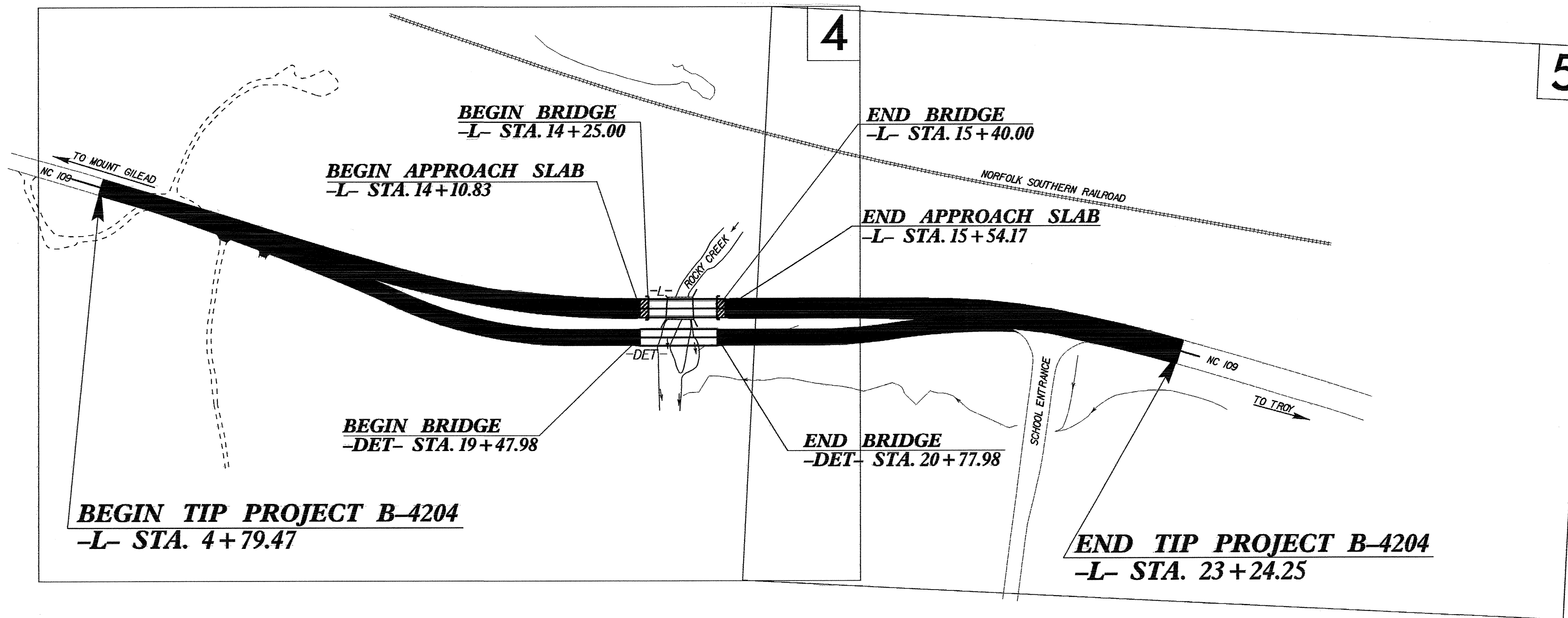


TIP PROJECT: B-4204

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

LOCATION: BRIDGE NO. 28 OVER ROCKY CREEK ON NC 109
 TYPE OF WORK: GRADING, DRAINAGE, PAVING AND STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4204	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

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	
1630.01	Riser Basin	
	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
	Wattle	
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	
1632.02	Type B	
1632.03	Type C	
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

**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.

**HIGH QUALITY WATER(S) EXIST
 ON THIS PROJECT**
 High Quality Water Zone(s) Exist
 From Sta. Begin
 to Sta. End
 Refer To E. C. Special Provisions
 for Special Considerations.

GRAPHIC SCALE

0

PLANS

0

PROFILE (HORIZONTAL)

0

PROFILE (VERTICAL)

ROADSIDE ENVIRONMENTAL UNIT
 DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA

Prepared In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
 1 South Wilmington St.
 Raleigh, NC 27611
2006 STANDARD SPECIFICATIONS

Roadway Standard Drawings

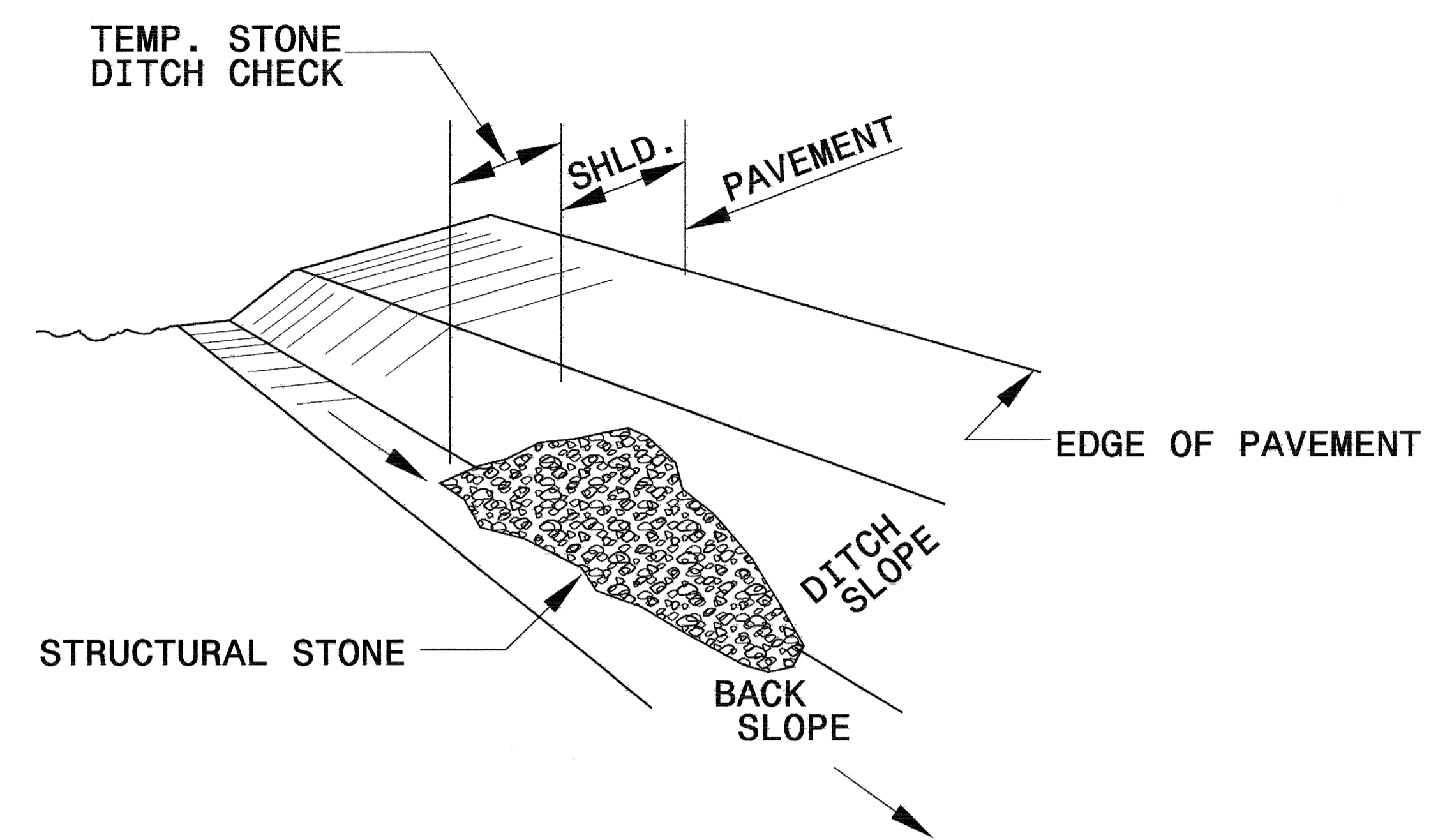
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	
1630.03 Temporary Silt Ditch	
1630.05 Temporary Diversion	

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PROJECT REFERENCE NO.	SHEET NO.
B-4204	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL

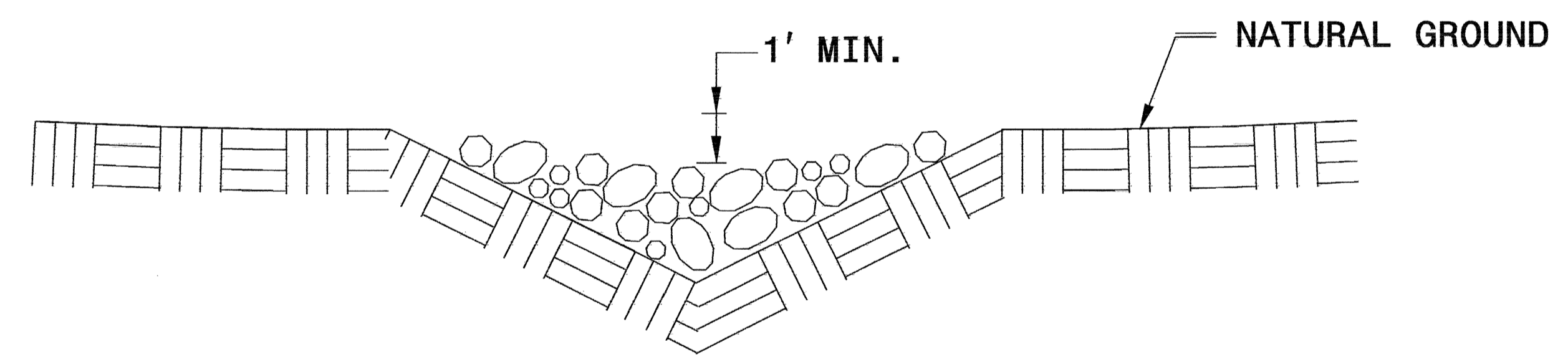


ISOMETRIC VIEW

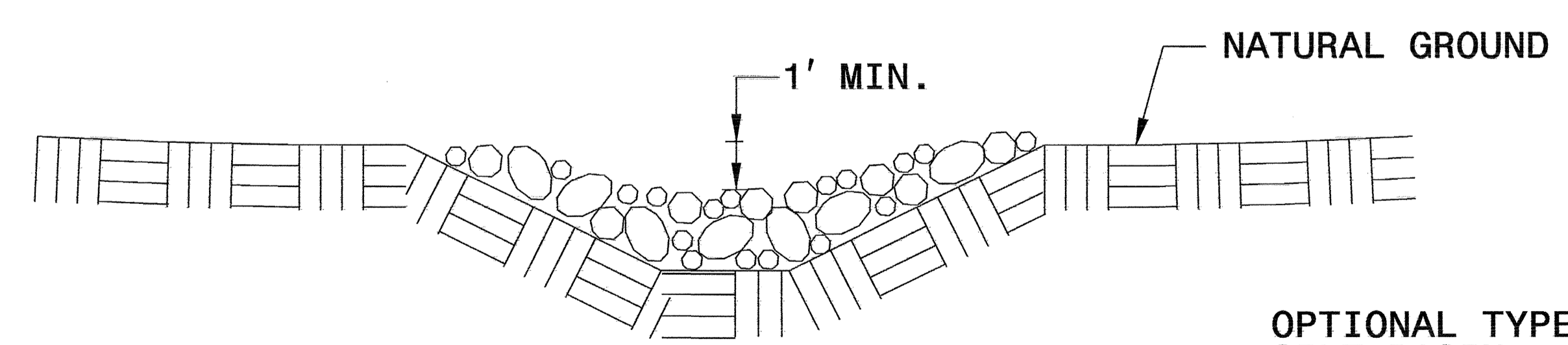
NOTES:

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

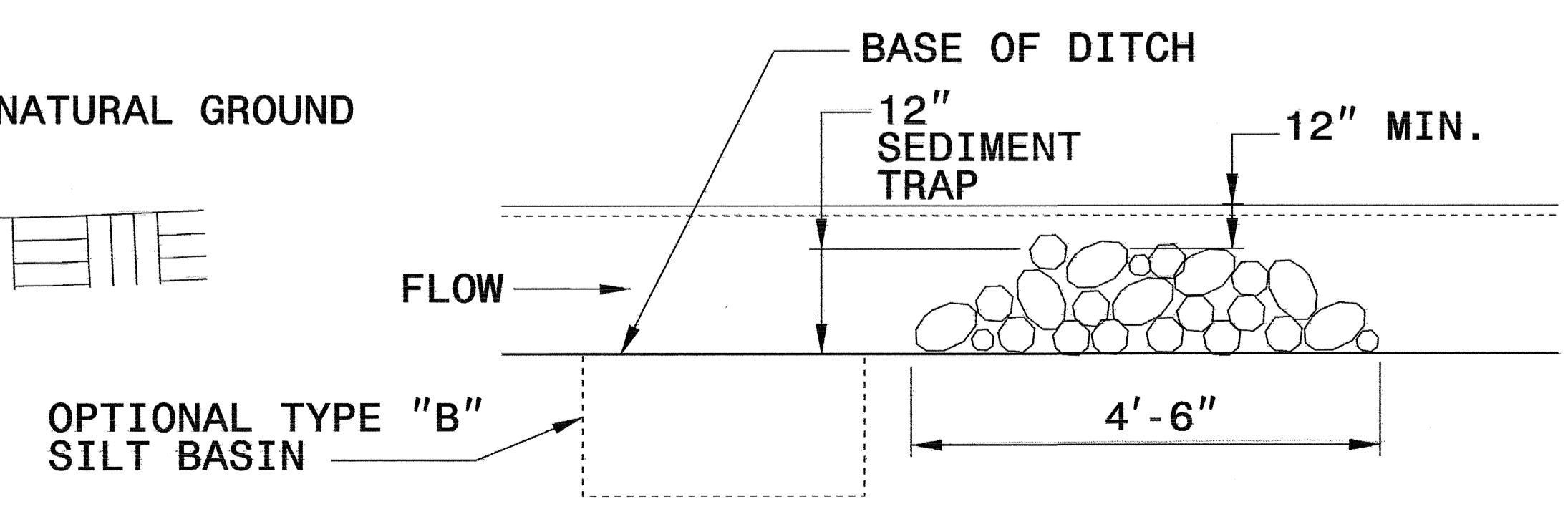
THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



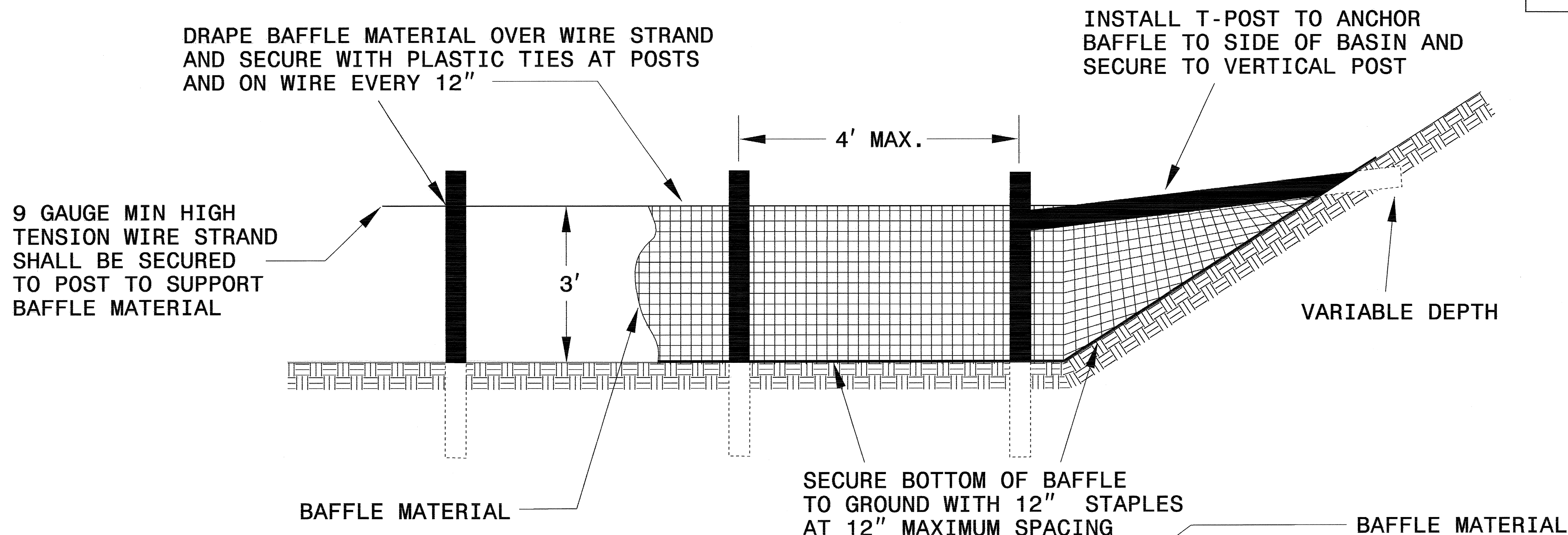
CROSS SECTION TRAPEZOIDAL DITCH



ELEVATION VIEW

PROJECT REFERENCE NO. B-4204	SHEET NO. EC-2A
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER BAFFLE DETAIL

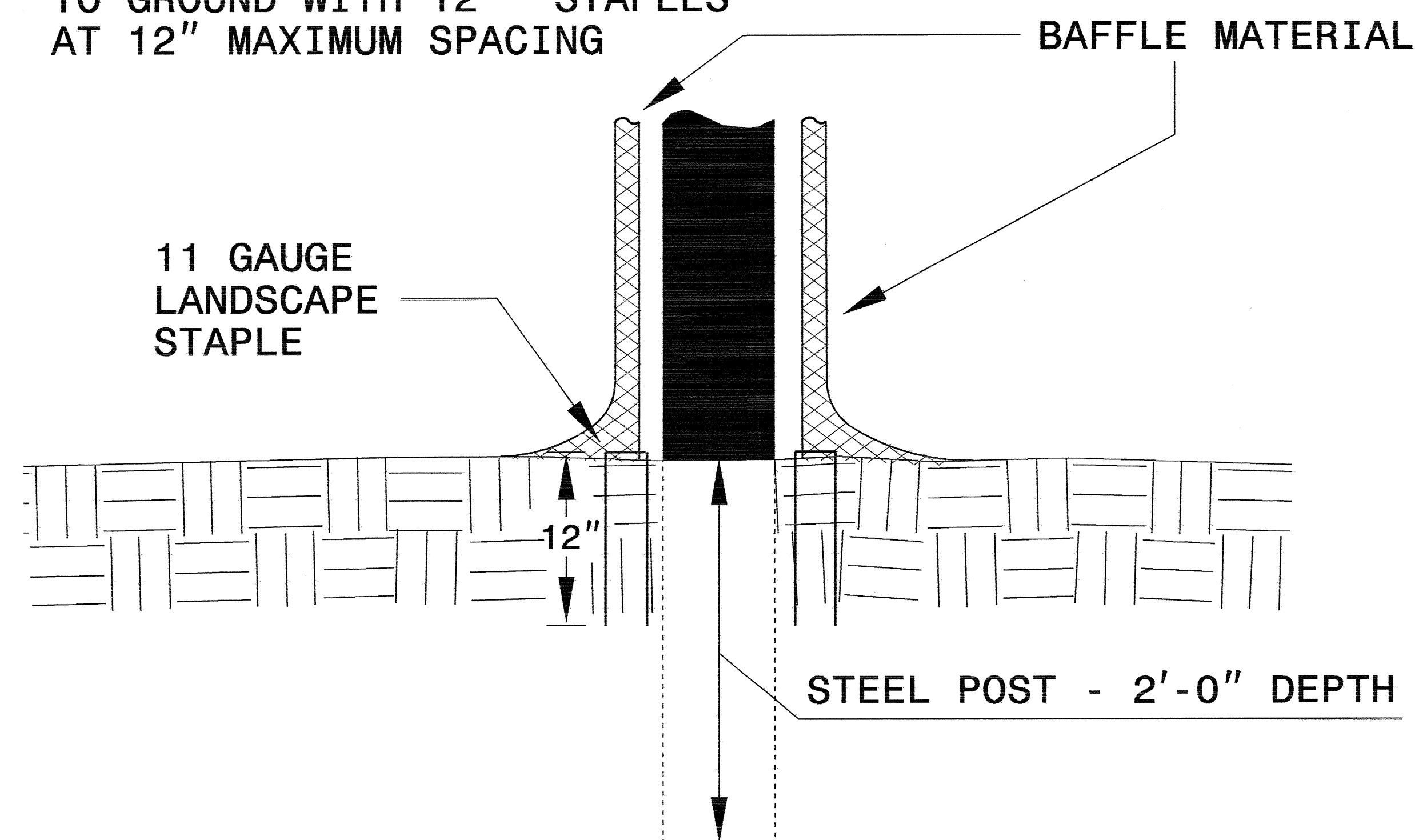


NOTES:

1. INSTALL THREE(3) COIR FIBER BAFFLES IN SILT BASINS AND SEDIMENT DAMS AT DRAINAGE OUTLETS WITH A SPACING OF $\frac{1}{4}$ THE BASIN LENGTH.

2. TWO(2) COIR FIBER BAFFLES CAN BE INSTALLED IN SILT BASINS AND DAMS LESS THAN 20 FT. IN LENGTH WITH A SPACING OF $\frac{1}{3}$ THE BASIN LENGTH.

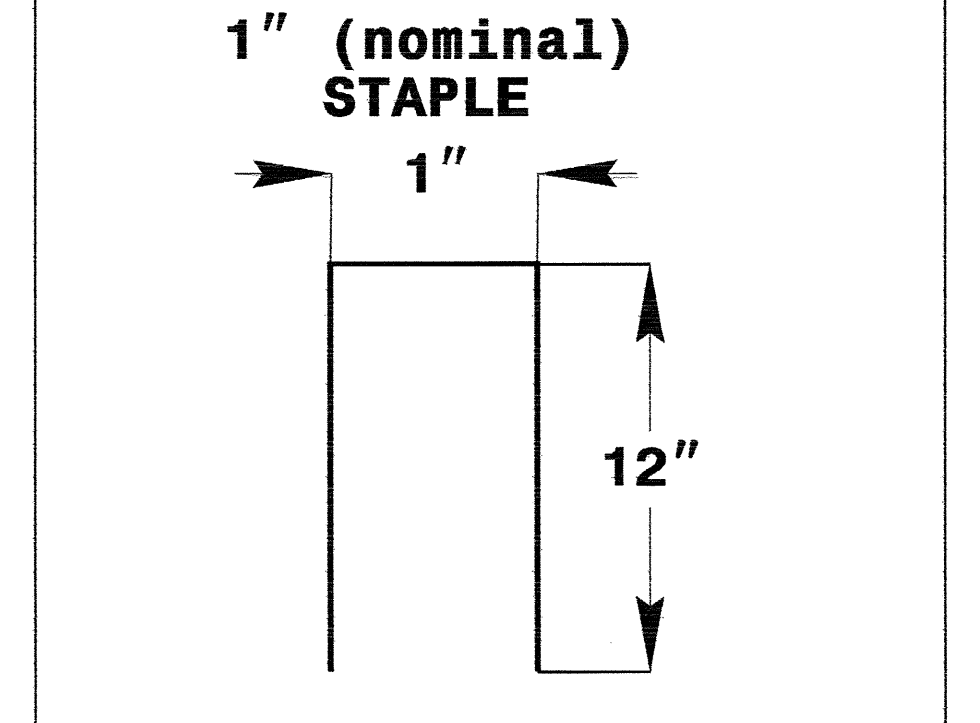
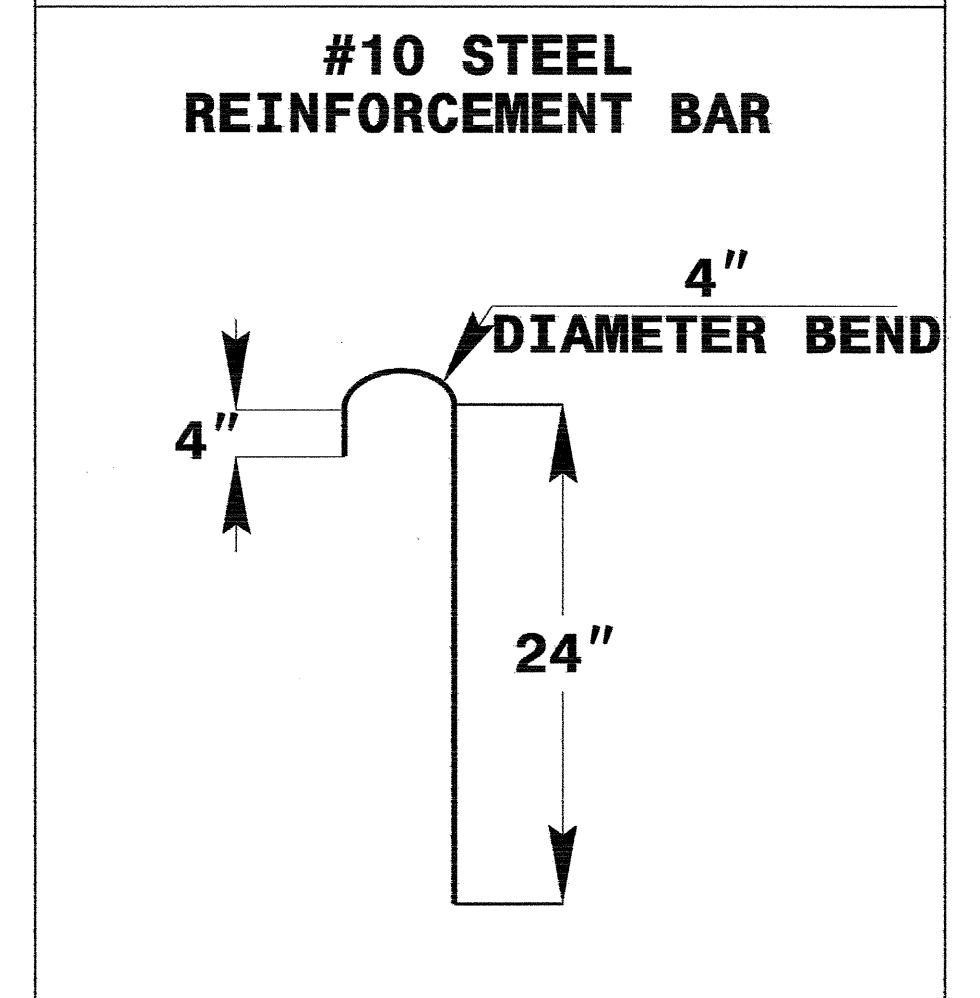
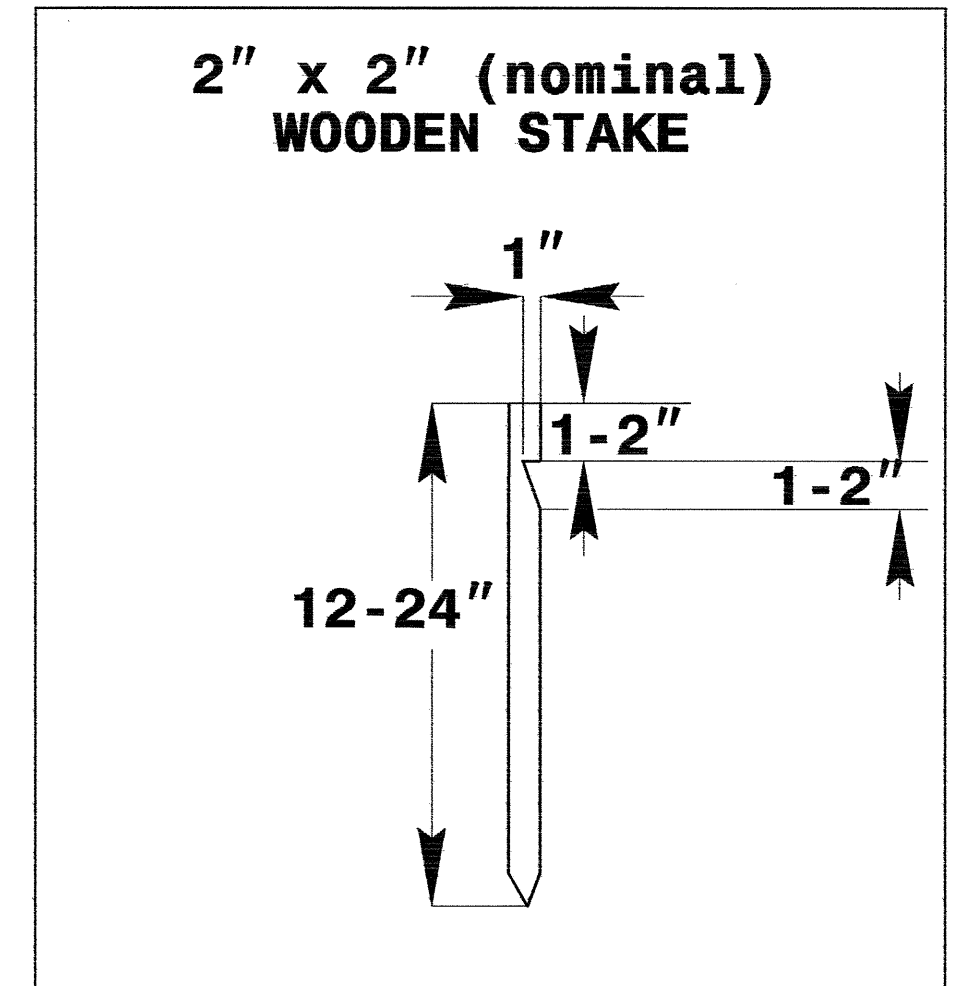
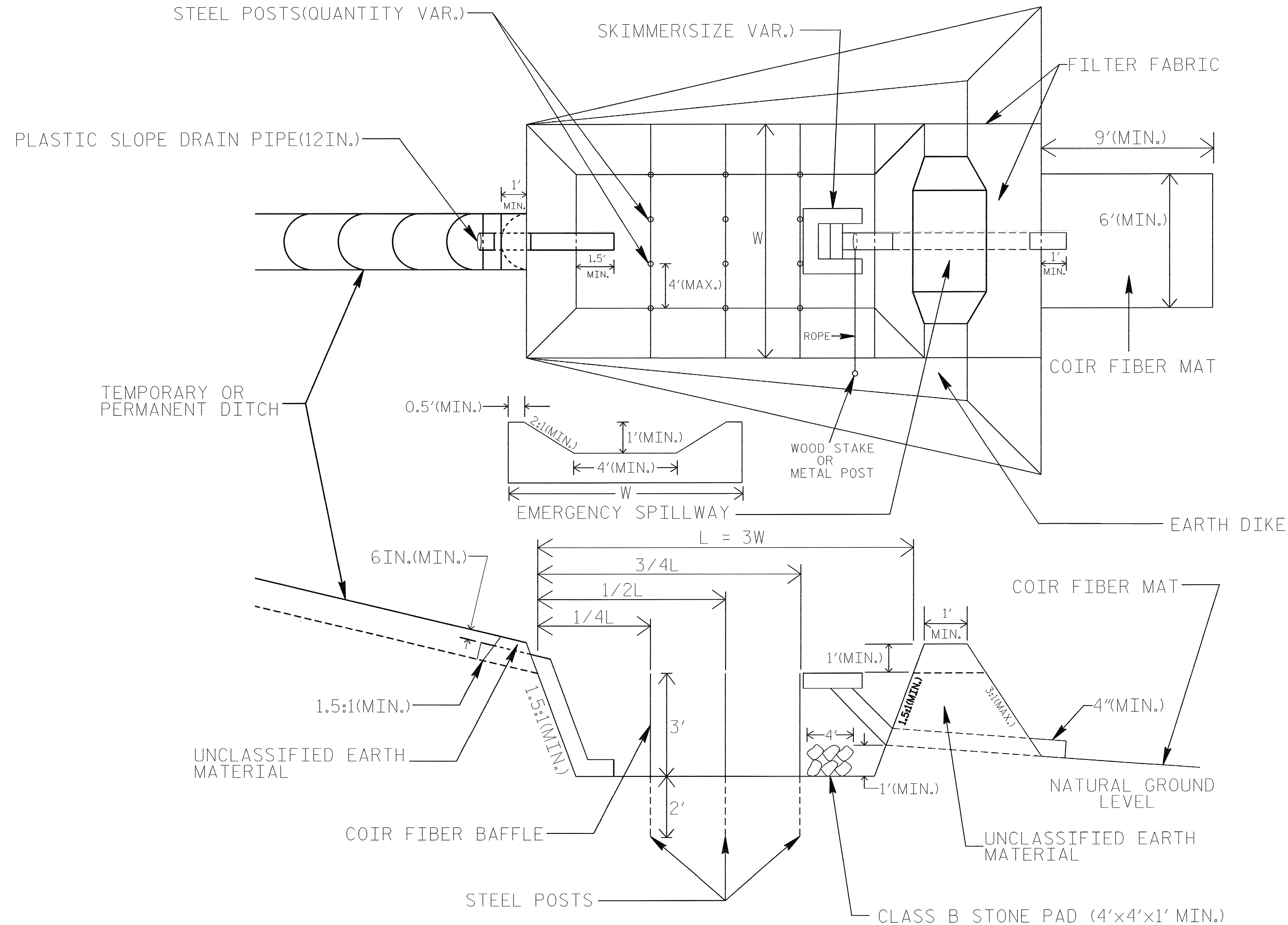
3. TOP HEIGHT OF COIR FIBER BAFFLES SHALL NOT BE BELOW BASE OF EMERGENCY SPILLWAY ELEVATION.



BAFFLE MATERIAL SHALL BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

SKIMMER BASIN WITH BAFFLES DETAIL

PROJECT REFERENCE NO. B-4204	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



COIR FIBER MAT ANCHOR OPTIONS

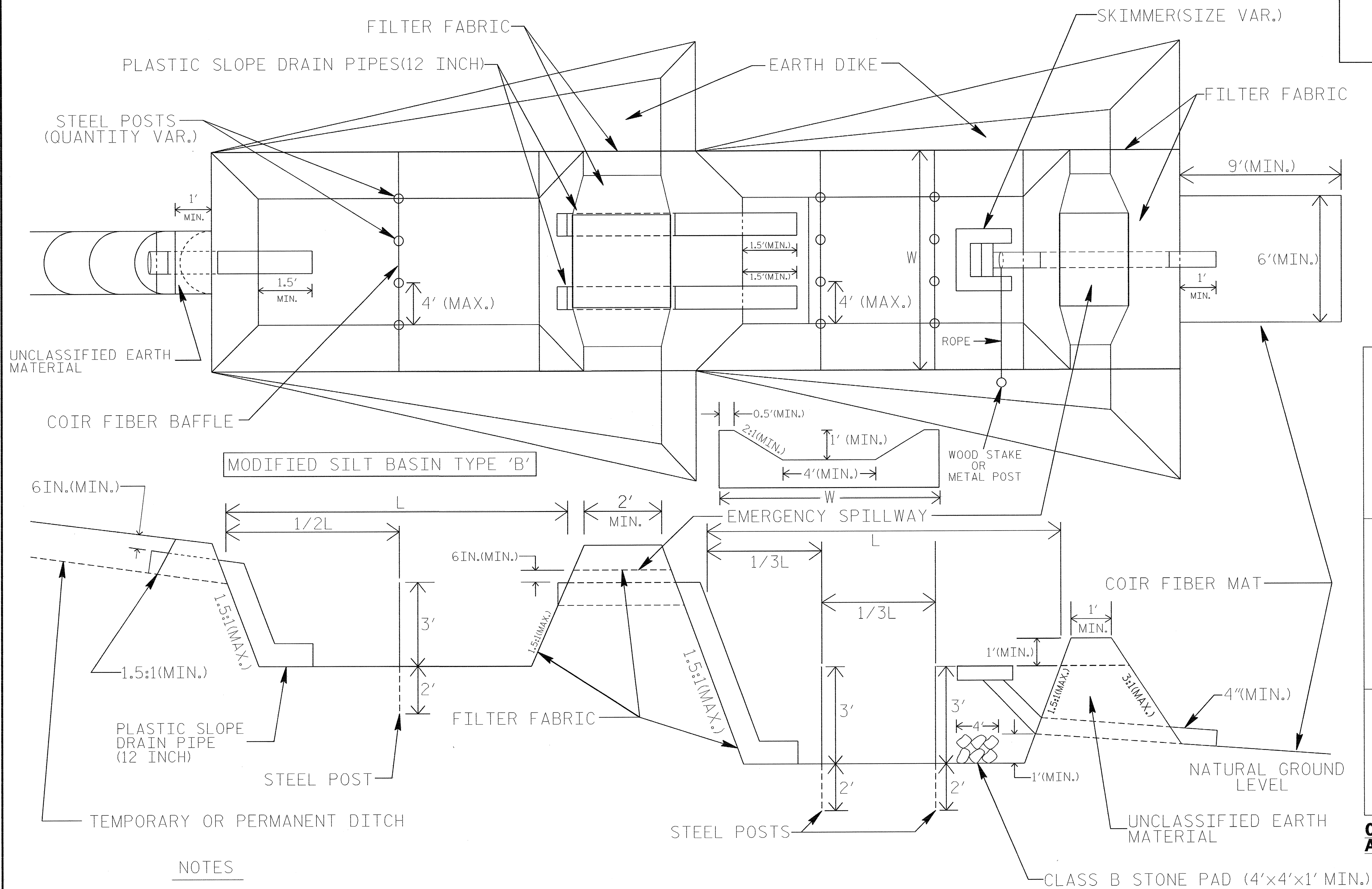
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.

NOT TO SCALE

TIERED SKIMMER BASIN DETAIL

PROJECT REFERENCE NO. B-4204	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



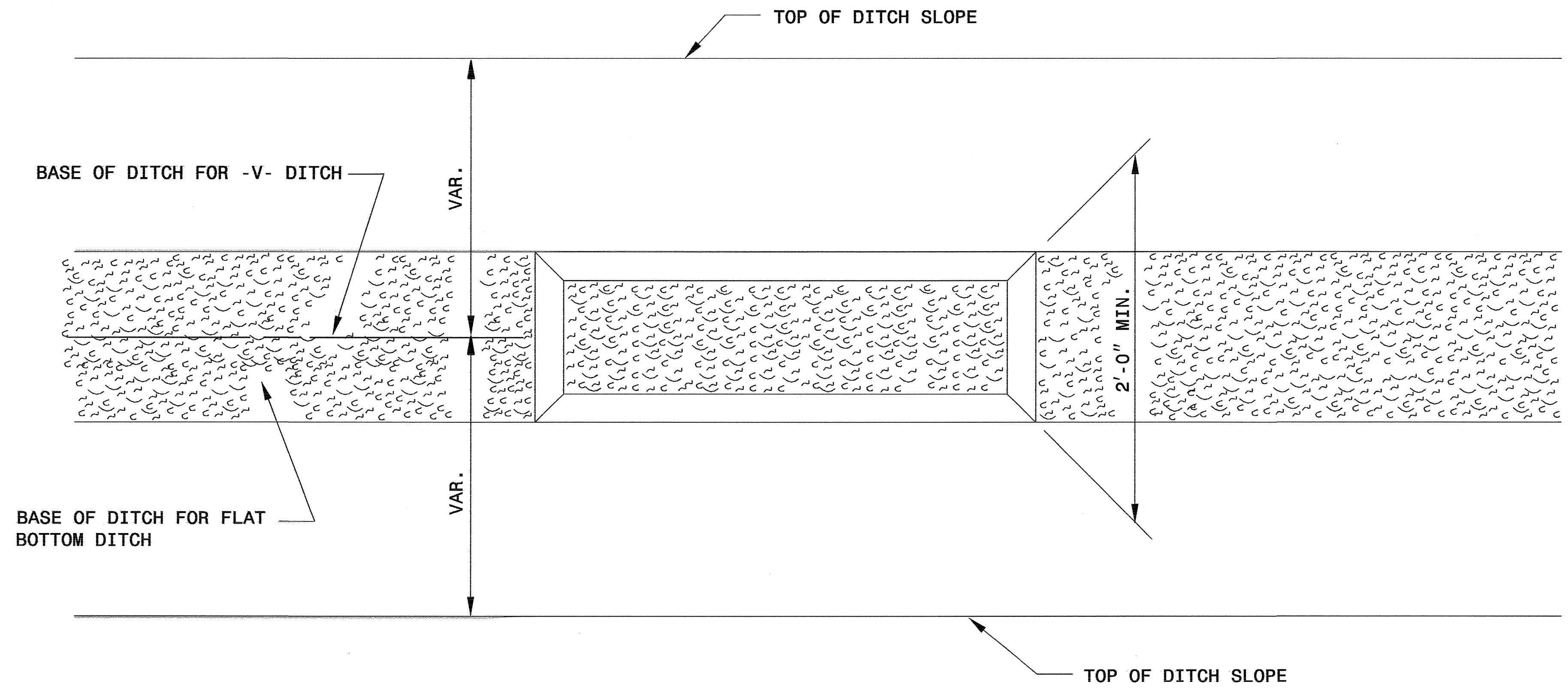
NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR 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. THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE EMERGENCY SPILLWAY LENGTHS (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.

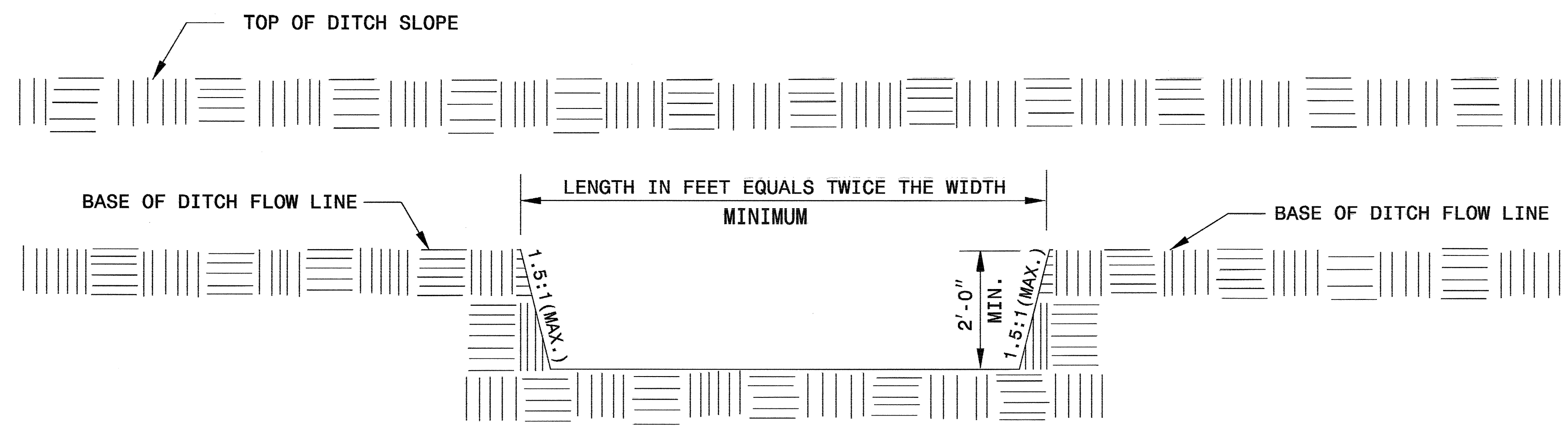
NOT TO SCALE

PROJECT REFERENCE NO. B-4204	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SILT BASIN 'B' DETAIL



PLAN



ELEVATION

PROJECT REFERENCE NO. B-4204	SHEET NO. EC-2E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE DETAIL

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. 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.

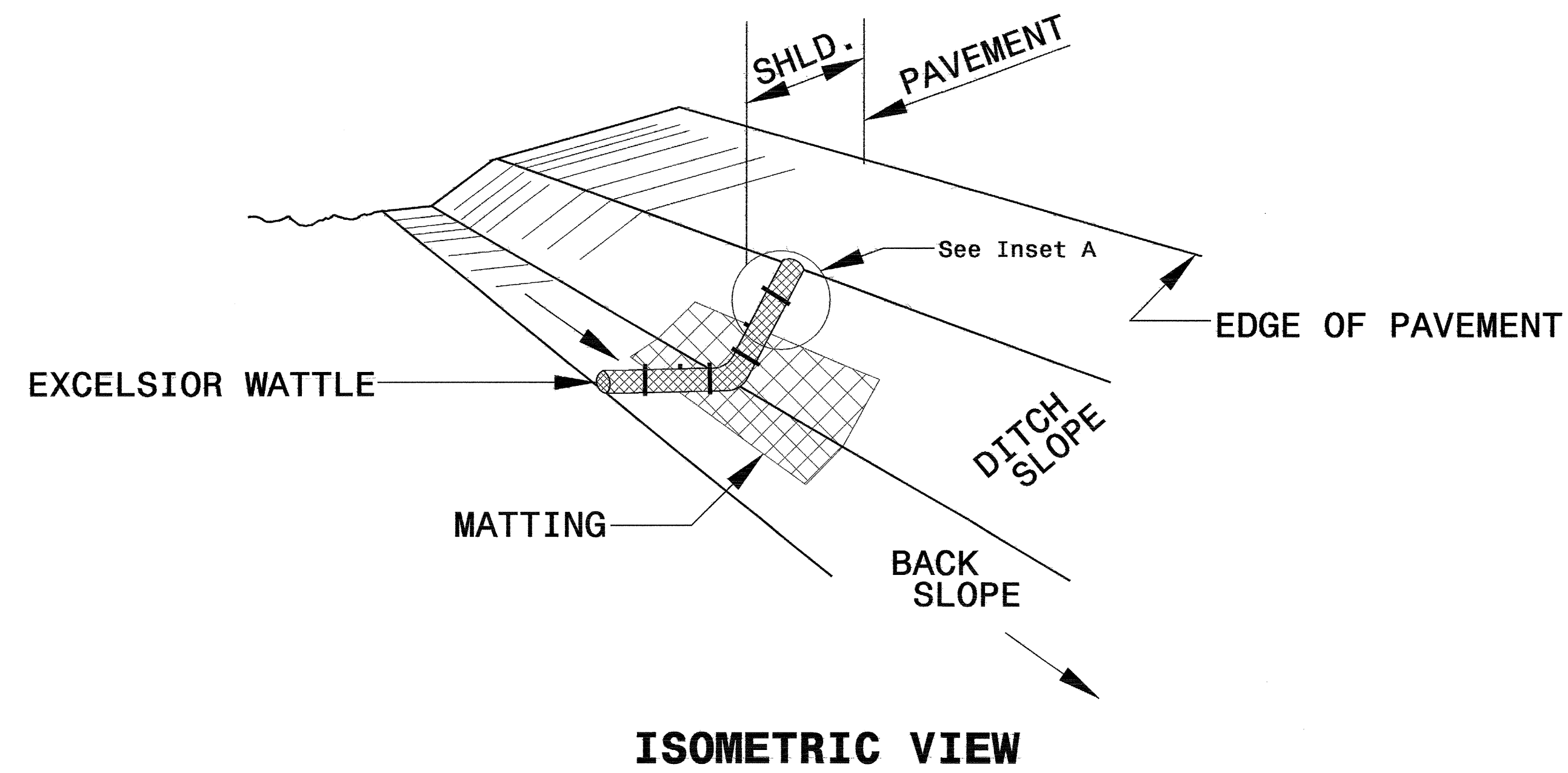
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

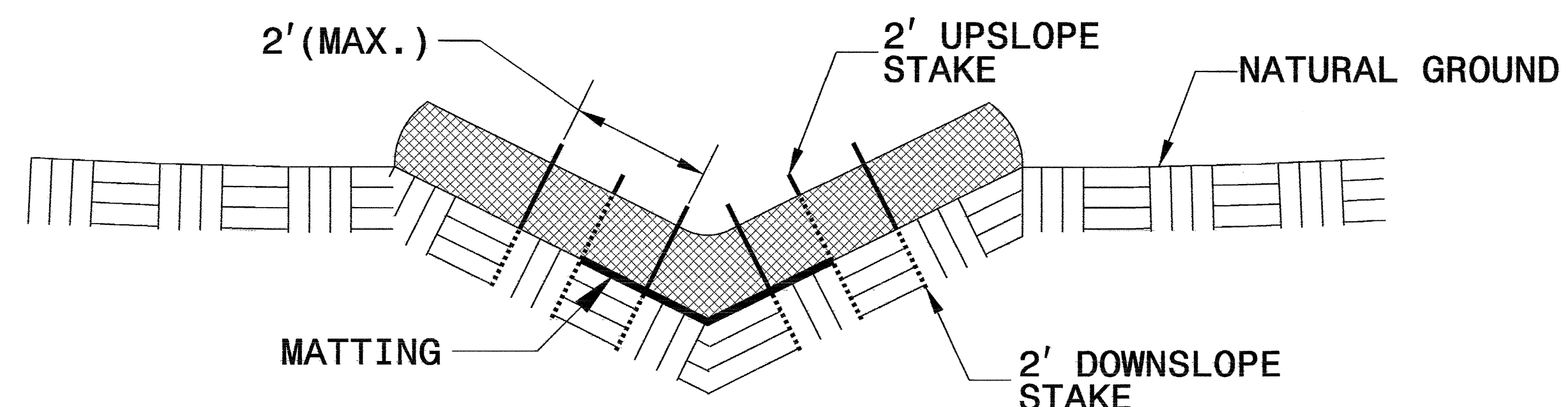
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

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.

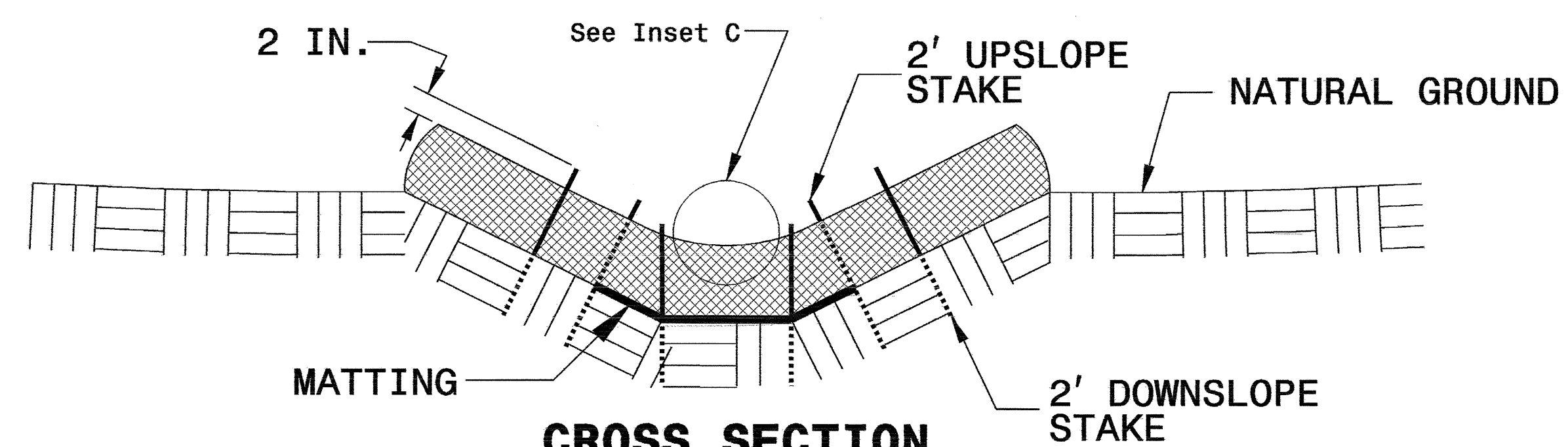
INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



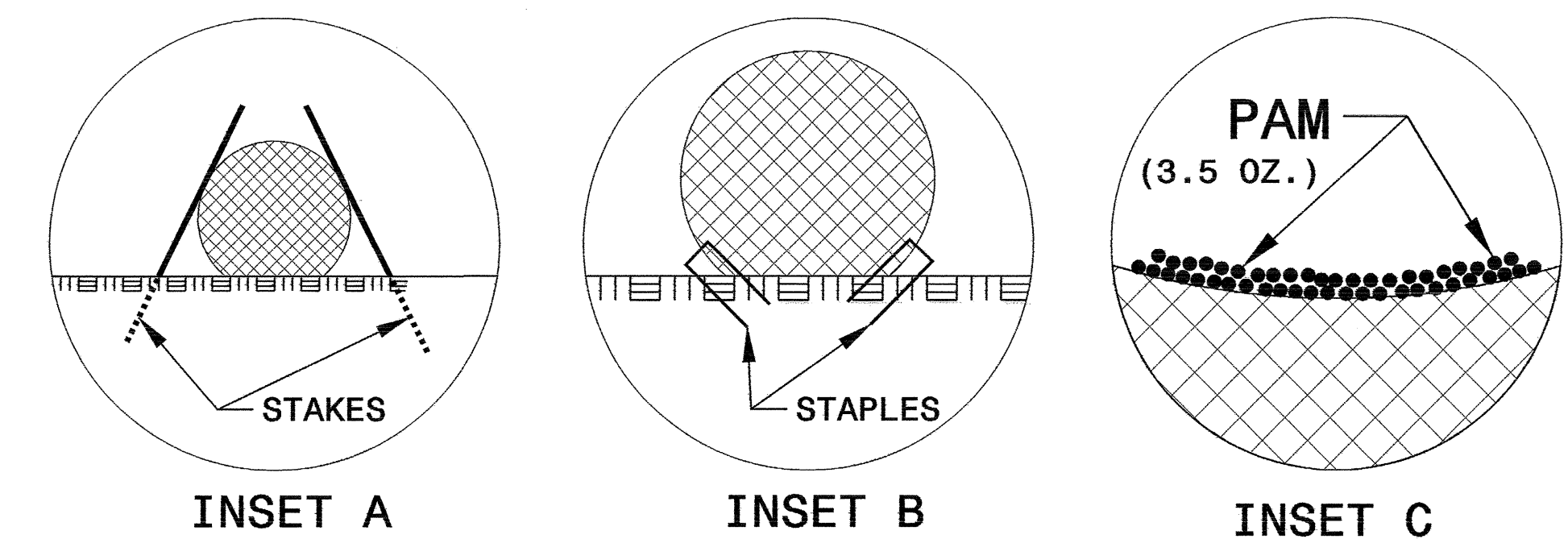
ISOMETRIC VIEW



CROSS SECTION VEE DITCH



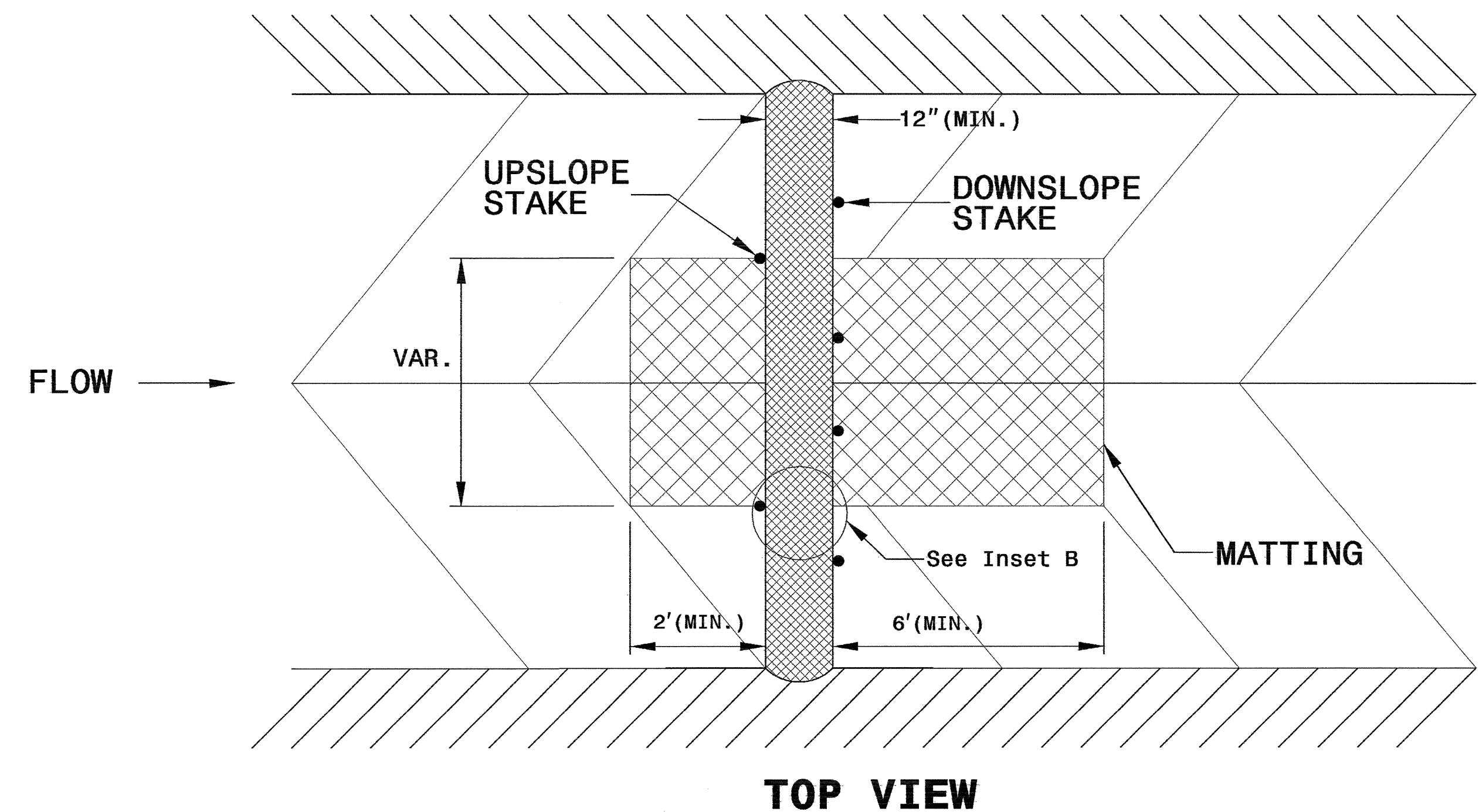
CROSS SECTION TRAPEZOIDAL DITCH



INSET A

INSET B

INSET C



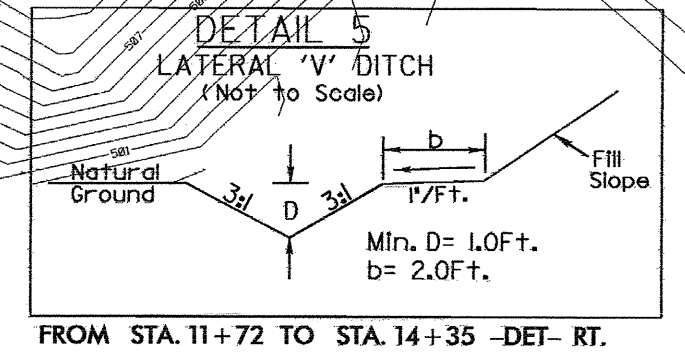
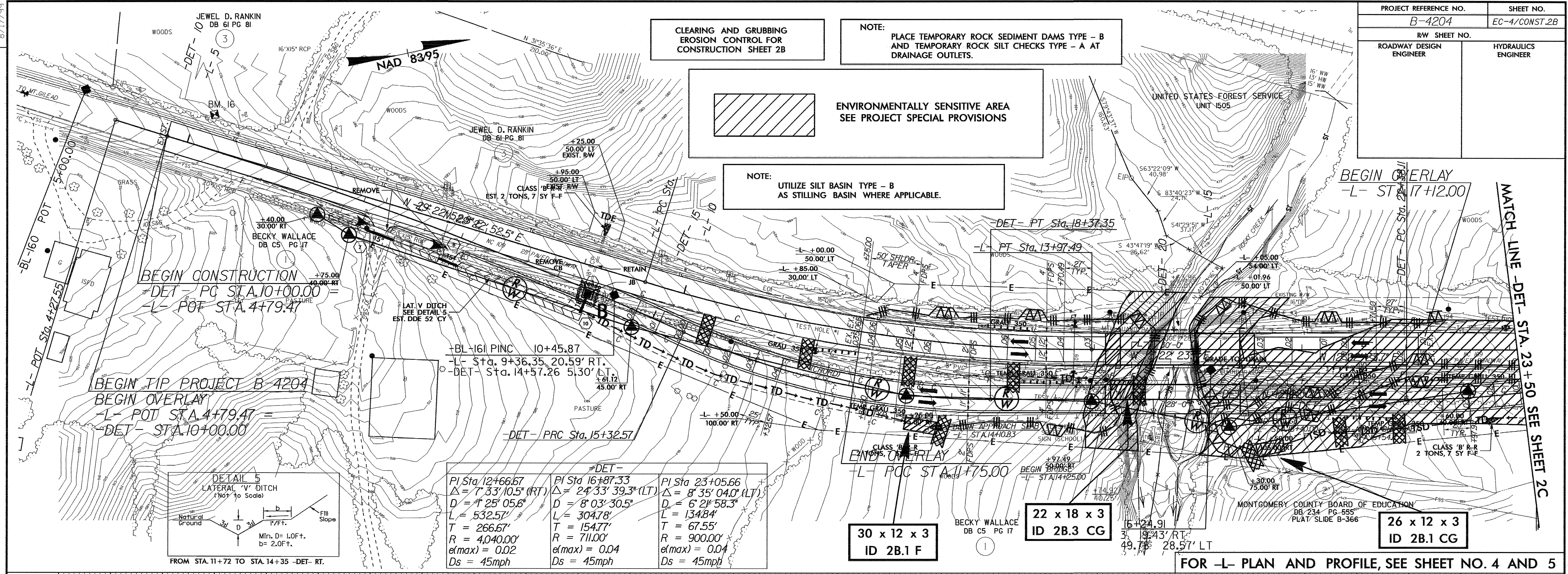
TOP VIEW

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 2B

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

ENVIRONMENTALLY SENSITIVE AREA
 SEE PROJECT SPECIAL PROVISIONS

NOTE:
 UTILIZE SILT BASIN TYPE - B
 AS STILLING BASIN WHERE APPLICABLE.



PI Sta	Δ	D	L	T	R	e(max)	DS
12+66.67	7° 33' 10.5" (RT)	125' 05.6"	532.57'	266.67'	4,040.00'	0.02	45mph
16+87.33	24° 33' 39.3" (LT)	8' 03' 30.5"	304.78'	154.77'	711.00'	0.04	45mph
23+05.66	8° 35' 04.0" (LT)	6' 21' 58.3"	134.84'	67.55'	900.00'	0.04	45mph

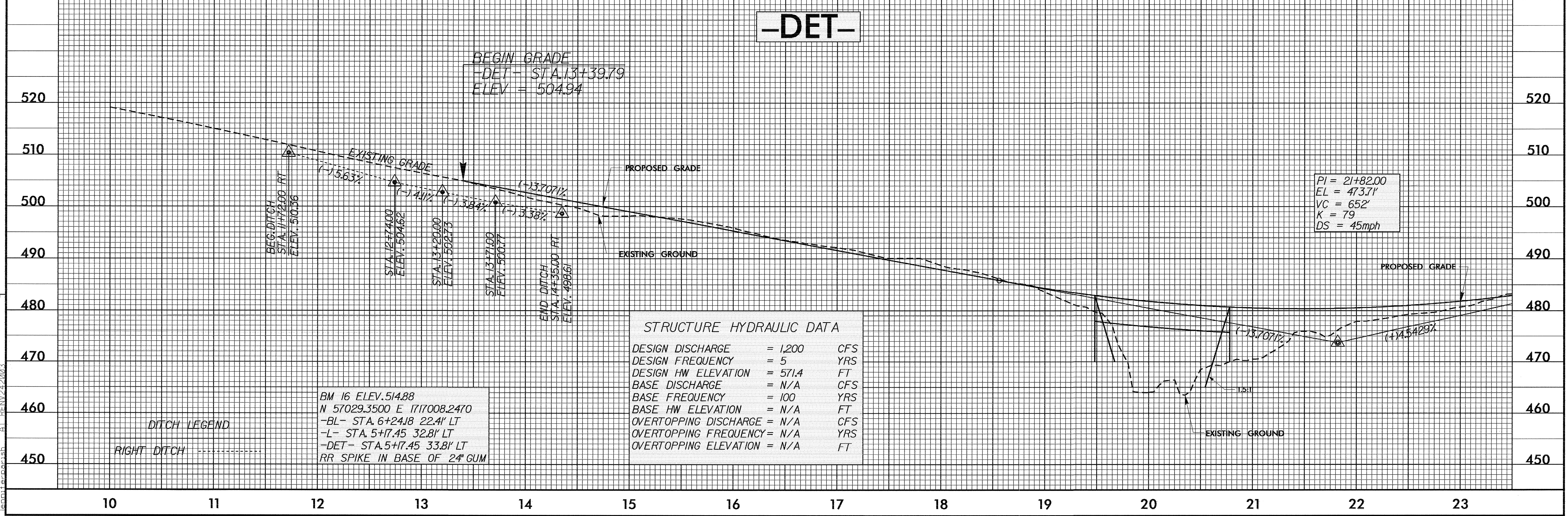
30 x 12 x 3
 ID 2B.1 F

22 x 18 x 3
 ID 2B.3 CG

26 x 12 x 3
 ID 2B.1 CG

FOR -L- PLAN AND PROFILE, SEE SHEET NO. 4 AND 5

-DET-



STRUCTURE HYDRAULIC DATA

DESIGN DISCHARGE	= 1200	CFS
DESIGN FREQUENCY	= 5	YRS
DESIGN HW ELEVATION	= 571.4	FT
BASE DISCHARGE	= N/A	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= N/A	FT
OVERTOPPING DISCHARGE	= N/A	CFS
OVERTOPPING FREQUENCY	= N/A	YRS
OVERTOPPING ELEVATION	= N/A	FT

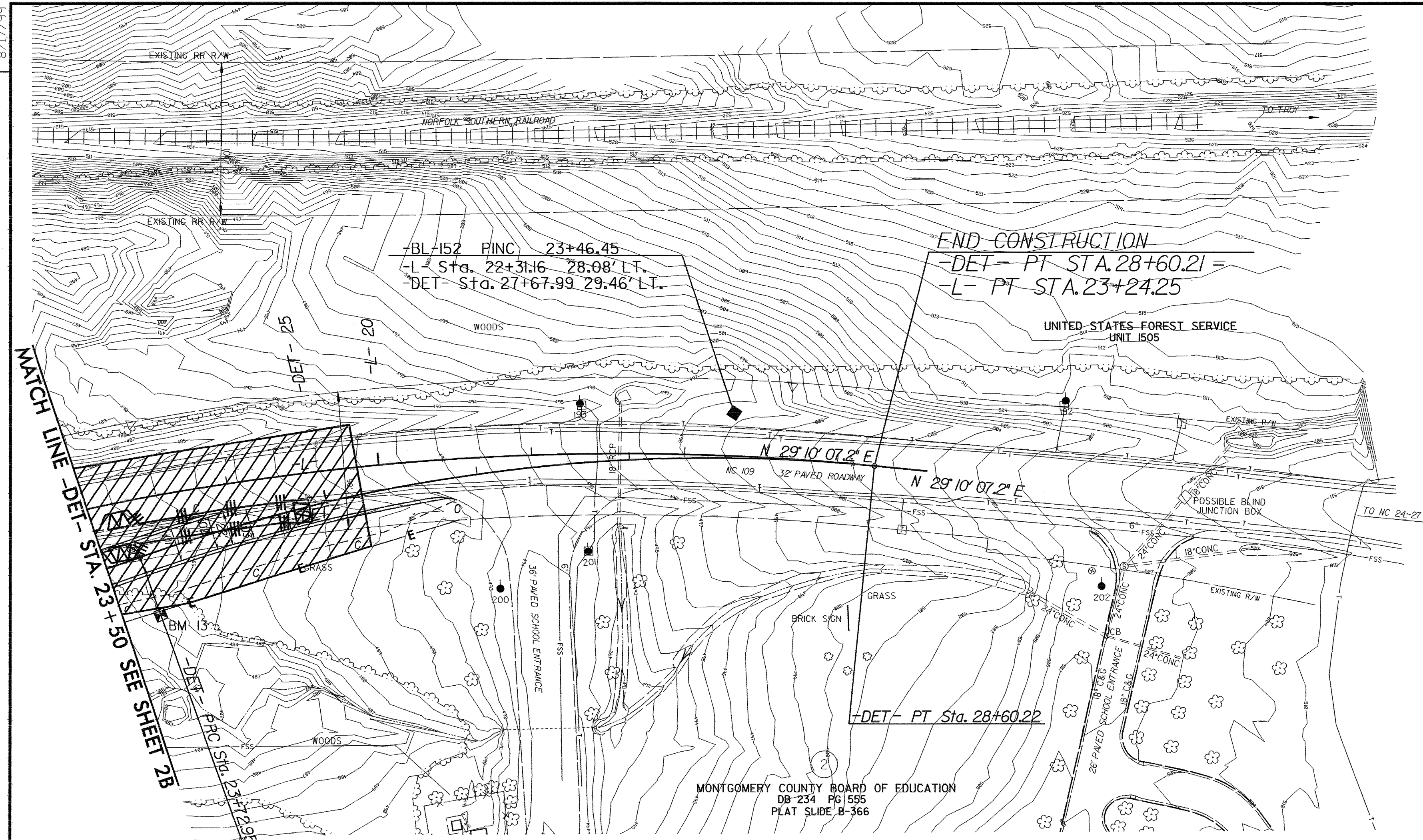
BM 16 ELEV. 514.88
 N 57029.3500 E 1117008.2470
 -BL- STA. 6+24.18 22.41' LT
 -L- STA. 5+17.45 32.81' LT
 -DET- STA. 5+17.45 33.81' LT
 RR SPIKE IN BASE OF 24" GUM

DITCH LEGEND
 RIGHT DITCH

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 REVISIONS
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8/17/99

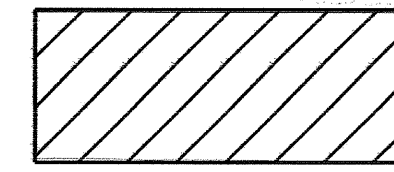
PROJECT REFERENCE NO. B-4204	SHEET NO. EC-5/CONST.2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-DET-	
PI Sta 23+05.66	PI Sta 26+20.64
$\Delta = 8^{\circ} 35' 04.0''$ (LT)	$\Delta = 25^{\circ} 22' 47.5''$ (RT)
D = 6' 21' 58.3"	D = 5' 12' 31.3"
L = 134.84'	L = 487.26'
T = 67.55'	T = 247.69'
R = 900.00'	R = 1,100.00'
e(max) = 0.04	e(max) = 0.04
Ds = 45mph	Ds = 45mph

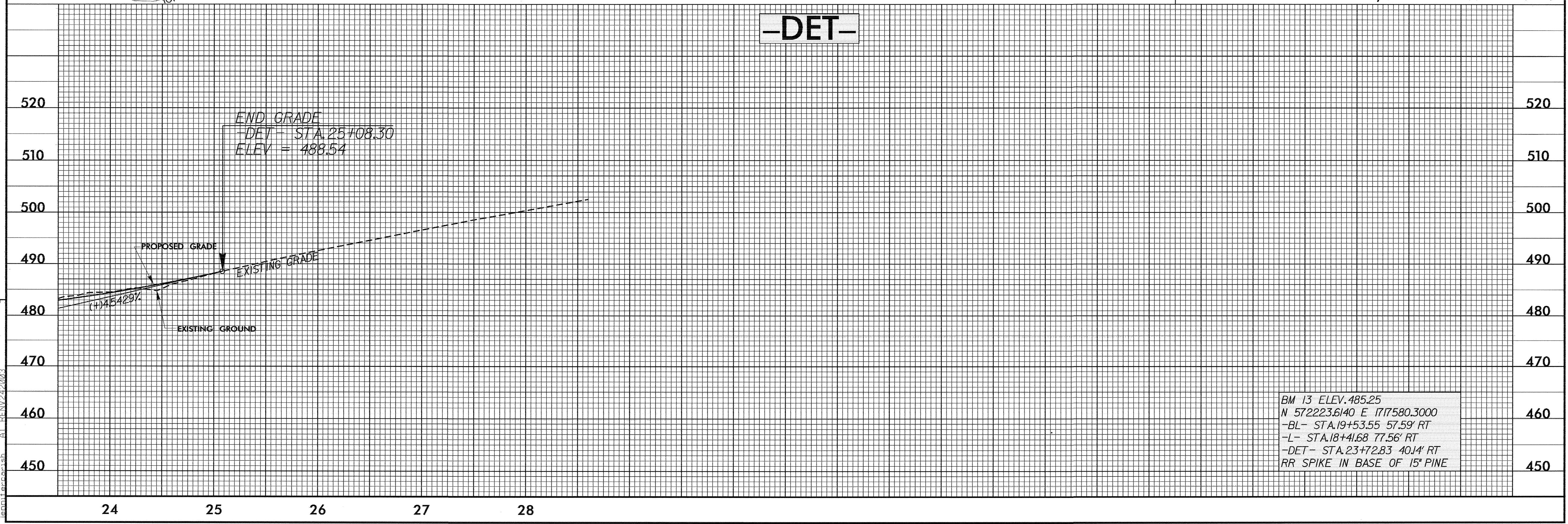
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 2C

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

 ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

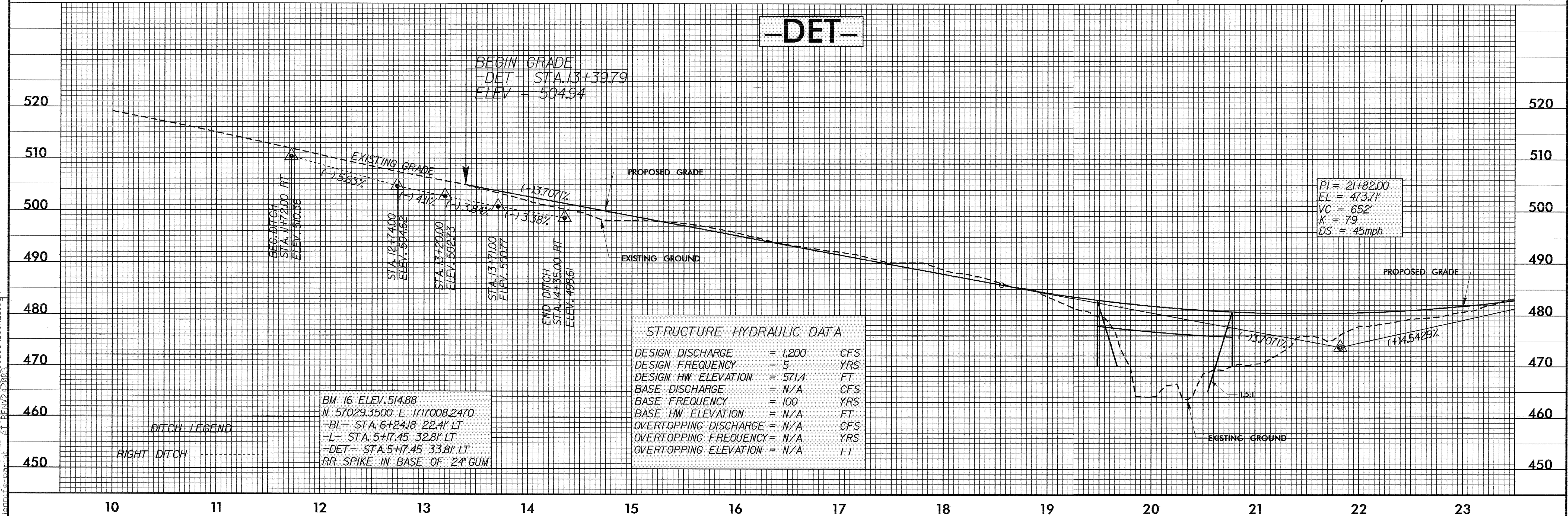
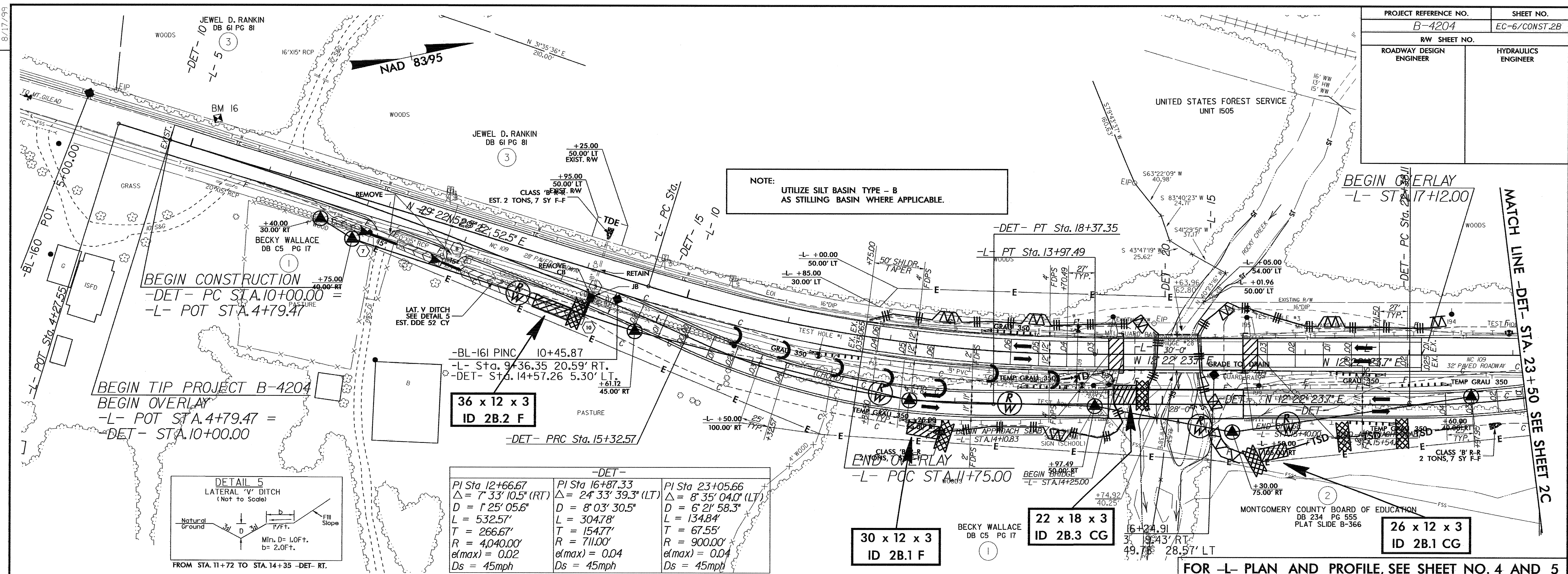
REVISIONS

FOR -L- PLAN AND PROFILE, SEE SHEET NO. 4 AND 5



BM 13 ELEV. 485.25
N 572223.6140 E 1717580.3000
-BL- STA. 19+53.55 57.59' RT
-L- STA. 18+41.68 77.56' RT
-DET- STA. 23+72.83 40.14' RT
RR SPIKE IN BASE OF 15' PINE

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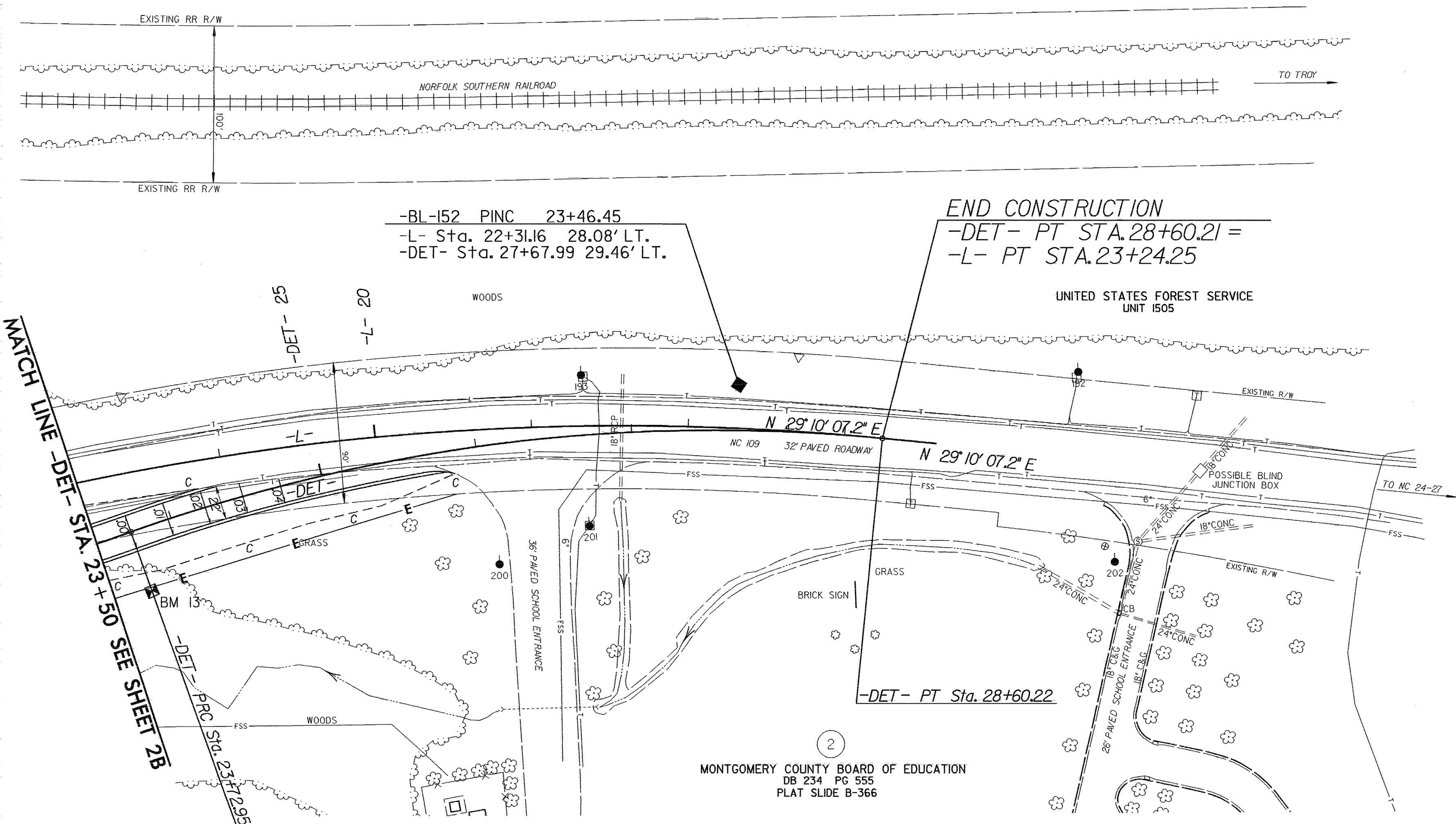
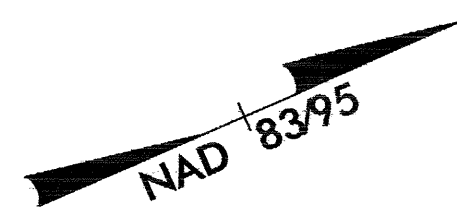
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REVISIONS

8/17/99

8/17/99

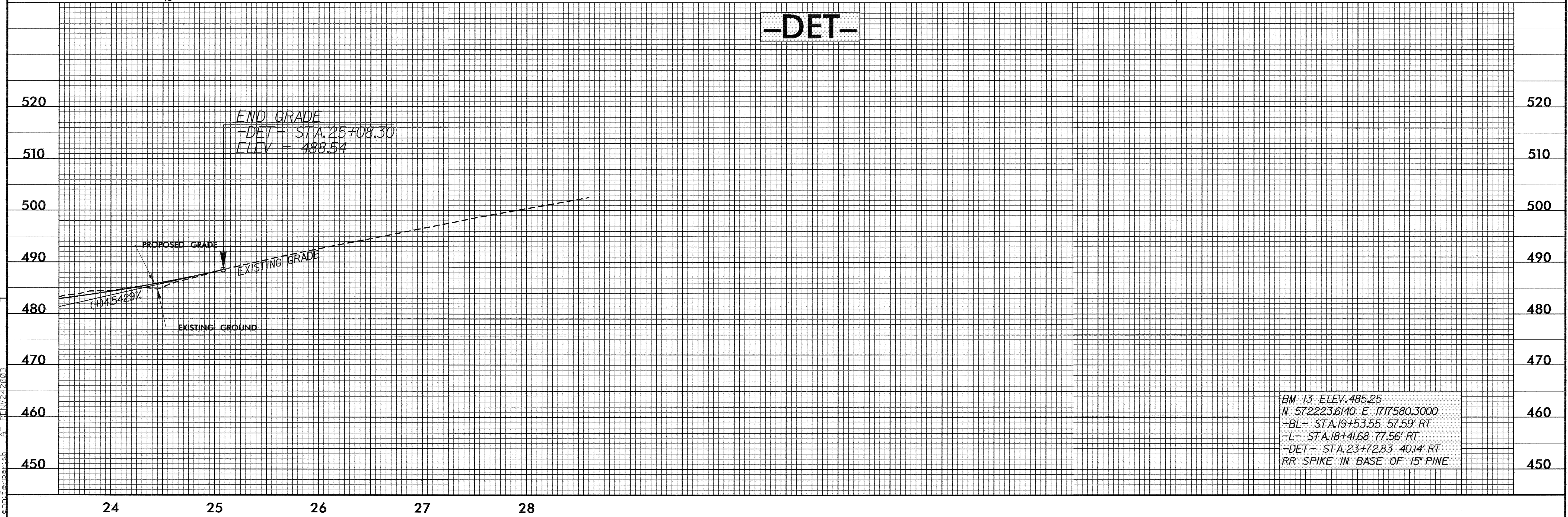
PROJECT REFERENCE NO.	SHEET NO.
B-4204	EC-7/CONST.2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-DET-	
PI Sta 23+05.66	PI Sta 26+20.64
$\Delta = 8^{\circ} 35' 04.0\" (LT)$	$\Delta = 25^{\circ} 22' 47.5\" (RT)$
$D = 6^{\circ} 21' 58.3\"$	$D = 5^{\circ} 12' 31.3\"$
$L = 134.84'$	$L = 487.26'$
$T = 67.55'$	$T = 247.69'$
$R = 900.00'$	$R = 1,100.00'$
$e(max) = 0.04$	$e(max) = 0.04$
$Ds = 45mph$	$Ds = 45mph$

MATCH LINE -DET- STA. 23+50 SEE SHEET 2B

FOR -L- PLAN AND PROFILE, SEE SHEET NO. 4 AND 5



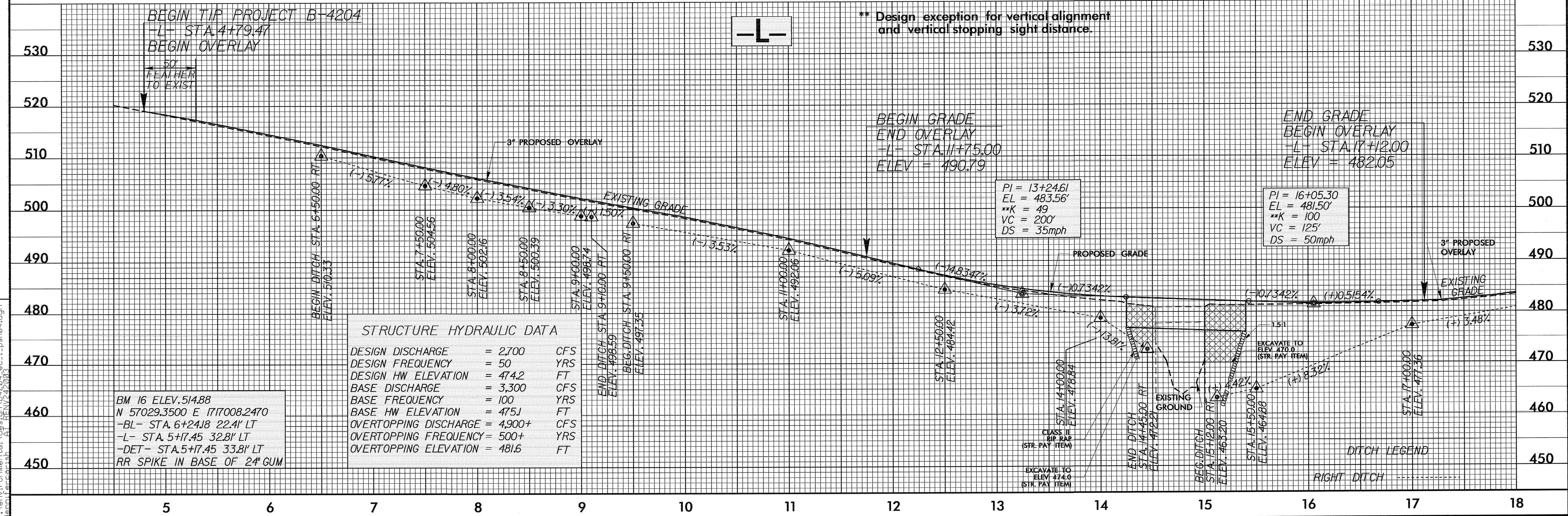
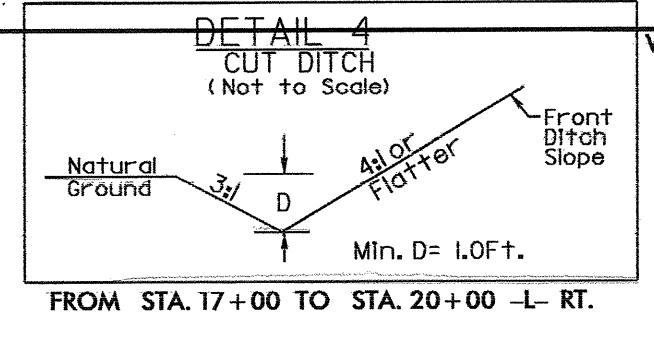
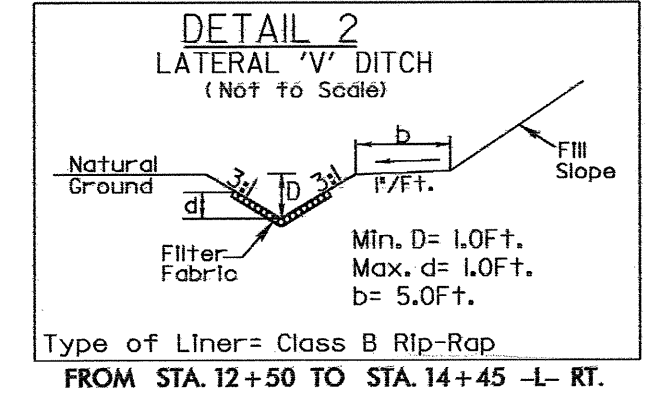
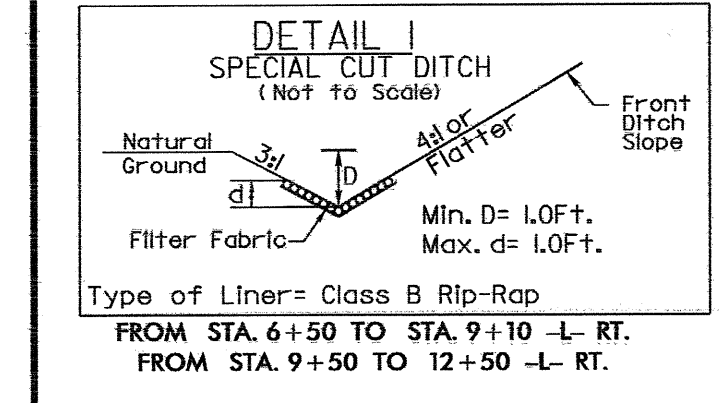
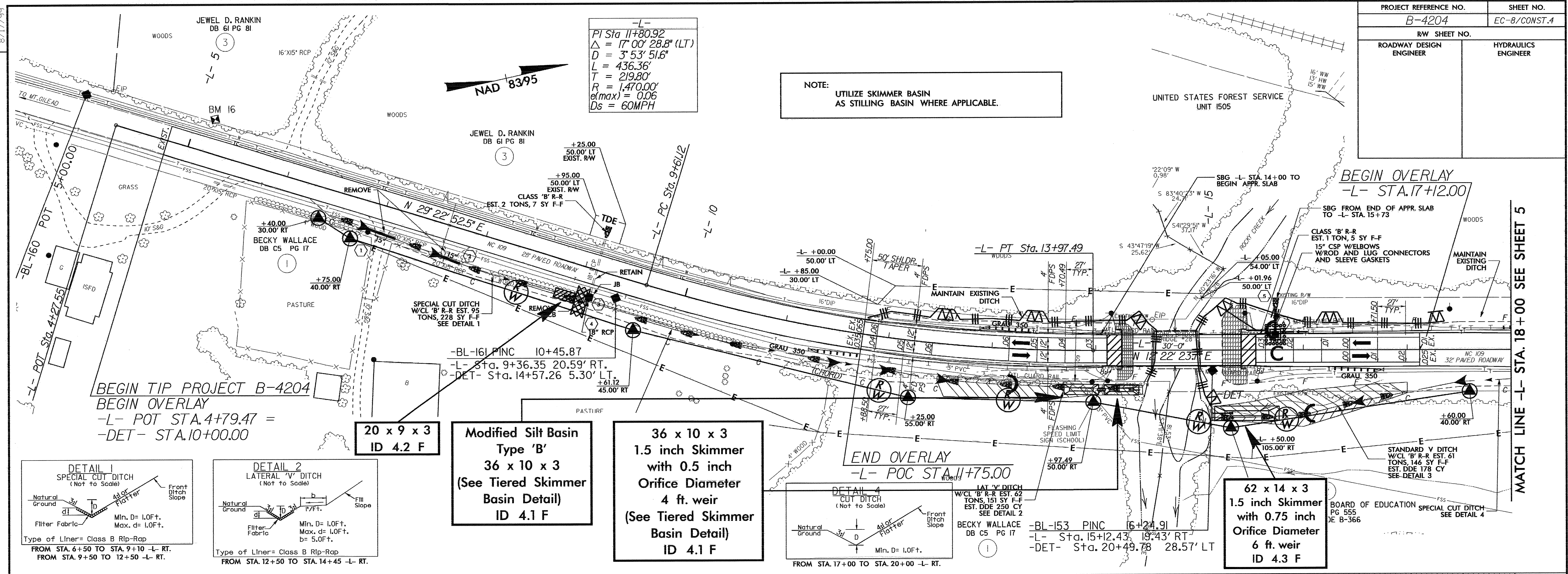
BM 13 ELEV. 485.25
N 57°22'3.6140 E 1717580.3000
-BL- STA. 19+53.55 57.59' RT
-L- STA. 18+41.68 77.56' RT
-DET- STA. 23+72.83 40.14' RT
RR SPIKE IN BASE OF 15" PINE

REVISIONS

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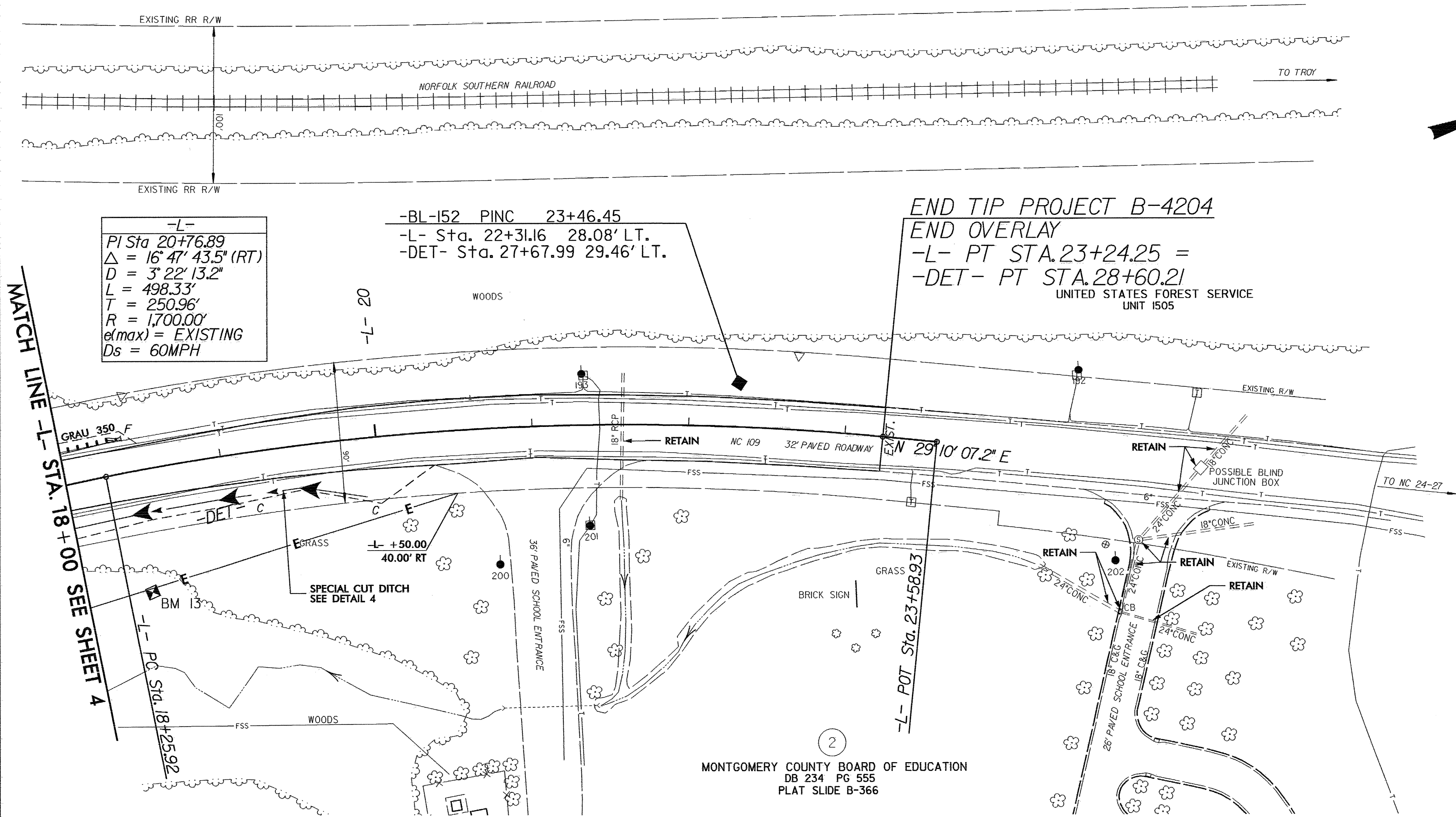
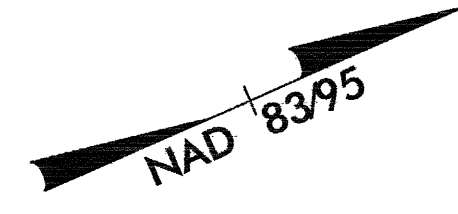
$-L-$
 PI Sta 11+80.92
 $\Delta = 17' 00'' 28.8'' (LT)$
 $D = 3' 53'' 51.6''$
 $L = 436.36'$
 $T = 219.80'$
 $R = 1,470.00'$
 $e(max) = 0.06$
 $Ds = 60MPH$

NOTE: UTILIZE SKIMMER BASIN AS STILLING BASIN WHERE APPLICABLE.



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 (Name)

PROJECT REFERENCE NO.	SHEET NO.
B-4204	EC-9/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

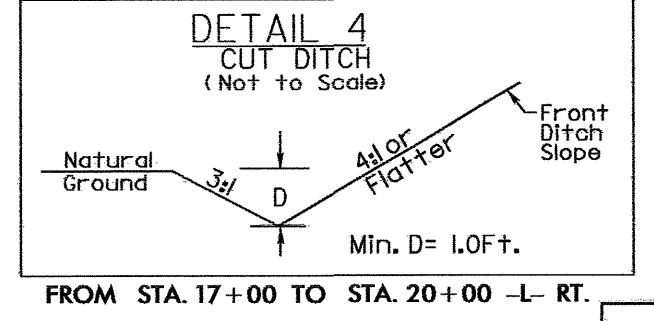


-L-
 PI Sta 20+76.89
 $\Delta = 16' 47' 43.5''$ (RT)
 $D = 3' 22' 13.2''$
 $L = 498.33'$
 $T = 250.96'$
 $R = 1,700.00'$
 $e(\max) = EXISTING$
 $Ds = 60MPH$

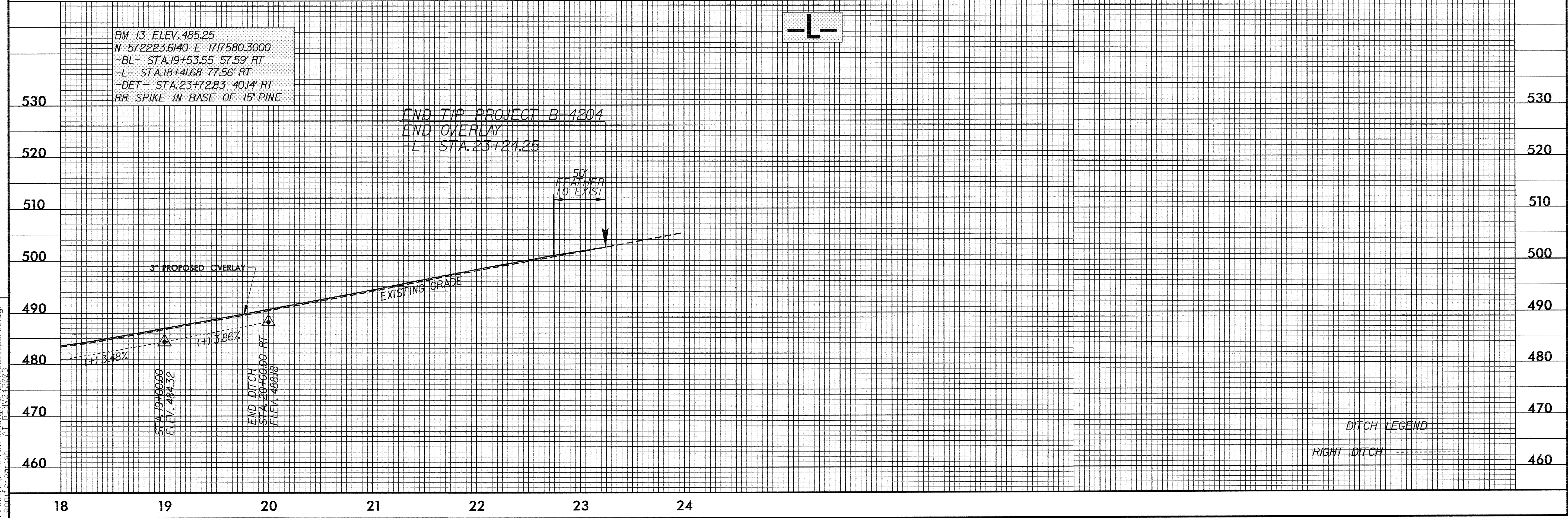
-BL-152 PINC 23+46.45
 -L- Sta. 22+31.16 28.08' LT.
 -DET- Sta. 27+67.99 29.46' LT.

END TIP PROJECT B-4204
 END OVERLAY

-L- PT STA. 23+24.25 =
 -DET- PT STA. 28+60.21
 UNITED STATES FOREST SERVICE
 UNIT 1505



FOR -DET- PLAN AND PROFILE, SEE SHEET NO. 2B AND 2C



BM 13 ELEV. 485.25
 N 572223.6140 E 1717580.3000
 -BL- STA. 19+53.55 57.59' RT
 -L- STA. 18+41.68 77.56' RT
 -DET- STA. 23+72.83 40.14' RT
 RR SPIKE IN BASE OF 15' PINE

END TIP PROJECT B-4204
 END OVERLAY
 -L- STA. 23+24.25

DITCH LEGEND
 RIGHT DITCH -----

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