

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5694	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

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

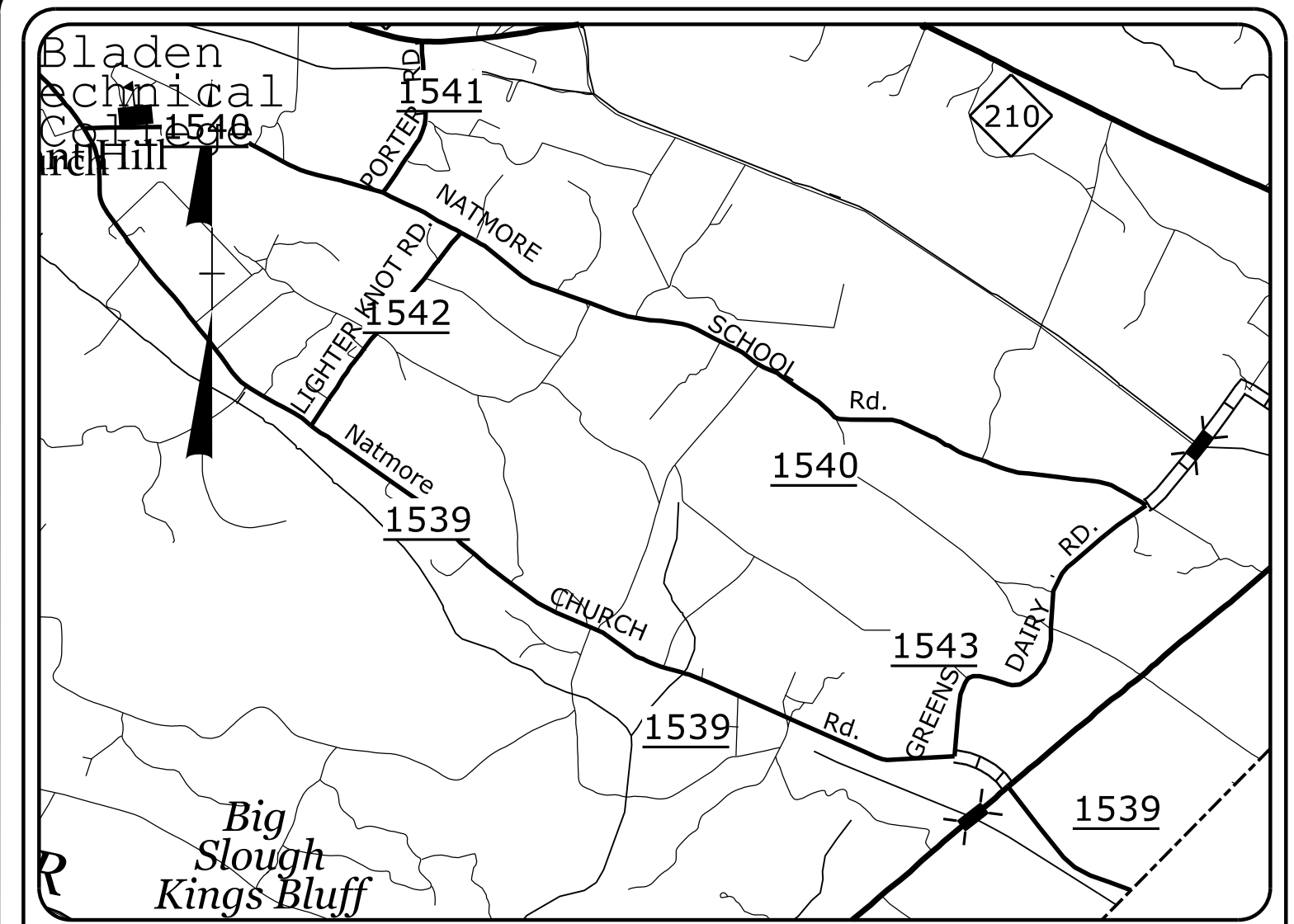
**LOCATION: REPLACE BRIDGE NO. 51 OVER WHITE OAK CANAL
 ON NC 11**

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE

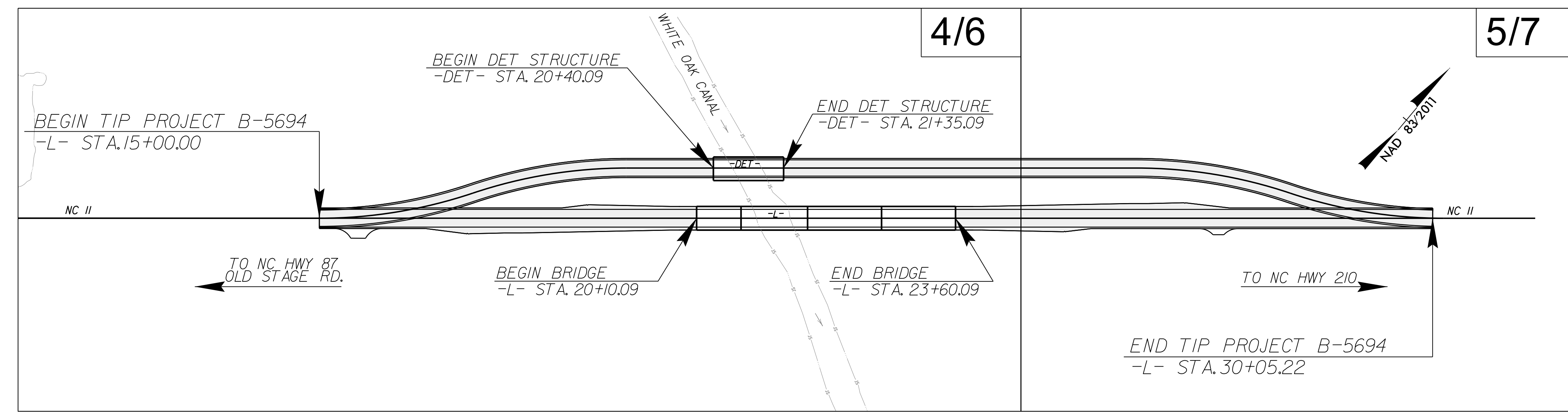
EROSION AND SEDIMENT CONTROL MEASURES

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 —
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	▭

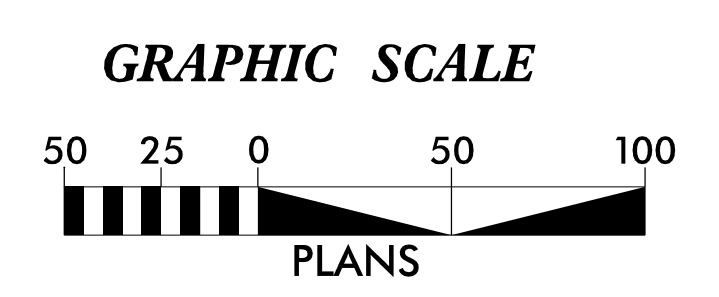
**THIS PROJECT CONTAINS
 EROSION CONTROL PLANS
 FOR CLEARING AND
 GRUBBING PHASE OF
 CONSTRUCTION.**



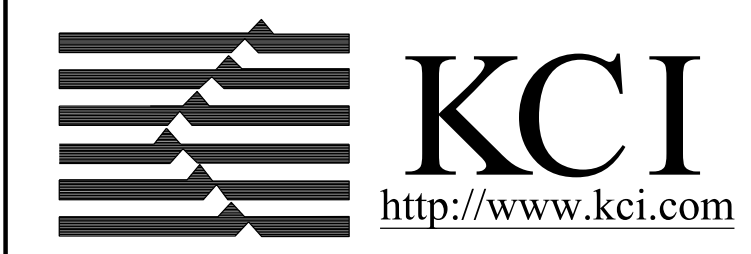
VICINITY MAP
 NOT TO SCALE



THIS PROJECT IS NOT WITHIN MUNICIPAL BOUNDARIES.
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.



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.



Prepared in the Office of:
KCI ASSOCIATES OF NORTH CAROLINA, PA
 4505 FALLS OF NEUSE ROAD
 RALEIGH, NC 27609

Designed by:
LEAH YOUNG, PE #3157
 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.

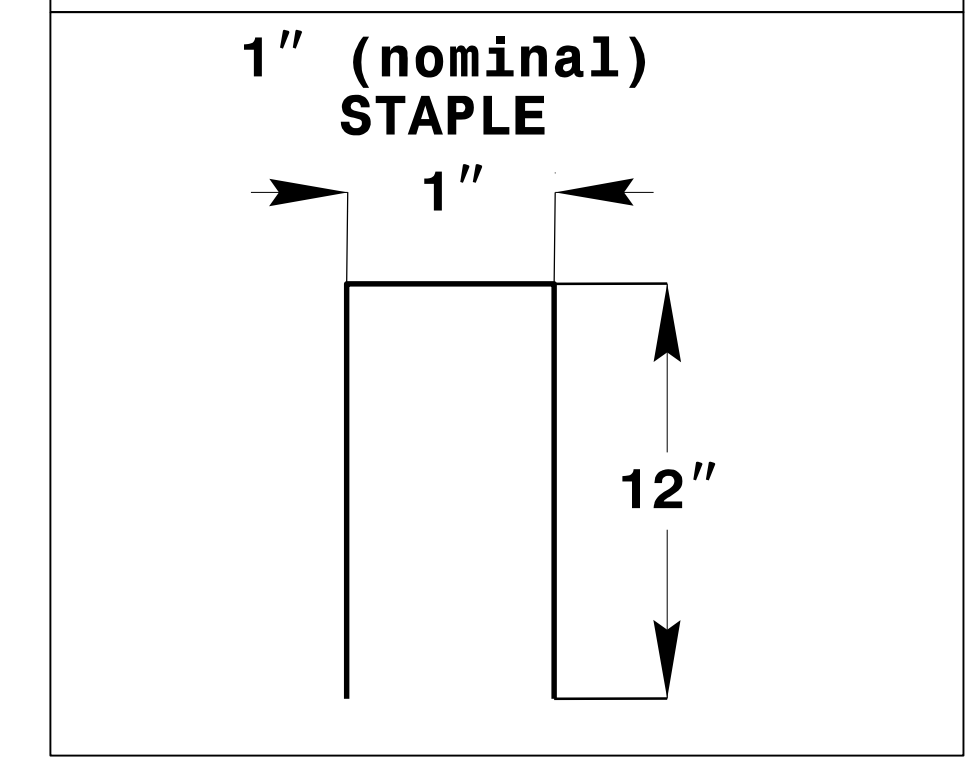
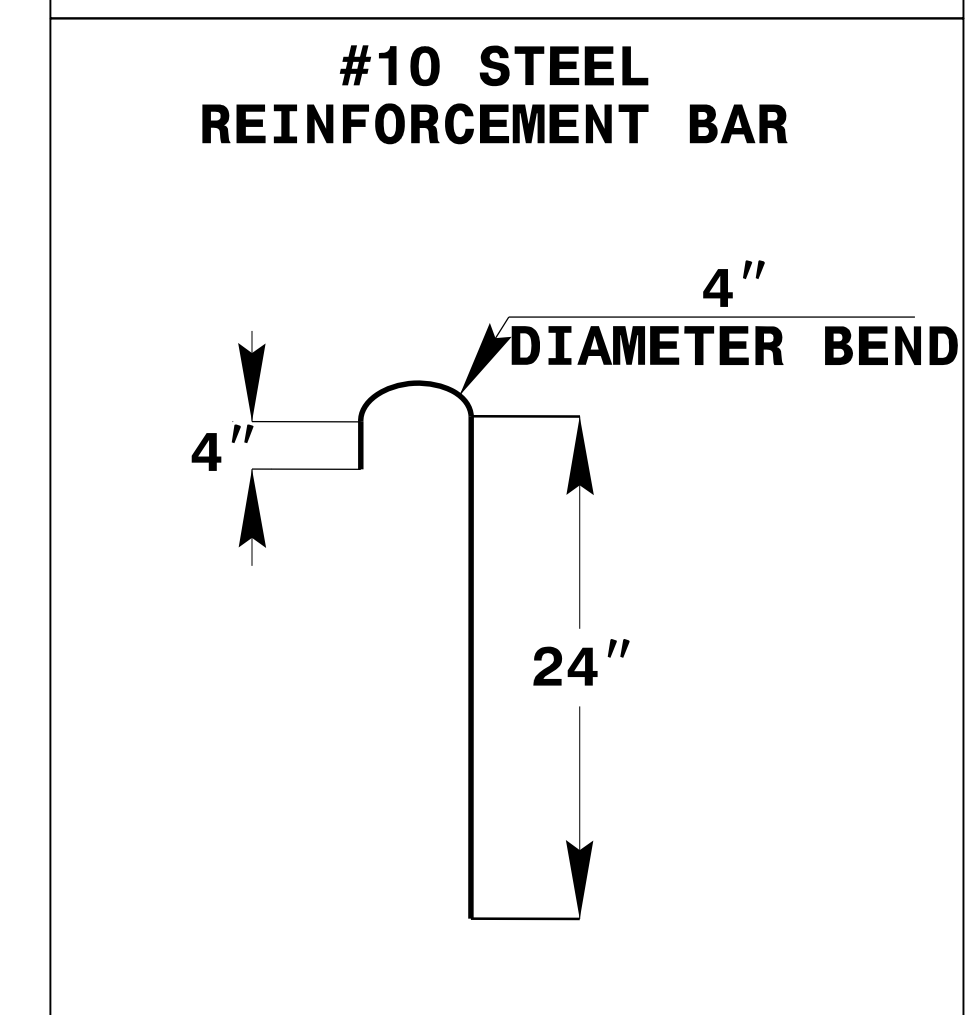
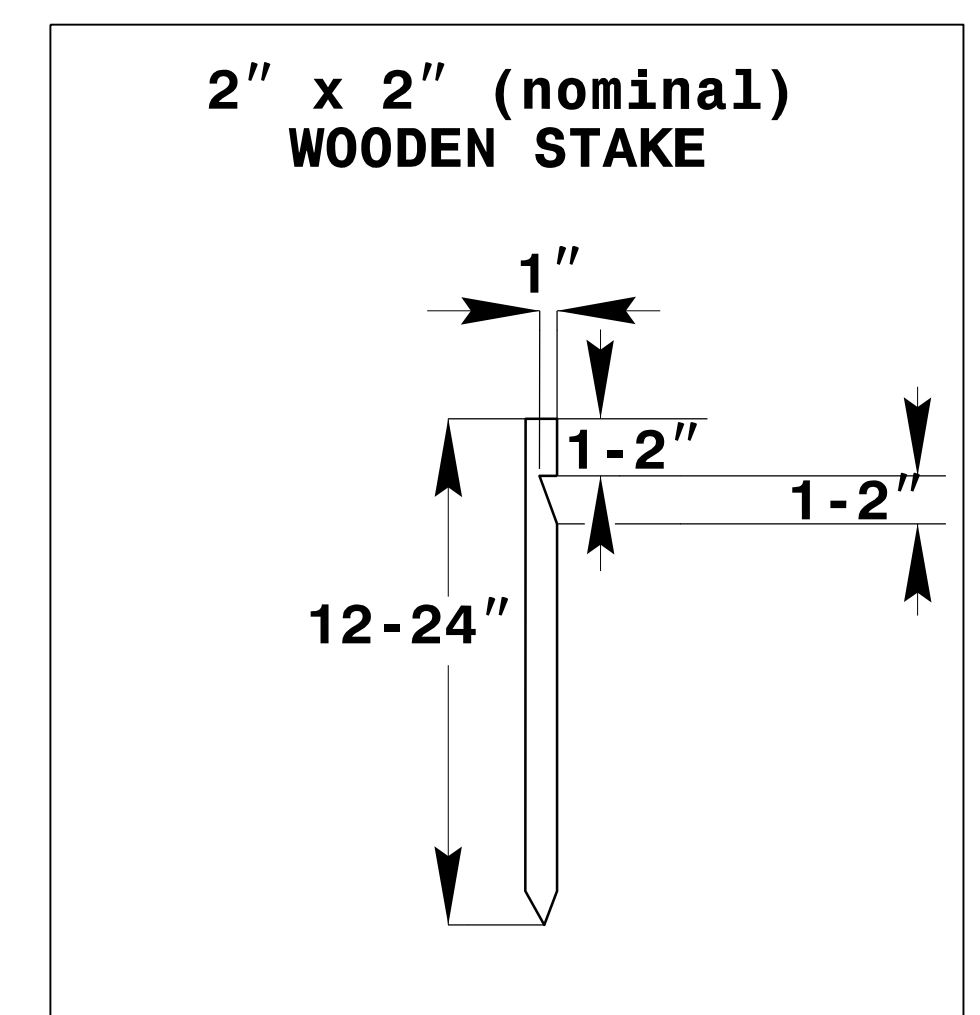
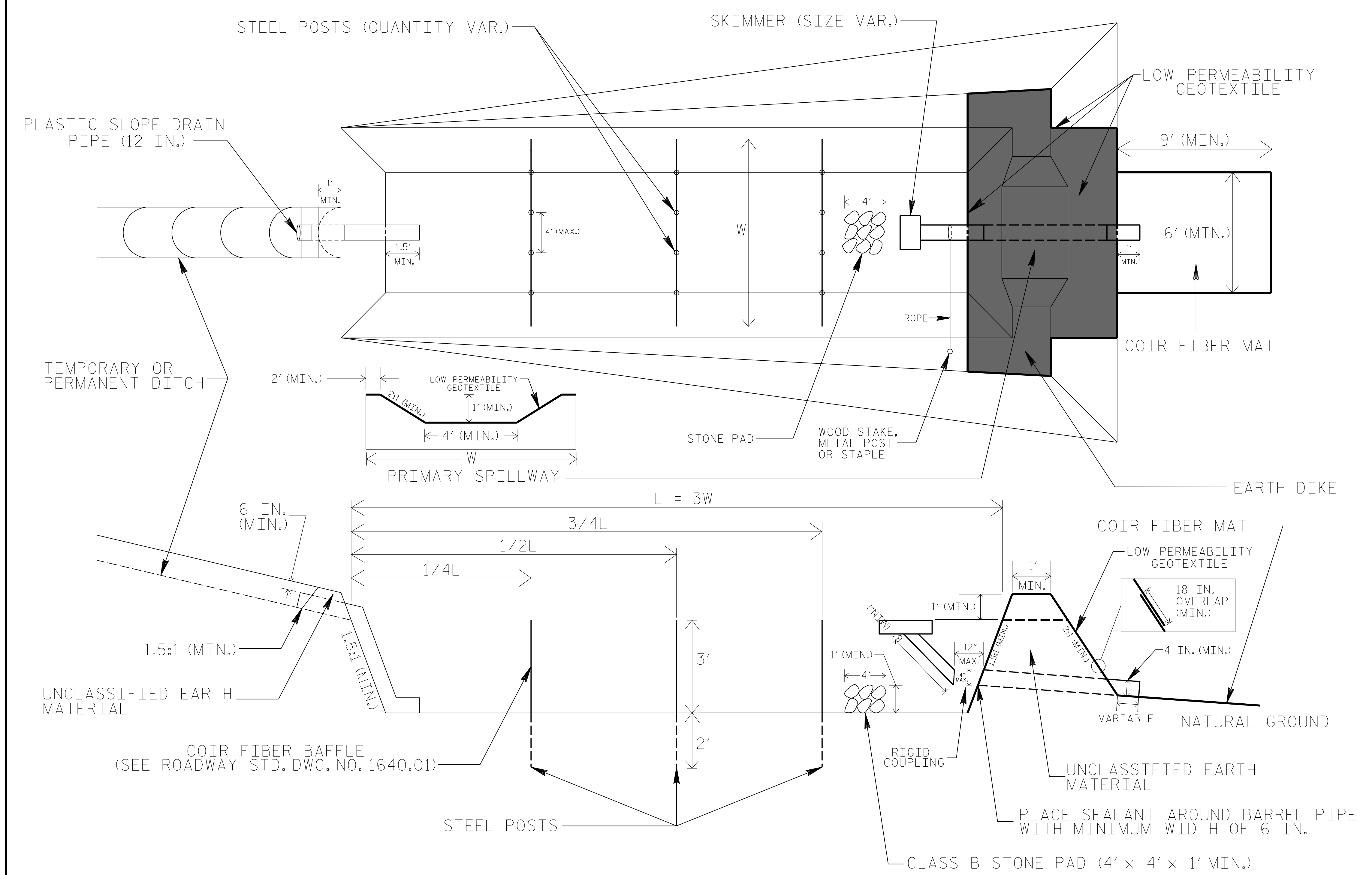
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type 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	

CONTRACT: C204362 TIP PROJECT: B-5694

B:\2518019145_12_5674208_0_boardside\CADD\PSN\B-5694_reu_EC01.dgn

PROJECT REFERENCE NO. B-5694	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



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. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

BORROW PIT DEWATERING BASIN DETAIL

PROJECT REFERENCE NO. B-5694	SHEET NO. EC-2A
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 (FT³), 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 IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1640.01 AND WITH MATERIAL THAT MEETS THE SPECIFICATIONS OF ROADWAY STANDARD 1640-14.

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 GEOTEXTILE 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.

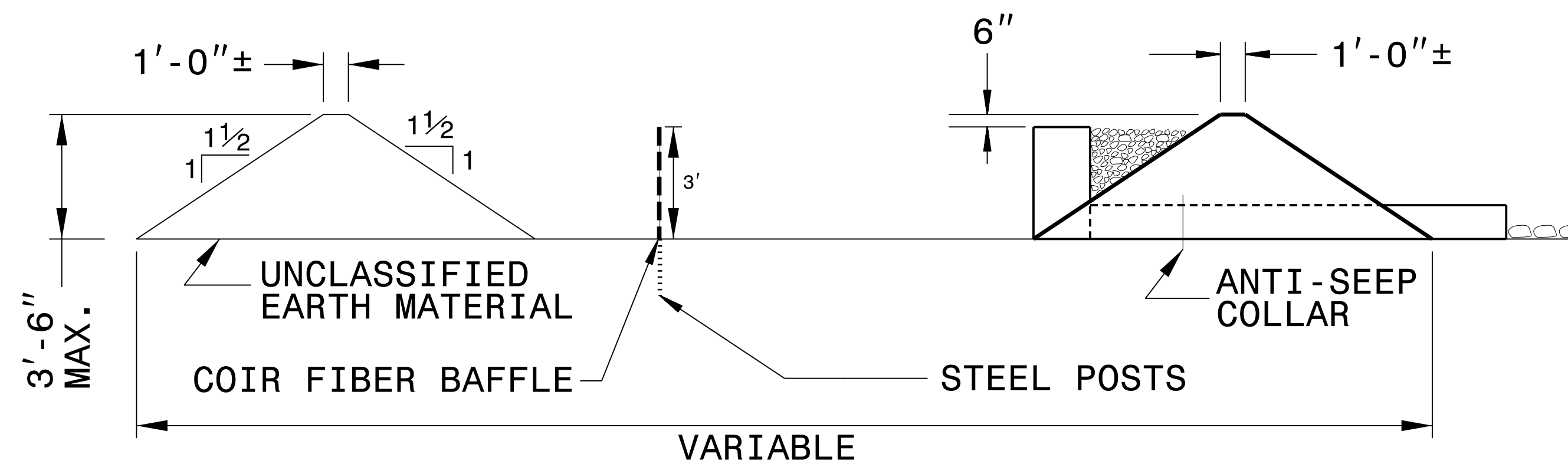
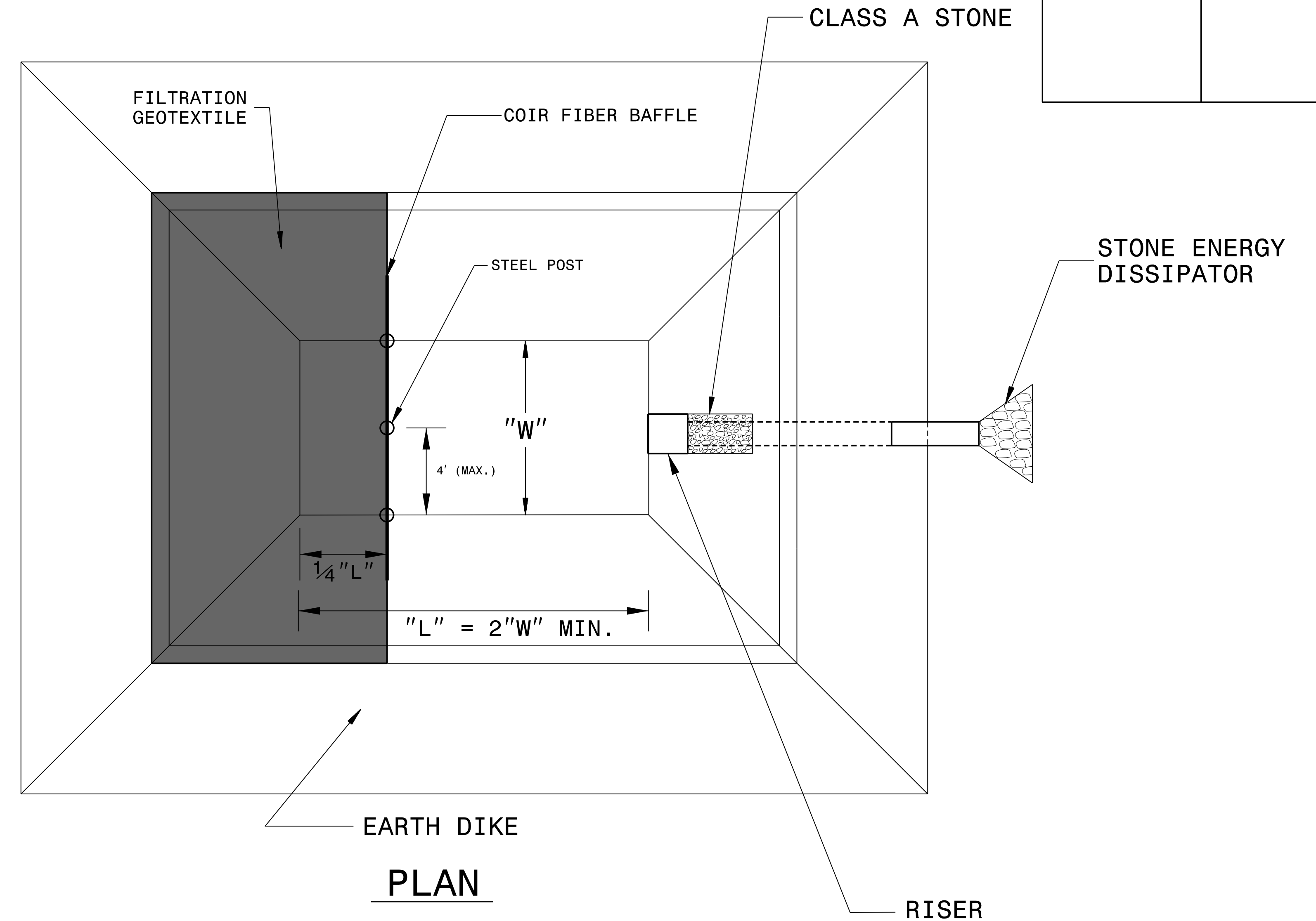
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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

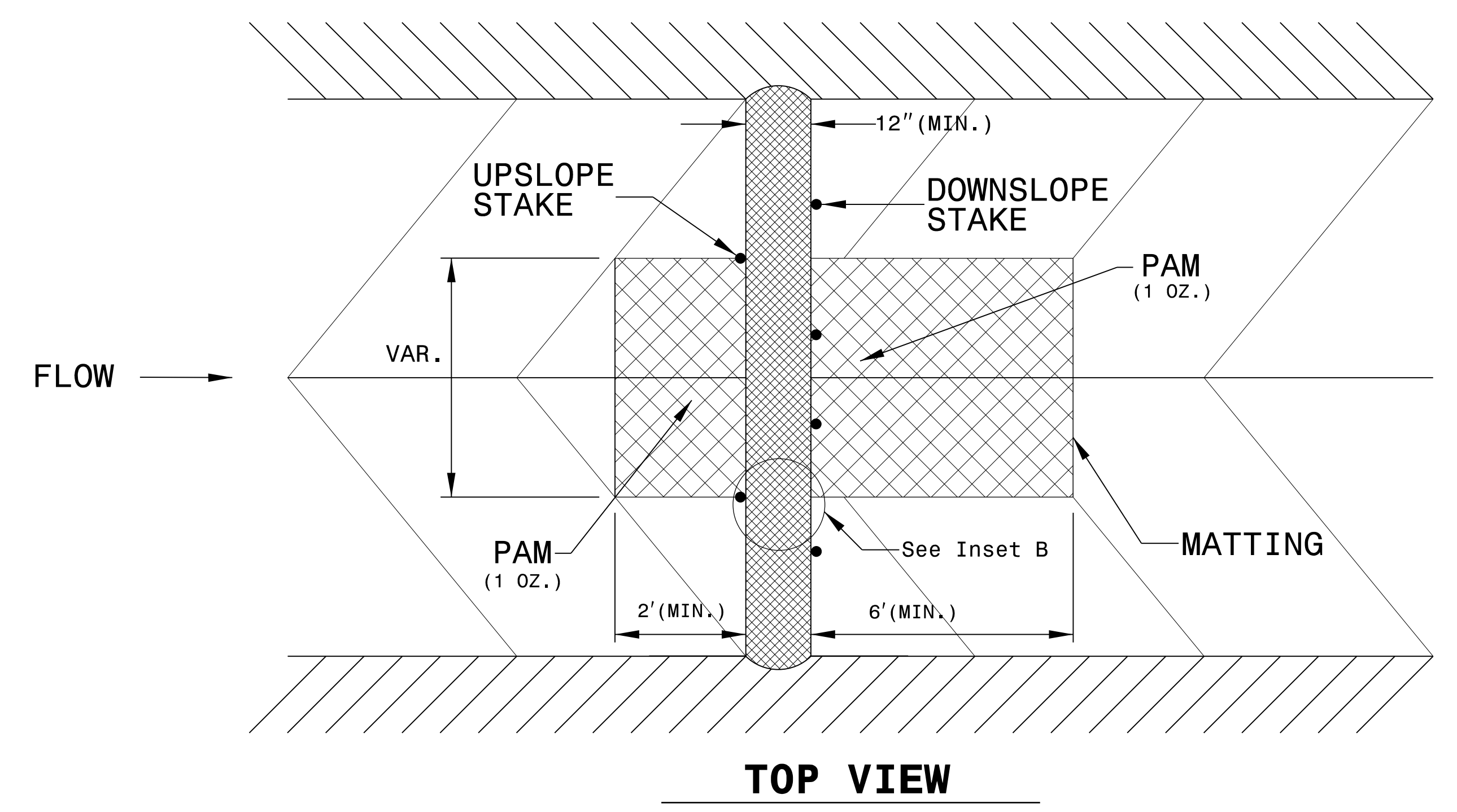
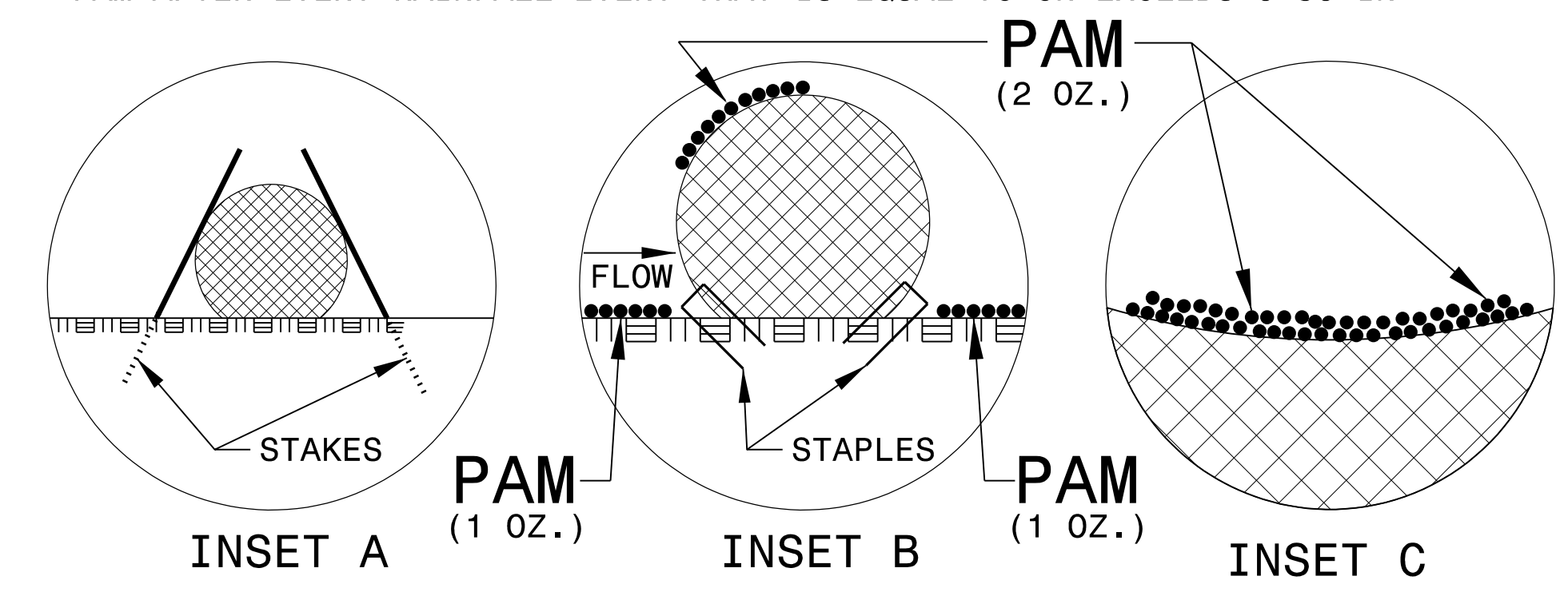
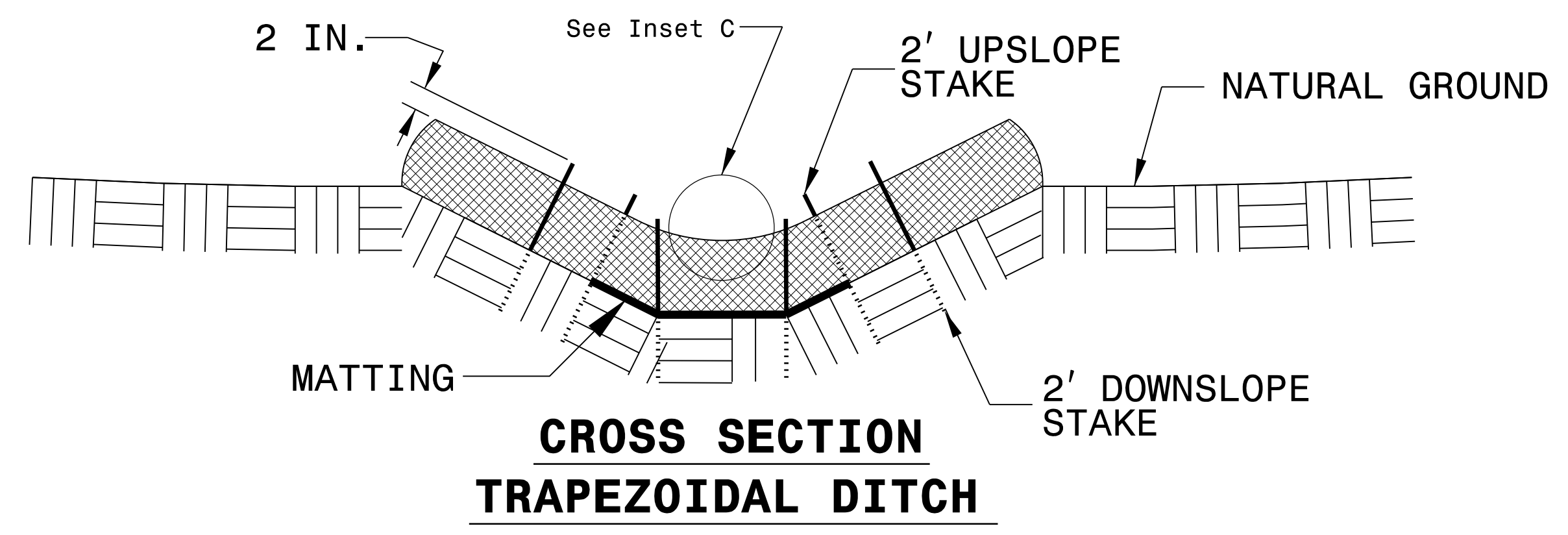
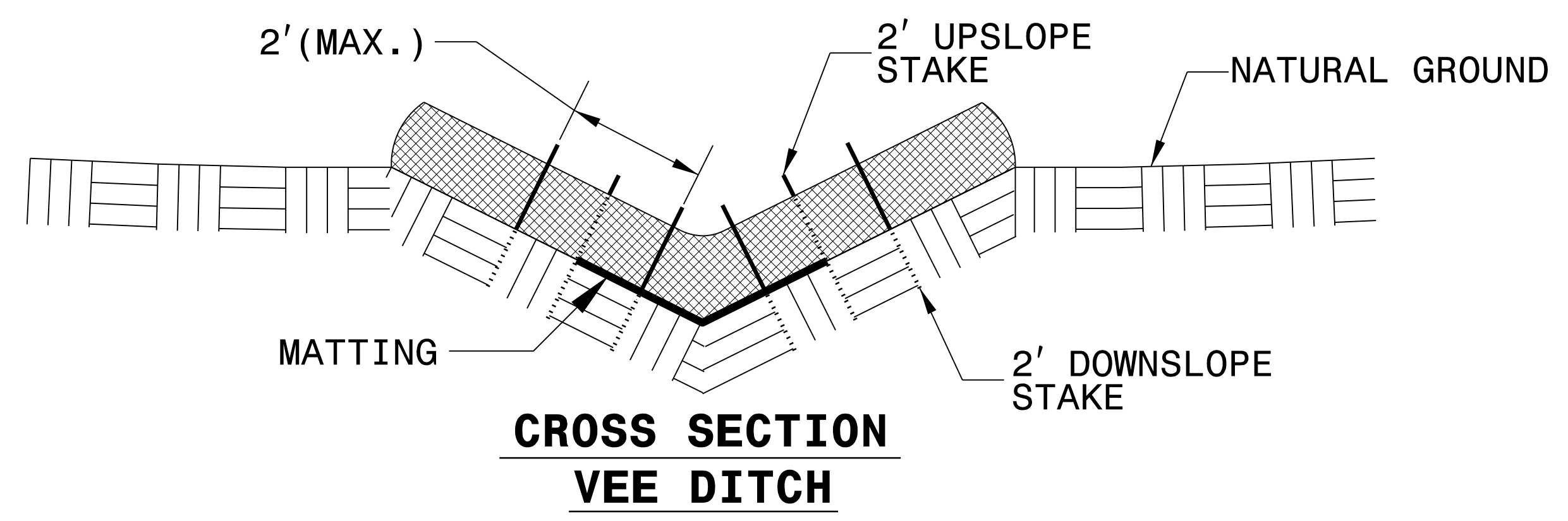
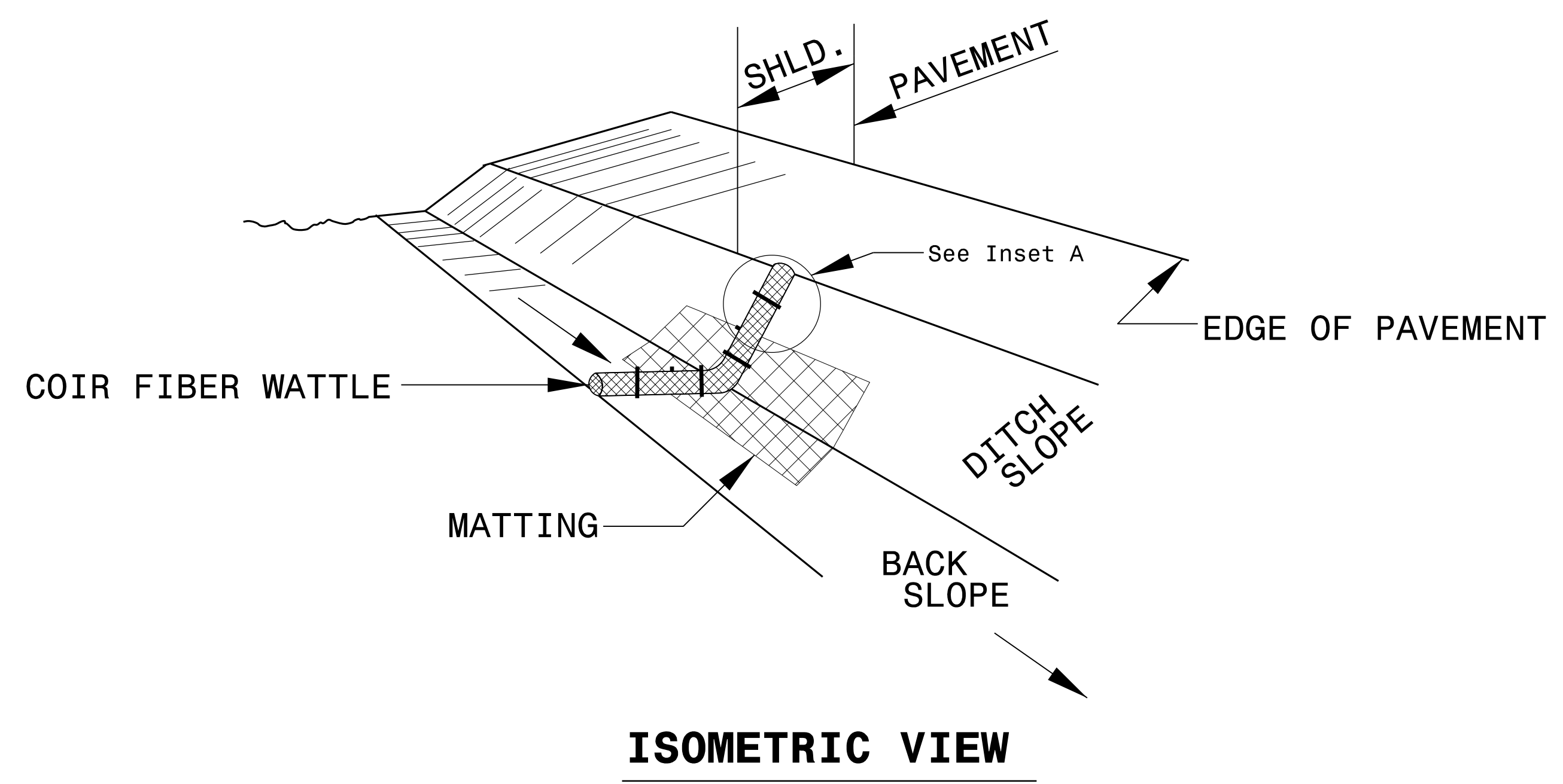
NOT TO SCALE

PROJECT REFERENCE NO. B-5694	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

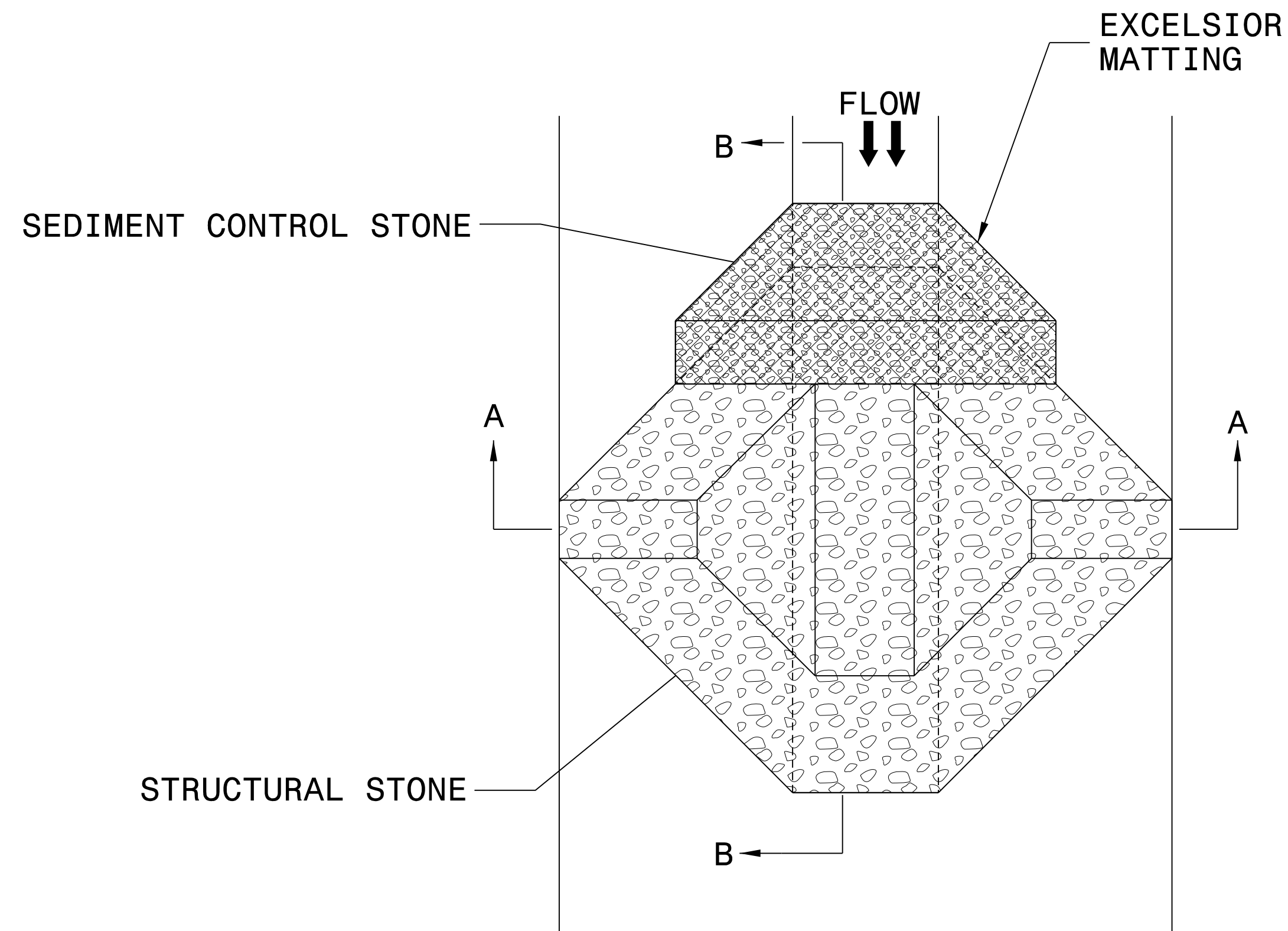
NOTES:

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

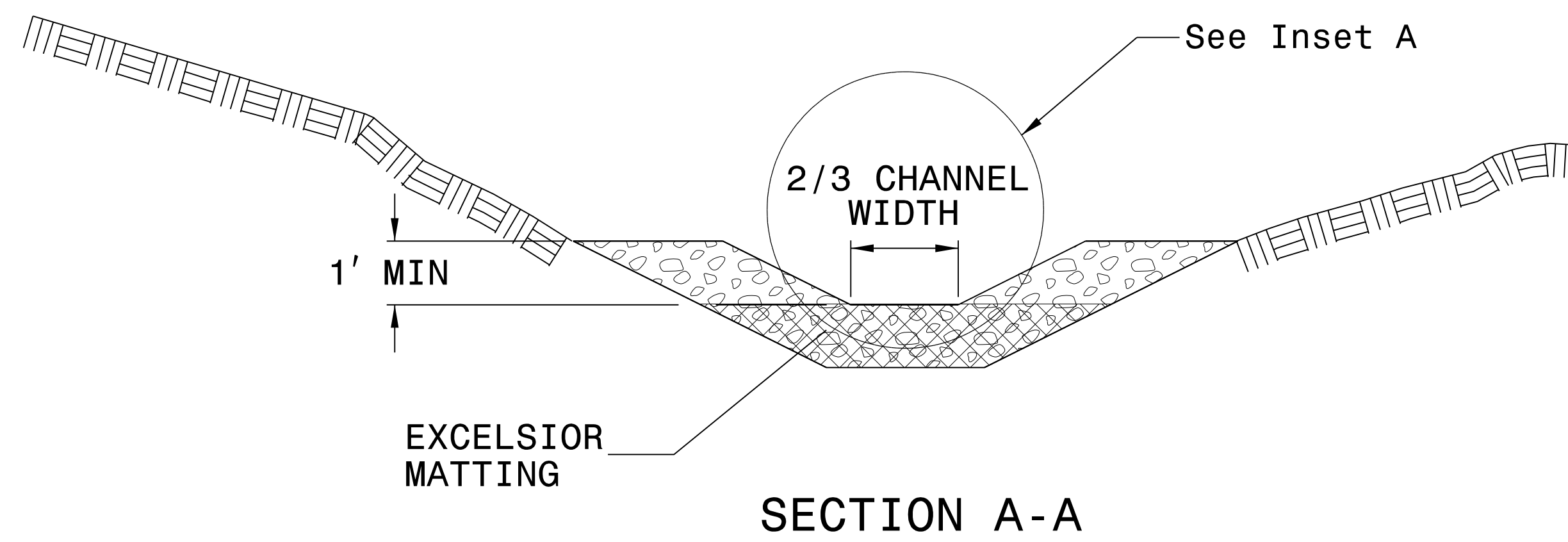


PROJECT REFERENCE NO. B-5694	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN



SECTION A-A

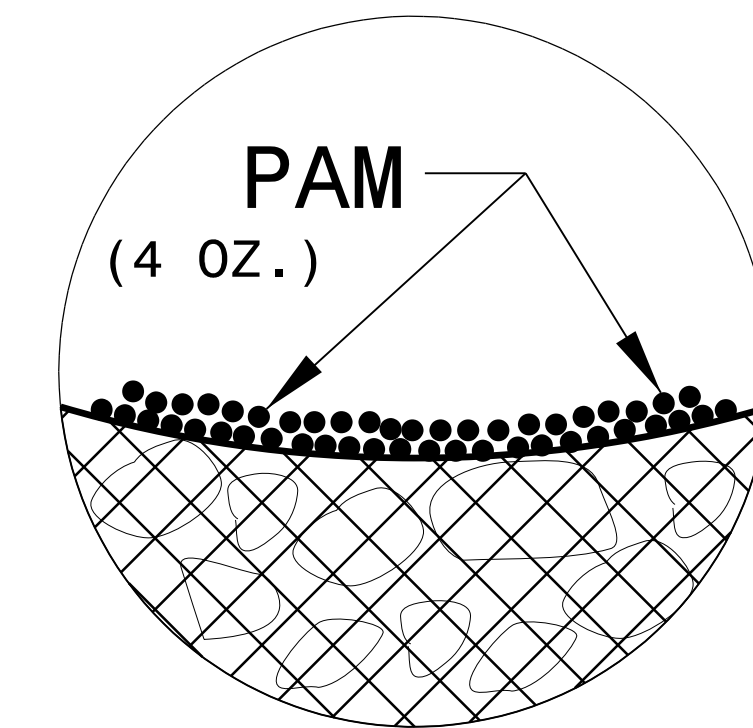
NOTES:

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

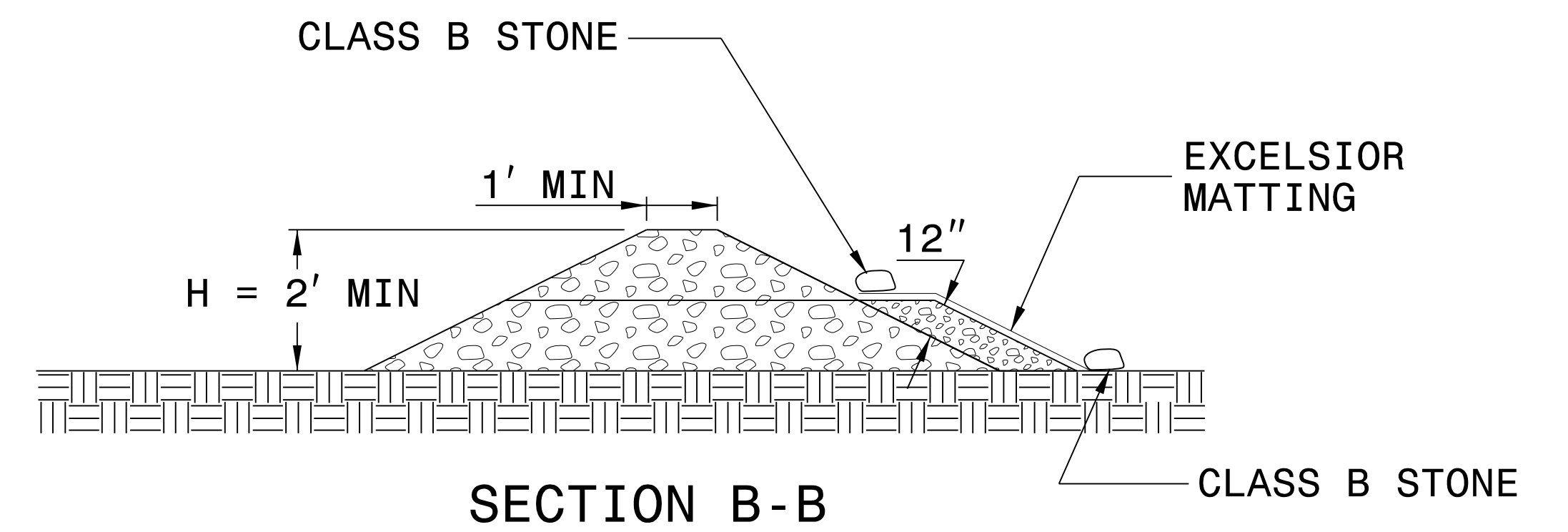
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

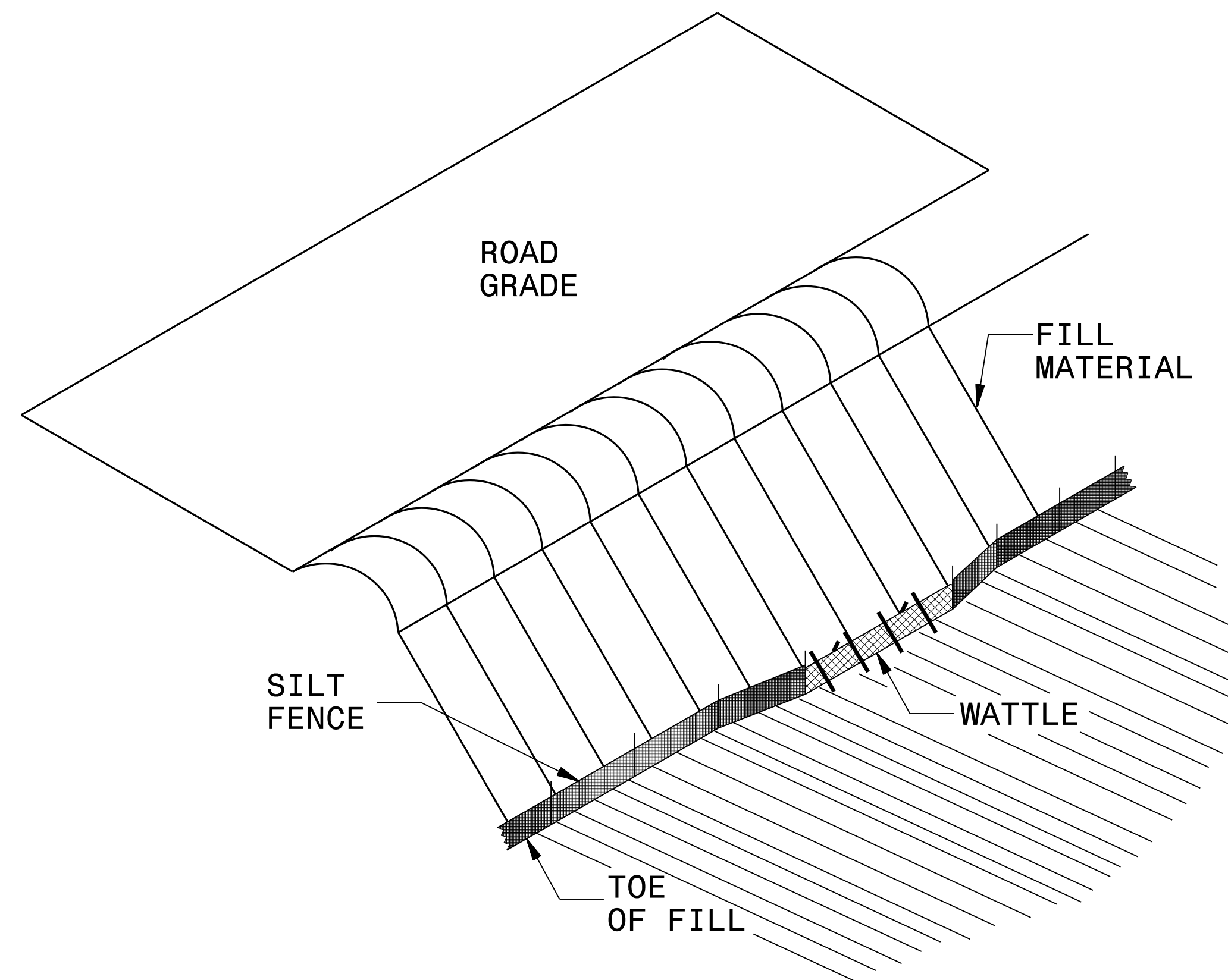


SECTION B-B

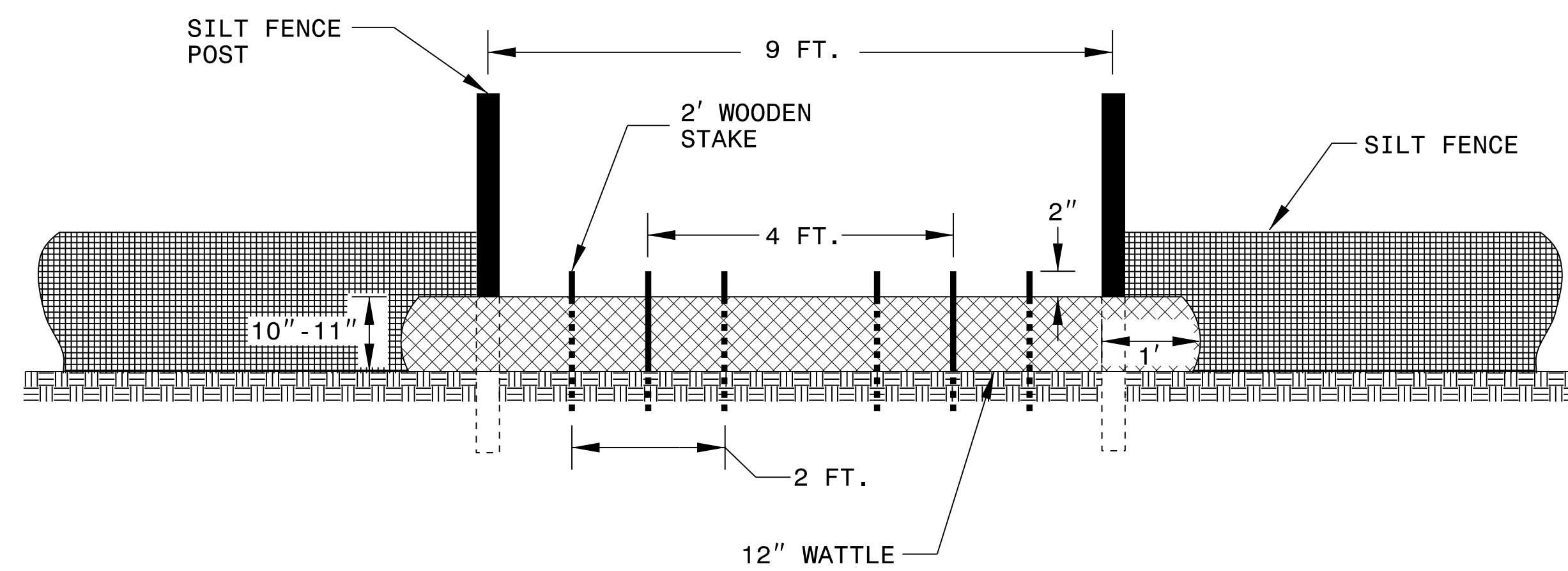
NOT TO SCALE

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. B-5694	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW

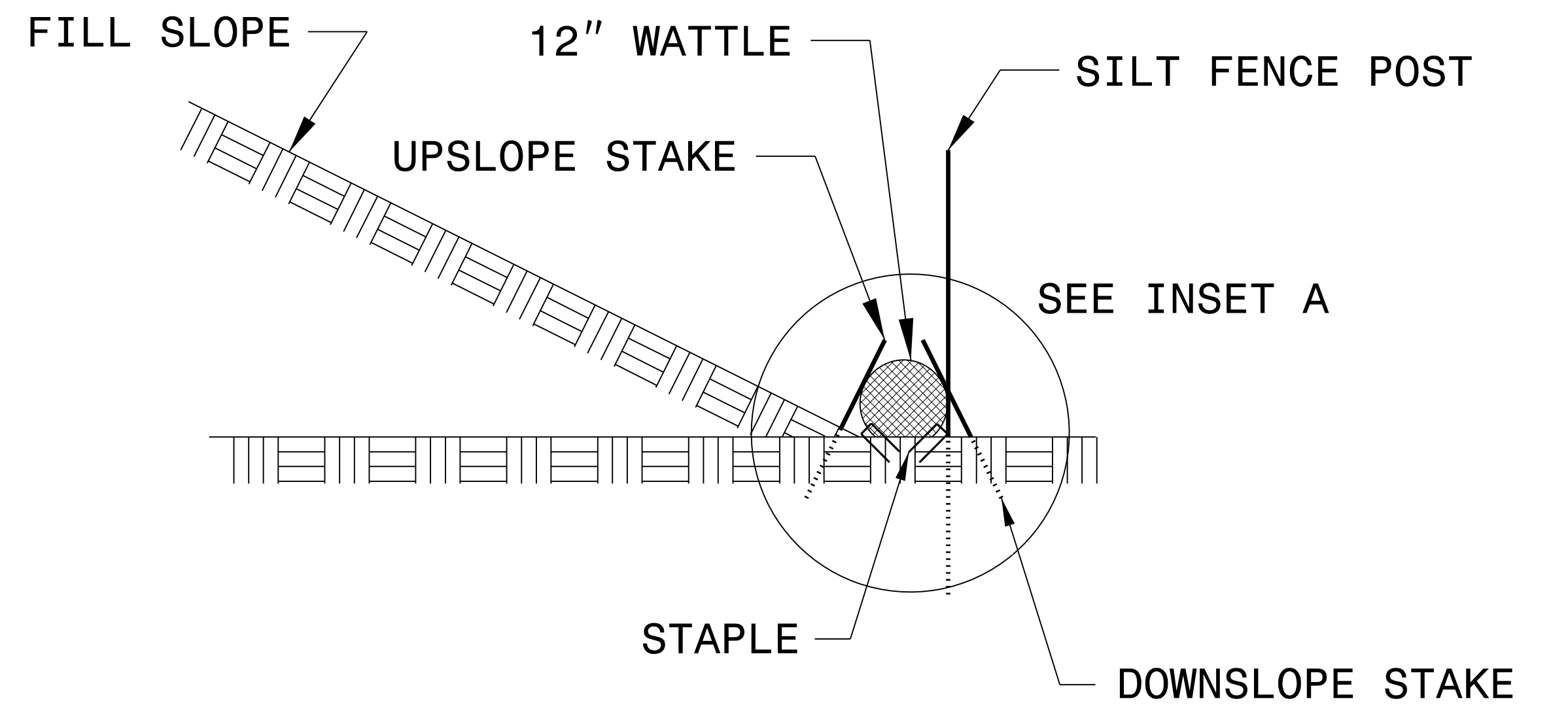
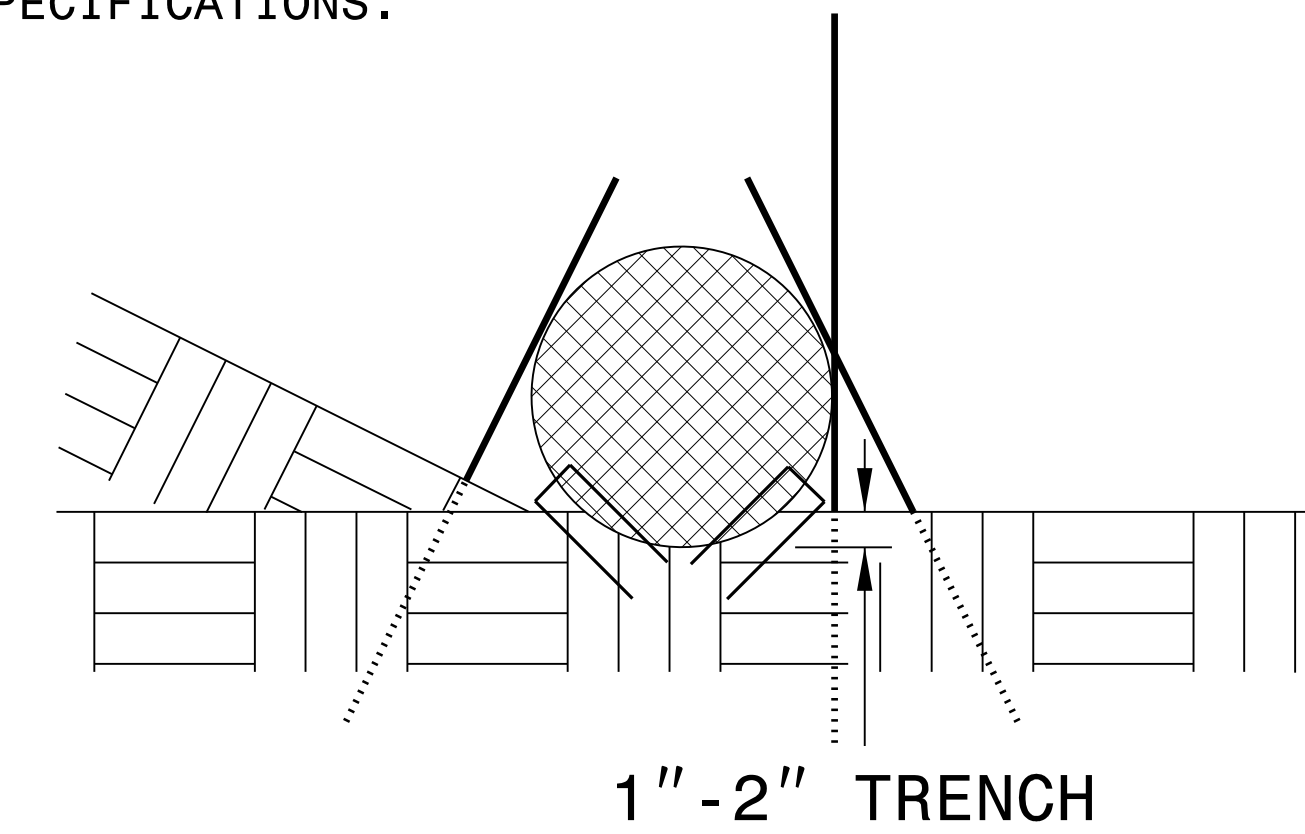


VIEW FROM SLOPE

NOTES:

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- 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.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

INSET A



SIDE VIEW

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>B-5694</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

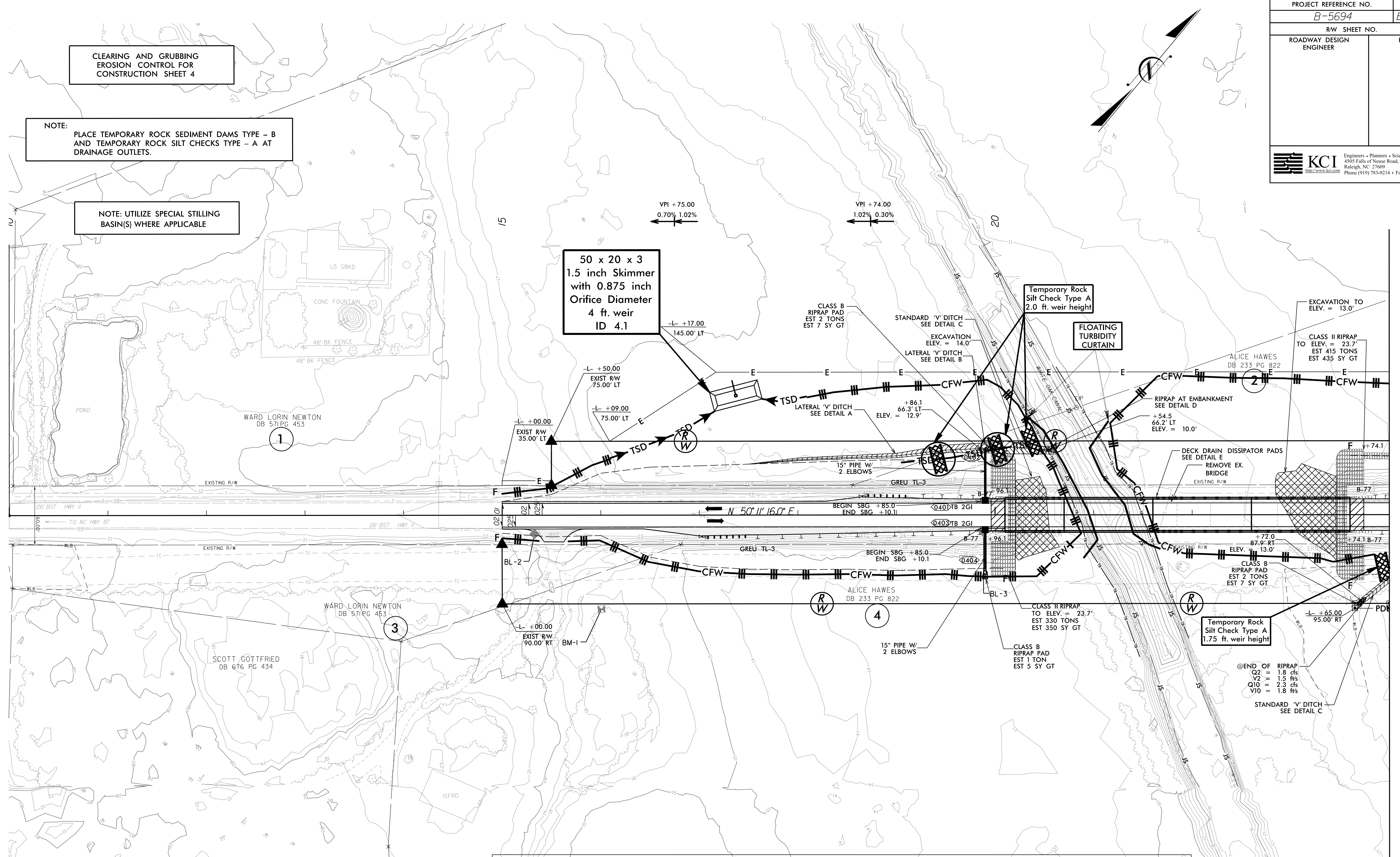
SOIL STABILIZATION TIMEFRAMES

<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.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

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

NOTE: UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE

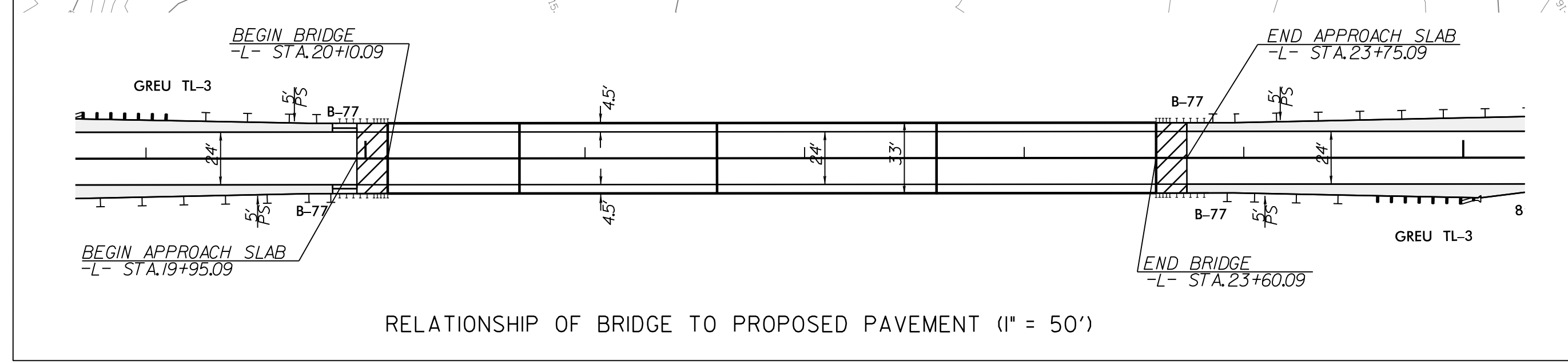


REVISIONS

MATCH LINE STA. 24 + 00.0 - SEE SHEET EC-5


6/7/2018 2:51:00 PM B:\5694\Roadside\CADD\PSH\B-5694_reu_EC04.dgn
Sawyer-Walters

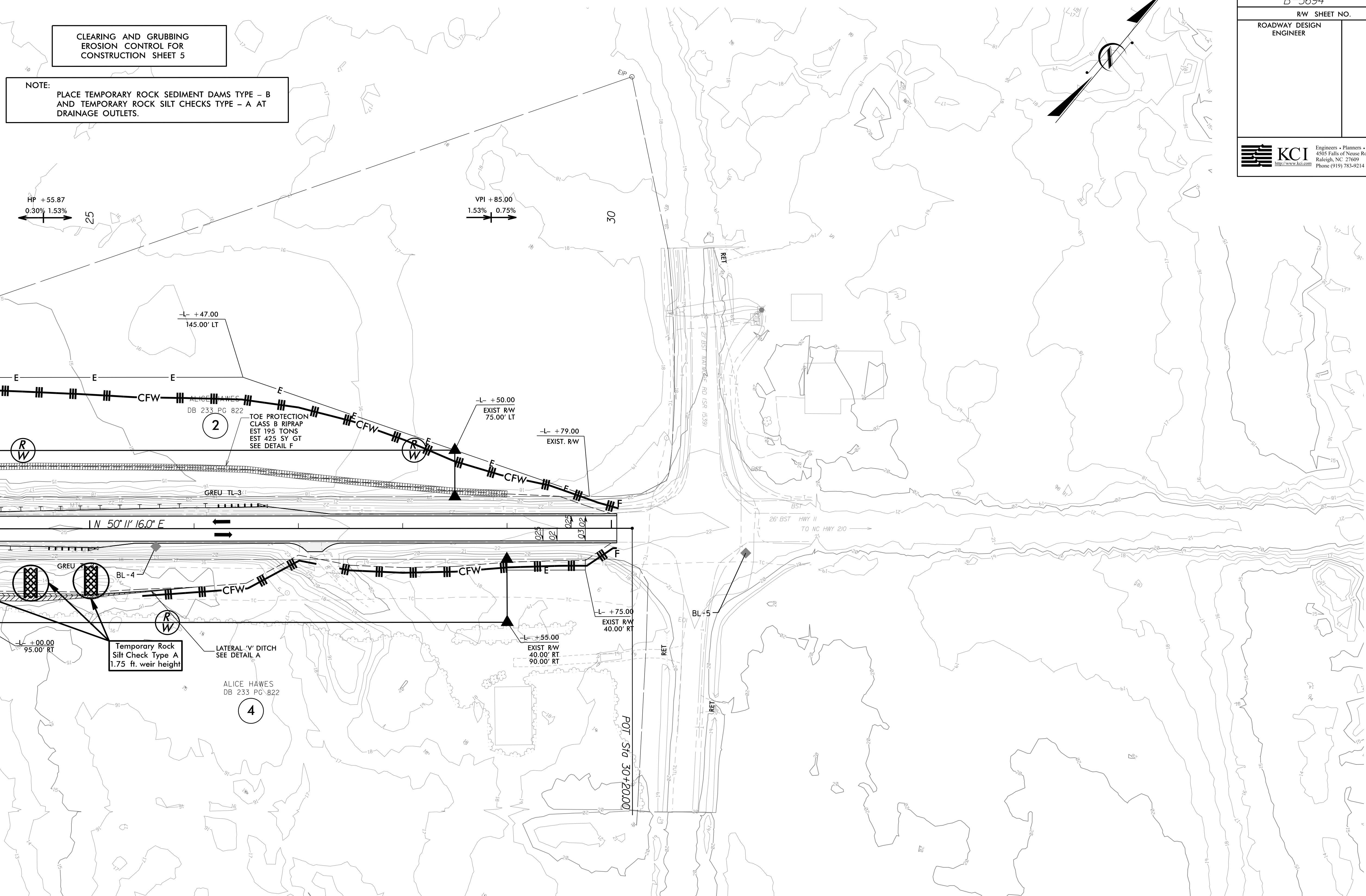
0401 TB 2GI @ -L- STA 19+90.1 LT DA = 0.02 acres C = 0.9 I = 4 in/hr Spread = 3.1 ft Rdwy. Grade = 0.003 f/ft Cross Slope = 0.025 f/ft Rim = 26.6 ft Invert = 23.4 ft	0401 15" Pipe w/2 Elbows US = 0401 US Invert = 23.4 ft DS = 0402 DS Invert = 12.9 ft L = 51.5 ft n = 0.024 S = 20.0% Q10 = 0.1 cfs V10 = 3.4 f/s	Lateral 'V' Ditch - LT Side Sta. = -L- 17+50.0 to 19+86.1 Q = 1.8 cfs V = 1.1-1.8 f/s d = 0.6-0.7 ft s = 0.003-0.010 f/ft n = 0.035	Standard 'V' Ditch - RT Side Sta. = -L- 23+72.0 to 24+50.0 Q = 2.3 cfs V = 1.3 f/s d = 0.8 ft s = 0.0031 f/ft n = 0.035
0403 TB 2GI @ -L- STA 19+90.1 RT DA = 0.02 acres C = 0.9 I = 4 in/hr Spread = 3.1 ft Rdwy. Grade = 0.003 f/ft Cross Slope = 0.025 f/ft Rim = 26.6 ft Invert = 23.4 ft	0403 15" Pipe w/2 Elbows US = 0403 US Invert = 23.4 ft DS = 0404 DS Invert = 14.7 ft L = 38.3 ft n = 0.024 S = 22.1% Q10 = 0.1 cfs V10 = 3.6 f/s	Lateral 'V' Ditch - LT Side Sta. = -L- 19+86.1 to 20+10.1 Standard 'V' Ditch Sta. = -L- 20+10.1 to 20+54.5 Q = 1.8 cfs V = 3.3 f/s d = 0.4 ft s = 0.0424 f/ft n = 0.035	



FOR -L- PROFILE SEE SHEET 8
FOR DETOUR SEE SHEET 6/7

50' 0' 50' 100'
25'

PROJECT REFERENCE NO.	SHEET NO.
B-5694	EC-5/CONST.5
RW SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 KCI Engineers • Planners • Scientists • Construction Managers 450 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266	



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.

HP +55.87
0.30% 1.53%

VPI +85.00
1.53% 0.75%

MATCH LINE STA. 24+00.0 - SEE SHEET EC-4

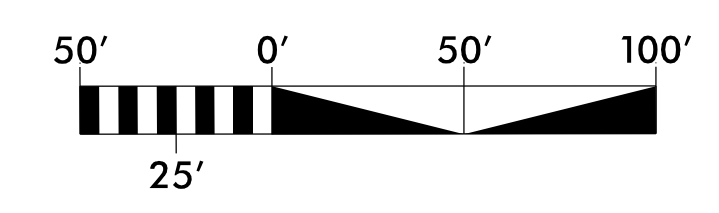
Temporary Rock
Silt Check Type A
1.75 ft. weir height

LATERAL 'V' DITCH
SEE DETAIL A

Standard 'V' Ditch - RT Side
Sta. = -L- 23+72.0 to 24+50.0
Q = 2.3 cfs
V = 1.3 f/s
d = 0.8 ft
s = 0.0031 f/ft
n = 0.035

Lateral 'V' Ditch - RT Side
Sta. = -L- 24+50.0 to 26+00.0
Q = 2.3 cfs
V = 1.9 f/s
d = 0.6 ft
s = 0.0100 f/ft
n = 0.035

FOR -L- PROFILE SEE SHEET 8
FOR DETOUR SEE SHEET 6/7

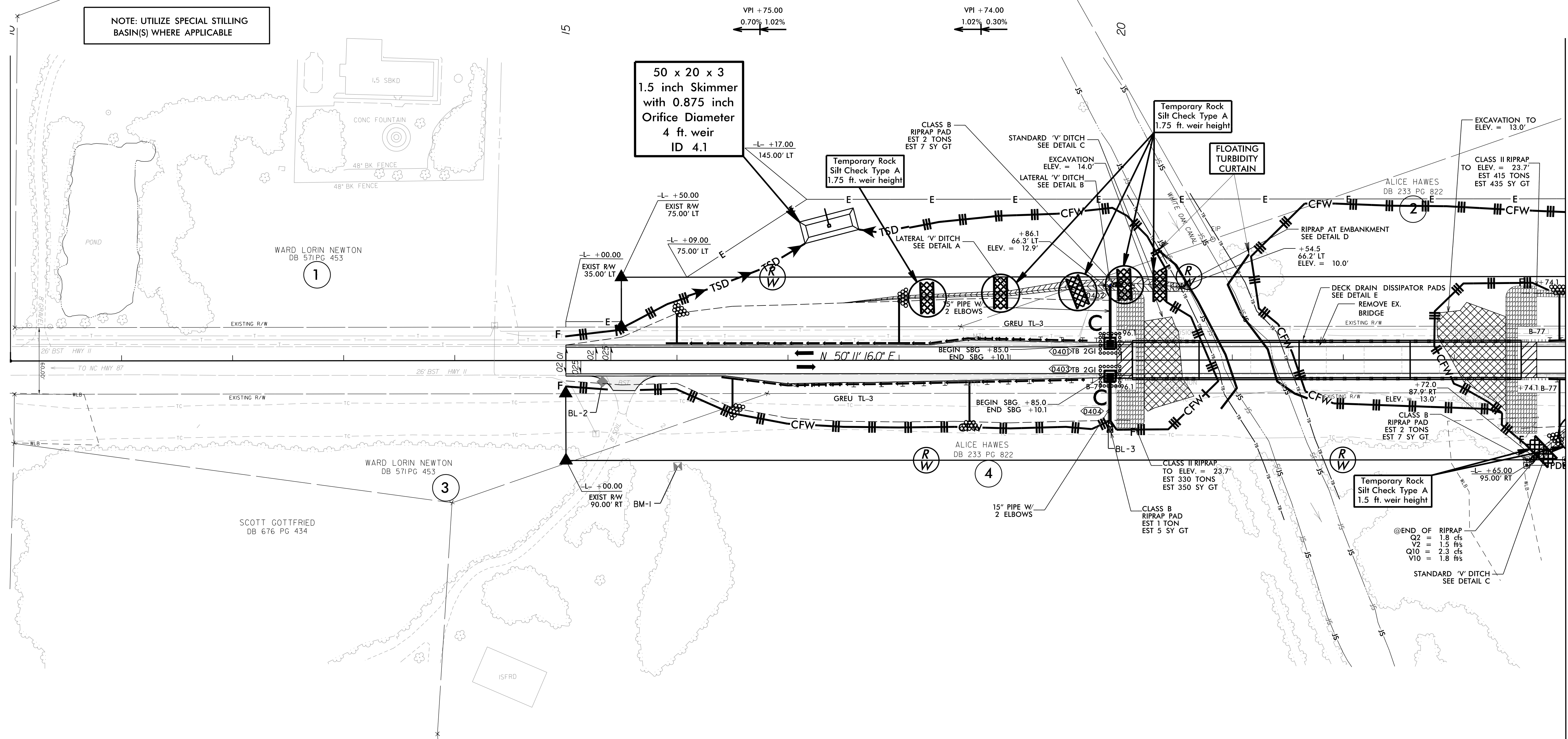


REVISIONS

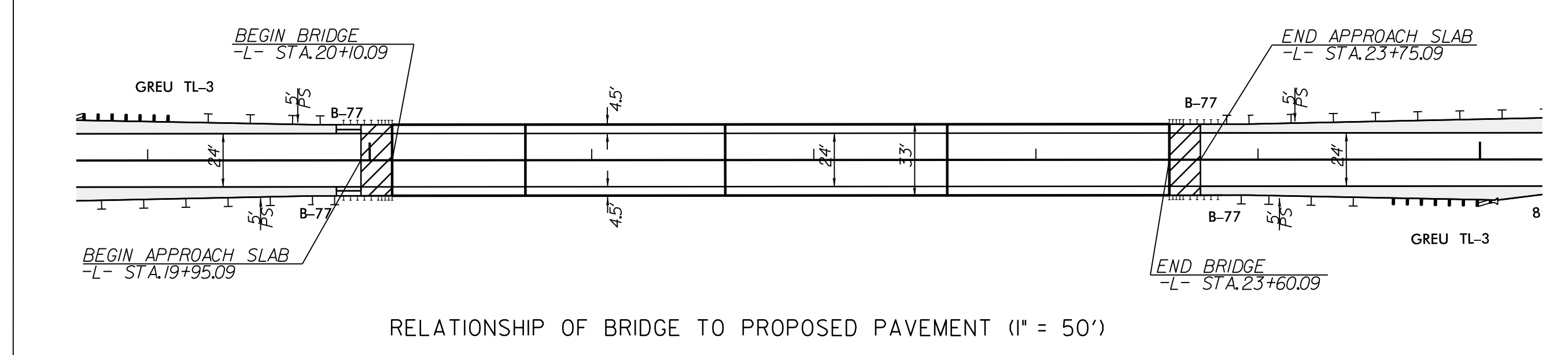
6/7/2018 8:25:10 AM 251801945.12 B-5694-Roadside-CADD\PSH\B-5694_reu_EC05.dgn Sawyer-Walters

For Excavation Under Bridge
Install 880 sq. yd. of Coir Fiber Matting for
Erosion Control for Stabilization as Work Allows.

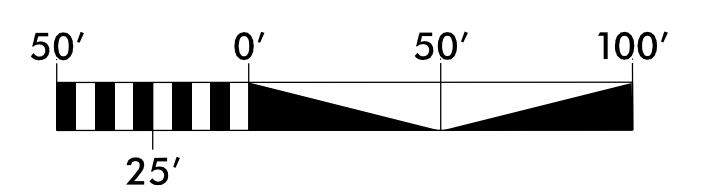
NOTE: UTILIZE SPECIAL STILLING
BASIN(S) WHERE APPLICABLE



0401 TB 2GI @ -L- STA 19+90.1 LT DA = 0.02 acres C = 0.9 I = 4 in/hr Spread = 3.1 ft Rdwy. Grade = 0.003 f/ft Cross Slope = 0.025 f/ft Rim = 26.6 ft Invert = 23.4 ft	0401 15" Pipe w/2 Elbows US = 0401 US Invert = 23.4 ft DS = 0402 DS Invert = 12.9 ft L = 51.5 ft n = 0.024 S = 20.0% Q10 = 0.1 cfs V10 = 3.4 f/s	Lateral 'V' Ditch - LT Side Sta. = -L- 17+50.0 to 19+86.1 Qa = 1.8 cfs V = 1.1-1.8 f/s d = 0.6-0.7 ft s = 0.003-0.010 f/ft n = 0.035	Standard 'V' Ditch - RT Side Sta. = -L- 23+72.0 to 24+50.0 Qa = 2.3 cfs V = 1.3 f/s d = 0.8 ft s = 0.0031 f/ft n = 0.035
0403 TB 2GI @ -L- STA 19+90.1 RT DA = 0.02 acres C = 0.9 I = 4 in/hr Spread = 3.1 ft Rdwy. Grade = 0.003 f/ft Cross Slope = 0.025 f/ft Rim = 26.6 ft Invert = 23.4 ft	0403 15" Pipe w/2 Elbows US = 0403 US Invert = 23.4 ft DS = 0404 DS Invert = 14.7 ft L = 38.3 ft n = 0.024 S = 22.1% Q10 = 0.1 cfs V10 = 3.6 f/s	Lateral 'V' Ditch - LT Side Sta. = -L- 19+86.1 to 20+10.1 Standard 'V' Ditch Qa = 1.8 cfs V = 3.3 f/s d = 0.4 ft s = 0.0424 f/ft n = 0.035	



FOR -L- PROFILE SEE SHEET 8
FOR DETOUR SEE SHEET 6/7

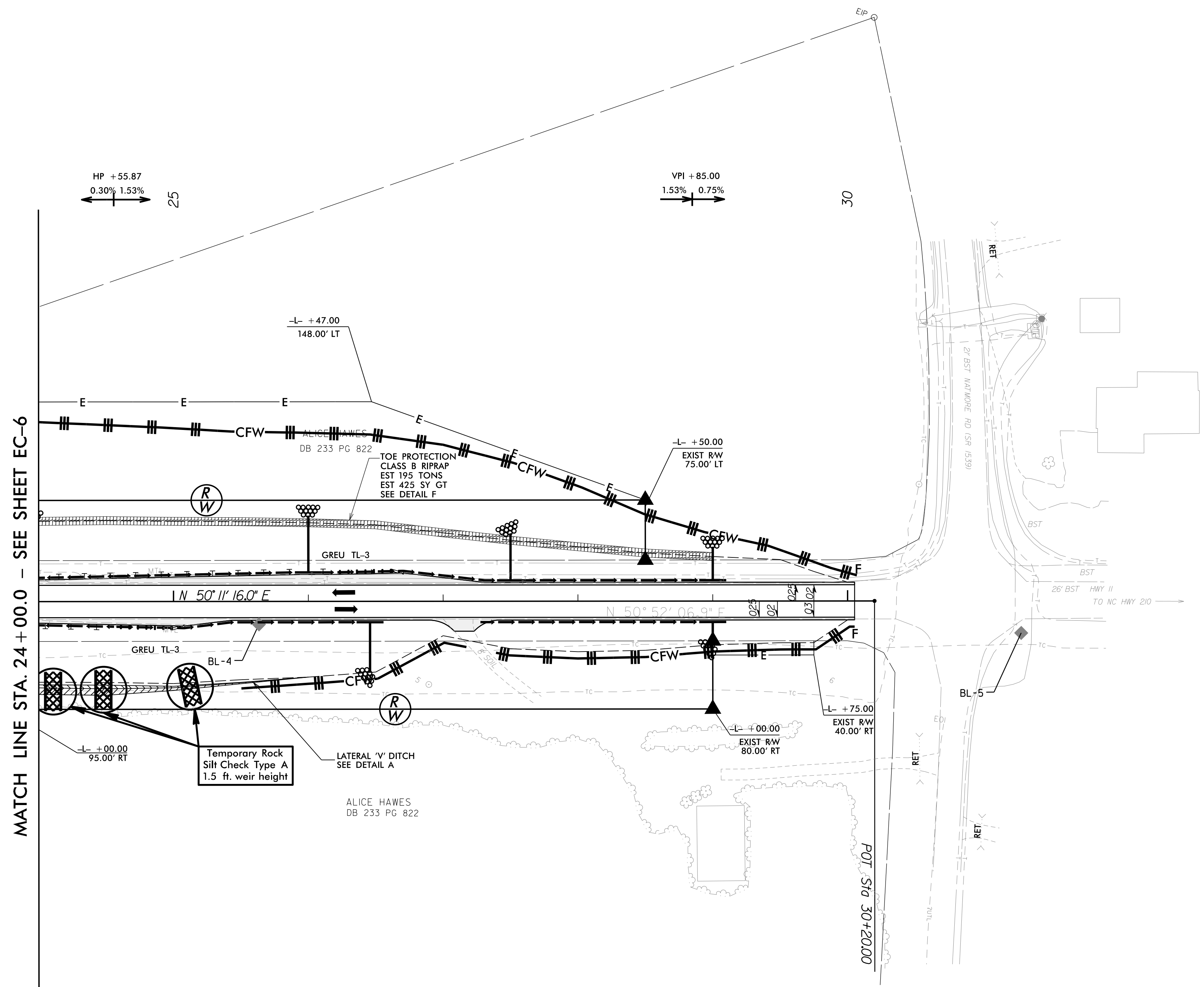
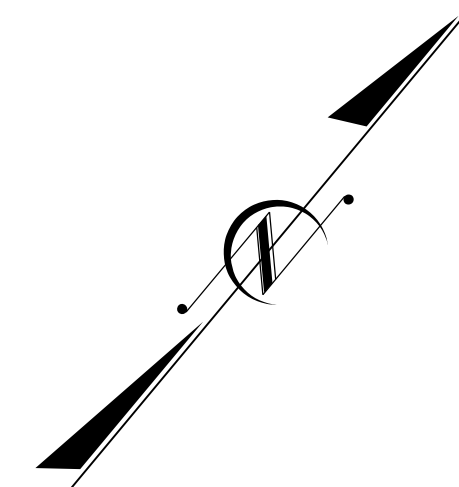


REVISIONS

6/7/2018 2:28:25 PM 251801945.12 B-5694\Roadside\CADD\PS\B-5694.reu.EC06.dgn
8/17/99

MATCH LINE STA. 24+00.0 - SEE SHEET EC-7

PROJECT REFERENCE NO.	SHEET NO.
B-5694	EC-7/CONST.5
R/W SHEET NO.	5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
KCI	Engineers • Planners • Scientists • Construction Managers
4500 Falls of Neuse Road, Suite 400	Raleigh, NC 27609
Phone (919) 783-9214 • Fax (919) 783-9266	



MATCH LINE STA. 24+00.0 - SEE SHEET EC-6

HP +55.87
0.30% 1.53%

VPI +85.00
1.53% 0.75%

-L- +47.00
148.00' LT

-L- +50.00
EXIST RW
75.00' LT

-L- +00.00
95.00' RT

-L- +00.00
EXIST RW
80.00' RT

-L- +75.00
EXIST RW
40.00' RT

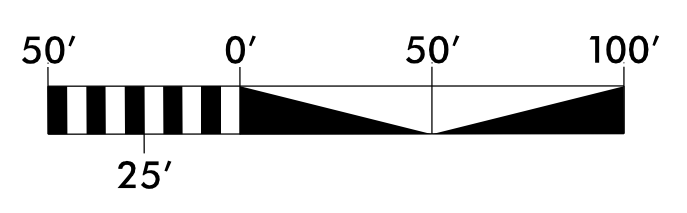
REVISIONS

6/7/2018 8:25:08 AM C:\Users\raj\OneDrive\Documents\Projects\B-5694_Roadside\CAD\DWG\EC-7\Const.5.dgn
 8/17/99

Standard 'V' Ditch - RT Side
 Sta. = -L- 23+72.0 to 24+50.0
 Q = 2.3 cfs
 V = 1.3 f/s
 d = 0.8 ft
 s = 0.0031 f/ft
 n = 0.035

Lateral 'V' Ditch - RT Side
 Sta. = -L- 24+50.0 to 26+00.0
 Q = 2.3 cfs
 V = 1.9 f/s
 d = 0.6 ft
 s = 0.0100 f/ft
 n = 0.035

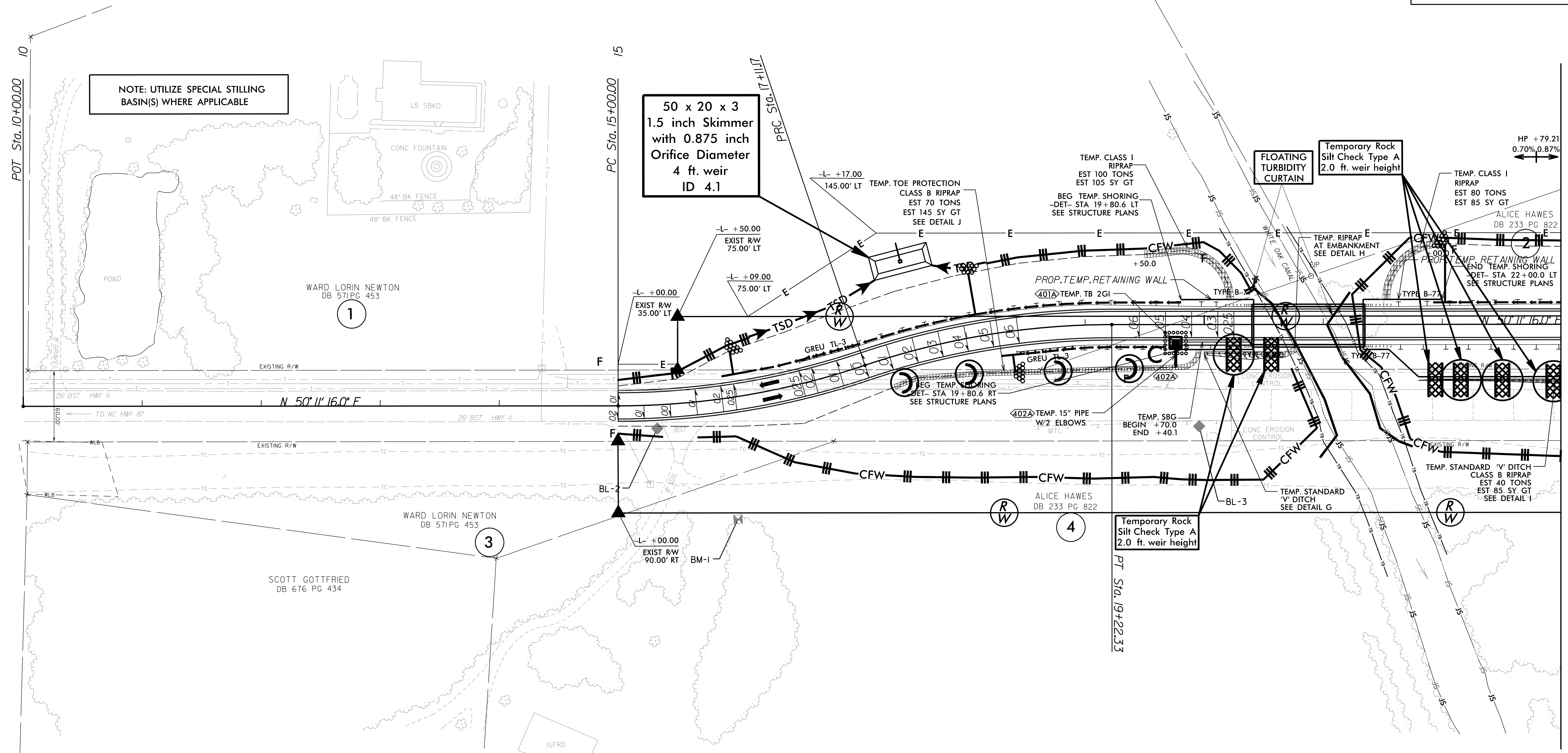
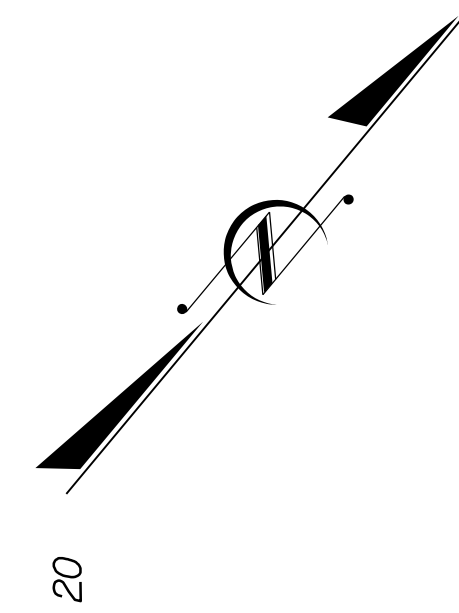
FOR -L- PROFILE SEE SHEET 8
 FOR DETOUR SEE SHEET 6/7



-DET-

PI Sta 16+06.52 Δ = 18° 36' 49.2" (LT) D = 8' 48' 53.0" L = 211.7' T = 106.52' R = 650.00'	PI Sta 18+17.69 Δ = 18° 36' 49.2" (RT) D = 8' 48' 53.0" L = 211.7' T = 106.52' R = 650.00'	PI Sta 27+18.97 Δ = 18° 36' 49.2" (RT) D = 8' 48' 53.0" L = 211.7' T = 106.52' R = 650.00'	PI Sta 29+30.14 Δ = 18° 36' 49.2" (LT) D = 8' 48' 53.0" L = 211.7' T = 106.52' R = 650.00'
---	---	---	---

DETOUR



NOTE: UTILIZE SPECIAL STILLING BASIN(S) WHERE APPLICABLE

50 x 20 x 3
1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
4 ft. weir
ID 4.1

Temporary Rock
Silt Check Type A
2.0 ft. weir height

MATCH LINE STA. 23+00.00 - SEE SHEET EC-9

REVISIONS

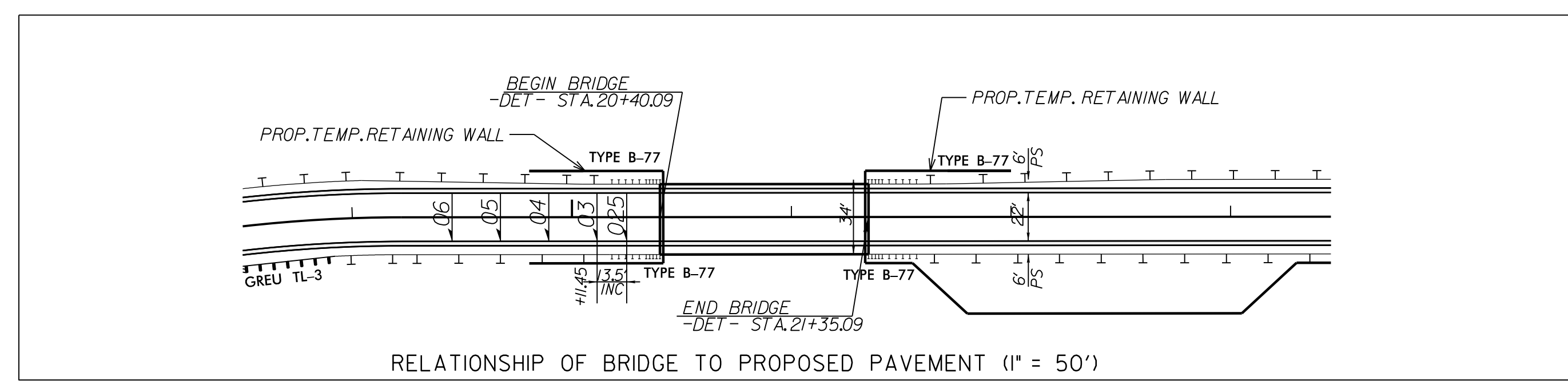
6/7/2018 2:51:01 PM B-5694-Roadside-CADD\PSH\B-5694_reu_EC08.dgn

Temp. Standard 'V' Ditch - RT Side
Sta. = -DET- 19+76.1 to 20+67.3
Q = 2.3 cfs
V = 2.7-4.5 f/s
d = 0.5-0.7 ft
s = 0.0416-0.1691 f/ft
n = 0.05
Liner = Class I Riprap or Similar
Required Shear Stress = 5.3 lbs/ft

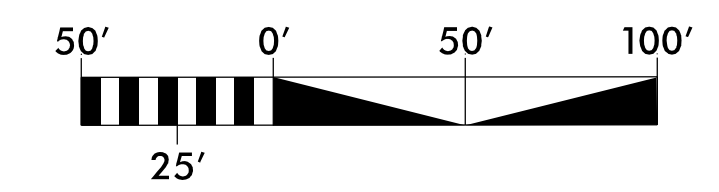
Temp. Standard 'V' Ditch - LT Side
Sta. = -DET- 21+80.1 to 24+15.0
Q = 4.8 cfs
V = 1.2-4.1 f/s
d = 0.8-1.4 ft
s = 0.003-0.0820 f/ft
n = 0.05
Liner = Class I Riprap or Similar
Required Shear Stress = 3.9 lbs/ft

0401A TEMPORARY TB 2GI
@ -DET- STA 19+76.1 RT
DA = 0.15 ac
C = 0.90
l = 4.0 in/hr
Spread = 3.5 ft
Shoulder = 6.0 ft
Rdwy Grade = 0.007 f/ft
Cross Slope = 0.046 f/ft
Rim = 25.9 ft
Invert = 22.8 ft

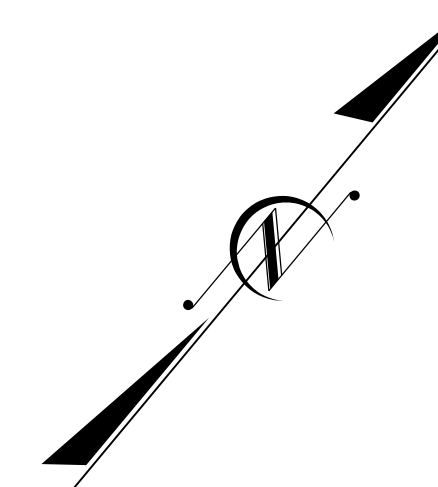
0402A
Temporary 15" Pipe
US = 0401A
US Invert = 22.8 ft
DS = 0402A
DS Invert = 18.9 ft
L = 19.0 ft
n = 0.024
s = 19.4%
Q10 = 0.9 cfs
V10 = 6.8 f/s




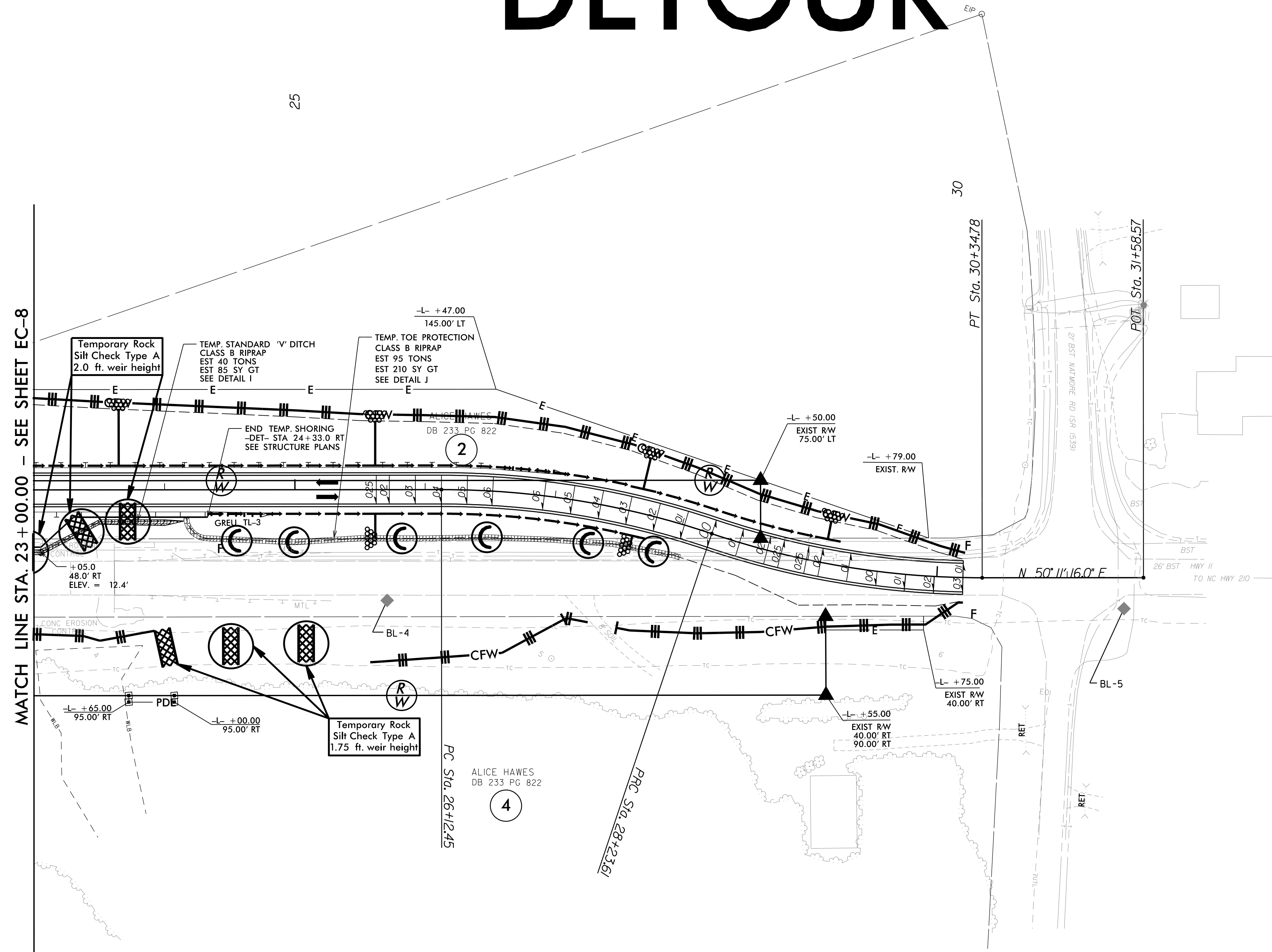
FOR -DET- PROFILE SEE SHEET 9
FOR -L- SEE SHEET 4/5



DETOUR



PROJECT REFERENCE NO.	SHEET NO.
B-5694	EC-9/CONST.7
RW SHEET NO.	7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 KCI Engineers • Planners • Scientists • Construction Managers 4505 Falls of Neuse Road, Suite 400 Raleigh, NC 27609 Phone (919) 783-9214 • Fax (919) 783-9266	



REVISIONS

6/7/2018 8:25:08 AM C:\Users\jwalters\Documents\Projects\B-5694\Roadside\CADD\PSH\B-5694_reu_EC09.dgn
 8/17/99
 Sawyers-Walters

Temp. Standard 'V' Ditch - RT Side
 Sta. = -DET- 21+80.1 to 24+15.0
 Q = 4.8 cfs
 V = 1.2-4.1 f/s
 d = 0.5-1.4 ft
 s = 0.003-0.0820 f/ft
 n = 0.05
 Liner = Class I Riprap or Similar
 Required Shear Stress = 3.9 lbs/ft

FOR -DET- PROFILE SEE SHEET 9
 FOR -L- SEE SHEET 4/5

