

**TIP PROJECT: B-4090**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL  
**CUMBERLAND COUNTY**

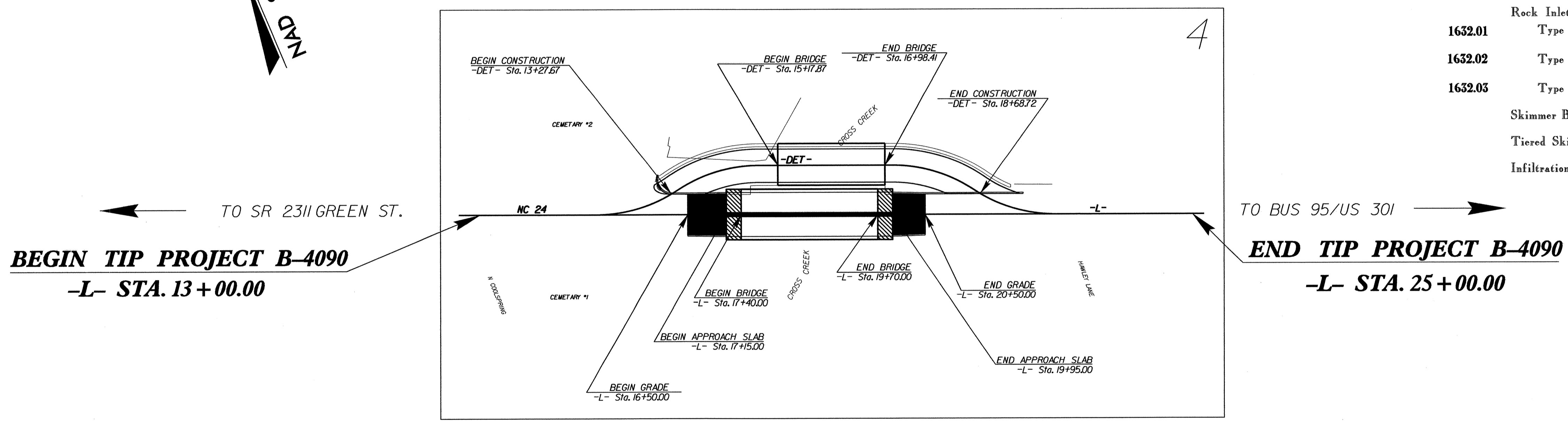
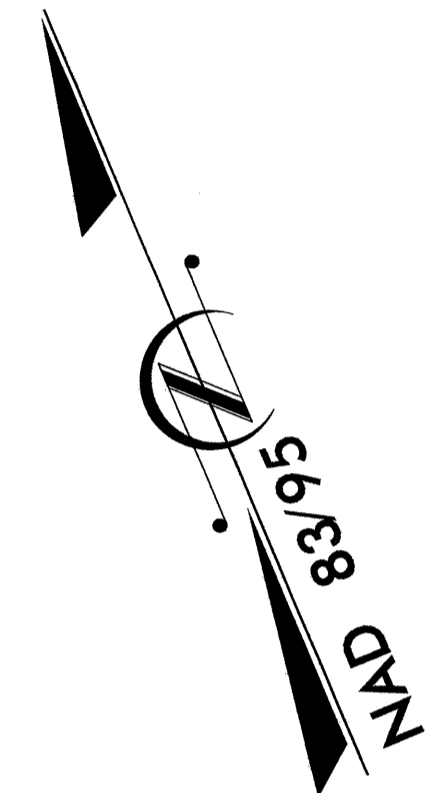
LOCATION: BRIDGE No. 125 ON NC 24 (GROVE ST.) OVER

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE  
AND RETAINING WALLS

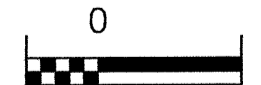
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4090	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

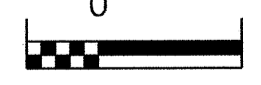
Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting 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	
1632.02	Type B	
1632.03	Type C	
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	



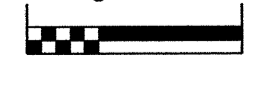
**GRAPHIC SCALE**



PLANS



PROFILE (HORIZONTAL)



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**

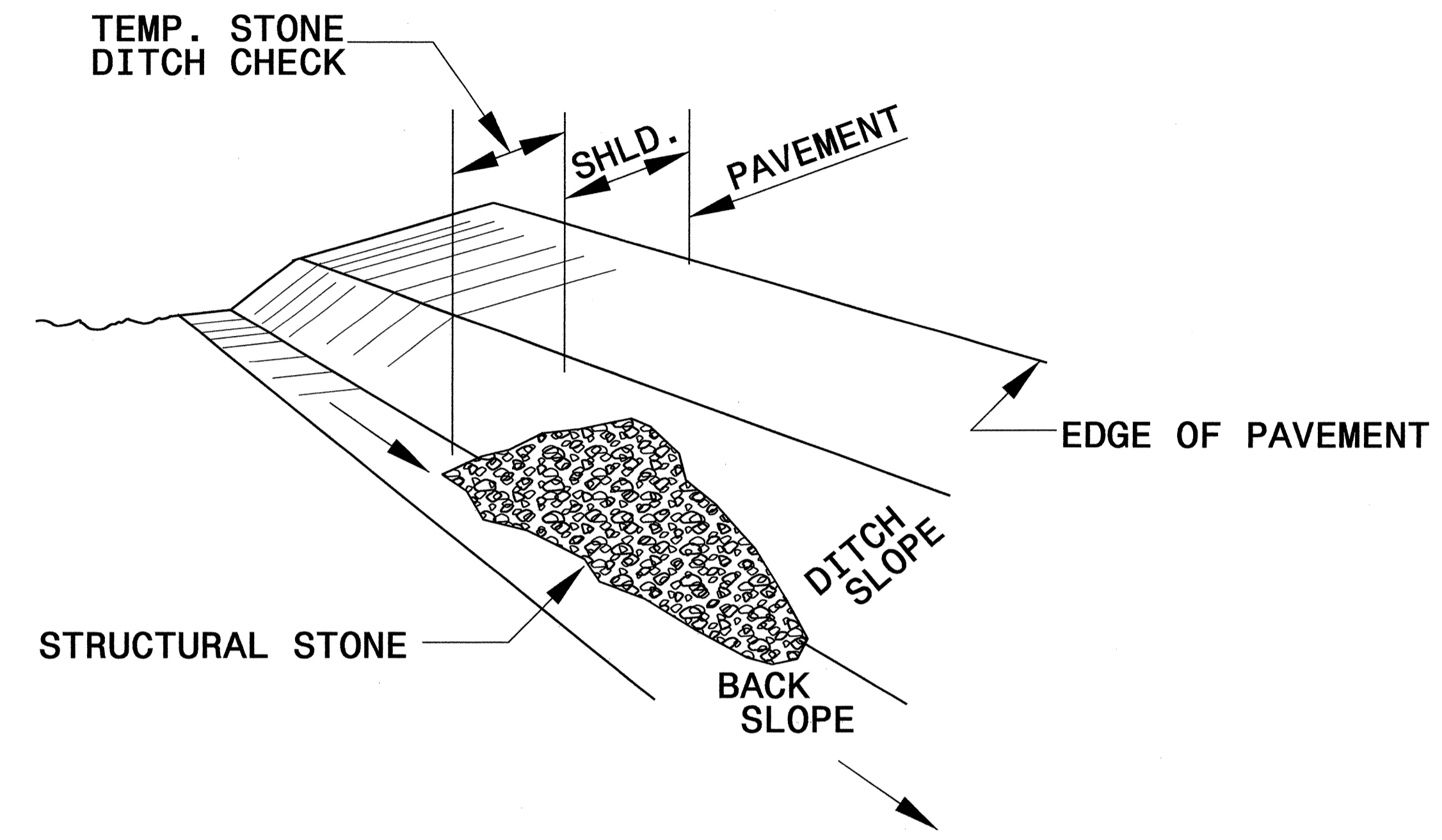
The following roadway english standards as appear in "Roadway Standard Drawings"-- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1634.01	Temporary Rock Sediment Dam Type A

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J:\geocad\1415\1415.dwg  
B-4090\_EC-1.dwg

PROJECT REFERENCE NO. B-4090	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

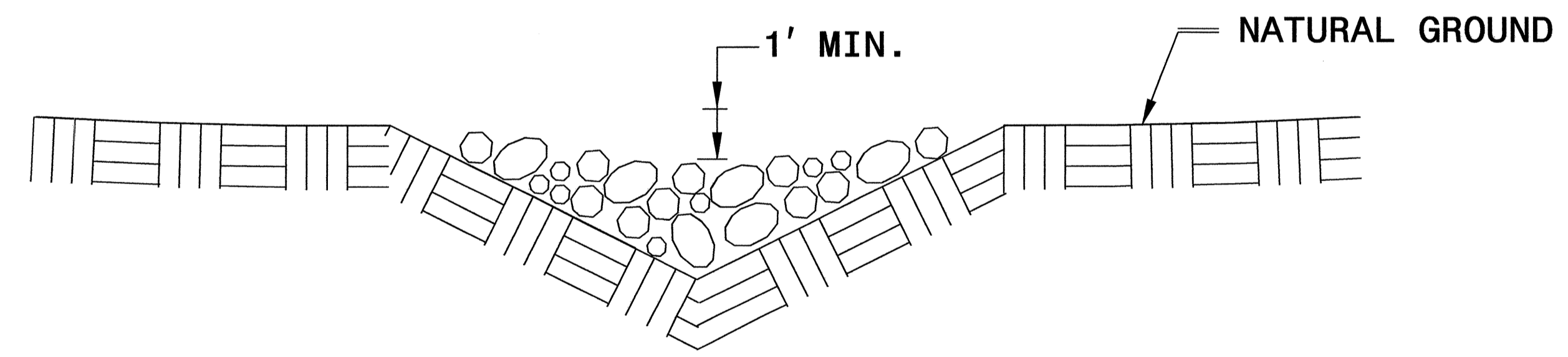


**ISOMETRIC VIEW**

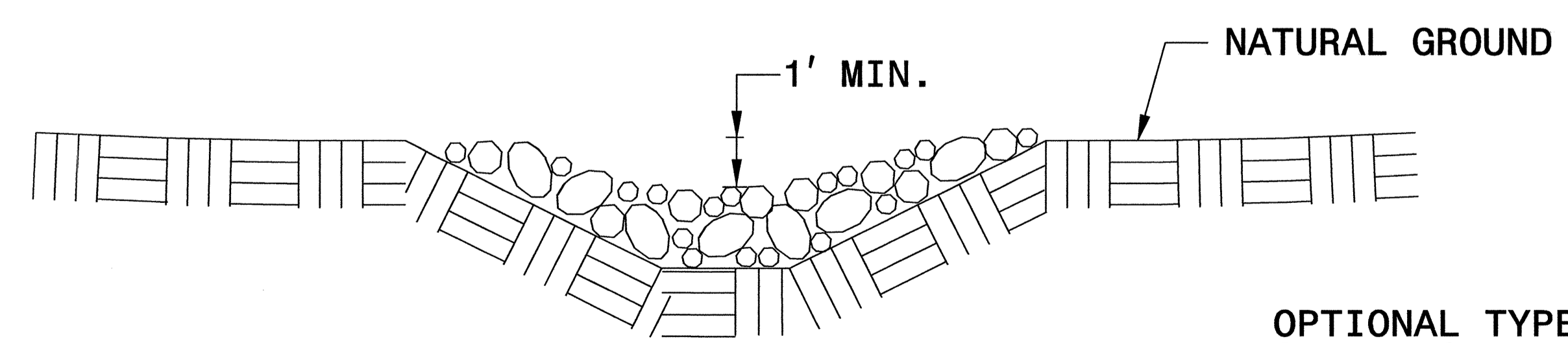
**NOTES:**

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

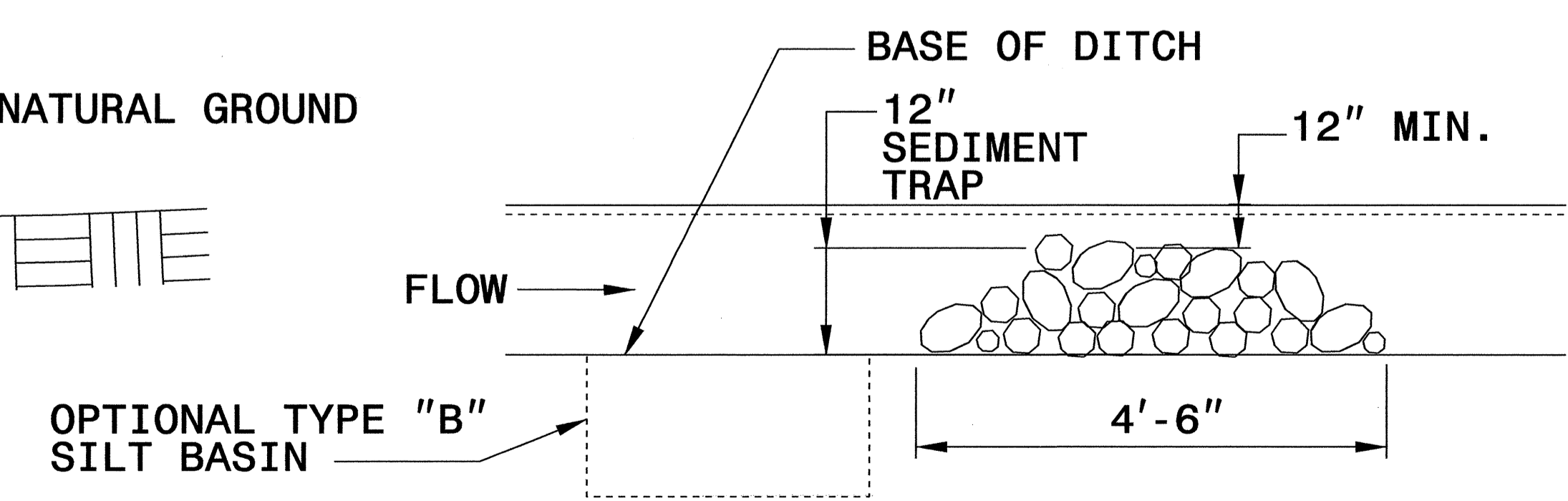
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



**CROSS SECTION VEE DITCH**



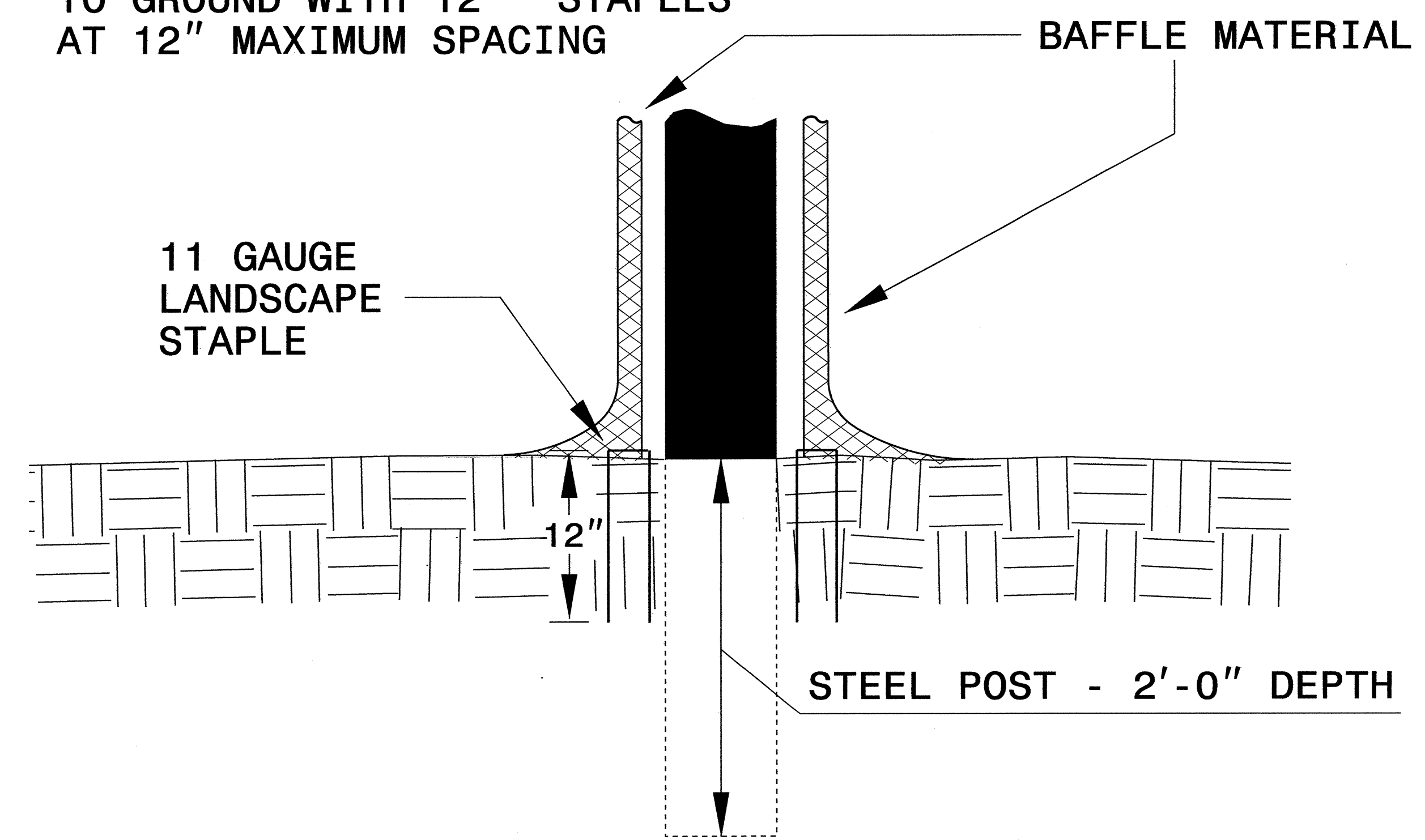
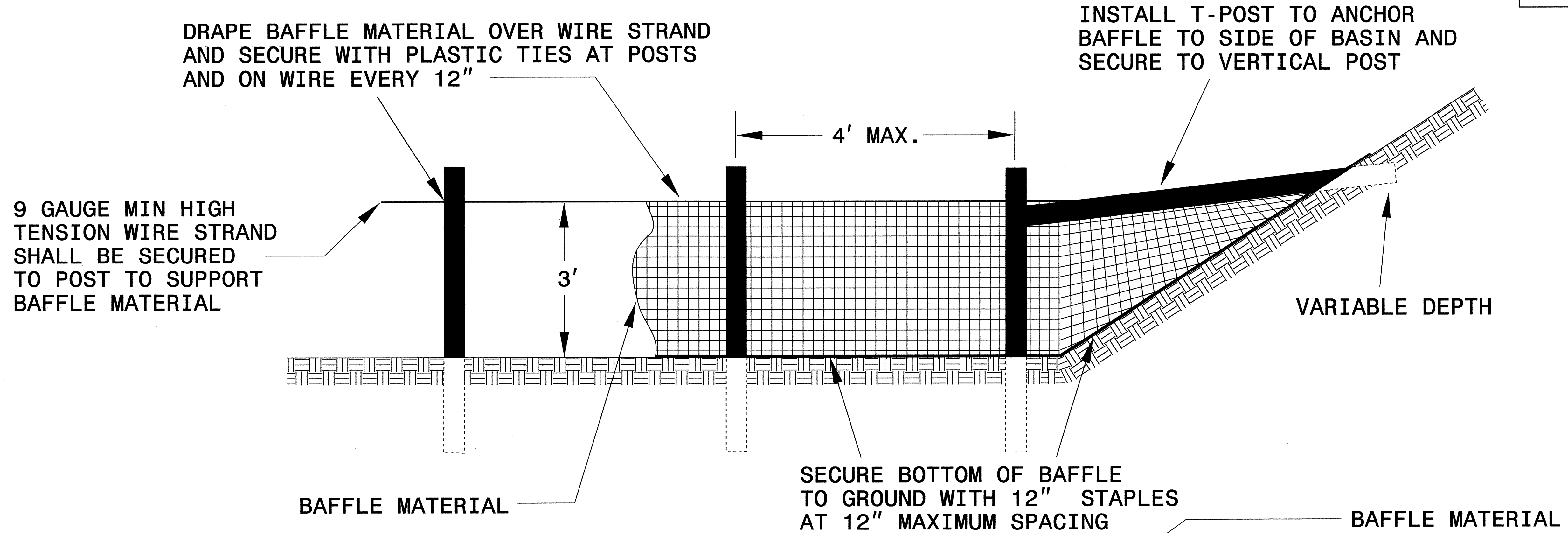
**CROSS SECTION TRAPEZOIDAL DITCH**



**ELEVATION VIEW**

PROJECT REFERENCE NO. B-4090	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER BAFFLE DETAIL



**NOTES:**

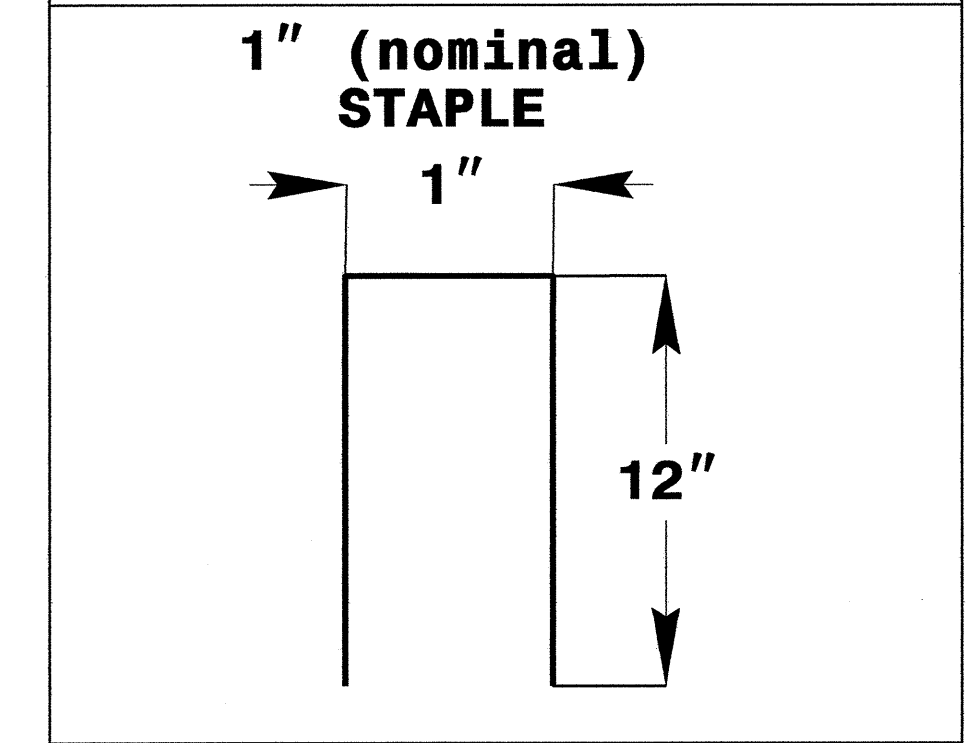
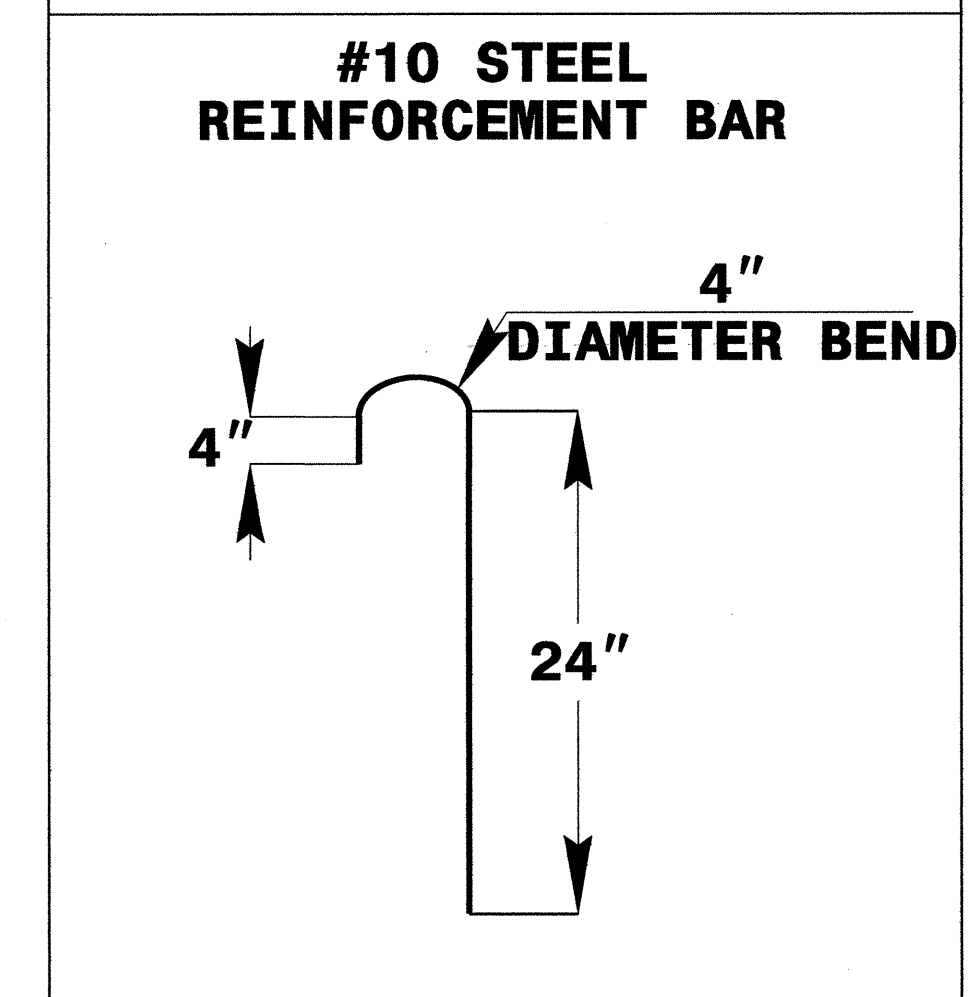
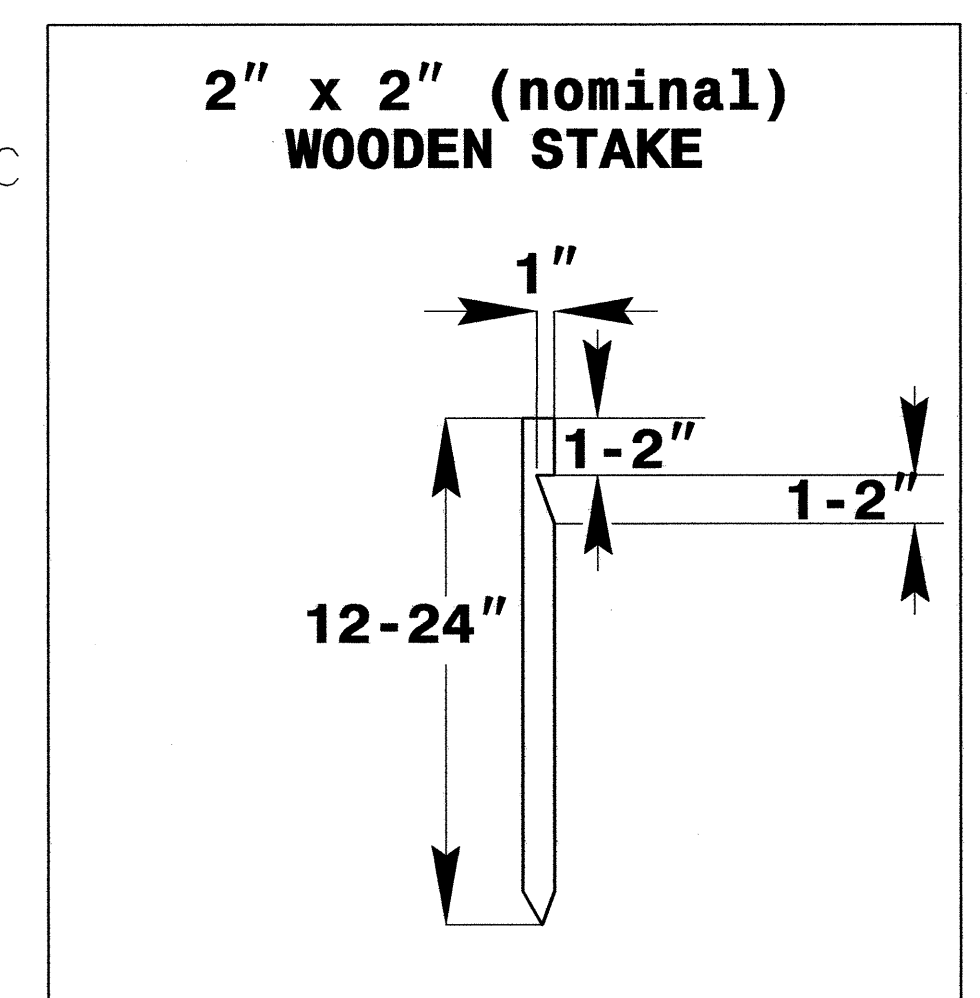
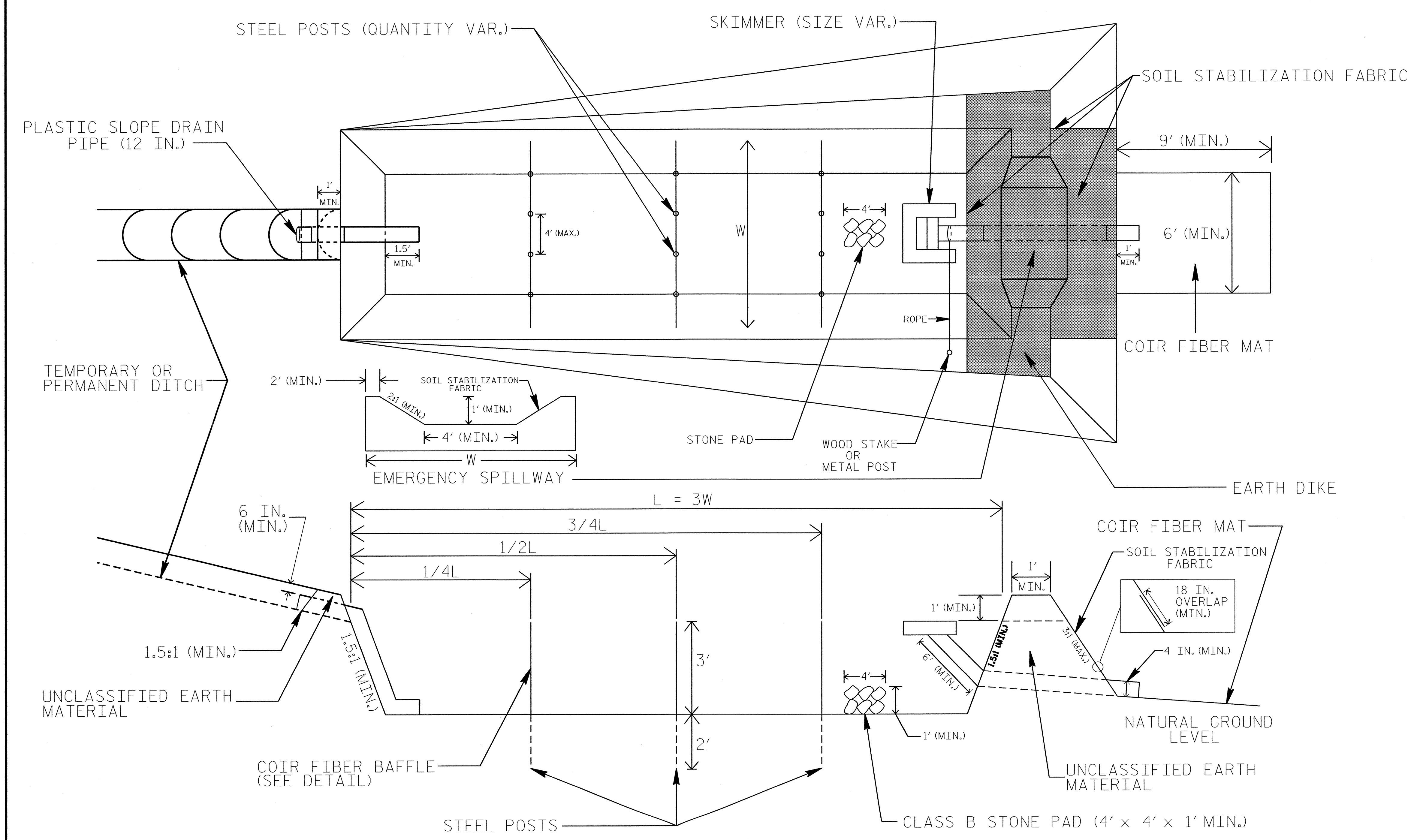
1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF  $\frac{1}{4}$  THE BASIN LENGTH.
2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF  $\frac{1}{3}$  THE BASIN LENGTH.
3. TOP HEIGHT 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



PROJECT REFERENCE NO. B-4090	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SKIMMER BASIN WITH BAFFLES DETAIL



## COIR FIBER MAT ANCHOR OPTIONS

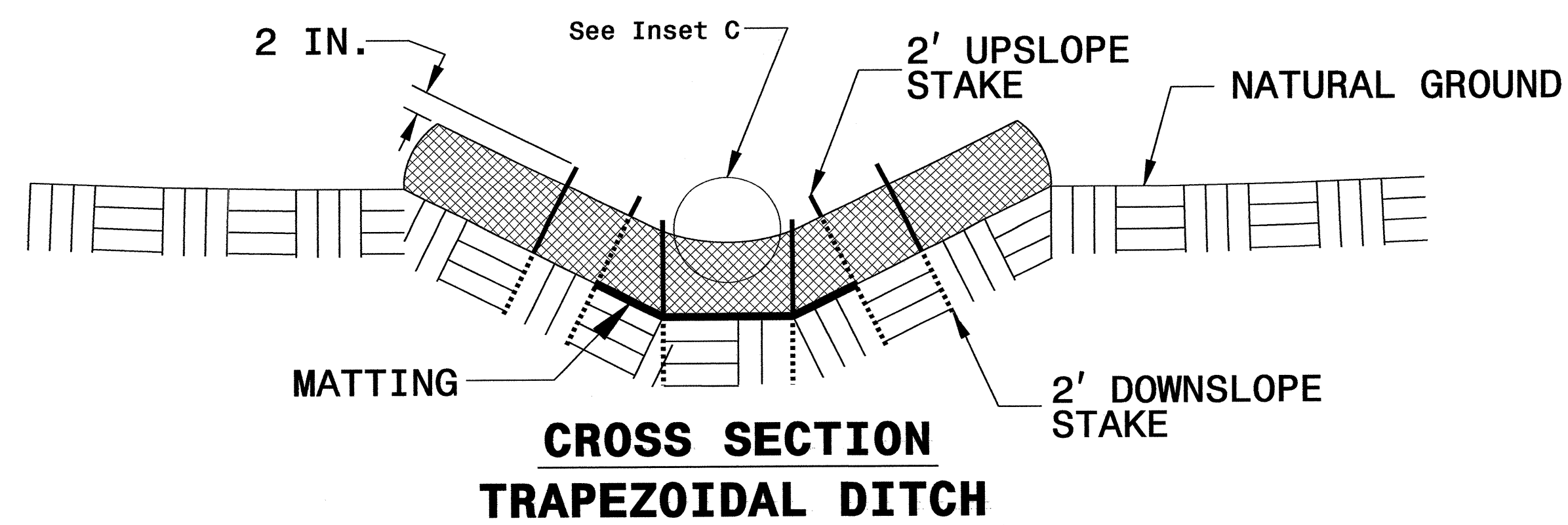
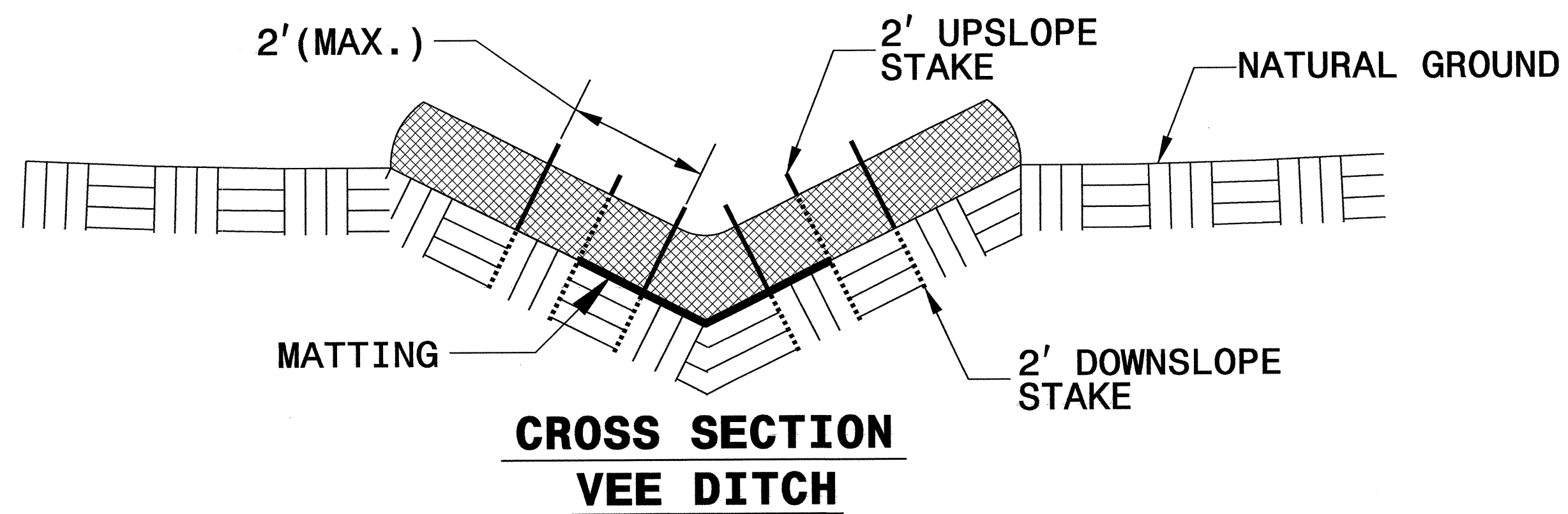
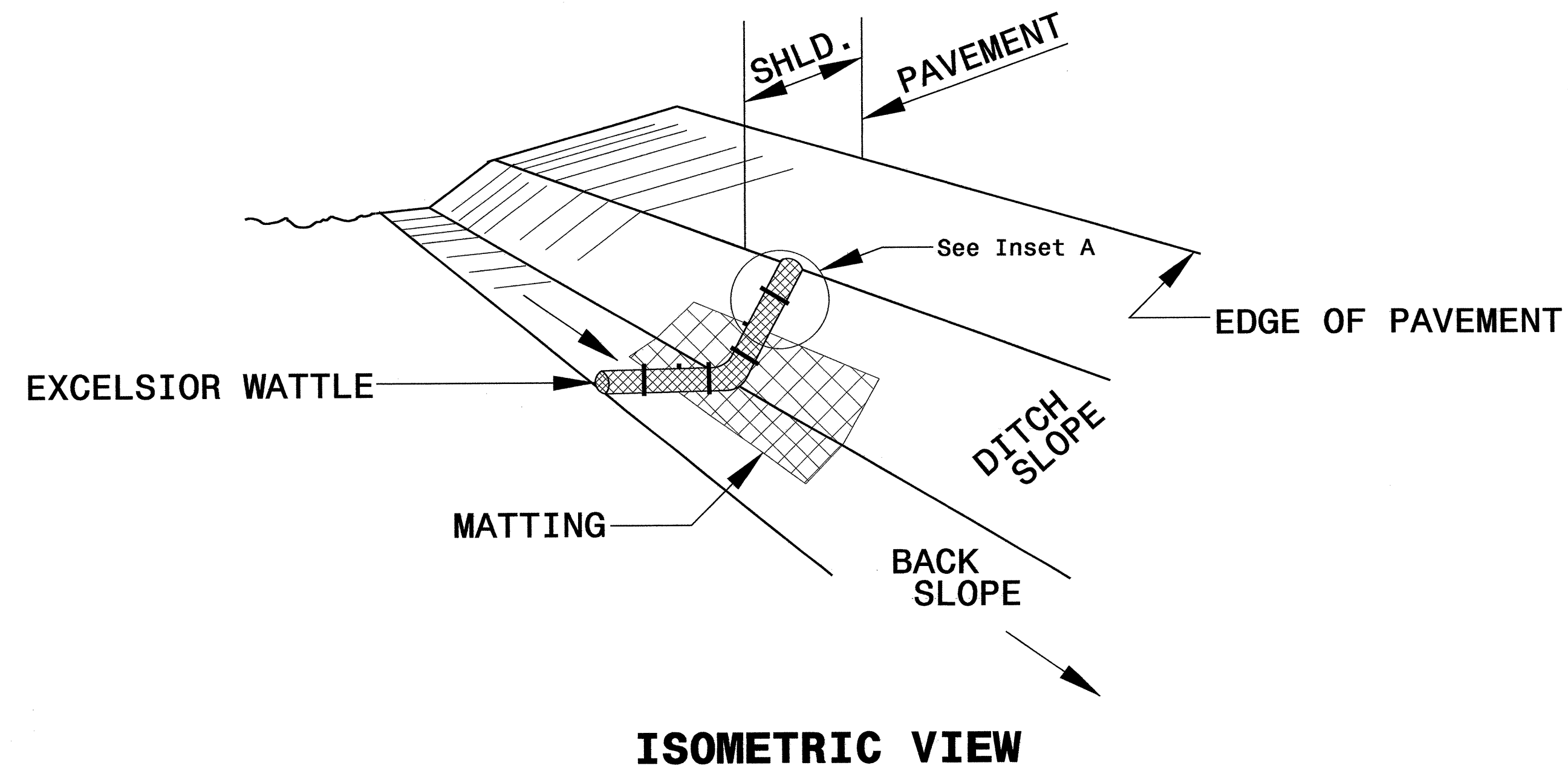
### NOTES

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 IN. (MIN.).

NOT TO SCALE

PROJECT REFERENCE NO. B-4090	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL 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.

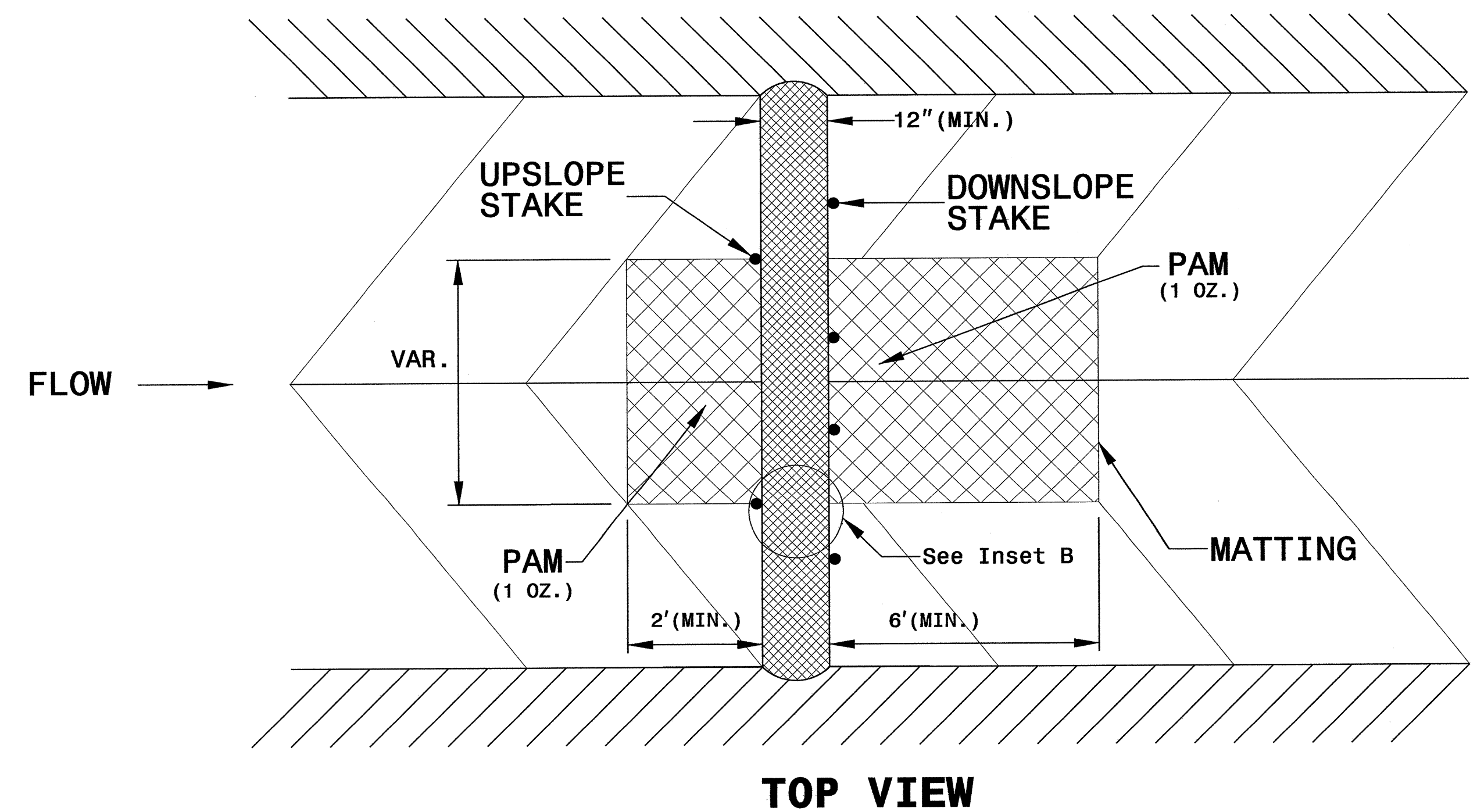
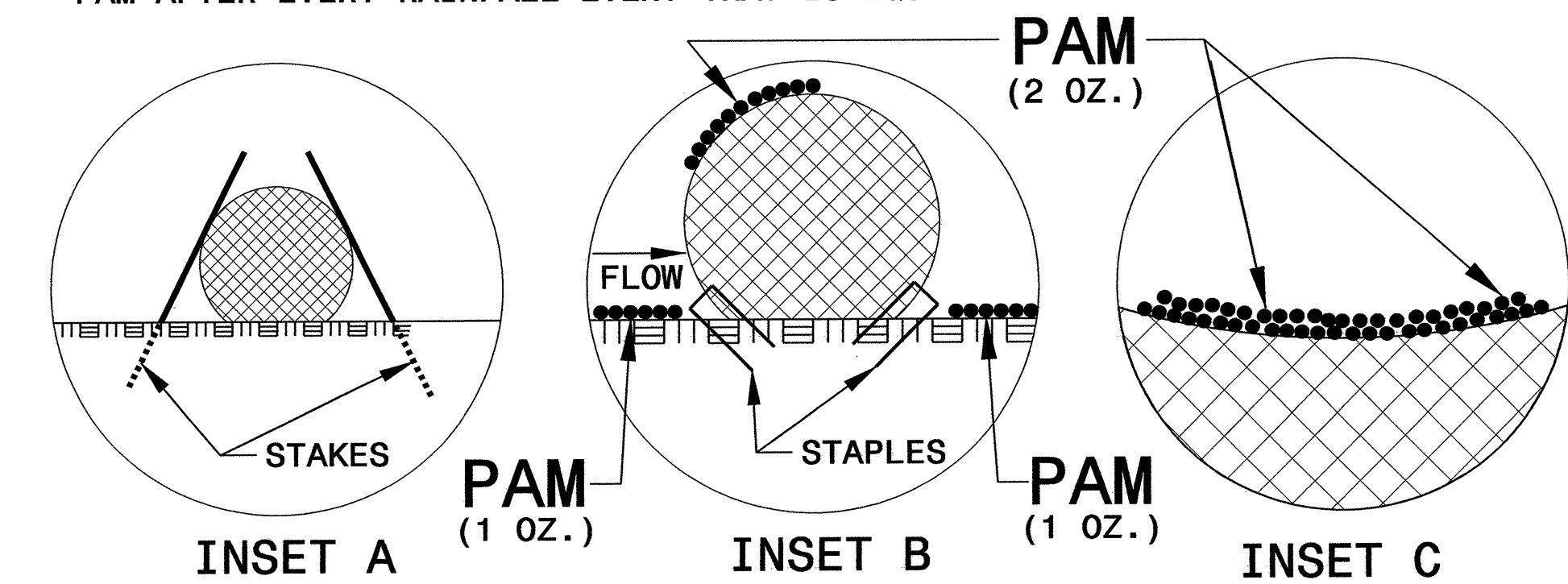
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

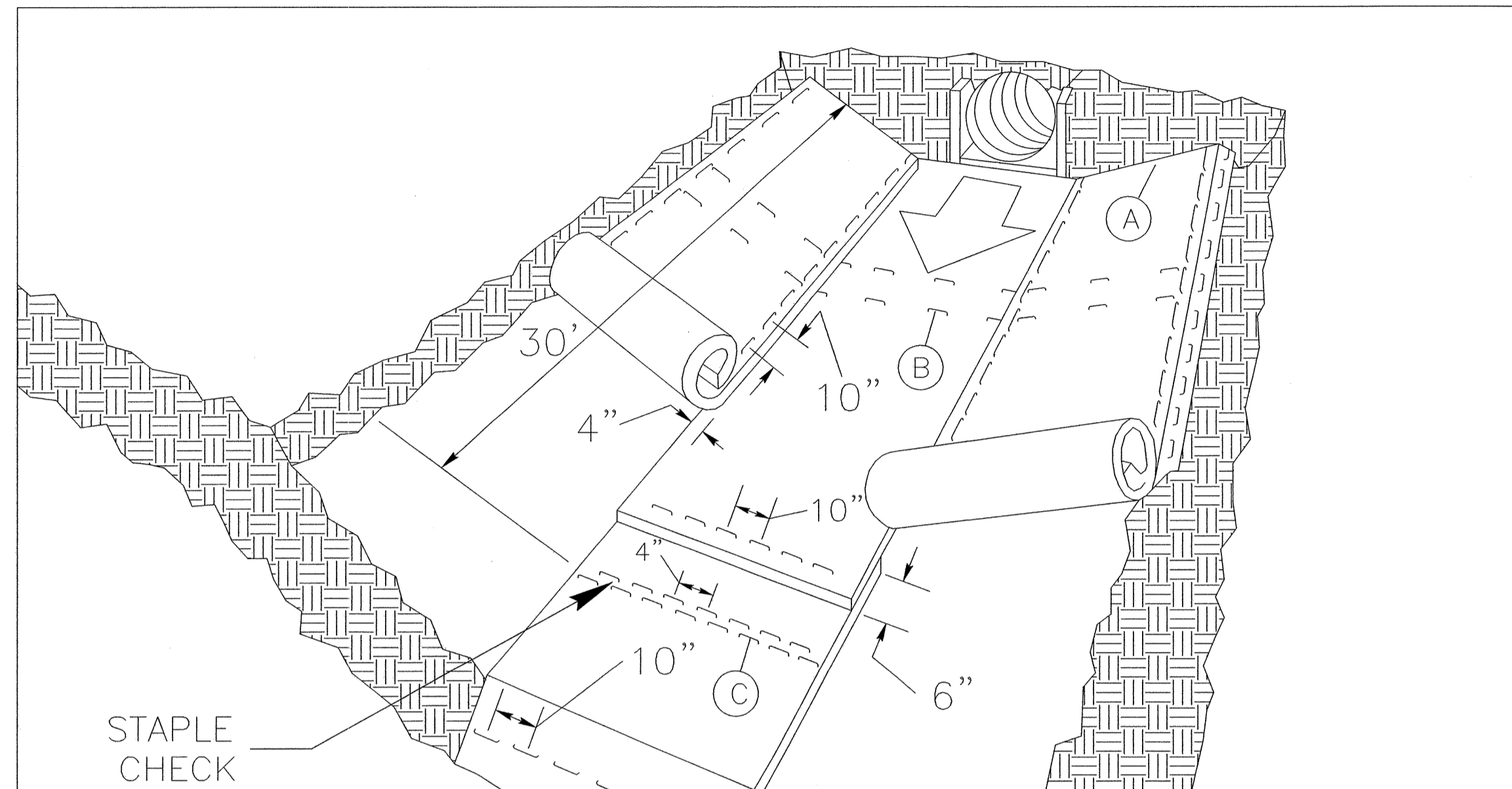
INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





PROJECT REFERENCE NO. B-4090	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# MATTING INSTALLATION DETAIL



**MATTING IN DITCHES**

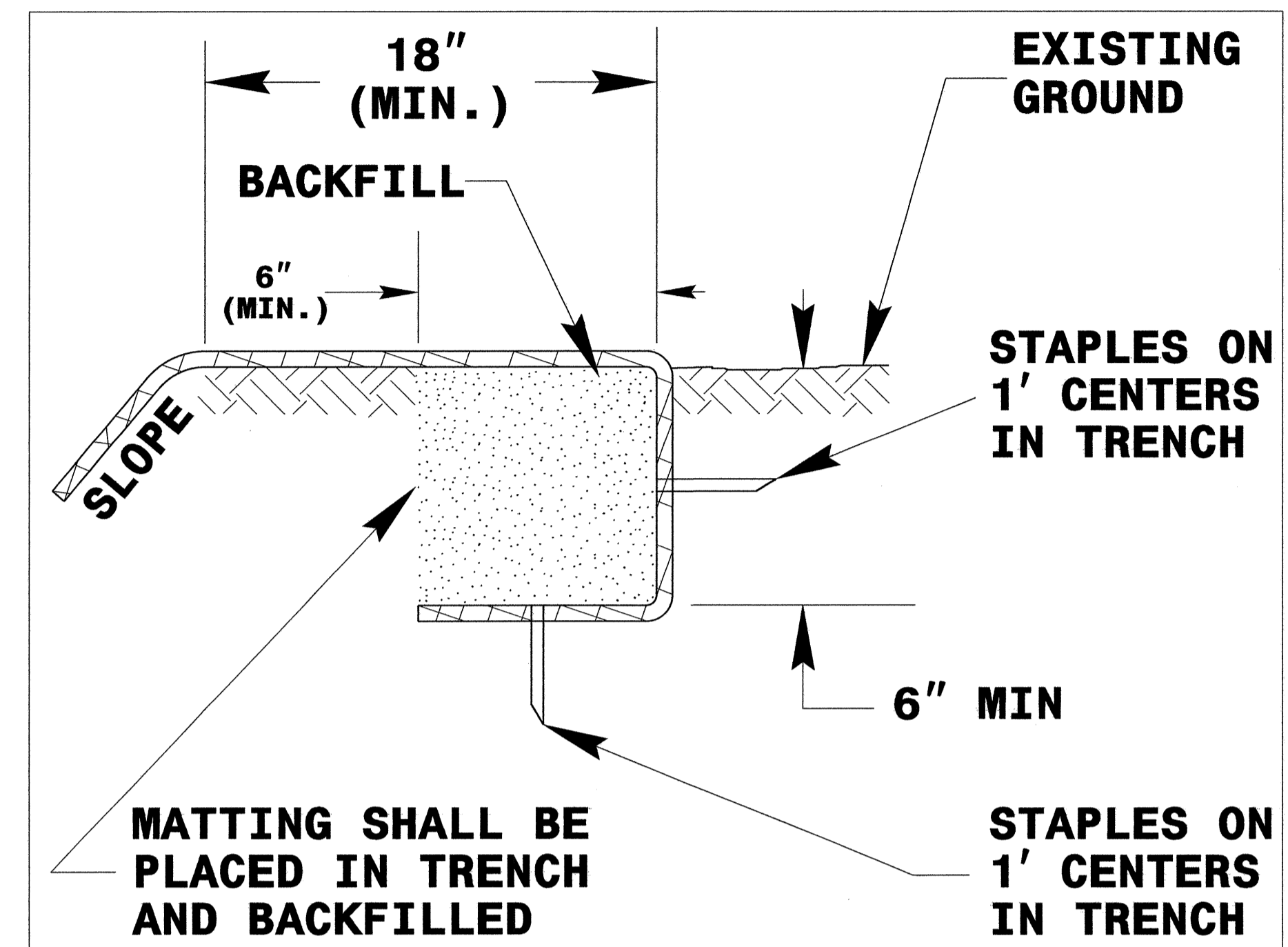
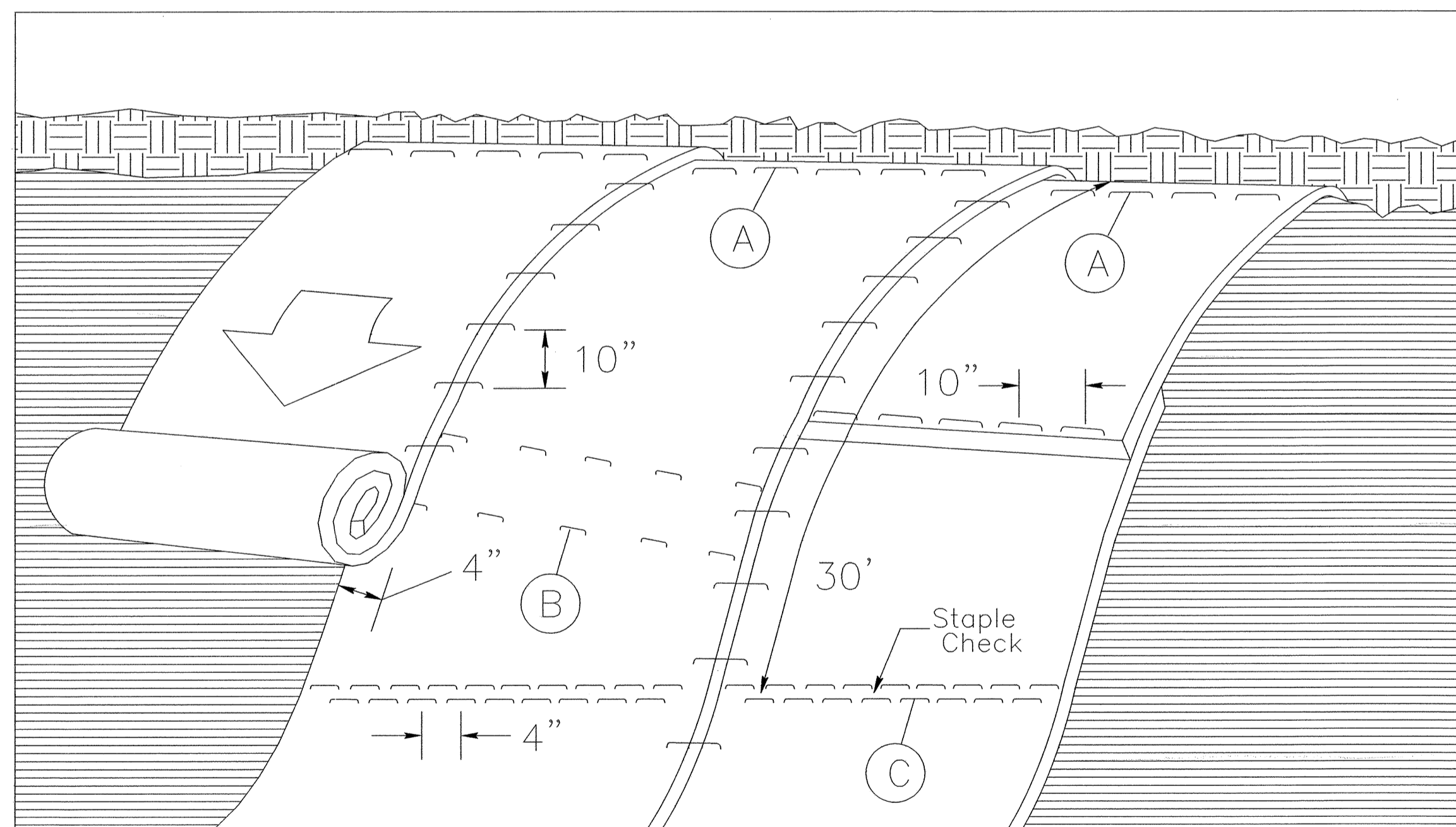


DIAGRAM (A)



**MATTING ON SLOPES**

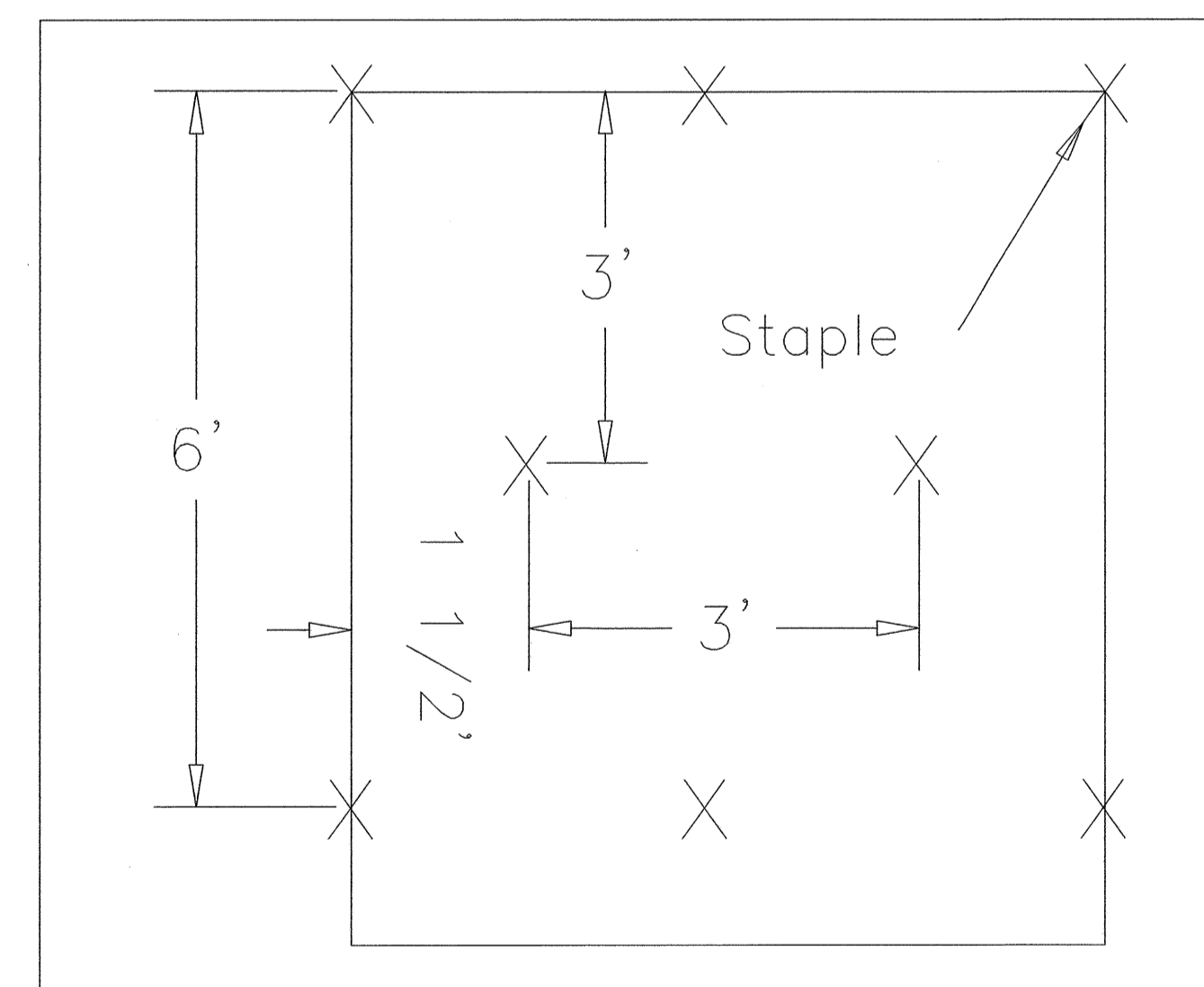


DIAGRAM (B)

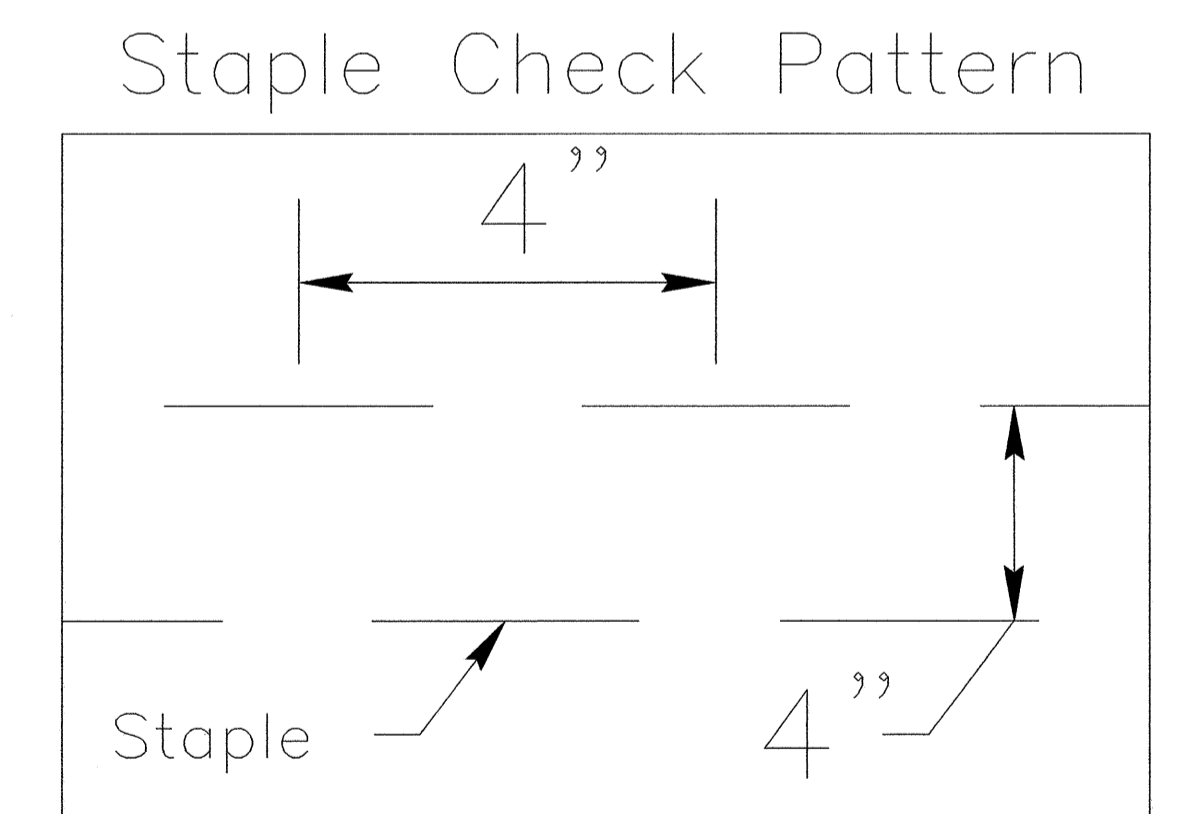


DIAGRAM (C)

**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-4090	EC-03/CONST.04
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

NOTE:  
UTILIZE SKIMMER BASIN AND/OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

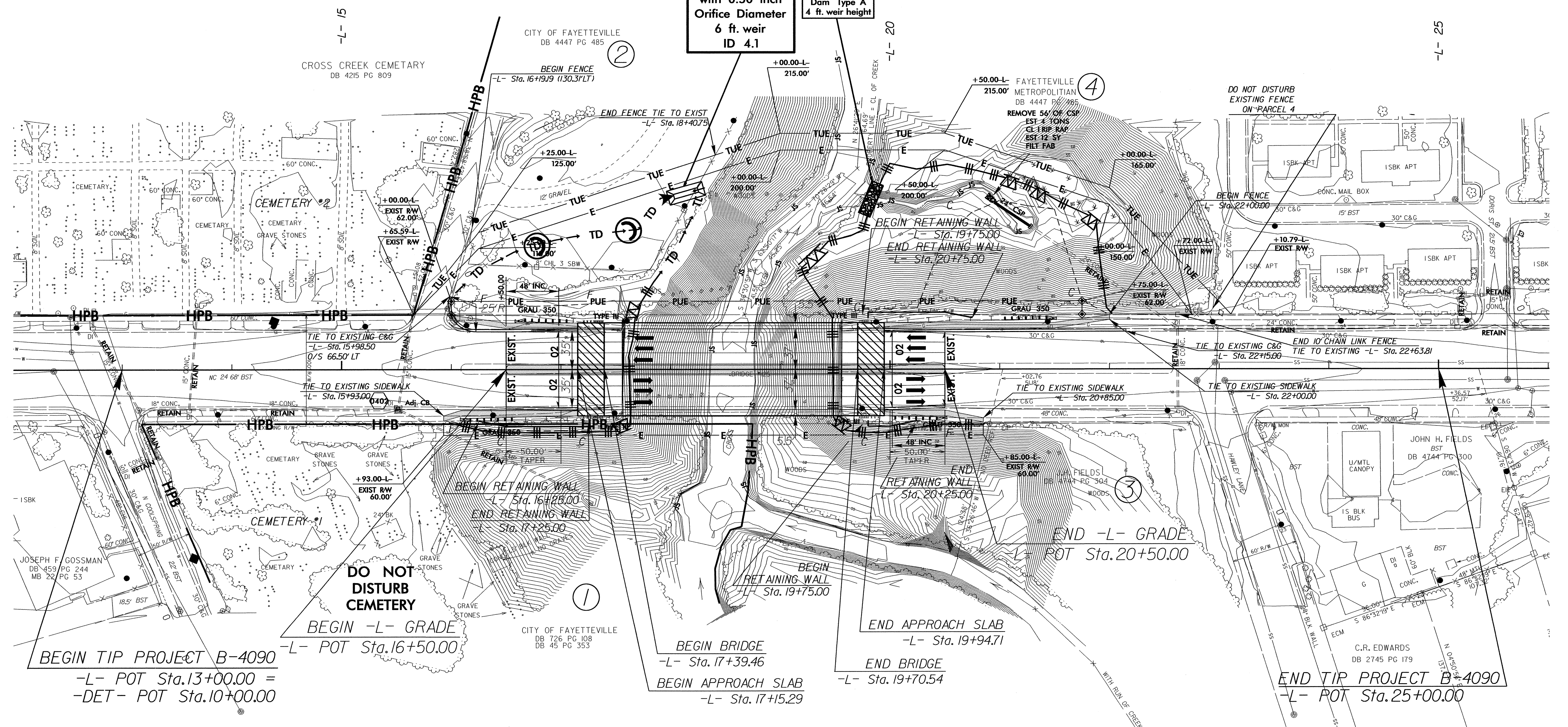
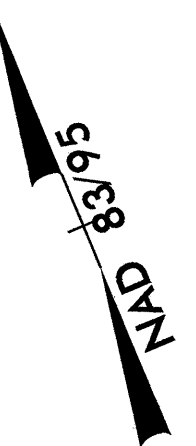
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 04

NOTE: SEE PROJECT SPECIAL PROVISIONS INSTALL FILTER FABRIC IN JURISDICTIONAL STREAM PRIOR TO PLACEMENT SEDIMENT DAM TYPE 'A' AND FILL MATERIAL FOR DETOUR.

33 x 14 x 3  
1.5 inch Skimmer  
with 0.50 inch  
Orifice Diameter  
6 ft. weir  
ID 4.1

Temporary Rock  
Sediment  
Dam Type A  
4 ft. weir height



R/W Rev: Updated property line between parcels 1 and 2. Moved the Temporary Utility Easement (TUE) at survey -L- Sta. 22+22.00(LT) to -L- Sta. 23+10.79(LT). Moved the Temporary Construction Easement (TCE) at survey -L- Sta. 15+50.00(RT) to -L- Sta. 15+93.00(RT). Moved the Temporary Construction Easement (TCE) at survey -L- Sta. 21+25.00(RT) to -L- Sta. 20+85.00(RT). 02/07/2011 -- TBR

8/17/99

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NOTES:

	SIDEWALK
	BRIDGE APPROACH SLAB
	HISTORIC PROPERTY BOUNDARY

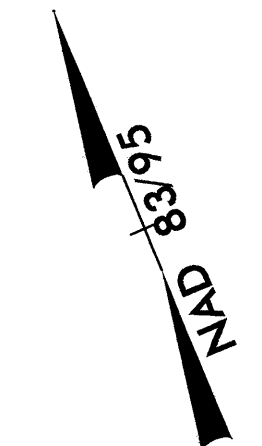


NOTE: UTILIZE SKIMMER BASIN AND/OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NOTE: SEE PROJECT SPECIAL PROVISIONS INSTALL FILTER FABRIC ALONG JURISDICTIONAL STREAM PRIOR TO PLACEMENT OF FILL MATERIAL FOR DETOUR.

# DETOUR

PROJECT REFERENCE NO. B-4090	SHEET NO. EC-04/CONST.2-B
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



Place Matting for Erosion Control on Slope as Work Allows.

33 x 14 x 3  
1.5 inch Skimmer  
with 0.50 inch  
Orifice Diameter  
6 ft. weir  
ID 4.1

Temporary Rock  
Sediment  
Dam Type A  
4 ft. weir height

DO NOT DISTURB  
RELOCATED FENCE

DO NOT DISTURB  
RELOCATED FENCE

SEE TRANSPORTATION  
MANAGEMENT PLANS  
FOR TEMP PAVEMENT MARKINGS

REMOVE FIRST SECTION OF  
PIPE, COLLAR AND EXTEND

DO NOT DISTURB  
EXISTING FENCE  
ON PARCELS 4

DO NOT DISTURB  
CEMETERY

SEE TRANSPORTATION  
MANAGEMENT PLANS  
FOR TEMP PAVEMENT MARKINGS

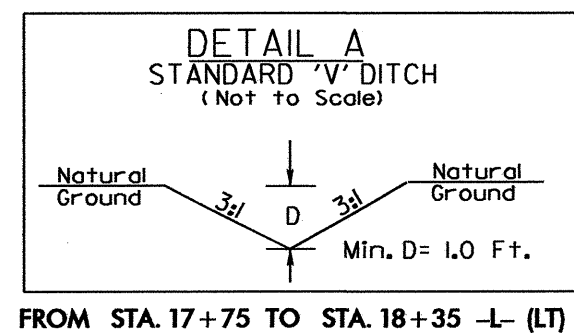
BEGIN TIP PROJECT B-4090  
-L- POT Sta.13+00.00 =  
-DET- POT Sta.10+00.00

END TIP PROJECT B-4090  
-L- POT Sta.25+00.00

DETOUR IS DESIGNED FOR 25 MPH.

-DET- CURVE DATA

PI Sta 12+70.50 Δ = 33° 16' 47.6" (LT) D = 22° 55' 05.9" L = 145.21' T = 74.72' R = 250.00' RO = SEE PLANS	PI Sta 14+15.71 Δ = 33° 16' 47.6" (RT) D = 22° 55' 05.9" L = 145.21' T = 74.72' R = 250.00' RO = SEE PLANS	PI Sta 17+85.92 Δ = 33° 16' 47.6" (RT) D = 22° 55' 05.9" L = 145.21' T = 74.72' R = 250.00' RO = SEE PLANS	PI Sta 19+31.14 Δ = 33° 16' 47.6" (LT) D = 22° 55' 05.9" L = 145.21' T = 74.72' R = 250.00' RO = SEE PLANS
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HPB HISTORIC PROPERTY BOUNDARY

REVISIONS

08-AUG-2011 13:48  
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10/24/2011 10:17:00



PROJECT REFERENCE NO.	SHEET NO.
B-4090	EC-05/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

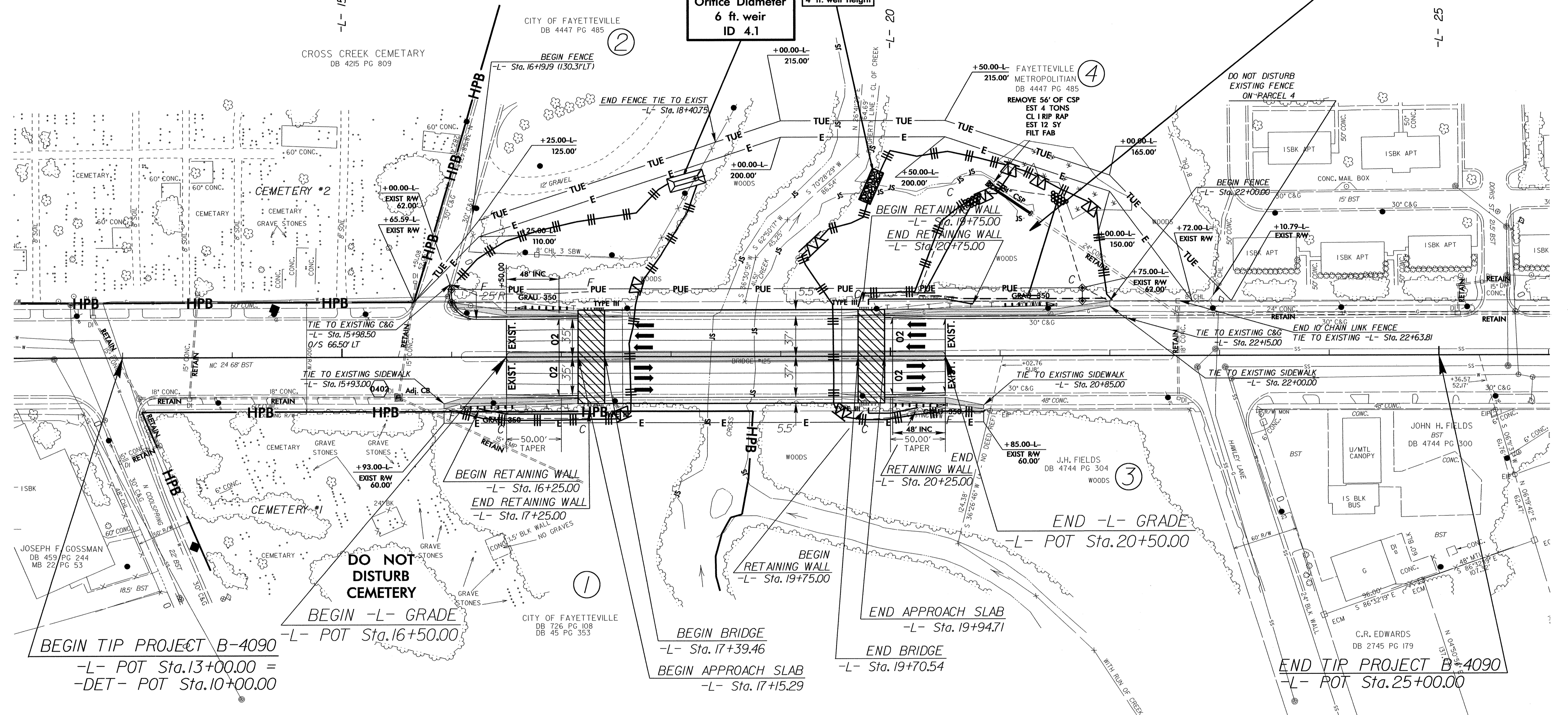
NOTE:  
UTILIZE SKIMMER BASIN AND/OR SPECIAL STILLING BASIN AS STILLING BASIN WHERE APPLICABLE.

NOTE: SEE PROJECT SPECIAL PROVISIONS  
INSTALL FILTER FABRIC IN JURISDICTIONAL STREAM  
PRIOR TO PLACEMENT SEDIMENT DAM TYPE 'A'  
AND FILL MATERIAL FOR DETOUR.

Place Matting for Erosion Control  
on Slopes Adjacent to Permitted  
Wetlands as Work Allows.

33 x 14 x 3  
1.5 inch Skimmer  
with 0.50 inch  
Orifice Diameter  
6 ft. weir  
ID 4.1

Temporary Rock  
Sediment  
Dam Type A  
4 ft. weir height



NOTES:

	SIDEWALK
	BRIDGE APPROACH SLAB
	HISTORIC PROPERTY BOUNDARY

REVISIONS  
 R.W. Rev: Updated property line between parcels 1 and 2. Moved the Temporary Utility Easement (TUE) at survey -L- Sta. 22+72.00(LT) to -L- Sta. 23+10.79(LT). Moved the Temporary Construction Easement (TCE) at survey -L- Sta. 15+93.00(RT) to -L- Sta. 15+50.00(RT). Moved the Temporary Construction Easement (TCE) at survey -L- Sta. 21+25.00(RT) to -L- Sta. 20+85.00(RT). 02.07.2011 -- TBR

8/17/09

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