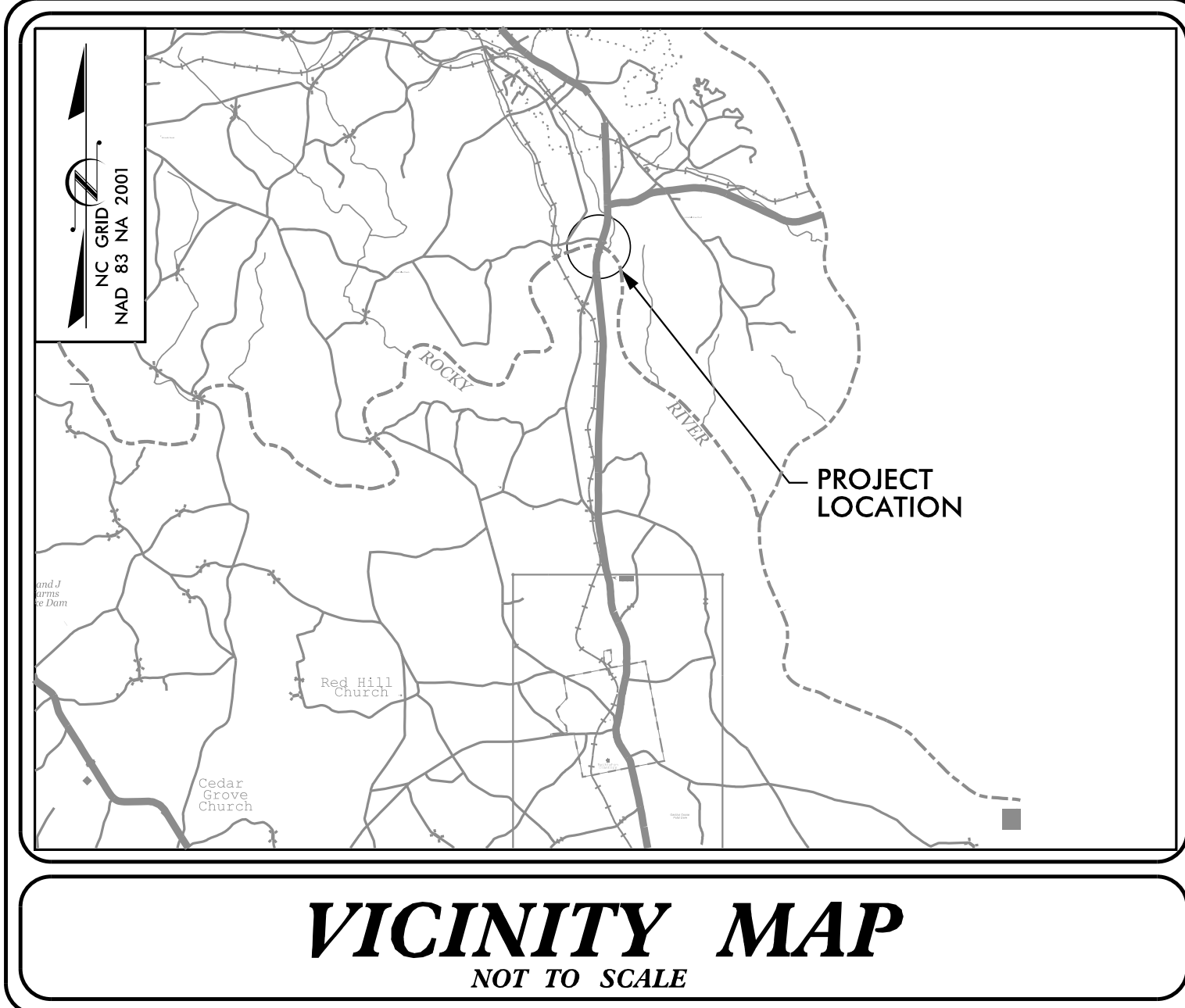


TIP PROJECT: B-4407



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
ANSON /STANLY COUNTIES

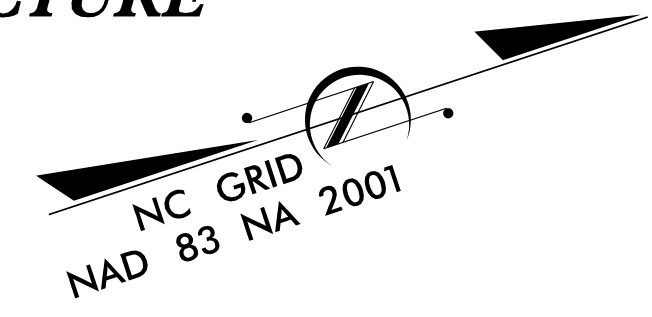
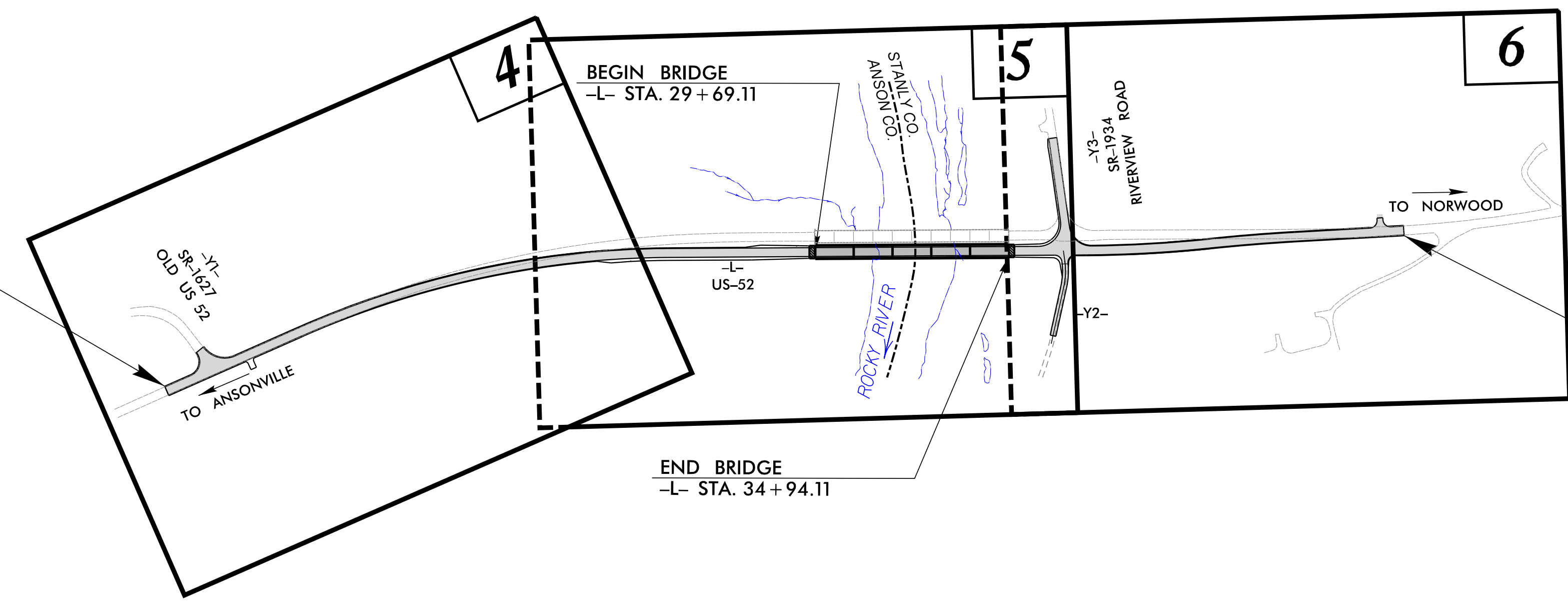
**REPLACE BRIDGE NO. 030070 OVER ROCKY RIVER ON US-52
GRADING, DRAINAGE, PAVING, AND STRUCTURE**

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT
Refer To E. C. Special Provisions for Special Considerations.

303(d) IMPAIRED WATER(S) EXIST ON THIS PROJECT
303(d) Impaired Water Zone(s) Exist From Sta. BEGIN to Sta. END
Refer To E. C. Special Provisions for Special Considerations.



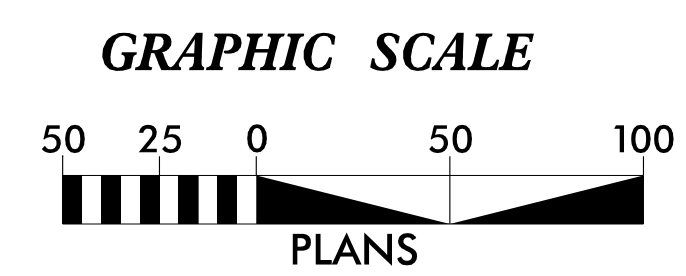
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4407	EC-1	16
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
38356.1.2	NA	PE	
38356.2.2	NA	R/W & UTILITIES	
38356.3.2	NA	CONST.	

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	---X---
1622.01	Temporary Berms and Slope Drains	---X---
1630.02	Silt Basin Type B	---X---
1633.01	Temporary Rock Silt Check Type-A	---X---
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	---X---
1633.02	Temporary Rock Silt Check Type-B	---X---
	Wattle / Coir Fiber Wattle	---X---
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	---X---
1634.01	Temporary Rock Sediment Dam Type-A	---X---
1634.02	Temporary Rock Sediment Dam Type-B	---X---
1635.01	Rock Pipe Inlet Sediment Trap Type-A	---X---
1635.02	Rock Pipe Inlet Sediment Trap Type-B	---X---
1630.04	Stilling Basin	---X---
1630.06	Special Stilling Basin	---X---
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	---X---
	Tiered Skimmer Basin	---X---
	Infiltration Basin	---X---

BEGIN TIP PROJECT B-4407
-L- STA. 11 + 50.00

END TIP PROJECT B-4407
-L- STA. 45 + 65.00



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE 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.

V&M
Vaughn & Melton
Consulting Engineers

Asheville, North Carolina
828-253-2796

Boone, NC 828-355-9933
 Tri-Cities, TN 423-467-8401
 Knoxville, TN 865-548-5800
 Spartanburg, SC 864-574-4775
 Charleston, SC 843-974-5650
 Middleboro, KY 606-248-6600
 Raleigh, NC 919-977-9455
 Charlotte, NC 704-357-0488
 Atlanta, GA 770-627-3590

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Prepared in the Office of:
Vaughn & Melton
Consulting Engineers
1318-F Patton Avenue
Asheville, NC 28806

Designed by:
Corey Napeir, PE 4098
NAME LEVEL III CERTIFICATION NO.

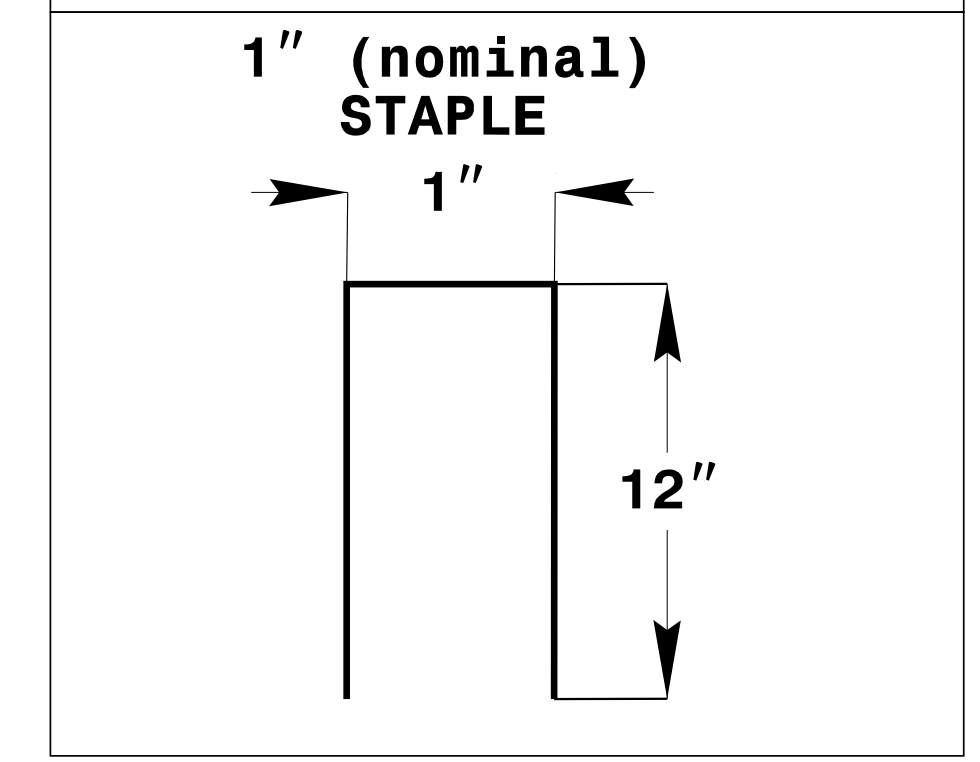
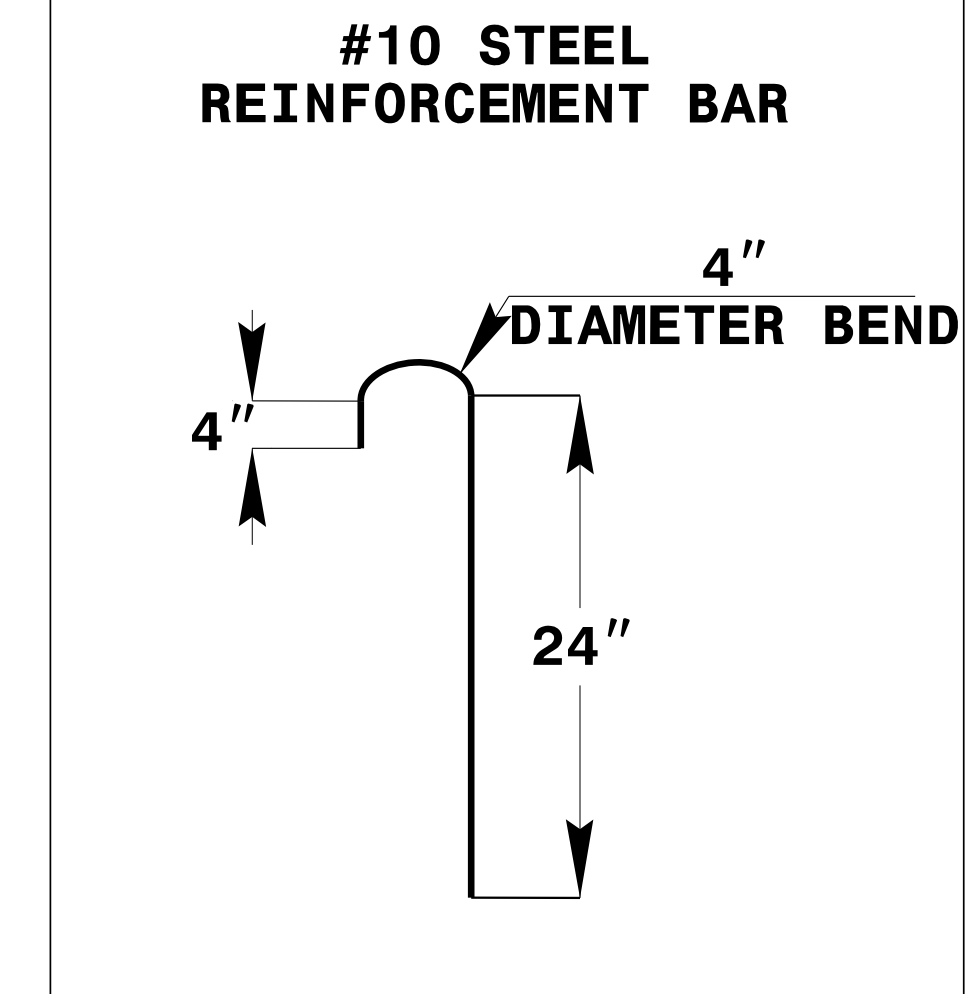
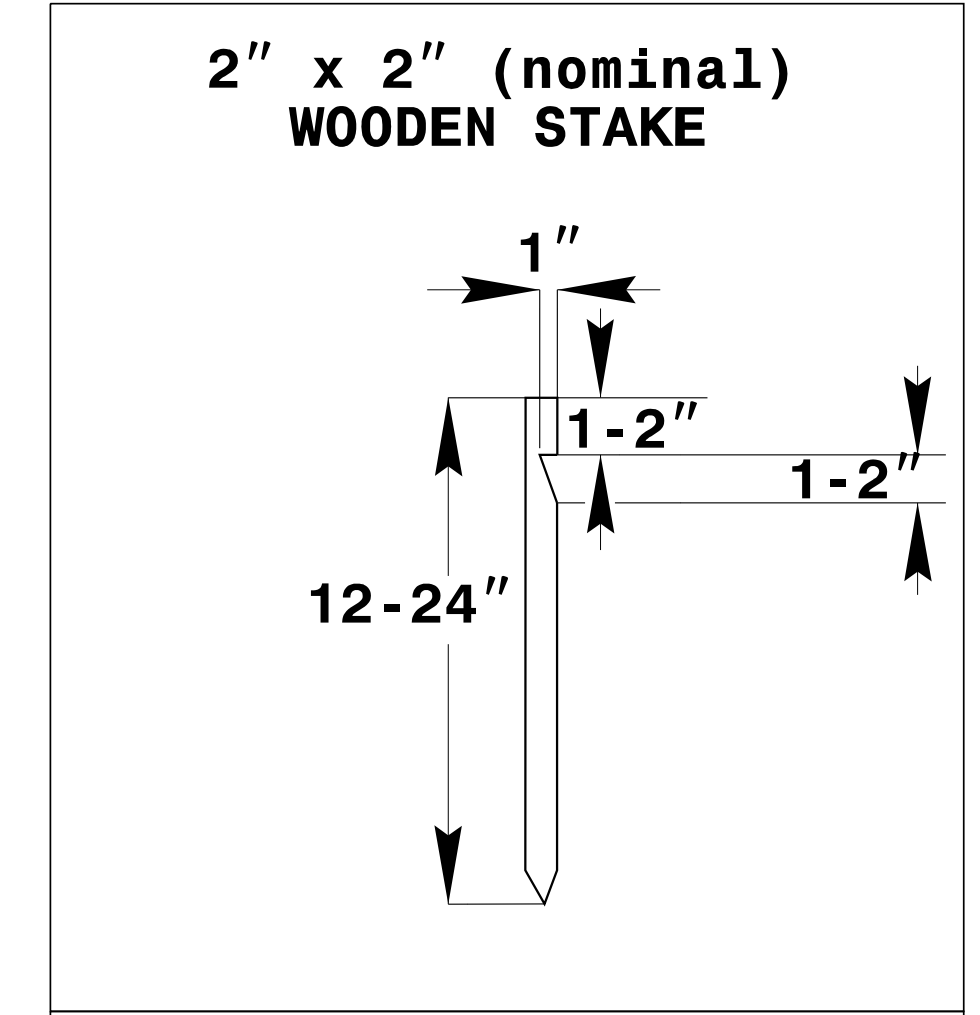
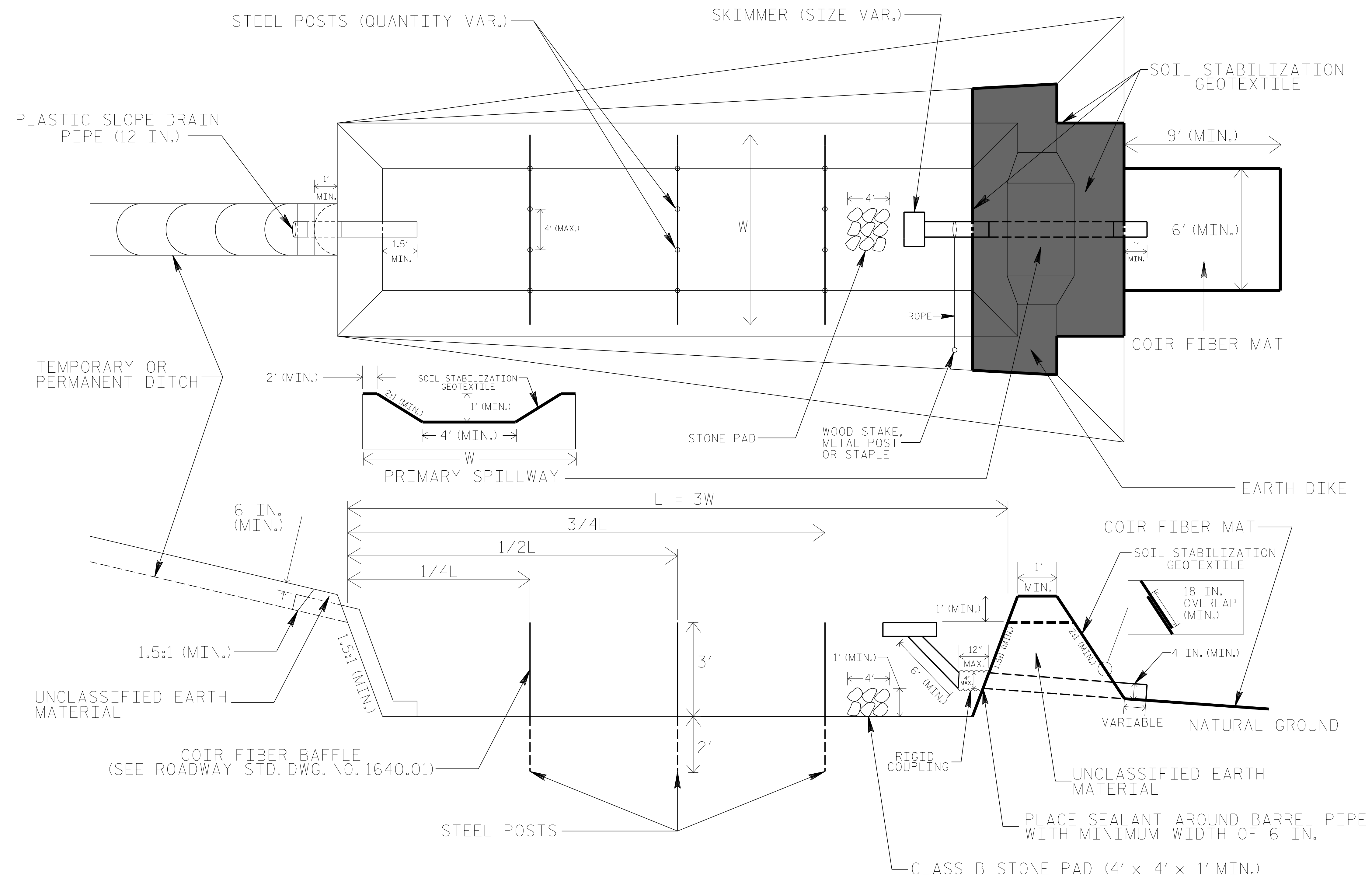
Roadway Standard Drawings

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	

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SKIMMER BASIN WITH BAFFLES DETAIL



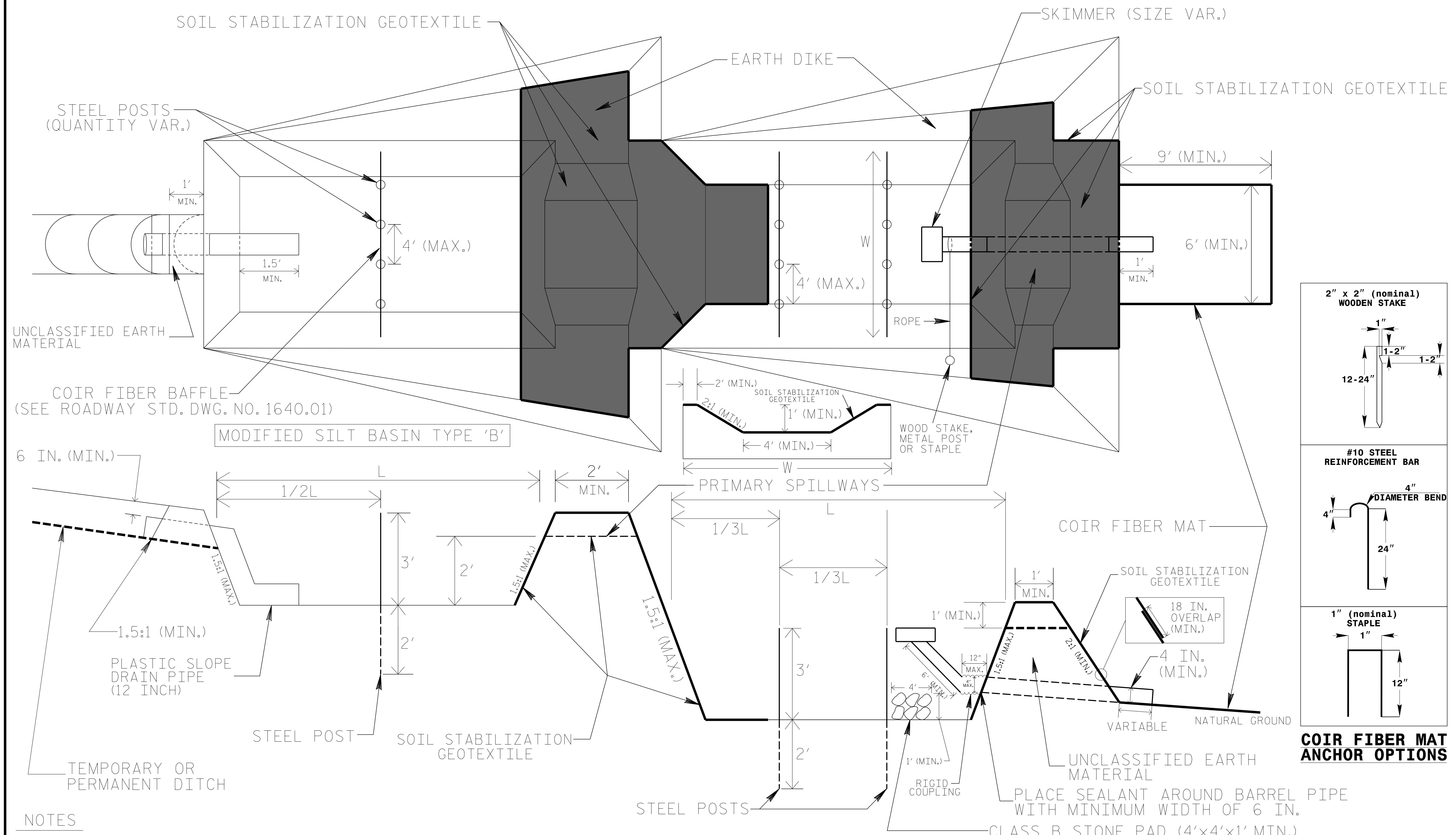
COIR FIBER MAT ANCHOR OPTIONS

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

TIERED SKIMMER BASIN DETAIL

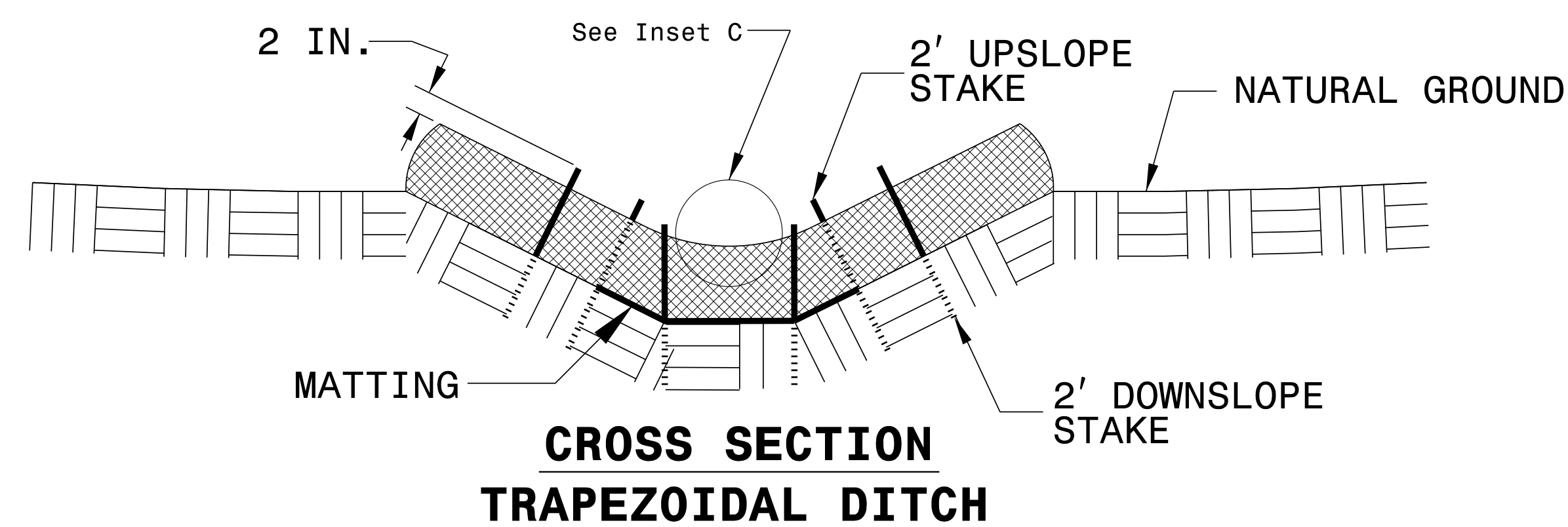
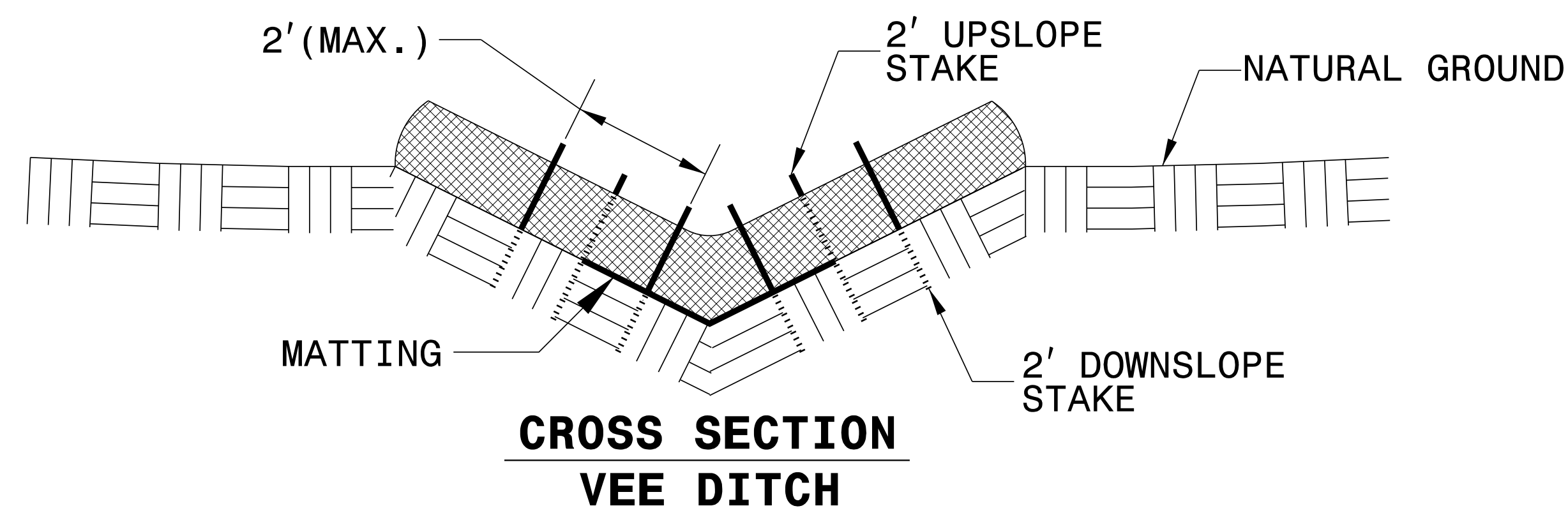
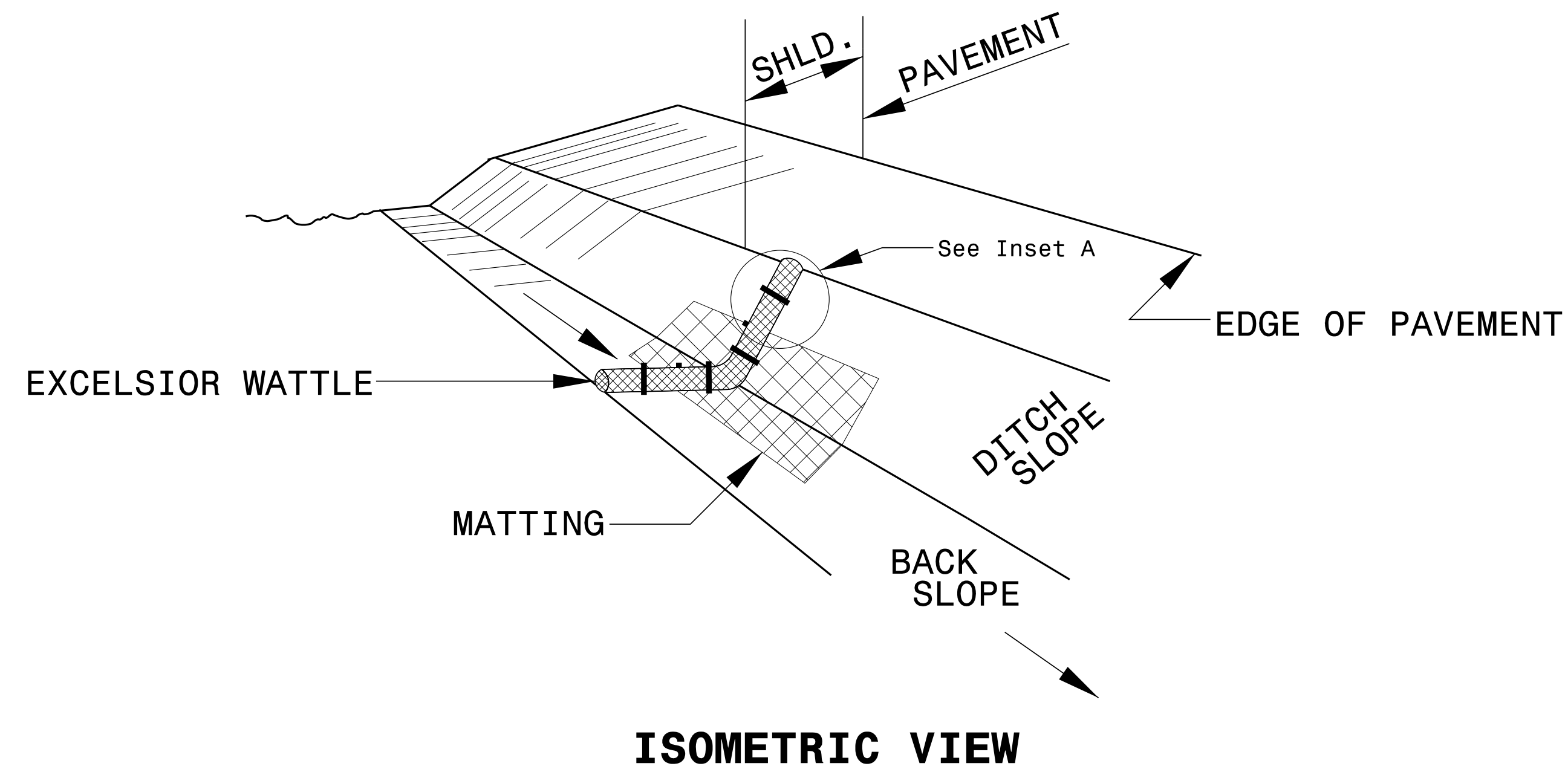


NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY WEIR LENGTHS (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

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.

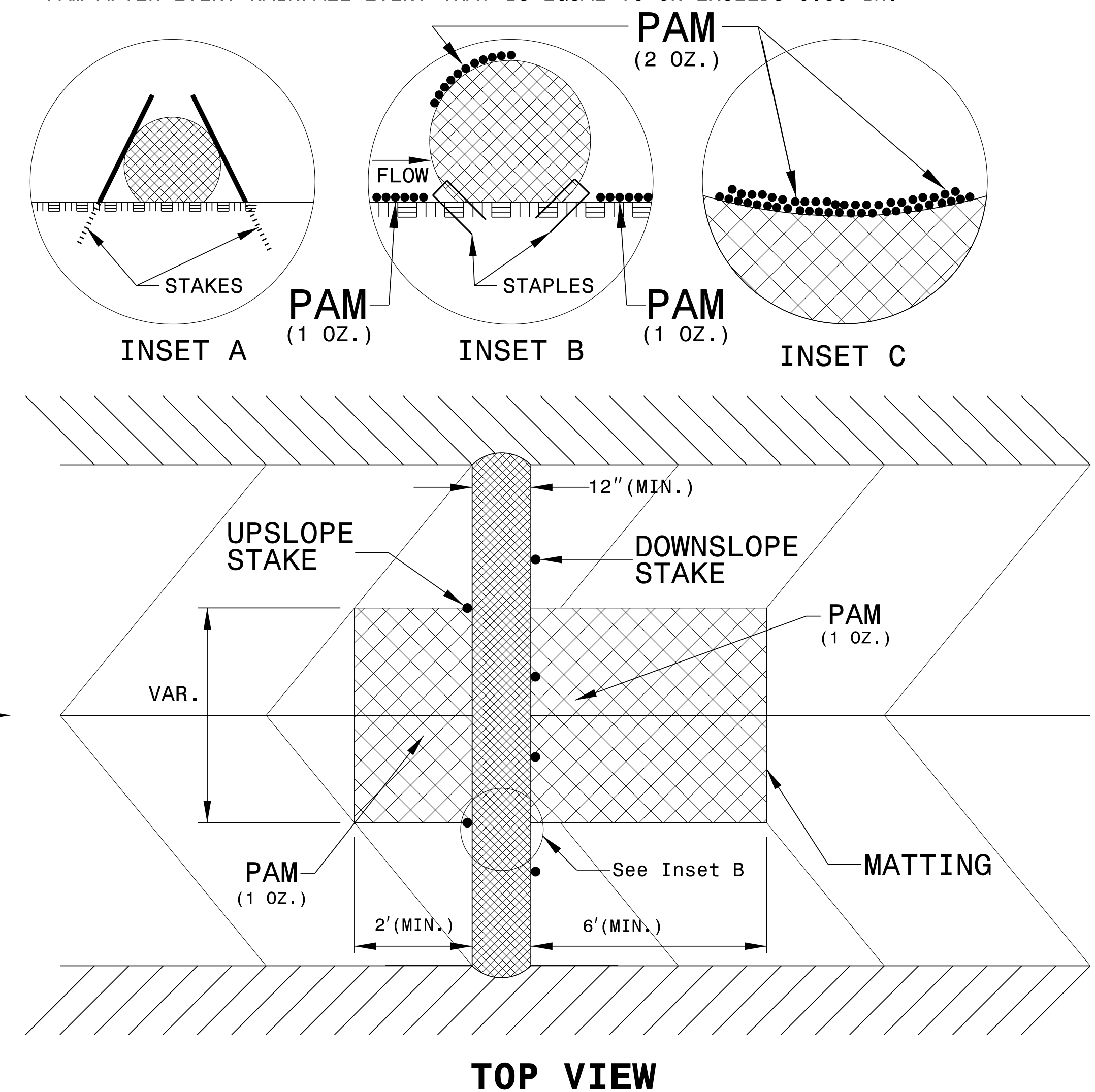
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

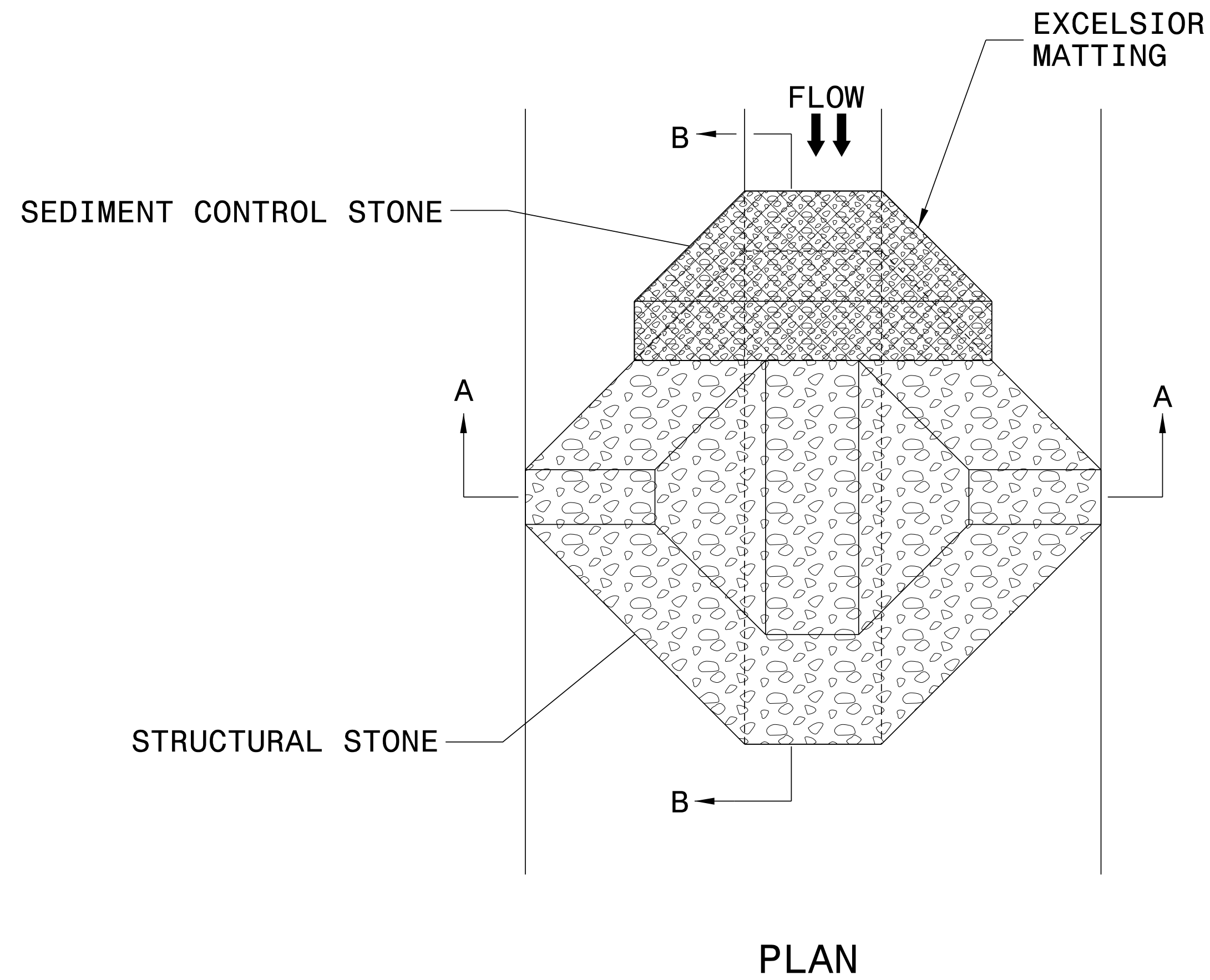
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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.



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



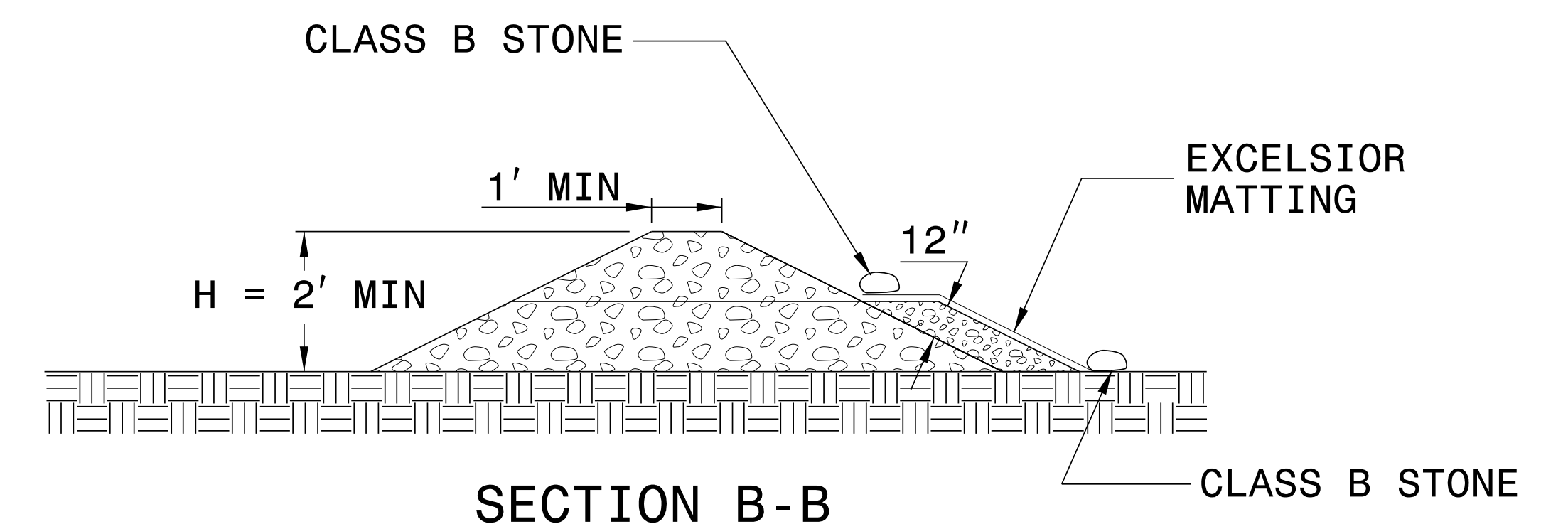
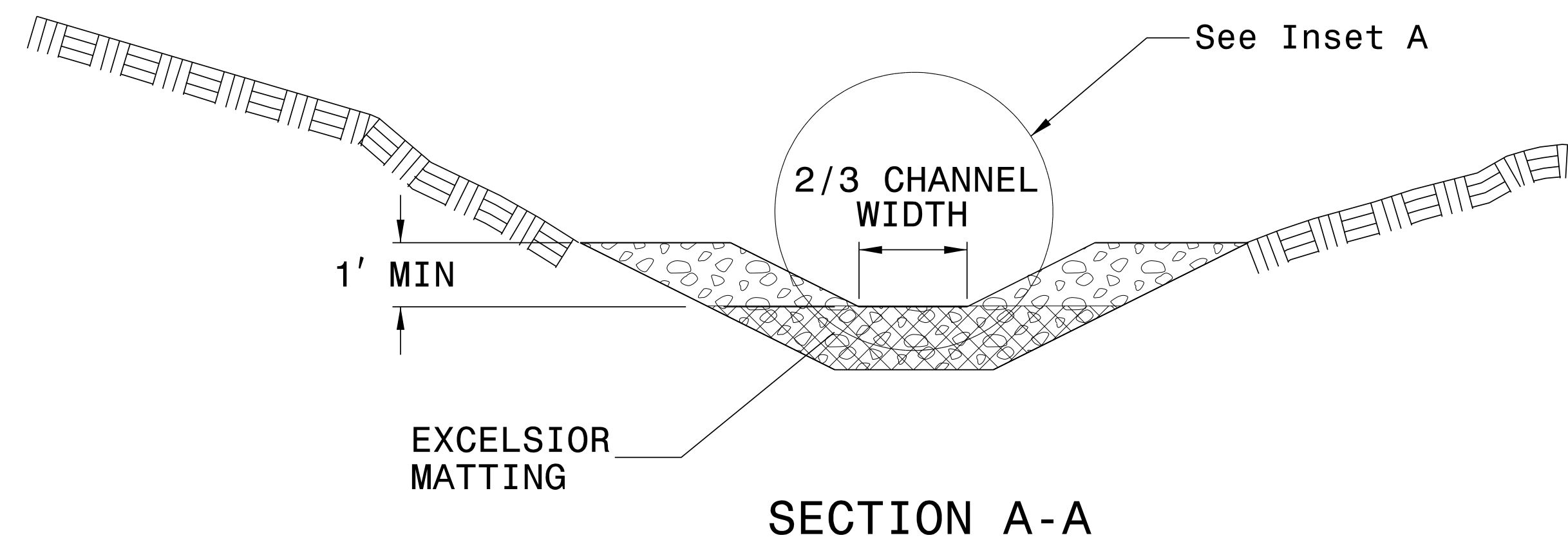
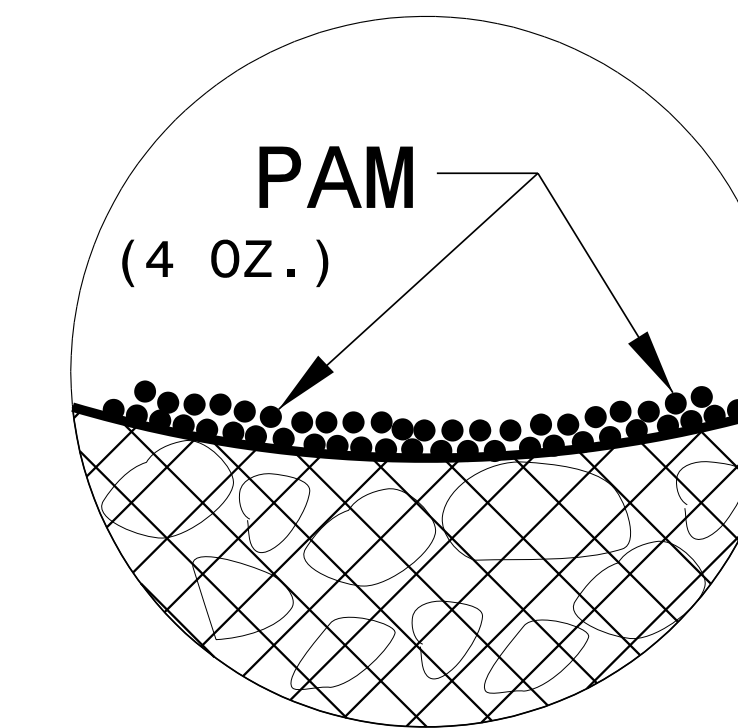
NOTES:

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.



NOT TO SCALE

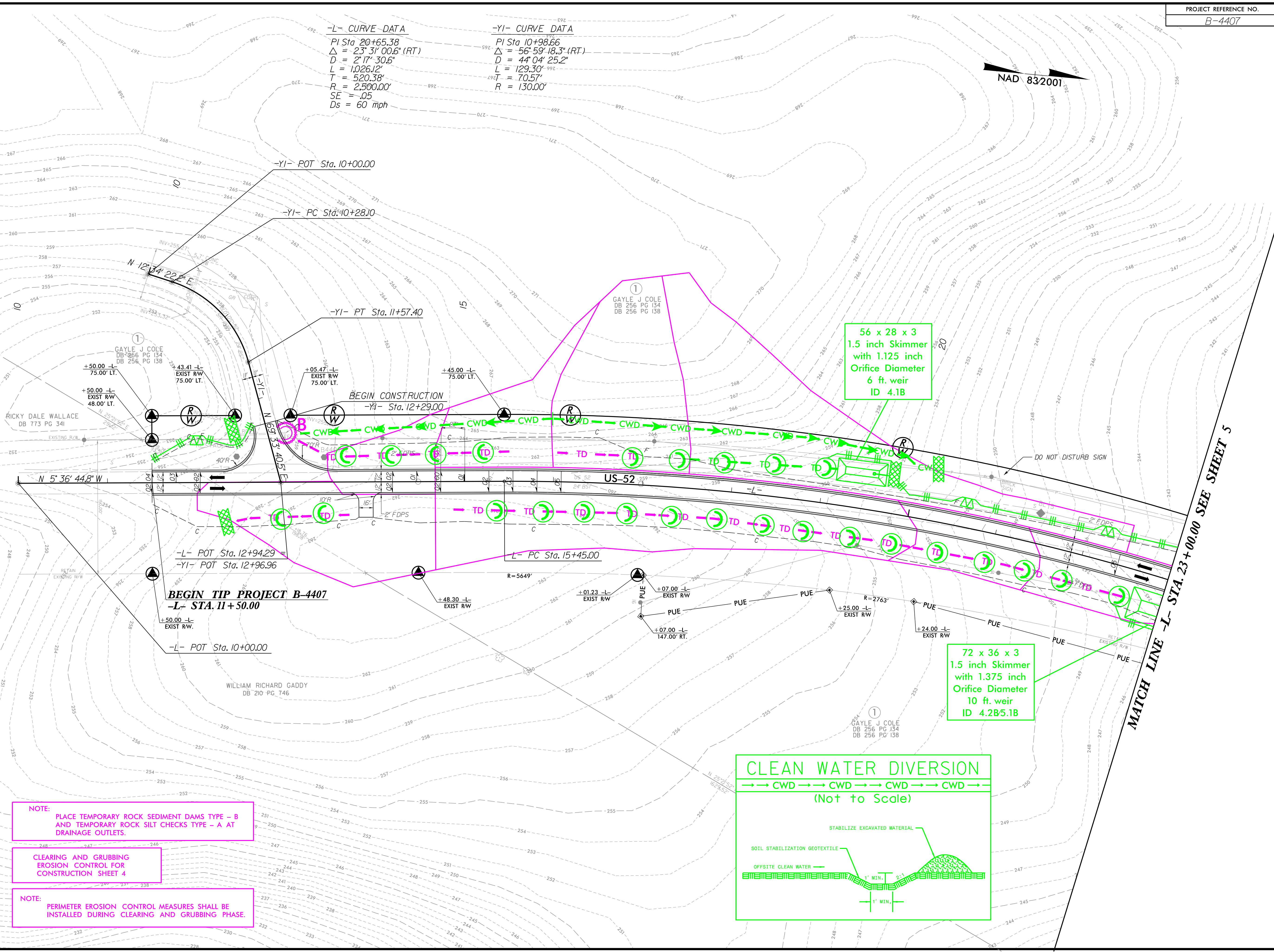
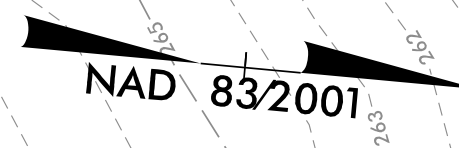
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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.

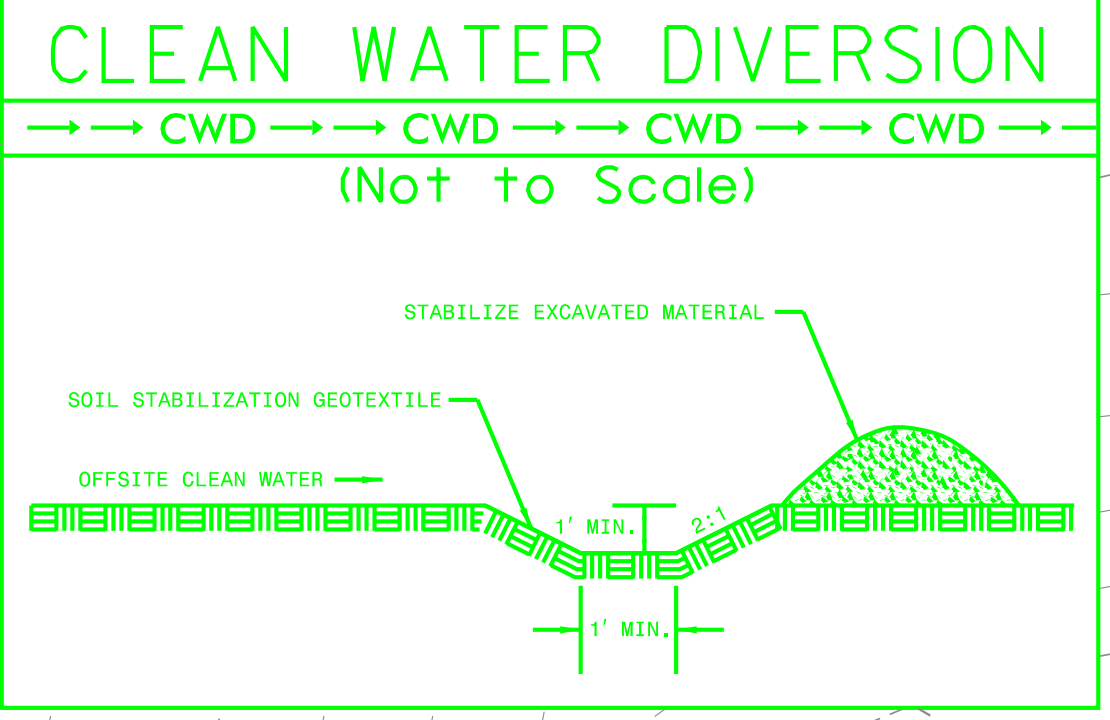
-L- CURVE DATA
 PI Sta 20+65.38
 $\Delta = 23^{\circ} 31' 00.6''$ (RT)
 $D = 2' 17.306''$
 $L = 1,026.12'$
 $T = 520.38'$
 $R = 2,500.00'$
 $SE = .05$
 $Ds = 60$ mph

-YI- CURVE DATA
 PI Sta 10+98.66
 $\Delta = 56^{\circ} 59' 18.3''$ (RT)
 $D = 44' 04.252''$
 $L = 129.30'$
 $T = 70.57'$
 $R = 130.00'$



56 x 28 x 3
 1.5 inch Skimmer
 with 1.125 inch
 Orifice Diameter
 6 ft. weir
 ID 4.1B

72 x 36 x 3
 1.5 inch Skimmer
 with 1.375 inch
 Orifice Diameter
 10 ft. weir
 ID 4.2B/5.1B



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 4

NOTE:
 PERIMETER EROSION CONTROL MEASURES SHALL BE
 INSTALLED DURING CLEARING AND GRUBBING PHASE.

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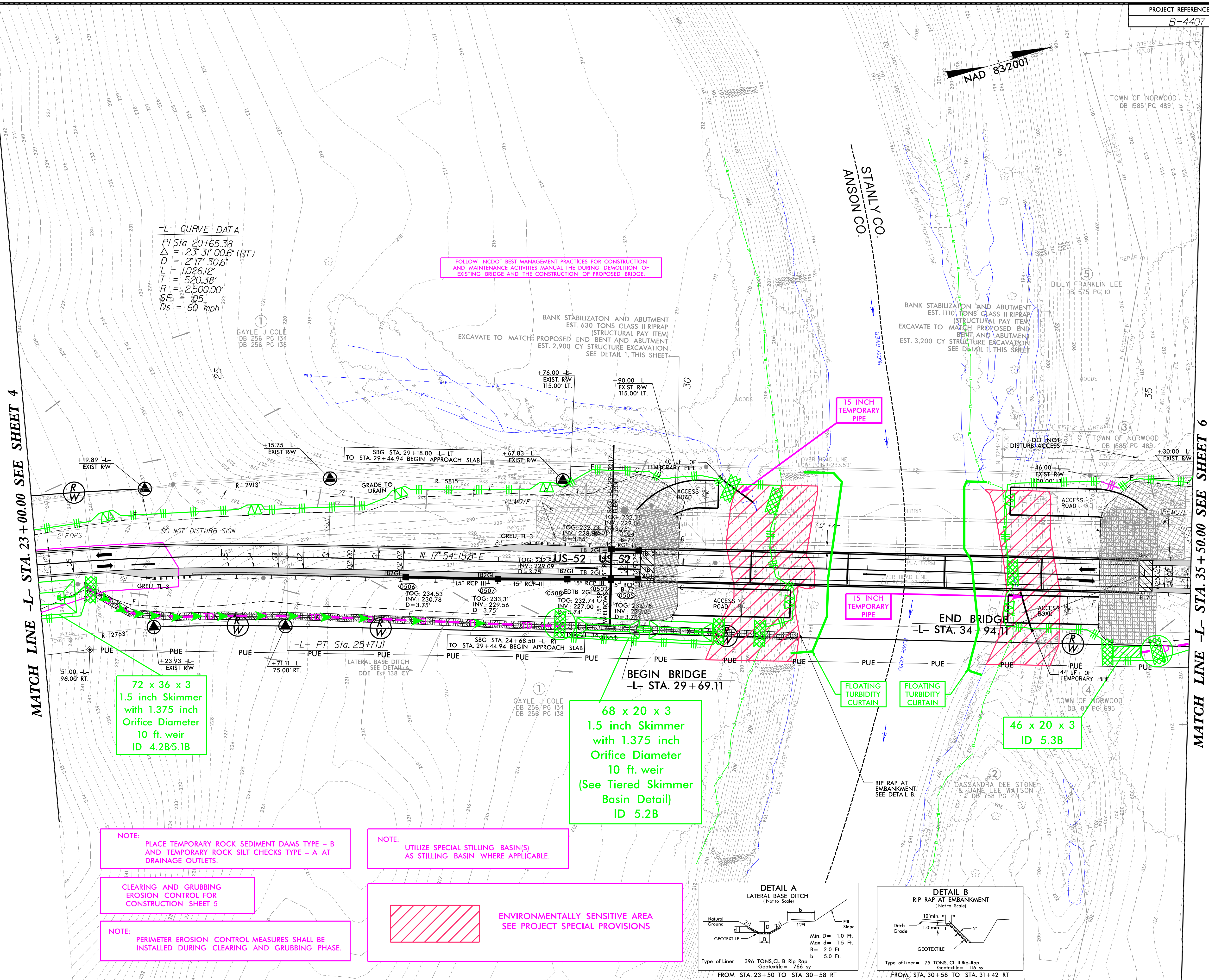
NAD 83/2001

-L- CURVE DATA
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 $D = 2^\circ 17' 30.6"$
 $L = 1026.12'$
 $R = 520.38'$
 $SE = .05$
 $Ds = 60 \text{ mph}$

FOLLOW NCDOT BEST MANAGEMENT PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL DURING DEMOLITION OF EXISTING BRIDGE AND THE CONSTRUCTION OF PROPOSED BRIDGE.

MATCH LINE -L- STA. 23+00.00 SEE SHEET 4

MATCH LINE -L- STA. 35+50.00 SEE SHEET 6



72 x 36 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
10 ft. weir
ID 4.2B5.1B

68 x 20 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
10 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 5.2B

46 x 20 x 3
ID 5.3B

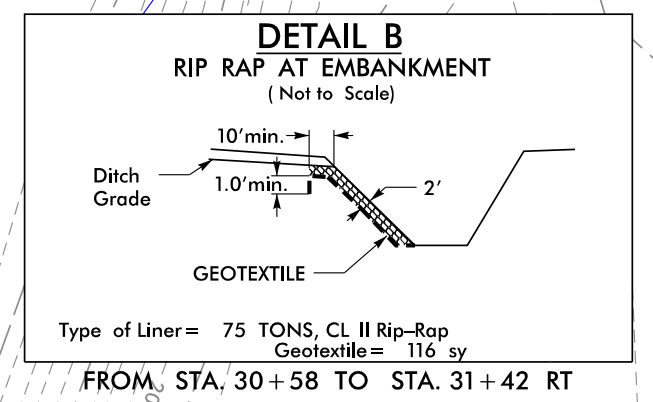
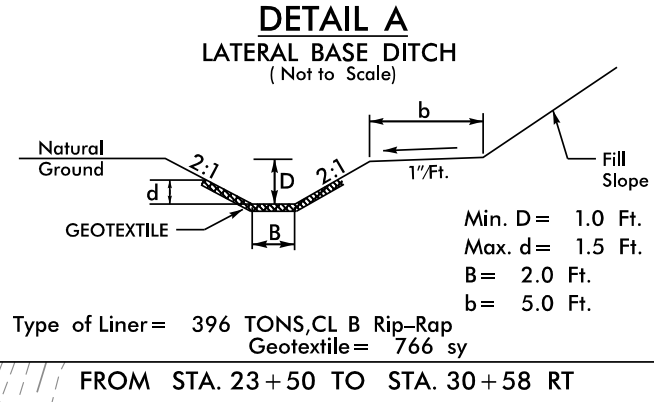
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

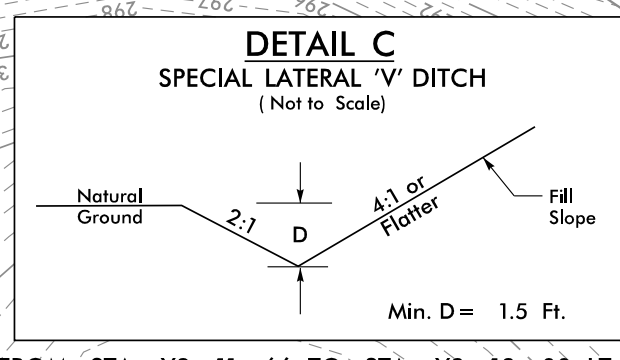


-L- CURVE DATA

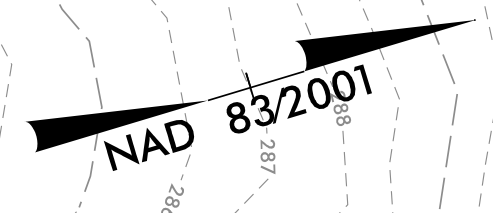
PI Sta. 38+69.15 Δ = 5' 37' 47.3" (LT) D = 1' 41' 24.5" L = 333.10' T = 166.68' R = 3390.00' SE = .04 Ds = 60 mph	PI Sta. 41+55.74 Δ = 2' 45' 19.5" (RT) D = 1' 08' 47.8" L = 240.31' T = 120.18' R = 4996.93' SE = .03 Ds = 60 mph	PI Sta. 48+77.96 Δ = 10' 25' 56.0" (LT) D = 1' 28' 29.3" L = 707.37' T = 354.66' R = 3885.00' SE = .04 Ds = 60 mph
--	--	---

-Y2- CURVE DATA

PI Sta. 11+92.44 Δ = 20' 03' 12.8" (LT) D = 28' 38' 52.4" L = 70.00' T = 35.36' R = 200.00'
--

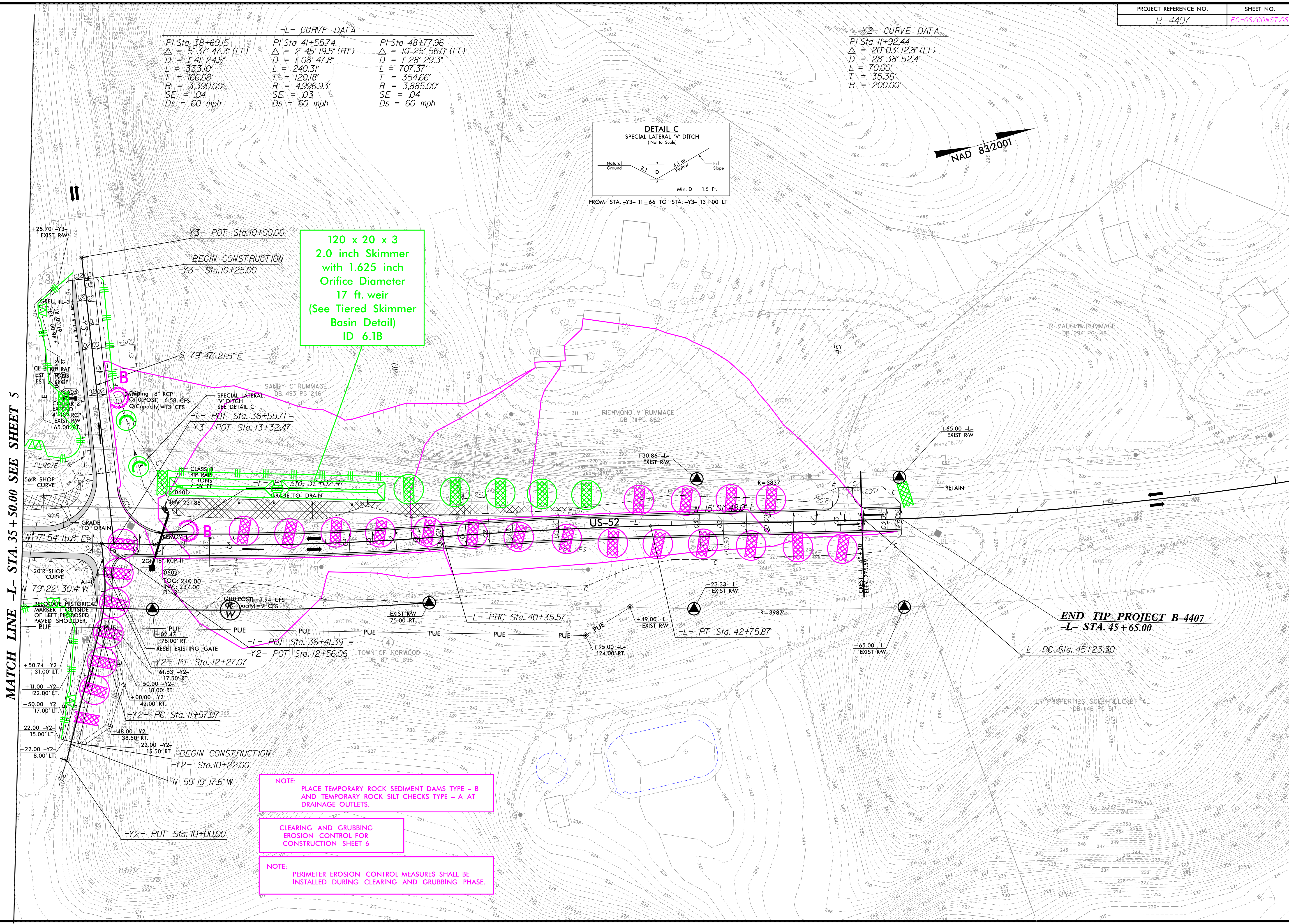


FROM STA. -Y3- 11+66 TO STA. -Y3- 13+00 LT



**120 x 20 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
17 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 6.1B**

MATCH LINE -L- STA. 35 + 50.00 SEE SHEET 5



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 6

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

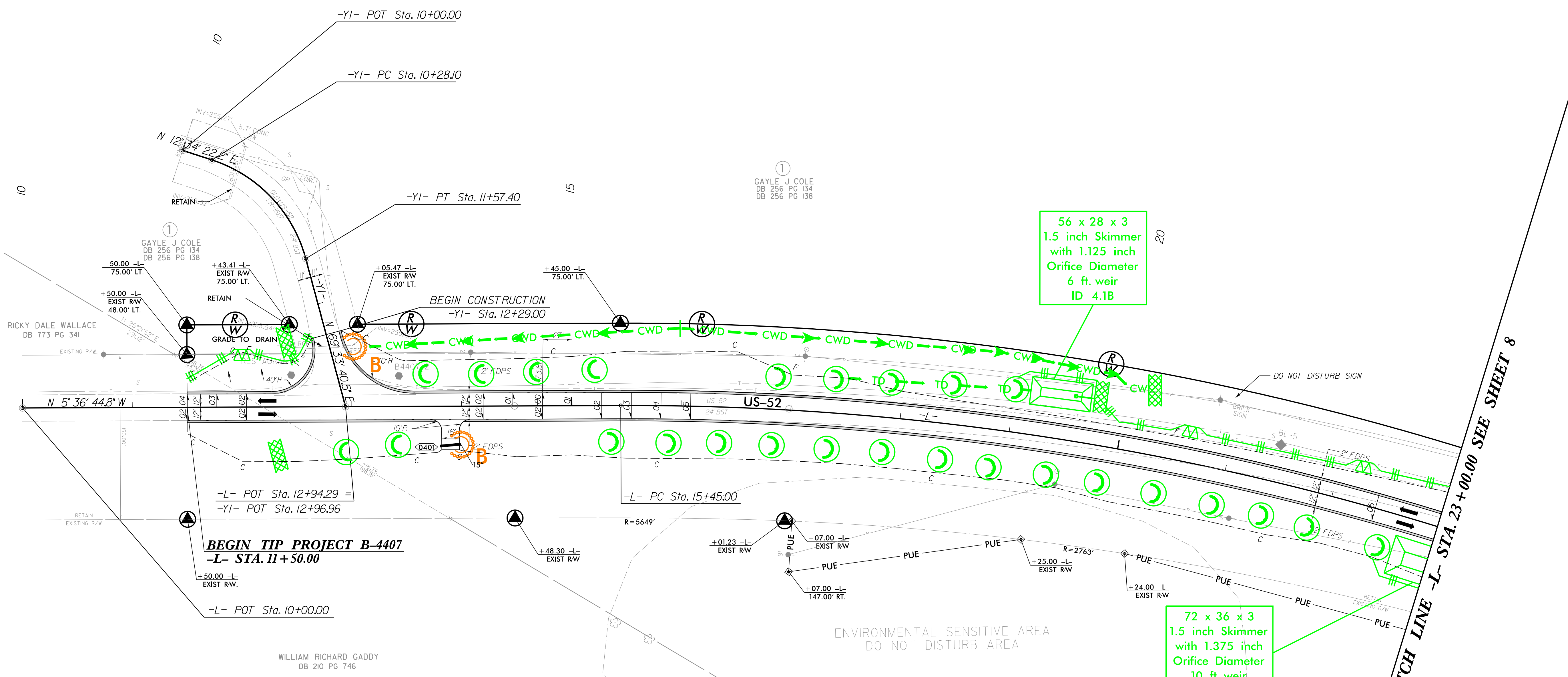
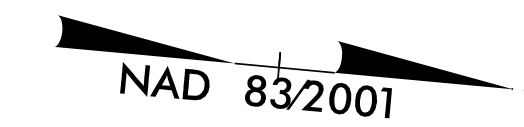
**END TIP PROJECT B-4407
-L- STA. 45 + 65.00**

-L- CURVE DATA

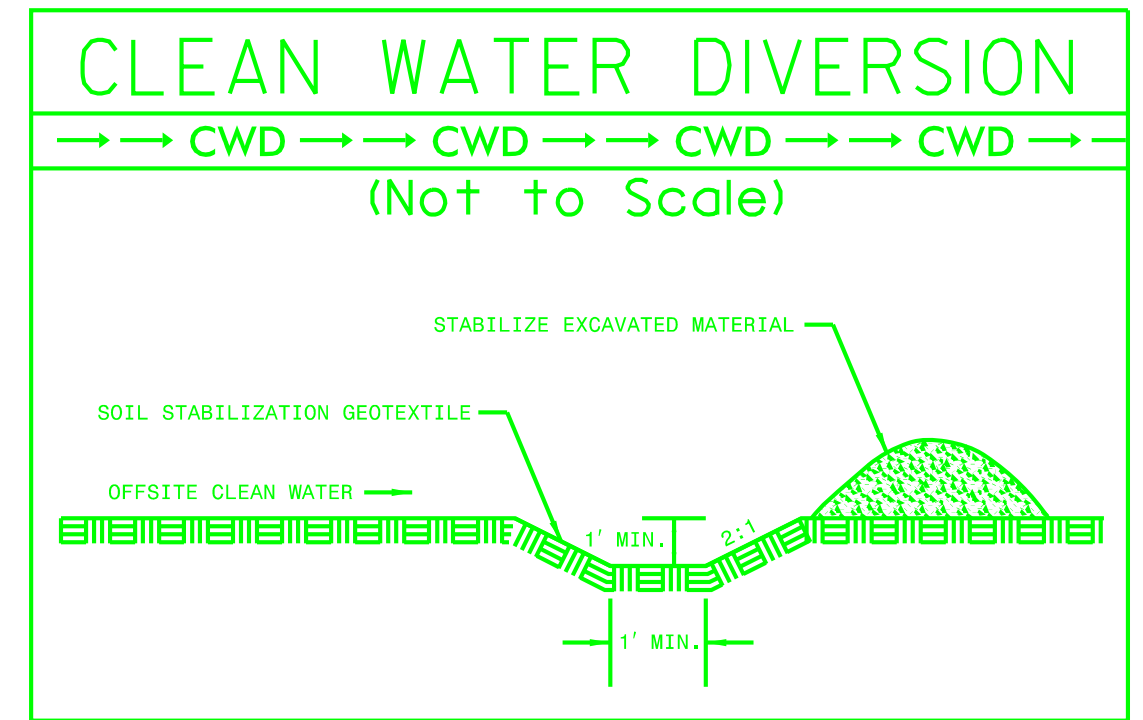
PI Sta 20+65.38
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 $D = 2^\circ 17' 30.6"$
 $L = 1,026.12'$
 $T = 520.38'$
 $R = 2,500.00'$
 $SE = .05$
 $Ds = 60$ mph

-YI- CURVE DATA

PI Sta 10+98.66
 $\Delta = 56^\circ 59' 18.3"$ (RT)
 $D = 44^\circ 04' 25.2"$
 $L = 129.30'$
 $T = 70.57'$
 $R = 130.00'$



Place Matting for Erosion Control on Slope as Work Allows.



MATCH LINE -L- STA. 23+00.00 SEE SHEET 8

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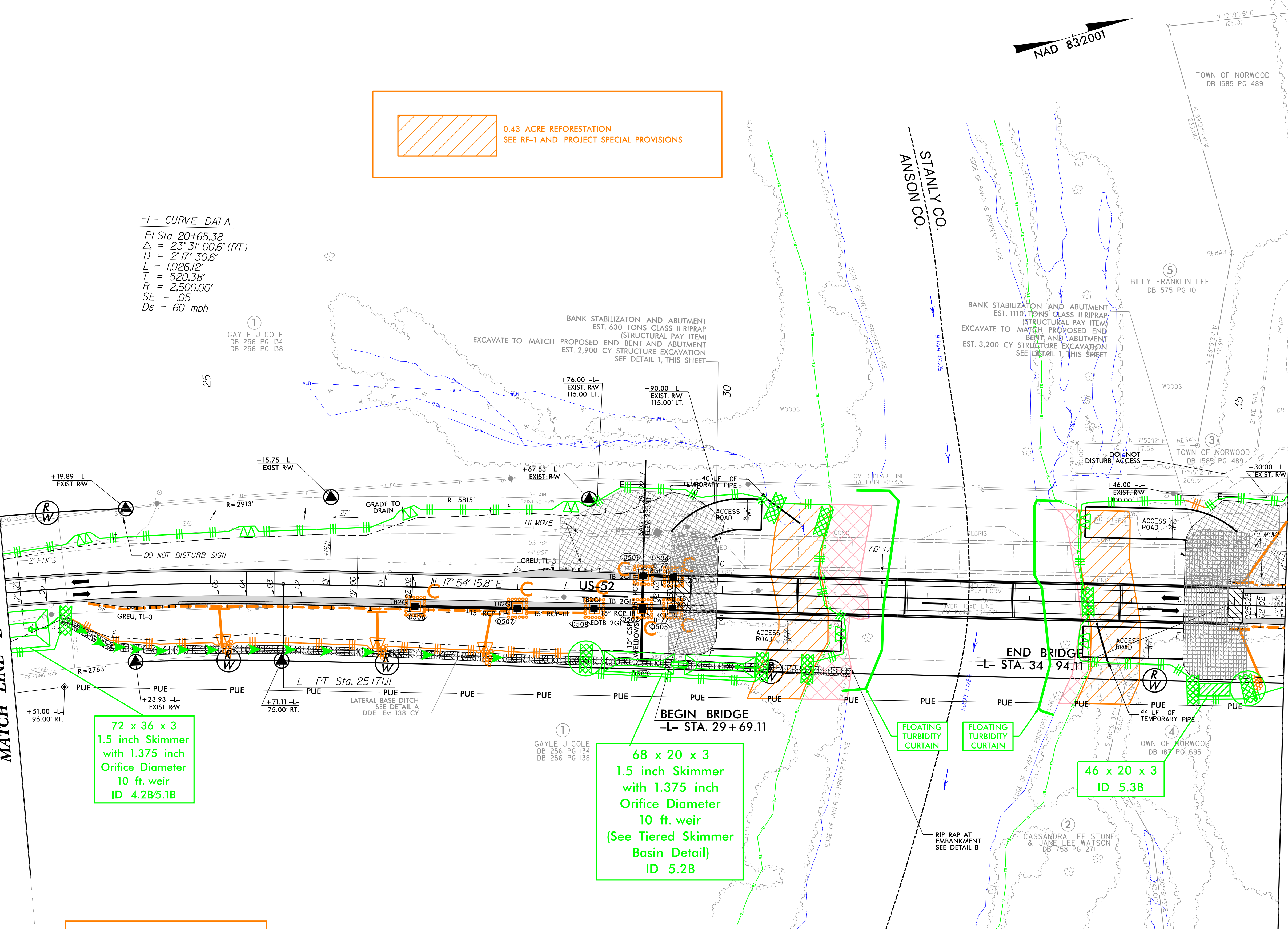


0.43 ACRE REFORESTATION
SEE RF-1 AND PROJECT SPECIAL PROVISIONS

-L- CURVE DATA
 PI Sta 20+65.38
 $\Delta = 23^\circ 31' 00.6" (RT)$
 $D = 2^\circ 17' 30.6"$
 $L = 1,026.12'$
 $T = 520.38'$
 $R = 2,500.00'$
 $SE = .05$
 $Ds = 60 \text{ mph}$

MATCH LINE -L- STA. 23+00.00 SEE SHEET 7

MATCH LINE -L- STA. 35+50.00 SEE SHEET 9



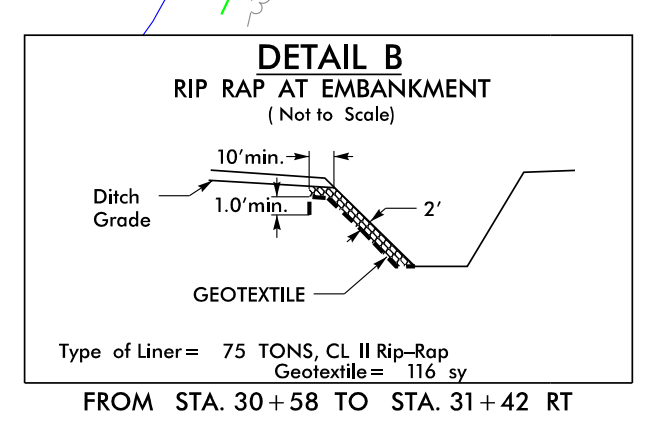
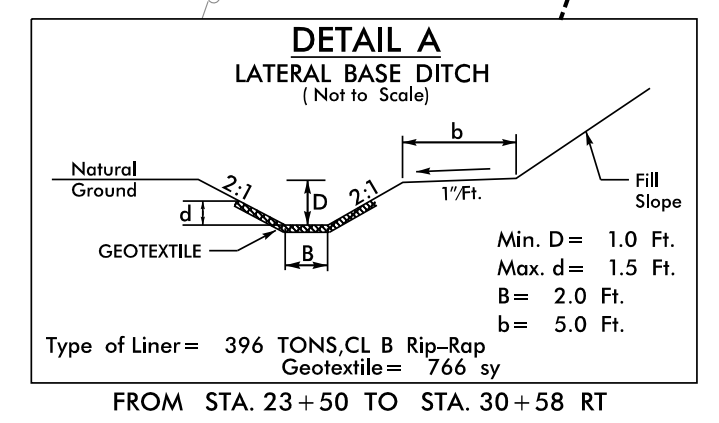
72 x 36 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
10 ft. weir
ID 4.2B5.1B

68 x 20 x 3
1.5 inch Skimmer
with 1.375 inch
Orifice Diameter
10 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 5.2B

46 x 20 x 3
ID 5.3B

Place Matting for Erosion Control
on Slope as Work Allows.

0.21 ACRE STREAMBANK REFORESTATION
SEE RF-2, RF-3 AND PROJECT SPECIAL PROVISIONS

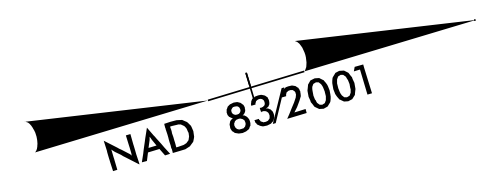
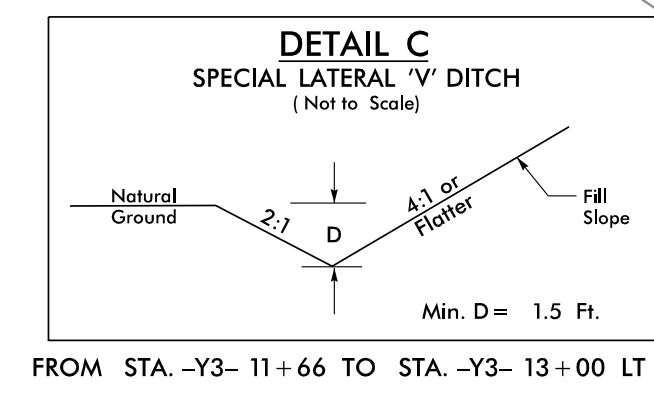


-L- CURVE DATA

PI Sta 38+69.15	PI Sta 41+55.74	PI Sta 48+77.96
$\Delta = 5' 37" 47.3" (LT)$	$\Delta = 2' 45" 19.5" (RT)$	$\Delta = 10' 25" 56.0" (LT)$
$D = 1' 41" 24.5"$	$D = 1' 08" 47.8"$	$D = 1' 28" 29.3"$
$L = 333.10'$	$L = 240.31'$	$L = 707.37'$
$T = 166.68'$	$T = 120.18'$	$T = 354.66'$
$R = 3,390.00'$	$R = 4,996.93'$	$R = 3,885.00'$
$SE = .04$	$SE = .03$	$SE = .04$
$Ds = 60 \text{ mph}$	$Ds = 60 \text{ mph}$	$Ds = 60 \text{ mph}$

-Y2- CURVE DATA

PI Sta 11+92.44
$\Delta = 20' 03" 12.8" (LT)$
$D = 28' 38" 52.4"$
$L = 70.00'$
$T = 35.36'$
$R = 200.00'$



MATCH LINE -L- STA. 35 + 50.00 SEE SHEET 8

120 x 20 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
17 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 6.1B

60 x 30 x 3
1.5 inch Skimmer
with 1.250 inch
Orifice Diameter
7 ft. weir
ID 6.1F

Place Matting for Erosion Control
on Slope as Work Allows.

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