

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4190	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

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

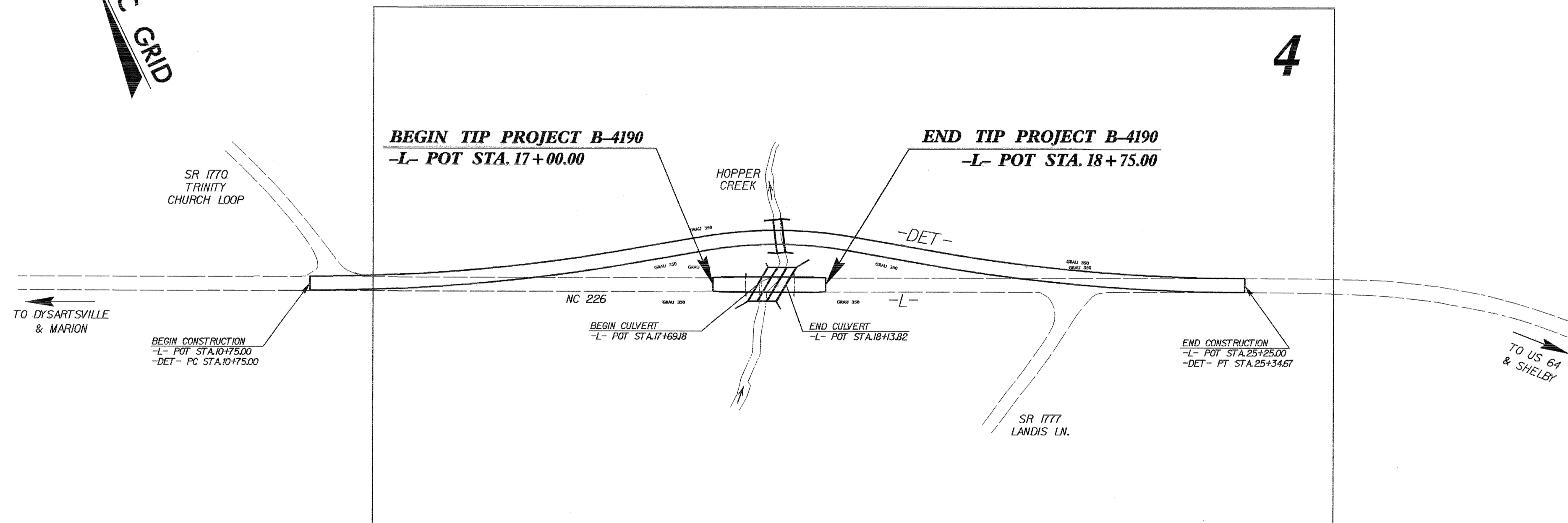
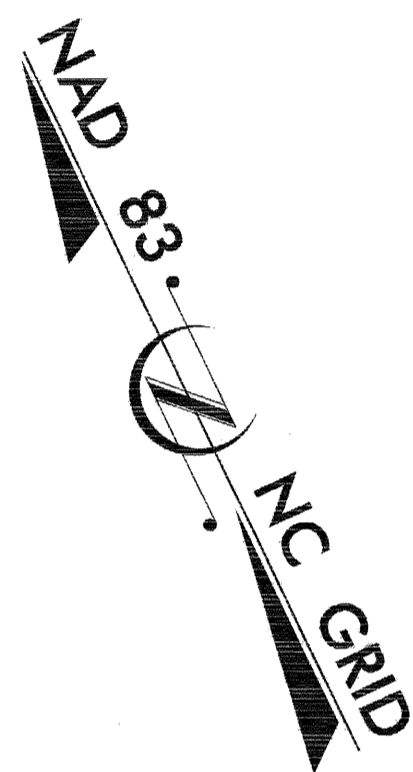
**LOCATION: BRIDGE #37 OVER HOPPER CREEK
 ON NC 226**

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

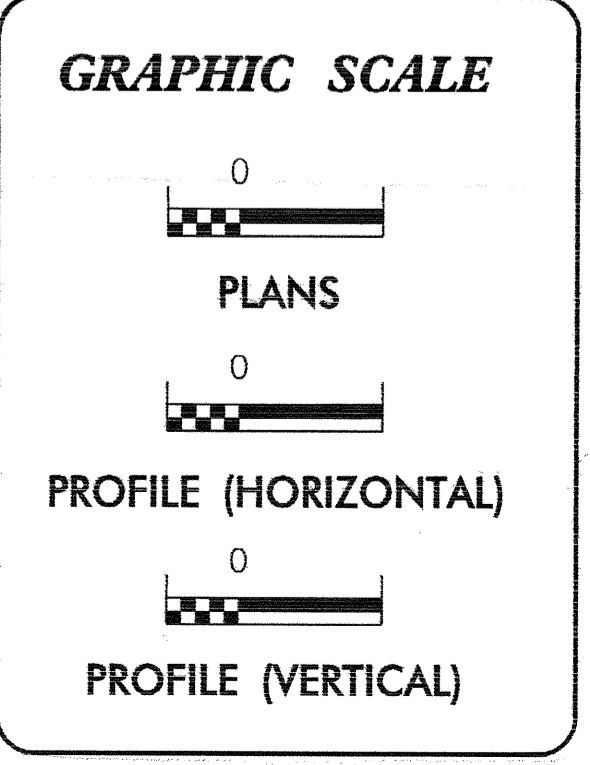
EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	▲▲▲▲▲
1622.01	Temporary Berms and Slope Drains	— T —
	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	▨
1655.01	Rock Pipe Inlet Sediment Trap Type-A	⊓
1655.02	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.**



TIP PROJECT: B-4190



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

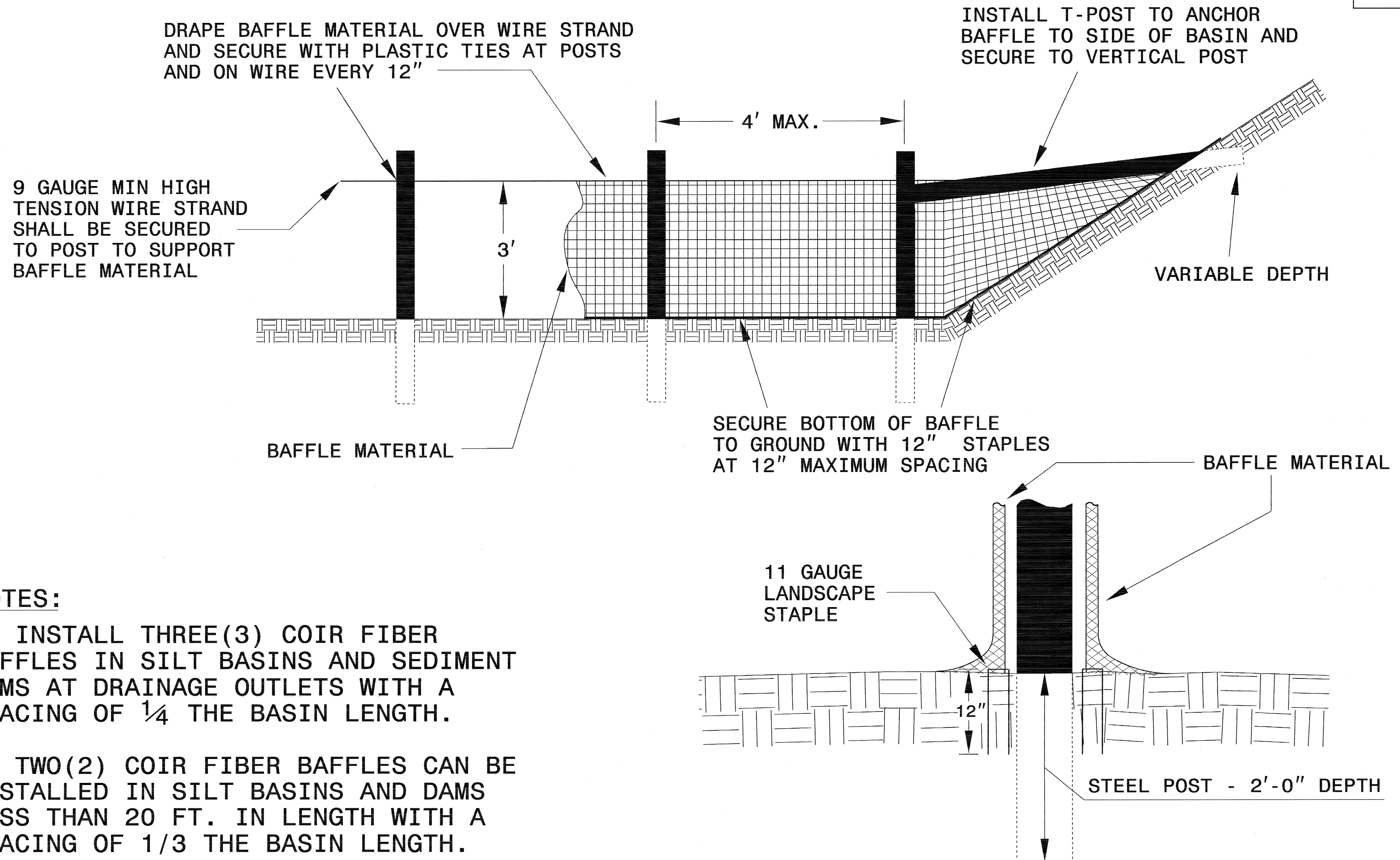
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1630.04 Stilling Basin
1606.01 Special Sediment Control Fence	1630.05 Temporary Diversion
1607.01 Gravel Construction Entrance	1630.06 Special Stilling Basin
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.03 Temporary Silt Ditch	

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PROJECT REFERENCE NO. B-4190	SHEET NO. EC-2
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.

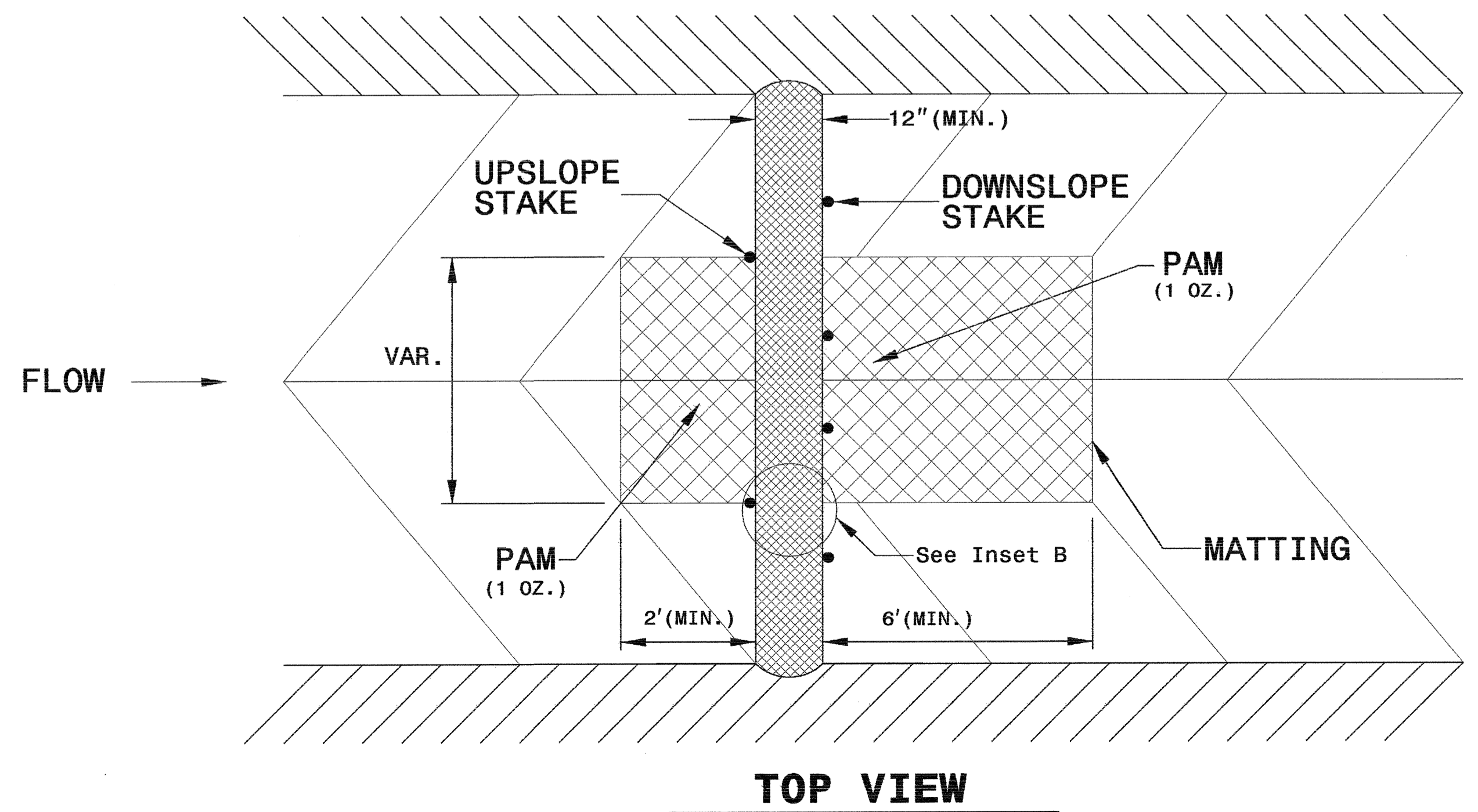
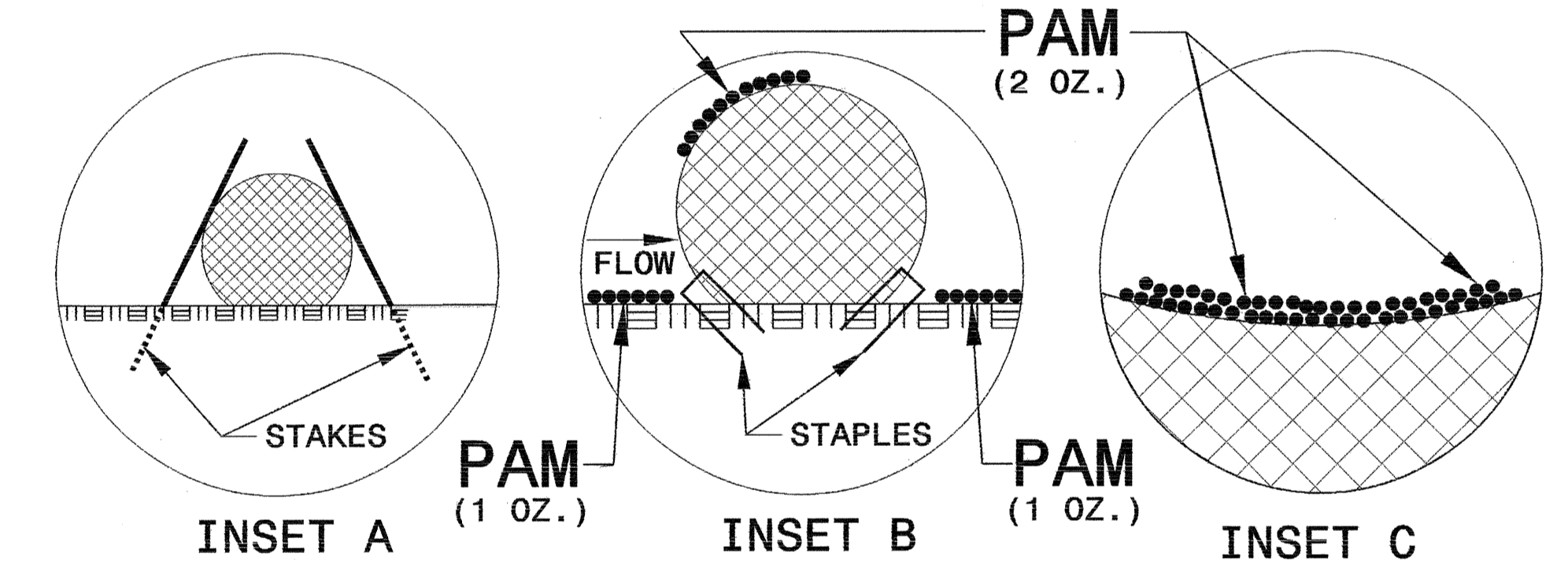
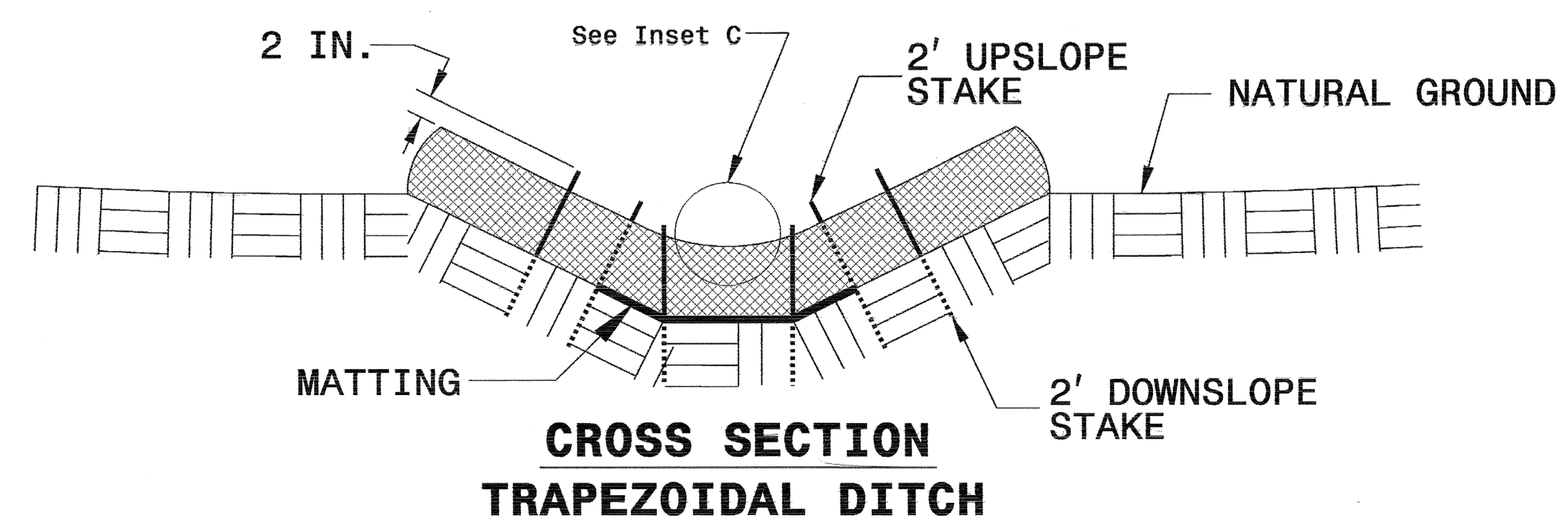
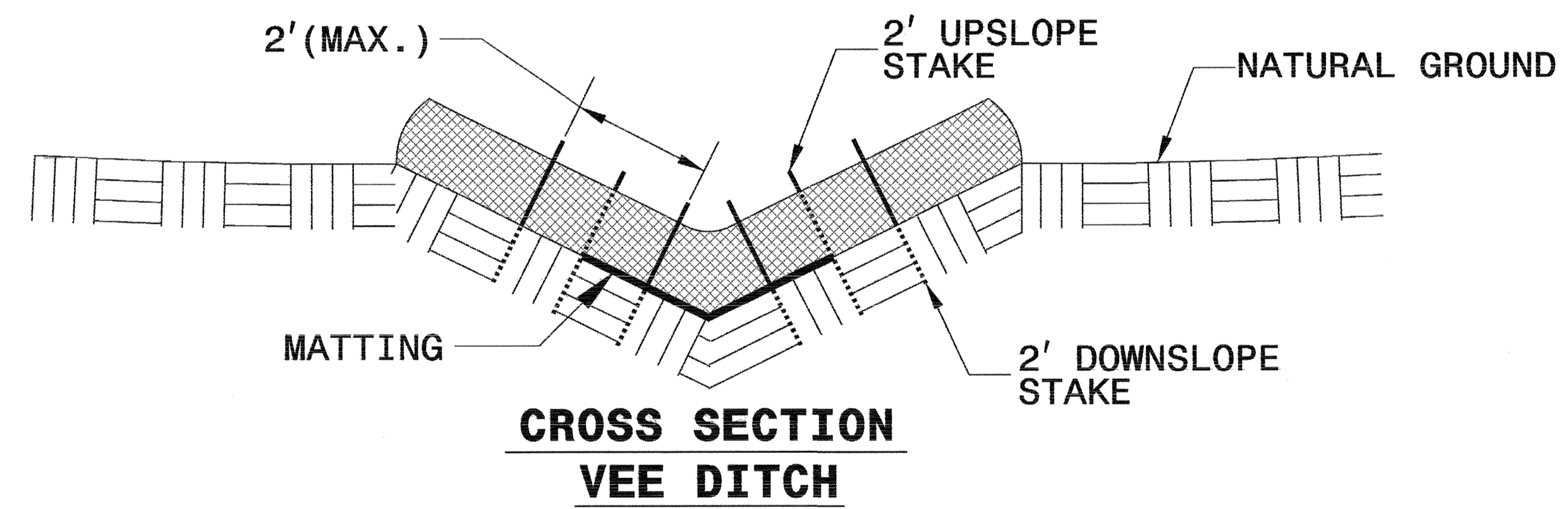
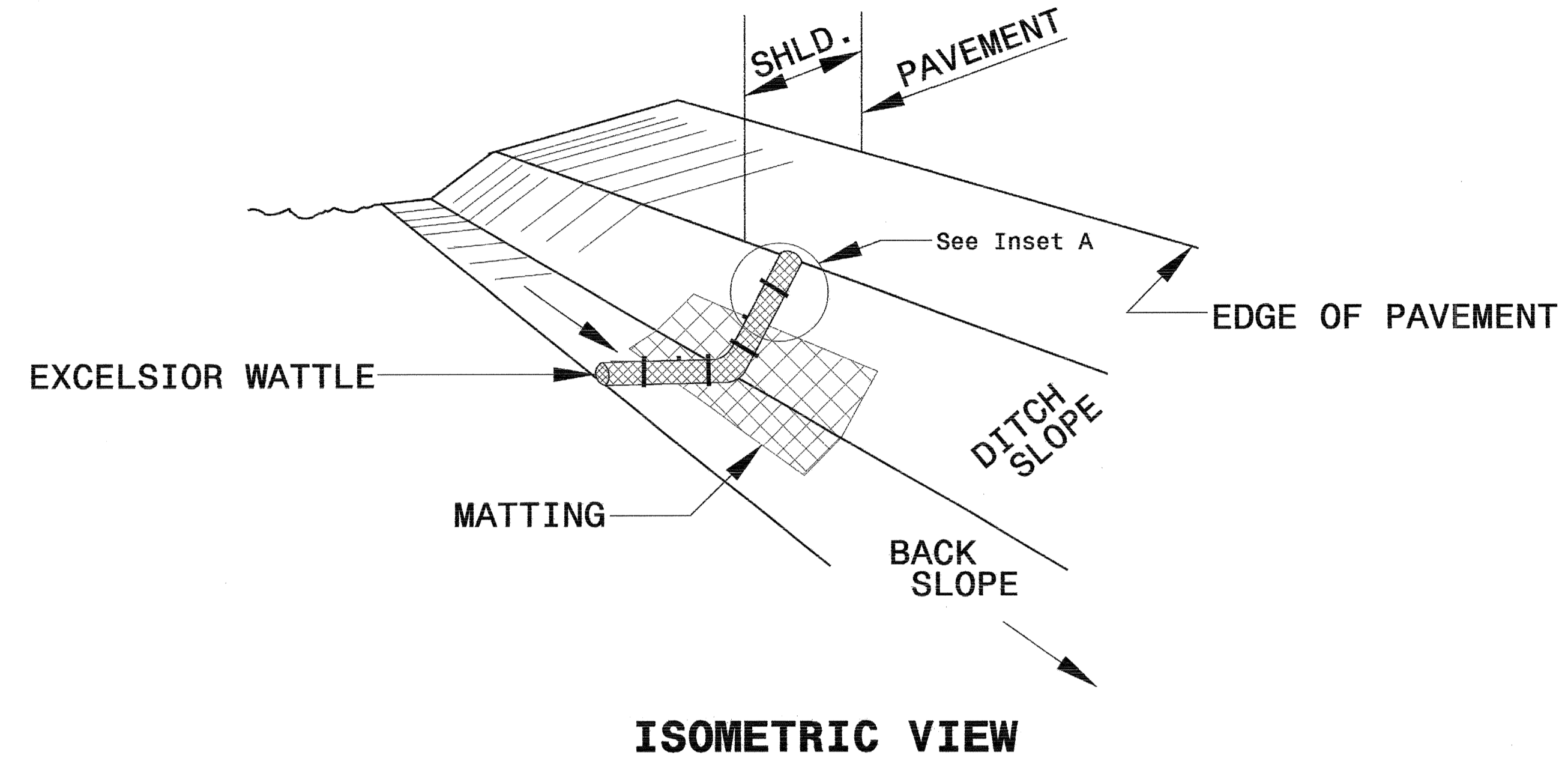
BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

PROJECT REFERENCE NO. B-490	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

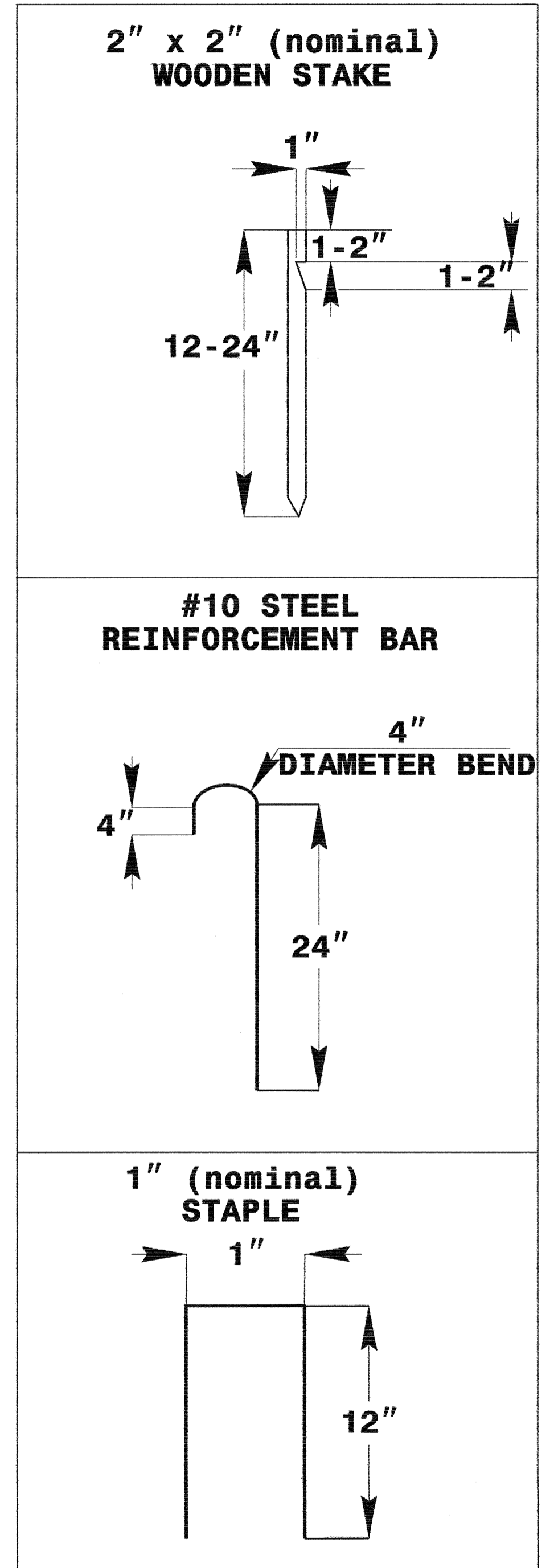
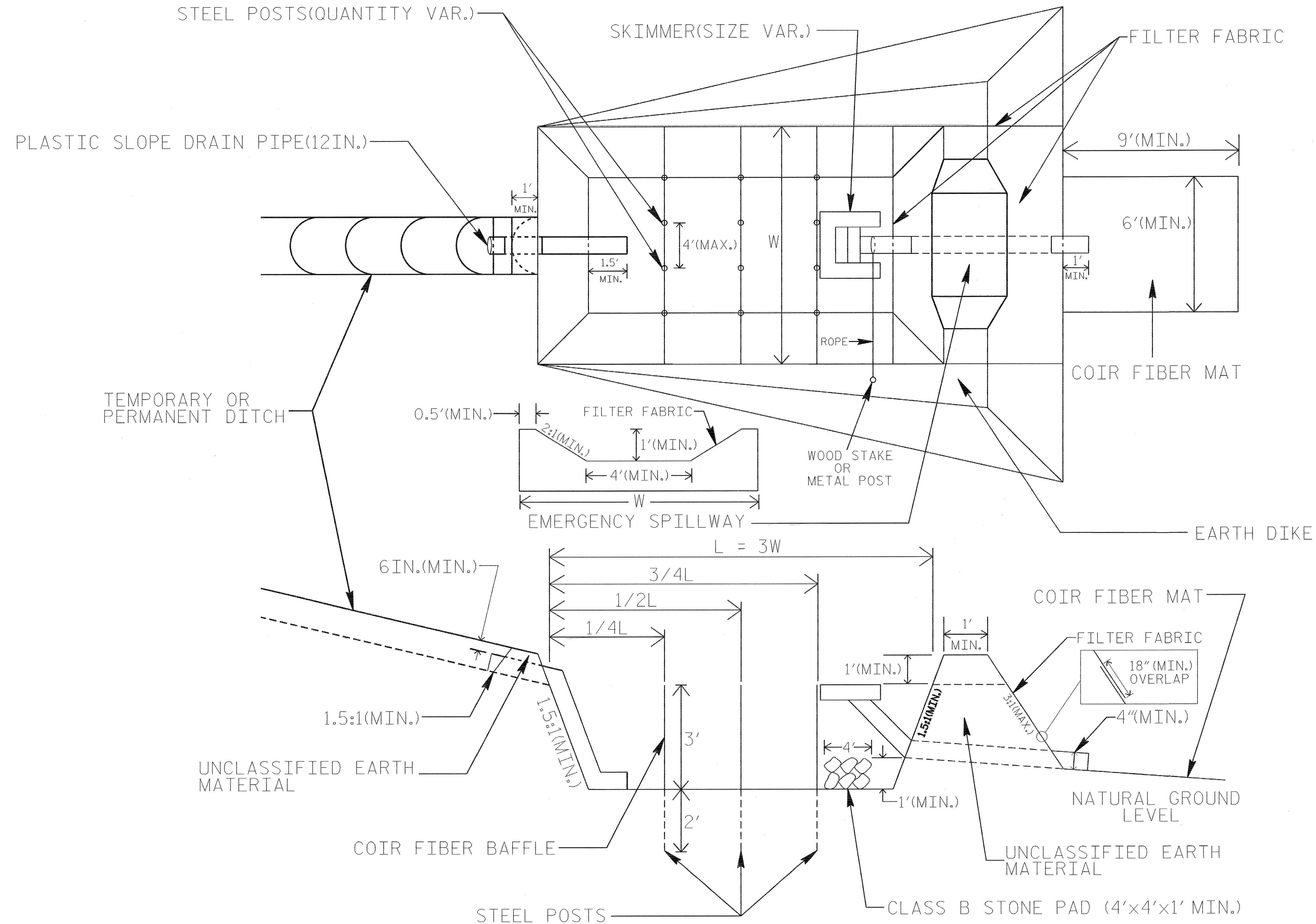
NOTES:

- 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.



SKIMMER BASIN WITH BAFFLES DETAIL

PROJECT REFERENCE NO. B-4190	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



COIR FIBER MAT ANCHOR OPTIONS

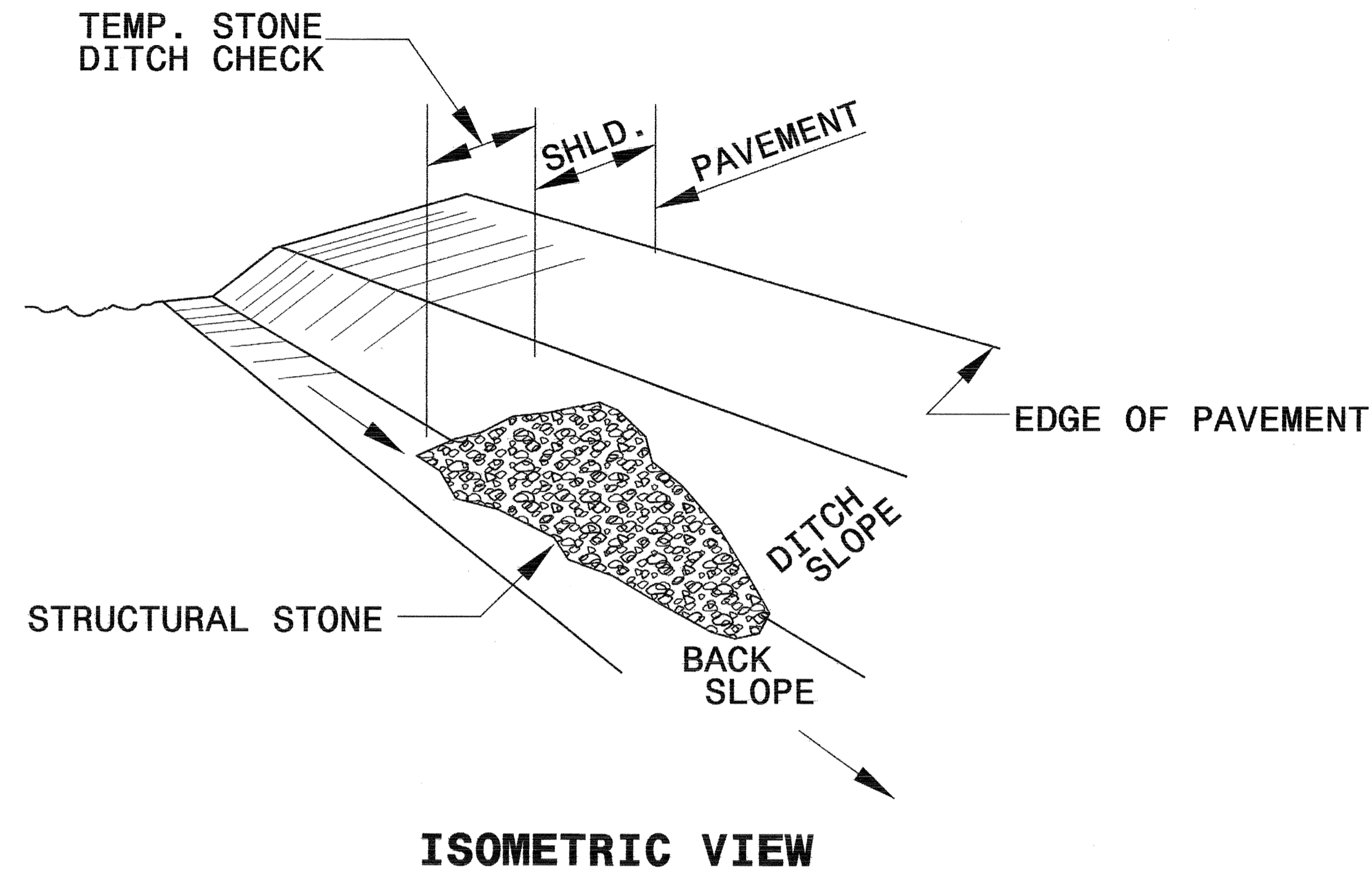
NOTES

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. FILTER FABRIC FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18" (MIN.) AS SHOWN.

NOT TO SCALE

PROJECT REFERENCE NO. B-4190	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

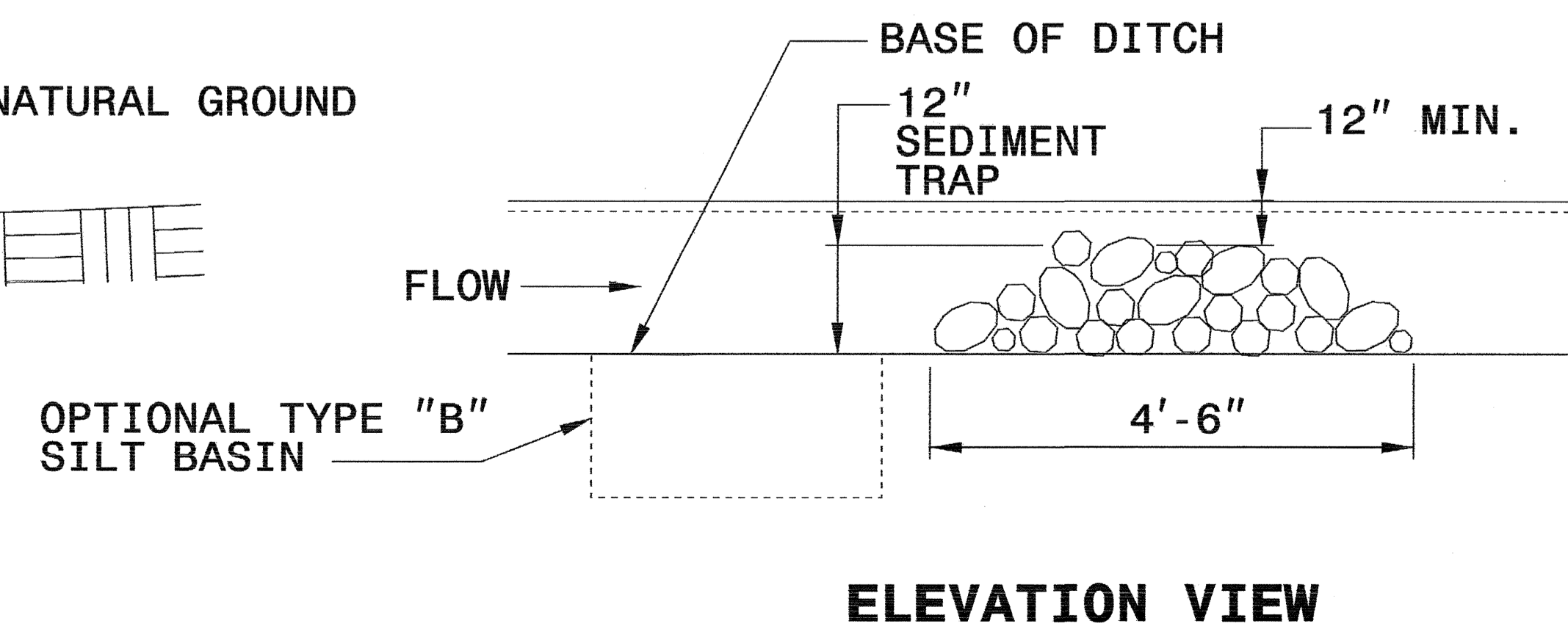
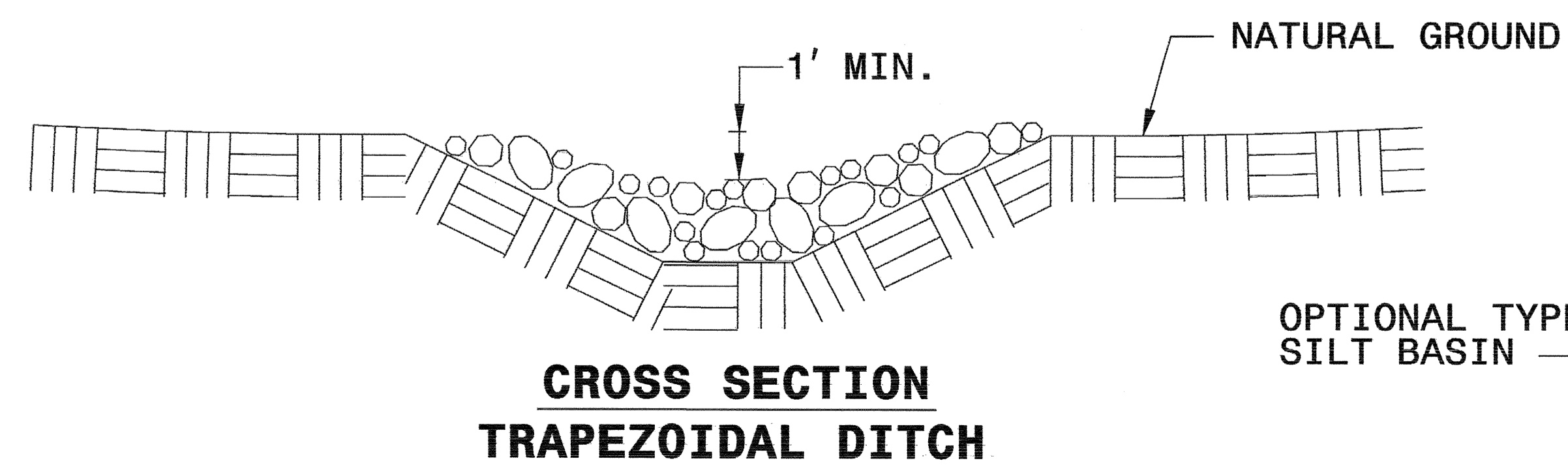
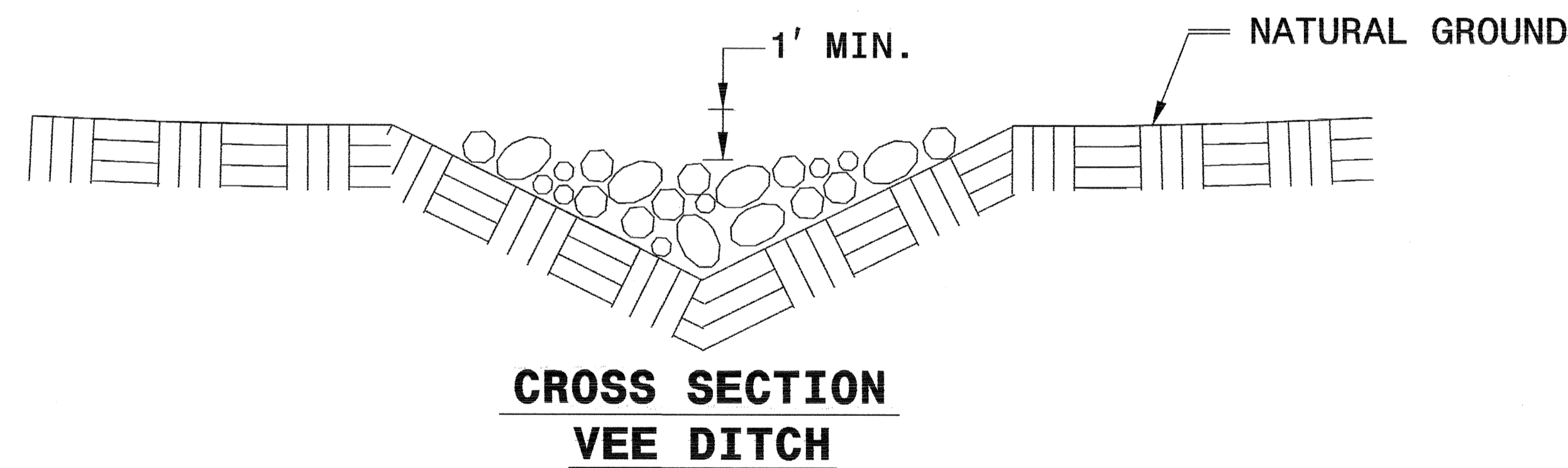
TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



NOTES:

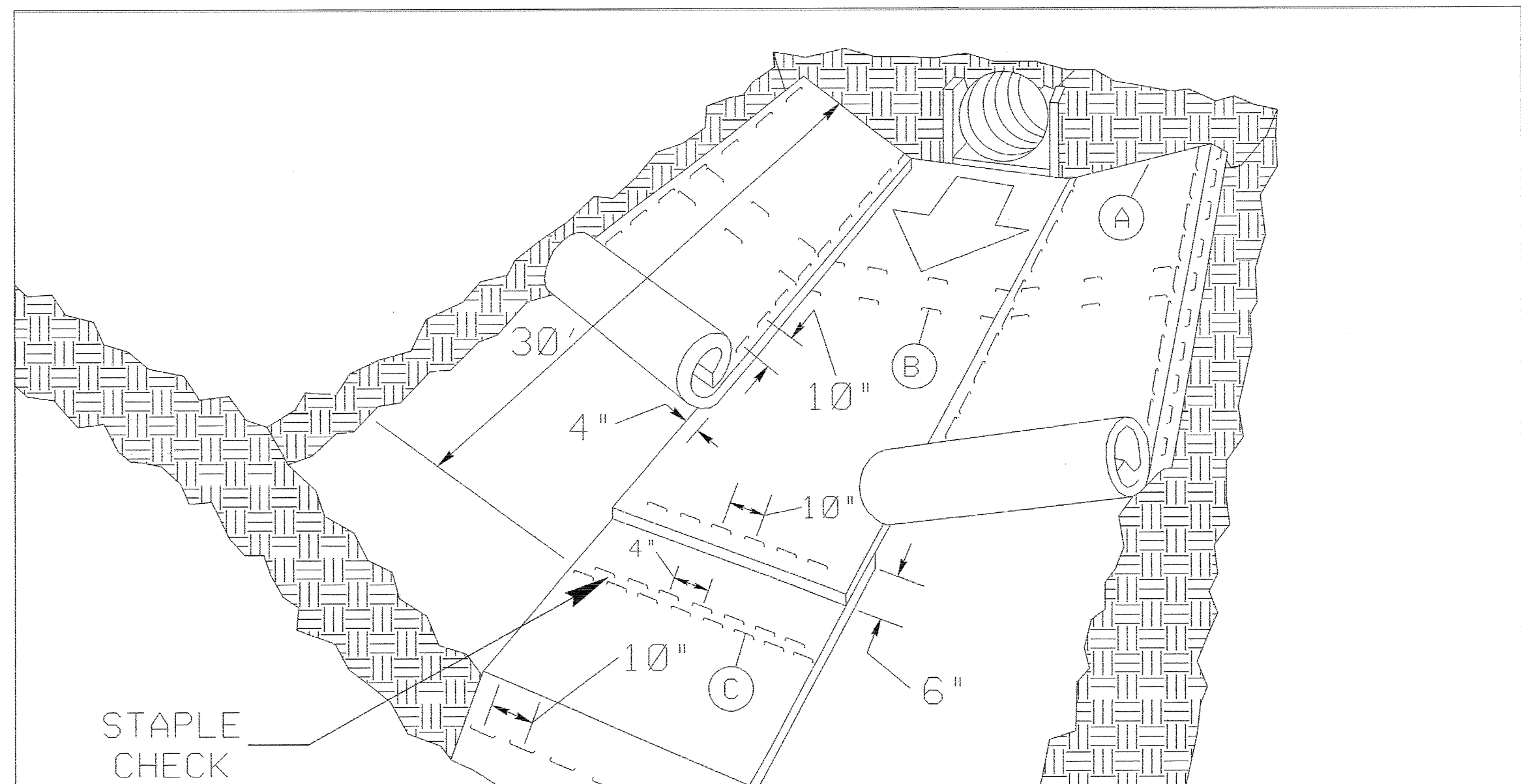
USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

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%.



PROJECT REFERENCE NO. B-4190	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

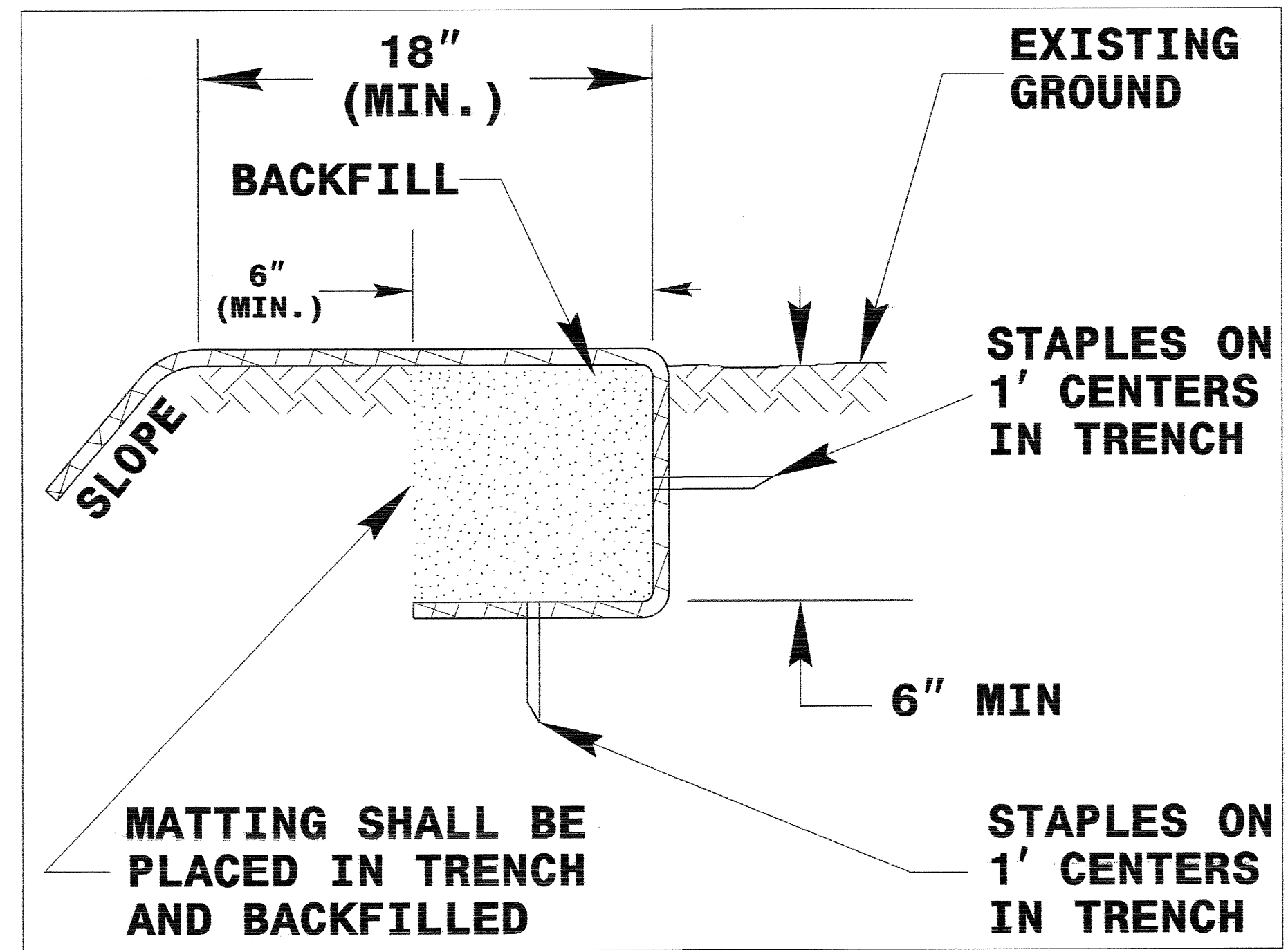
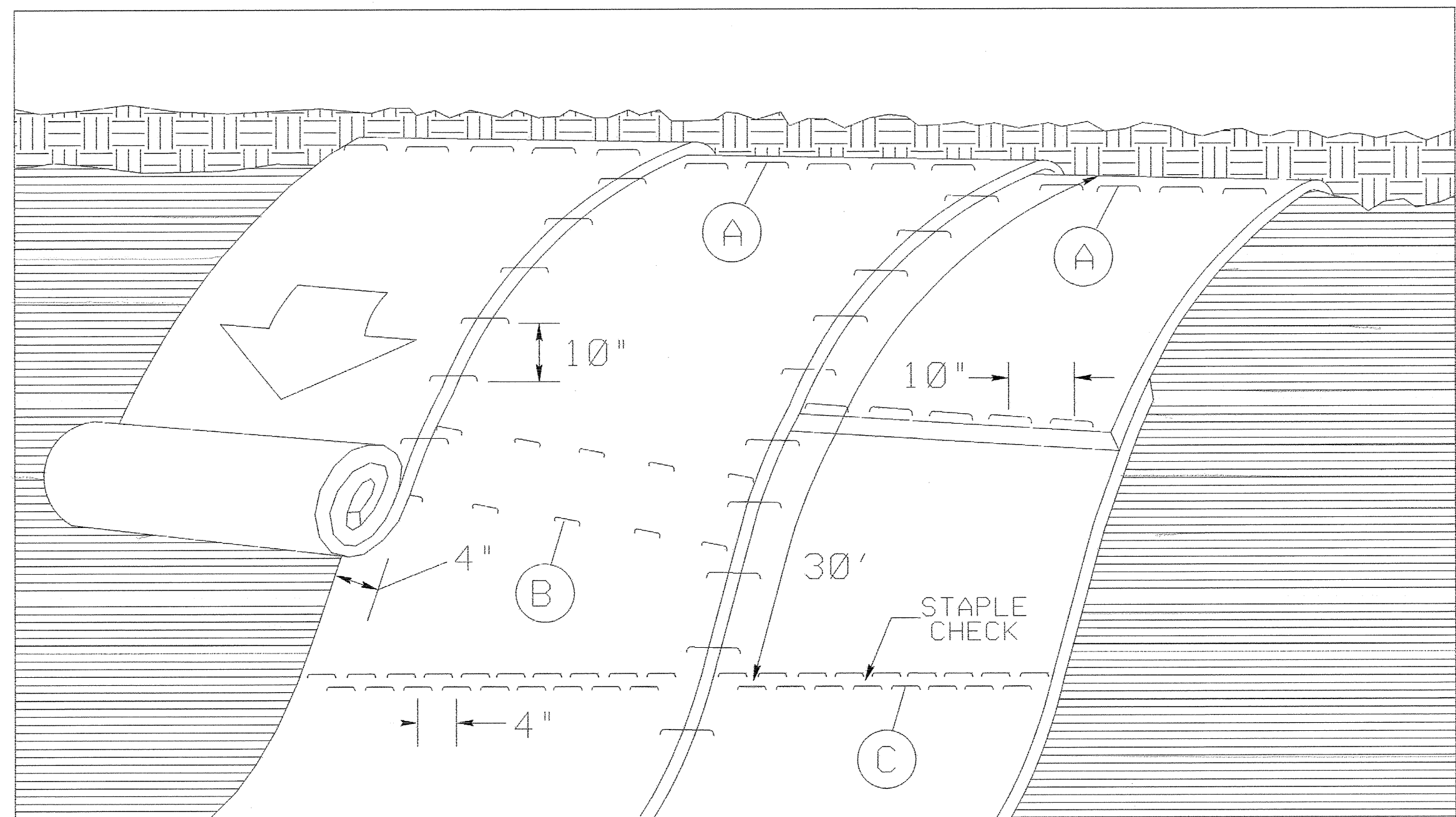


DIAGRAM (A)



MATTING ON SLOPES

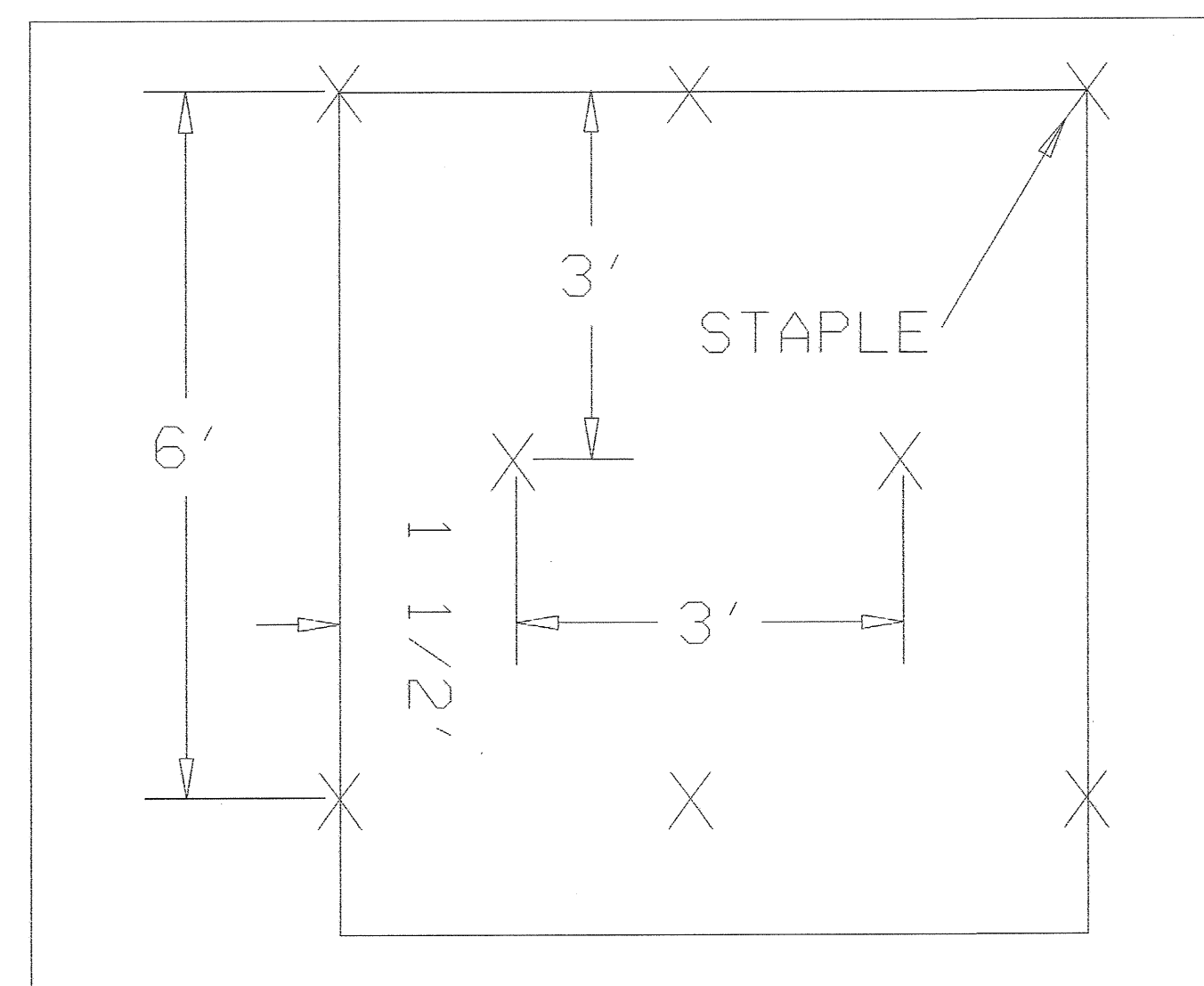


DIAGRAM (B)

STAPLE CHECK PATTERN

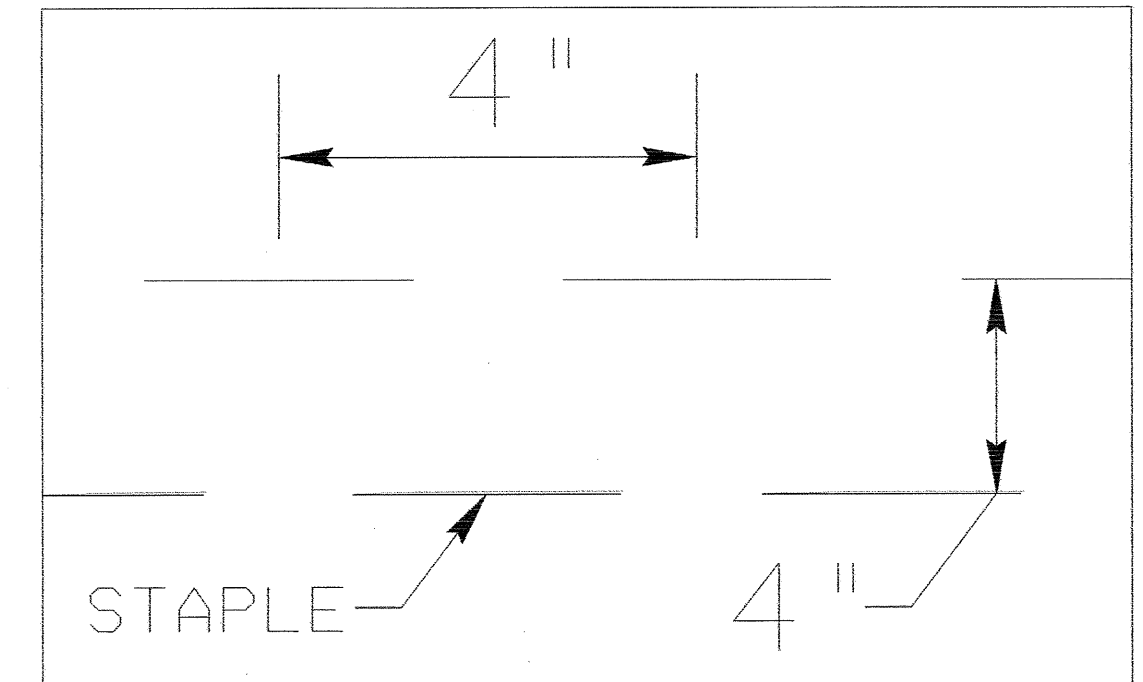


DIAGRAM (C)

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. B-4190	SHEET NO. EC-3
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
2	-DET-	12+00	16+50	LT	405
2	-DET-	14+50	16+50	RT	140
4	-L-	11+50	16+50	LT	1235
4	-L-	18+15	21+00	LT	205
			SUBTOTAL		1985
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				8325
			TOTAL		10310
			SAY		10500

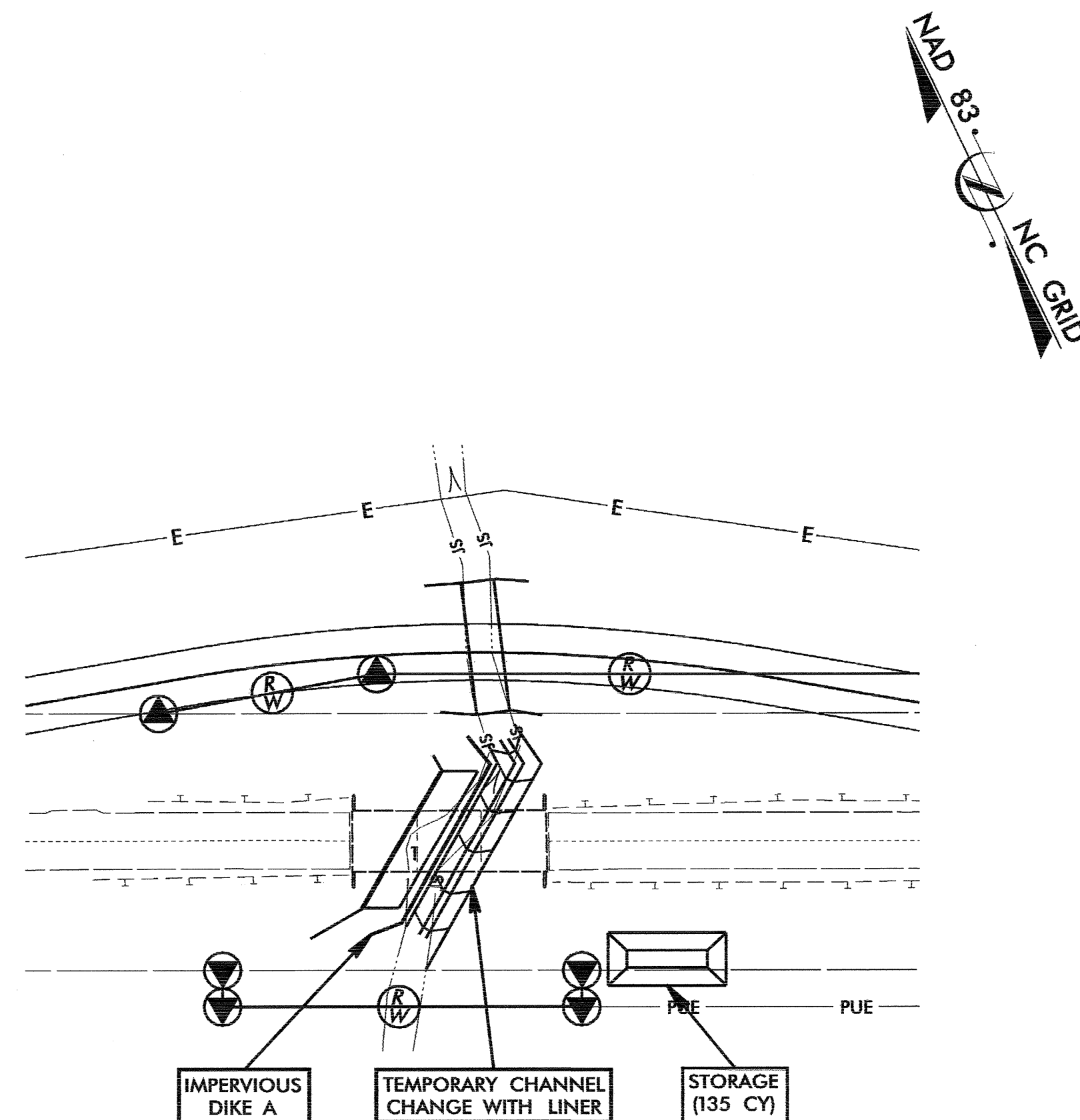
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
2	-DET-	21+10	22+50	LT	70
2	-DET-	23+60	25+00	LT	200
4	-L-	21+10	22+50	LT	70
4	-L-	23+50	25+00	LT	210
			SUBTOTAL		550
		ADDITIONAL PRGM TO BE INSTALLED			0
			TOTAL		550
			SAY		600

PROJECT REFERENCE NO. B-4190	SHEET NO. EC-5/CONST.1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CULVERT CONSTRUCTION SEQUENCE STA. 17+70 -L-

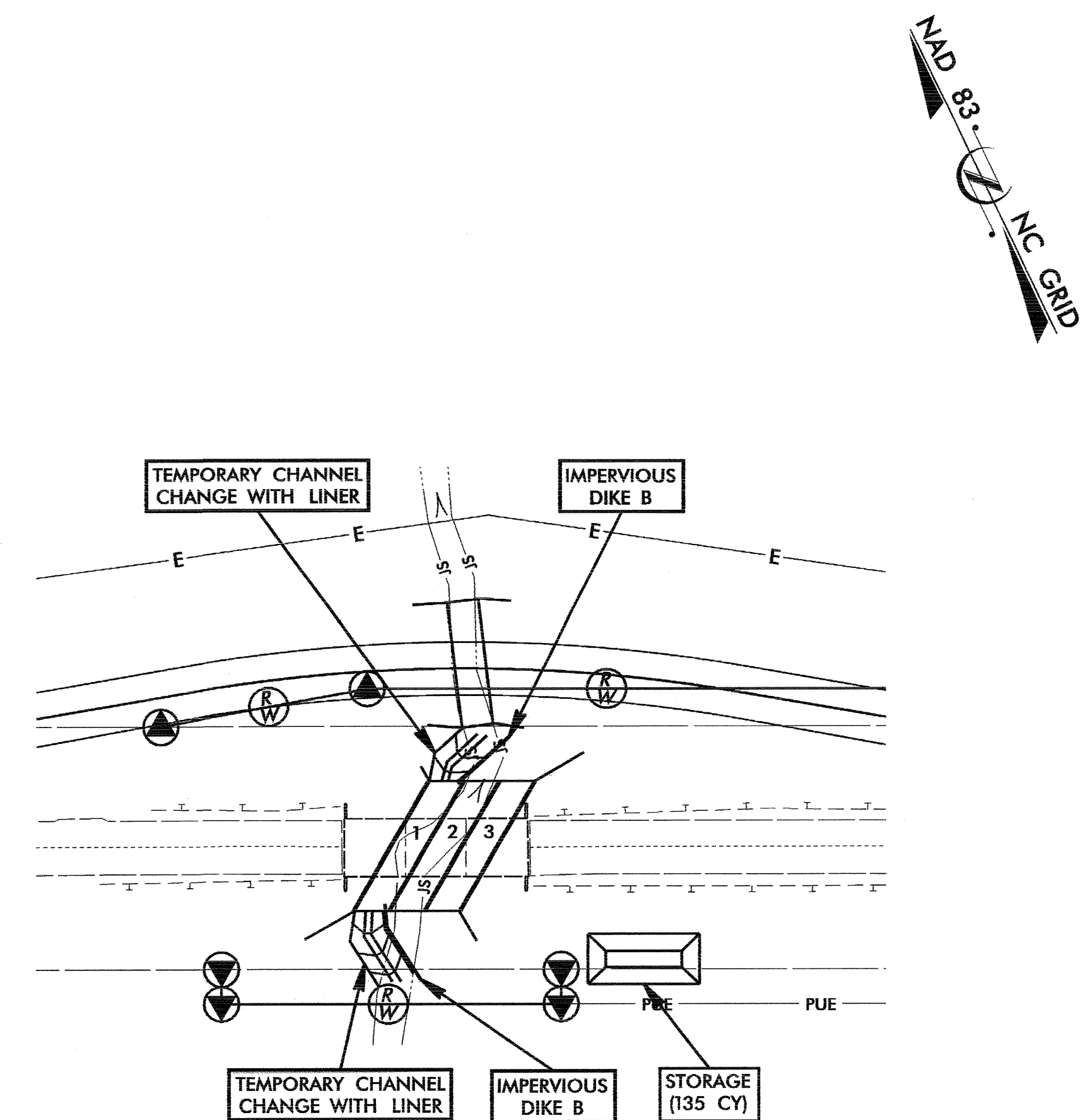
PHASE I

1. CONSTRUCT TEMPORARY ONSITE DETOUR UTILIZING "BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES" AND SPECIAL STILLING BASIN(S) AS NEEDED TO INSTALL PIPE ARCH, AND SHIFT TRAFFIC ONTO NEWLY CONSTRUCTED DETOUR.
2. REMOVE EXISTING BRIDGE.
3. CONSTRUCT STILLING BASIN (135 CY)
4. CONSTRUCT PHASE I TEMPORARY CHANNEL CHANGE WITH LINER (3 FT BASE, 3 FT DEPTH, 2:1 SIDE SLOPES).
5. CONSTRUCT IMPERVIOUS DIKE A.
6. DIVERT WATER THROUGH TEMPORARY CHANNEL CHANGE.
7. CONSTRUCT BARREL ONE.
8. REMOVE IMPERVIOUS DIKE A AND PHASE I TEMPORARY CHANNEL CHANGE.

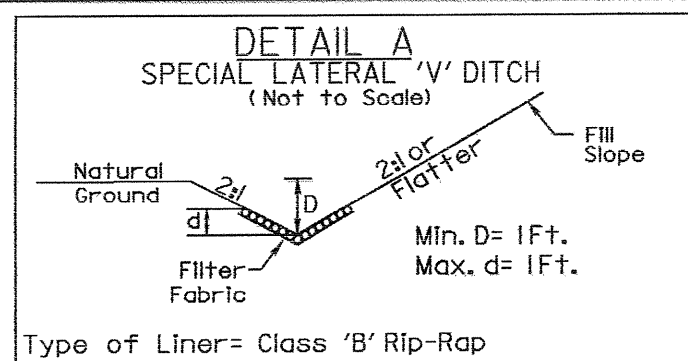


PHASE II

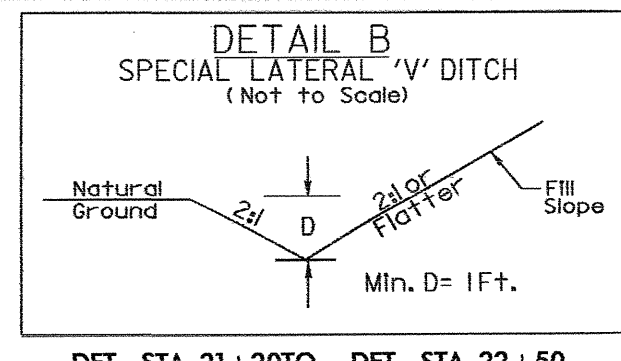
9. CONSTRUCT PHASE II TEMPORARY CHANNEL CHANGES WITH LINER (3 FT BASE, 3 FT DEPTH, 2:1 SIDE SLOPES).
10. CONSTRUCT IMPERVIOUS DIKES B.
11. DIVERT WATER THROUGH TEMPORARY CHANNEL CHANGES.
12. CONSTRUCT BARRELS 2 AND 3.
13. REMOVE PHASE II TEMPORARY CHANNEL CHANGES, IMPERVIOUS DIKES B, AND STILLING BASIN, DIVERTING FLOW THROUGH BARREL 2.
14. CONSTRUCT ROCK INLET SILLS AND LOW FLOW CHANNELS FOR BARRELS 1 AND 3.
15. REMOVE DETOUR AND COMPLETE ROADWAY.



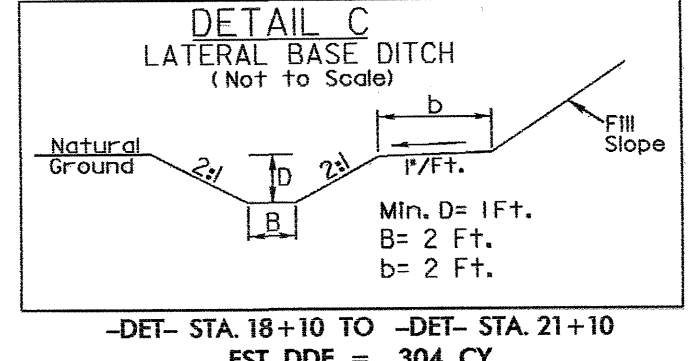
PROJECT REFERENCE NO.	SHEET NO.
B-4190	EC-6/CONST.2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



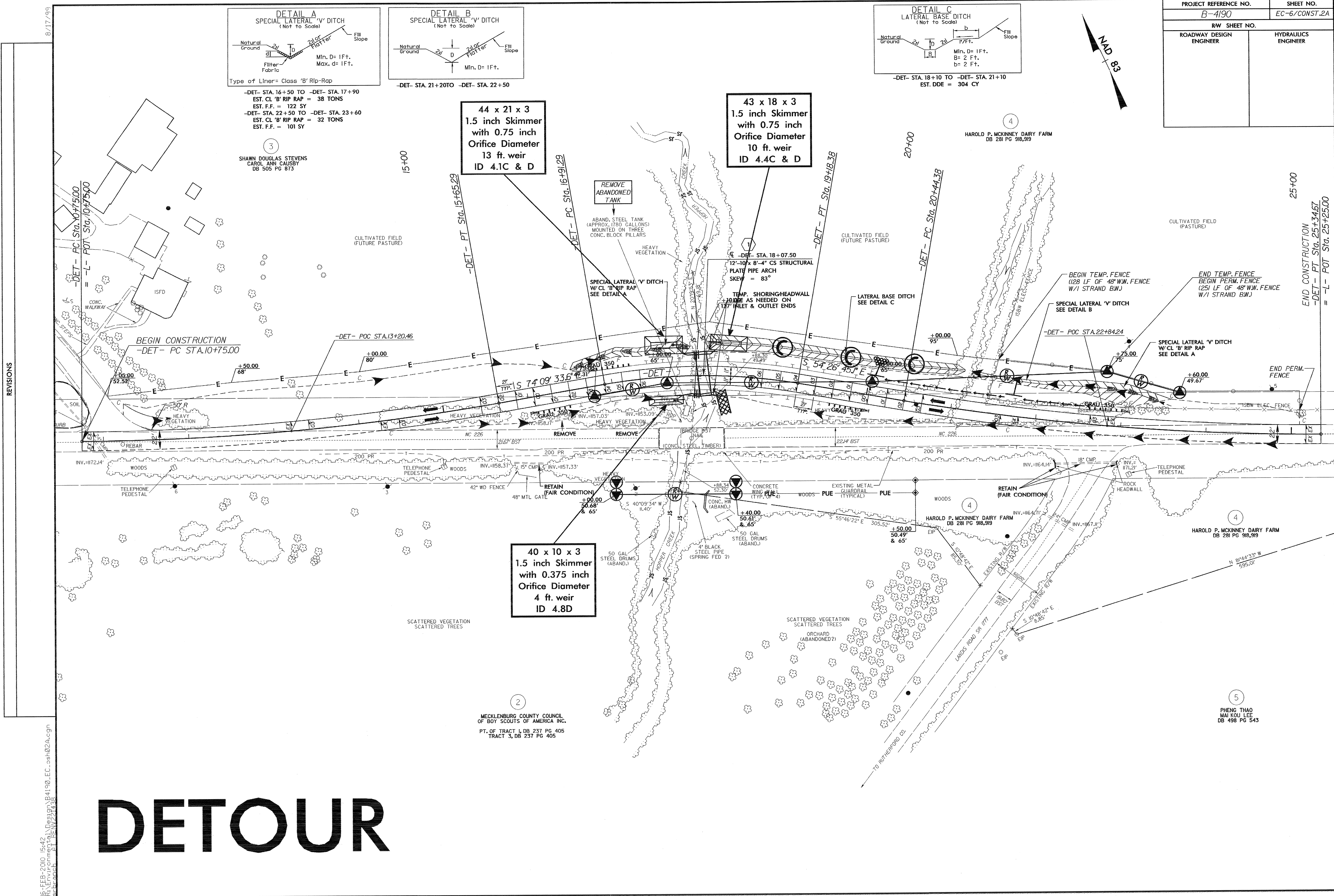
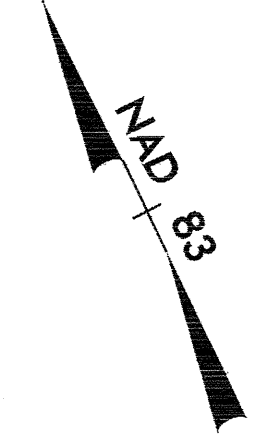
-DET- STA. 16+50 TO -DET- STA. 17+90
 EST. CL 'B' RIP RAP = 38 TONS
 EST. F.F. = 122 SY
 -DET- STA. 22+50 TO -DET- STA. 23+60
 EST. CL 'B' RIP RAP = 32 TONS
 EST. F.F. = 101 SY



-DET- STA. 21+20 TO -DET- STA. 22+50



-DET- STA. 18+10 TO -DET- STA. 21+10
EST. DDE = 304 CY



REVISIONS

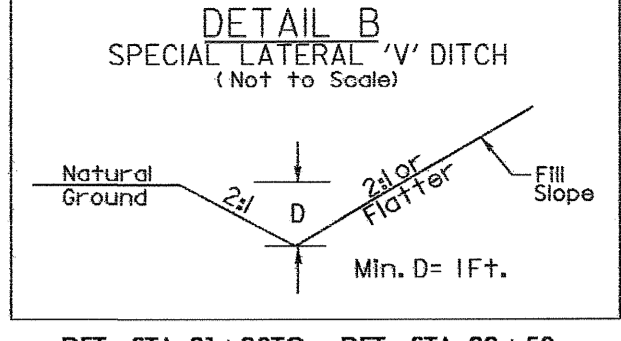
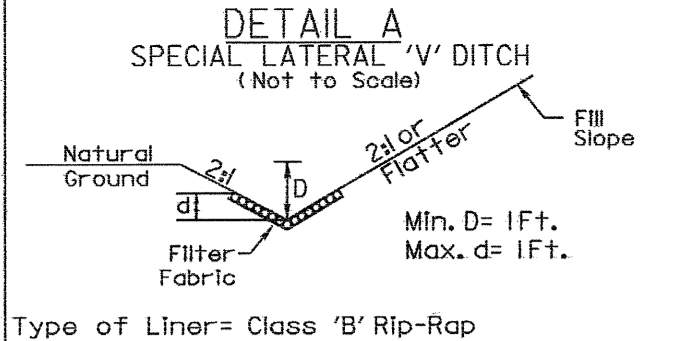
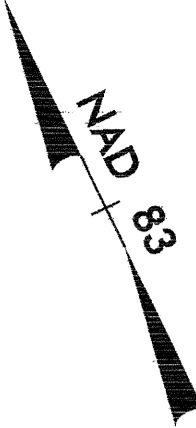
DETOUR

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2
 MECKLENBURG COUNTY COUNCIL
 OF BOY SCOUTS OF AMERICA INC.
 PT. OF TRACT 1, DB 237 PG 405
 TRACT 3, DB 237 PG 405

5
 PHENG THAO
 MAI KOU LEE
 DB 498 PG 543

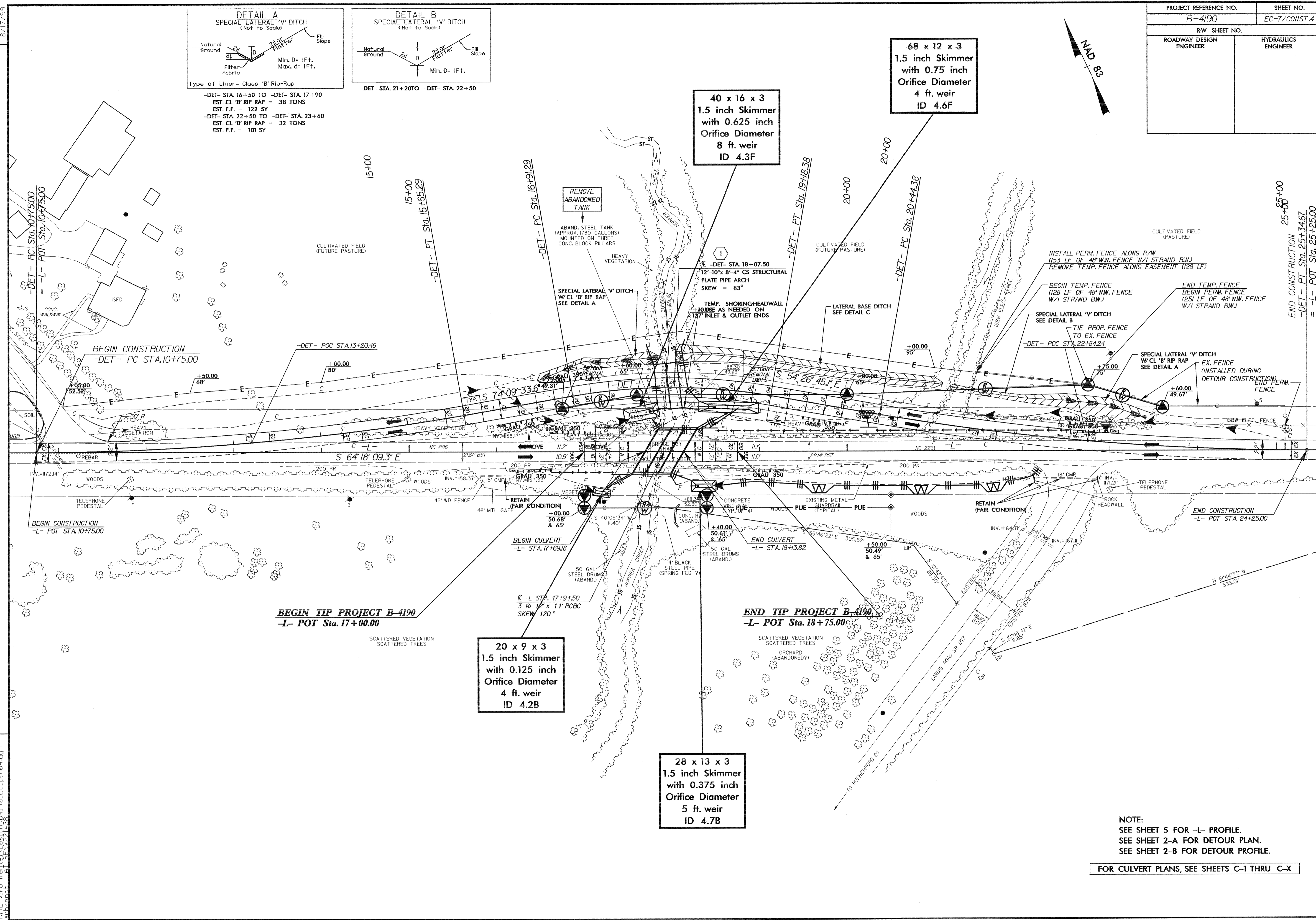
PROJECT REFERENCE NO.	SHEET NO.
B-4190	EC-7/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-DET- STA. 16+50 TO -DET- STA. 17+90
EST. CL 'B' RIP RAP = 38 TONS
EST. F.F. = 122 SY

-DET- STA. 22+50 TO -DET- STA. 23+60
EST. CL 'B' RIP RAP = 32 TONS
EST. F.F. = 101 SY

-DET- STA. 21+20 TO -DET- STA. 22+50



REVISIONS

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16-FEB-2010 15:41
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NOTE:
SEE SHEET 5 FOR -L- PROFILE.
SEE SHEET 2-A FOR DETOUR PLAN.
SEE SHEET 2-B FOR DETOUR PROFILE.

FOR CULVERT PLANS, SEE SHEETS C-1 THRU C-X