

09/28/09

TIP PROJECT: BR-0047

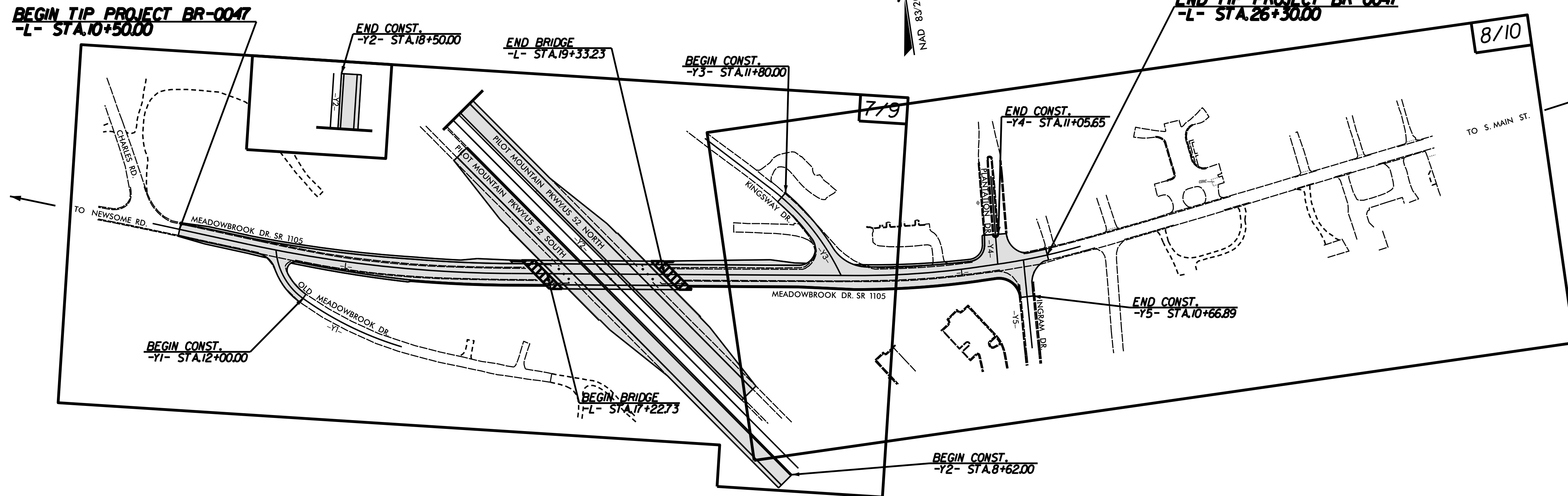
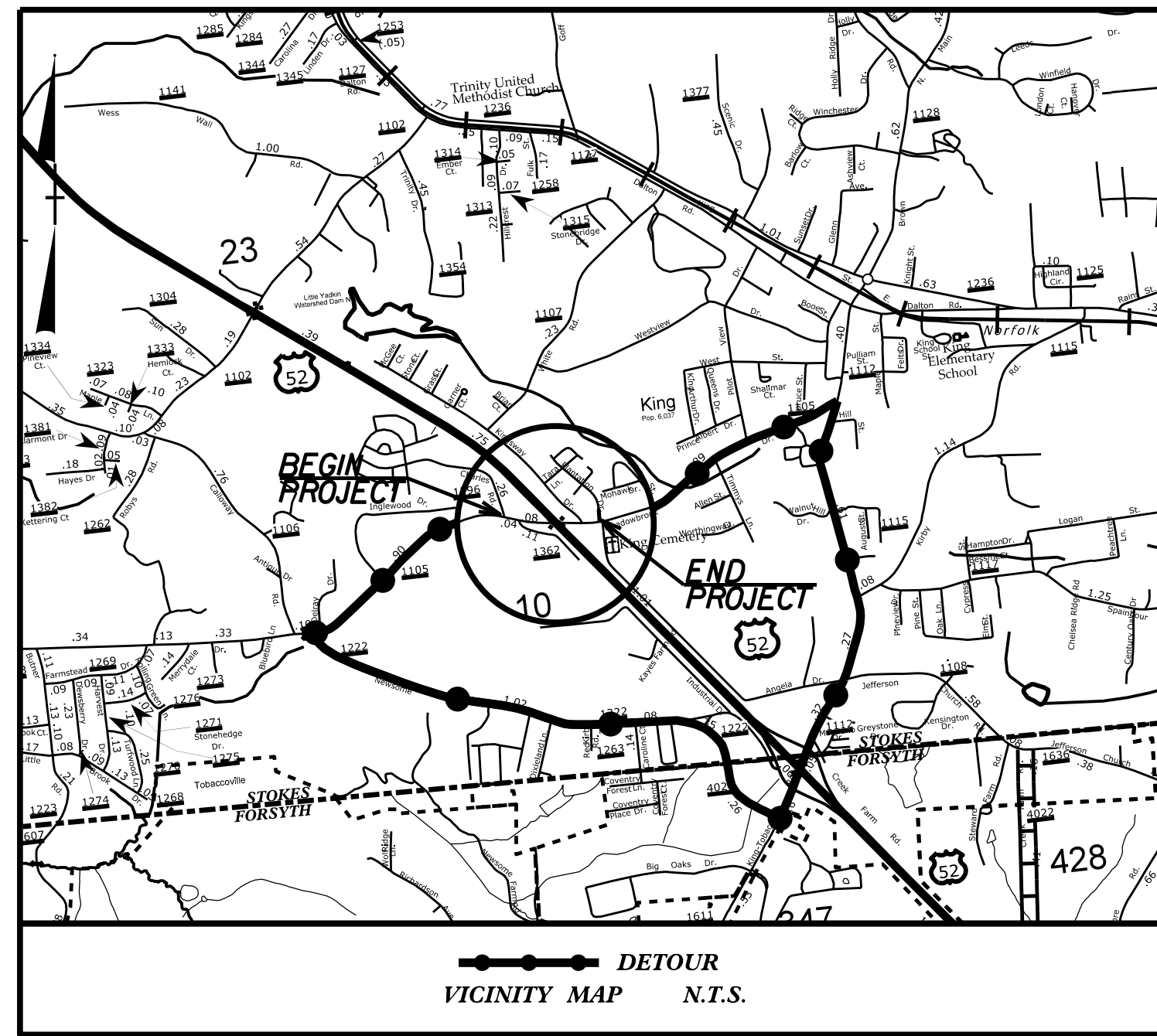
CONTRACT:

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

STOKES COUNTY

LOCATION: REPLACE BRIDGE 10 ON SR 1105
(MEADOWBROOK DR.) OVER U.S. 52

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

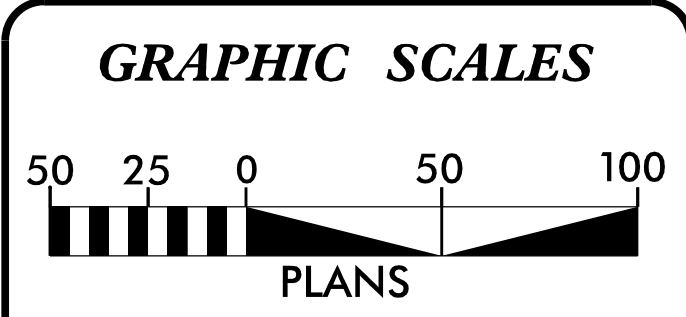


| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|--------------|--------------|
| N.C. | BR-0047 | EC-1 | |
| STATE PROJ. NO. | P.A. PROJ. NO. | DESCRIPTION | |
| 49078.1.1 | N/A | P.E. | |
| 49078.2.1 | N/A | RW, Utility | |
| 49078.3.1 | N/A | CONSTRUCTION | |

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 | ---/---/--- |
| 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 | U |
| 1635.02 | Rock Pipe Inlet Sediment Trap Type-B | U |
| 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.



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:
PARRISH AND PARTNERS
11325 N. COMMUNITY HOUSE RD.
CHARLOTTE, NC 28277
Designed by:
KEVIN HIGGINS, PE 4000
NAME LEVEL III CERTIFICATION NO.

Reviewed In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
3755 Silas Creek Parkway
Winston-Salem, NC 27127
2018 STANDARD SPECIFICATIONS
Reviewed by:
THOMAS A. SMITH, 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 | |

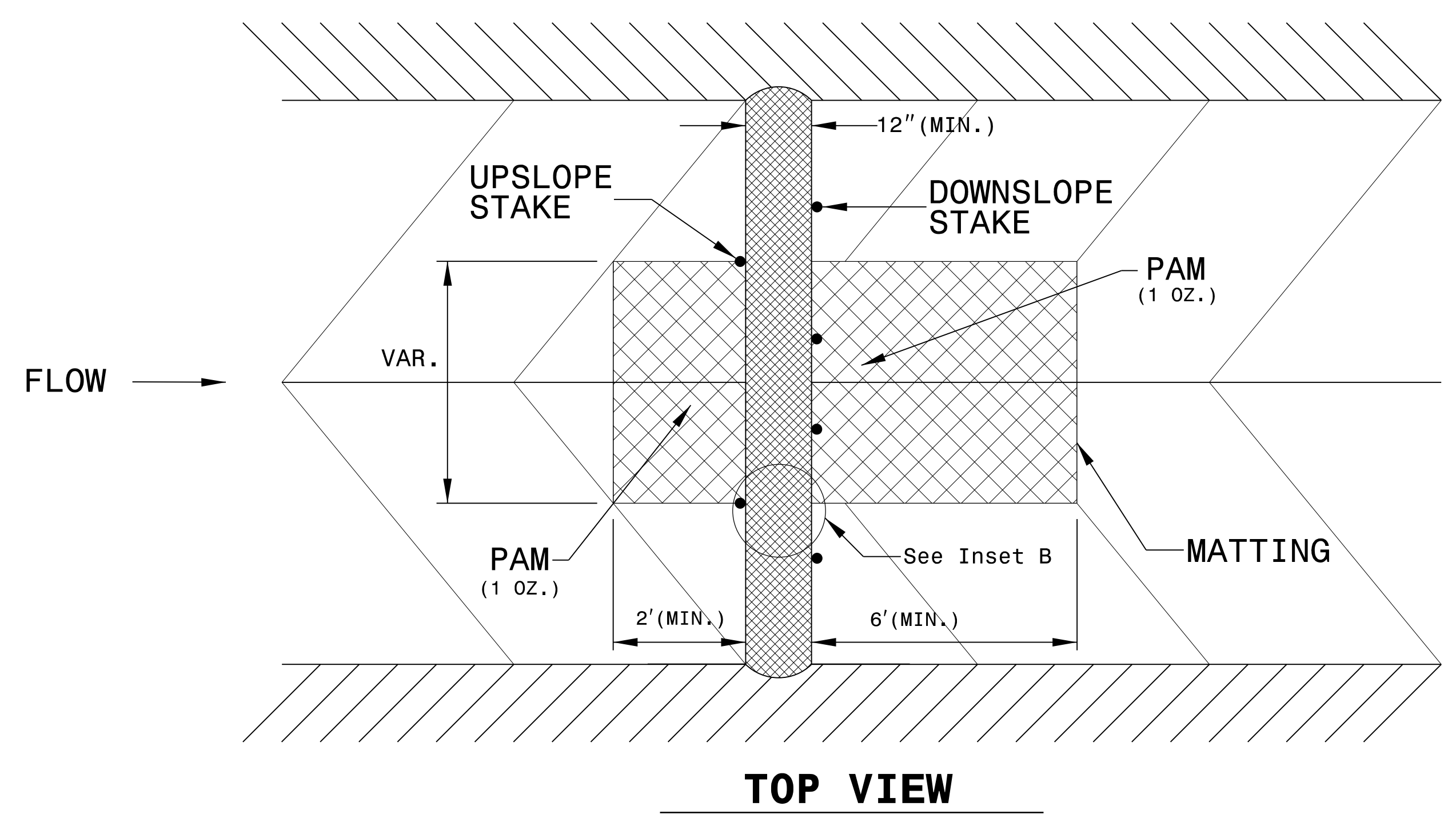
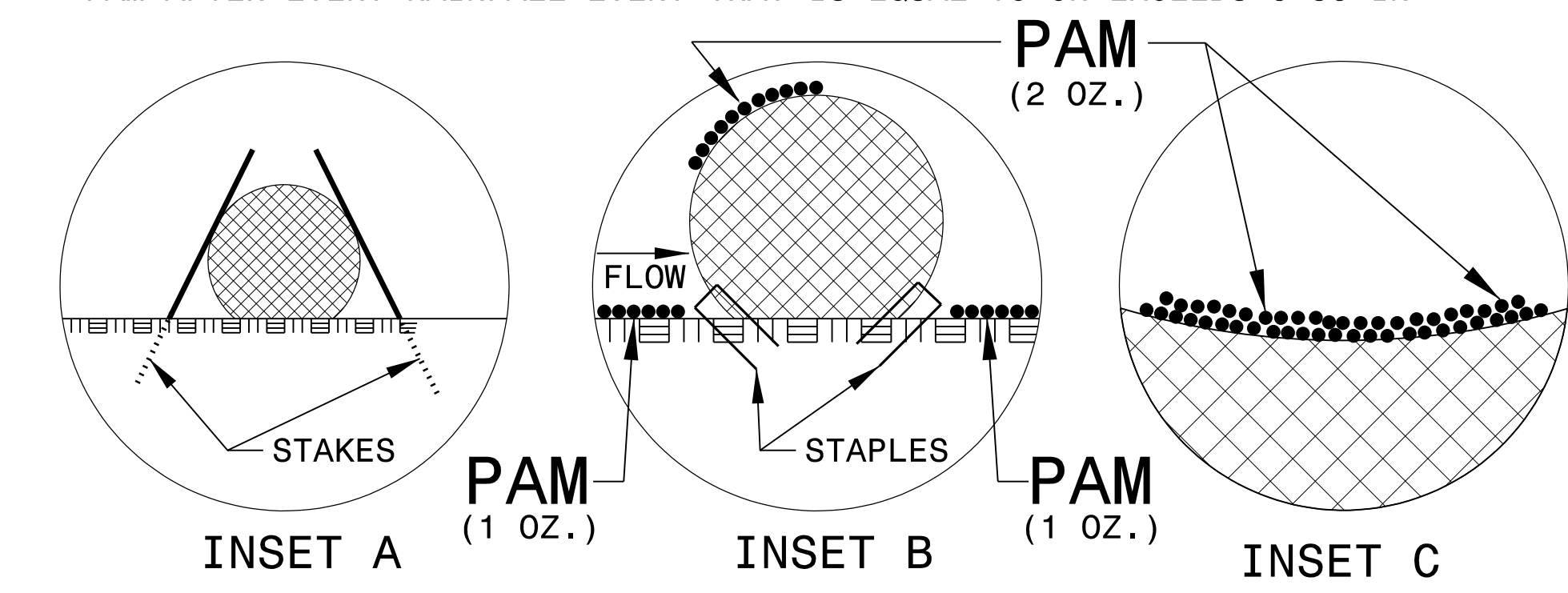
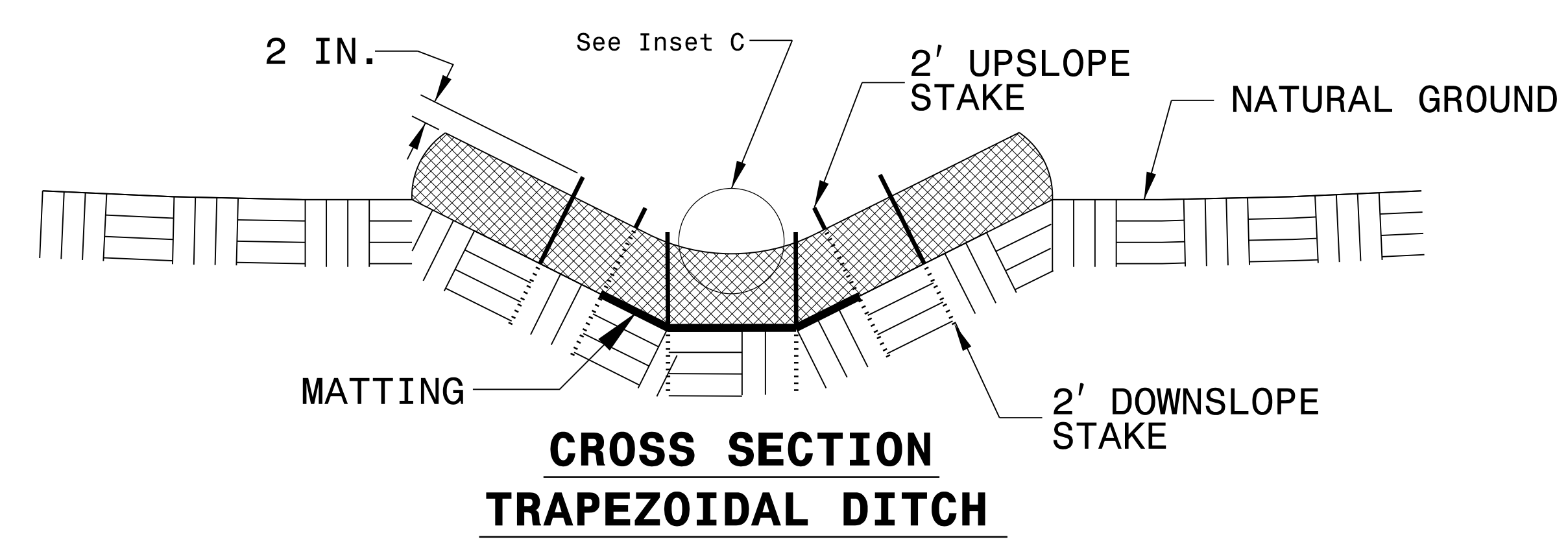
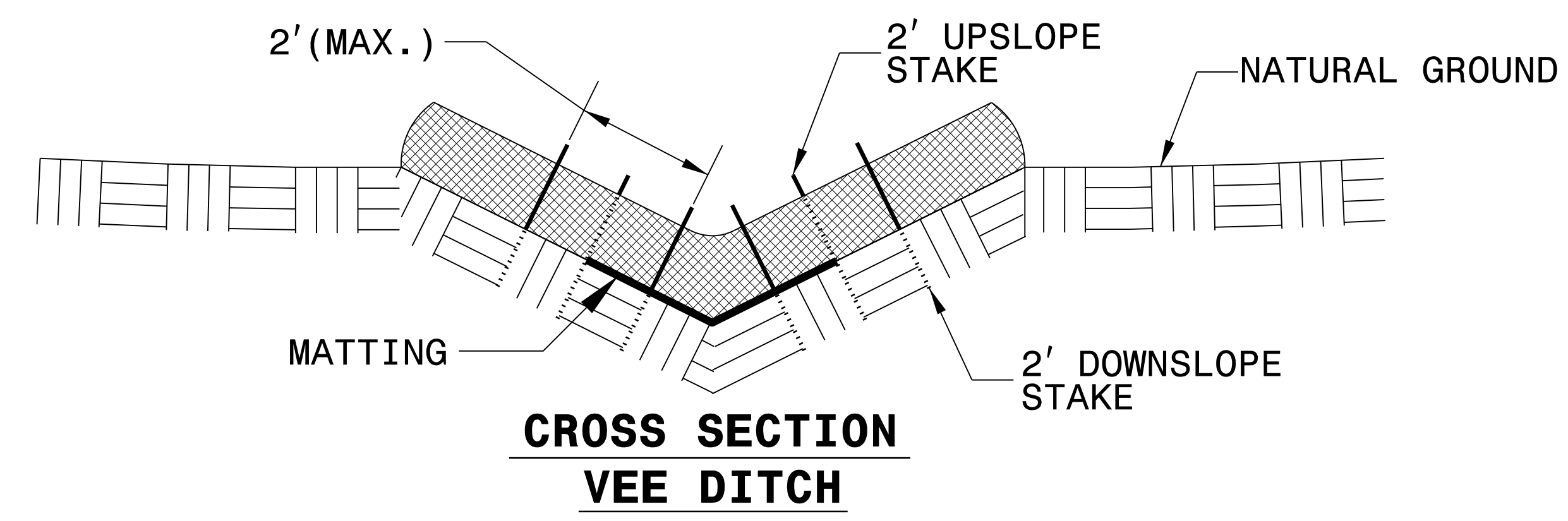
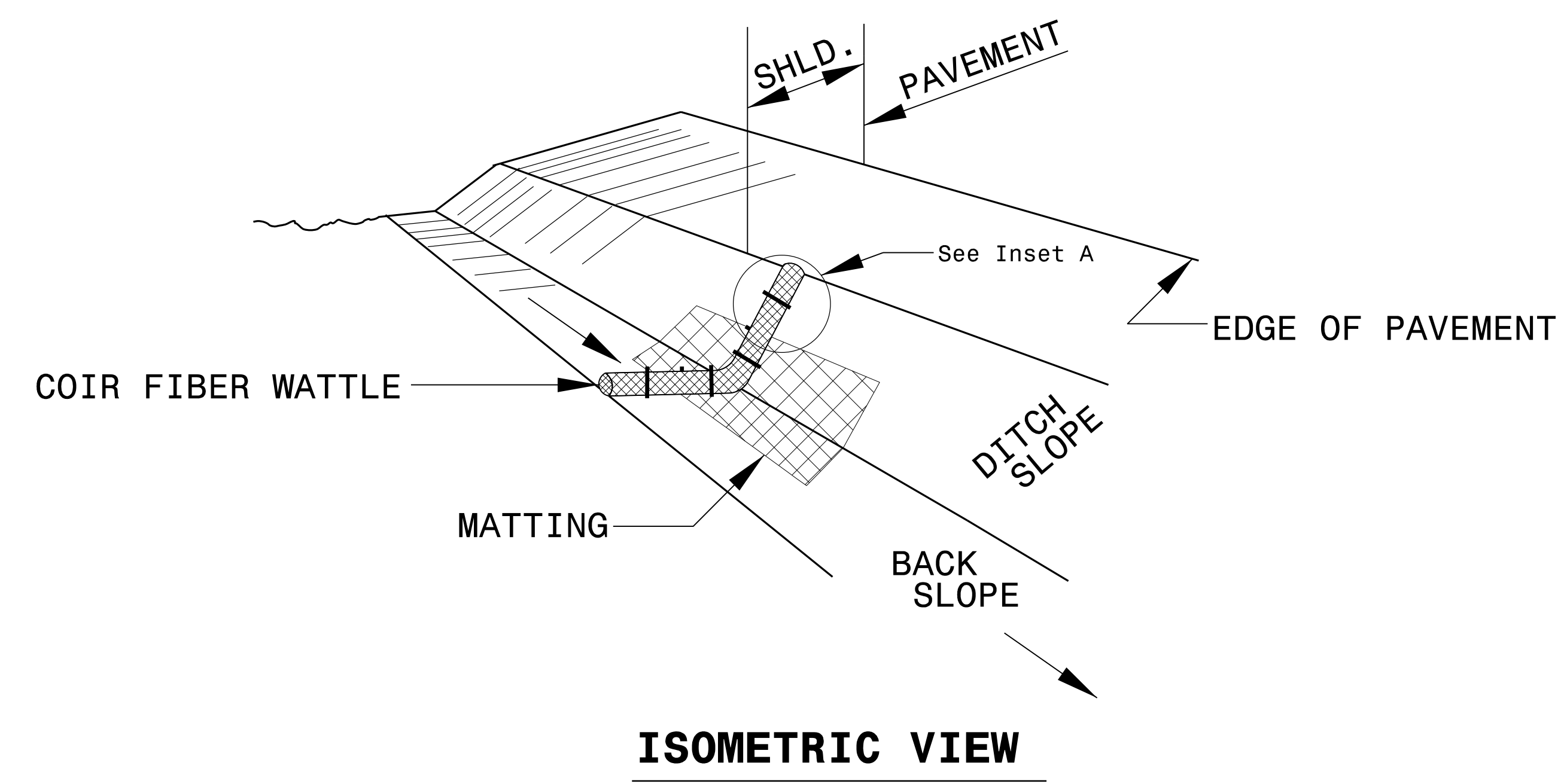
\$\$\$\$\$ SYSTEM \$\$\$\$\$\$
\$\$\$\$\$ DON \$\$\$\$\$\$
\$\$\$\$\$ USERNAME \$\$\$\$\$\$

| | |
|---|--------------------------|
| PROJECT REFERENCE NO. <i>BR-0047</i> | SHEET NO. <i>EC-2</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

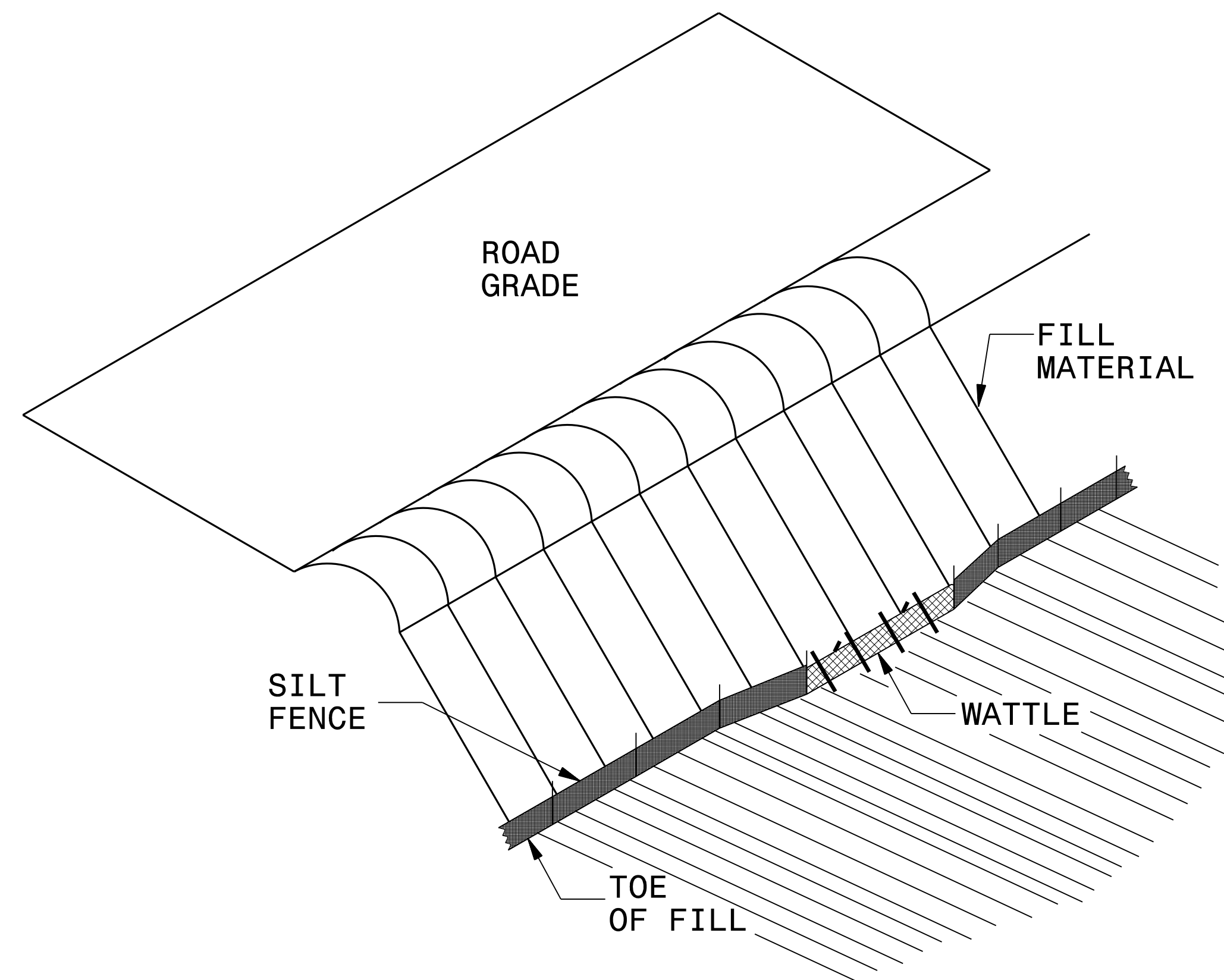
NOTES:

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

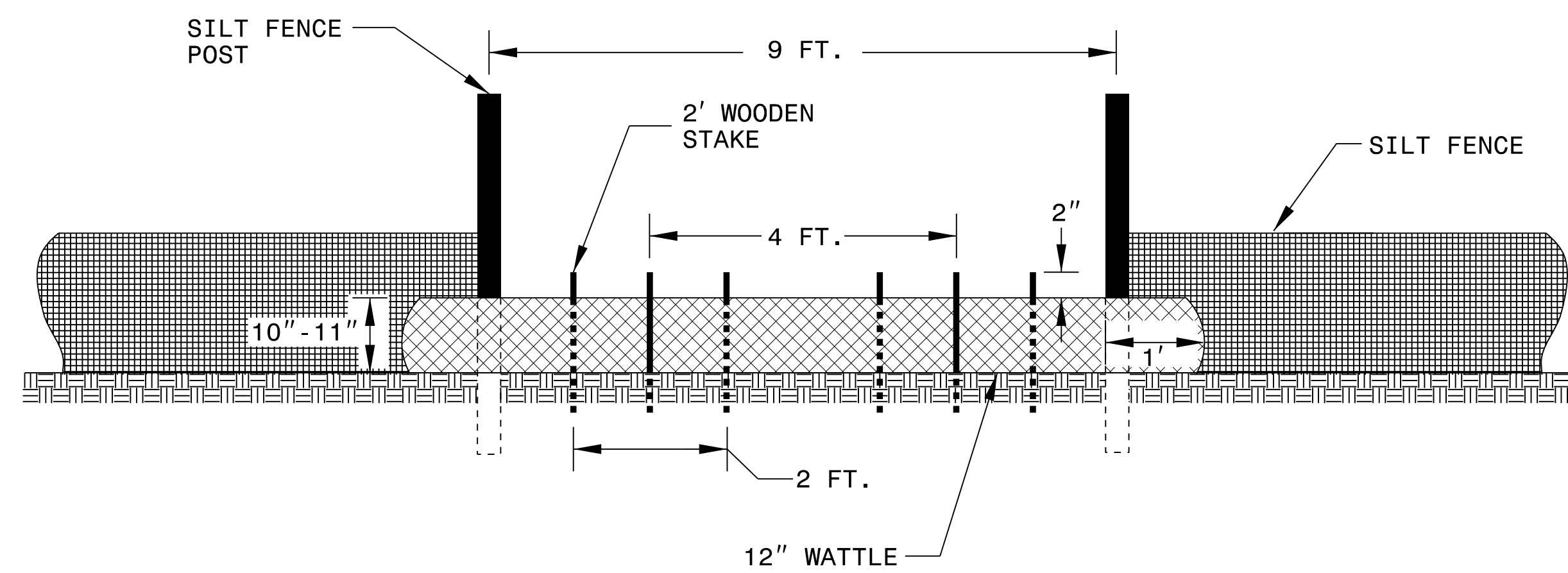


SILT FENCE COIR FIBER WATTLE BREAK DETAIL

| | |
|---|--------------------------|
| PROJECT REFERENCE NO. <i>BR-0047</i> | SHEET NO. <i>EC-3</i> |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |



ISOMETRIC VIEW

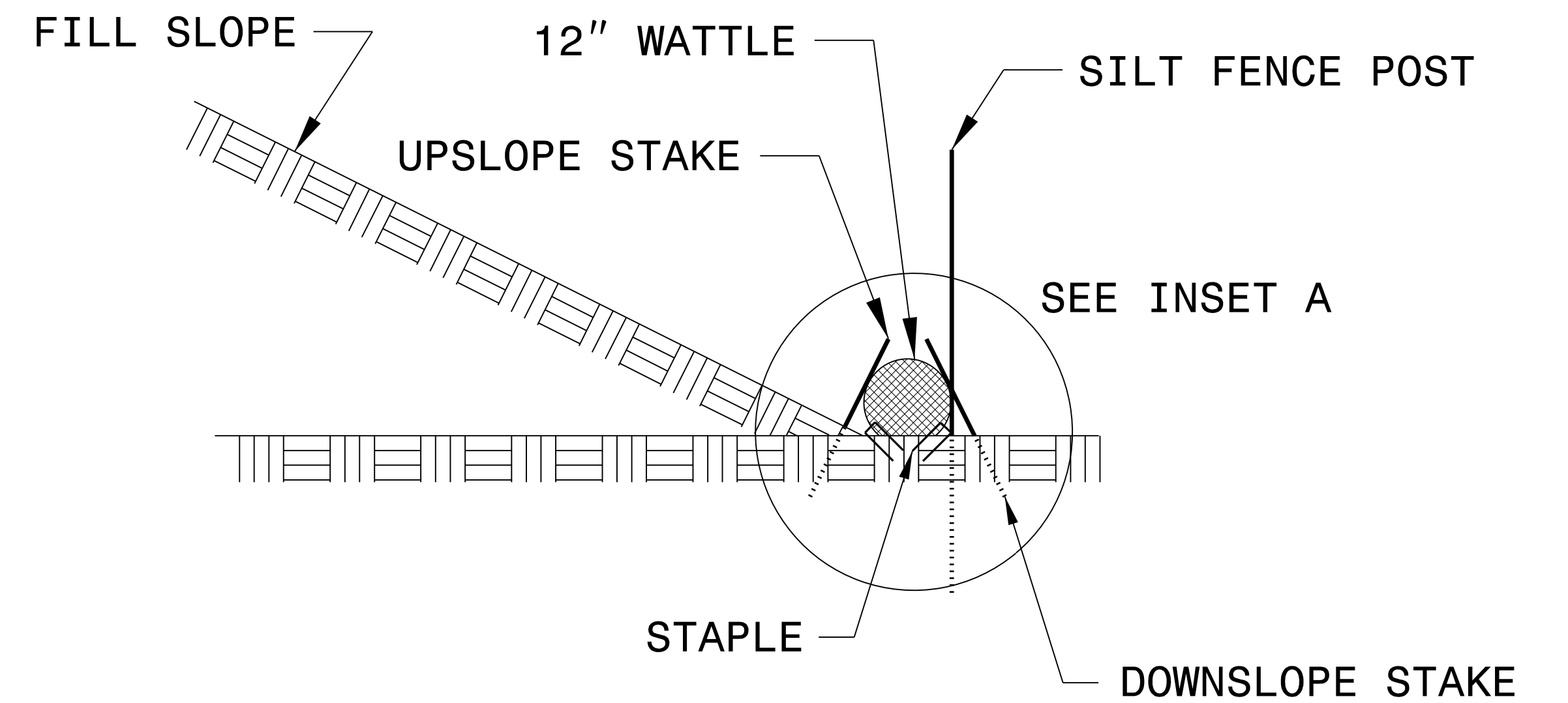
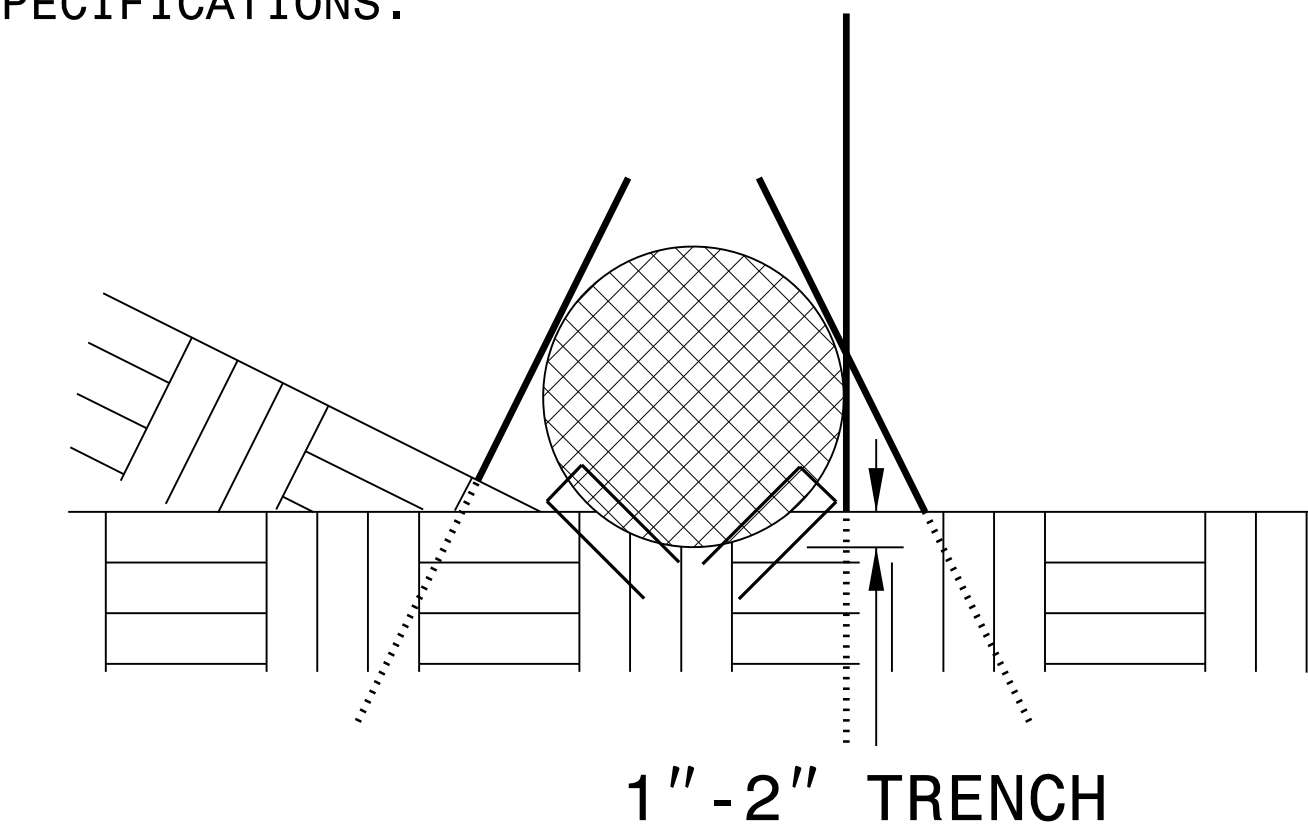


VIEW FROM SLOPE

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.

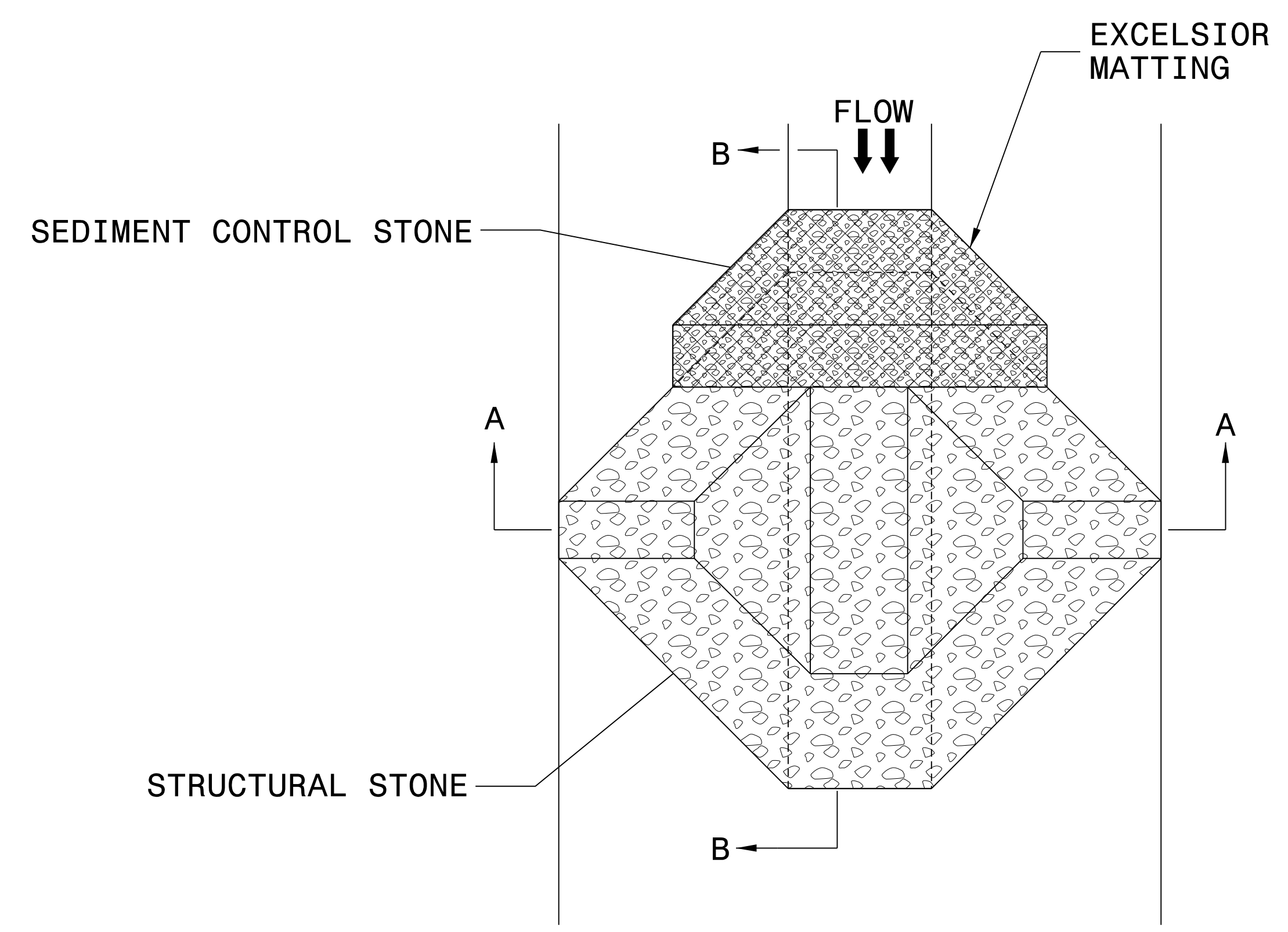
INSET A



SIDE VIEW

| | |
|----------------------------------|---------------------|
| PROJECT REFERENCE NO. BR-0047 | SHEET NO. EC-4 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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



PLAN

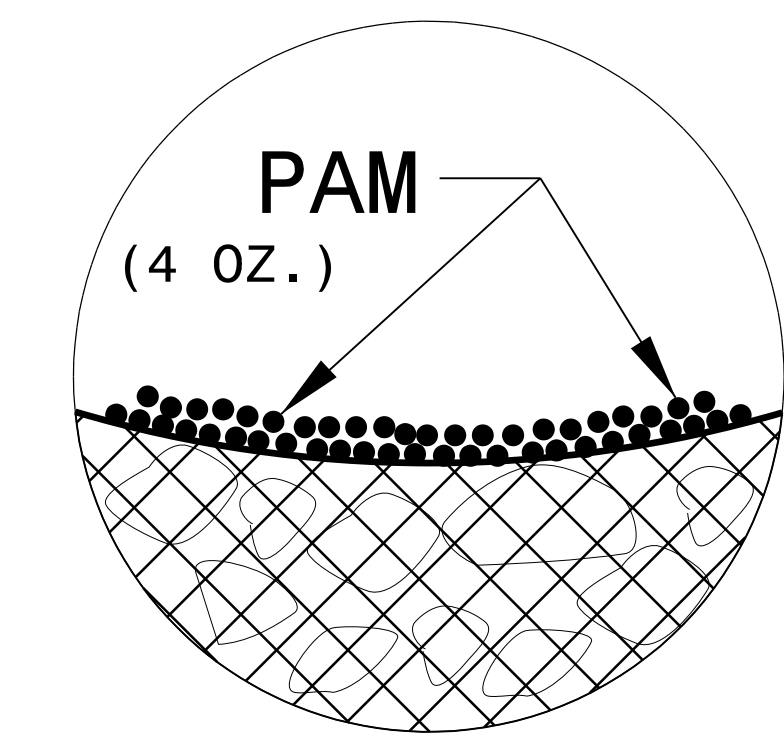
NOTES:

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

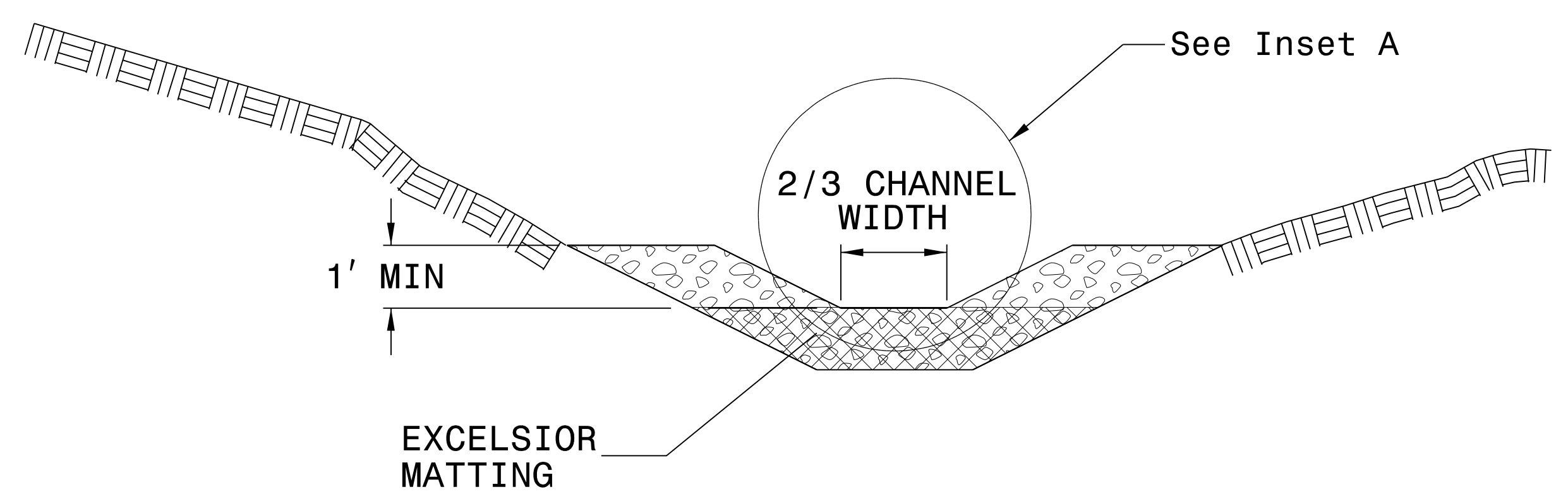
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

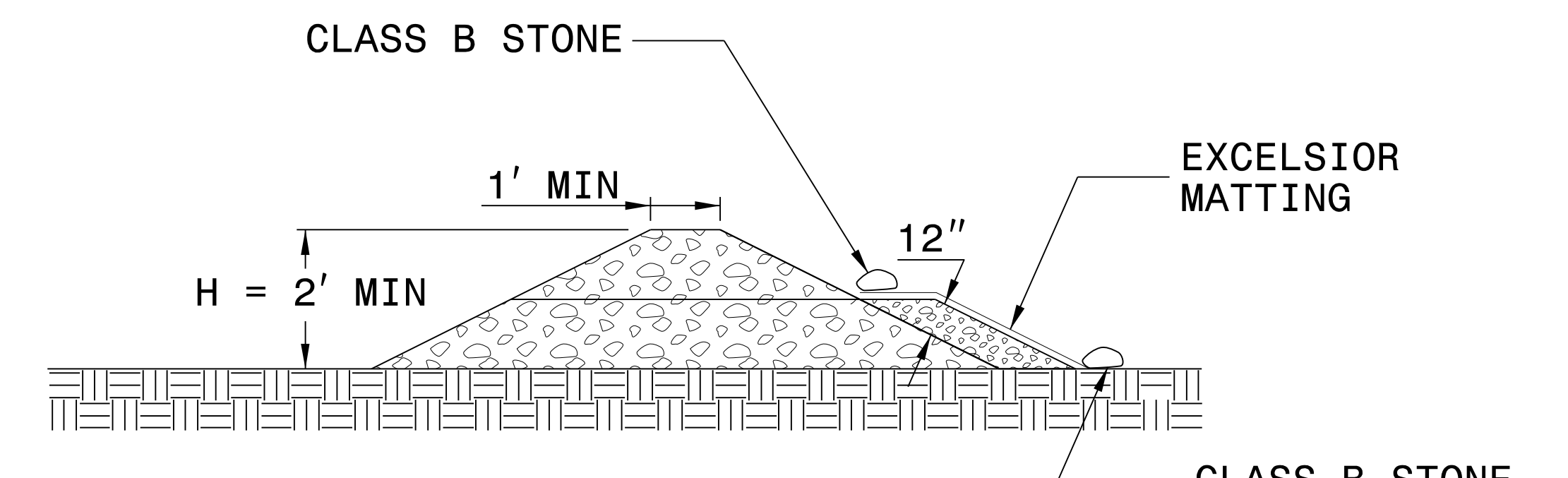
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

| | |
|---|--------------------------|
| PROJECT REFERENCE NO. <i>BR-0047</i> | SHEET NO. <i>EC-5</i> |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

SOIL STABILIZATION TIMEFRAMES

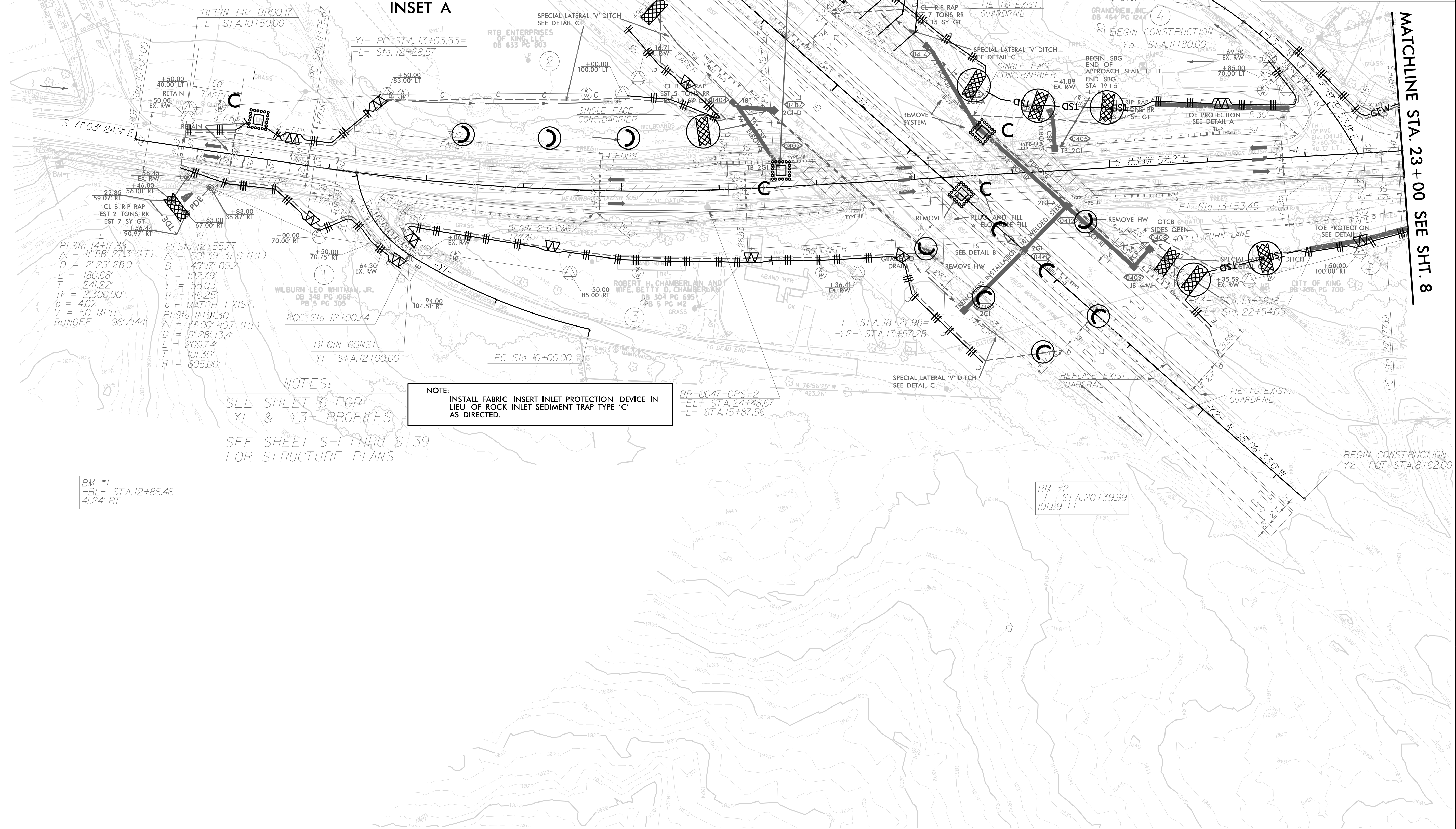
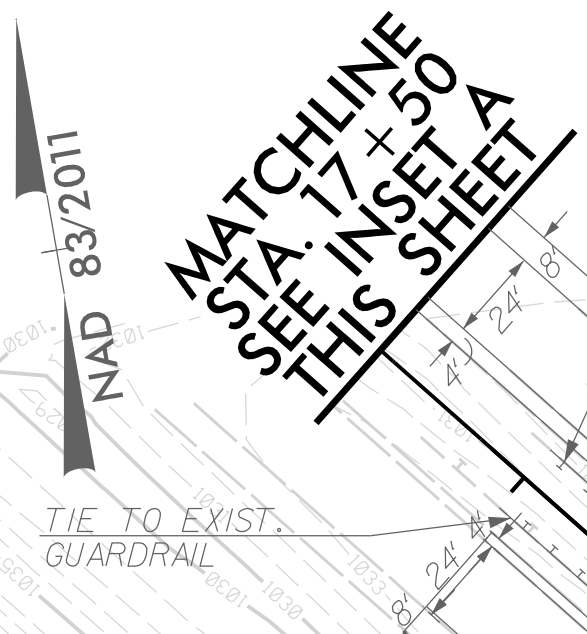
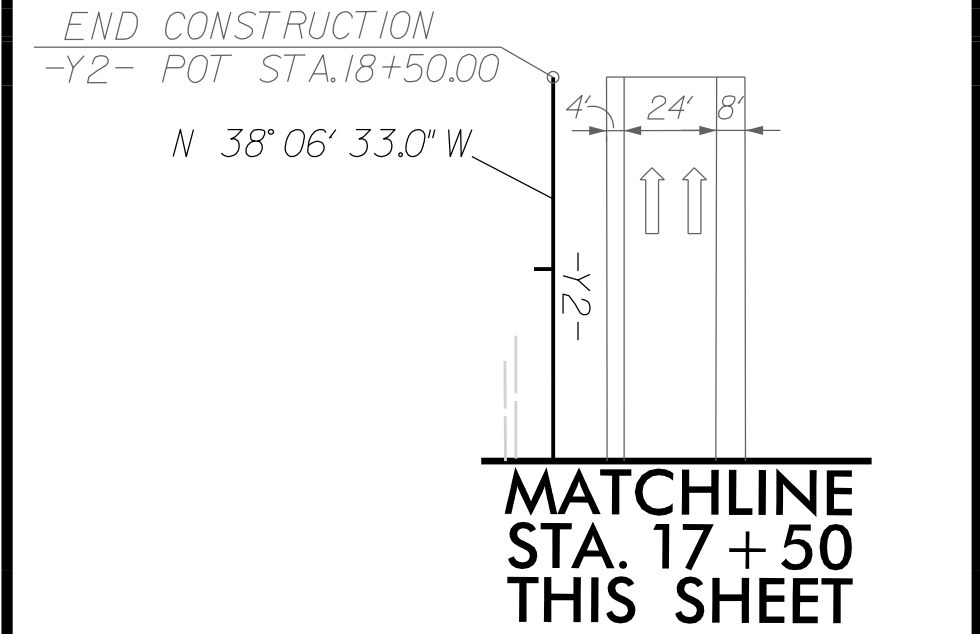
| <i>SITE DESCRIPTION</i> | <i>STABILIZATION TIME</i> | <i>TIMEFRAME EXCEPTIONS</i> |
|--|---------------------------|--|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES | 7 DAYS | NONE |
| HIGH QUALITY WATER (HQW) ZONES | 7 DAYS | NONE |
| SLOPES STEEPER THAN 3:1 | 7 DAYS | IF SLOPES ARE 10' OR LESS IN 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. BR-0047 | SHEET NO. EC-7 |
| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

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

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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4



PI Sta 14+17.88
 $\Delta = 11^{\circ} 58' 27.13''$ (LT)
 $D = 2^{\circ} 29' 28.0''$
 $L = 480.68'$
 $T = 241.22'$
 $R = 2,300.00'$
 $e = 4.0\%$
 $V = 50$ MPH
 $RUNOFF = 96/144'$

PI Sta 12+55.77
 $\Delta = 50^{\circ} 39' 37.6''$ (RT)
 $D = 49^{\circ} 17' 09.2''$
 $L = 102.79'$
 $T = 55.03'$
 $R = 116.25'$
 $e = MATCH$ EXIST.
 PI Sta 11+01.30
 $\Delta = 15^{\circ} 00' 40.7''$ (RT)
 $D = 9^{\circ} 28' 13.4''$
 $L = 200.74'$
 $T = 101.30'$
 $R = 605.00'$

NOTES:
 SEE SHEET 6 FOR
 -Y1- & -Y3- PROFILES
 SEE SHEET S-1 THRU S-39
 FOR STRUCTURE PLANS

NOTE: INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED.

BR-0047-GPS-2
 -EL- STA. 24+48.67=
 -L- STA. 15+87.56

BM #1
 -BL- STA. 12+86.46
 41.24' RT

BM #2
 -L- STA. 20+39.99
 101.89 LT

MATCHLINE STA. 23+00 SEE SHT. 8

REVISIONS

8.17.79

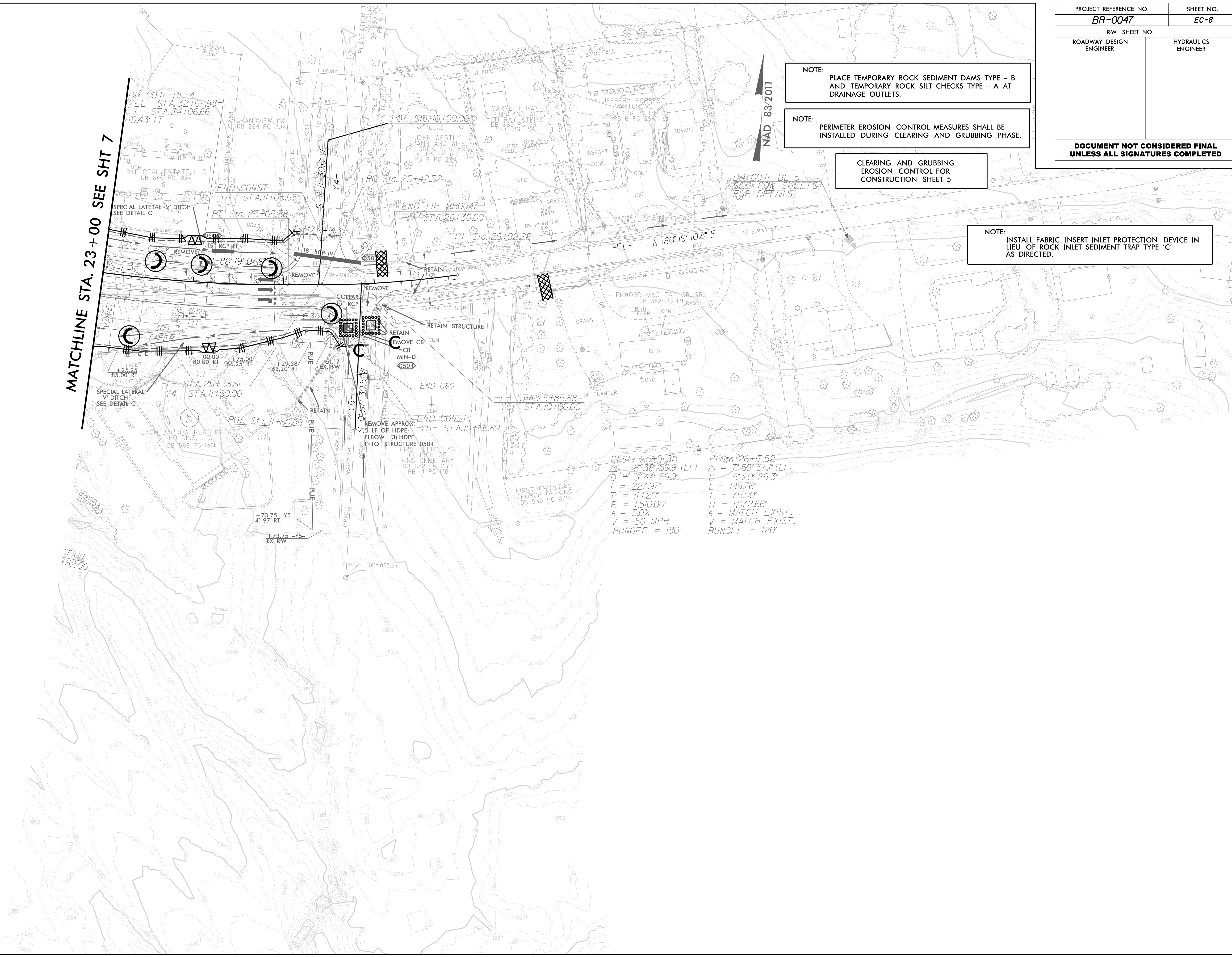
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|--|--------------------------|
| PROJECT REFERENCE NO. BR-0047 | SHEET NO. EC-8 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

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

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

NOTE:
INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN
LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C'
AS DIRECTED.



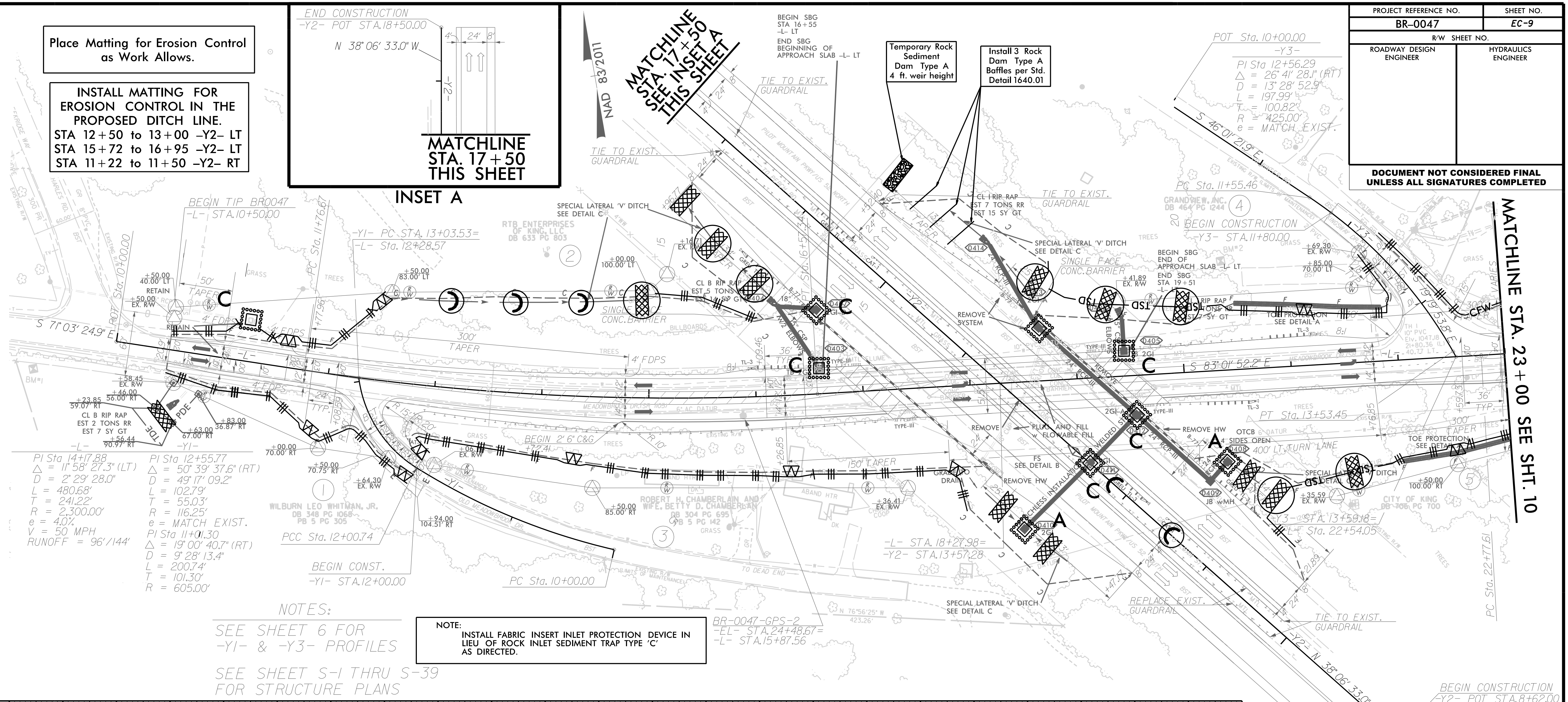
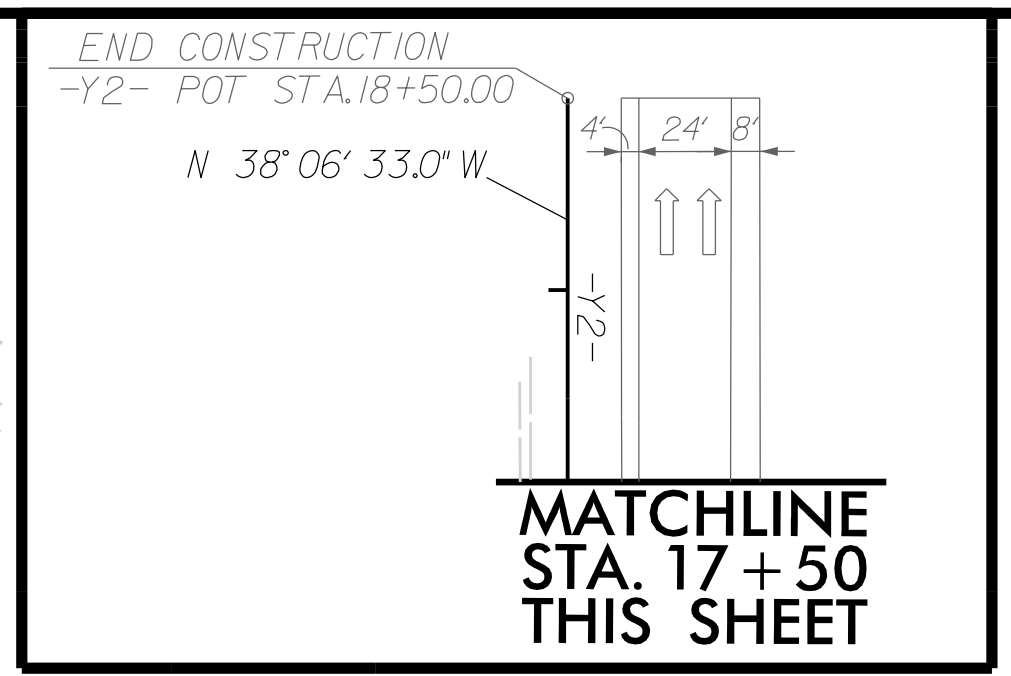
| | |
|---|--|
| $PI\ Sta. 23+91.81$ $\Delta = 9^{\circ} 38' 59.9" (LT)$ $D = 3^{\circ} 47' 39.9"$ $L = 227.97'$ $T = 114.20'$ $R = 1,510.00'$ $e = 5.0\%$ $V = 50\ MPH$ $RUNOFF = 180'$ | $PI\ Sta. 26+17.52$ $\Delta = 7^{\circ} 59' 57.1" (LT)$ $D = 5^{\circ} 20' 29.3"$ $L = 149.76'$ $T = 75.00'$ $R = 1,072.66'$ $e = MATCH\ EXIST.$ $V = MATCH\ EXIST.$ $RUNOFF = 120'$ |
|---|--|

\$\$\$\$SYTIME\$\$\$\$
 \$\$\$USERNAME\$\$\$

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Place Matting for Erosion Control as Work Allows.

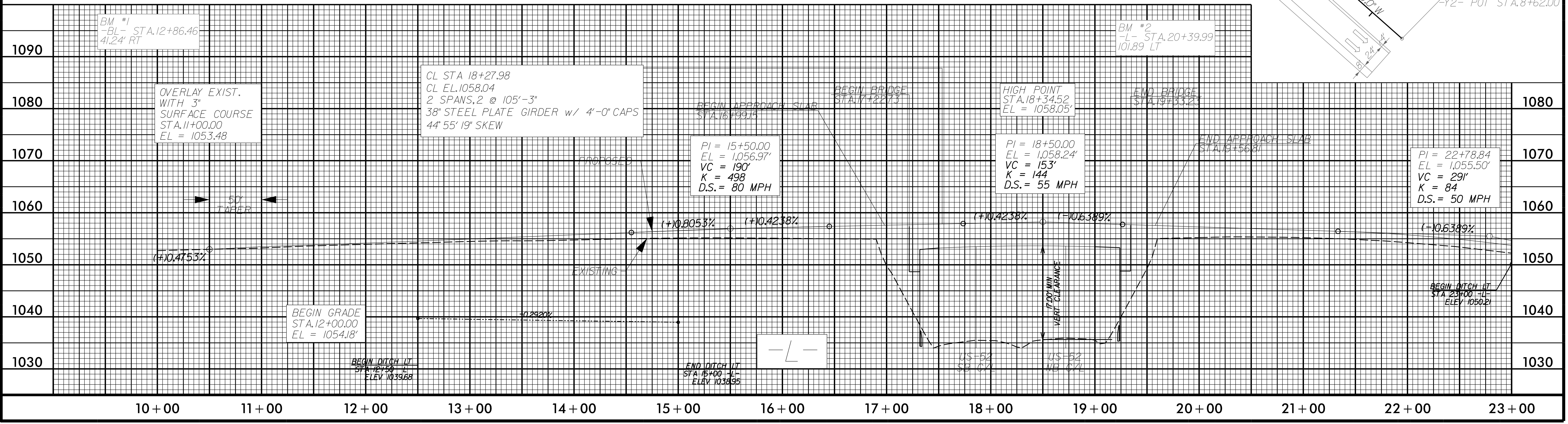
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE.
STA 12+50 to 13+00 -Y2- LT
STA 15+72 to 16+95 -Y2- LT
STA 11+22 to 11+50 -Y2- RT



PI Sta 14+17.88
Δ = 11° 58' 27.3" (LT)
D = 2' 29' 28.0"
L = 480.68'
T = 241.22'
R = 2,300.00'
e = 4.0%
V = 50 MPH
RUNOFF = 96°/144'

PI Sta 12+55.77
Δ = 50° 39' 37.6" (RT)
D = 49° 17' 09.2"
L = 102.79'
T = 55.03'
R = 116.25'
e = MATCH EXIST.
PI Sta 11+01.30
Δ = 19° 00' 40.7" (RT)
D = 9° 28' 13.4"
L = 200.74'
T = 101.30'
R = 605.00'

NOTES:
SEE SHEET 6 FOR
-Y1- & -Y3- PROFILES
SEE SHEET S-1 THRU S-39
FOR STRUCTURE PLANS



REVISIONS

8/17/99

