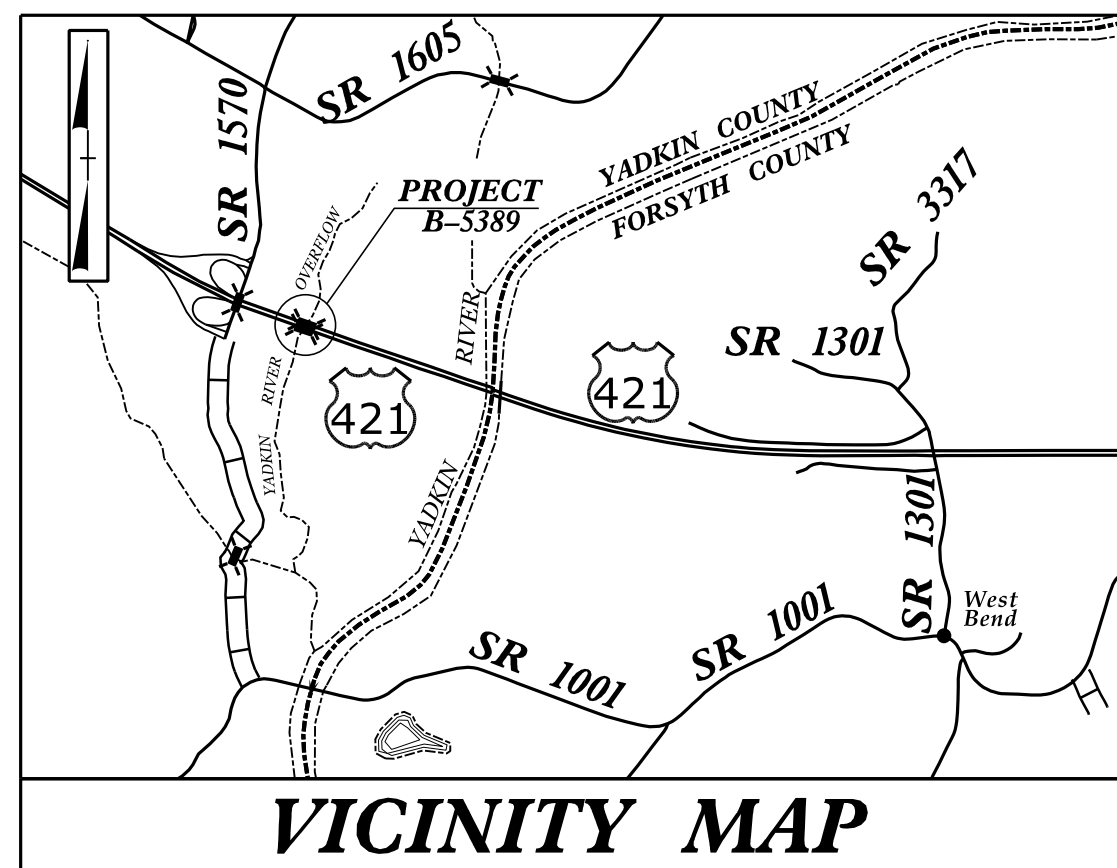


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TIP PROJECT: B-5389



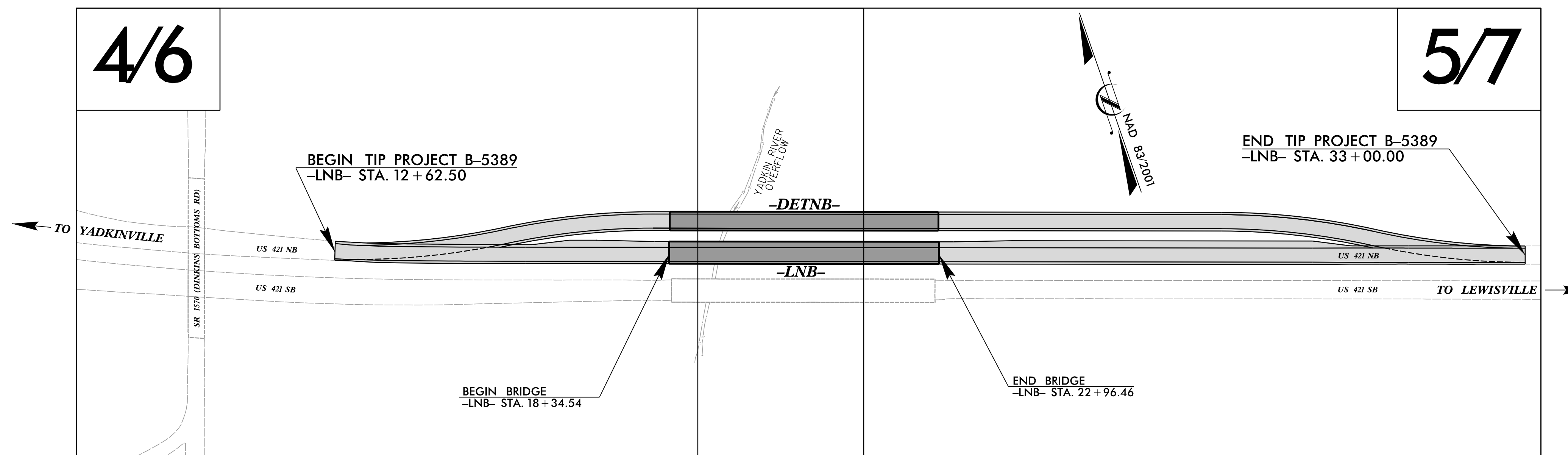
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

YADKIN COUNTY

**LOCATION: BRIDGE NO.105 OVER YADKIN RIVER OVERFLOW
ON US 421 NORTHBOUND LANES**

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

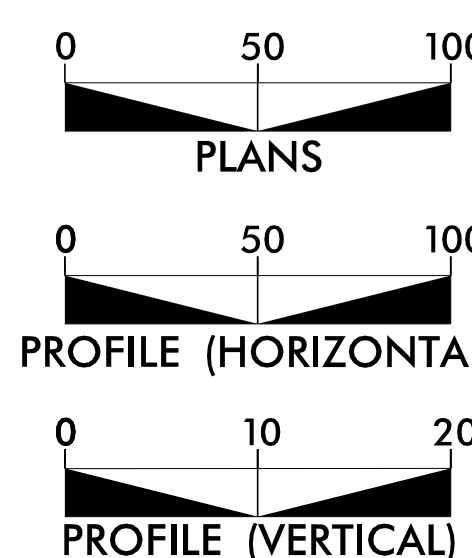


EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
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	⊗
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	⊗
1633.02	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	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



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

Prepared in the Office of:



A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
6131 FALLS OF NEUSE ROAD, SUITE 106, RALEIGH, NC 27609
(919) 855-9989 FAX: (919) 855-5627
EMAIL: AMT@AMTENGINEERING.COM

Designed by:

James A. Crouse, PE
NAME

3267
LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

Noelle Ring, CPESC

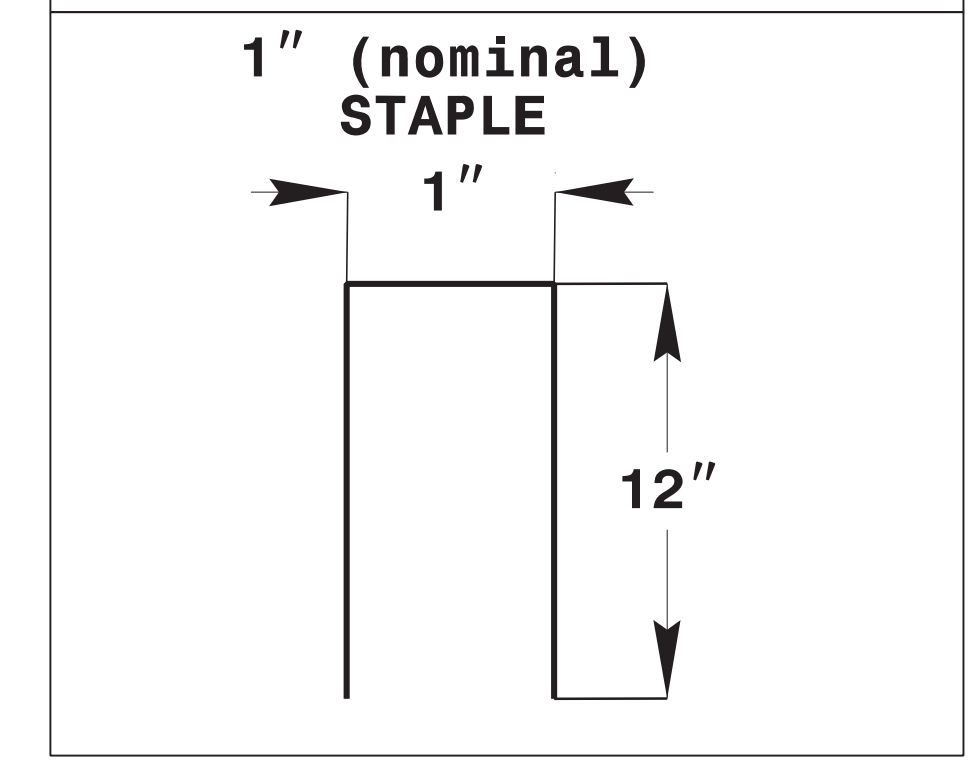
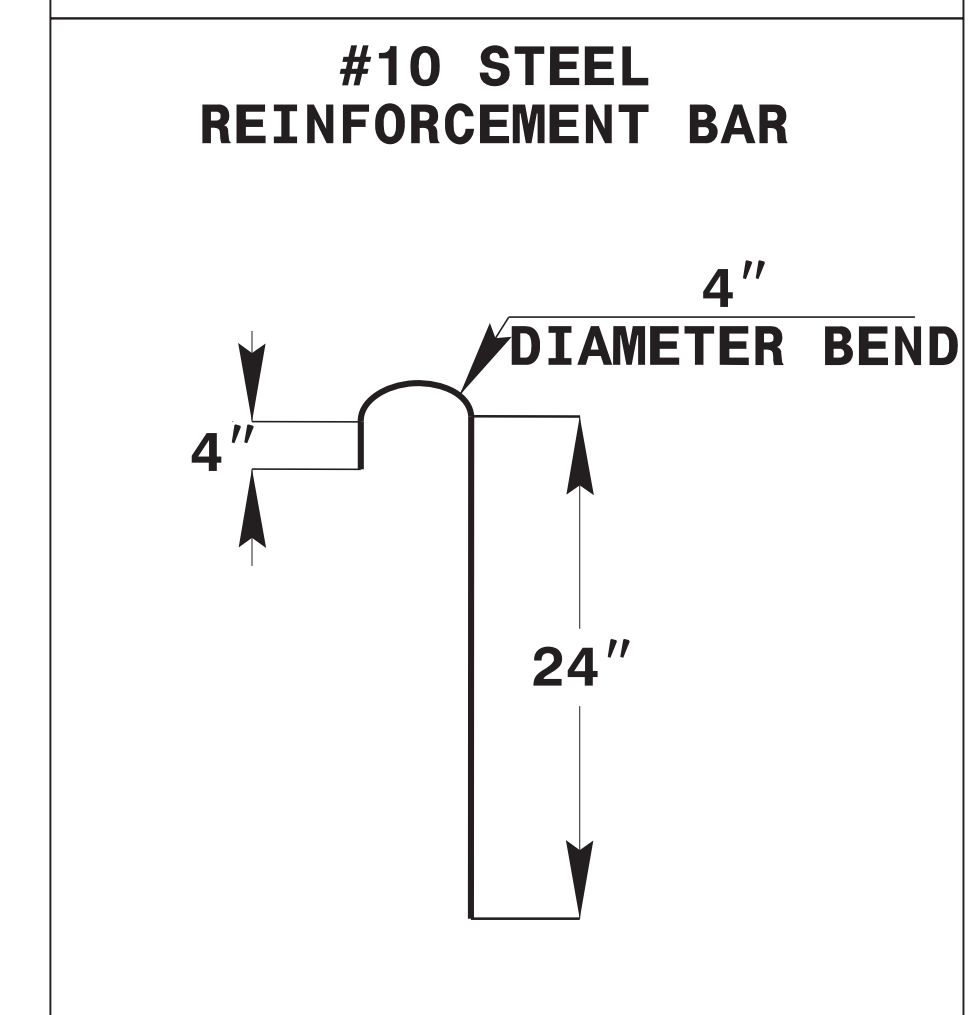
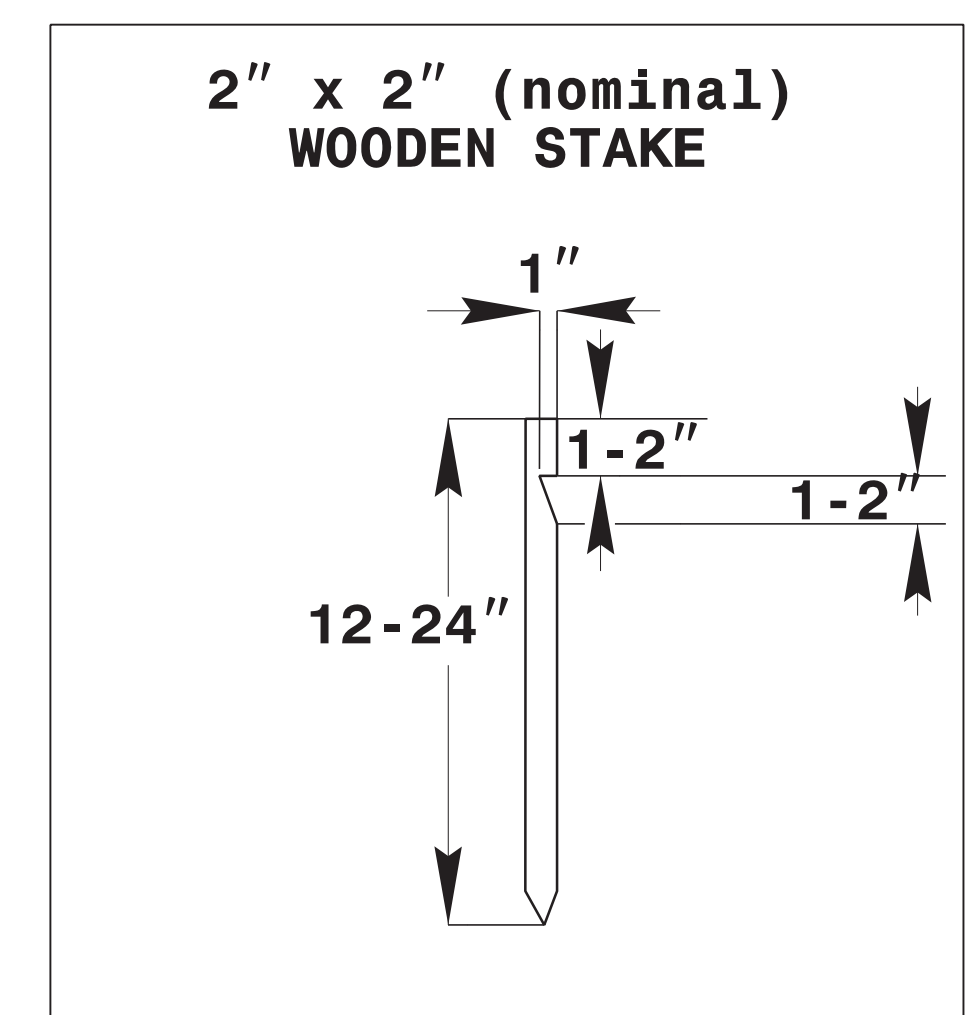
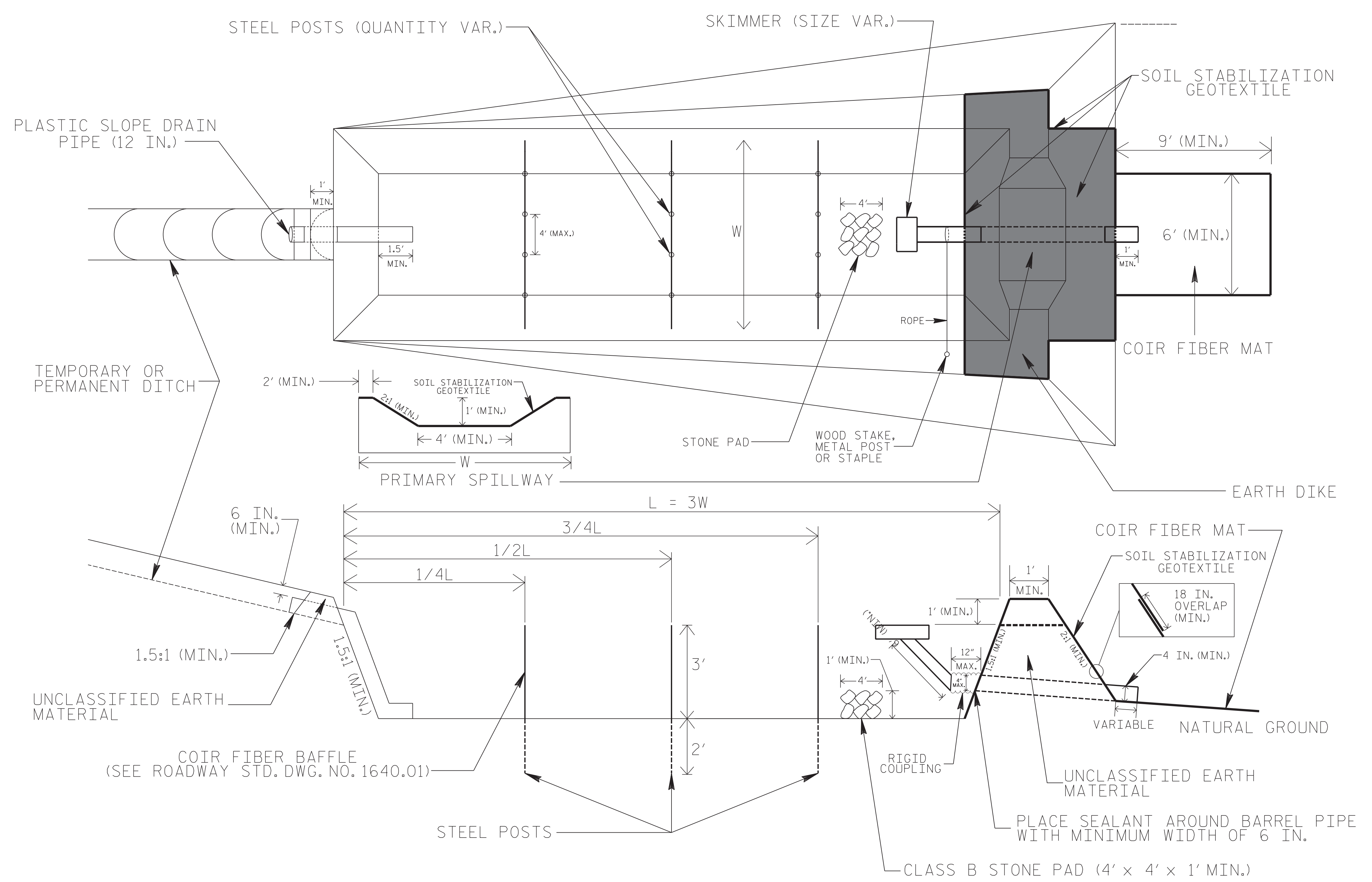
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 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	1632.01 Rock Inlet Sediment Trap Type A
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	1633.02 Temporary Rock Silt Check Type B
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.01 Rock Pipe Inlet Sediment Trap Type A
1630.04 Stilling Basin	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.05 Temporary Diversion	1640.01 Coir Fiber Baffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

PROJECT REFERENCE NO. B-5389	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



COIR FIBER MAT ANCHOR OPTIONS

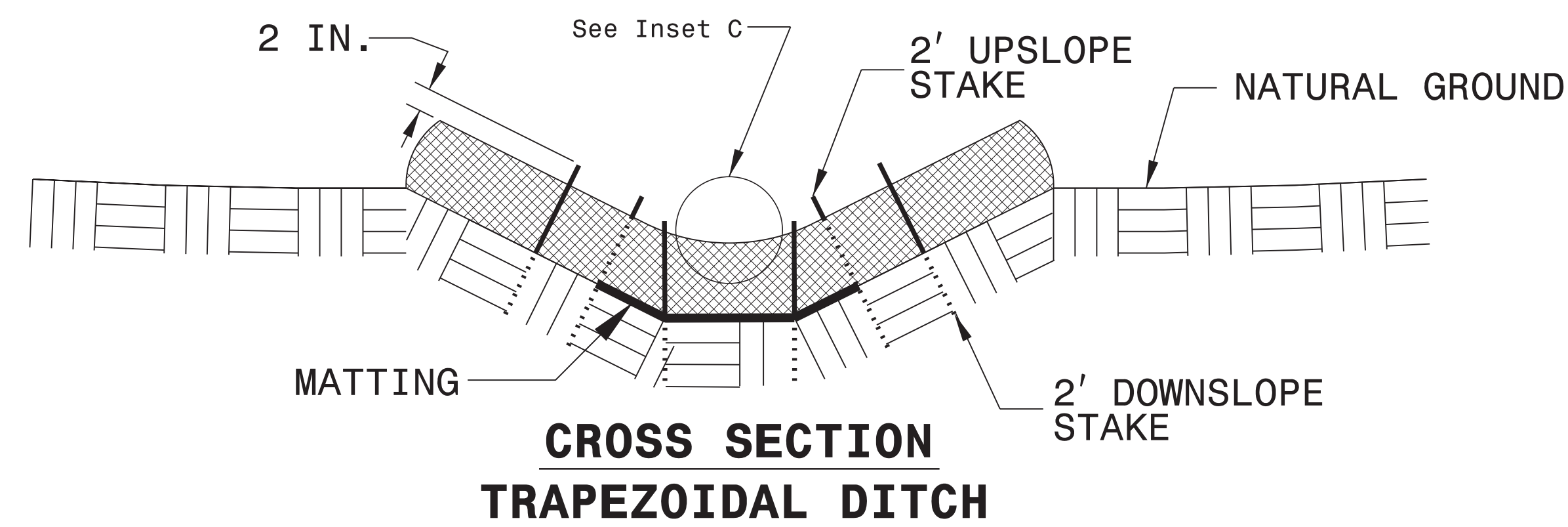
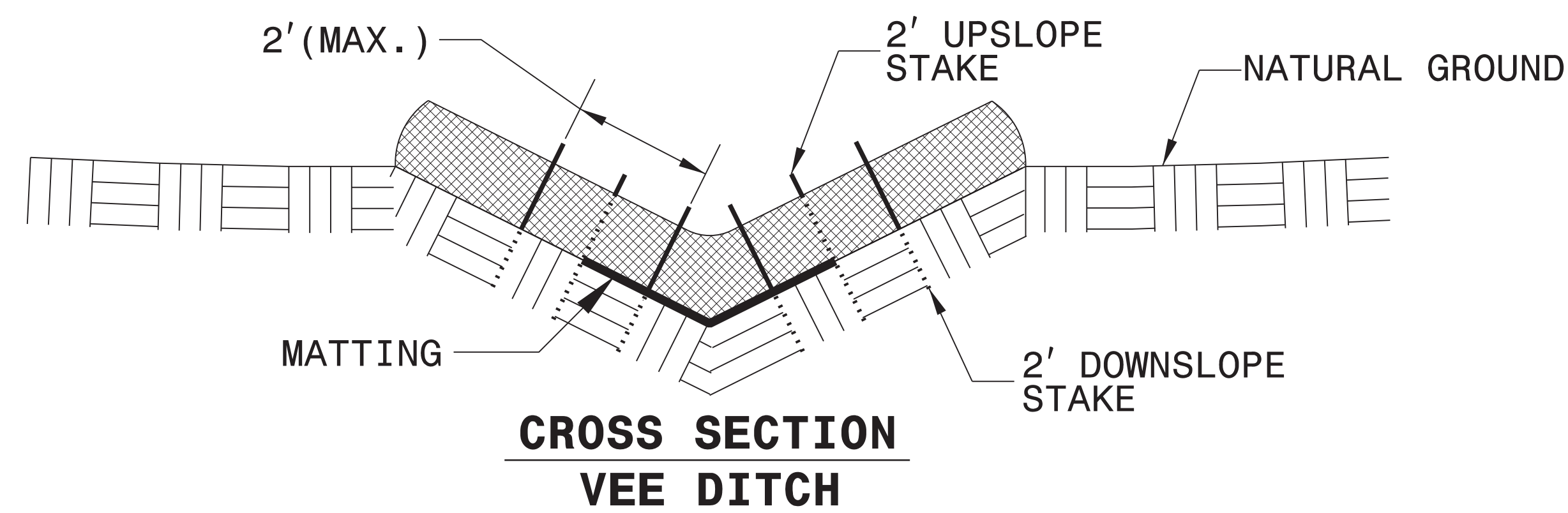
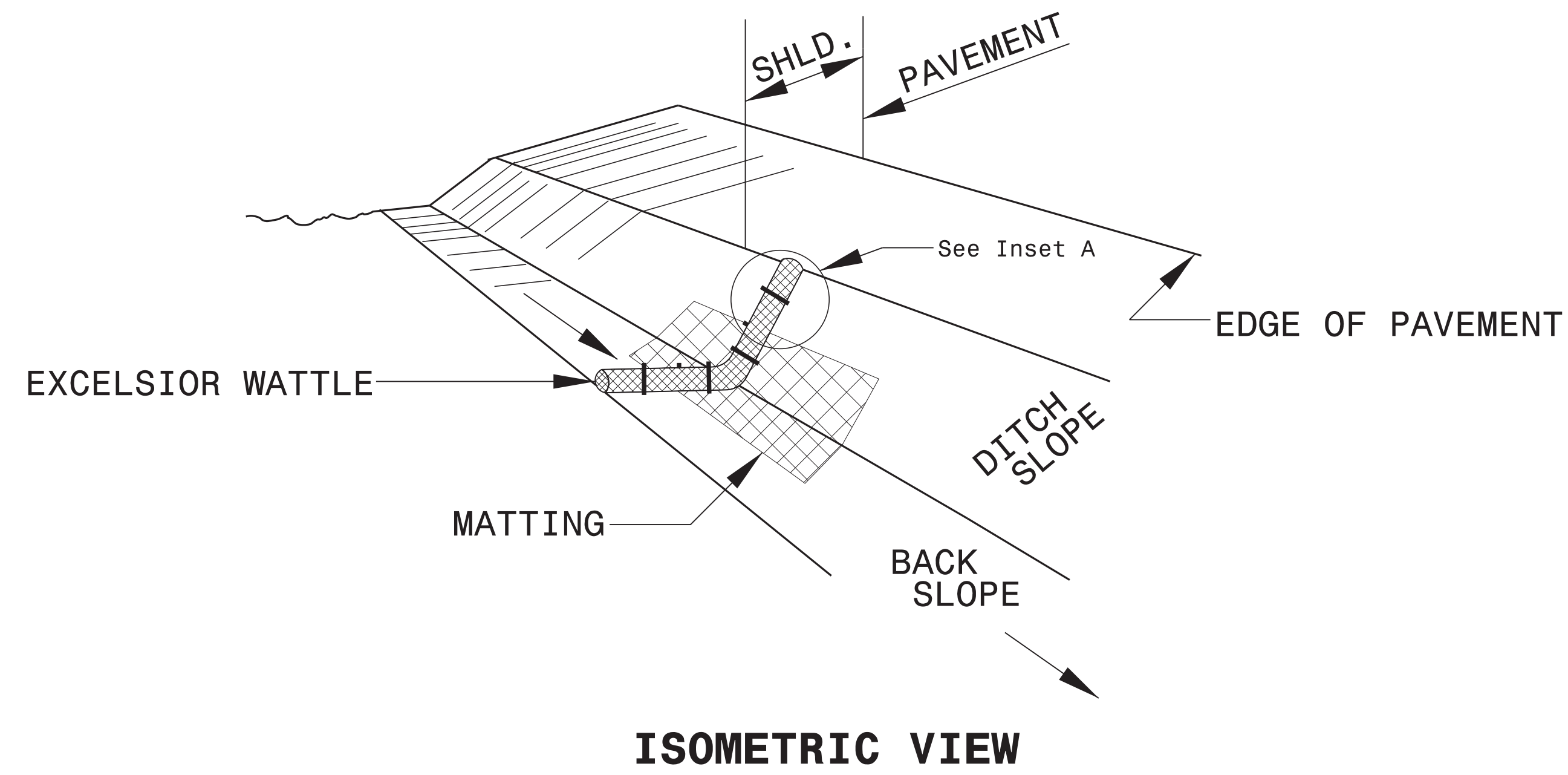
NOTES

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

NOT TO SCALE

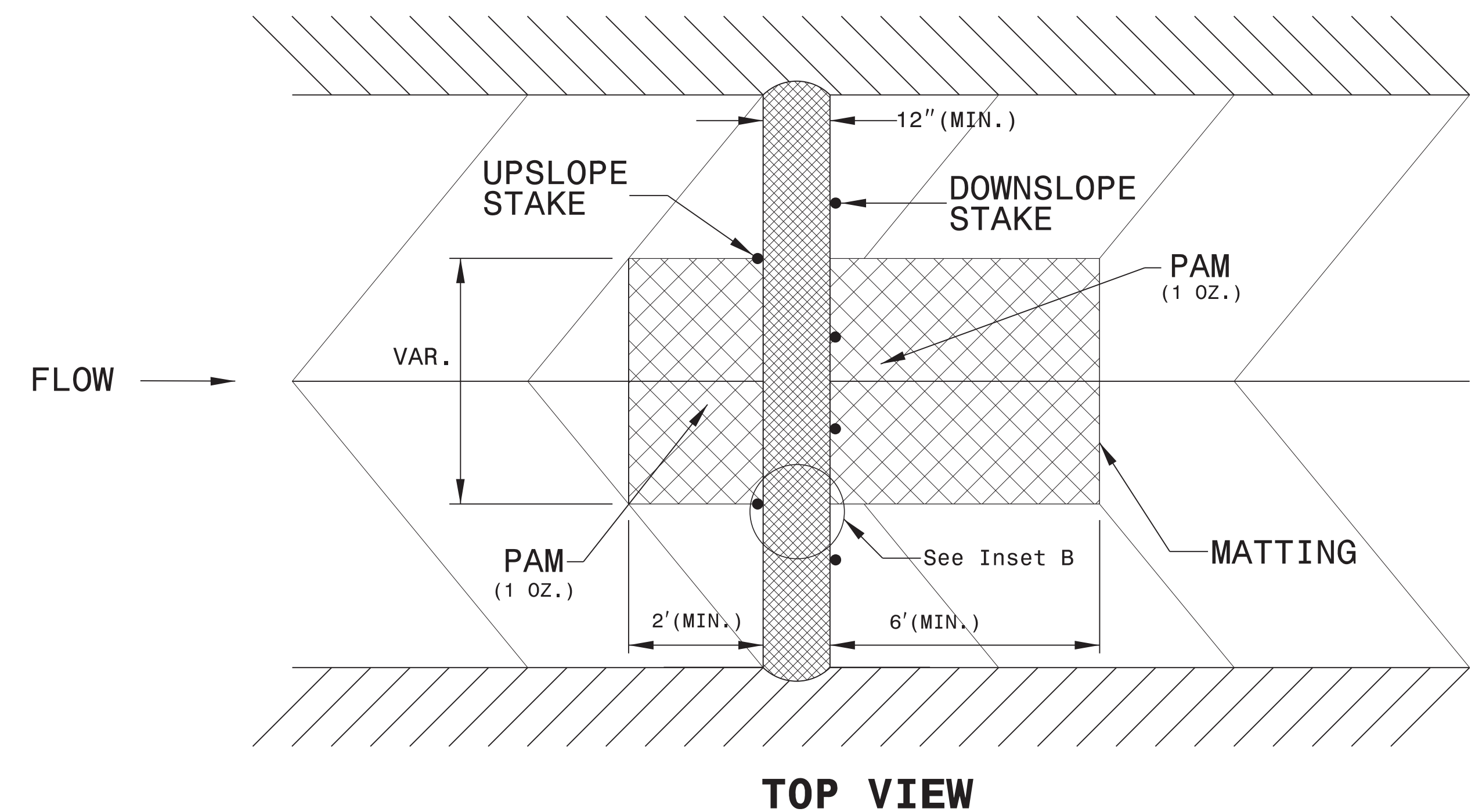
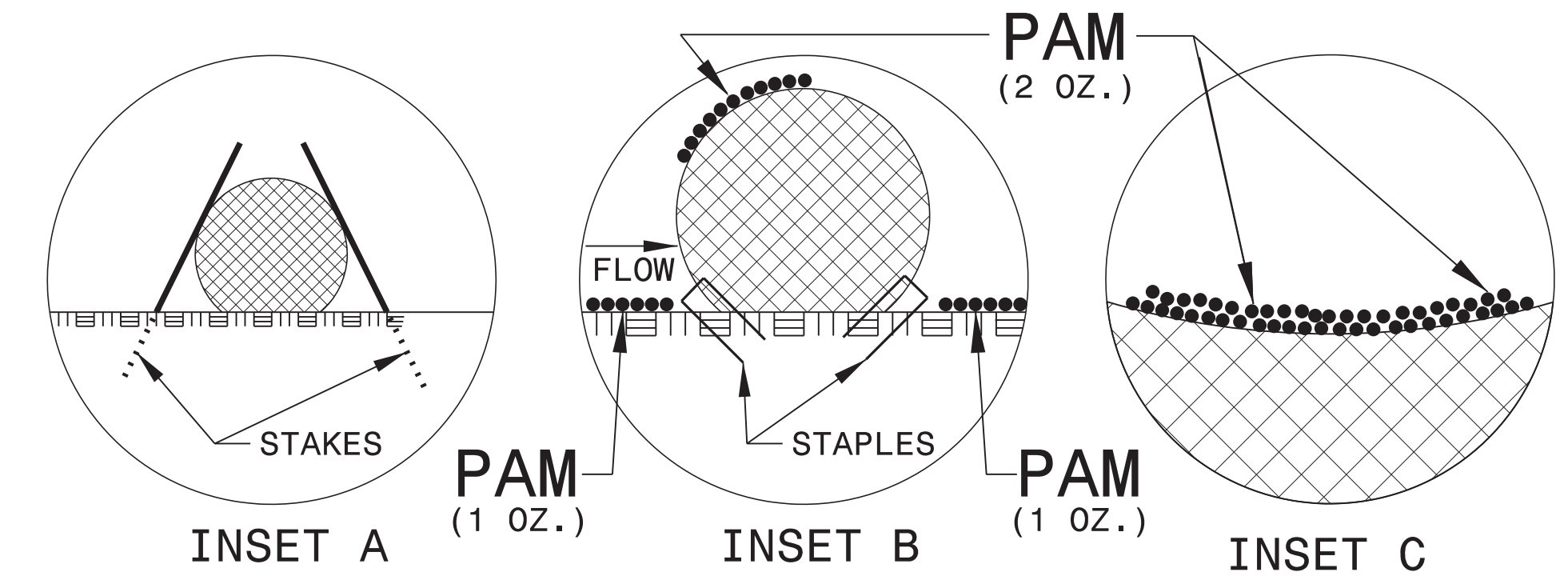
PROJECT REFERENCE NO. B-5389	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



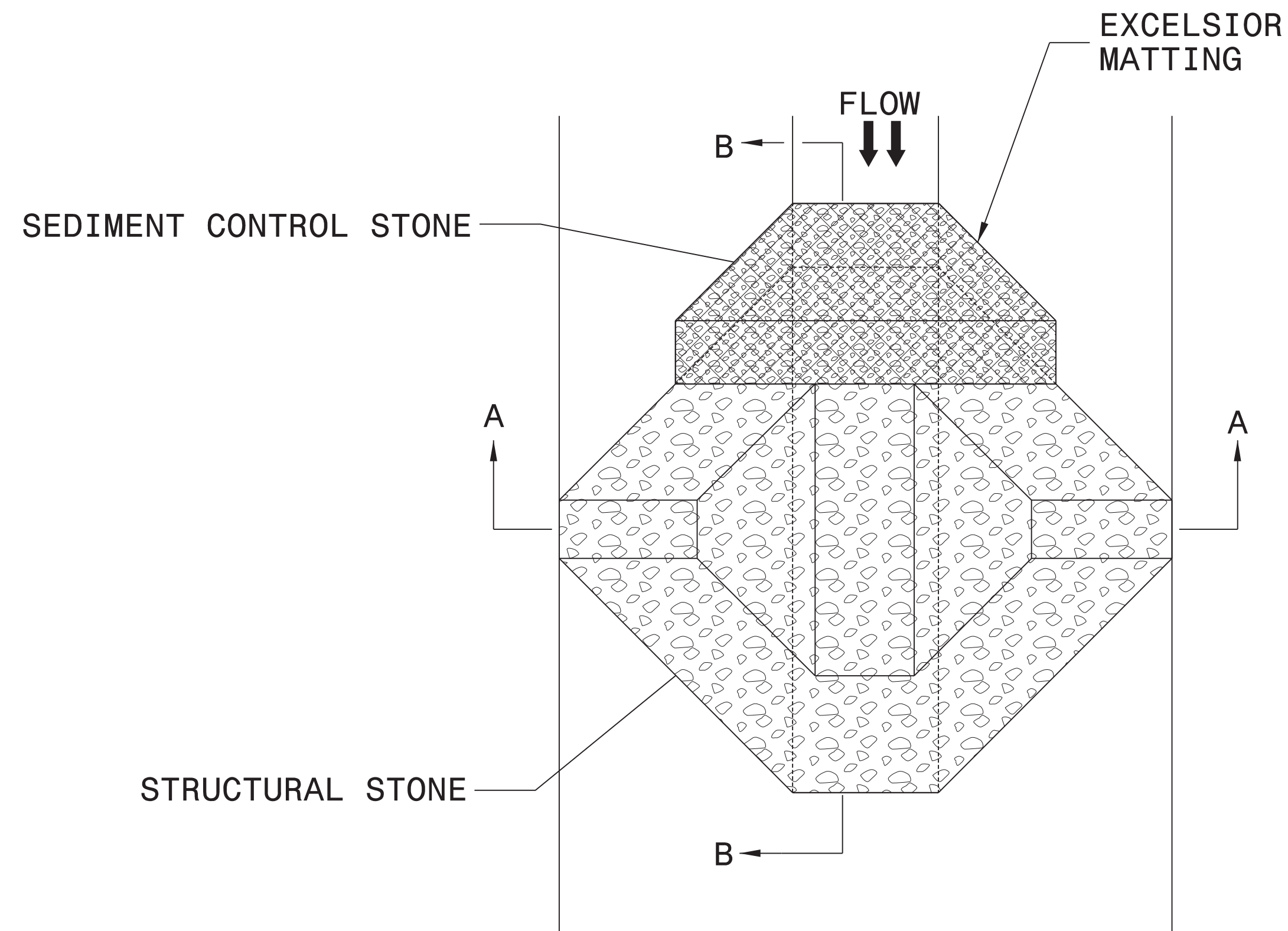
NOTES:

- 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 EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

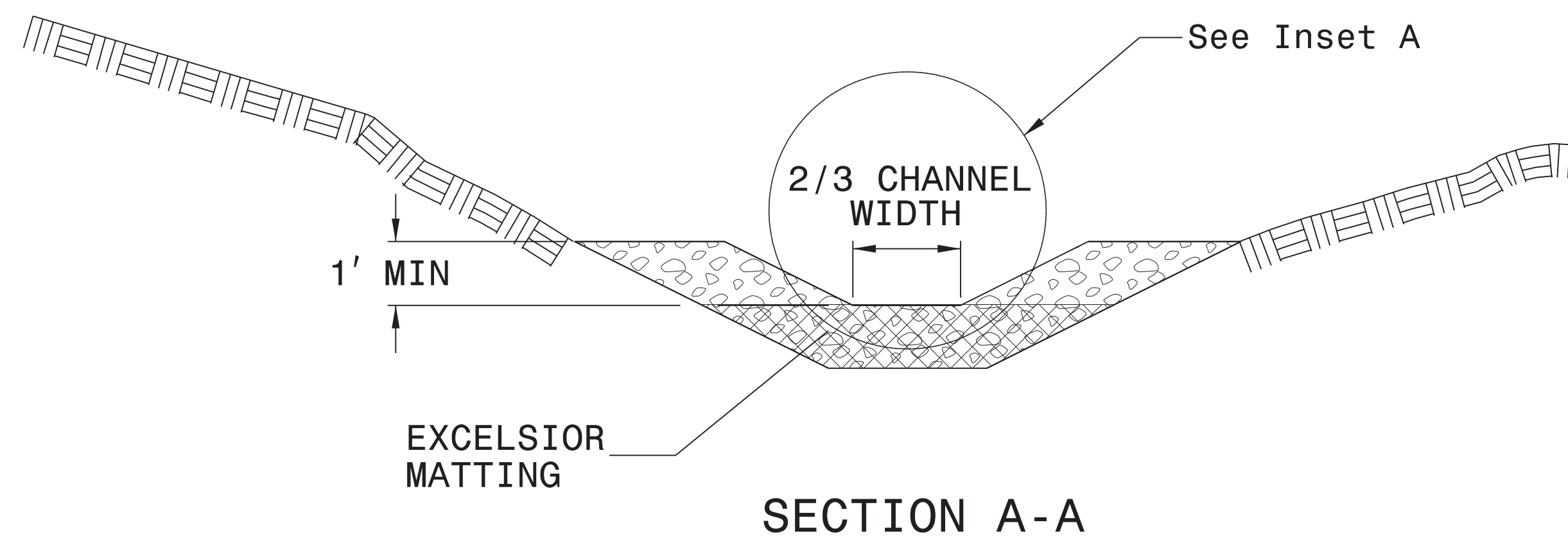


PROJECT REFERENCE NO. <i>B-5389</i>	SHEET NO. <i>EC-2B</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

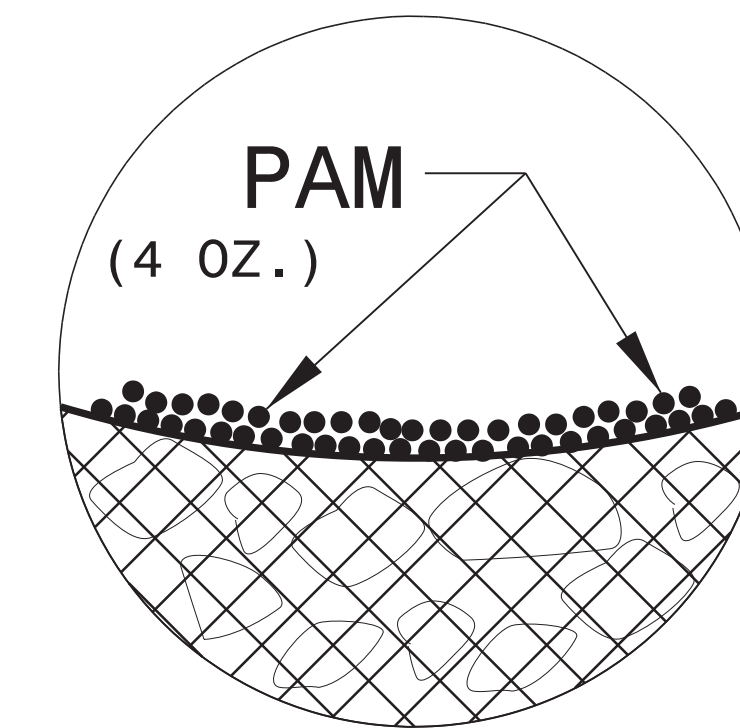
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

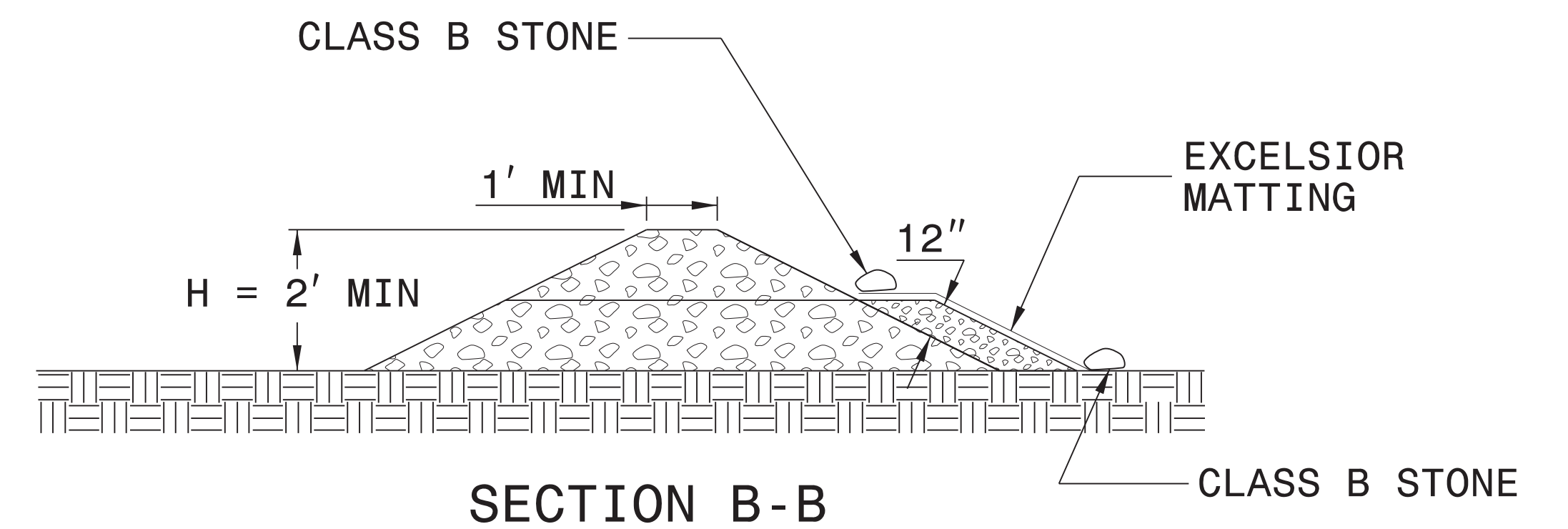
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 4 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


NOT TO SCALE

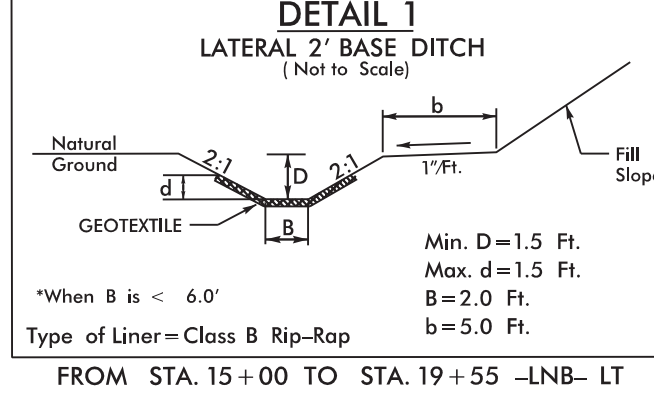
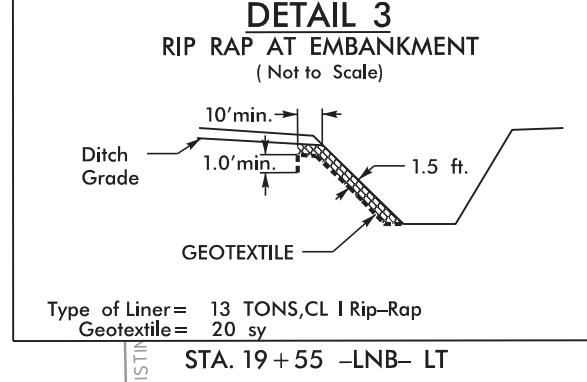
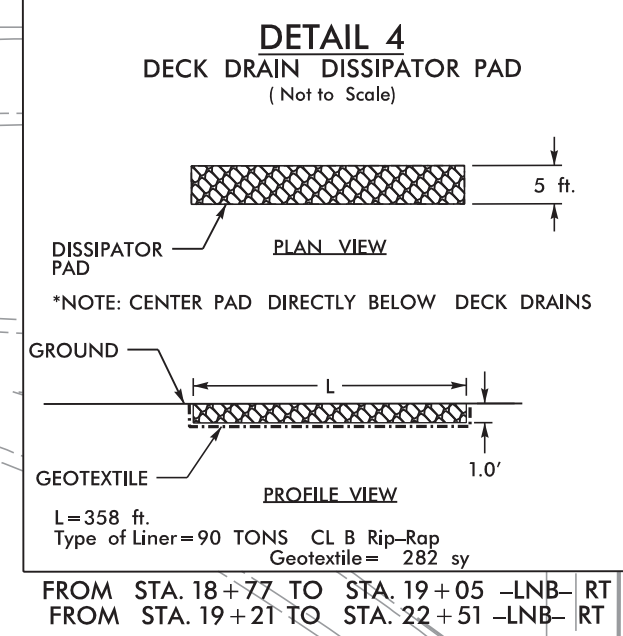
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>B-5389</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
B-5389	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 AMT A. MORTON THOMAS AND ASSOCIATES, INC. <small>CONSULTING ENGINEERS</small> <small>4131 FALLS OF THE ROADS, SUITE 100, RALEIGH, NC 27609</small> <small>(919) 851-9889 FAX (919) 851-5681</small> <small>EMAIL: AMT@AMTENGINEERING.COM</small> <small>NCBELS LICENSE # F-1049</small>	
FINAL DESIGN	



NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

BEGIN TIP PROJECT B-5389
-LNB- STA. 12+62.50
BEGIN 3" OVERLAY

Place Matting for Erosion Control
on Slope as Work Allows.
LNB Sta. 14+00 to 18+35.53 LT

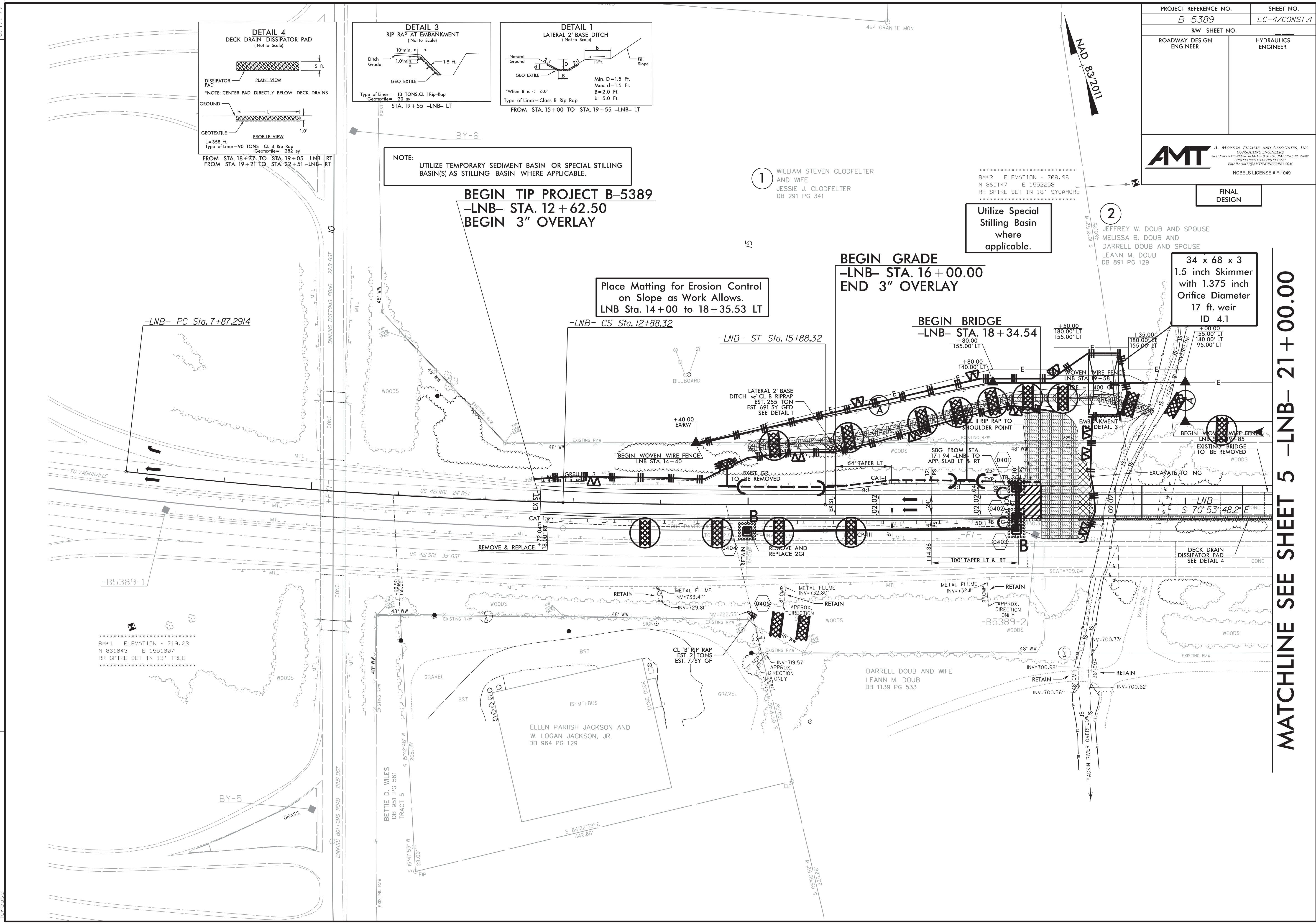
BEGIN GRADE
-LNB- STA. 16+00.00
END 3" OVERLAY

BEGIN BRIDGE
-LNB- STA. 18+34.54

34 x 68 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
17 ft. weir
ID 4.1


Utilize Special Stilling Basin
where applicable.

8/17/99
8/16/2019
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REVISIONS

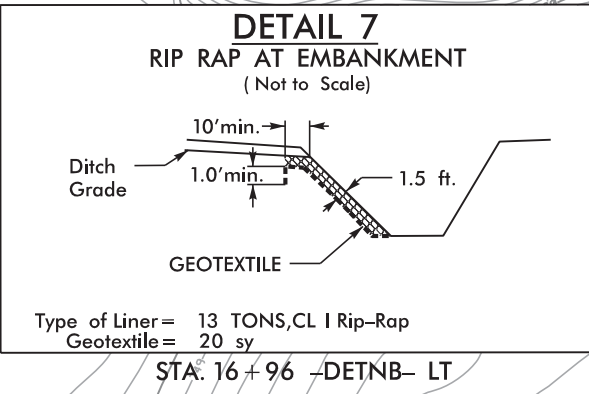


MATCHLINE SEE SHEET 5 -LNB- 21+00.00

8/17/99

PROJECT REFERENCE NO. B-5389	SHEET NO. EC-6/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 A. MORTON THOMAS AND ASSOCIATES, INC. CONSULTING ENGINEERS 6131 FALLS OF THE ROADS, SUITE 100, RALEIGH, NC 27609 (919) 851-9800 FAX (919) 851-5661 EMAIL: AMT@AMTENGINEERING.COM NCBELS LICENSE # F-1049	

DETOUR



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6 (DETOUR)

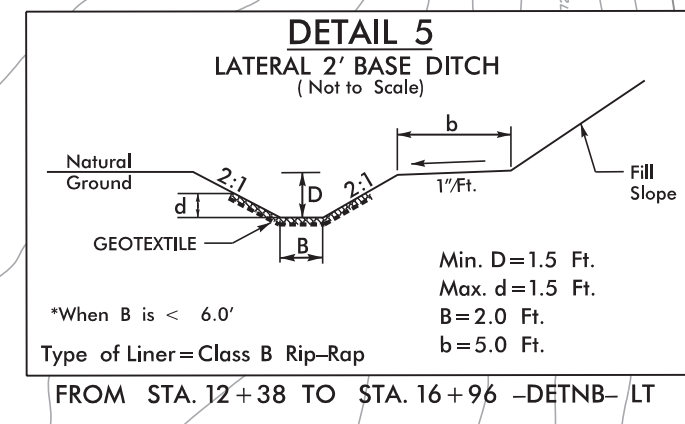
-DETNB-

PI Sta 11+46.99	PI Sta 14+20.69
$\Delta = 13^\circ 58' 02.2" (LT)$	$\Delta = 12^\circ 11' 59.9" (RT)$
$D = 4' 46" 33.7"$	$D = 4' 46" 33.7"$
$L = 292.45'$	$L = 255.44'$
$T = 146.99'$	$T = 128.24'$
$R = 1,200.00'$	$R = 1,200.00'$
$SE = 0.04$	$SE = 0.04$
$ROFF = 154'$	$ROFF = 154'$
$DS = 55 MPH$	$DS = 55 MPH$

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

BEGIN -DETNB- GRADE
-DETNB- STA. 11+86.96 =
-NBL- STA. 14+49.08 11.90' LT

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



Place Temporary
Rock Silt Checks
Type-A at
Drainage Outlets

34 x 68 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
17 ft. weir
ID 4.1

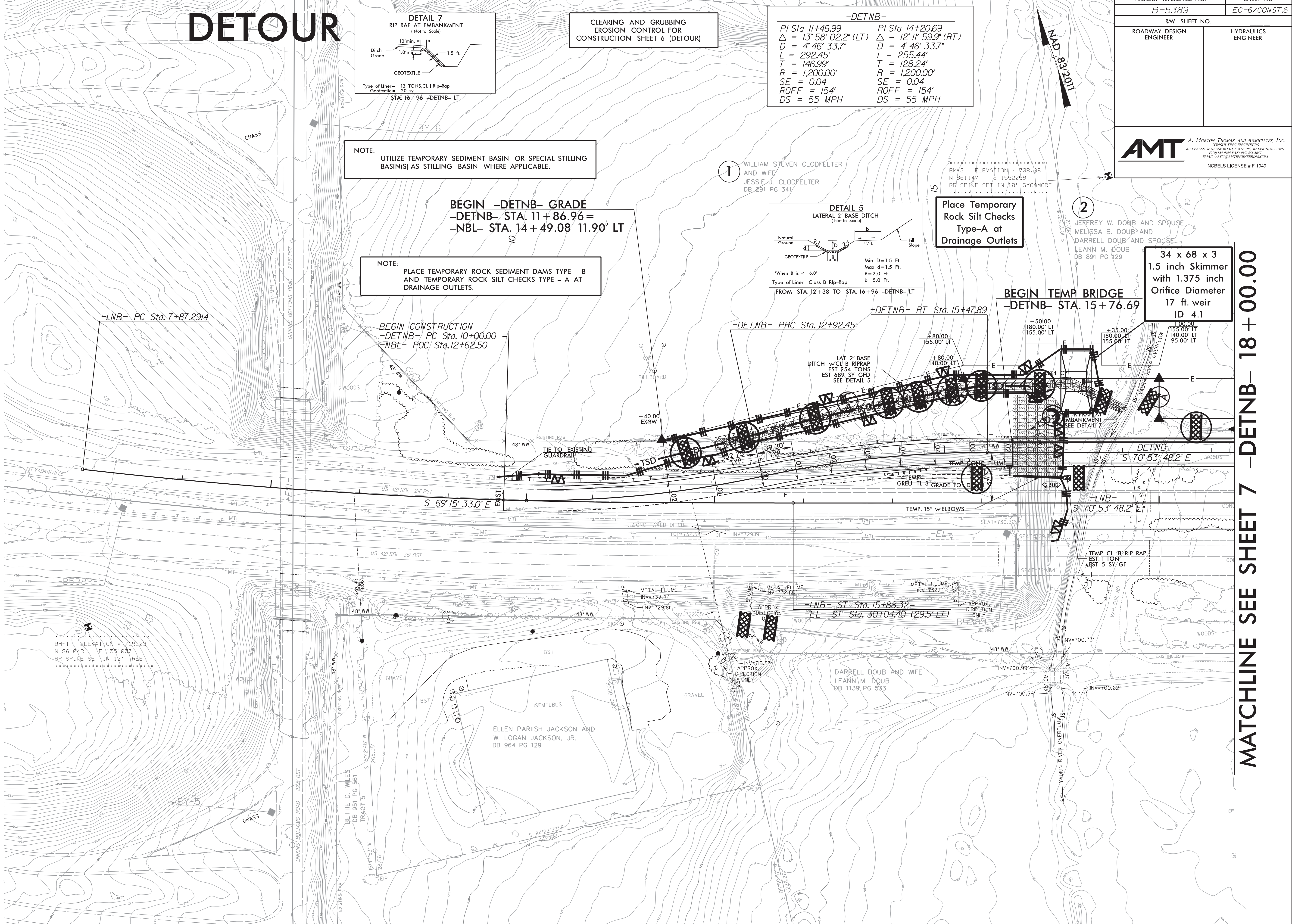
BEGIN TEMP BRIDGE
-DETNB- STA. 15+76.69

-LNB- PC Sta. 7+87.2914

BEGIN CONSTRUCTION
-DETNB- PC Sta. 10+00.00 =
-NBL- POC Sta. 12+62.50

-DETNB- PRC Sta. 12+92.45


-DETNB- PT Sta. 15+47.89



REVISIONS

6/6/2019
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8/17/99

MATCHLINE SEE SHEET 7 -DETNB- 18+00.00

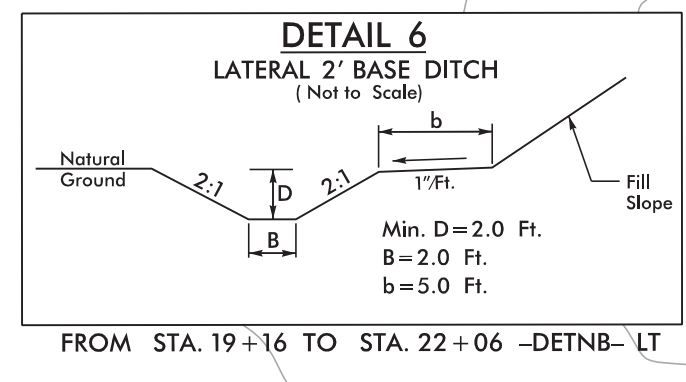
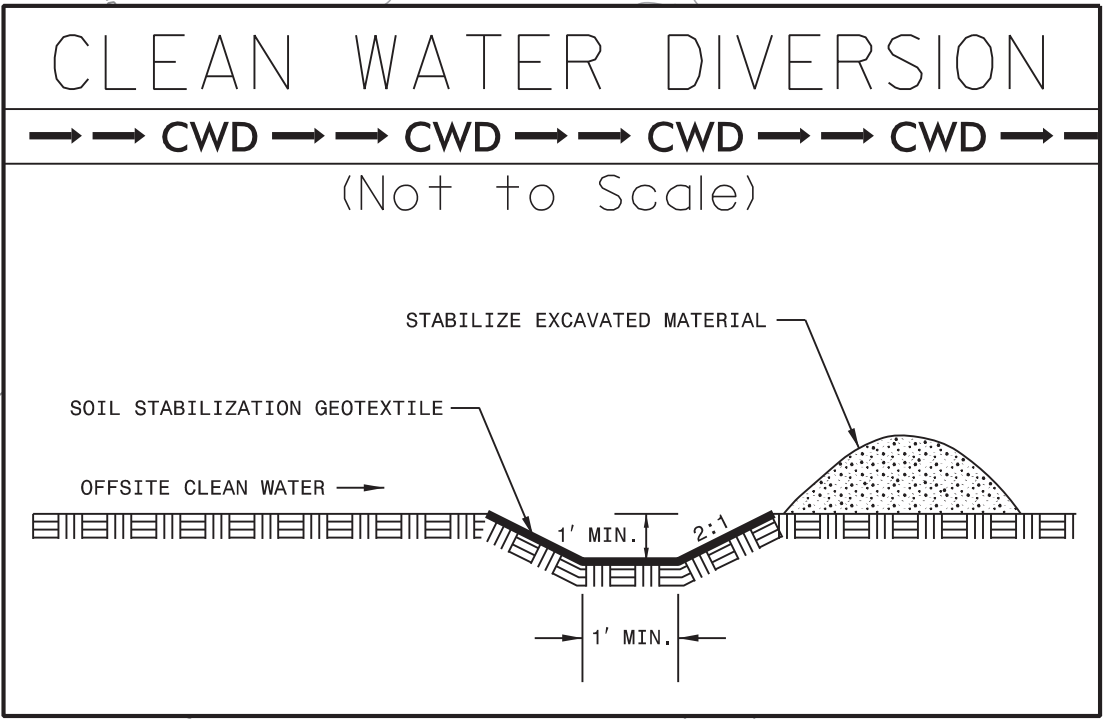
PROJECT REFERENCE NO. B-5389	SHEET NO. EC-7/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 A. MORTON THOMAS AND ASSOCIATES, INC. CONSULTING ENGINEERS 6131 FALLS OF THE ROADS, SUITE 100, RALEIGH, NC 27609 (919) 851-9889 FAX (919) 851-5661 EMAIL: AMT@AMTENGINEERING.COM NCBELS LICENSE # F-1049	

-DETNB-

PI Sta 26+52.76	PI Sta 29+14.74
$\Delta = 12^{\circ} 30' 43.8" (RT)$	$\Delta = 12^{\circ} 30' 43.6" (LT)$
D = 4' 46" 33.7"	D = 4' 46" 33.7"
L = 261.98'	L = 261.98'
T = 131.55'	T = 131.55'
R = 1,200.00'	R = 1,200.00'
SE = 0.04	SE = 0.04
ROFF = 154'	ROFF = 154'
DS = 55 MPH	DS = 55 MPH

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7 (DETOUR)



DETOUR

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

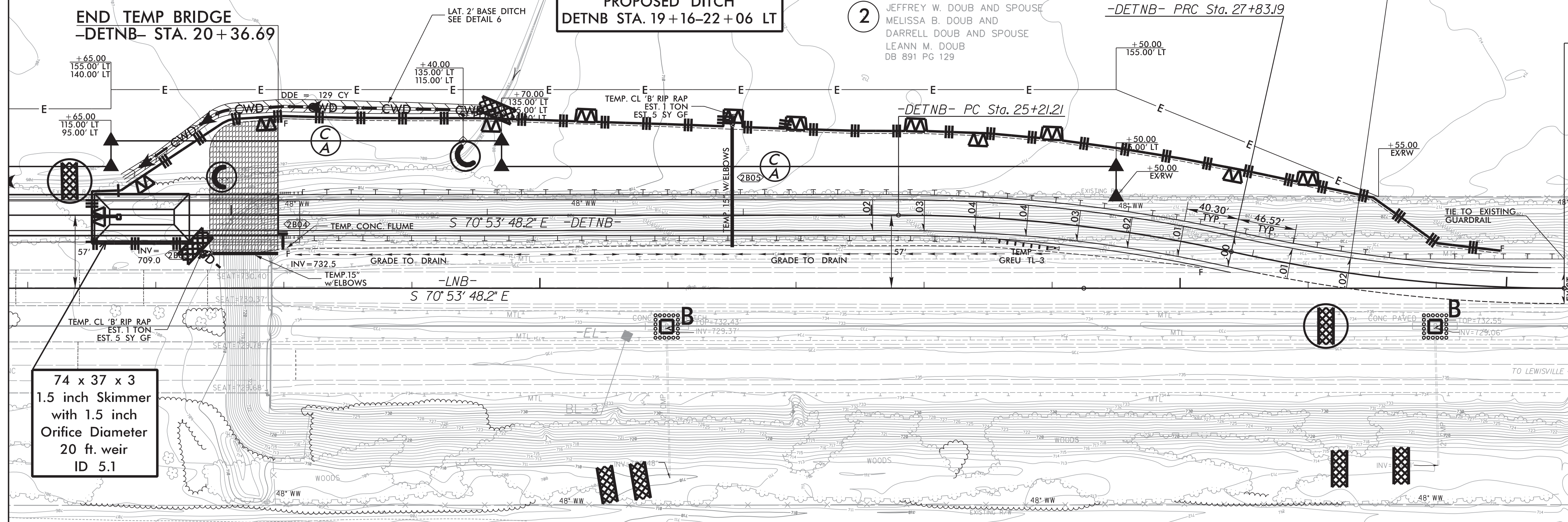
END -DETNB- GRADE
-DETNB- STA. 28+76.22 =
-NBL- STA. 31+31.55 11.88' LT

300 SY MATTING FOR
PROPOSED DITCH
DETNB STA. 19+16-22+06 LT

2 JEFFREY W. DOUB AND SPOUSE
MELISSA B. DOUB AND
DARRELL DOUB AND SPOUSE
LEANN M. DOUB
DB 891 PG 129

END DETOUR CONSTRUCTION
-DETNB- PT Sta. 30+45.77 =
-NBL- POT Sta. 33+00.00

MATCHLINE SEE SHEET 6 -DETNB- 18+00.00



74 x 37 x 3
1.5 inch Skimmer
with 1.5 inch
Orifice Diameter
20 ft. weir
ID 5.1

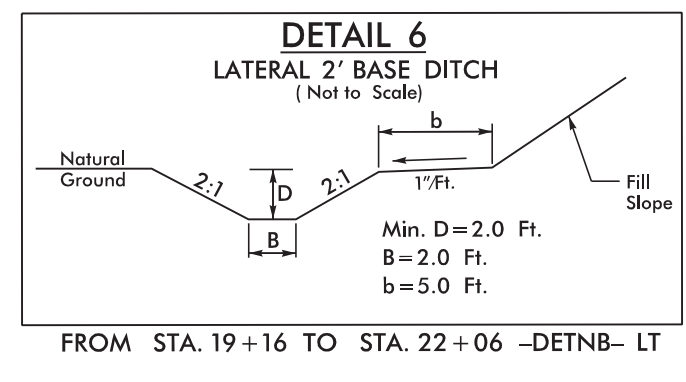
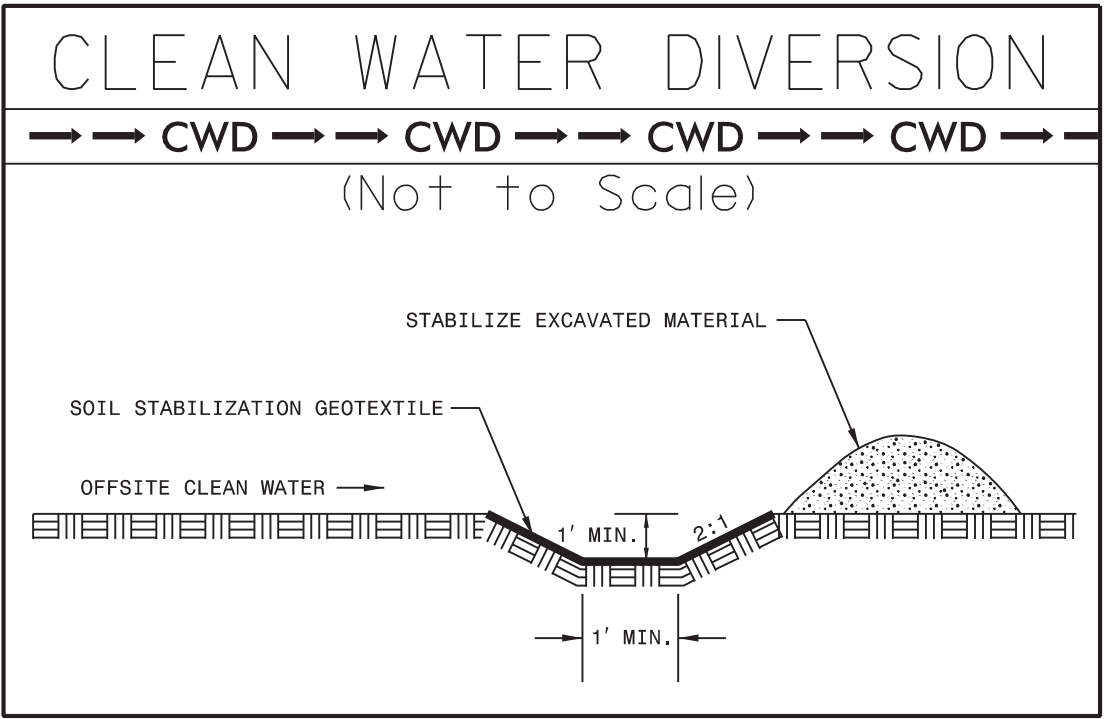
REVISIONS

8/17/09
6/6/2019
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8/17/99
 REVISIONS
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 6/6/2018
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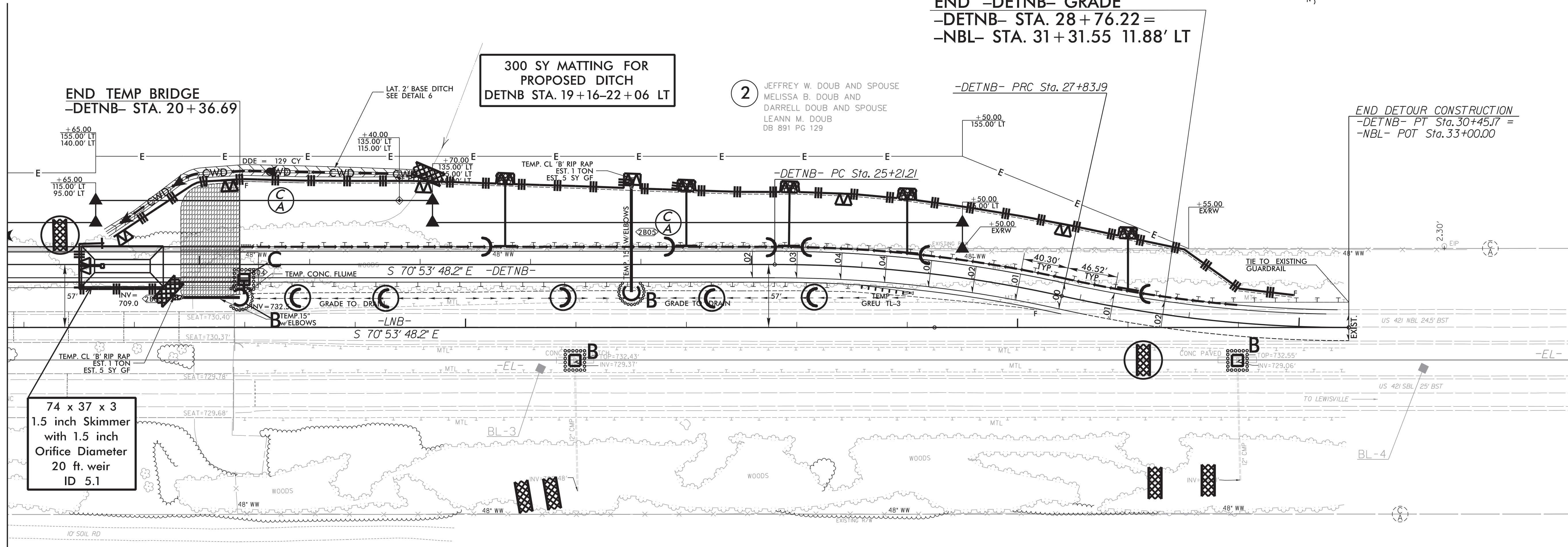
-DETNB-	
PI Sta 26+52.76	PI Sta 29+14.74
$\Delta = 12' 30" 43.8" (RT)$	$\Delta = 12' 30" 43.6" (LT)$
$D = 4' 46" 33.7"$	$D = 4' 46" 33.7"$
$L = 261.98'$	$L = 261.98'$
$T = 131.55'$	$T = 131.55'$
$R = 1,200.00'$	$R = 1,200.00'$
$SE = 0.04$	$SE = 0.04$
$ROFF = 154'$	$ROFF = 154'$
$DS = 55 MPH$	$DS = 55 MPH$

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



DETOUR

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



2 JEFFREY W. DOUB AND SPOUSE
MELISSA B. DOUB AND
DARRELL DOUB AND SPOUSE
LEANN M. DOUB
DB 891 PG 129

DARRELL DOUB AND WIFE
LEANN M. DOUB
DB 1139 PG 533

PROJECT REFERENCE NO. B-5389	SHEET NO. EC-9/CONST.7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 A. MORTON THOMAS AND ASSOCIATES, INC. CONSULTING ENGINEERS 6131 FALLS OF THE ROADS, SUITE 106, RALEIGH, NC 27609 (919) 851-9889 FAX (919) 851-5661 EMAIL: AMT@AMTENGINEERING.COM NCBELS LICENSE # F-1049	



30