TIP PROJECT: B-3187

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3187	EC-1	

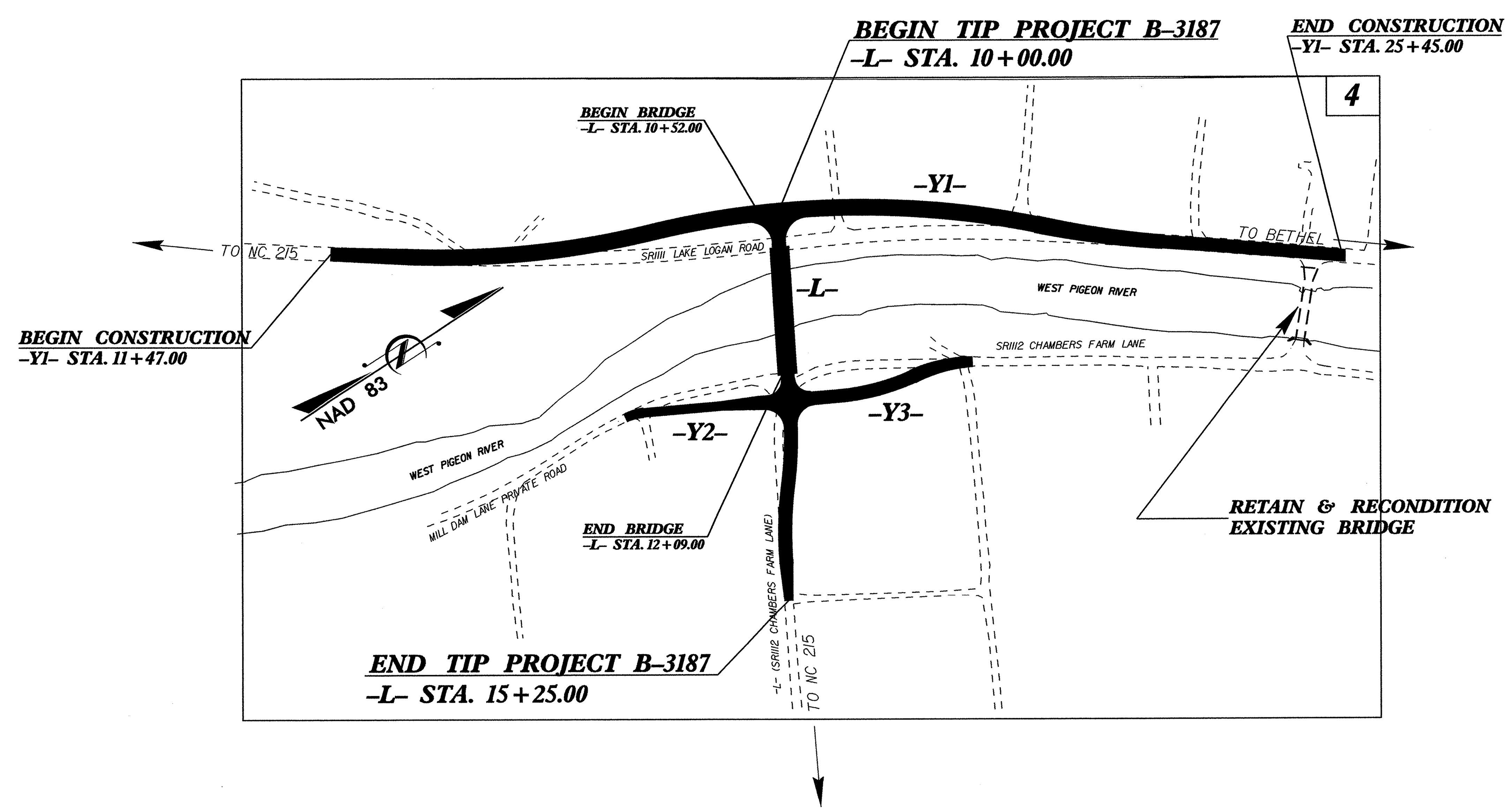
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

HAYWOOD COUNTY

LOCATION: Bridge #79 on SR 1112 (Chambers Farm Lane) over West Fork Pigeon River
TYPE OF WORK: Grading, Drainage, Paving, Structure & Recondition Existing Structure



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
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.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

Refer To E. C. Special Provisions for Special Considerations.

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

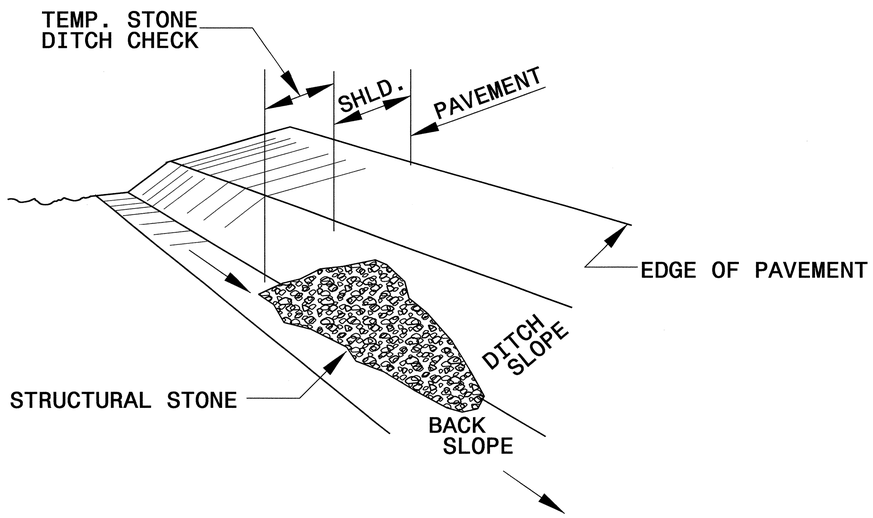
Roadway Standard Drawings

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
1606.01 Special Sediment Control Fence
1607.01 Gravel Construction Entrance
1622.01 Temporary Berms and Slope Drains
1630.05 Temporary Diversion
1632.02 Rock Inlet Sediment Trap Type B
1632.03 Rock Inlet Sediment Trap Type C
1633.01 Temporary Rock Silt Check Type A
1635.02 Rock Pipe Inlet Sediment Trap Type B

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

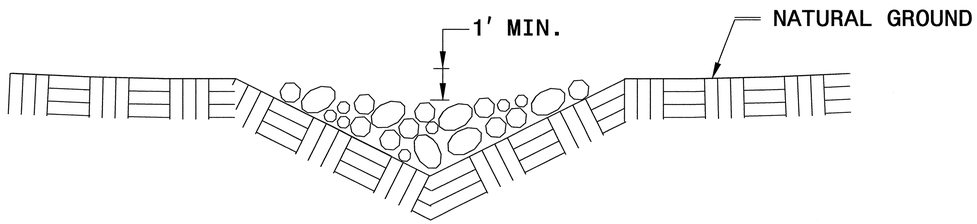


ISOMETRIC VIEW

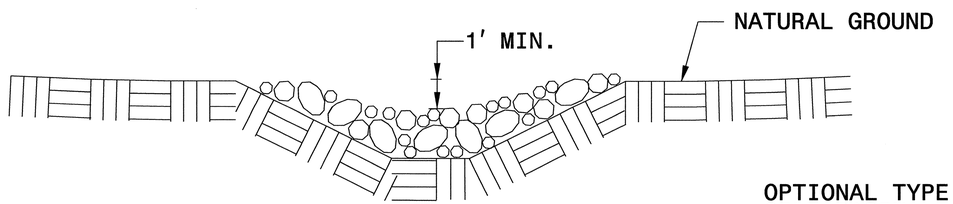
NOTES:

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

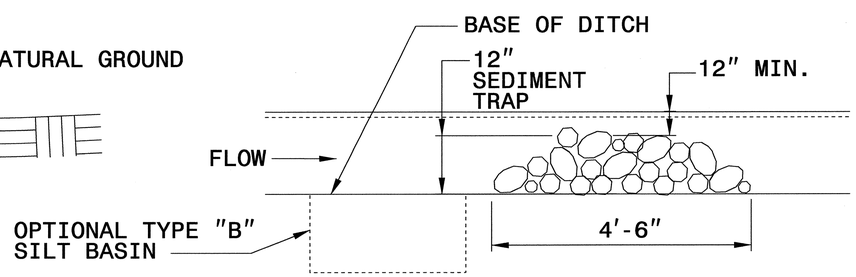
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



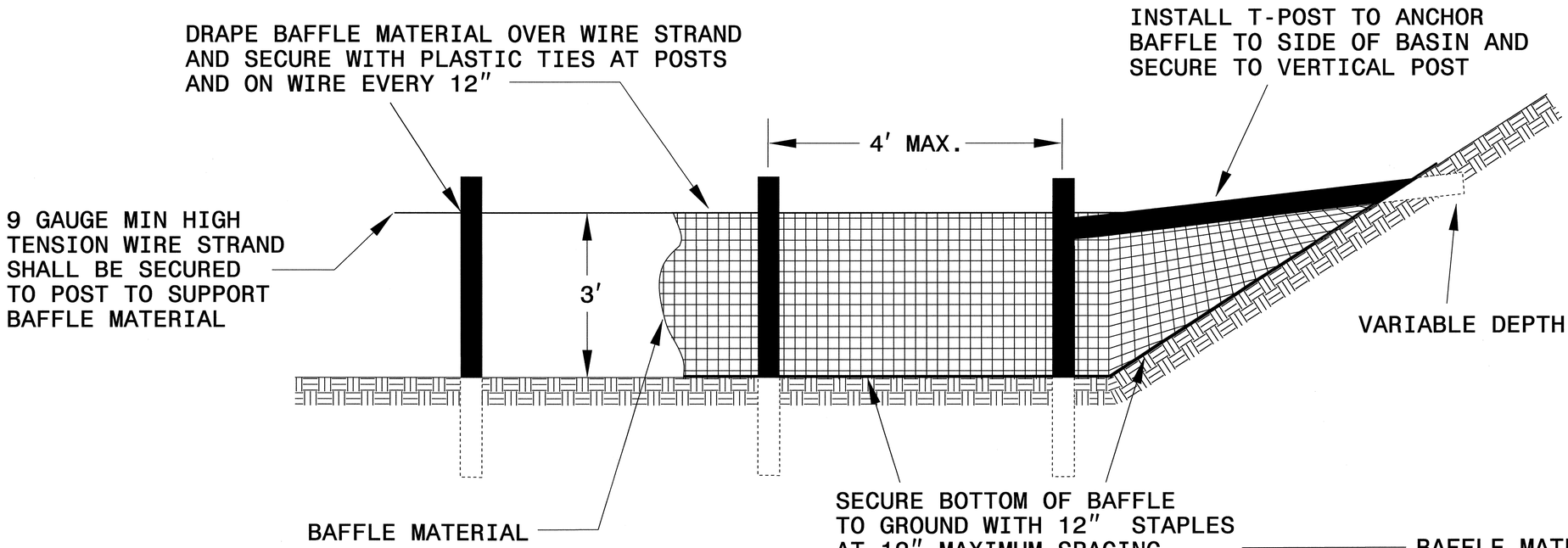
CROSS SECTION TRAPEZOIDAL DITCH



ELEVATION VIEW

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-2A
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL

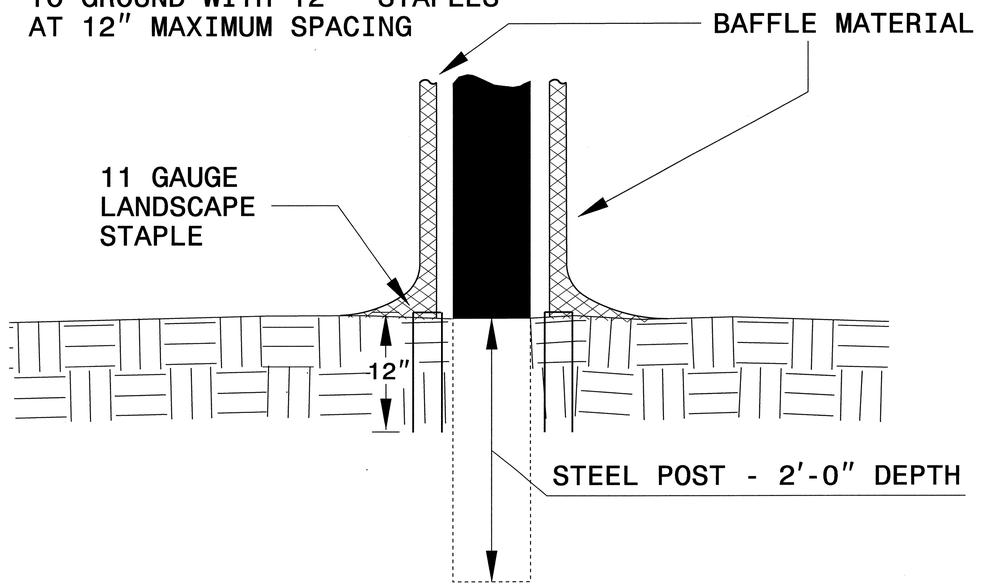


NOTES:

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.

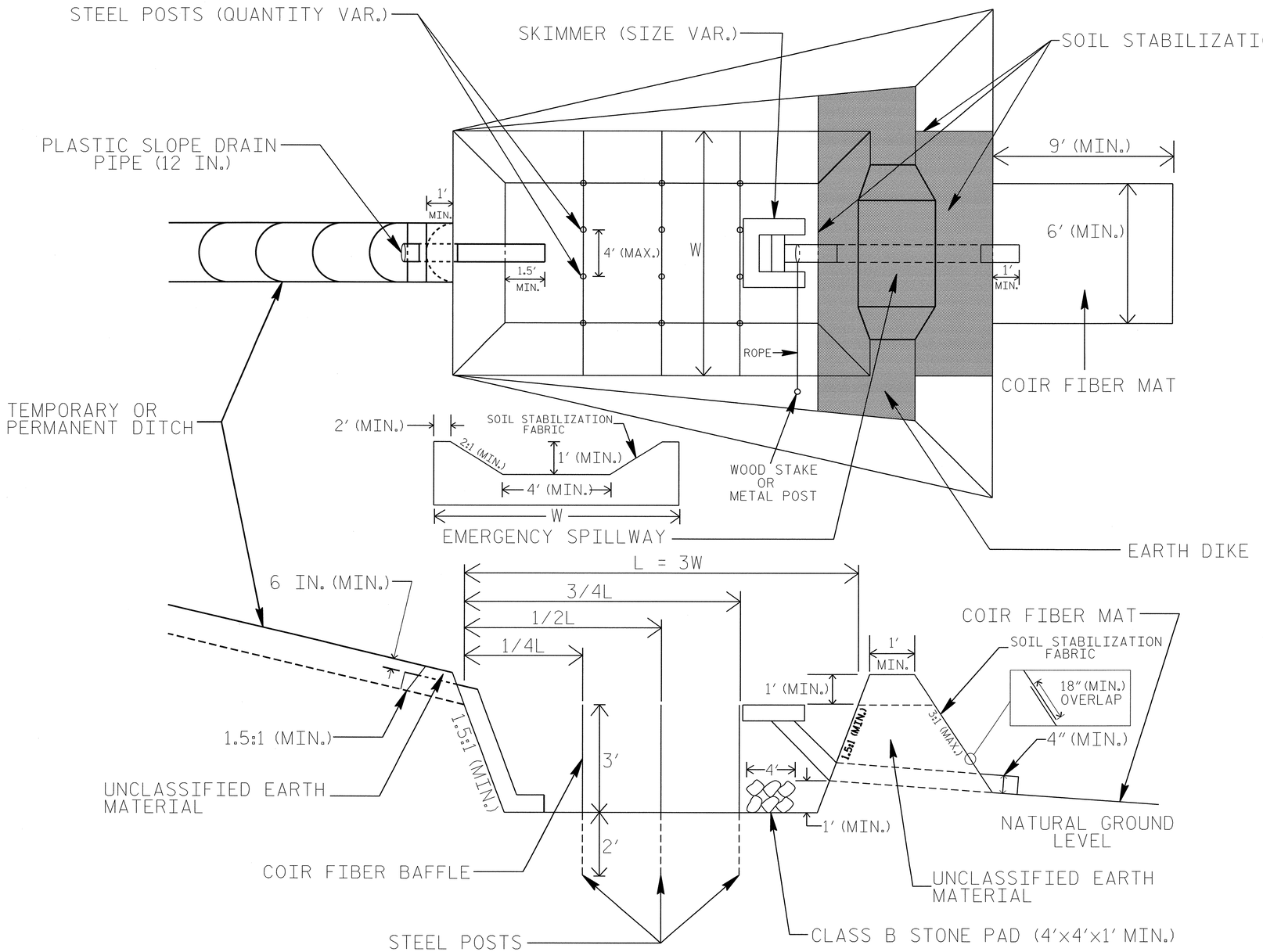
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.



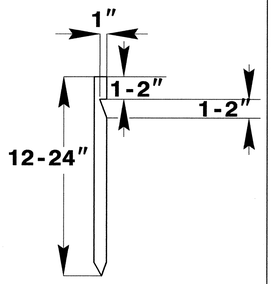
BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12″ LANDSCAPE STAPLES

SKIMMER BASIN WITH BAFFLES DETAIL

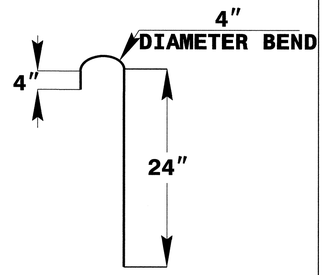
PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-2B
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



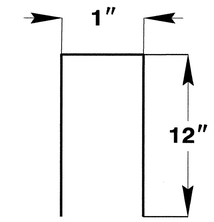
2" x 2" (nominal) WOODEN STAKE



#10 STEEL REINFORCEMENT BAR



1" (nominal) STAPLE



COIR FIBER MAT ANCHOR OPTIONS

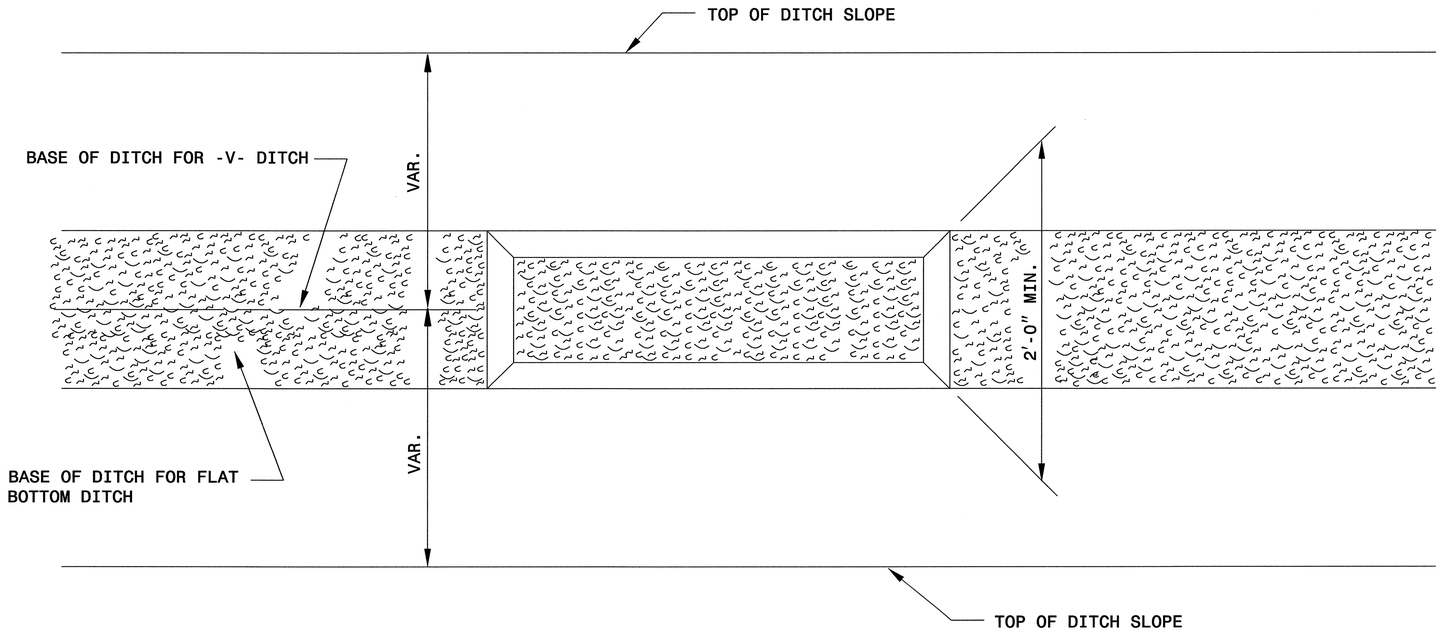
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING Q/0.8, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTER FABRIC AS DIRECTED.
6. SOIL STABILIZATION FABRIC FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18" AS SHOWN.

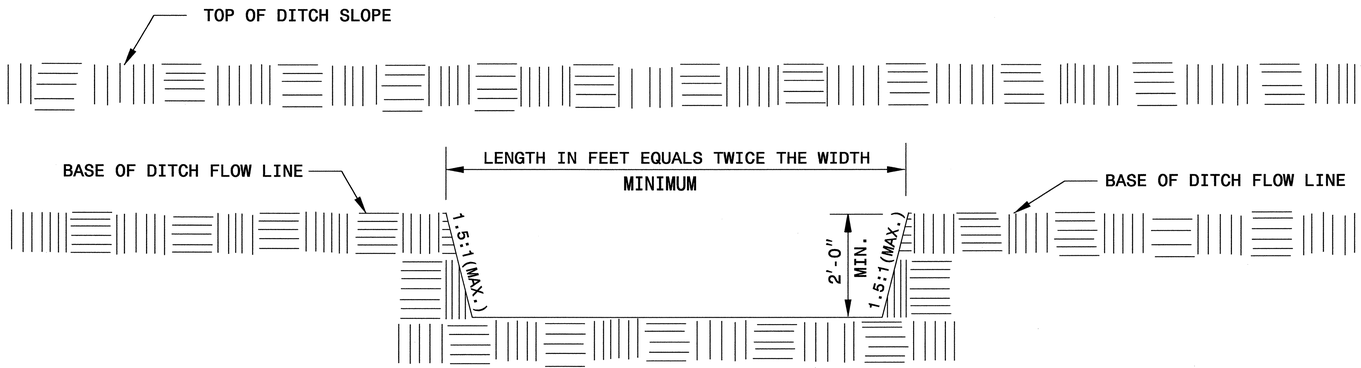
NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-2C
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



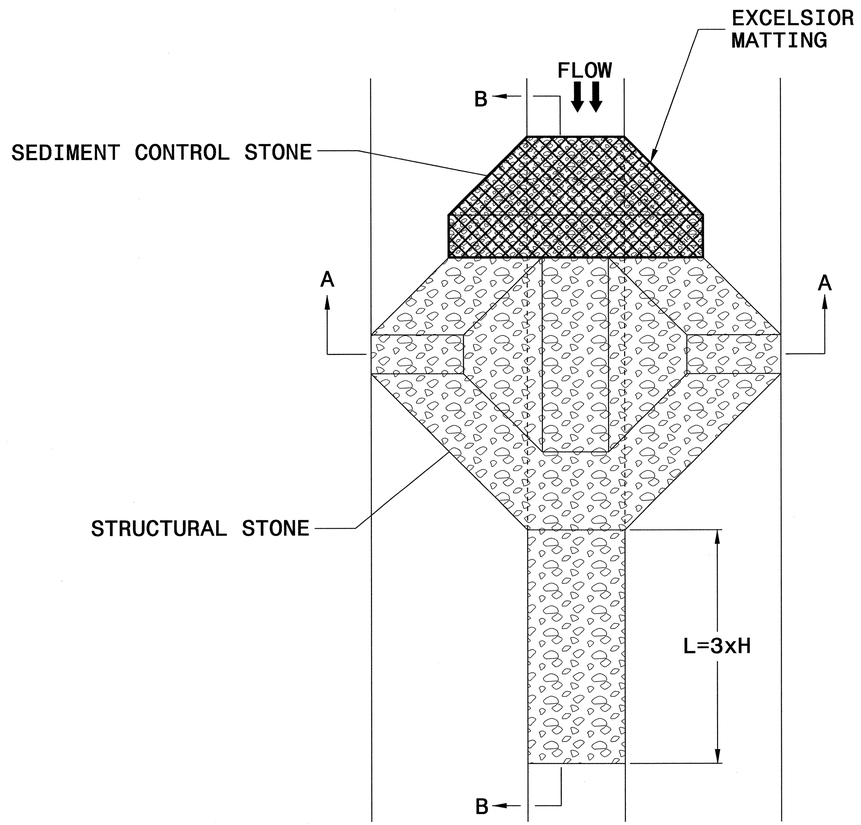
PLAN



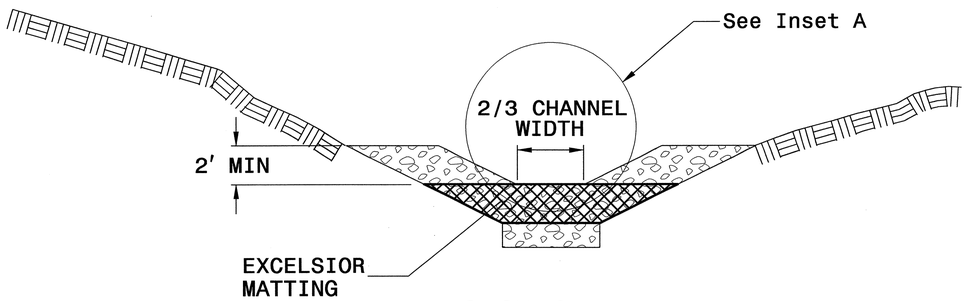
ELEVATION

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-2D
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN



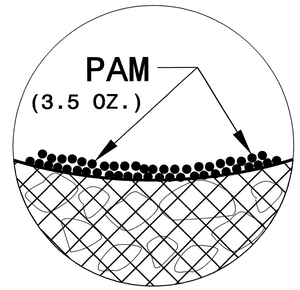
SECTION A-A

NOTES

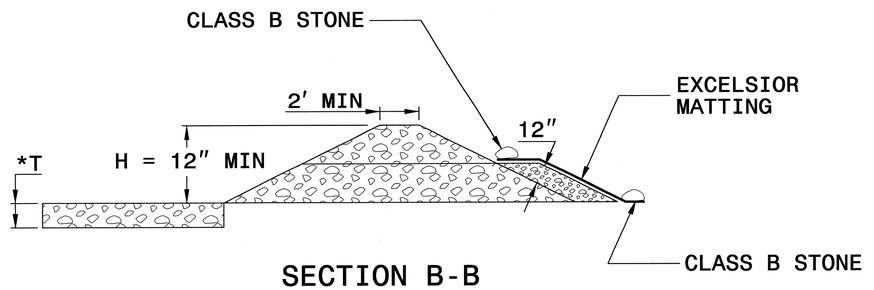
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



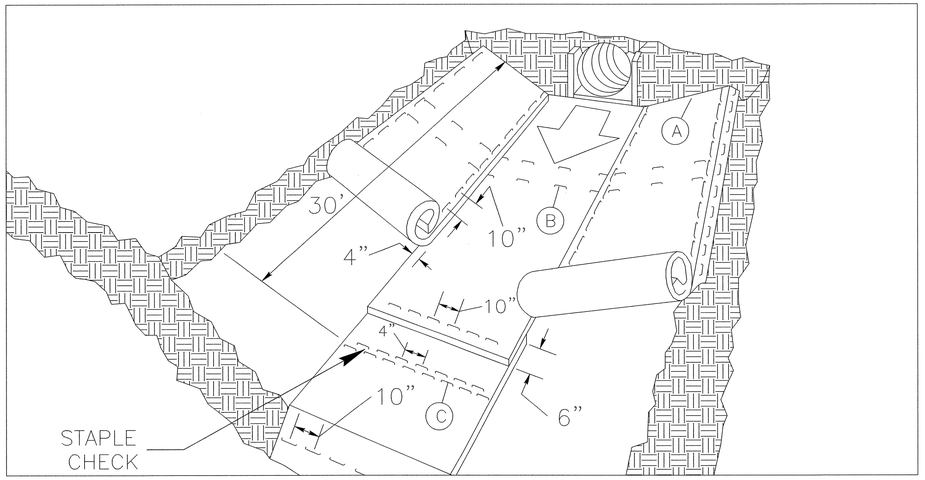
SECTION B-B

*T = 12" MIN., 18" MAX.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-2E
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

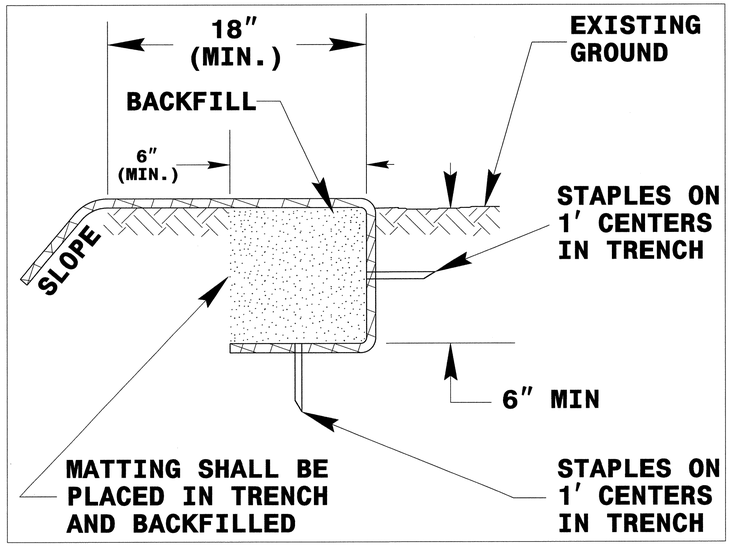
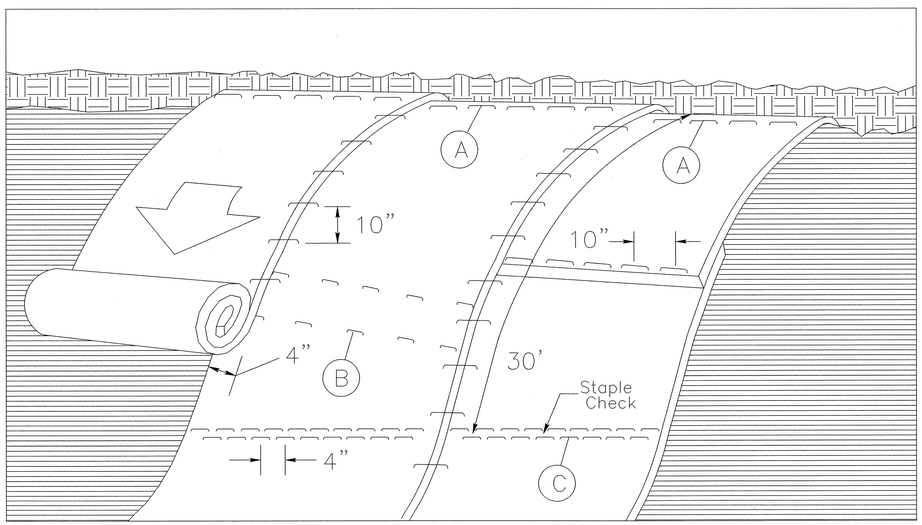


DIAGRAM (A)



MATTING ON SLOPES

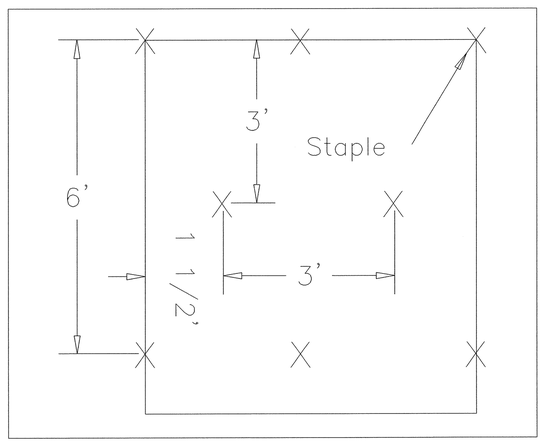


DIAGRAM (B)

Staple Check Pattern

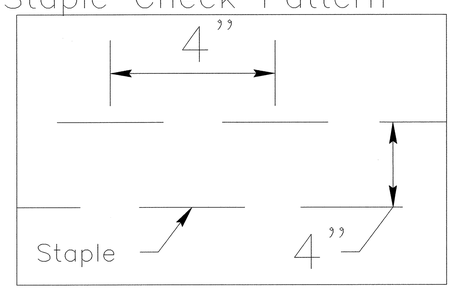


DIAGRAM (C)

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

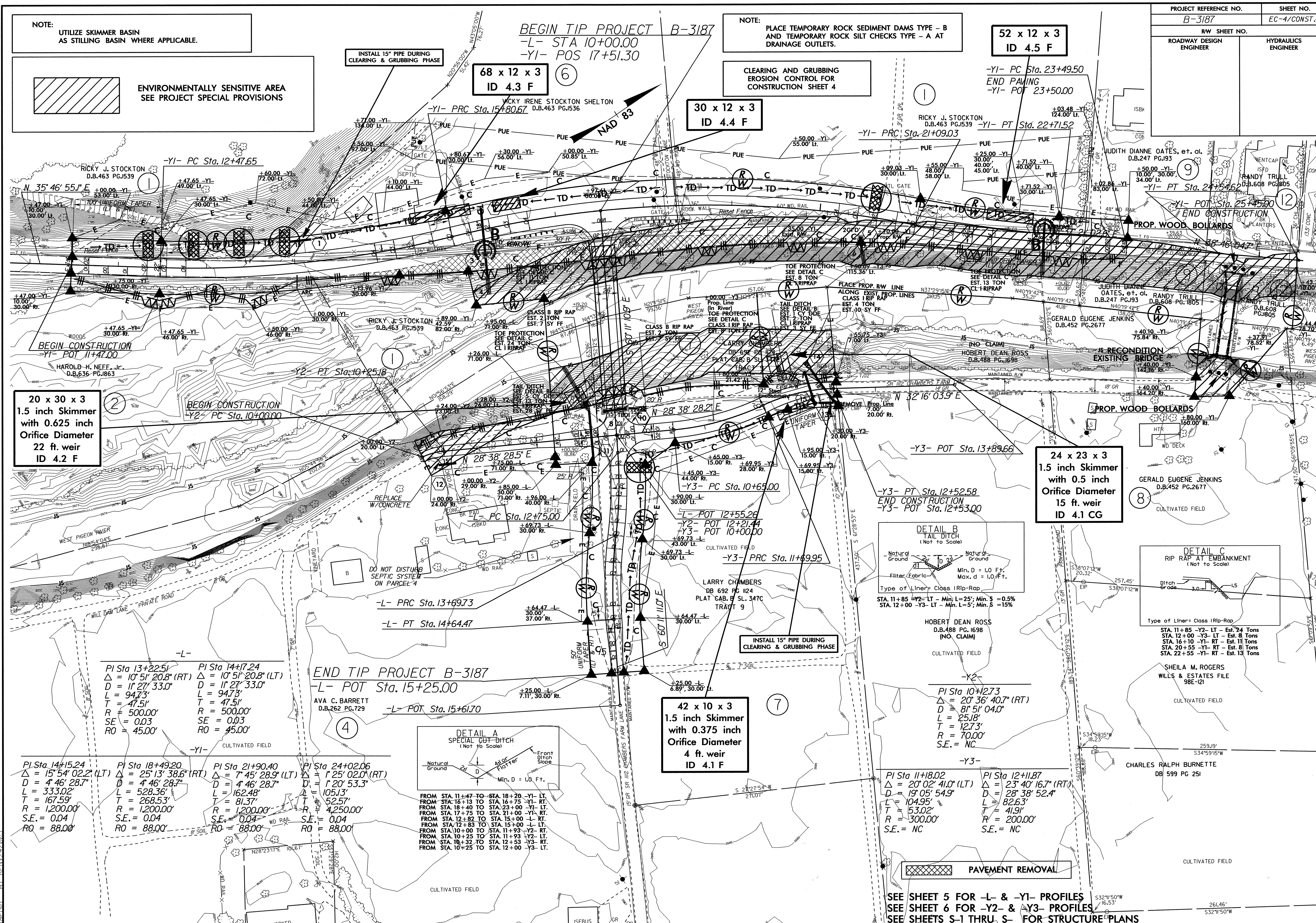
SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-Y1-	16+00	18+50	LT	245
4	-Y1-	18+40	22+50	LT	450
4	-Y1-	22+50	23+00	LT	5
4	-Y2-	10+25	11+93	LT	180
4	-Y2-	10+00	11+93	RT	200
4	-Y3-	10+25	12+00	LT	120
			SUBTOTAL		1200
MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER					8500
				TOTAL	9700
				SAY	10000

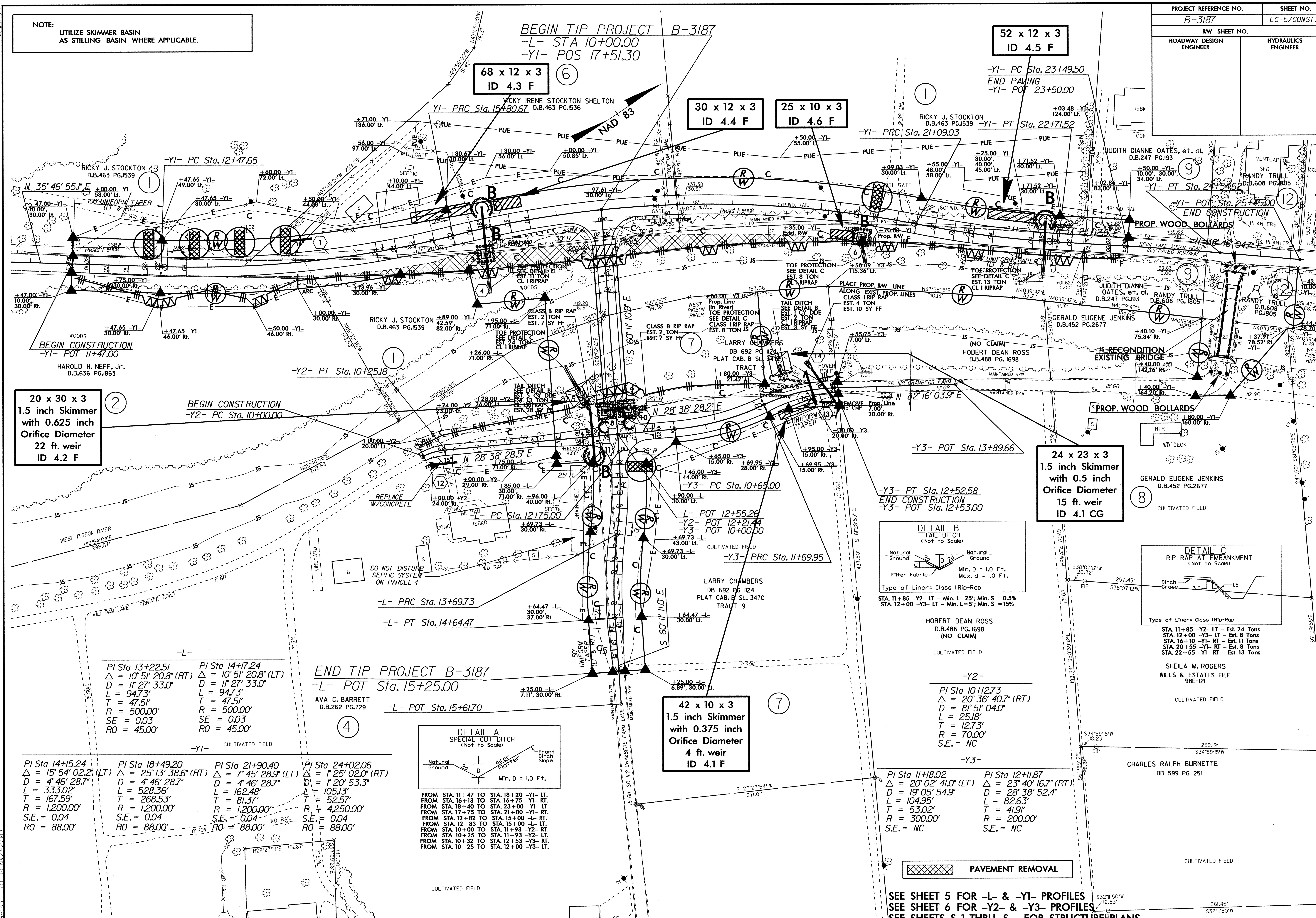
PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	16+25	17+00	RT	170
			SUBTOTAL		170
		ADDITIONAL PSRM TO BE INSTALLED			0
				TOTAL	170
				SAY	200


PROJECT REFERENCE NO. B-3187
SHEET NO. EC-4/CONST.4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
NOTE: UTILIZE SKIMMER BASIN AS STILLING BASIN WHERE APPLICABLE.
ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS
INSTALL 15" PIPE DURING CLEARING & GRUBBING PHASE
68 x 12 x 3 ID 4.3 F
BEGIN TIP PROJECT B-3187
-L- STA 10+00.00
-Y1- POS 17+51.30
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
30 x 12 x 3 ID 4.4 F
52 x 12 x 3 ID 4.5 F
NAD 83
-Y1- PC Sta. 23+49.50
END PAVING
-Y1- POT 23+50.00
-Y1- PRC Sta. 15+80.67
-Y1- PC Sta. 12+47.65
-Y1- PRC Sta. 21+09.03
-Y1- PT Sta. 22+71.52
-Y1- PT Sta. 24+54.61
-Y1- POT Sta. 25+45.00
END CONSTRUCTION
PROP. WOOD BOLLARDS
RICKY J. STOCKTON D.B.463 PG.1539
VICKY IRENE STOCKTON SHELTON D.B.463 PG.1536
JUDITH DIANNE OATES, et. al. D.B.247 PG.193
RANDY TRULL D.B.608 PG.1805
GERALD EUGENE JENKINS D.B.452 PG.2677
HOBERT DEAN ROSS D.B.488 PG.1698 (NO CLAIM)
HAROLD H. NEFF, Jr. D.B.636 PG.1863
LARRY CHAMBERS DB 692 PG 1124 PLAT CAB. B SL. 347C TRACT 9
AVA C. BARRETT D.B.262 PG.729
SHEILA M. ROGERS WILLS & ESTATES FILE 98E-121
CHARLES RALPH BURNETTE DB 599 PG 251
BEGIN CONSTRUCTION -Y1- POT 11+47.00
-Y2- PT Sta. 10+25.18
BEGIN CONSTRUCTION -Y2- PC Sta. 10+00.00
20 x 30 x 3 1.5 inch Skimmer with 0.625 inch Orifice Diameter 22 ft. weir ID 4.2 F
RECONDITION EXISTING BRIDGE
24 x 23 x 3 1.5 inch Skimmer with 0.5 inch Orifice Diameter 15 ft. weir ID 4.1 CG
-Y3- POT Sta. 13+89.66
-Y3- PT Sta. 12+52.58
END CONSTRUCTION
-Y3- POT Sta. 12+53.00
-Y3- PC Sta. 10+65.00
-L- POT 12+55.26
-Y2- POT 12+21.44
-Y3- POT 10+00.00
-Y3- PRC Sta. 11+69.95
-L- PC Sta. 12+75.00
-L- PRC Sta. 13+69.73
-L- PT Sta. 14+64.47
DO NOT DISTURB SEPTIC SYSTEM ON PARCEL 4
REPLACE W/CONCRETE
WEST PIGEON RIVER
MILL DAM LANE PRIVATE ROAD
SR 1112 CHAMBERS FARM LANE
END TIP PROJECT B-3187
-L- POT Sta. 15+25.00
-L- POT Sta. 15+61.70
42 x 10 x 3 1.5 inch Skimmer with 0.375 inch Orifice Diameter 4 ft. weir ID 4.1 F
-L-
PI Sta 13+22.51 Δ = 10° 51' 20.8" (RT) D = 11° 27' 33.0" L = 94.73' T = 47.51' R = 500.00' SE = 0.03 RO = 45.00'
PI Sta 14+17.24 Δ = 10° 51' 20.8" (LT) D = 11° 27' 33.0" L = 94.73' T = 47.51' R = 500.00' SE = 0.03 RO = 45.00'
-Y1-
PI Sta 14+15.24 Δ = 15° 54' 02.2" (LT) D = 4° 46' 28.7" L = 333.02' T = 167.59' R = 1,200.00' S.E. = 0.04 RO = 88.00'
PI Sta 18+49.20 Δ = 25° 13' 38.6" (RT) D = 4° 46' 28.7" L = 528.36' T = 268.53' R = 1,200.00' S.E. = 0.04 RO = 88.00'
PI Sta 21+90.40 Δ = 7° 45' 28.9" (LT) D = 4° 46' 28.7" L = 162.48' T = 81.37' R = 1,200.00' S.E. = 0.04 RO = 88.00'
PI Sta 24+02.06 Δ = 1° 25' 02.0" (RT) D = 1° 20' 53.3" L = 105.13' T = 52.57' R = 4,250.00' S.E. = 0.04 RO = 88.00'
-Y2-
PI Sta 10+12.73 Δ = 20° 36' 40.7" (RT) D = 81° 51' 04.0" L = 25.18' T = 12.73' R = 70.00' S.E. = NC
-Y3-
PI Sta 11+18.02 Δ = 20° 02' 41.0" (LT) D = 19° 05' 54.9" L = 104.95' T = 53.02' R = 300.00' S.E. = NC
PI Sta 12+11.87 Δ = 23° 40' 16.7" (RT) D = 28° 38' 52.4" L = 82.63' T = 41.91' R = 200.00' S.E. = NC
DETAIL A SPECIAL CUT DITCH (Not to Scale)
Natural Ground
Adjust Flatter
Front Ditch Slope
Min. D = 1.0 Ft.
FROM STA. 11+47 TO STA. 18+20 -Y1- LT.
FROM STA. 16+13 TO STA. 16+75 -Y1- RT.
FROM STA. 18+40 TO STA. 23+00 -Y1- LT.
FROM STA. 17+75 TO STA. 21+00 -Y1- RT.
FROM STA. 12+82 TO STA. 15+00 -L- RT.
FROM STA. 12+83 TO STA. 15+00 -L- LT.
FROM STA. 10+00 TO STA. 11+93 -Y2- RT.
FROM STA. 16+13 TO STA. 11+93 -Y2- LT.
FROM STA. 10+25 TO STA. 12+53 -Y3- RT.
FROM STA. 10+32 TO STA. 12+53 -Y3- RT.
FROM STA. 10+25 TO STA. 12+00 -Y3- LT.
DETAIL B TAIL DITCH (Not to Scale)
Natural Ground
Filter Fabric
Min. D = 1.0 Ft. Max. d = 1.0 Ft.
Type of Liner= Class I Rip-Rap
STA. 11+85 -Y2- LT - Min. L= 25'; Min. S = 0.5%
STA. 12+00 -Y3- LT - Min. L= 5'; Min. S = 15%
DETAIL C RIP RAP AT EMBANKMENT (Not to Scale)
Ditch Grade
Type of Liner= Class I Rip-Rap
STA. 11+85 -Y2- LT - Est. 24 Tons
STA. 12+00 -Y3- LT - Est. 8 Tons
STA. 16+10 -Y1- RT - Est. 11 Tons
STA. 20+55 -Y1- RT - Est. 8 Tons
STA. 22+55 -Y1- RT - Est. 13 Tons
CULTIVATED FIELD
PAVEMENT REMOVAL
SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- & -Y3- PROFILES
SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS
5/14/99
17-NOV-2010 13:39

PROJECT REFERENCE NO.	SHEET NO.
B-3187	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
UTILIZE SKIMMER BASIN
AS STILLING BASIN WHERE APPLICABLE.



-L-

PI Sta 13+22.51	PI Sta 14+17.24
Δ = 10° 51' 20.8" (RT)	Δ = 10° 51' 20.8" (LT)
D = 11° 27' 33.0"	D = 11° 27' 33.0"
L = 94.73'	L = 94.73'
T = 47.51'	T = 47.51'
R = 500.00'	R = 500.00'
SE = 0.03	SE = 0.03
RO = 45.00'	RO = 45.00'

-Y1-

PI Sta 14+15.24	PI Sta 18+49.20	PI Sta 21+90.40	PI Sta 24+02.06
Δ = 15° 54' 02.2" (LT)	Δ = 25° 13' 38.6" (RT)	Δ = 7° 45' 28.9" (LT)	Δ = 1° 25' 02.0" (RT)
D = 4° 46' 28.7"	D = 4° 46' 28.7"	D = 4° 46' 28.7"	D = 1° 20' 53.3"
L = 333.02'	L = 528.36'	L = 162.48'	L = 105.13'
T = 167.59'	T = 268.53'	T = 81.37'	T = 52.57'
R = 1,200.00'	R = 1,200.00'	R = 1,200.00'	R = 4,250.00'
S.E. = 0.04	S.E. = 0.04	S.E. = 0.04	S.E. = 0.04
RO = 88.00'	RO = 88.00'	RO = 88.00'	RO = 88.00'

-Y2-

PI Sta 10+12.73
Δ = 20° 36' 40.7" (RT)
D = 81° 51' 04.0"
L = 25.18'
T = 12.73'
R = 70.00'
S.E. = NC

-Y3-

PI Sta 11+18.02	PI Sta 12+11.87
Δ = 20° 02' 41.0" (LT)	Δ = 23° 40' 16.7" (RT)
D = 19° 05' 54.9"	D = 28° 38' 52.4"
L = 104.95'	L = 82.63'
T = 53.02'	T = 41.91'
R = 300.00'	R = 200.00'
S.E. = NC	S.E. = NC

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)
Min. D = 1.0 Ft.

FROM STA. 11+47 TO STA. 18+20 -Y1- LT.
FROM STA. 16+13 TO STA. 16+75 -Y1- RT.
FROM STA. 18+40 TO STA. 23+00 -Y1- LT.
FROM STA. 17+75 TO STA. 21+00 -Y1- RT.
FROM STA. 12+82 TO STA. 15+00 -L- RT.
FROM STA. 12+83 TO STA. 15+00 -L- LT.
FROM STA. 10+00 TO STA. 11+93 -Y2- RT.
FROM STA. 10+25 TO STA. 11+93 -Y2- LT.
FROM STA. 10+32 TO STA. 12+53 -Y3- RT.
FROM STA. 10+25 TO STA. 12+00 -Y3- LT.

DETAIL B
TAIL DITCH
(Not to Scale)
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
Type of Liner= Class I Rip-Rap
STA. 11+85 -Y2- LT - Min. L=25'; Min. S = 0.5%
STA. 12+00 -Y3- LT - Min. L=5'; Min. S = 15%

DETAIL C
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= Class I Rip-Rap
STA. 11+85 -Y2- LT - Est. 24 Tons
STA. 12+00 -Y3- LT - Est. 8 Tons
STA. 16+10 -Y1- RT - Est. 11 Tons
STA. 20+55 -Y1- RT - Est. 8 Tons
STA. 22+55 -Y1- RT - Est. 13 Tons

PAVEMENT REMOVAL

SEE SHEET 5 FOR -L- & -Y1- PROFILES
SEE SHEET 6 FOR -Y2- & -Y3- PROFILES
SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS

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