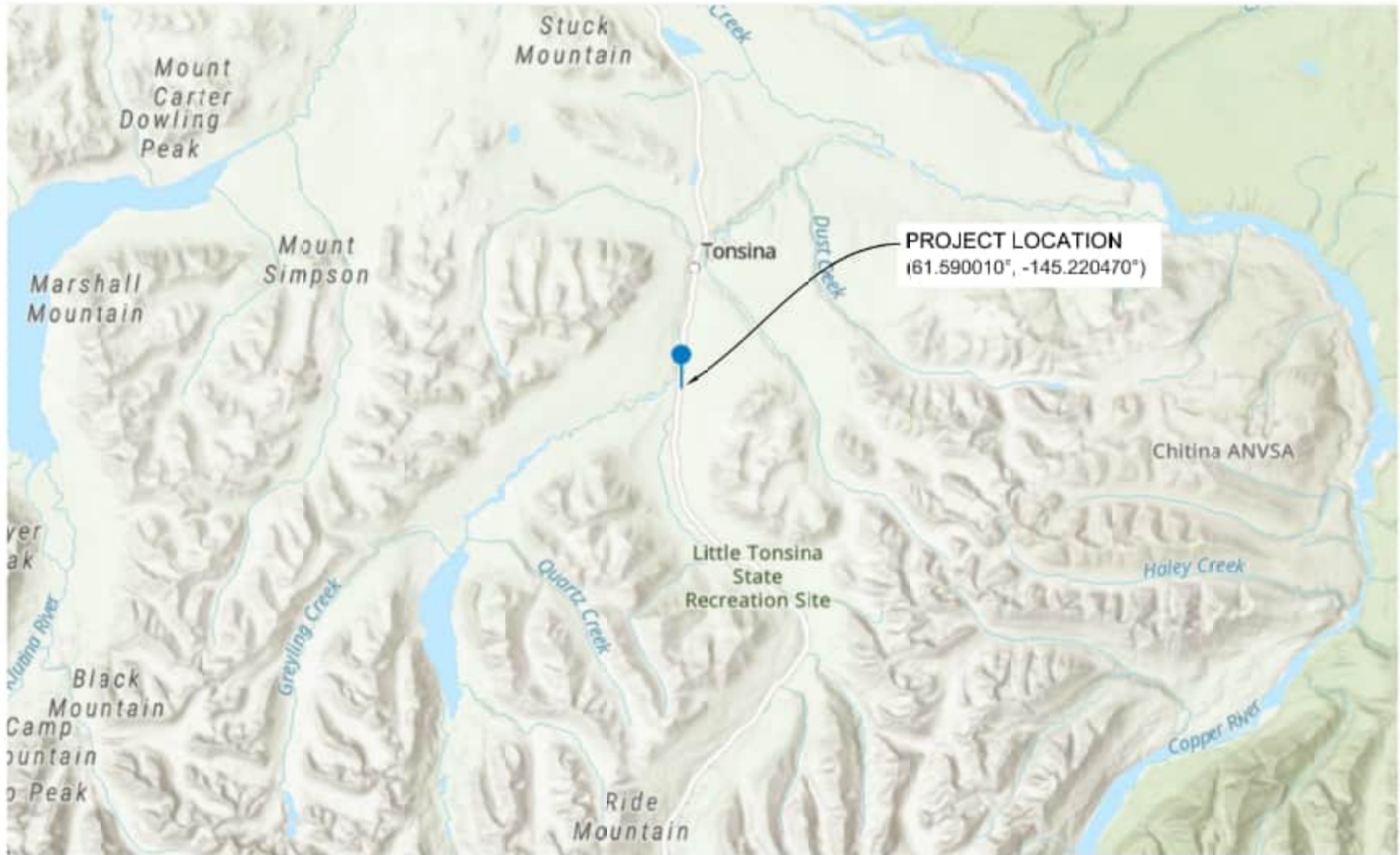


LITTLE TONSINA TRIBUTARY ATV TRAIL FISH PASSAGE PROJECT TONSINA, ALASKA



VICINITY MAP
SCALE 1:500,000

DRAWING INDEX	
SHEET NO.	TITLE
G-001	TITLE SHEET
G-002	QUANTITIES AND NOTES
V-001	SURVEY
CD001	DEMOLITION PLAN
C-101	SITE PLAN
C-102	CHANNEL PLAN
C-103	CHANNEL PROFILE
C-104	EROSION AND SEDIMENT CONTROL
C-105	DEWATERING PLAN
C-501	SECTIONS AND DETAILS
C-502	STEP DETAILS
L-101	REVEGETATION PLAN

Designed for:



COPPER RIVER
WATERSHED
PROJECT

Revision No.	Description	Date
Notes:		

Designed by:



RIVER FOCUS
WATER RESOURCE CONSULTANTS

LITTLE TONSINA TRIBUTARY
ATV TRAIL FISH PASSAGE PROJECT

TITLE SHEET

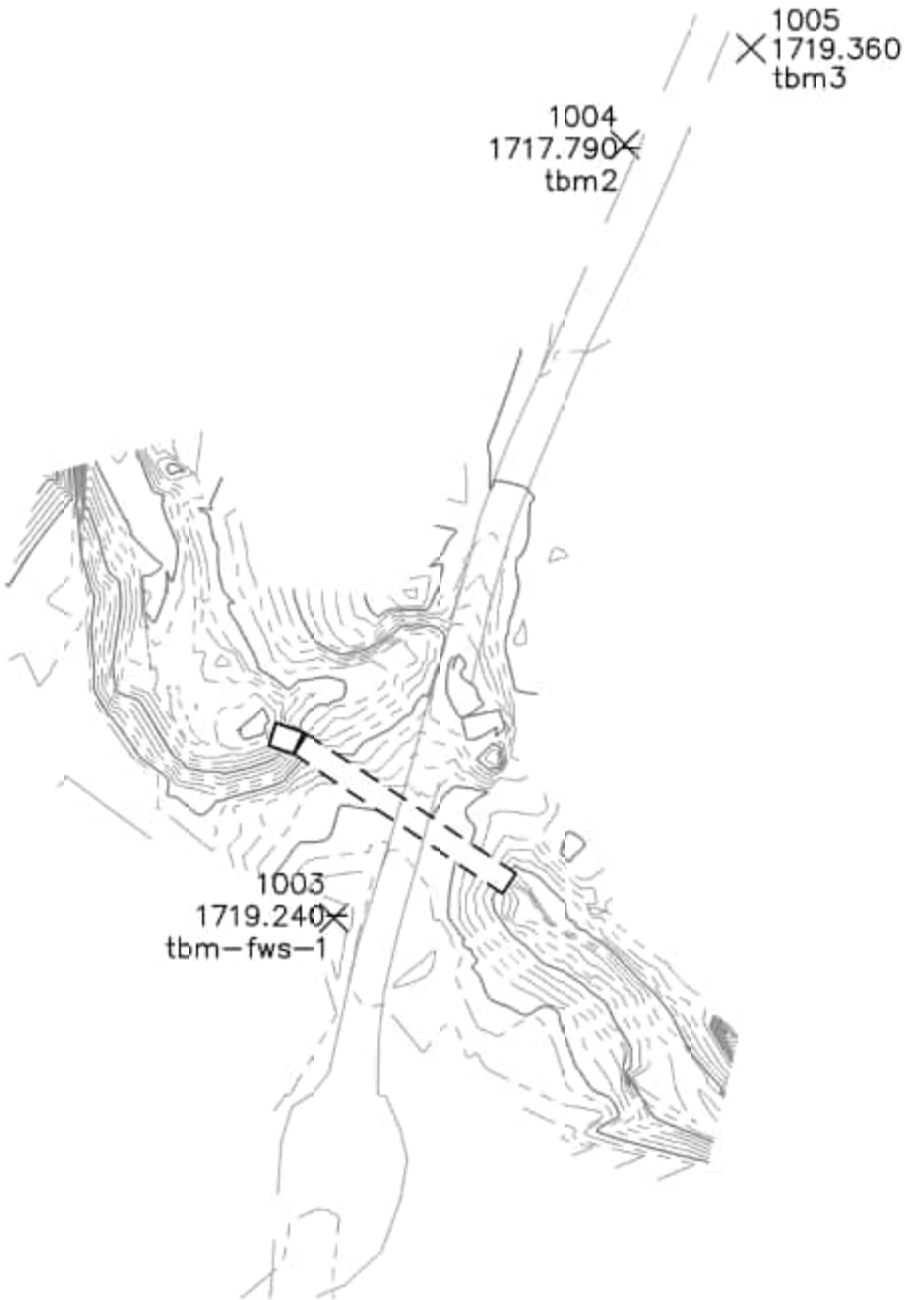
SHEET:
G-001

- NOTES:
1.

THE SURVEY INFORMATION SHOWN ON THESE PLANS WAS PREPARED FOR DESIGN PURPOSES ONLY AND DOES NOT REPRESENT A BOUNDARY OR LEGAL SURVEY. THIS SURVEY WAS NOT PERFORMED OR CERTIFIED BY A LICENSED PROFESSIONAL LAND SURVEYOR.
2.

TEMPORARY BENCH MARK POINTS 1000 AND 5001 ARE LOCATED ALONG THE NORTH END OF THE RICHARDSON HIGHWAY PULL OUT.

POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1000	2775275.370	1775921.910	1671.99	base
1003	2773907.700	1776157.760	1719.24	tbm-fws-1
1004	2774068.710	1776218.270	1717.79	tbm2
1005	2774088.780	1776244.510	1719.36	tbm3
5001	2775289.531	1775928.406	1672.36	tmb0



PLAN VIEW
SCALE 1:40



NOTES:

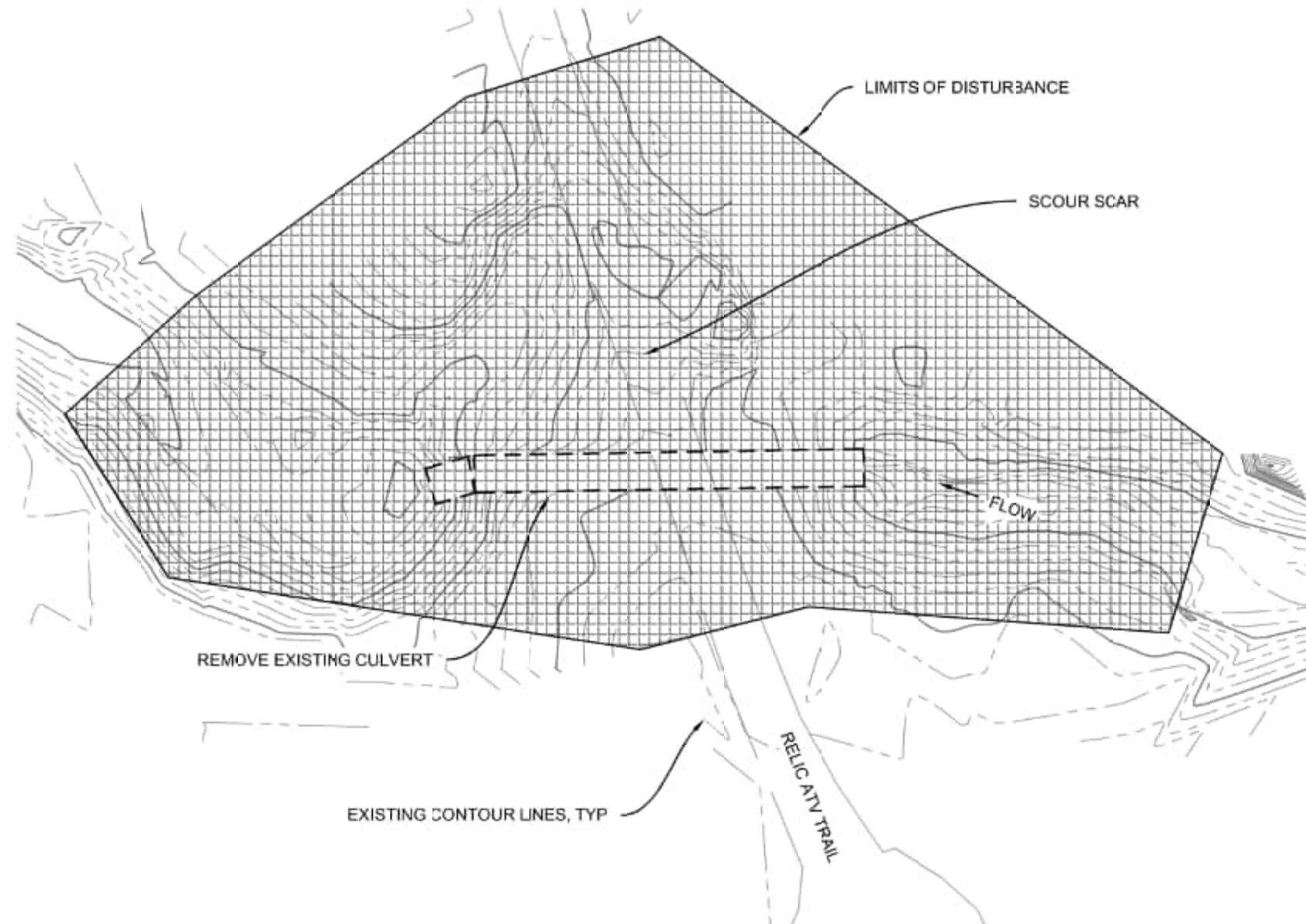
1. LIMITS OF DISTURBANCE ARE ESTIMATES BASED ON SITE VISIT OBSERVATIONS. ACTUAL LIMITS OF DISTURBANCE SHALL BE DELINEATED BY THE CONTRACTOR PRIOR TO CLEARING AND GRUBBING.



**Know what's below.
Call before you dig.**

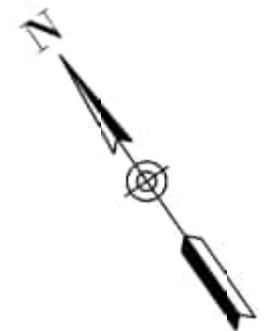
CONTRACTOR SHALL CONTACT
UTILITY COMPANIES TWO WEEKS
PRIOR TO EXCAVATION.

ALASKA DIG LINE: 1-800-478-3121



LEGEND

 LIMITS OF DISTURBANCE,
0.18 ACRES



Revision No.	Description	Date
Notes:		



LITTLE TONSINA TRIBUTARY ATV TRAIL FISH PASSAGE PROJECT

DEMOLITION PLAN

SHEET:
CD001

NOTES:

1. ATV TRAIL BARRICADE MATERIAL WILL BE DETERMINED DURING CONSTRUCTION. BARRICADE WILL SPAN THE WIDTH OF THE EXISTING TRAIL AND WILL BE IMMOVABLE BY AN UTV.
2. SIGNS TO REDIRECT ATV TRAFFIC TO NEW ATV TRAIL WILL BE PLACED ON RELIC TRAIL ON BOTH THE NORTH AND SOUTH SIDE OF THE RECONSTRUCTED CHANNEL.



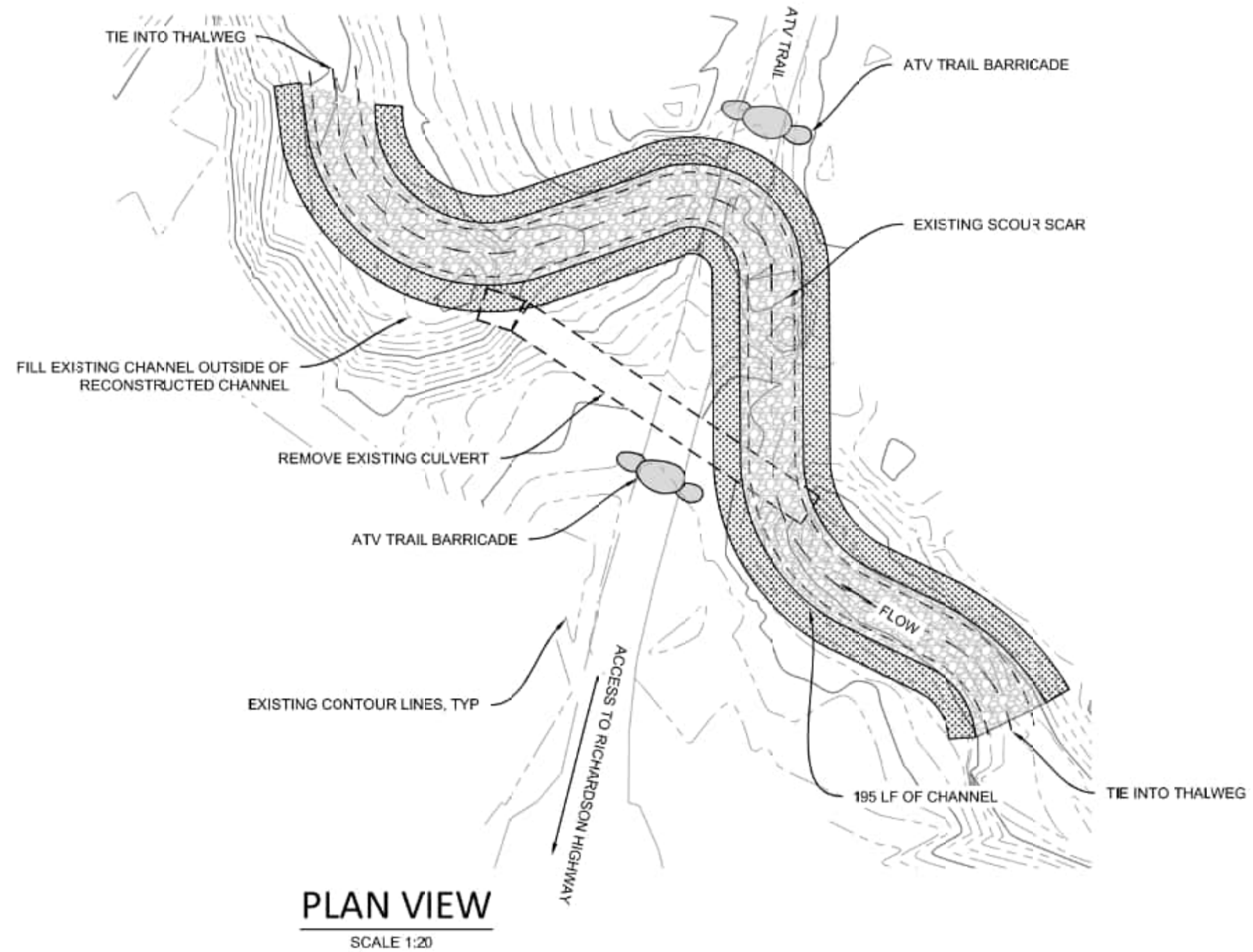
EXISTING CULVERT OUTLET.



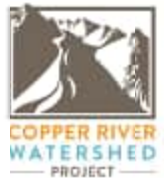
DOWNSTREAM REACH.

LEGEND

-  STREAM SUBSTRATE
-  TOP OF BANK VEGETATION



Designed for:



Revision No.	Description	Date

Notes:

Designed by:



LITTLE TONSINA TRIBUTARY ATV TRAIL FISH PASSAGE PROJECT

SITE PLAN

SHEET:

C-101

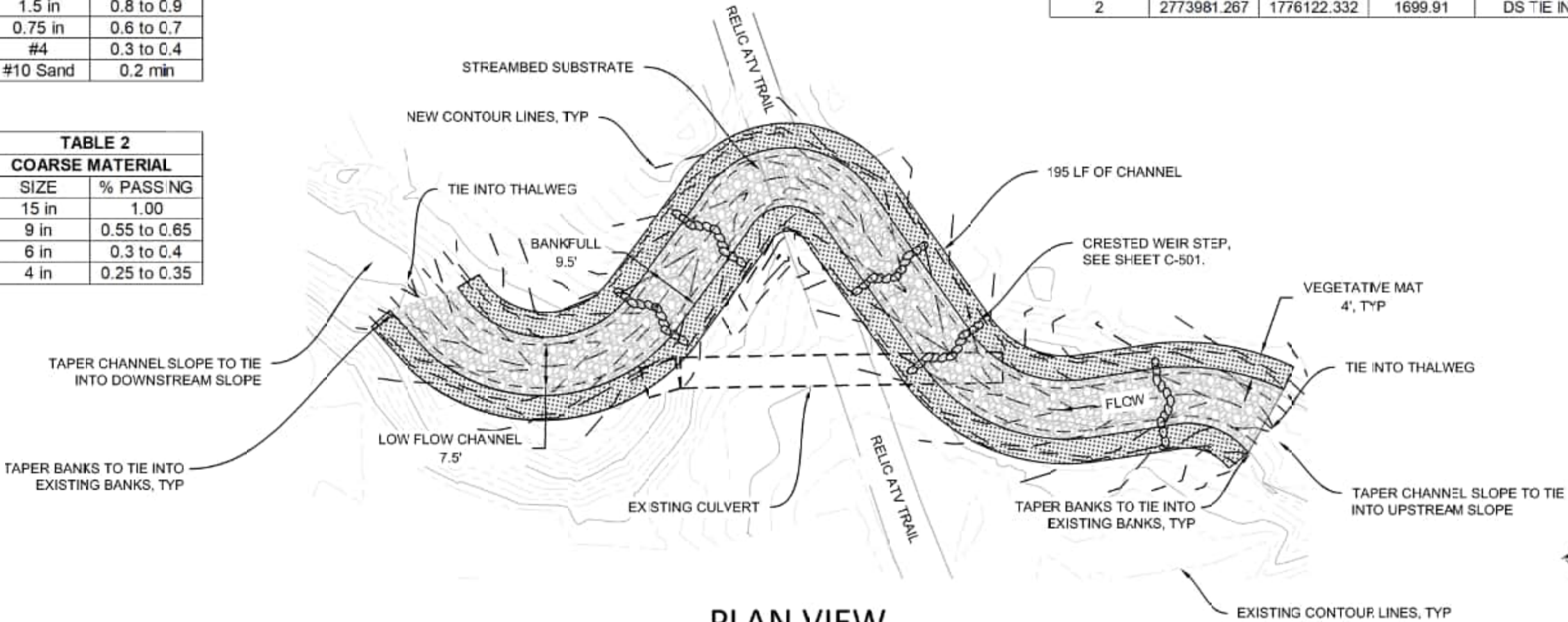
NOTES:

1. STREAMBED SUBSTRATE GRADATION MIX SHALL CONSIST OF 40% FINE MATERIAL (TABLE 1) AND 60% COARSE MATERIAL (TABLE 2), OR SIMILAR. SALVAGE AND REUSE OF MATERIAL SHALL BE PRIORITIZED WHEN FEASIBLE. ALL MATERIAL SHALL BE SUBJECT TO REVIEW BY ENGINEER PRIOR TO PLACEMENT.
2. CRESTED WEIR STEPS WILL EXTEND A MINIMUM OF 2 FEET INTO THE BANK. FOR SPACING OF STEPS, SEE SHEET C-103. STEPS WILL BE APPROVED BY THE ENGINEER PRIOR TO REWATERING.

TABLE 1	
FINE MATERIAL	
SIZE	% PASSING
4 in	1.00
1.5 in	0.8 to 0.9
0.75 in	0.6 to 0.7
#4	0.3 to 0.4
#10 Sand	0.2 min

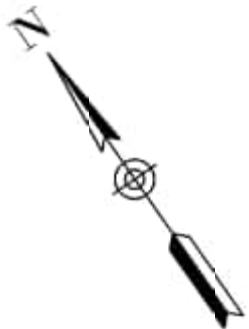
TABLE 2	
COARSE MATERIAL	
SIZE	% PASSING
15 in	1.00
9 in	0.55 to 0.65
6 in	0.3 to 0.4
4 in	0.25 to 0.35

TABLE 3				
TIE IN POINT TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	2773881.836	1776224.281	1707.25	US TIE IN
2	2773981.267	1776122.332	1699.91	DS TIE IN



LEGEND

	STREAM SUBSTRATE
	TOP OF BANK VEGETATION, VEGETATIVE MAT



Revision No.	Description	Date

Notes:

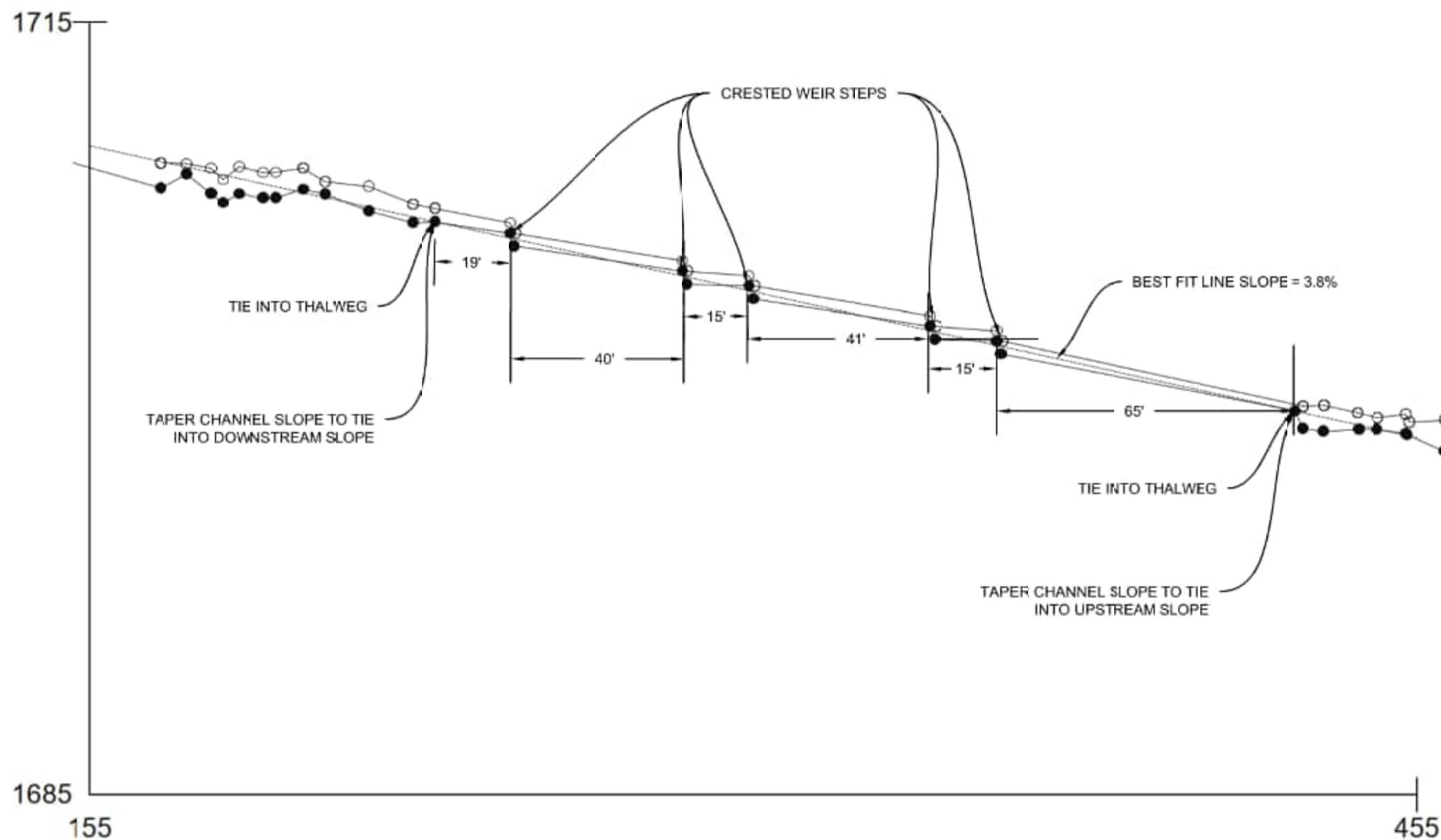


LITTLE TONSINA TRIBUTARY
ATV TRAIL FISH PASSAGE PROJECT

CHANNEL
PLAN

SHEET:
C-102

Elevation (ft)



Distance along stream (ft)

PROFILE VIEW

LEGEND

- THALWEG
- WATER SURFACE



Revision No.	Description	Date



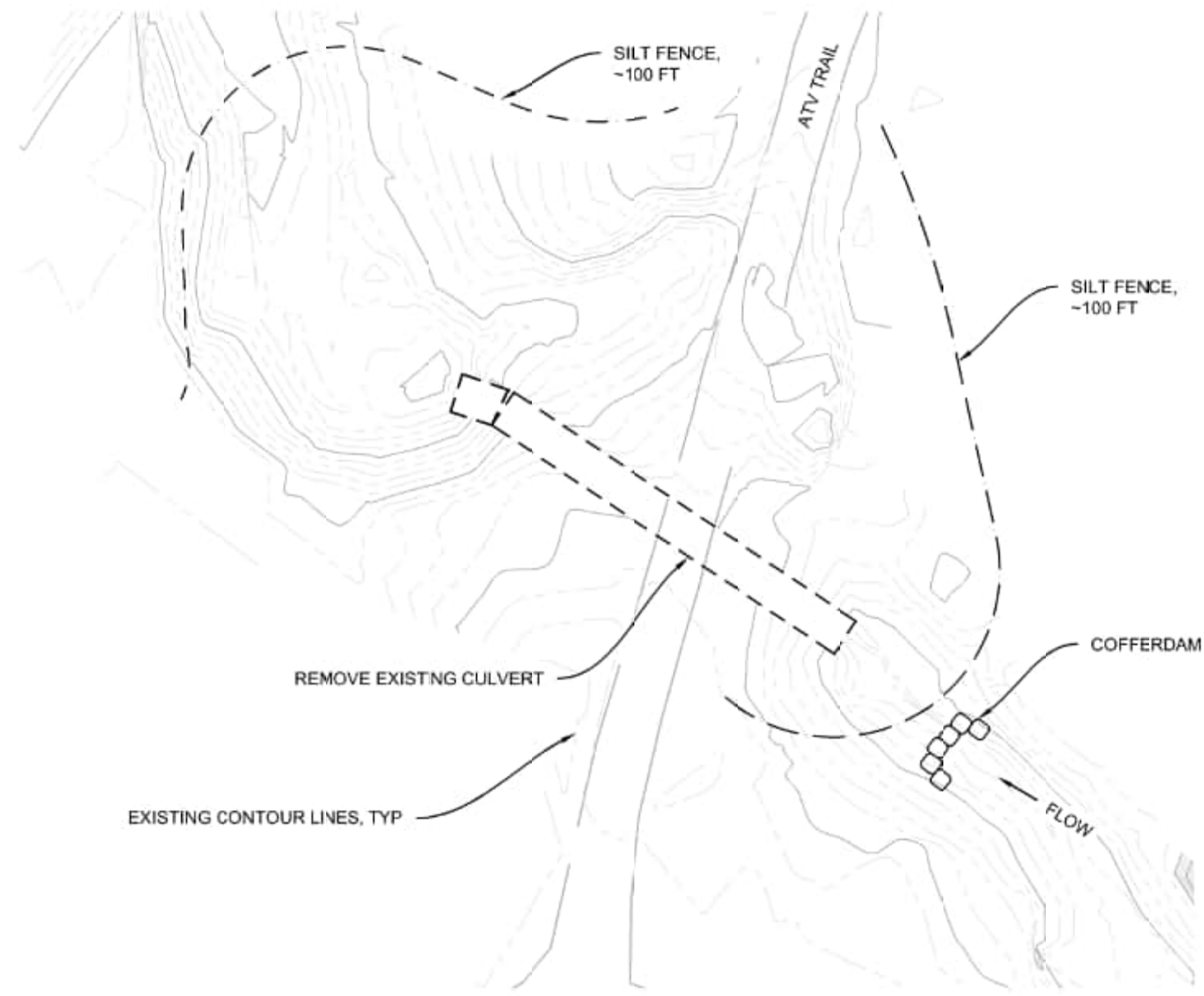
LITTLE TONSINA TRIBUTARY
ATV TRAIL FISH PASSAGE PROJECT

CHANNEL
PROFILE

SHEET:
C-103

NOTES:

1. LENGTH AND LOCATION OF SILT FENCES ARE ESTIMATES BASED ON SITE VISIT OBSERVATIONS. ACTUAL LENGTH AND LOCATION OF SILT FENCE SHALL BE DELINEATED BY THE CONTRACTOR PRIOR TO CLEARING AND GRUBBING.
2. INSTALLATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE ADOT&PF SEDIMENT AND EROSION CONTROL MANUAL. SILT FENCE FABRIC SHALL BE OVERLAPPED 6" AT FENCE SUPPORTS AND INSTALLED TAUT, NOT LOOSE OR FOLDED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY AND LOCATED 2 TO 5' FROM THE TOE OF EMBANKMENT OR EXCAVATION AREAS, OR AS DIRECTED BY THE ENGINEER.
4. STRAW WADDLES SHALL BE PLACED AT PUMP OUTLET TO REDUCE IMPACT FROM PUMPED FLOW. ADDITIONAL STRAW WADDLES SHALL BE READILY AVAILABLE IF DIRECTED BY THE ENGINEER.



PLAN VIEW
SCALE 1:20



Revision No.	Description	Date

Notes:



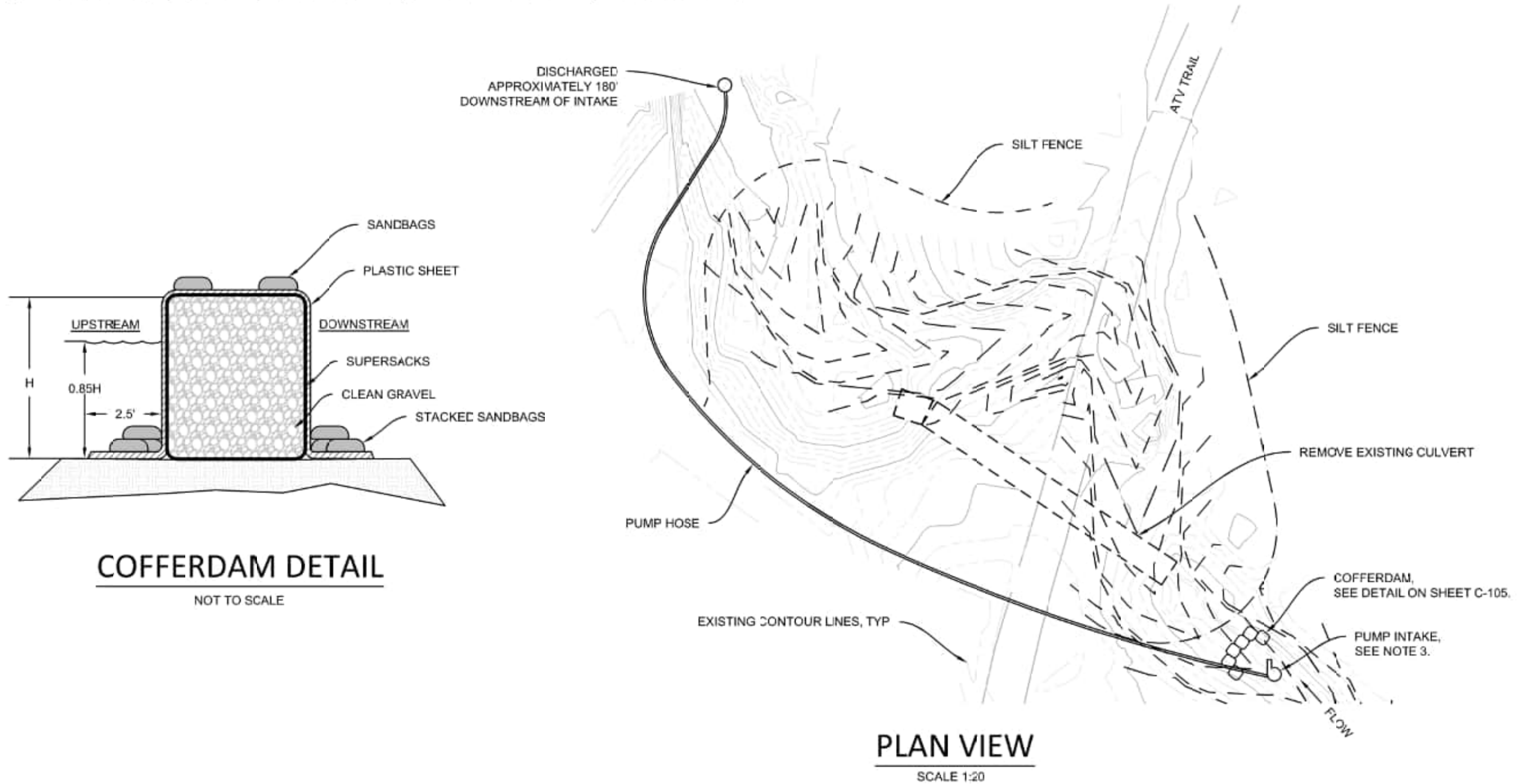
**LITTLE TONSINA TRIBUTARY
ATV TRAIL FISH PASSAGE PROJECT**

**EROSION AND
SEDIMENT CONTROL**

SHEET:
C-104

NOTES:

1. LENGTH AND LOCATION OF THE UPSTREAM COFFERDAM ARE ESTIMATED BASED ON SITE VISIT OBSERVATIONS. ACTUAL LENGTH, LOCATION, AND NUMBER OF SUPERSACKS FOR THE UPSTREAM COFFERDAM SHALL BE DELINEATED BY THE CONTRACTOR PRIOR TO CLEARING AND GRUBBING.
2. SUPERSACKS SHALL BE NEW OR DOUBLE-BAGGED IF USED. MATERIAL SHALL BE FILLED WITH CLEAN GRAVEL SIMILAR TO CHANNEL BED MATERIAL IN THE CASE OF RIPPING.
3. ON SITE FOR PUMPING THE TRIBUTARY SHALL BE TWO 8-INCH PUMPS AND ONE 4-INCH PUMP OR SIMILAR. CONTRACTOR SHALL USE THE SMALLEST APPROPRIATE PUMP CONFIGURATION. PUMP INTAKE SHALL HAVE A MAXIMUM SCREEN MESH SIZE OF 0.25 INCH (IN ACCORDANCE WITH GROUP D AND E). PUMPED WATER SHALL BE DISCHARGE A MINIMUM OF 100 FT DOWNSTREAM FROM INTAKE.
4. WHEN REMOVING THE COFFERDAM, CONTRACTOR SHALL RESTORE THE IMPACT AREA TO ORIGINAL CONDITIONS.



Revision No.	Description	Date
Notes:		



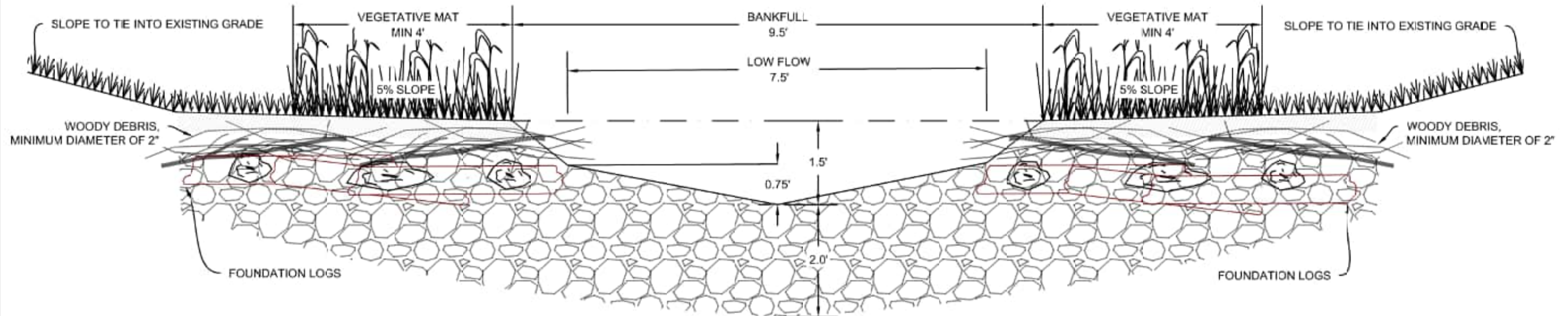
LITTLE TONSINA TRIBUTARY
ATV TRAIL FISH PASSAGE PROJECT

DEWATERING
PLAN

SHEET:
C-105

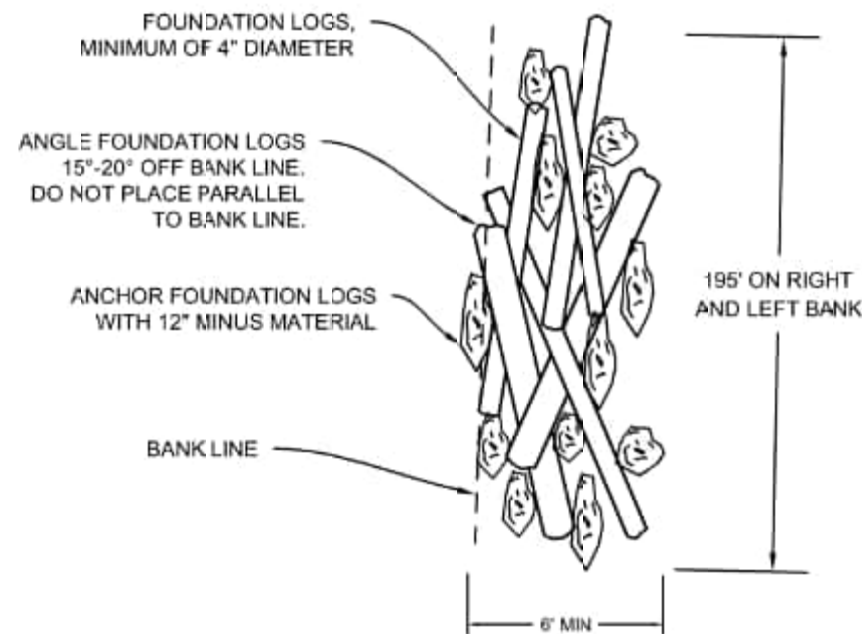
NOTES:

1. SALVAGE AND REUSE FOUNDATION LOGS AND WOODY DEBRIS FOR BRUSH LAYERS FROM CLEARING AND GRUBBING MATERIAL. IF ADDITIONAL MATERIAL IS NECESSARY, CONTRACTOR WILL COORDINATE WITH CLIENT TO IDENTIFY APPROVED HARVEST LOCATIONS.
2. TOE WOOD BANKS WILL BE APPROVED BY ENGINEER PRIOR TO TOP OF THE BANK VEGETATION.



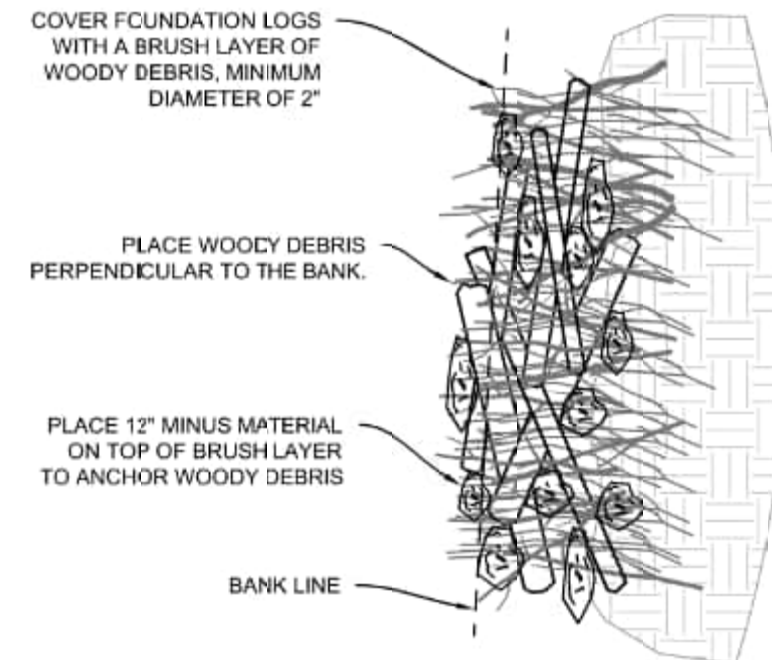
CROSS SECTION VIEW

NOT TO SCALE



TOE WOOD DETAIL: STEP 1

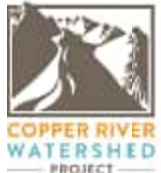
NOT TO SCALE



TOE WOOD DETAIL: STEP 2

NOT TO SCALE

Designed for:



Revision No.

Description

Date

Designed by:



Notes:

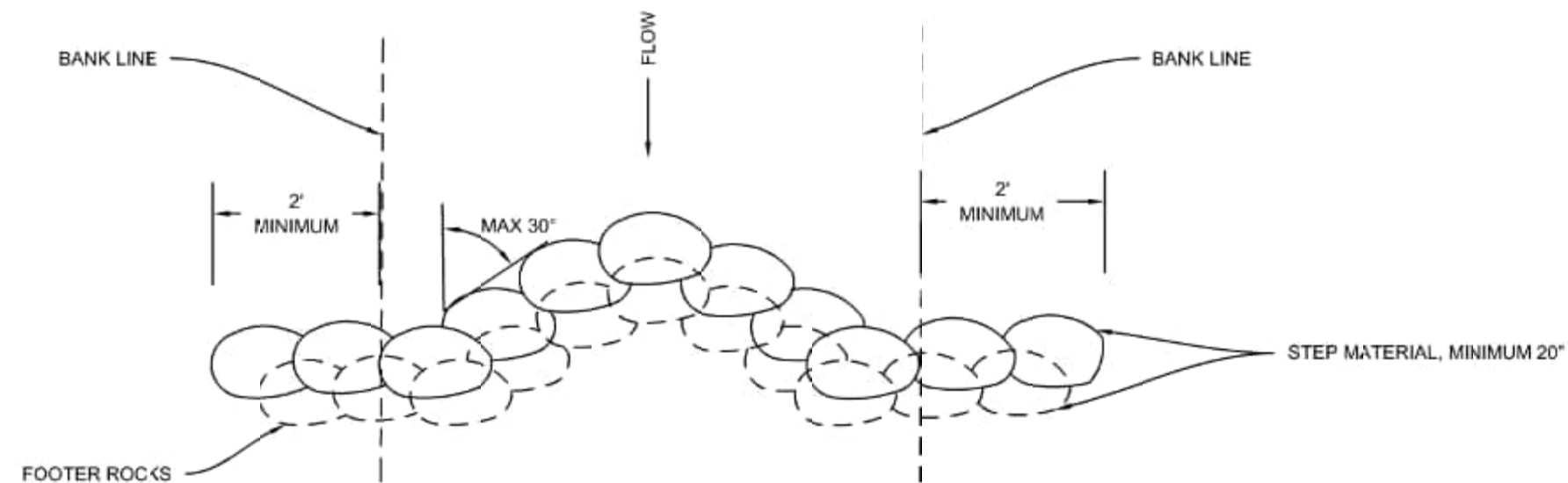
LITTLE TONSINA TRIBUTARY ATV TRAIL FISH PASSAGE PROJECT

SECTIONS AND DETAILS

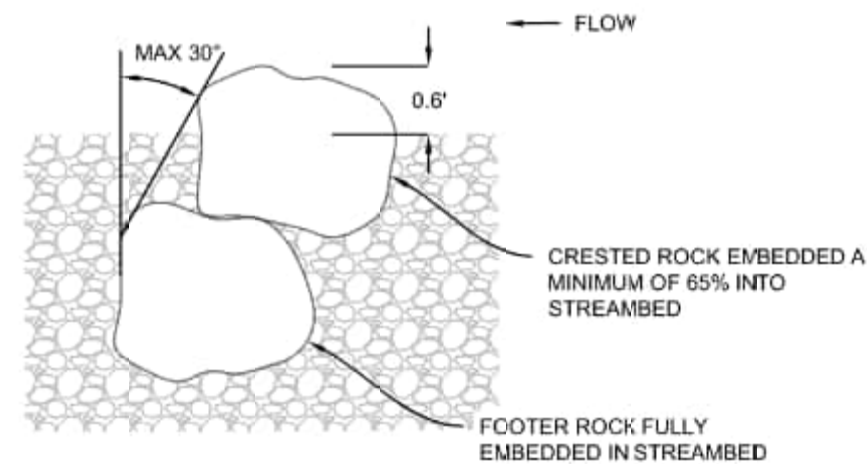
SHEET:

C-501

- NOTES:
1. CRESTED WEIR STEP WILL SPAN BANKFULL WIDTH AND 2 FT INTO EACH BANK. QUANTITY OF ROCKS IN THE CRESTED WEIR STEP WILL VARY.
 2. SALVAGE AND REUSE STEP MATERIAL FROM EXCAVATION WHEN FEASIBLE.
 3. CRESTED WEIR STEPS WILL BE APPROVED BY THE ENGINEER PRIOR TO REWATERING OF THE CHANNEL.



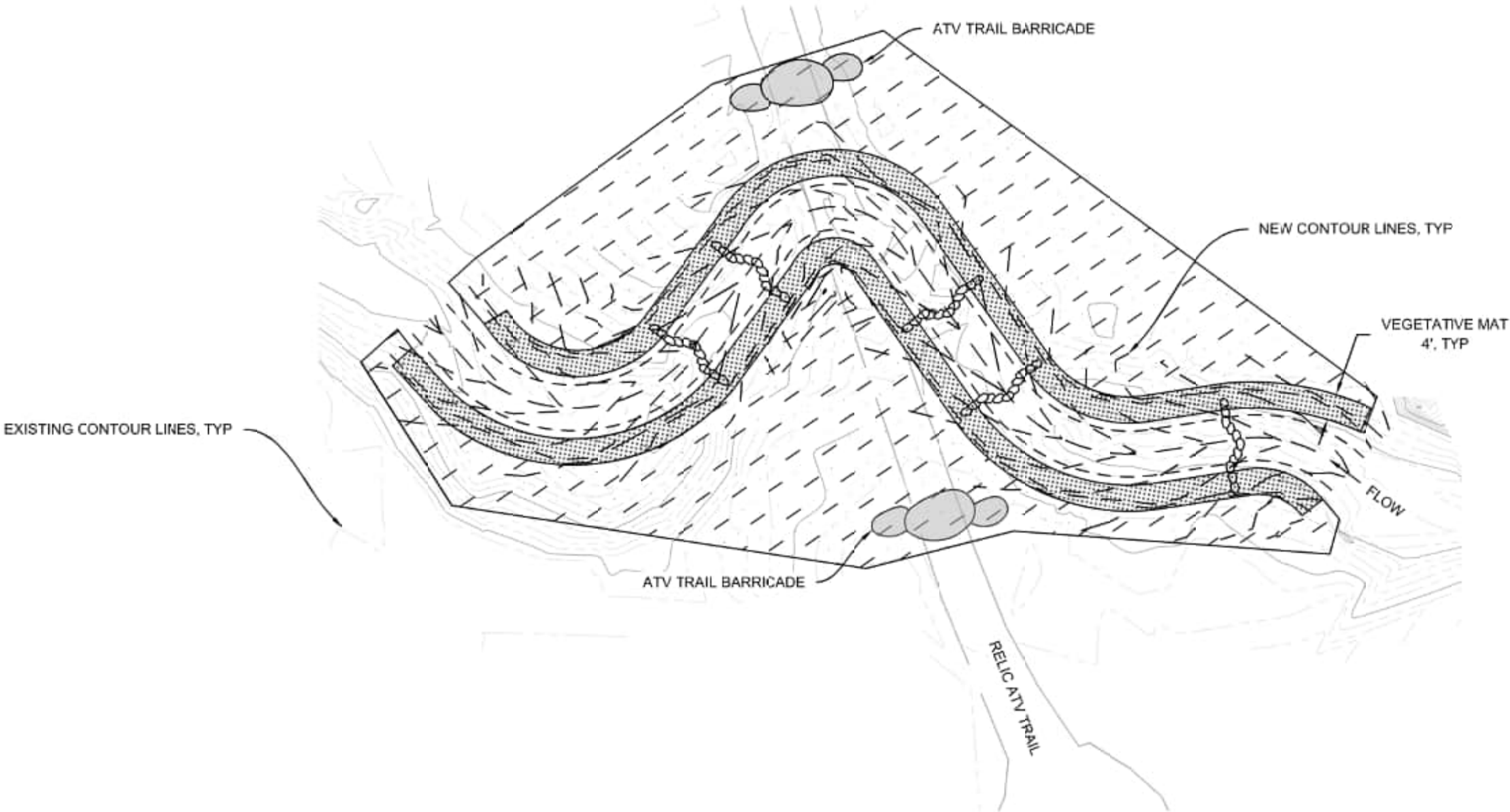
CRESTED WEIR STEP PLAN VIEW
NOT TO SCALE



FOOTER CROSS SECTION VIEW
NOT TO SCALE

NOTES:

- 1. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING VEGETATION WHEREVER FEASIBLE.
- 2. AREAS OF VEGETATION THAT ARE LIGHTLY IMPACTED SHALL BE RESTORED BY WATERING AND ALLOWING NATURAL REGROWTH.
- 3. DISTURBED AREAS SHALL RECEIVE 4" OF NATIVE TOPSOIL AND NATIVE SEEDS (SUPPLIED BY COPPER RIVER WATERSHED PROJECT).



LEGEND

-  SALVAGED VEGETATIVE MAT
-  DISTURBED AREAS, COVER WITH 4" OF NATIVE SOIL, TRACKWALK, AND USE NATIVE SEEDS

PLAN VIEW

SCALE 1:20



Revision No	Description	Date

Notes:



LITTLE TONSINA TRIBUTARY
ATV TRAIL FISH PASSAGE PROJECT

REVEGETATION
PLAN

SHEET:
L-101