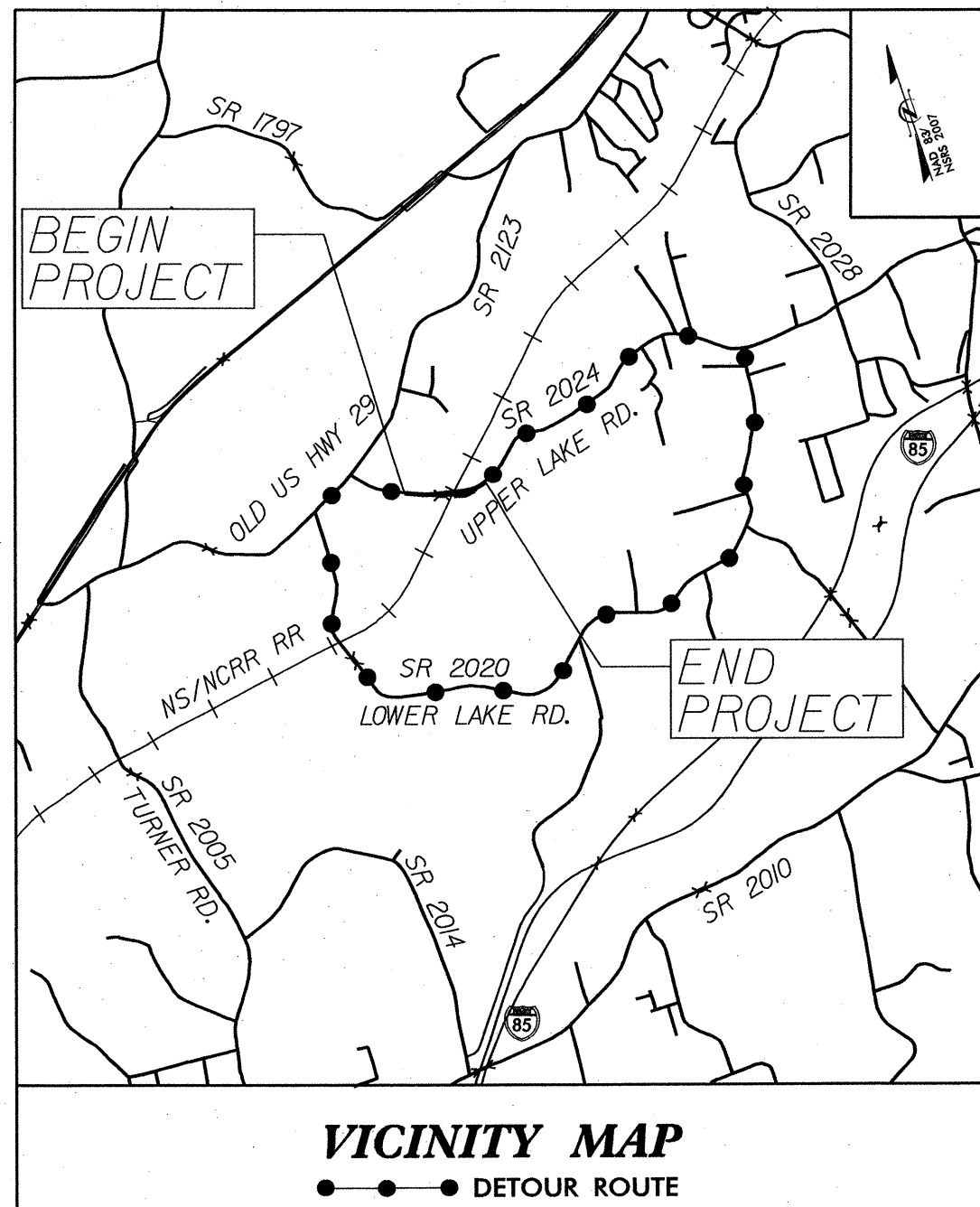


TIP PROJECT: C-4901B

CONTRACT: C203141

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA  
RAIL DIVISION

**DAVIDSON COUNTY**

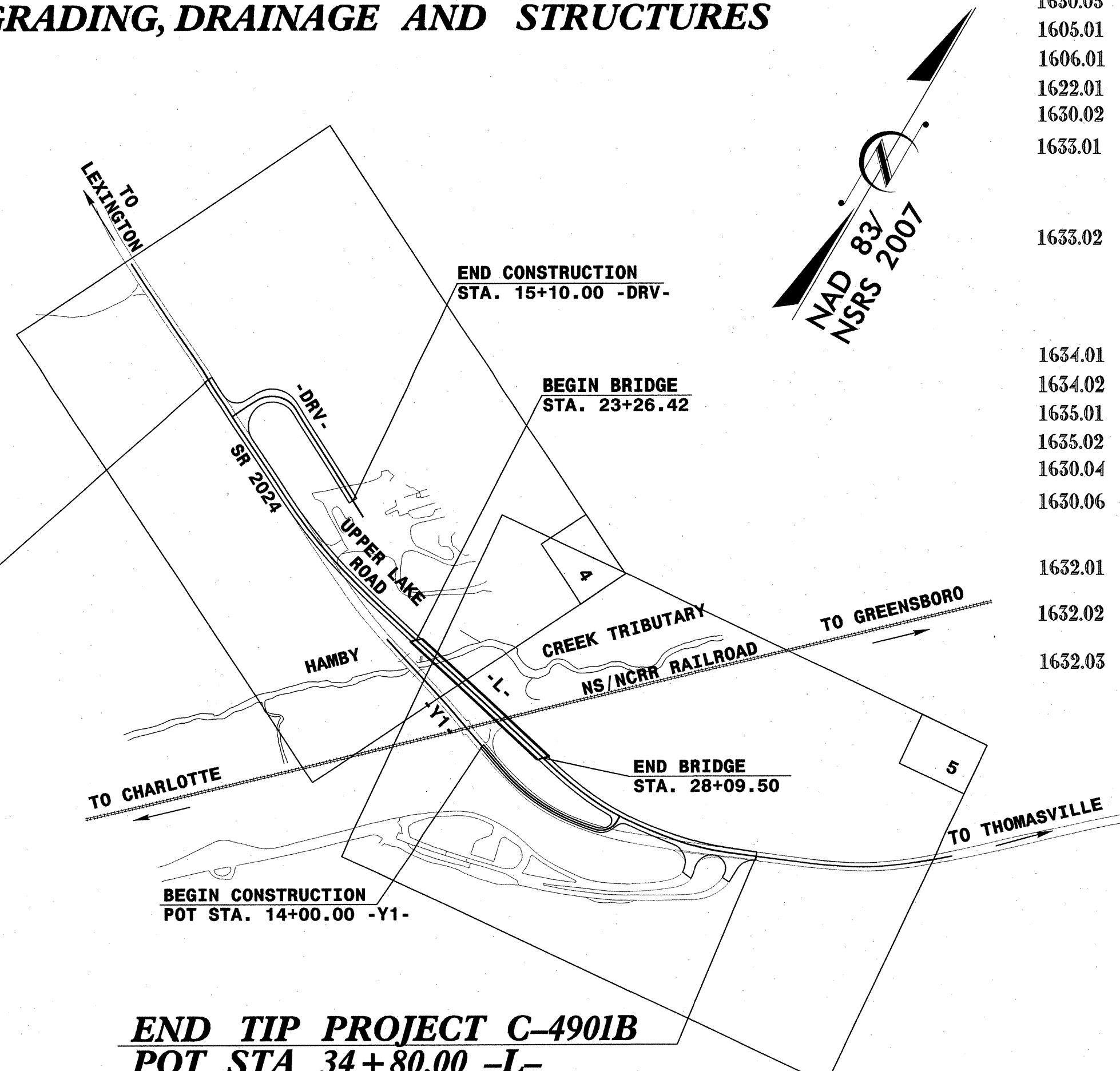
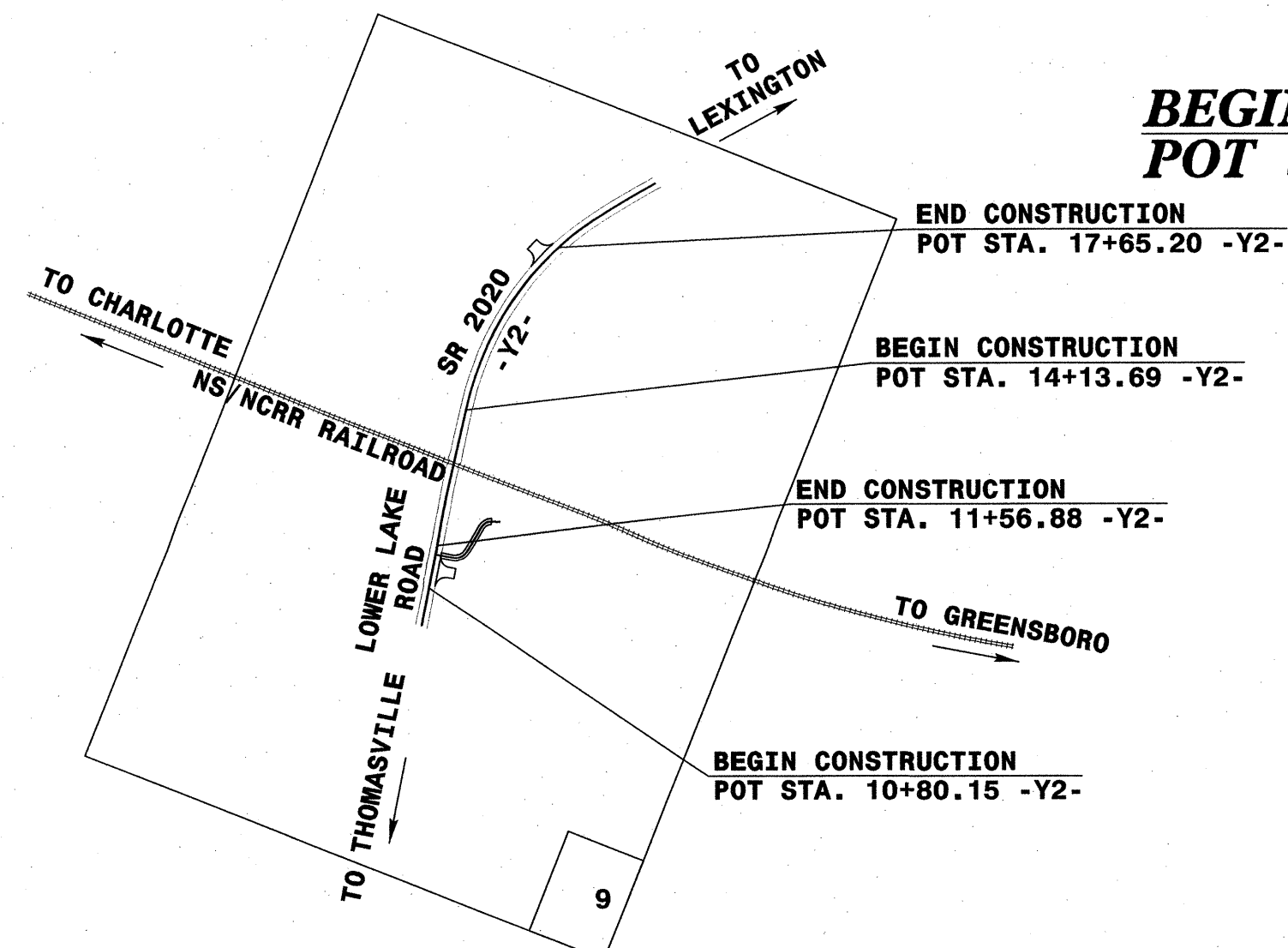
**LOCATION: UPPER LAKE RD. (SR 2024) GRADE SEPARATION OVER  
HAMBY CREEK TRIBUTARY AND NSNCRR RAILROAD  
TYPE OF WORK: PAVING, GRADING, DRAINAGE AND STRUCTURES**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	C-4901B	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
49010.1.STR05T1B		PE, UTIL PE	
49010.1.STR06T3		PE, UTIL PE	
43219.2.STR02C4901		RW	
49010.3.STR02T4D		UTIL CONST., CONST.	

**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1650.05	Temporary Silt Ditch	TSO
1650.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SB
1635.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle / Coir Fiber Wattle	WCFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	WCFW-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB



**BEGIN TIP PROJECT C-4901B  
POT STA. 13+90.00 -L-**

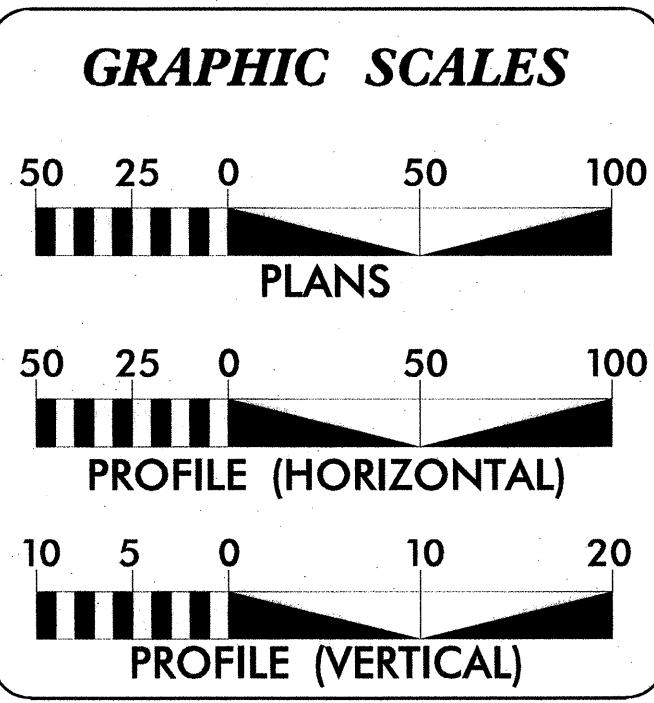
**END TIP PROJECT C-4901B  
POT STA. 34+80.00 -L-**

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

**2012 STANDARD SPECIFICATIONS**  
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

**Index of Sheets**

EC-1	Title Sheet
EC-2 - EC-2F	Erosion Control Details
EC-3	Soil Stabilization Summary
EC-3A	Stabilization Timeframes
EC-4 - EC-6	Clearing and Grubbing Plans
EC-7 - EC-9	Final Grade Plans



Prepared in the Office of:  
**SUNGATE DESIGN GROUP, P.A.**  
305 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27603  
TEL: 919.883.2500 FAX: 919.883.4500  
E-MAIL: PERS@SUNGATEDESIGN.COM

JOSHUA G. DALTON  
LEVEL IIIA NAME  
  
307  
LEVEL IIIA CERTIFICATION NO.

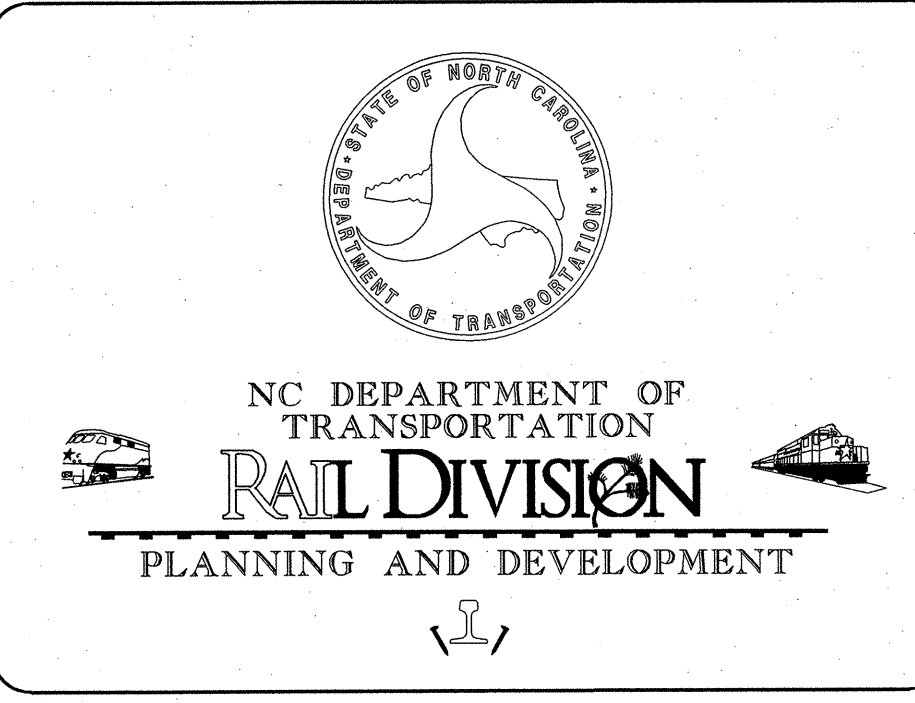
**2012 STANDARD SPECIFICATIONS**

LETTING DATE: **MARCH 19, 2013**

RIGHT OF WAY DATE: **APRIL 30, 2012**

**HYDRAULICS ENGINEER**

1/2/13  
SIGNATURE: \_\_\_\_\_ P.E.



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 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

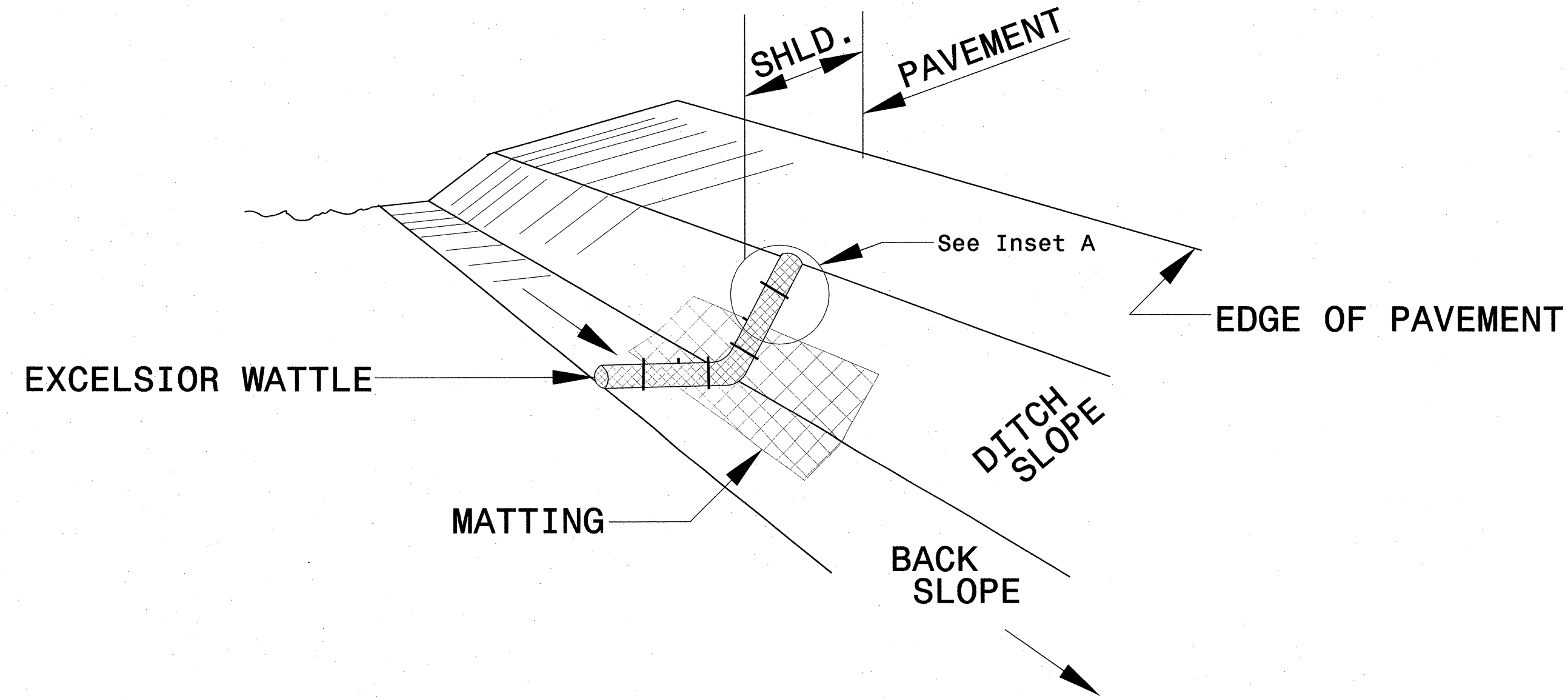
1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1606.01 Special Sediment Control Fence	1632.03 Rock Inlet Sediment Trap Type C
1607.01 Gravel Construction Entrance	1633.01 Temporary Rock Silt Check Type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

DCN

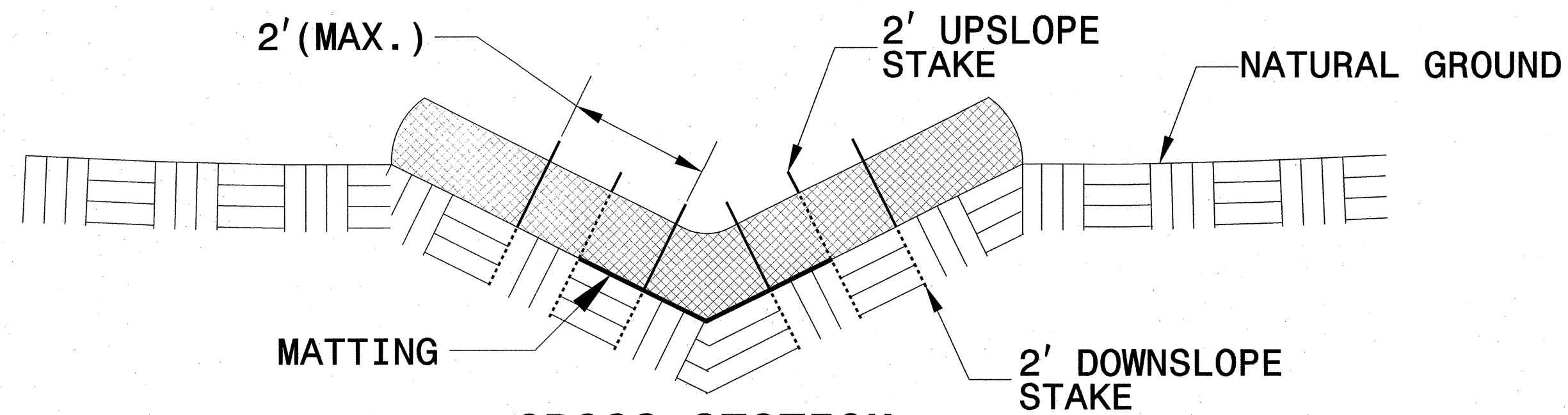
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PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

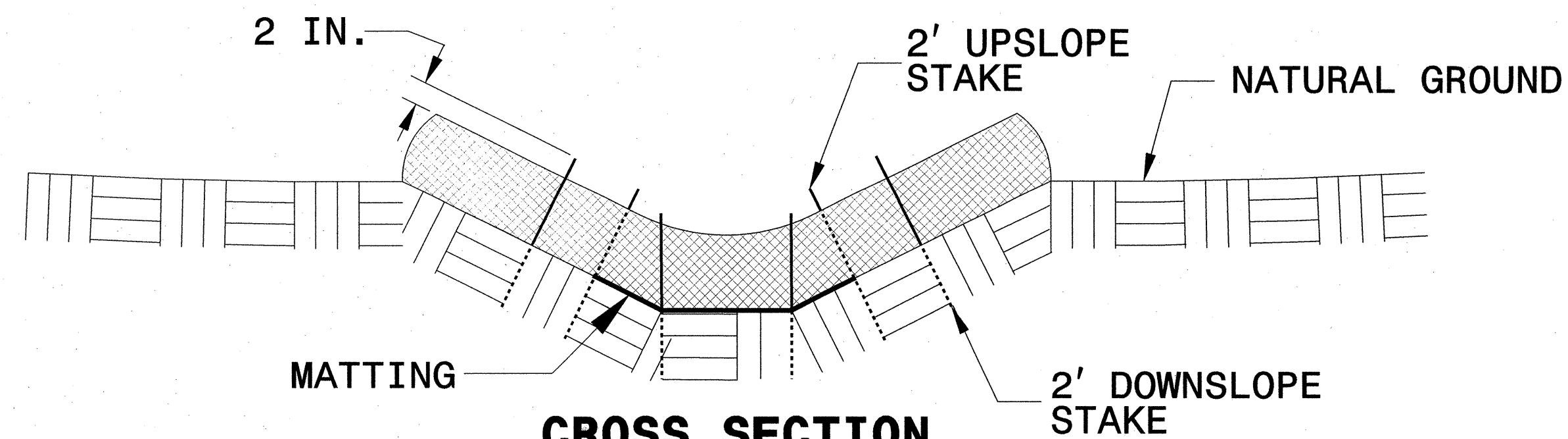
# WATTLE DETAIL



**ISOMETRIC VIEW**



**CROSS SECTION VEE DITCH**



**CROSS SECTION TRAPEZOIDAL DITCH**

**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

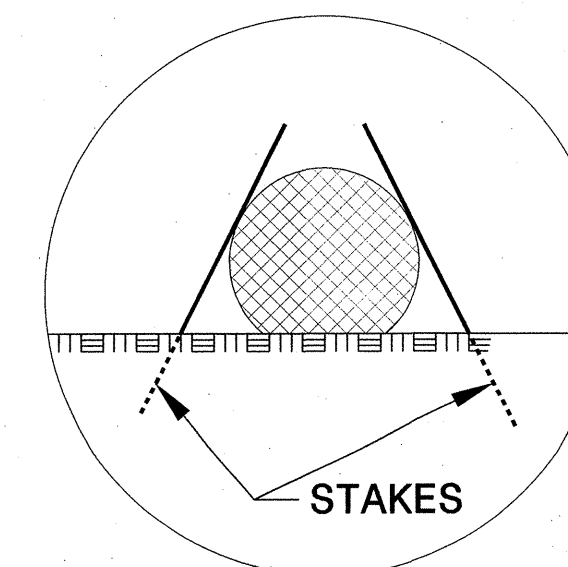
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

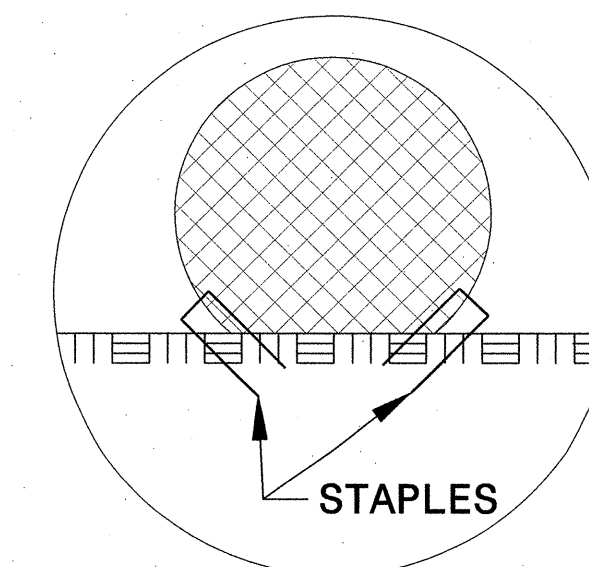
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

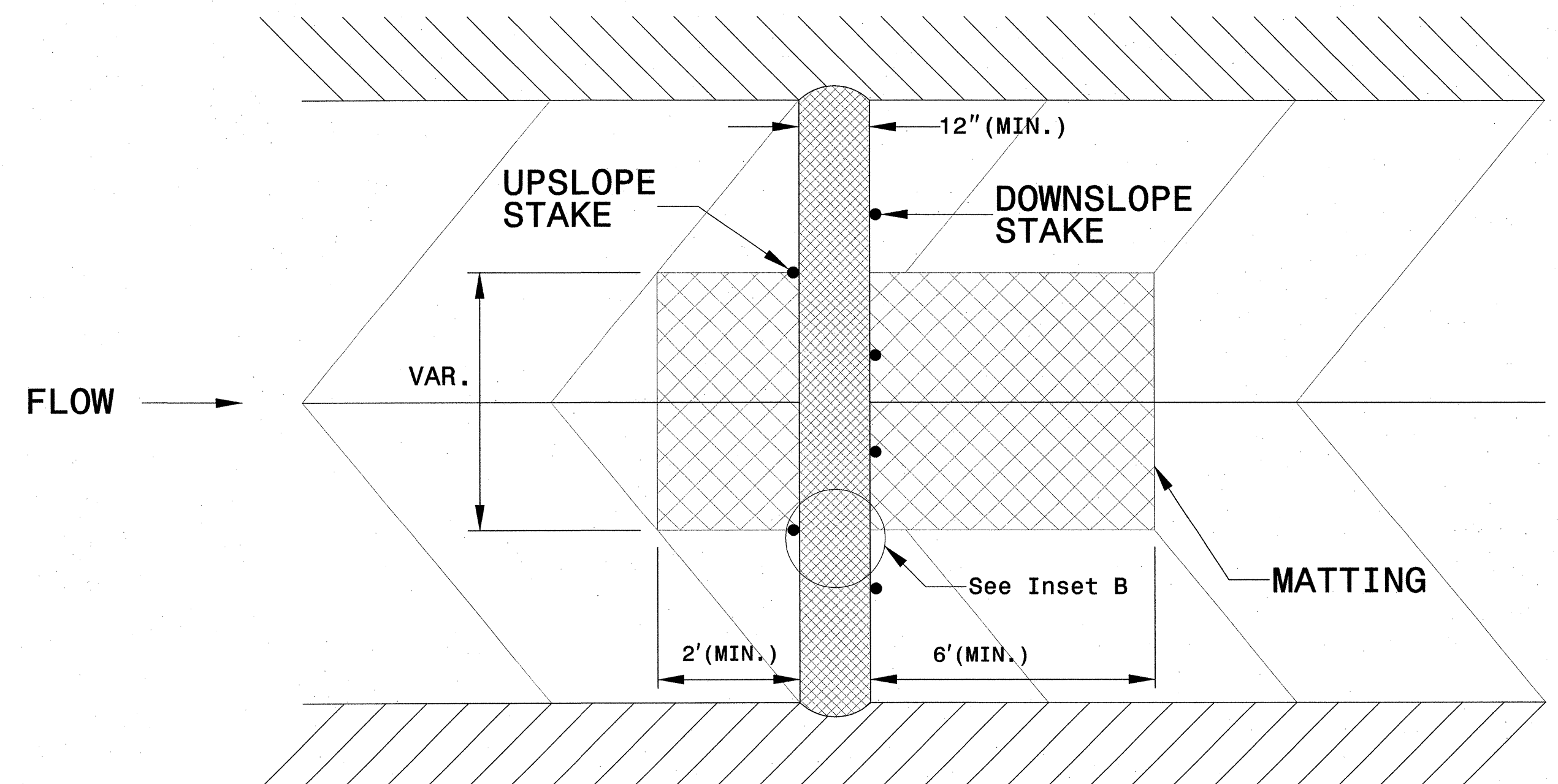
INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



**INSET A**



**INSET B**

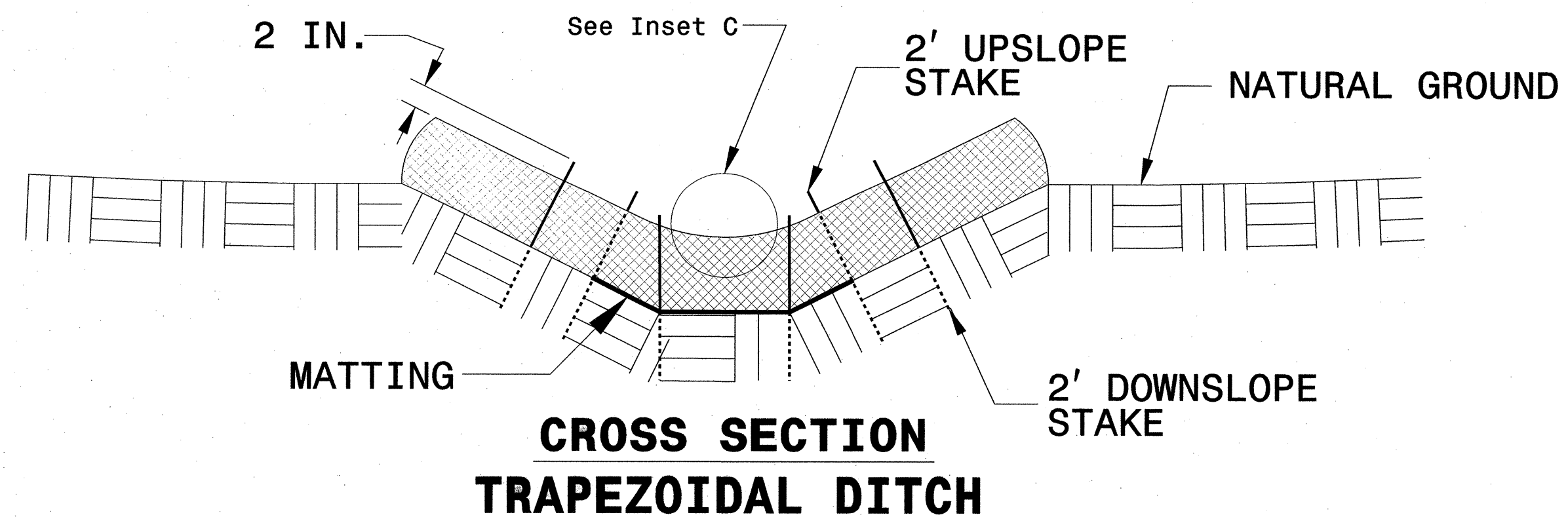
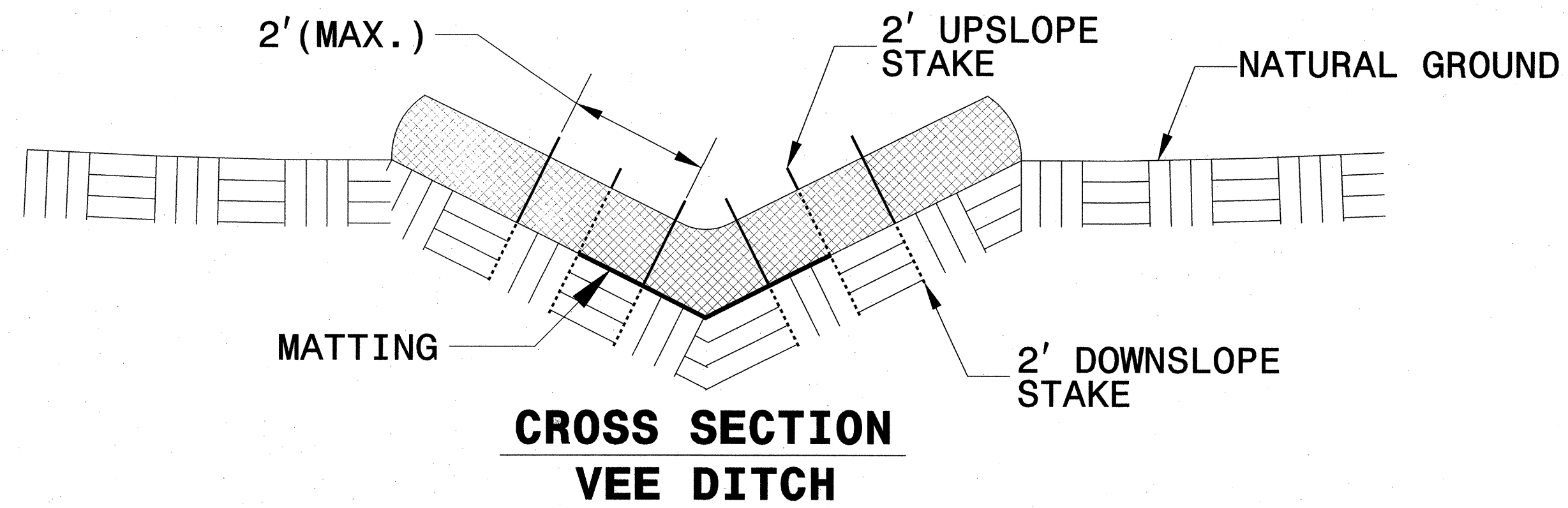
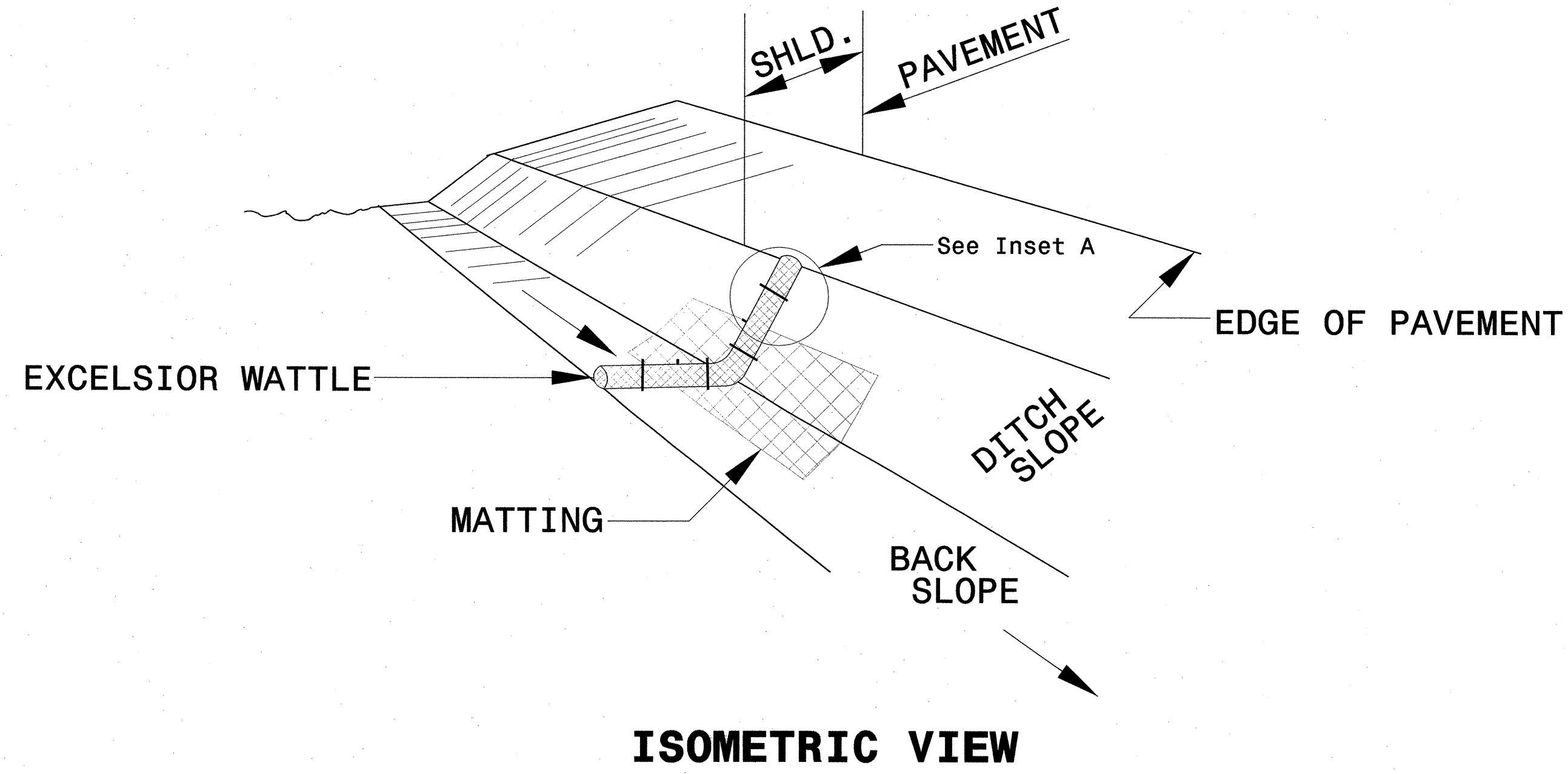


**TOP VIEW**



# WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**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.

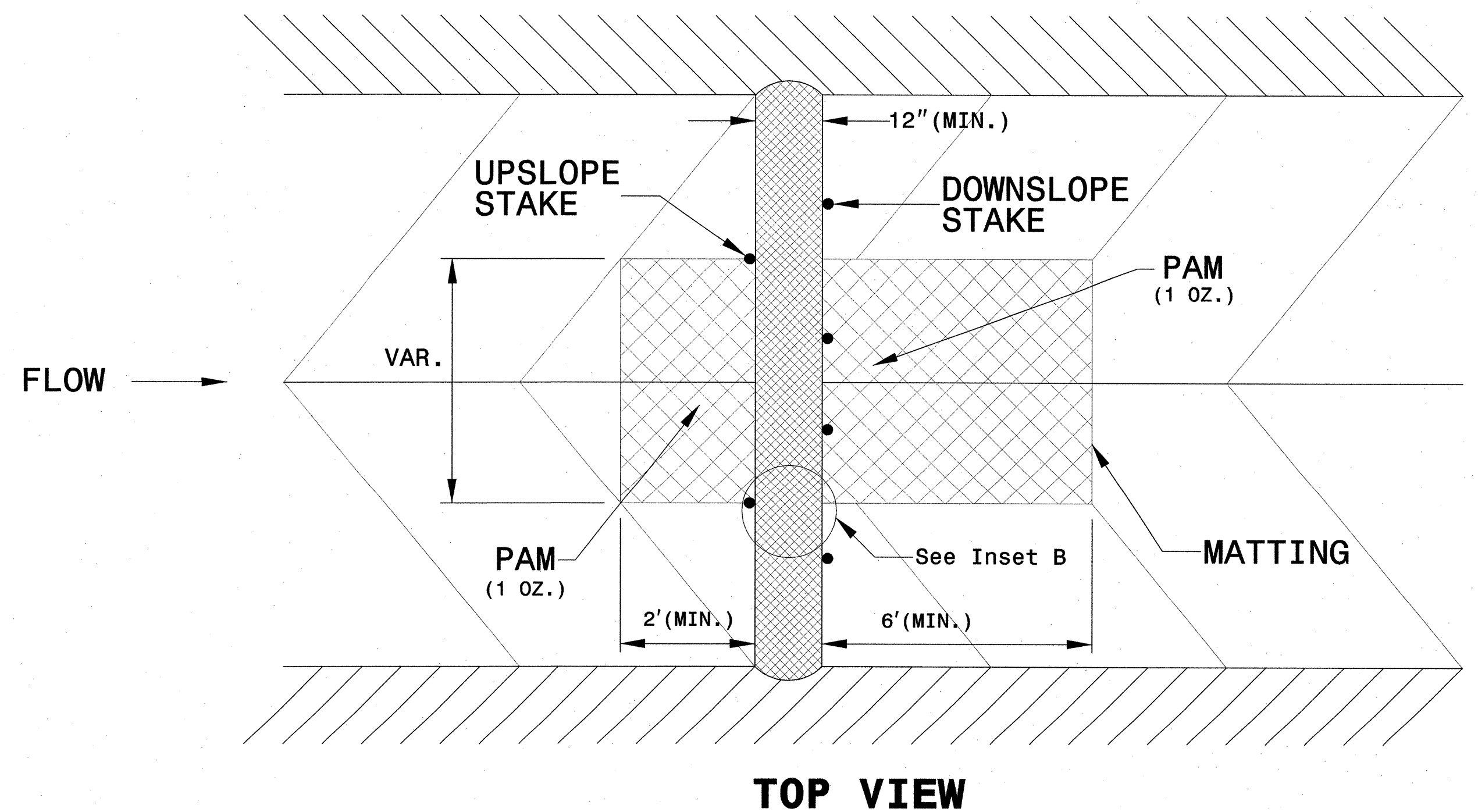
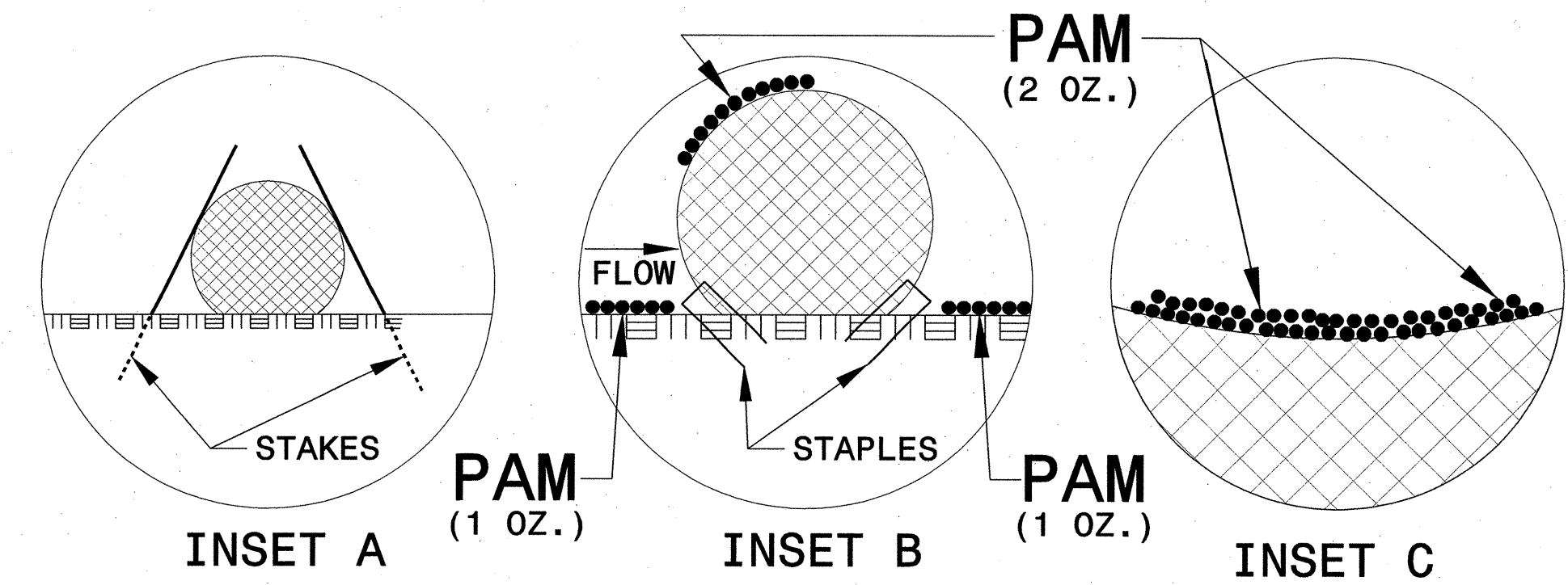
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

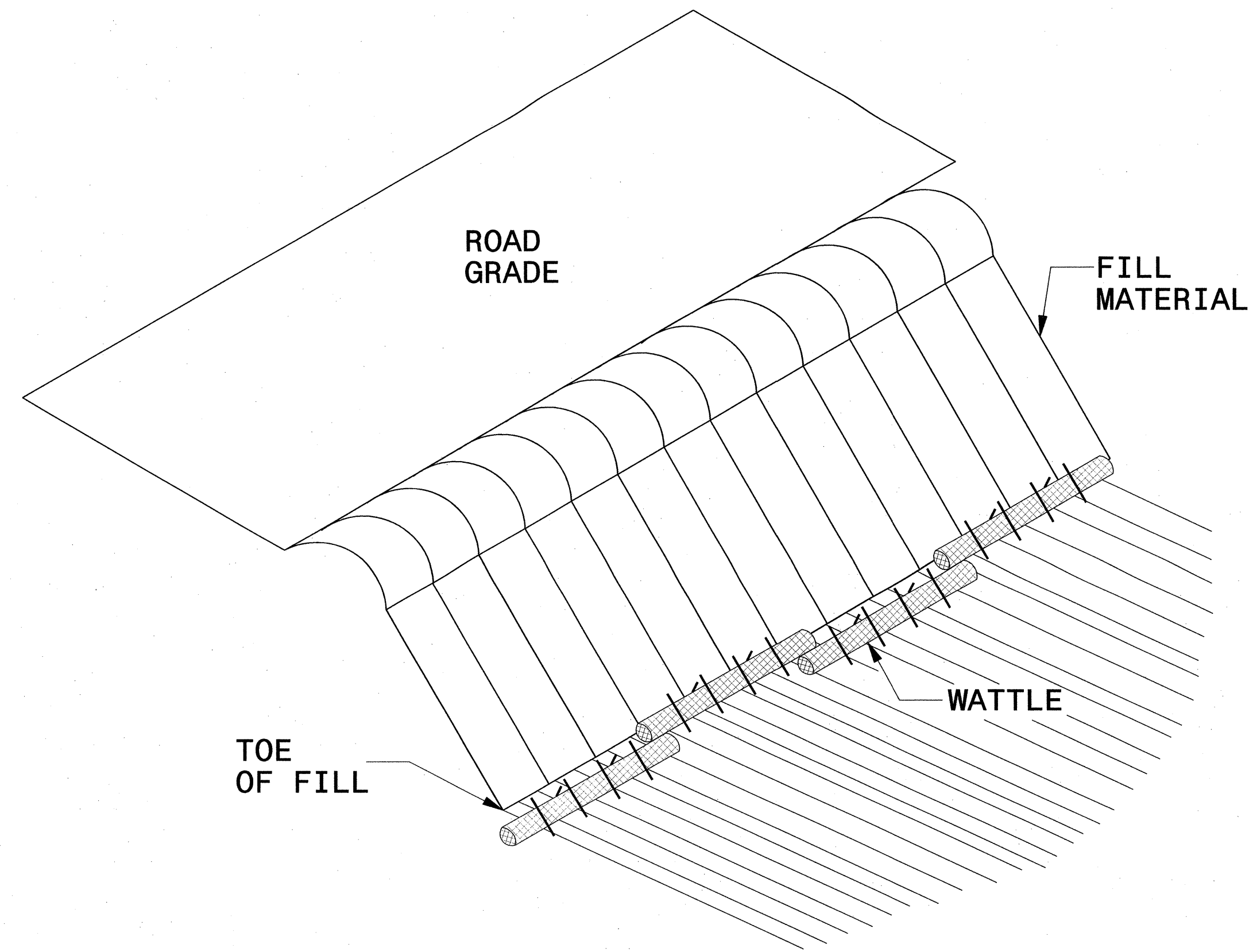


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PROJECT REFERENCE NO. C-4901B		SHEET NO. EC-2B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

# WATTLE BARRIER DETAIL



**ISOMETRIC VIEW**

**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

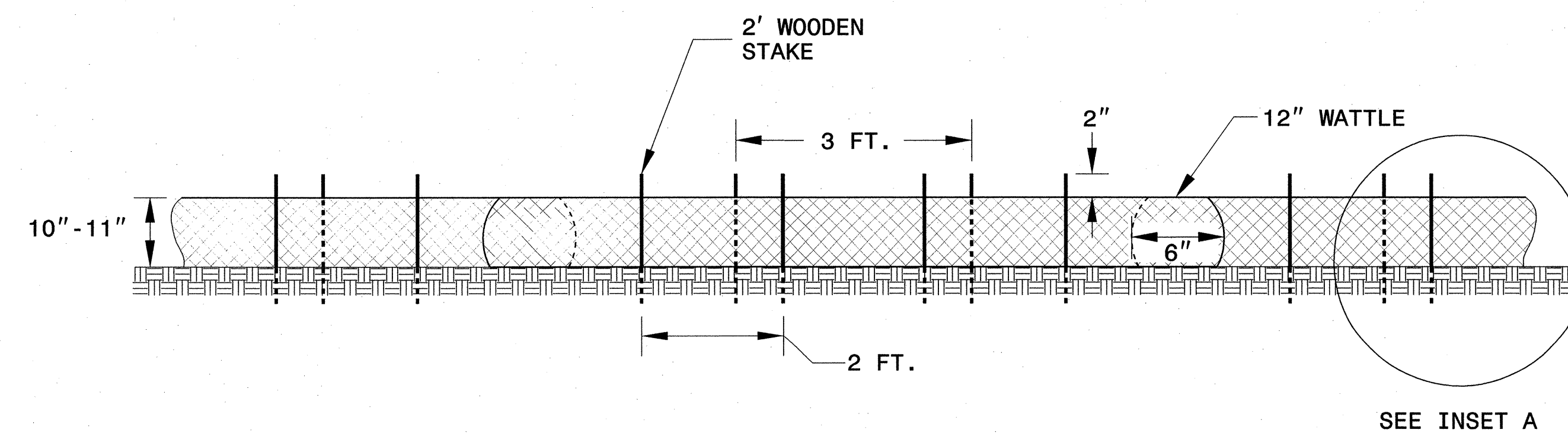
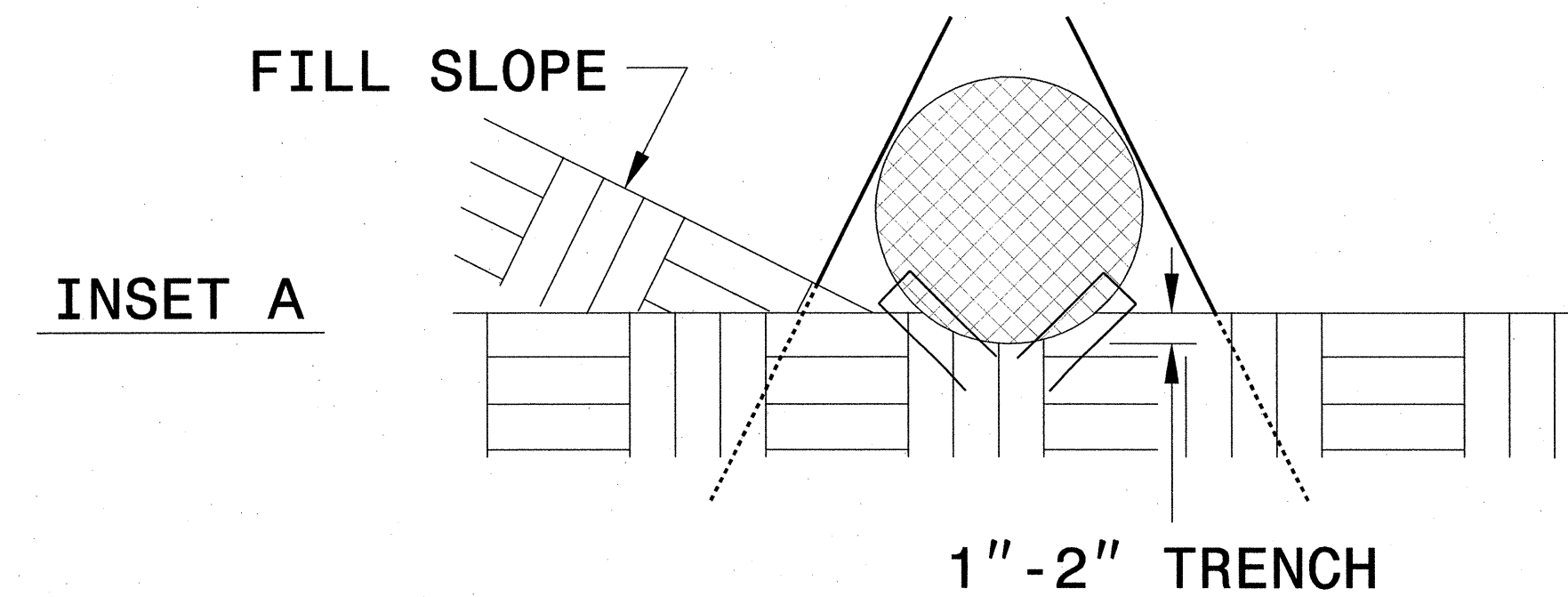
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

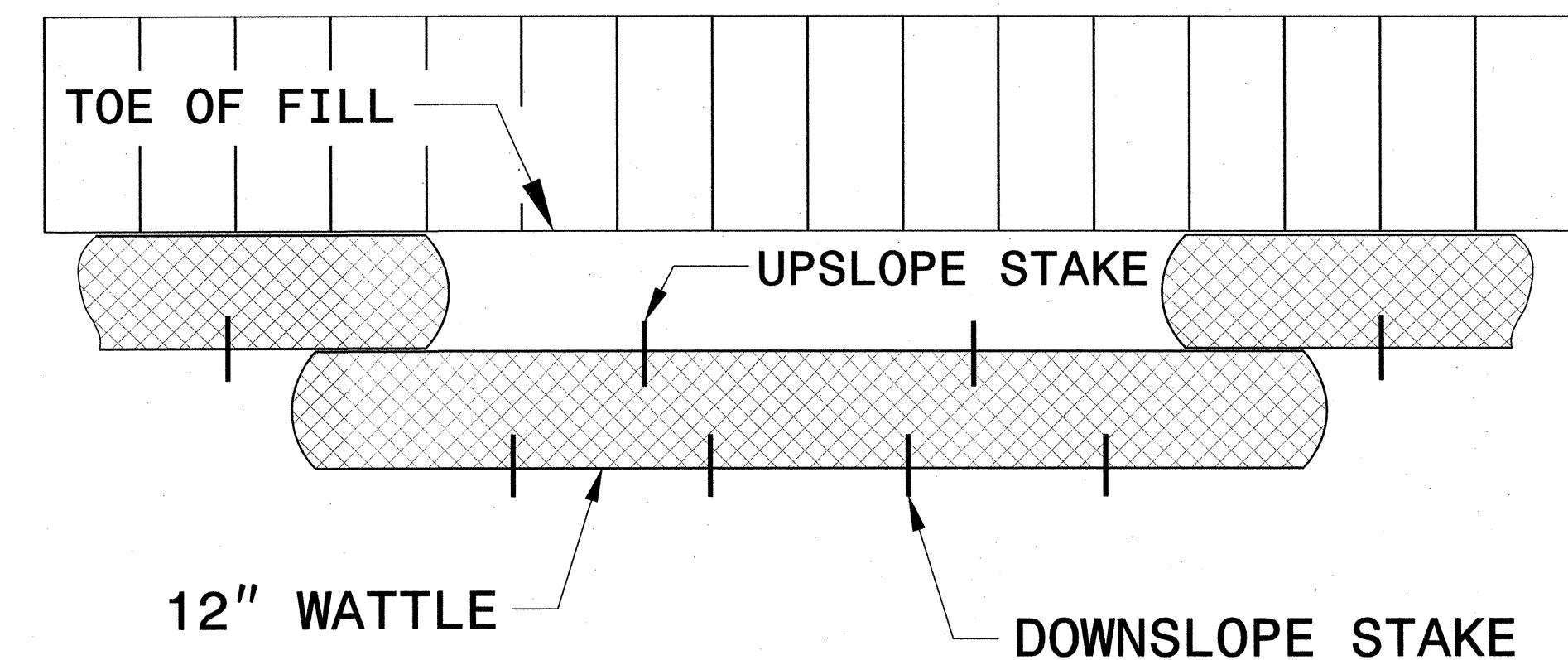
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 20 FT.



**FRONT VIEW**



**TOP VIEW**

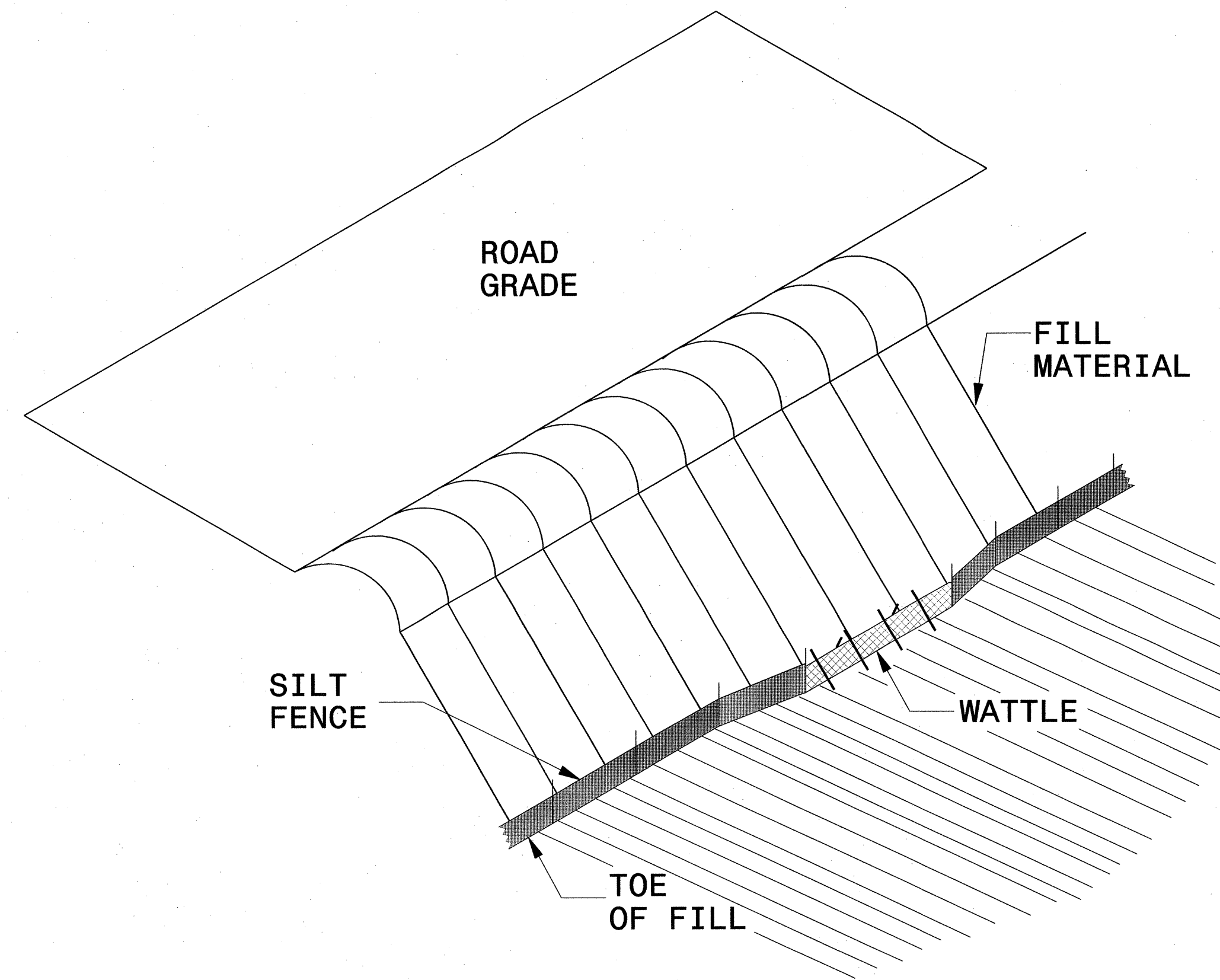


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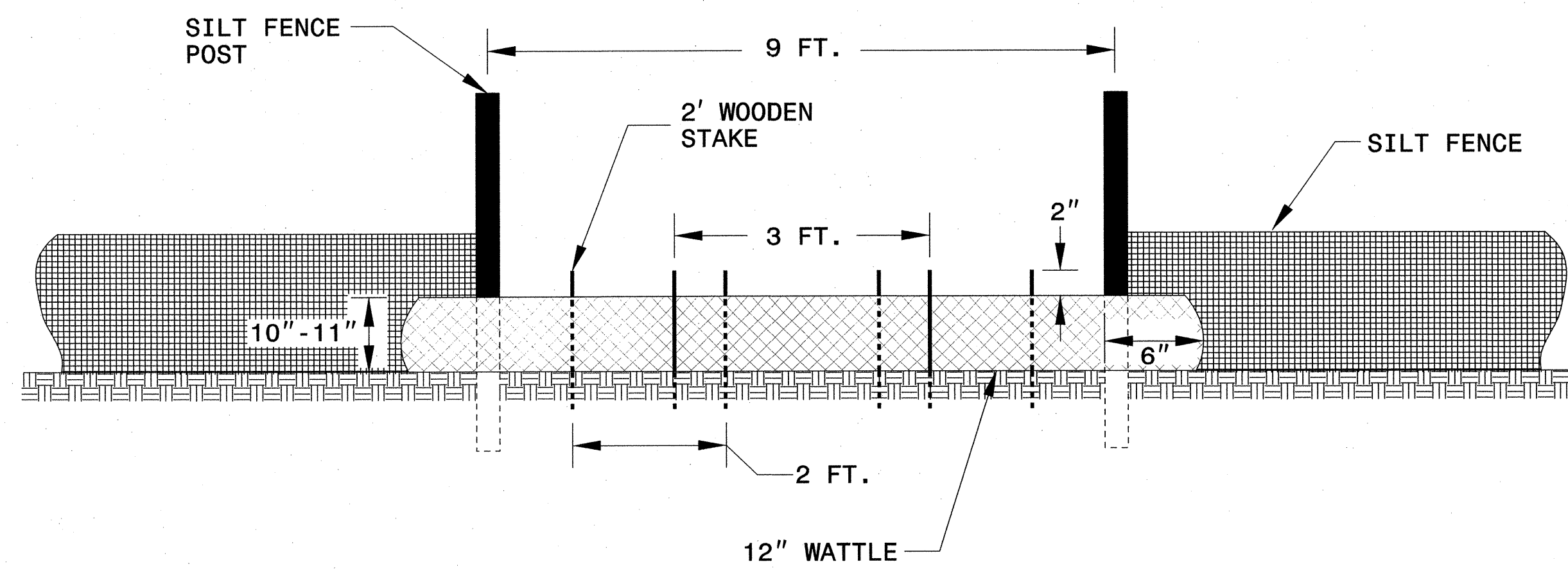
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PROJECT REFERENCE NO.		SHEET NO.	
C-4901B		EC-2C	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

# SILT FENCE WATTLE BREAK DETAIL



**ISOMETRIC VIEW**

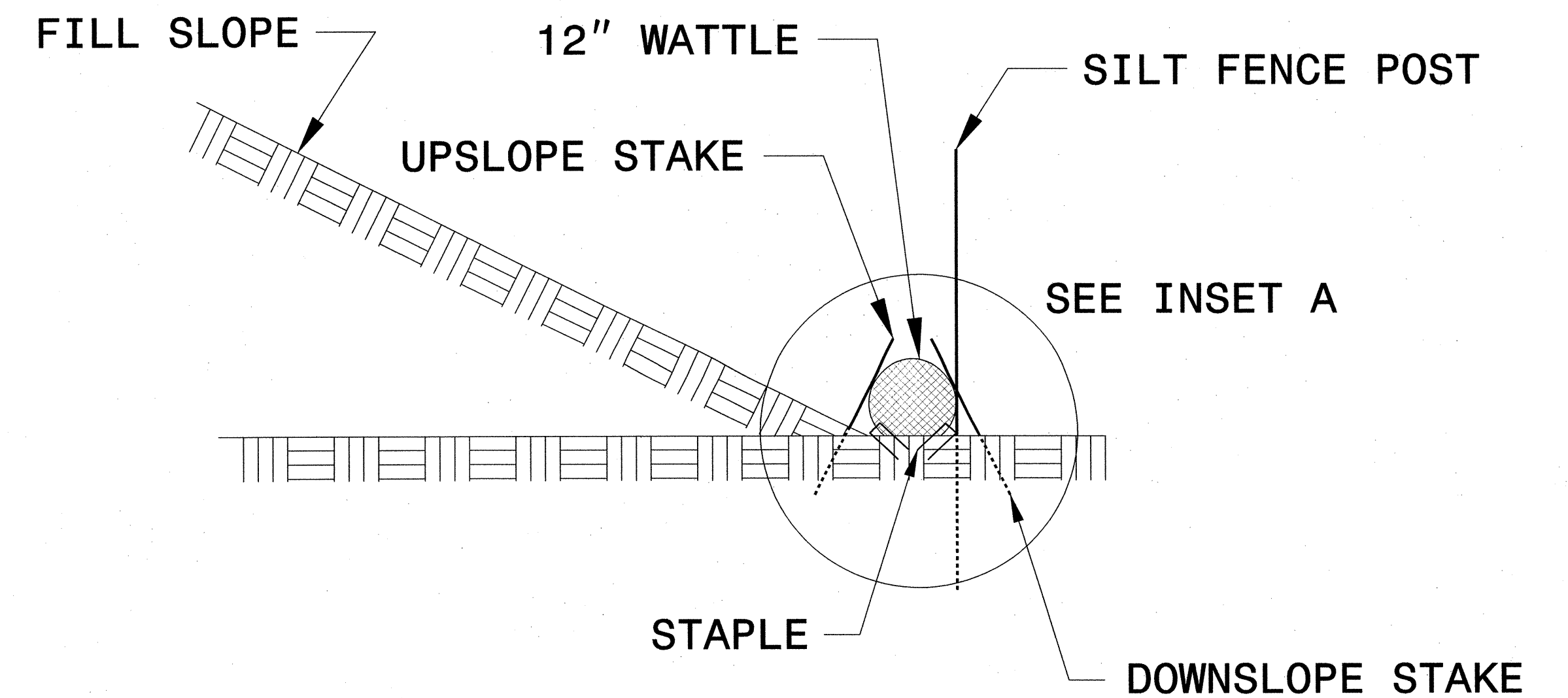
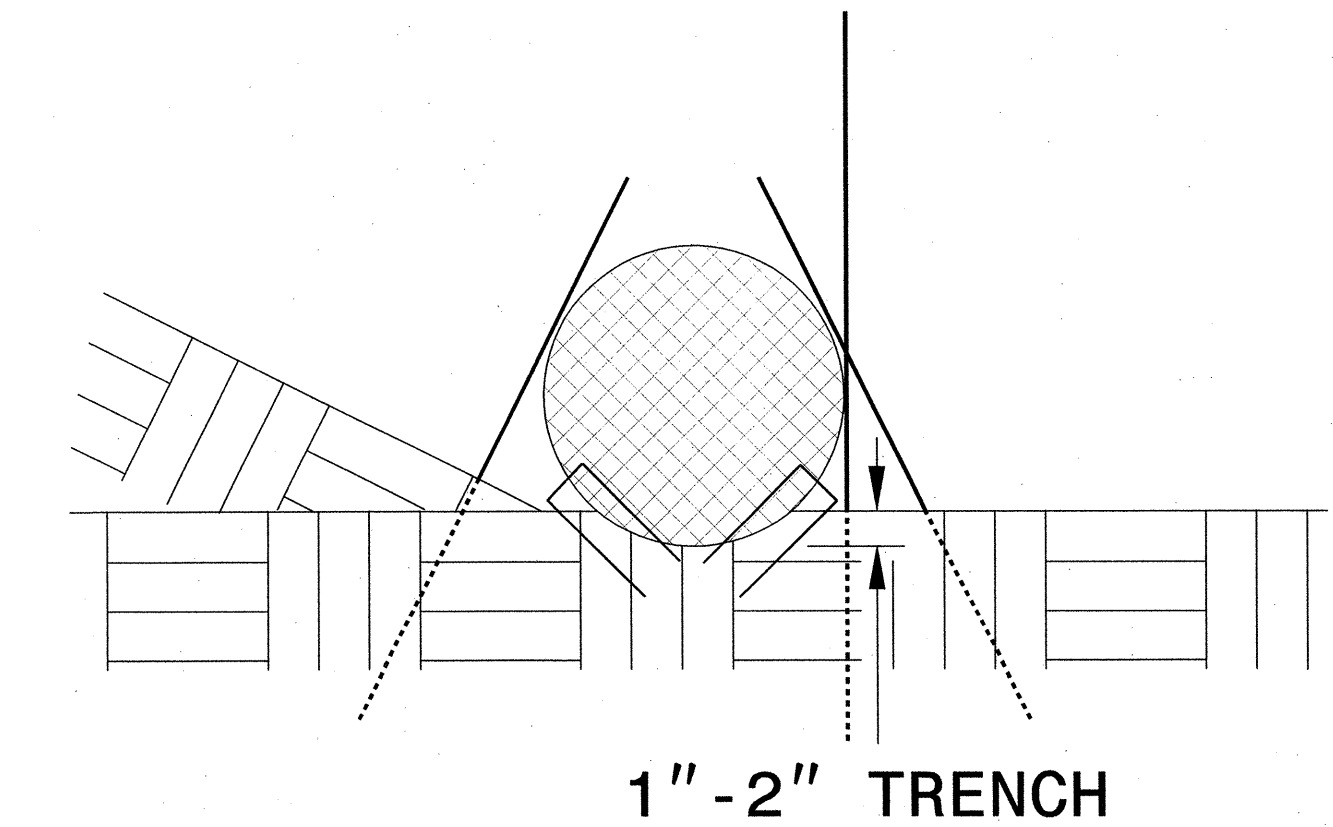


**VIEW FROM SLOPE**

**NOTES:**

- USE MINIMUM 12 IN. DIAMETER EXCELSIOR 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**



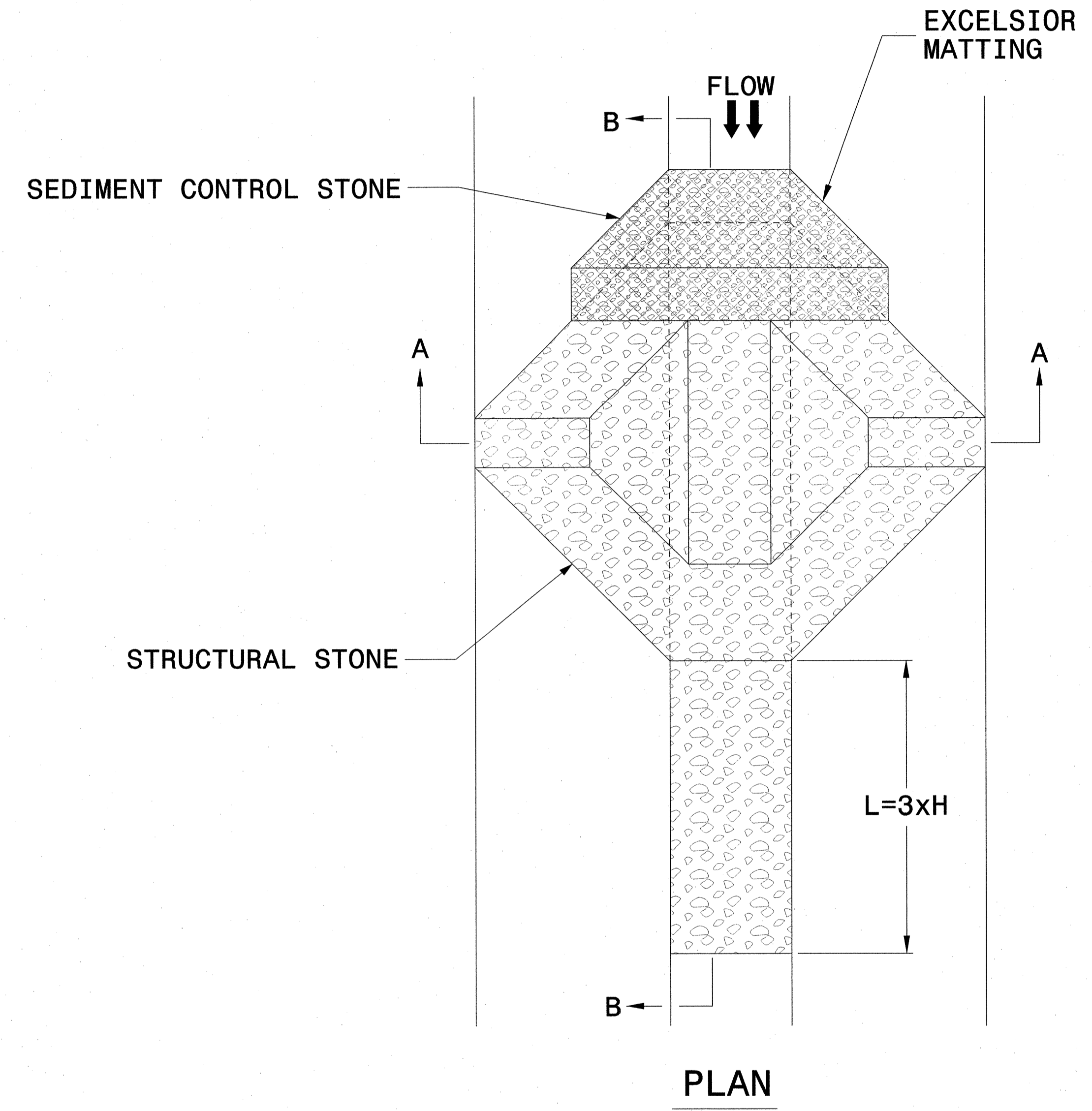
**SIDE VIEW**

PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

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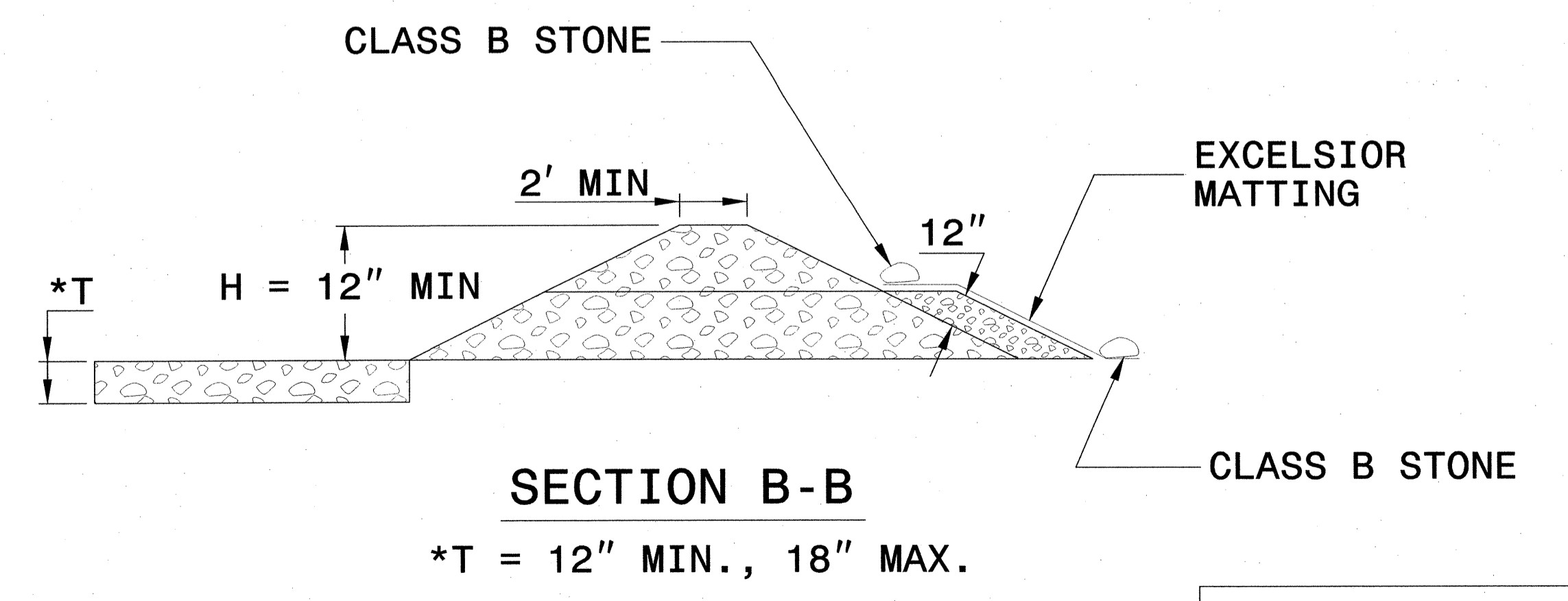
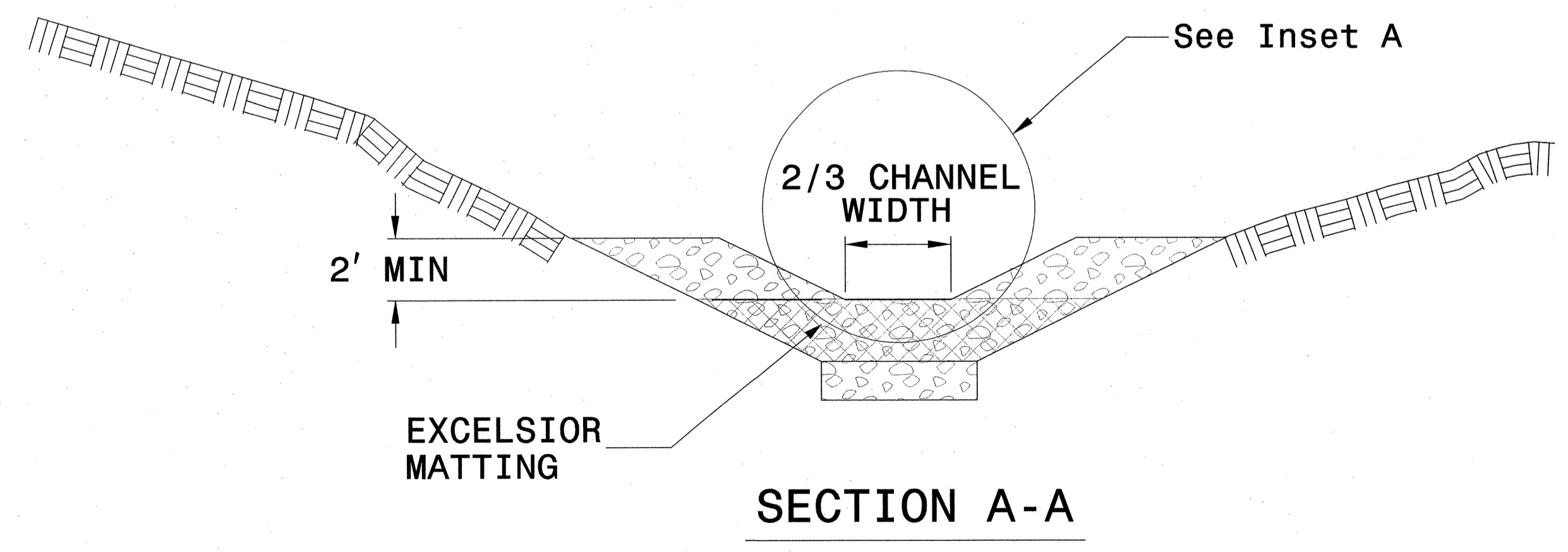
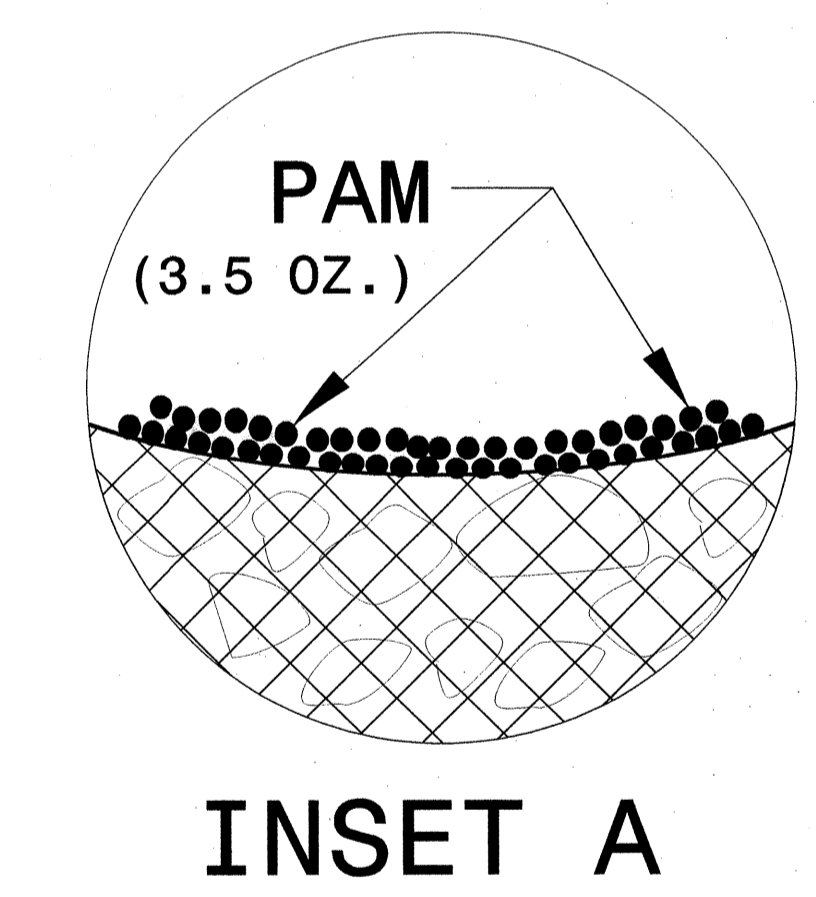


### NOTES

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



NOT TO SCALE

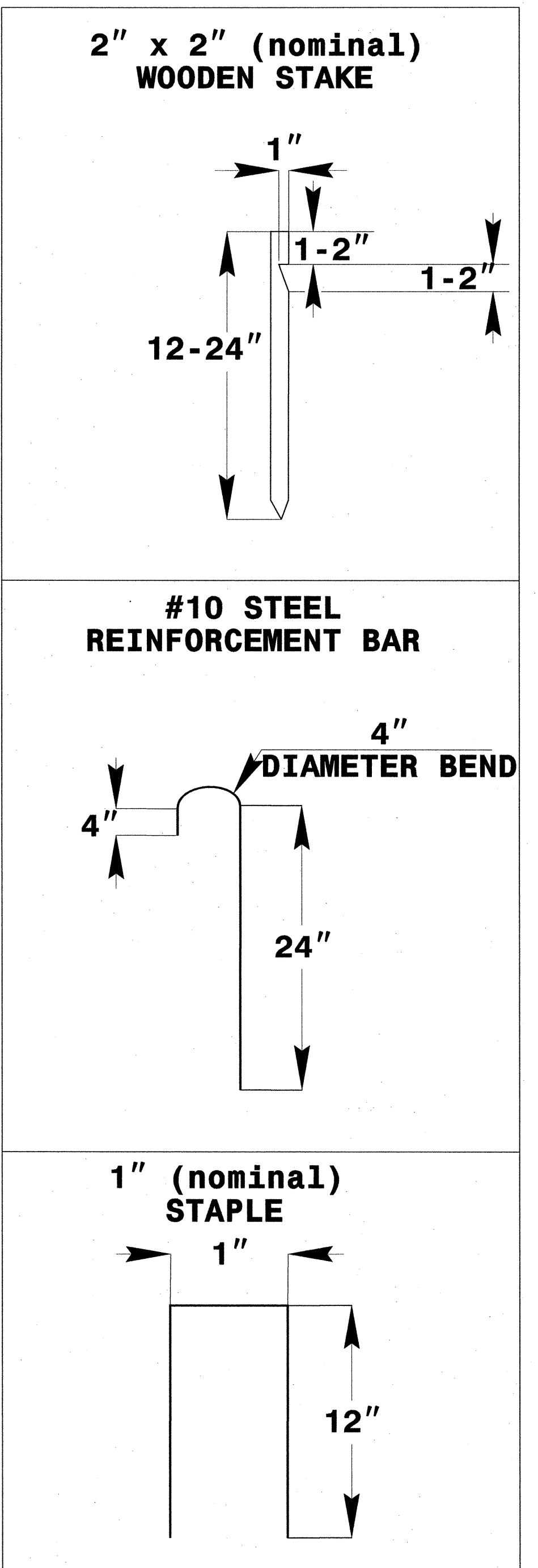
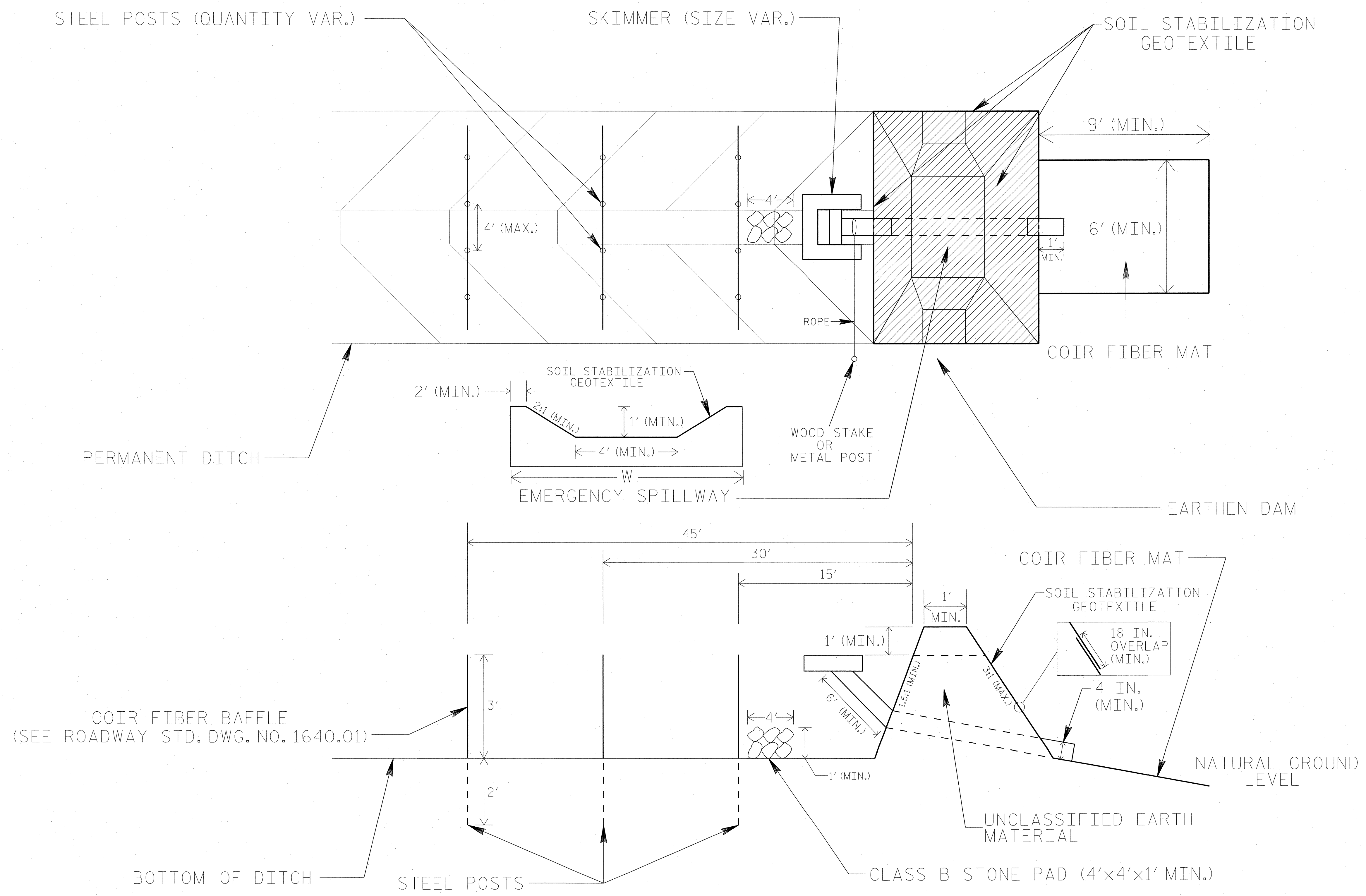


# EARTHEN DAM WITH SKIMMER

PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-2E
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

0259DEL\_P10c2

DCN



## COIR FIBER MAT ANCHOR OPTIONS

- NOTES**
1. LIMIT EARTHEN DAM HEIGHT TO 5 FT.
  2. DETERMINE EMERGENCY SPILLWAY LENGTH (FT.) USING  $Q/0.8$ , WHERE Q IS FLOW RATE (CFS) INTO BASIN.
  3. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

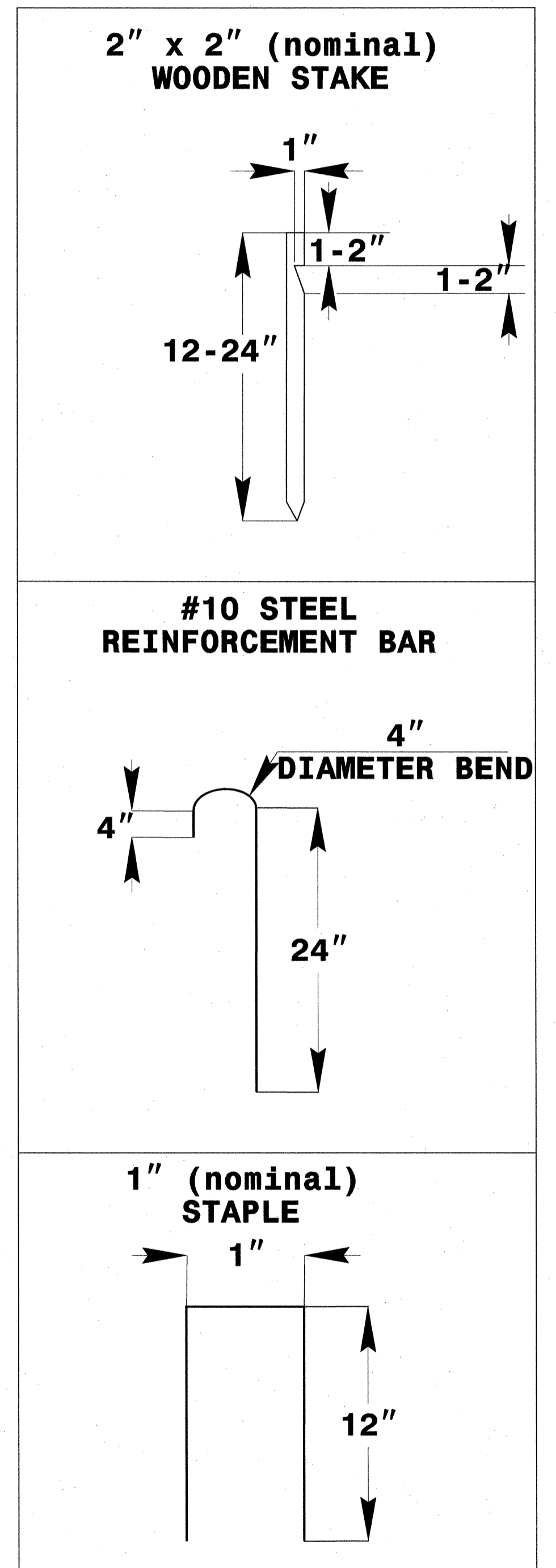
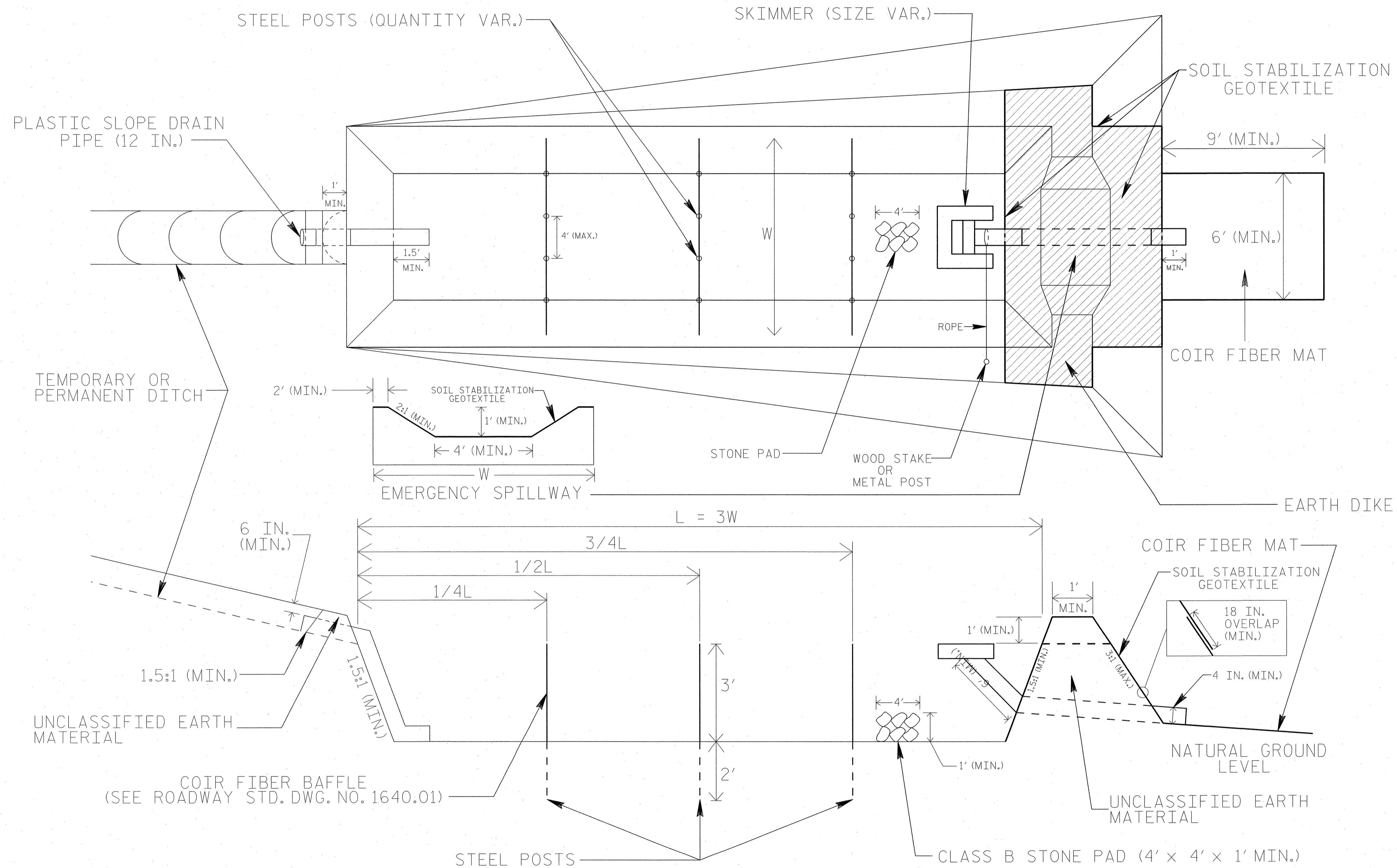
NOT TO SCALE

DCN

0259DEL\_P10c2

PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-2F
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# 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 EMERGENCY SPILLWAY 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 AS DIRECTED.
6. SOIL STABILIZATION GEOTEXTILE FOR EMERGENCY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE





DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>C-4901B</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.

0259DEL\_P10c2

DCN



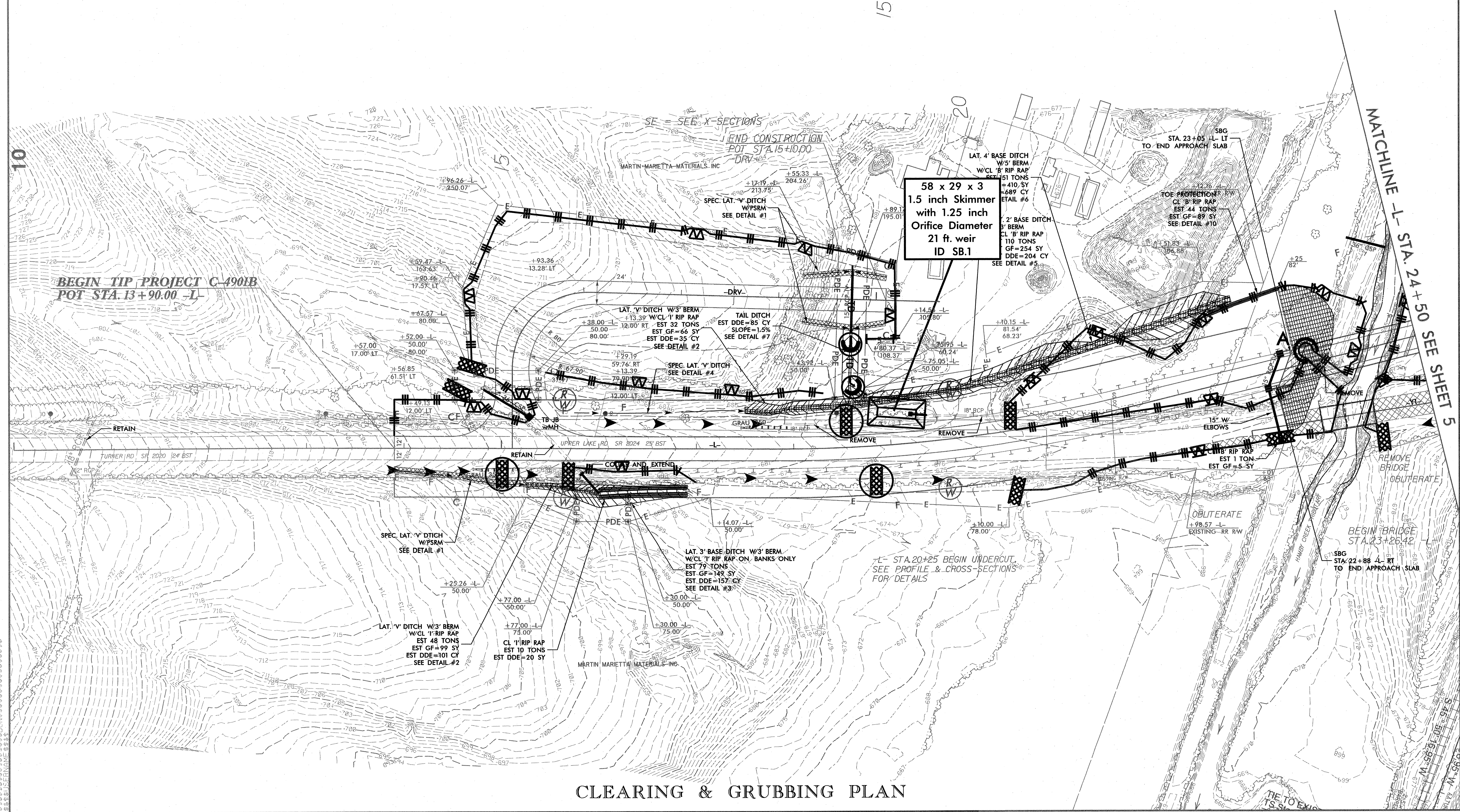
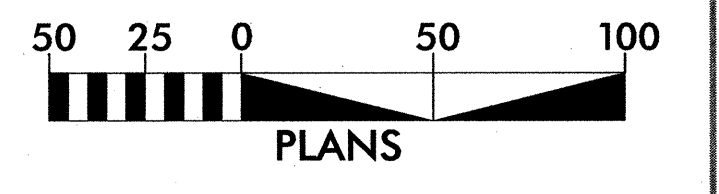
08/20/12\_P102

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4

Place Matting for Erosion Control  
on Slopes Adjacent to Permitted  
Wetlands as Work Allows.

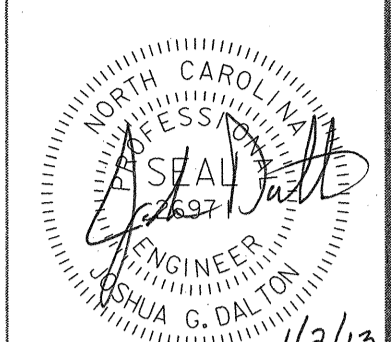
INSTALL PIPE(S) IN JURISDICTIONAL AREAS ACCORDING TO  
NCDOT BEST MANAGEMENT PRACTICES FOR  
CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-04/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING & GRUBBING PLAN



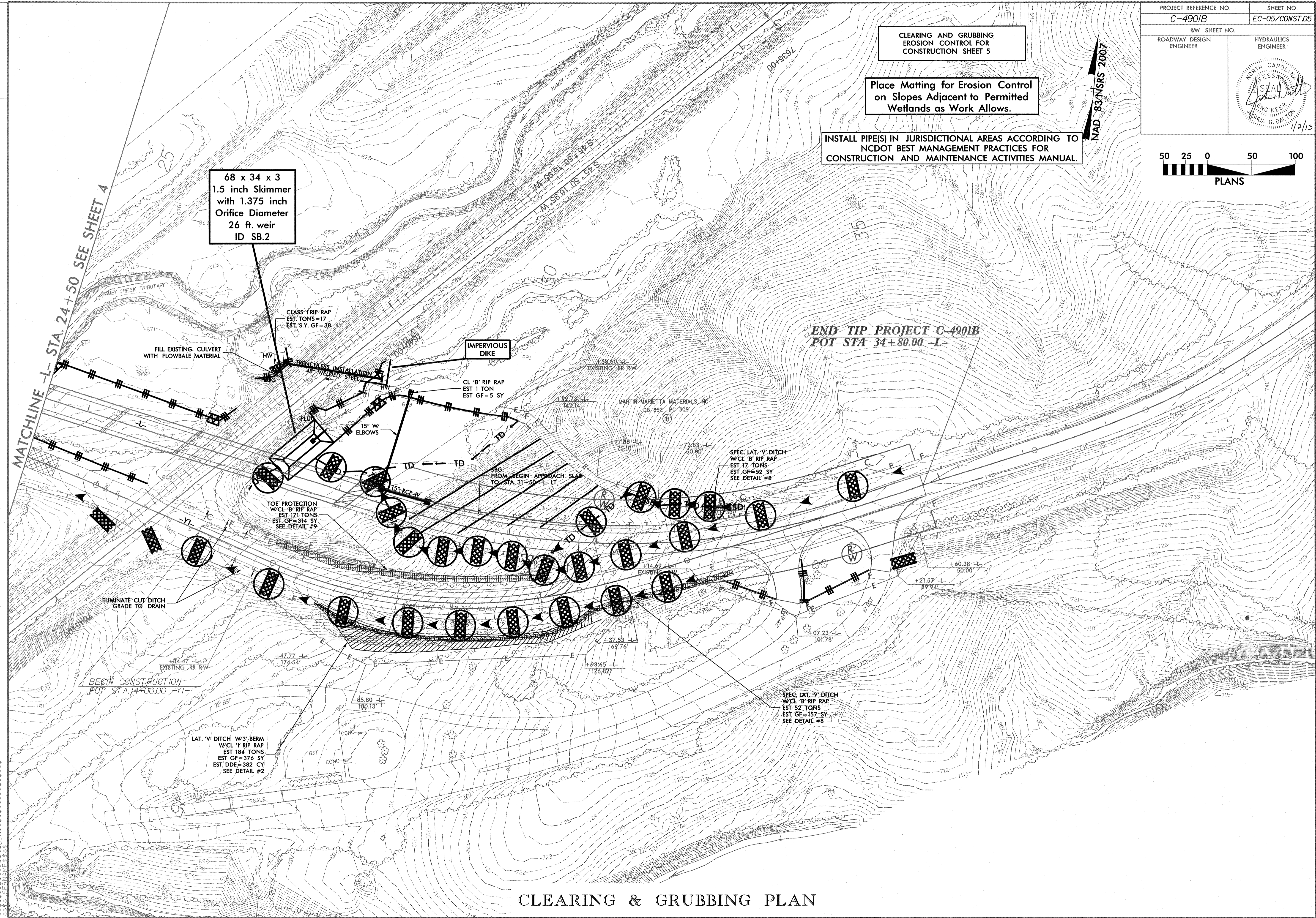
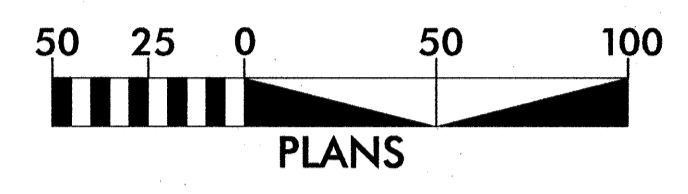
PROJECT REFERENCE NO. <b>C-4901B</b>	SHEET NO. <b>EC-05/CONST.05</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
	

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 5

Place Matting for Erosion Control  
on Slopes Adjacent to Permitted  
Wetlands as Work Allows.

INSTALL PIPE(S) IN JURISDICTIONAL AREAS ACCORDING TO  
NCDOT BEST MANAGEMENT PRACTICES FOR  
CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

NAD 83/NSRS 2007



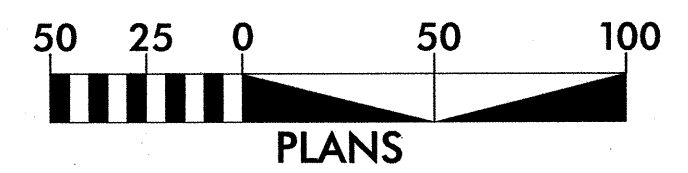
CLEARING & GRUBBING PLAN







PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-07/CONST.04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

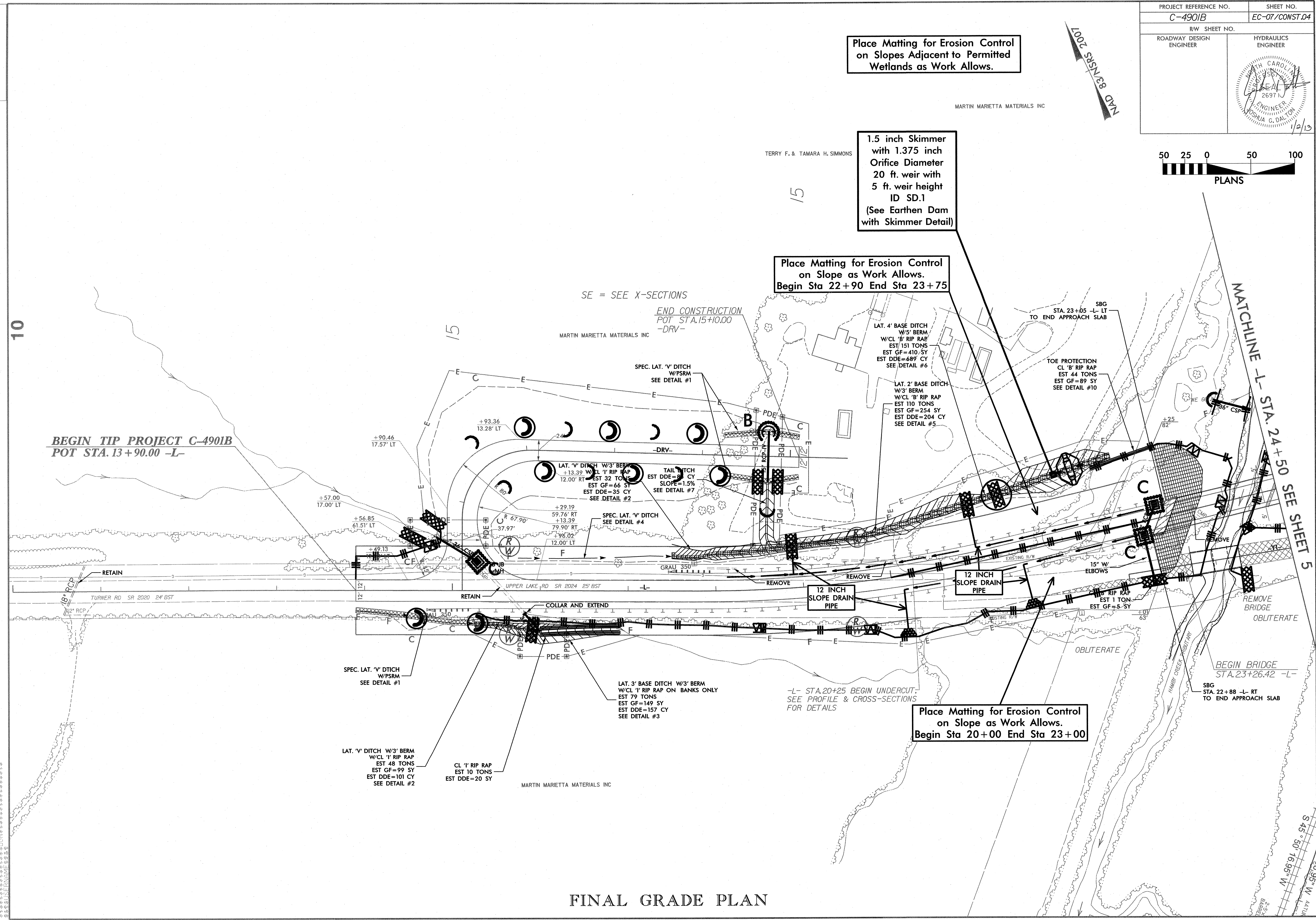


Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

1.5 inch Skimmer with 1.375 inch Orifice Diameter  
20 ft. weir with 5 ft. weir height  
ID SD.1  
(See Earthen Dam with Skimmer Detail)

Place Matting for Erosion Control on Slope as Work Allows.  
Begin Sta 22+90 End Sta 23+75

Place Matting for Erosion Control on Slope as Work Allows.  
Begin Sta 20+00 End Sta 23+00



FINAL GRADE PLAN

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SEE SHEET 5

MATCHLINE -L- STA. 24+50

BEGIN TIP PROJECT C-4901B  
POT STA. 13+90.00 -L-

END CONSTRUCTION  
POT STA. 15+10.00  
-DRV-

BEGIN BRIDGE  
STA. 23+26.42 -L-

SBG STA. 22+88 -L- RT  
TO END APPROACH SLAB

-L- STA. 20+25 BEGIN UNDERCUT-  
SEE PROFILE & CROSS-SECTIONS  
FOR DETAILS

TURNER RD SR 2020 24' BST

UPPER LAKE RD SR 2024 25' BST

02/20/2016 11:02 AM

MAD 8/28/2007

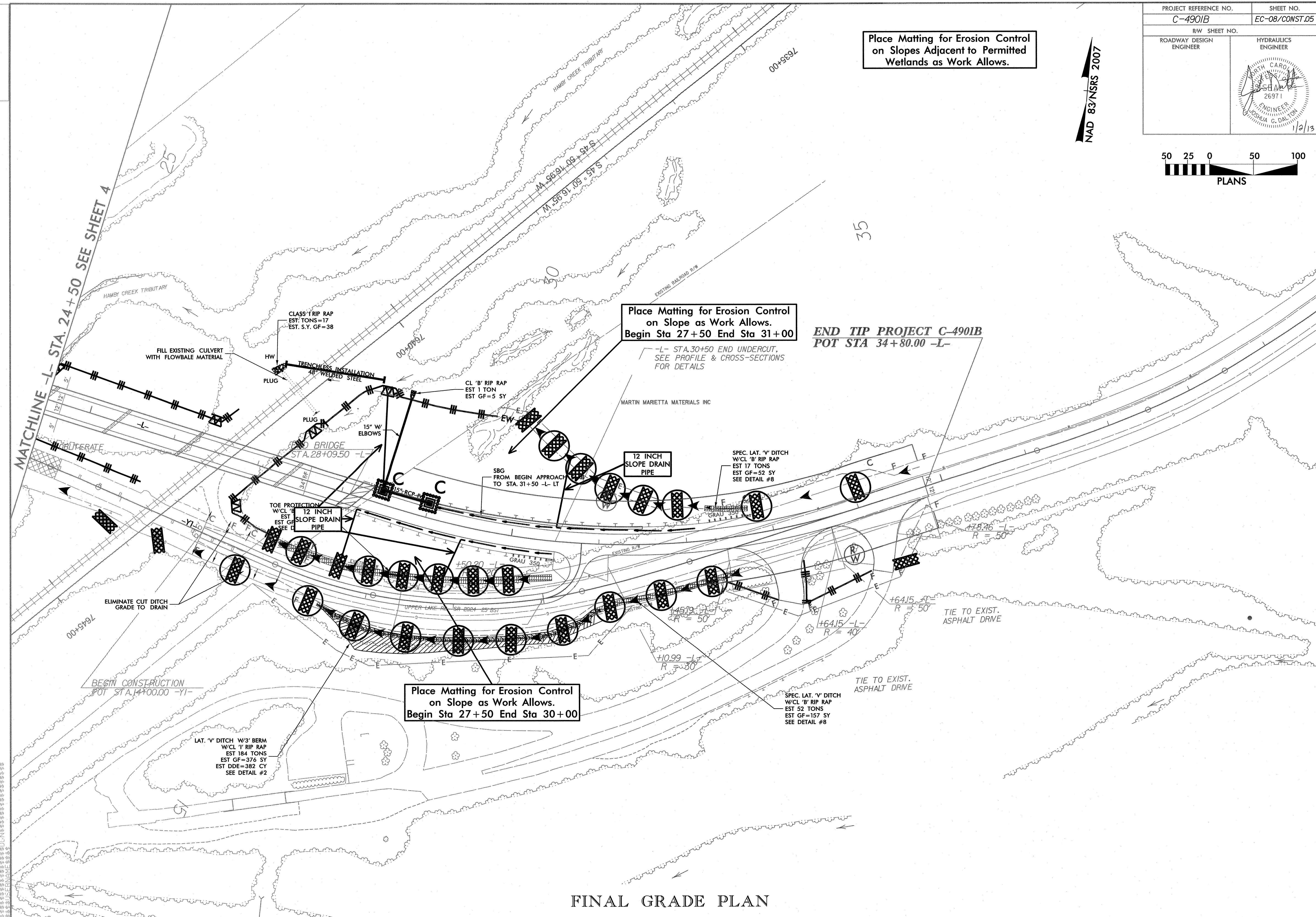
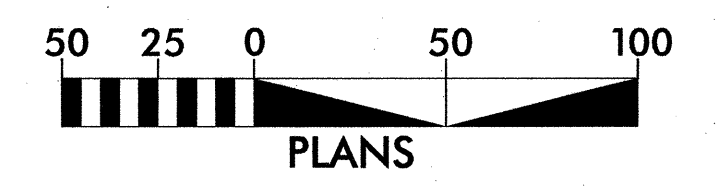
S 45° 50' 16.95\"/>



PROJECT REFERENCE NO. C-4901B	SHEET NO. EC-08/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

NAD 83/NSRS 2007



Place Matting for Erosion Control on Slope as Work Allows.  
Begin Sta 27+50 End Sta 31+00

END TIP PROJECT C-4901B  
POT STA 34+80.00 -L-

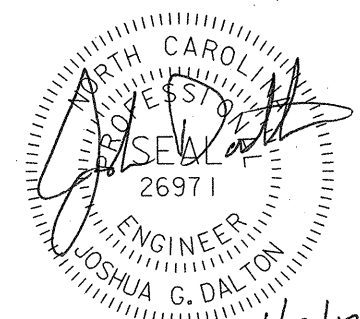
Place Matting for Erosion Control on Slope as Work Allows.  
Begin Sta 27+50 End Sta 30+00

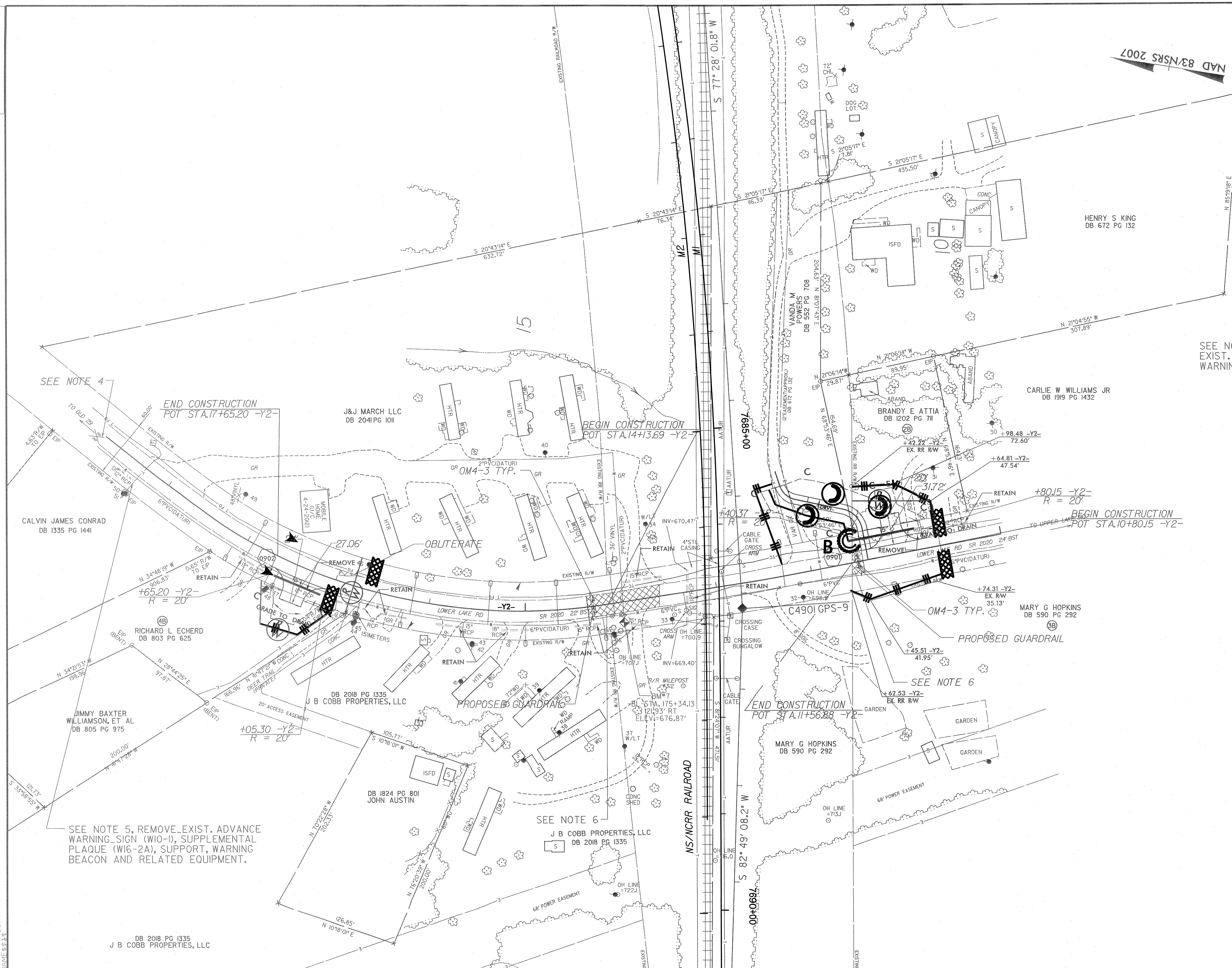
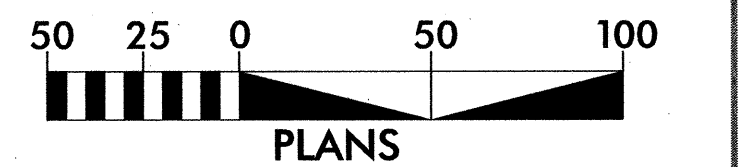
FINAL GRADE PLAN

02/20/2012\_P1W2

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PROJECT REFERENCE NO. <b>C-4901B</b>	SHEET NO. <b>EC-09/CONST.09</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 JOSHUA G. DALTON 12/13	



SEE NOTE 5, REMOVE EXIST. ADVANCE WARNING SIGN (W10-1)

SEE NOTE 4

SEE NOTE 4

SEE NOTE 5, REMOVE EXIST. ADVANCE WARNING SIGN (W10-1), SUPPLEMENTAL PLAQUE (W16-2A), SUPPORT, WARNING BEACON AND RELATED EQUIPMENT.

**FINAL GRADE PLAN**

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