meet.

Matanuska-Susitna Borough Quarterly Project Report

Report Period: 07/01/2012- 09/30/2012 Today's Date: 12/03/12

Project Name: Culvert Repl Little Su/Big Lake Watershed & Hydroseed

Grantor: USFWS Project Number: 30107-7102

Expiration Date: 12/31/2012 Grant Number: F11AC00657

Project Element	Schedule	Comments
Permits		Complete
Design		Complete
--Final		
Purchasing		
--Item – CMP		
--Item #2		
Construction		
-- 35% Complete		
--50% Complete		
--90% Complete		

--Completed		Sunrise, Meadow Lake & Hydroseeding
Utilities		
Electric		
Telephone	6/20/11	
Natural Gas	6/20/11	
GCI		
Road Access		
Restoration		
Close-out		

PROJECT SCHEDULE

CHRONOLOGY

03/17/2011 Pre-Bid ML-027
03/08/2001 - Bid Opening for Sunrise Culvert Replacement
03/31/2011 Bid Opening ML-027
04/05/11 – Assembly adopted
04/13/11 – Grant signed by USF&WS
04/21/2011 - NTP issued to TEW's Inc
04/22/2011 - Preconstruction meeting held, NTP issued
05/05/2011 - Preconstruction held
05/17/2011 - Construction started
06/16/2011 - Pre-Bid for ML-026 & ML-028
06/22/2011 - 2nd Quarter grant report done
07/15/2011 – Sunrise Culvert Replacement completed
08/15/2011 – Meadow Lakes Culvert Replacement completed

09/16/2011 – 3rd Quarter grant report done
12/05/2011 – Closed out PO #2011-4295 to Enstar
12/06/2011 – 4th Quarter grant report done
03/20/2012 – 1st Quarter grant report done
06/15/2012 - Quotes due for Coyote Creek maintenance work ML-024
06/20/2012 - 2nd Quarter grant report done
06/30/2012 - Work on Coyote Creek completed
09/17/2012 - 3rd Quarter grant report done
10/29/2012 - Equipment delivered and invoiced.
12/03/2012 - Final grant report done

Sunrise Road: Original small culvert with barriers.

Coyote Creek new 19 foot box culvert.

Sunrise Road: New, larger and embedded culvert.

Poddle Creek new culvert.

Contract Drawings For

MATANUSKA - SUSITNA BOROUGH

SUNRISE ROAD FISH PASSAGE RESTORATION PROJECT

CULVERT ML 024

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA
NOVEMBER, 2010

ABBREVIATIONS	
ALCAP	ALUMINUM CAP
AVAP	AS VERTICAL AS POSSIBLE
BFW	BANKFULL WIDTH
CFS	CUBIC FEET PER SECOND
CSP	CORRUGATED STEEL PIPE
E	EASTING
ELEC	ELECTRIC
ELEV	ELEVATION
FT	FEET
GALV.	GALVANIZED
I.E.	INVERT ELEVATION
IN	INCH
ME	MATCH EXISTING
MIN	MINIMUM
ML	MILE
N	NORTHING
NTS	NOT TO SCALE
OH	OVERHEAD
Q	FLOW
Q2D2	2-YEAR, 2-DAY FLOW
SHD	SHOULDER
SQ MI	SQUARE MILE
STA	STATION
TYP	TYPICAL

LOCATION MAP
NTS

DRAWING INDEX

Parcel 1

MSB WAIVER RESOLUTION NO. 2003-277-PWM
REC. NO. 2003-038790-0

50' Road Easement
Bk. 753 Pg 632

25
25

33' Road Reserve

702

SUNRISE ROAD

33' Road Reserve

Begin Project
30+00
N 4986.78
E 9271.56

Coyote Creek

31+00 1 32+00 33+00 34+00 35+00 36+00 37+00 2

N89°56'11"E
800.00'

ML024

TRACT A
(W½ NW¼ NW¼ & SW¼ NW¼)
Section 13, T18N, R2W, S.M., Alaska

Poodle Creek

End Project
38+00
N 4987.67
E 10071.56

E½ NE¼ NE¼ & SE¼ NW¼ Section 13,
T18N, R2W, S.M., Alaska

33' Road Reserve

701

33' Road Reserve

NW¼ SW¼ Section 13,
T18N, R2W, S.M., Alaska

Parcel 4

RECORD OF SURVEY
FOR CAMERON SEDDON
PARCEL 3 & 4
OF WAIVER NO. 84-67W

Plat No. 2004-103

Parcel 3

LEGEND

- SURVEY MONUMENT
- (901) CONTROL POINTS
- 32+00 ALIGNMENT W/STATIONING
- ADJACENT PROPERY LINE
- EASEMENT LINE

ALIGNMENT SURVEY CONTROL COORDINATES

POINT	STATION	OFFSET	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	31+37.75	11.46' Lt.	4998.39	9409.29	109.80	ALCAP
2	37+28.35	12.24' Lt.	4999.83	9999.89	100.00	ALCAP
701	37+99.93	33.00' Rt.	4954.67	10071.53		REBAR W/PLASTIC CAP
702			5011.18	8751.67		ALCAP

HORIZONTAL CONTROL
Coordinates are based on an assumed datum in U.S. Feet. Bearings are based on the Record of Survey for CAMERON SEDDON PARCEL 3 & 4 of Waiver No. 84-67W, as filed under Plat No. 2004-103, Palmer Recording District, State of Alaska.

VERTICAL CONTROL
Elevations are based on an assumed datum in U.S. Feet. The Basis of Elevations is temporary benchmark "2", a 2" aluminum cap having a value of 100.00 feet.

N

GRAPHIC SCALE
60 0 30 60 120

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VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

Revision No.	Description	Date

Designed
Drawn VLB
Checked SEP
Date NOVEMBER 2010
Project Number: File No: Scale: AS SHOWN

STATE OF ALASKA
Stanley E. Pohlness
LS 6714
Registered Professional Land Surveyor

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

SURVEY CONTROL

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C2 of C13

DOWL FILE No. 233-87

SCRIPT FILE:

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ESTIMATE OF QUANTITIES			
ITEM NO.	PAY ITEM	PAY UNIT	QUANTITY
201(3B)	CLEARING AND GRUBBING	1	LUMP SUM
202(2A)	REMOVAL OF PAVEMENT	175	SQUARE YARD
202(4A)	REMOVAL OF CULVERT PIPE	110	LINEAR FOOT
203(5A)	BORROW, TYPE A	1,460	CUBIC YARD
204(1)	STRUCTURAL EXCAVATION FOR CONDUITS AND MINOR STRUCTURES	1,640	CUBIC YARD
301(1)	AGGREGATE BASE COURSE, GRADING D-1	47	TON
401(4)	ASPHALT CONCRETE, TYPE II, CLASS B	175	SQUARE YARD
602(3)	ALUMINUM BOX CULVERT SPAN 19', RISE 6'1"	54	LINEAR FOOT
611(1)	RIPRAP, CLASS II	190	CUBIC YARD
615(2)	REMOVE EXISTING SIGN	1	EACH
618(1)	SEEDING	0.14	ACRE
619(1)	MULCH	670	SQUARE YARD
620(1)	TOPSOIL (4-INCH DEPTH)	670	SQUARE YARD
621(2)	PLANTING TREES AND SHRUBS	1	LUMP SUM
633(1)	SILT FENCE	800	LINEAR FOOT
640(1)	MOBILIZATION AND DEMOBILIZATION	1	LUMP SUM
641(1)	EROSION AND POLLUTION CONTROL ADMINISTRATION	1	LUMP SUM
642(1)	CONSTRUCTION SURVEYING	1	LUMP SUM
643(2)	TRAFFIC MAINTENANCE	1	LUMP SUM
671(1)	SIMULATION STREAMBED MIX	290	CUBIC YARD
800(1)	STREAM DIVERSION & DEWATERING	1	LUMP SUM

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Revision No.	Description	Date

Designed: RDP
Drawn: OCT
Checked: BMM
Date: NOVEMBER, 2010
Project Number: File No: Scale: AS SHOWN

STATE OF ALASKA 49TH
Bradley M. Melocik
CE 11098
REGISTERED PROFESSIONAL ENGINEER
11/15/10

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

ESTIMATE OF QUANTITIES

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

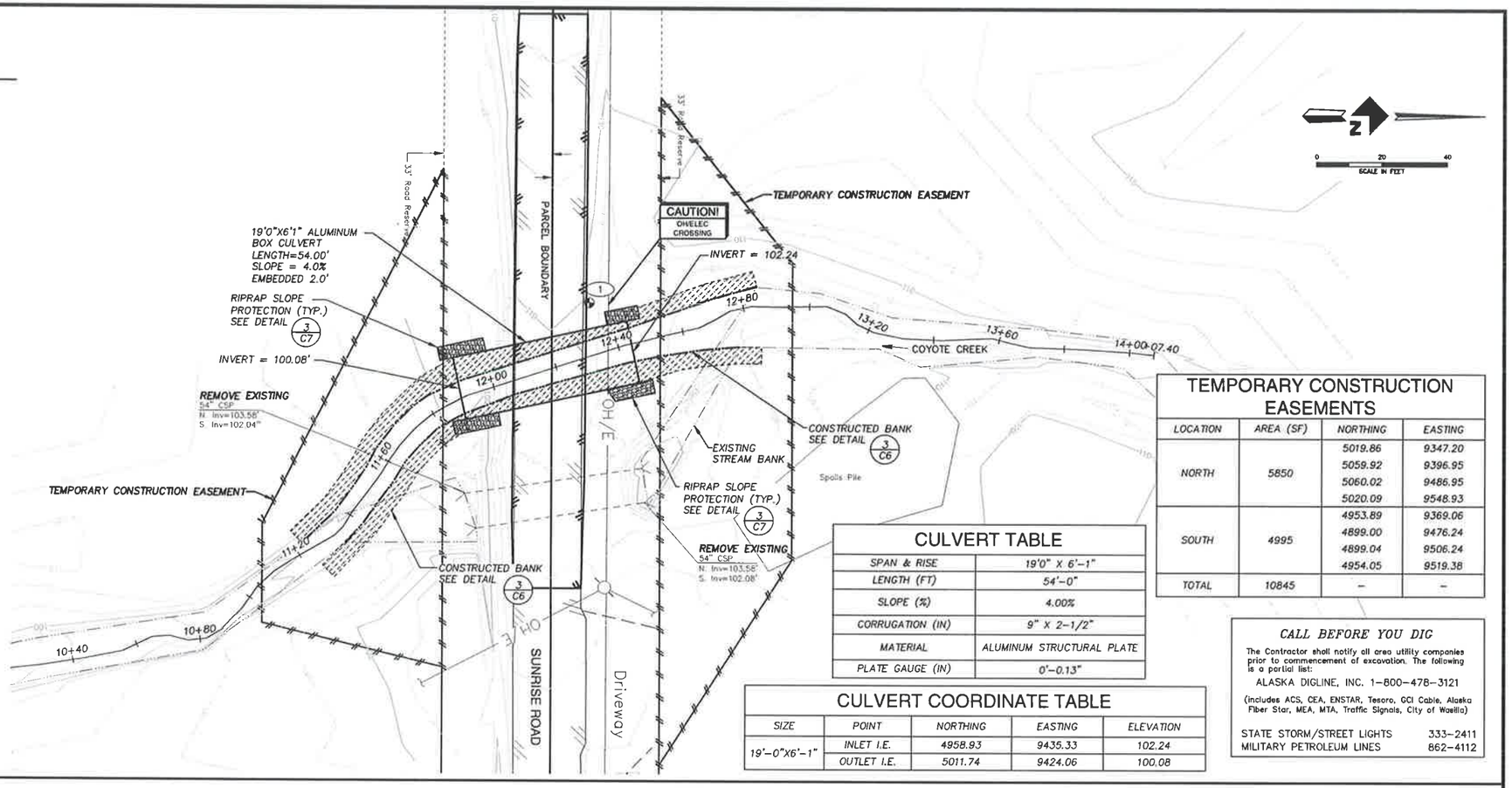
Sheet C3 of C13

DOWL FILE No. 233-87

SCRIPT FILE

GENERAL NOTES

1. SURVEY INFORMATION WAS PROVIDED BY DOWL HKM. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL SITE FEATURES. IF THE CONTRACTOR SHOULD ENCOUNTER CONDITIONS OTHER THAN THOSE SHOWN ON THE PLANS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE.
2. PLANS MAY NOT SHOW ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND SHALL EXERCISE CAUTION DURING CONSTRUCTION.
4. COORDINATE CONSTRUCTION STAGING AND MOBILIZATION AREAS AND ACTIVITIES WITH OWNER'S REPRESENTATIVE.
5. EXERCISE EXTREME CAUTION AND OBSERVE ALL APPLICABLE OSHA REQUIREMENTS FOR WORKING IN CONFINED AREAS.
6. STATIONING IS ALONG CENTERLINE OF PIPE OR ROADWAY. ELEVATIONS ARE TO PIPE INVERT UNLESS OTHERWISE NOTED.
7. VERIFY INVERTS OF ALL PROPOSED STRUCTURES PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES FROM PLANS IMMEDIATELY TO OWNER'S REPRESENTATIVE.
8. CULVERT DESIGN LOAD: AASHTO LOADING HS-25, MINIMUM SOIL BEARING CAPACITY: 4000PSF.
9. EXCAVATION AND BACKFILL:
   A. REMOVE ALL ORGANIC OR OVER SATURATED SOFT MATERIAL, WHICH CANNOT BE COMPACTED. DO NOT PLACE EXCESS AND/OR UNSUITABLE MATERIAL EXCAVATED DURING CONSTRUCTION, ADJACENT TO OR IN THE STREAM CHANNEL.
   B. BACKFILL SHALL BE PLACED AND COMPACTED WITH CARE AND SHALL BE BROUGHT UP EVENLY AND SIMULTANEOUSLY ON BOTH SIDES OF PIPE.
   C. COMPACTION MUST BE TESTED BY A CERTIFIED TESTING LABORATORY AND REPORTS TO BE SUBMITTED TO THE OWNER'S REPRESENTATIVE.
10. CULVERT INSTALLATION:
    A. CULVERT JOINTS SHOULD NOT LEAK.
    B. CULVERT INFILL MATERIAL SHALL BE INSTALLED IN PIPE ACCORDING TO PLANS. MANUAL INSTALLATION IS REQUIRED.
    C. PROVIDE WORK SCHEDULE TO THE OWNER'S REPRESENTATIVE PER OWNER'S REQUIREMENTS. NOTIFY THE OWNER'S REPRESENTATIVE FOR INSPECTION AS REQUIRED IN THE DOCUMENTS.
11. CONTRACTOR SHALL SURVEY EXISTING ROAD PROFILE TO EXTENT NECESSARY TO CONSTRUCT PROPOSED ROADWAY AS SHOWN ON SHEET C8.
12. ALL VEGETATION IN THE AREAS NOT AFFECTED BY WORK SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR. RESEED ALL DISTURBED AREAS IN CONFORMANCE WITH STREAM REVEGETATION PLANS.



TEMPORARY CONSTRUCTION EASEMENTS

LOCATION	AREA (SF)	NORTHING	EASTING
NORTH	5850	5019.86	9347.20
		5059.92	9396.95
		5060.02	9486.95
		5020.09	9548.93
SOUTH	4995	4953.89	9369.06
		4899.00	9476.24
		4899.04	9506.24
		4954.05	9519.38
TOTAL	10845	–	–

CULVERT TABLE

SPAN & RISE	19'0" X 6'-1"
LENGTH (FT)	54'-0"
SLOPE (%)	4.00%
CORRUGATION (IN)	9" X 2-1/2"
MATERIAL	ALUMINUM STRUCTURAL PLATE
PLATE GAUGE (IN)	0'-0.13"

CULVERT COORDINATE TABLE

SIZE	POINT	NORTHING	EASTING	ELEVATION
19'-0"X6'-1"	INLET I.E.	4958.93	9435.33	102.24
	OUTLET I.E.	5011.74	9424.06	100.08

CALL BEFORE YOU DIG

The Contractor shall notify all area utility companies prior to commencement of excavation. The following is a partial list:

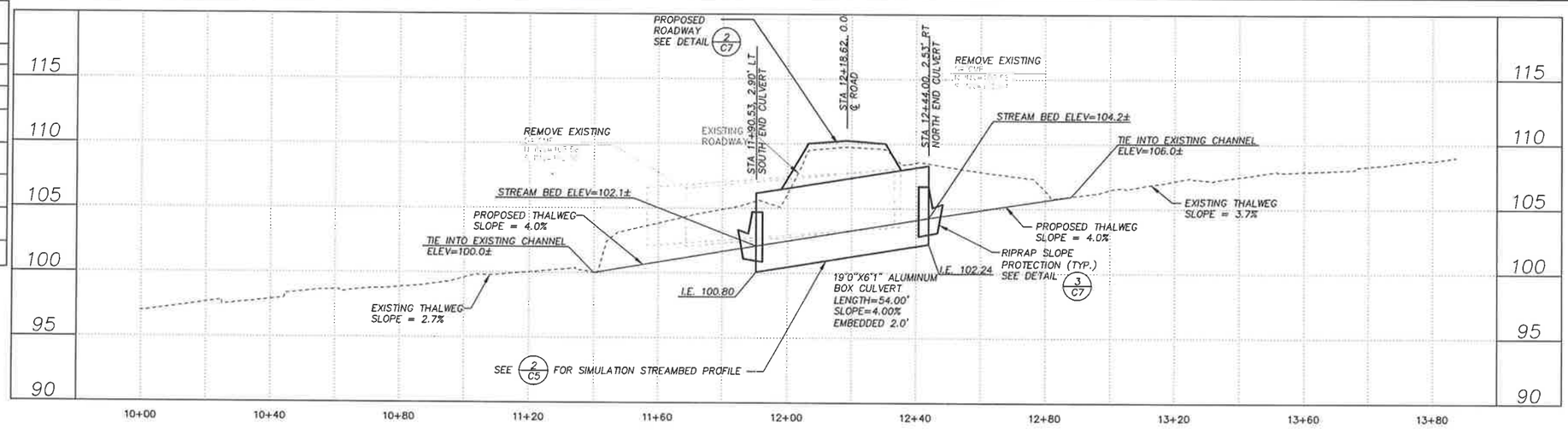
ALASKA DIGLINE, INC. 1-800-478-3121

(includes ACS, CEA, ENSTAR, Tesoro, GCI Cable, Alaska Fiber Star, MEA, MTA, Traffic Signals, City of Wasilla)

STATE STORM/STREET LIGHTS	333-2411
MILITARY PETROLEUM LINES	862-4112

HYDRAULIC SUMMARY

EXCEEDENCE PROBABILITY	Q(cfs)
02D2 (0.40x50%)	30
50%	77
10%	170
4%	228
2%	275
1%	324
DRAINAGE AREA = 5.6 SQ MI	



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Drawn: OCT
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Project Number: File No: Scale: AS SHOWN

STATE OF ALASKA 49TH — Bradley M. Malocik CE 11098 — REGISTERED PROFESSIONAL ENGINEER — 11/15/10

U.S. FISH & WILDLIFE SERVICE — DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

PLAN AND PROFILE

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C4 of C13

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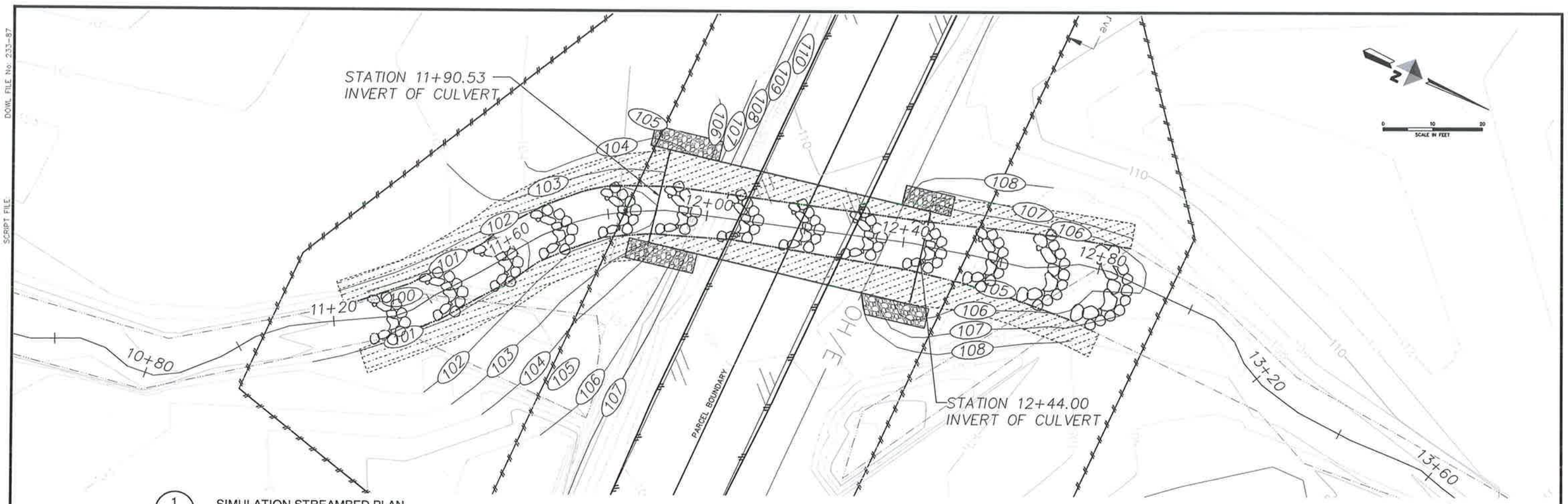
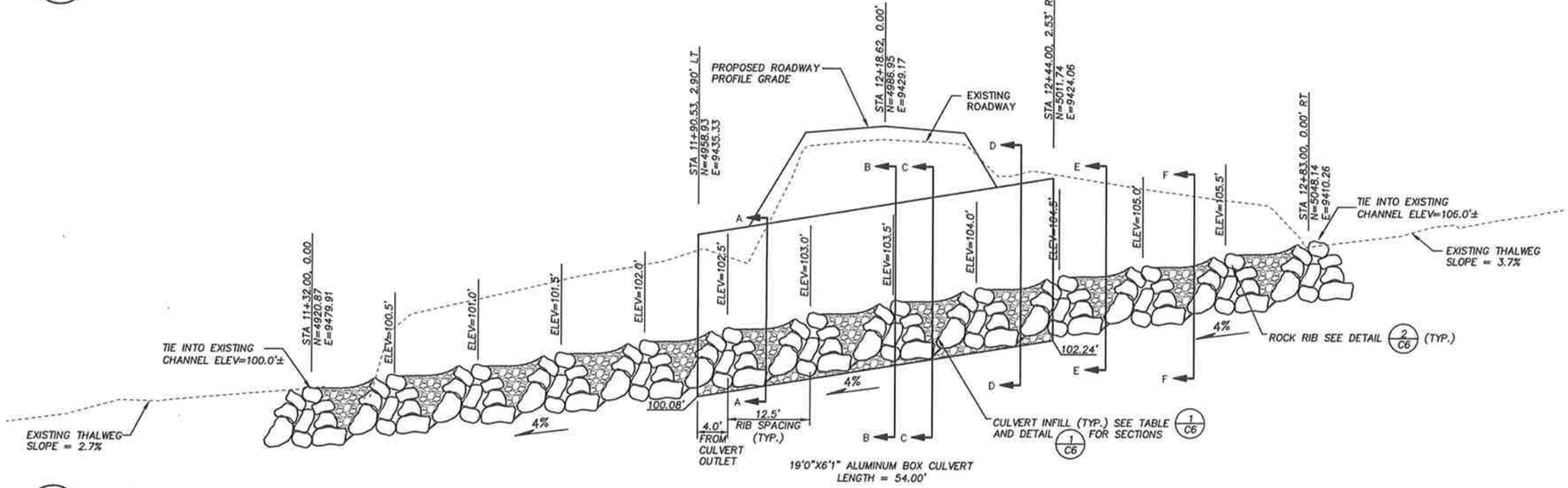


1/C5 SIMULATION STREAMBED PLAN
NTS



2/C5 SIMULATION STREAMBED PROFILE
NTS

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(Includes ACS, CEA, ENSTAR, Tesoro, GCI Cable, Alaska Fiber Star, MEA, MTA, Traffic Signals, City of Wasilla)

STATE STORM/STREET LIGHTS	333-2411
MILITARY PETROLEUM LINES	862-4112

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STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER Brooks M. Melocik CE 11098 11/5/10

U.S. FISH & WILDLIFE SERVICE DEPARTMENT OF THE INTERIOR

MATANUSKA-SUSITNA 1964 BOROUGH

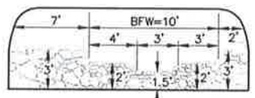
MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

SIMULATION STREAMBED

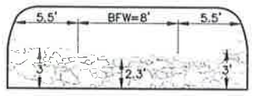
SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

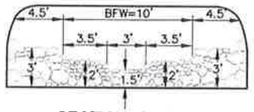
Sheet C5 of C13



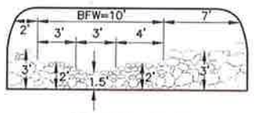
SECTION A–A
INFILL SECTION (BETWEEN RIBS)



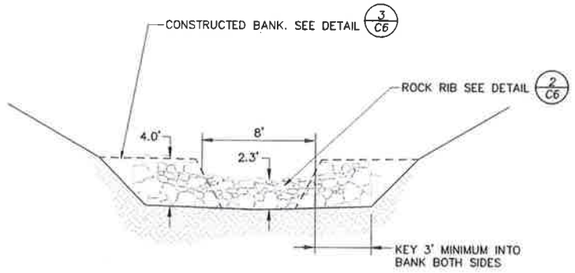
SECTION B–B
INFILL SECTION (AT RIBS)



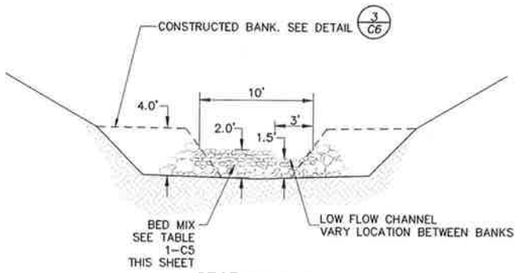
SECTION C–C
INFILL SECTION (BETWEEN RIBS)



SECTION D–D
INFILL SECTION (BETWEEN RIBS)



SECTION E–E
RIB IN UPSTEAM/DOWNSTREAM CHANNEL

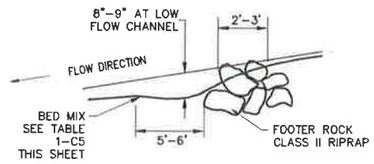


SECTION F–F
RIFFLE IN UPSTREAM/DOWNSTREAM CHANNEL

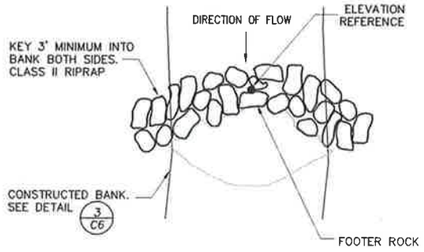
GENERAL NOTES:

1. CONSTRUCT CULVERT INFILL WITH HAND–PLACED ROCKS LEAVING A NON–UNIFORM SURFACE AND GAPS BETWEEN. FILL VOIDS WITH CULVERT INFILL/BED MIX.
2. BANK STABILIZATION ROCKS TO BE CONSTRUCTED OF CLASS II RIPRAP. FILL VOIDS WITH FINER MATERIAL.
3. ROCK RIBS AND FOOTER ROCKS TO BE CONSTRUCTED OF CLASS II RIPRAP. FILL VOIDS WITH FINER MATERIAL.
4. SELECT THE LARGER FRACTION (>18" DIAMETER) OF CLASS II RIPRAP FOR KEY PEICES (FOOTER ROCKS AND BANK STABILIZATION ROCKS). USE SMALLER FRACTION (<18" DIAMETER) FOR TOP OF RIBS.

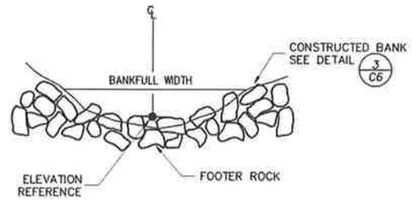
TABLE 1–C6	
CULVERT INFILL/ BED MIX	MATERIAL SIZES
100% PASSING	6"
84% PASSING	4"
50% PASSING	2"
25% PASSING	1"
16% PASSING	#4
5% PASSING	#8



PROFILE VIEW



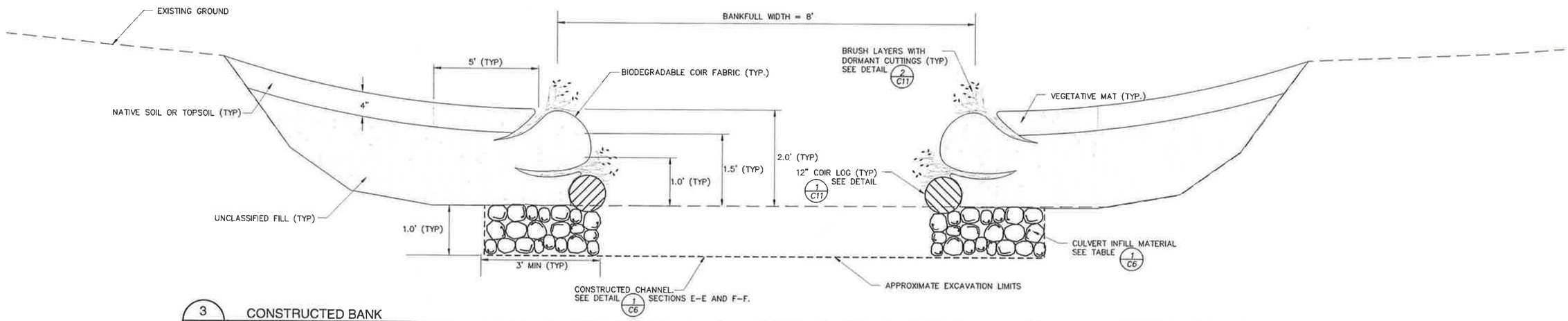
PLAN VIEW



CROSS–SECTION VIEW

1/C6 CULVERT CHANNEL INFILL DETAIL
NTS. LOOKING UPSTREM (UP–STATION)

2/C6 ROCK RIB DETAIL
NTS



3/C6 CONSTRUCTED BANK
STA 11+25.00 TO STA 11+90.00
STA 12+45.00 TO STA 12+85.00

VERIFY SCALES
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STATE OF ALASKA 49TH — Bradley M. Melocik CE 11095 — REGISTERED PROFESSIONAL ENGINEER — 11/15/10

U.S. FISH & WILDLIFE SERVICE — DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

DETAILS

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C6 of C13

DOWL FILE No: 233–87
SCRIPT FILE:
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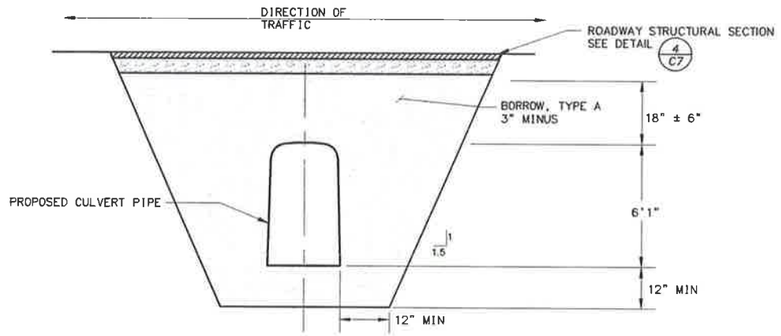
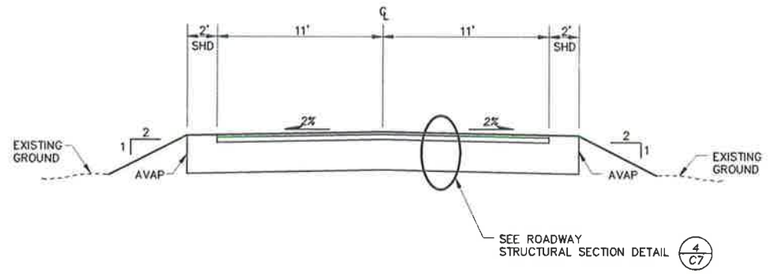
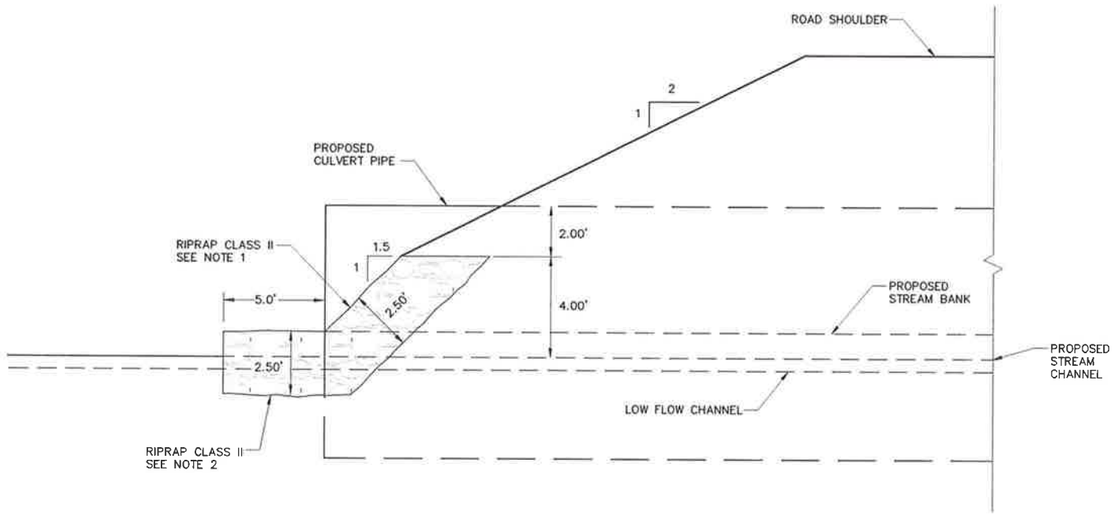


1/C7 TYPICAL CULVERT CROSS-SECTION - ML 024
NTS

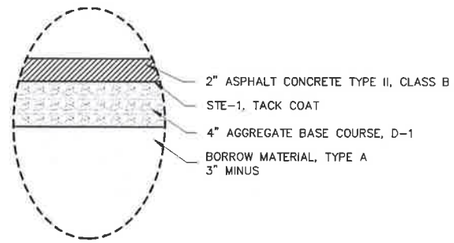


2/C7 PROPOSED ROADWAY TYPICAL SECTION
NTS



1. RIPRAP CLASS II TO BE STACKED AS A STRUCTURAL UNIT FORMING A 1.5:1 SLOPING WALL TO RETAIN FILL NEXT TO THE MOUTH OF THE CULVERT. RIPRAP WILL BE SORTED AND STACKED TO FORM A STABLE UNIT.
2. RIPRAP CLASS II TOE TO BE PLACED AT ALL 4 QUADRANTS. PLACE RIPRAP ALONG EXTENDING STREAMBANKS ABOVE AND BELOW THE STREAM CHANNEL ELEVATION.

3/C7 RIPRAP SLOPE PROTECTION SECTION
STA 11+85.00 TO STA 11+95.00
STA 12+40.00 TO STA 12+50.00



4/C7 ROADWAY STRUCTURAL SECTION DETAIL
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STATE OF ALASKA 49TH — Bradley M. Melocik 11091 — REGISTERED PROFESSIONAL ENGINEER — 11/15/10

U.S. FISH & WILDLIFE SERVICE — DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

SECTIONS AND DETAILS

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C7 of C13

DOWL FILE No: 233-87

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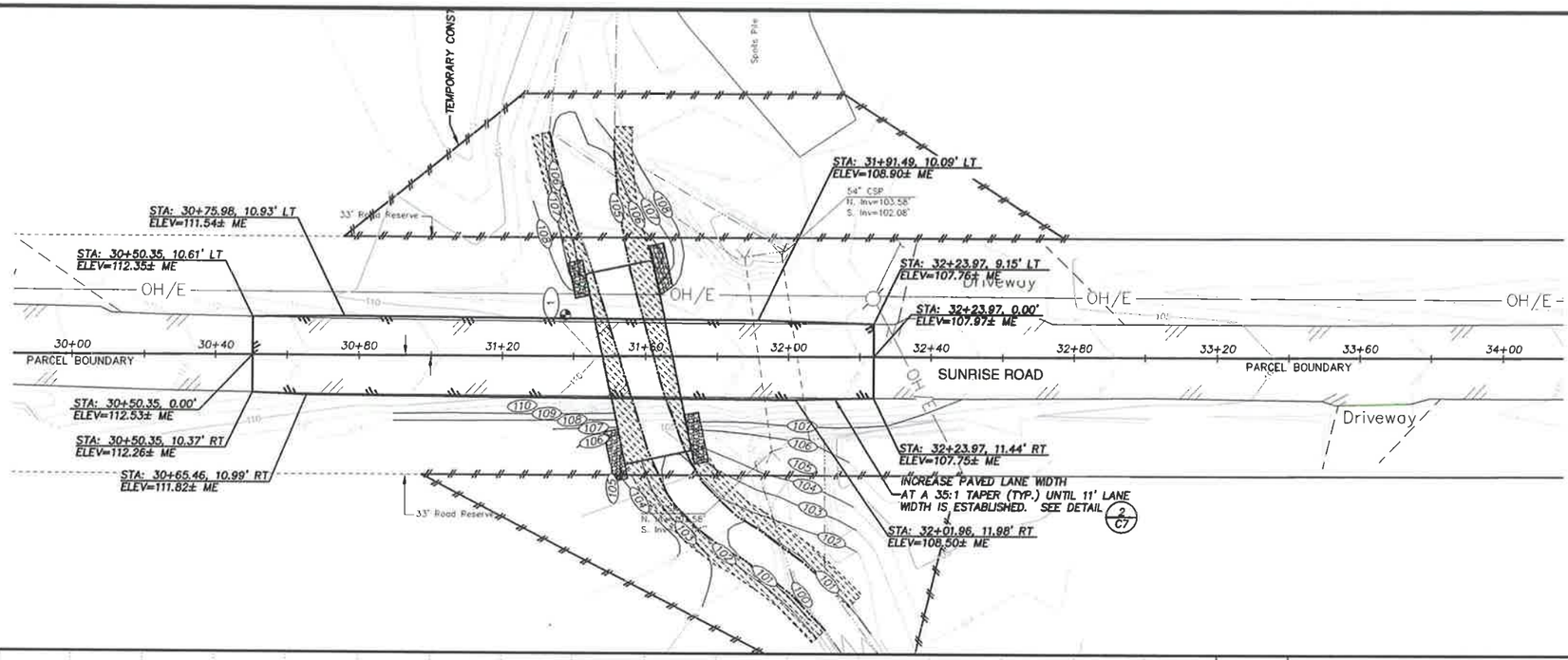


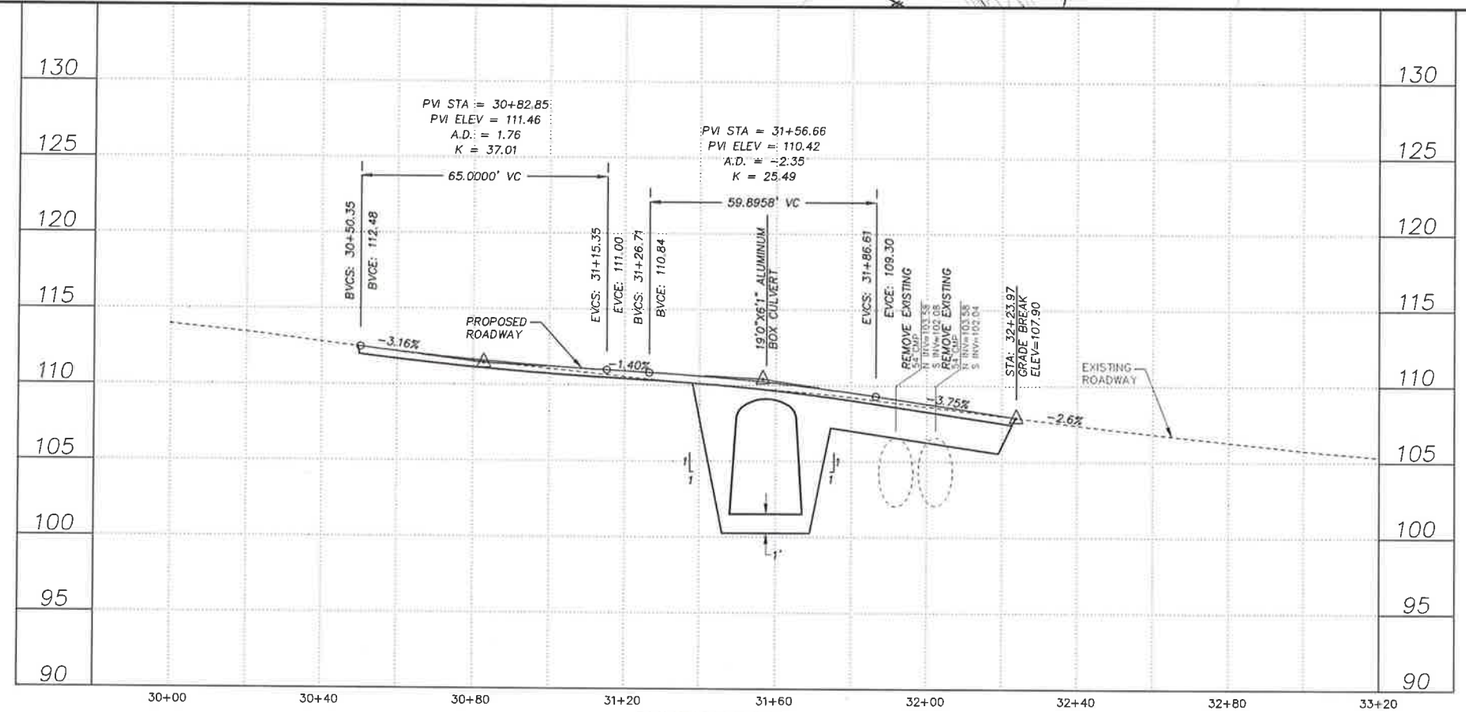
CALL BEFORE YOU DIG

The Contractor shall notify all area utility companies prior to commencement of excavation. The following is a partial list:

ALASKA DIGLINE, INC. 1-800-478-3121

(includes ACS, CEA, ENSTAR, Tesoro, GCI Cable, Alaska Fiber Star, MEA, MTA, Traffic Signals, City of Wasilla)

STATE STORM/STREET LIGHTS	333-2411
MILITARY PETROLEUM LINES	862-4112



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STATE OF ALASKA 49TH REGISTERED PROFESSIONAL ENGINEER
Bradley M. Melocik
CE 11098
11/15/10

U.S. FISH & WILDLIFE SERVICE DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

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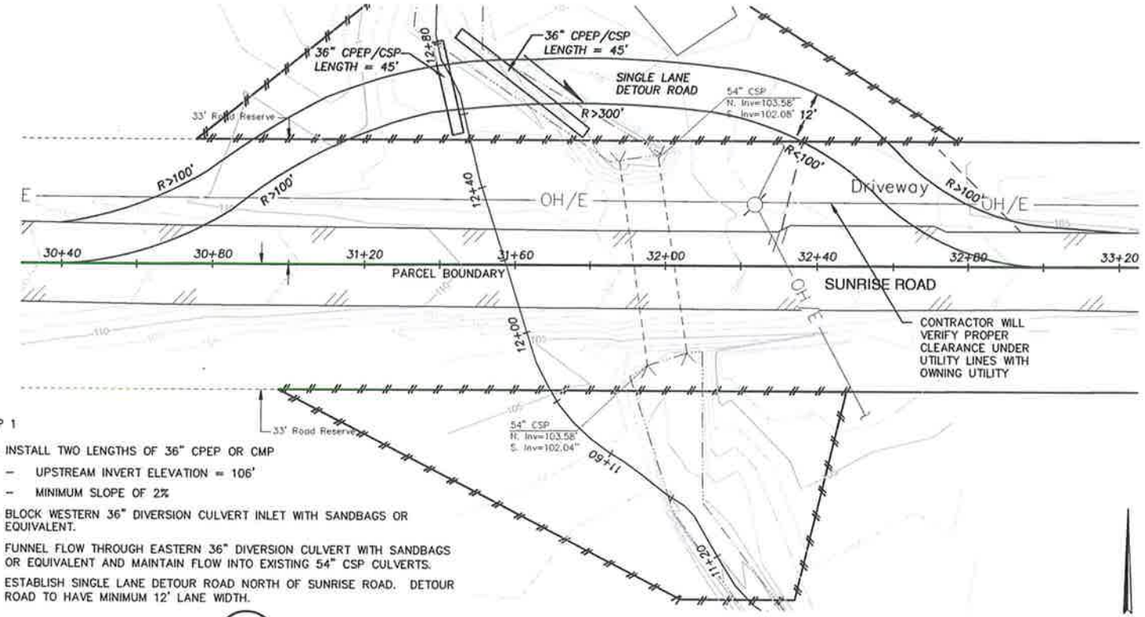
SUNRISE ROAD FISH PASSAGE
ML 024

ROADWAY PLAN AND PROFILE

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

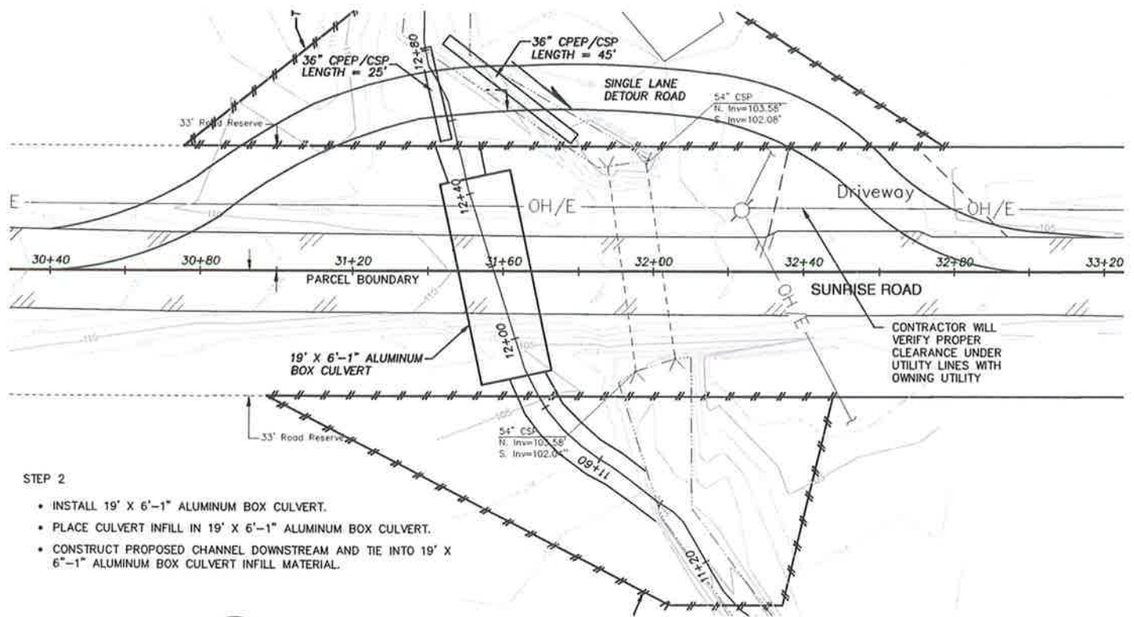
Sheet C8 of C13



STEP 1

- INSTALL TWO LENGTHS OF 36" CPEP OR CMP
  - UPSTREAM INVERT ELEVATION = 106'
  - MINIMUM SLOPE OF 2%
- BLOCK WESTERN 36" DIVERSION CULVERT INLET WITH SANDBAGS OR EQUIVALENT.
- FUNNEL FLOW THROUGH EASTERN 36" DIVERSION CULVERT WITH SANDBAGS OR EQUIVALENT AND MAINTAIN FLOW INTO EXISTING 54" CSP CULVERTS.
- ESTABLISH SINGLE LANE DETOUR ROAD NORTH OF SUNRISE ROAD. DETOUR ROAD TO HAVE MINIMUM 12' LANE WIDTH.

1/C9 STEP 1
NTS



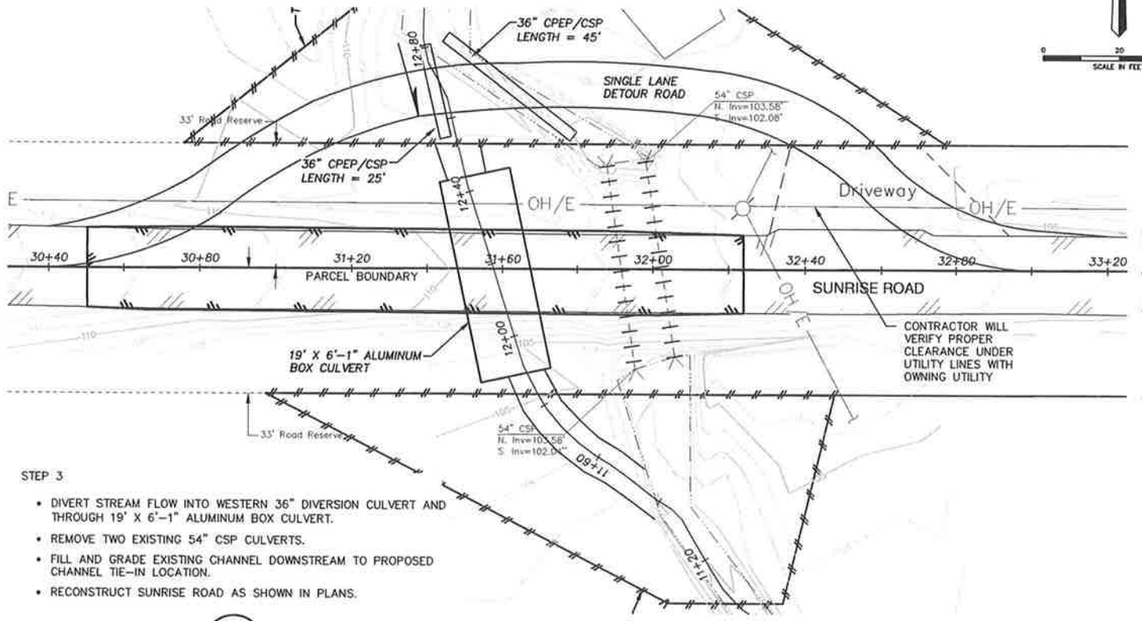
STEP 2

- INSTALL 19' X 6'-1" ALUMINUM BOX CULVERT.
- PLACE CULVERT INFILL IN 19' X 6'-1" ALUMINUM BOX CULVERT.
- CONSTRUCT PROPOSED CHANNEL DOWNSTREAM AND TIE INTO 19' X 6'-1" ALUMINUM BOX CULVERT INFILL MATERIAL.

2/C9 STEP 2
NTS

N

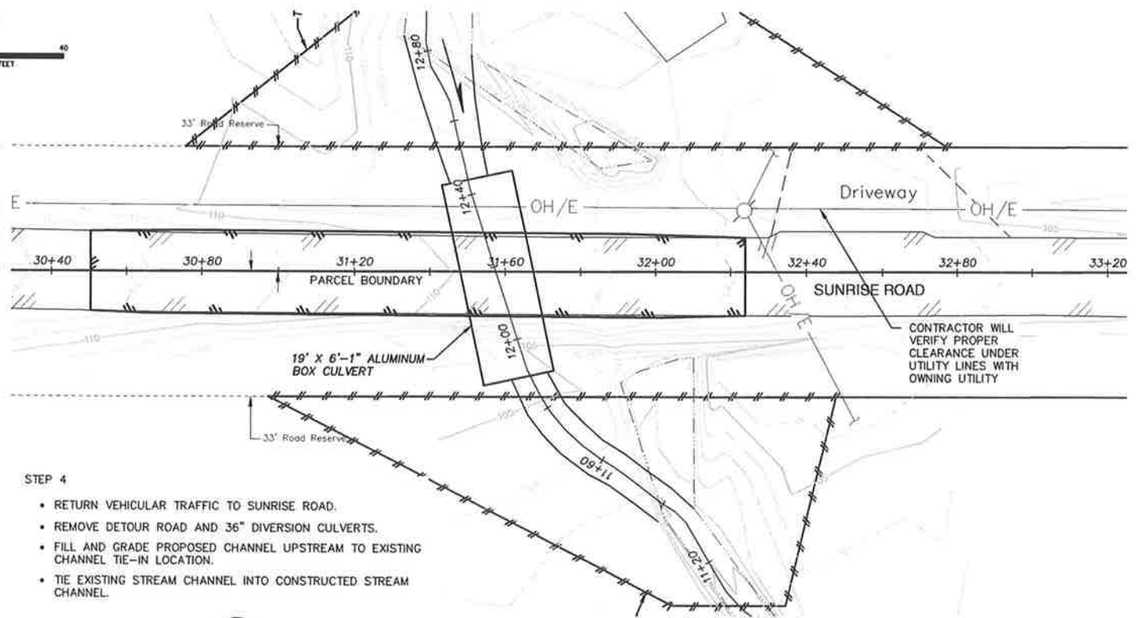
0 20 40
SCALE IN FEET



STEP 3

- DIVERT STREAM FLOW INTO WESTERN 36" DIVERSION CULVERT AND THROUGH 19' X 6'-1" ALUMINUM BOX CULVERT.
- REMOVE TWO EXISTING 54" CSP CULVERTS.
- FILL AND GRADE EXISTING CHANNEL DOWNSTREAM TO PROPOSED CHANNEL TIE-IN LOCATION.
- RECONSTRUCT SUNRISE ROAD AS SHOWN IN PLANS.

3/C9 STEP 3
NTS



STEP 4

- RETURN VEHICULAR TRAFFIC TO SUNRISE ROAD.
- REMOVE DETOUR ROAD AND 36" DIVERSION CULVERTS.
- FILL AND GRADE PROPOSED CHANNEL UPSTREAM TO EXISTING CHANNEL TIE-IN LOCATION.
- TIE EXISTING STREAM CHANNEL INTO CONSTRUCTED STREAM CHANNEL.

4/C9 STEP 4
NTS

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U.S. FISH & WILDLIFE SERVICE — DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

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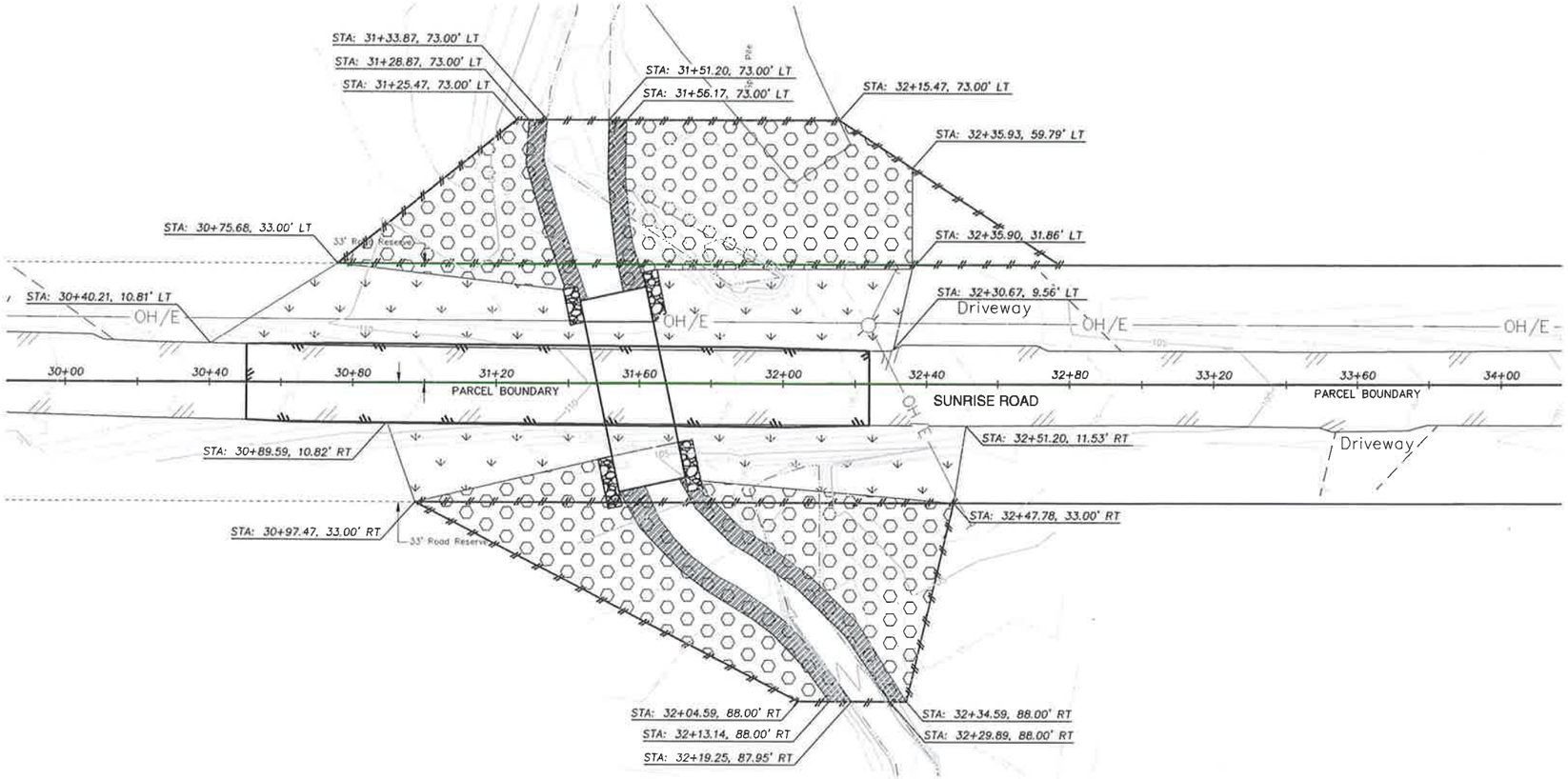
SUNRISE ROAD FISH PASSAGE
ML 024

STREAM DIVERSION PLAN

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C9 of C13



SITE REVEGETATION

DISTURBED RIPARIAN AREAS OUTSIDE OF THE DITCHLINE: AFTER GRADING TO MATCH CONTOURS SHOWN IN PLANS, PLACE NATIVE SOIL OR TOPSOIL AT THE DIRECTION OF THE ENGINEER. SEED WITH "NATURAL SEED MIX" AS SPECIFIED IN THE SPECIAL PROVISIONS.

VEGETATIVE MAT: PLACE SALVAGED VEGETATIVE MAT, OR VEGETATIVE MAT ACQUIRED OFFSITE, ALONG RECONSTRUCTED STREAMBANK NEXT TO BRUSH LAYERING. PROVIDE A MINIMUM WIDTH OF 5' ON EACH BANK.

DISTURBED AREA AT ROAD AND DITCHLINE: COVER WITH 4 INCHES OF NATIVE SOIL OR TOPSOIL AT THE DIRECTION OF THE ENGINEER. TRACKWALK AND SEED WITH "SEED MIX FOR DISTURBED AREAS AT ROAD AND DITCHLINE" AS SPECIFIED IN THE SPECIAL PROVISIONS.

RIPRAP AREA: AFTER PLACEMENT OF RIPRAP AND APPROVAL OF ENGINEER, FILL VOIDS BETWEEN ROCKS WITH NATIVE SOIL AND SEED WITH "SEED MIX FOR DISTURBED AREAS AT ROAD AND DITCHLINE" AS SPECIFED IN THE SPECIAL PROVISIONS.

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U.S. FISH & WILDLIFE SERVICE DEPARTMENT OF THE INTERIOR

MATANUSKA SUSITNA 1964 BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

STREAM REVEGETATION PLAN

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

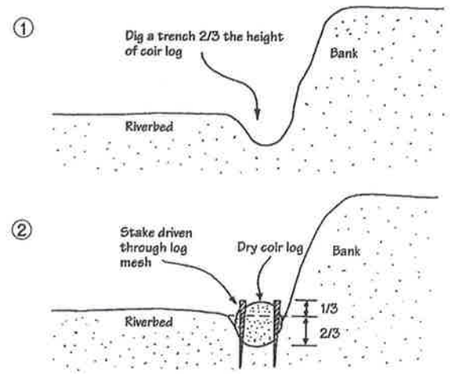
Drawing Number:

Sheet C10 of C13

ADAPTED FROM ADFG STREAM BANK AND REVEGETATION GUIDE (2005)

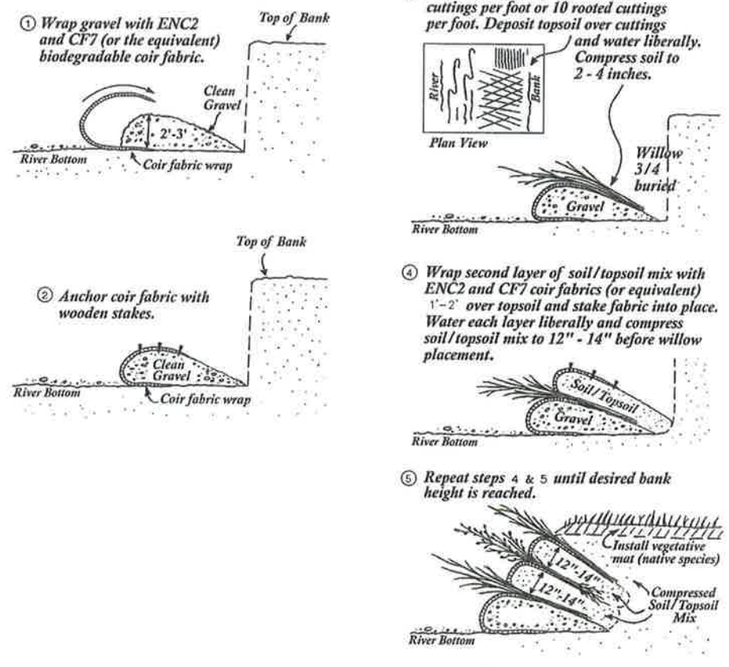
Coir Logs
Step-by-Step

Install coir log during periods of dry riverbed or isolate area (see Silt Fence Installation). Secure log with wooden or live stakes woven through coir log mesh and driven into earth. Stake log into place every foot on both sides. Tie adjacent logs together with biodegradable twine. Compact soil around log. Secure the upstream and downstream ends by positioning coir logs so they transition smoothly into a stabilized bank.



1 / C11 COIR LOG
NTS

ADAPTED FROM ADFG STREAM BANK AND REVEGETATION GUIDE (2005)



2 / C11 BRUSH LAYERING
NTS

GENERAL NOTES:

REVEGETATION MEASURES SHALL BE COMPLETED IN ACCORDANCE WITH GUIDELINES LISTED IN THE 2005 STREAM BANK AND REVEGETATION GUIDE AVAILABLE FROM ALASKA DEPARTMENT OF FISH AND GAME.

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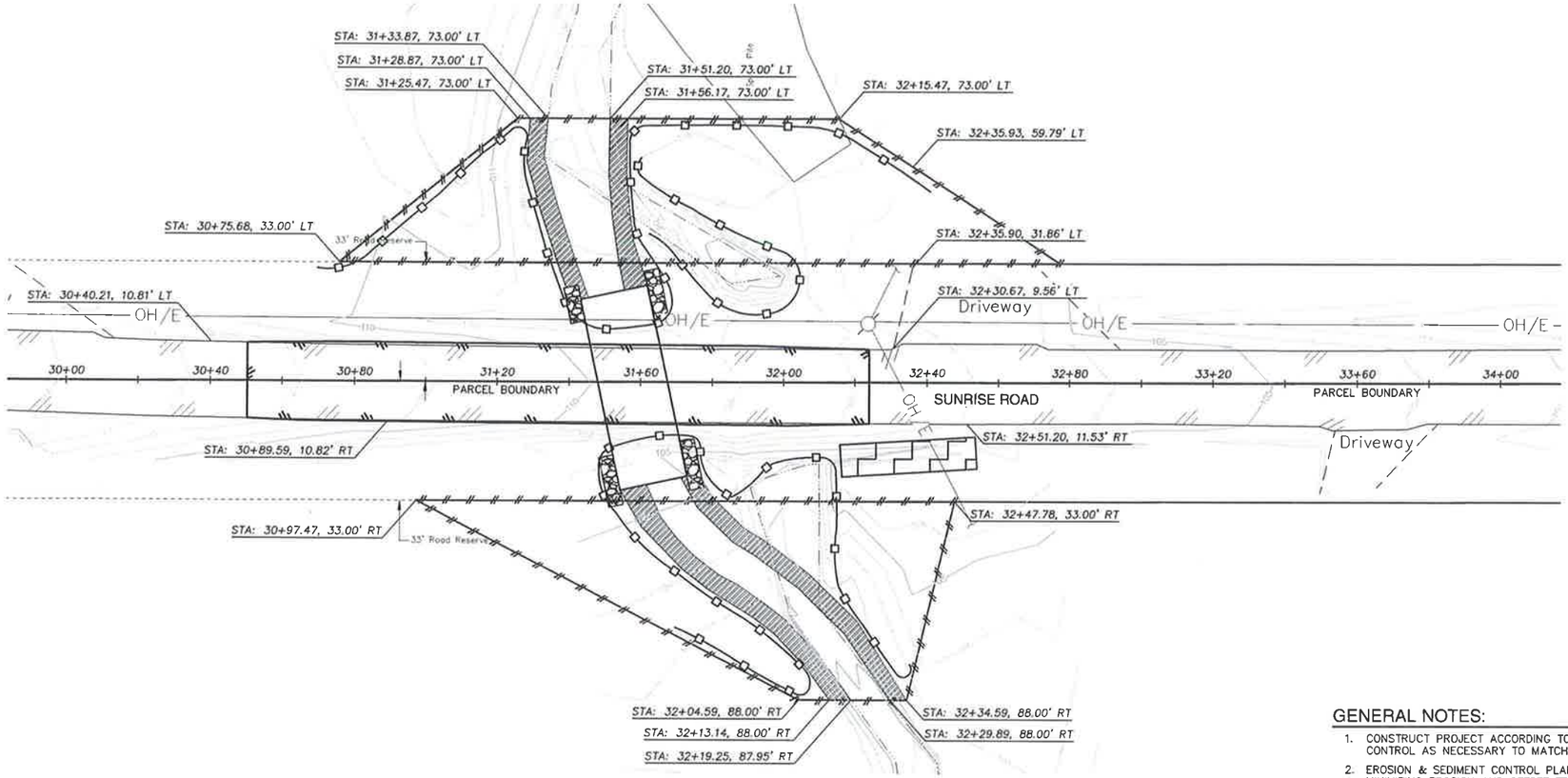
REVEGETATION DETAILS

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C11 of C13



EROSION AND SEDIMENT CONTROL PLAN (ESCP) KEY

PERIMETER CONTROL (SILT FENCE, FIBER ROLL, OR SIMILAR)

ROCK LINING (LARGE GRAVEL/SMALL COBBLE)

DEWATERING NOTES:

1. TEMPORARY DIKES OR BERMS MAY BE CREATED TO ISOLATE THE WORK AREA FROM WATERS OF THE SURROUNDING AREA. THIS WORK MAY REQUIRE A DIVERSION OF STREAM WATER BY PUMPING FROM INLET SIDE TO OUTLET SIDE OF THE ROADWAY. MAKE AN OUTLET ENERGY DISSIPATER AT THE DISCHARGE END OF THE PUMP HOSE FOR EROSION CONTROL.
2. DEWATER WITH PUMP HOSE IF REQUIRED AND APPROVED BY THE ENGINEER.
3. ADDITIONAL ENERGY DISSIPATERS MAY BE REQUIRED FOR DEWATERING DISCHARGE AS NECESSARY AND APPROVED BY THE ENGINEER.
4. PUMPS SHOULD BE SIZED TO CARRY HIGHEST FLOW REASONABLY EXPECTED TO OCCUR DURING CONSTRUCTION INCLUDING SURFACE AND SUBSURFACE FLOWS.
5. ALL DISCHARGE POINTS REQUIRE PERMANENT OR TEMPORARY VELOCITY CONTROLS.
6. PROVIDE FOR SEDIMENT REMOVAL FOR ALL DEWATERING ACTIVITY PRIOR TO DISCHARGE FROM THE PROJECT INTO ANY WATER OF THE U.S. THIS MAY REQUIRE TEMPORARY SETTLEMENT BASINS OR OTHER MEANS OF REMOVING TURBIDITY.
7. PERMANENT AND TEMPORARY SEDIMENT TRAPS AND BASINS (IF APPLICABLE) WILL BE CONSTRUCTED BEFORE ANY HYDRAULIC CONVEYANCE OR DEWATERING PROCEDURES OCCUR.

GENERAL NOTES:

1. CONSTRUCT PROJECT ACCORDING TO PHASING SHOWN ON SHEET C9. ADJUST PERIMETER CONTROL AS NECESSARY TO MATCH TEMPORARY FILL EXTENTS OF DETOUR ROAD.
2. EROSION & SEDIMENT CONTROL PLAN SHEETS GIVE GENERAL INFORMATION FOR USE IN MINIMIZING EROSION AND OFFSET TRANSPORT OF SEDIMENT. THE CONTRACTOR IS EXPECTED TO PROVIDE SITE SPECIFIC DETAILS AND BMP'S BASED ON THE CONTRACTOR'S ACTUAL SCHEDULE AND CONSTRUCTION METHODS.
3. CONTRACTOR SHALL MINIMIZE THE AMOUNT OF DISTURBED AREA OPEN TO EROSION AT ANY ONE TIME.
4. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. UTILIZE VEGETATIVE BUFFERS, STRAW WATTLES, AND/OR SILT FENCE. APPROXIMATE LOCATIONS AS SHOWN ON THE PLAN SHEETS DEPEND ON THE METHOD OF WORK.
5. "FINISH AS YOU GO" STABILIZATION SHALL OCCUR AS EACH EARTH DISTURBING ACTIVITY IS COMPLETED IN ANY AREA. TEMPORARY STABILIZATION SHALL BE INSTALLED UNTIL PERMANENT STABILIZATION IS ACHIEVED.
6. PROVIDE STABILIZED CONSTRUCTION EXITS FOR VEHICLES LEAVING THE WORK AREA AND AT AREAS WHICH MAY BE UTILIZED BY THE TRAVELING PUBLIC.
7. PROVIDE TEMPORARY EROSION CONTROL BMP'S FOR EXPOSED SOILS DURING CONSTRUCTION (E.G. HYDRO MULCH, EROSION CONTROL BLANKETS AND/OR WATTLES). PROVIDE VELOCITY DISSIPATERS AT ALL DEWATERING DISCHARGE POINTS.
8. EROSION AND SEDIMENT CONTROL DEVICES MAY HAVE TO BE REMOVED AND REINSTALLED DAILY TO ALLOW CONSTRUCTION ACTIVITIES TO PROCEED. MAINTAIN ALL DEVICES ON A DAILY BASIS INCLUDING BUT NOT LIMITED TO REMOVAL AND DISPOSAL OF ACCUMULATED SEDIMENT, CLEANING DEVICES AND REPLACEMENT OF DAMAGED DEVICES WITH NEW.
9. INSTALL PERMANENT EROSION CONTROL MEASURES SUCH AS RIPRAP APRONS AND EMBANKMENT STABILIZATION AS SOON AS PRACTICABLE.
10. ALL DISTURBED GROUND CAPABLE OF SUPPORTING VEGETATION SHALL BE RE-VEGETATED FOR FINAL STABILIZATION. FINAL STABILIZED AREAS NOT RE-VEGETATED SHALL BE 100% COVERED BY ROCK, ASPHALT, OR OTHER PERMANENT NON-ERODIBLE MATERIAL. ATTAINMENT OF FINAL STABILIZATION SHALL BE AS APPROVED IN THE FIELD BY THE ENGINEER.
11. SLOPE PROTECTION BMP'S SHALL INCLUDE SLOPE ROUGHENING, MULCH, TACKIFYING, EROSION CONTROL BLANKETS, SEEDING, ROCK LINING, OR OTHER METHODS APPROVED BY THE ENGINEER.
12. STOCKPILE AND STAGING LOCATIONS SHALL BE RECLAIMED TO THEIR ORIGINAL CONDITION. NO STOCKPILES OR STAGING AREAS ARE ALLOWED IN WETLANDS.
13. ALL STOCKPILES OF ERODIBLE MATERIALS SHALL HAVE PERIMETER CONTROL IN PLACE.
14. THE WORK AREA SHALL BE ISOLATED FROM THE FLOWING WATER. VEHICLE OR EQUIPMENT OPERATION SHALL BE MINIMIZED IN FLOWING WATER.

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U.S. FISH & WILDLIFE SERVICE — DEPARTMENT OF THE INTERIOR

MATANUSKA 1964 SUSITNA BOROUGH

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

EROSION AND SEDIMENT CONTROL PLAN

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

Sheet C12 of C13

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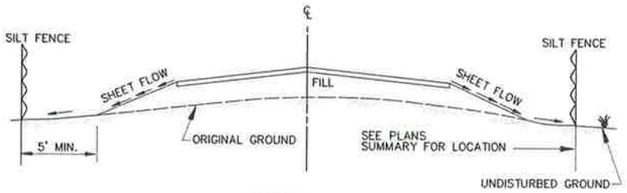
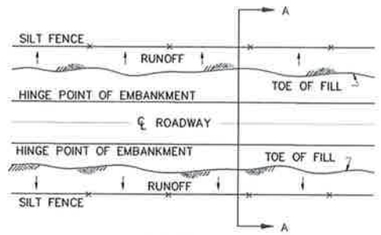


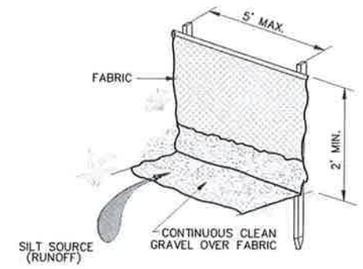
SECTION A-A

GENERAL NOTES:

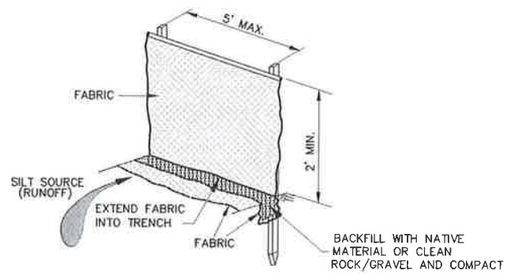
1. INSTALLATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE ADOT/PF AK HIGHWAY DRAINAGE MANUAL CHAPTER 16 AND ADOT/PF SWPPP GUIDE.
2. SILT FENCE FABRIC SHALL BE OVERLAPPED 6" AT FENCE SUPPORTS.
3. SILT FENCE FABRIC SHALL BE TAUT, NOT LOOSE OR FOLDED.
4. THE CONTRACTOR SHALL INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT.
5. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.



PLAN VIEW



BACKFILL ALTERNATE



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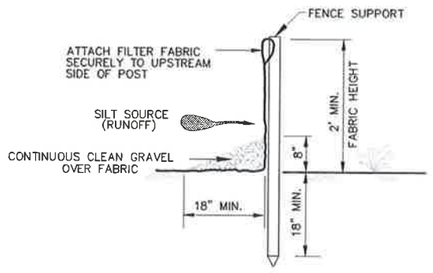
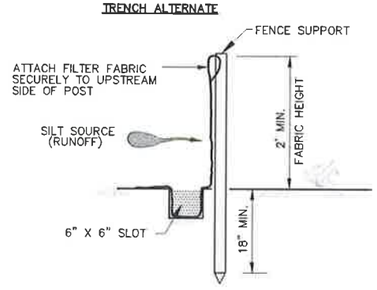


BACKFILL CROSS SECTION



TRENCH CROSS SECTION

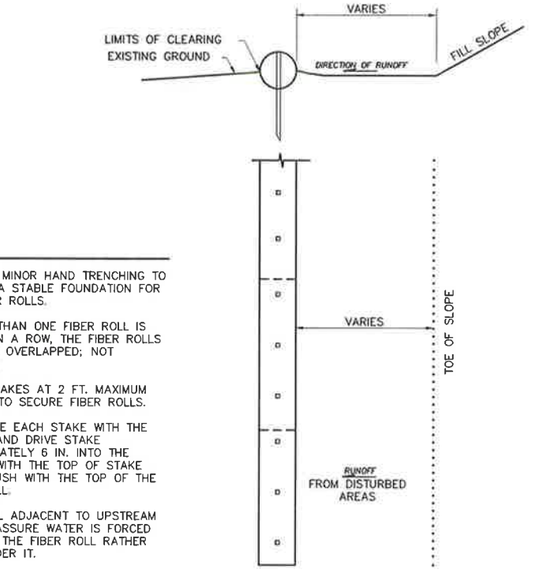
FOR USE ON LAND

1. FENCE SHALL BE PLACED AT LEAST 5' FROM THE TOE OF EMBANKMENT OR EXCAVATION AREAS, OR AS DIRECTED BY THE ENGINEER.
2. ACCUMULATION OF SEDIMENT BEHIND SILT FENCE SHALL BE REMOVED WHEN IT REACHES A HEIGHT OF 1/3 THE HEIGHT OF THE FENCE. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

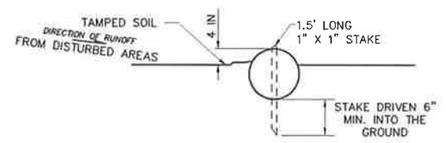
1/C13 SILT FENCE DETAIL
NTS

NOTES

1. PERFORM MINOR HAND TRENCHING TO PROVIDE A STABLE FOUNDATION FOR THE FIBER ROLLS.
2. IF MORE THAN ONE FIBER ROLL IS PLACED IN A ROW, THE FIBER ROLLS SHALL BE OVERLAPPED; NOT ABUTTED.
3. SPACE STAKES AT 2 FT. MAXIMUM SPACING TO SECURE FIBER ROLLS.
4. INTERTWINE EACH STAKE WITH THE NETTING AND DRIVE STAKE APPROXIMATELY 6 IN. INTO THE GROUND WITH THE TOP OF STAKE BEING FLUSH WITH THE TOP OF THE FIBER ROLL.
5. TAMP SOIL ADJACENT TO UPSTREAM SIDE TO ASSURE WATER IS FORCED THROUGH THE FIBER ROLL RATHER THAN UNDER IT.



PLAN
INSTALLATION OF A FIBER ROLL
AT TOE OF FILL



INSTALLATION TYPICAL

2/C13 FIBER ROLL DETAIL
NTS

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STATE OF ALASKA 14911 Bradley M. Melocik REGISTERED PROFESSIONAL ENGINEER 11/15/10

MATANUSKA - SUSITNA BOROUGH
SUNRISE ROAD FISH PASSAGE
ML 024

EROSION AND SEDIMENT CONTROL DETAILS

SECTION 13, TOWNSHIP 18 NORTH, RANGE 2 WEST, SEWARD MERIDIAN, ALASKA

Drawing Number:

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