

**TIP PROJECT: R-4900**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

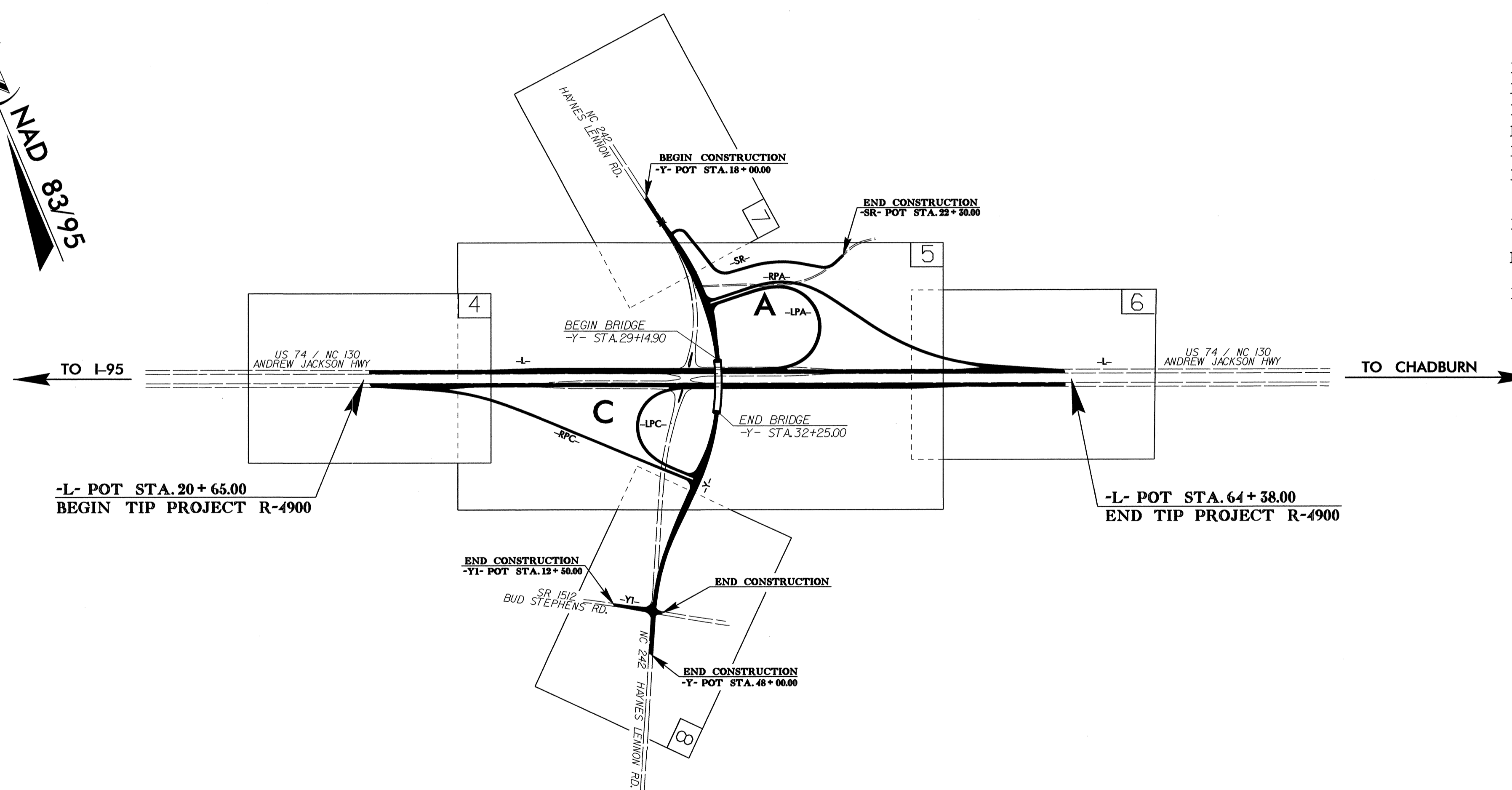
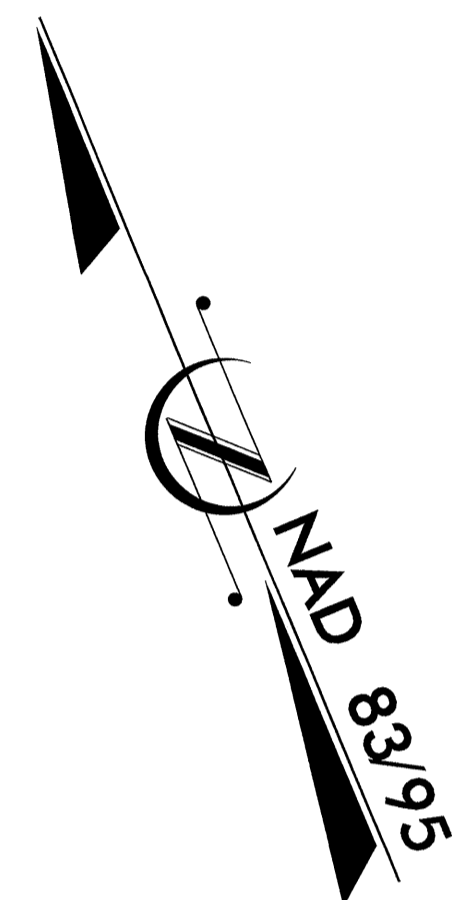
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PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

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**COLUMBUS COUNTY**

**LOCATION: NEW INTERCHANGE US 74 - NC 130 / NC 242 INTERSECTION**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE**



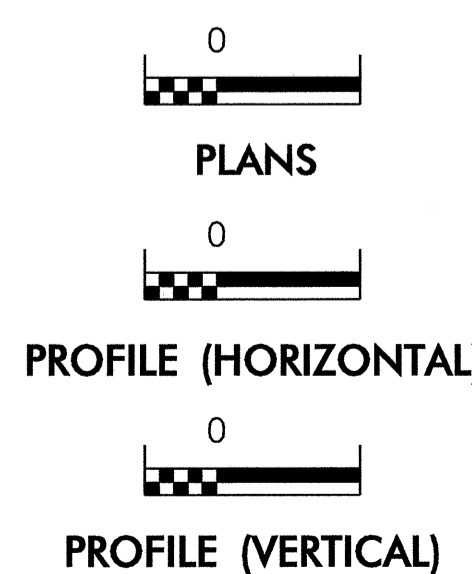
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4900	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
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.**

**GRAPHIC SCALE**



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**

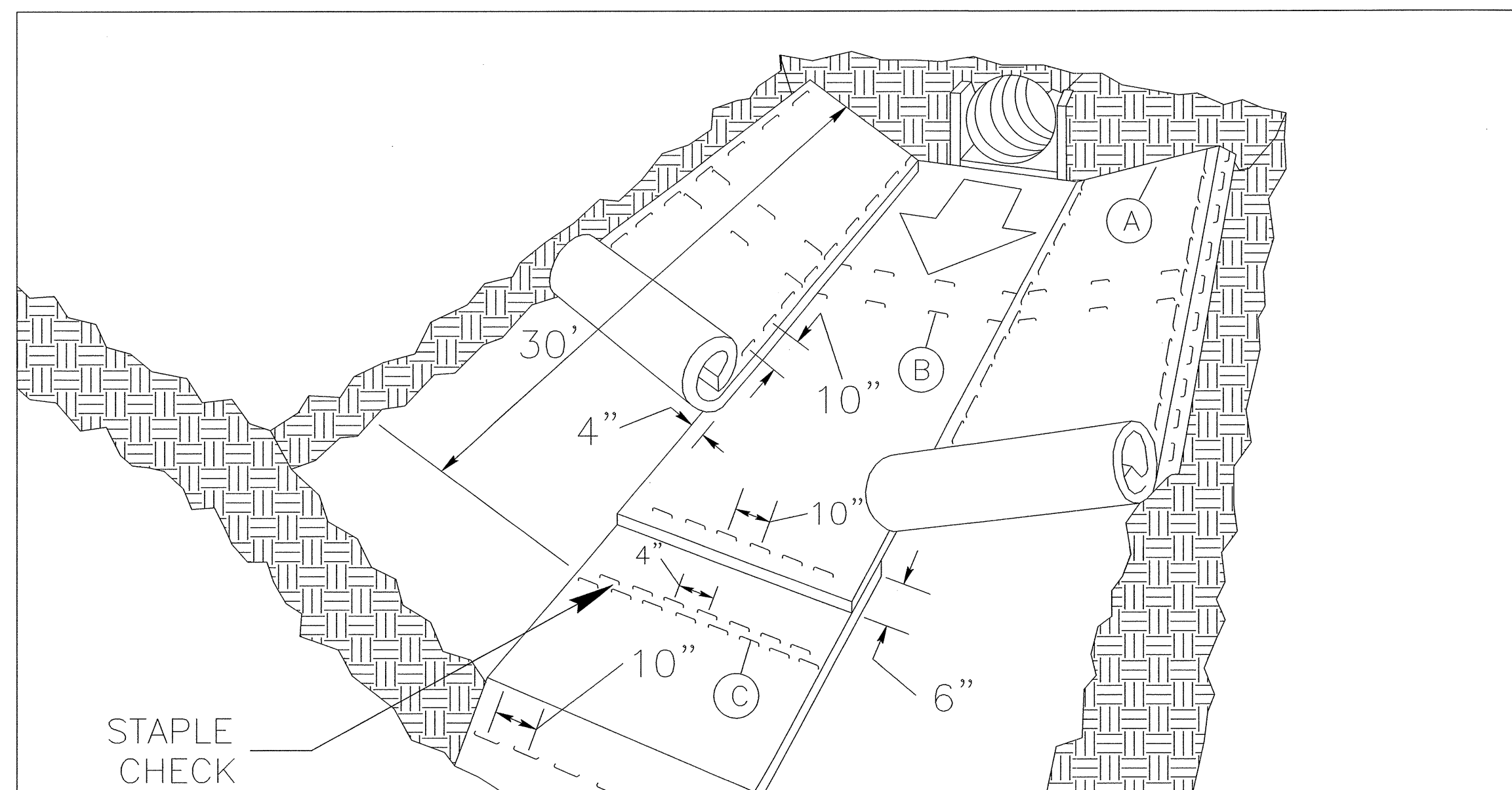
**Roadway Standard Drawings**

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             | 1632.02 Rock Inlet Sediment Trap Type B      |
| 1606.01 Special Sediment Control Fence   | 1632.03 Rock Inlet Sediment Trap Type C      |
| 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   |
| 1630.05 Temporary Diversion              | 1635.01 Rock Pipe Inlet Sediment Trap Type A |
| 1630.06 Special Stilling Basin           | 1635.02 Rock Pipe Inlet Sediment Trap Type B |
| 1632.01 Rock Inlet Sediment Trap Type A  |  |

PROJECT REFERENCE NO. R-4900	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# MATTING INSTALLATION DETAIL



**MATTING IN DITCHES**

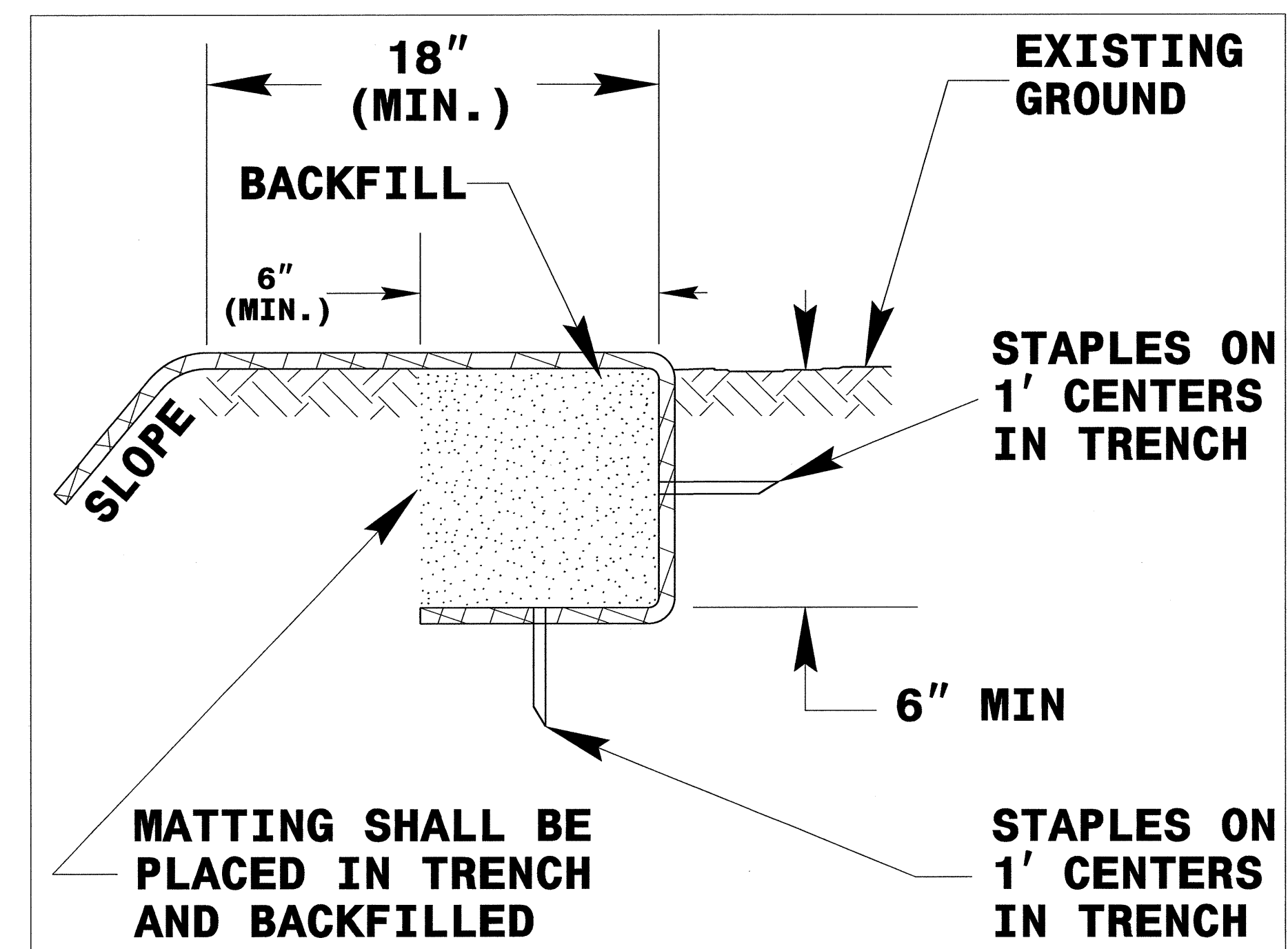
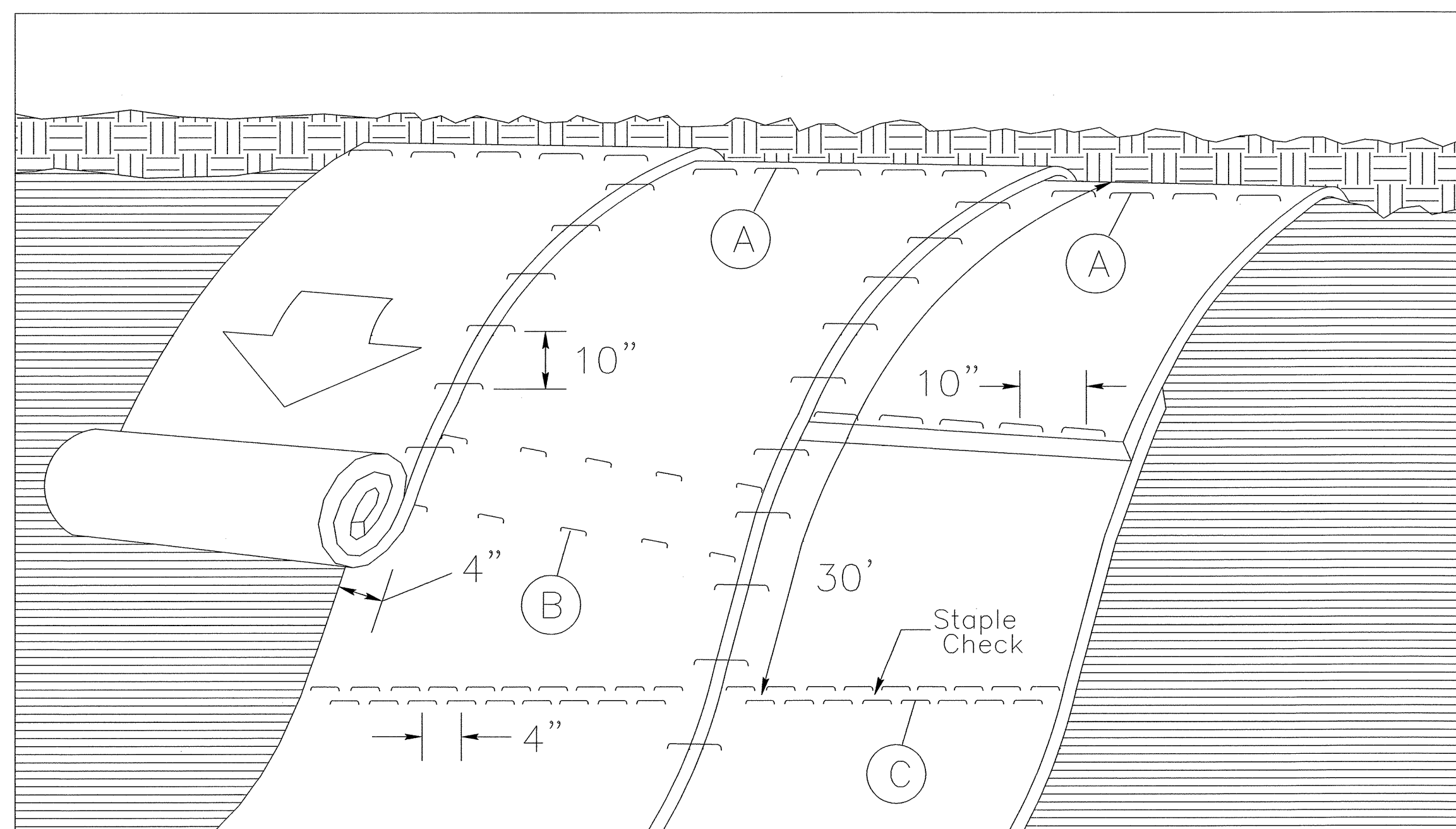


DIAGRAM (A)



**MATTING ON SLOPES**

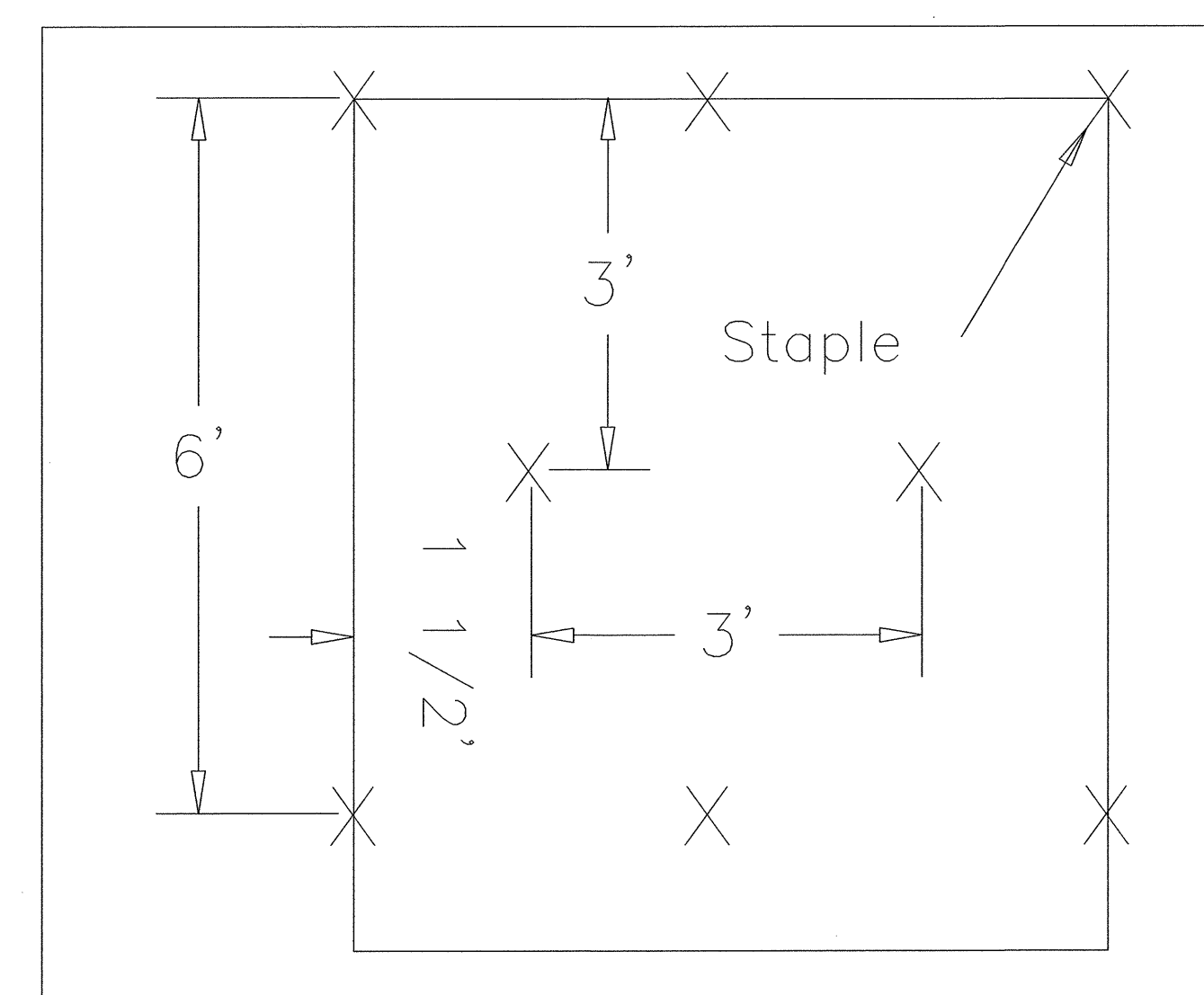


DIAGRAM (B)

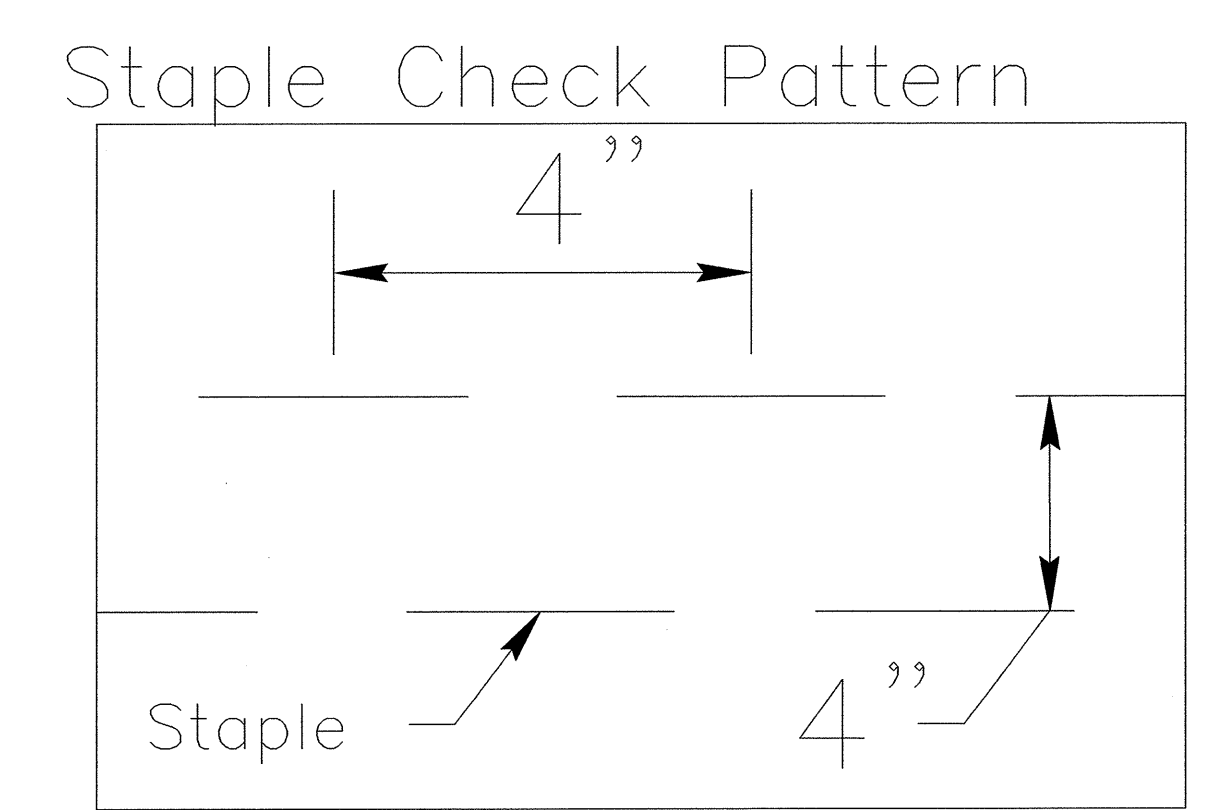


DIAGRAM (C)

**NOTES:**

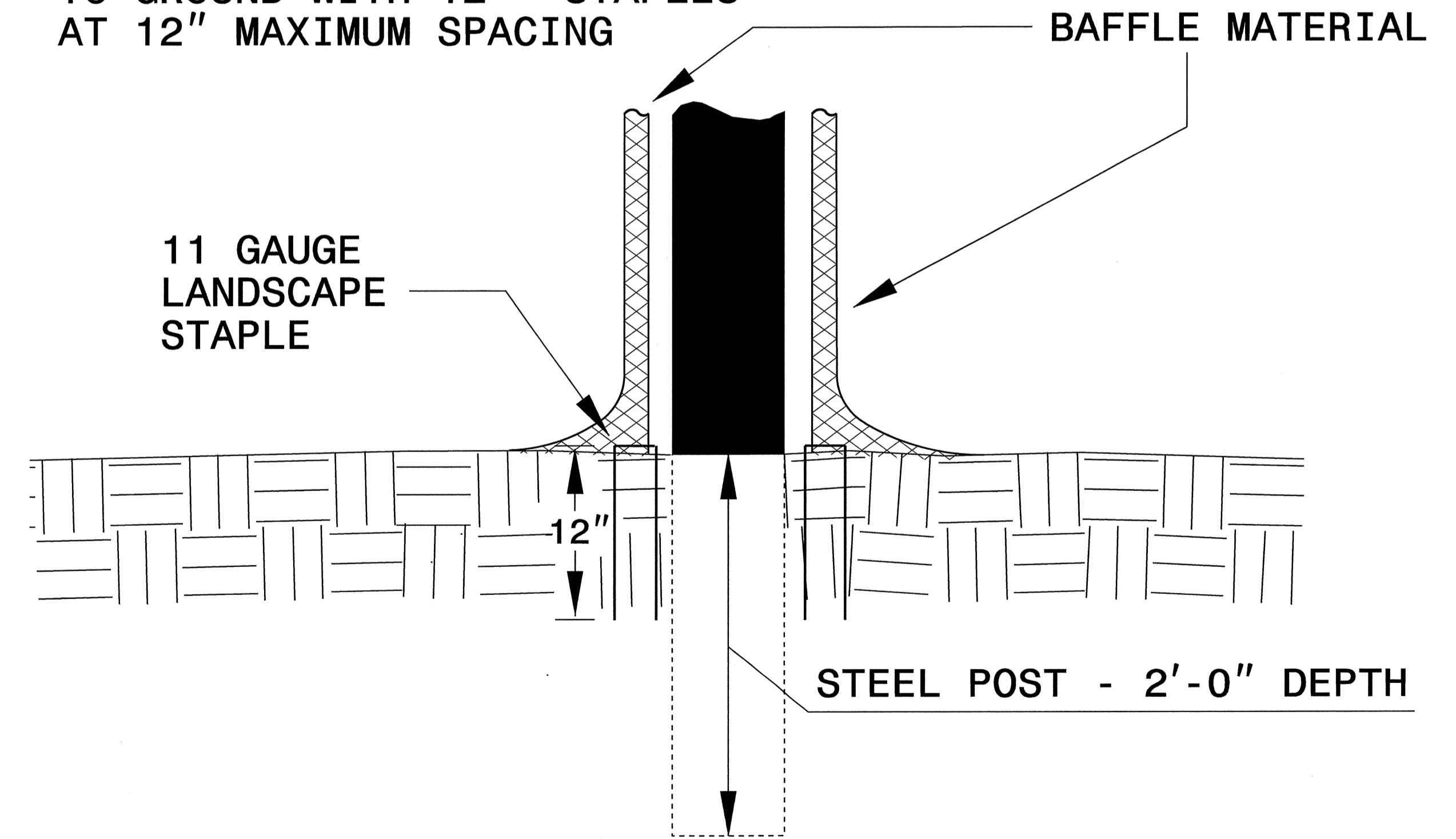
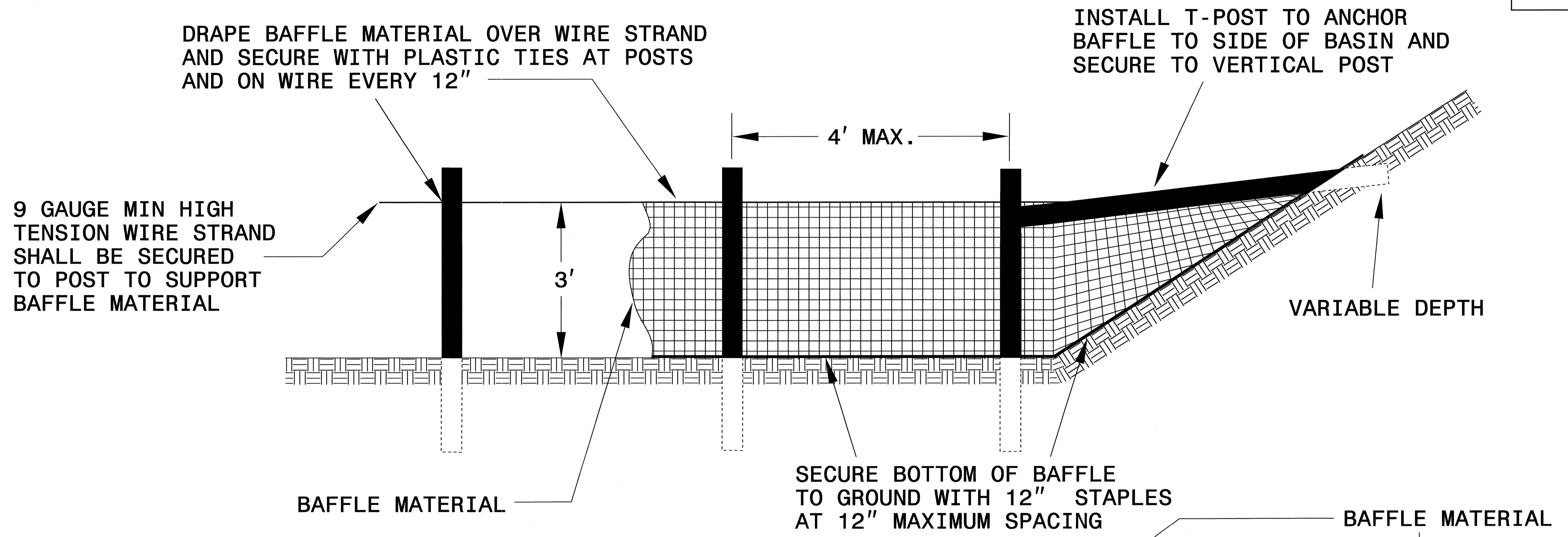
THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

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. R-4900	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER BAFFLE DETAIL



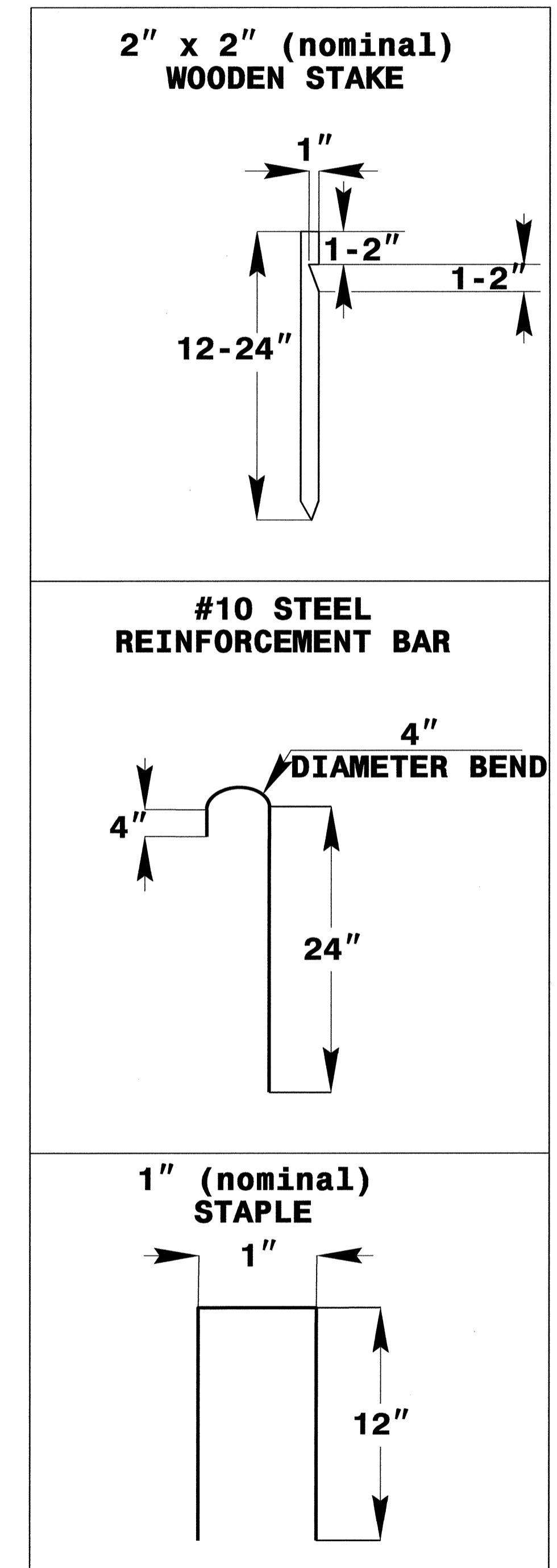
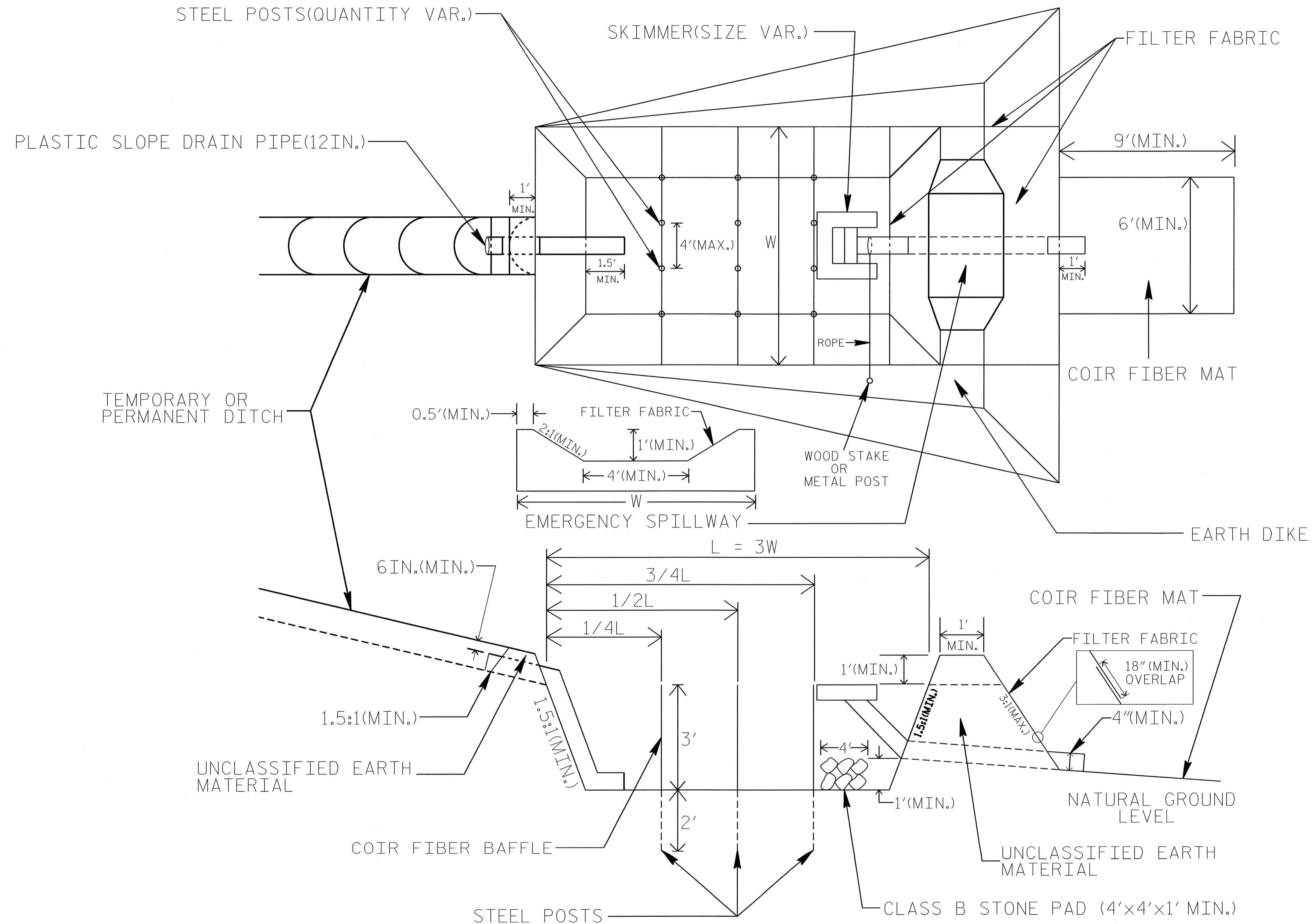
**NOTES:**

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

# SKIMMER BASIN WITH BAFFLES DETAIL

PROJECT REFERENCE NO. R-4900	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



## COIR FIBER MAT ANCHOR OPTIONS

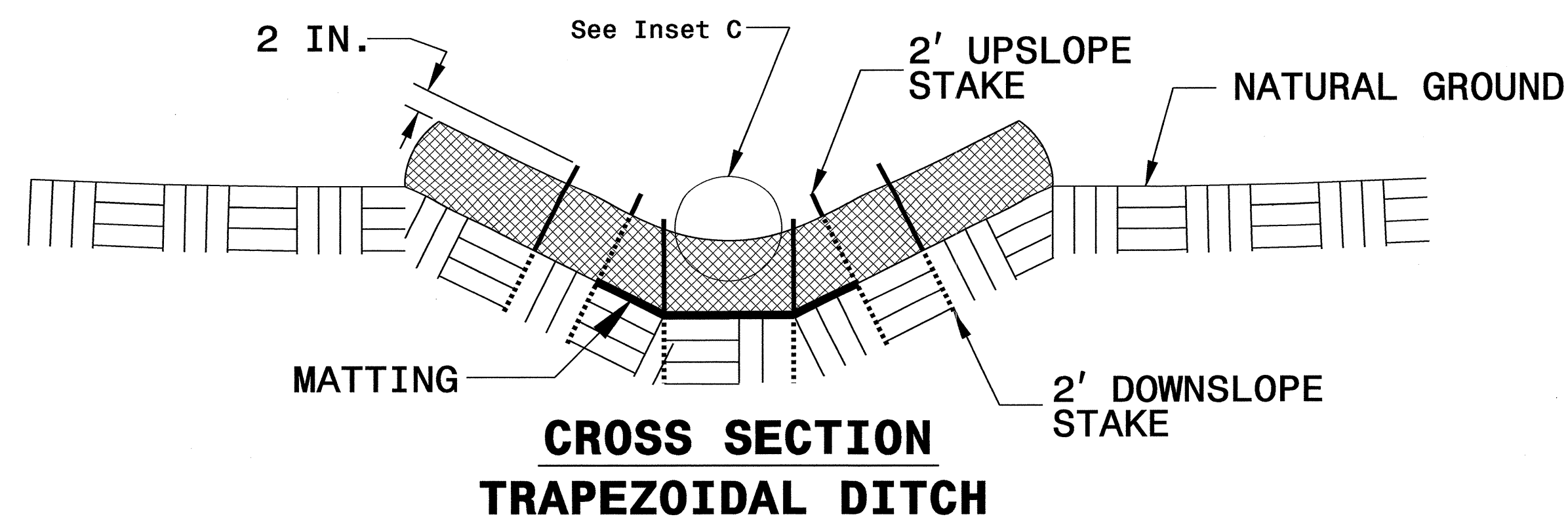
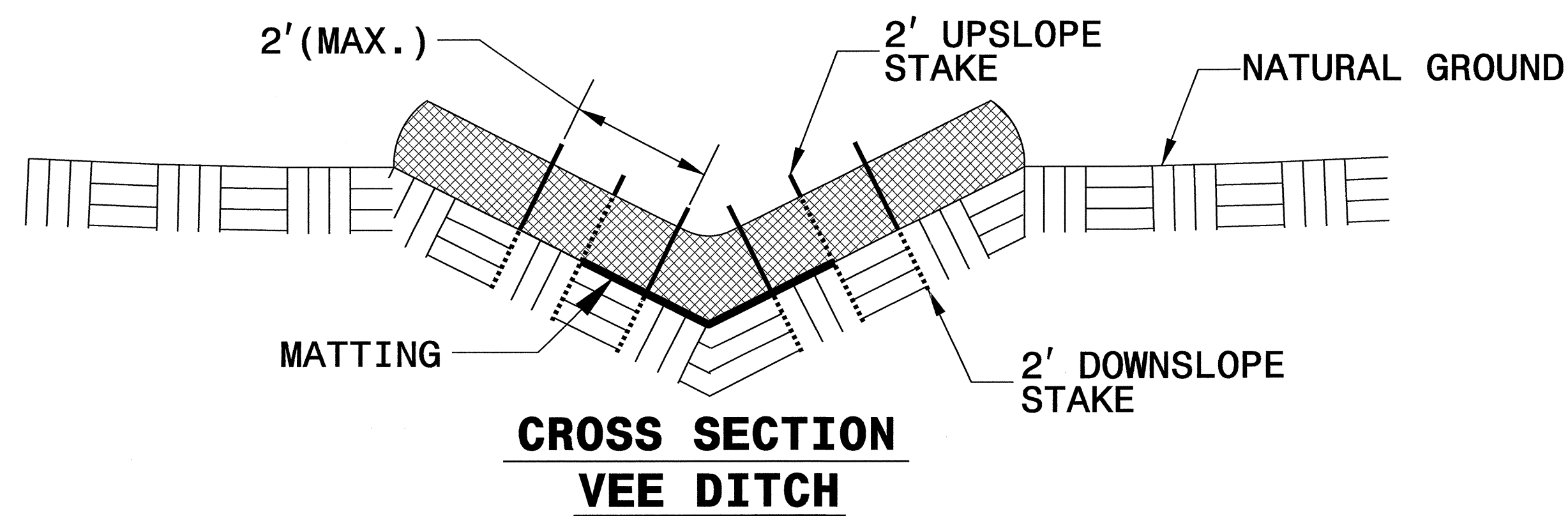
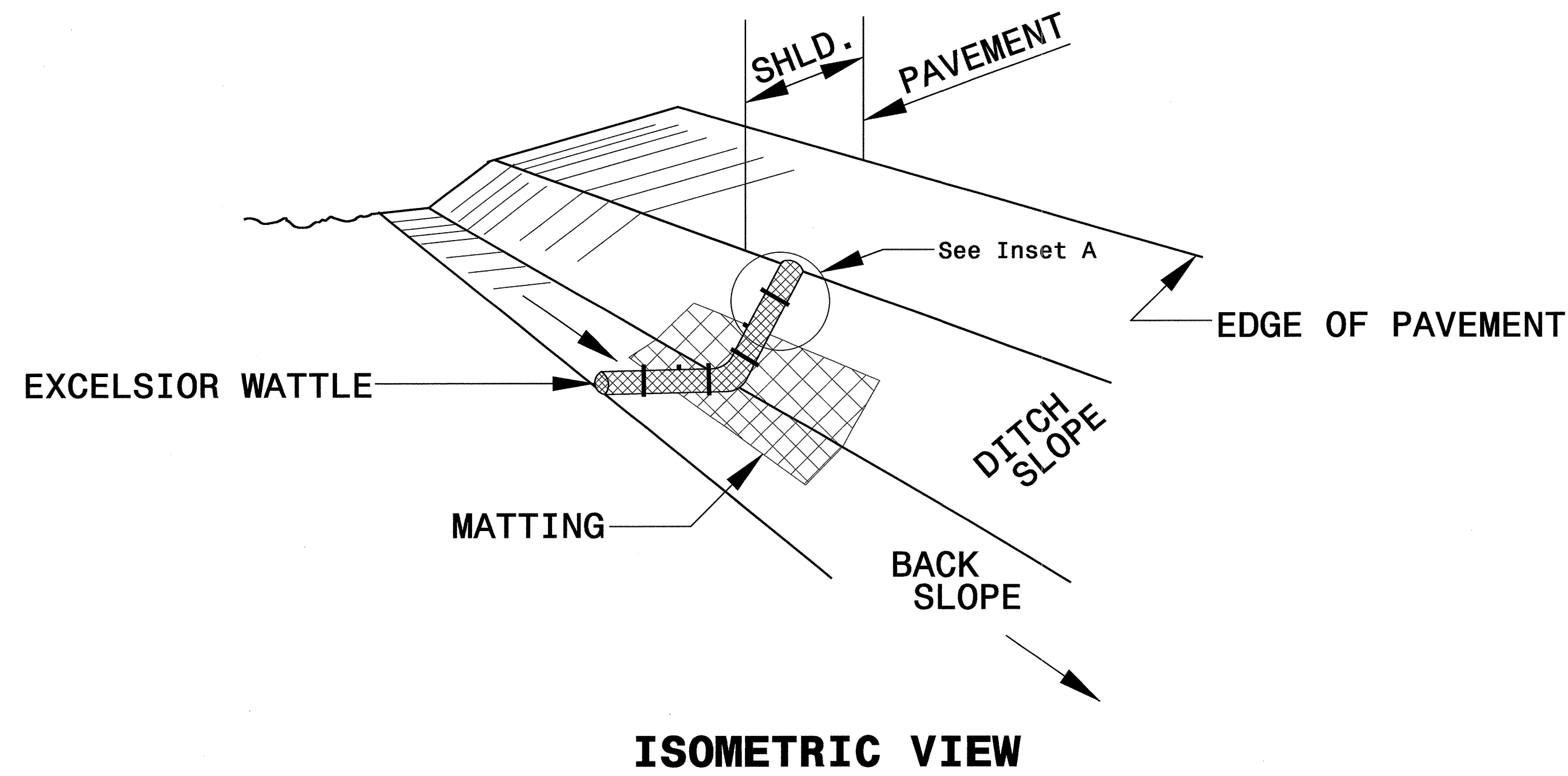
### NOTES

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. R-4900	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.

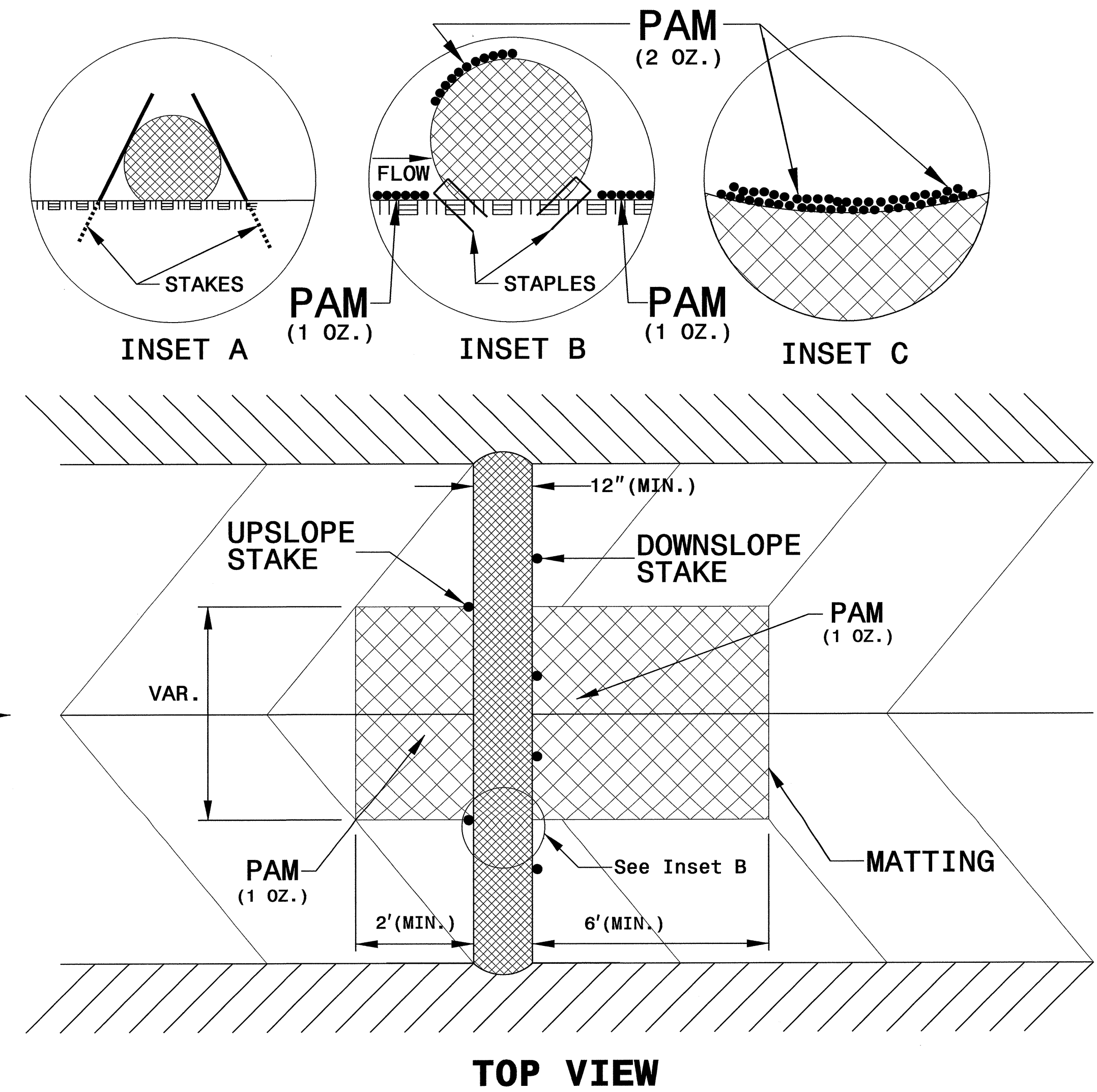
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.



# BORROW PIT DEWATERING BASIN DETAIL

PROJECT REFERENCE NO. R-4900	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING  $V = 8.0203 * Q * T$ , WHERE V IS VOLUME (FT<sup>3</sup>), Q IS PUMP FLOW RATE (GPM), AND T IS DEWATERING TIME (HR). USE MAXIMUM FLOW RATE OF 1000 GPM AND A MINIMUM DEWATERING TIME OF 2 HOURS.

RISER SHALL BE A NON-PERFORATED, SMOOTH OR CORRUGATED MATERIAL WITH A FLASHBOARD OPTION.

CONSTRUCT THE COIR FIBER BAFFLE WITH A MATERIAL THAT MEETS THE SPECIFICATIONS OF THE COIR FIBER MAT SPECIAL PROVISION PROVIDED IN THE CONTRACT.

PROVIDE 5' STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 3' OF THE POST APPEARING ABOVE THE GROUND.

ATTACH THE COIR FIBER MAT TO THE STEEL POSTS WITH WIRE OR OTHER ACCEPTABLE MEANS AND STAPLED INTO THE BOTTOM AND SIDE SLOPES OF THE BASIN WITH 12" STAPLES.

INSTALL TYPE 2 FILTER FABRIC ON SIDESLOPES AND BOTTOM OF BASIN AT INLET AS SHOWN IN THE DETAIL.

USE THE TYPICAL SECTION SHOWN FOR THE BORROW PIT DEWATERING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A NON-PERFORATED RISER.

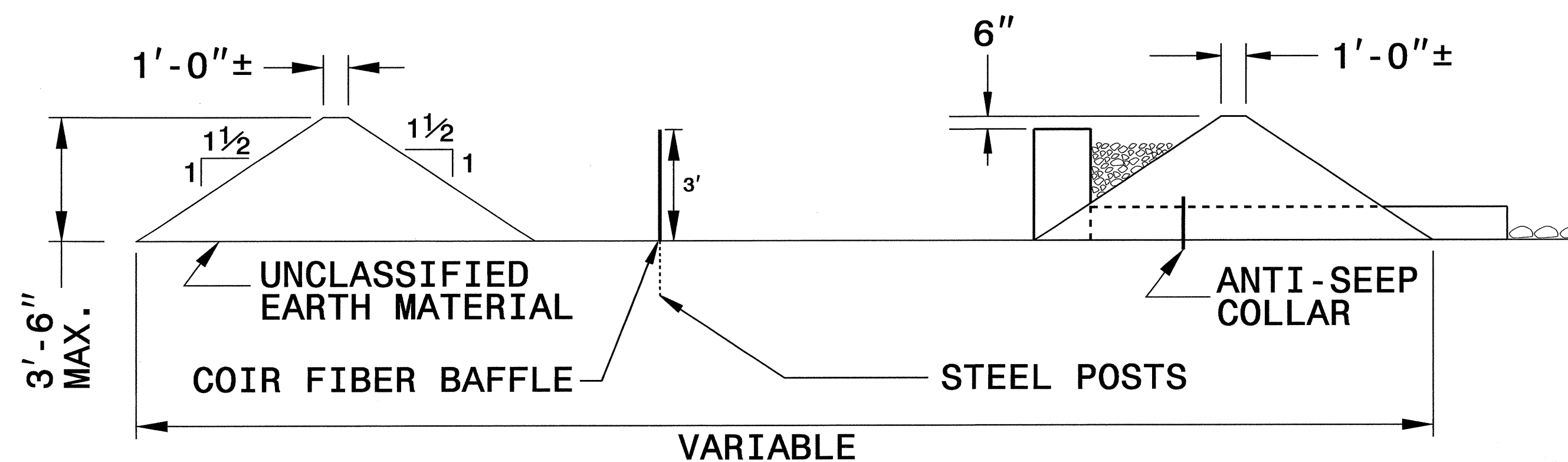
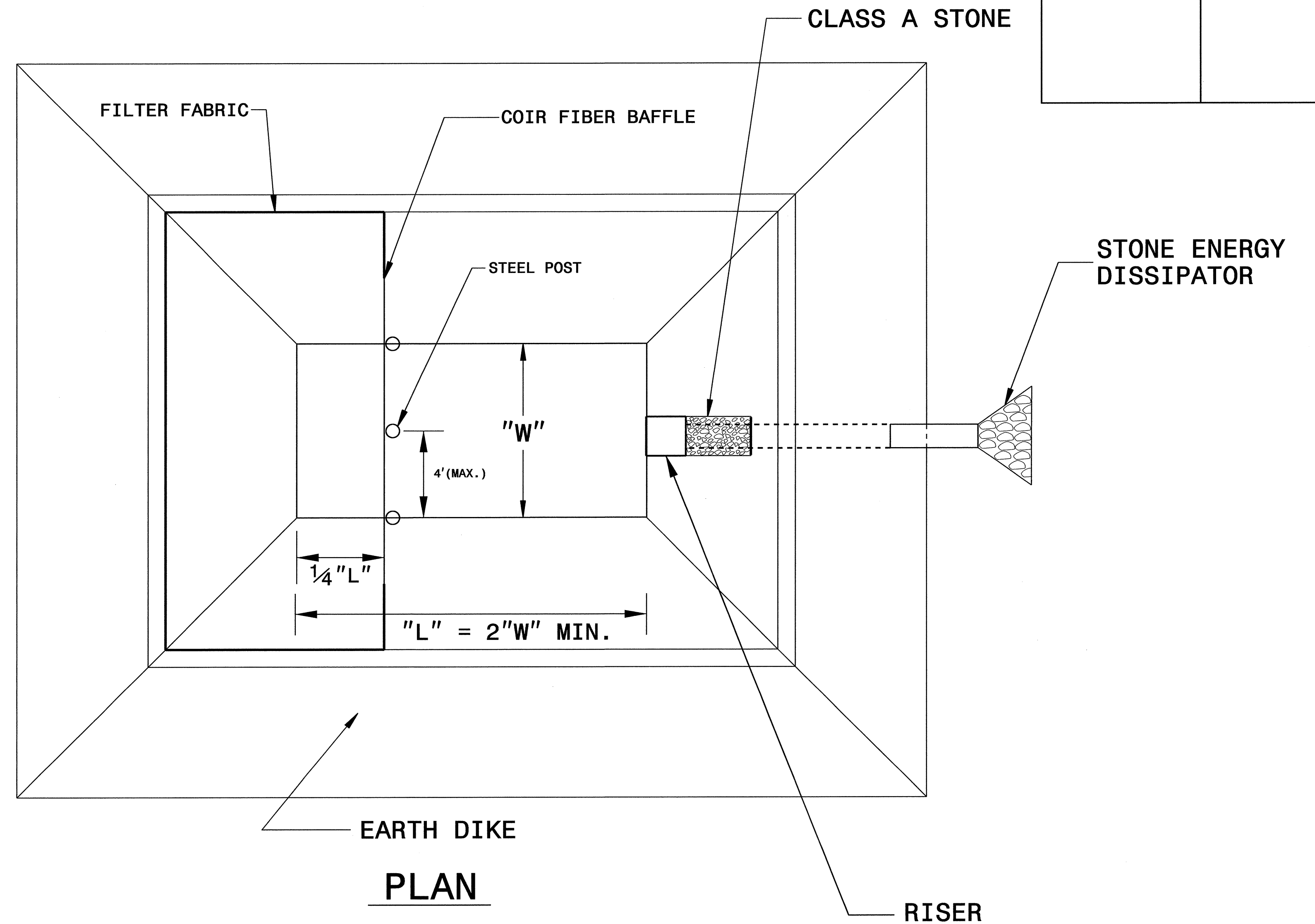
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

THE BORROW PIT DEWATERING BASIN SIZE IS VARIABLE AND DEPENDENT ON SPECIFIC SITE REQUIREMENTS AS WELL AS PROPOSED CONSTRUCTION OPERATIONS.

SUBMIT THE SIZE, LOCATION AND RISER PIPE MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE BORROW PIT DEWATERING BASIN TO A MAXIMUM DEPTH OF 6 IN. BELOW TOP OF EARTH DIKE.

PROVIDE A STONE ENERGY DISSIPATOR PAD AT THE OUTLET OF THE PUMP DISCHARGE HOSE AND OUTLET OF THE RISER BARREL IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 876.02 FOR OUTLET W/O DITCH.



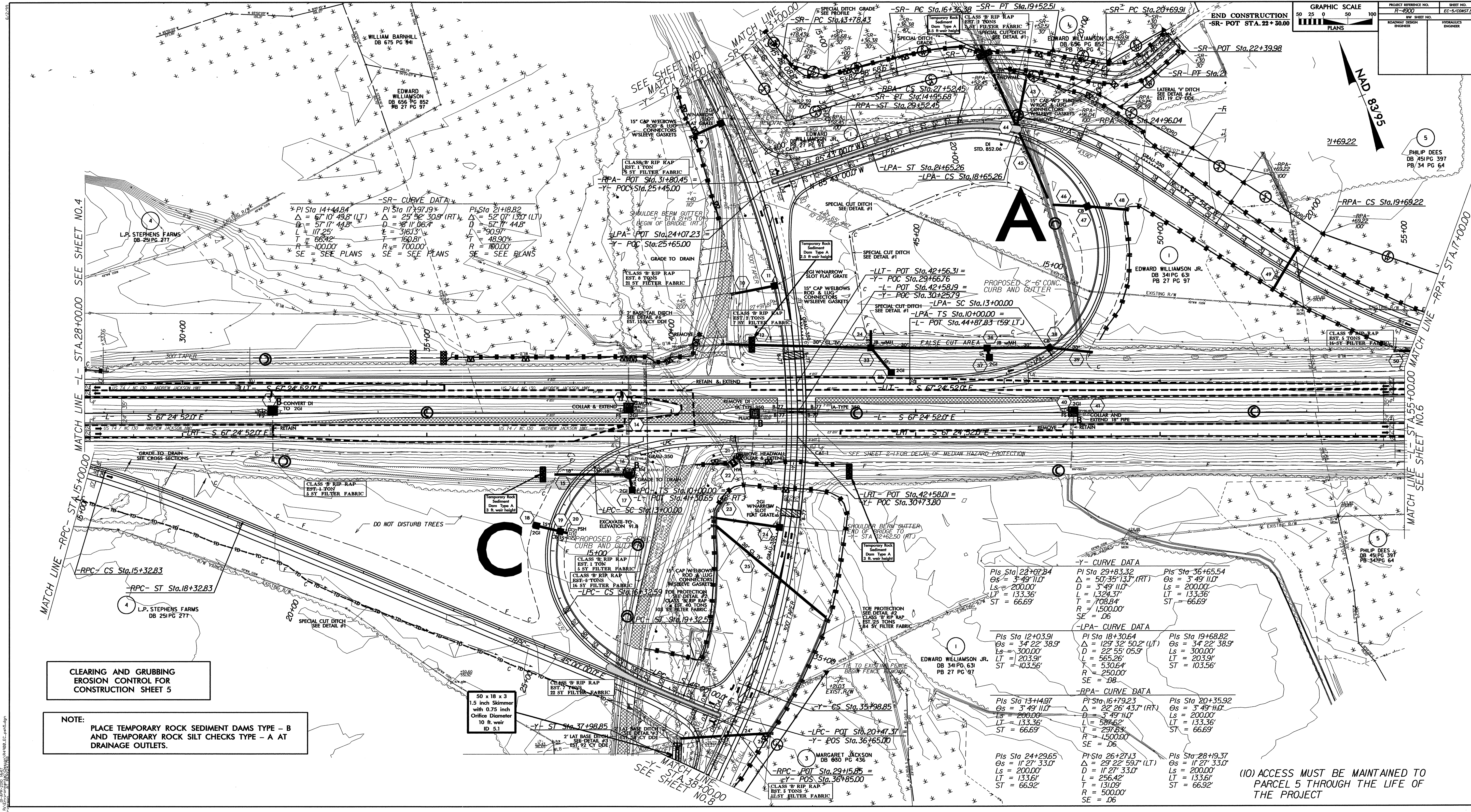
TYPICAL SECTION VIEW

NOT TO SCALE









GRAPHIC SCALE  
50 25 0 50 100  
PLANS

PROJECT REFERENCE NO. R-2922  
SHEET NO. EC-5-CONSTR. 3  
RDWAY DESIGN ENGINEER  
HYDRAULIC ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 5

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

50 x 18 x 3  
1.5 inch Skimmer  
with 0.75 inch  
Orifice Diameter  
10 ft. weir  
ID 5.1

**-Y- CURVE DATA**

PI Sta 29+83.32 Δ = 50°35'13" (RT) D = 3'49'11.0" L = 133.36' T = 708.84' R = 1500.00' SE = .06	PI Sta 36+65.54 Δ = 3°49'11.0" D = 200.00' L = 133.36' T = 66.69'
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**-LPA- CURVE DATA**

PI Sta 12+03.91 Δ = 34°22'38.9" D = 300.00' L = 203.91' T = 103.56'	PI Sta 18+30.64 Δ = 129°32'50.2" (LT) D = 22°55'05.9" L = 565.26' T = 530.64' R = 250.00' SE = .08	PI Sta 19+68.82 Δ = 34°22'38.9" D = 300.00' L = 203.91' T = 103.56'
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**-RPA- CURVE DATA**

PI Sta 16+79.23 Δ = 22°26'43.7" (RT) D = 3'49'11.0" L = 58.62' T = 297.63' R = 1500.00' SE = .06	PI Sta 20+35.92 Δ = 3°49'11.0" D = 200.00' L = 133.36' T = 66.69'	PI Sta 28+19.37 Δ = 11°27'33.0" D = 200.00' L = 133.36' T = 66.92'
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(10) ACCESS MUST BE MAINTAINED TO  
PARCEL 5 THROUGH THE LIFE OF  
THE PROJECT



5/14/95

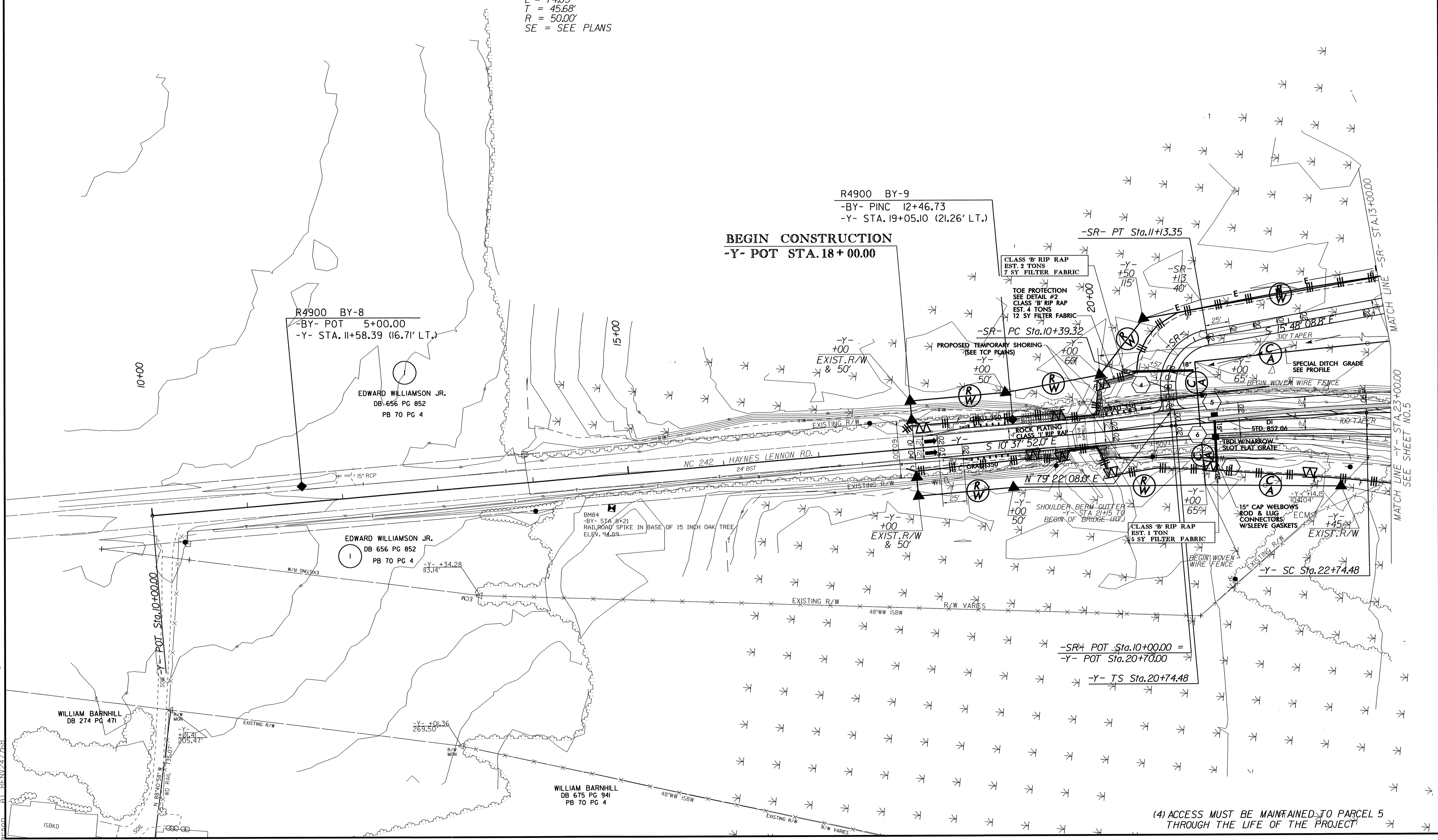
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R-4900		EC-7/CONST.7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 7

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

-Y- CURVE DATA  
 Pls Sta 22+07.84      Pls Sta 29+83.32  
 $\theta_s = 3^\circ 49' 11.0''$        $\Delta = 50^\circ 35' 13.7''$  (RT)  
 $L_s = 200.00'$        $D = 3^\circ 49' 11.0''$   
 $LT = 133.36'$        $L = 1,324.37'$   
 $ST = 66.69'$        $T = 708.84'$   
                                   $R = 1,500.00'$   
                                   $SE = .06$

-SR- CURVE DATA  
 Pls Sta 10+85.00  
 $\Delta = 8^\circ 49' 43.2''$  (RT)  
 $D = 11^\circ 35' 29.6''$   
 $L = 74.03'$   
 $T = 45.68'$   
 $R = 50.00'$   
 SE = SEE PLANS



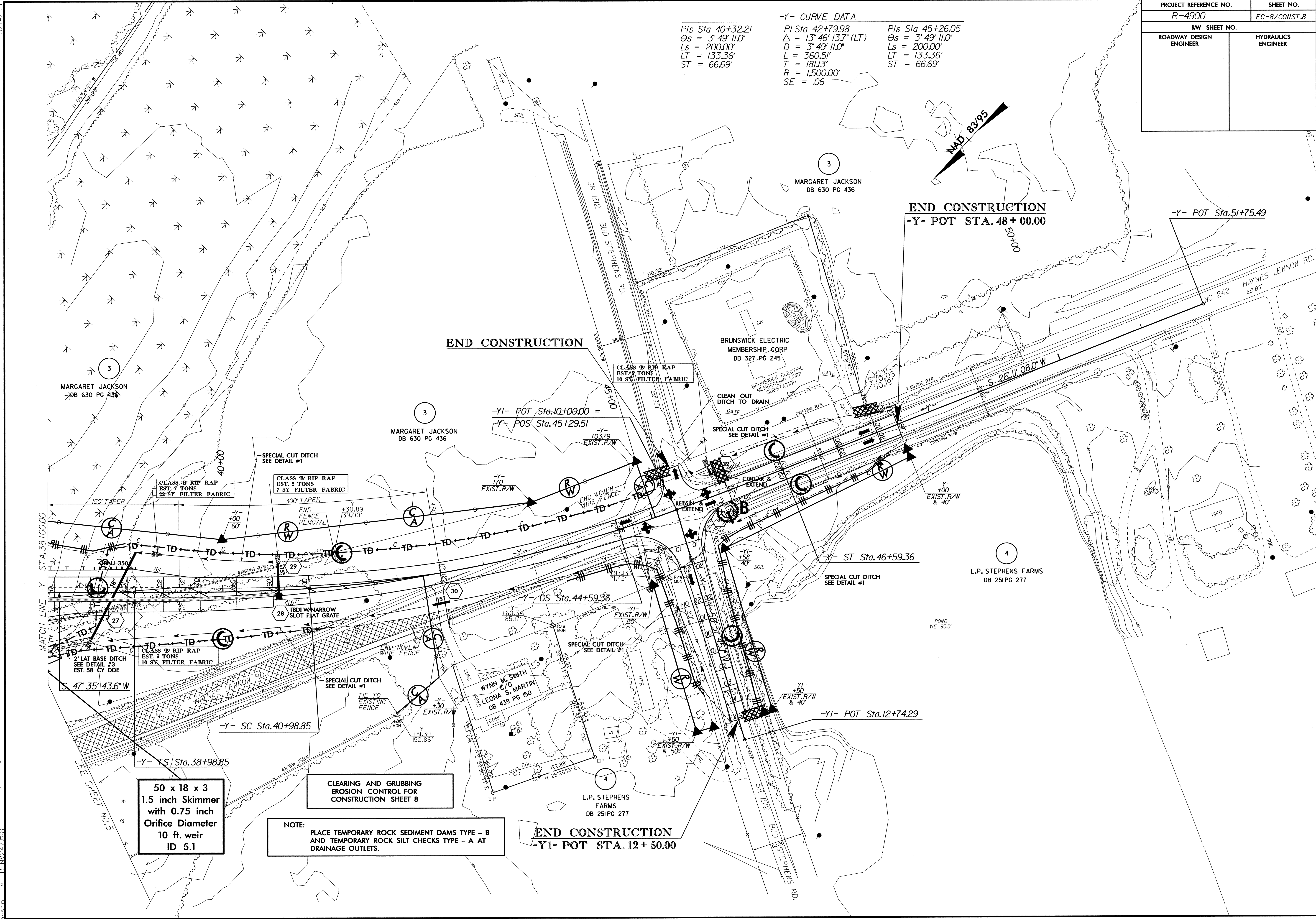
(4) ACCESS MUST BE MAINTAINED TO PARCEL 5 THROUGH THE LIFE OF THE PROJECT

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 cop:williamson

PROJECT REFERENCE NO.	SHEET NO.
R-4900	EC-B/CONST.B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-Y- CURVE DATA

Pls Sta 40+32.21	Pls Sta 42+79.98	Pls Sta 45+26.05
$\Theta_s = 3^\circ 49' 11.0''$	$\Delta = 13^\circ 46' 13.7''$ (LT)	$\Theta_s = 3^\circ 49' 11.0''$
$L_s = 200.00'$	$D = 3^\circ 49' 11.0''$	$L_s = 200.00'$
$LT = 133.36'$	$L = 360.51'$	$LT = 133.36'$
$ST = 66.69'$	$T = 181.13'$	$ST = 66.69'$
	$R = 1,500.00'$	
	$SE = .06$	



MATCH LINE -Y- STA. 38+00.00

SEE SHEET NO. 5

**50 x 18 x 3  
1.5 inch Skimmer  
with 0.75 inch  
Orifice Diameter  
10 ft. weir  
ID 5.1**

**CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 8**

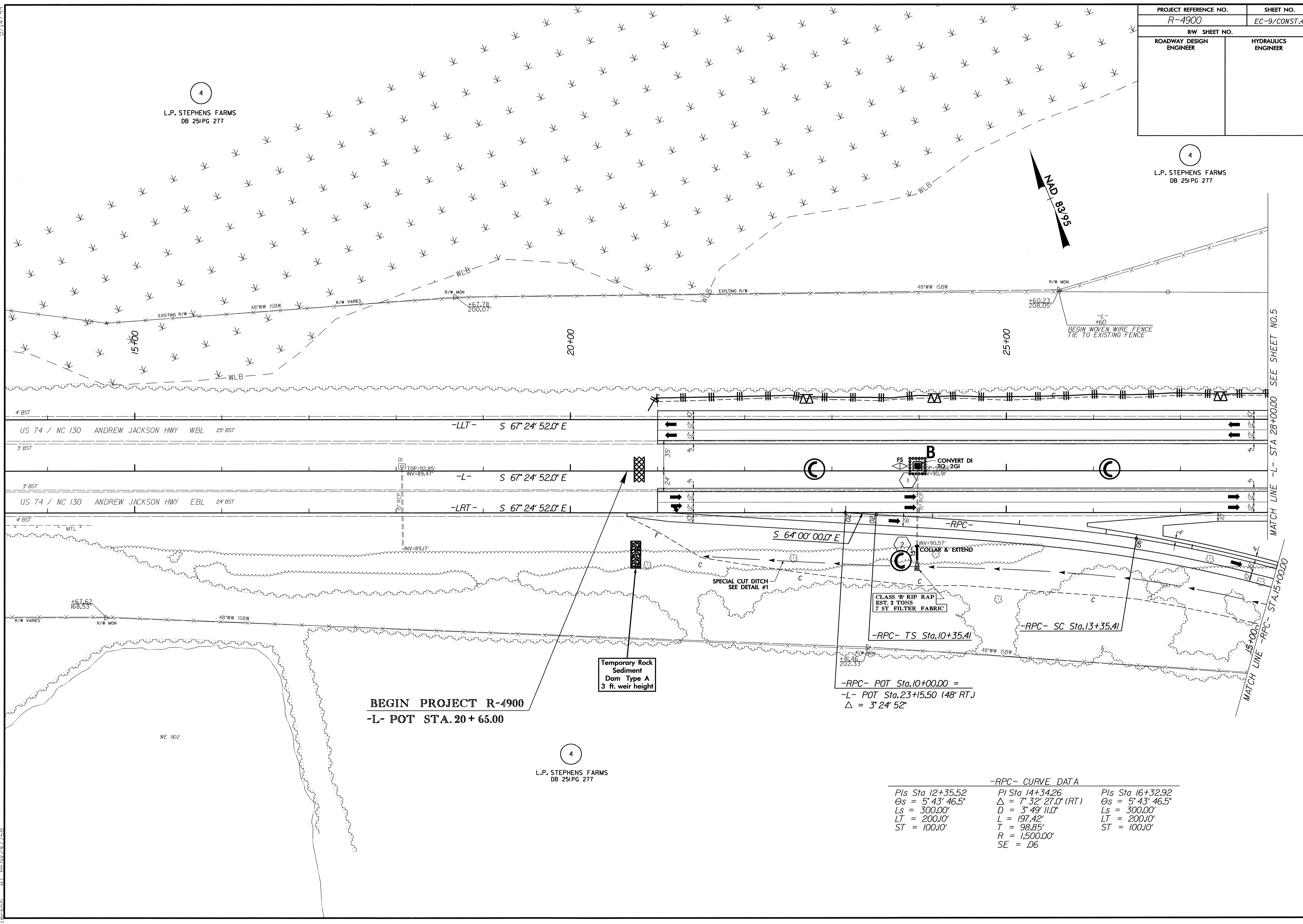
**NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.**

**END CONSTRUCTION  
-Y1- POT STA. 12+ 50.00**

5/14/99  
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5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
R-4900		EC-9/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



4  
L.P. STEPHENS FARMS  
DB 251PG 277

4  
L.P. STEPHENS FARMS  
DB 251PG 277

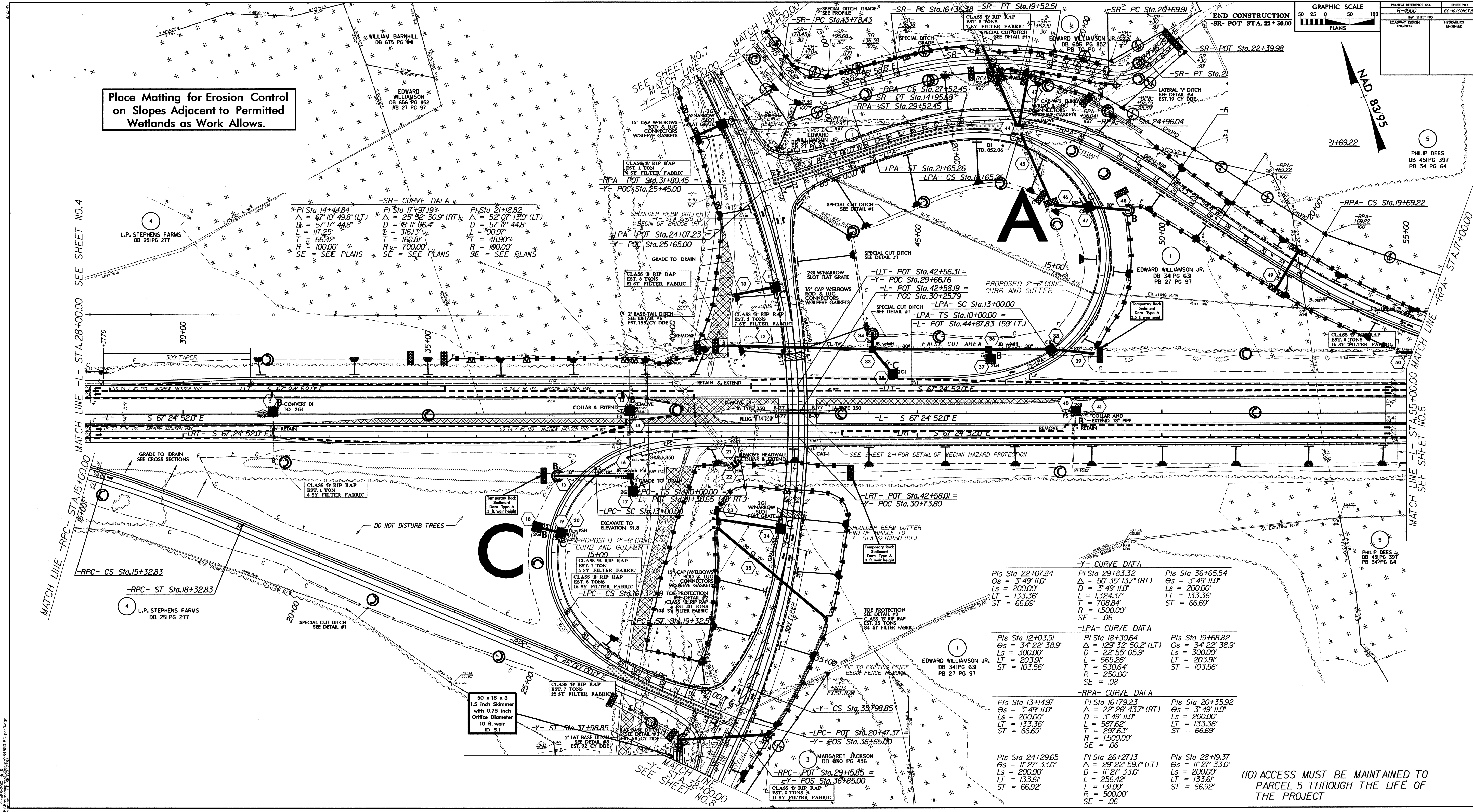
**BEGIN PROJECT R-4900**  
-L- POT STA. 20 + 65.00

4  
L.P. STEPHENS FARMS  
DB 251PG 277

-RPC- CURVE DATA

PIs Sta 12+35.52	PI Sta 14+34.26	PIs Sta 16+32.92
$\theta_s = 5^\circ 43' 46.5''$	$\Delta = 7^\circ 32' 27.0''$ (RT)	$\theta_s = 5^\circ 43' 46.5''$
$L_s = 300.00'$	$D = 3^\circ 49' 11.0''$	$L_s = 300.00'$
$LT = 200.10'$	$L = 197.42'$	$LT = 200.10'$
$ST = 100.10'$	$T = 98.85'$	$ST = 100.10'$
	$R = 1,500.00'$	
	$SE = .06$	

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cd-jason



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

**-SR- CURVE DATA-**

PI Sta 14+4.84 Δ = 67° 10' 43.5" (LT) D = 57' 17" 44.5" L = 117.25' T = 66.42' R = 100.00' SE = SEE PLANS	PI Sta 17+97.93 Δ = 25° 32' 30.9" (RT) D = 98' 11" 06.4" L = 316.13' T = 160.81' R = 700.00' SE = SEE PLANS	PI Sta 21+18.82 Δ = 52° 07' 13.0" (LT) D = 57' 17" 44.5" L = 90.97' T = 48.90' R = 180.00' SE = SEE PLANS
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**-Y- CURVE DATA**

PIs Sta 22+07.84 Os = 3° 49' 11.0" Ls = 200.00' LT = 133.36' ST = 66.69'	PI Sta 29+83.32 Os = 5° 35' 13.7" (RT) D = 3° 49' 11.0" L = 1324.37' T = 708.84' R = 1500.00' SE = .06	PIs Sta 36+65.54 Os = 3° 49' 11.0" Ls = 200.00' LT = 133.36' ST = 66.69'
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**-LPA- CURVE DATA**

PIs Sta 12+03.91 Os = 34° 22' 38.9" Ls = 300.00' LT = 203.91' ST = 103.56'	PI Sta 18+30.64 Δ = 129° 32' 50.2" (LT) D = 22° 55' 05.9" L = 565.26' T = 530.64' R = 250.00' SE = .08	PIs Sta 19+68.82 Os = 34° 22' 38.9" Ls = 300.00' LT = 203.91' ST = 103.56'
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**-RPA- CURVE DATA**

PIs Sta 13+14.97 Os = 3° 49' 11.0" Ls = 200.00' LT = 133.36' ST = 66.69'	PI Sta 16+79.23 Δ = 22° 26' 43.7" (RT) D = 3° 49' 11.0" L = 587.82' T = 297.63' R = 1500.00' SE = .06	PIs Sta 20+35.92 Os = 3° 49' 11.0" Ls = 200.00' LT = 133.36' ST = 66.69'
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**-Y- POS CURVE DATA**

PIs Sta 24+29.65 Os = 11° 27' 33.0" Ls = 200.00' LT = 133.61' ST = 66.92'	PIs Sta 26+27.13 Δ = 29° 22' 59.7" (LT) D = 11° 27' 33.0" L = 256.42' T = 131.09' R = 500.00' SE = .06	PIs Sta 28+19.37 Os = 11° 27' 33.0" Ls = 200.00' LT = 133.61' ST = 66.92'
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(10) ACCESS MUST BE MAINTAINED TO PARCEL 5 THROUGH THE LIFE OF THE PROJECT



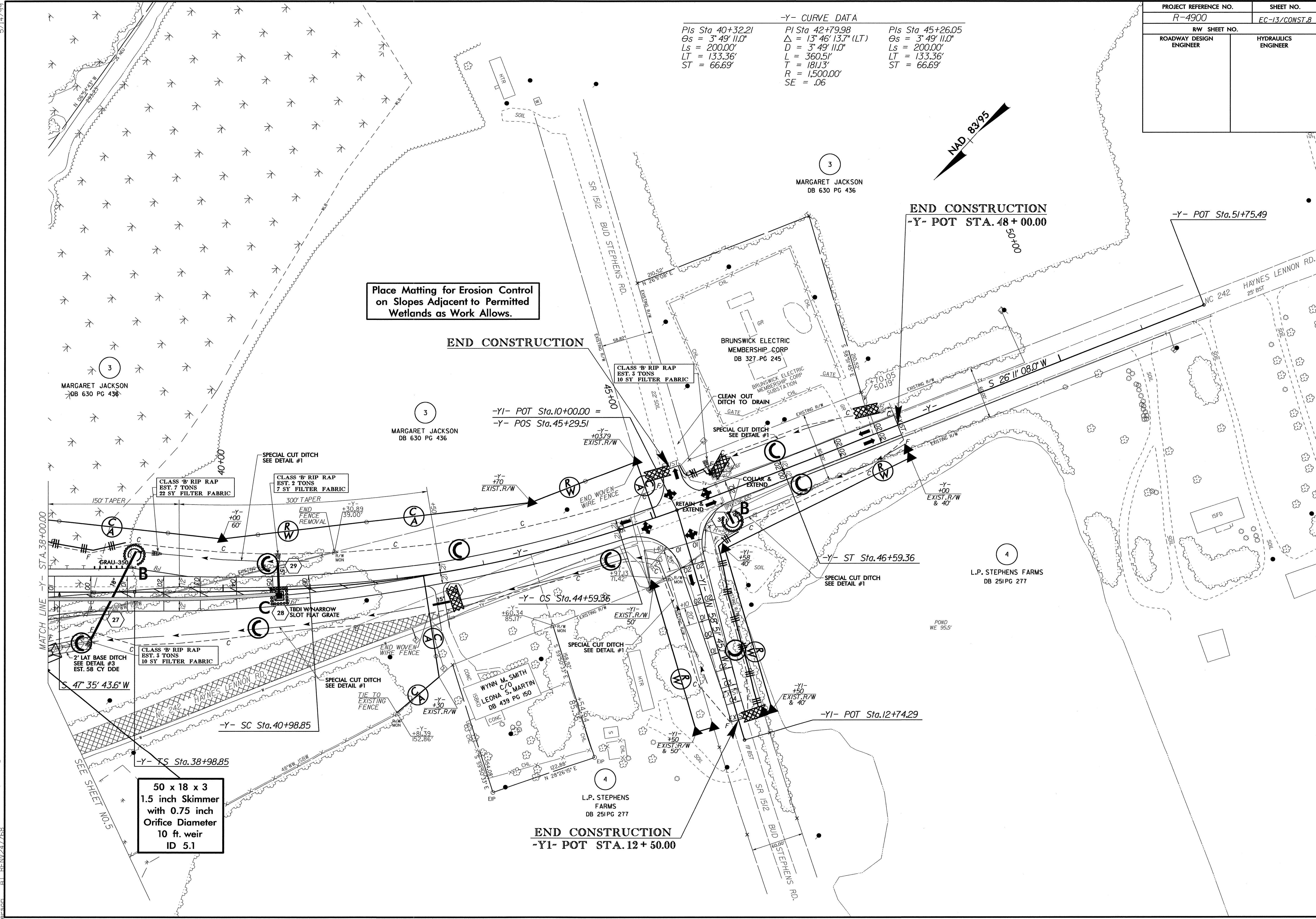
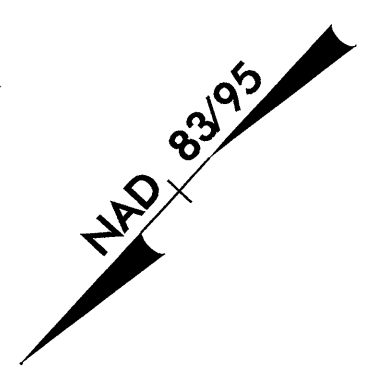




PROJECT REFERENCE NO.		SHEET NO.	
R-4900		EC-13/CONST.8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

**-Y- CURVE DATA**

Pls Sta 40+32.21	PI Sta 42+79.98	Pls Sta 45+26.05
Os = 3' 49' 11.0"	Δ = 13' 46' 13.7" (LT)	Os = 3' 49' 11.0"
Ls = 200.00'	D = 3' 49' 11.0"	Ls = 200.00'
LT = 133.36'	L = 360.51'	LT = 133.36'
ST = 66.69'	T = 181.13'	ST = 66.69'
	R = 1,500.00'	
	SE = .06	



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

50 x 18 x 3  
1.5 inch Skimmer  
with 0.75 inch  
Orifice Diameter  
10 ft. weir  
ID 5.1

END CONSTRUCTION  
-Y1- POT STA. 12+ 50.00

END CONSTRUCTION  
-Y- POT STA. 48+ 00.00

-Y- POT Sta. 51+75.49

-Y1- POT Sta. 10+00.00 =  
-Y- POS Sta. 45+29.51

-Y- ST Sta. 46+59.36

-Y- CS Sta. 44+59.36

-Y- SC Sta. 40+98.85

-Y- TS Sta. 38+98.85

-Y1- POT Sta. 12+74.29

MATCH LINE -Y- STA. 38+00.00

SEE SHEET NO. 5

5/14/99  
01-APR-2010 11:31 R:\E:\form\p\4900\EC\_pah8.dgn  
cd-jensen