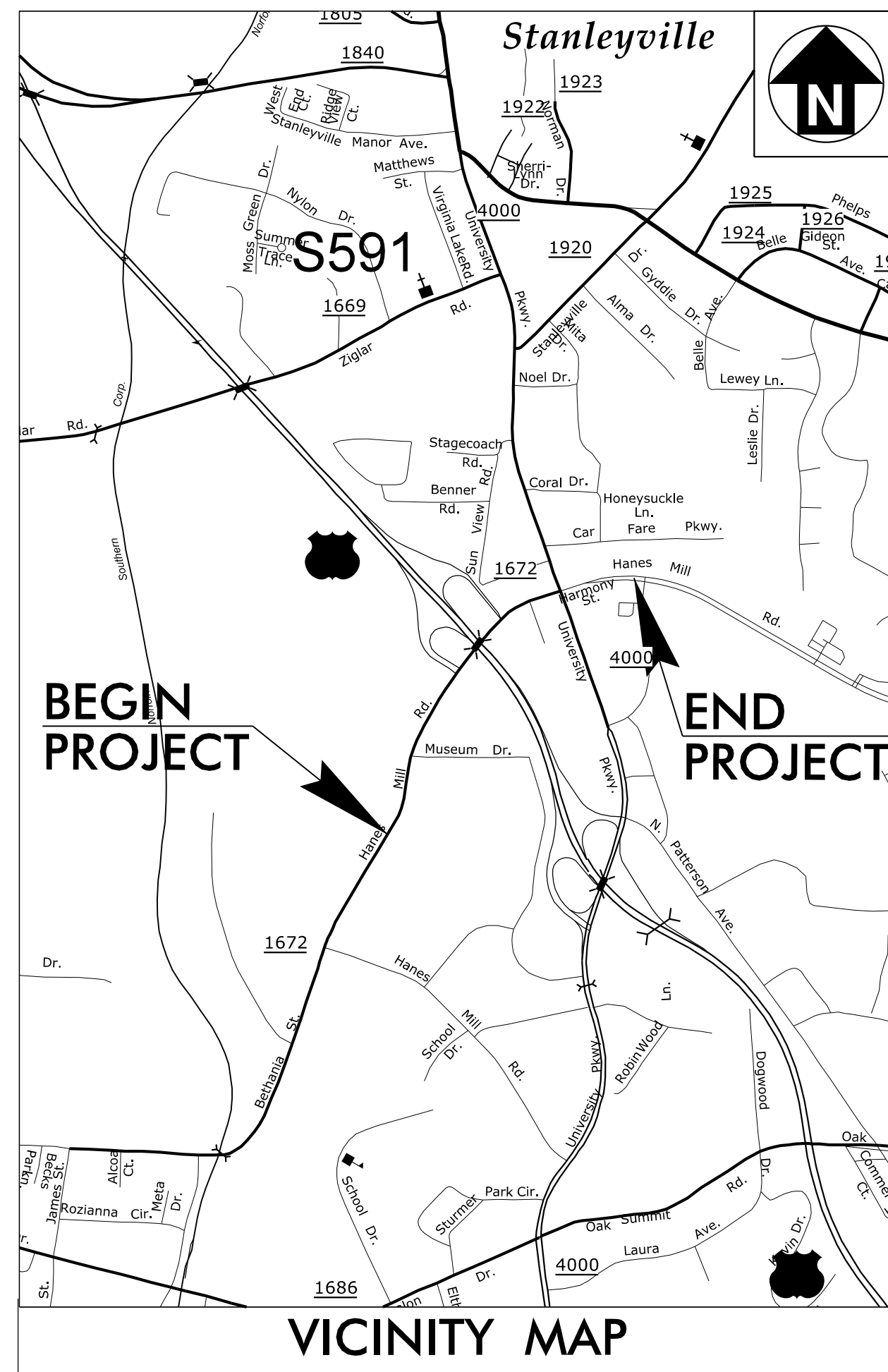


TIP PROJECT: U-2729

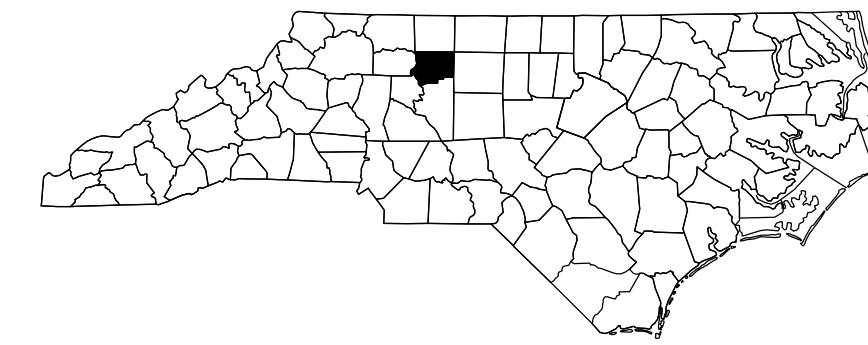
CONTRACT: C204088



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

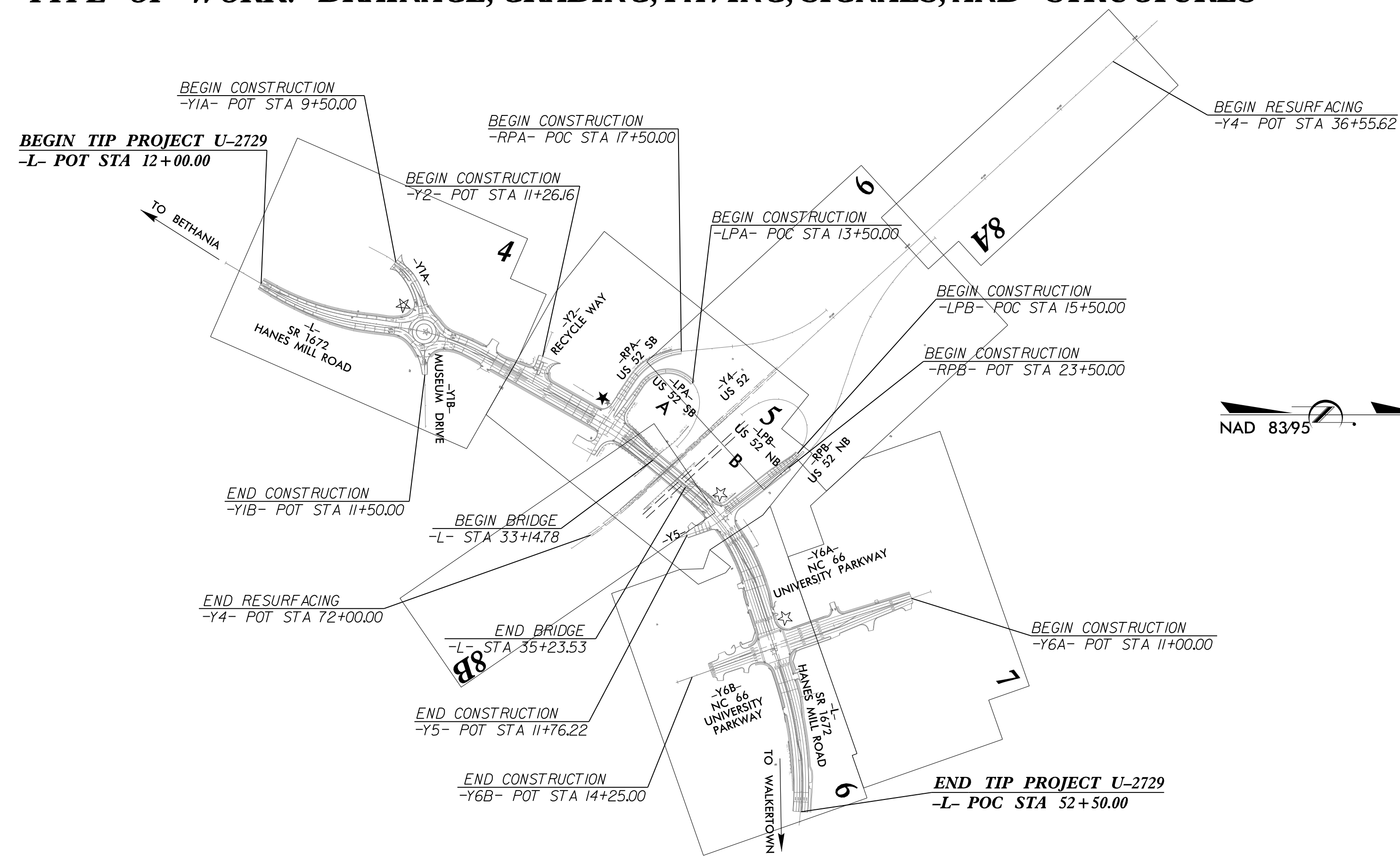
FORSYTH COUNTY



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2729	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34853.1.2		PE	
34853.2.2		RW UTIL.	
34853.3.3		CONST.	

LOCATION: SR 1672 (HANES MILL ROAD) FROM MUSEUM DRIVE TO SR 4000 (UNIVERSITY PARKWAY) IN WINSTON-SALEM

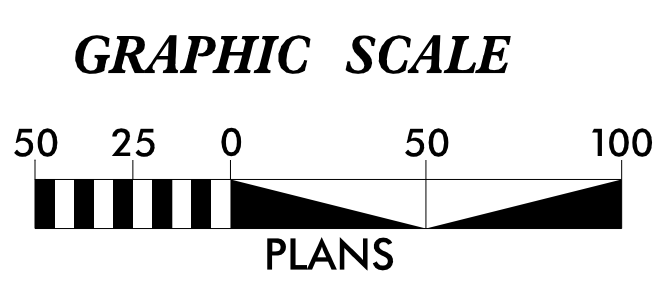
TYPE OF WORK: DRAINAGE, GRADING, PAVING, SIGNALS, AND STRUCTURES



EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1650.05	Temporary Silt Ditch	---
1650.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	---X---
1622.01	Temporary Berms and Slope Drains	---T---
1650.02	Silt Basin Type B	---S---
1653.01	Temporary Rock Silt Check Type-A	---R---
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	---R-P---
1653.02	Temporary Rock Silt Check Type-B	---R-B---
	Wattle / Coir Fiber Wattle	---W---
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	---W-P---
1654.01	Temporary Rock Sediment Dam Type-A	---SDA---
1654.02	Temporary Rock Sediment Dam Type-B	---SDB---
1655.01	Rock Pipe Inlet Sediment Trap Type-A	---RPIA---
1655.02	Rock Pipe Inlet Sediment Trap Type-B	---RPIB---
1650.04	Stilling Basin	---SB---
1650.06	Special Stilling Basin	---SSB---
	Rock Inlet Sediment Trap:	
1652.01	Type A	A
1652.02	Type B	B
1652.03	Type C	C
	Skimmer Basin	---SKB---
	Tiered Skimmer Basin	---TSKB---
	Infiltration Basin	---IB---

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



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-01000 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:
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

Designed by:
Wyatt D. Yelverton, PE, CPESC 3609
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.

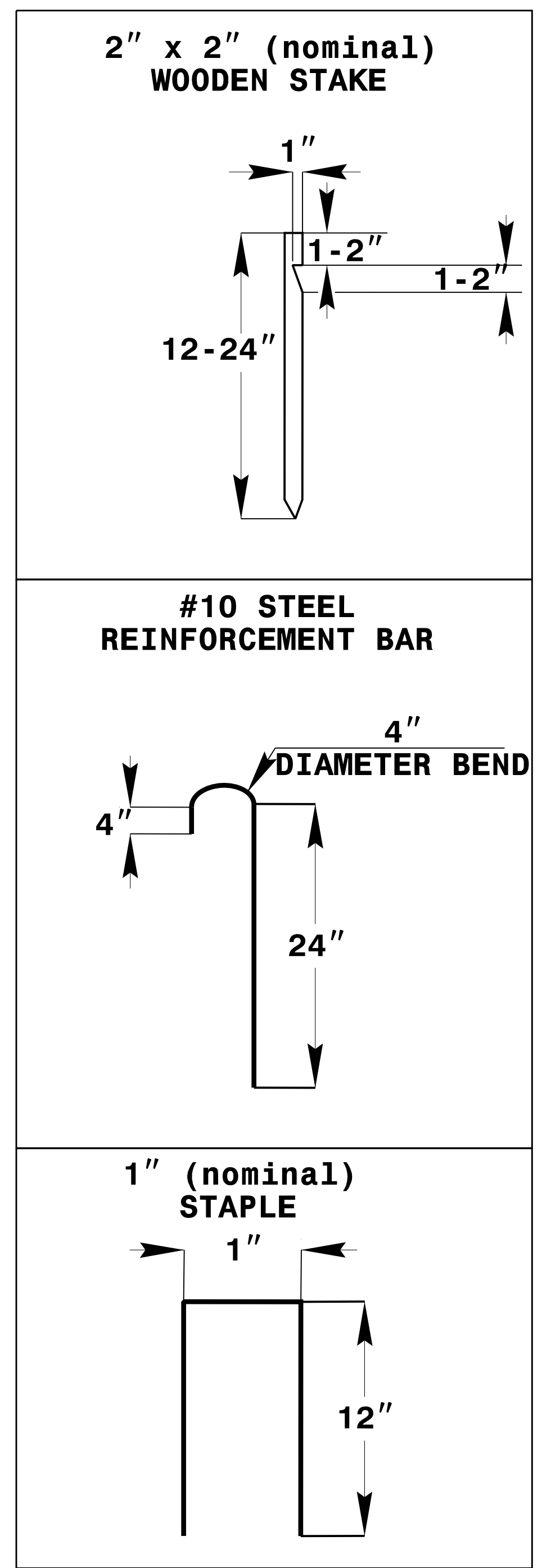
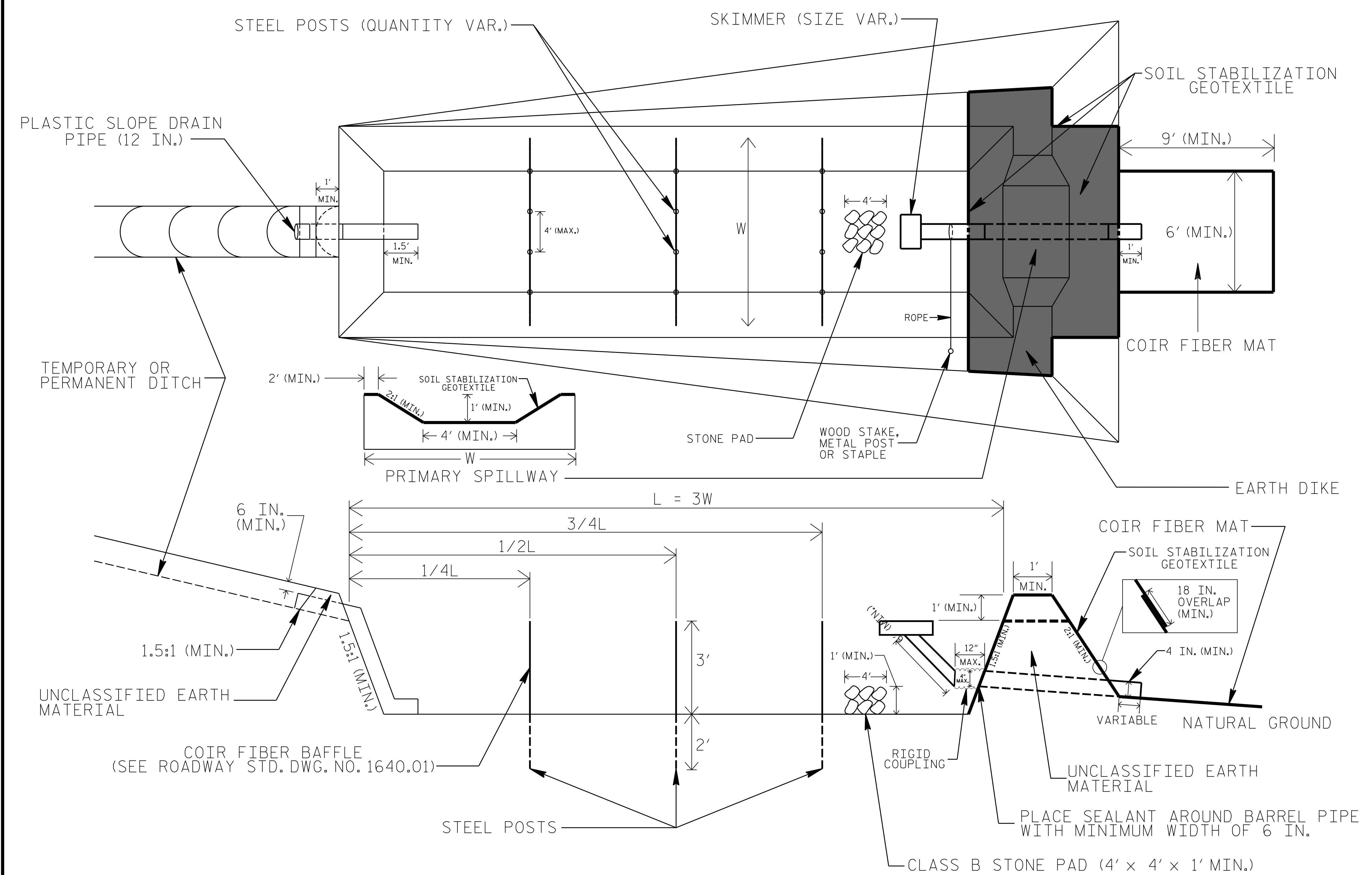
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type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

4/13/2023 10:29:29 EC-194.dgn



PROJECT REFERENCE NO. U-2729	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL



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.).

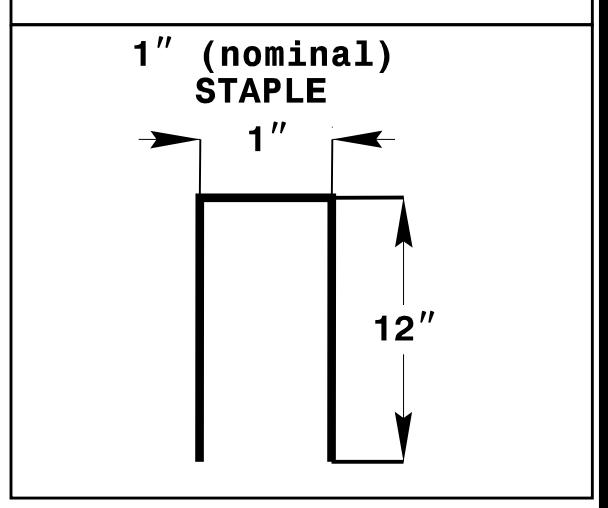
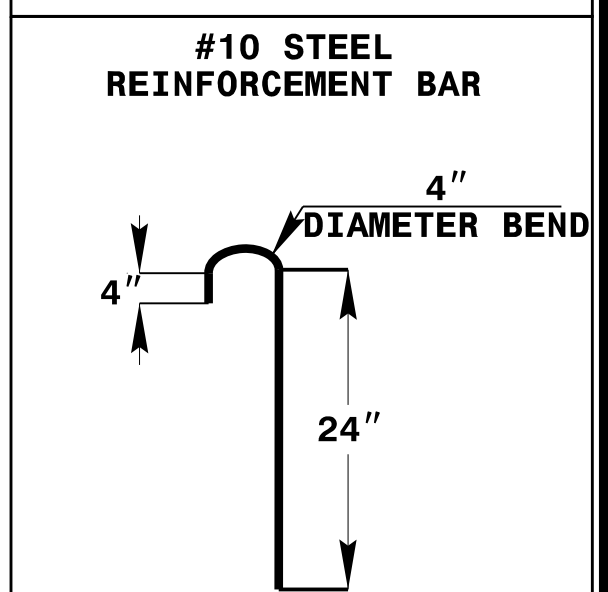
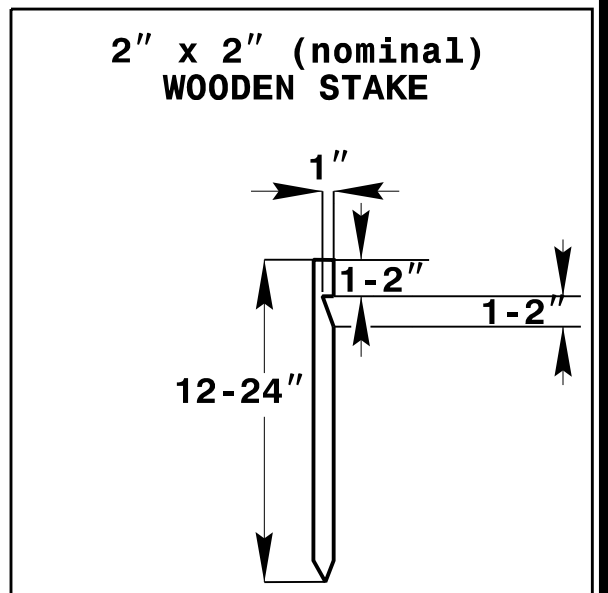
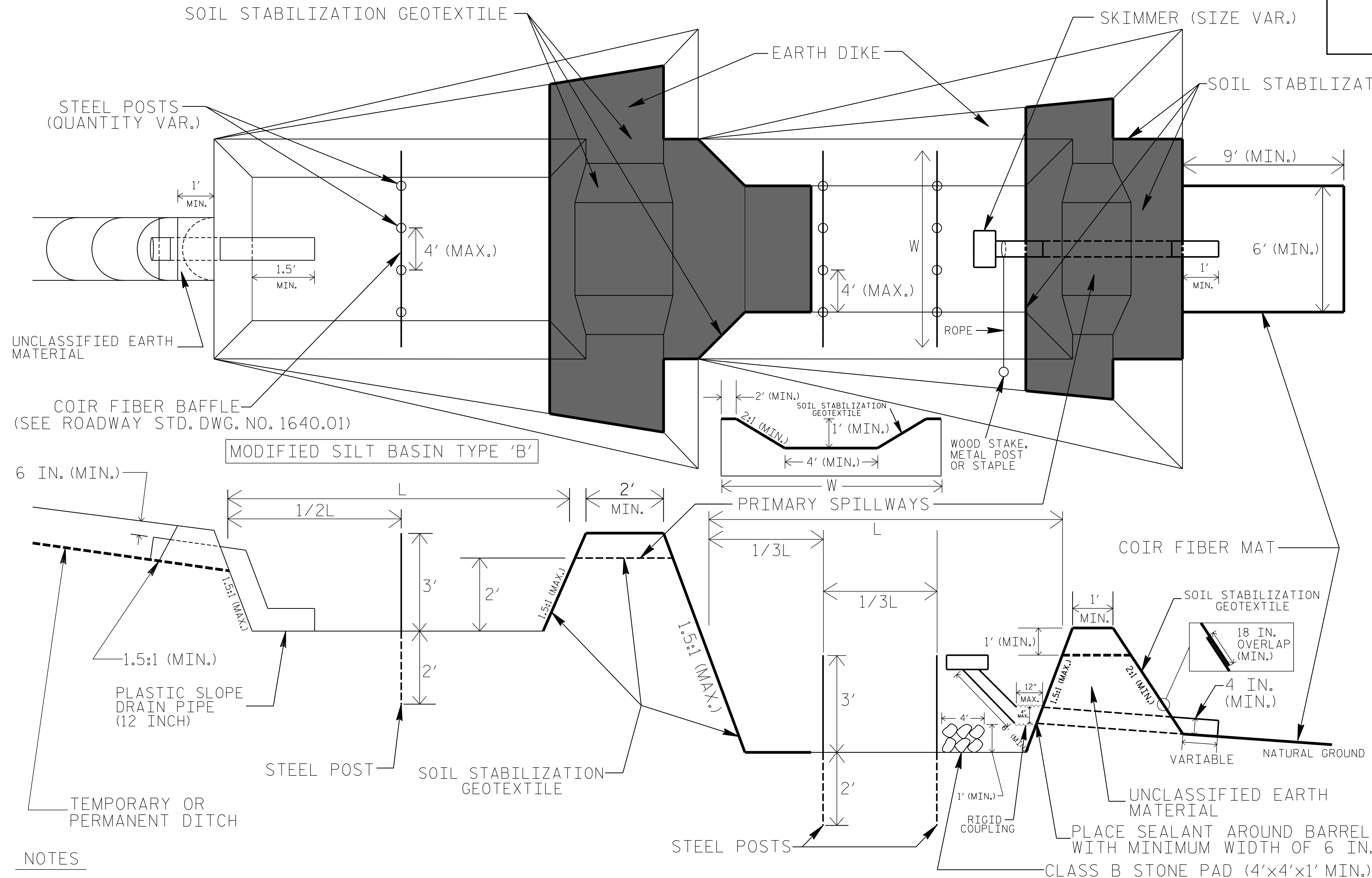
NOT TO SCALE

TIERED SKIMMER BASIN DETAIL



HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. U-2729	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER




COIR FIBER MAT ANCHOR OPTIONS

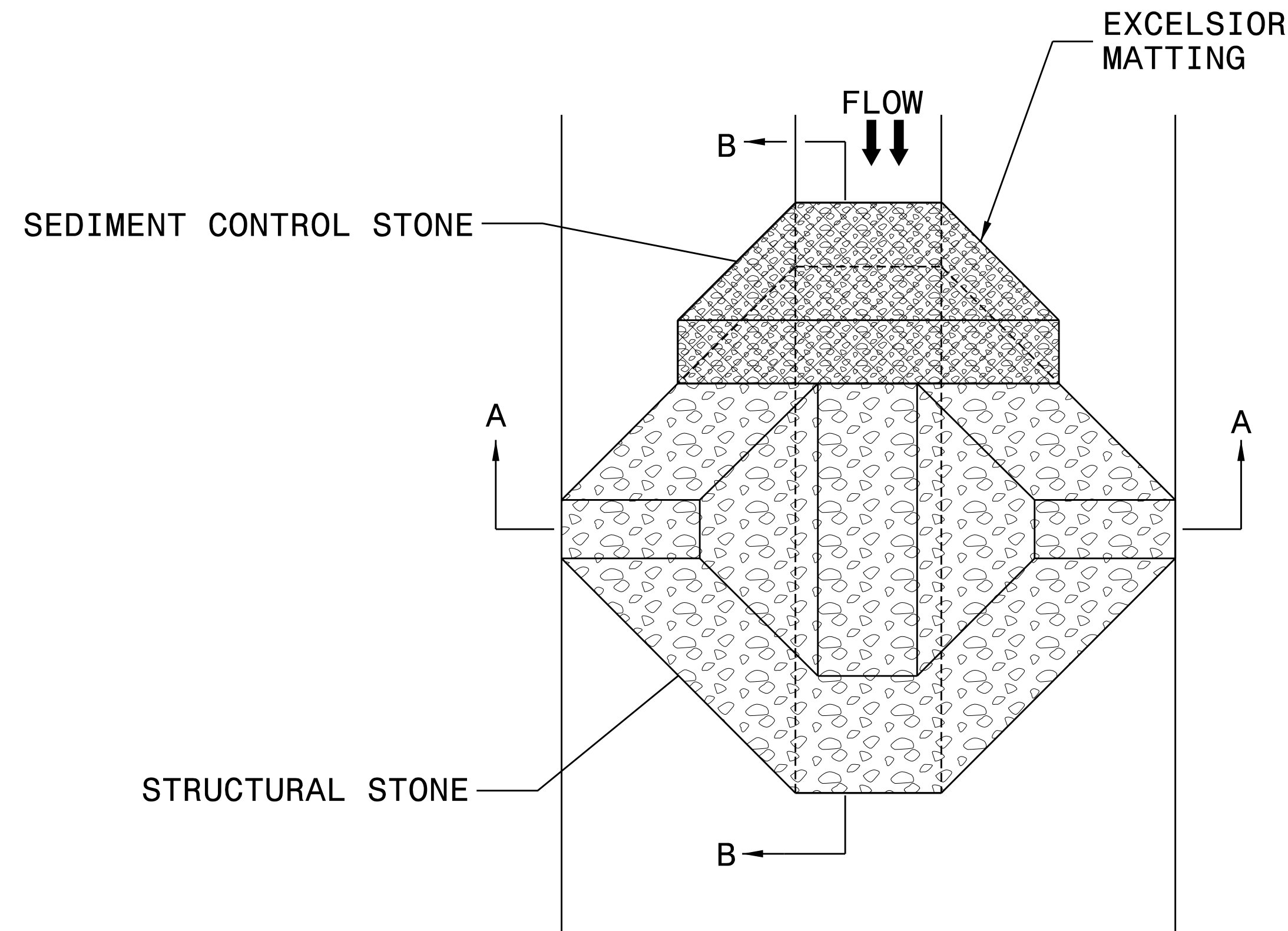
NOTES

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

PROJECT REFERENCE NO. U-2729	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 HDR Engineering, Inc. of the Carolinas 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601 N.C.B.E.L.S. License Number: F-0116	

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



PLAN

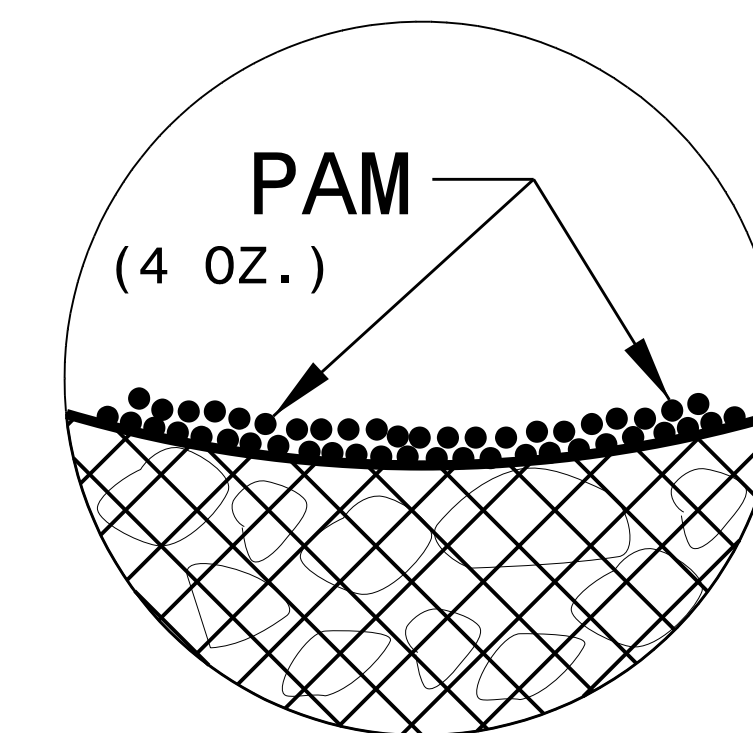
NOTES:

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

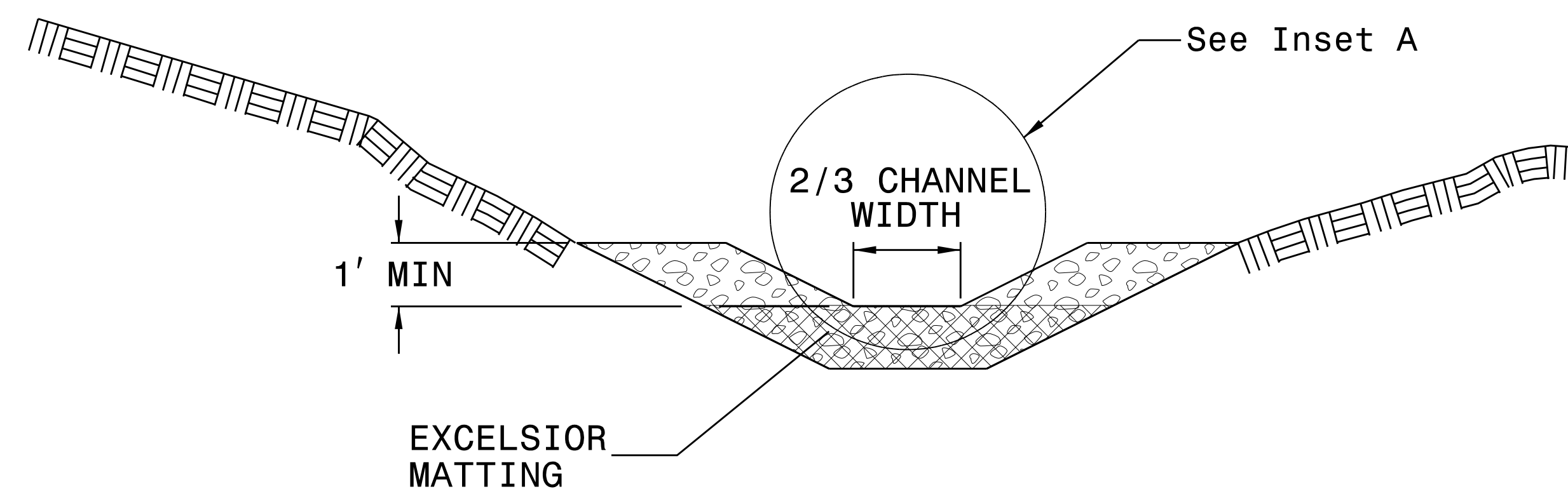
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

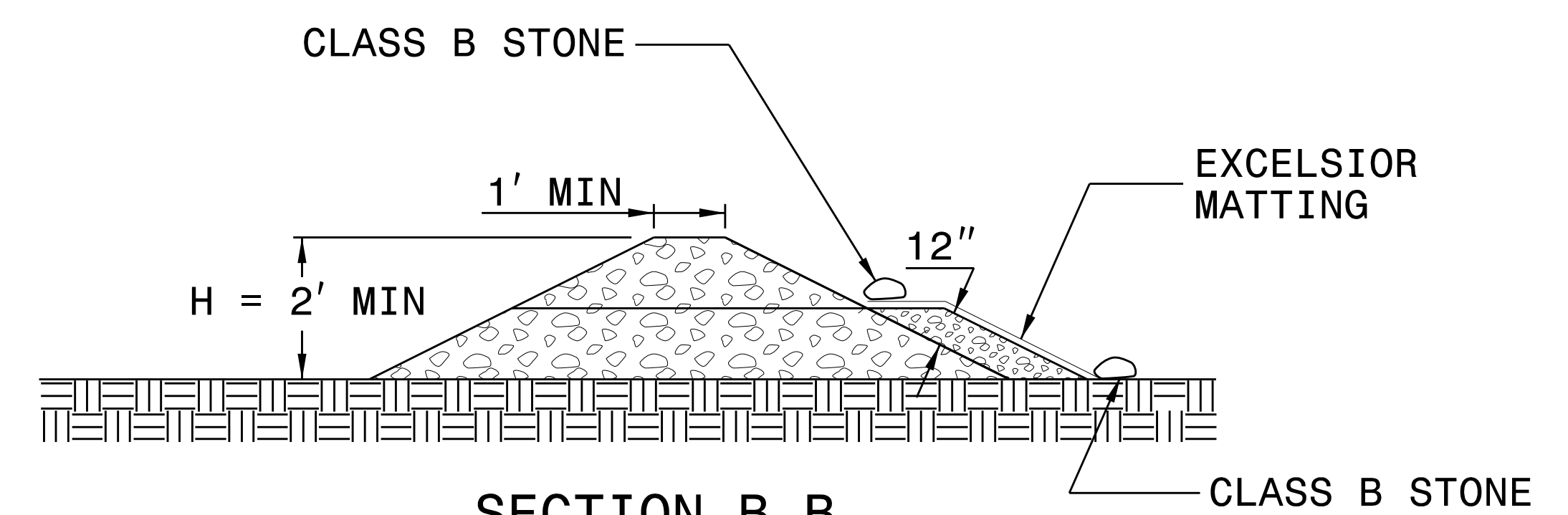
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A

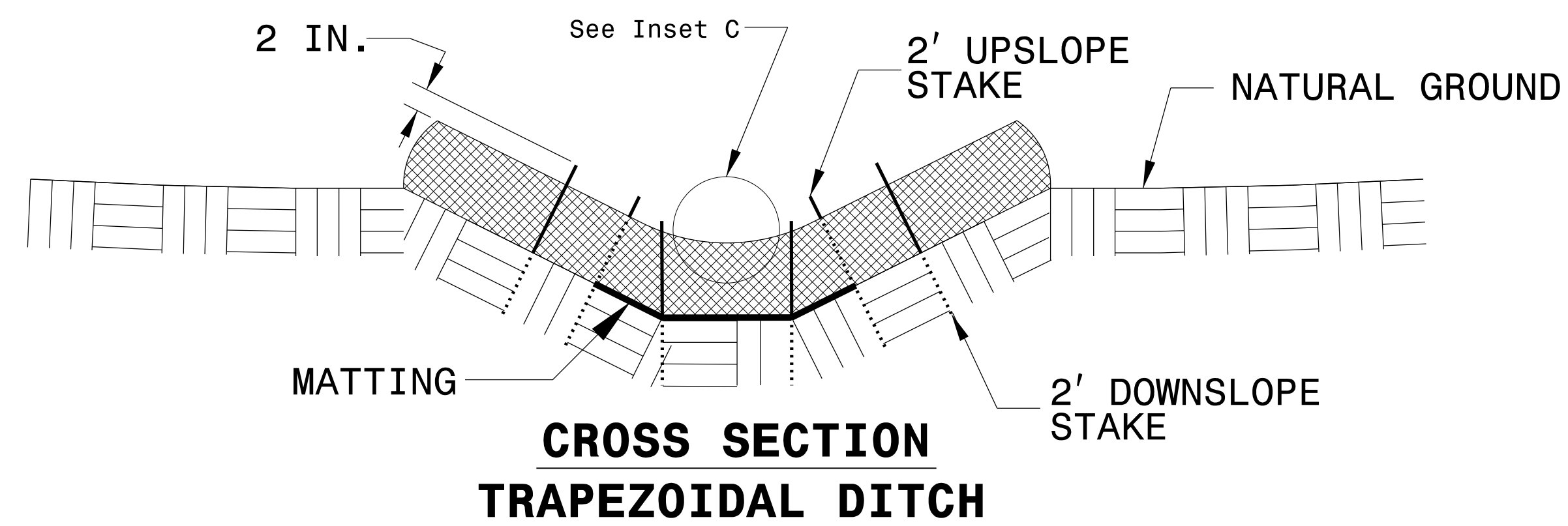
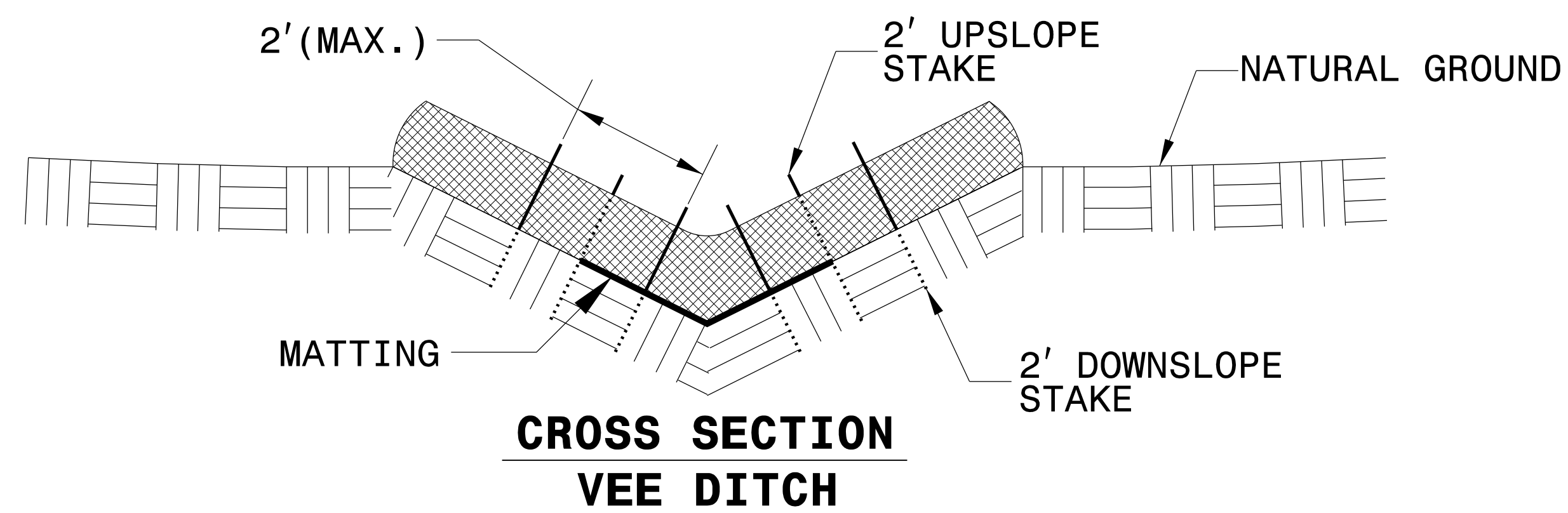
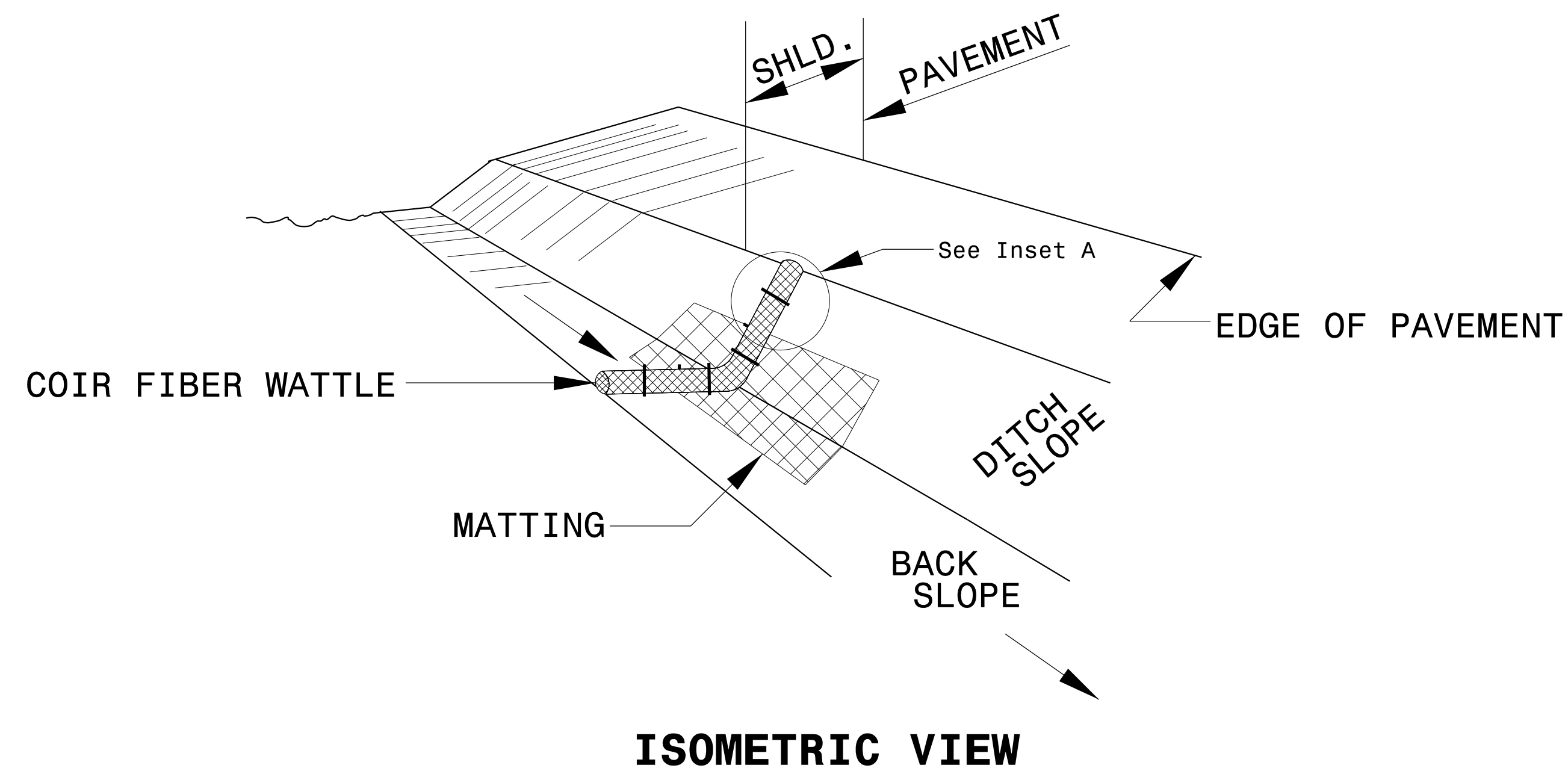


SECTION B-B

NOT TO SCALE

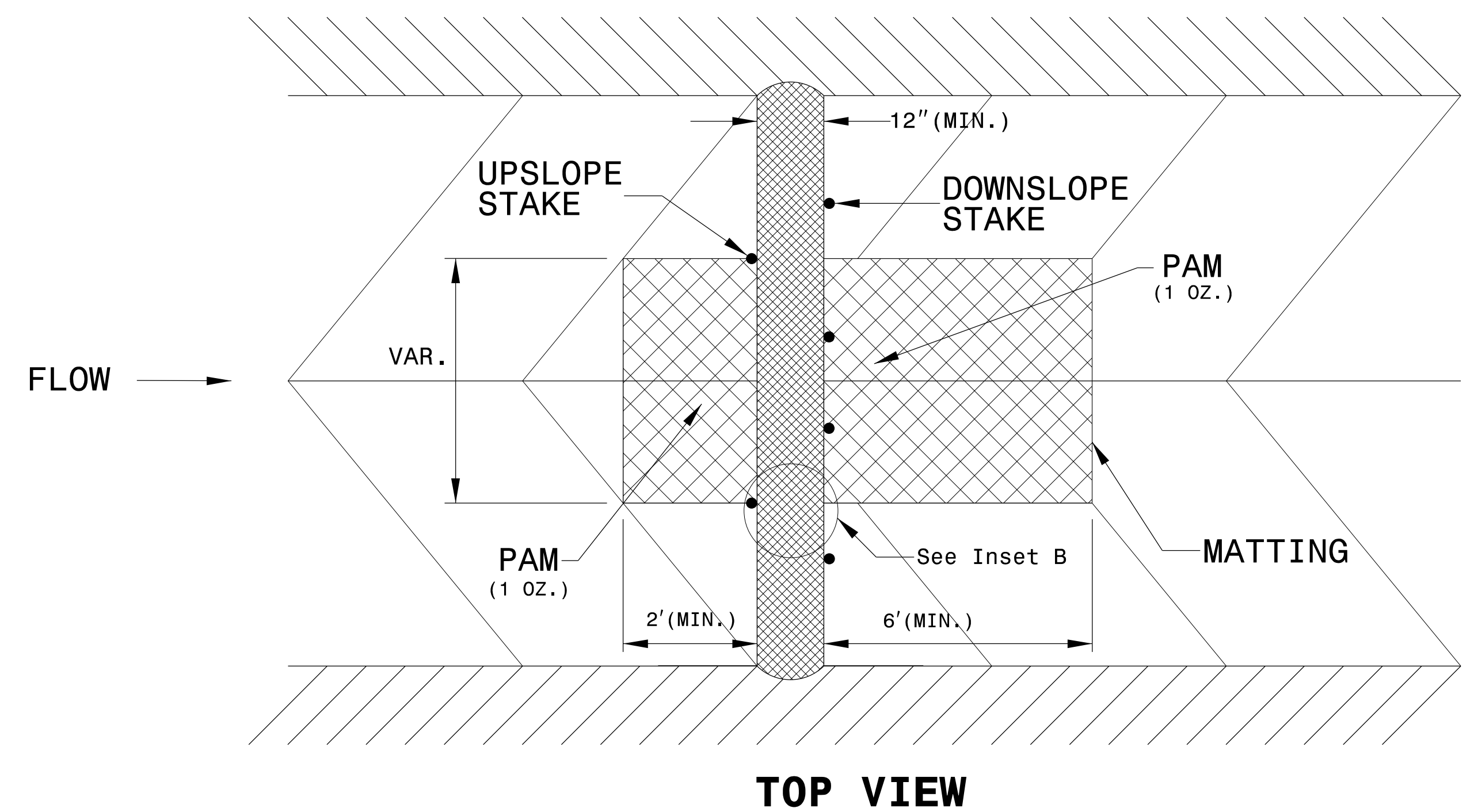
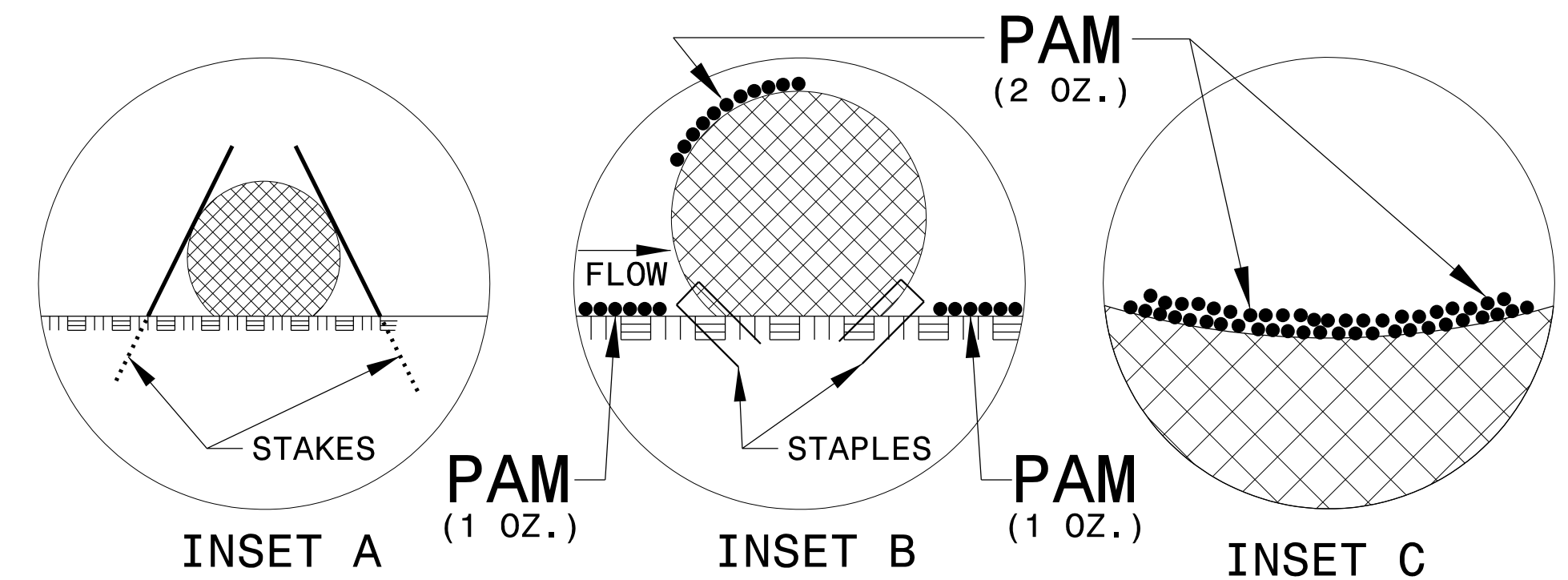
PROJECT REFERENCE NO. U-2729	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



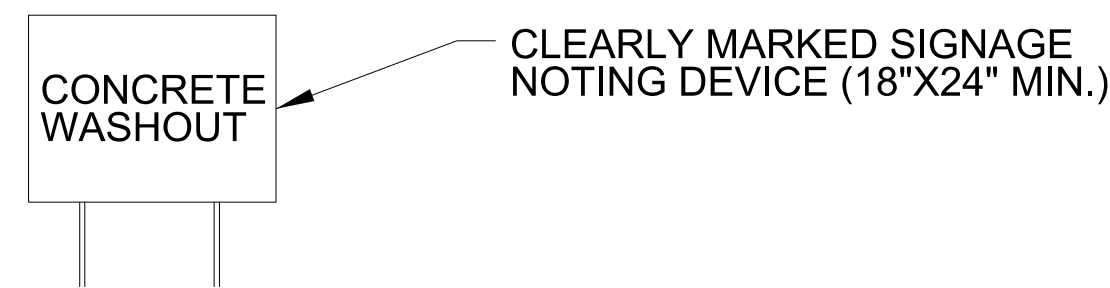
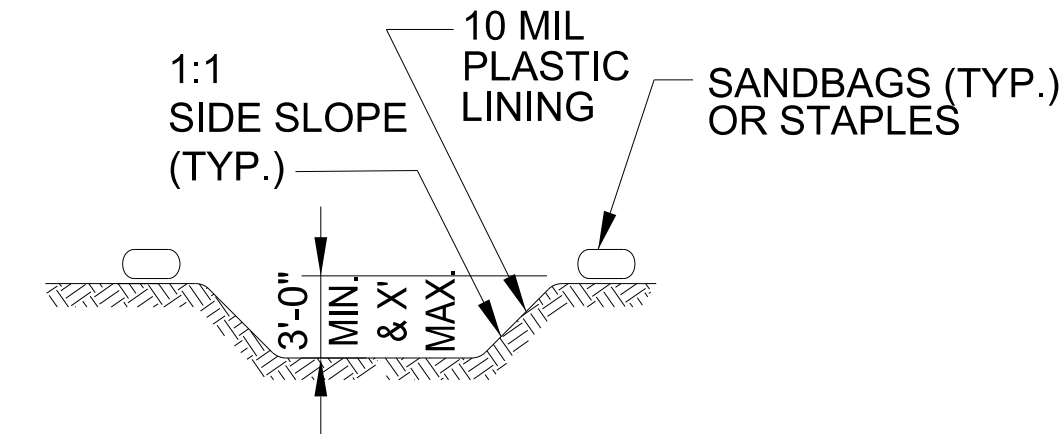
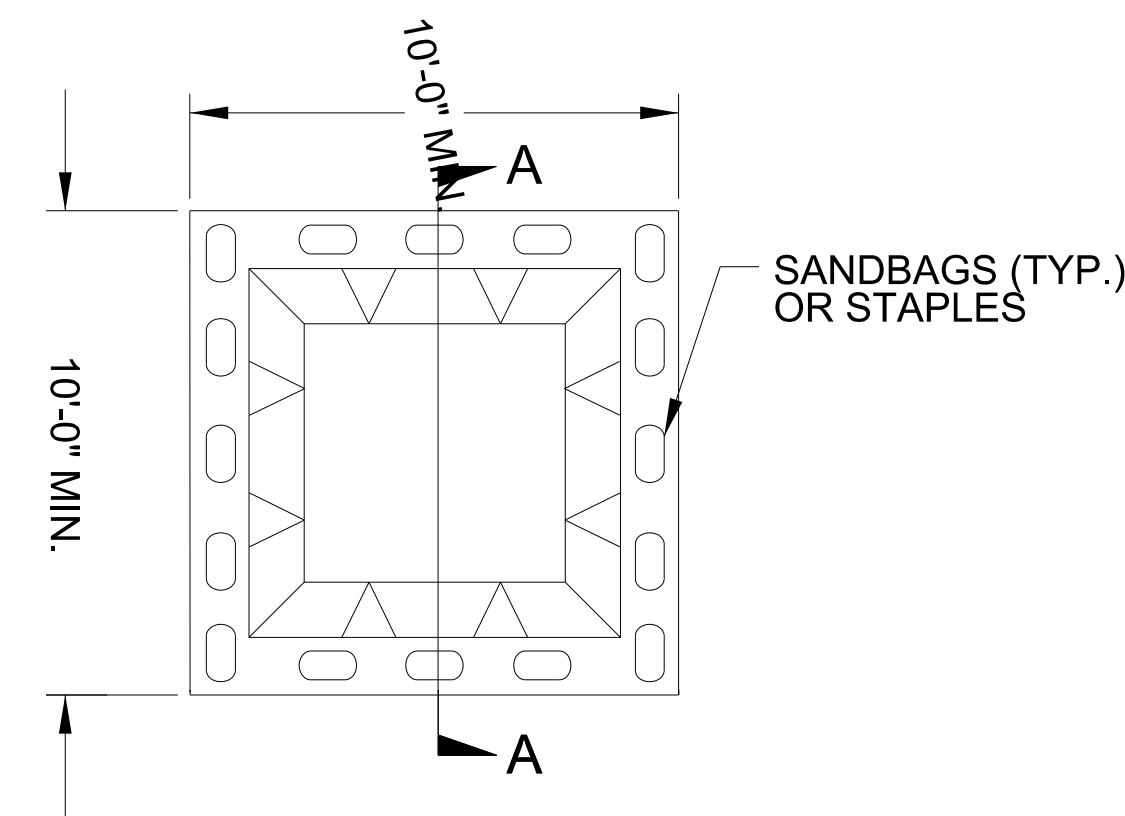
NOTES:

- 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. <i>U-2729</i>	SHEET NO. <i>EC-2D</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



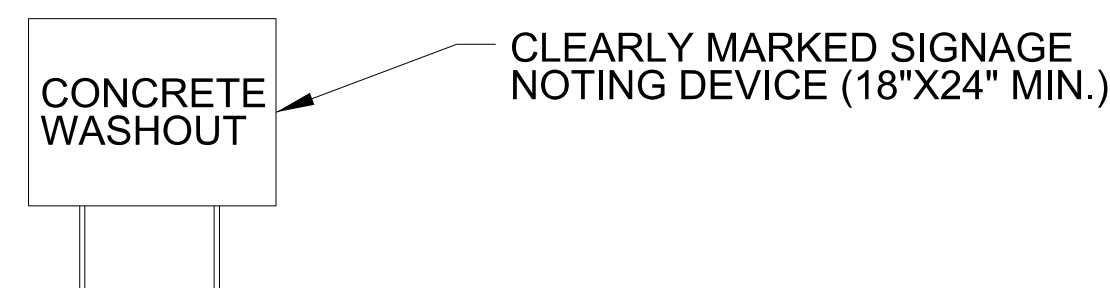
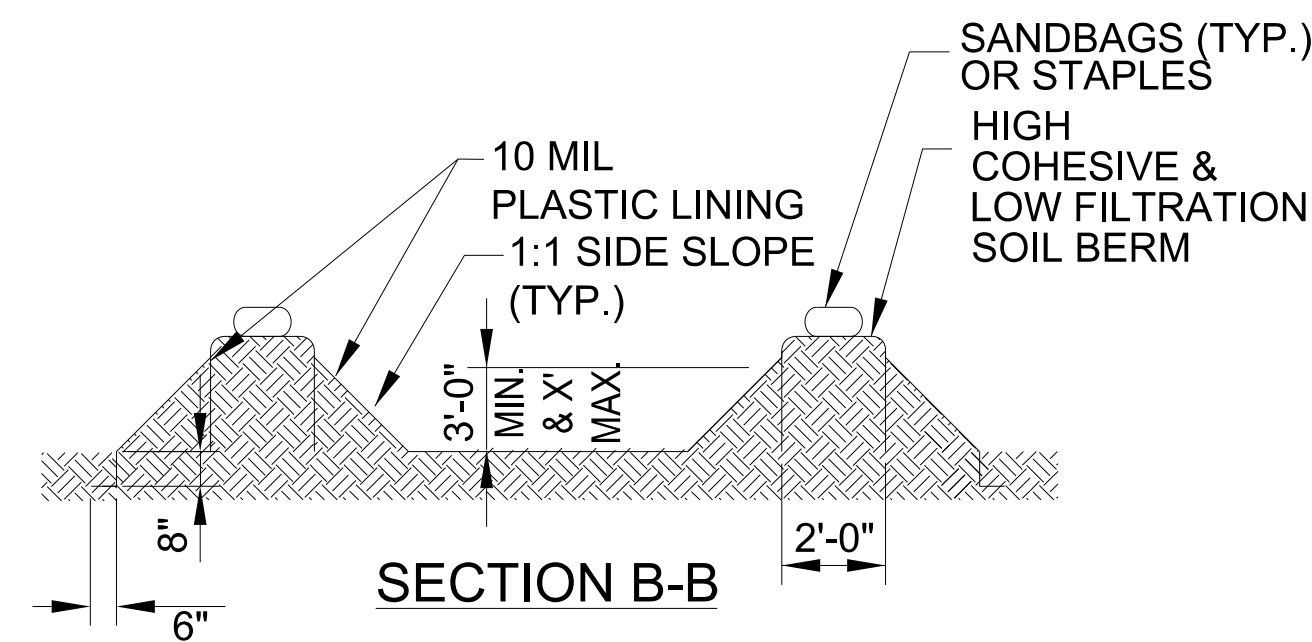
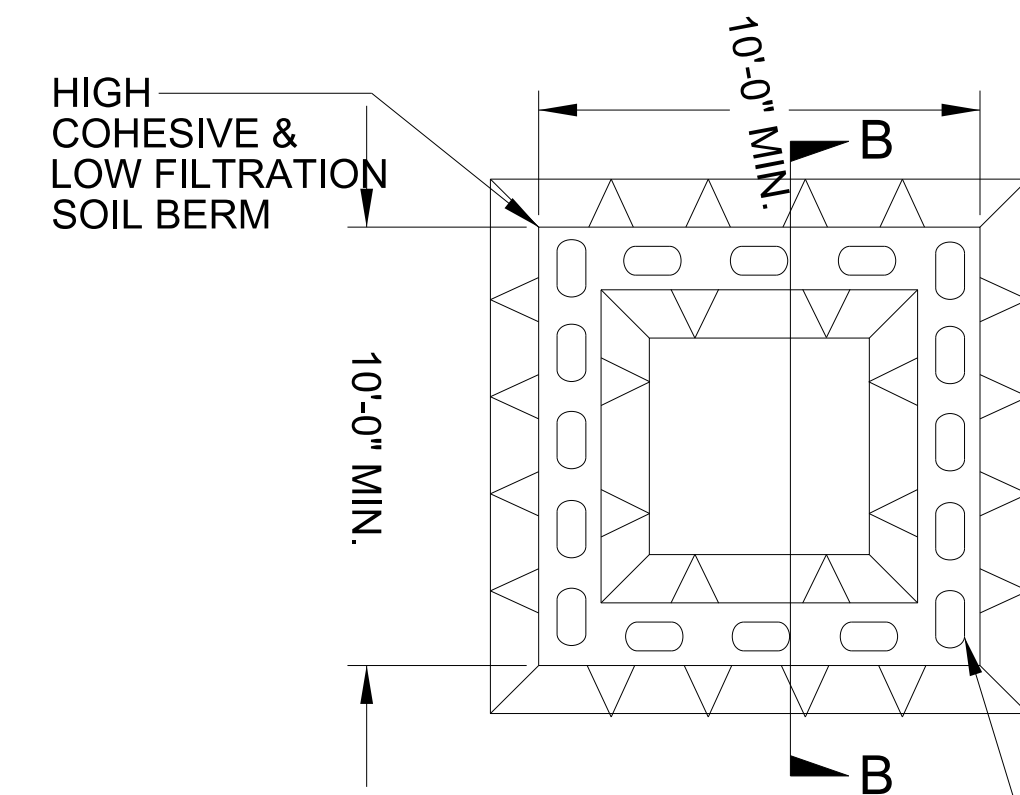
SECTION A-A

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PLAN

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

HDR HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO. <i>U-2729</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.

PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-4/CONST.-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

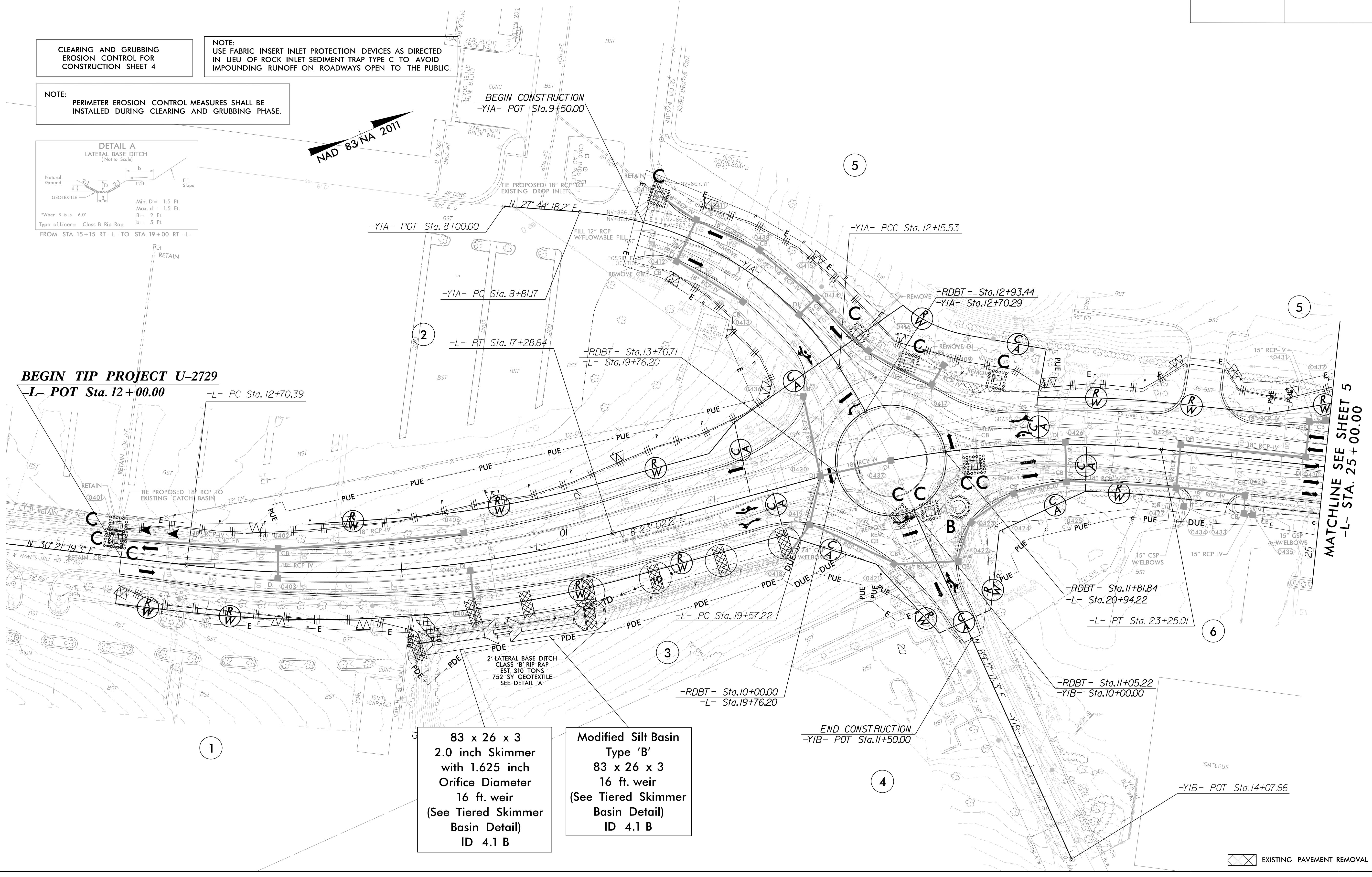
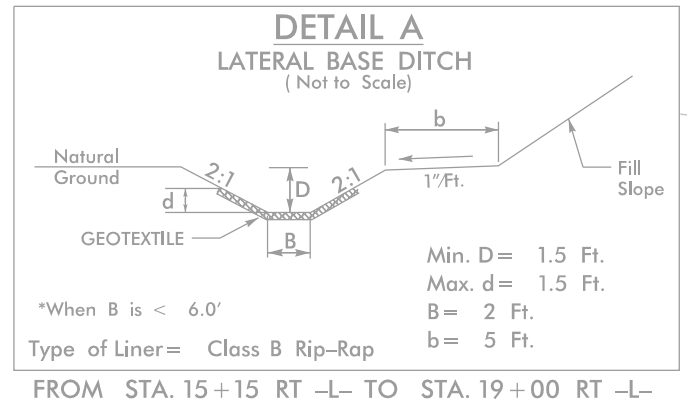
SEE SHEET 2B-1 FOR INTERSECTION DETAILS
SEE SHEET 2B-5 THRU 2B-8 FOR ISLAND DETAILS

-L- SEE PROFILE SHEET 10
-YIA- SEE PROFILE SHEET 11
-YIB- SEE PROFILE SHEET 11
-RDBT- SEE PROFILE SHEET 15

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NOTE:
USE FABRIC INSERT INLET PROTECTION DEVICES AS DIRECTED
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C TO AVOID
IMPOUNDING RUNOFF ON ROADWAYS OPEN TO THE PUBLIC.

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



83 x 26 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
16 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1 B

Modified Silt Basin
Type 'B'
83 x 26 x 3
16 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1 B

8/17/99

3/2/2003
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EXISTING PAVEMENT REMOVAL

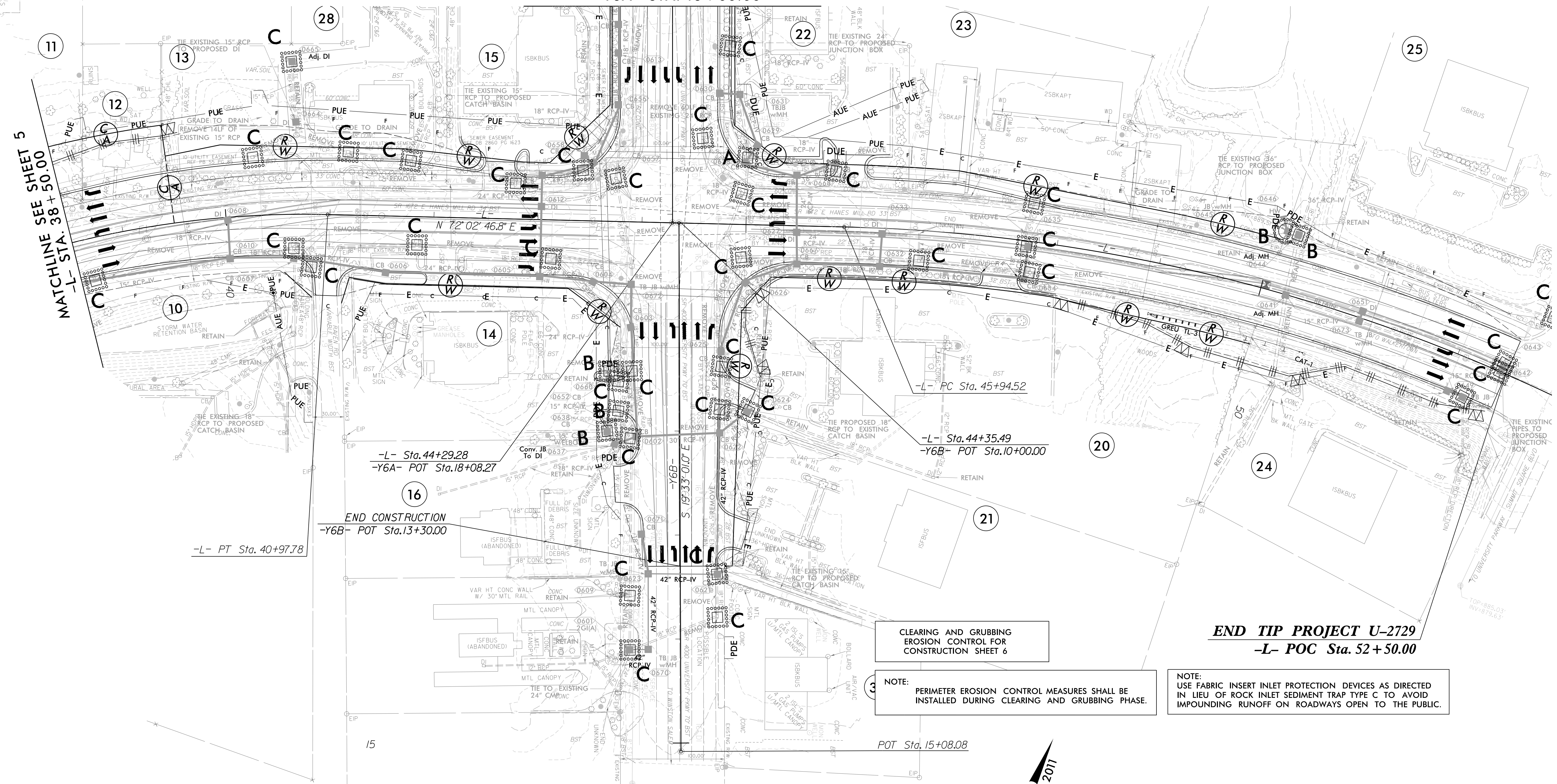
PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-6/CONST.-6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SEE SHEET 2B-4 FOR INTERSECTION DETAILS

-L- SEE PROFILE SHEET 11
 -Y6A- SEE PROFILE SHEET 15
 -Y6B- SEE PROFILE SHEET 15

MATCHLINE SEE SHEET 7
 -Y6A- STA. 16+00.00

MATCHLINE SEE SHEET 5
 -L- STA. 38+50.00



8/17/99

3/22/03
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PROJECT REFERENCE NO.		SHEET NO.	
U-2729		EC-7/CONST.-7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

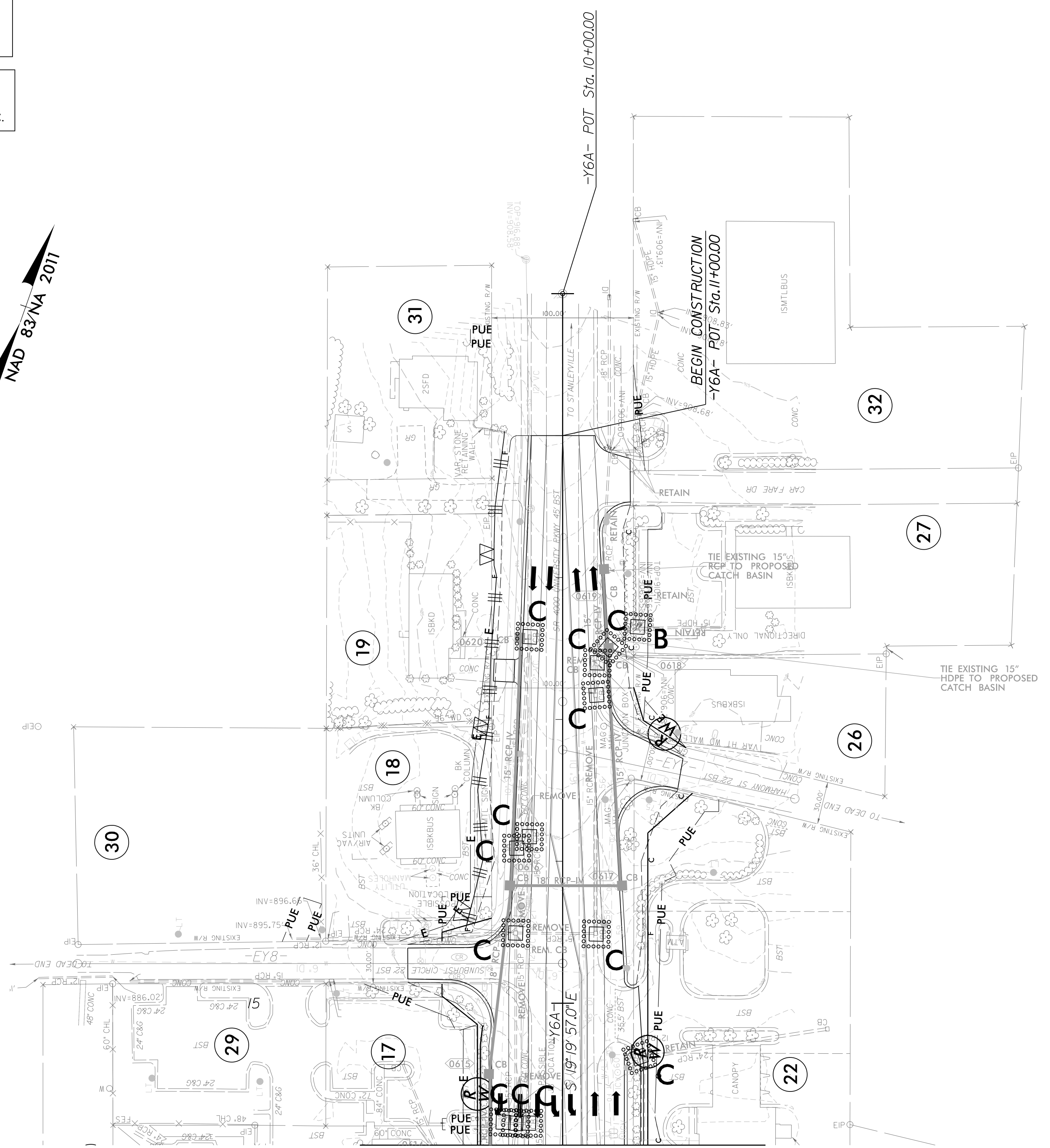
-Y6A- SEE PROFILE SHEET 15

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

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

NOTE:
USE FABRIC INSERT INLET PROTECTION DEVICES AS DIRECTED
IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C TO AVOID
IMPOUNDING RUNOFF ON ROADWAYS OPEN TO THE PUBLIC.

NAD 83/NA 2011



MATCHLINE SEE SHEET 6
-Y6A- STA. 16 + 00.00

EXISTING PAVEMENT REMOVAL

8/17/99

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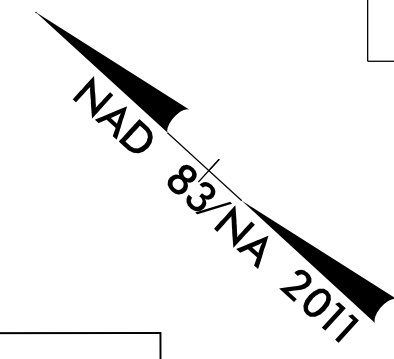
PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-8/CONST.-8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

THIS SHEET INCLUDED FOR -Y4- (U.S. 52) RESURFACING

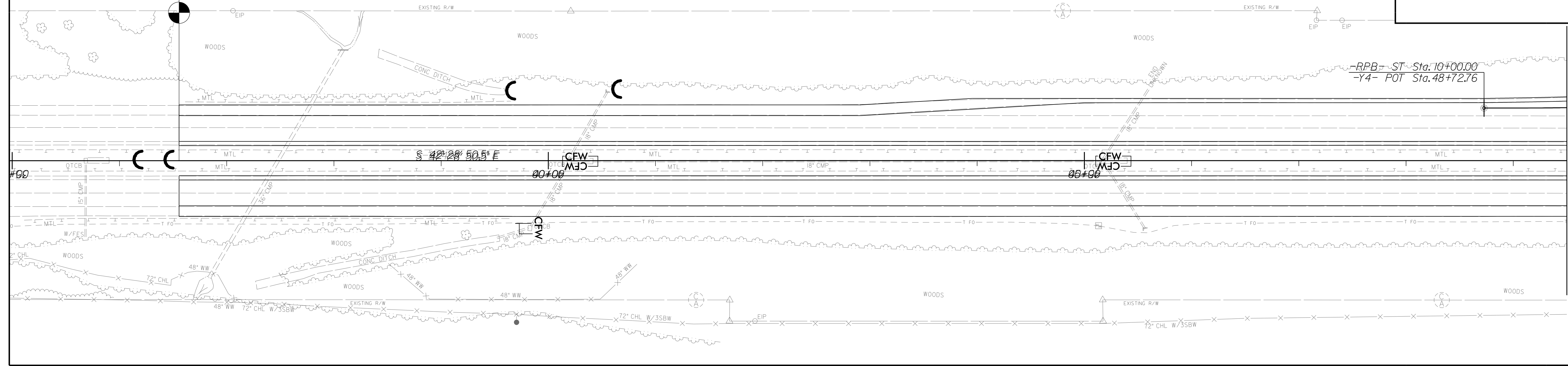
8 A

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 8A

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



Begin Resurfacing U-2729
-Y4- Sta. 36+55.62
Tie to TIP Project R-2247EB
-Y68- Sta. 127+00.00

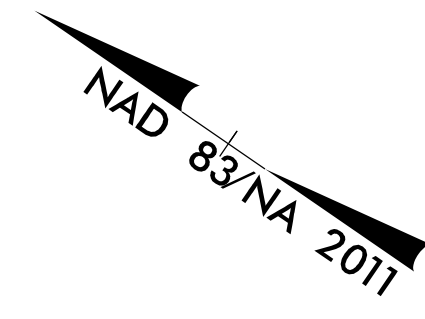


MATCHLINE SEE SHEET 9
 -Y4- STA. 49+50.00

8 B

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 8B

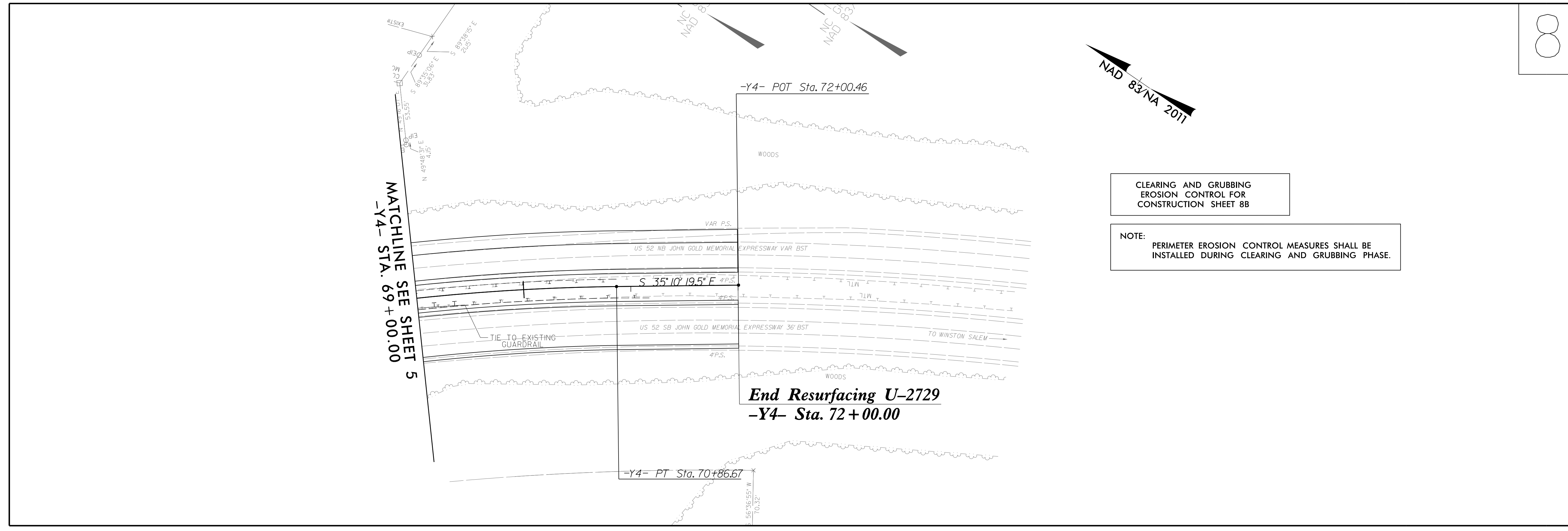
NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.



MATCHLINE SEE SHEET 5
 -Y4- STA. 69+00.00

-Y4- POT Sta. 72+00.46

End Resurfacing U-2729
-Y4- Sta. 72+00.00



-Y4- PT Sta. 70+86.67

8/17/99

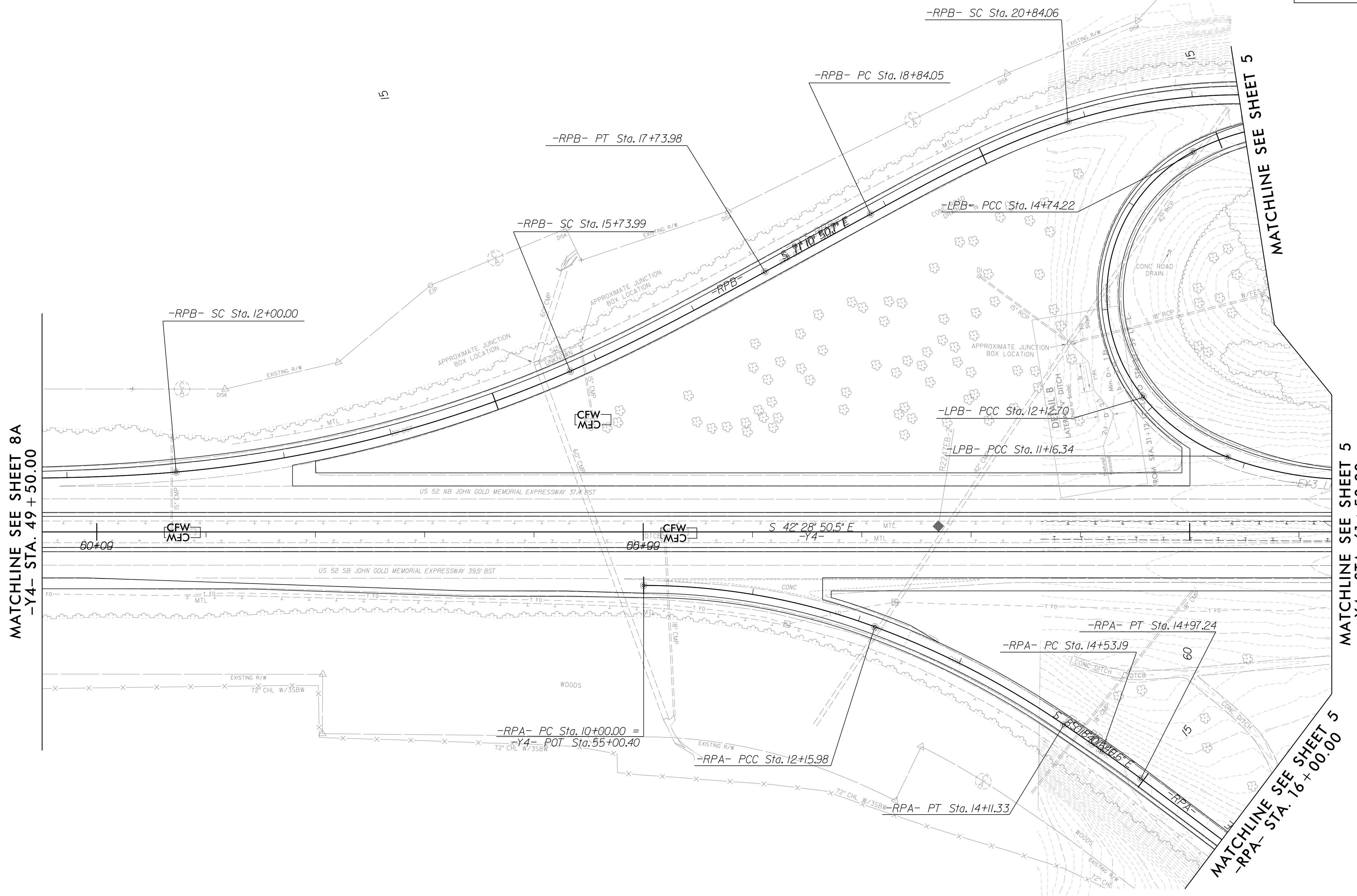
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PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-9/CONST.-9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

THIS SHEET INCLUDED FOR -Y4- (U.S. 52) RESURFACING

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 9

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



8/17/99

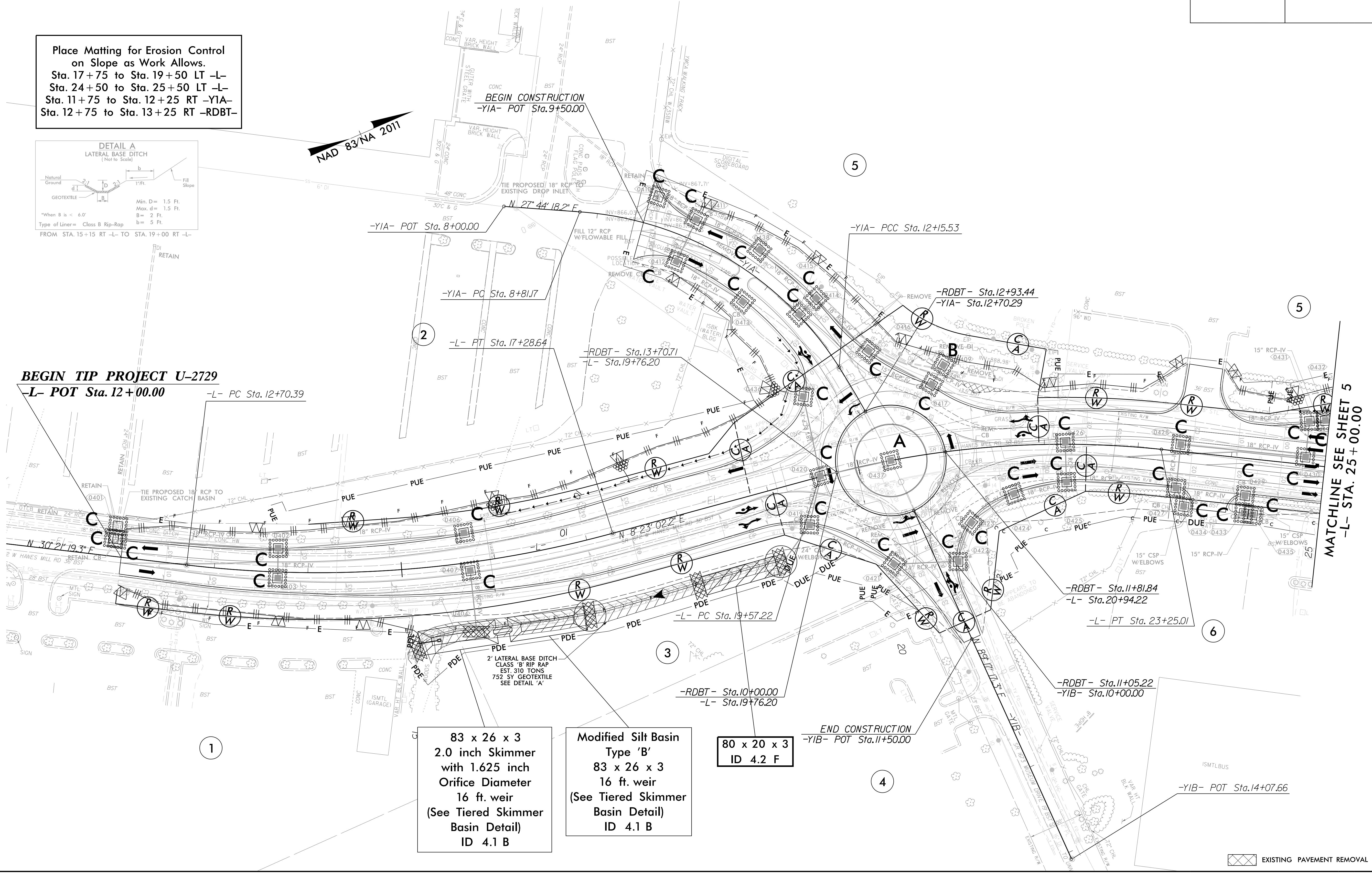
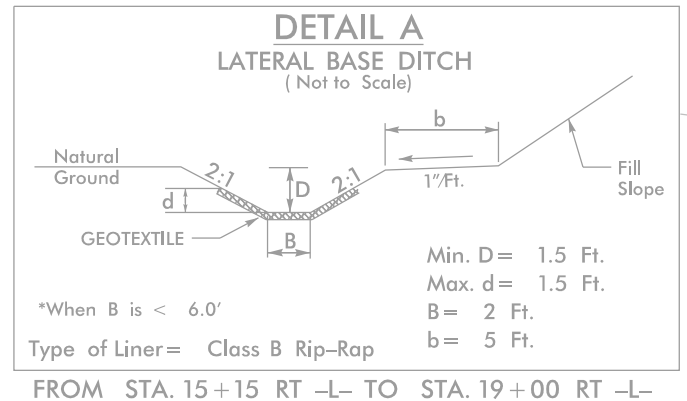
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PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-10/CONST.-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SEE SHEET 2B-1 FOR INTERSECTION DETAILS
SEE SHEET 2B-5 THRU 2B-8 FOR ISLAND DETAILS

-L- SEE PROFILE SHEET 10
-YIA- SEE PROFILE SHEET 11
-YIB- SEE PROFILE SHEET 11
-RDBT- SEE PROFILE SHEET 15

Place Matting for Erosion Control on Slope as Work Allows.
Sta. 17+75 to Sta. 19+50 LT -L-
Sta. 24+50 to Sta. 25+50 LT -L-
Sta. 11+75 to Sta. 12+25 RT -YIA-
Sta. 12+75 to Sta. 13+25 RT -RDBT-



83 x 26 x 3
2.0 inch Skimmer
with 1.625 inch
Orifice Diameter
16 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1 B

Modified Silt Basin
Type 'B'
83 x 26 x 3
16 ft. weir
(See Tiered Skimmer
Basin Detail)
ID 4.1 B

80 x 20 x 3
ID 4.2 F

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EXISTING PAVEMENT REMOVAL

PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-12/CONST.-6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SEE SHEET 2B-4 FOR INTERSECTION DETAILS

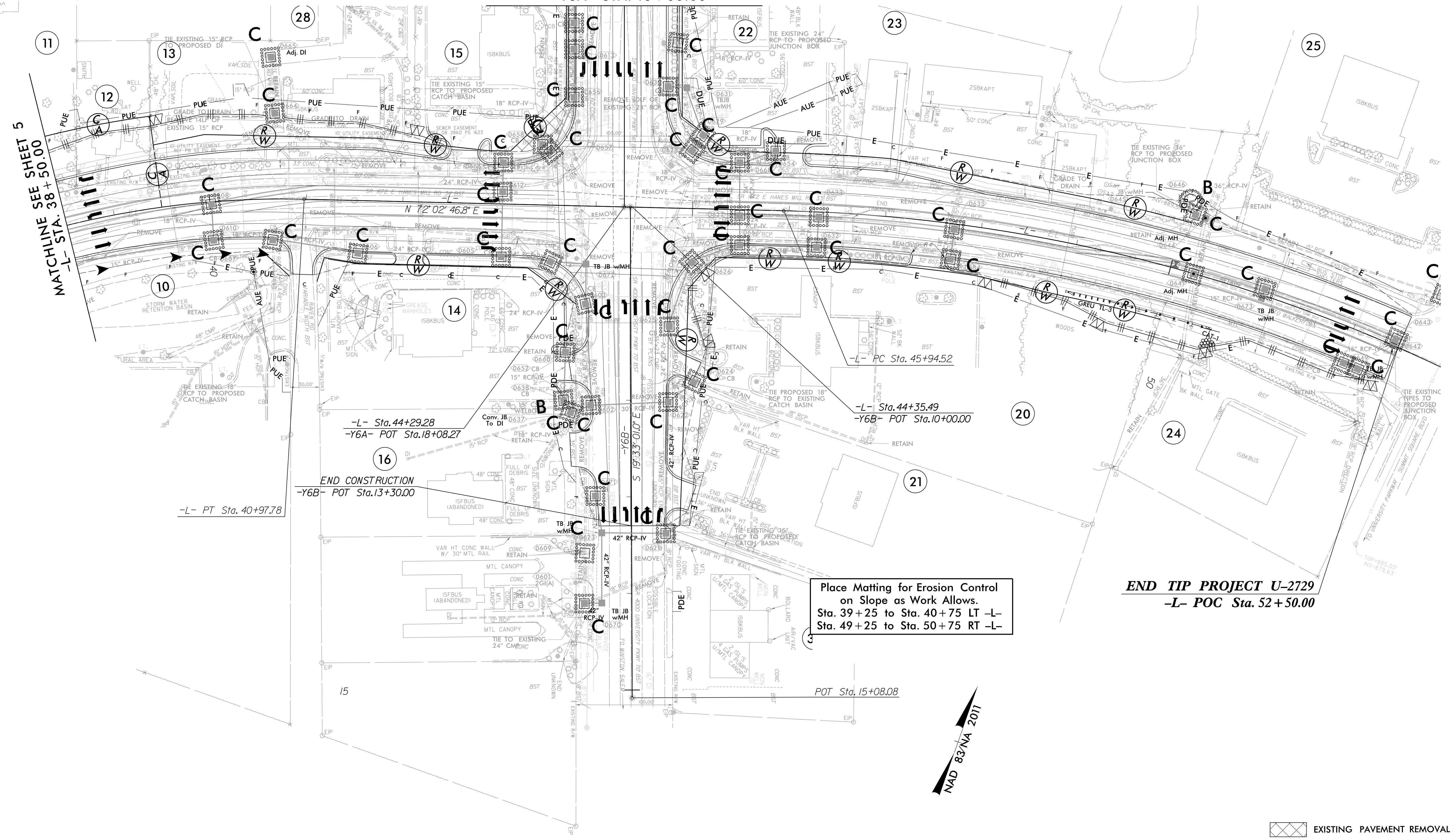
-L- SEE PROFILE SHEET 11
 -Y6A- SEE PROFILE SHEET 15
 -Y6B- SEE PROFILE SHEET 15

MATCHLINE SEE SHEET 7
 -Y6A- STA. 16+00.00

MATCHLINE SEE SHEET 5
 -L- STA. 38+50.00

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 41/144/7/PNT



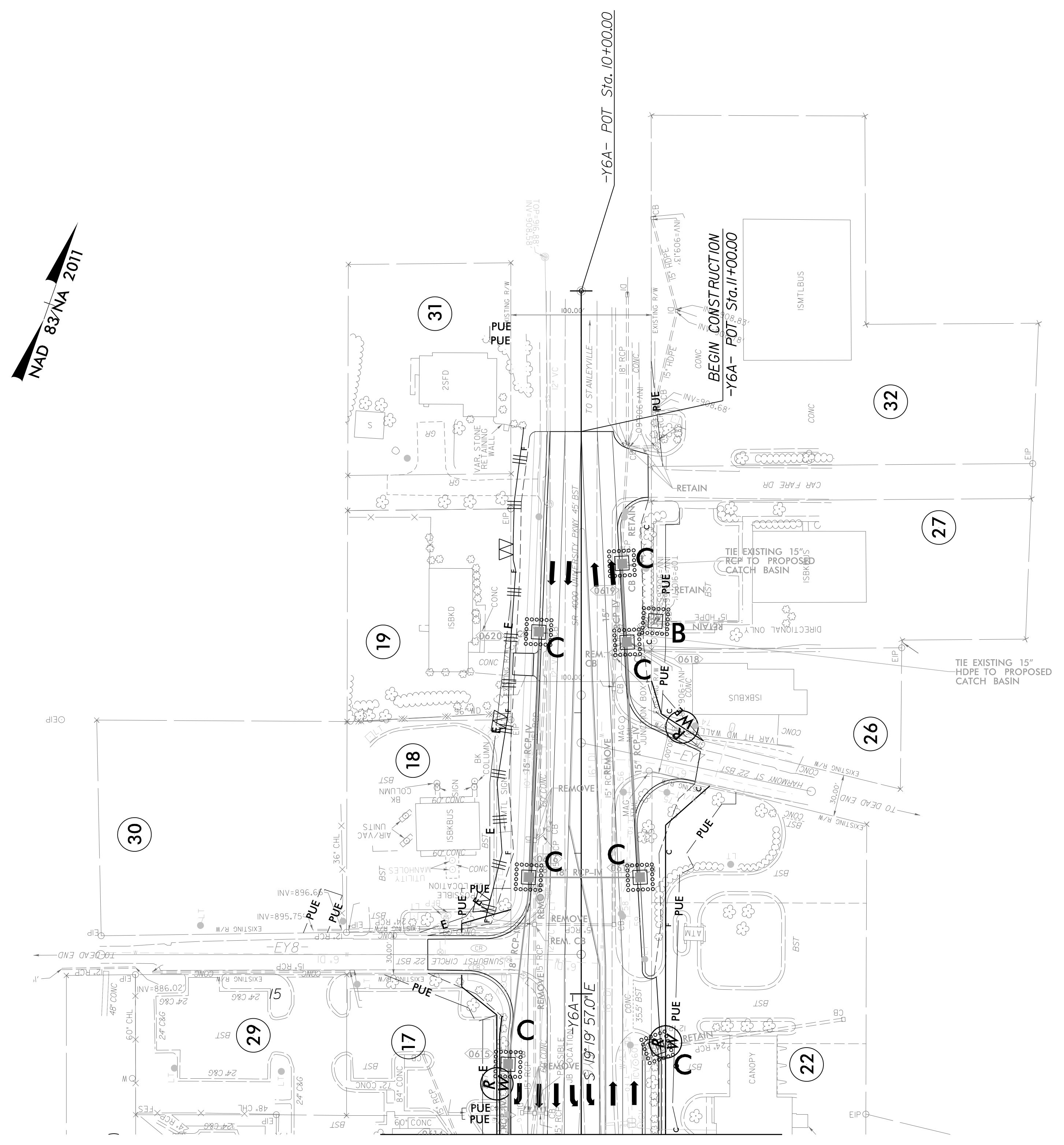
Place Matting for Erosion Control
 on Slope as Work Allows.
 Sta. 39+25 to Sta. 40+75 LT -L-
 Sta. 49+25 to Sta. 50+75 RT -L-

END TIP PROJECT U-2729
 -L- POC Sta. 52+50.00

EXISTING PAVEMENT REMOVAL

-Y6A- SEE PROFILE SHEET 15

PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-13/CONST.-7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



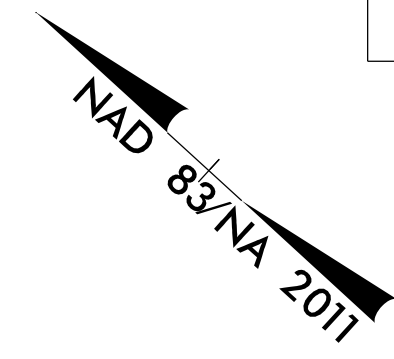
MATCHLINE SEE SHEET 6
 -Y6A- STA. 16 + 00.00

EXISTING PAVEMENT REMOVAL

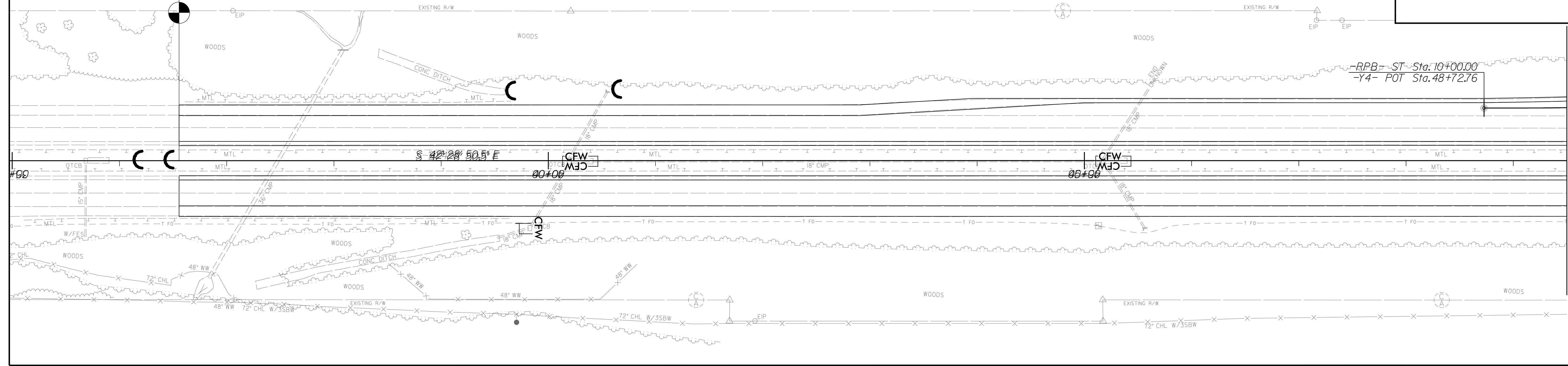
PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-14/CONST.-8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

THIS SHEET INCLUDED FOR -Y4- (U.S. 52) RESURFACING

8 A

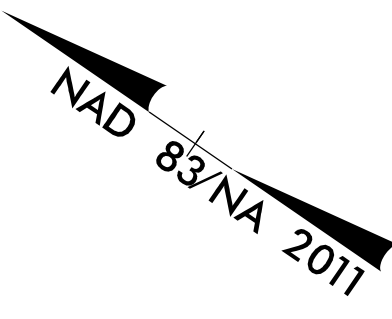


Begin Resurfacing U-2729
-Y4- Sta. 36+55.62
Tie to TIP Project R-2247EB
-Y68- Sta. 127+00.00



MATCHLINE SEE SHEET 9
 -Y4- STA. 49+50.00

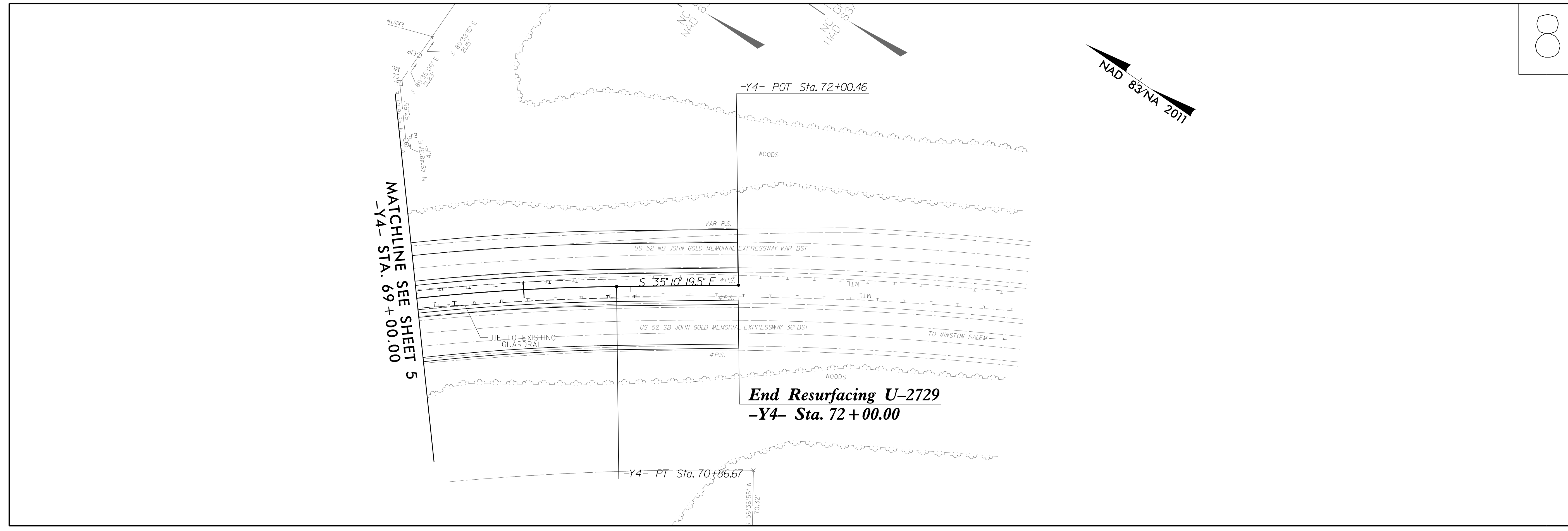
8 B



MATCHLINE SEE SHEET 5
 -Y4- STA. 69+00.00

-Y4- POT Sta. 72+00.46

End Resurfacing U-2729
-Y4- Sta. 72+00.00

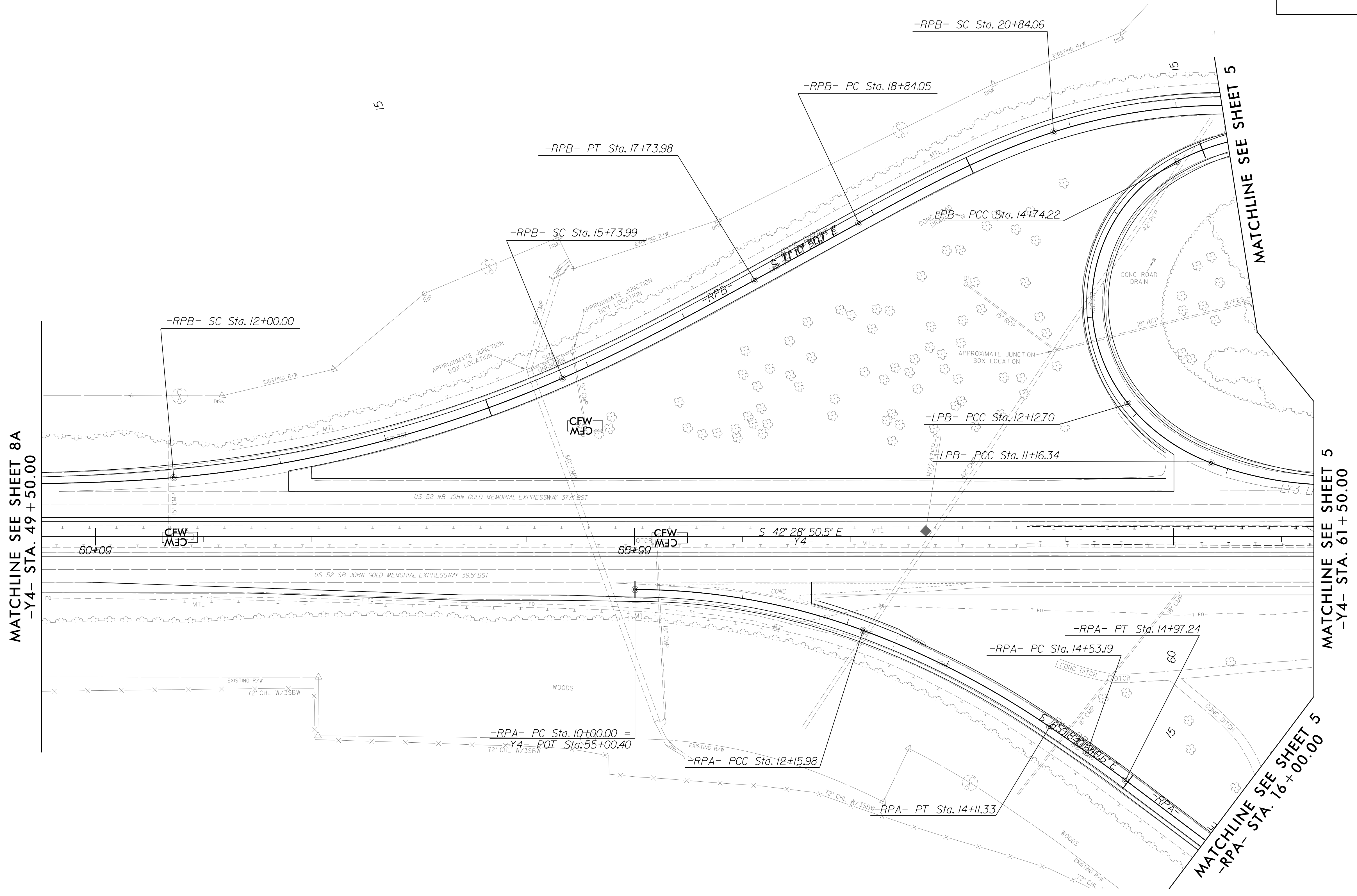


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5/5/2023 EC-PSH-F.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-2729	EC-15/CONST.-9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

THIS SHEET INCLUDED FOR -Y4- (U.S. 52) RESURFACING



8/17/99

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