TIP PROJECT: B-4677

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4677	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

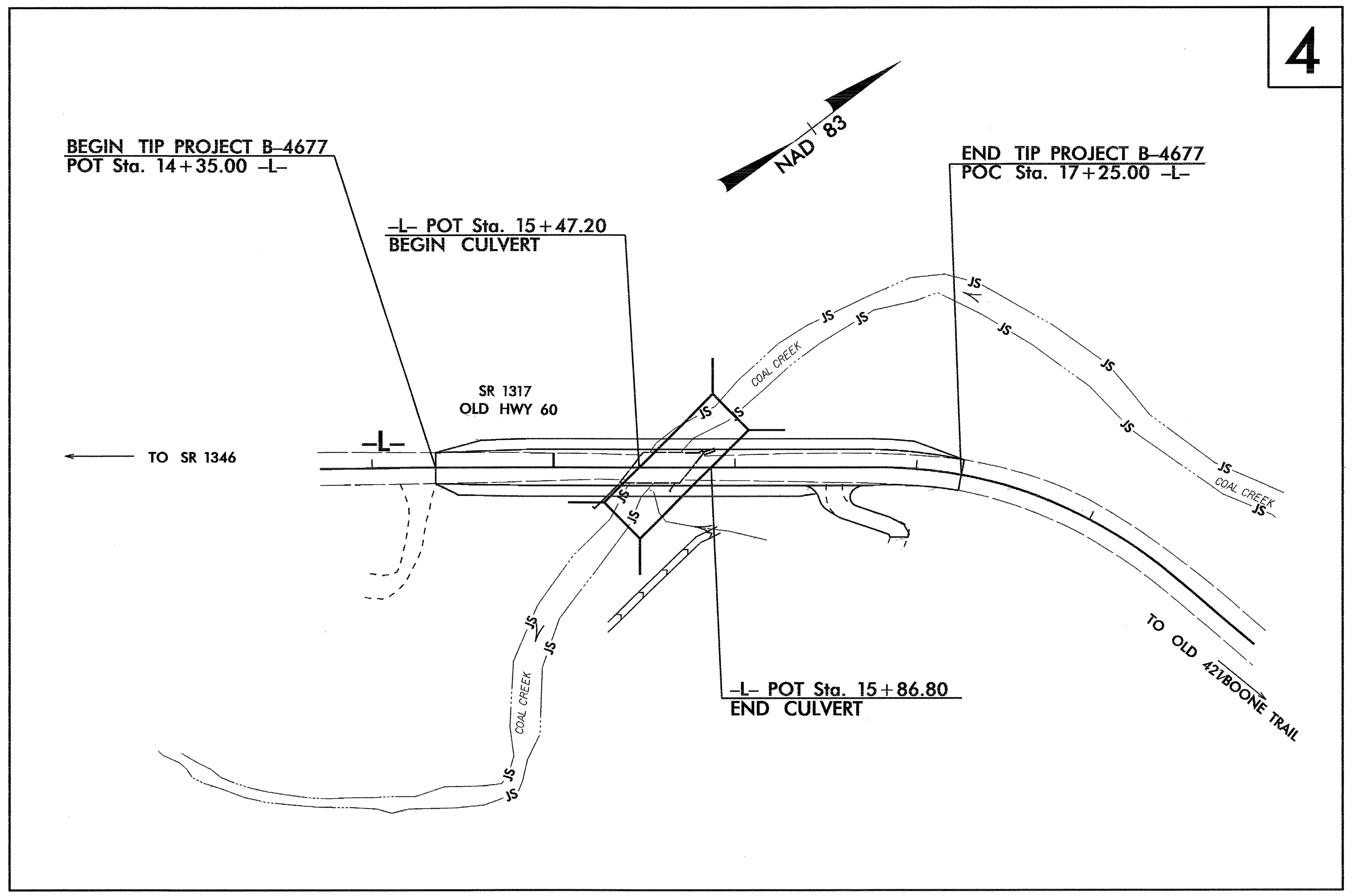
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

WILKES COUNTY

LOCATION: BRIDGE NO. 99 OVER COAL CREEK ON SR 1317 (Old Hwy 60)

TYPE OF WORK: GRADING, DRAINAGE, CULVERT, AND PAVING



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.01	Riser Basin	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
	Wattle	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

0
PLANS

0
PROFILE (HORIZONTAL)

0
PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Prepared In the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2006 STANDARD SPECIFICATIONS

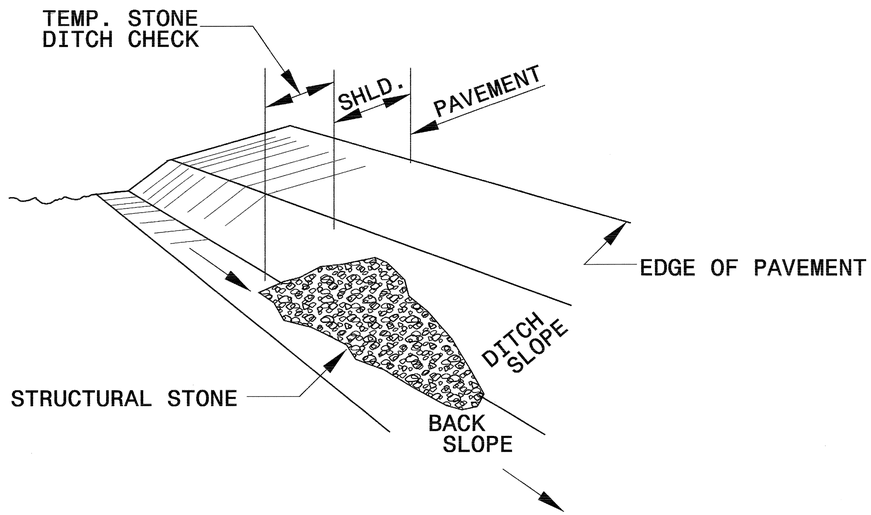
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01	Temporary Silt Fence	1630.05	Temporary Diversion
1606.01	Special Sediment Control Fence	1630.06	Special Stilling Basin
1607.01	Gravel Construction Entrance	1632.03	Rock Inlet Sediment Trap Type C
1622.01	Temporary Berms and Slope Drains	1633.01	Temporary Rock Silt Check Type A

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

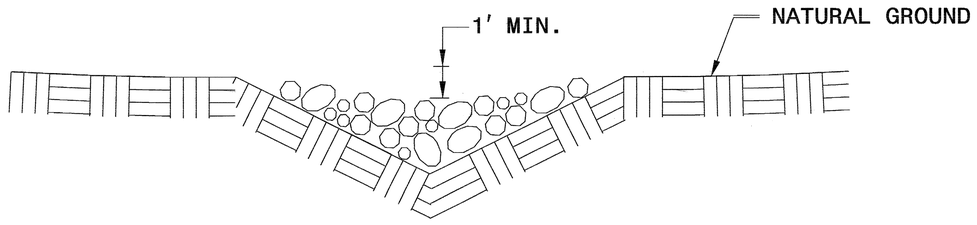


ISOMETRIC VIEW

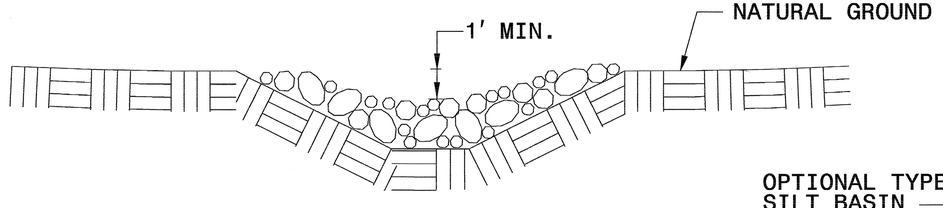
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

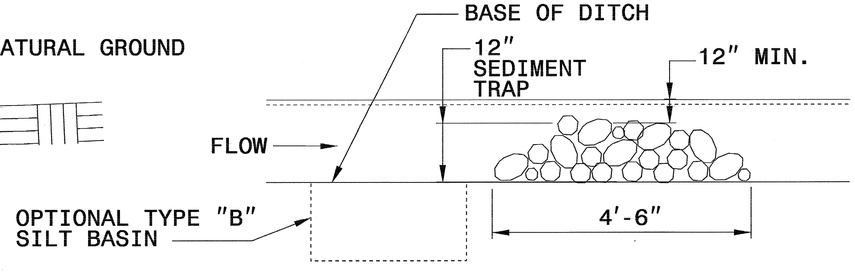
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



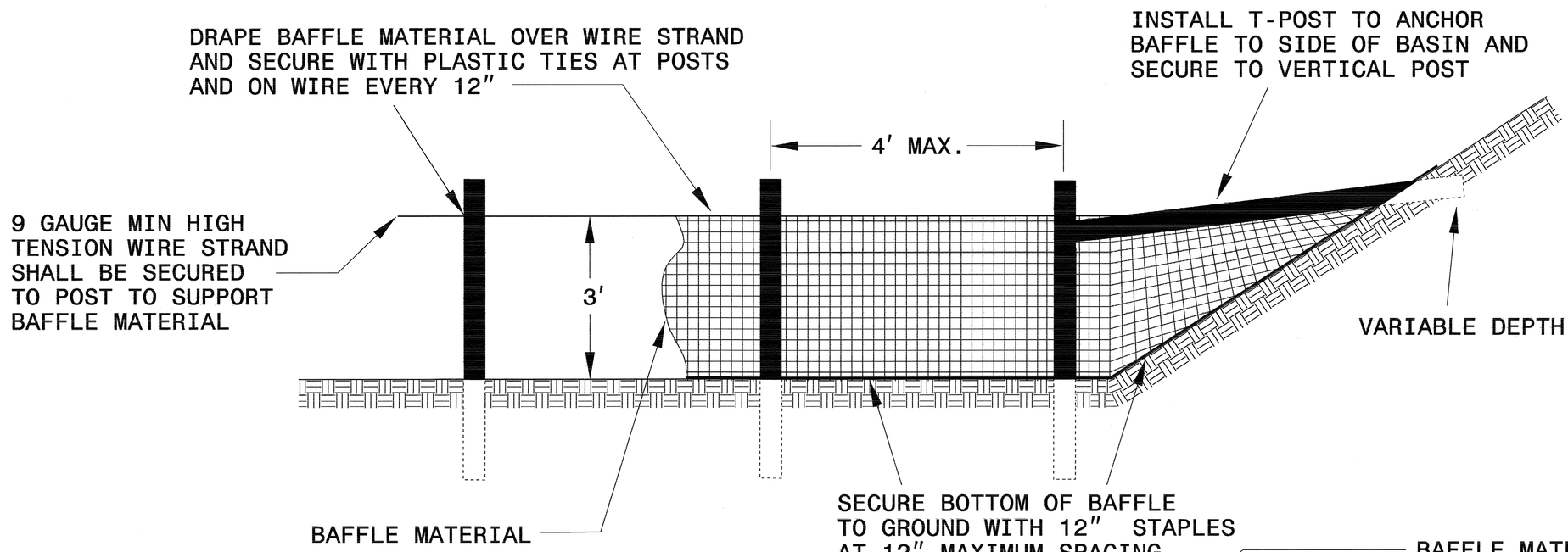
CROSS SECTION TRAPEZOIDAL DITCH

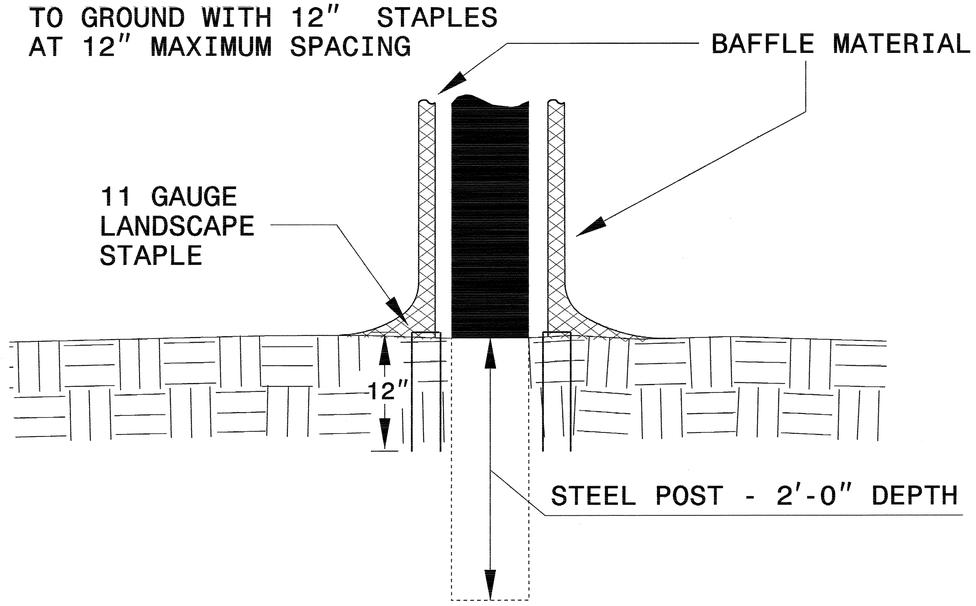


ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL





BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12″ LANDSCAPE STAPLES

NOTES:

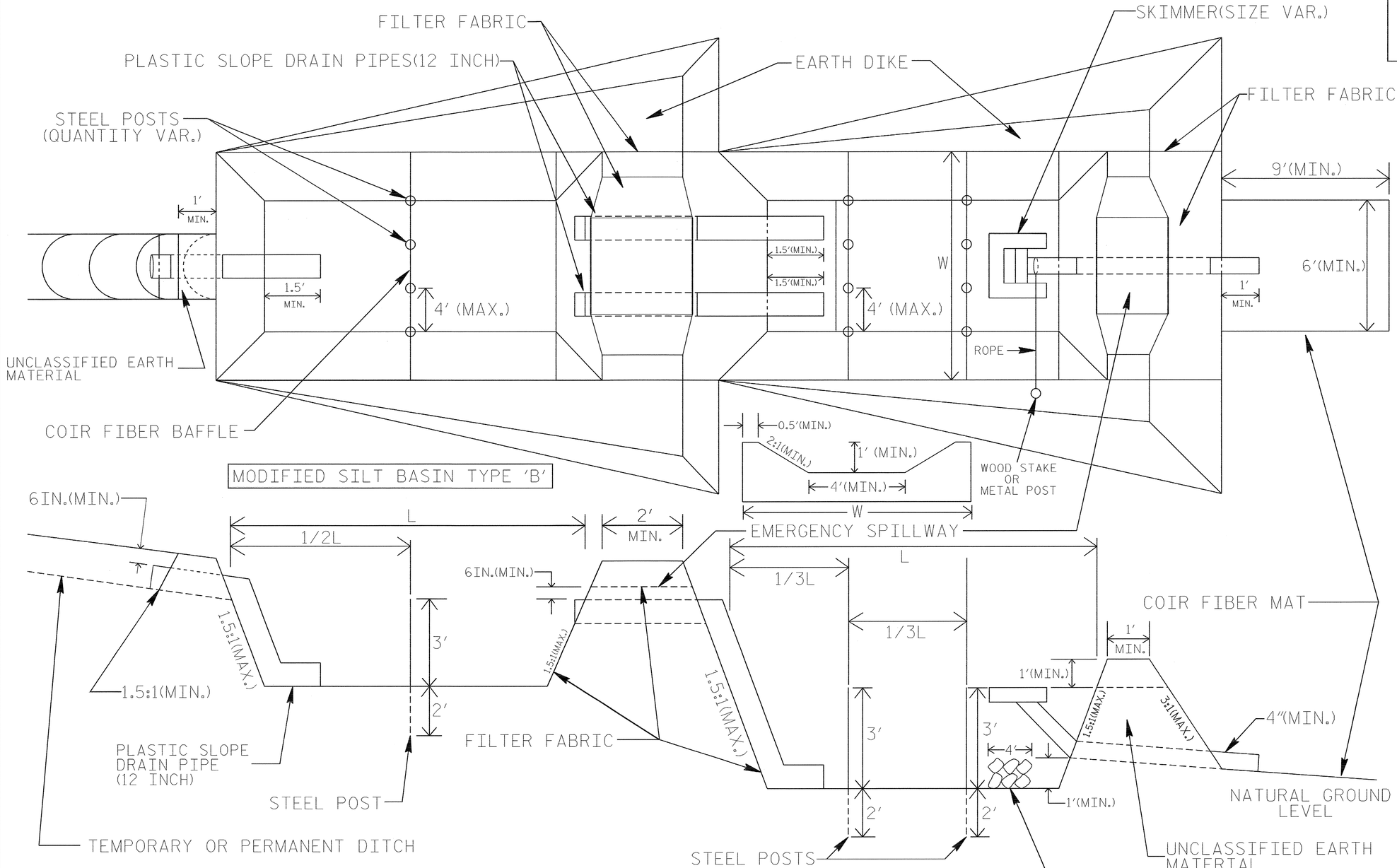
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF ¼ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF 1/3 THE BASIN LENGTH.

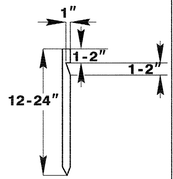
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

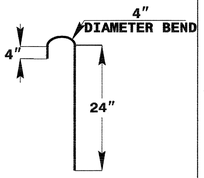
TIERED SKIMMER BASIN DETAIL



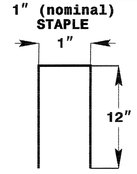
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

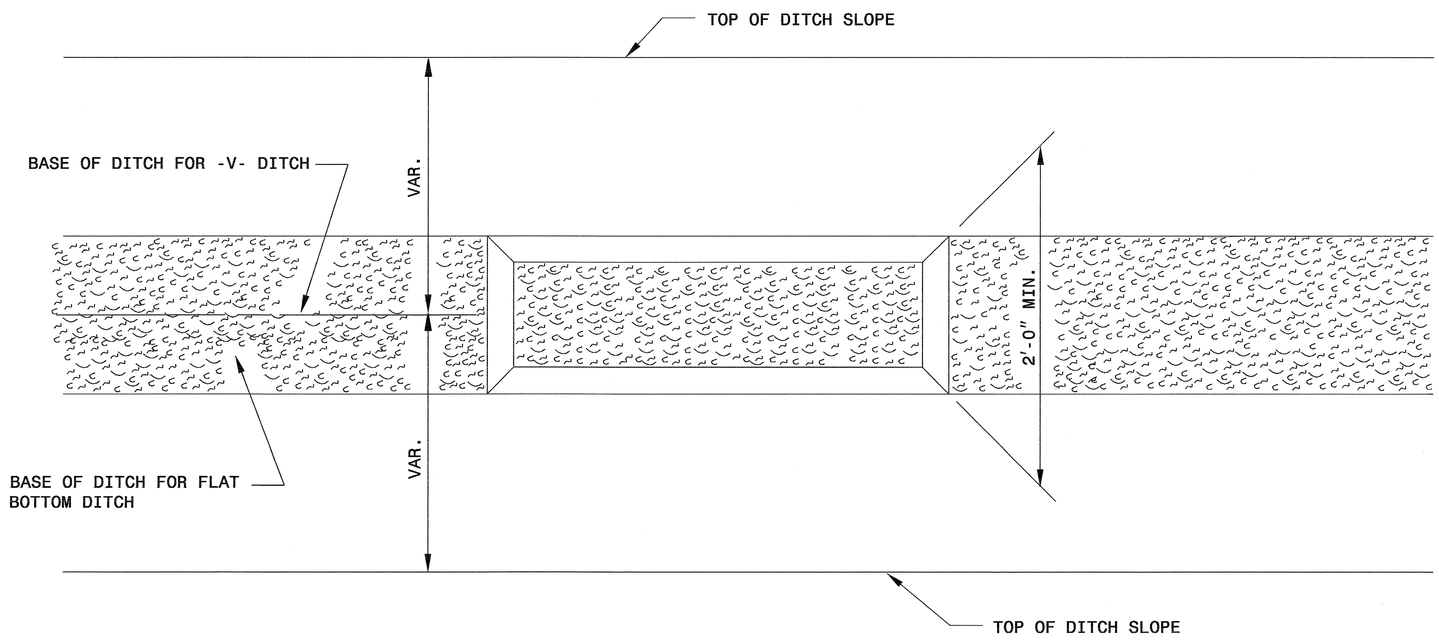
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE EMERGENCY SPILLWAY LENGTHS (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.

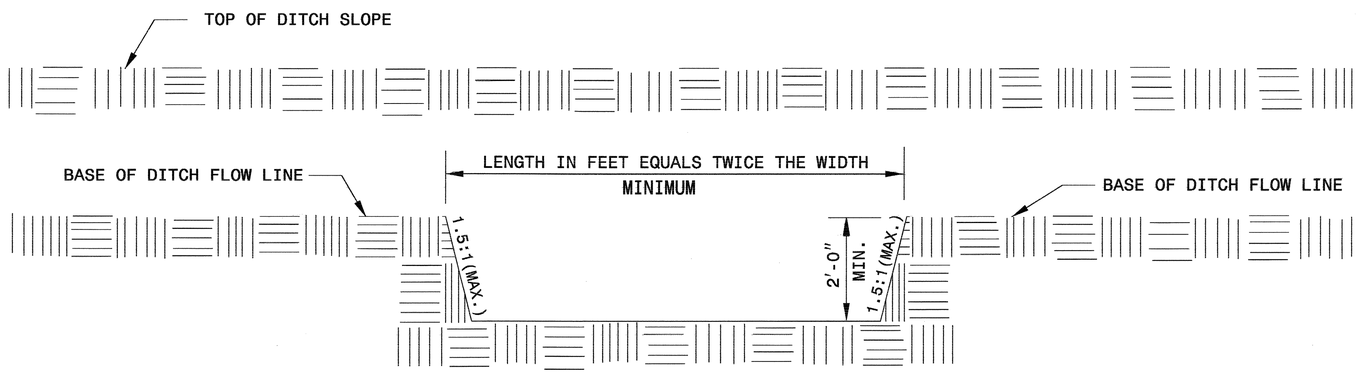
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



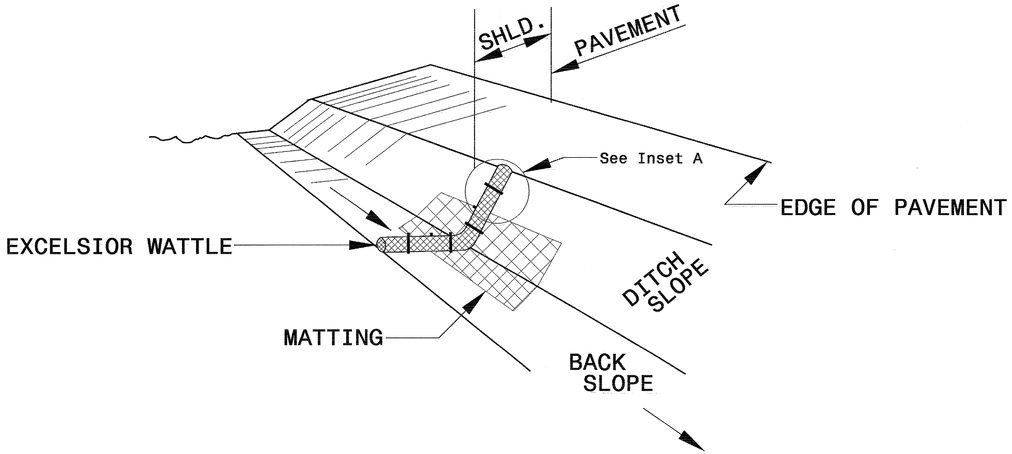
PLAN



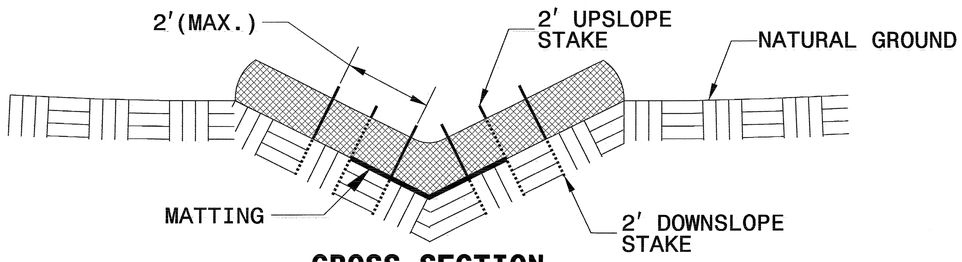
ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

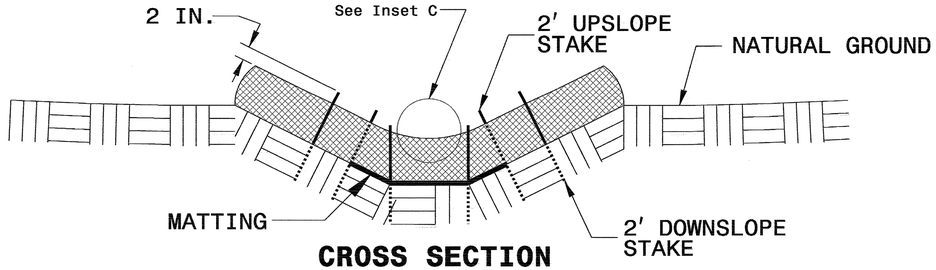
WATTLE WITH POLYACRYLAMIDE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. CROSS SECTION.

ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

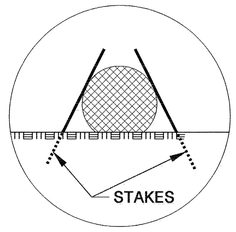
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

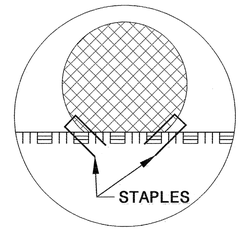
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

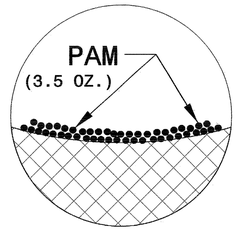
INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



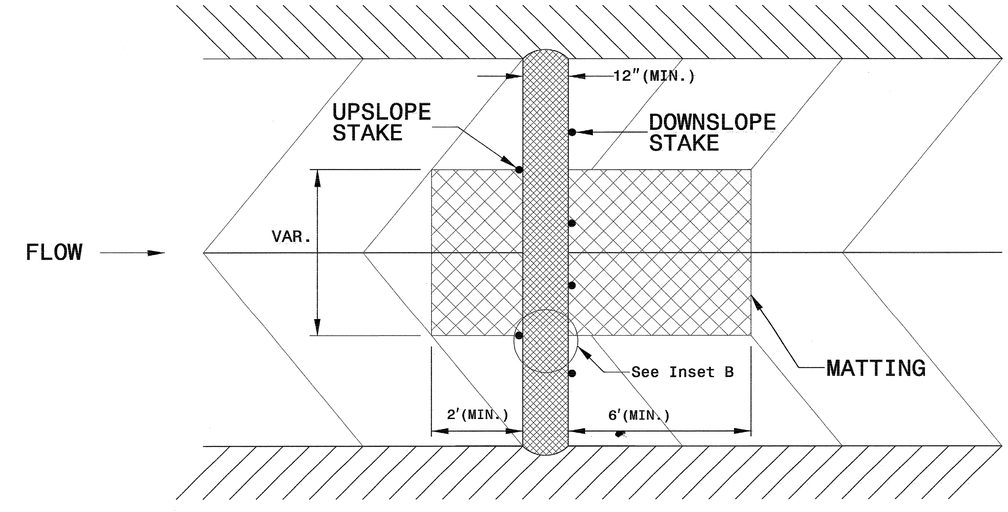
INSET A



INSET B



INSET C



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	16+75	17+00	RT	45
				SUBTOTAL	45
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					6900
				TOTAL	6945
				SAY	7000

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-4/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

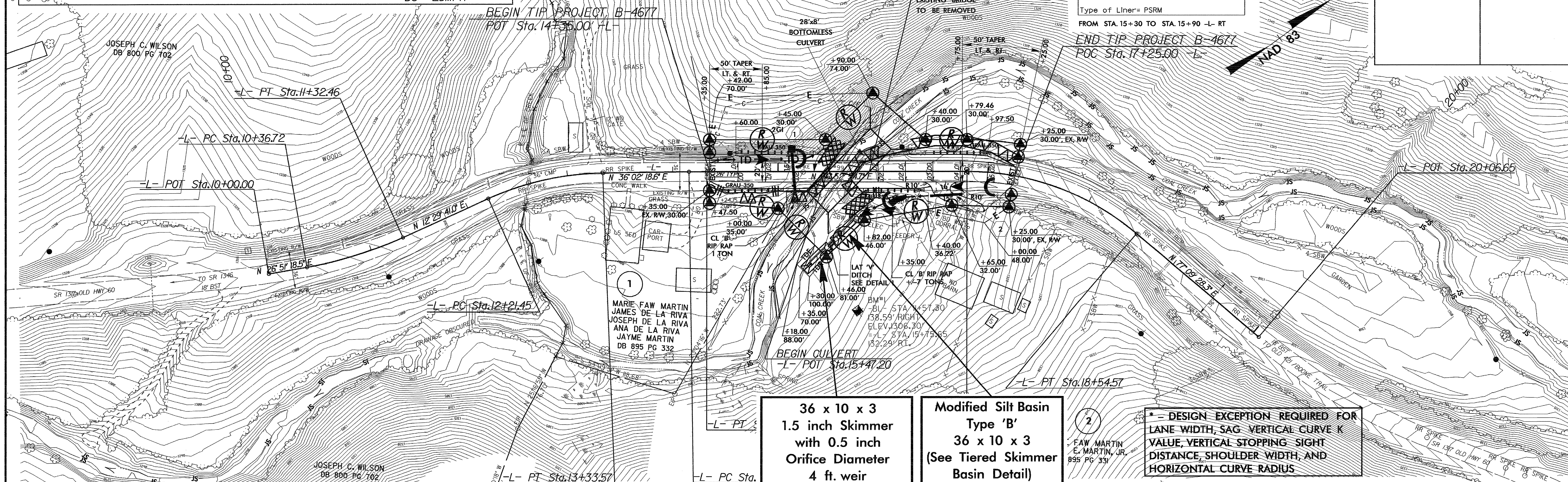
8/17/99

REVISIONS

-L-

PI Sta 10+84.84	PI Sta 12+78.31	PI Sta 14+23.91	PI Sta 17+70.81
Δ = 14° 21' 37.5" (LT)	Δ = 23° 32' 37.6" (RT)	Δ = 0° 50' 36.2" (RT)	Δ = 40° 16' 33.6" (RT)
D = 15° 00' 00.0"	D = 21° 00' 00.0"	D = 5° 00' 00.0"	D = 23° 00' 00.0"
L = 95.74'	L = 112.11'	L = 16.87'	L = 175.11'
T = 48.12'	T = 56.86'	T = 8.43'	T = 91.35'
R = 381.97'	R = 272.84'	R = 1,145.92'	*R = 249.11'
			DS= 25MPH

DETAIL I
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1 Ft.
Max. d= 1 Ft.
b= 3 Ft.
Type of Liner= PSRM
FROM STA. 15+30 TO STA. 15+90 -L- RT



36 x 10 x 3
1.5 inch Skimmer
with 0.5 inch
Orifice Diameter
4 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.2

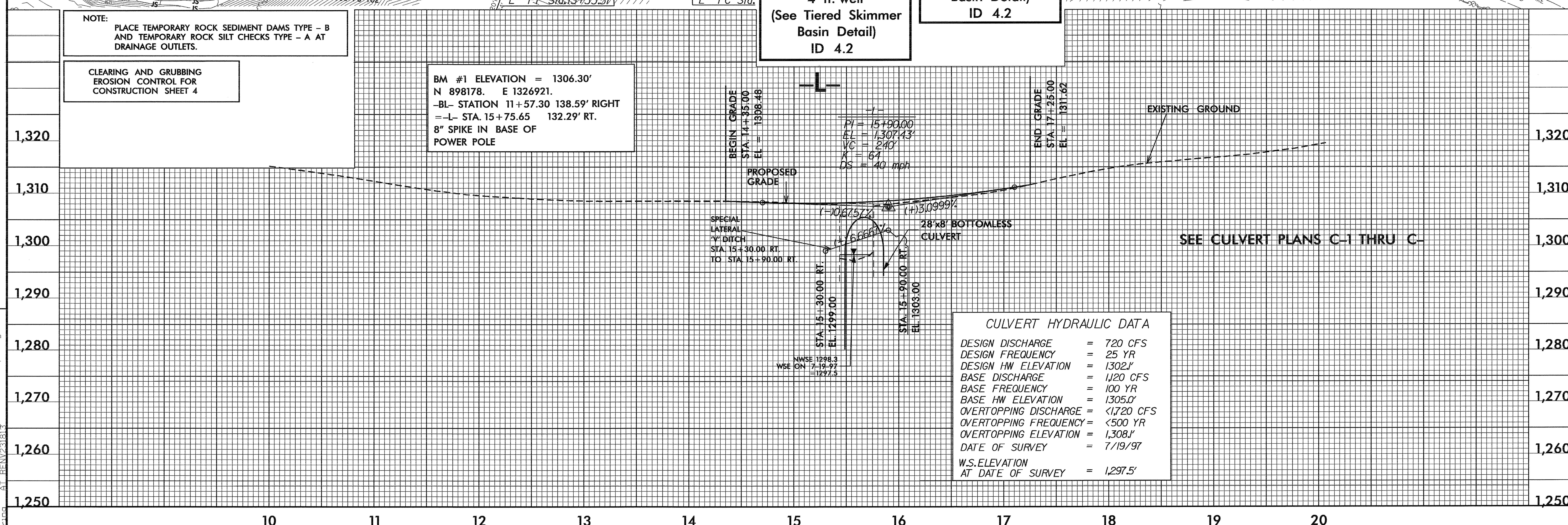
Modified Silt Basin
Type 'B'
36 x 10 x 3
(See Tiered Skimmer
Basin Detail)
ID 4.2

* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, SHOULDER WIDTH, AND HORIZONTAL CURVE RADIUS

NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

BM #1 ELEVATION = 1306.30'
N 898178. E 1326921.
-BL- STATION 11+57.30 138.59' RIGHT
=-L- STA. 15+75.65 132.29' RT.
8" SPIKE IN BASE OF
POWER POLE



SEE CULVERT PLANS C-1 THRU C-

CULVERT HYDRAULIC DATA

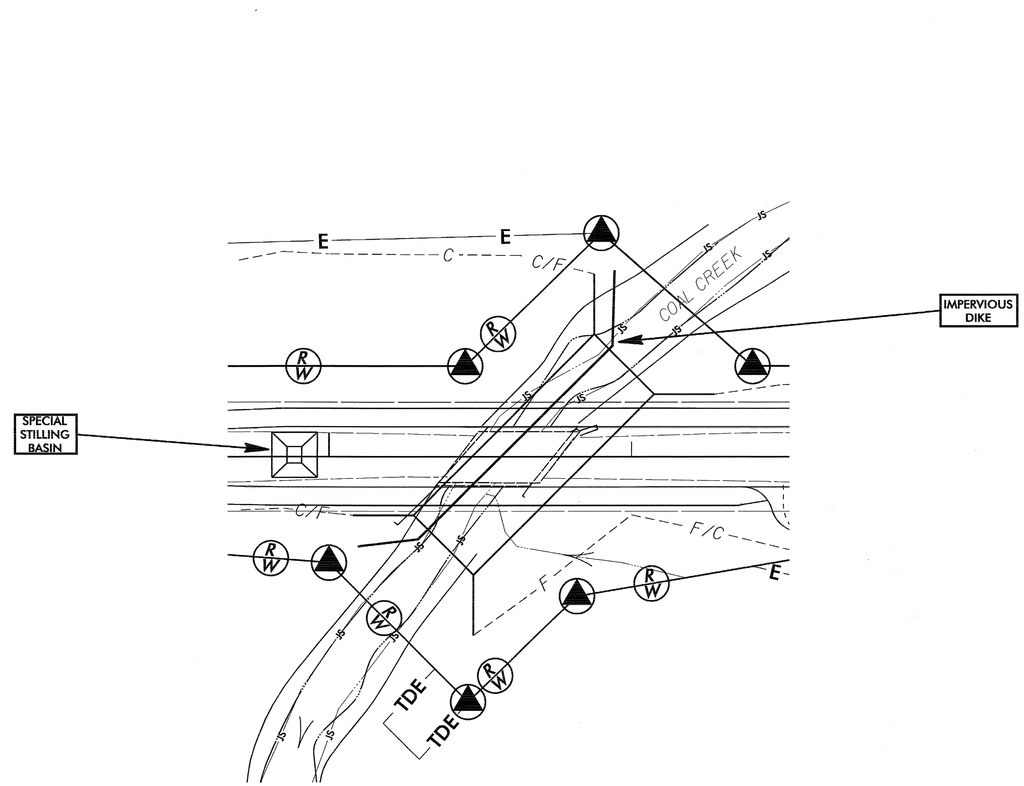
DESIGN DISCHARGE	= 720 CFS
DESIGN FREQUENCY	= 25 YR
DESIGN HW ELEVATION	= 1302.1'
BASE DISCHARGE	= 1,120 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= 1305.0'
OVERTOPPING DISCHARGE	= <1,720 CFS
OVERTOPPING FREQUENCY	= <500 YR
OVERTOPPING ELEVATION	= 1,308.1'
DATE OF SURVEY	= 7/19/97
W.S. ELEVATION AT DATE OF SURVEY	= 1,297.5'

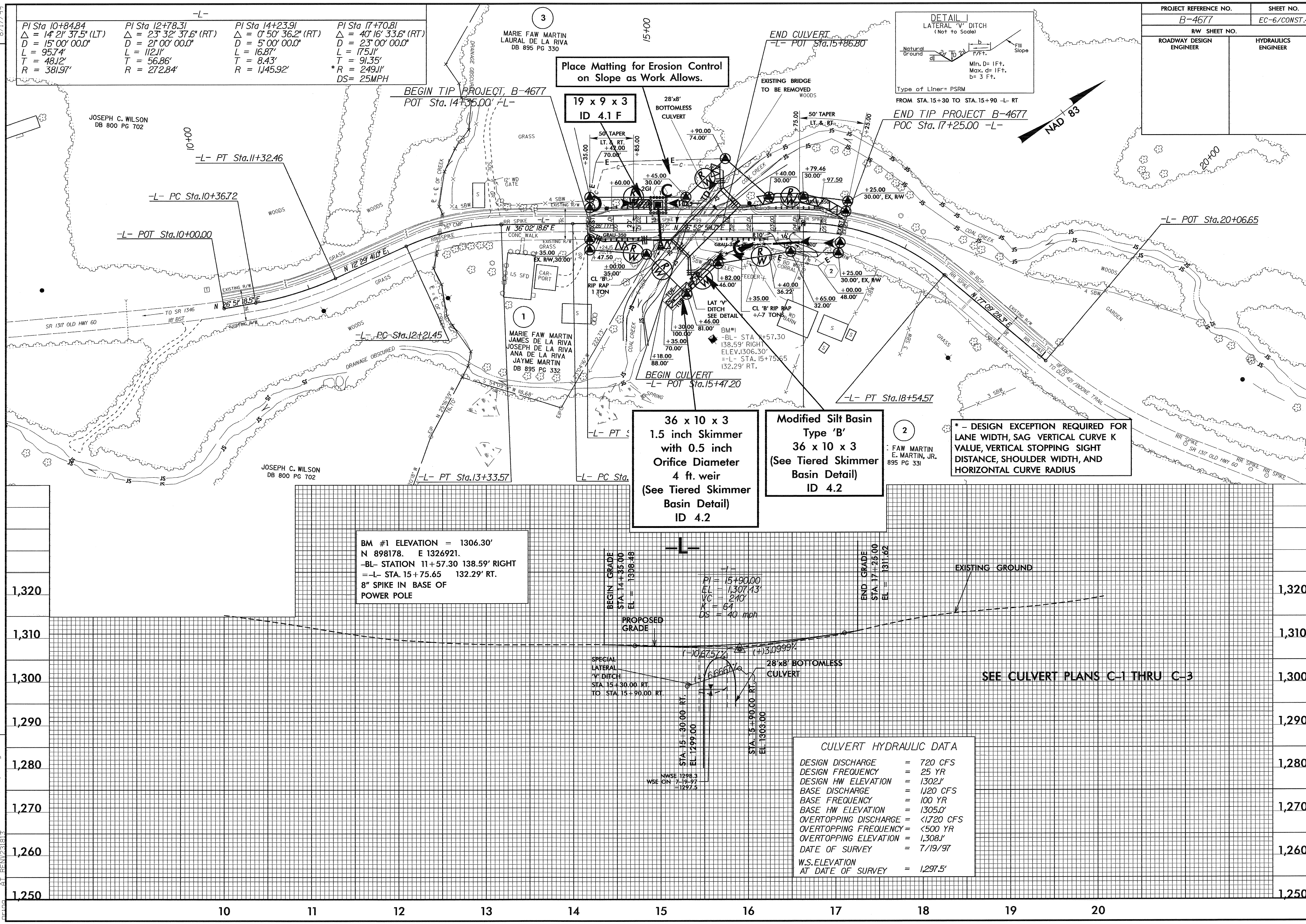
18-AUG-2009 11:21
r:\environmental\Design\B-4677_EC_psh.dgn

CULVERT CONSTRUCTION SEQUENCE STA. 15+67 –L–

PROJECT REFERENCE NO.	SHEET NO.
B-4677	EC-5/CONST.A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CULVERT CONSTRUCTION.
2. REMOVE EXISTING BRIDGE.
3. CONSTRUCT IMPERVIOUS DIKE.
4. CONSTRUCT FOOTINGS FOR CONSPAN CULVERT.
5. INSTALL CONSPAN CULVERT.
6. REMOVE IMPERVIOUS DIKE AND COMPLETE ANY NECESSARY UPSTREAM/DOWNSTREAM CHANNEL IMPROVEMENTS.
7. REMOVE SPECIAL STILLING BASIN(S) AND COMPLETE ROADWAY.




PROJECT REFERENCE NO. B-4677
SHEET NO. EC-6/CONST.4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
-L-
PI Sta 10+84.84 △ = 14° 21' 37.5" (LT) D = 15° 00' 00.0" L = 95.74' T = 48.12' R = 381.97'
PI Sta 12+78.31 △ = 23° 32' 37.6" (RT) D = 21° 00' 00.0" L = 112.11' T = 56.86' R = 272.84'
PI Sta 14+23.91 △ = 0° 50' 36.2" (RT) D = 5° 00' 00.0" L = 16.87' T = 8.43' R = 1,145.92'
PI Sta 17+70.81 △ = 40° 16' 33.6" (RT) D = 23° 00' 00.0" L = 175.11' T = 91.35' *R = 249.11' DS= 25MPH
8/17/99
MARIE FAW MARTIN
LAURAL DE LA RIVA
DB 895 PG 330
Place Matting for Erosion Control on Slope as Work Allows.
19 x 9 x 3
ID 4.1 F
BEGIN TIP PROJECT, B-4677
POT Sta. 14+35.00 -L-
END CULVERT
-L- POT Sta.15+86.80
EXISTING BRIDGE TO BE REMOVED
28'x8' BOTTOMLESS CULVERT
DETAIL I
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D= 1Ft.
Max. d= 1Ft.
b= 3 Ft.
Type of Liner= PSRM
FROM STA. 15+30 TO STA. 15+90 -L- RT
END TIP PROJECT B-4677
POC Sta. 17+25.00 -L-
NAD 83
JOSEPH C. WILSON
DB 800 PG 702
-L- PT Sta.11+32.46
-L- PC Sta.10+36.72
-L- POT Sta.10+00.00
N 12° 29' 41.0" E
N 26° 51' 18.5" E
N 36° 02' 18.6" E
N 36° 52' 54.7" E
N 77° 09' 28.3" E
-L- PC Sta.12+21.45
MARIE FAW MARTIN
JAMES DE LA RIVA
JOSEPH DE LA RIVA
ANA DE LA RIVA
JAYME MARTIN
DB 895 PG 332
BEGIN CULVERT
-L- POT Sta.15+47.20
-L- PT Sta.18+54.57
-L- POT Sta.20+06.65
BM#1
-BL- STA 11+57.30
138.59' RIGHT
ELEV.1306.30'
=-L- STA. 15+75.65
132.29' RT.
LAT 'V' DITCH SEE DETAIL I
CL 'B' RIP RAP 1 TON
CL 'B' RIP RAP +/-7 TONS
36 x 10 x 3
1.5 inch Skimmer with 0.5 inch Orifice Diameter 4 ft. weir
(See Tiered Skimmer Basin Detail)
ID 4.2
Modified Silt Basin Type 'B'
36 x 10 x 3
(See Tiered Skimmer Basin Detail)
ID 4.2
FAW MARTIN
E. MARTIN, JR.
895 PG 331
* - DESIGN EXCEPTION REQUIRED FOR LANE WIDTH, SAG VERTICAL CURVE K VALUE, VERTICAL STOPPING SIGHT DISTANCE, SHOULDER WIDTH, AND HORIZONTAL CURVE RADIUS
-L- PT Sta.13+33.57
SR 1317 OLD HWY 60
TO SR 1346
COAL CREEK
WOODS
GRASS
BM #1 ELEVATION = 1306.30'
N 898178. E 1326921.
-BL- STATION 11+57.30 138.59' RIGHT
=-L- STA. 15+75.65 132.29' RT.
8" SPIKE IN BASE OF POWER POLE
-L-
BEGIN GRADE STA. 14+35.00 EL = 1308.48
PI = 15+90.00
EL = 1,307.43'
VC = 240'
K = 64
DS = 40 mph
END GRADE STA. 17+25.00 EL = 1311.62
EXISTING GROUND
PROPOSED GRADE
(-)0.675%
(+)3.0999%
28'x8' BOTTOMLESS CULVERT
SPECIAL LATERAL 'V' DITCH STA. 15+30.00 RT. TO STA. 15+90.00 RT.
STA. 15+30.00 RT. EL. 1299.00
STA. 15+90.00 RT. EL. 1303.00
NWSE 1298.3
WSE ON 7-19-97 =1297.5
SEE CULVERT PLANS C-1 THRU C-3
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 720 CFS
DESIGN FREQUENCY = 25 YR
DESIGN HW ELEVATION = 1302.1'
BASE DISCHARGE = 1,120 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 1305.0'
OVERTOPPING DISCHARGE = <1,720 CFS
OVERTOPPING FREQUENCY = <500 YR
OVERTOPPING ELEVATION = 1,308.1'
DATE OF SURVEY = 7/19/97
W.S.ELEVATION AT DATE OF SURVEY = 1,297.5'
1,320
1,310
1,300
1,290
1,280
1,270
1,260
1,250
10
11
12
13
14
15
16
17
18
19
20
REVISIONS
18-AUG-2009
B-4677_EC_psh.dgn