

TIP PROJECT: U-3324

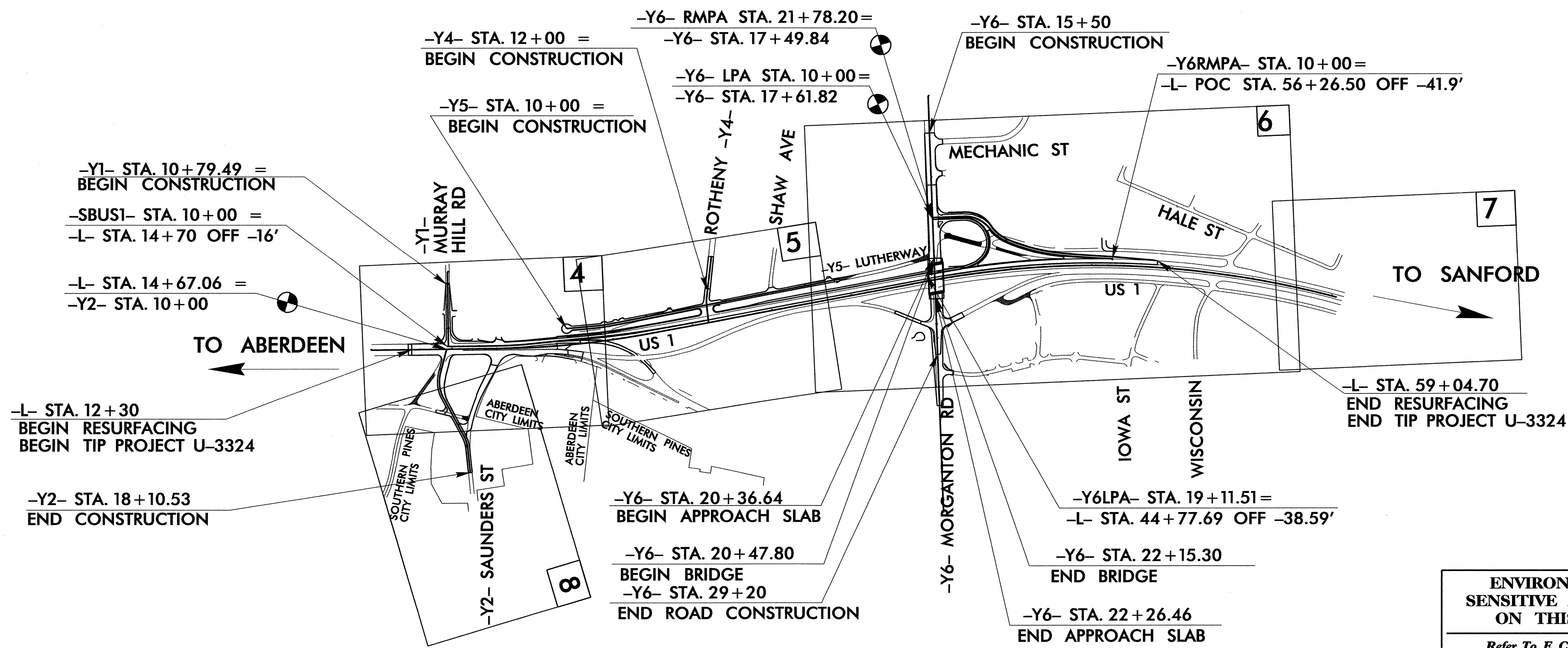
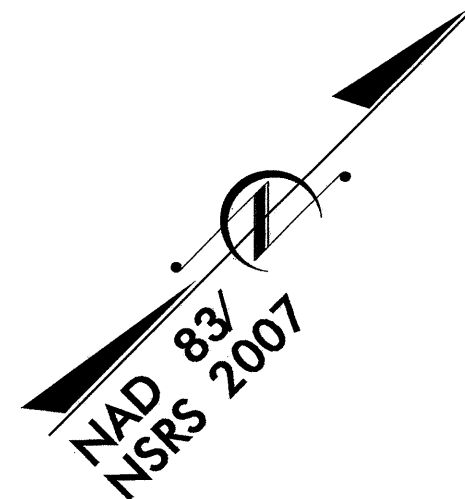
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

MOORE COUNTY

**LOCATION: ABERDEEN-SOUTHERN PINES - INTERSECTION OF
SR 1309 (MORGANTON ROAD) AND US1 (SANDHILLS BOULEVARD)**

**TYPE OF WORK: RESURFACING, PAVING, GRADING, DRAINAGE, RETAINING WALLS,
STRUCTURE, GUARDRAIL, CURB & GUTTER, SIGNING AND SIGNALS**



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	III III III
1622.01	Temporary Berms and Slope Drains	TD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	RS
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	RS
1633.02	Temporary Rock Silt Check Type-B	RS
	Wattle / Coir Fiber Wattle	W
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W
1634.01	Temporary Rock Sediment Dam Type-A	RD
1634.02	Temporary Rock Sediment Dam Type-B	RD
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPI
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPI
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SK
	Tiered Skimmer Basin	SK
	Infiltration Basin	IB

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

**THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.**

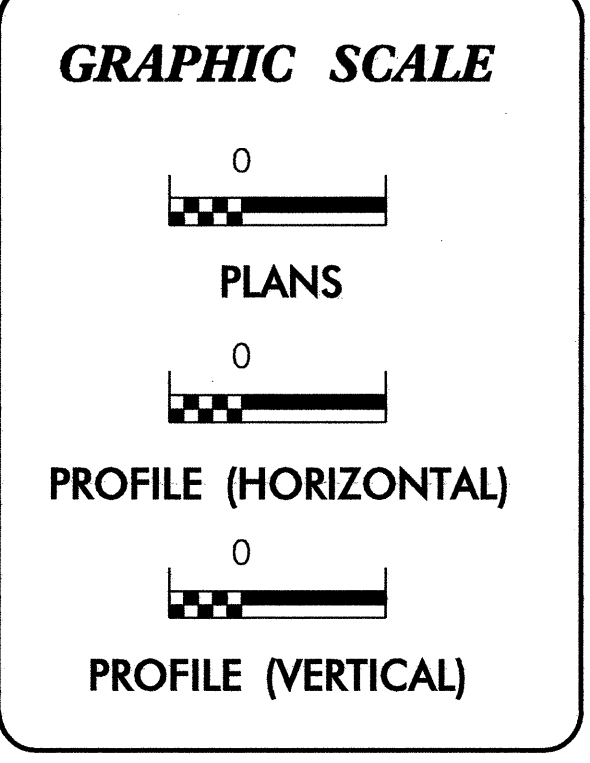
**ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT**

*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. Approx. 45+25 -L-
to Sta. End Project*

*Refer To E. C. Special Provisions
for Special Considerations.*



**ROADSIDE ENVIRONMENTAL UNIT
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

**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.**

Prepared in the Office of:

ROADSIDE ENVIRONMENTAL UNIT

*1 South Wilmington St.
Raleigh, NC 27611*

2012 STANDARD SPECIFICATIONS

Roadway Standard Drawings

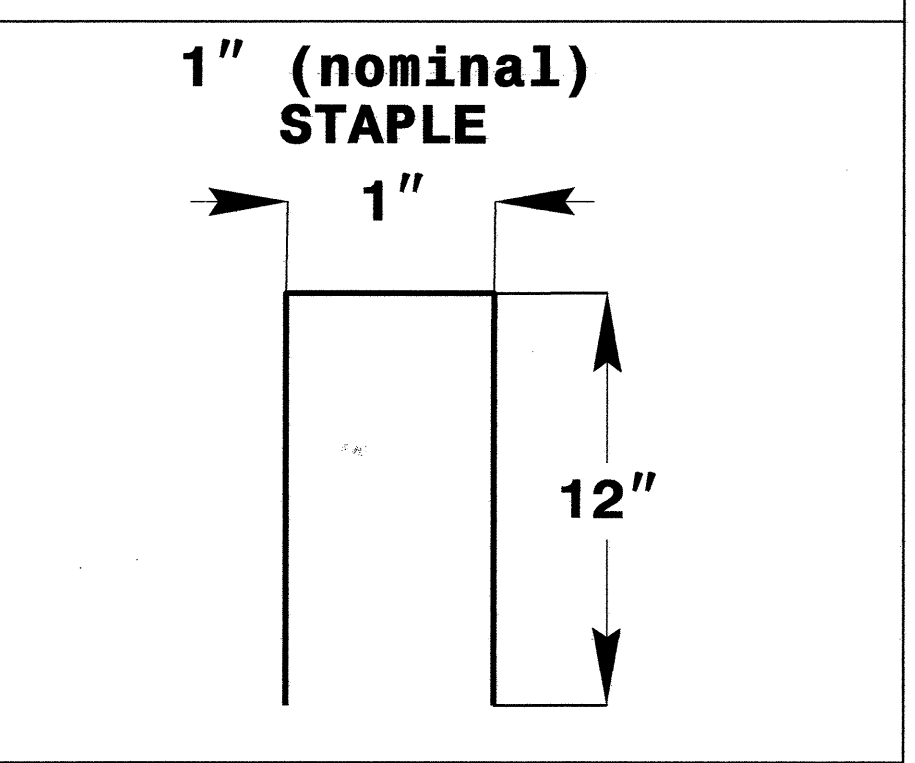
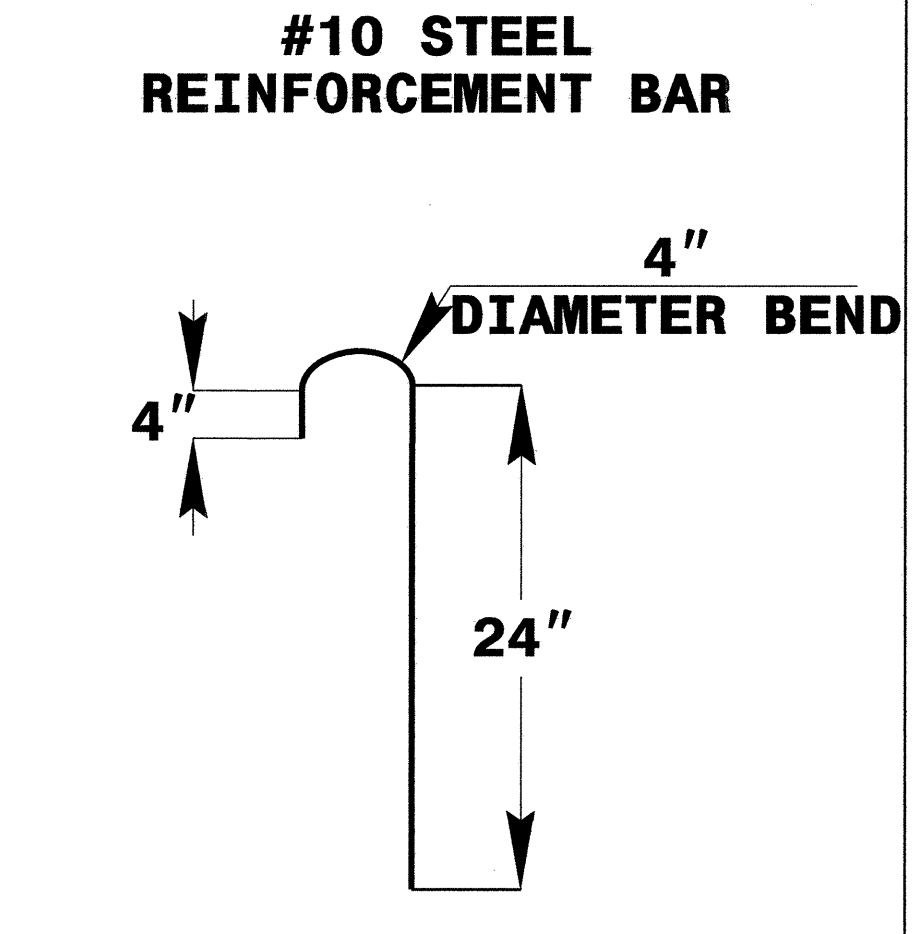
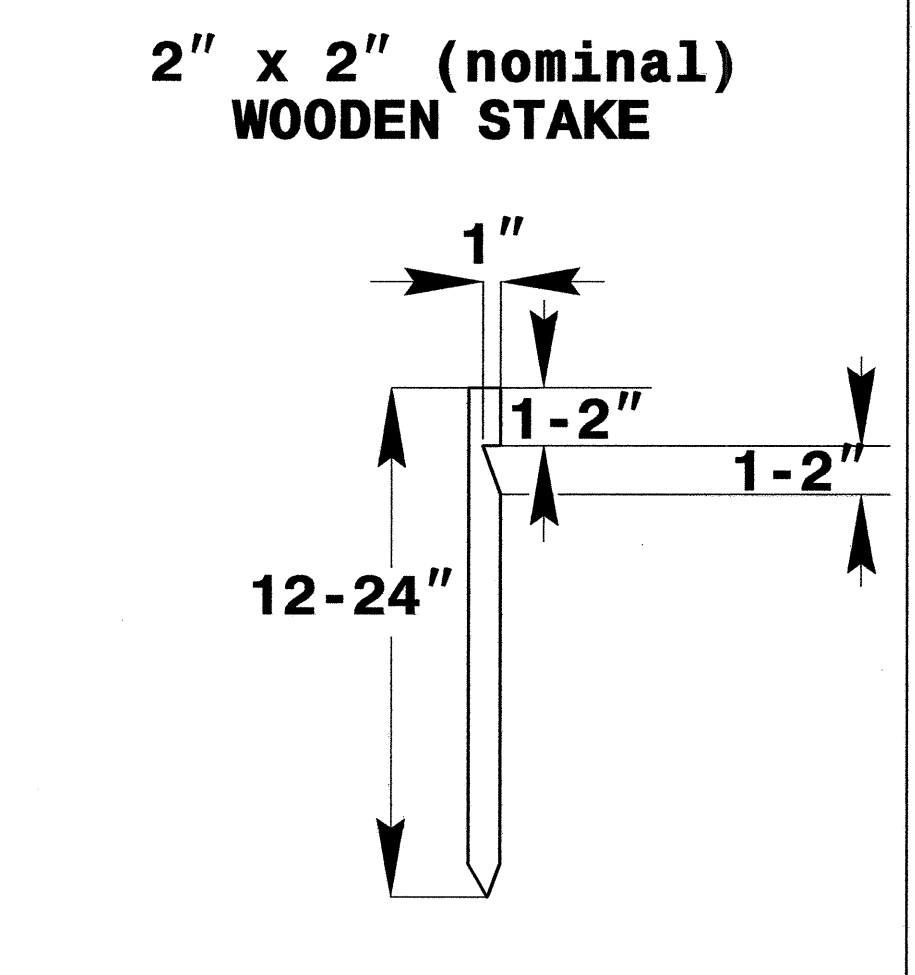
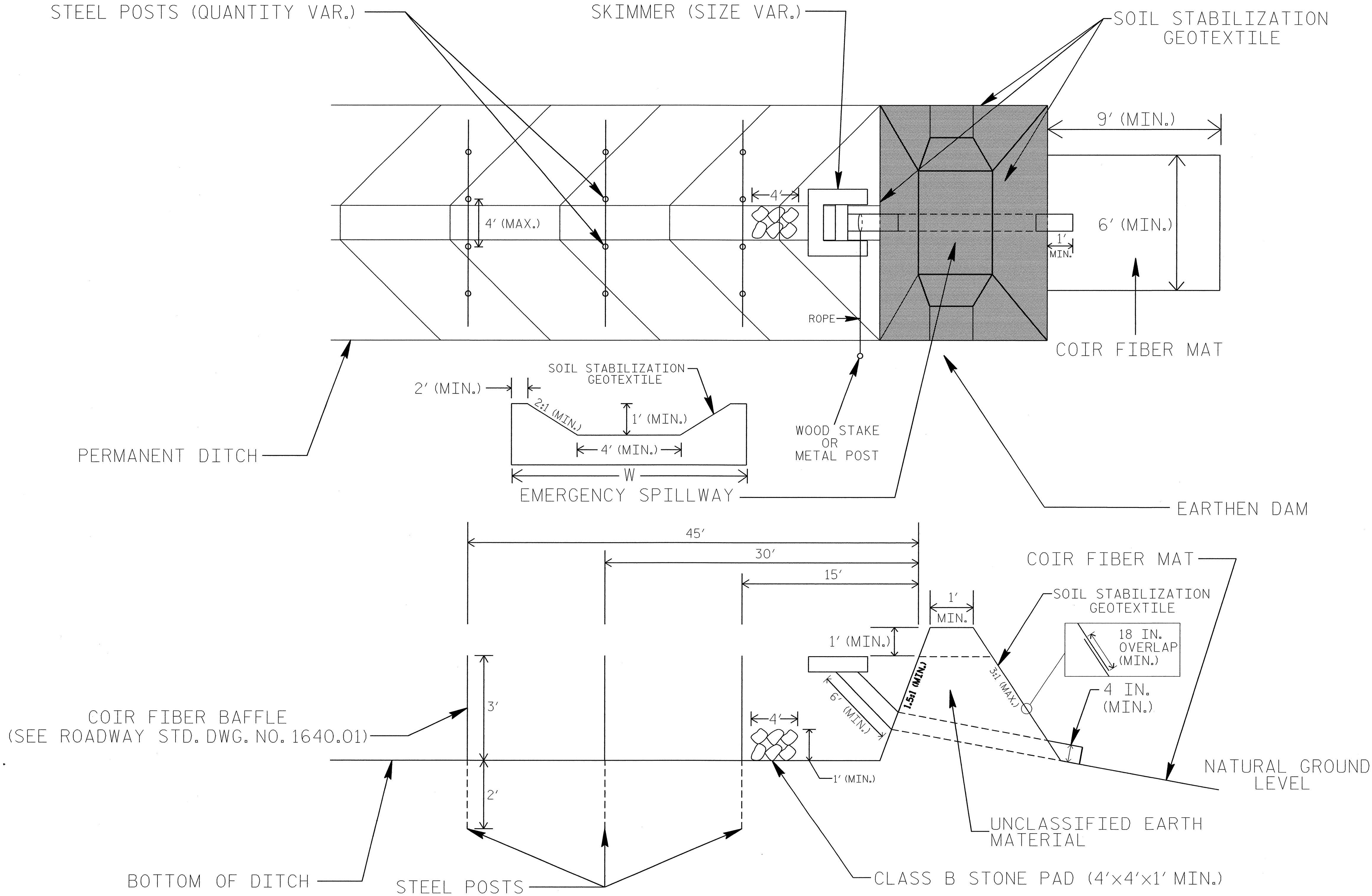
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	

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PROJECT REFERENCE NO. U-3324	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EARTHEN DAM WITH SKIMMER



COIR FIBER MAT ANCHOR OPTIONS

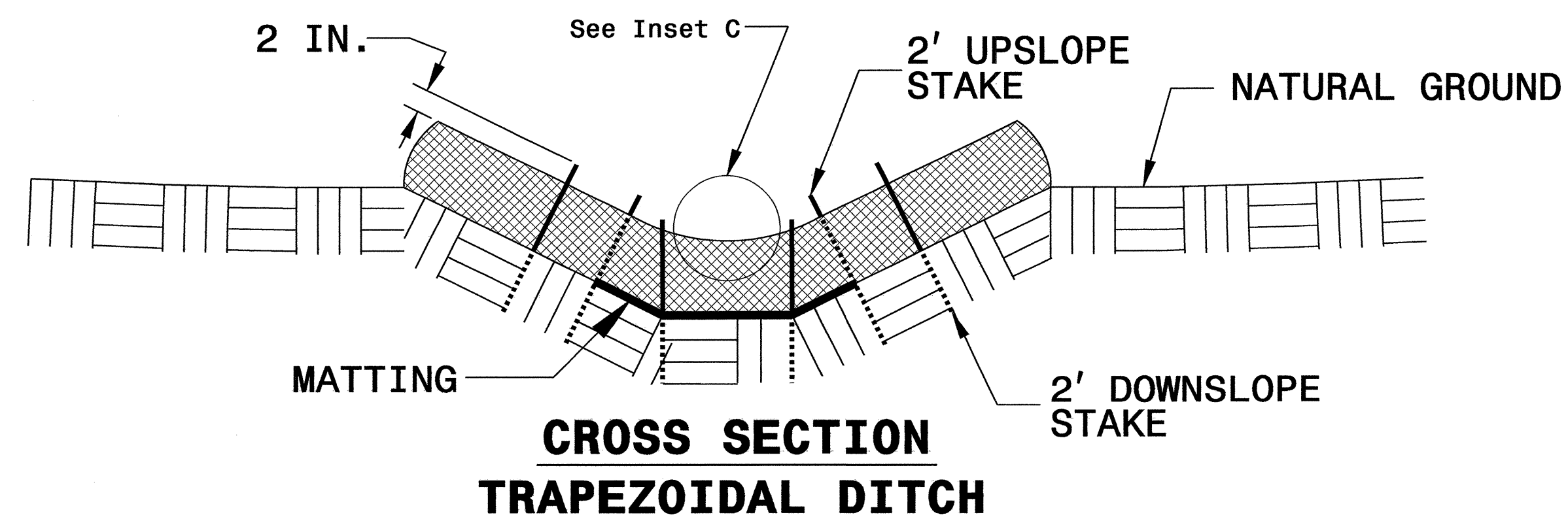
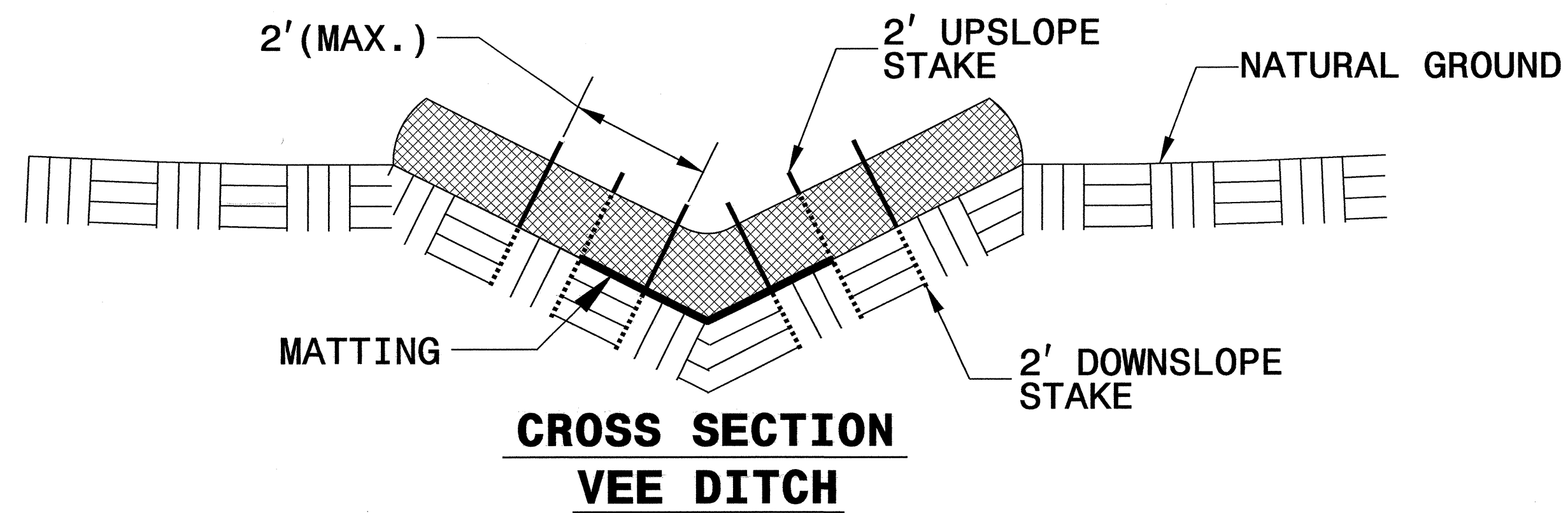
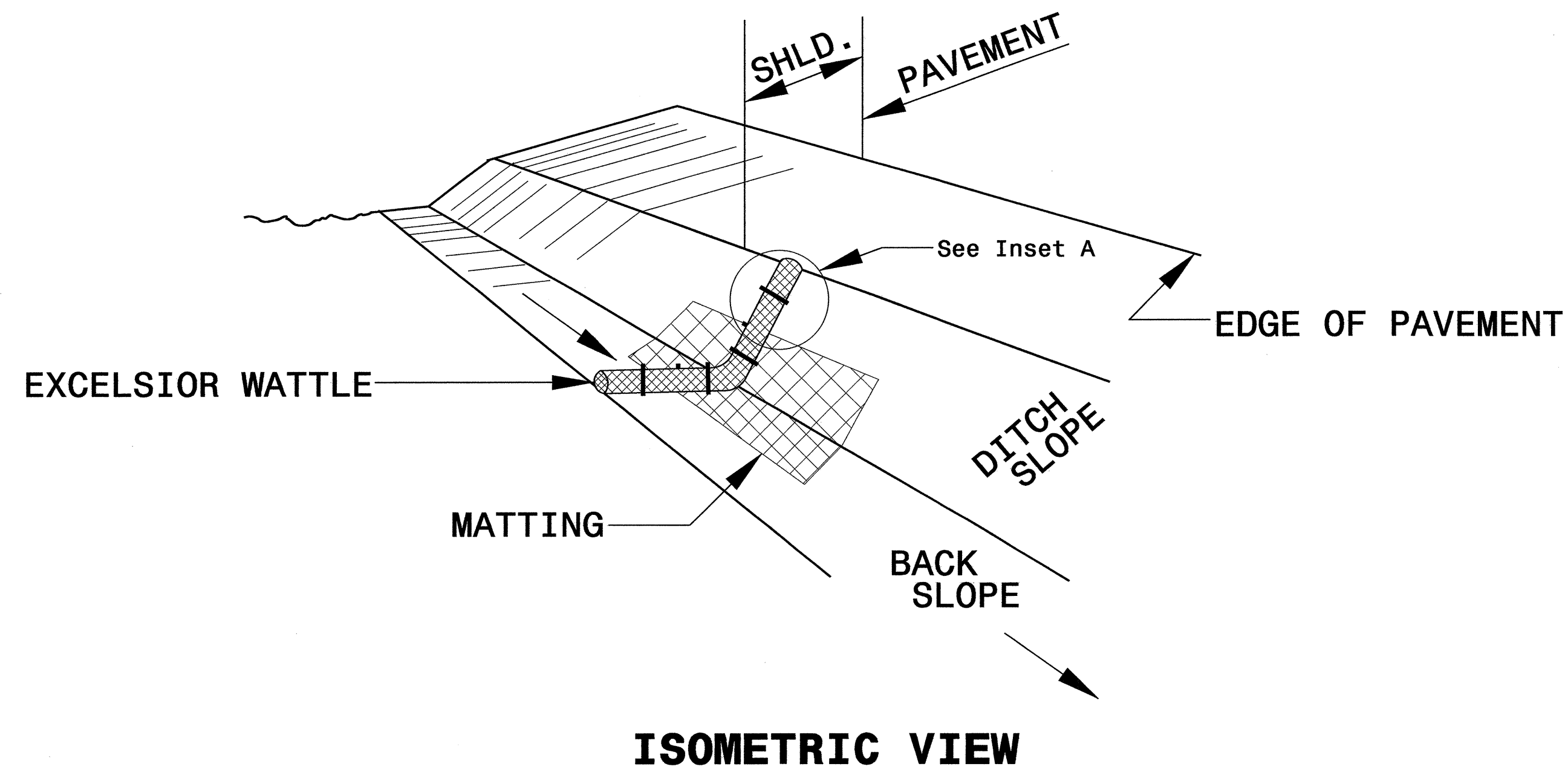
NOTES

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

PROJECT REFERENCE NO. U-3324	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



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.

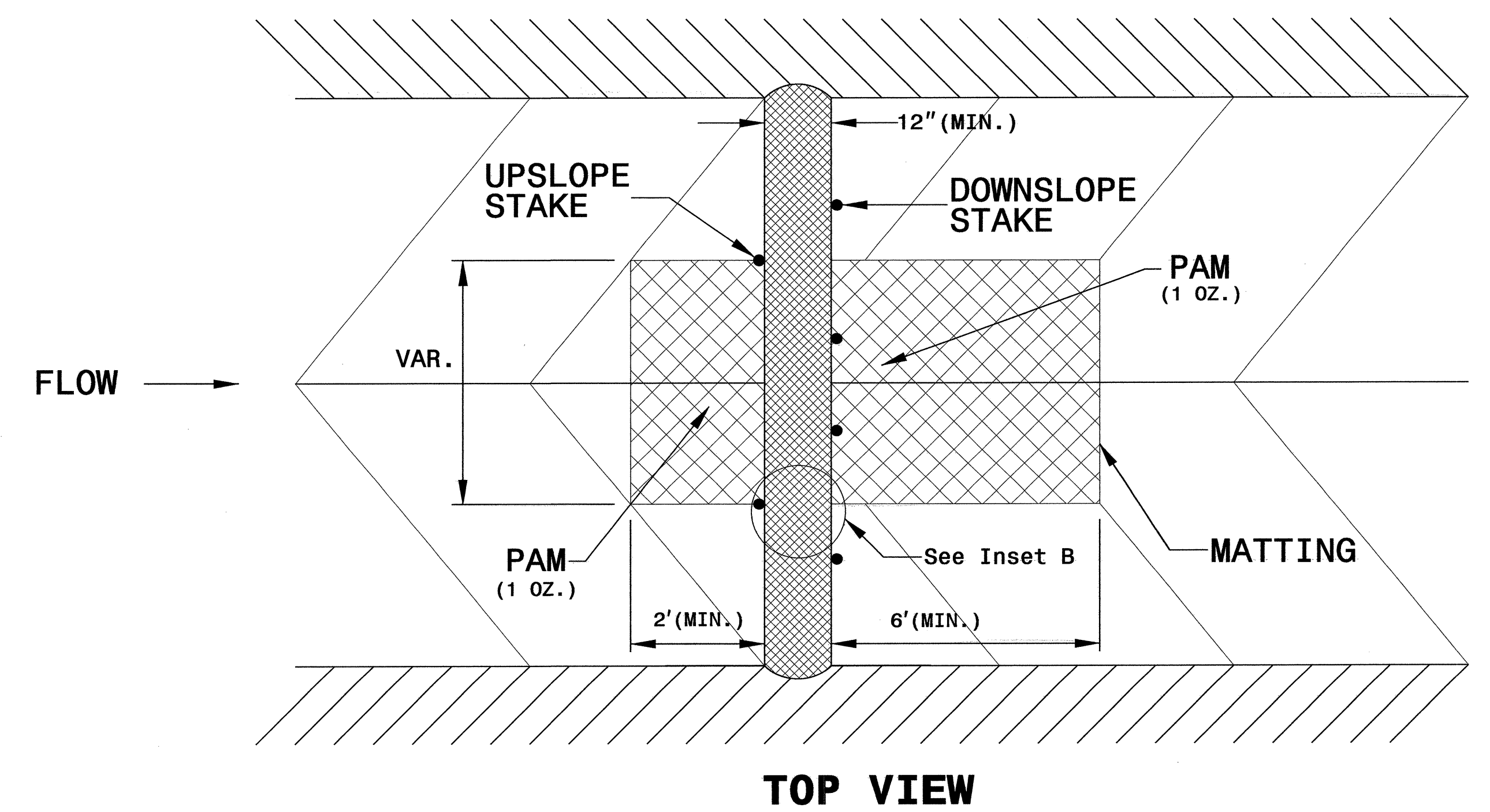
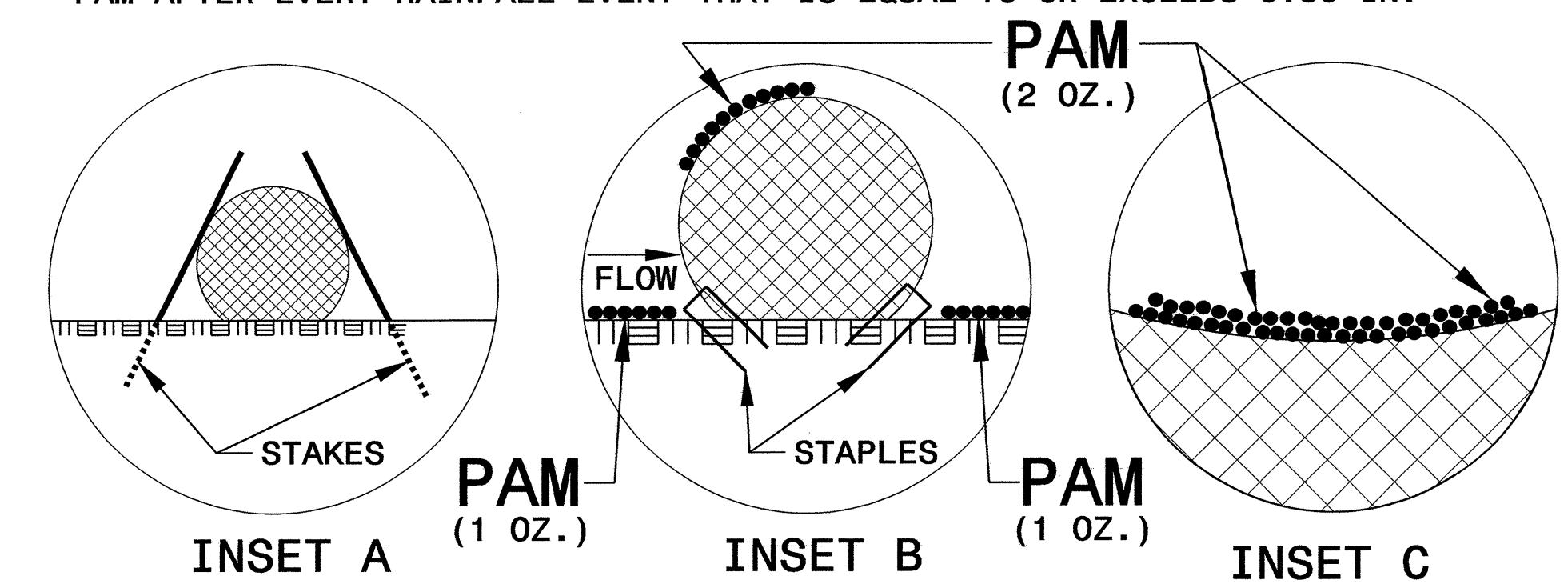
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

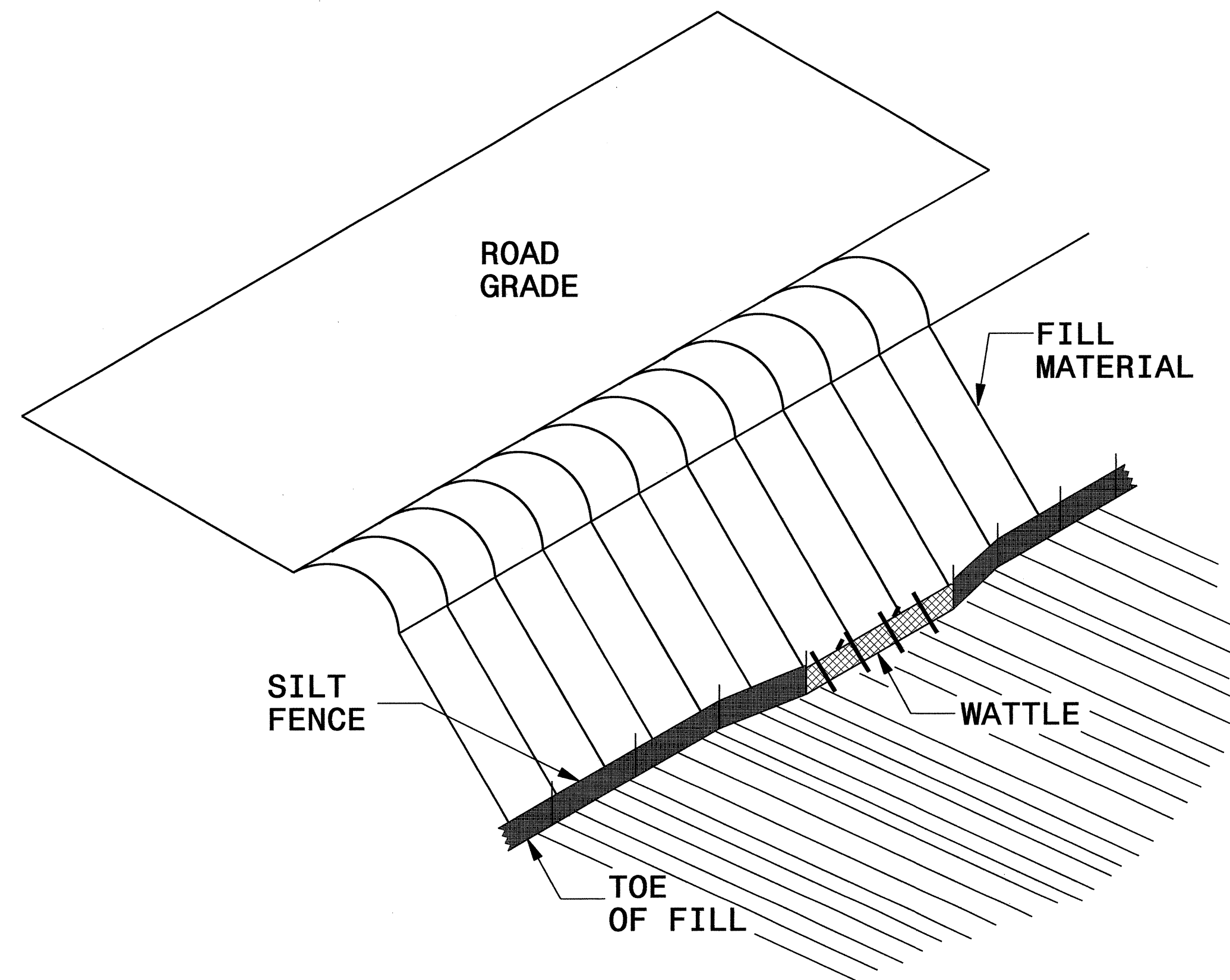
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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.

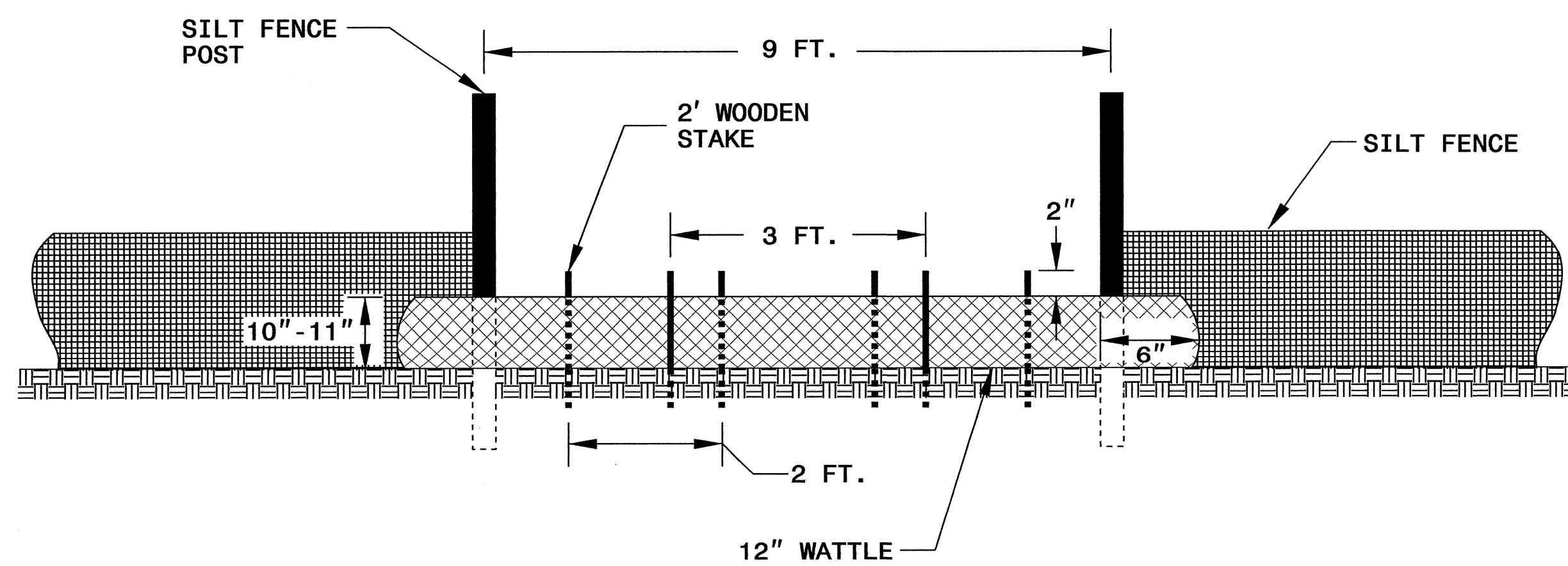


PROJECT REFERENCE NO. U-3324		SHEET NO. EC-2B	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW

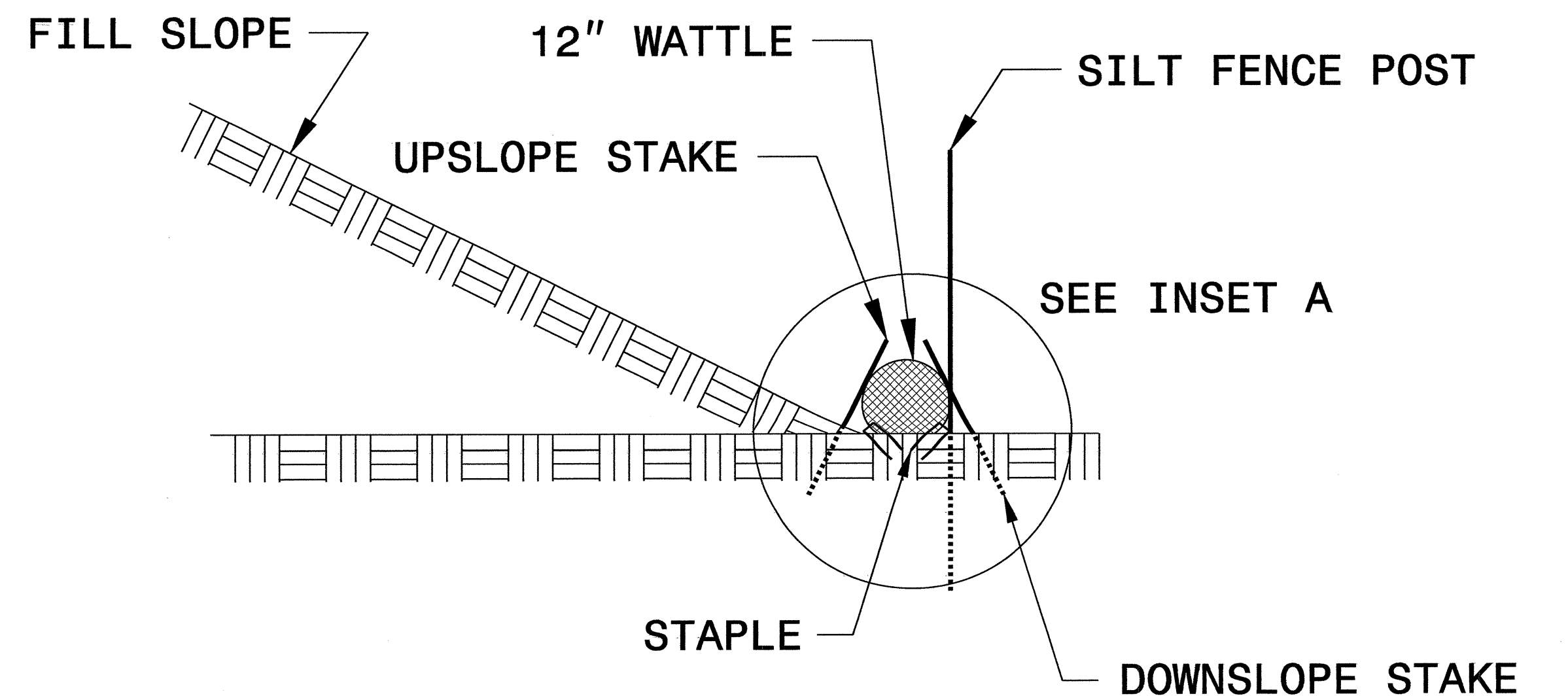
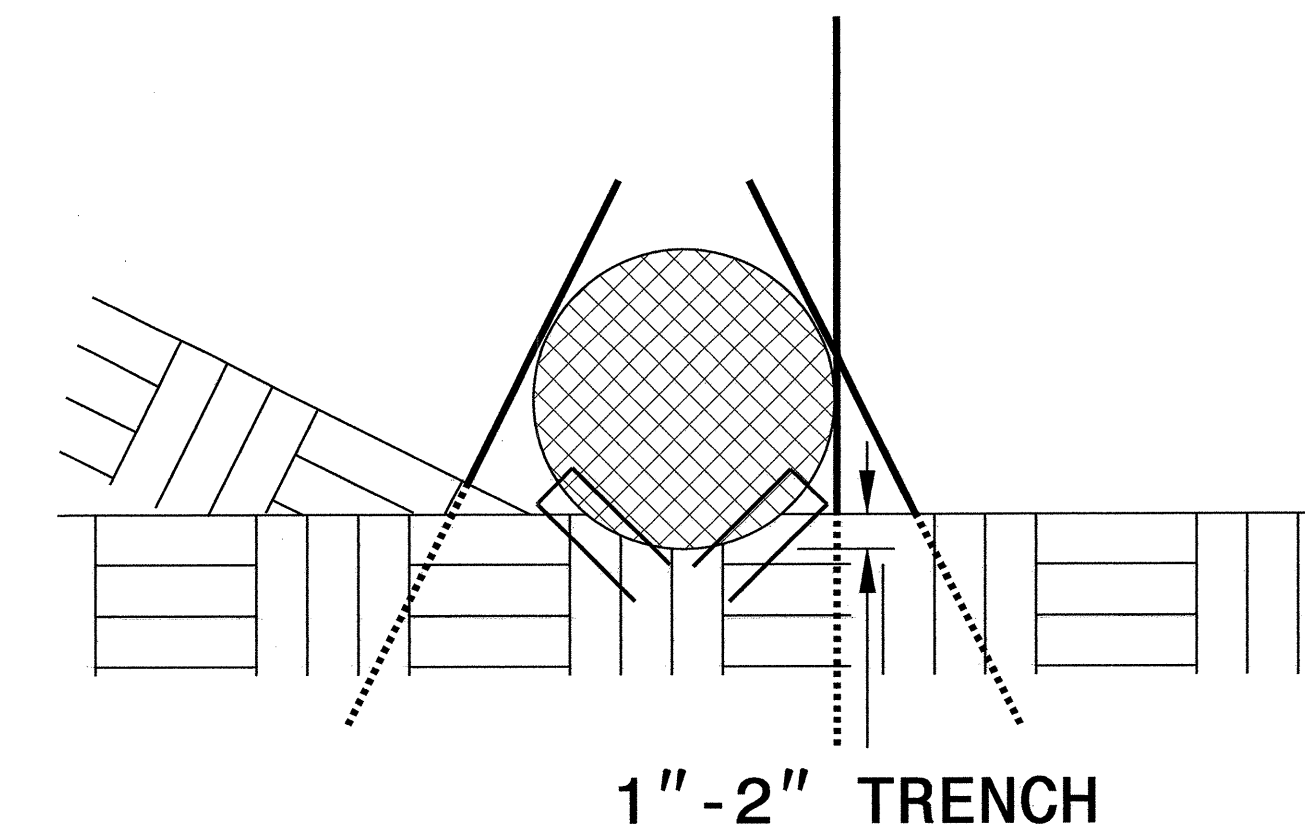


VIEW FROM SLOPE

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.

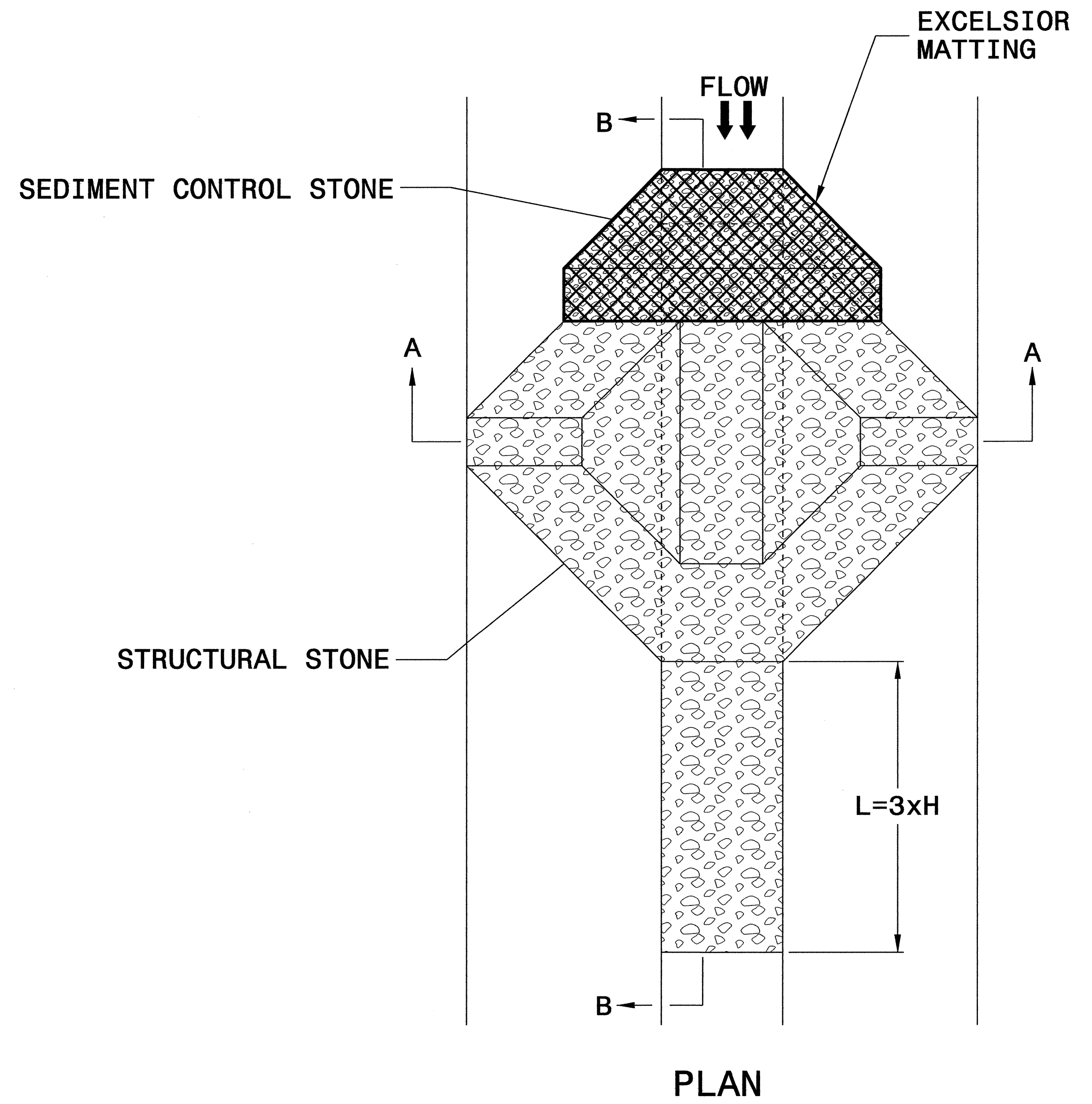
INSET A



SIDE VIEW

PROJECT REFERENCE NO. U-3324	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

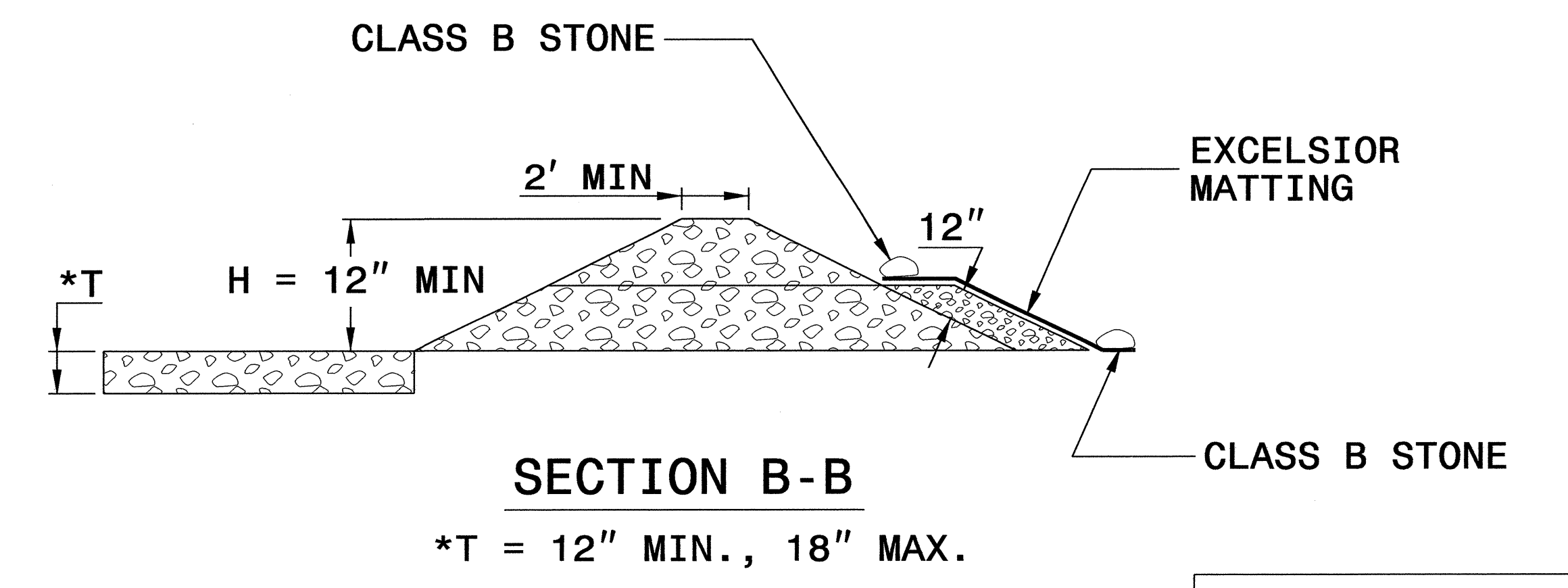
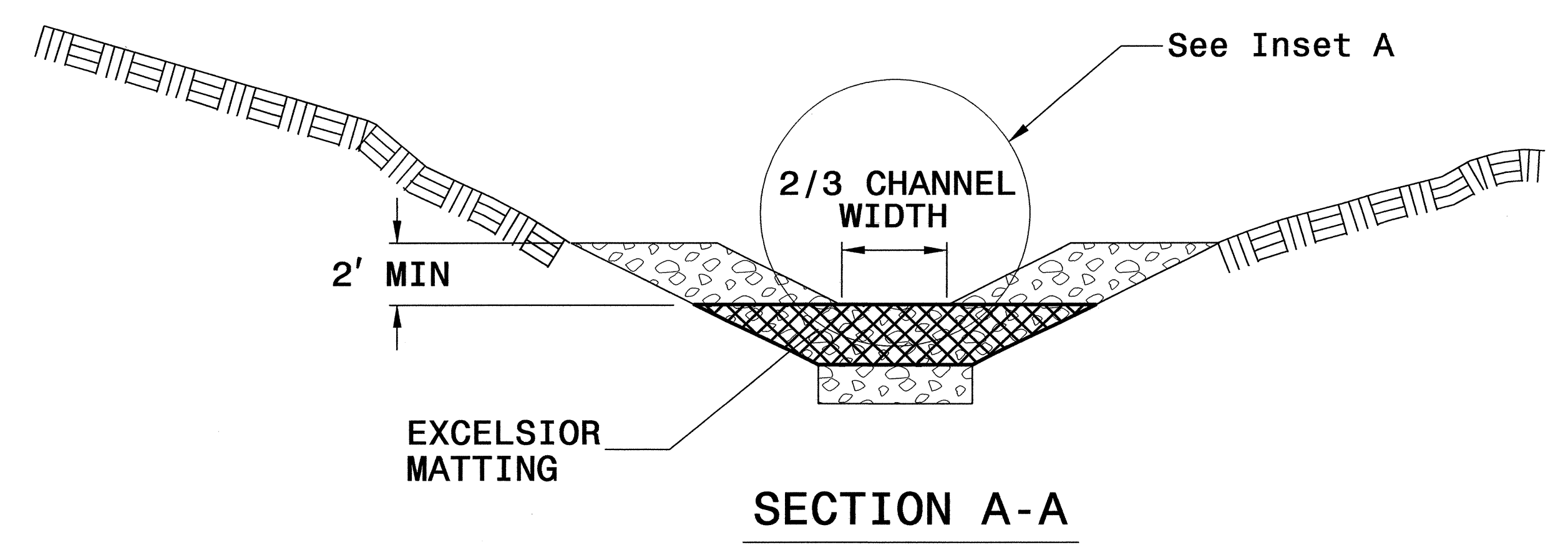
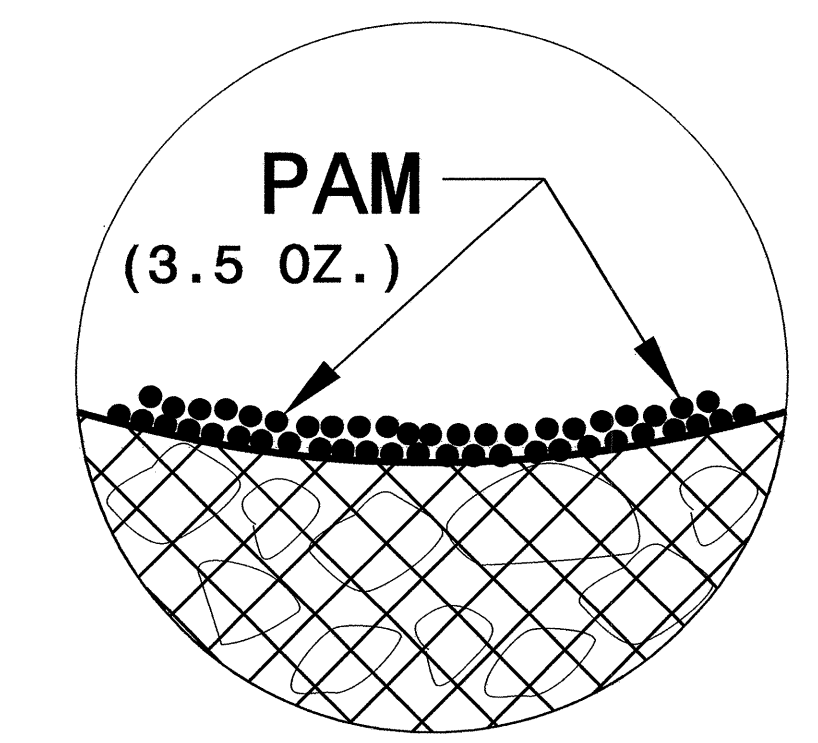


NOTES

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>U-3324</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

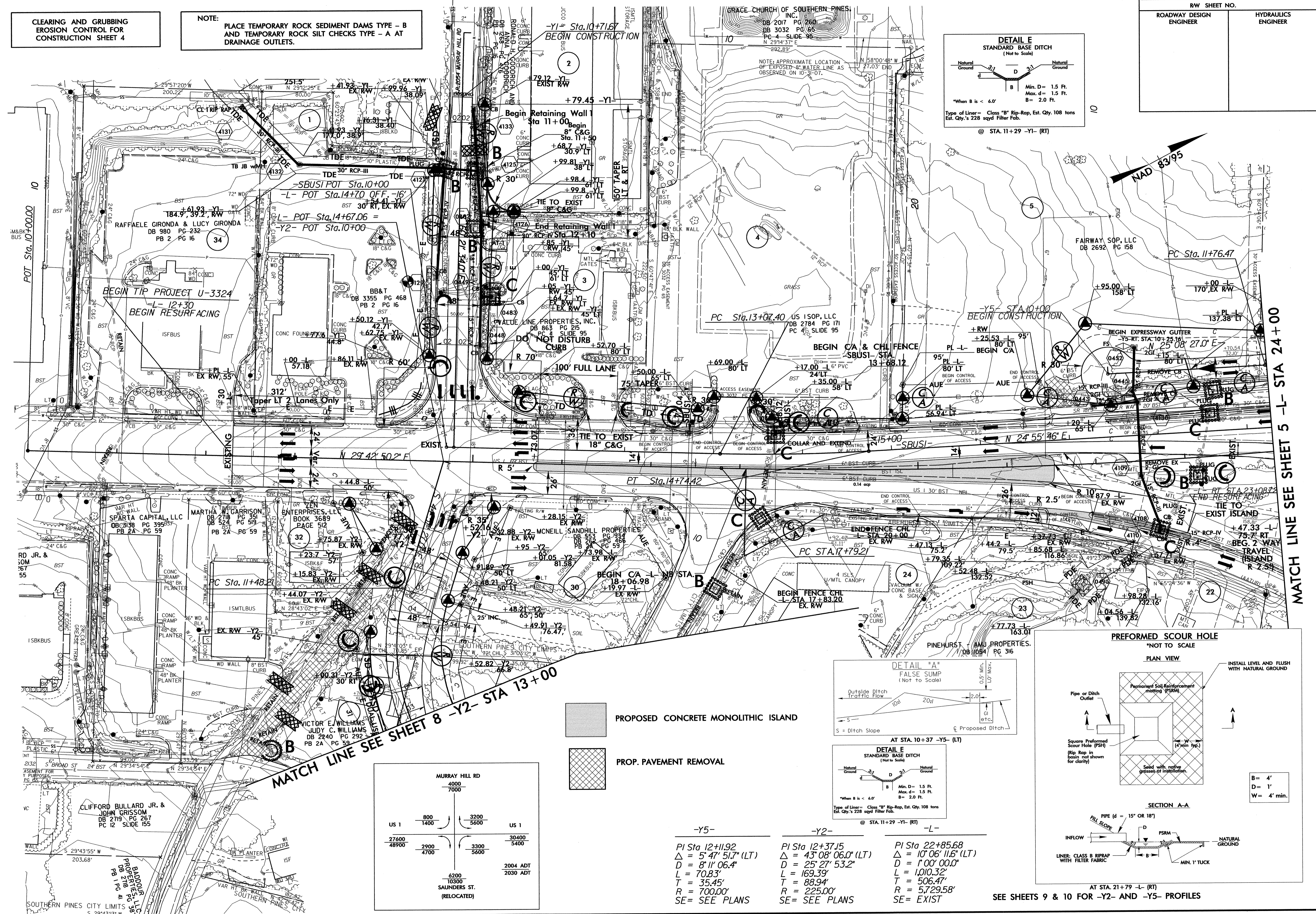
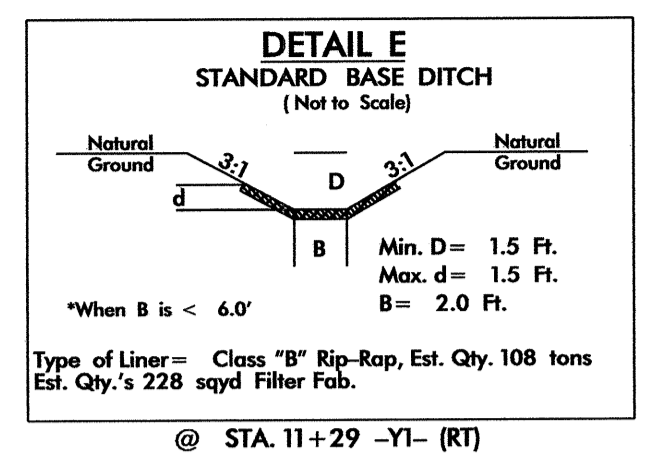
SOIL STABILIZATION TIMEFRAMES

<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-3324		EC-4/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

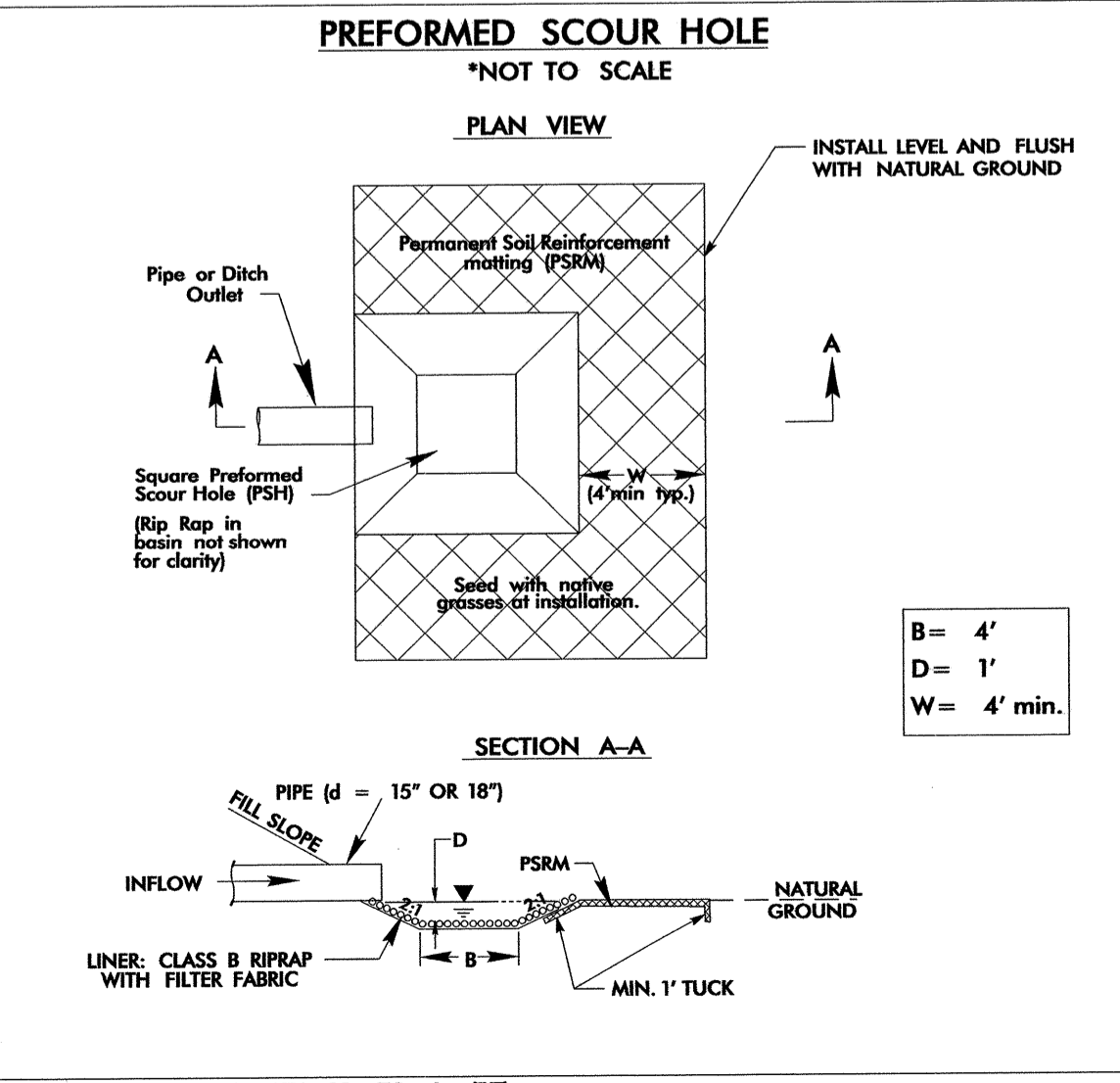
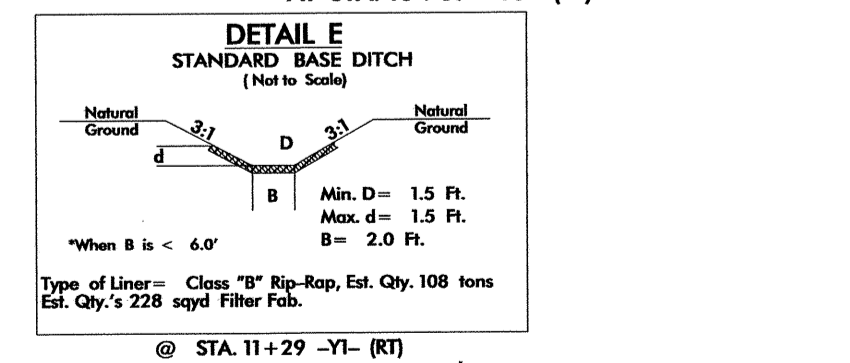
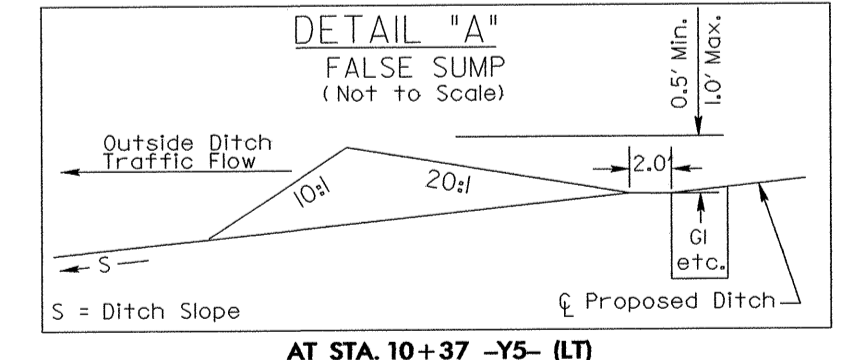
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.



PROPOSED CONCRETE MONOLITHIC ISLAND
PROP. PAVEMENT REMOVAL

MURRAY HILL RD 4000 7000			
US 1	800 1400	3200 5600	US 1
	27600 48900	2900 4700	30400 5400
6200 10300 SAUNDERS ST. (RELOCATED)			
2004 ADT 2030 ADT			

-Y5-	-Y2-	-L-
PI Sta 12+11.92 Δ = 5' 47" 51.7" (LT) D = 8' 11" 06.4" L = 70.83' T = 35.45' R = 700.00' SE = SEE PLANS	PI Sta 12+37.15 Δ = 43' 08" 06.0" (LT) D = 25' 27" 53.2" L = 169.39' T = 88.94' R = 225.00' SE = SEE PLANS	PI Sta 22+85.68 Δ = 10' 06" 11.6" (LT) D = 1' 00" 00.0" L = 1,010.32' T = 506.47' R = 5,729.58' SE = EXIST



SEE SHEETS 9 & 10 FOR -Y2- AND -Y5- PROFILES

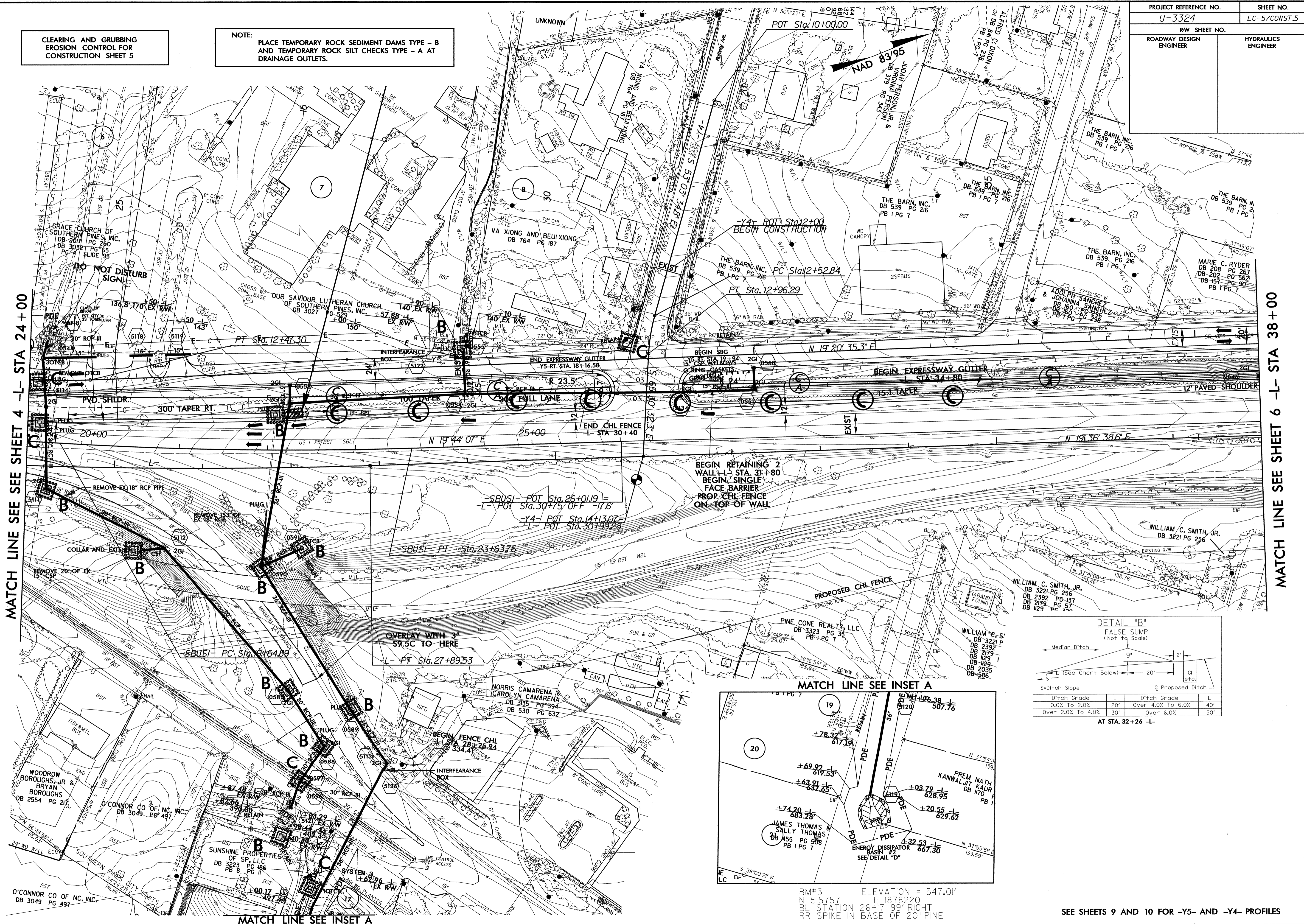
MATCH LINE SEE SHEET 5 -L- STA 24+00

MATCH LINE SEE SHEET 8 -Y2- STA 13+00

PROJECT REFERENCE NO. U-3324	SHEET NO. EC-5/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

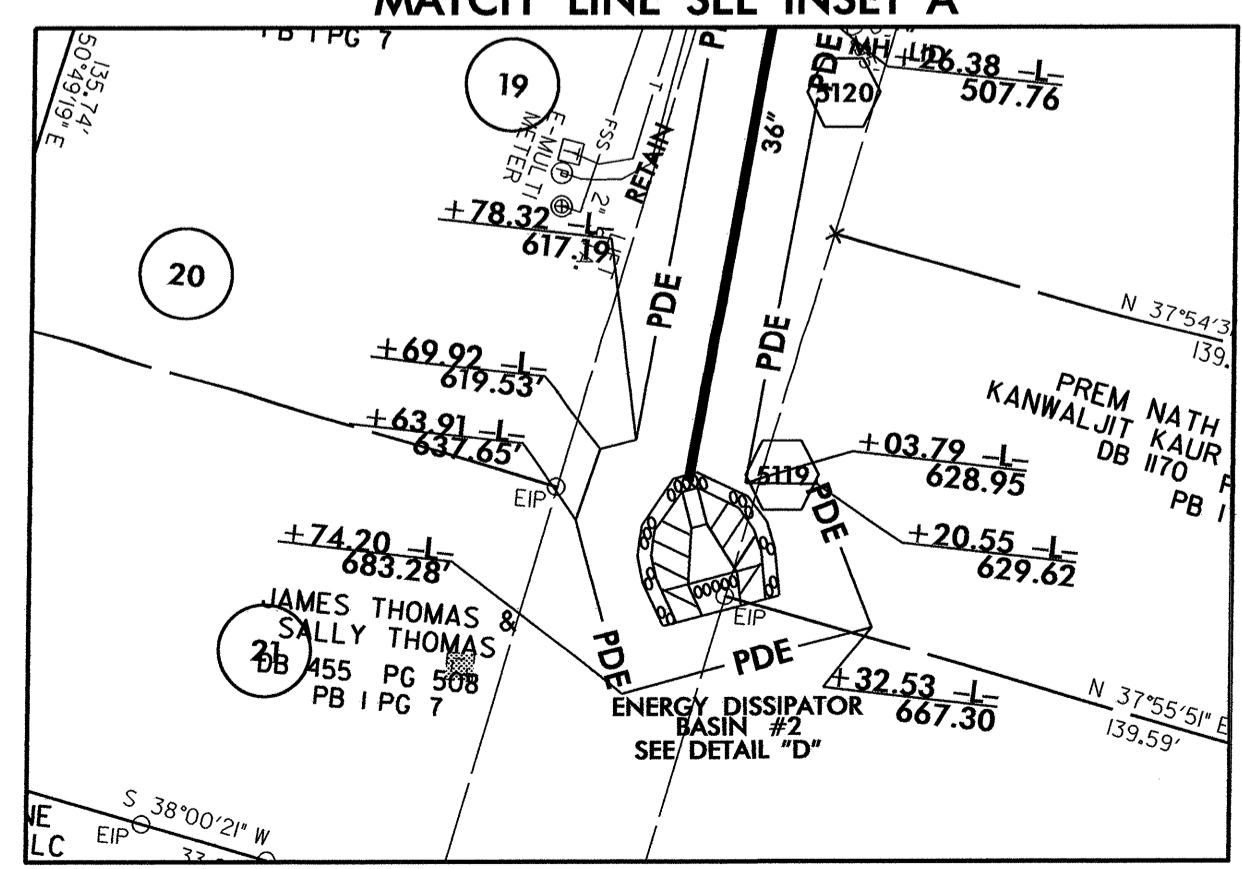
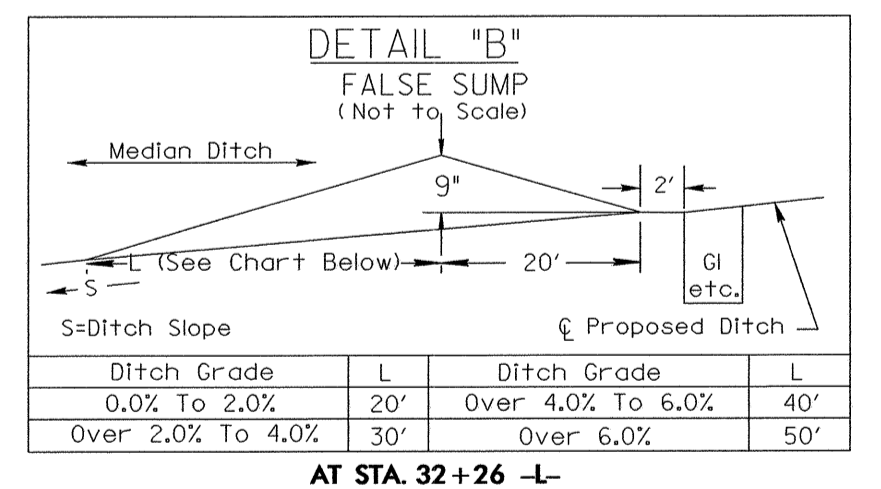
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

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



MATCH LINE SEE SHEET 4 -L- STA 24+00

MATCH LINE SEE SHEET 6 -L- STA 38+00



BM#3 ELEVATION = 547.01'
N 515757 E 1878220
BL STATION 26+17 99" RIGHT
RR SPIKE IN BASE OF 20" PINE

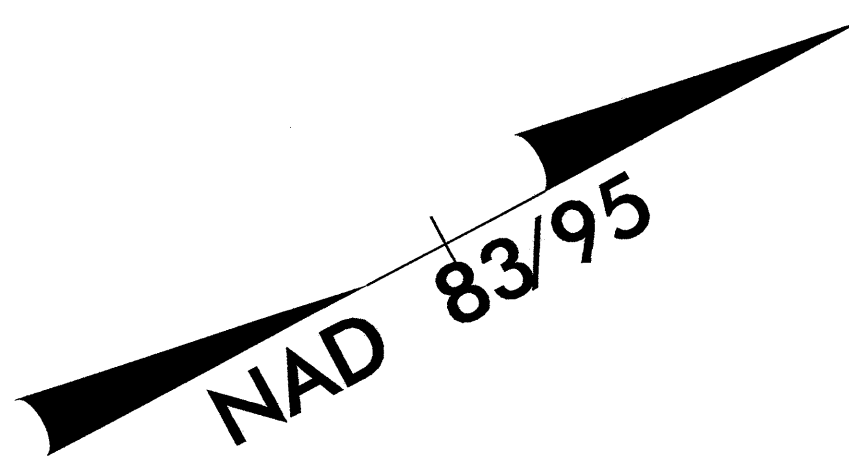
SEE SHEETS 9 AND 10 FOR -Y5- AND -Y4- PROFILES

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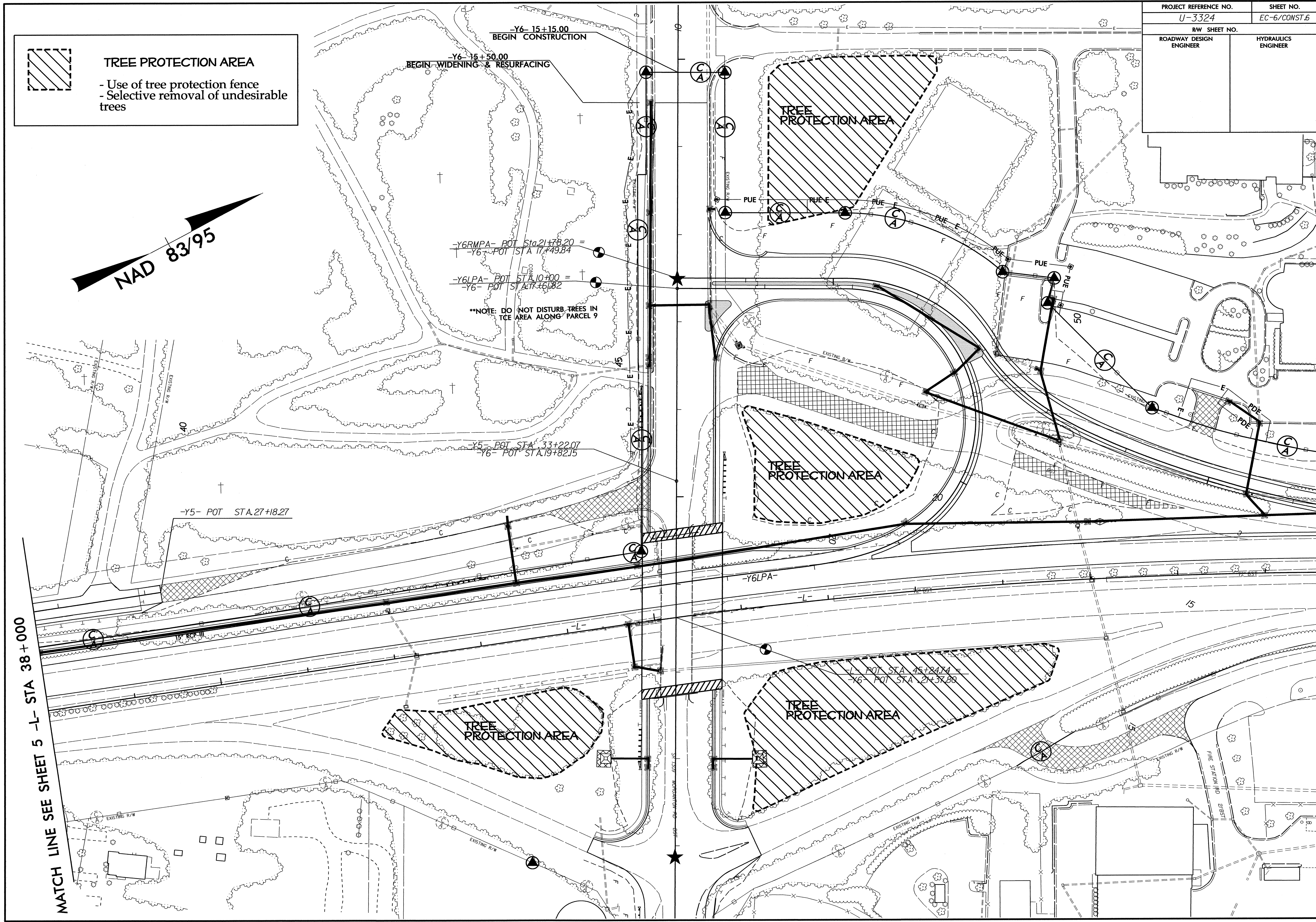
PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-6/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

TREE PROTECTION AREA

- Use of tree protection fence
- Selective removal of undesirable trees



MATCH LINE SEE SHEET 5 -L- STA 38+000



-Y6- 15+15.00
BEGIN CONSTRUCTION

-Y6- 15+50.00
BEGIN WIDENING & RESURFACING

-Y6RMPA- POT STA 21+78.20 =
-Y6- POT STA 17+49.84

-Y6LPA- POT STA 10+00 =
-Y6- POT STA 17+61.82

**NOTE: DO NOT DISTURB TREES IN TREE AREA ALONG PARCEL 9

-Y5- POT STA 33+22.07
-Y6- POT STA 19+82.15

-Y5- POT STA 27+18.27

-Y6LPA-

L POT STA 45+24.74 =
Y6 POT STA 27+57.90

TREE PROTECTION AREA

TREE PROTECTION AREA

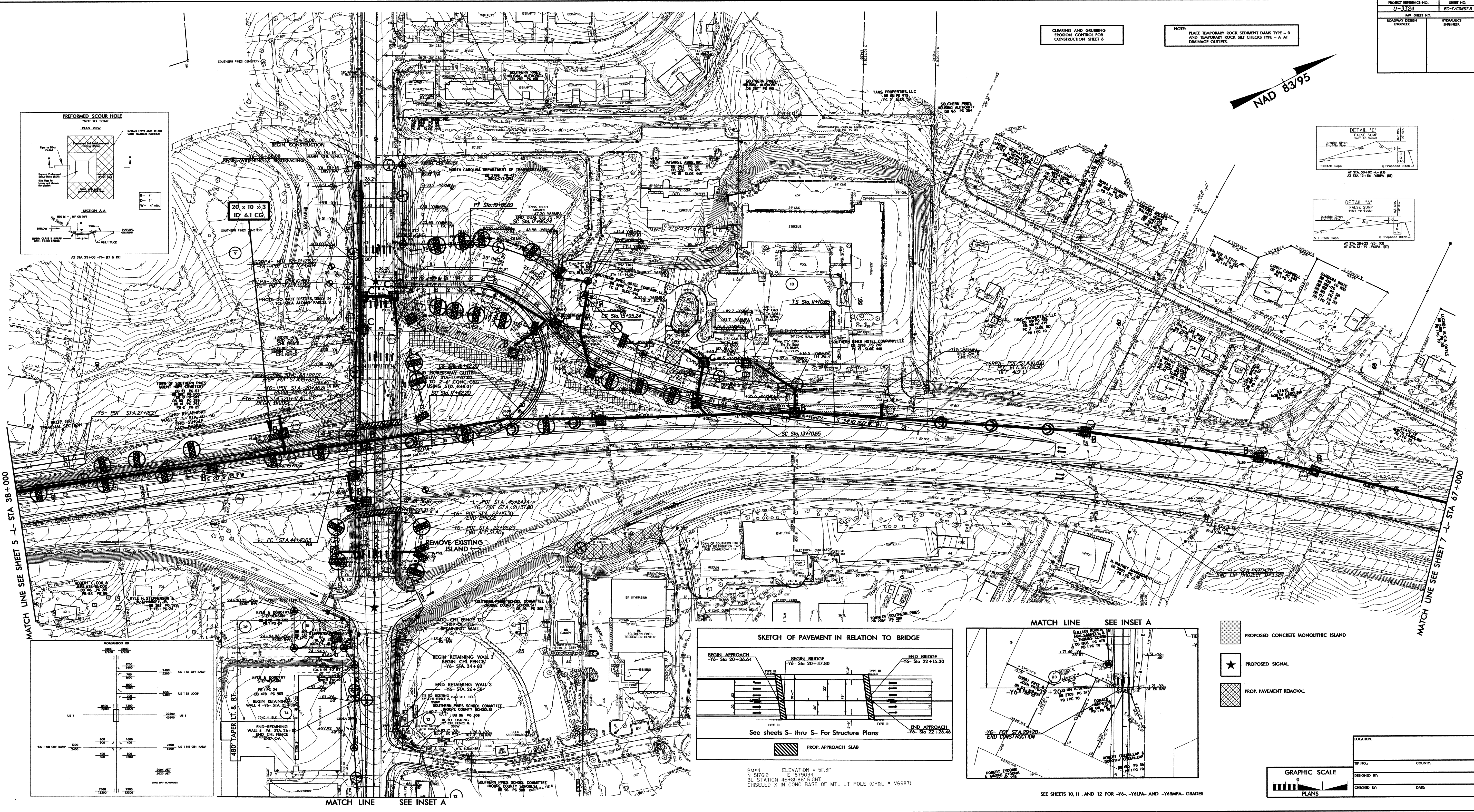
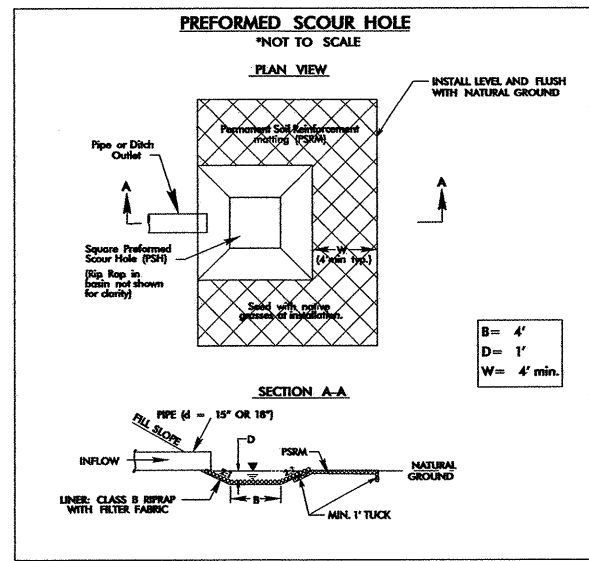
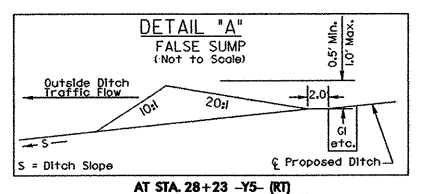
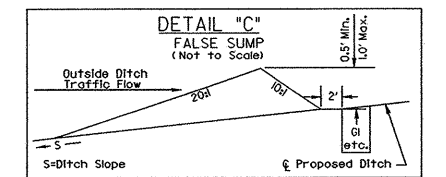
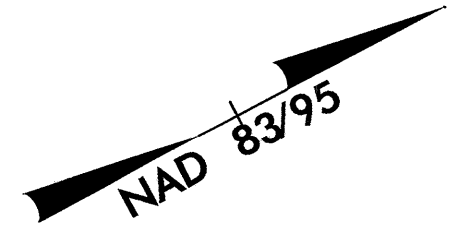
TREE PROTECTION AREA

TREE PROTECTION AREA

PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-7/CONSTR.6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

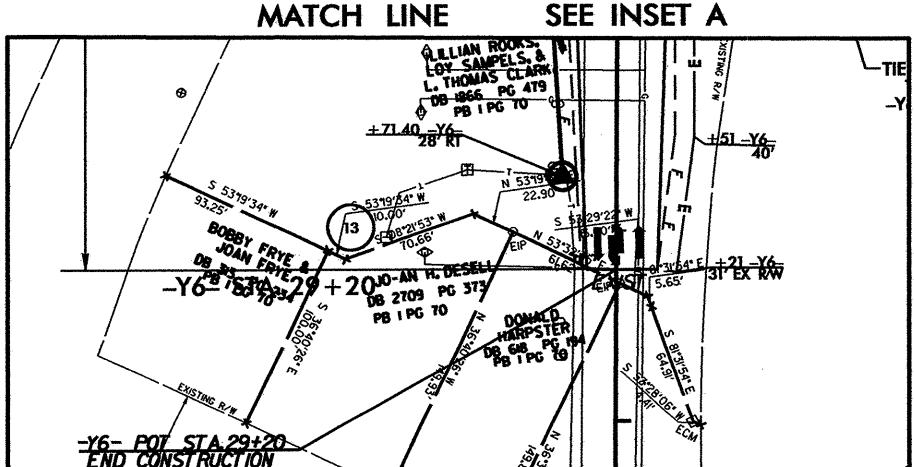
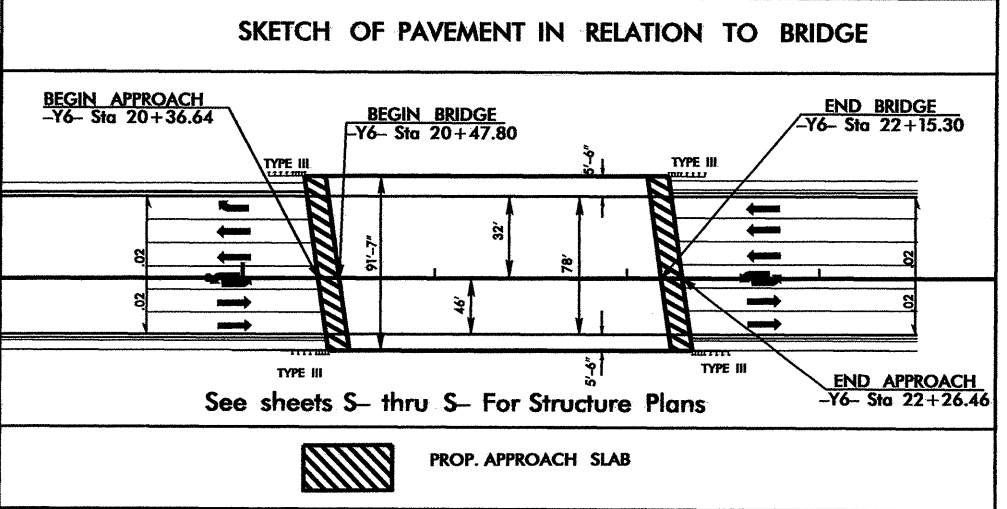
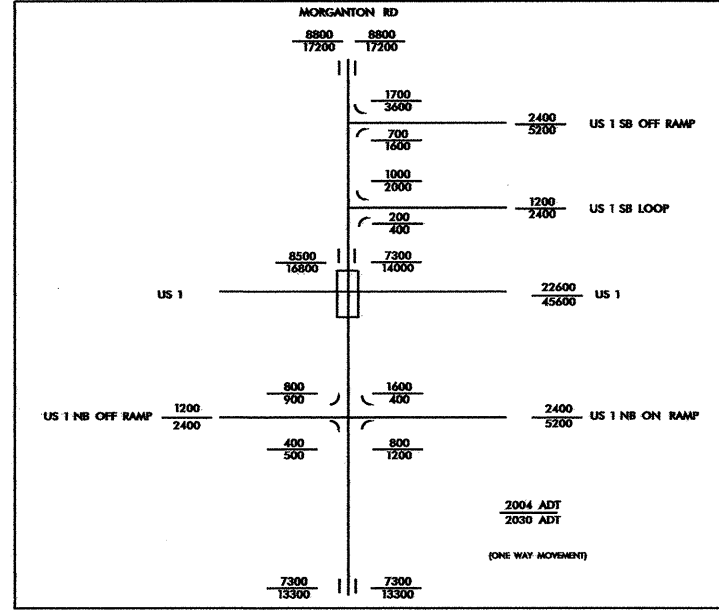
CLEARING AND GRUBBING
SECTION CONTROL FOR
CONSTRUCTION SHEET 6

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



MATCH LINE SEE SHEET 5 - L- STA 38+000

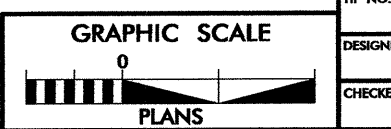
MATCH LINE SEE SHEET 7 - L- STA 67+000



- PROPOSED CONCRETE MONOLITHIC ISLAND
- ★ PROPOSED SIGNAL
- PROP. PAVEMENT REMOVAL

BM#4 ELEVATION = 518.81'
N 50°16'2" E 187.900M
BL STATION 46+81.81' RIGHT
CHISELED 'X' IN CONC BASE OF MTL LT POLE (CP&L # V6987)

SEE SHEETS 10, 11, AND 12 FOR -Y6-, -Y6LPA- AND -Y6RMPA- GRADES

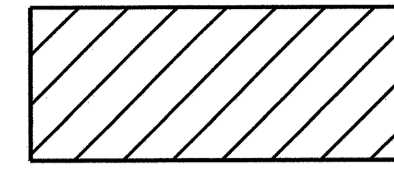


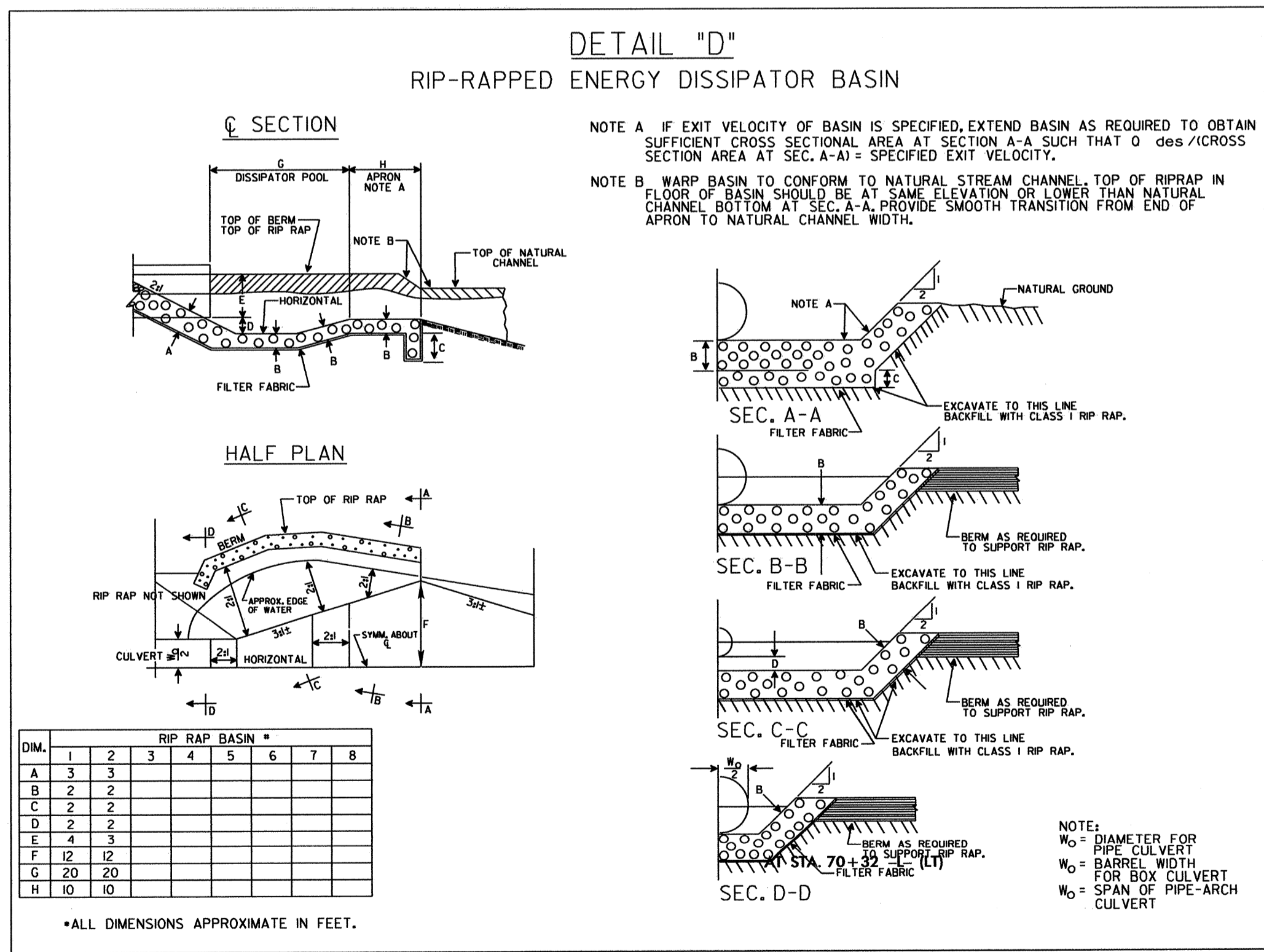
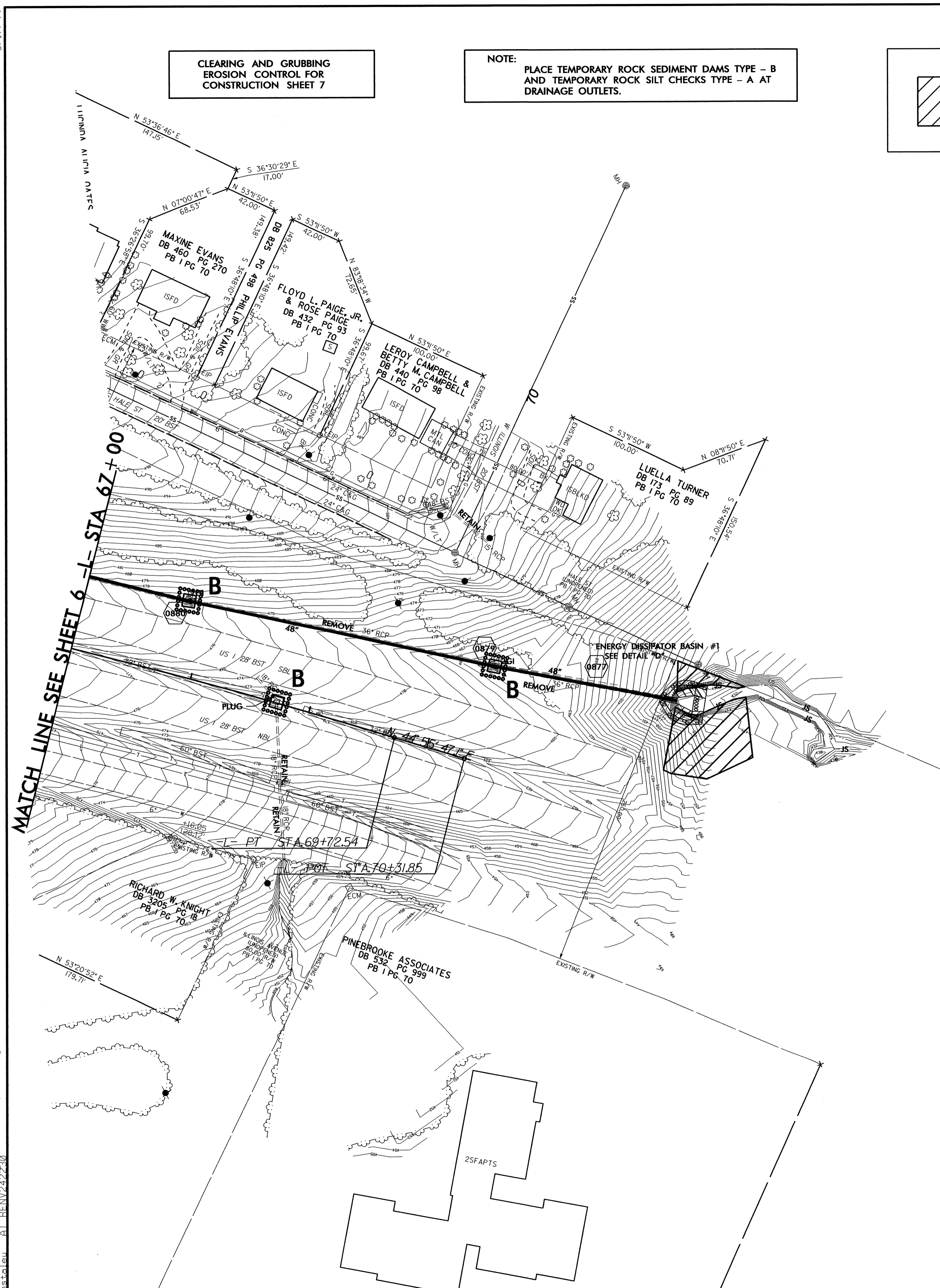
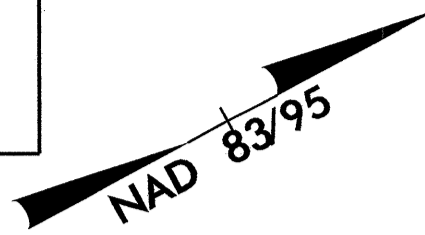
LOCATION:	
TYP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

PROJECT REFERENCE NO.		SHEET NO.	
U-3324		EC-8/CONST.7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

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



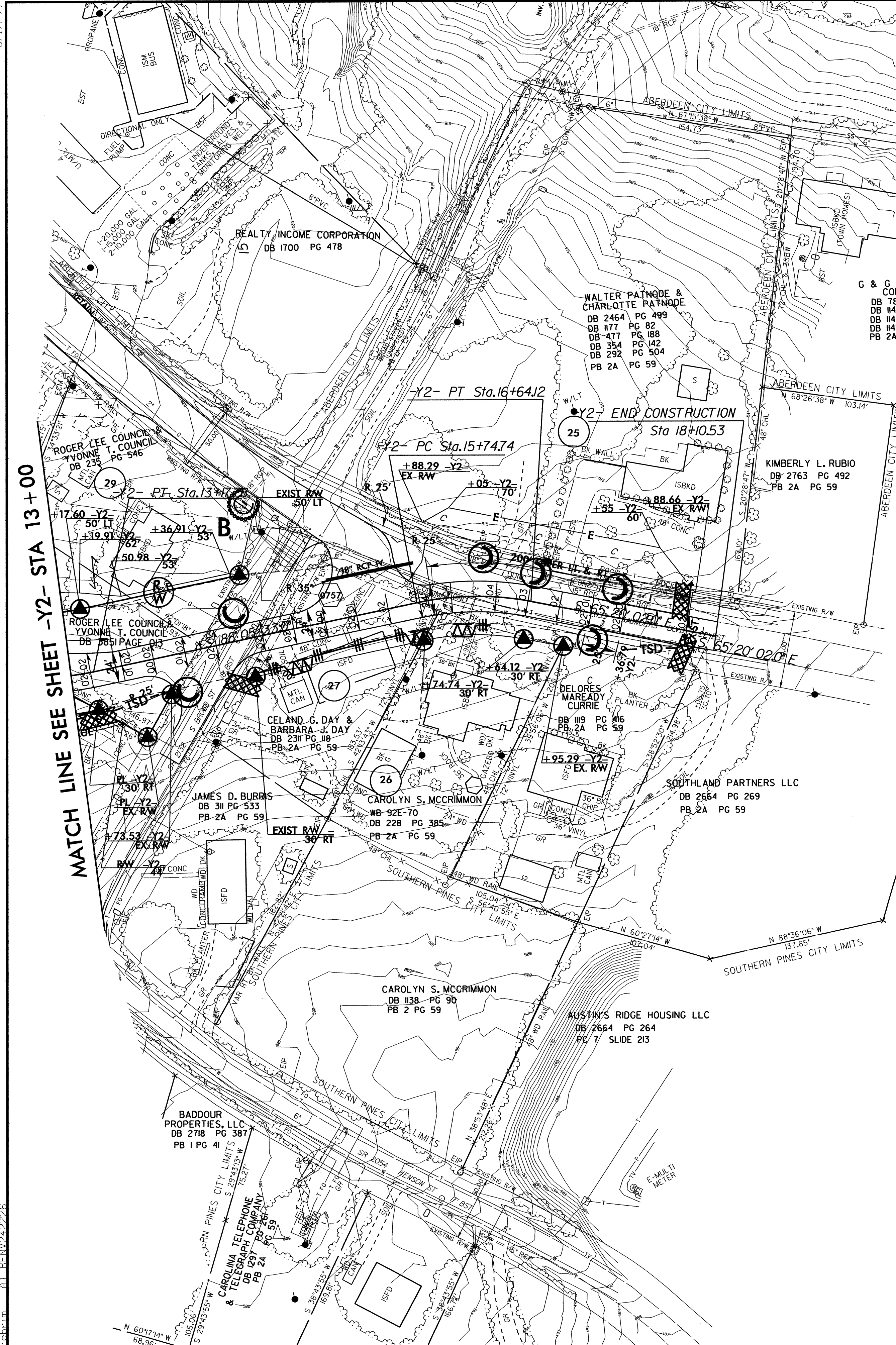
8/17/99
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PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-9/CONST.B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 8

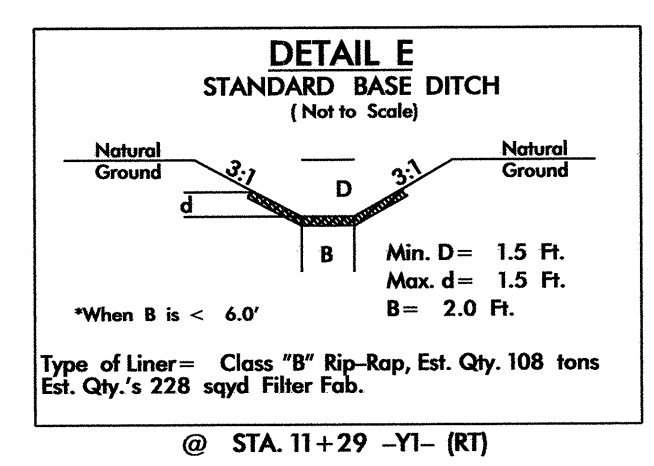
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.



8.17.99

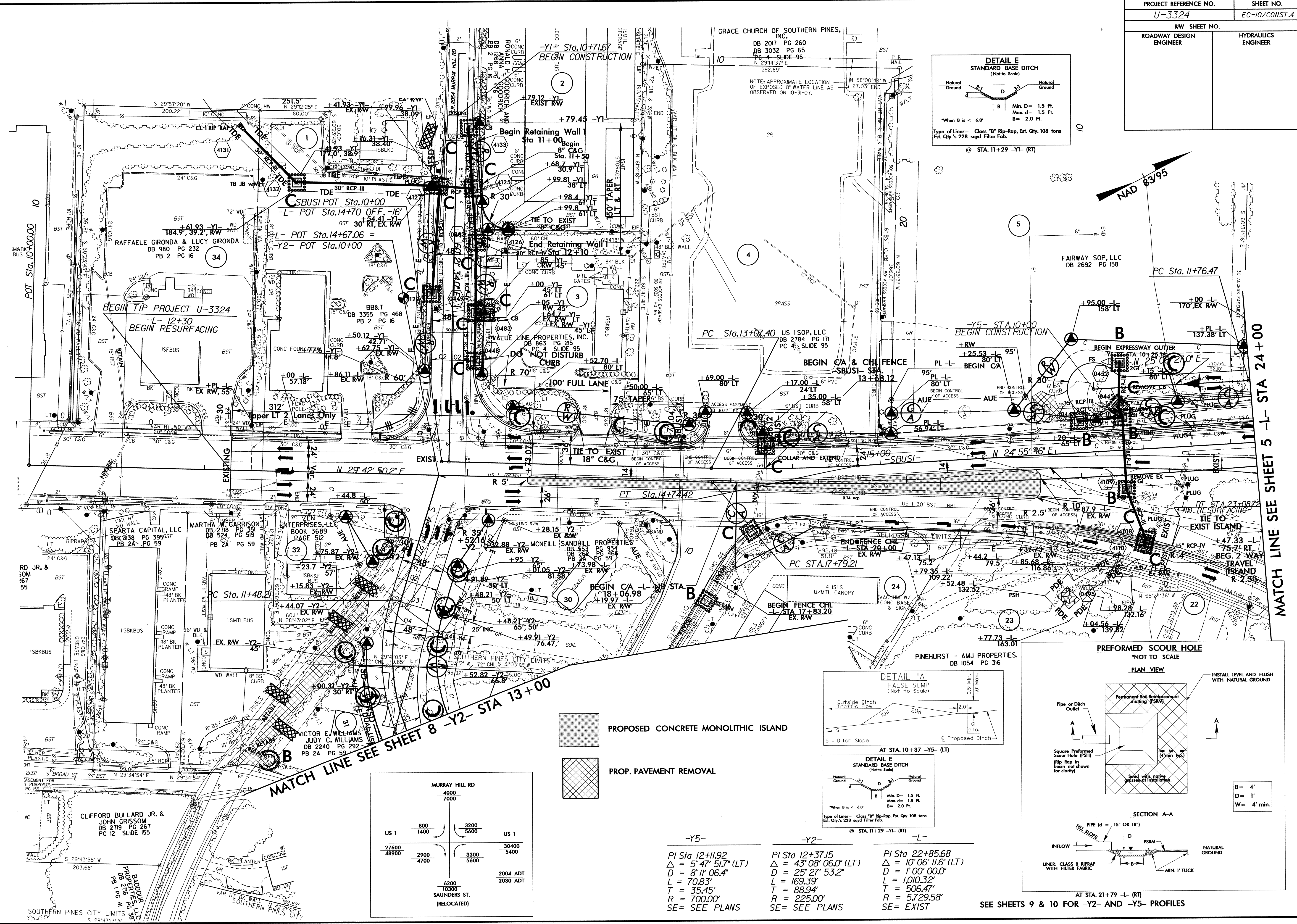
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PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-10/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



8/17/99

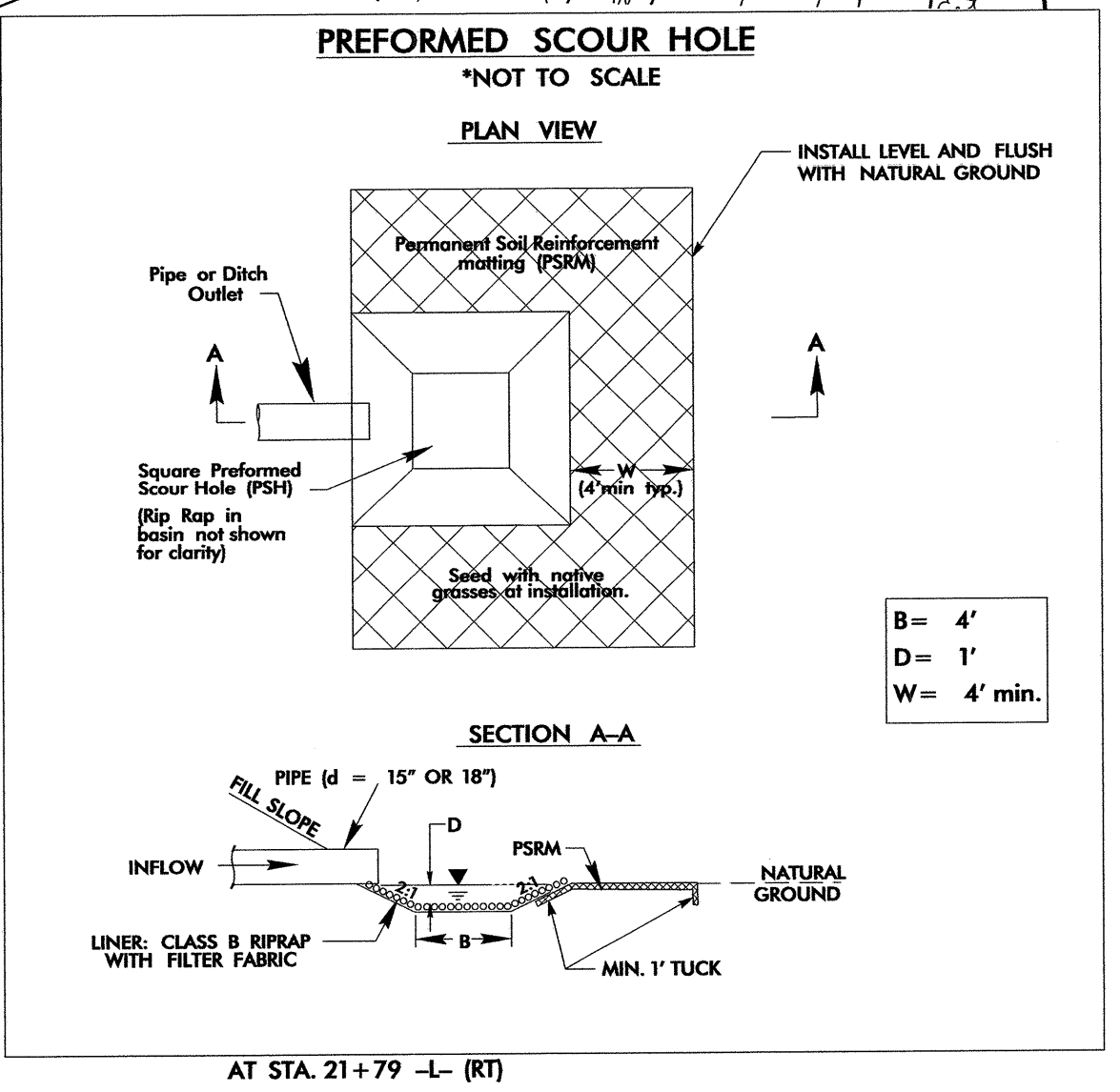
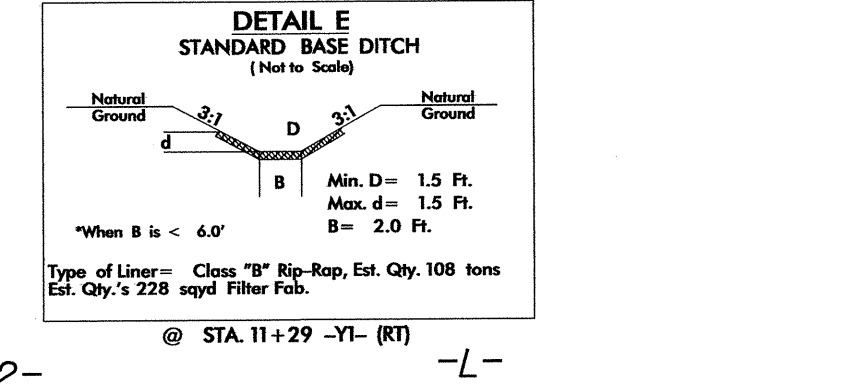
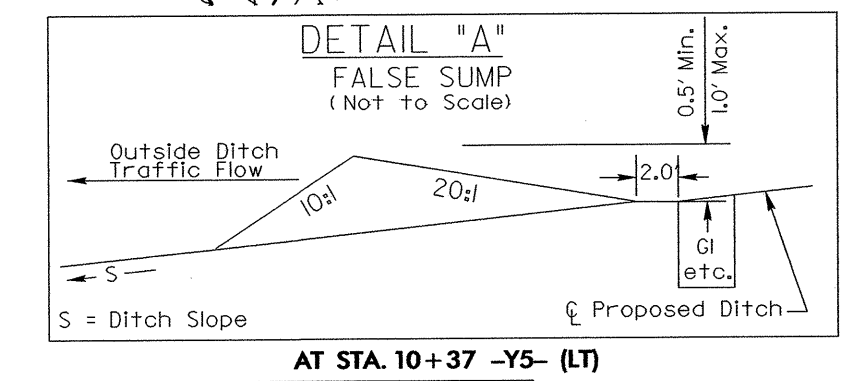
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A:LENNY21226



MURRAY HILL RD			
4000		7000	
US 1	800	3200	US 1
	1400	5600	
27600	2900	3300	30400
48900	4700	5600	5400
6200		2004 ADT	
10300		2030 ADT	
SAUNDERS ST. (RELOCATED)			

PROPOSED CONCRETE MONOLITHIC ISLAND

PROP. PAVEMENT REMOVAL



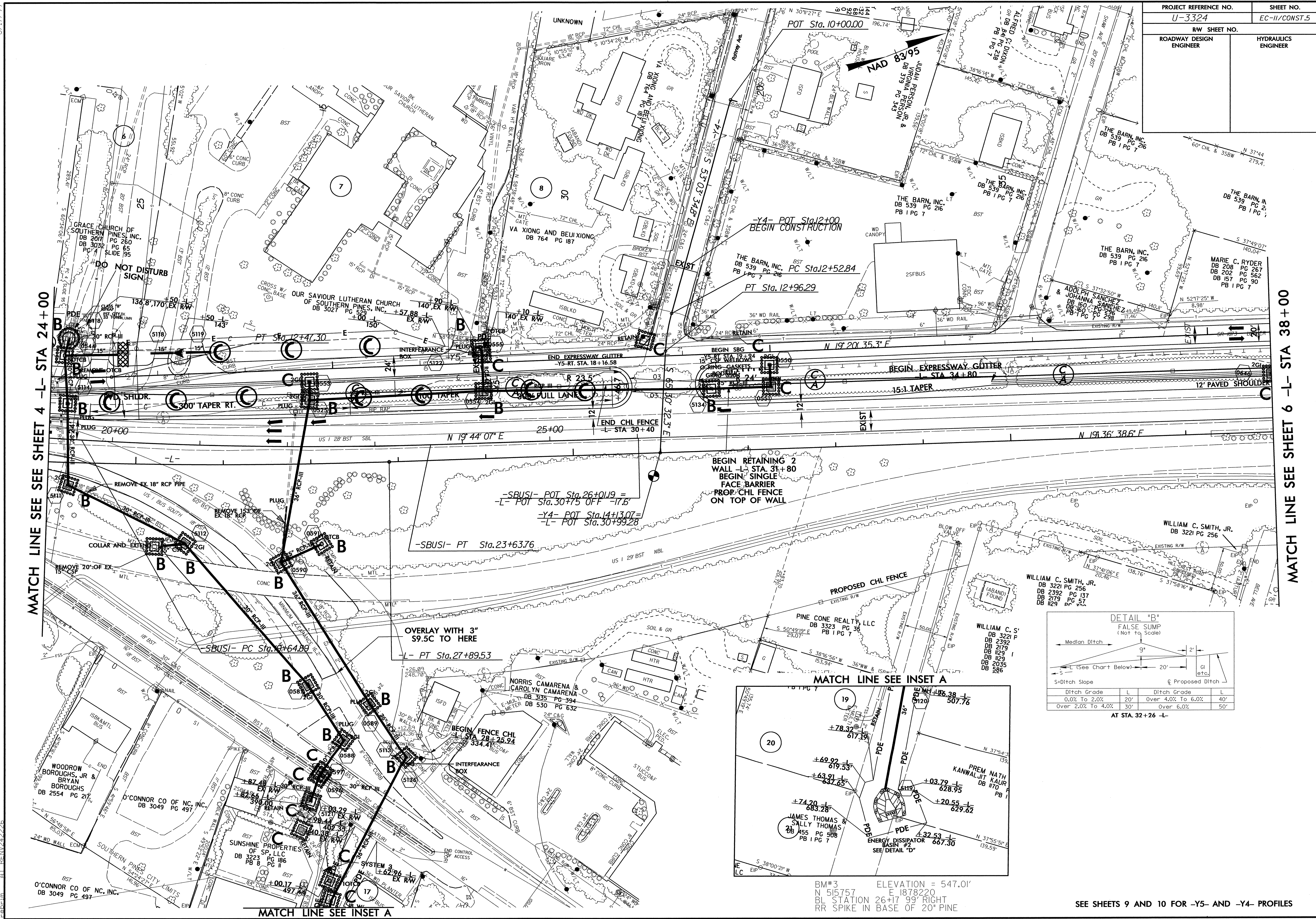
SEE SHEETS 9 & 10 FOR -Y2- AND -Y5- PROFILES

-Y5-	-Y2-	-L-
PI Sta 12+11.92	PI Sta 12+37.15	PI Sta 22+85.68
$\Delta = 5' 47" 51.7' (LT)$	$\Delta = 43' 08" 06.0' (LT)$	$\Delta = 10' 06" 11.6' (LT)$
D = 8' 11" 06.4'	D = 25' 27" 53.2'	D = 1' 00" 00.0'
L = 70.83'	L = 169.39'	L = 1,010.32'
T = 35.45'	T = 88.94'	T = 506.47'
R = 700.00'	R = 225.00'	R = 5,729.58'
SE = SEE PLANS	SE = SEE PLANS	SE = EXIST

MATCH LINE SEE SHEET 5 -L- STA 24+00

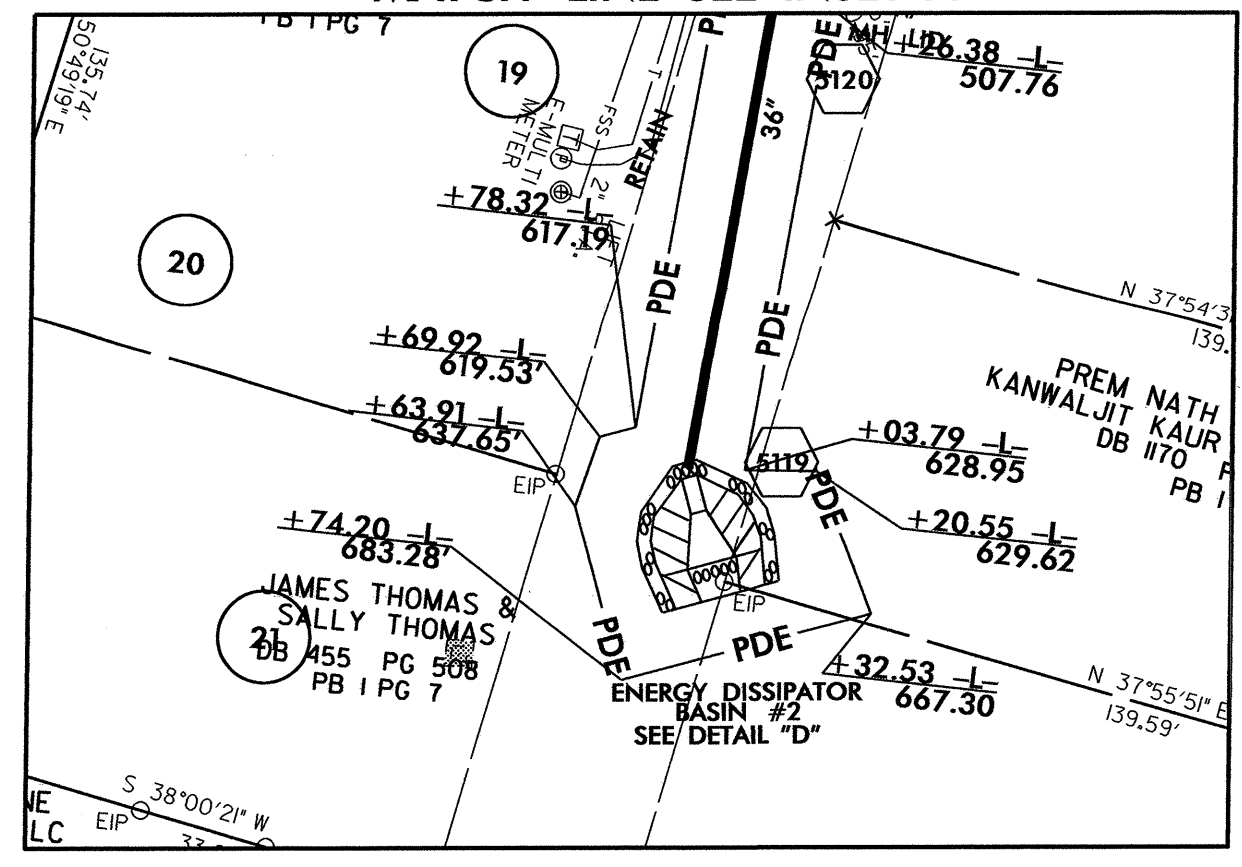
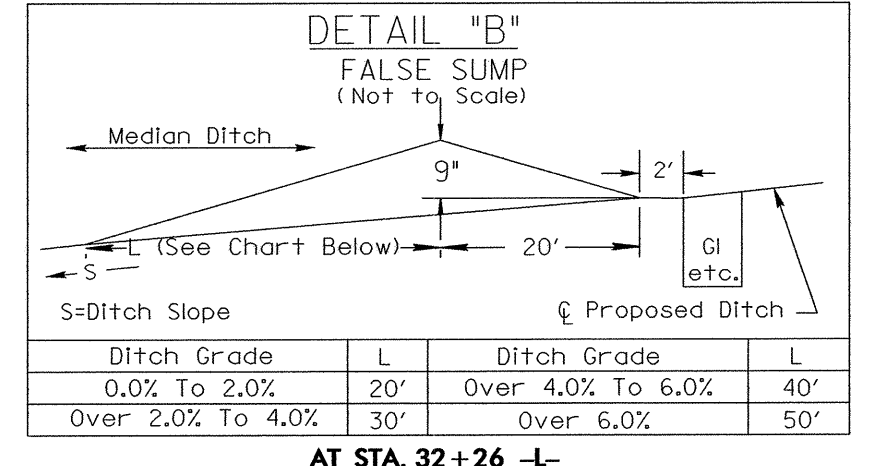
MATCH LINE SEE SHEET 8 -Y2- STA 13+00

PROJECT REFERENCE NO. U-3324		SHEET NO. EC-II/CONST.5	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



MATCH LINE SEE SHEET 4 -L- STA 24+00

MATCH LINE SEE SHEET 6 -L- STA 38+00

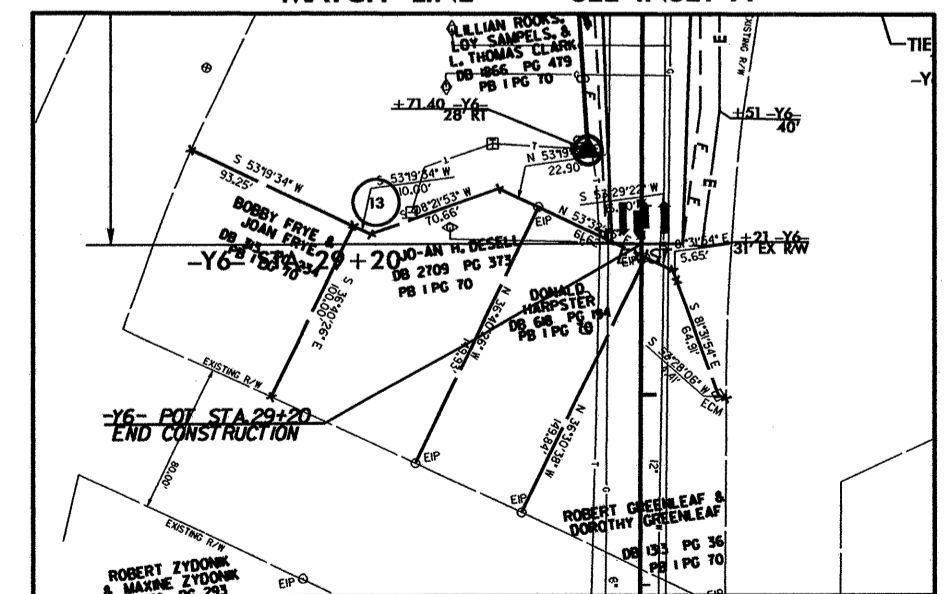
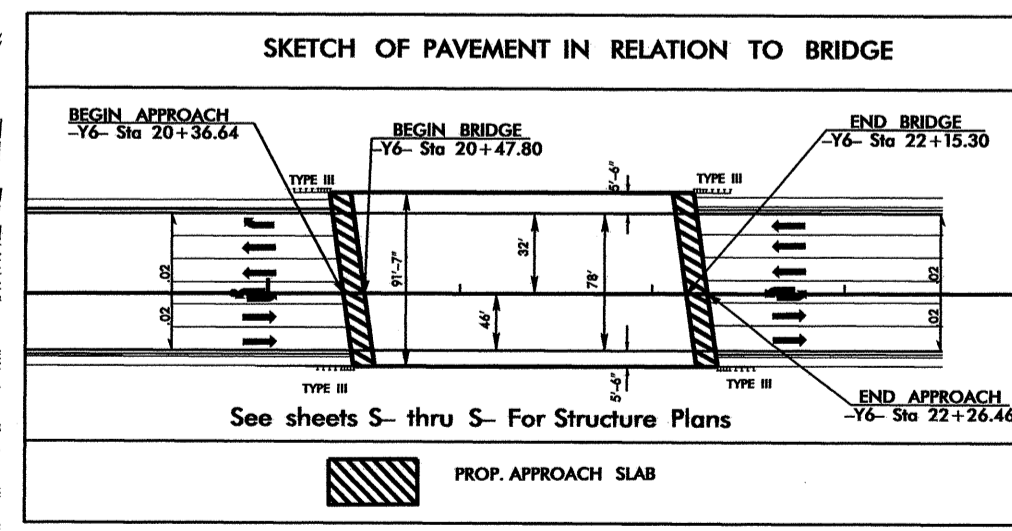
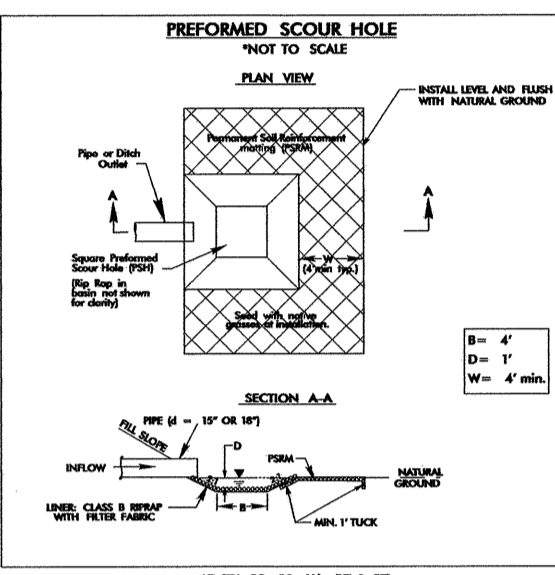
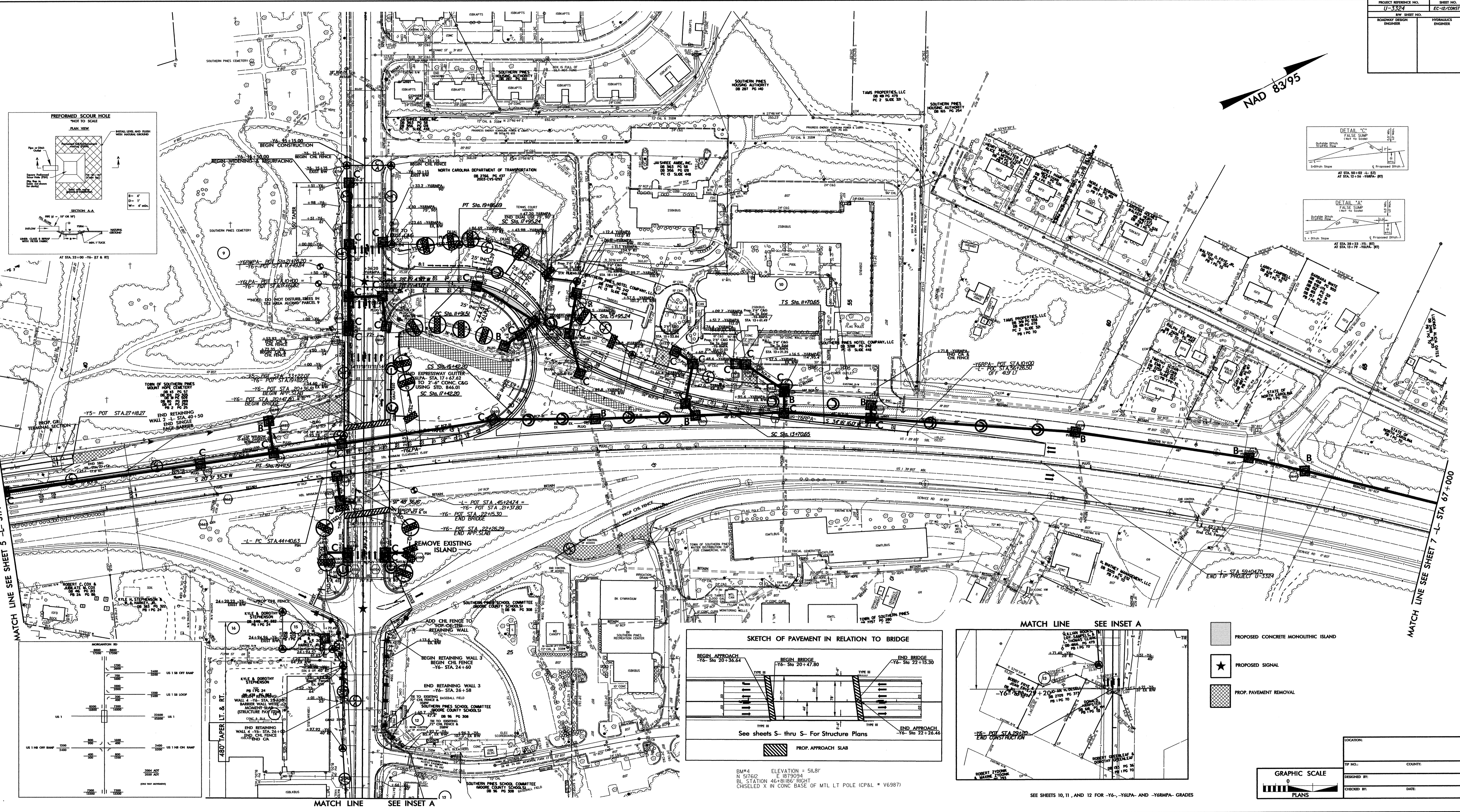
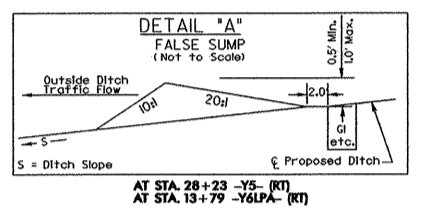
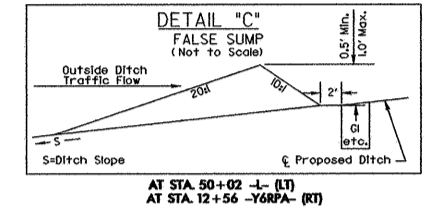
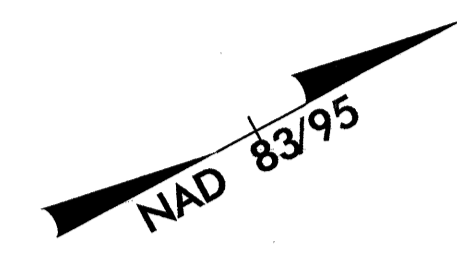


BM#3 ELEVATION = 547.01'
 N 515757 E 1878220
 BL STATION 26+17.99' RIGHT
 RR SPIKE IN BASE OF 20' PINE

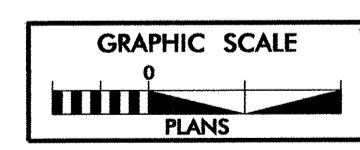
SEE SHEETS 9 AND 10 FOR -Y5- AND -Y4- PROFILES

8.17/99
 05 JUN 2012 10:44
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PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-10/CONST 6
ROW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



- PROPOSED CONCRETE MONOLITHIC ISLAND
- PROPOSED SIGNAL
- PROP. PAVEMENT REMOVAL



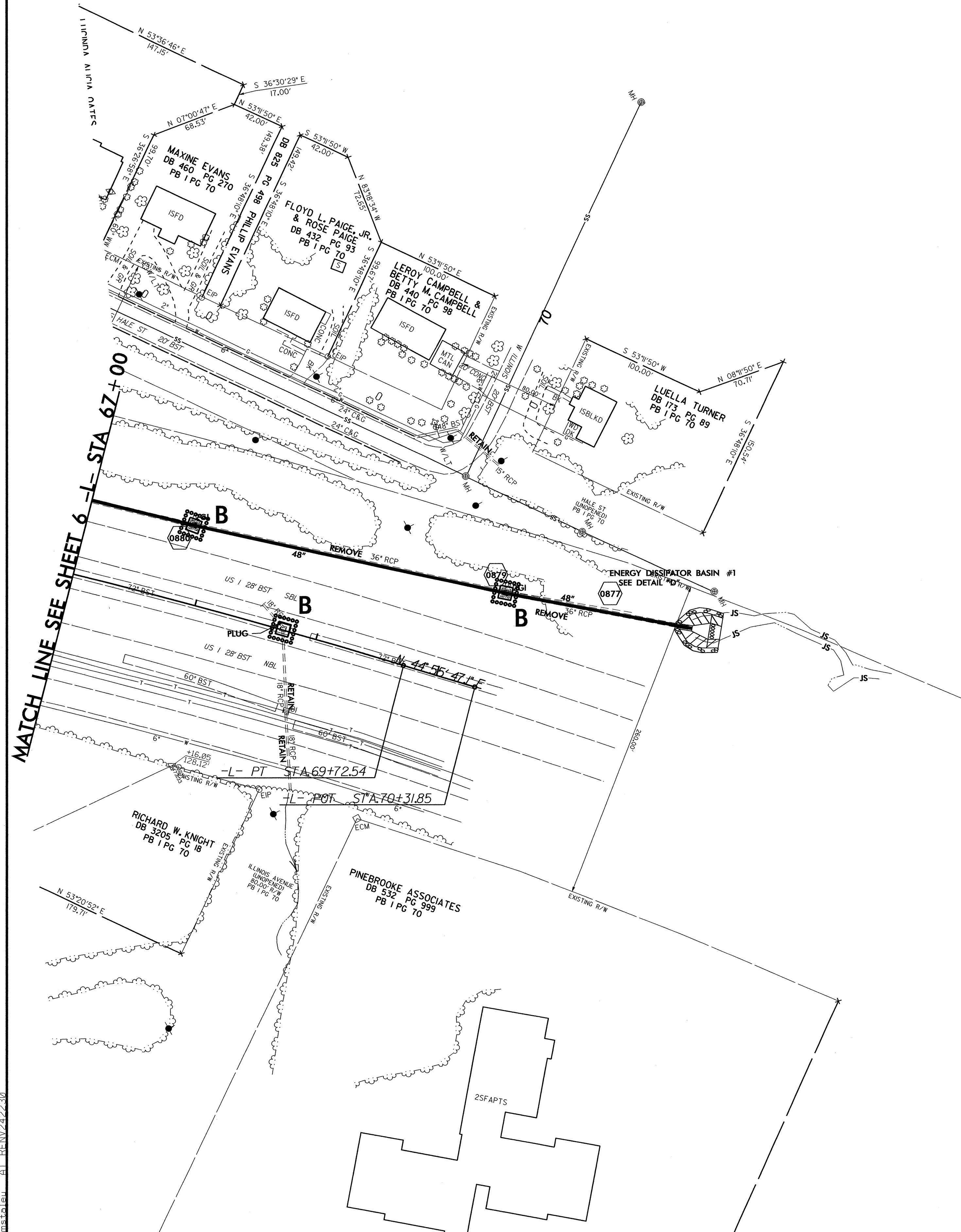
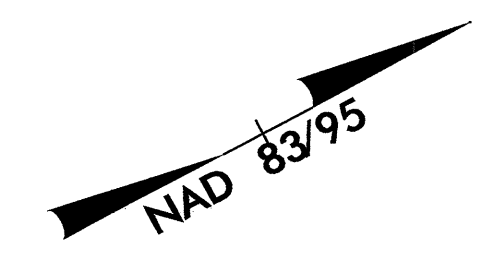
LOCATION:	
TP NO.:	COUNTY:
DESIGNED BY:	
CHECKED BY:	DATE:

SEE SHEETS 10, 11, AND 12 FOR -Y6-, -Y6A- AND -Y6RMA- GRADES

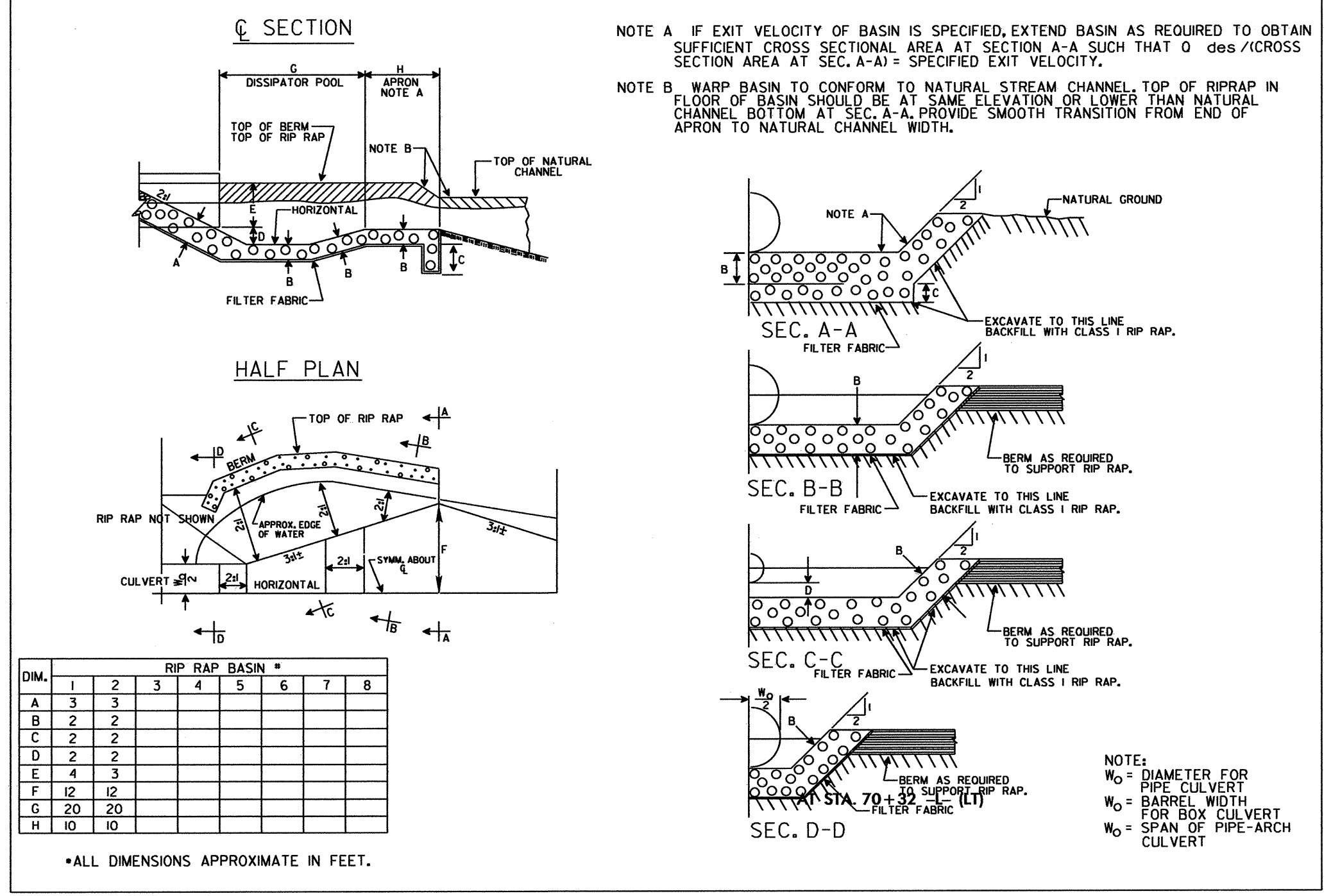
BM#4 ELEVATION = 511.81'
 N 517612 E 1679094
 61.1 STATION 46+45.00' RIGHT
 CHISELED X IN CONC BASE OF MTL LT POLE (CP&L * V6987)

05-JUN-2022 10:45
 P:\Projects\2022\U-3324\EC-10\CONST 6.dwg

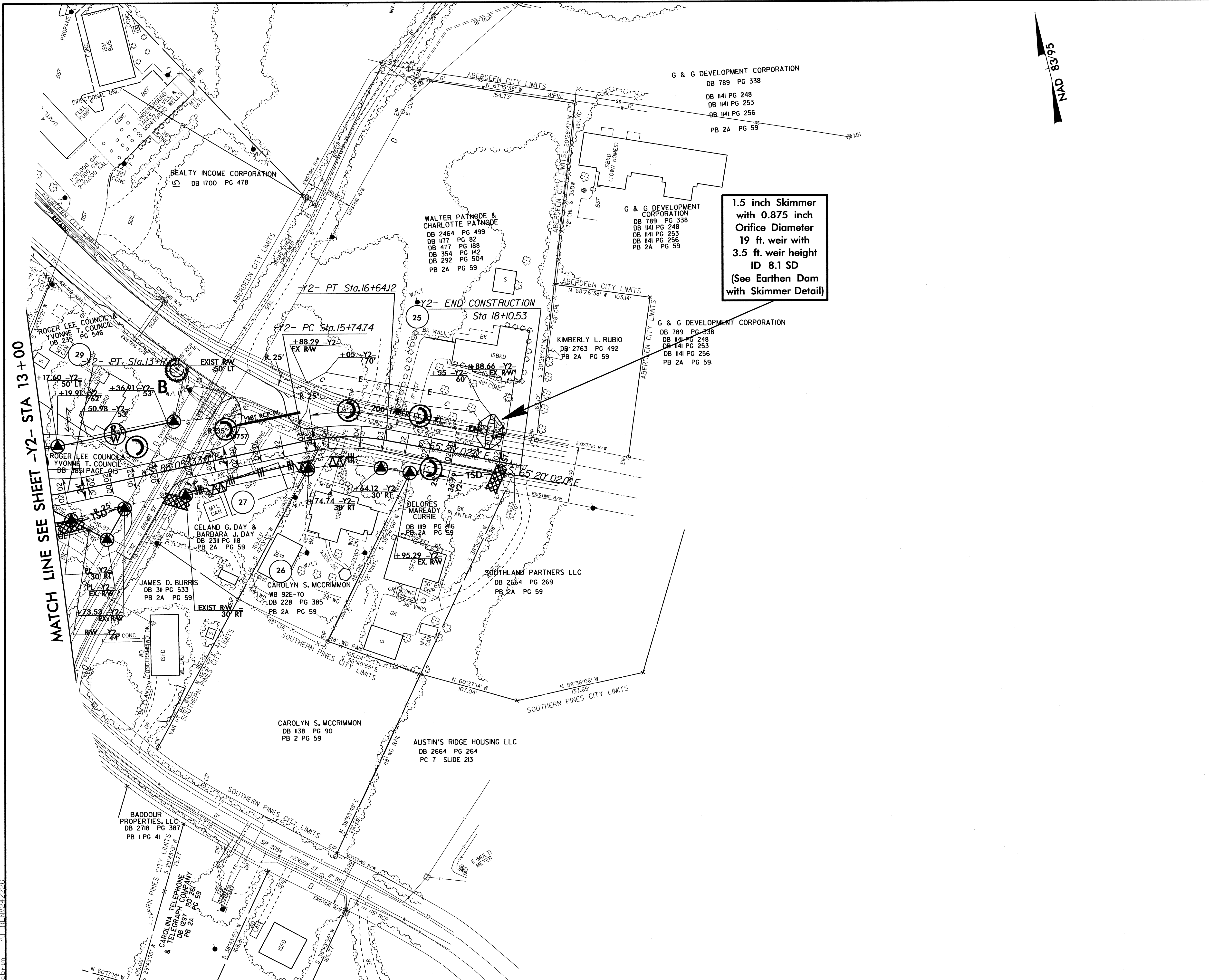
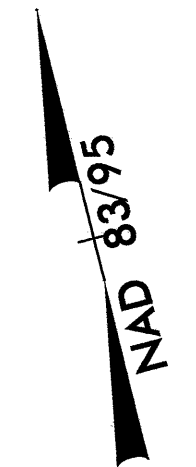
PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-13/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



DETAIL "D"
RIP-RAPPED ENERGY DISSIPATOR BASIN



PROJECT REFERENCE NO.	SHEET NO.
U-3324	EC-14/CONST.8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
19 ft. weir with
3.5 ft. weir height
ID 8.1 SD
(See Earthen Dam
with Skimmer Detail)

8/17/99

MATCH LINE SEE SHEET -Y2- STA 13+00

05 JUN 2012 10:52
C:\Users\psh\Documents\U3324_EC_psh.dgn
AT:REV:23/26