

TIP PROJECT: R-5522

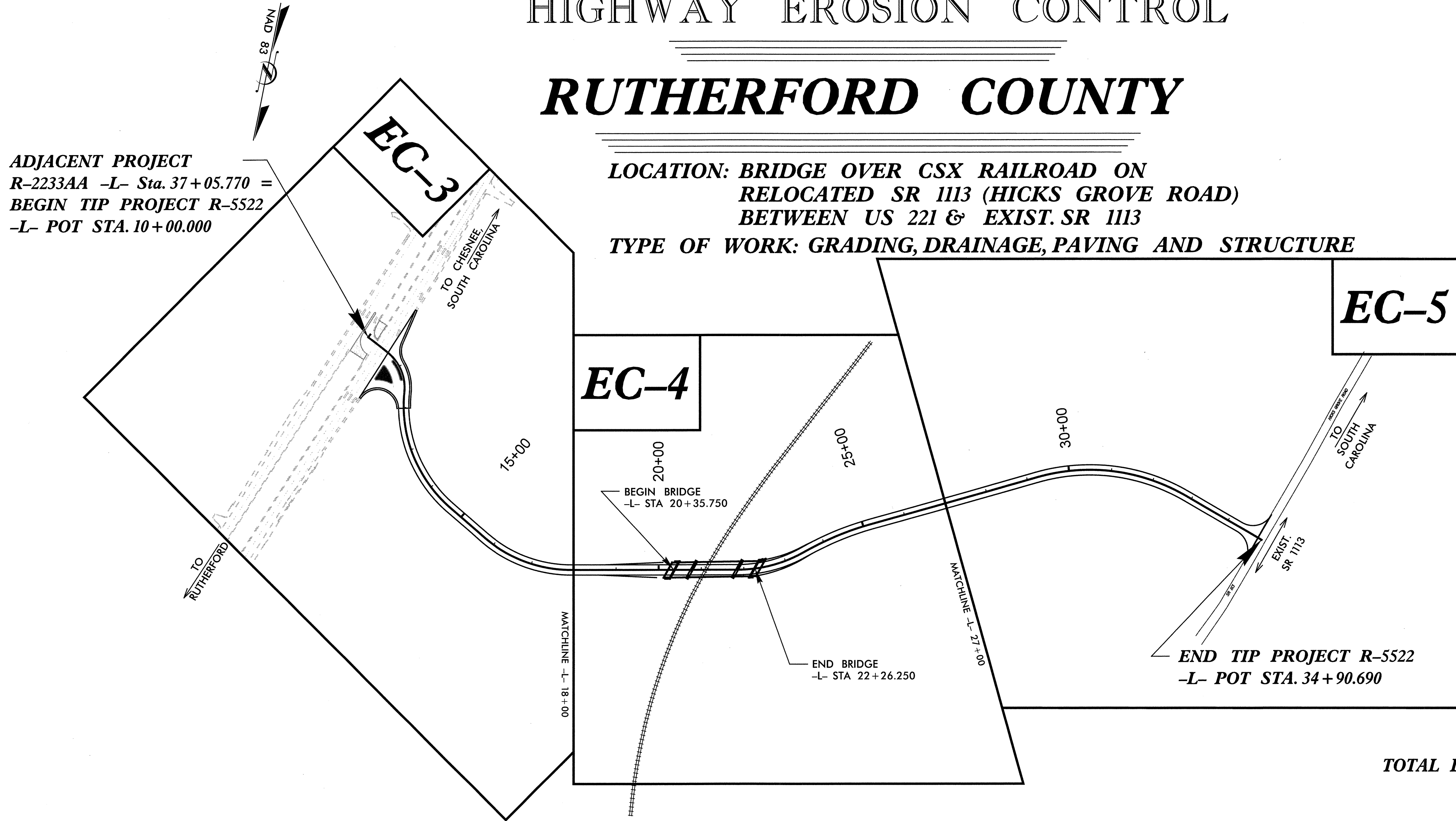
STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL
RUTHERFORD COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5522	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1607.01	Gravel Construction Entrance	
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	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
1634.01	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1635.02	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	

ADJACENT PROJECT
 R-2233AA -L- Sta. 37+05.770 =
 BEGIN TIP PROJECT R-5522
 -L- POT STA. 10+00.000



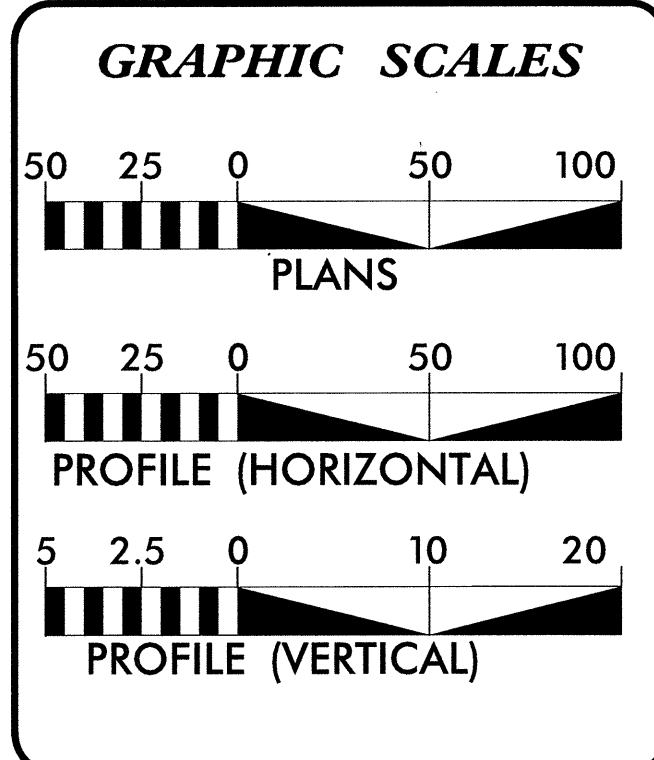
LOCATION: BRIDGE OVER CSX RAILROAD ON
 RELOCATED SR 1113 (HICKS GROVE ROAD)
 BETWEEN US 221 & EXIST. SR 1113

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

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

THESE EROSION AND SEDIMENT CONTROL
 PLANS COMPLY WITH THE REGULATIONS SET
 FORTH BY THE NCG-0100000 GENERAL
 CONSTRUCTION PERMIT EFFECTIVE
 AUGUST 3, 2011 ISSUED BY THE
 NORTH CAROLINA DEPARTMENT OF
 ENVIRONMENT AND NATURAL RESOURCES
 DIVISION OF WATER QUALITY

**TOTAL DISTURBED AREA = 429961 SQ. FT.
 = 9.8705 ACRES**



ROADSIDE ENVIRONMENTAL UNIT
 DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

LEVEL III-A ENGINEER:
 AARON C. CARVER, PE
 CERTIFICATION NO: 302

Charlotte, North Carolina 704-895-9061
 Tri-Cities, Tennessee 423-487-5460
 Knoxville, Tennessee 865-546-9800
 Middlesboro, Kentucky 606-248-6600
 Asheville, North Carolina 828-253-2796
 Spartanburg, South Carolina 864-574-4775

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Prepared for the Office of:
ROADSIDE ENVIRONMENTAL UNIT
 1 South Wilmington St.
 Raleigh, NC 27611
2012 STANDARD SPECIFICATIONS

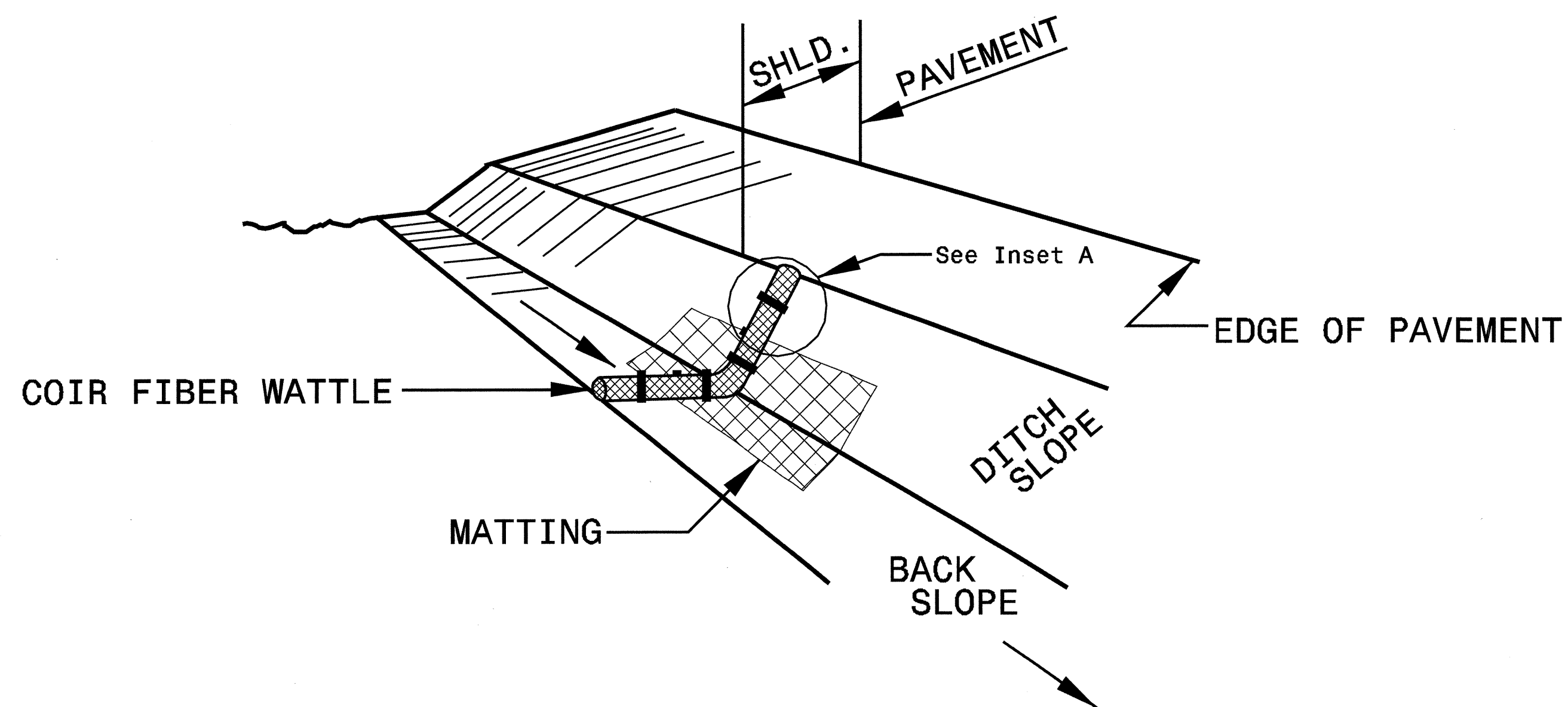
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

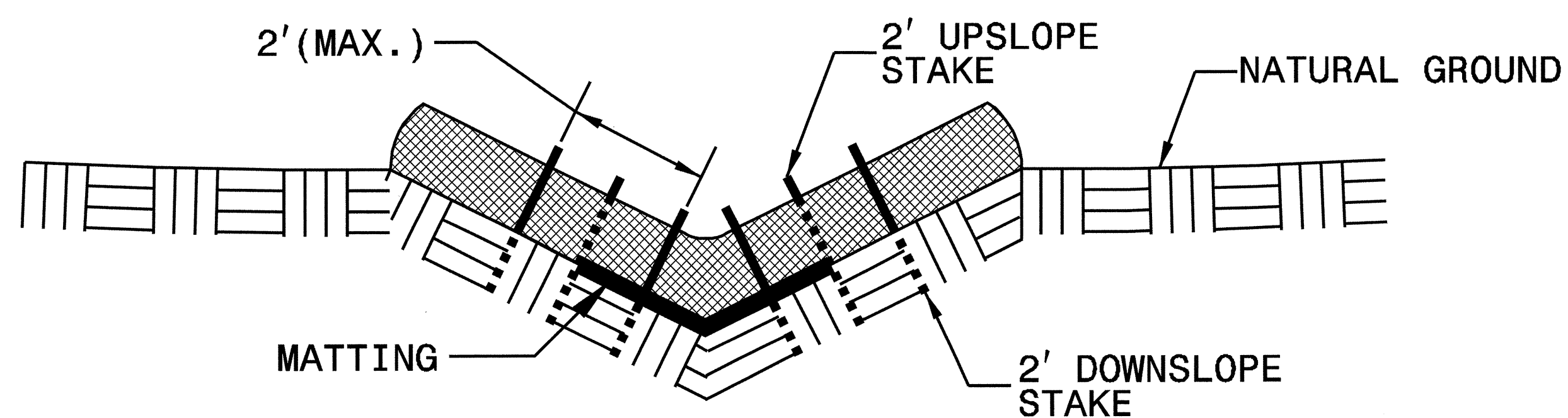
1604.01 Railroad Erosion Control Detail	1630.06 Special Stilling Basin
1605.01 Temporary Silt Fence	1631.01 Matting Installation
1606.01 Special Sediment Control Fence	1632.01 Rock Inlet Sediment Trap Type A
1607.01 Gravel Construction Entrance	1632.02 Rock Inlet Sediment Trap Type B
1622.01 Temporary Berms and Slope Drains	1632.03 Rock Inlet Sediment Trap Type C
1630.01 Riser Basin	1633.01 Temporary Rock Silt Check Type A
1630.03 Temporary Silt Ditch	1634.01 Temporary Rock Sediment Dam Type A
1630.04 Stilling Basin	1634.02 Temporary Rock Sediment Dam Type B
1630.05 Temporary Diversion	1635.01 Rock Pipe Inlet Sediment Trap Type A
	1635.02 Rock Pipe Inlet Sediment Trap Type B

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

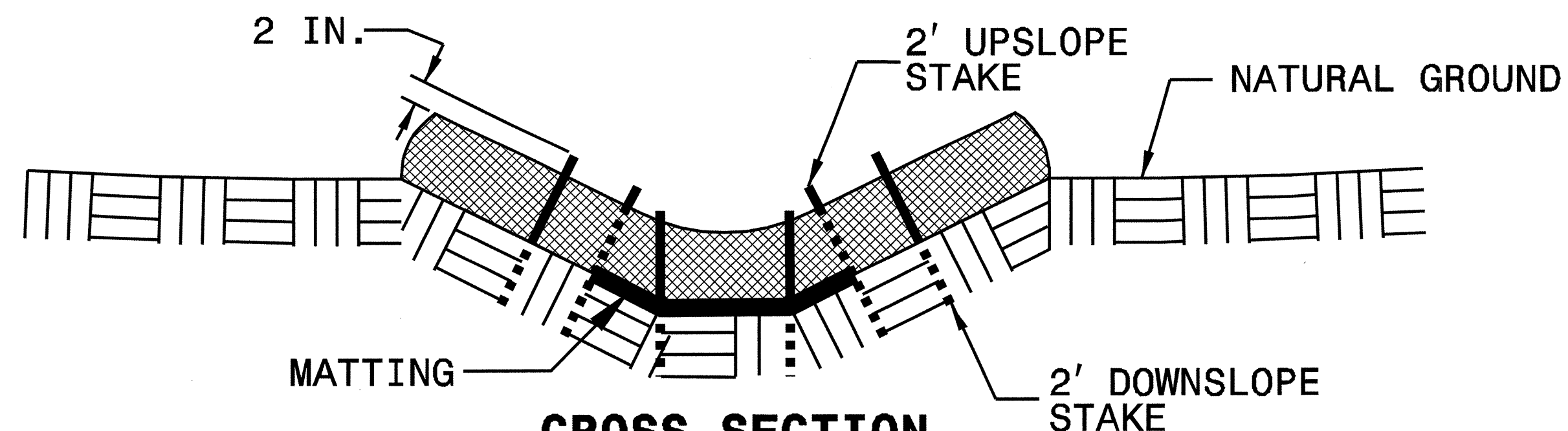
COIR FIBER WATTLE DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.

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

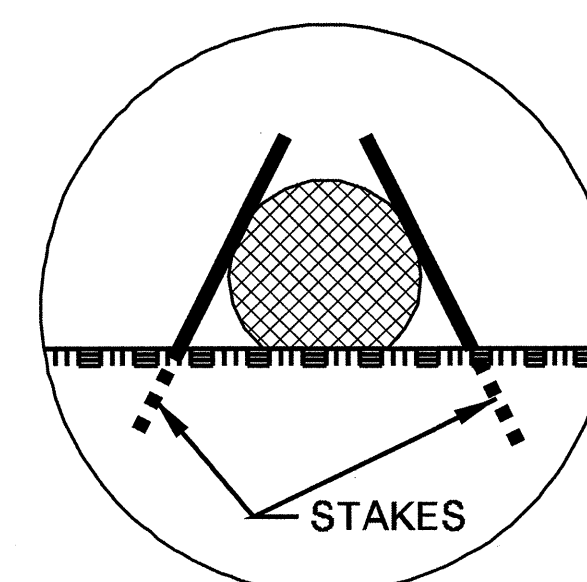
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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

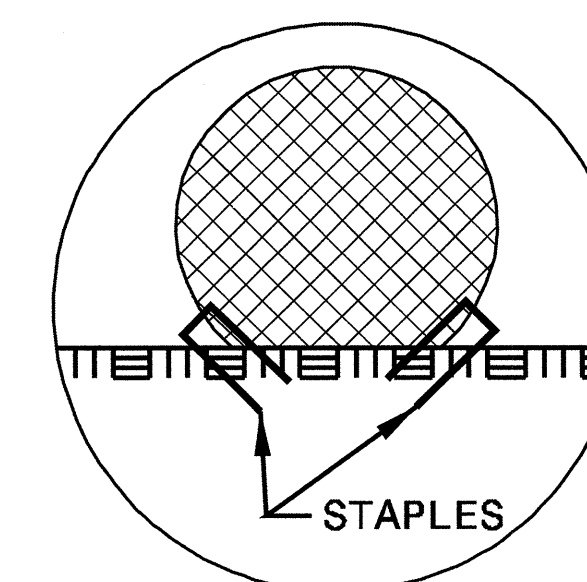
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

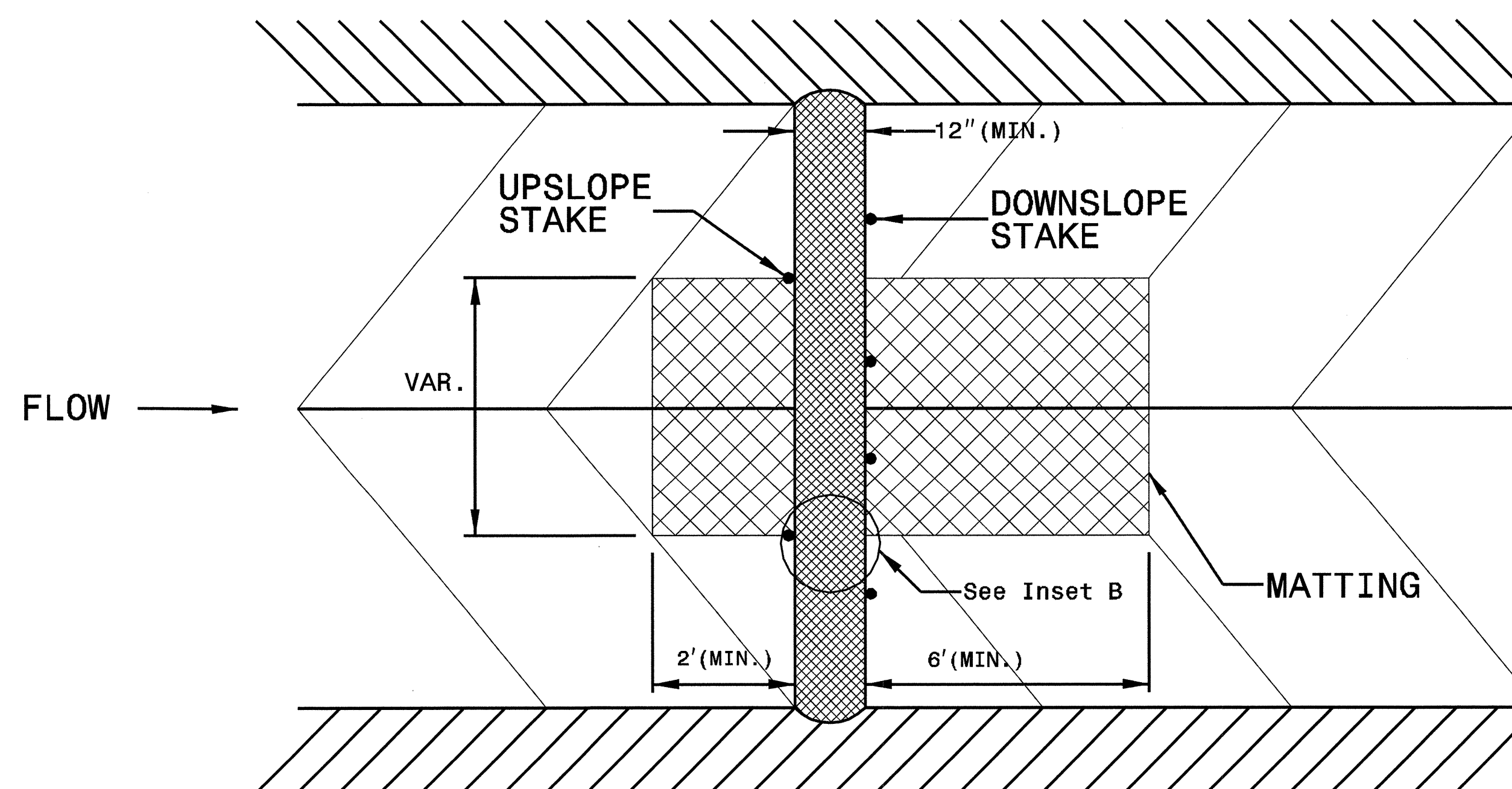
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



INSET A



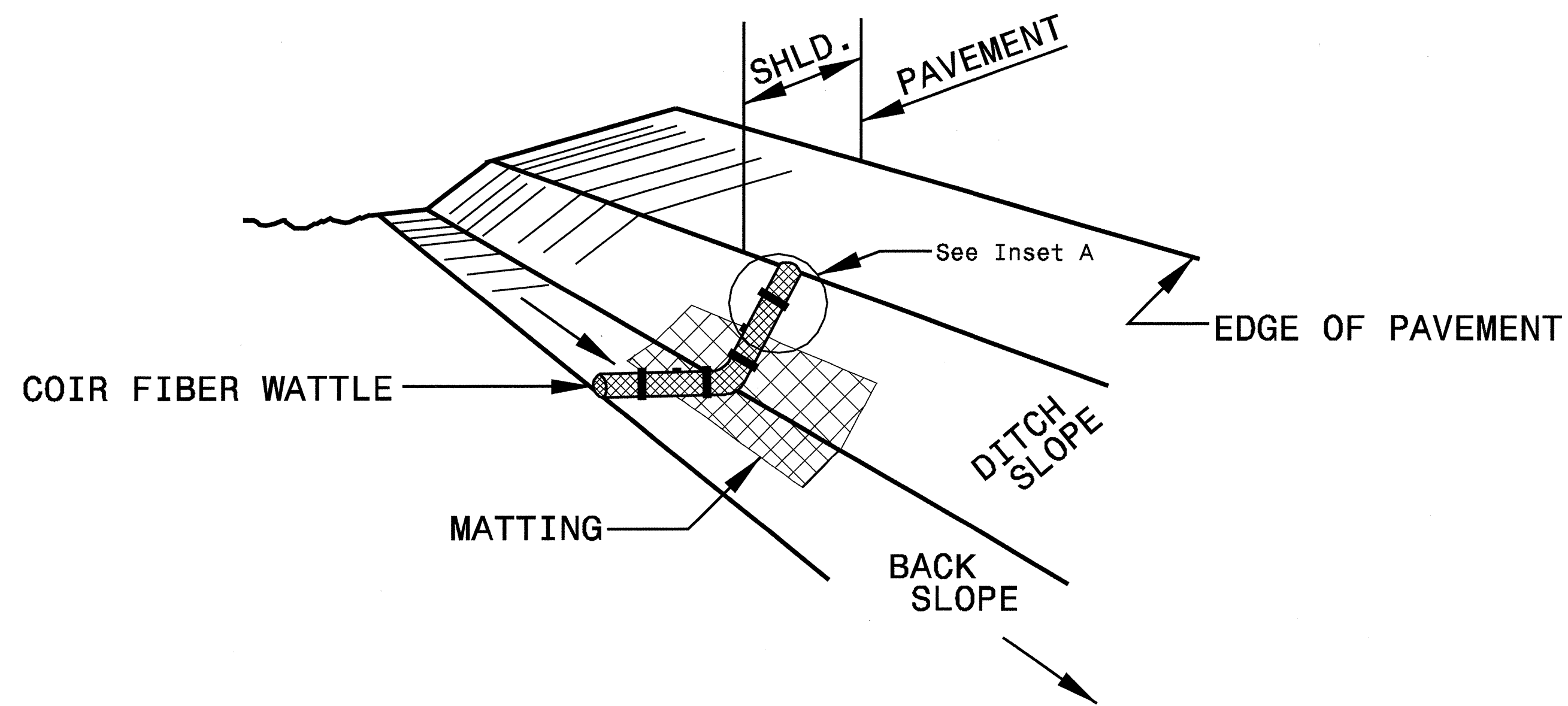
INSET B



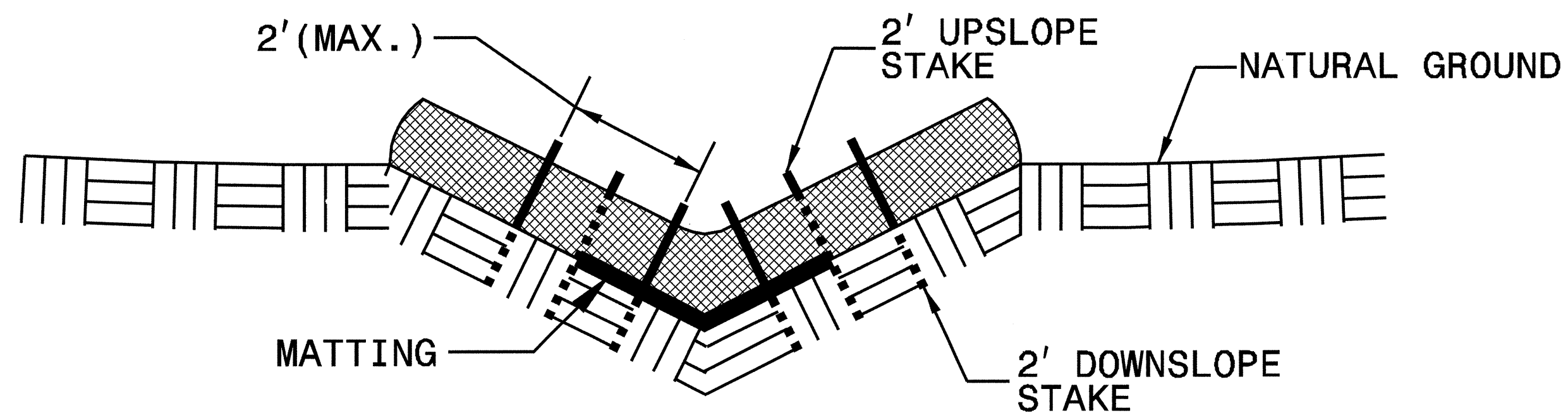
TOP VIEW

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

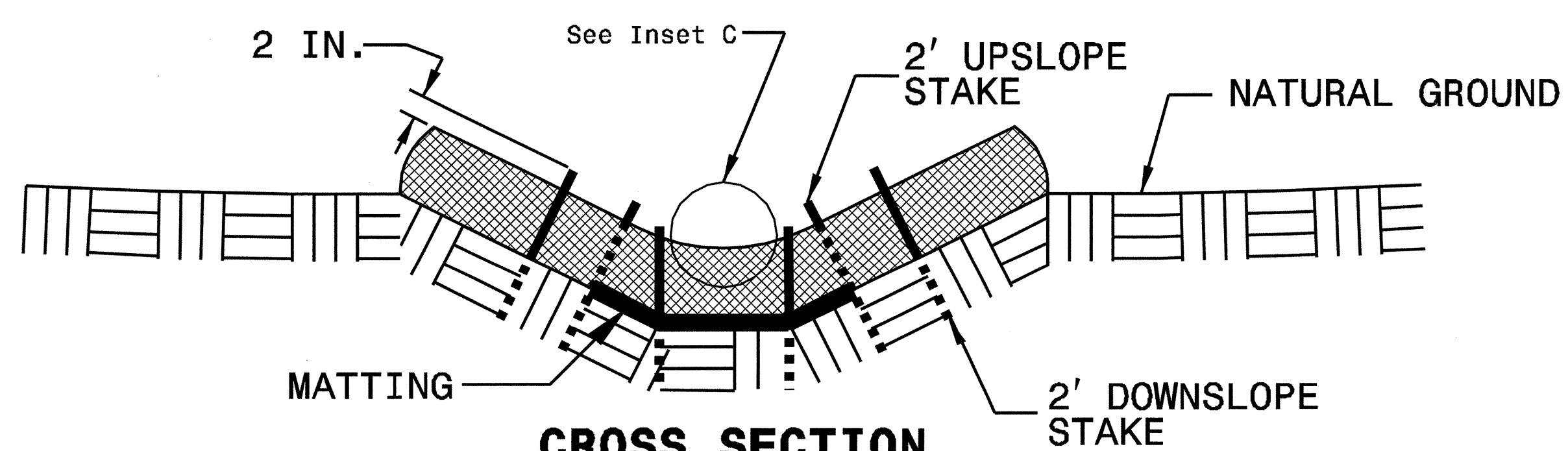
COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



ISOMETRIC VIEW



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) 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.

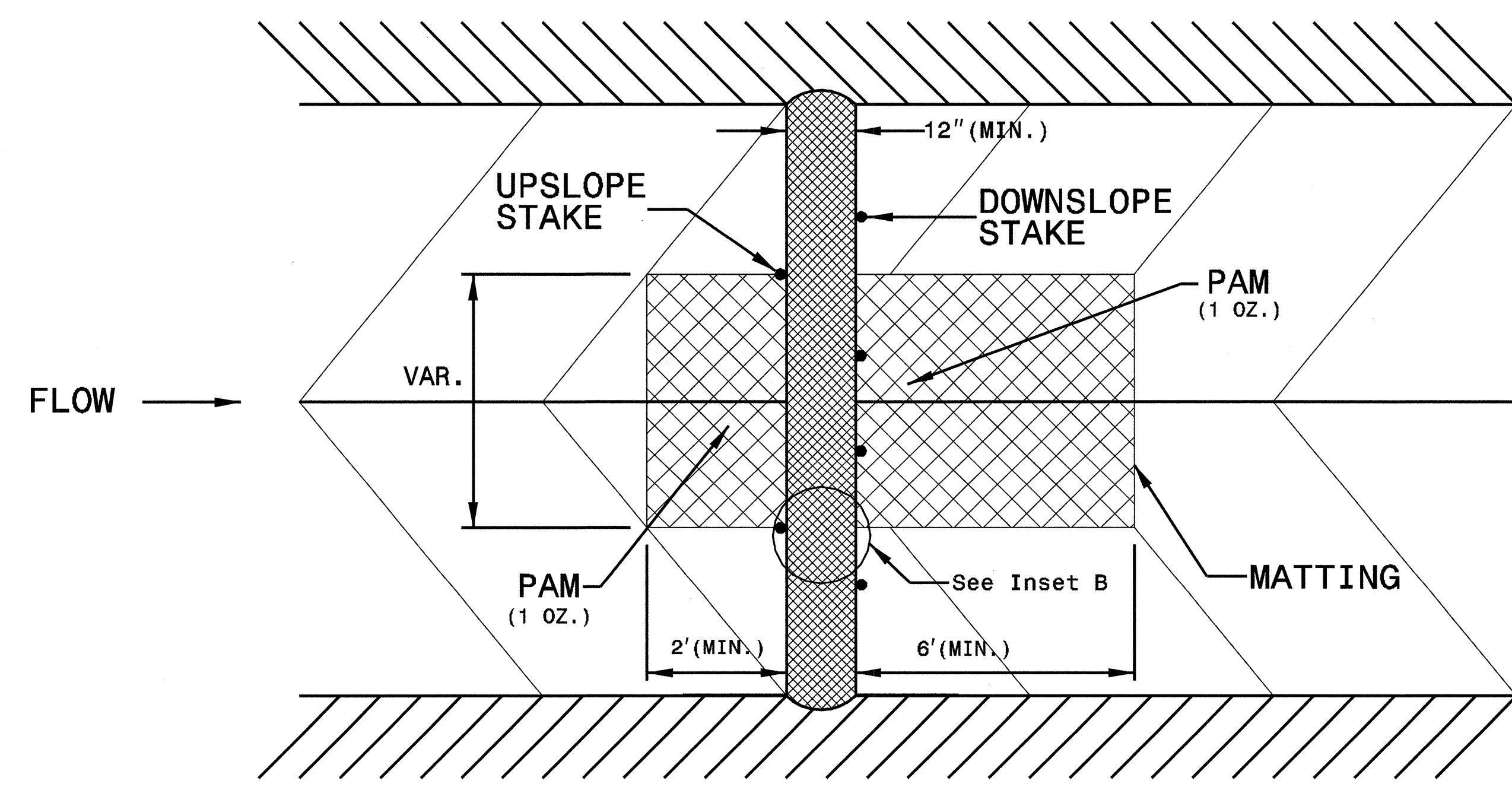
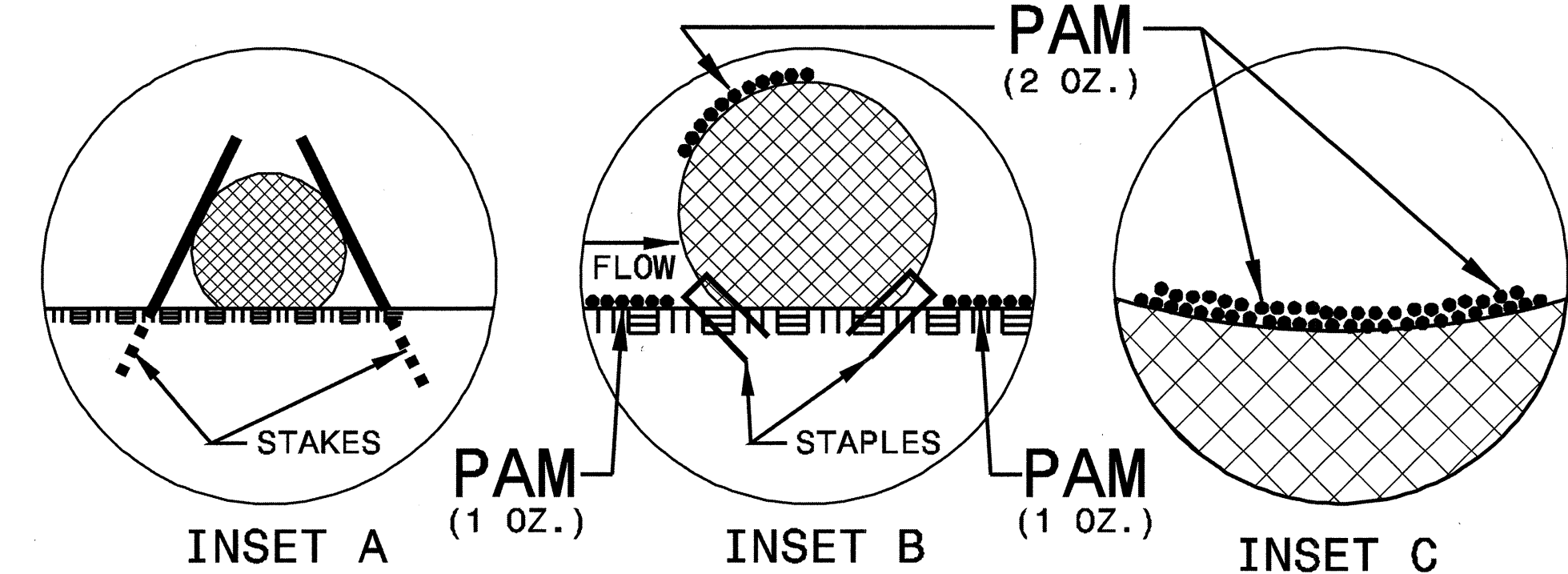
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

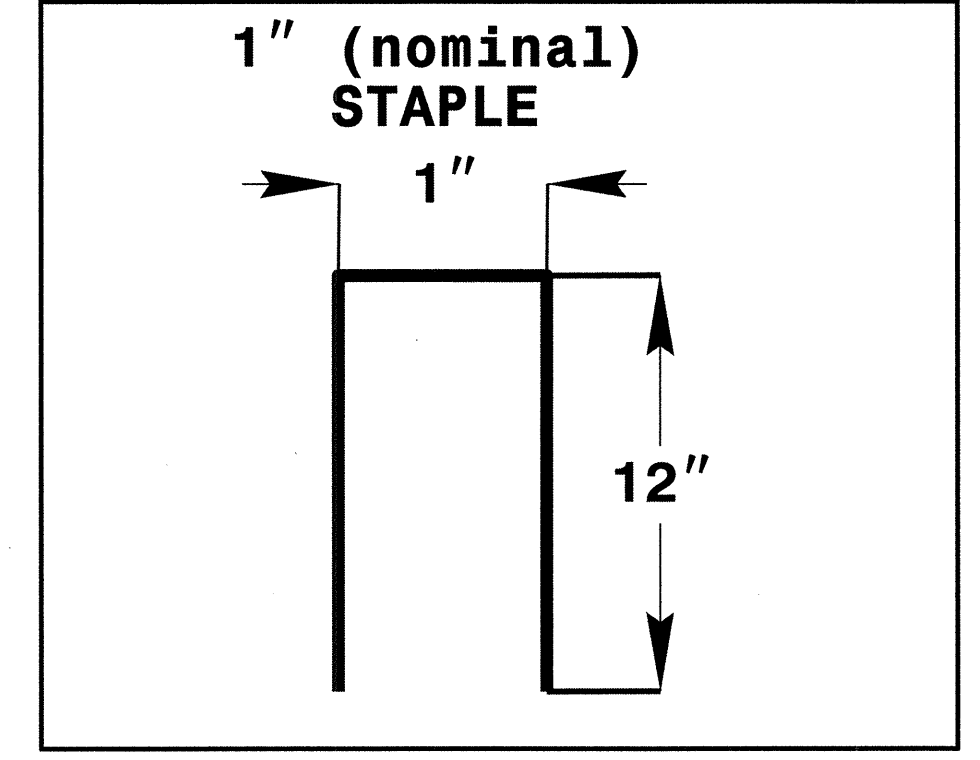
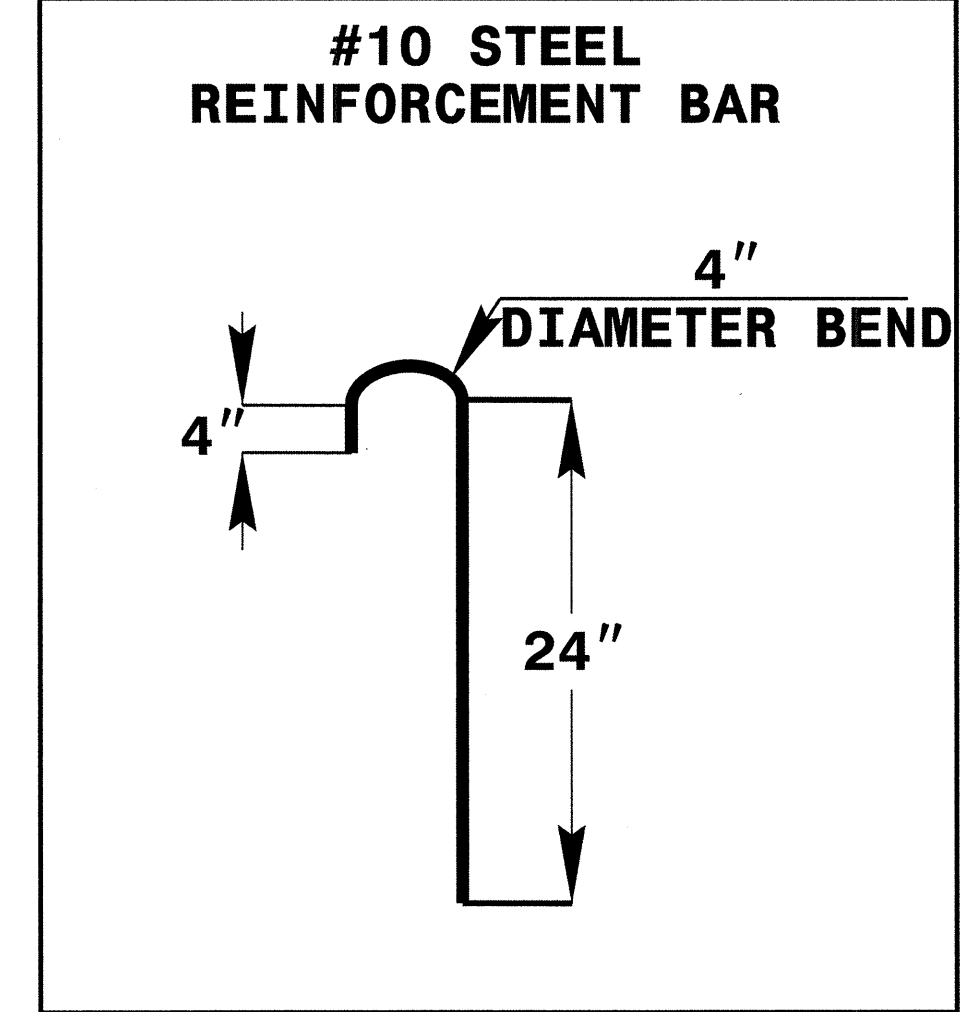
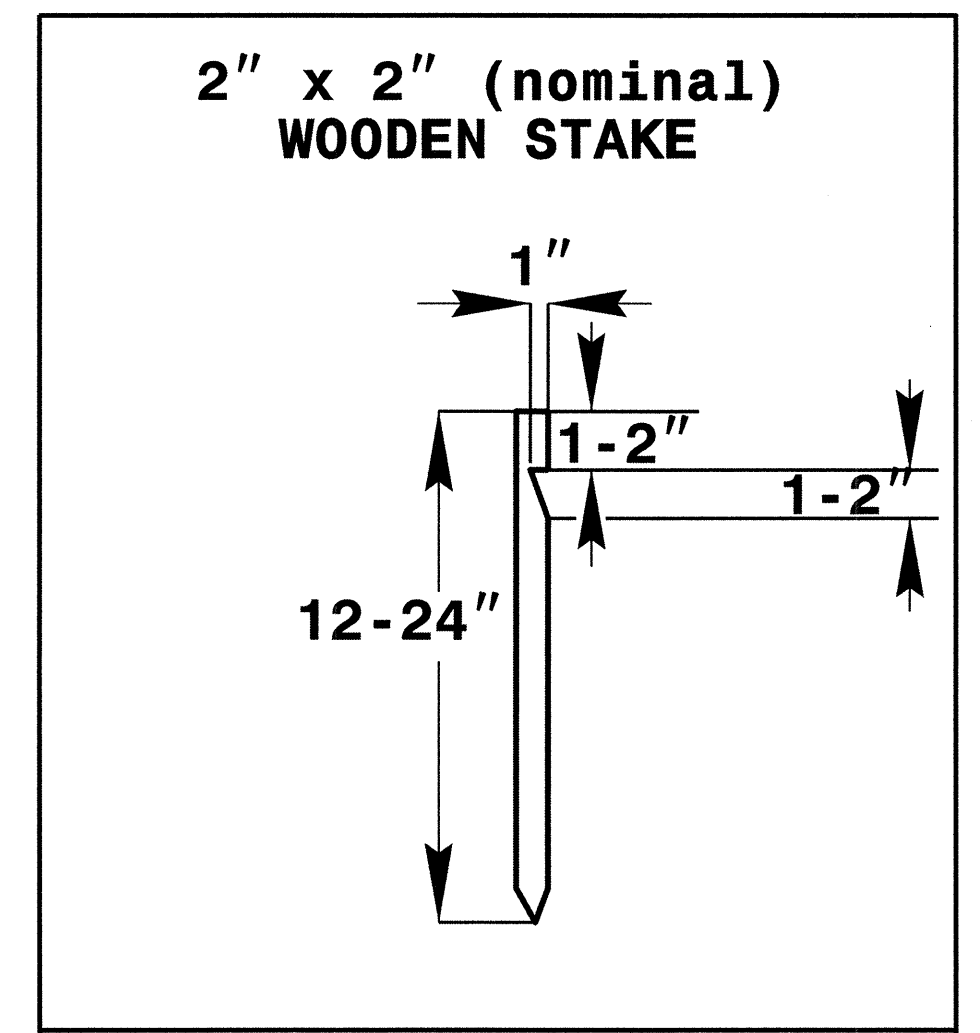
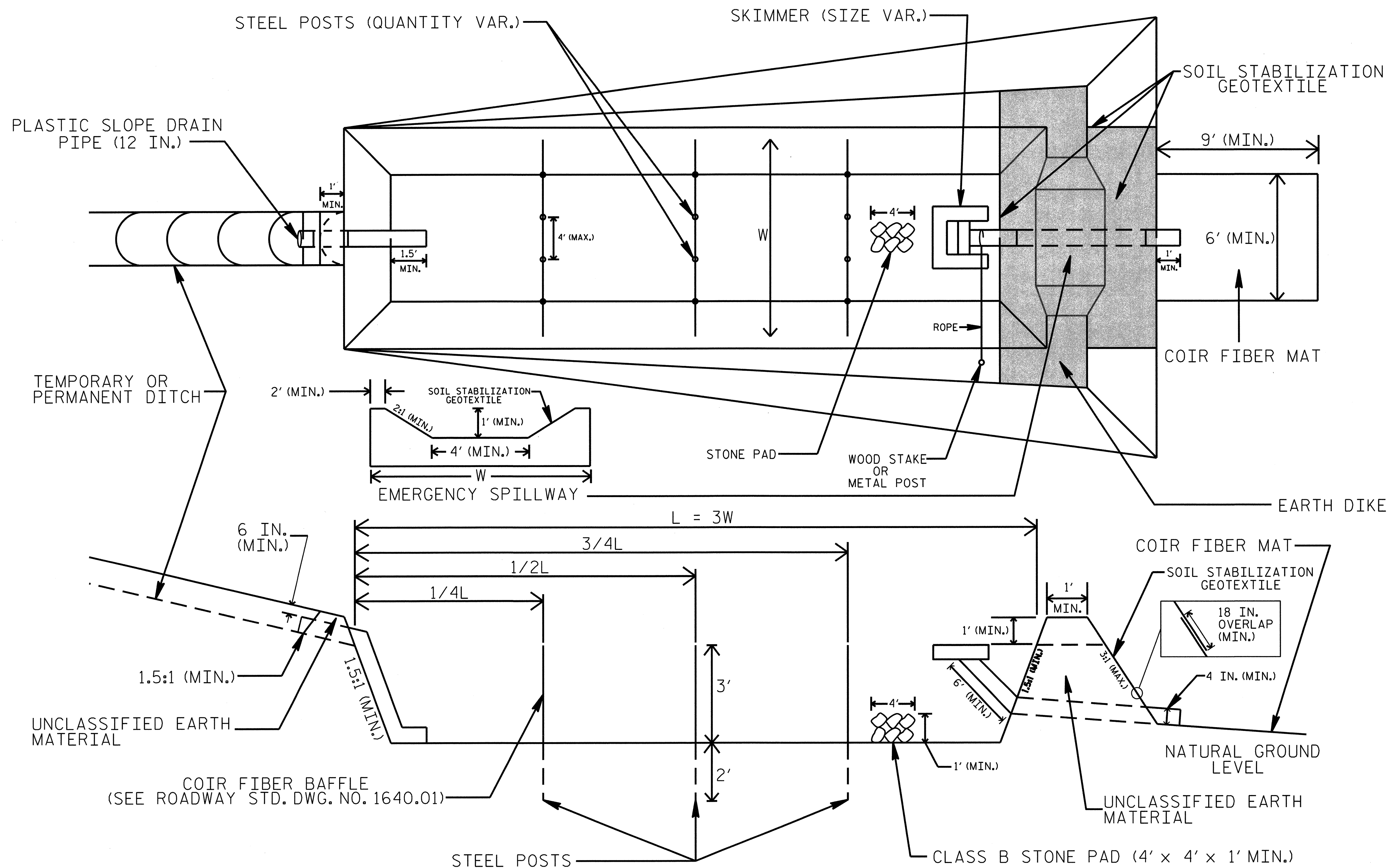
INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



TOP VIEW

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

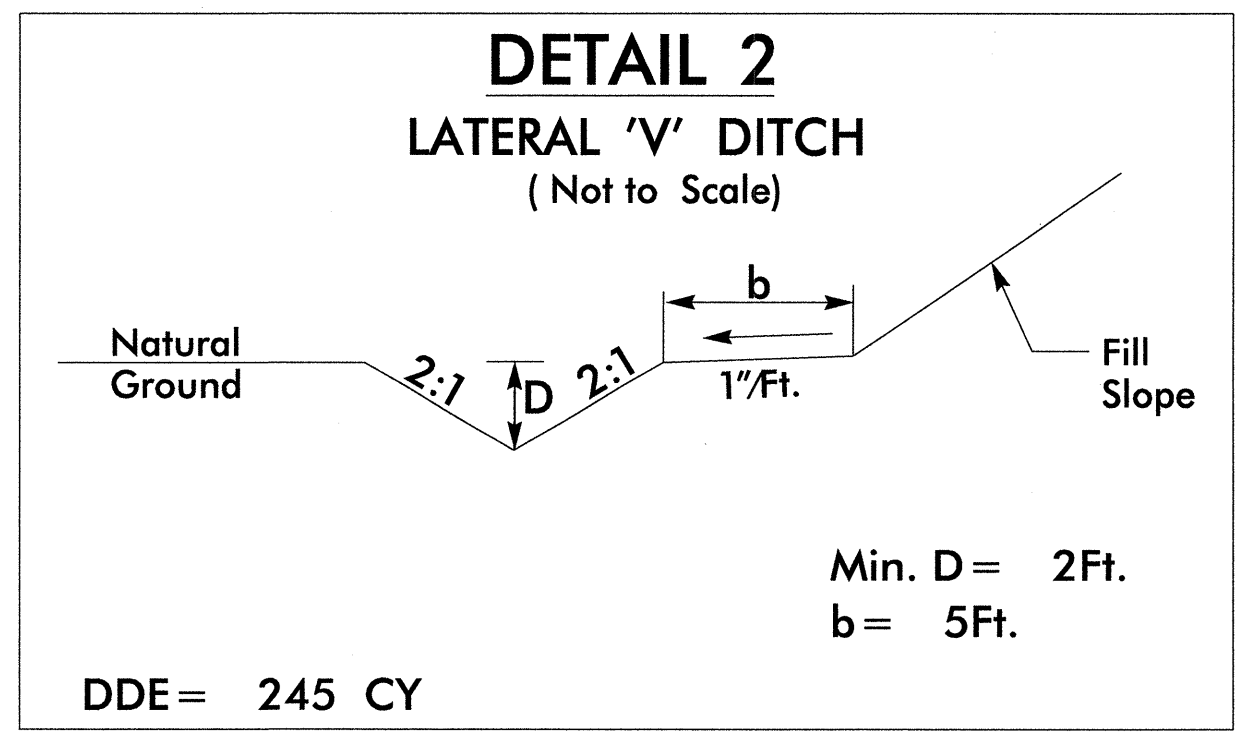
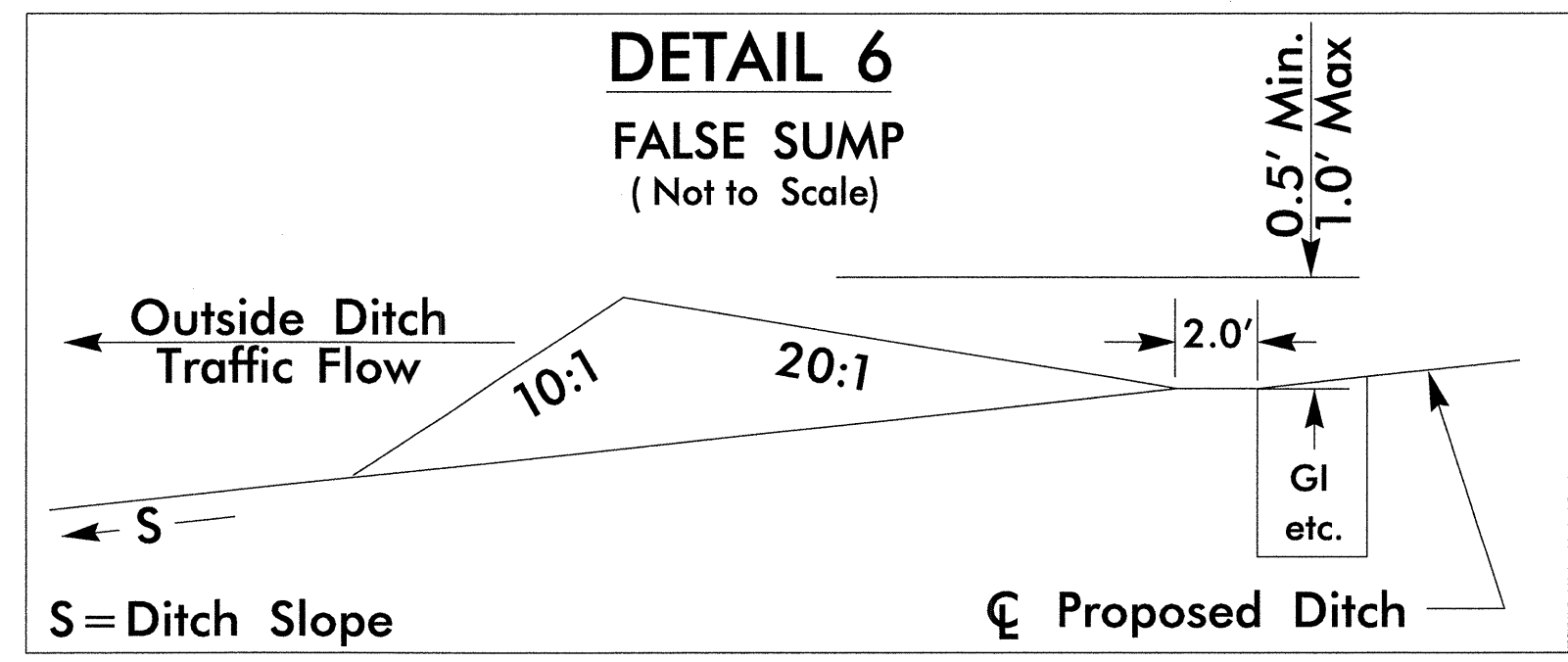
NOTES

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 FILTRATION GEOTEXTILE AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

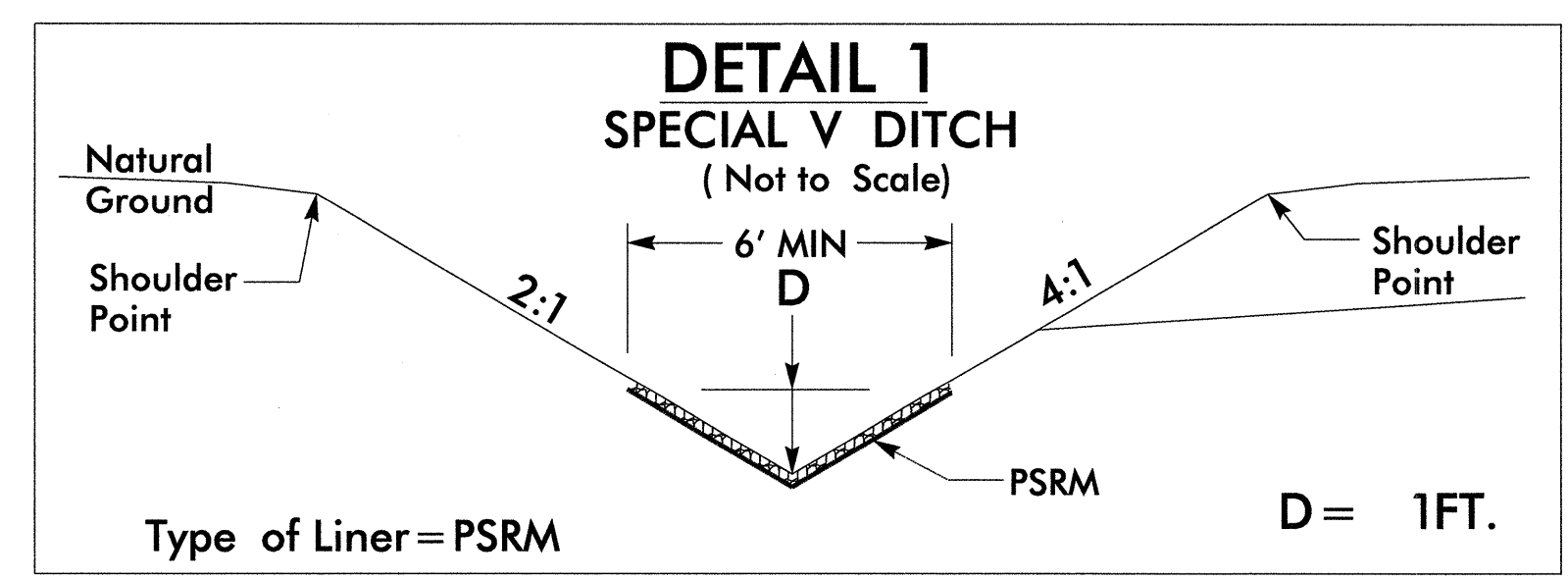
NOT TO SCALE

2/27/12

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-3/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

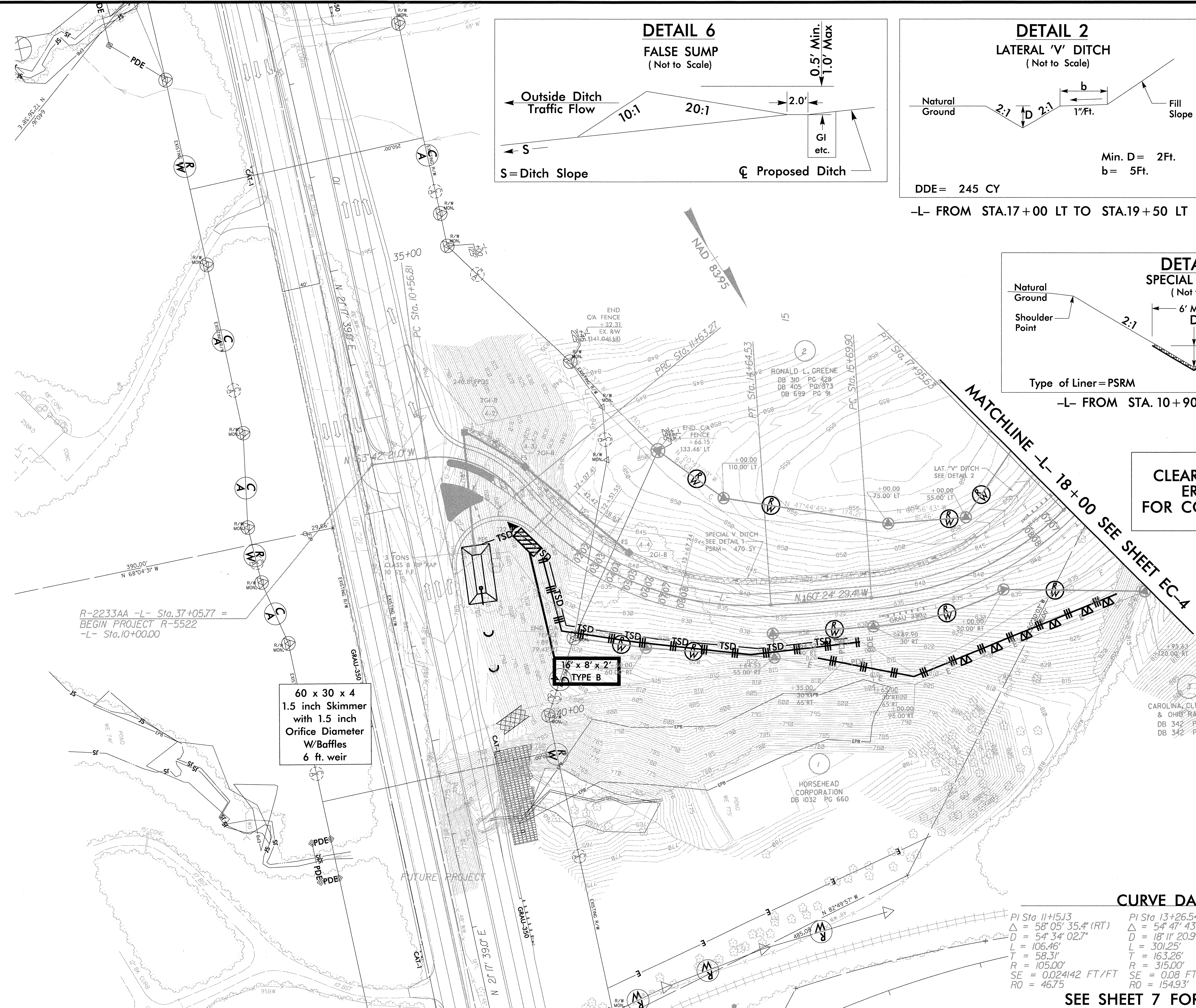


DDE = 245 CY
-L- FROM STA.17+00 LT TO STA.19+50 LT



Type of Liner = PSRM
-L- FROM STA. 10+90 TO STA. 17+00 LT

**CLEARING AND GRUBBING
EROSION CONTROL
FOR CONSTRUCTION SHEET 4**



R-2233AA -L- Sta.37+05.77 =
BEGIN PROJECT R-5522
-L- Sta.10+00.00

60 x 30 x 4
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
W/Baffles
6 ft. weir

16' x 8' x 2'
TYPE B

CURVE DATA

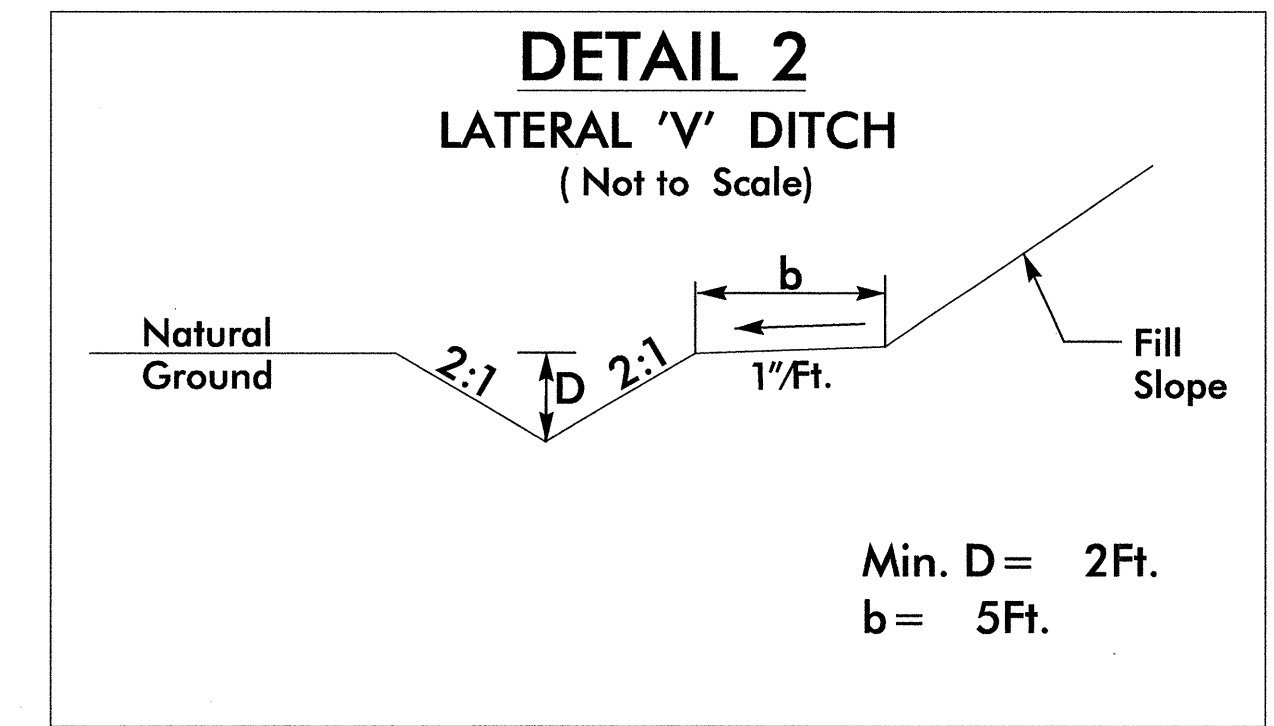
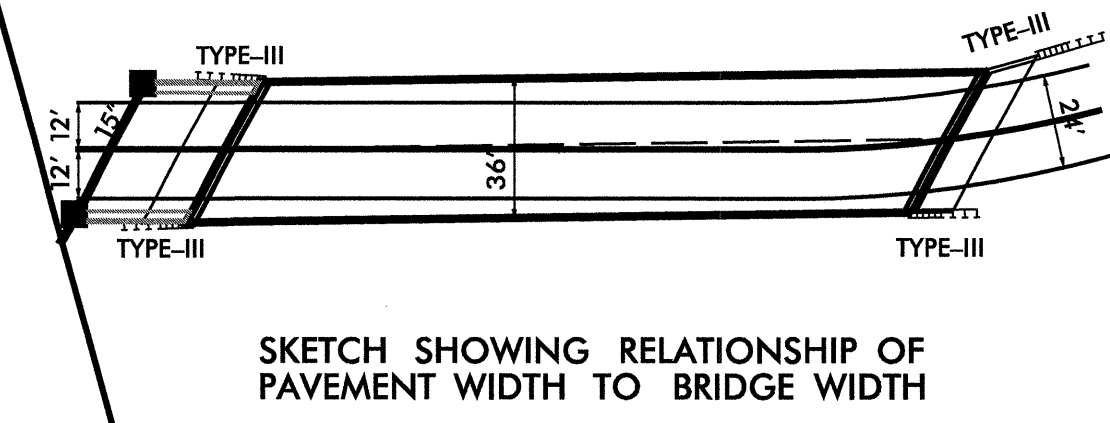
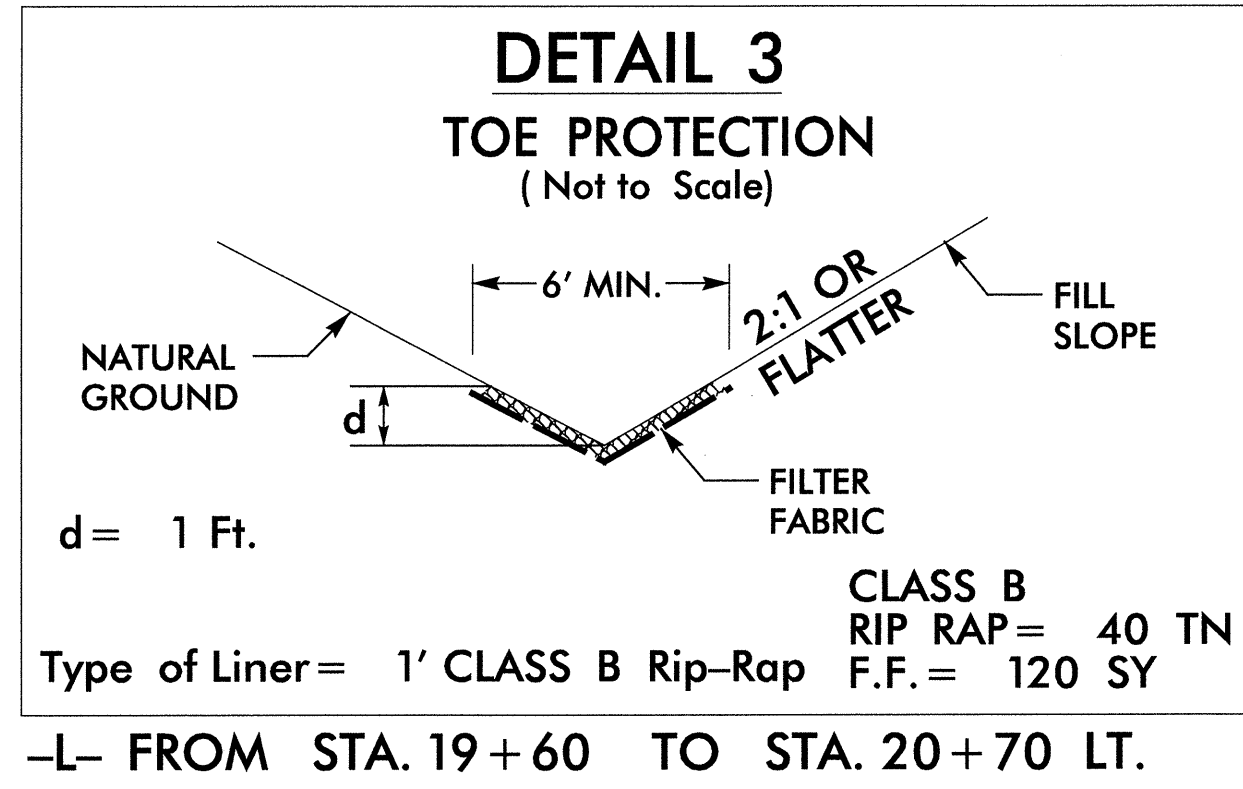
PI Sta 11+15.13 $\Delta = 58^{\circ} 05' 35.4" (RT)$ $D = 54^{\circ} 34' 02.7"$ $L = 106.46'$ $T = 58.31'$ $R = 105.00'$ $SE = 0.024142 FT/FT$ $RO = 46.75'$	PI Sta 13+26.54 $\Delta = 54^{\circ} 47' 43.8" (LT)$ $D = 18^{\circ} 11' 20.9"$ $L = 301.25'$ $T = 163.26'$ $R = 315.00'$ $SE = 0.08 FT/FT$ $RO = 154.93'$	PI Sta 16+87.85 $\Delta = 41^{\circ} 03' 27.7" (LT)$ $D = 18^{\circ} 11' 20.9"$ $L = 225.73'$ $T = 117.95'$ $R = 315.00'$ $SE = 0.08 FT/FT$ $RO = 116.13'$
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SEE SHEET 7 FOR PROFILE

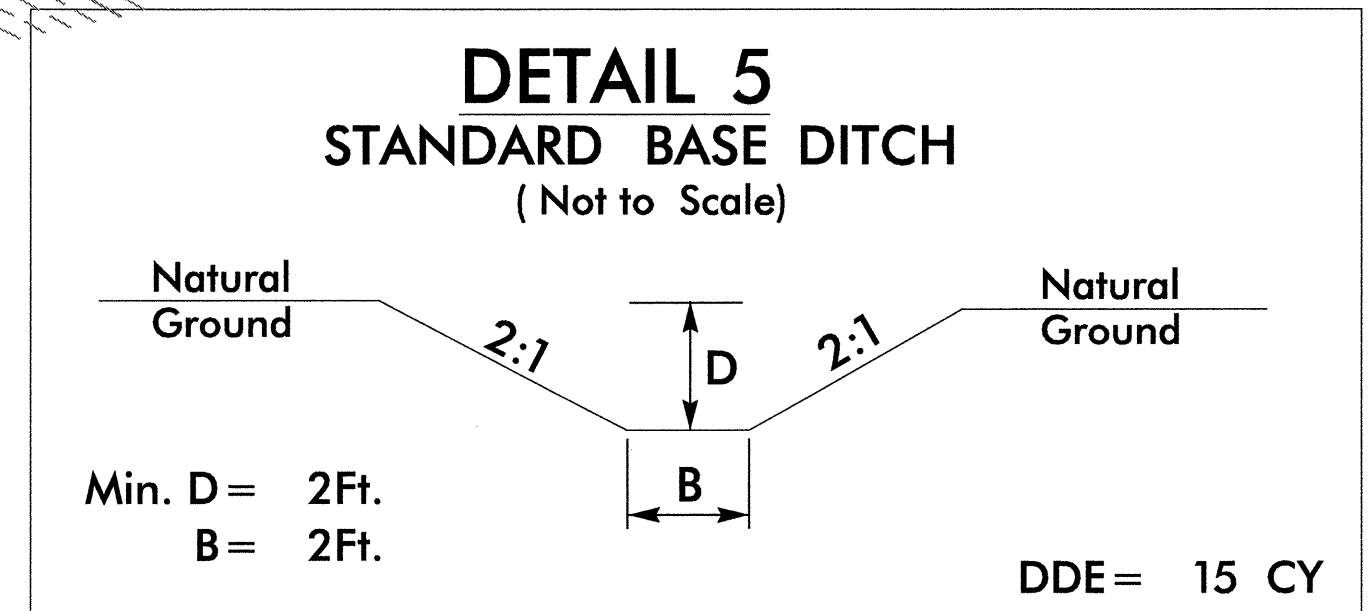
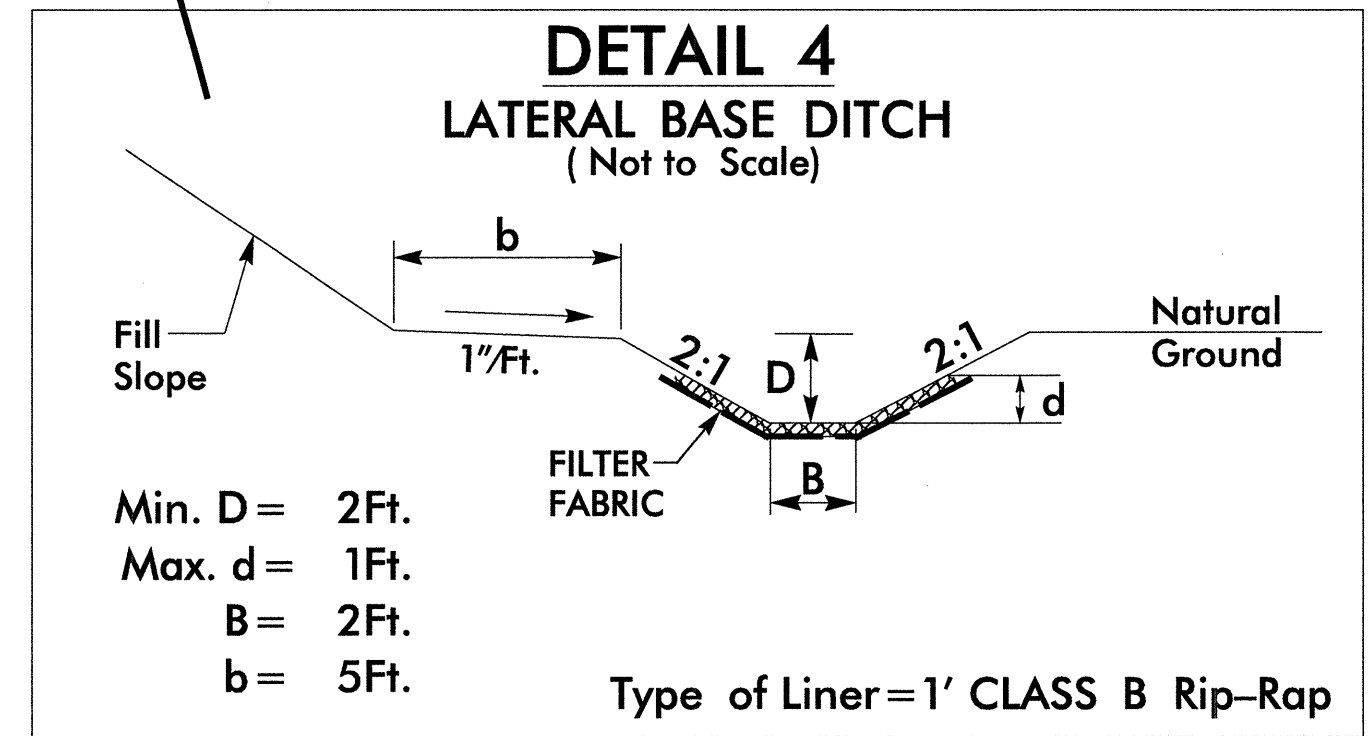
REVISIONS

SYSTEMS CONNECTIONS

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-4/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**CLEARING AND GRUBBING
EROSION CONTROL
FOR CONSTRUCTION SHEET 5**



-L- FROM STA. 18+07 RT TO STA. 18+43 RT

CURVE DATA

PI Sta 22+66.70	PI Sta 24+33.74
$\Delta = 29^{\circ} 05' 59.6''$ (LT)	$\Delta = 13^{\circ} 30' 21.0''$ (RT)
$D = 18' 11'' 20.9''$	$D = 7' 38'' 22.0''$
$L = 159.99'$	$L = 176.79'$
$T = 81.76'$	$T = 88.81'$
$R = 315.00'$	$R = 750.00'$
$SE = 0.03$ FT/FT	$SE = 0.06$ FT/FT
$RO = 58.06$ OUT	$RO = 116.13$ IN
	$RO = 117.11$ OUT

SEE SHEET 8 FOR PROFILE

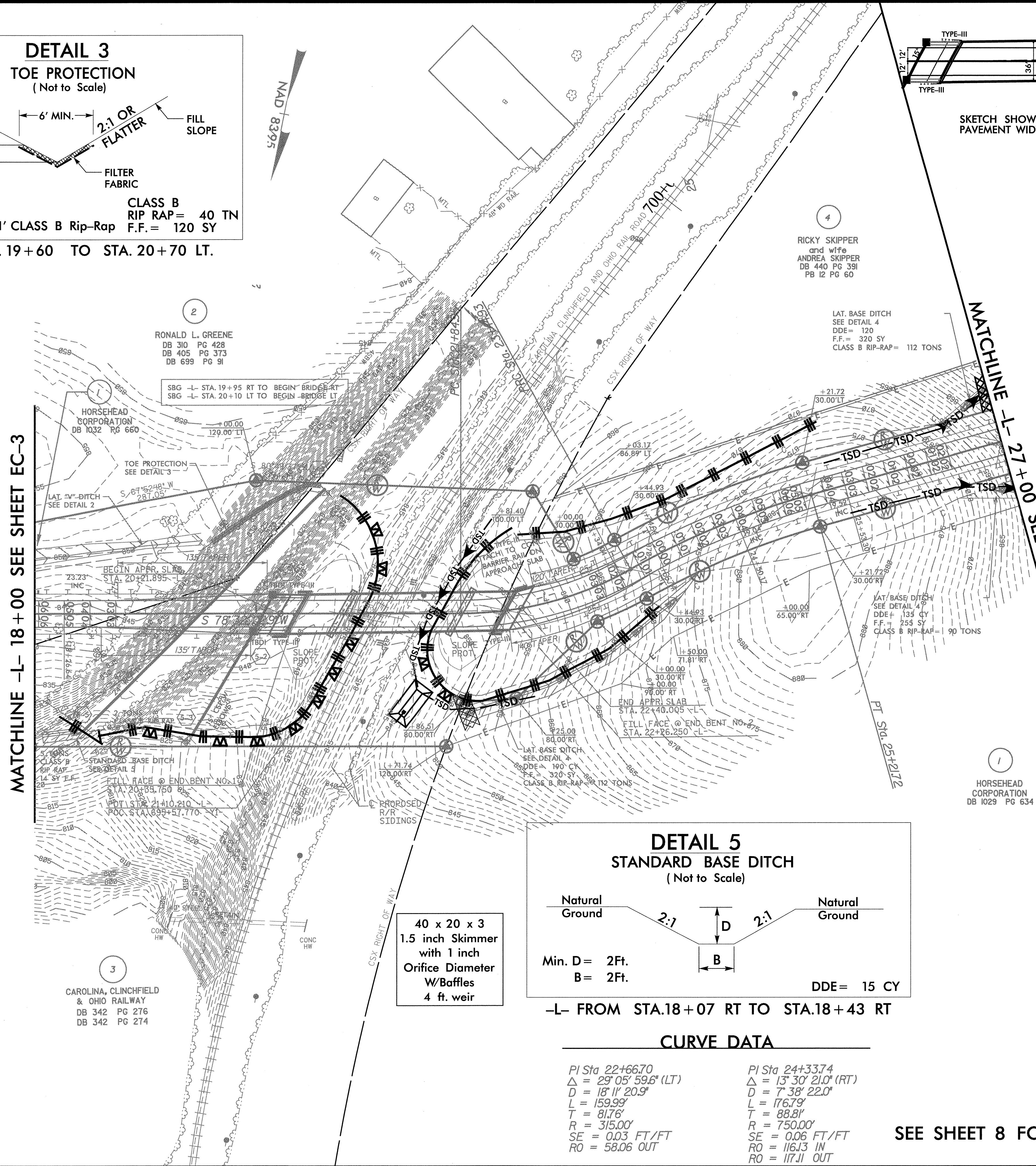
MATCHLINE -L- 18+00 SEE SHEET EC-3

MATCHLINE -L- 27+00 SEE SHEET EC-5

2/27/12

REVISIONS

SYSTEMS TIME



RONALD L. GREENE
DB 310 PG 428
DB 405 PG 373
DB 699 PG 91

SBG -L- STA. 19+95 RT TO BEGIN BRIDGE RT
SBG -L- STA. 20+10 LT TO BEGIN BRIDGE LT

HORSEHEAD CORPORATION
DB 1032 PG 660

TOE PROTECTION
SEE DETAIL 3

LAT. 'V' DITCH
SEE DETAIL 2

BEGIN APPR. SLAB
STA. 20+21.895 -L

S 76° 39' W

135' TAPER

180' TYPE-III
SLOPE 3:1

SLOPE PROT.

PT. STA. 25+12.2

HORSEHEAD CORPORATION
DB 1029 PG 634

PROPOSED
R/R
SIDINGS

CONC HW

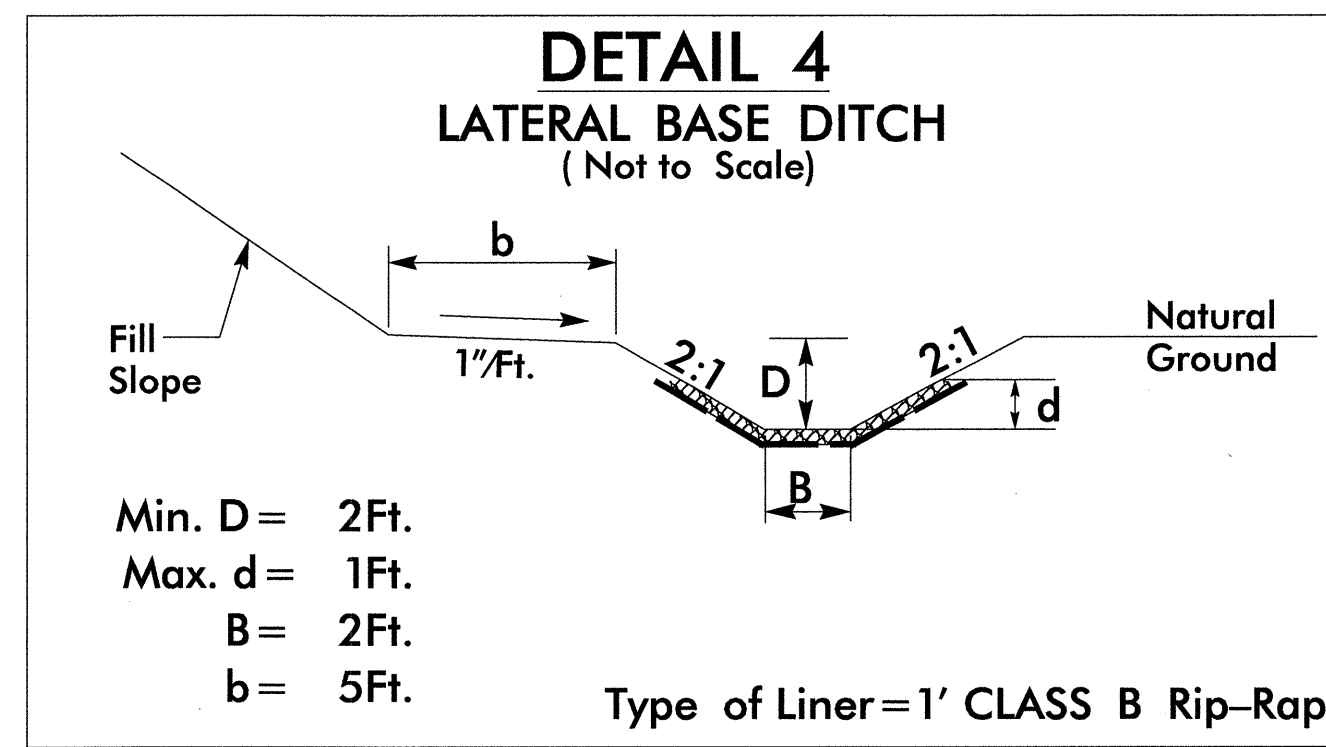
CONC HW

CSX RIGHT OF WAY

3
CAROLINA, CLINCHFIELD
& OHIO RAILWAY
DB 342 PG 276
DB 342 PG 274

40 x 20 x 3
1.5 inch Skimmer
with 1 inch
Orifice Diameter
W/Baffles
4 ft. weir

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-5/CONST.6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

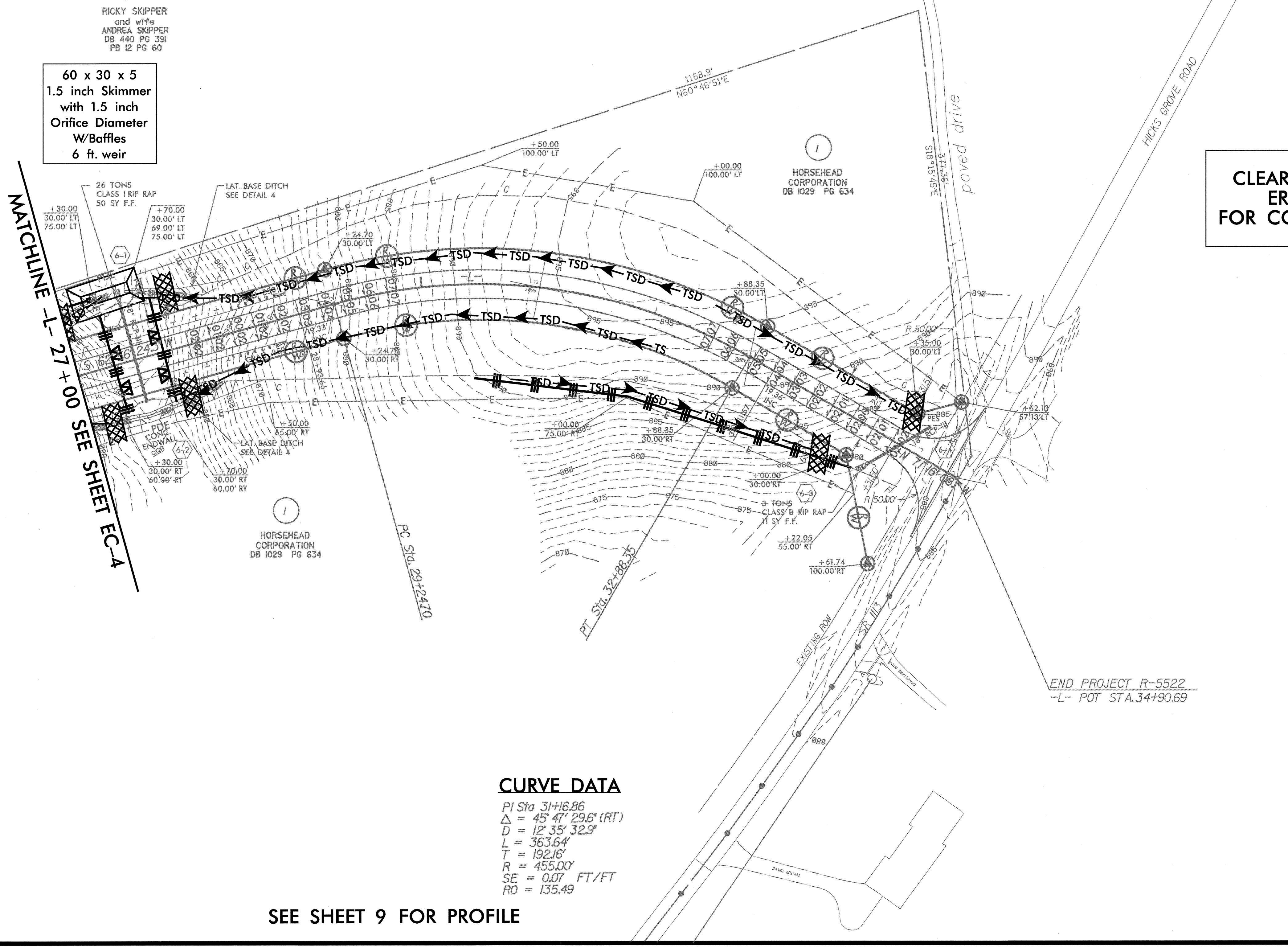


-L- FROM STA.26+50 LT TO STA 29+00 LT
-L- FROM STA.26+50 RT TO STA.28+50 RT

4
RICKY SKIPPER
and wife
ANDREA SKIPPER
DB 440 PG 391
PB 12 PG 60

60 x 30 x 5
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
W/Baffles
6 ft. weir

MATCHLINE -L- 27+00 SEE SHEET EC-4



**CLEARING AND GRUBBING
EROSION CONTROL
FOR CONSTRUCTION SHEET 6**

END PROJECT R-5522
-L- POT STA.34+90.69

CURVE DATA
PI Sta 31+16.86
 $\Delta = 45^\circ 47' 29.6''$ (RT)
D = 12' 35" 32.9"
L = 363.64'
T = 192.16'
R = 455.00'
SE = 0.07 FT/FT
RO = 135.49

SEE SHEET 9 FOR PROFILE

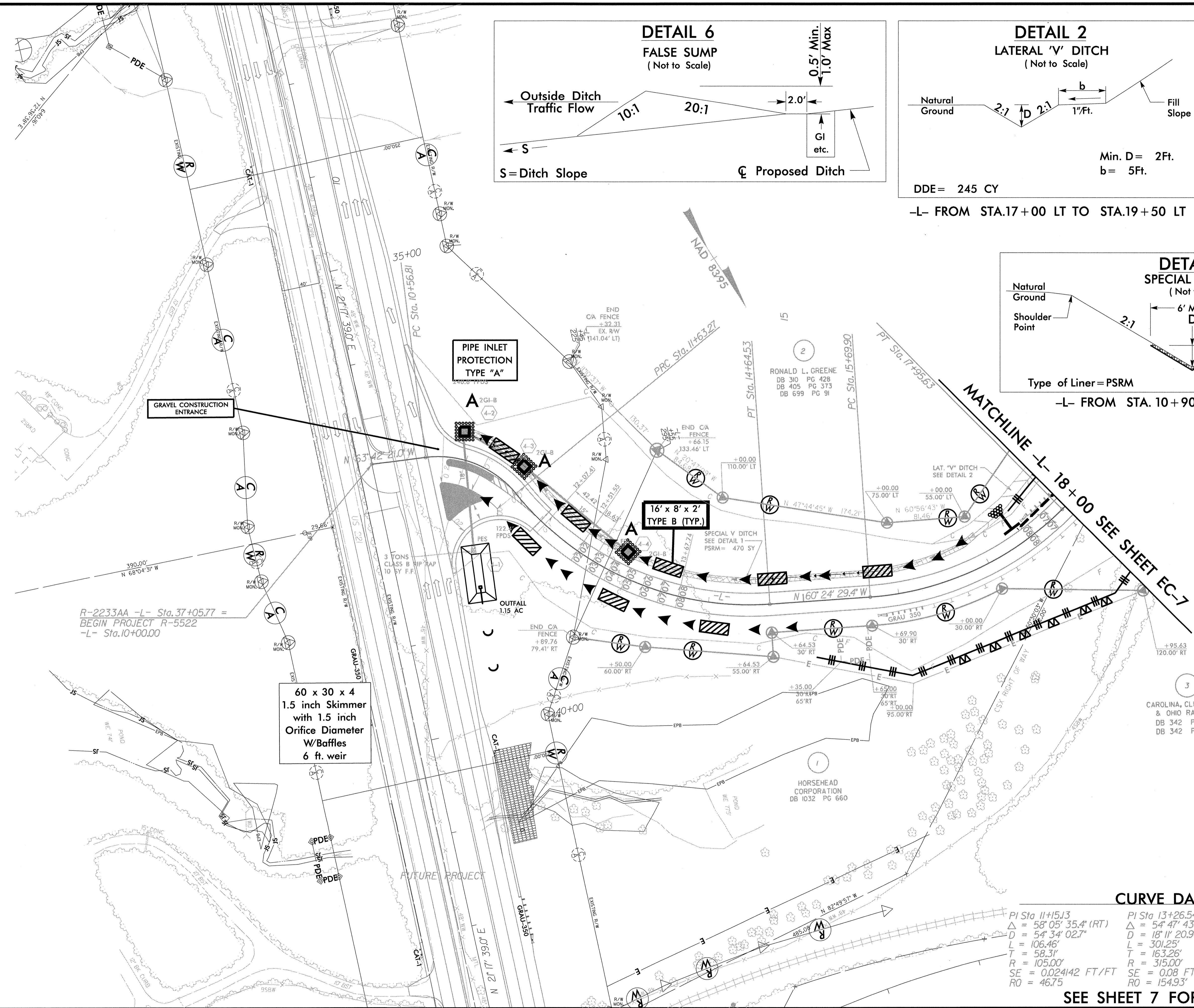
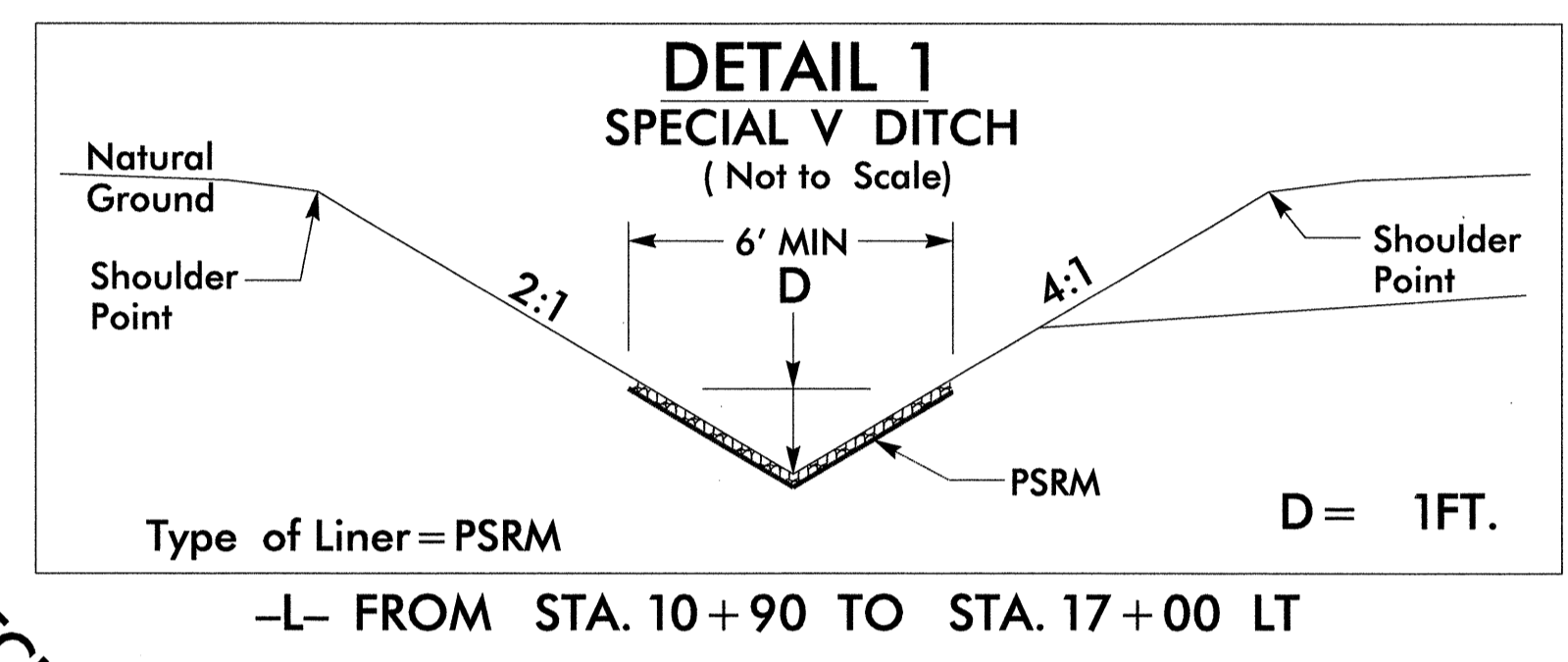
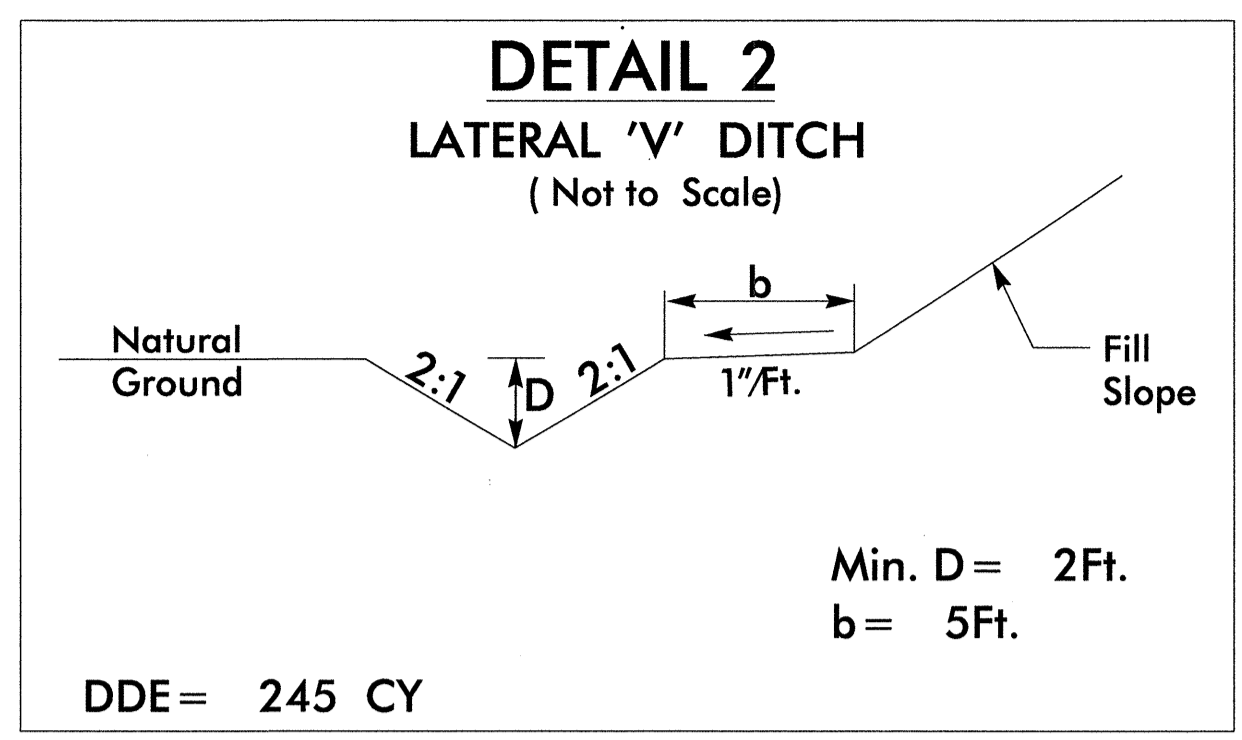
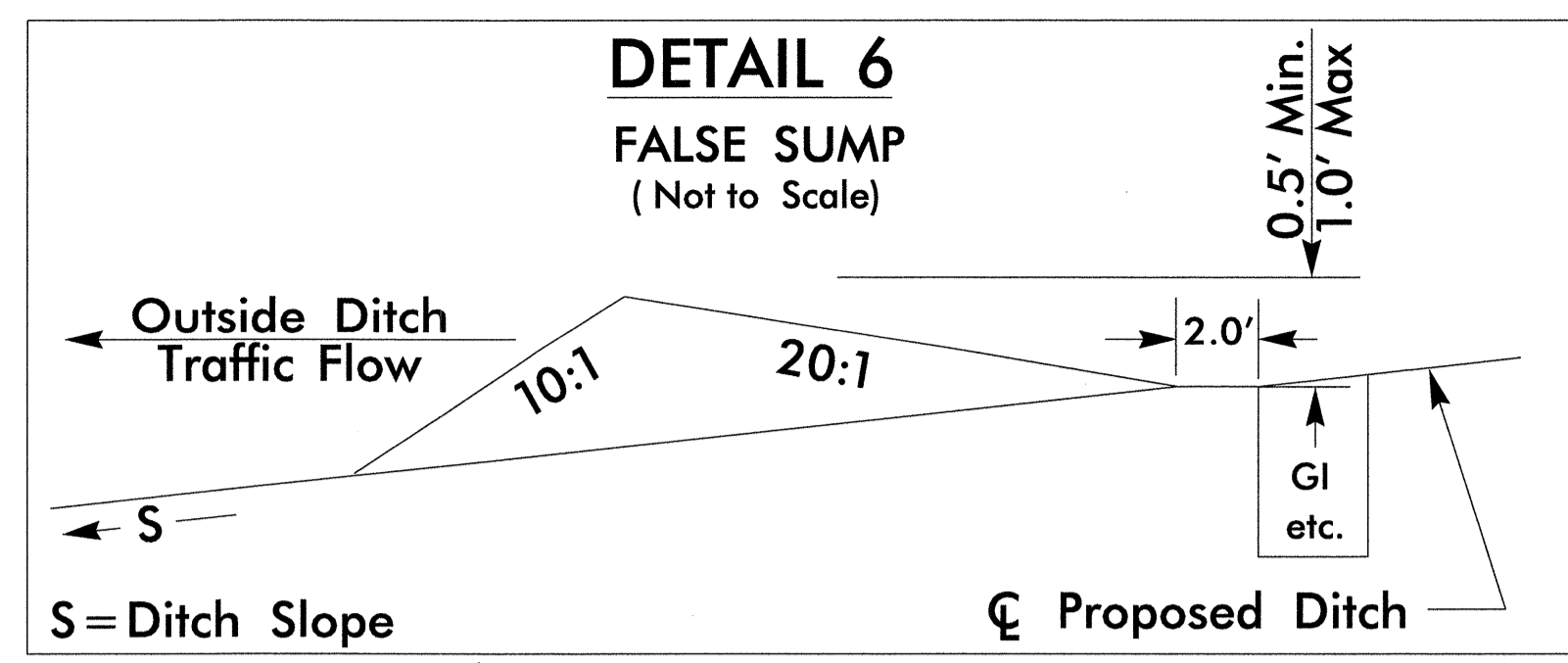
REVISIONS

2/27/12

SYTIME\$\$\$\$\$
DONSON\$\$\$\$\$
LENNEL\$\$\$\$\$
LENNEL\$\$\$\$\$

2/27/12

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-6/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CURVE DATA

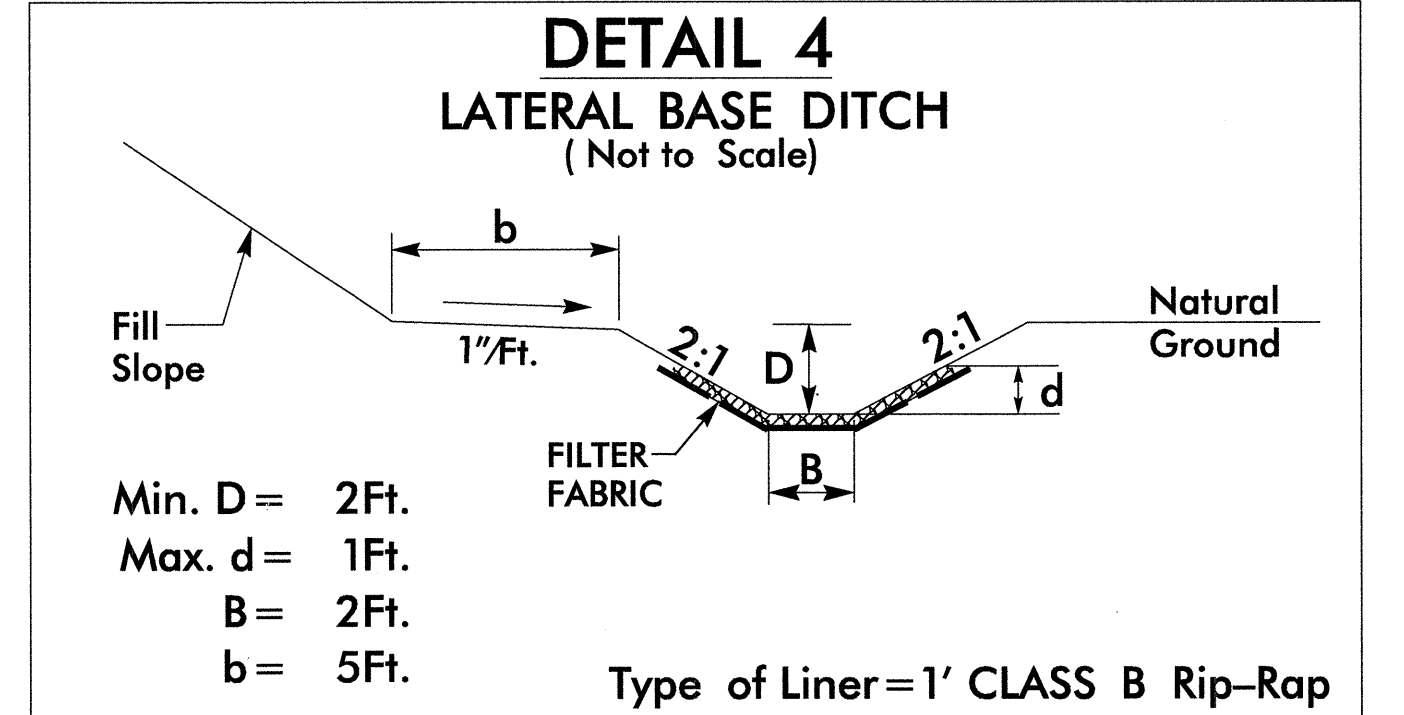
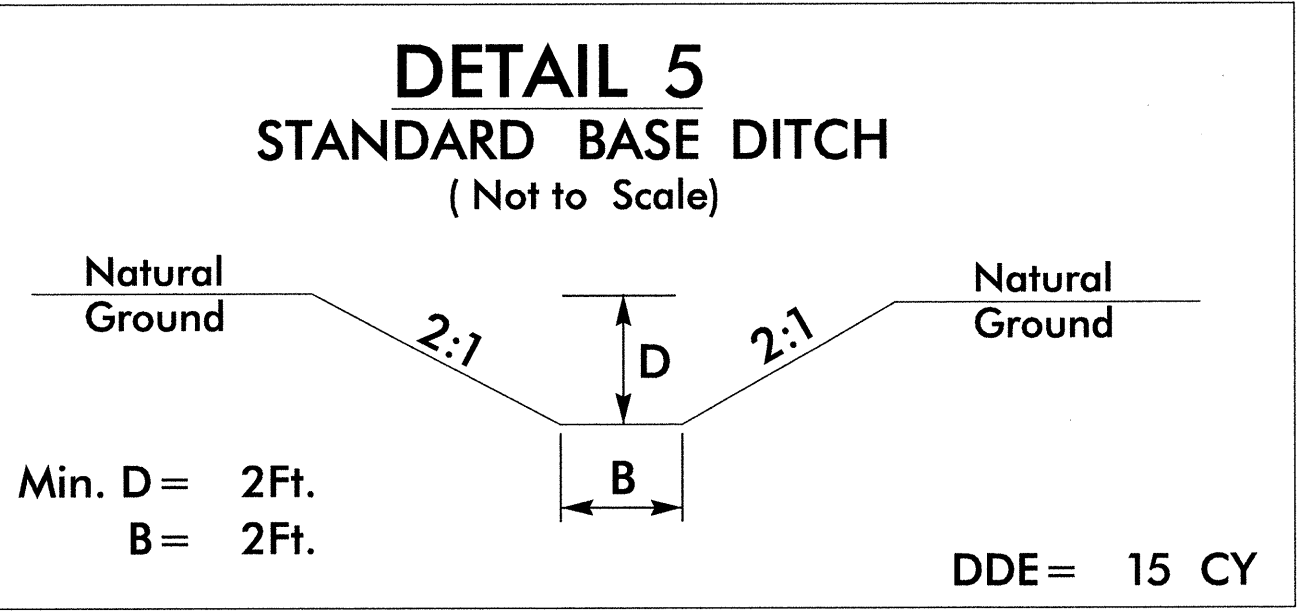
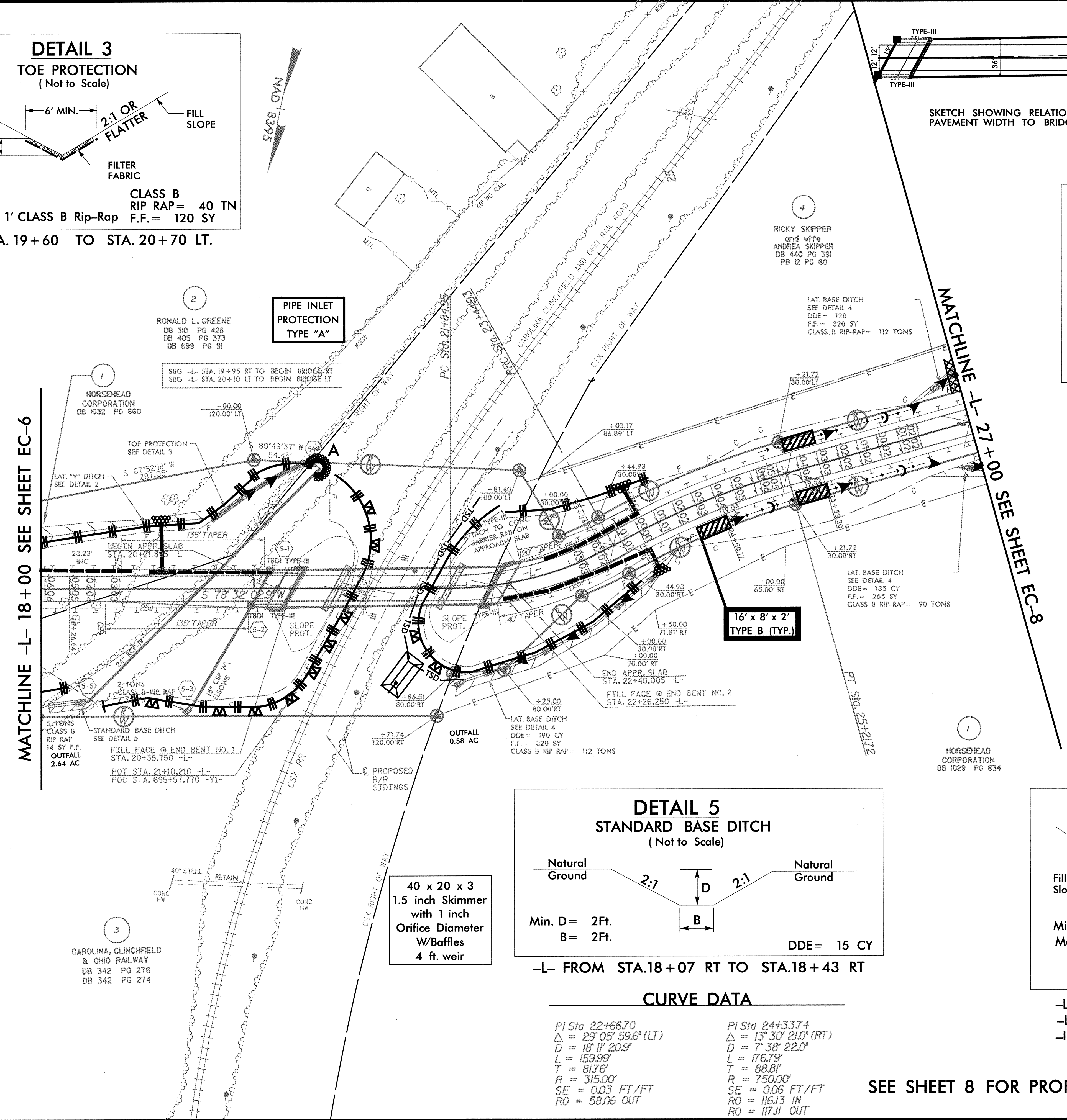
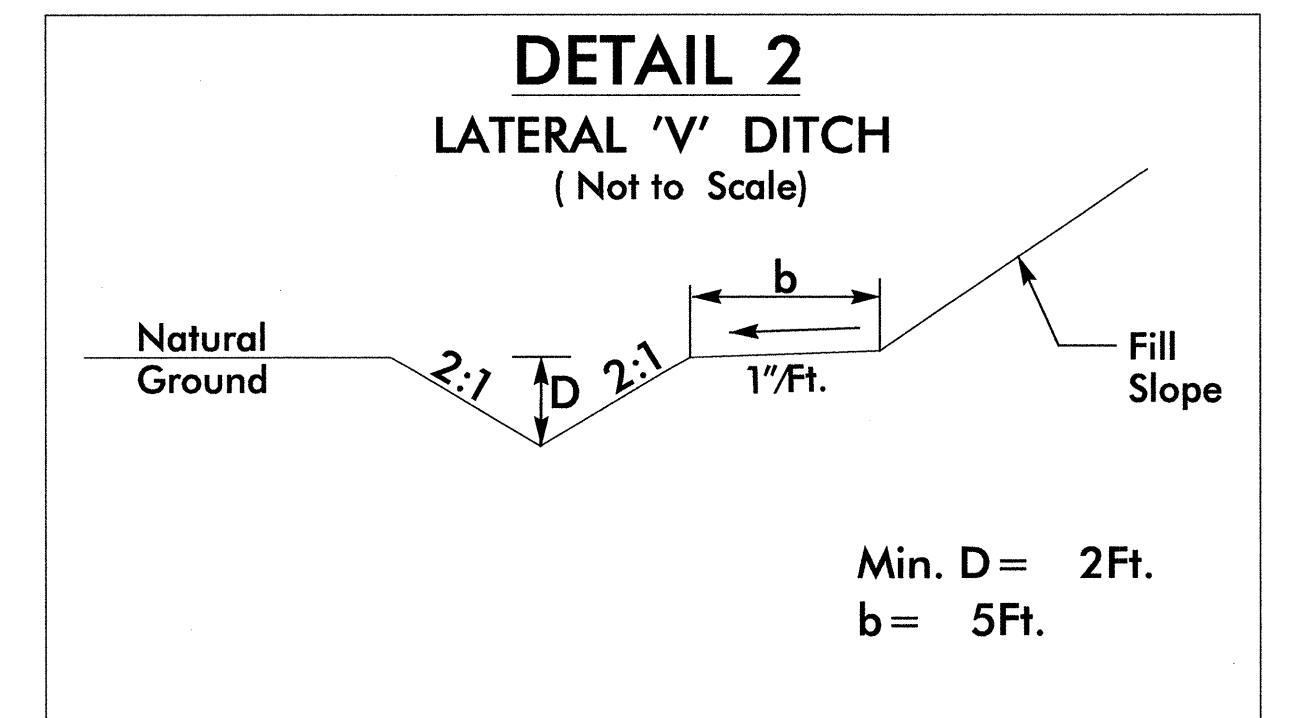
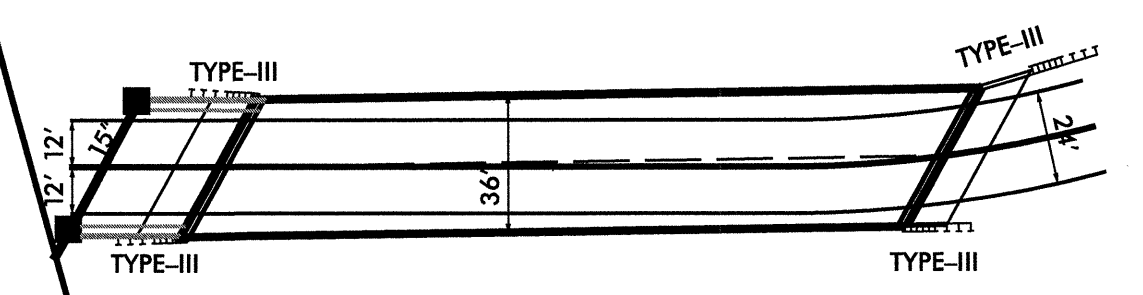
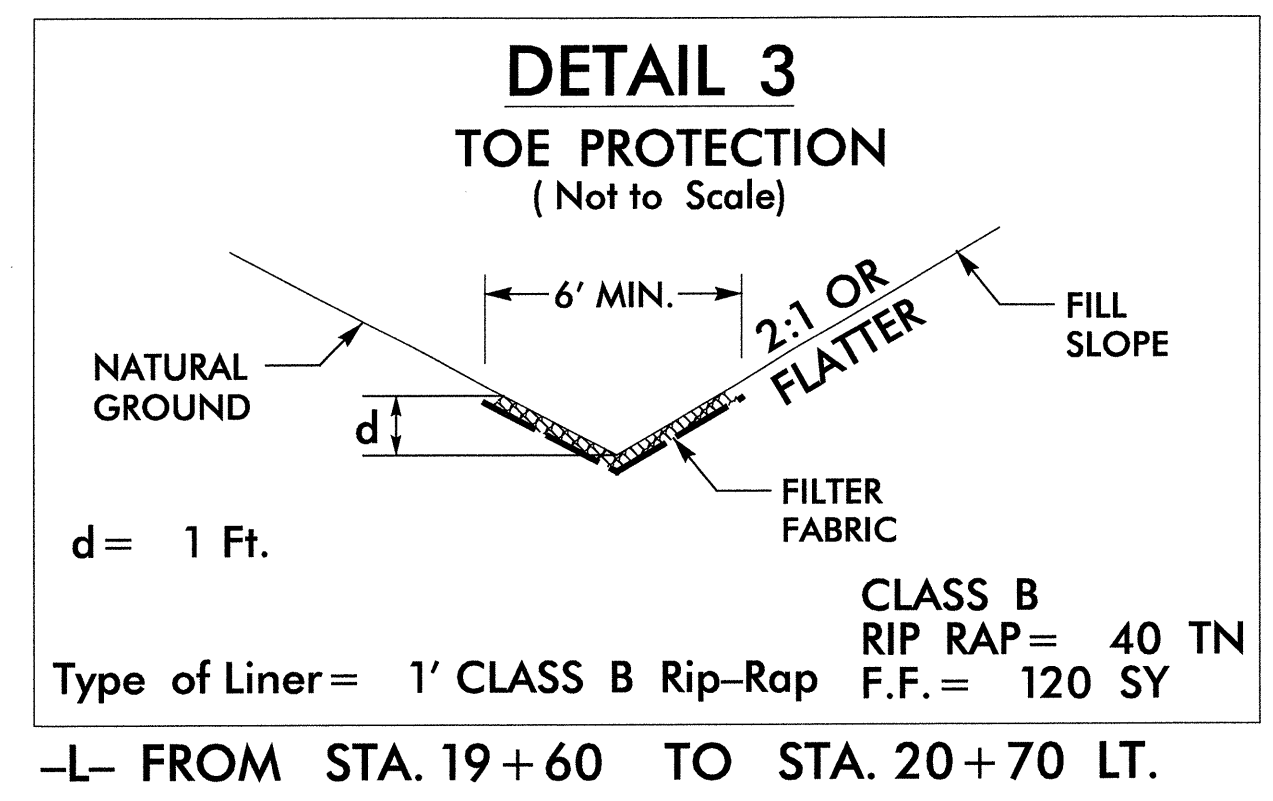
PI Sta 11+15.13 Δ = 58° 05' 35.4" (RT) D = 54' 34" 02.7" L = 106.46' T = 58.31' R = 105.00' SE = 0.024142 FT/FT RO = 46.75	PI Sta 13+26.54 Δ = 54° 47' 43.8" (LT) D = 18' 11" 20.9" L = 301.25' T = 163.26' R = 315.00' SE = 0.08 FT/FT RO = 154.93'	PI Sta 16+87.85 Δ = 41° 03' 27.7" (LT) D = 18' 11" 20.9" L = 225.73' T = 117.95' R = 315.00' SE = 0.08 FT/FT RO = 116.13'
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SEE SHEET 7 FOR PROFILE

REVISIONS

SYSTEMS TIME 11:41 AM 11/11/11

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-7/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CURVE DATA

PI Sta 22+66.70	PI Sta 24+33.74
$\Delta = 29^{\circ} 05' 59.6''$ (LT)	$\Delta = 13^{\circ} 30' 21.0''$ (RT)
$D = 18^{\circ} 11' 20.9''$	$D = 7^{\circ} 38' 22.0''$
$L = 159.99'$	$L = 176.79'$
$T = 81.76'$	$T = 88.81'$
$R = 315.00'$	$R = 750.00'$
$SE = 0.03 \text{ FT/FT}$	$SE = 0.06 \text{ FT/FT}$
$RO = 58.06 \text{ OUT}$	$RO = 116.13 \text{ IN}$
	$RO = 117.11 \text{ OUT}$

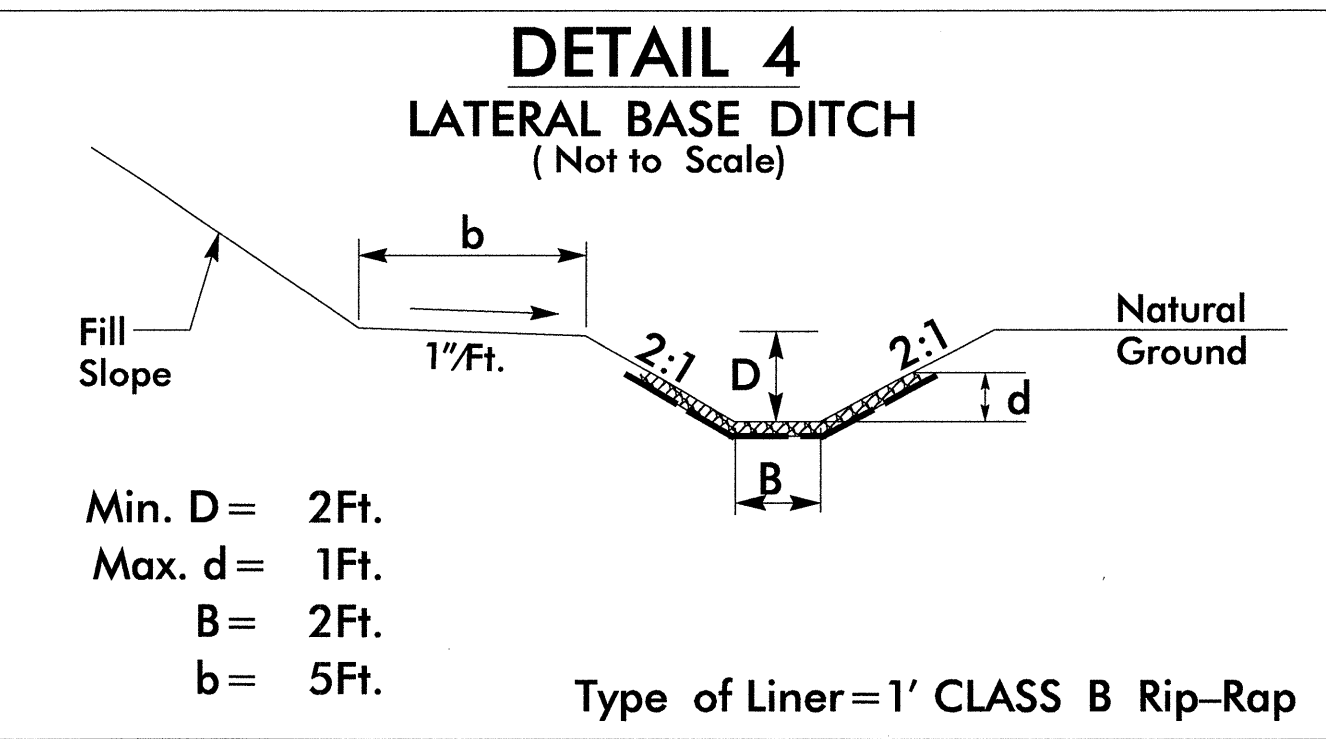
SEE SHEET 8 FOR PROFILE

REVISIONS

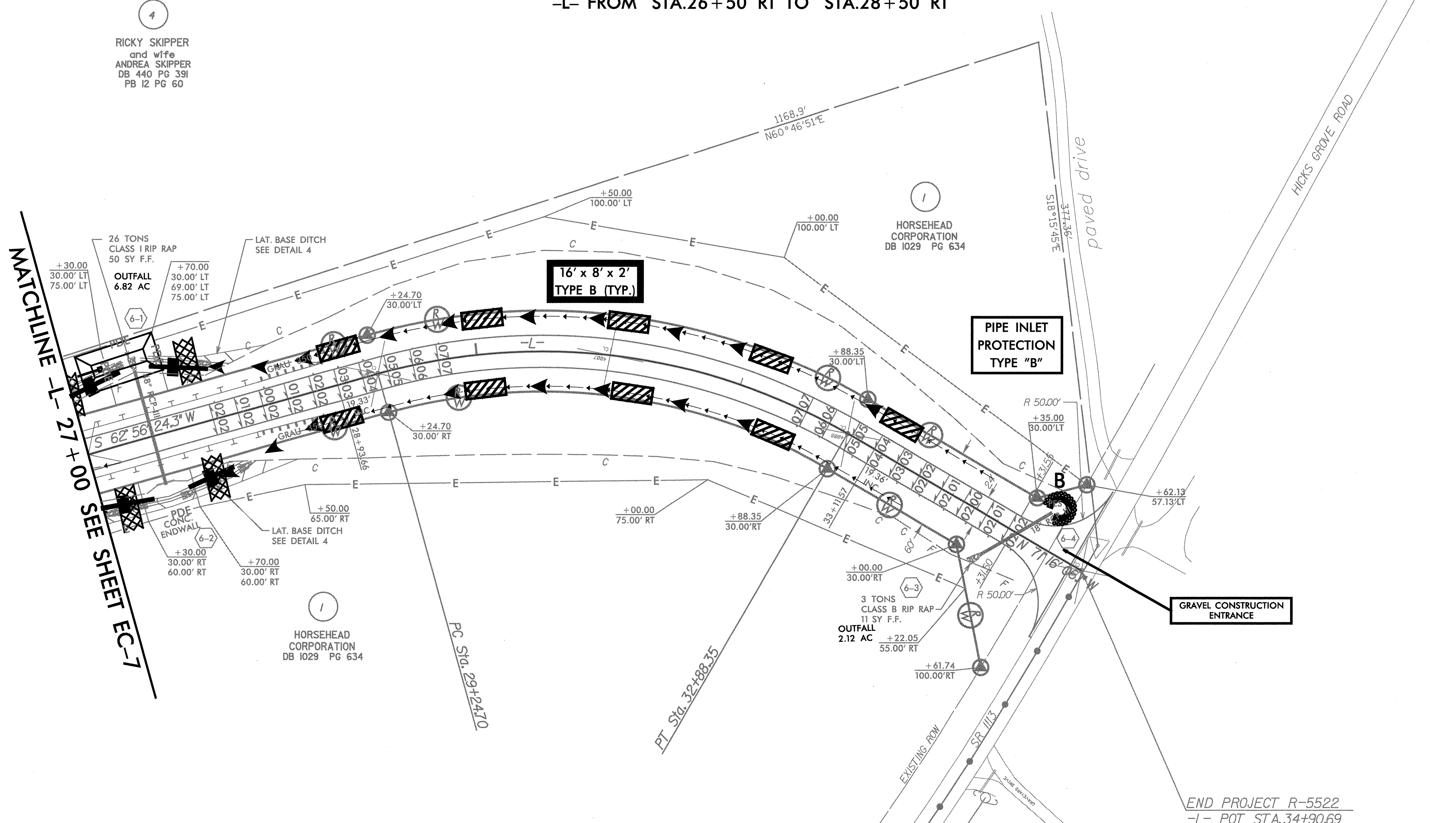
2/27/12

SYTIME

PROJECT REFERENCE NO. R-5522	SHEET NO. EC-8/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-L- FROM STA.26+50 LT TO STA 29+00 LT
-L- FROM STA.26+50 RT TO STA.28+50 RT



CURVE DATA
 PI Sta 31+16.86
 $\Delta = 45^\circ 47' 29.6''$ (RT)
 $D = 12^\circ 35' 32.9''$
 $L = 363.64'$
 $T = 192.16'$
 $R = 455.00'$
 $SE = 0.07$ FT/FT
 $RO = 135.49$

SEE SHEET 9 FOR PROFILE

REVISIONS

2/27/12

SYTIME\$\$\$\$\$
 C:\L\ENR\121112\121112.DWG
 12/11/12 10:00 AM