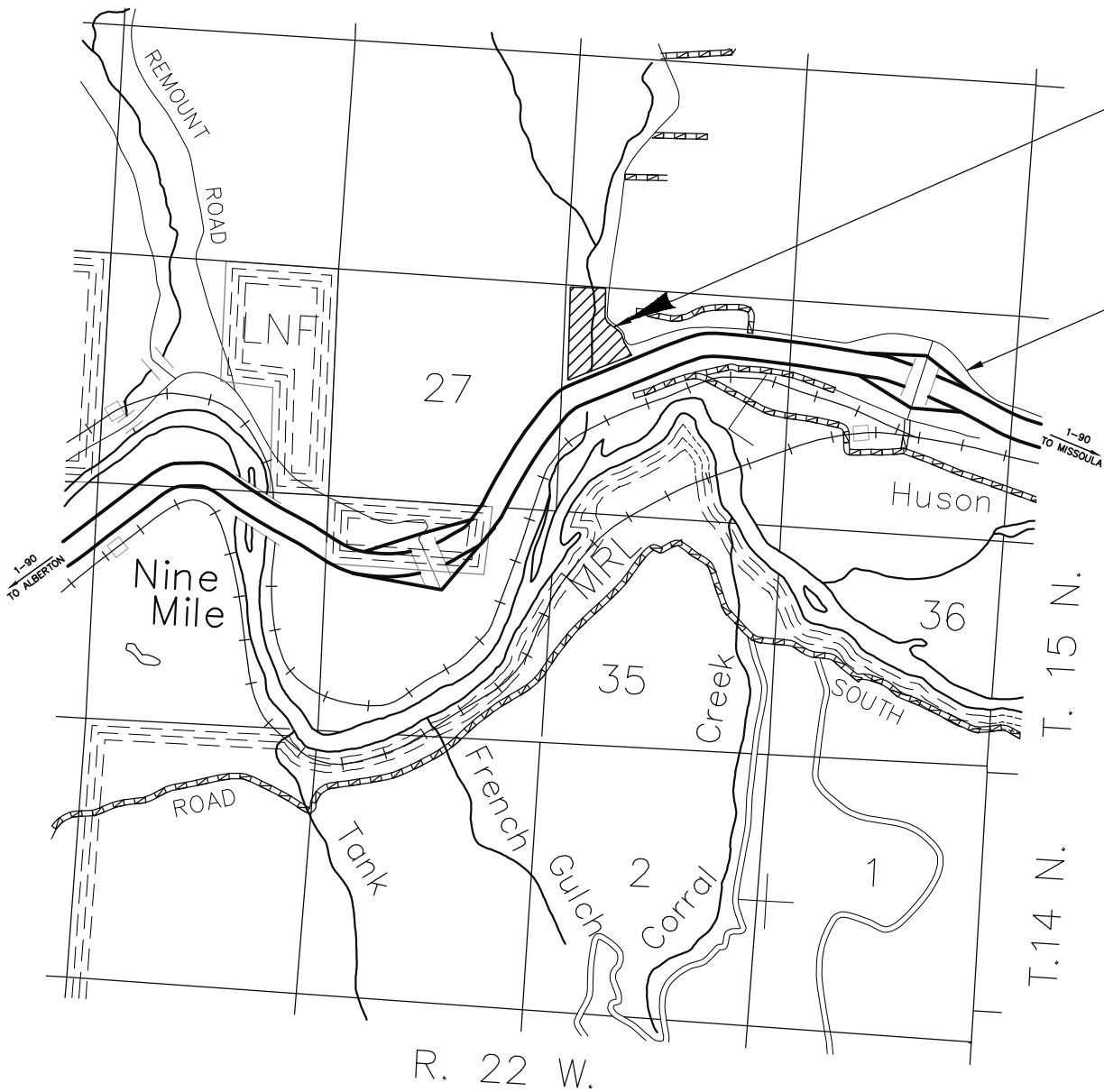


MONTANA DEPARTMENT OF TRANSPORTATION

FEDERAL AID PROJECT NO. STPX 32(85)
AQUATIC RESOURCES MITIGATION
RICHARDSON FAMILY MITIGATION
MISSOULA COUNTY



CONFLUENCE CONSULTING INC.
1289 STONERIDGE DRIVE
BOZEMAN, MONTANA 59718
PH:(406)585-9500

ASSOCIATED PROJECT AGREEMENT NUMBERS	
R / W	STPX 32(86)
I. C.	STPX 32(108)
P. E.	STPX 32(84)

CONFLUENCE CONSULTING INC.	
BY _____	
DATE _____	
MONTANA DEPARTMENT OF TRANSPORTATION	
RECEIVED :	
BY _____	

TABLE OF CONTENTS

PLANS	SHEET NO.	PLANS	SHEET NO.
TITLE SHEET	1	DEWATERING PLAN	24
TABLE OF CONTENTS	2	SEGMENT A – CONCEPTUALTEMPORARY CHANNEL DIVERSION PLAN	24
NOTES	3	REVEGETATION AND EXCLOSURE FENCE PLAN	25
LEGEND	3	REVEGETATION AND EXCLOSURE FENCE PLAN	25
CONTROL DIAGRAM	4	FENCING PLAN	26–28
SUMMARIES	5	WILDLIFE FENCING & POLE FENCE LOCATIONS	26
GRADING	5	FENCING DETAILS	27
CLEARING AND GRUBBING	5	PEDESTRIAN PASS DETAIL	28
CULVERTS	5	WETLANDS IMPACT PLAN	29
ABANDON MONITOR WELL	5	WETLANDS IMPACT PLAN	29
REVEGETATION	5	CHANNEL BANK TREATMENT LAYOUT TABLES	30–31
FENCING	5	RIGHT BANK TREATMENT – LAYOUT TABLE	30
CHANNEL CONSTRUCTION	5	LEFT BANK TREATMENT – LAYOUT TABLE	31
FLOODPLAIN ROUGHNESS TREATMENT	5	CROSS SECTIONS	32–49
WOODY HABITAT STRUCTURES	5		
WETLAND DIVERSION AND FISH SCREEN	5		
SITE PLANS	6–12		
SITE PLAN	6		
SHEET INDEX	6		
SITE PLAN – SITE S1	7		
SITE PLAN – SITE S2	8		
SITE PLAN – SITE S3	9		
SITE PLAN – SITE W1	10		
SITE W1 PROFILES	11		
FILL SITES PLAN	12		
STREAM DETAILS	13–17		
TYPICAL CHANNEL DETAILS	13		
TYPICAL BANK TREATMENT DETAILS	14		
WOODY HABITAT STRUCTURE DETAIL	15		
FLOODPLAIN ROUGHNESS DETAILS	16		
FLOODPLAIN SUPER–ELEVATION – SOIL AMENDMENT DETAILS	17		
ROCK WEIR PLAN	18		
ROCK WEIR SITE PLAN AND DESIGN DETAILS	18		
WETLAND DIVERSION PLAN	19–23		
WETLAND DIVERSION SITE PLAN	19		
WETLAND DIVERSION DETAILED SITE PLAN AND DETAILS	20		
FISH SCREEN DETAILED SITE PLAN AND DETAILS	21		
FISH SCREEN HOUSING AND FRAME DETAILS	22		
WETLAND DIVERSION DETAILS	23		

NOTES

UTILITIES

CALL THE UTILITIES UNDERGROUND LOCATION CENTER (811) OR OTHER NOTIFICATION SYSTEM FOR THE MARKING AND LOCATION OF ALL LINES AND SERVICE BEFORE EXCAVATING.

WETLANDS

WETLANDS EXIST ADJACENT TO THE SITE AND MAY EXIST BEYOND THE PROJECT LIMITS. WETLAND AREAS AND PERMANENT WETLAND IMPACT AREAS WITHIN THE PROJECT LIMITS HAVE BEEN DELINEATED AND ARE SHOWN ON THE PLANS. ANY ACTION IMPACTING WETLAND AREAS OUTSIDE OF THE PERMANENT IMPACT AREAS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR.



PRESERVED WETLAND AREAS
(DO NOT DISTURB)



WETLAND TO STREAM CONVERSION
(PERMANENT IMPACTS)



TEMPORARY WETLAND
IMPACT AREAS

SURVEY DATA

DTM FILES FORMATTED FOR TRIMBLE, LEICA, AND TOPCON SURVEY INSTRUMENTS ARE AVAILABLE UPON REQUEST. CONTACT BEN SCHENDEL, MDT PROJECT MANAGER AT 406-444-6248, OR THE MDT MISSOULA DISTRICT CONSTRUCTION ENGINEER.

PROPERTY BOUNDARY IS APPROXIMATE. SURVEY WILL BE REQUIRED TO VERIFY BOUNDARY.

MONITOR WELLS

DO NOT DISTURB MONITOR WELLS UNLESS OTHERWISE NOTED. SEE SITE PLAN FOR MONITOR WELL LOCATIONS.

DESIGN CHANGES

ANY DESIGN CHANGES MADE DURING CONSTRUCTION MUST BE APPROVED BY THE MDT RESOURCES SECTION SUPERVISOR, 406-444-7227.

SOIL INFORMATION

SOILS INFORMATION IS INCLUDED WITH THE SPECIAL PROVISIONS FOR THIS PROJECT.

GROUNDWATER ELEVATION

THE CONTRACTOR IS RESPONSIBLE FOR INTERPRETING THE GROUNDWATER DATA AND DETERMINING THE PROBABLE GROUNDWATER ELEVATION FOR THE TIME PERIOD FOR CONSTRUCTION (SEE SPECIAL PROVISIONS).

LEGEND

EXISTING FEATURES



TREE LINE



FARM FENCE



OVERHEAD ELECTRIC



UNDERGROUND PHONE



FIBER OPTIC



PROPERTY BOUNDARY (APPROX.)

PROPOSED FEATURES



STREAM ALIGNMENT



CONSTRUCTION LIMIT



GRADING EXTENT



CUT/FILL TRANSITION



EXTENT OF SOIL AMENDMENT



TOE OF FLOODPLAIN



CHANNEL TOP OF BANK



RIFFLE COIR WRAPPED LIFT



POOL COIR WRAPPED LIFT



SUPER-ELEVATED FLOODPLAIN



FENCE



EXCLOSURE FENCE



WOODY HABITAT STRUCTURE

CONTOURS



PROPOSED CONTOUR (1')



EXISTING MAJOR CONTOUR (5')



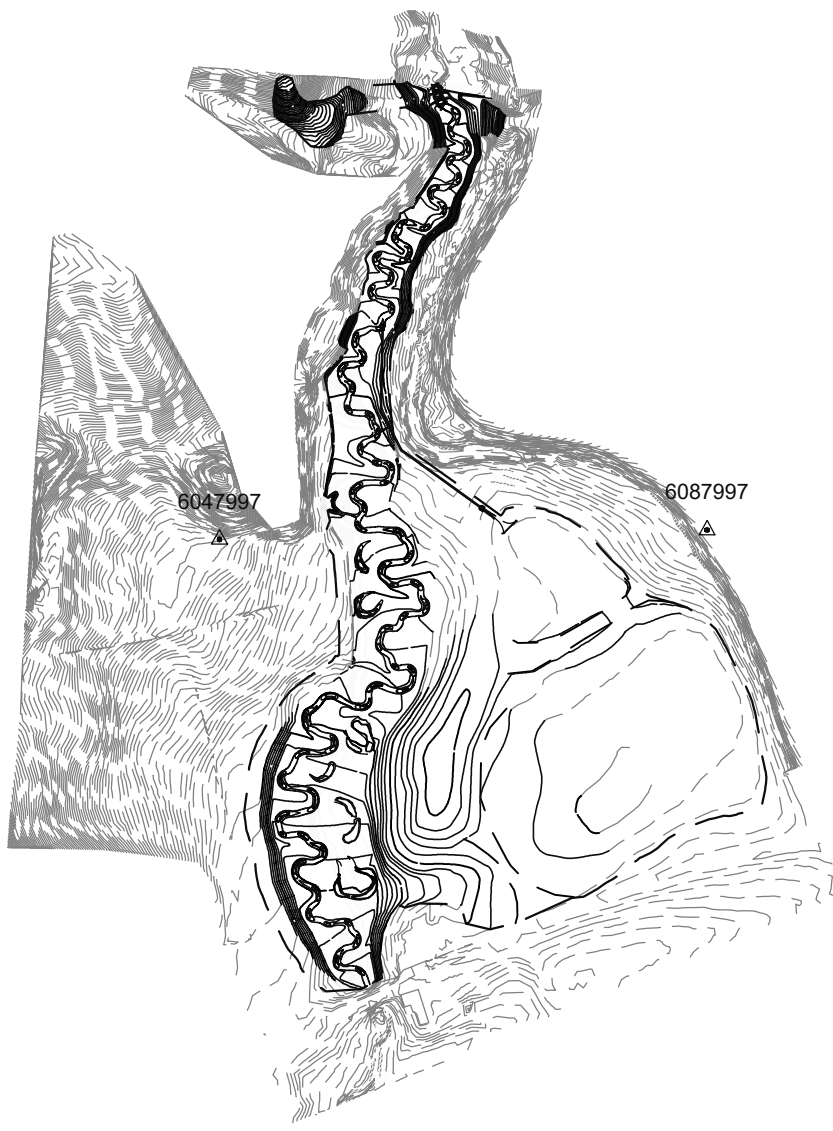
EXISTING MINOR CONTOUR (1')



PROPOSED SPOT ELEVATION

6057997
6067997
6097997

6037997
6047997
6087997
6077997
6027997



CONTROL DIAGRAM

SCALE 1"=400'

NOTE:
THIS PROJECT IS ON THE MONTANA COORDINATE SYSTEM NAD83-2007.
NORTHING AND EASTING COORDINATES ARE EXPRESSED IN UNITS OF
INTERNATIONAL FEET AND ELEVATIONS ARE IN UNITS OF U.S. SURVEY FEET.

DIMENSIONS SHOWN ON THE PLANS ARE GRID. ALL SURVEY AND STAKING REQUIRE
THE USE OF A COMBINATION SCALE FACTOR (CSF) TO CONVERT GRID DIMENSIONS
TO GROUND DIMENSIONS (GRID DISTANCE % CSF = GROUND DISTANCE).
THE CSF FOR THIS PROJECT IS 0.99925051.

BEARING SOURCE

NAD 83 (2007)

LEVEL DATUM SOURCE

NAVD 88

CONTROL ABSTRACT

POINT NUMBER	N OR Y COORDINATE	E OR X COORDINATE	ELEVATION	LOCATION DESCRIPTION
6017997	1050750.797	758882.566	3057.45	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6017997 2013", 32 FT RIGHT OF EASTBOUND I-90 MP. 83.296
6027997	1051408.051	759771.312	3035.22	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6027997 2013", 43 FT RIGHT OF EASTBOUND I-90 MP. 83.510.
6037997	1052793.038	758836.998	3114.85	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6037997 2013", 1600 FT NORTH OF WESTBOUND I-90 CONTROL POINT WB63, ON SOUTH FACING SLOPE, 170 FT WEST OF FENCE, NO WITNESS POST.
6047997	1052773.524	759398.435	3045.26	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6047997 2013", 1300 FT NORTHERLY OF CL OF WESTBOUND I-90, AT EDGE OF CULTIVATED FIELD, NEAR BASE OF HILL, 280 FT WEST OF 6 MILE CREEK. NO WITNESS POST.
6057997	1054022.697	758905.512	3123.93	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6057997 2013", 2600 FT NORTHERLY OF CL OF WESTBOUND I-90, ON TOP OF SMALL RIDGE, 300 FT NORTHWESTERLY OF SECTION CORNER, NO WITNESS POST.
6067997	1053990.472	760093.041	3062.26	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6067997 2013", 14 FT LEFT OF CL PTW 6 MILE ROAD MP 1.722 FROM INTERCHANGE AT HUSON, 3 FT LEFT OF EDGE OF OIL, NO WITNESS POST.
6077997	1051822.175	760835.285	3005.36	SET PK NAIL WITH WASHER STAMPED "6077997 2013", 3 FT RIGHT OF CL PTW HUSON RD MP. 1.224, FIBER OPTIC LOCATOR POST IS NNE 33 FT, 24 FT SOUTHERLY OF R/W FENCE, NO WITNESS POST.
6087997	1052793.048	760414.045	3039.86	SET PK NAIL WITH WASHER STAMPED "6087997 2013", 1.5 FT RT OF CL PTW 6 MILE CREEK RD MP. 1.427, NEAR SOUTH END OF TURNOUT, 18 FT WESTERLY OF POWER POLE, NO WITNESS POST.
6097997	1054025.856	761023.566	3276.01	SET MDT 2 INCH ALUMINUM CAP ON A 5/8 INCH BY 30 INCH REBAR ON 5/8" X 30" REBAR, FLUSH WITH GROUND, STAMPED "6097997 2013", 1800 FT NORTH OF WEST BOUND I-90, ON TOP OF SPARSELY TIMBERED RIDGE. NO WITNESS POST.

6017997

SUMMARY

GRADING				
ITEM	cubic yards			REMARKS
	UNCL. EXC.	MUCK EXC.	# EMB.+	
CHANNEL AND FLOODPLAIN	24,269	10	5,482	5,397 CY OF UNCL. EXC. IS TOPSOIL SALVAGE & PLACING
WETLAND BERMS / CELLS	8,131	0	11,790	8,131 CY OF UNCL. EXC. IS TOPSOIL SALVAGE & PLACING
FILL SITE 1	301	0	1,610	301 CY OF UNCL. EXC. IS TOPSOIL SALVAGE & PLACING
TOTAL	32,701	10	18,882	

FOR INFORMATION ONLY. NO SHRINK FACTOR

WETLAND DIVERSION AND FISH SCREEN								
ITEM	feet		each		lump sum			REMARKS
	12" DUAL WALL HDPE DIVERSION PIPE*	10" BYPASS PIPE**	TRASH GUARD	REMOVE IRRIGATION STRUCTURE	HEADGATE AND HEADWALL ***	FLUME #	FISH SCREEN AND HOUSING ##	
WETLAND DIVERSION	455	22	1	2	1	1	1	
TOTAL	455	22	1	2	1	1	1	

* Paid for as Drainage Pipe 12" - LF

** Paid for as Pipe Corr Polyethylene 10 In. - LF

*** Paid for as Irrigation Headwall - LS

Paid for as Irrigation Structure - LS

Paid for as Miscellaneous Items - LS

WOODY HABITAT STRUCTURES				
STATION		each	lineal feet	REMARKS
		LOG AND ROOTWAD	FOOTER LOG*	
FROM	TO			
0+00.00	34+40	17	238	
TOTAL		17	238	

* Includes 17 footer logs averaging 14' in length each

CLEARING AND GRUBBING		
ITEM	acres	REMARKS
	CLEARING AND GRUBBING	
CHANNEL AND FLOODPLAIN	6.3	AREA OF DISTURBANCE FOR SEGMENTS 1 AND 2
FILL SITE 1	0.4	AREA REPRESENTS GRADING EXTENTS OF FILL SITE 1
TOTAL	6.7	

CULVERTS			
STATION	linear feet	CULVERT IN PL. in x ft	REMARKS
	REMOVE PIPE CULVERT		
33+57	57.0	72 x 57 STRUCTURAL STEEL PIPE CULVERT	REACH 1 - SIXMILE CREEK
TOTAL	57.0	~	

FENCING										
ITEM	lnft				each				feet	REMARKS
	FENCE - WILDLIFE FRIENDLY FW	WILDLIFE CROSSING POLE FENCE*	EXCLOSURE FENCE**	REMOVE FENCE***	FARM FENCE PANEL		DEADMAN	FENCE - PEDESTRIAN PASS	RESET GATE	
	TYPE MFF4-SBBS-16				SINGLE FW	DOUBLE FW				
WEST BOUNDARY	2,561	45	NA	2,606	10	1	3			WESTERN FENCE
NORTH BOUNDARY	982	15	NA	997	4	1	1			NORTHERN FENCE
EAST BOUNDARY	2,158	15	NA	2,075	4	12	3	2	1	EASTERN FENCE
TOTAL	5,701	75	4,840	5,678	18	14	7	2	1	16

* Paid for as Fence Wood 2-Rail - LF

** Paid for as Fence - Special Design - LF

*** Incidental to new fence installation

FLOODPLAIN ROUGHNESS TREATMENT				
STATION		each		REMARKS
		SMALL LOGS *	LOG AND ROOTWAD **	
FROM	TO			
		177	44	FLOODPLAIN ROUGHNESS ON ENTIRE FLOODPLAIN
TOTAL		177	44	

* Paid for as Bank Habitat Log - Each

** Paid for as Miscellaneous Items - Each

CHANNEL CONSTRUCTION									
STATION		cubic yards			lineal feet ²	lump sum		each	REMARKS
		STREAMBED MATERIAL	STREAM TOE / HARDENED RIFFLE *	FILTER MATERIAL	WILLOW CUTTINGS	TEMPORARY CHANNEL DIVERSION	COIR WRAPPED LIFT ¹ **	ROCK WEIR STEP POOL ³ ***	
FROM	TO								
0+00.00	34+40	3,262	1,233	674	2,719	1	5,319	3	
TOTAL		3,262	1,233	674	2,719	1	5,319	3	

1. Coir Wrapped Lifts installed along 5,319 lf of bank and includes 673 CY of topsoil

2. Measured along the streamside face of the bank in the which the Coir Wrapped Lift is installed

3. Rock weir / Step Pool includes 108 cy of weir rock total

* Paid for as miscellaneous items - CY

** Paid for as Bioengineered Bank - LS

*** Paid for as Rock Step Pool - EA

ABANDON MONITOR WELL		
ITEM DESC	EACH	REMARKS
MW-2	1	SEE SITE PLAN FOR LOCATION
MW-3	1	SEE SITE PLAN FOR LOCATION
TOTAL	2	

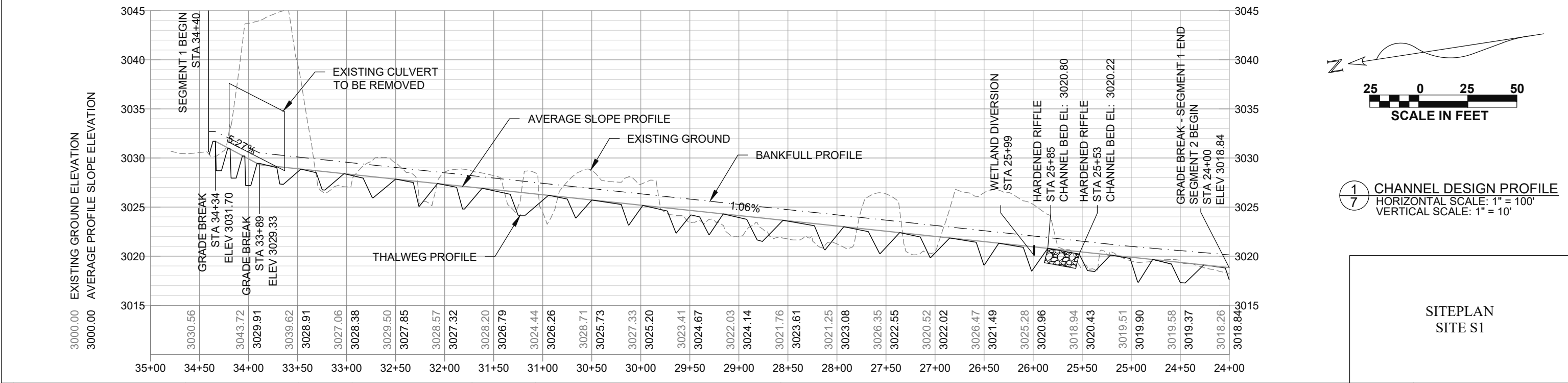
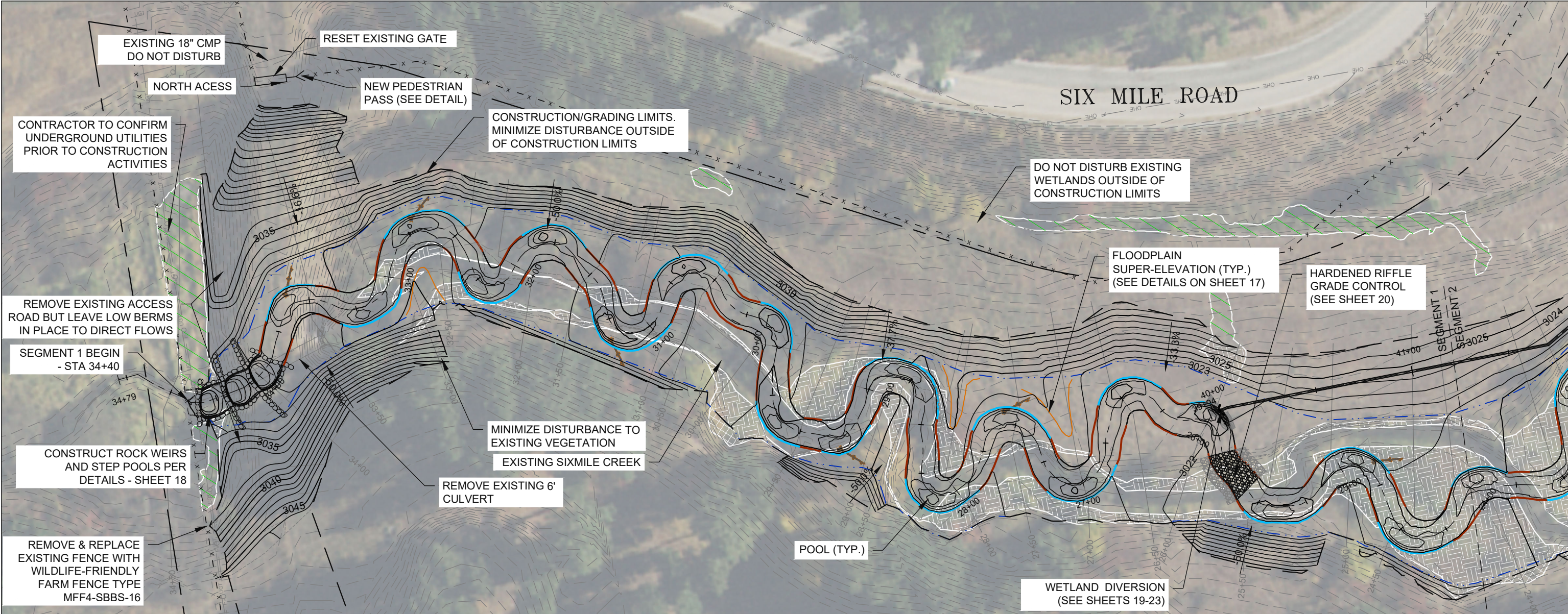
REVEGETATION								
FOR	cubic yards		acre			square yards	lump sum	REMARKS
	TOPSOIL SALVAGE & PLACING	WETLAND SOIL-SALVAGE AND PLACE	SOIL AMENDMENT ***	WETLAND SEEDING- UPLAND	WETLAND SEEDING- WETLAND	BIO- DEGRADABLE EROSION CONTROL FABRIC****	TREE AND SHRUB PLANTING	
ROCK WEIRS						92		
CHANNEL / FLOODPLAIN*	5,397	50		1.8	4.5	708	1	
WETLAND BERMS / CELLS**	8,131		6.8	3.3	6.9	1,249		
FILL SITE #1	301			0.4				
UPLANDS OUTSIDE OF CONSTRUCTION LIMITS				14.1				
TOTAL	13,829	50	6.8	19.6	11.4	2,049	1	

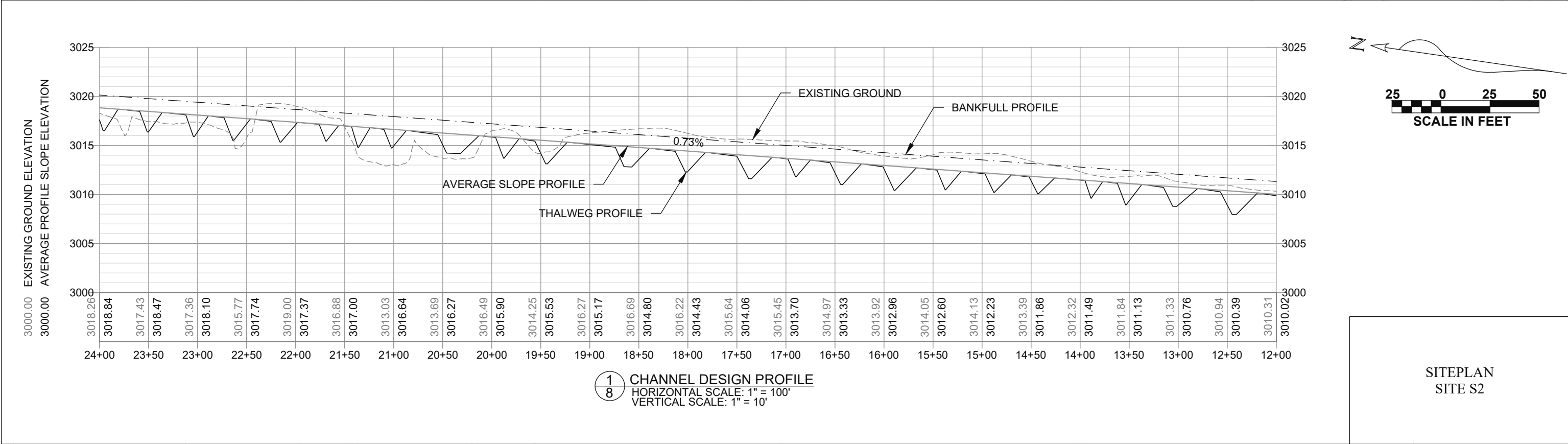
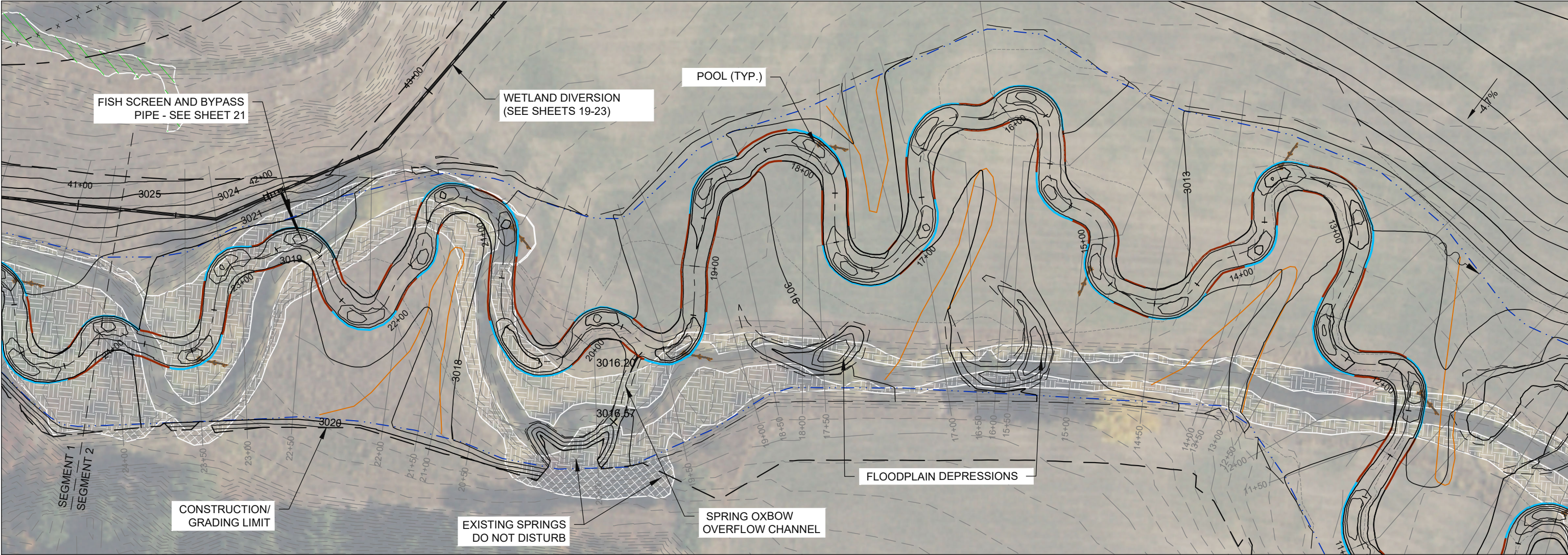
* 690 CY of salvaged topsoil to be used in coir wrapped lifts

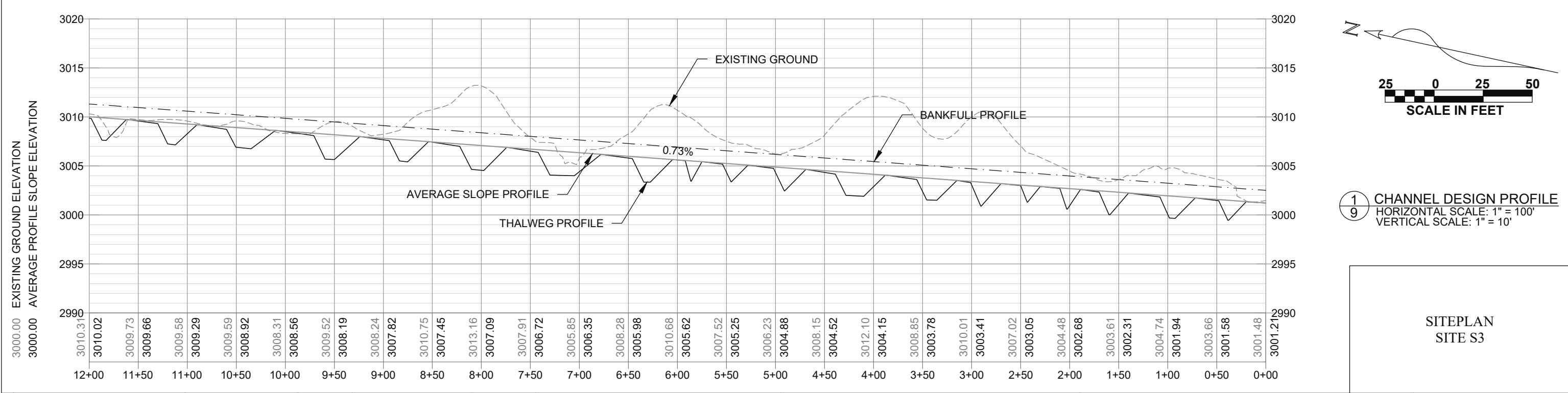
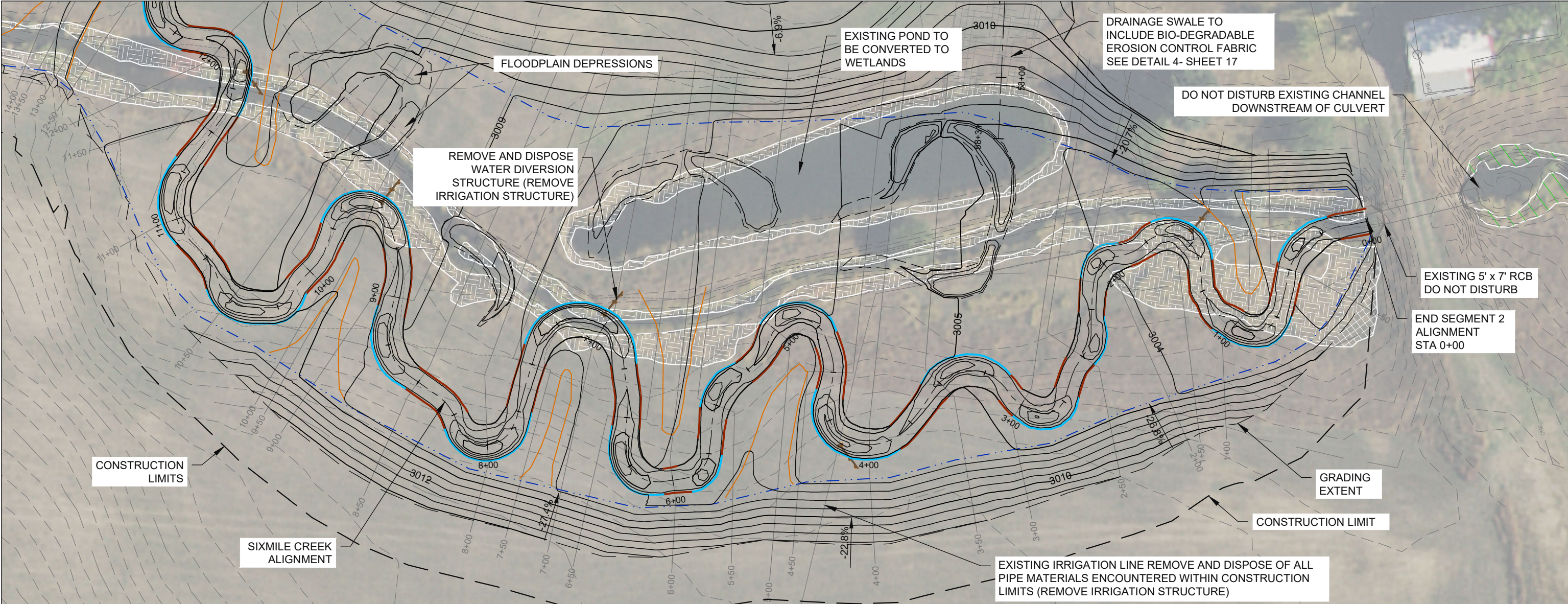
** 5.03 acres of the wetland berms / cells are located outside of the cut / fill boundary

*** Paid for as Miscellaneous Items - Acre

**** Paid for as Erosion Control Blanket - High- Perform - SqYd

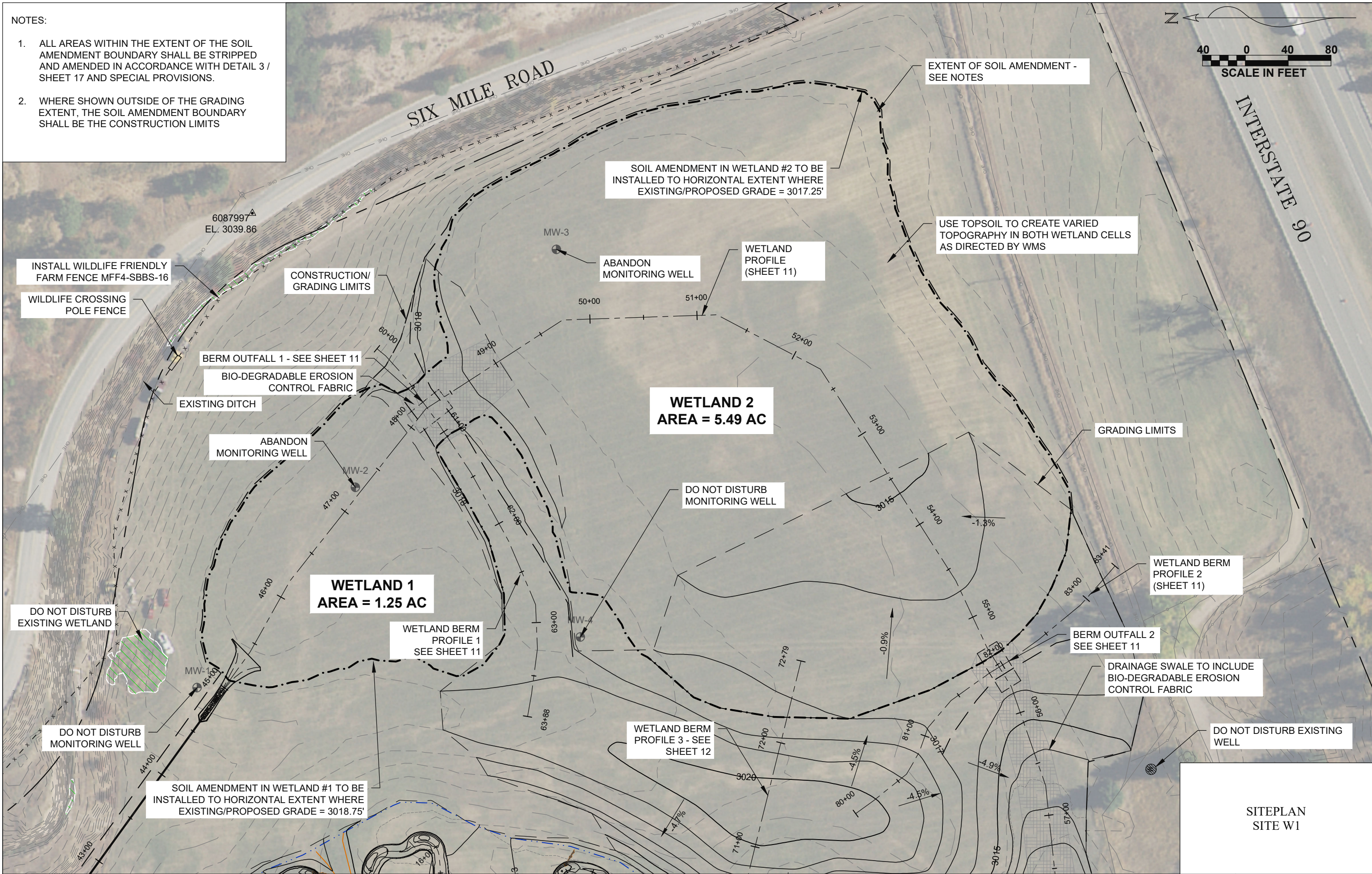


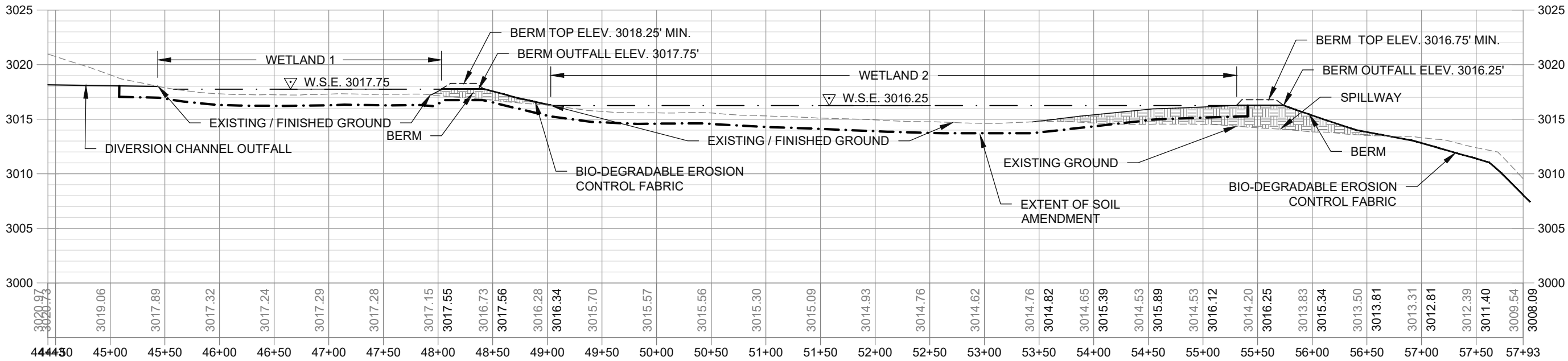




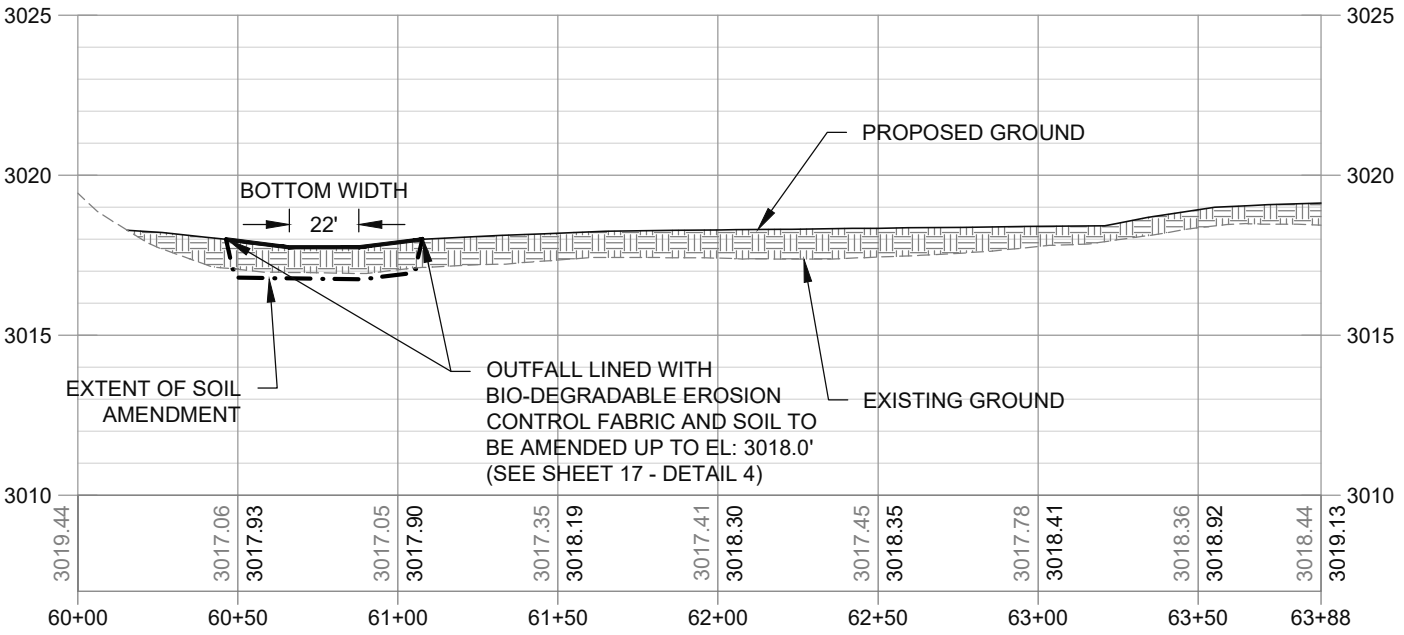
NOTES:

1. ALL AREAS WITHIN THE EXTENT OF THE SOIL AMENDMENT BOUNDARY SHALL BE STRIPPED AND AMENDED IN ACCORDANCE WITH DETAIL 3 / SHEET 17 AND SPECIAL PROVISIONS.
2. WHERE SHOWN OUTSIDE OF THE GRADING EXTENT, THE SOIL AMENDMENT BOUNDARY SHALL BE THE CONSTRUCTION LIMITS

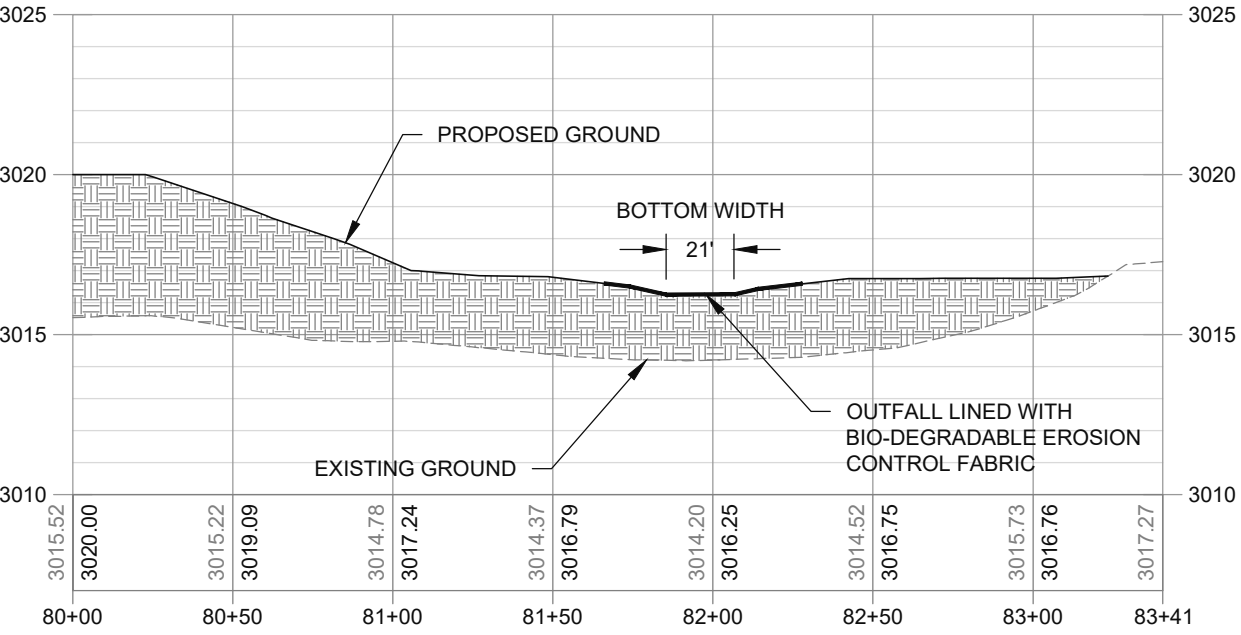




1
11 WETLAND PROFILE
HORIZONTAL SCALE: 1" = 100'
VERTICAL SCALE: 1" = 10'

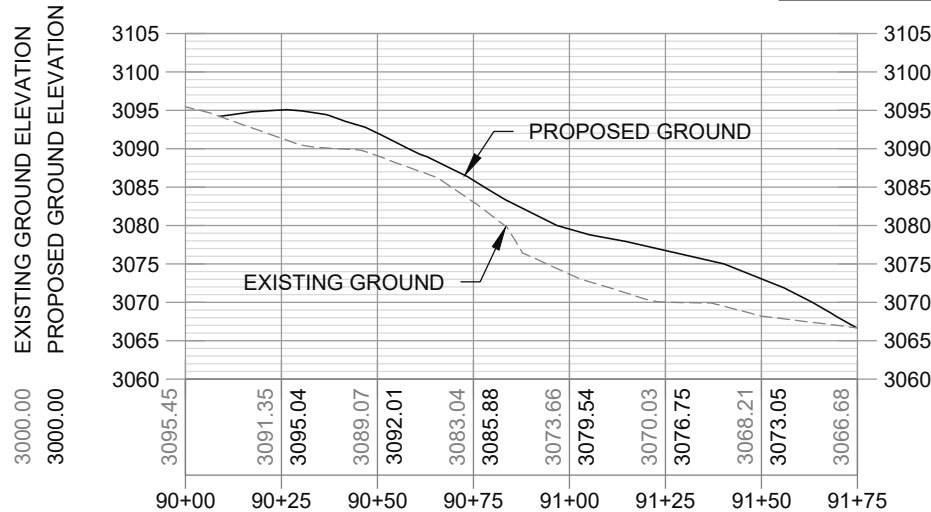
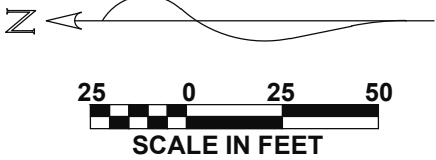
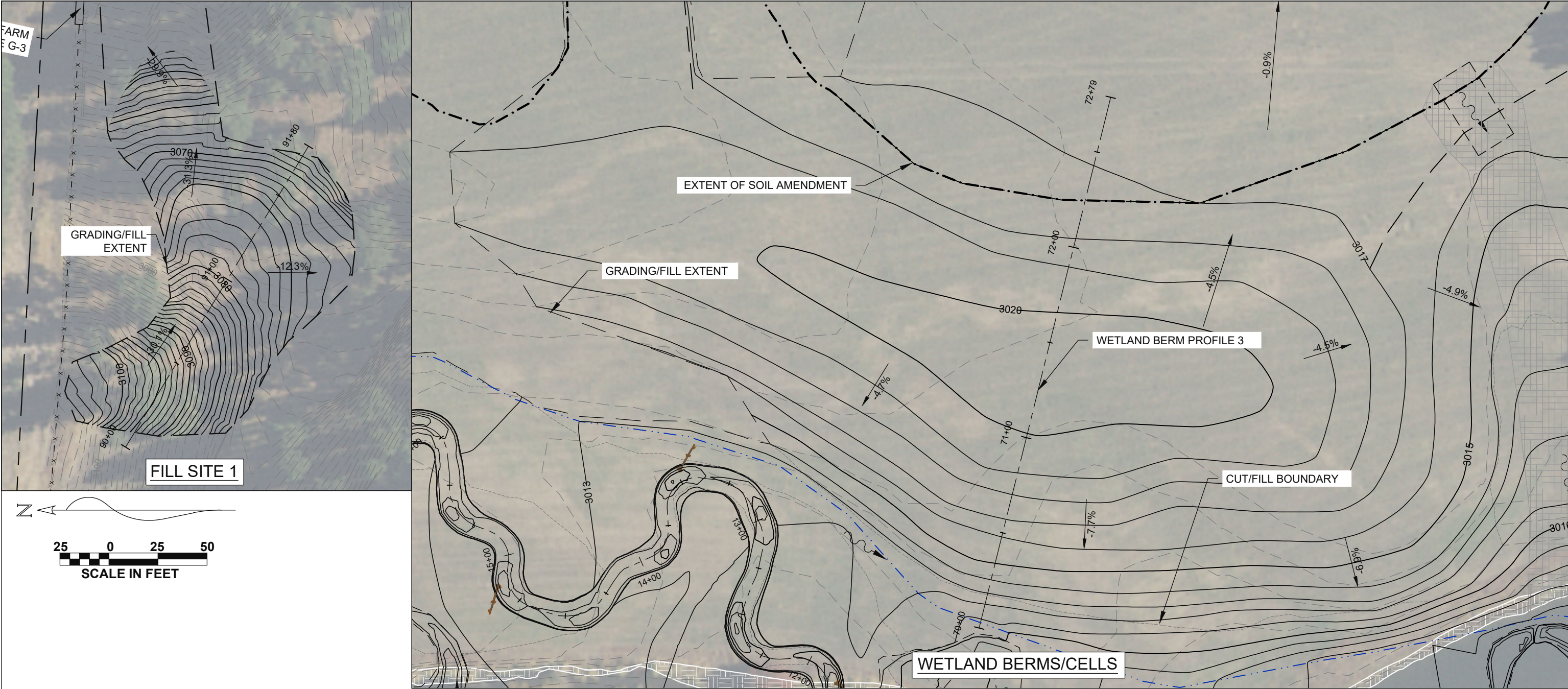


2
11 WETLAND BERM PROFILE 1
HORIZONTAL SCALE: 1" = 60'
VERTICAL SCALE: 1" = 6'

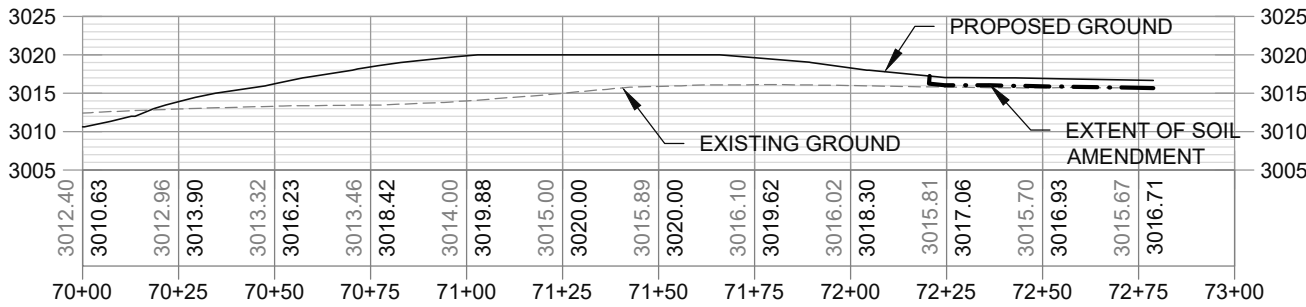


3
11 WETLAND BERM PROFILE 2
HORIZONTAL SCALE: 1" = 60'
VERTICAL SCALE: 1" = 6'

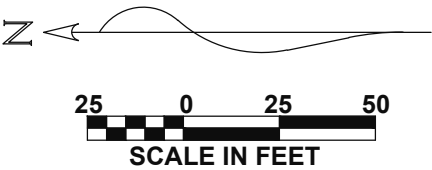
SITE W1
PROFILES



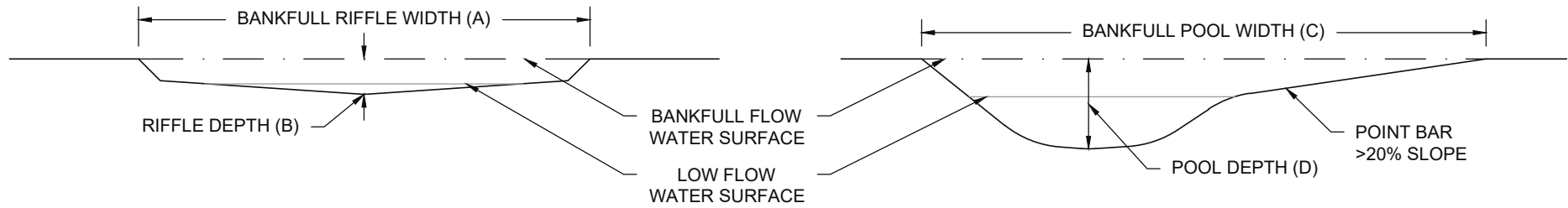
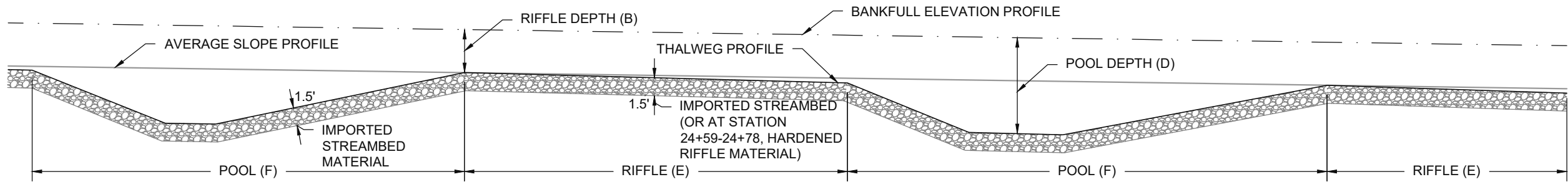
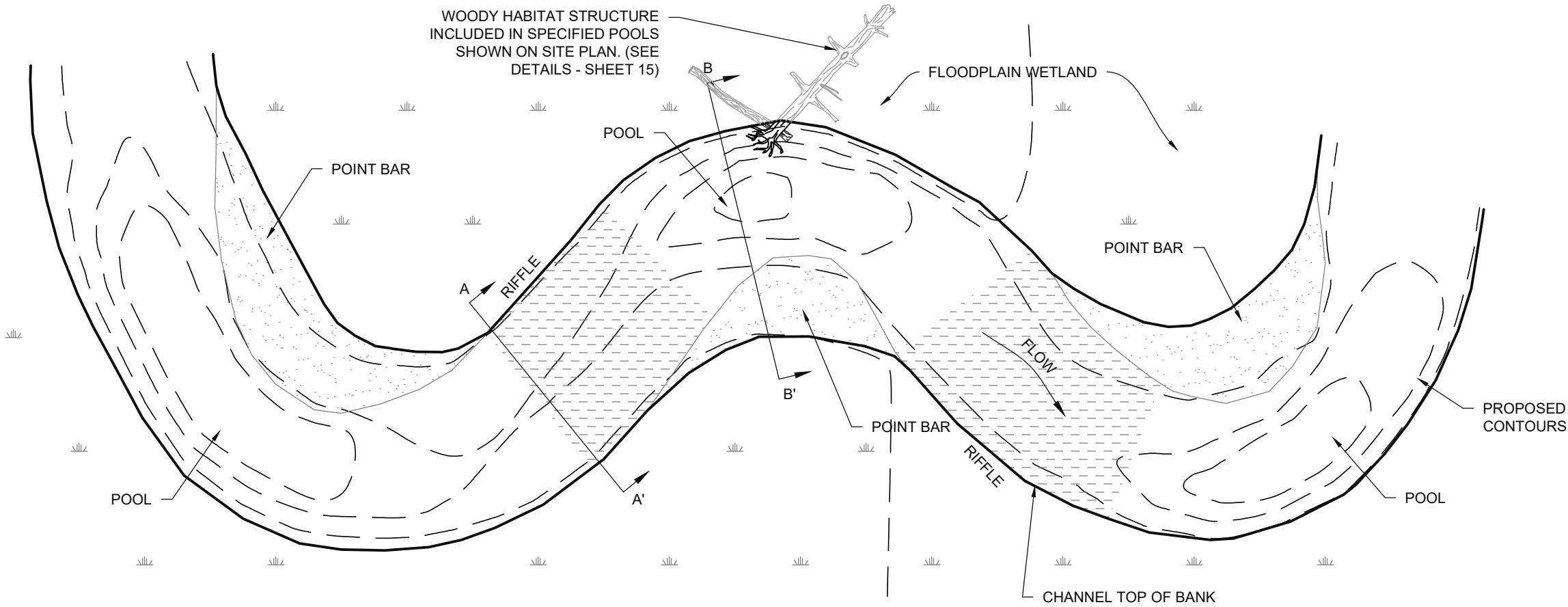
1 FILL SITE 1 PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'



2 WETLAND BERM PROFILE 3
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'

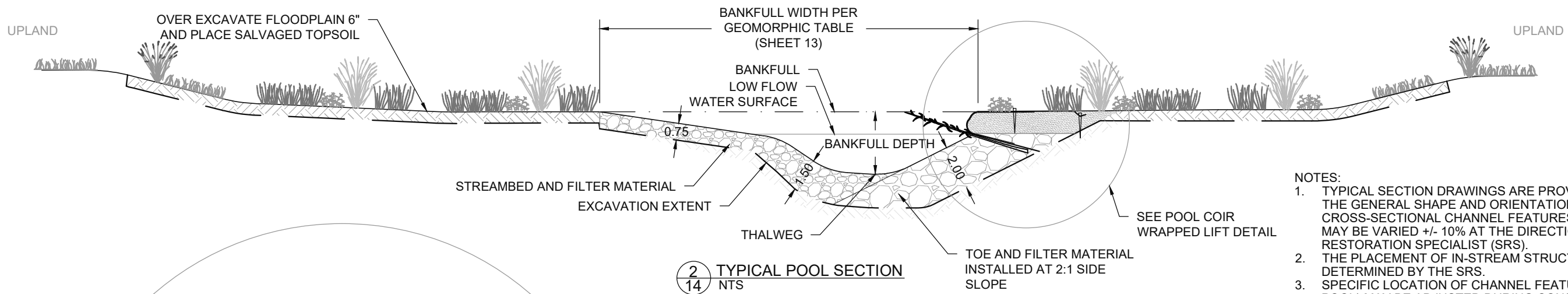
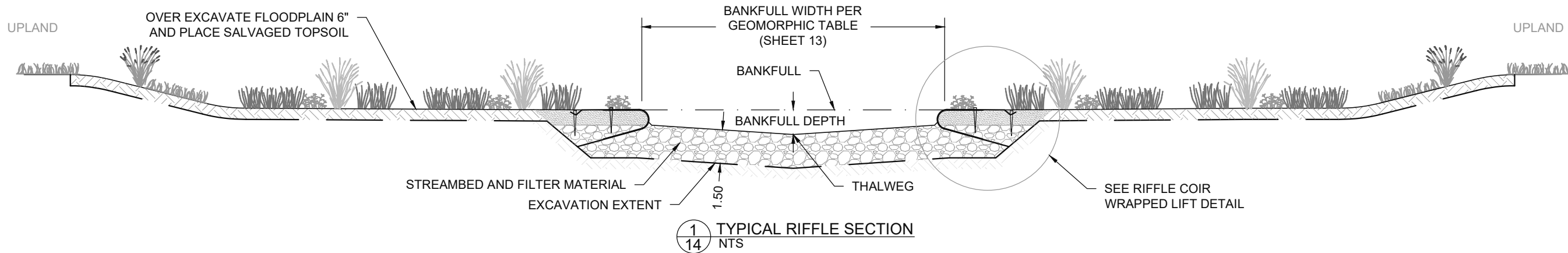


FILL SITES
PLAN

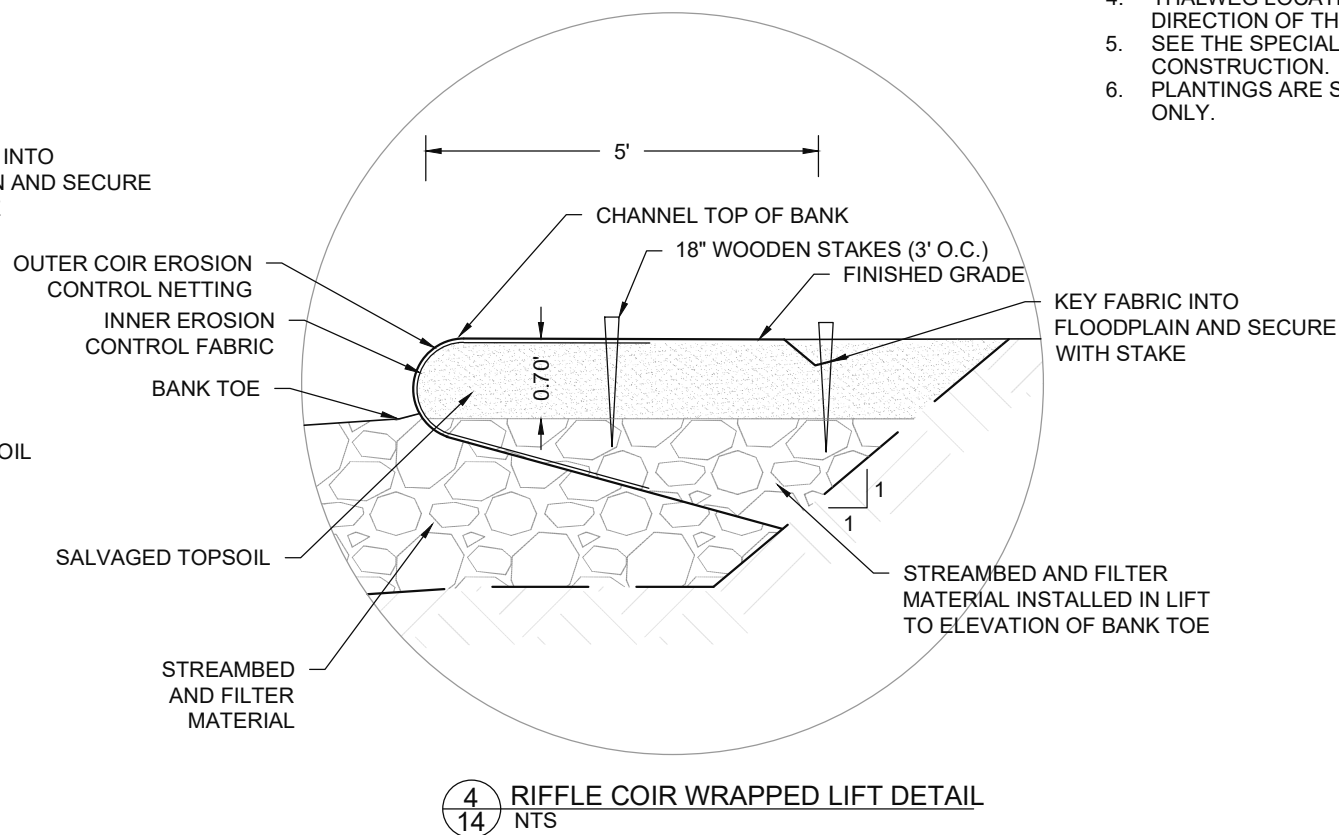
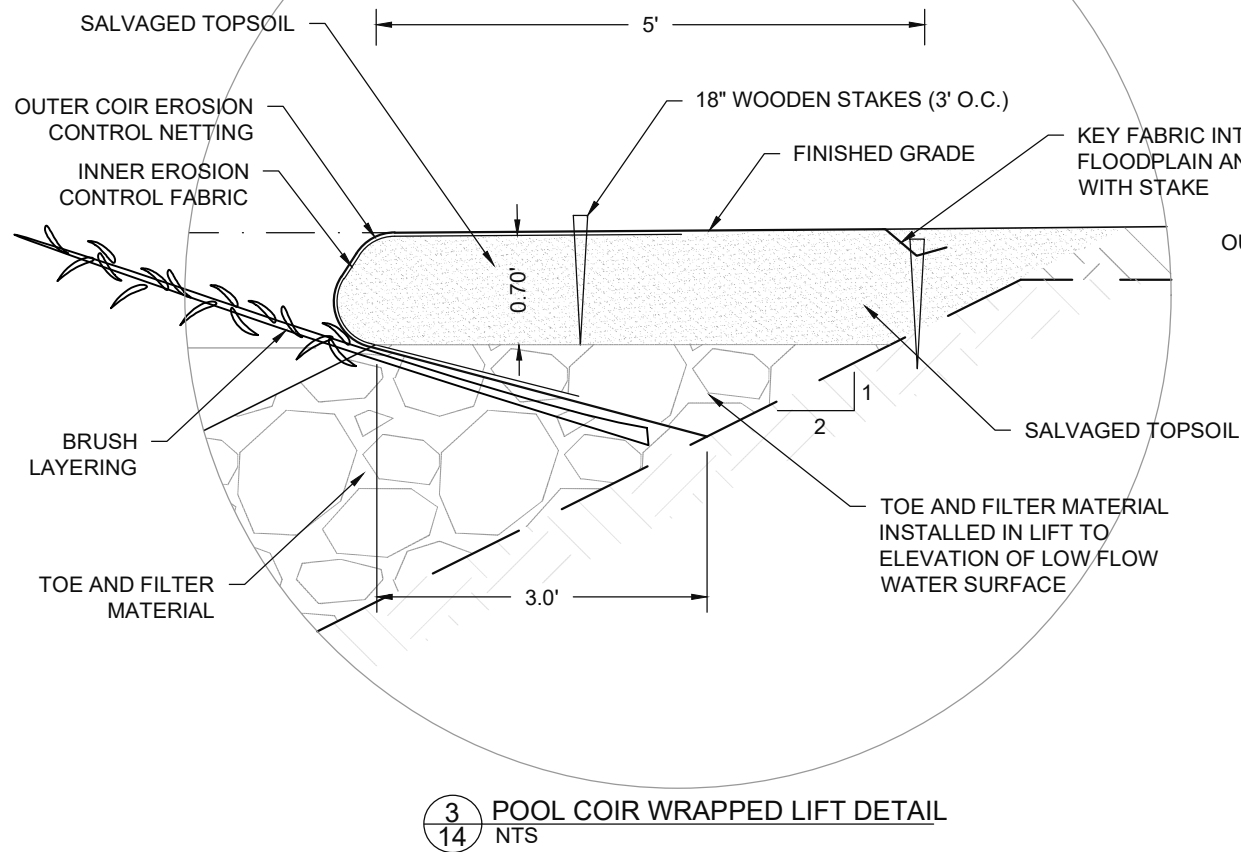


GEOMORPHIC TABLE			
	FEATURE	SEGMENT 1	SEGMENT 2
A	RIFFLE WIDTH (FT)	14	13
B	RIFFLE MAX DEPTH (FT)	1.0 - 1.2	1.2 - 1.4
C	POOL WIDTH (FT)	15.4 - 19.6	14.3 - 18.2
D	POOL MAX DEPTH (FT)	2.1 - 2.9	2.5 - 3.6
E	RIFFLE LENGTH (FT)	14 - 35	13 - 32.5
F	POOL LENGTH (FT)	21 - 56	19.5 - 52

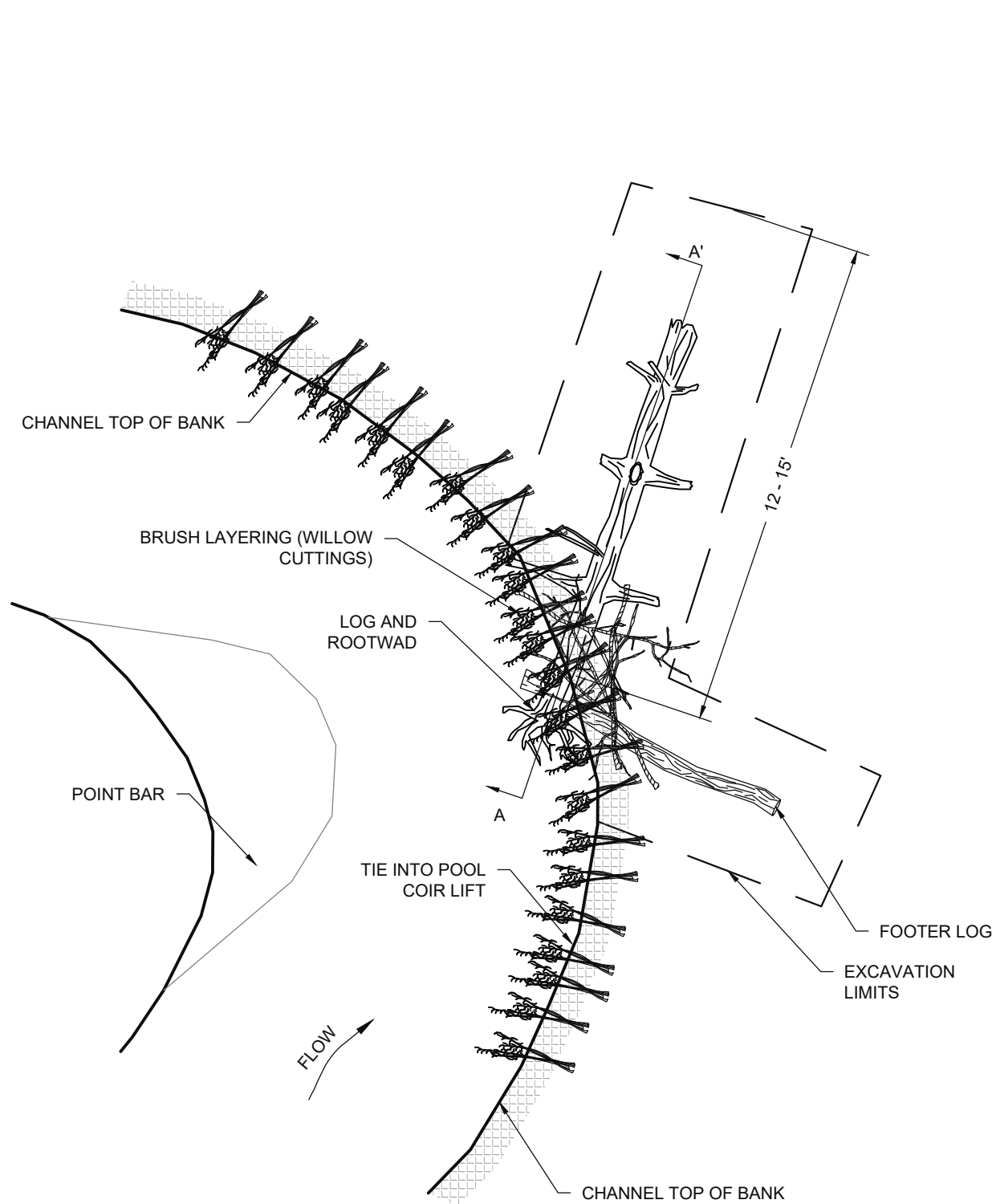
TYPICAL CHANNEL
DETAILS



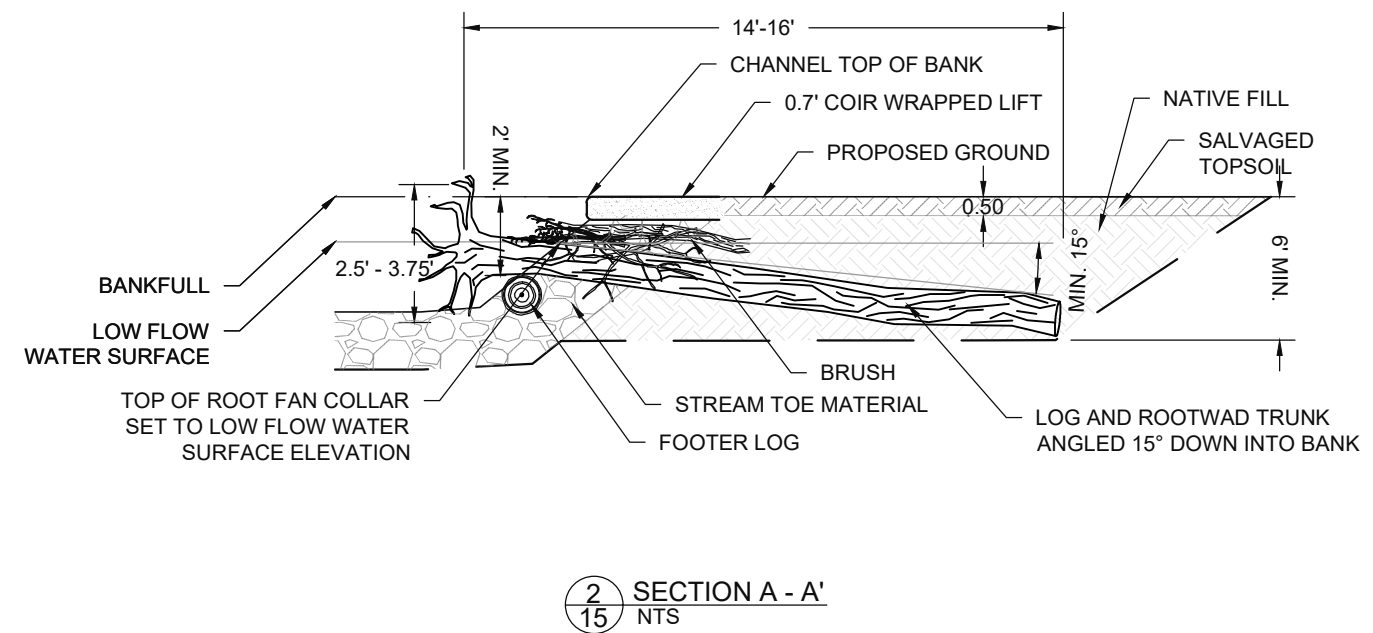
- NOTES:
1. TYPICAL SECTION DRAWINGS ARE PROVIDED TO INDICATE THE GENERAL SHAPE AND ORIENTATION OF THE CROSS-SECTIONAL CHANNEL FEATURES. THE DIMENSIONS MAY BE VARIED +/- 10% AT THE DIRECTION OF THE STREAM RESTORATION SPECIALIST (SRS).
 2. THE PLACEMENT OF IN-STREAM STRUCTURES WILL BE DETERMINED BY THE SRS.
 3. SPECIFIC LOCATION OF CHANNEL FEATURES (RUN, RIFFLE, POOL) MAY BE ADJUSTED DURING CONSTRUCTION BASED ON SITE CONDITIONS AND AT THE DIRECTION OF THE SRS.
 4. THALWEG LOCATION IS TYPICAL AND MAY VARY AT THE DIRECTION OF THE SRS.
 5. SEE THE SPECIAL PROVISIONS FOR CHANNEL CONSTRUCTION.
 6. PLANTINGS ARE SHOWN FOR VISUALIZATION PURPOSES ONLY.



TYPICAL BANK TREATMENT DETAILS



1
15
TYPICAL WOODY HABITAT STRUCTURE PLAN VIEW
NTS

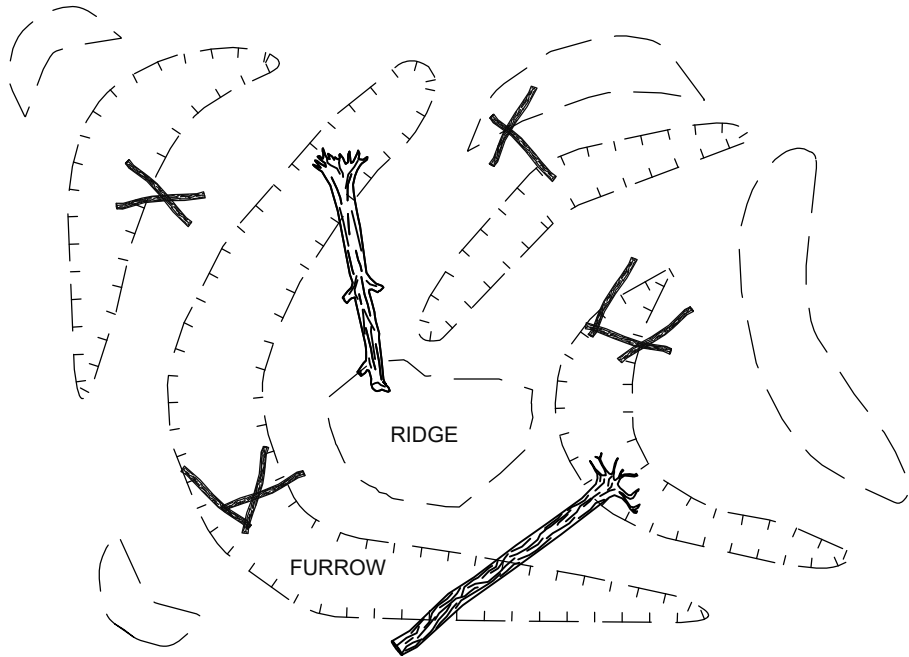


CONSTRUCTION NOTES:

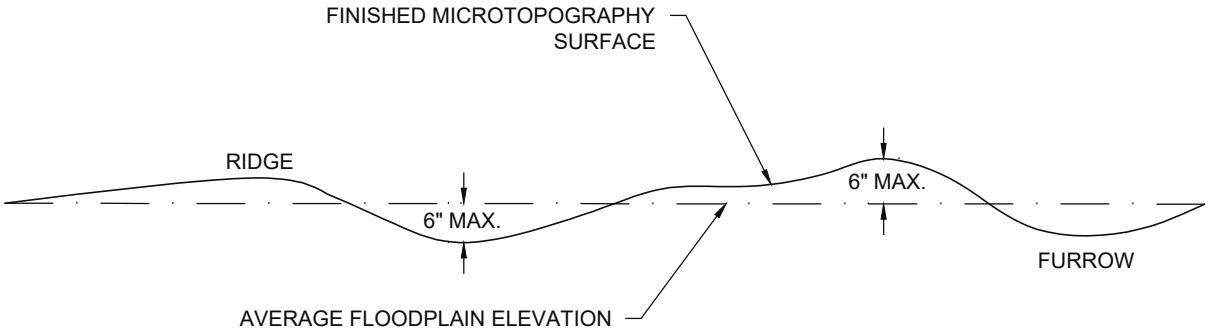
1. EXCAVATE TRENCH AND SET FOOTER LOGS AT SPECIFIED DEPTH. USE FOOTER LOGS WITH MINIMUM DIAMETER AND STEM LENGTH AS SPECIFIED. FOOTER LOGS SHALL NOT HAVE A ROOTFAN.
2. IF POSSIBLE, BACKFILL UP TO TOP OF FOOTER WITH NATIVE FILLER MATERIAL.
3. DOUSE BACKFILL PERIODICALLY WITH WATER TO IMPROVE COMPACTION AND MINIMIZE VOID SPACES.
4. SET ROOTWAD LOG ON FOOTER LOG. PLACE ROOTWAD LOG'S STEM SLOPING DOWNWARD INTO BANK FROM EDGE OF WATER.
5. USE ROOTWADS WITH MINIMUM ROOTFAN DIAMETER AND STEM LENGTH AS SPECIFIED.
6. INSERT BRUSH AND SMALLER DIAMETER LIMBS IN BETWEEN THE FOOTER AND ROOT FAN LOGS AT RANDOM ANGLES AND BACKFILL UP TO TOP OF ROOTWAD LOGS WITH TOE AND FILLER MATERIAL.
7. DOUSE BACKFILL PERIODICALLY WITH WATER TO IMPROVE COMPACTION AND MINIMIZE VOID SPACES. COMPACT SOILS WITH EXCAVATOR BUCKET.
8. COVER THE TOP OF THE STRUCTURE WITH BRUSH SALVAGED FROM SITE AS DIRECTED BY SRS. INSTALL BRUSH LAYERING AND COIR WRAPPED LIFTS IN ACCORDANCE WITH SPECIAL PROVISIONS.
9. THE SRS SHALL INSPECT AND APPROVE ALL FOOTER LOGS AND ROOTWAD LOGS PRIOR TO BACKFILLING.
10. NOTIFY SRS OF ANY PROPOSED CHANGES PRIOR TO IMPLEMENTATION. THE SRS RESERVES THE RIGHT TO MODIFY STRUCTURE DESIGN SPECIFICATIONS DURING CONSTRUCTION IF WARRANTED DUE TO UNFORESEEN CONDITIONS.

ITEM	TRUNK DIAMETER (FT)	LENGTH (FT)	ROOT FAN DIAMETER (FT)
FOOTER LOG	1.0 - 1.5	12 - 15	NONE
LOG AND ROOTWAD	1.0-1.25	14-16	2.5 - 3.75

WOODY HABITAT
STRUCTURE DETAILS

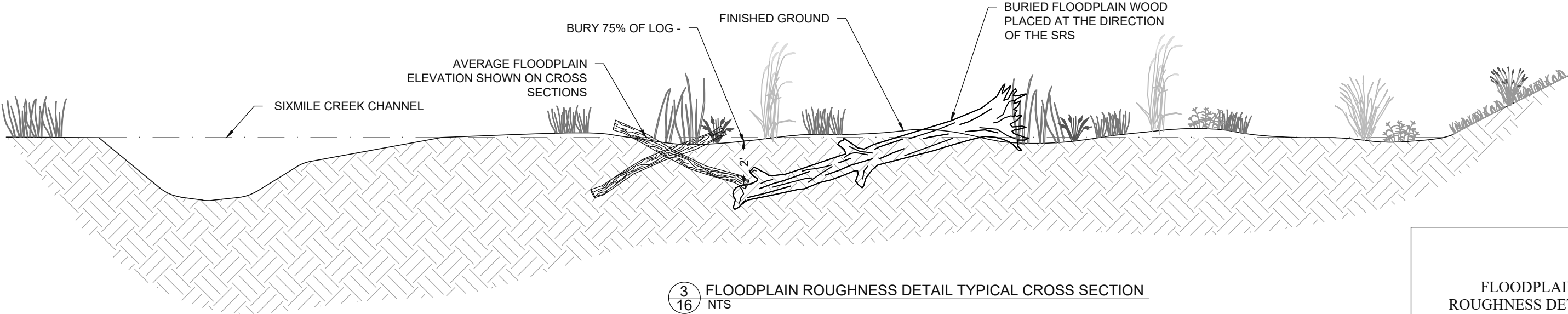


1
16 TYPICAL WOOD PLACEMENT AND MICROTOPOGRAPHY PLAN VIEW
NTS



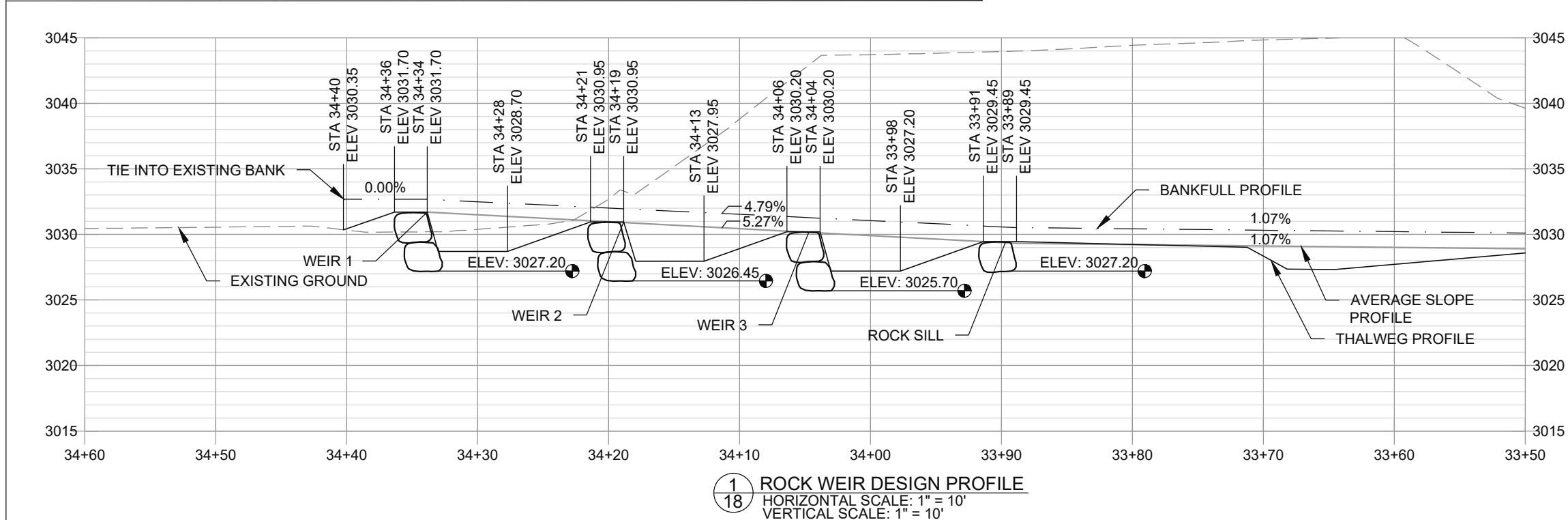
2
16 TYPICAL MICROTOPOGRAPHY GRADING SECTION VIEW
NTS

WOOD PLACEMENT CRITERIA						
ITEM	DIAMETER (IN)	LENGTH (FT)	ROOTWAD (Y/N)	LIMBS	BURIAL	RATE
LARGE LOGS (LOG AND ROOTWAD)	>6 - 12	8 - 12	Y	YES	75%	10/AC
SMALL LOGS	3 - 6	8 - 12	60% Y	YES	50%	40/AC



3
16 FLOODPLAIN ROUGHNESS DETAIL TYPICAL CROSS SECTION
NTS

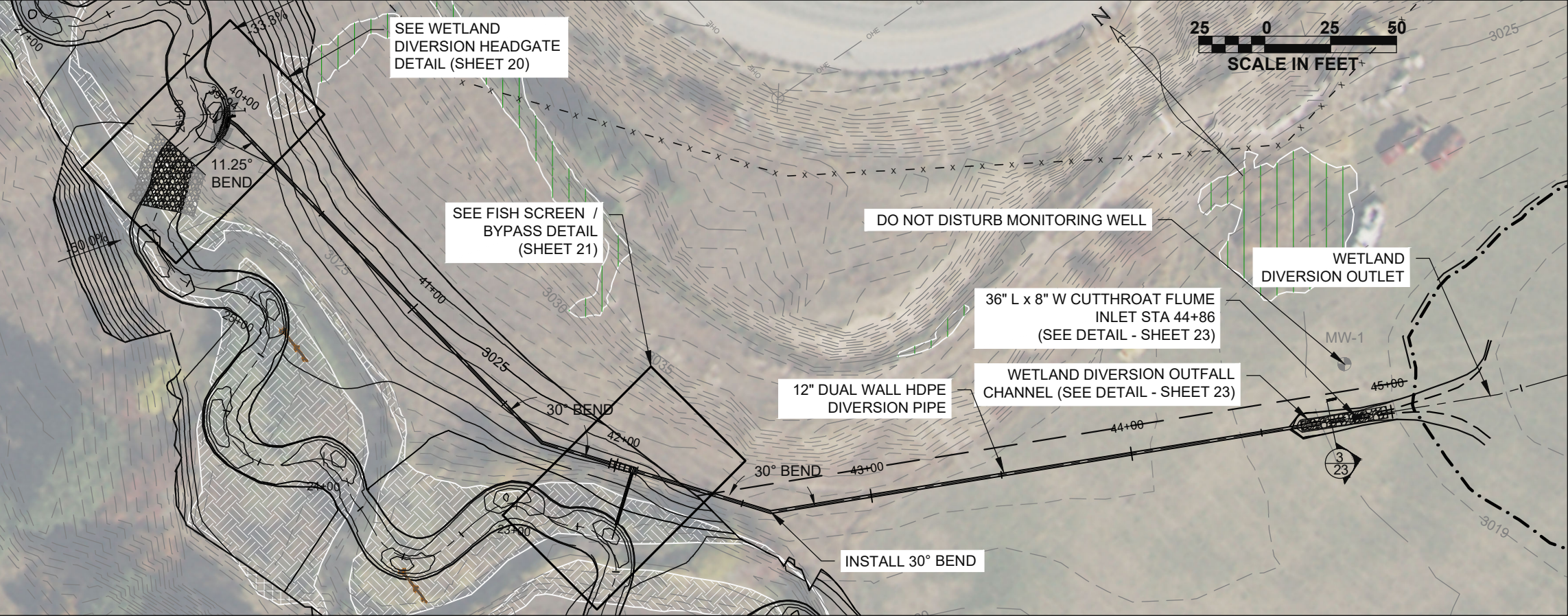
FLOODPLAIN
ROUGHNESS DETAILS



ROCK WEIR TABLE		
	FEATURE	DIMENSION
A	WEIR WIDTH (FT)	13.75
B	WEIR DEPTH (FT)	1.0
C	STEP POOL WIDTH (FT)	16.5
D	STEP POOL MAX DEPTH (FT)	3.9

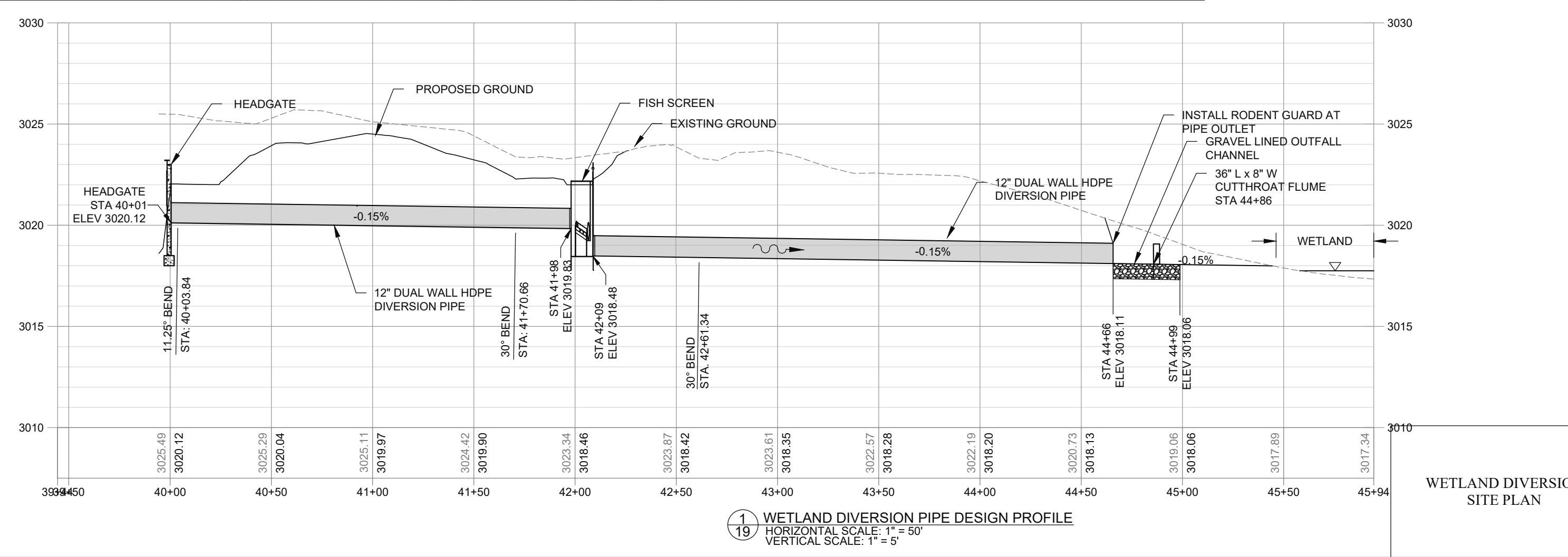
NOTE:
WEIR ROCK TO BE INSTALLED TO A MINIMUM OF
DEPTH OF 4.5' MEASURED FROM INVERT OF SILL TO
TOE OF ROCK. TOE OF ROCK ELEVATION SHOWN
ON PROFILE IS MAXIMUM ELEVATION.

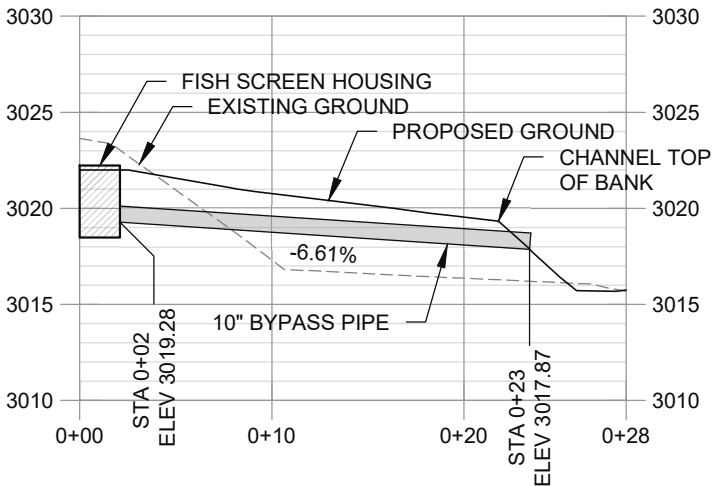
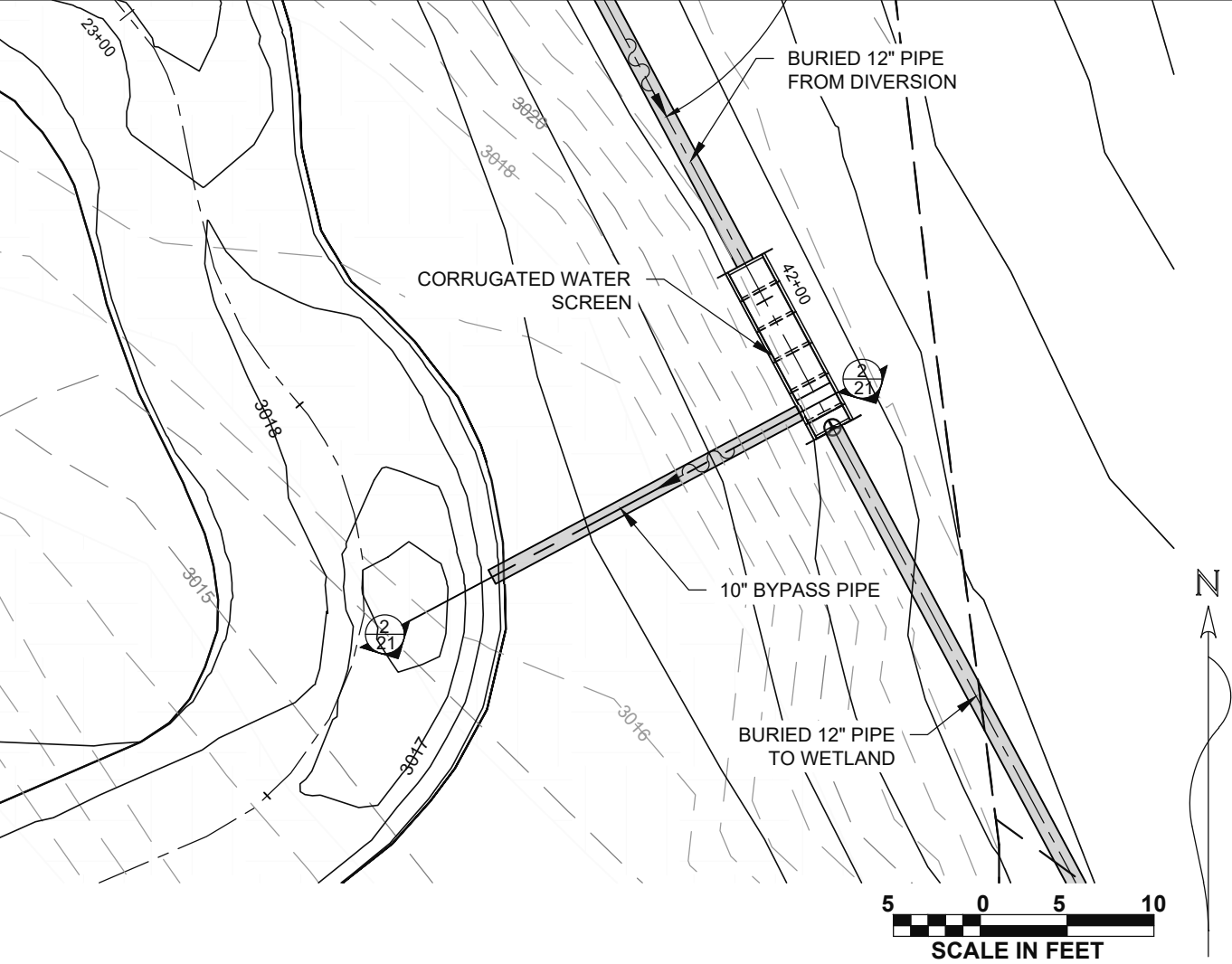
ROCK WEIR SITE PLAN AND DESIGN DETAILS



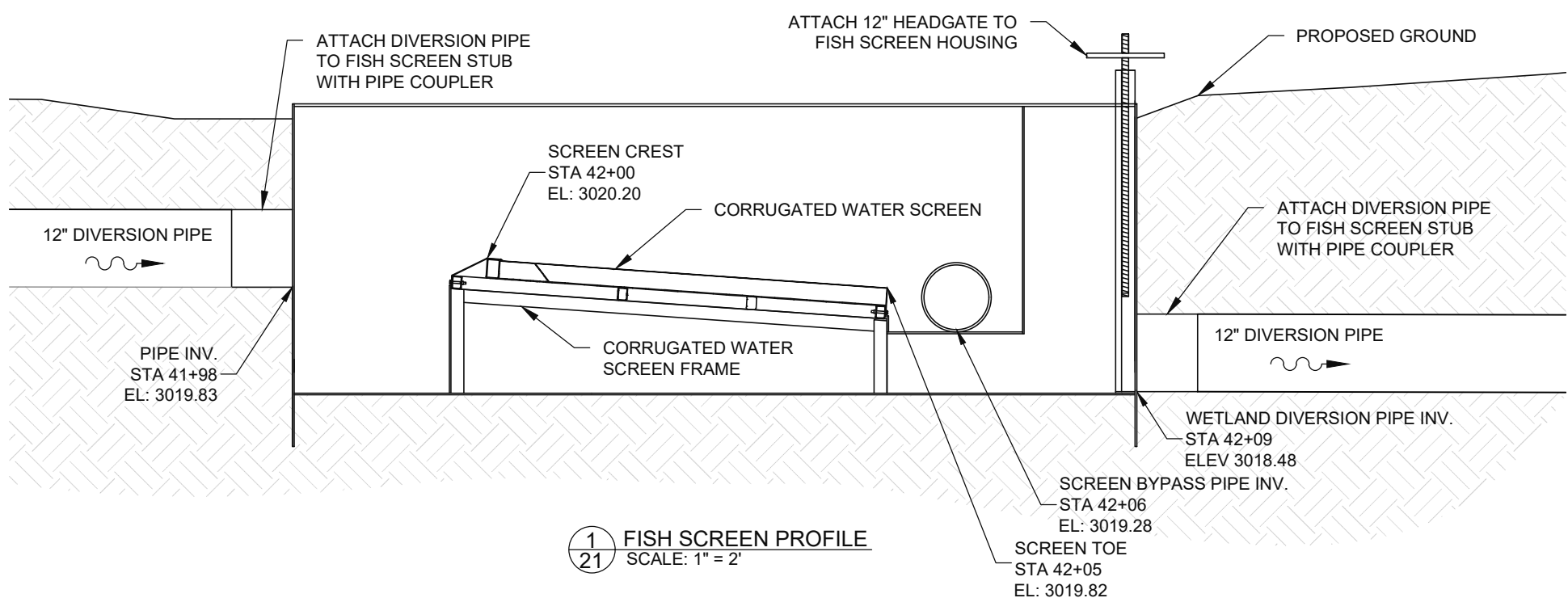
- WETLAND DIVERSION PLAN NOTES:
1. DIVERTED FLOW WILL BE CONTROLLED TO A MAXIMUM OF 1.52 CFS WITH A 12" CAST IRON HEADGATE WITH A TRASH RACK AT THE INLET.
 2. DIVERSION PIPE WILL BE 12" DUAL WALL PIPE BURIED A MINIMUM OF 12" UNDERGROUND.
 3. A 36" L x 8" W CUTTHROAT FLUME WILL BE INSTALLED DOWN GRADIENT OF THE DIVERSION PIPE OUTLET TO MEASURE FLOW RATE.
 4. FLOW BEYOND THAT REQUIRED TO SUPPLY THE WETLANDS WILL BE RETURNED TO 6 MILE CREEK VIA THE WETLAND OUTFALL CHANNEL.

DIVERSION COORDINATES		
SITE	LATITUDE	LONGITUDE
INLET	47.0362	-114.3535
OUTLET	47.0351	-114.3524

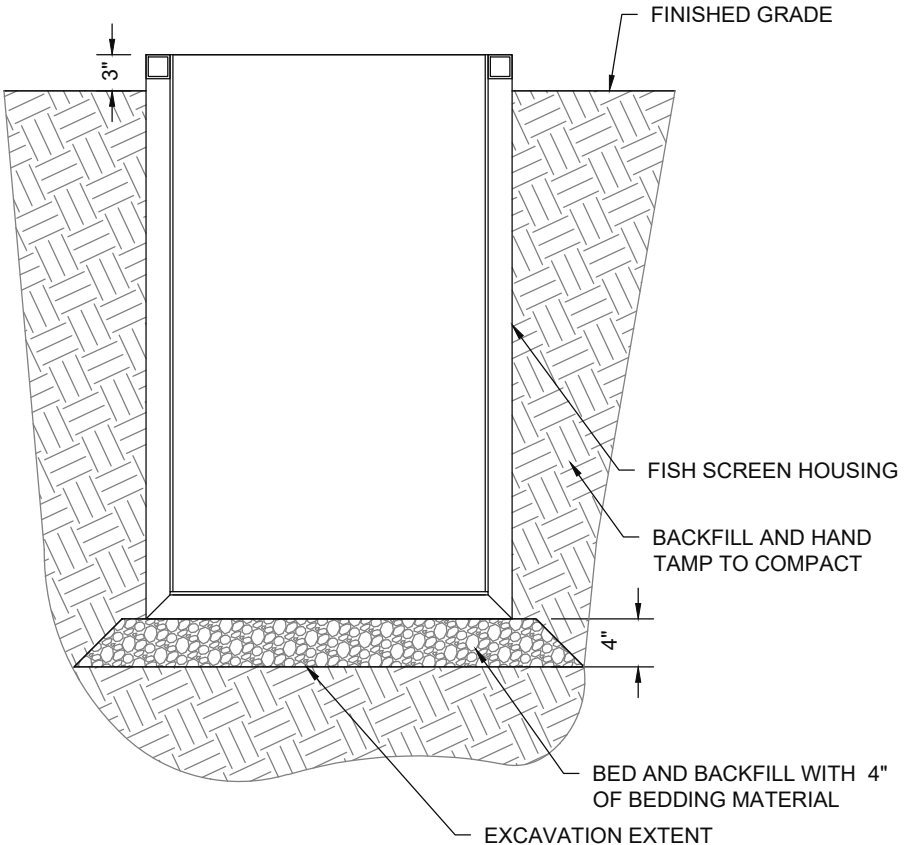




2
21 FISH BYPASS PIPE PROFILE
SCALE: 1" = 10'

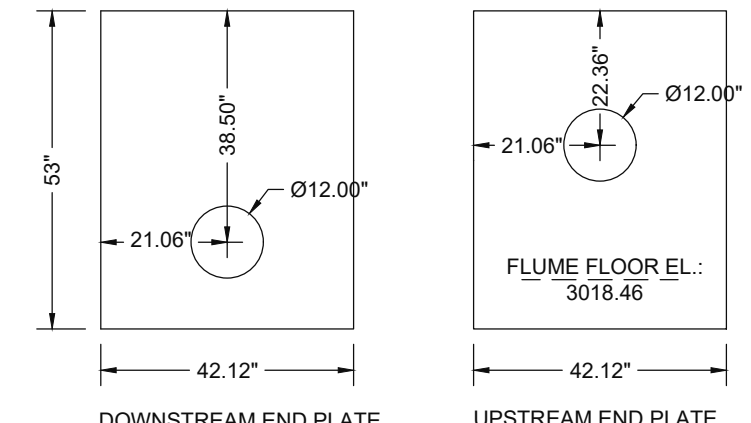
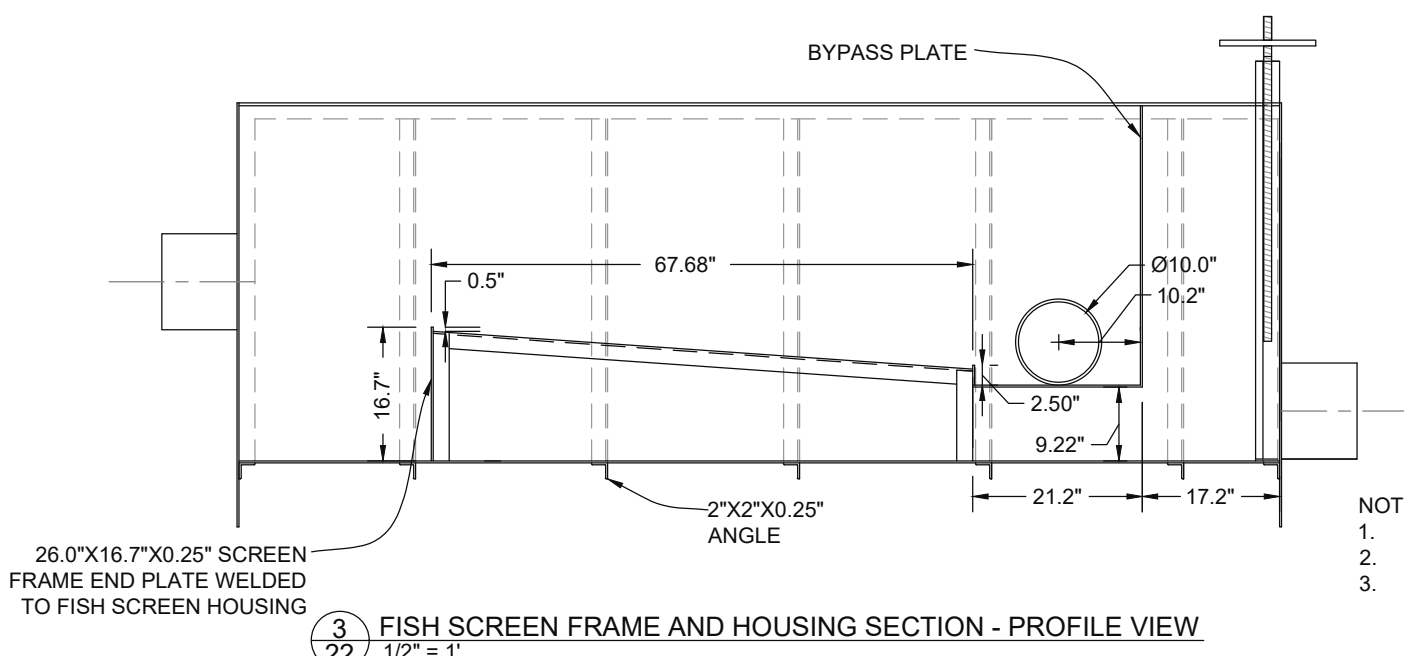
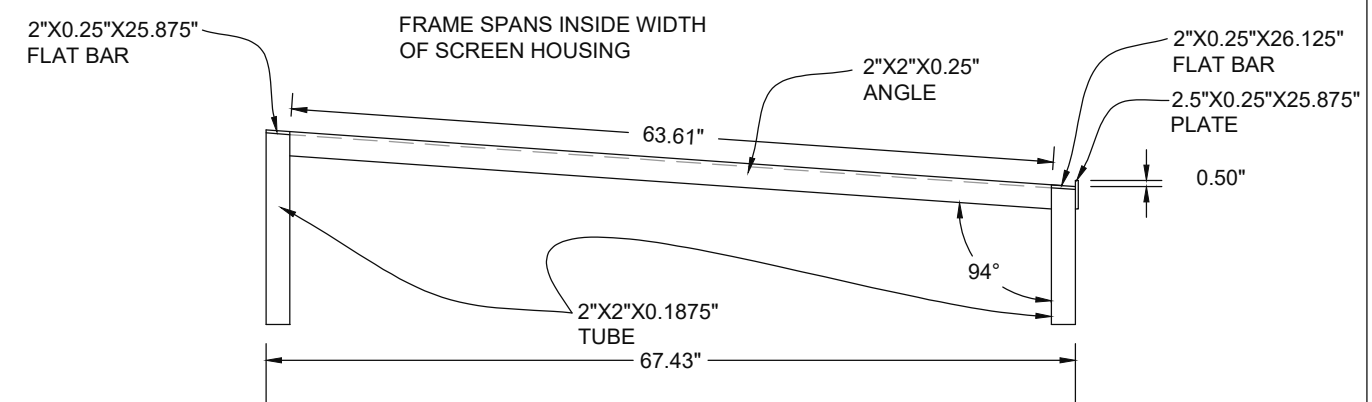
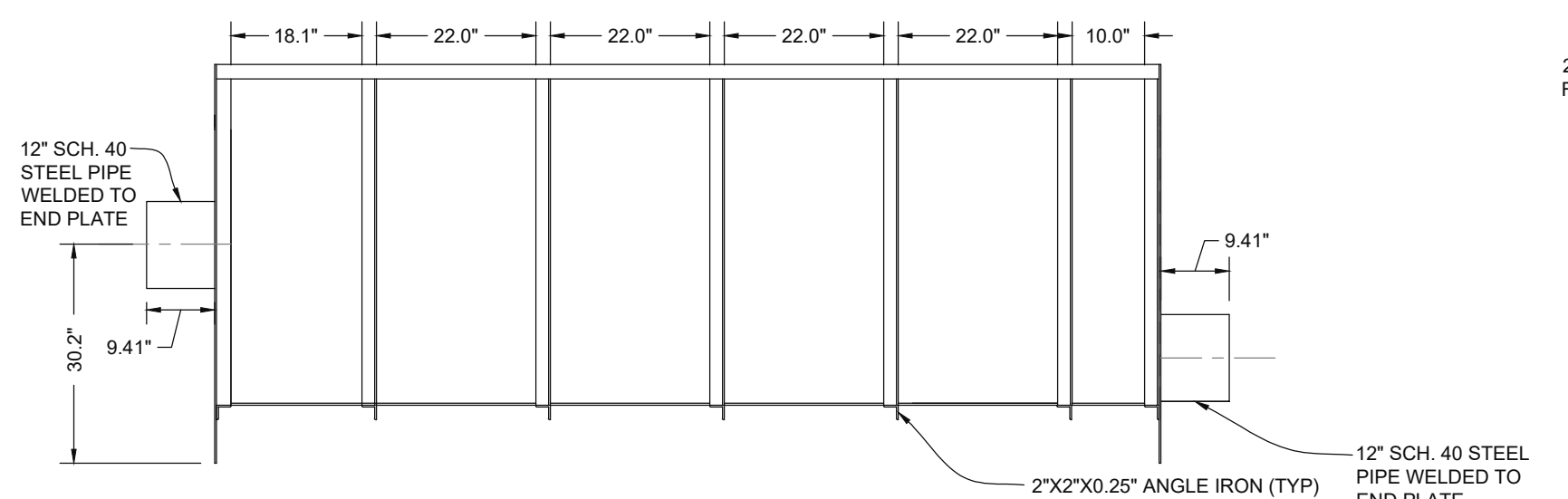
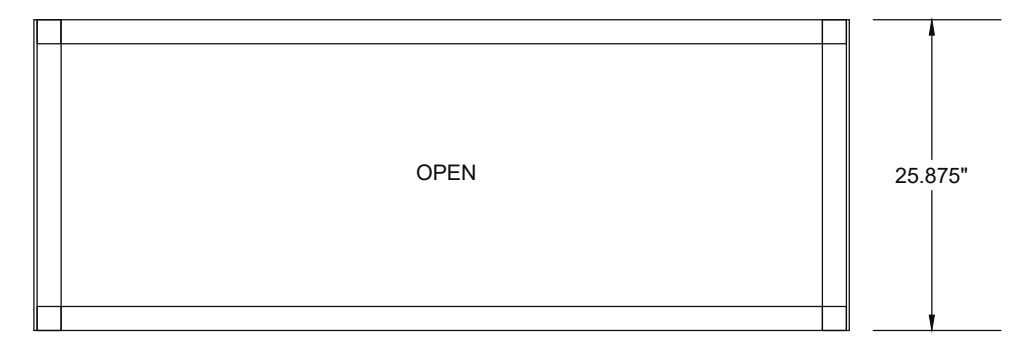
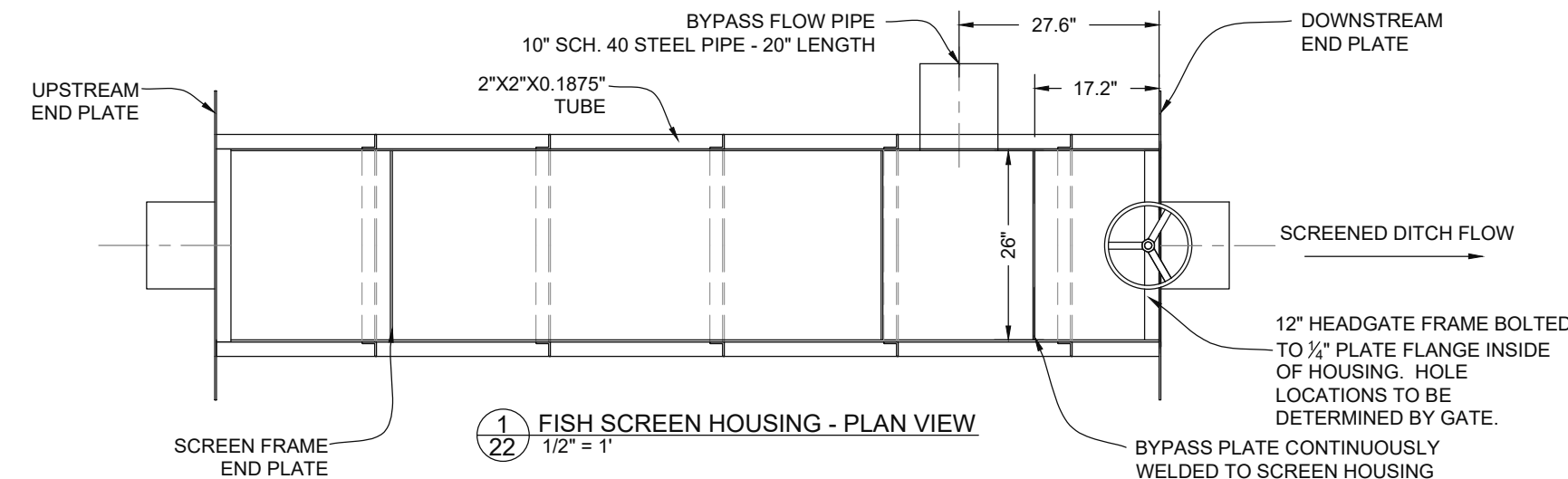


1
21 FISH SCREEN PROFILE
SCALE: 1" = 2'



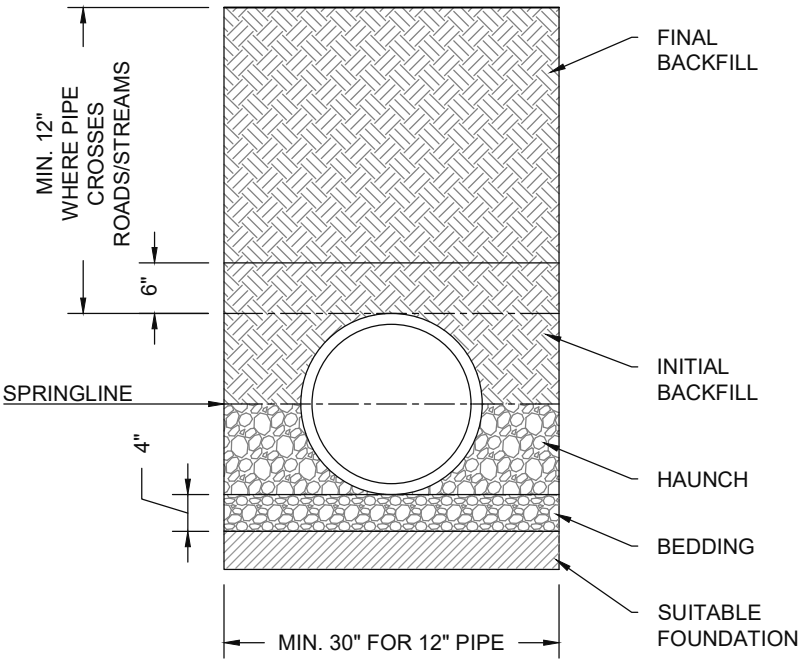
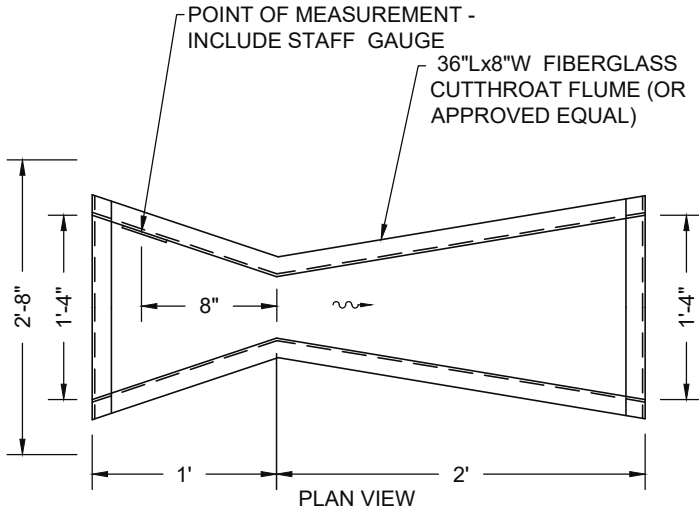
3
21 FISH SCREEN HOUSING BEDDING
3/4" = 1'

FISH SCREEN
DETAILED SITE PLAN
AND DETAILS

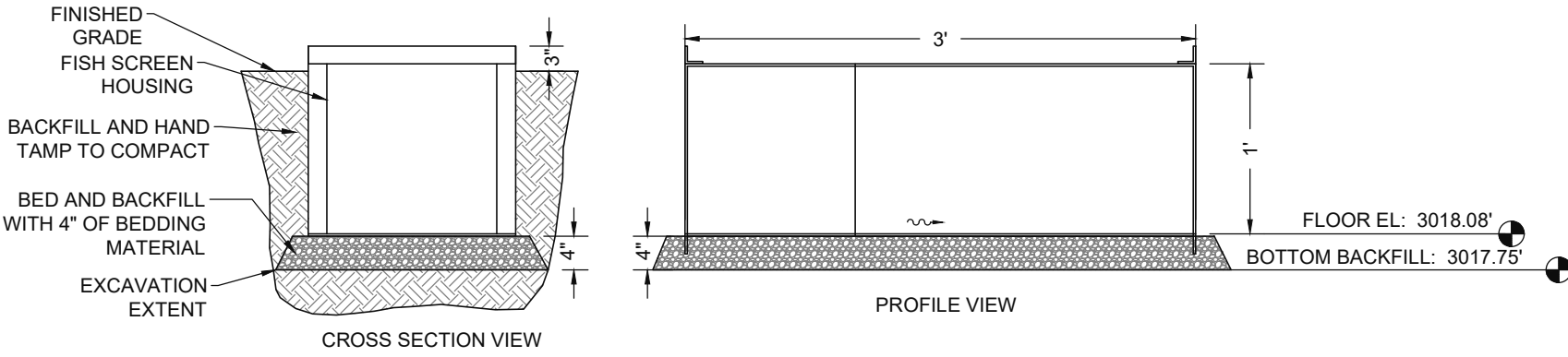


- NOTES:
1. ALL SHEET METAL IS 0.25 " THICK MILD STEEL.
 2. ALL ANGLE IRON IS 0.25" THICK.
 3. FISH SCREEN HOUSING SHALL BE FABRICATED WITH CONTINUOUS WELDS AT ALL CORNERS/JOINTS. NO SHEET METAL BENDING IS ALLOWED.

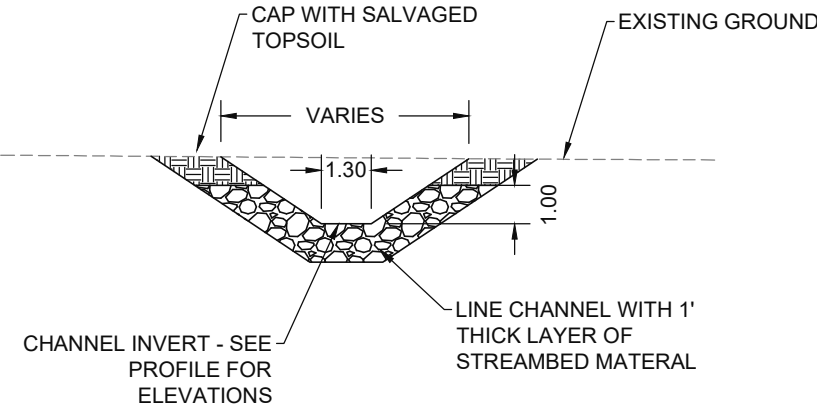
FISH SCREEN HOUSING
AND FRAME DETAILS



1
23 PIPE BEDDING DETAIL
NTS

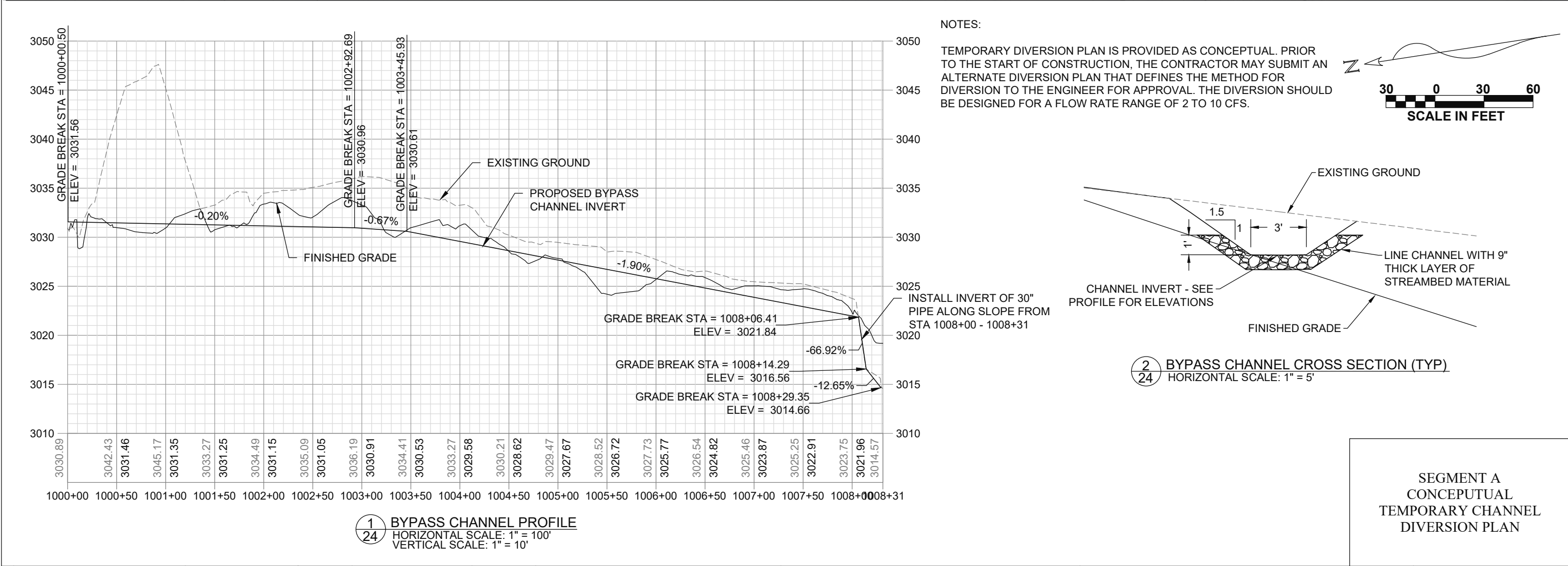
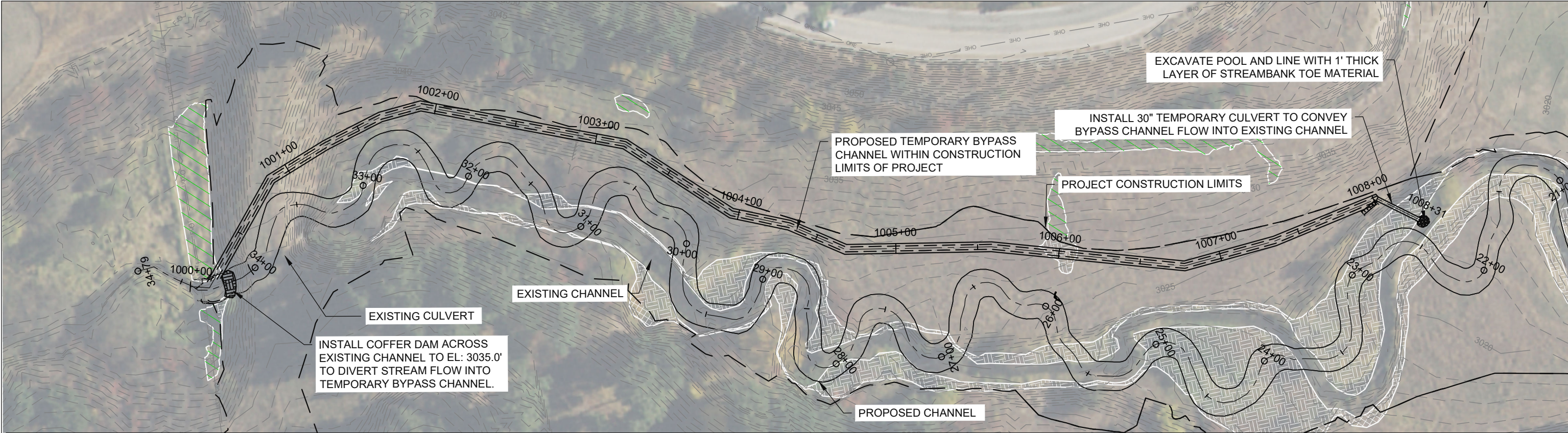


2
23 FLUME DETAIL
NTS



3
23 DIVERSION OUTFALL CHANNEL DETAIL
NTS

WETLAND DIVERSION
DETAILS



REVEGETATION LEGEND

- WETLAND REVEGETATION ZONE
- UPLAND REVEGETATION ZONE
- TEMPORARY EXCLOSURE FENCE
- TEMPORARY EXCLOSURE GATE

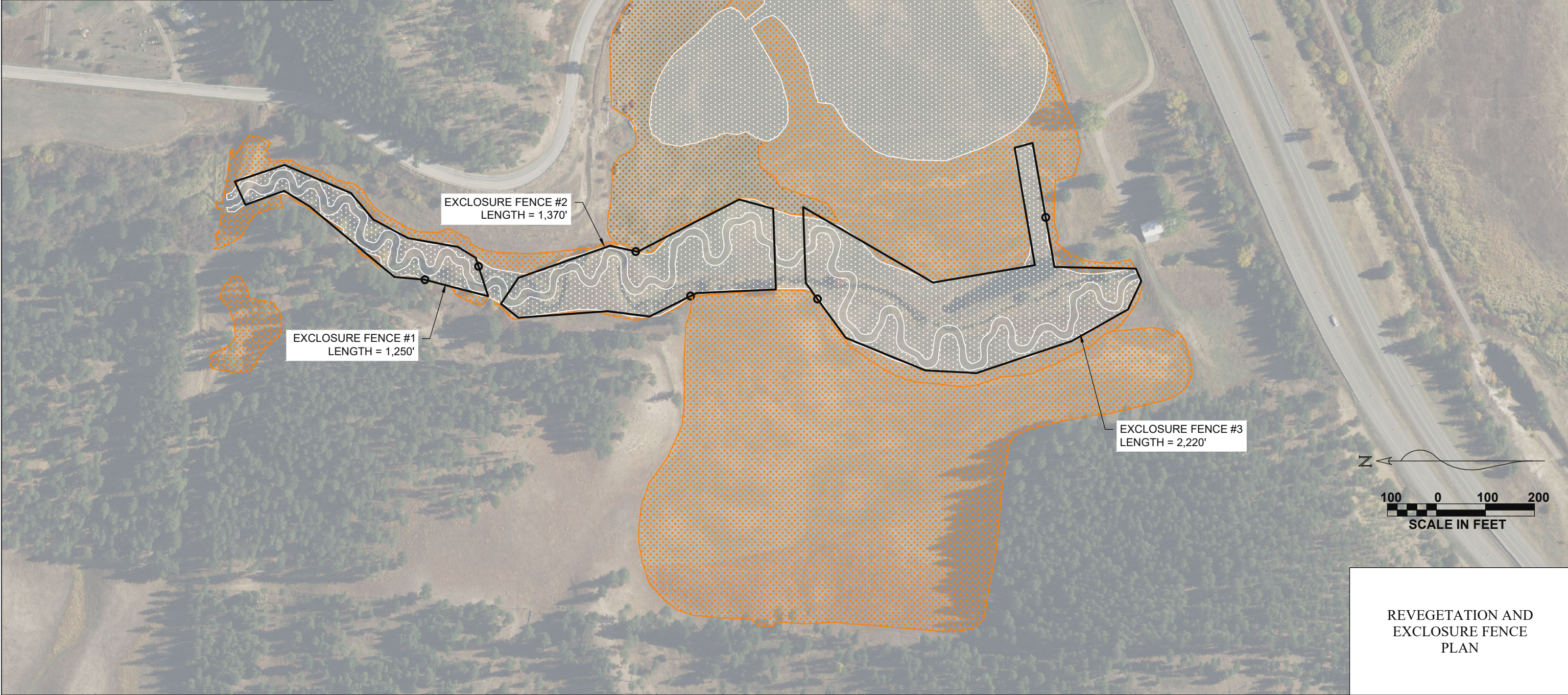
- NOTES:
1.

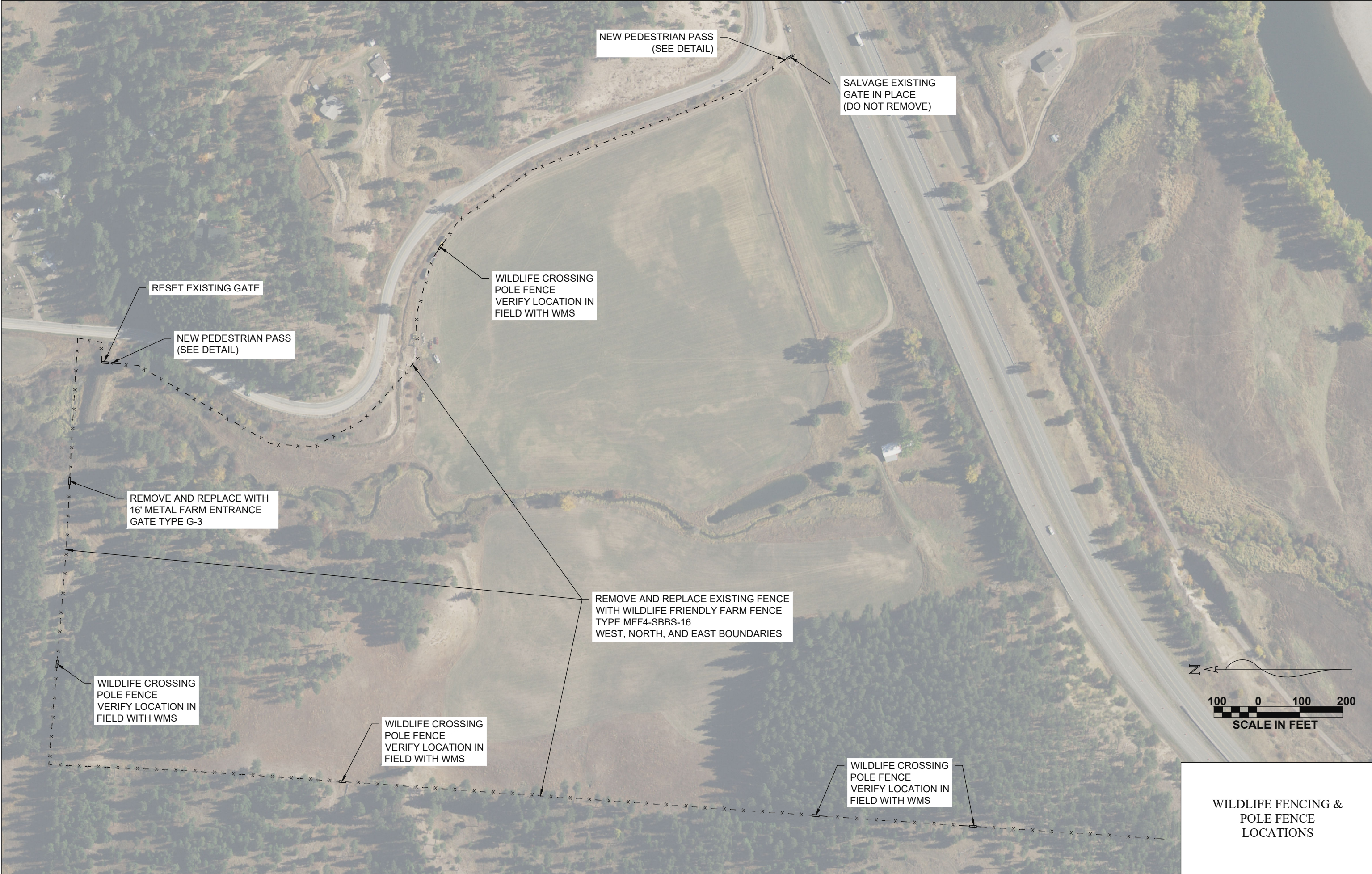
LOCATION OF EXCLOSURE FENCE WILL BE DIRECTED BY SRS.
2.

6 EXCLOSURE GATES WILL BE INSTALLED AT THE DIRECTION OF THE SRS. SEE DETAIL ON SHEET 27.
3.

SHRUB PLANTINGS ARE TO BE INSTALLED AT LOCATIONS WITHIN EXCLOSURE FENCE #1 AT THE DIRECTION OF THE SRS

PLANTING TABLE		
SPECIES	CONTAINER SIZE / MINIMUM HEIGHT	QUANTITY
Shrubs:		
Thinleaf alder (<i>Alnus tenuifolia</i>)	1 gal / 2ft	20
Thinleaf alder (<i>Alnus tenuifolia</i>)	5 gal / 5ft	20





NEW PEDESTRIAN PASS
(SEE DETAIL)

SALVAGE EXISTING
GATE IN PLACE
(DO NOT REMOVE)

RESET EXISTING GATE

NEW PEDESTRIAN PASS
(SEE DETAIL)

WILDLIFE CROSSING
POLE FENCE
VERIFY LOCATION IN
FIELD WITH WMS

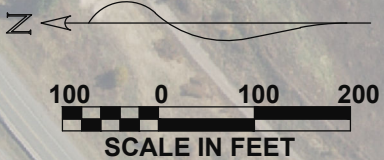
REMOVE AND REPLACE WITH
16' METAL FARM ENTRANCE
GATE TYPE G-3

REMOVE AND REPLACE EXISTING FENCE
WITH WILDLIFE FRIENDLY FARM FENCE
TYPE MFF4-SBBS-16
WEST, NORTH, AND EAST BOUNDARIES

WILDLIFE CROSSING
POLE FENCE
VERIFY LOCATION IN
FIELD WITH WMS

WILDLIFE CROSSING
POLE FENCE
VERIFY LOCATION IN
FIELD WITH WMS

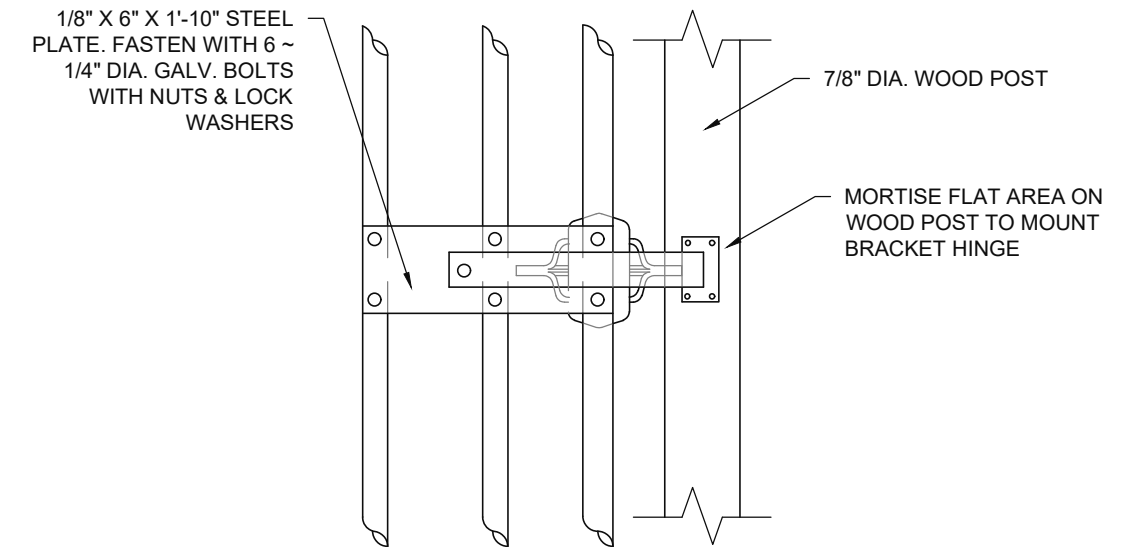
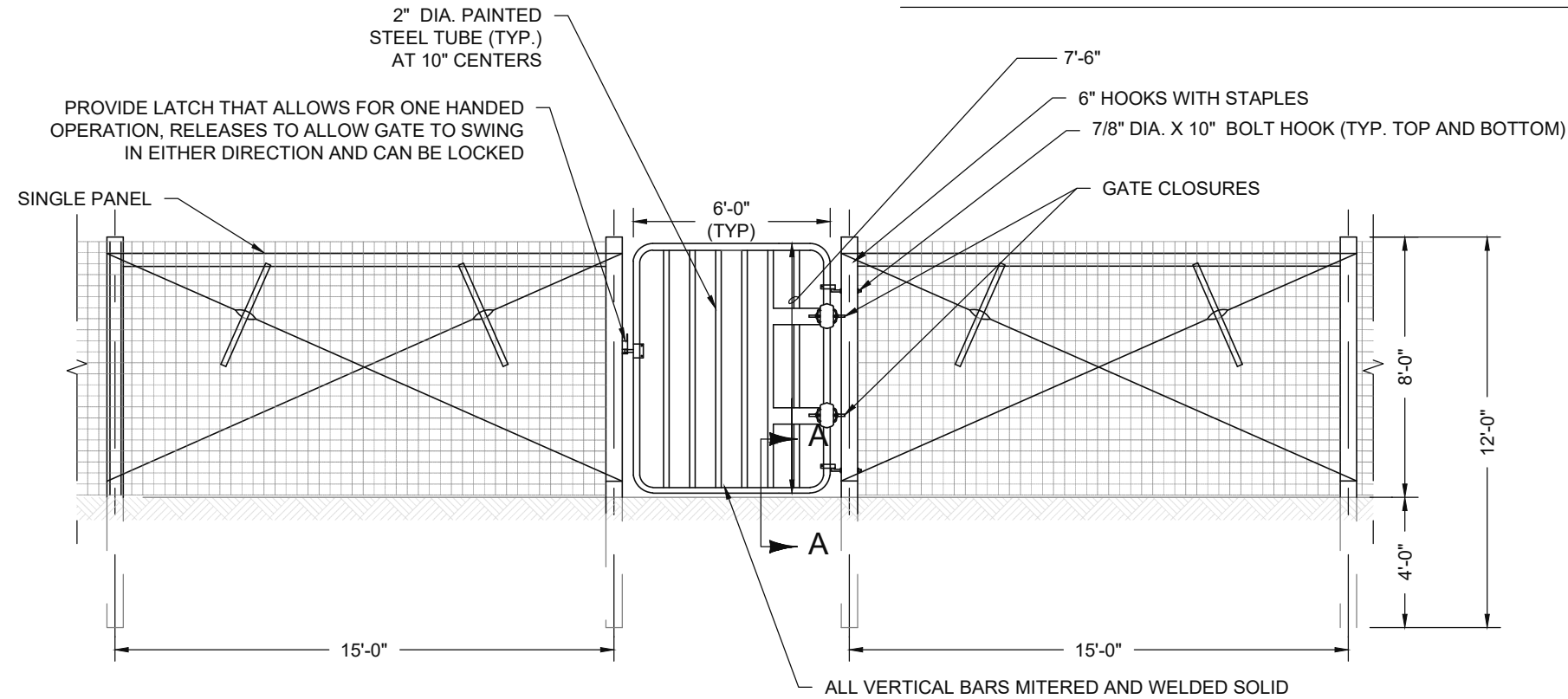
WILDLIFE CROSSING
POLE FENCE
VERIFY LOCATION IN
FIELD WITH WMS



WILDLIFE FENCING &
POLE FENCE
LOCATIONS

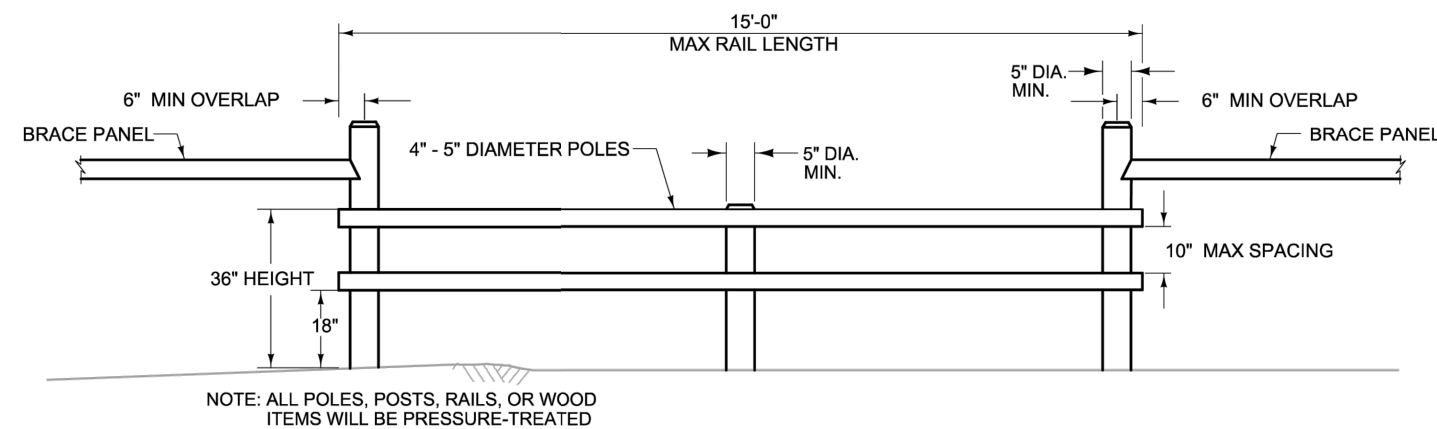
3	 MONTANA DEPARTMENT OF TRANSPORTATION	MDT-RICHARDSON-LAYOUT-EXCLOSURE FENCE	DESIGNED BY TT	SITE PLANS		RICHARDSON FAMILY MITIGATION		STPX 32 (85)
2		6/29/2026	REVIEWED BY JL			CSF = 0.99925051		UPN 7997001
1		12:01:43 PM	CHECKED BY	MISSOULA COUNTY				SHEET 26

EXCLOSURE FENCE GATE DETAIL

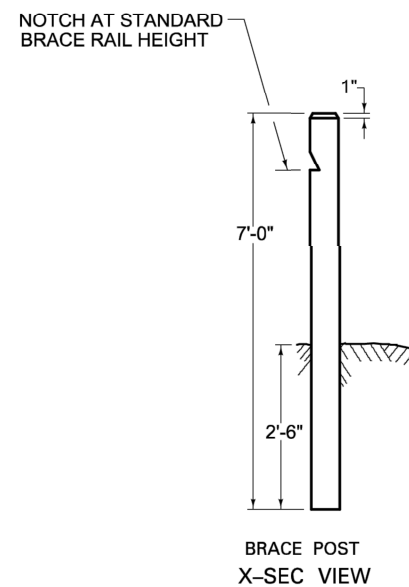


TIE BAR MOUNTING DETAIL
FOR GATE CLOSERS

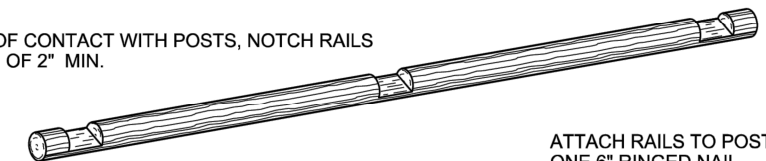
WILDLIFE CROSSING POLE FENCE



DETAIL
POLE FENCE
(NO SCALE)



AT POINTS OF CONTACT WITH POSTS, NOTCH RAILS
TO A DEPTH OF 2" MIN.



ATTACH RAILS TO POSTS USING
ONE 6" RINGED NAIL

RAIL NOTCHING

ALL DIMENSIONS IN FEET AND INCHES
UNLESS OTHERWISE SPECIFIED

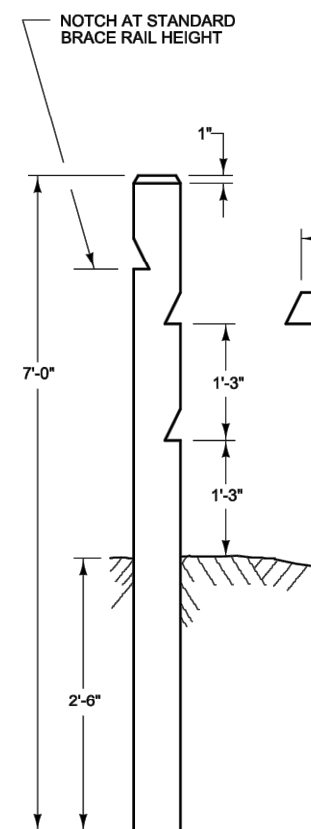
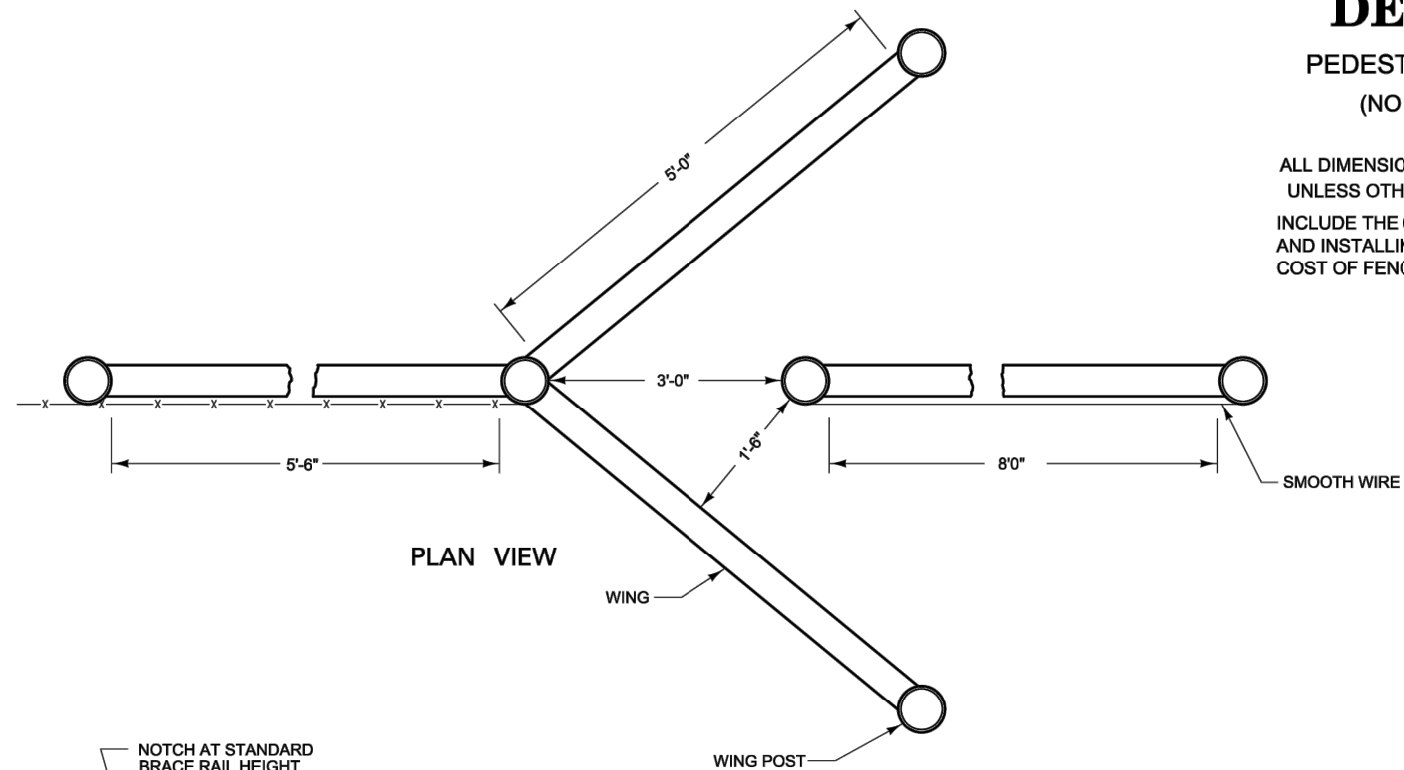
FENCE DETAILS

DETAIL

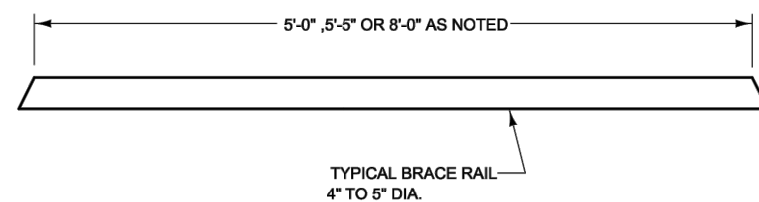
PEDESTRIAN PASS
(NO SCALE)

ALL DIMENSIONS IN FEET AND INCHES
UNLESS OTHERWISE SPECIFIED

INCLUDE THE COST OF FURNISHING MATERIALS
AND INSTALLING PEDESTRIAN PASSES IN THE
COST OF FENCING

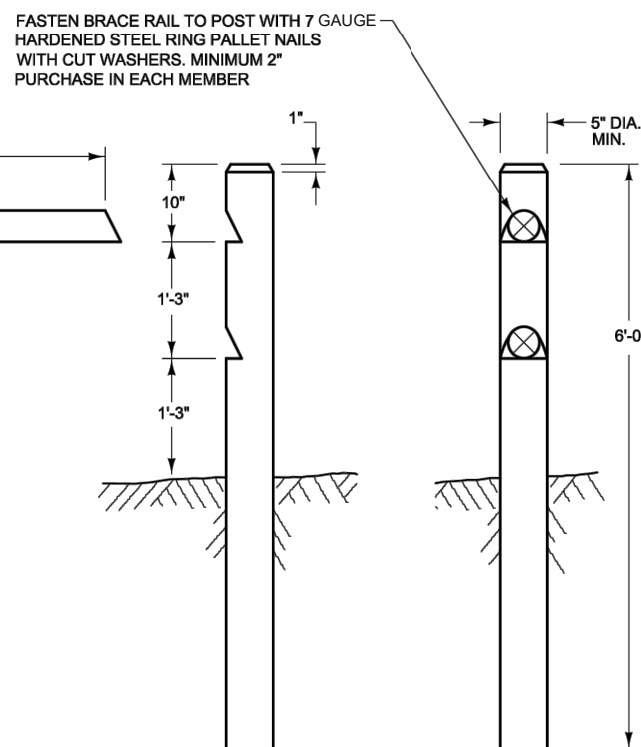


BRACE POST



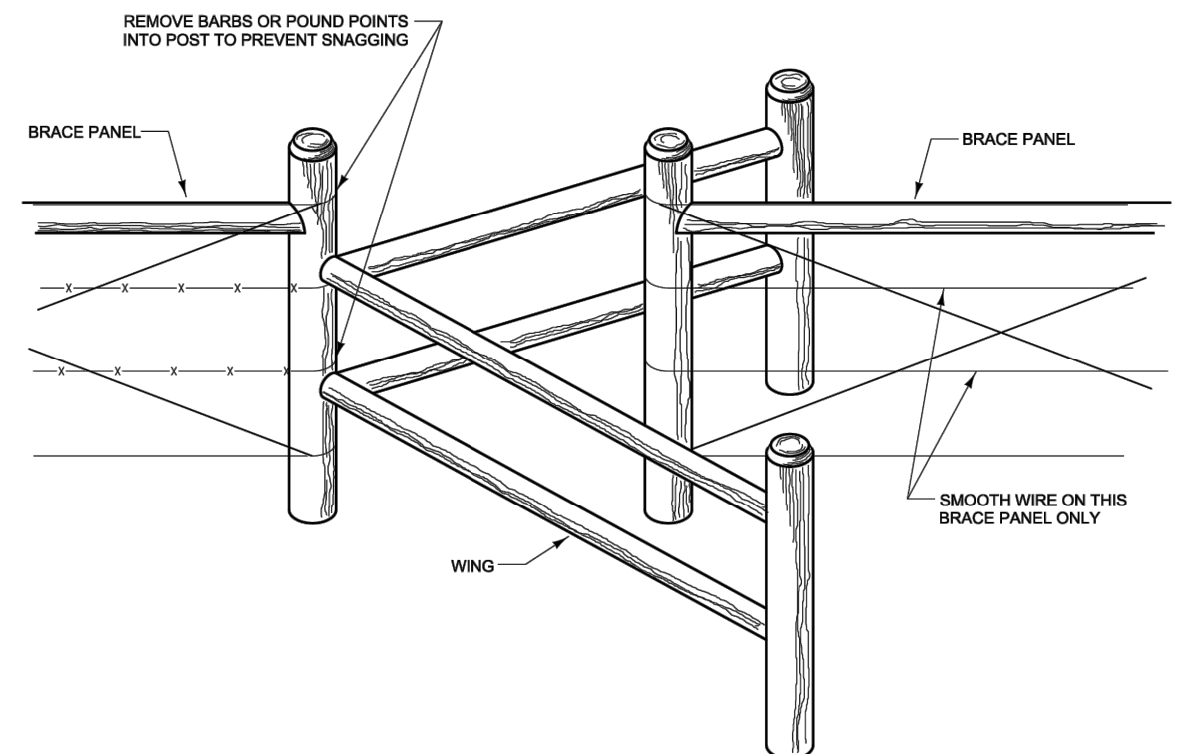
NOTE:

FIT BRACE AND POST TOGETHER SNUGLY. BEAR A MINIMUM 60% OF THE POLE END AREA ON THE POST NOTCH. DO NOT ALLOW GAPS GREATER THAN 0.25". USE FULL LENGTH PRESSURE TREATED POSTS AND BRACES.



WING POST

WING POST



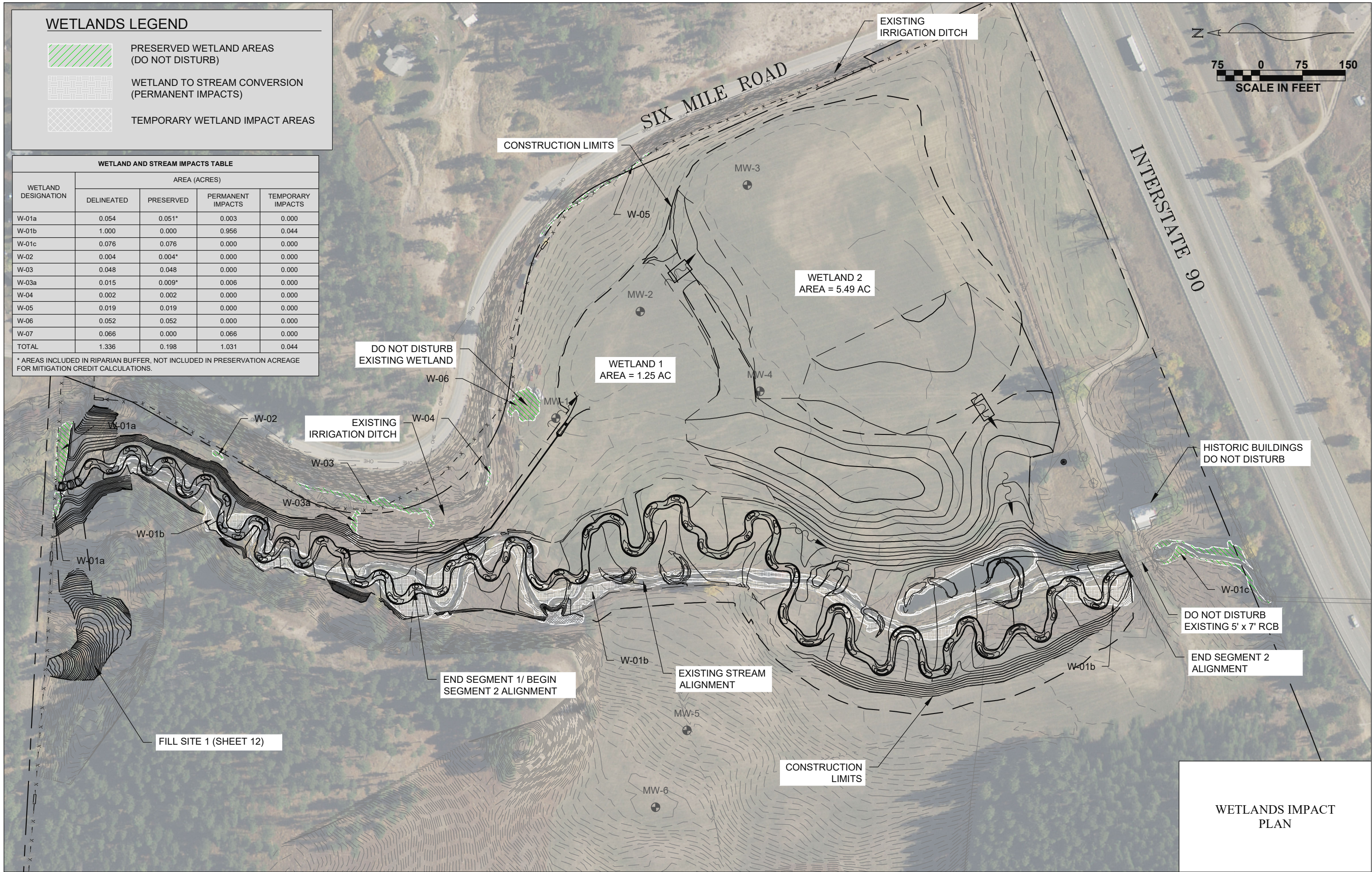
PERSPECTIVE

PEDESTRIAN PASS DETAIL

WETLANDS LEGEND

-  PRESERVED WETLAND AREAS
(DO NOT DISTURB)
-  WETLAND TO STREAM CONVERSION
(PERMANENT IMPACTS)
-  TEMPORARY WETLAND IMPACT AREAS

WETLAND AND STREAM IMPACTS TABLE				
WETLAND DESIGNATION	AREA (ACRES)			
	DELINEATED	PRESERVED	PERMANENT IMPACTS	TEMPORARY IMPACTS
W-01a	0.054	0.051*	0.003	0.000
W-01b	1.000	0.000	0.956	0.044
W-01c	0.076	0.076	0.000	0.000
W-02	0.004	0.004*	0.000	0.000
W-03	0.048	0.048	0.000	0.000
W-03a	0.015	0.009*	0.006	0.000
W-04	0.002	0.002	0.000	0.000
W-05	0.019	0.019	0.000	0.000
W-06	0.052	0.052	0.000	0.000
W-07	0.066	0.000	0.066	0.000
TOTAL	1.336	0.198	1.031	0.044
* AREAS INCLUDED IN RIPARIAN BUFFER, NOT INCLUDED IN PRESERVATION ACREAGE FOR MITIGATION CREDIT CALCULATIONS.				



RIGHT BANK TREATMENT - LAYOUT TABLE

STATION	BANK TREATMENT	OFFSET (FT)	CHANNEL TOP OF BANK EL.: (FT)	NORTHING (FT)	EASTING (FT)
0+00	BR	-6.5	3,002.44	1,051,840.89	759,701.29
0+15	ER	-6.5	3,002.62	1,051,855.05	759,696.37
0+56	BR	-6.5	3,002.92	1,051,872.94	759,670.60
0+72	ER/BP	-6.5	3,003.04	1,051,874.53	759,653.31
1+09	EP/BR	-7.5	3,003.31	1,051,913.60	759,641.47
1+37	ER	-6.5	3,003.51	1,051,930.12	759,668.82
1+76	BR	-7.8	3,003.80	1,051,947.45	759,674.77
1+86	ER	6.5	3,003.88	1,051,958.64	759,666.88
2+15	BR	-7.0	3,004.09	1,051,969.58	759,651.90
2+29	ER/BP	-6.5	3,004.19	1,051,968.84	759,638.94
2+51	EP/BR	-7.2	3,004.35	1,051,970.27	759,613.84
2+71	ER/BP	-6.6	3,004.50	1,051,975.47	759,596.17
3+01	EP/BR	-7.2	3,004.72	1,052,007.60	759,582.30
3+09	ER	-6.5	3,004.78	1,052,015.42	759,588.70
3+54	BR	-7.9	3,005.10	1,052,041.68	759,586.14
3+87	ER/BP	-6.6	3,005.35	1,052,061.56	759,556.59
4+40	EP/BR	-7.1	3,005.74	1,052,108.23	759,580.94
4+65	ER	-6.5	3,005.92	1,052,111.60	759,601.10
5+06	BR	-7.7	3,006.22	1,052,128.34	759,599.69
5+27	ER	-6.5	3,006.38	1,052,140.74	759,579.52
5+56	BR	-7.1	3,006.59	1,052,151.29	759,558.16
5+75	ER/BP	-6.5	3,006.73	1,052,150.93	759,539.78
5+93	EP/BR	-7.5	3,006.86	1,052,163.45	759,519.21
6+05	ER/BP	-6.5	3,006.96	1,052,177.26	759,515.85
6+46	EP/BR	-7.0	3,007.25	1,052,208.38	759,547.02
6+77	ER	-6.5	3,007.48	1,052,213.49	759,576.34
7+48	BR	-6.7	3,008.00	1,052,246.53	759,572.19
7+74	ER/BP	-6.5	3,008.20	1,052,250.20	759,546.40
8+20	EP/BR	-7.2	3,008.54	1,052,292.91	759,532.49
8+54	ER/BP	-6.5	3,008.78	1,052,315.60	759,549.36
8+94	EP/BR	-7.2	3,009.08	1,052,335.54	759,589.94
9+26	ER	-6.6	3,009.32	1,052,337.28	759,618.12
9+80	BR	-7.2	3,009.70	1,052,358.18	759,618.04
10+10	ER/BP	-6.5	3,009.94	1,052,372.66	759,589.24
10+60	EP/BR	-6.9	3,010.30	1,052,423.49	759,584.68
10+91	ER/BP	-6.5	3,010.52	1,052,442.25	759,604.67
11+30	EP/BR	-7.1	3,010.81	1,052,448.55	759,649.09
11+63	ER	-6.5	3,011.06	1,052,433.23	759,677.69
12+08	BR	-7.4	3,011.37	1,052,441.72	759,702.06
12+19	ER/BP	-6.5	3,011.47	1,052,454.79	759,702.87
12+57	EP/BR	-7.5	3,011.78	1,052,473.76	759,741.58
12+78	ER	-6.5	3,011.94	1,052,466.11	759,759.93
13+25	BR	-6.5	3,012.24	1,052,478.03	759,792.79
13+37	ER	-6.5	3,012.33	1,052,487.87	759,794.60
13+70	BR	-6.7	3,012.57	1,052,500.13	759,782.32
13+76	ER/BP	-6.5	3,012.62	1,052,499.96	759,775.52
13+97	EP/BR	-7.1	3,012.78	1,052,514.97	759,753.43
14+26	ER/BP	-6.5	3,012.98	1,052,533.35	759,738.07

STATION	BANK TREATMENT	OFFSET (FT)	CHANNEL TOP OF BANK EL.: (FT)	NORTHING (FT)	EASTING (FT)
14+52	EP/BR	-7.1	3,013.18	1,052,561.82	759,723.99
14+69	ER/BP	-6.5	3,013.30	1,052,580.00	759,729.96
14+96	EP/BR	-7.1	3,013.50	1,052,595.01	759,759.11
15+21	ER/BP	-6.5	3,013.68	1,052,604.51	759,769.95
15+46	EP/BR	-6.7	3,013.87	1,052,624.44	759,793.29
15+66	ER	-6.5	3,014.01	1,052,625.51	759,812.64
16+02	BR	-7.8	3,014.27	1,052,640.41	759,817.05
16+20	ER	-6.5	3,014.42	1,052,662.79	759,811.58
16+62	BR	-7.2	3,014.71	1,052,676.77	759,788.94
16+77	ER/BP	-6.6	3,014.83	1,052,674.85	759,774.48
16+99	EP/BR	-7.3	3,014.99	1,052,679.01	759,748.02
17+14	ER/BP	-6.6	3,015.10	1,052,690.01	759,735.17
17+50	EP/BR	-6.9	3,015.37	1,052,729.95	759,747.25
17+77	ER	-6.5	3,015.56	1,052,732.48	759,774.28
18+18	BR	-7.8	3,015.85	1,052,754.62	759,787.95
18+45	ER	-8.1	3,016.06	1,052,774.55	759,772.18
18+73	BR	-7.4	3,016.27	1,052,784.12	759,756.87
19+24	ER/BP	-6.5	3,016.64	1,052,786.34	759,707.54
19+58	EP/BR	-6.6	3,016.89	1,052,816.29	759,681.56
19+69	ER	-6.5	3,016.98	1,052,827.55	759,688.87
20+00	BR	-6.9	3,017.19	1,052,844.17	759,686.00
20+12	ER/BP	-6.5	3,017.29	1,052,852.68	759,675.18
20+56	EP/BR	-7.2	3,017.61	1,052,896.07	759,694.98
20+86	ER	-6.5	3,017.83	1,052,898.15	759,727.90
21+49	BR	-7.0	3,018.29	1,052,924.42	759,741.46
21+56	ER/BP	-6.6	3,018.35	1,052,926.08	759,735.77
21+77	EP/BR	-7.1	3,018.50	1,052,935.25	759,712.85
21+99	ER/BP	-6.5	3,018.66	1,052,944.21	759,695.44
22+25	EP/BR	-7.3	3,018.86	1,052,976.83	759,693.07
22+45	ER	-6.5	3,019.01	1,052,988.15	759,712.73
22+77	BR	-7.7	3,019.24	1,053,004.24	759,714.51
22+88	ER	-6.6	3,019.32	1,053,017.22	759,709.71
23+16	BR	-6.9	3,019.51	1,053,029.00	759,696.87
23+36	ER/BP	-6.5	3,019.67	1,053,031.61	759,675.94
23+60	EP/BR	-7.7	3,019.85	1,053,057.18	759,657.41
23+78	ER	-6.5	3,019.98	1,053,074.56	759,662.14
24+10	BR	-9.3	3,020.21	1,053,091.50	759,659.17
24+26	ER/BP	-7.0	3,020.36	1,053,108.43	759,647.06
24+58	EP/BR	-8.0	3,020.64	1,053,143.55	759,665.12
24+76	ER	-7.0	3,020.79	1,053,145.53	759,682.60
25+10	BR	-7.0	3,021.11	1,053,161.02	759,685.53
25+20	ER/BP	-7.0	3,021.21	1,053,169.57	759,678.31
25+53	EP/BR	-8.1	3,021.56	1,053,209.38	759,684.96
25+82	ER	-7.0	3,021.88	1,053,220.56	759,716.88
26+14	BR	-7.7	3,022.22	1,053,234.56	759,729.80
26+30	ER	-7.0	3,022.40	1,053,247.42	759,745.25
26+63	BR	-8.4	3,022.73	1,053,258.40	759,739.97
26+84	ER/BP	-7.1	3,022.95	1,053,267.67	759,721.34

STATION	BANK TREATMENT	OFFSET (FT)	CHANNEL TOP OF BANK EL.: (FT)	NORTHING (FT)	EASTING (FT)
27+15	EP/BR	-8.1	3,023.27	1,053,305.33	759,716.32
27+36	ER	-7.0	3,023.50	1,053,311.65	759,739.49
27+72	BR	-8.6	3,023.87	1,053,323.64	759,741.80
27+92	ER/BP	-7.0	3,024.09	1,053,338.77	759,723.65
28+24	EP/BR	-8.3	3,024.43	1,053,374.12	759,737.87
28+52	ER	-7.0	3,024.73	1,053,366.15	759,767.13
29+05	BR	-8.1	3,025.29	1,053,377.96	759,777.79
29+16	ER/BP	-7.0	3,025.41	1,053,386.08	759,767.81
29+38	EP/BR	-8.1	3,025.64	1,053,413.54	759,760.32
29+48	ER/BP	-7.7	3,025.75	1,053,423.63	759,764.89
29+73	EP/BR	-8.4	3,026.02	1,053,439.92	759,792.68
29+97	ER	-7.0	3,026.26	1,053,431.56	759,816.80
30+26	BR	-7.9	3,026.56	1,053,439.48	759,829.58
30+47	ER	-7.2	3,026.78	1,053,452.95	759,851.63
30+82	BR	-8.1	3,027.17	1,053,466.79	759,851.30
30+94	ER/BP	-7.6	3,027.30	1,053,474.45	759,839.96
31+33	EP/BR	-7.6	3,027.81	1,053,512.53	759,856.88
31+60	ER	-7.0	3,028.10	1,053,520.44	759,879.24
31+99	BR	-7.4	3,028.51	1,053,538.96	759,881.99
32+06	ER/BP	-7.0	3,028.59	1,053,544.51	759,876.27
32+32	EP/BR	-7.4	3,028.87	1,053,574.61	759,888.71
32+49	ER	-8.2	3,029.06	1,053,579.29	759,902.51
32+91	BR	-7.0	3,029.51	1,053,599.86	759,898.07
33+04	ER/BP	-7.3	3,029.65	1,053,604.67	759,887.12
33+31	EP/BR	-7.7	3,030.01	1,053,638.99	759,875.89
33+45	ER	-7.0	3,030.17	1,053,649.68	759,883.33
33+77	BR	-7.8	3,030.41	1,053,664.51	759,873.14
33+90	ER	-7.0	3,030.53	1,053,671.58	759,861.47

BANK TREATMENT TABLE KEY

- BR - BEGIN RIFFLE
- ER - END RIFFLE
- BP - BEGIN POOL
- EP - END POOL

NOTE: BEGIN AND END IS BASED ON DOWNSTREAM TO UPSTREAM STATIONING

RIGHT BANK TREATMENT
- LAYOUT TABLE

LEFT BANK TREATMENT - LAYOUT TABLE

STATION	BANK TREATMENT	OFFSET (FT)	CHANNEL TOP OF BANK EL: (FT)	NORTHING (FT)	EASTING (FT)
0+00	BR	6.5	3,002.44	1,051,845.29	759,713.53
0+19	ER/BP	6.5	3,002.65	1,051,864.18	759,706.42
0+48	EP/BR	6.8	3,002.87	1,051,885.44	759,679.79
0+70	ER	6.5	3,003.02	1,051,886.70	759,658.69
1+02	BR	7.9	3,003.24	1,051,898.80	759,652.61
1+40	ER/BP	6.8	3,003.54	1,051,918.72	759,676.60
1+69	EP/BR	7.5	3,003.75	1,051,952.85	759,690.12
1+90	ER/BP	6.5	3,003.91	1,051,967.54	759,677.18
2+11	EP/BR	7.0	3,004.06	1,051,983.62	759,656.71
2+26	ER	6.5	3,004.17	1,051,982.10	759,639.85
2+55	BR	6.7	3,004.36	1,051,984.82	759,615.56
2+69	ER	6.5	3,004.49	1,051,988.17	759,600.17
3+05	BR	6.5	3,004.76	1,052,004.67	759,596.48
3+15	ER/BP	6.4	3,004.82	1,052,011.80	759,602.88
3+56	EP/BR	6.9	3,005.12	1,052,055.96	759,590.72
3+83	ER	6.5	3,005.33	1,052,067.92	759,568.31
4+38	BR	7.2	3,005.73	1,052,094.15	759,577.89
4+69	ER/BP	6.5	3,005.96	1,052,102.60	759,611.48
5+03	EP/BR	7.5	3,006.20	1,052,141.59	759,608.56
5+29	ER/BP	6.5	3,006.39	1,052,151.28	759,587.37
5+53	EP/BR	7.4	3,006.57	1,052,165.45	759,562.21
5+68	ER	6.5	3,006.91	1,052,164.19	759,546.98
5+97	BR	6.8	3,006.89	1,052,172.65	759,531.09
6+04	ER	6.5	3,006.95	1,052,179.26	759,528.76
6+45	BR	6.9	3,007.25	1,052,194.43	759,547.49
6+77	ER/BP	6.5	3,007.49	1,052,201.00	759,579.95
7+42	EP/BR	6.7	3,007.96	1,052,258.84	759,580.62
7+74	ER	6.4	3,008.20	1,052,263.09	759,548.37
8+24	BR	6.9	3,008.56	1,052,282.36	759,542.27
8+54	ER	6.6	3,008.79	1,052,309.76	759,561.10
8+91	BR	7.4	3,009.06	1,052,321.33	759,585.28
9+25	ER/BP	6.5	3,009.30	1,052,324.24	759,620.78
9+74	EP/BR	6.9	3,009.67	1,052,370.68	759,626.60
10+10	ER	6.5	3,009.93	1,052,383.87	759,595.83
10+65	BR	6.7	3,010.33	1,052,413.61	759,595.34
10+91	ER	6.5	3,010.52	1,052,433.94	759,614.68
11+35	BR	7.4	3,010.84	1,052,433.79	759,646.47
11+63	ER/BP	6.7	3,011.06	1,052,420.64	759,673.71
11+98	EP/BR	7.6	3,011.31	1,052,428.98	759,714.11
12+20	ER	6.5	3,011.47	1,052,452.75	759,715.75
12+58	BR	7.4	3,011.74	1,052,459.55	759,737.12
12+79	ER/BP	6.5	3,011.87	1,052,453.16	759,758.30
13+15	EP/BR	8.0	3,012.15	1,052,461.13	759,797.53
13+37	ER/BP	6.5	3,012.33	1,052,486.78	759,807.55
13+62	EP/BR	7.1	3,012.52	1,052,513.56	759,791.54
13+74	ER	6.5	3,012.78	1,052,513.06	759,778.10
13+98	BR	6.8	3,012.78	1,052,521.21	759,765.87
14+21	ER	6.5	3,012.96	1,052,541.75	759,749.04

STATION	BANK TREATMENT	OFFSET (FT)	CHANNEL TOP OF BANK EL: (FT)	NORTHING (FT)	EASTING (FT)
14+58	BR	6.9	3,013.21	1,052,564.59	759,738.89
14+69	ER	6.5	3,013.30	1,052,574.78	759,741.91
14+92	BR	8.2	3,013.47	1,052,580.35	759,753.22
15+19	ER	6.5	3,013.67	1,052,597.88	759,781.36
15+52	BR	7.5	3,013.67	1,052,610.40	759,799.79
15+67	ER/BP	6.5	3,014.02	1,052,612.76	759,815.51
16+01	EP/BR	7.3	3,014.27	1,052,649.58	759,829.04
16+24	ER/BP	6.5	3,014.44	1,052,666.94	759,824.34
16+56	EP/BR	7.1	3,014.67	1,052,691.10	759,794.82
16+72	ER	6.5	3,014.79	1,052,688.76	759,777.26
17+04	BR	6.5	3,015.02	1,052,692.83	759,752.24
17+10	ER	6.5	3,015.07	1,052,696.23	759,747.32
17+59	BR	7.0	3,015.43	1,052,717.72	759,758.22
17+82	ER/BP	6.5	3,015.60	1,052,721.39	759,782.66
18+13	EP/BR	7.7	3,015.83	1,052,753.29	759,803.89
18+37	ER/BP	6.8	3,016.01	1,052,777.80	759,788.21
18+74	EP/BR	7.3	3,016.28	1,052,798.81	759,756.88
19+22	ER	6.5	3,016.96	1,052,799.40	759,709.13
19+67	BR	6.5	3,016.96	1,052,818.07	759,697.92
19+73	R/PB	6.5	3,017.00	1,052,823.64	759,701.87
19+96	EP/BR	7.1	3,017.17	1,052,852.97	759,697.58
20+09	ER	6.5	3,017.26	1,052,859.78	759,686.55
20+40	BR	8.2	3,017.50	1,052,874.59	759,689.48
20+87	ER/BP	6.5	3,017.84	1,052,885.15	759,728.67
21+11	EP/BR	7.7	3,018.01	1,052,894.91	759,755.69
21+23	ER/BP	6.5	3,018.11	1,052,909.40	759,761.28
21+44	EP/BR	7.1	3,018.26	1,052,935.47	759,751.69
21+51	ER	6.4	3,018.31	1,052,938.06	759,742.97
21+80	BR	6.9	3,018.53	1,052,948.11	759,719.15
21+93	ER	6.5	3,018.62	1,052,953.94	759,706.02
22+32	BR	7.2	3,018.91	1,052,970.78	759,707.49
22+45	ER/BP	6.5	3,019.01	1,052,976.86	759,719.43
22+73	EP/BR	7.6	3,019.20	1,053,010.05	759,729.32
22+88	ER/BP	6.5	3,019.32	1,053,020.45	759,722.37
23+12	EP/BR	7.4	3,019.49	1,053,042.52	759,702.72
23+30	ER	6.5	3,019.64	1,053,043.46	759,683.63
23+68	BR	6.5	3,019.91	1,053,062.66	759,673.24
23+80	ER/BP	6.5	3,020.00	1,053,073.89	759,675.31
24+04	EP/BR	8.2	3,020.17	1,053,103.03	759,673.71
24+17	ER	7.5	3,020.29	1,053,108.96	759,663.65
24+60	BR	7.9	3,020.65	1,053,128.14	759,669.59
24+77	ER/BRR	7.0	3,020.96	1,053,132.49	759,687.96
24+91	ERR/BP	8.3	3,021.28	1,053,146.03	759,703.51
25+03	EP/BR	7.9	3,021.24	1,053,162.86	759,702.42
25+19	ER	7.0	3,021.21	1,053,176.44	759,690.51
25+57	EP/BR	7.9	3,021.25	1,053,162.86	759,702.42
25+61	BR	7.8	3,021.65	1,053,198.02	759,699.79
25+84	ER/BP	7.0	3,021.90	1,053,206.51	759,718.27

STATION	BANK TREATMENT	OFFSET (FT)	CHANNEL TOP OF BANK EL: (FT)	NORTHING (FT)	EASTING (FT)
26+09	EP/BR	8.1	3,022.15	1,053,224.70	759,744.13
26+32	ER/BP	7.0	3,022.41	1,053,237.18	759,755.26
26+58	EP/BR	7.7	3,022.67	1,053,270.42	759,752.74
26+84	ER	7.0	3,022.95	1,053,279.55	759,728.90
27+21	BR	8.1	3,023.34	1,053,295.28	759,730.93
27+35	ER/BP	7.3	3,023.49	1,053,297.49	759,741.88
27+68	EP/BR	7.9	3,023.83	1,053,335.89	759,753.85
27+94	ER	7.2	3,024.09	1,053,347.66	759,735.02
28+33	BR	8.3	3,024.53	1,053,355.49	759,743.32
28+55	ER/BP	7.2	3,024.76	1,053,351.86	759,764.00
28+93	EP/BR	8.4	3,025.17	1,053,382.13	759,797.61
29+17	ER	7.0	3,025.42	1,053,396.98	759,776.73
29+40	BR	7.6	3,025.67	1,053,409.89	759,775.92
29+50	ER	7.0	3,025.77	1,053,417.86	759,778.47
29+77	BR	8.6	3,026.04	1,053,422.62	759,793.11
29+98	ER/BP	7.0	3,026.28	1,053,418.01	759,812.97
30+20	EP/BR	7.8	3,026.52	1,053,427.57	759,841.12
30+49	ER/BP	7.0	3,026.81	1,053,440.62	759,858.78
30+79	EP/BR	8.0	3,027.12	1,053,478.02	759,863.90
30+95	ER	7.6	3,027.39	1,053,486.39	759,849.34
31+38	BR	7.7	3,027.86	1,053,497.54	759,862.57
31+62	ER/BP	7.0	3,028.12	1,053,508.28	759,886.39
31+89	EP/BR	7.9	3,028.40	1,053,538.67	759,900.14
32+04	ER	7.1	3,028.57	1,053,553.20	759,887.76
32+37	BR	8.1	3,028.93	1,053,560.35	759,896.65
32+50	ER/BP	7.0	3,029.07	1,053,566.35	759,910.55
32+84	EP/BR	8.2	3,029.43	1,053,607.87	759,913.59
33+03	ER	7.0	3,029.71	1,053,617.15	759,894.17
33+37	BR	7.6	3,029.99	1,053,636.40	759,892.38
33+47	ER/BP	7.0	3,030.10	1,053,647.08	759,897.35
33+72	EP/BR	7.6	3,030.42	1,053,675.52	759,885.33
33+88	ER	7.0	3,030.54	1,053,682.53	759,870.30

BANK TREATMENT TABLE KEY

- BR - BEGIN RIFFLE
- ER - END RIFFLE
- BP - BEGIN POOL
- EP - END POOL

NOTE: BEGIN AND END IS BASED ON DOWNSTREAM TO UPSTRAM STATIONING

LEFT BANK TREATMENT - LAYOUT TABLE

