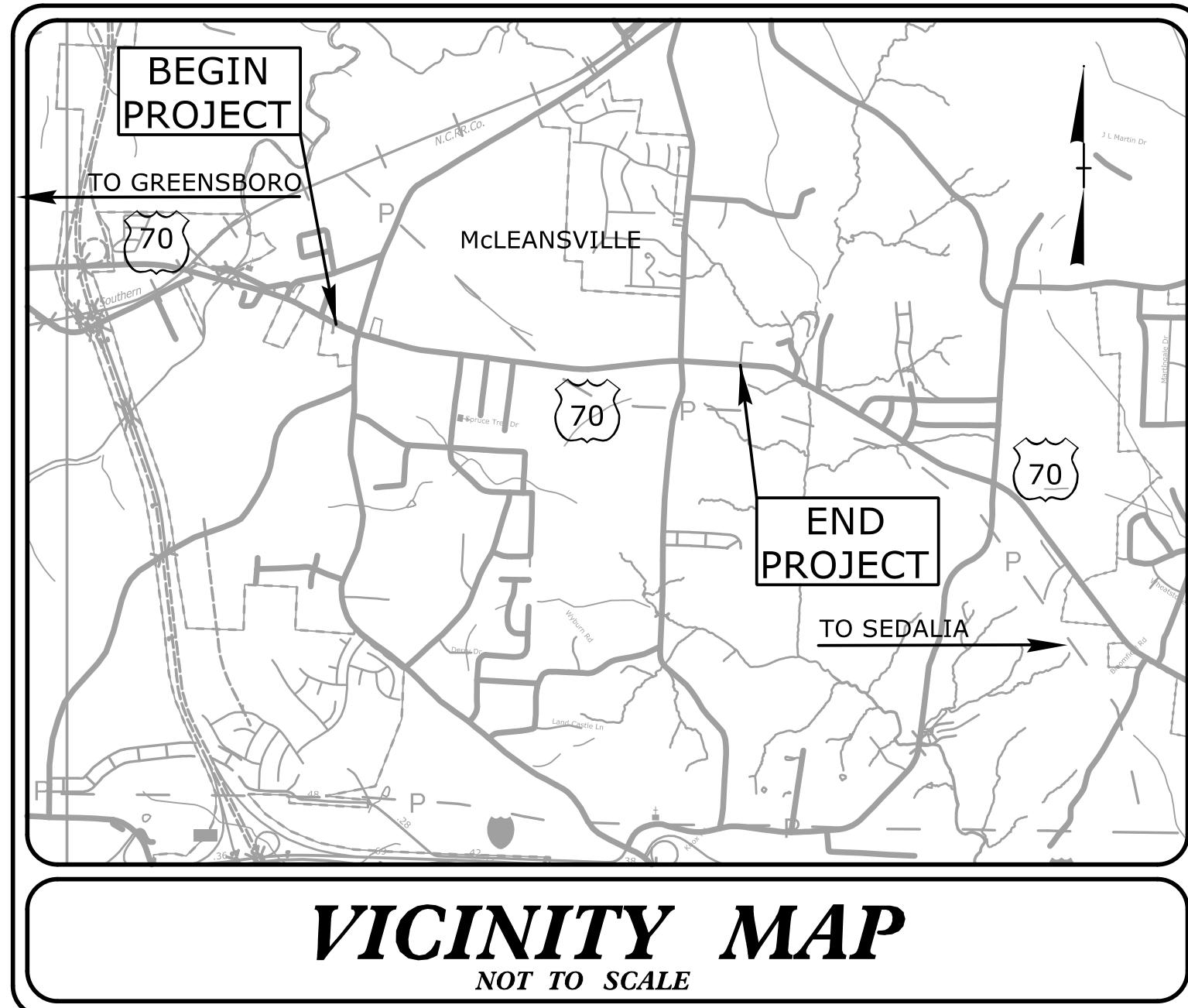
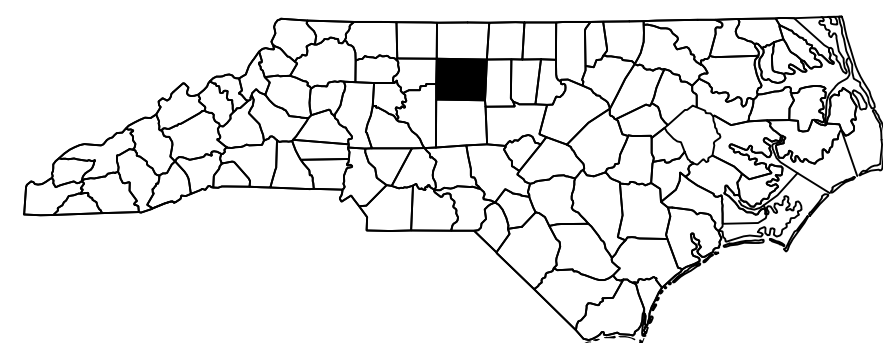


**TIP PROJECT: U-2581BA**



**VICINITY MAP**  
NOT TO SCALE

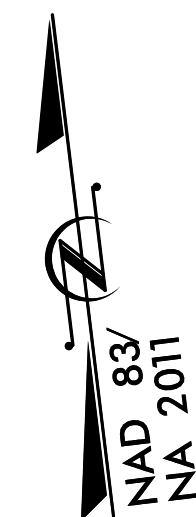
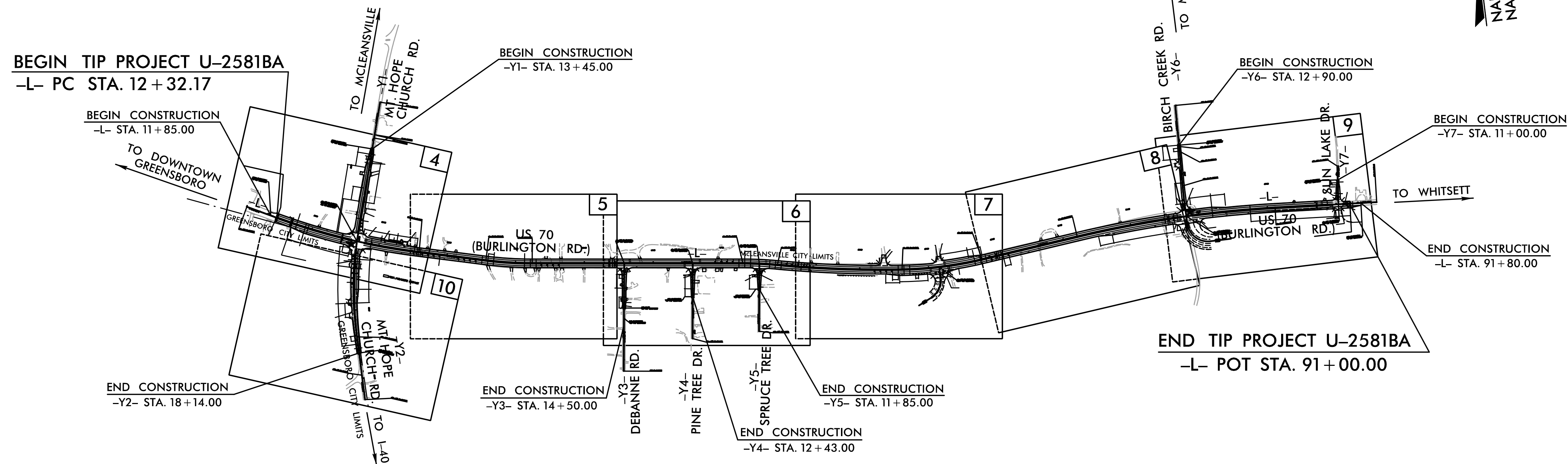


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL  
**GUILFORD COUNTY**

**LOCATION: US 70 (BURLINGTON ROAD) FROM WEST OF SR 3045/SR 2819 (MT. HOPE CHURCH ROAD) TO JUST EAST OF SR 3175 (BIRCH CREEK ROAD)**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS AND CULVERT**

★ EXISTING SIGNAL TO BE MODIFIED



**EROSION AND SEDIMENT CONTROL MEASURES**

Sid. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	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
1633.01	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	WF
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	WF-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	RIA
1632.02	Type B	RIB
1632.03	Type C	RIC
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	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.*

**GRAPHIC SCALE**



**THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.**



VHB Engineering NC, P.C. (C-3705)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606



Prepared In the Office of:  
VHB Engineering NC, P.C. (C-3705)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

Designed by:

**BRANDON BARHAM, PE, CFM** 3368  
NAME LEVEL III CERTIFICATION NO.

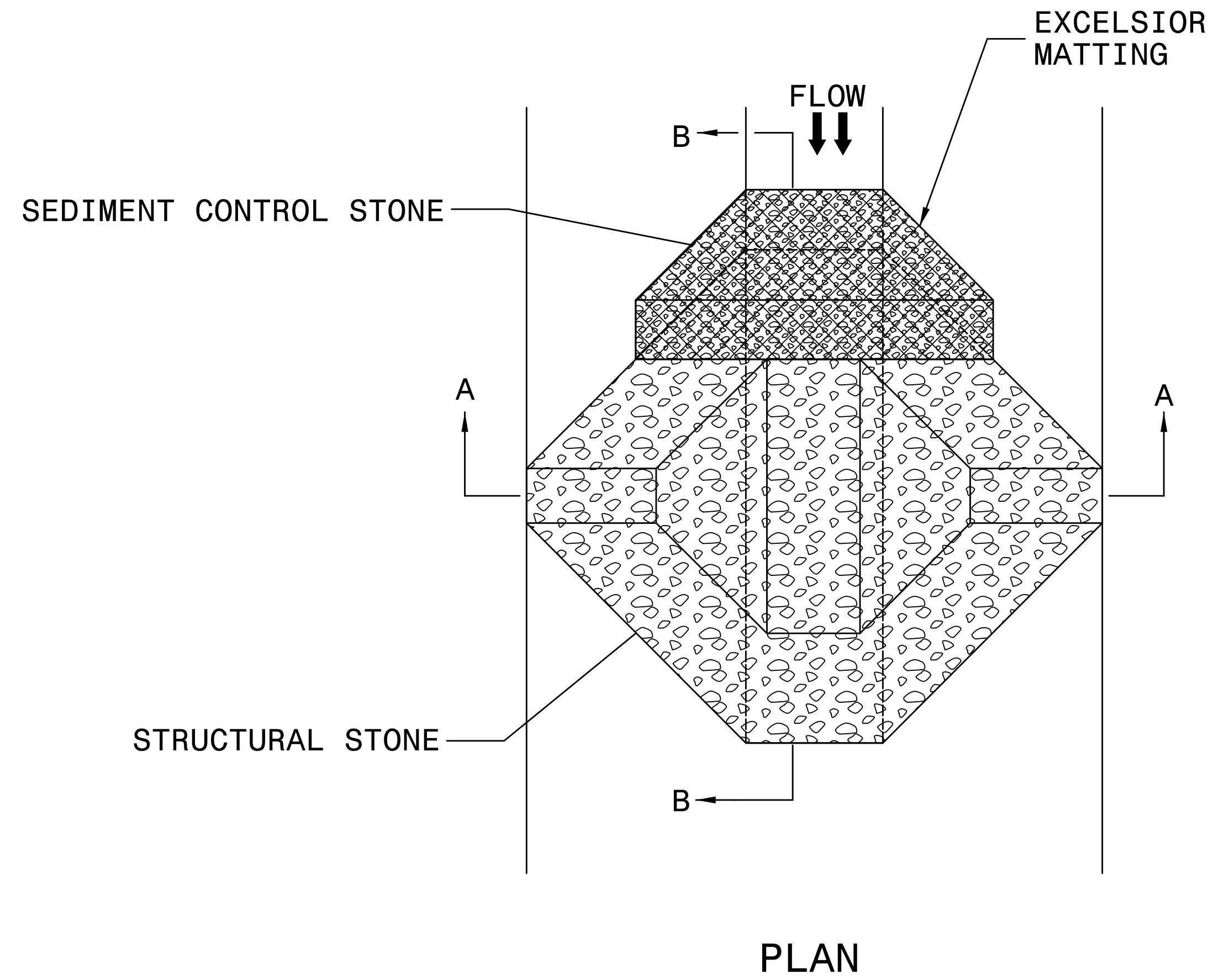
**Roadway Standard Drawings**

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	

PROJECT REFERENCE NO. U-2581BA	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



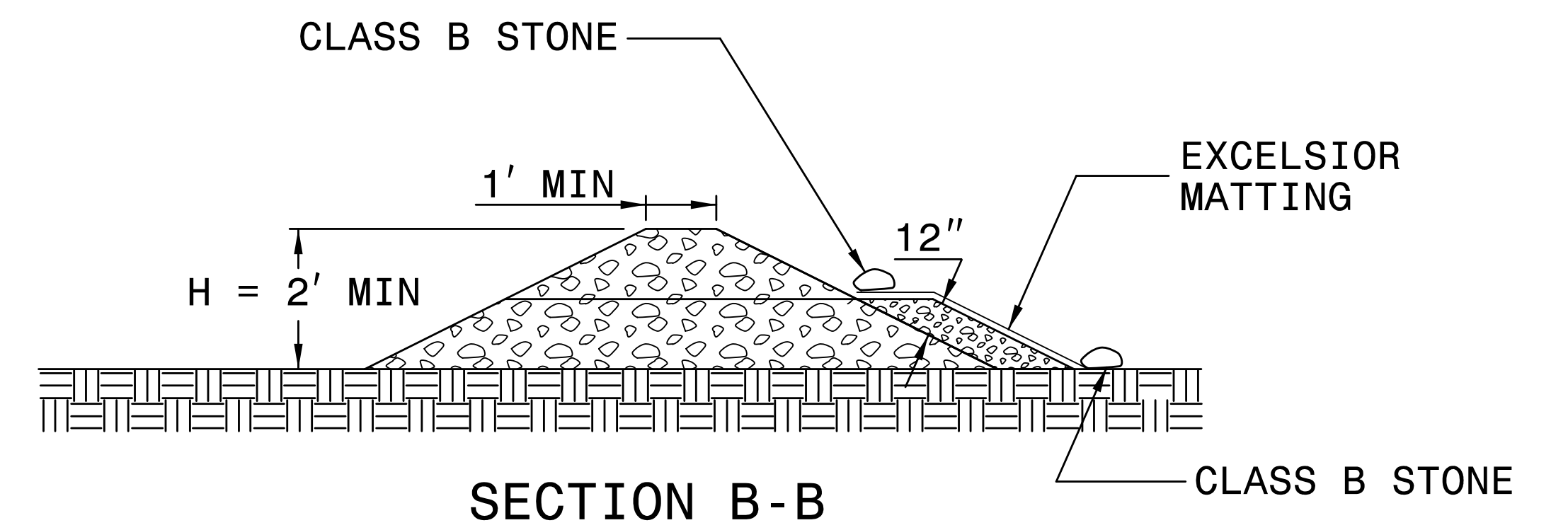
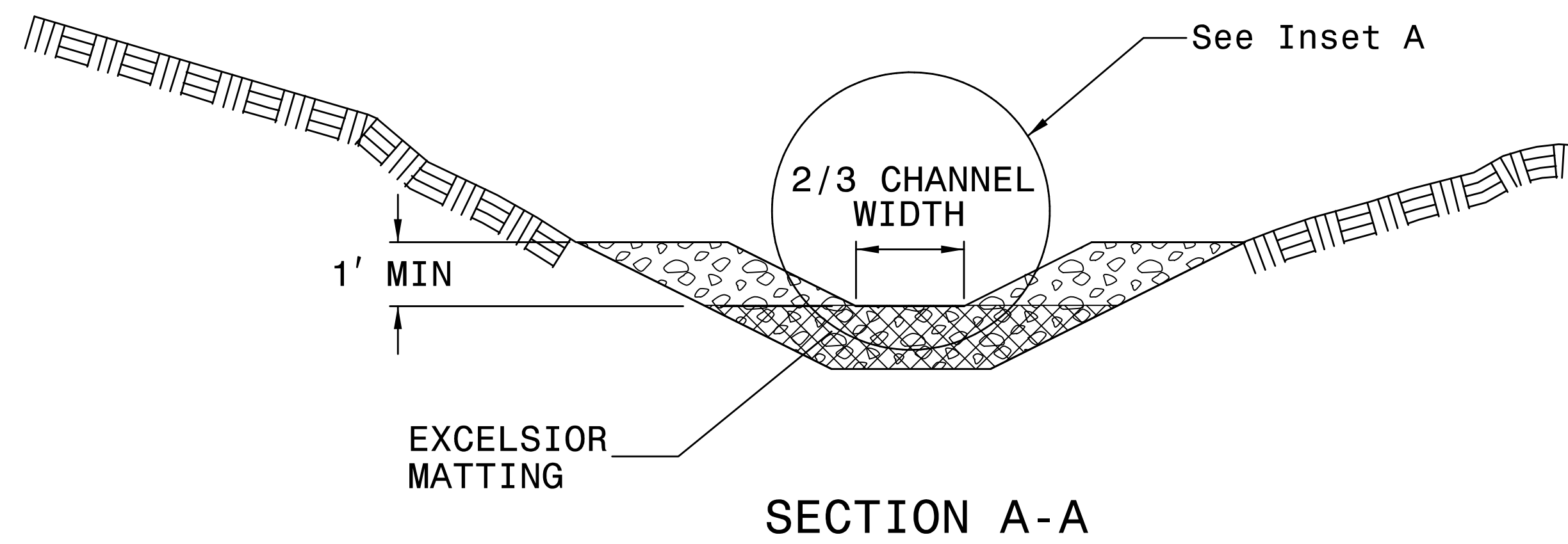
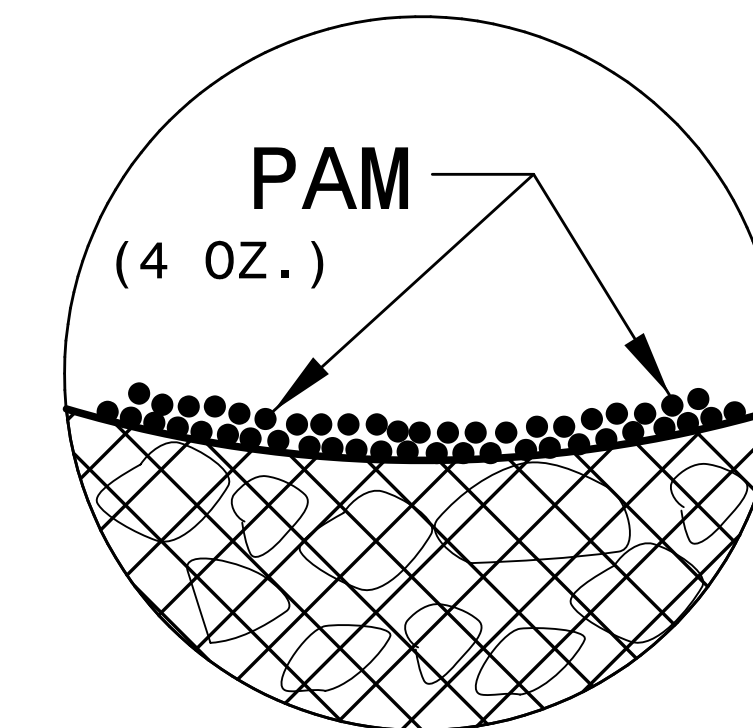
**NOTES:**

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.

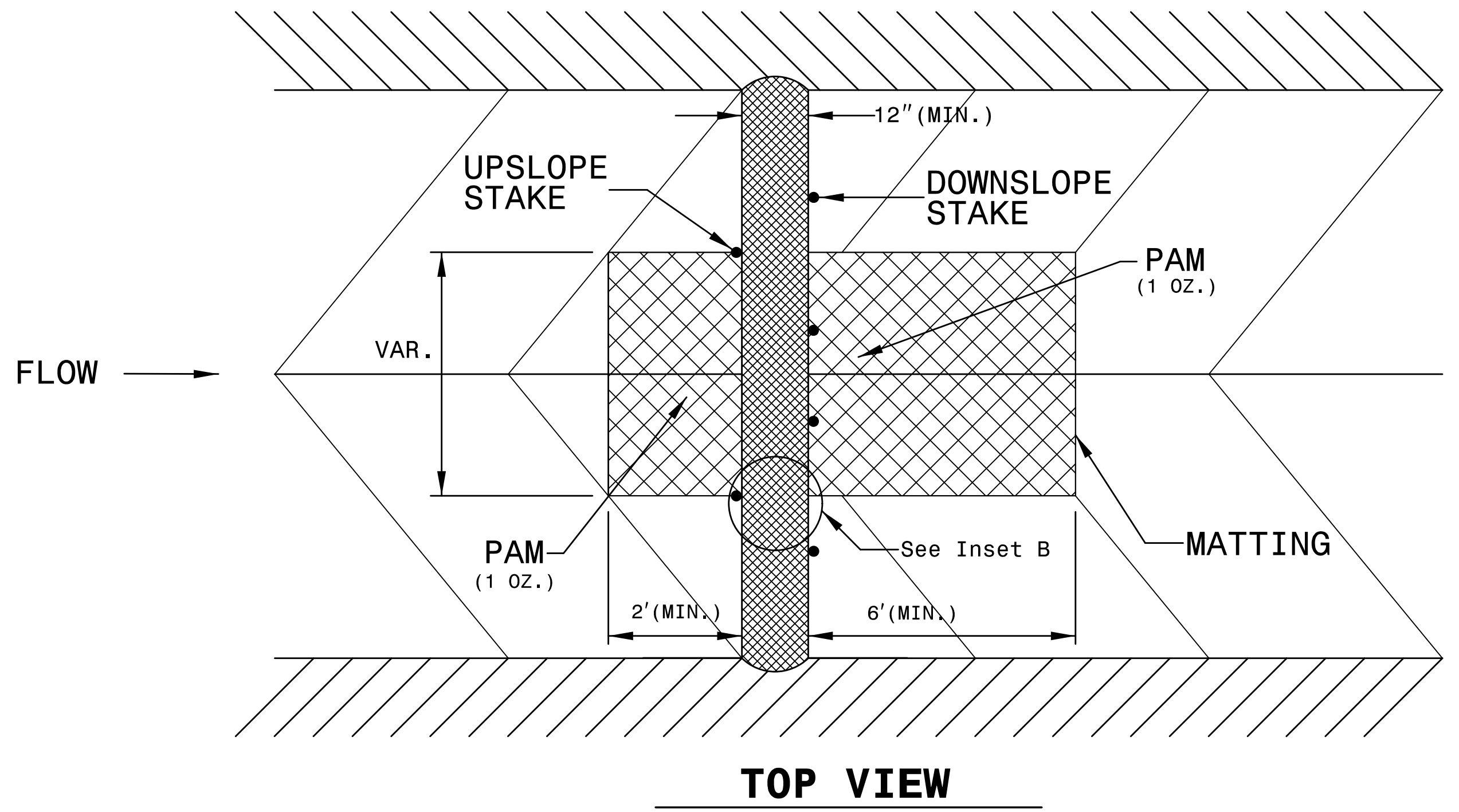
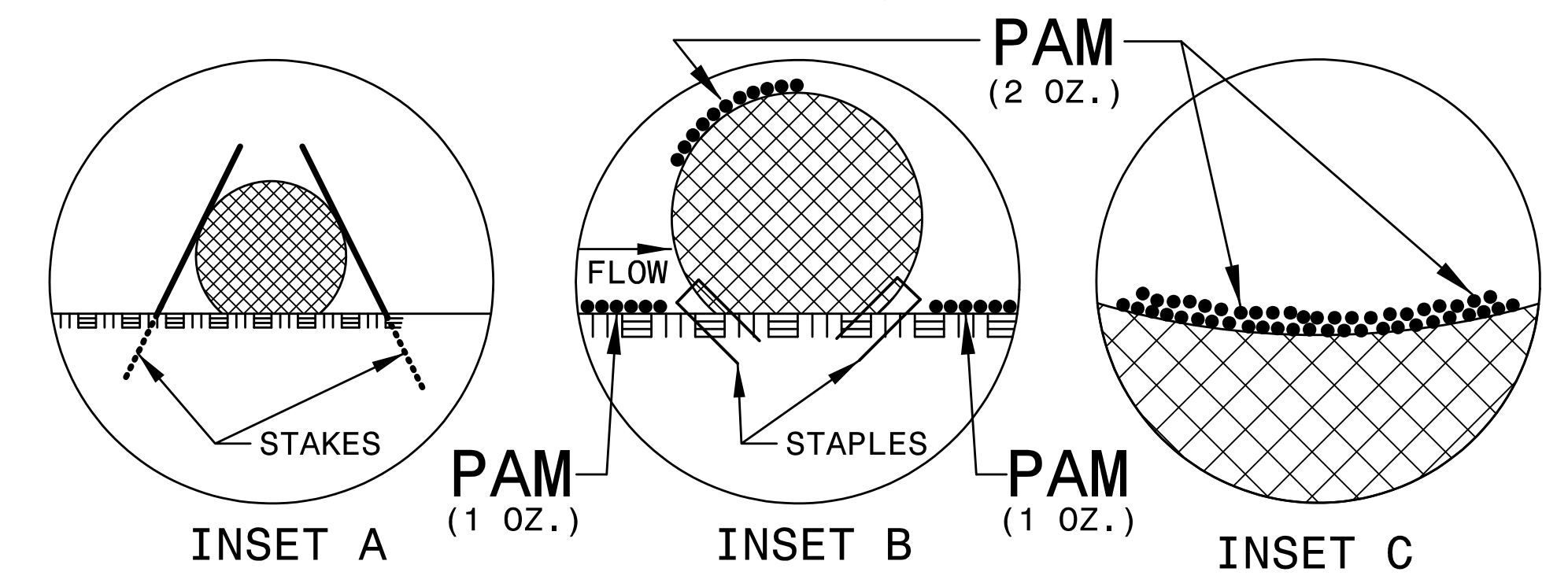
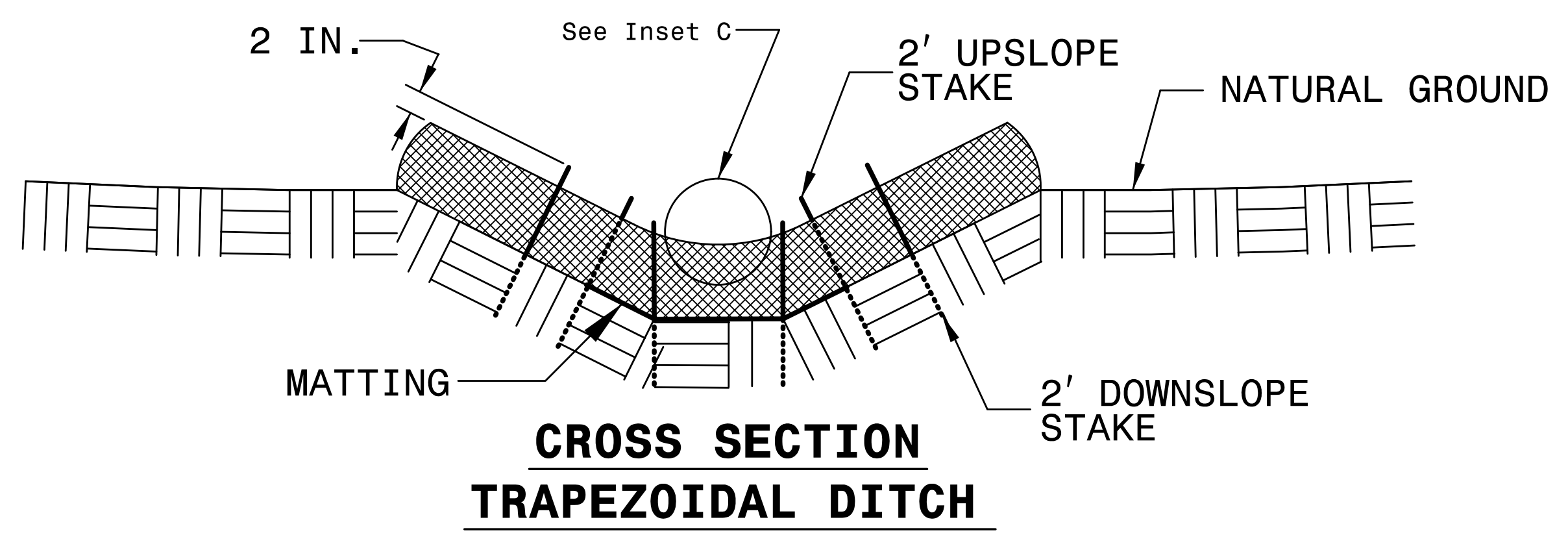
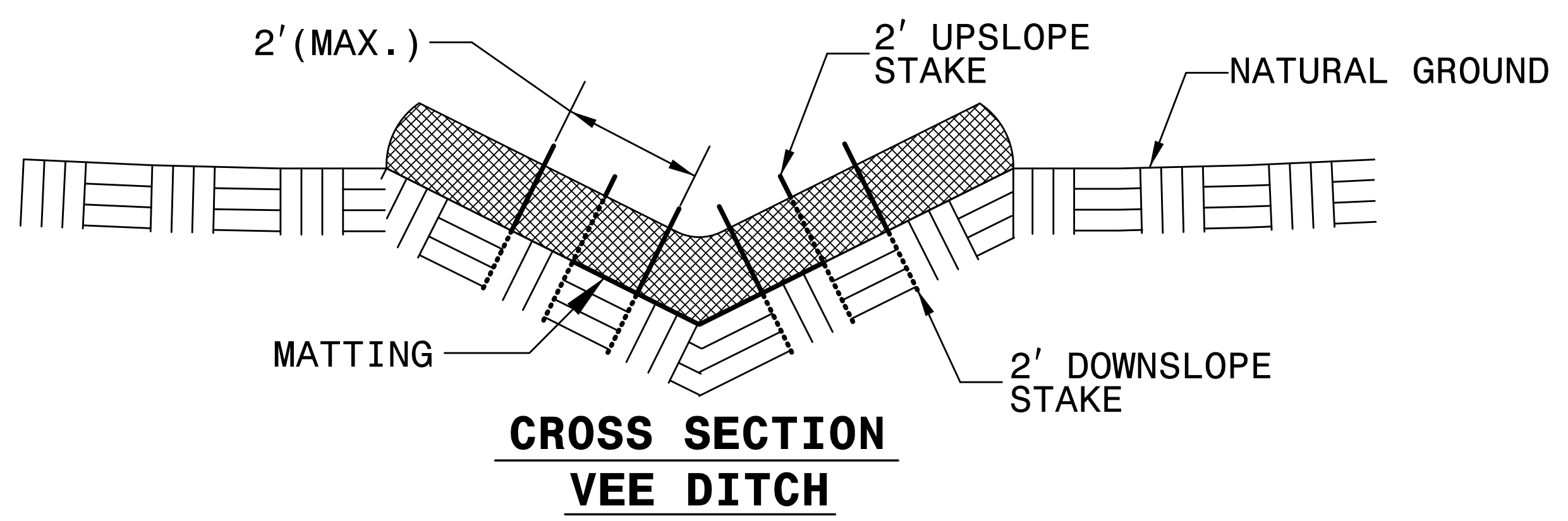
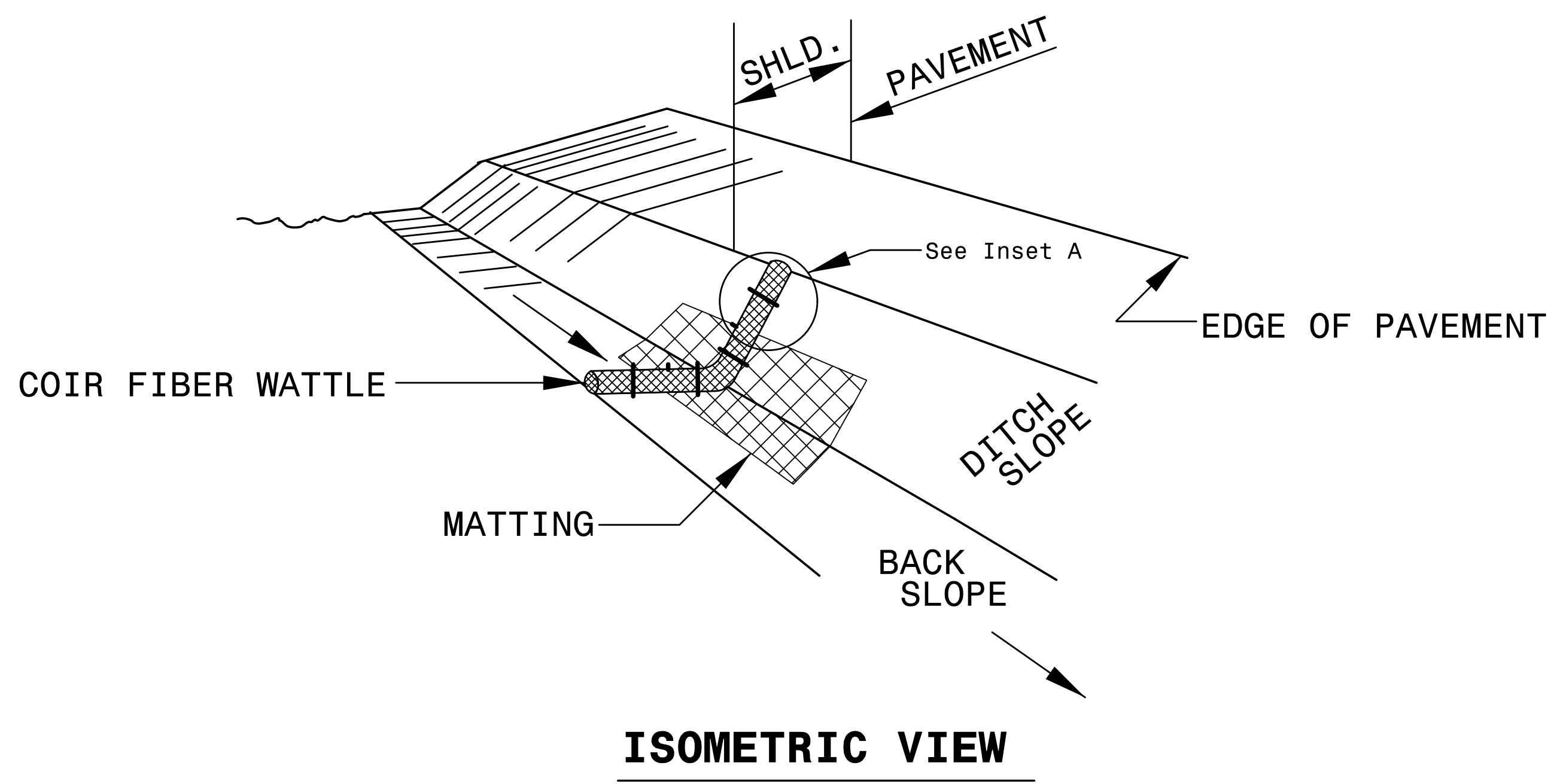


NOT TO SCALE

PROJECT REFERENCE NO. <i>U-2581BA</i>	SHEET NO. <i>EC-2A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

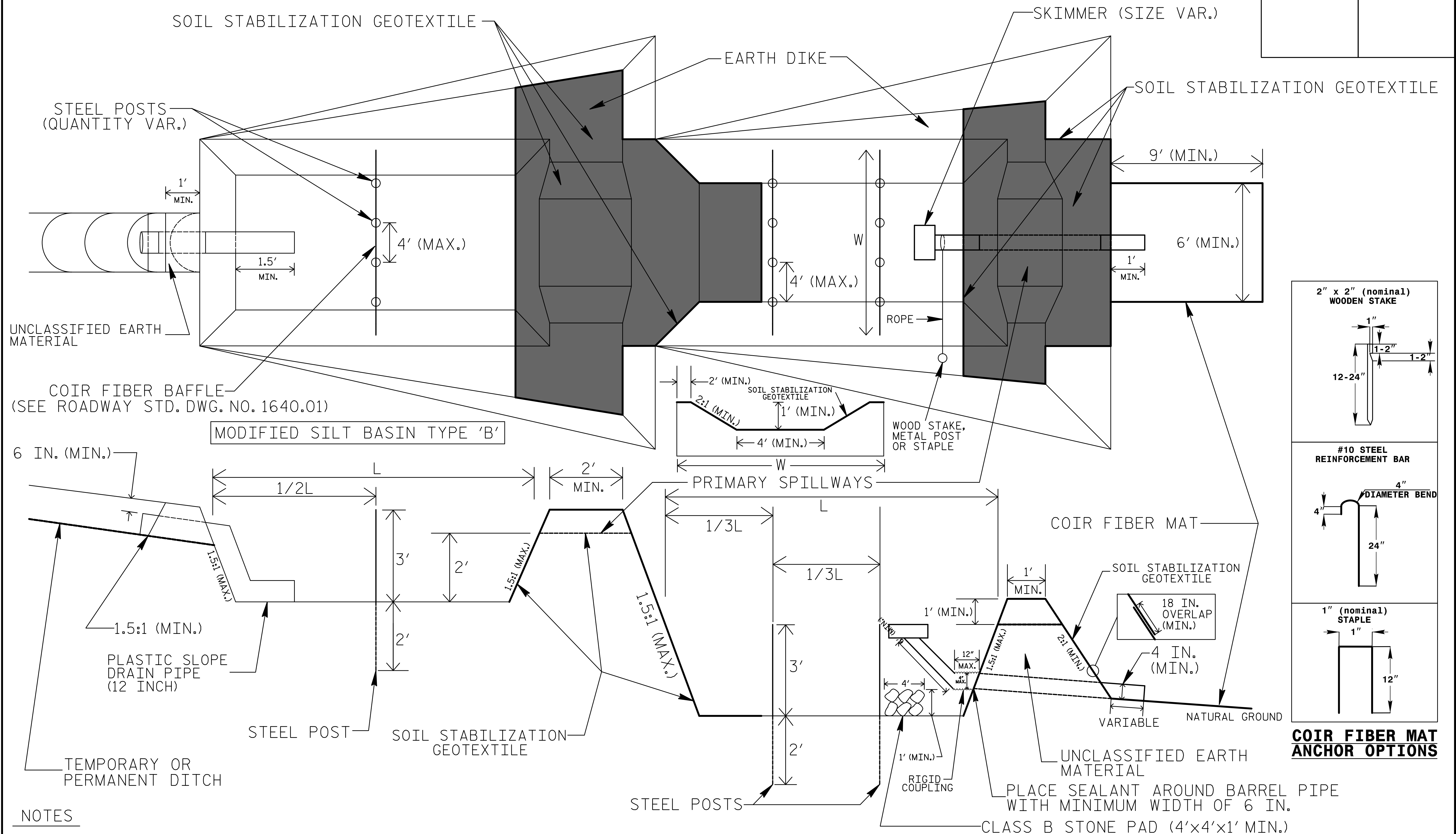
- NOTES:
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
  - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
  - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
  - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
  - PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
  - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.





# TIERED SKIMMER BASIN DETAIL

PROJECT REFERENCE NO. U-258/BA	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



## NOTES

- SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
- LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
- ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
- FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
- DETERMINE PRIMARY SPILLWAY WEIR LENGTHS (FT.) USING  $Q/0.8$ , WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
- SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>U-258/BA</i>	SHEET NO. <i>EC-3</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.

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>U-2581BA</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**SOIL STABILIZATION SUMMARY SHEET**

**MATTING FOR EROSION CONTROL**

**PERMANENT SOIL REINFORCEMENT MAT**

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
4	-L-	19+50	20+50	RT	100
4	-Y1-	15+50	18+00	RT	290
4	-Y1-	13+50	15+15	RT	195
4	-Y1-	15+55	16+39	LT	100
4	-Y2-	10+60	13+75	LT	405
4	-Y2-	14+50	18+14	LT	415
6	-Y3-	11+68	12+48	RT	60
6	-Y3-	13+74	14+50	RT	65
6	-Y3-	10+50	11+68	LT	105
6	-Y3-	11+94	12+44	LT	45
6	-Y3-	12+72	13+42	LT	55
6	-Y3-	13+73	14+50	LT	60
6	-Y4-	12+00	12+28	RT	25
6	-Y5-	11+00	11+45	RT	50
8	-L-	72+81	73+25	RT	45
9	-L-	80+65	81+15	RT	35
9	-L-	81+15	81+65	RT	40
9	-L-	90+63	91+40	LT	60
9	-Y6-	13+50	14+00	RT	25
			SUBTOTAL		2175
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				17695
			TOTAL		19870
			SAY		20000

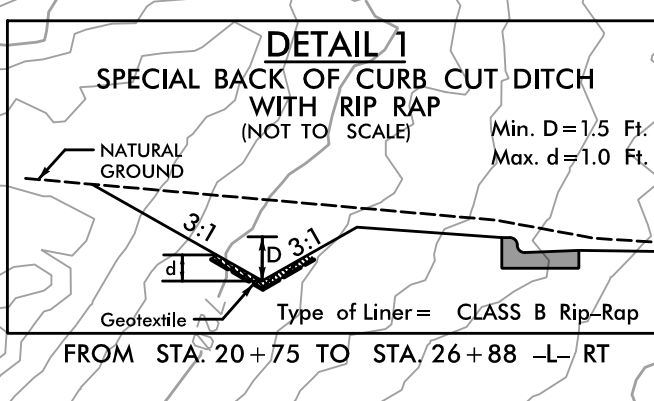
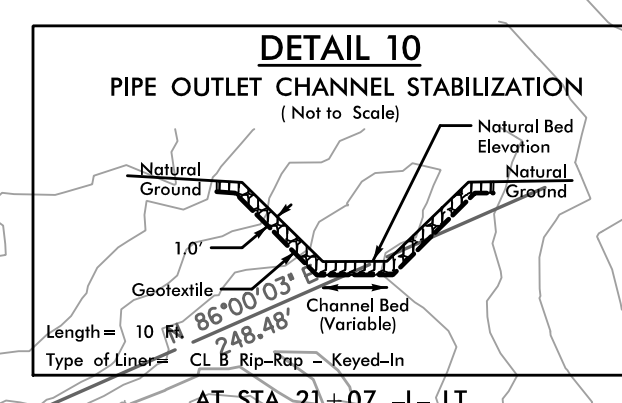
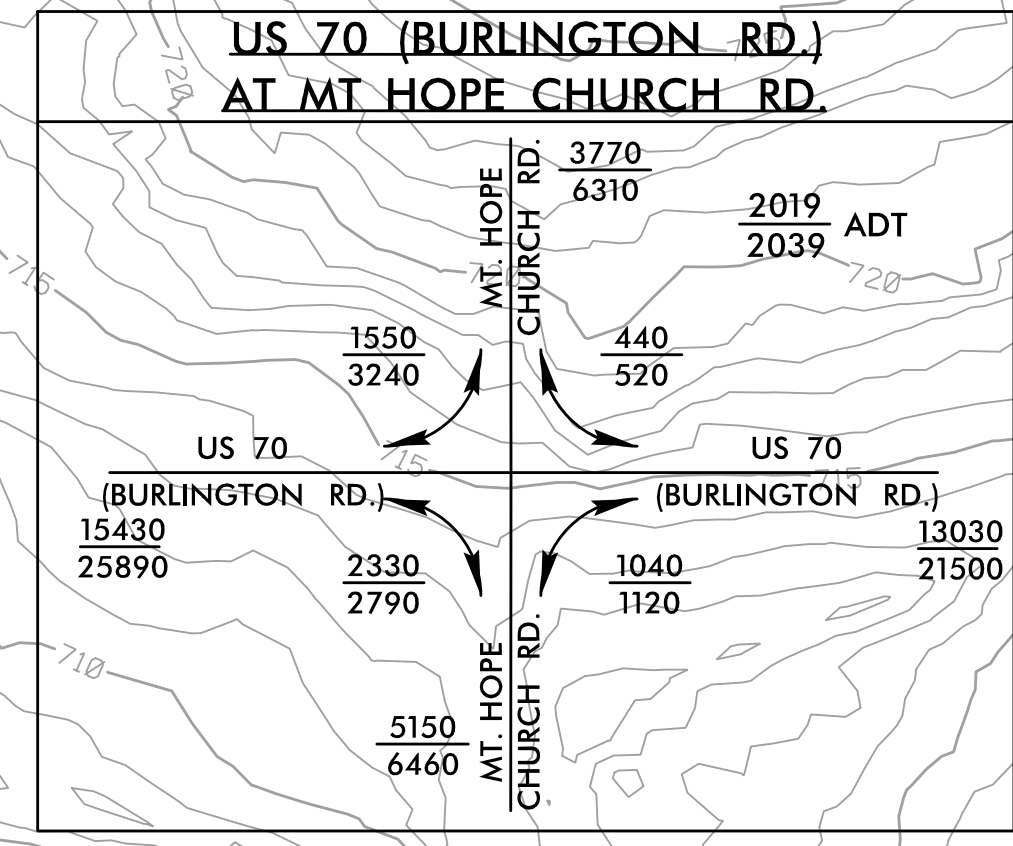
CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
6	-L-	40+50	41+50	LT	80
6	-Y3-	10+50	11+44	RT	85
6	-Y3-	12+86	13+45	RT	50
7	-L-	62+65	64+65	LT	165
8	-L-	64+65	67+00	LT	170
			SUBTOTAL		550
		ADDITIONAL PRGM TO BE INSTALLED			0
			TOTAL		550
			SAY		600



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**-L- CURVE DATA**  
 P/ Sta 17+66.4  
 $\Delta = 125^{\circ} 58' 11"$  (LT)  
 $D = 1' 13" 08.6"$   
 $L = 1063.9'$   
 $T = 534.24'$   
 $R = 4700.00'$   
 $SE = 0.025$   
 $RO = 105'$   
 $INC = 42'$

**-Y2- CURVE DATA**  
 P/ Sta 13+49.93  
 $\Delta = 143^{\circ} 39' 42.3"$  (LT)  
 $D = 2' 06" 23.3"$   
 $L = 696.04'$   
 $T = 349.93'$   
 $R = 2720.00'$   
 $SE = 0.04$   
 $RO = 144'$



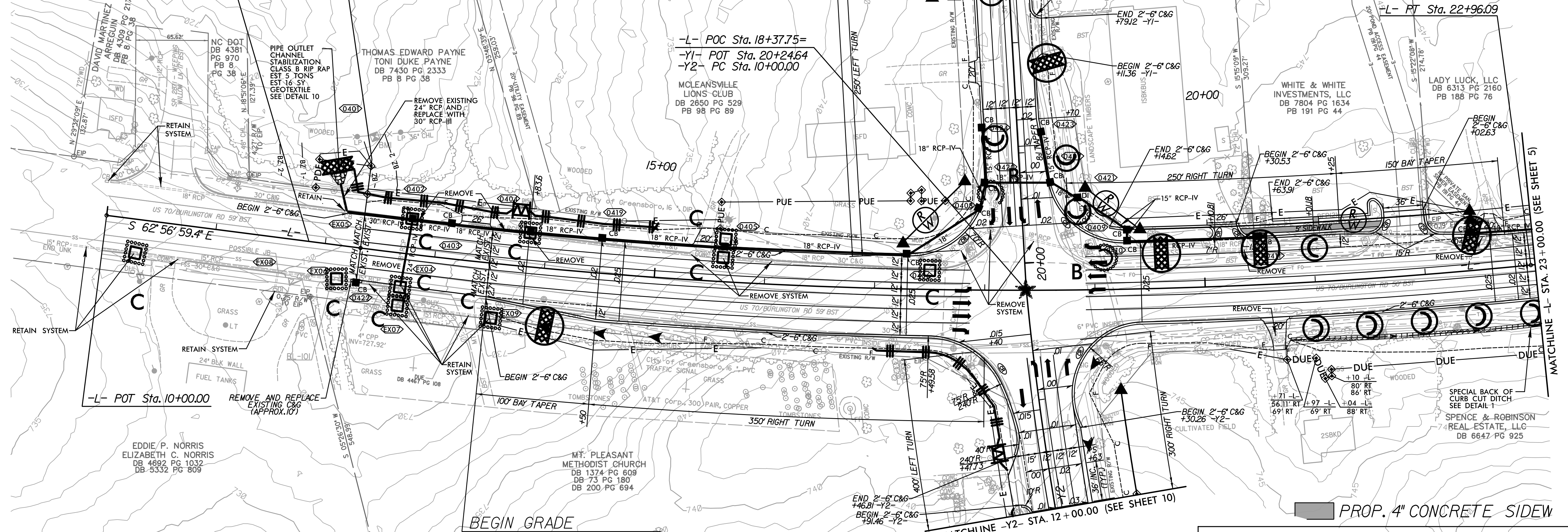
**NOTE:**  
 UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC

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

**BEGIN TIP PROJECT U-2581BA**  
**-L- PC STA. 12+32.17**  
 BEGIN MILL/RESURFACE  
 BEGIN WIDENING (LT SIDE ONLY)

**BEGIN CONSTRUCTION**  
**-L- POT Sta. 11+85.00**

**-L- POC Sta. 18+37.75 =**  
**-Y1- POT Sta. 20+24.64**  
**-Y2- PC Sta. 10+00.00**



**-L- POT Sta. 10+00.00**  
 REMOVE AND REPLACE EXISTING C&G (APPROX. 10')

**BEGIN GRADE**  
 END MILL/RESURFACE  
**-L- POC STA. 13+50.00**

★ EXISTING SIGNAL TO BE MODIFIED

FOR -L- PROFILE SEE SHEET 11  
 FOR -Y1- & -Y2- PROFILES SEE SHEET 14

PROP. 4" CONCRETE SIDEWALK

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 04

PROJECT REFERENCE NO. U-2581BA  
 SHEET NO. EC-04/CONST.04  
 RW SHEET NO.  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER

Prepared by  
**vhb**  
 VHB Engineering N.C., P.C. (C-2705)  
 940 West Campbell Drive, Suite 500  
 Raleigh, NC 27606

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PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	EC-05/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



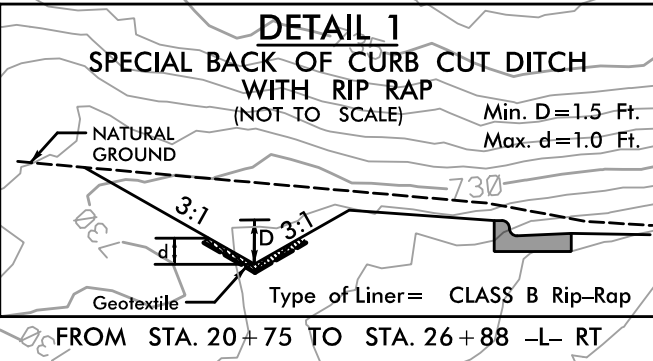
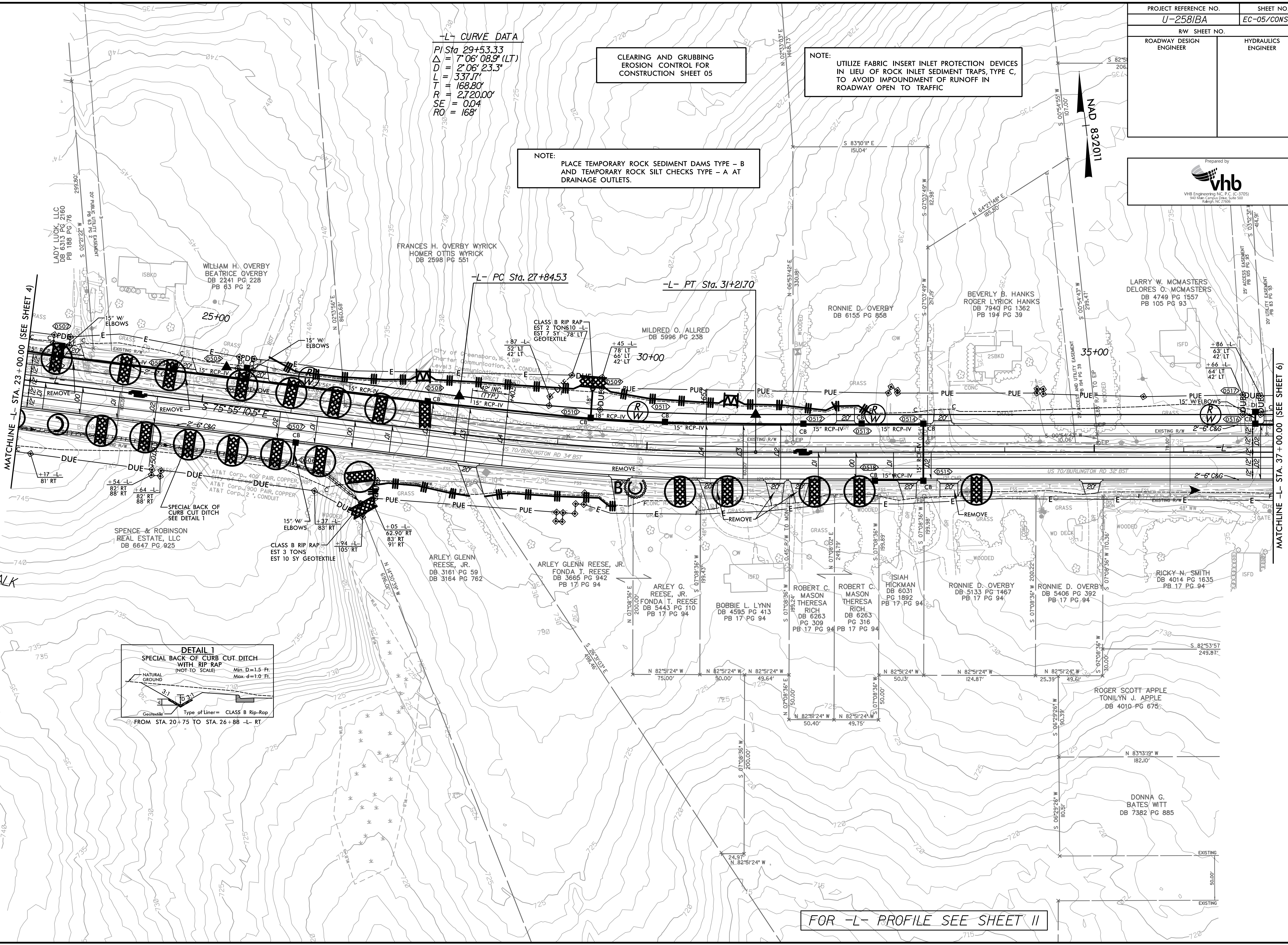
**-L- CURVE DATA**

PI Sta 29+53.33  
 $\Delta = 7^{\circ}06'08.9''$  (LT)  
 $D = 2^{\circ}06'23.3''$   
 $L = 337.77'$   
 $T = 168.80'$   
 $R = 2720.00'$   
 $SE = 0.04$   
 $RO = 168'$

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 05

NOTE:  
 UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
 IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
 TO AVOID IMPOUNDMENT OF RUNOFF IN  
 ROADWAY OPEN TO TRAFFIC

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



FOR -L- PROFILE SEE SHEET 11

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 abarben



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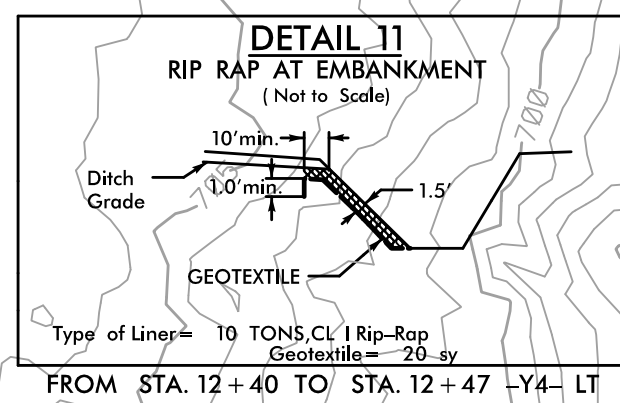
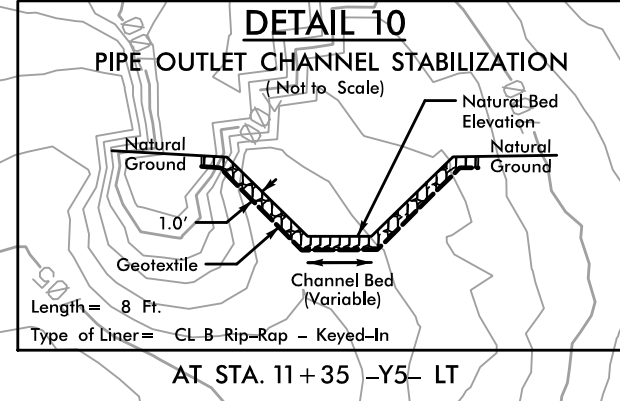
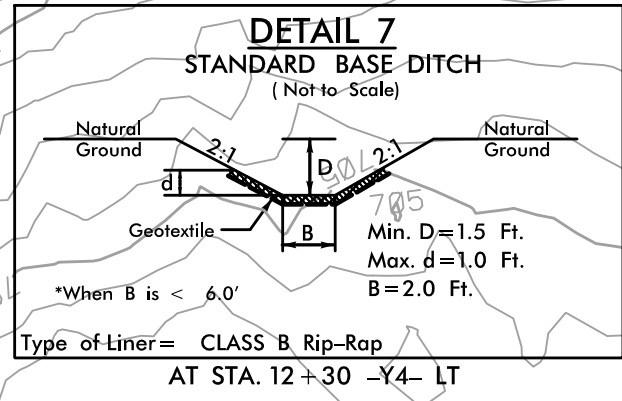
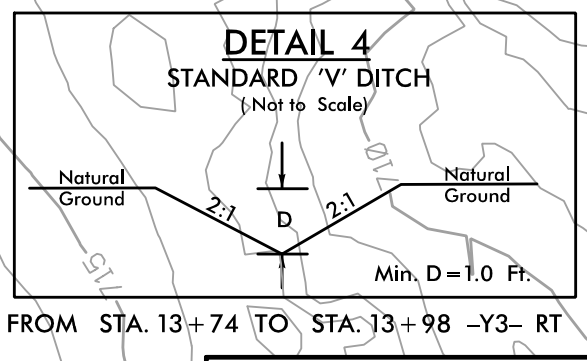
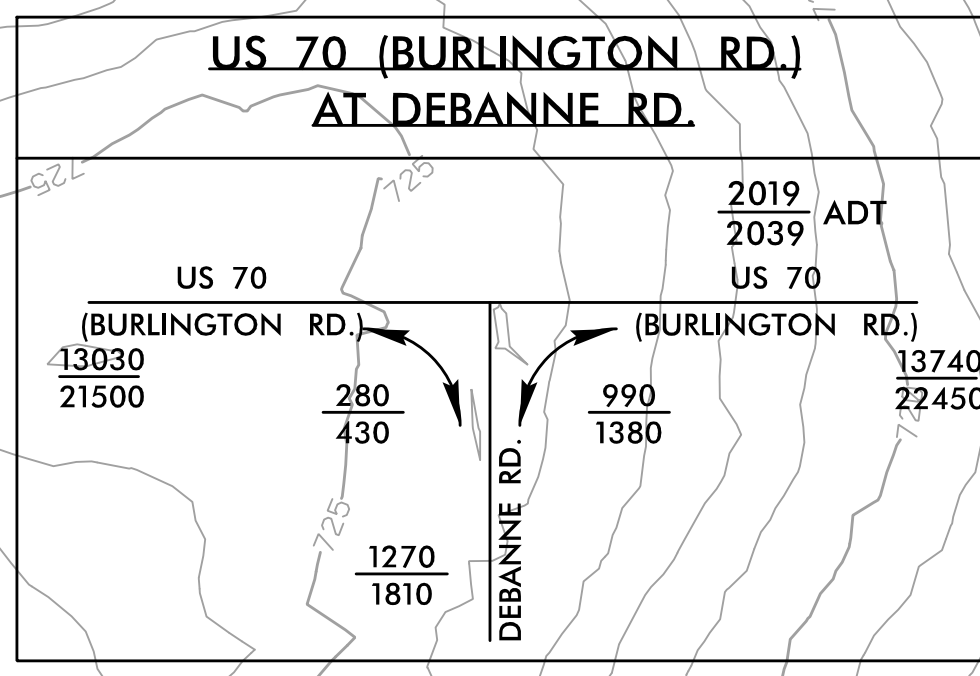
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06

NOTE:  
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
TO AVOID IMPOUNDMENT OF RUNOFF IN  
ROADWAY OPEN TO TRAFFIC

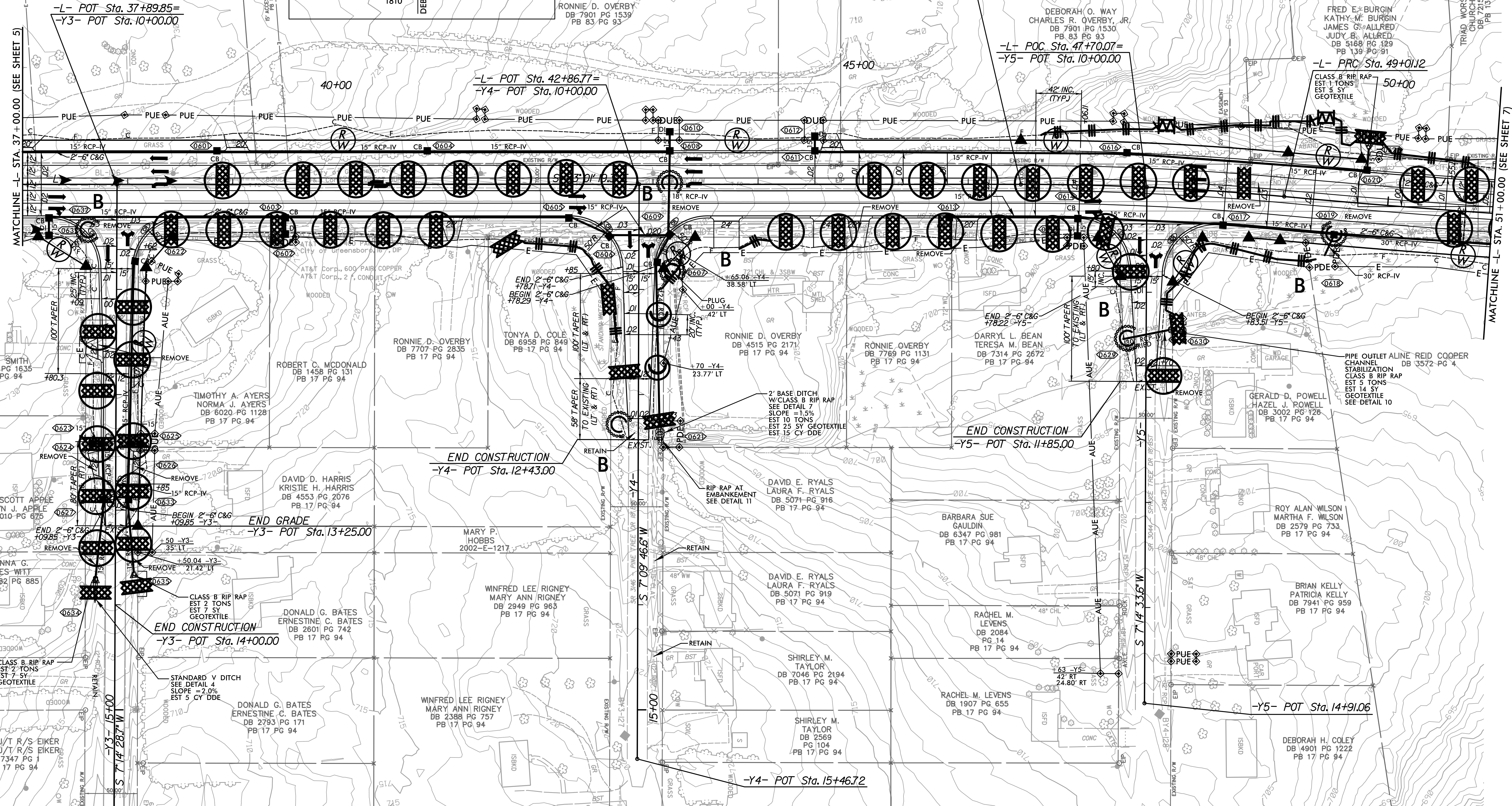
-L- CURVE DATA  
PI Sta 47+75.70      PI Sta 53+54.53  
 $\Delta = 5'17''14.8''(RT)$        $\Delta = 6'19''47.5''(LT)$   
 $D = 2'06''23.3''$        $D = 0'41''55.4''$   
 $L = 251.01'$        $L = 905.91'$   
 $T = 125.59'$        $T = 453.42'$   
 $R = 2,720.00'$        $R = 8,200.00'$   
 $SE = 0.04$        $SE = NC$   
 $RO = 168'$

FOR -L- PROFILE SEE SHEET 12  
FOR -Y3-, -Y4- & -Y5- PROFILES SEE SHEET 15

PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	EC-06/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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



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PROJECT REFERENCE NO. <b>U-2581BA</b>	SHEET NO. <b>EC-07/CONST.07</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



**-L- CURVE DATA**

PI Sta 53+54.53 Δ = 6'19" 47.5" (LT) D = 0' 4' 55.4" L = 905.9' T = 453.42' R = 8,200.00' SE = NC	PI Sta 61+02.09 Δ = 12' 22" 56.4" (LT) D = 2' 06" 23.3" L = 587.83' T = 295.06' R = 2,720.00' SE = 0.04 RO = 168'
---	--

**48' x 32' x 3'**  
**1.5 inch Skimmer**  
**with 1.4 inch**  
**Orifice Diameter**  
**12 ft. weir**  
**(See Tiered Skimmer**  
**Basin Detail)**  
**ID 7.1**

**Modified Silt Basin**  
**Type 'B'**  
**48' x 32' x 3'**  
**12 ft. weir**  
**(See Tiered Skimmer**  
**Basin Detail)**  
**ID 7.1**

**80' x 45' x 3'**  
**2.5 inch Skimmer**  
**with 2.25 inch**  
**Orifice Diameter**  
**41 ft. weir**  
**(See Tiered Skimmer**  
**Basin Detail)**  
**ID 7.2**

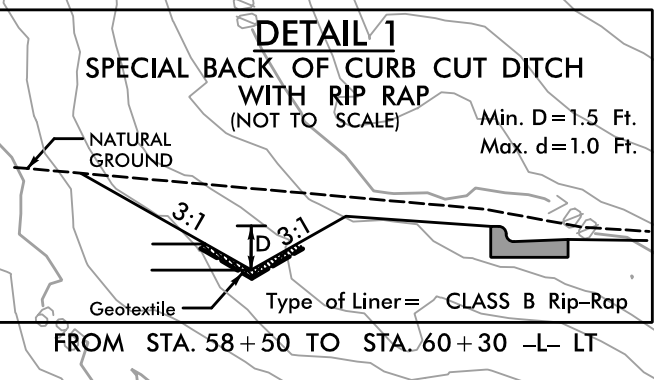
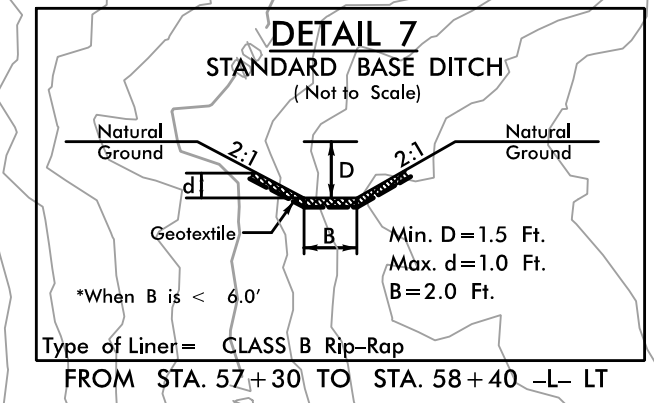
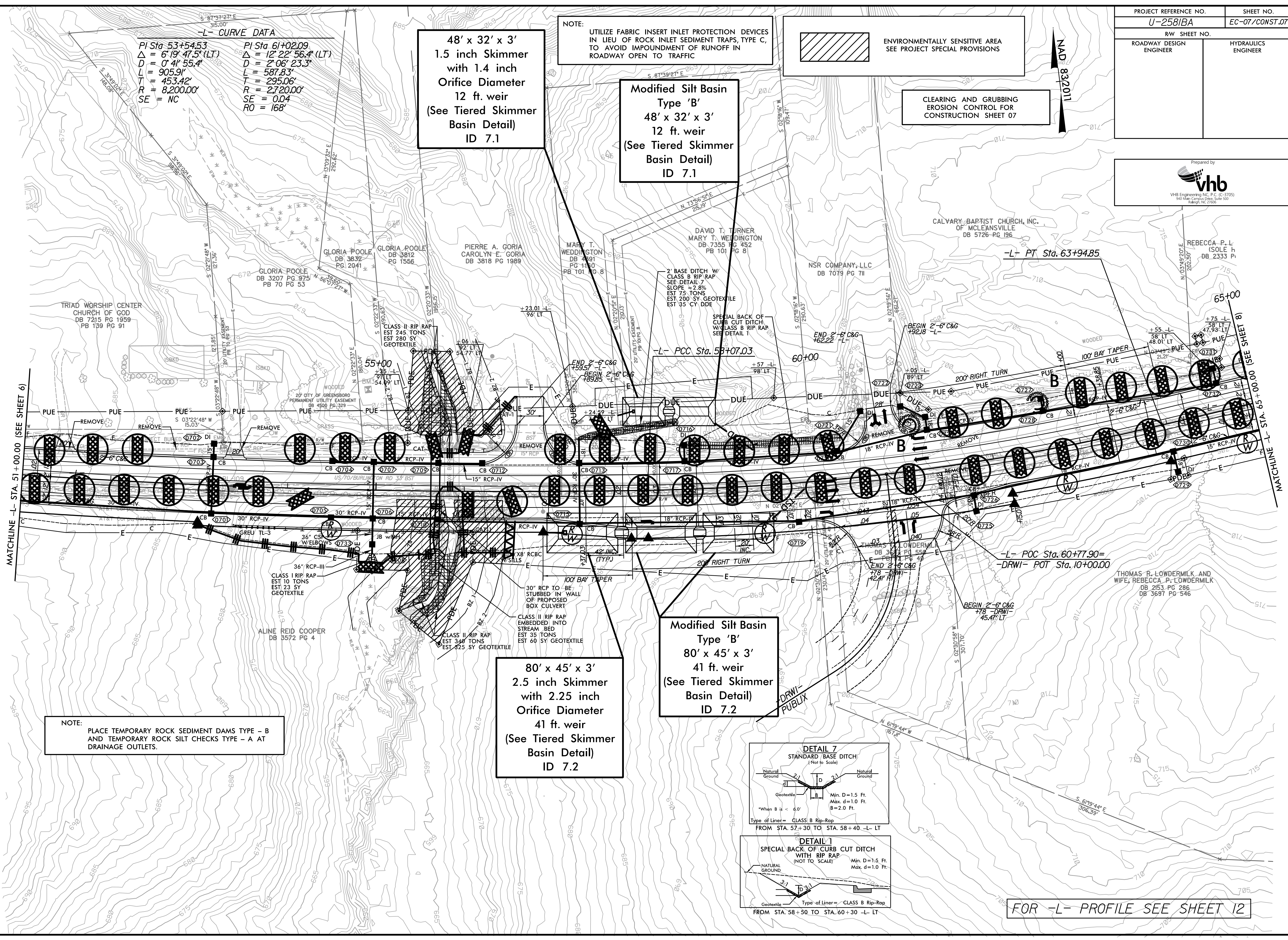
**Modified Silt Basin**  
**Type 'B'**  
**80' x 45' x 3'**  
**41 ft. weir**  
**(See Tiered Skimmer**  
**Basin Detail)**  
**ID 7.2**

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

NOTE: UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC

ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 07



FOR -L- PROFILE SEE SHEET 12

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PROJECT REFERENCE NO.	SHEET NO.
U-258/BA	EC-08/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

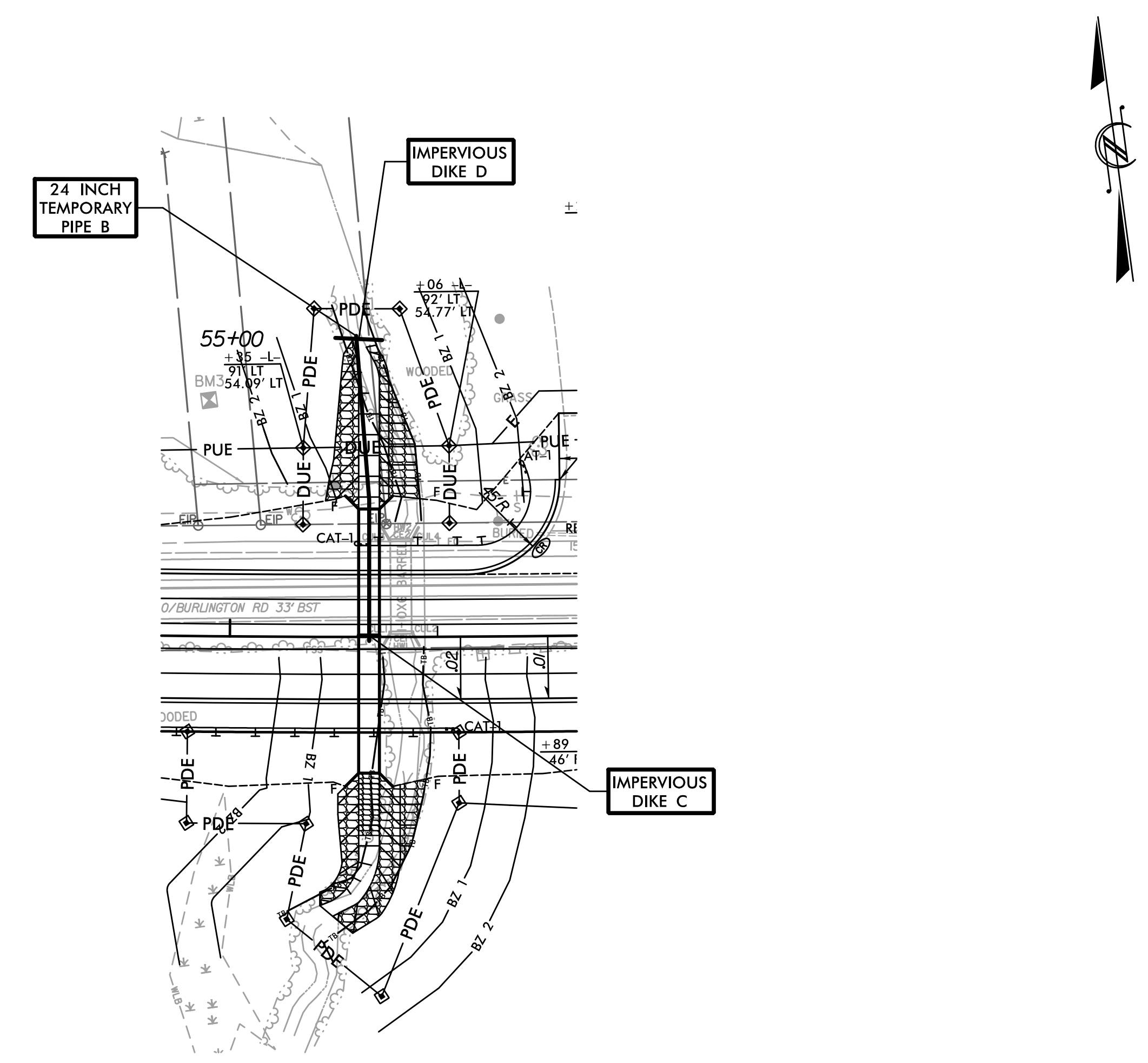
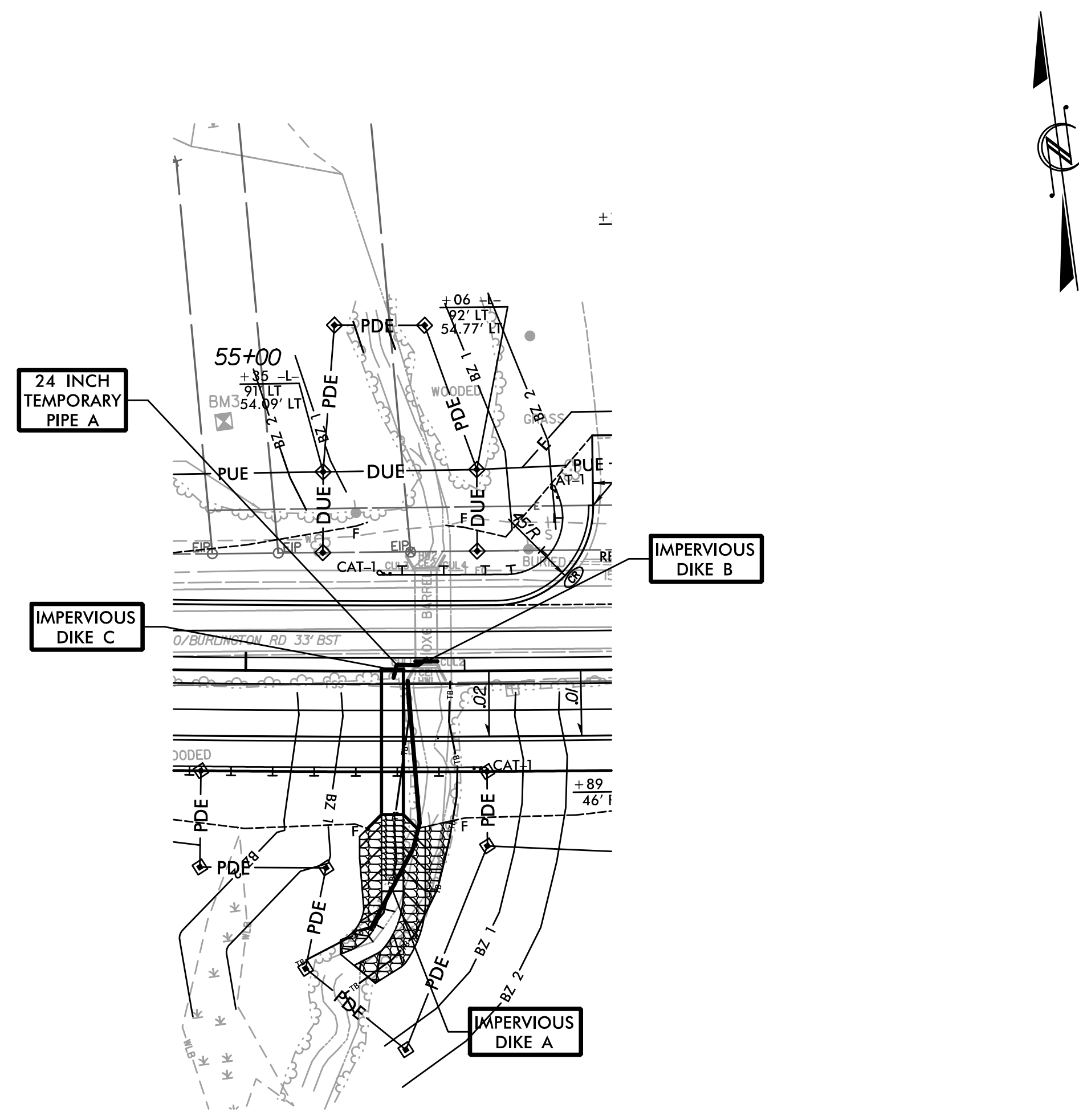
# CULVERT CONSTRUCTION SEQUENCE STA. 55+83 -L-

## PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NECESSARY TO DEWATER WORK AREAS.
2. MAINTAIN TRAFFIC OVER EXISTING RCBC.
3. INSTALL IMPERVIOUS DIKE A AND MAINTAIN FLOW THROUGH EXISTING RCBC.
4. CONSTRUCT APPROX. 65' OF DOWNSTREAM CULVERT. AND CONSTRUCT DOWNSTREAM CHANNEL AS MUCH AS POSSIBLE.
5. INSTALL IMPERVIOUS DIKE B AND C AND INSTALL 24" TEMPORARY PIPE A TO ROUTE WATER FROM OUTLET OF EXISTING RCBC INTO THE INSTALLED SECTION OF PROPOSED 10'x8' RCBC. REMOVE WINGWALL/HEADWALL OF EXISTING RCBC IF NECESSARY.
6. REMOVE IMPERVIOUS DIKE A AND FINISH CONSTRUCTION OF OUTLET CHANNEL.

## PHASE II

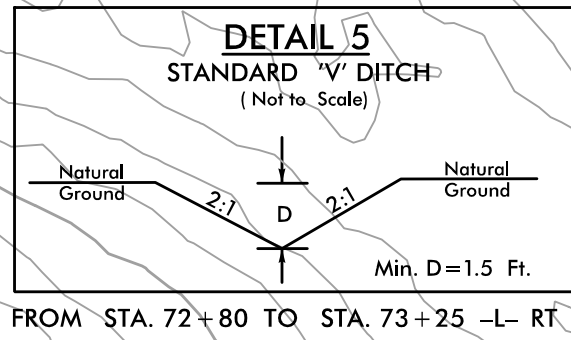
1. REMOVE PORTION OF EXISTING RCBC AND CONSTRUCT EAST BOUND ROADWAY OVER PROPOSED RCBC AND SHIFT TRAFFIC ONTO THE NEWLY CONSTRUCTED ROADWAY.
2. INSTALL IMPERVIOUS DIKE D AND INSTALL 24" TEMPORARY PIPE B.
3. REMOVE 24" TEMPORARY PIPE A AND IMPERVIOUS DIKE B.
4. CONSTRUCT REMAINING UPSTREAM CULVERT AND CHANNEL THAT WERE INSTALLED DURING PHASE I.
5. REMOVE IMPERVIOUS DIKE C AND D, 24" TEMPORARY PIPE B AND SPECIAL STILLING BASINS.
6. STABILIZE AND REMOVE ALL EROSION CONTROL DEVICES.





8/17/99

PROJECT REFERENCE NO. <b>U-2581BA</b>	SHEET NO. <b>EC-09/CONST.08</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



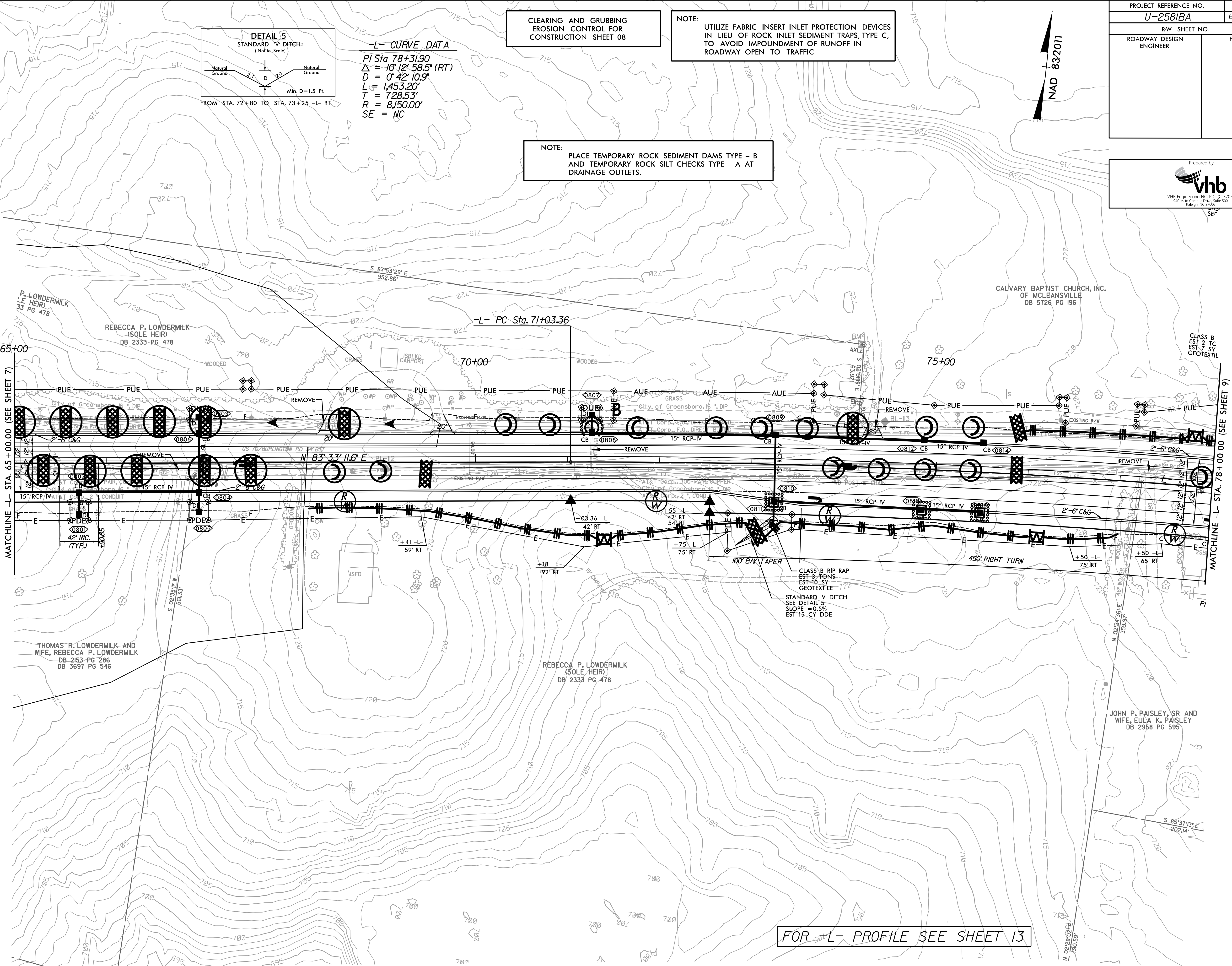
**-L- CURVE DATA**  
 PI Sta 78+31.90  
 $\Delta = 10^{\circ}12'58.5''$  (RT)  
 $D = 0^{\circ}42'10.9''$   
 $L = 1,453.20'$   
 $T = 728.53'$   
 $R = 8,150.00'$   
 SE = NC

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 08

NOTE:  
 UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
 IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
 TO AVOID IMPOUNDMENT OF RUNOFF IN  
 ROADWAY OPEN TO TRAFFIC

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

NAD 832011



FOR L- PROFILE SEE SHEET 13

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 abarban



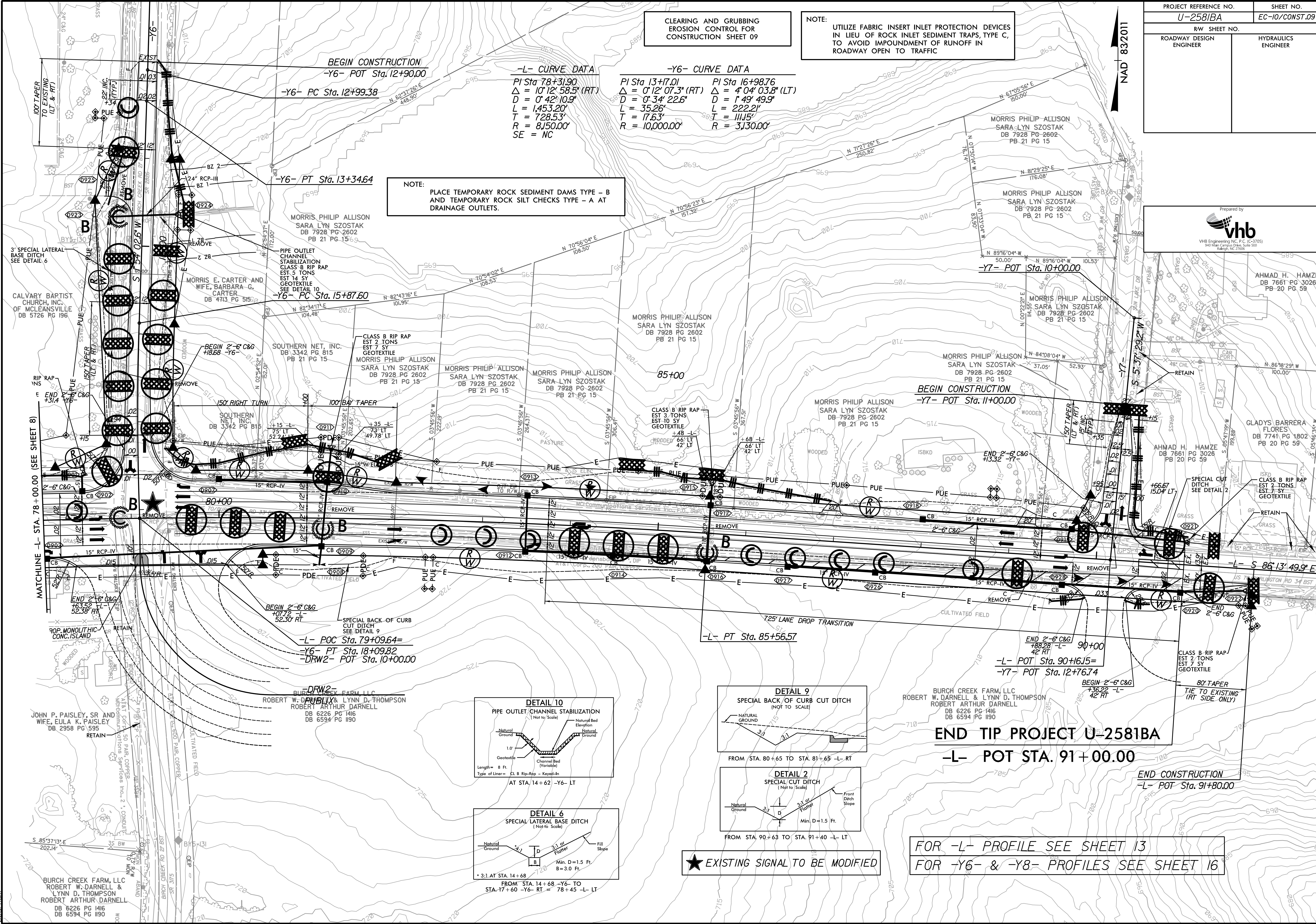
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	EC-10/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 09

NOTE:  
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
TO AVOID IMPOUNDMENT OF RUNOFF IN  
ROADWAY OPEN TO TRAFFIC

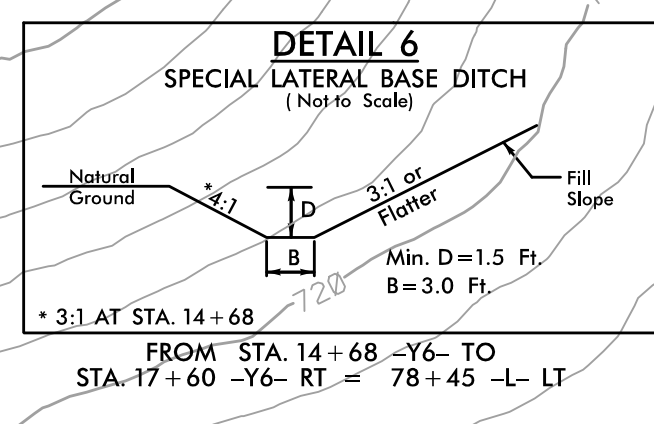
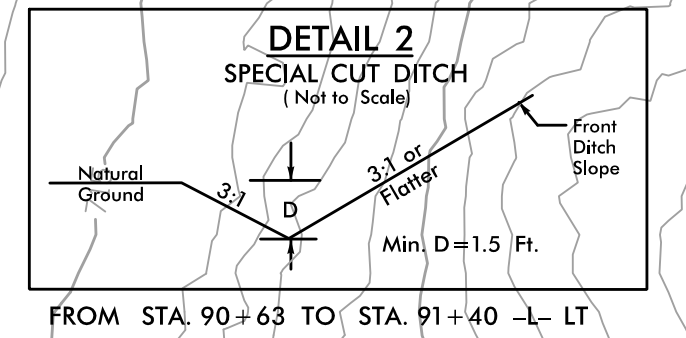
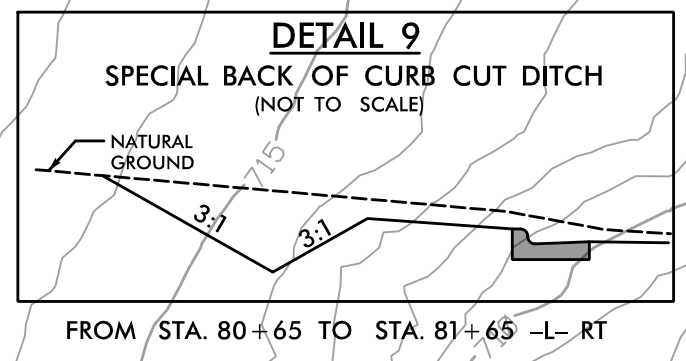
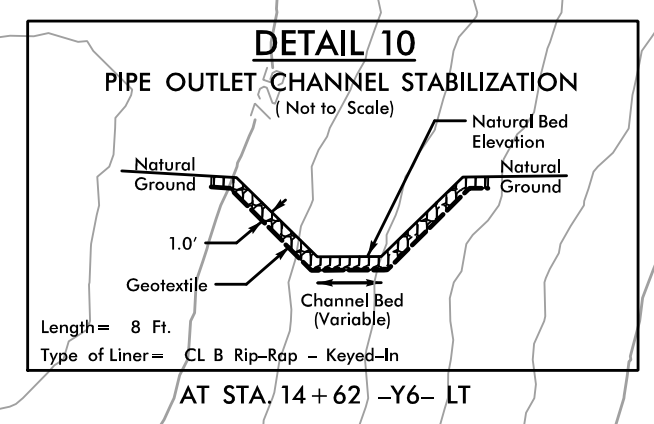
NAD 832011



**-L- CURVE DATA**  
PI Sta 78+31.90  
 $\Delta = 10' 12' 58.5''$  (RT)  
D = 0' 42' 10.9"  
L = 1,453.20'  
T = 728.53'  
R = 8,150.00'  
SE = NC

**-Y6- CURVE DATA**  
PI Sta 13+71.01  $\Delta = 0' 12' 07.3''$  (RT)  $\Delta = 4' 04' 03.8''$  (LT)  
D = 0' 34' 22.6" L = 35.26' T = 17.63' R = 10,000.00'  
PI Sta 16+98.76 L = 222.21' T = 111.15' R = 3,130.00'

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



★ EXISTING SIGNAL TO BE MODIFIED

**END TIP PROJECT U-2581BA**  
-L- POT STA. 91+00.00

END CONSTRUCTION  
-L- POT STA. 91+80.00

FOR -L- PROFILE SEE SHEET 13  
FOR -Y6- & -Y8- PROFILES SEE SHEET 16

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ROBERT W. DARNELL & LYNN D. THOMPSON  
ROBERT ARTHUR DARNELL  
DB 6226 PG 1416  
DB 6594 PG 1190

ROBERT W. DARNELL & LYNN D. THOMPSON  
ROBERT ARTHUR DARNELL  
DB 6226 PG 1416  
DB 6594 PG 1190

ROBERT W. DARNELL & LYNN D. THOMPSON  
ROBERT ARTHUR DARNELL  
DB 6226 PG 1416  
DB 6594 PG 1190

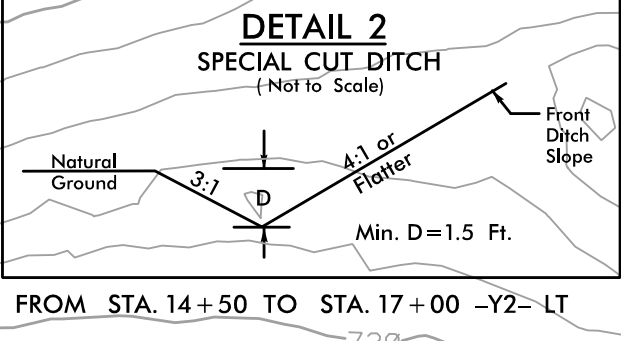
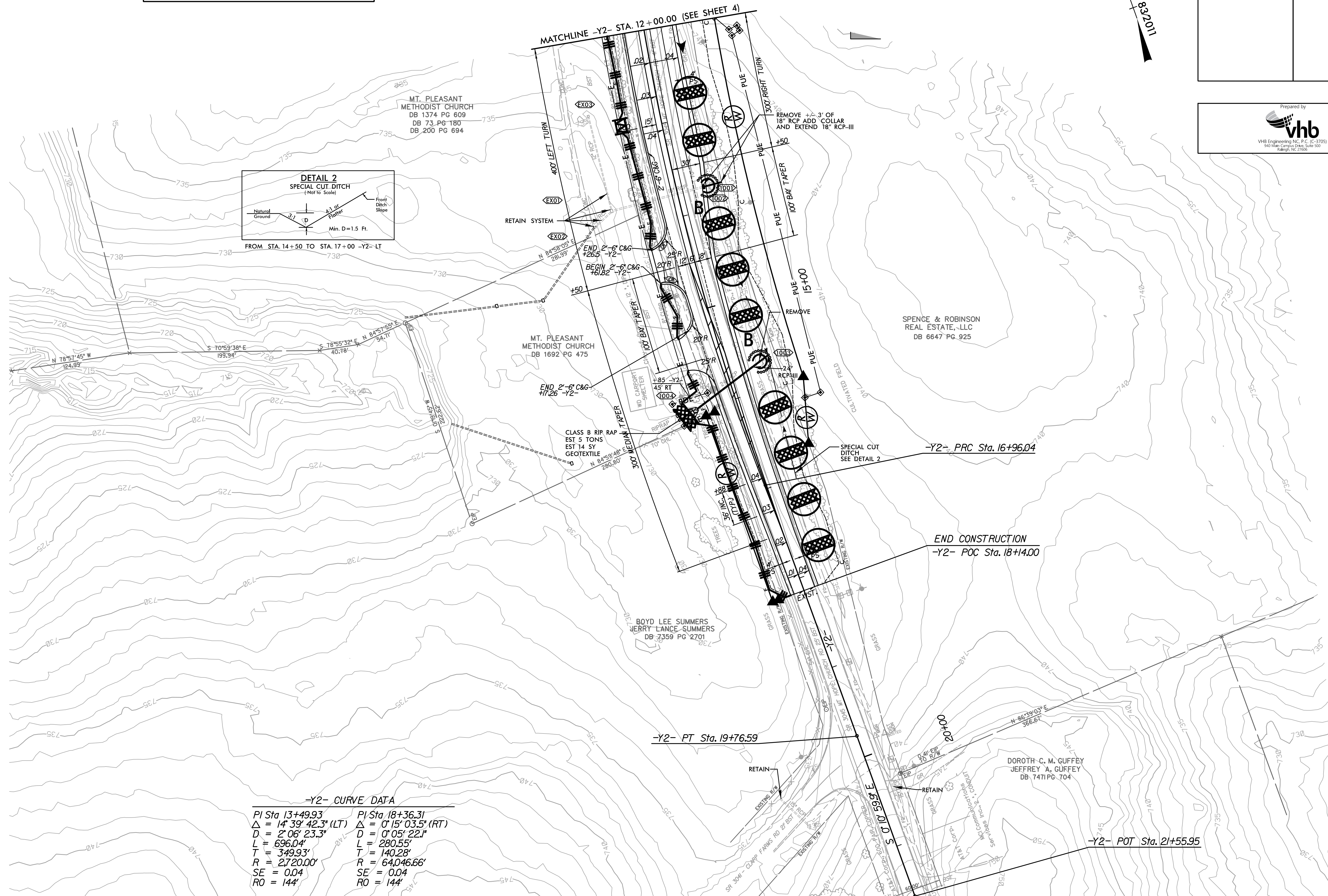
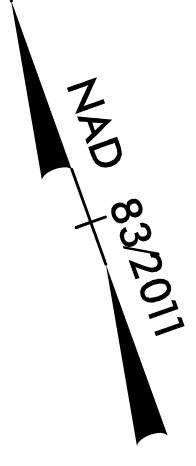


CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 10

NOTE:  
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
TO AVOID IMPOUNDMENT OF RUNOFF IN  
ROADWAY OPEN TO TRAFFIC

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

PROJECT REFERENCE NO. <b>U-2581BA</b>	SHEET NO. <b>EC-II/CONST.10</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**-Y2- CURVE DATA**

PI Sta 13+49.93	PI Sta 18+36.31
$\Delta = 14^{\circ} 39' 42.3"$ (LT)	$\Delta = 0^{\circ} 15' 03.5"$ (RT)
D = 2' 06" 23.3"	D = 0' 05" 22"
L = 696.04'	L = 280.55'
T = 349.93'	T = 140.28'
R = 2720.00'	R = 64,046.66'
SE = 0.04	SE = 0.04
RO = 144'	RO = 144'

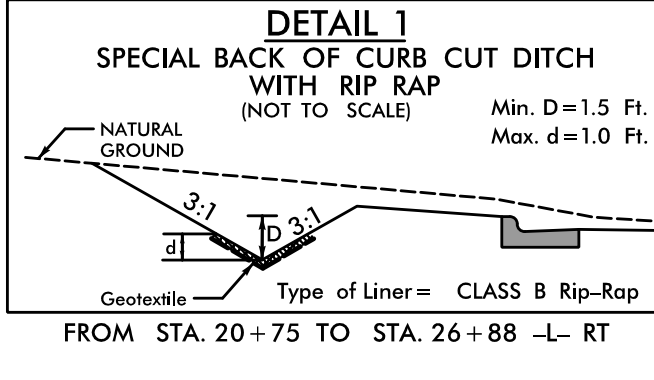
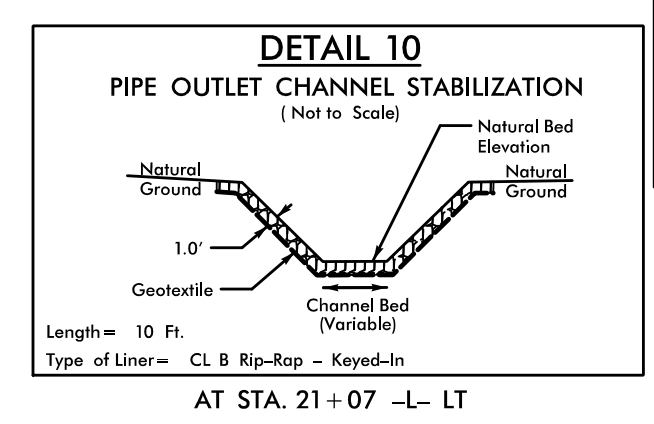
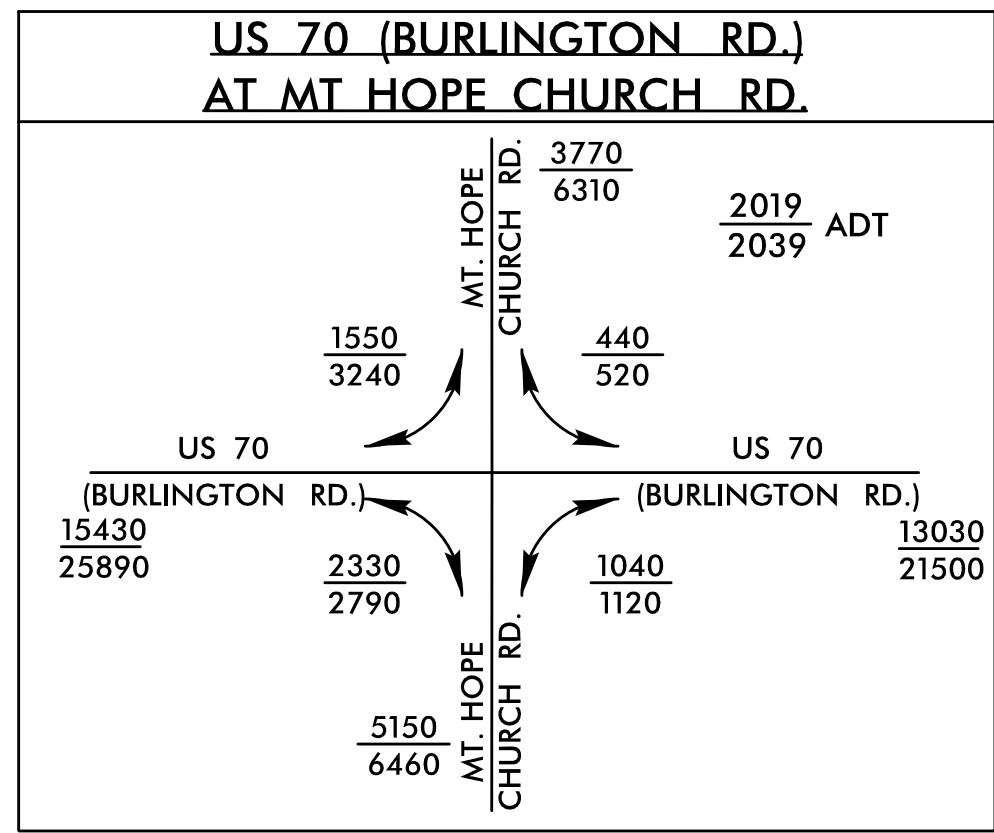
FOR -Y2- PROFILE SEE SHEET 14



8/17/99

**-L- CURVE DATA**  
 PI Sta 17+66.41  
 $\Delta = 12^{\circ}58'11"$  (LT)  
 $D = 1^{\circ}13'08.6"$   
 $L = 1,063.91'$   
 $T = 534.24'$   
 $R = 4,700.00'$   
 $SE = 0.025$   
 $RO = 105^{\circ}$   
 $INC = 42^{\circ}$

**-Y2- CURVE DATA**  
 PI Sta 13+49.93  
 $\Delta = 14^{\circ}39'42.3"$  (LT)  
 $D = 2^{\circ}06'23.3"$   
 $L = 696.04'$   
 $T = 349.93'$   
 $R = 2,720.00'$   
 $SE = 0.04$   
 $RO = 144^{\circ}$

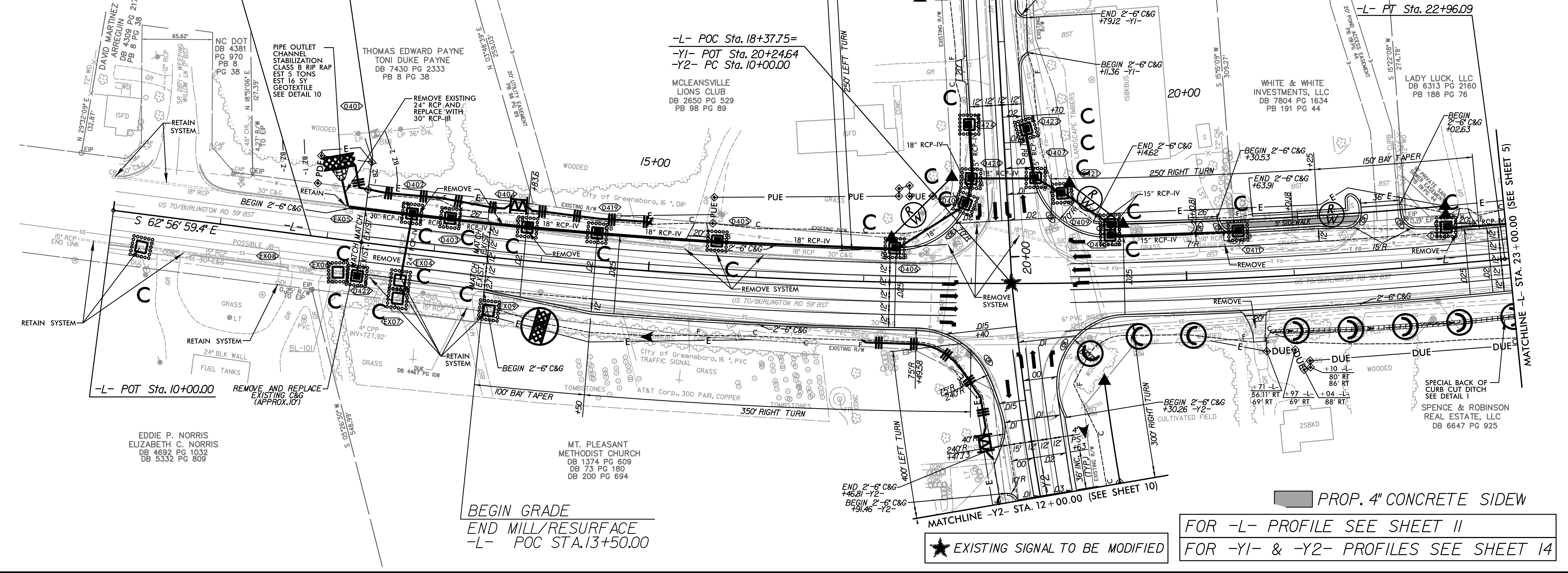


**NOTE:**  
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC

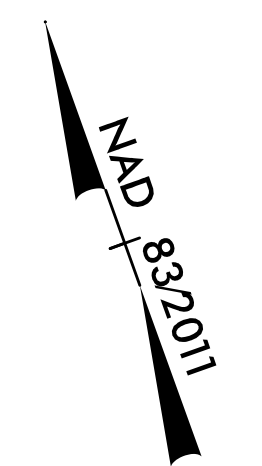
**BEGIN CONSTRUCTION**  
-Y1- POT Sta. 13+45.00

**BEGIN TIP PROJECT U-2581BA**  
-L- PC STA. 12+32.17  
BEGIN MILL/RESURFACE  
BEGIN WIDENING (LT SIDE ONLY)

**BEGIN CONSTRUCTION**  
-L- POT Sta. 11+85.00



PROJECT REFERENCE NO. <b>U-2581BA</b>	SHEET NO. <b>EC-12/CONST.04</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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sharban

PROP. 4" CONCRETE SIDEWALK  
 FOR -L- PROFILE SEE SHEET 11  
 FOR -Y1- & -Y2- PROFILES SEE SHEET 14

★ EXISTING SIGNAL TO BE MODIFIED

**BEGIN GRADE**  
END MILL/RESURFACE  
-L- POC STA. 13+50.00

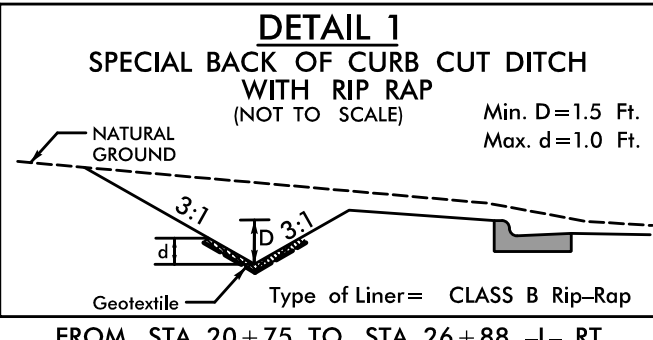
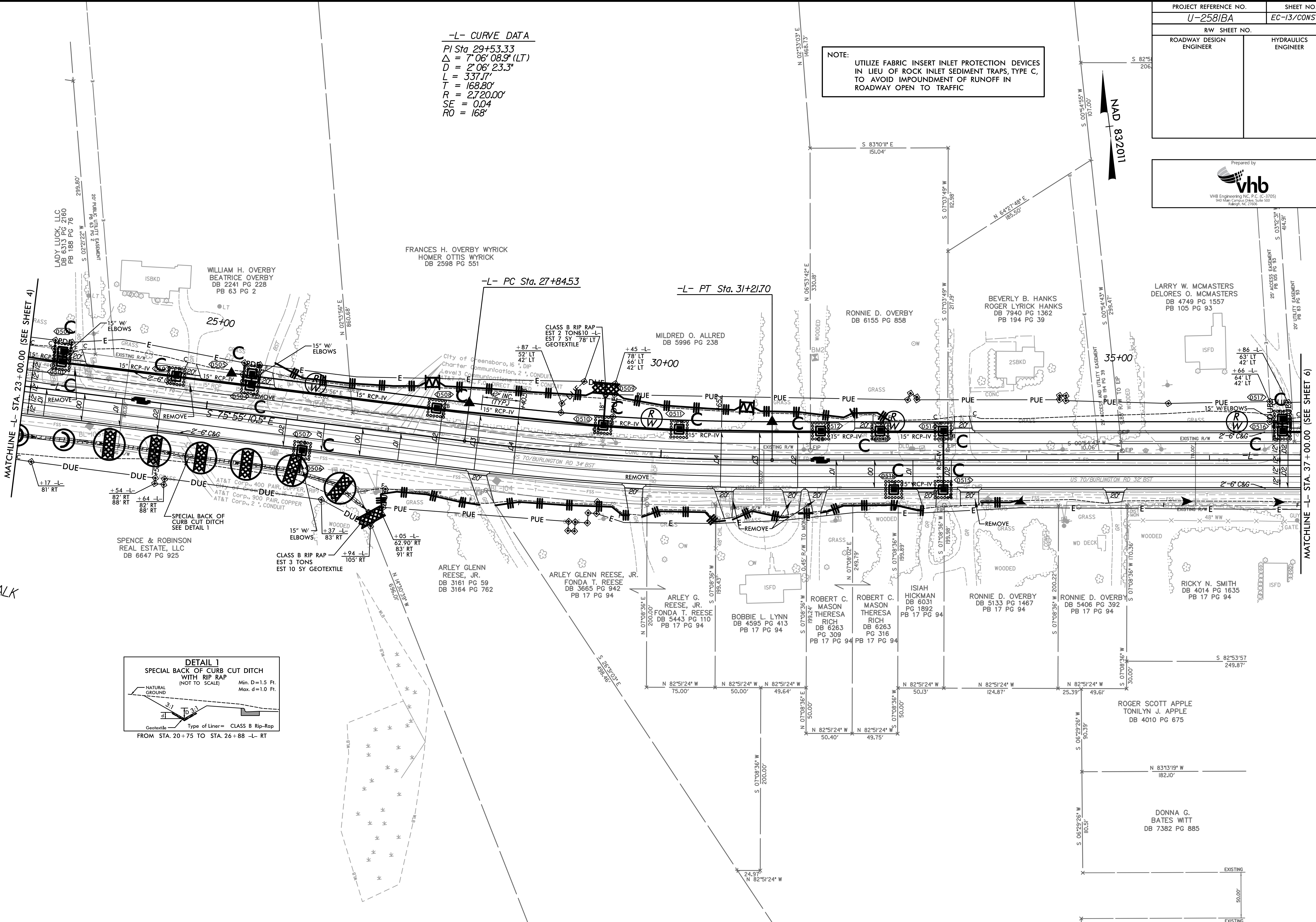


PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	EC-13/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**-L- CURVE DATA**  
 PI Sta 29+53.33  
 $\Delta = 7^{\circ}06'08.9''$  (LT)  
 $D = 2^{\circ}06'23.3''$   
 $L = 337.17'$   
 $T = 168.80'$   
 $R = 2720.00'$   
 $SE = 0.04$   
 $RO = 168'$

NOTE:  
 UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
 IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
 TO AVOID IMPOUNDMENT OF RUNOFF IN  
 ROADWAY OPEN TO TRAFFIC



FOR -L- PROFILE SEE SHEET II

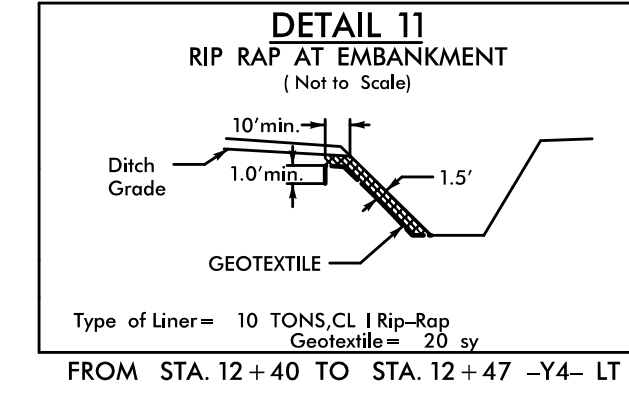
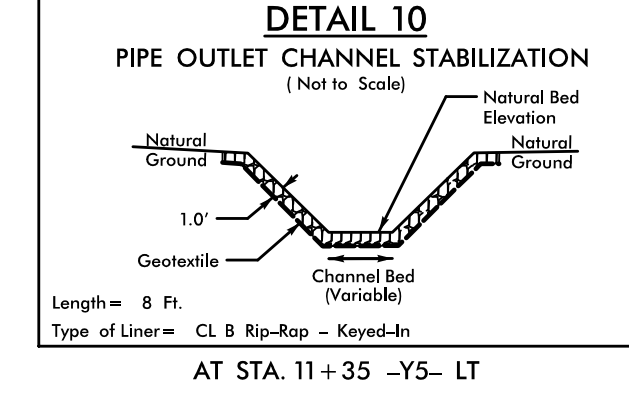
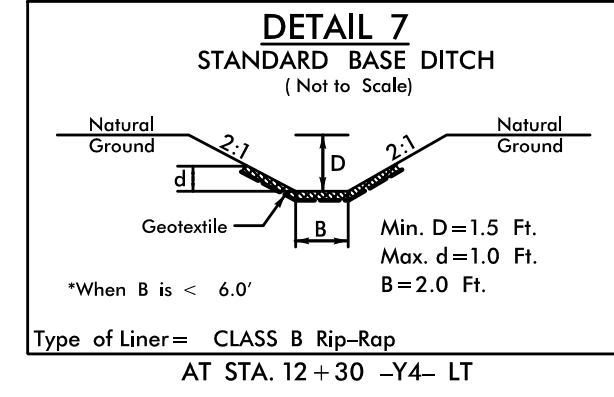
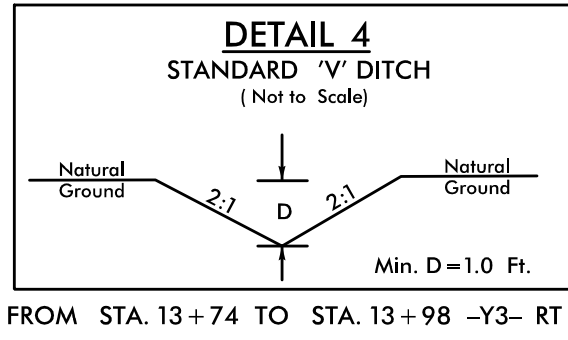
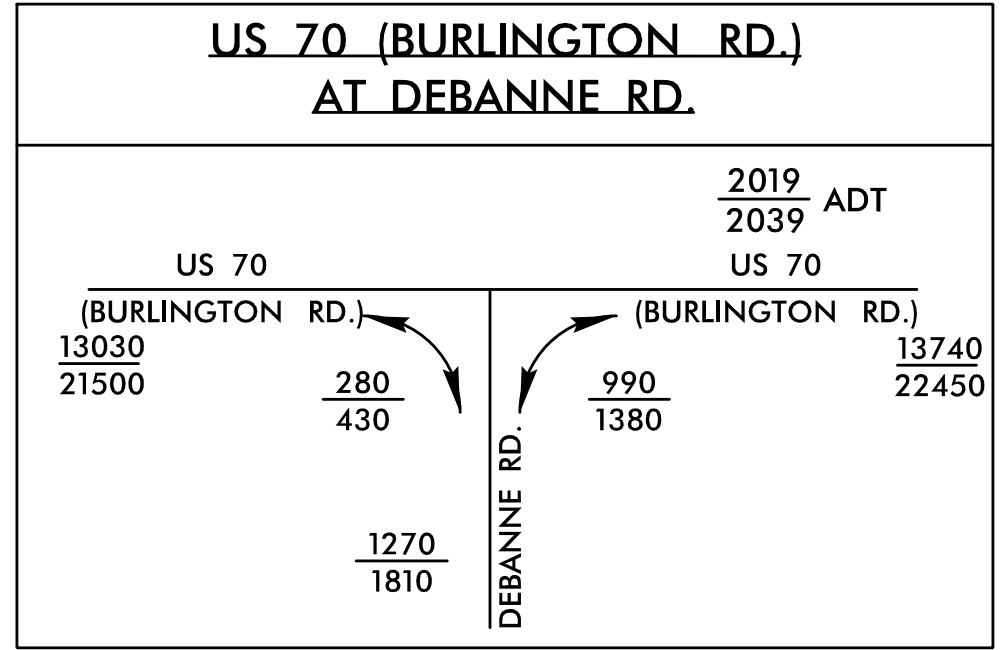


8/17/99

NOTE: UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC

**-L- CURVE DATA**

PI Sta 47+75.70	PI Sta 53+54.53
$\Delta = 5'17".148"$ (RT)	$\Delta = 6'19".475"$ (LT)
D = 2'06".233'	D = 0'41".554'
L = 251.01'	L = 905.91'
T = 125.59'	T = 453.42'
R = 2,720.00'	R = 8,200.00'
SE = 0.04	SE = NC
RO = 168'	

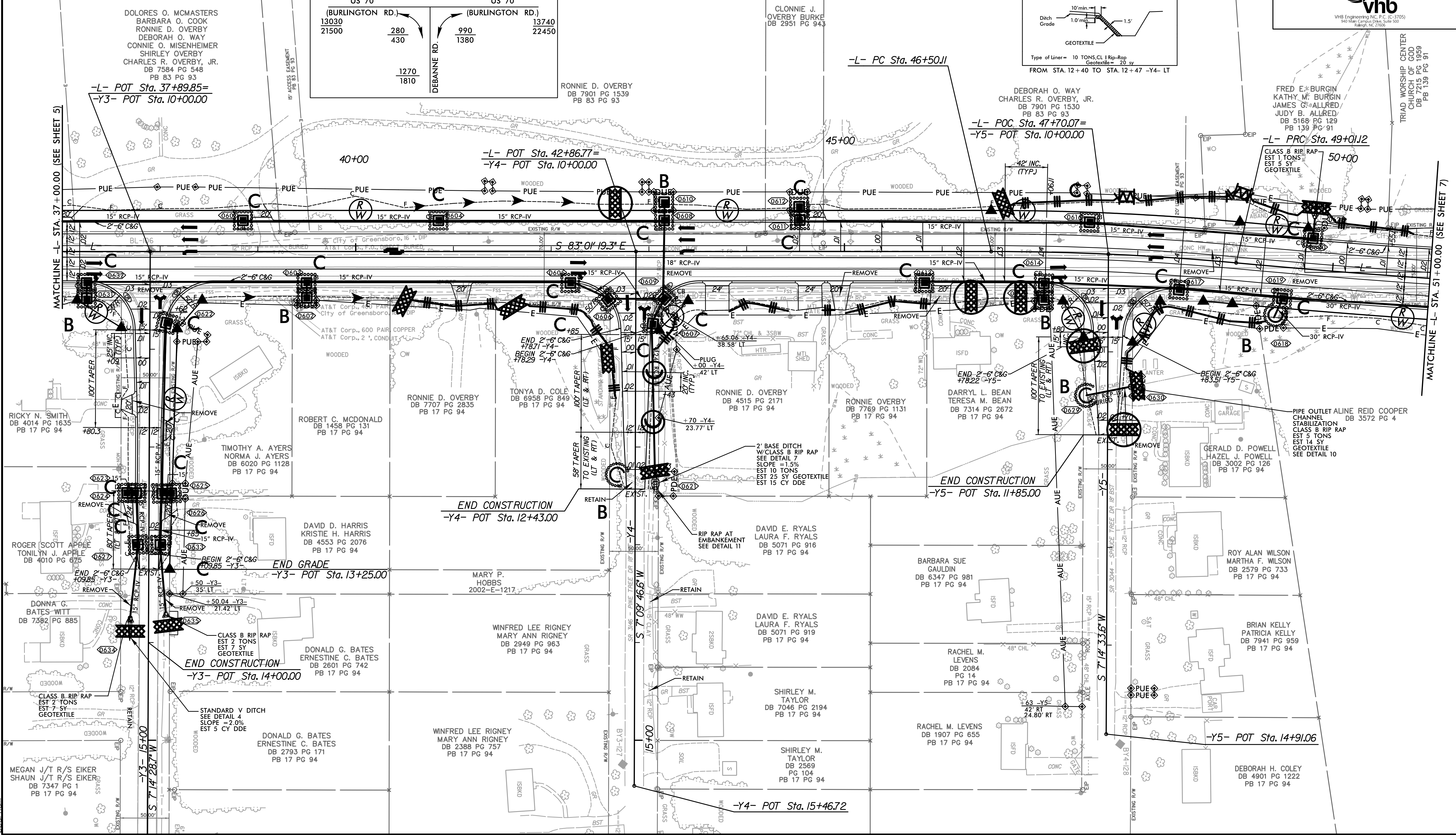


FOR -L- PROFILE SEE SHEET 12  
FOR -Y3-, -Y4- & -Y5- PROFILES SEE SHEET 15

PROJECT REFERENCE NO.		U-2581BA	EC-14/CONST.06
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		



Prepared by  
**vhb**  
VHB Engineering, Inc., P.C. (C-3705)  
960 West Campus Drive, Suite 500  
Raleigh, NC 27606



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abarban

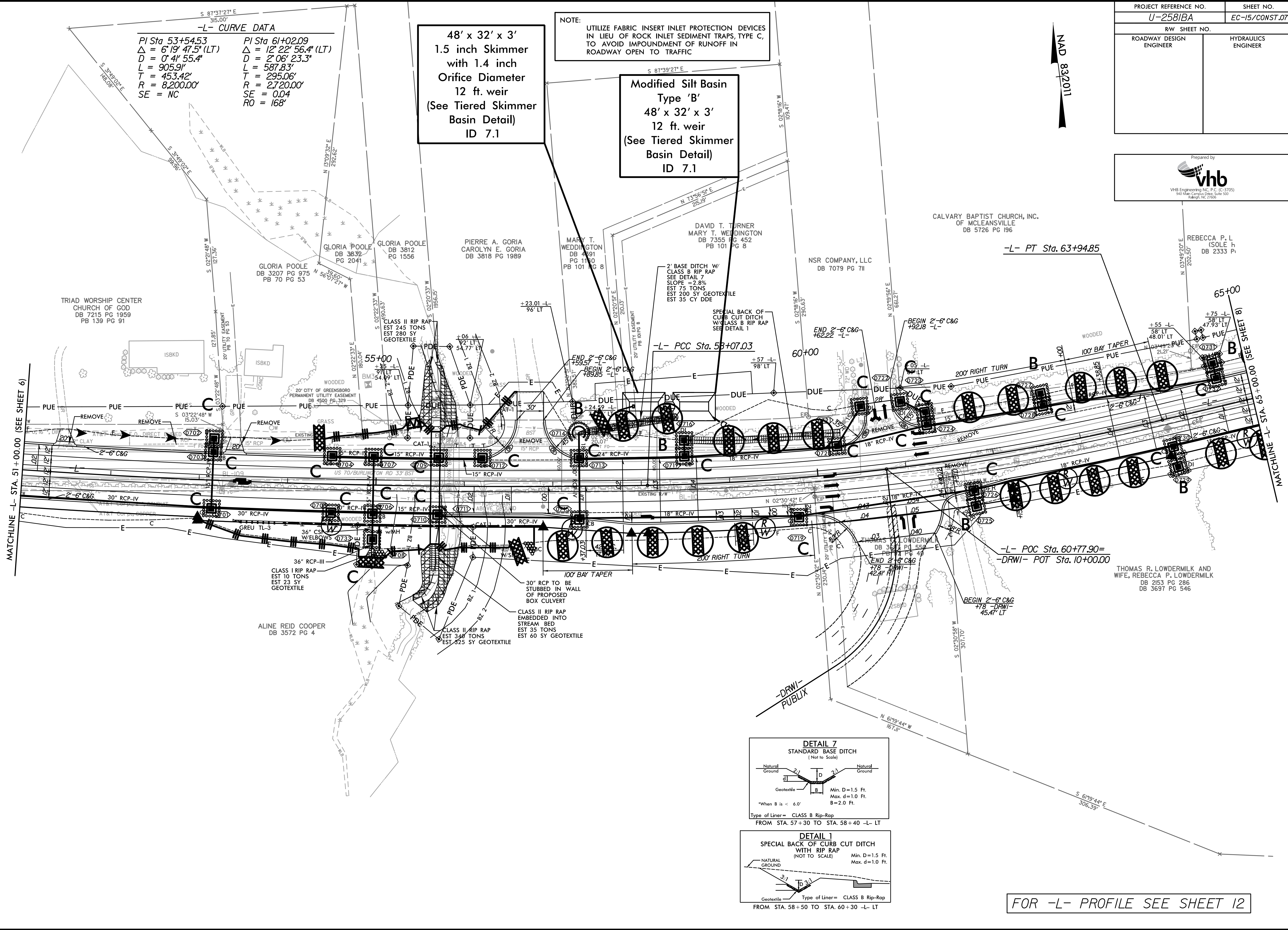


8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	EC-15/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NAD 83/2011



**-L- CURVE DATA**

PI Sta 53+54.53	PI Sta 61+02.09
$\Delta = 6' 19' 47.5''$ (LT)	$\Delta = 12' 22' 56.4''$ (LT)
$D = 0' 4' 55.4''$	$D = 2' 06' 23.3''$
$L = 905.9'$	$L = 587.83'$
$T = 453.42'$	$T = 295.06'$
$R = 8,200.00'$	$R = 2,720.00'$
SE = NC	SE = 0.04
	RO = 168'

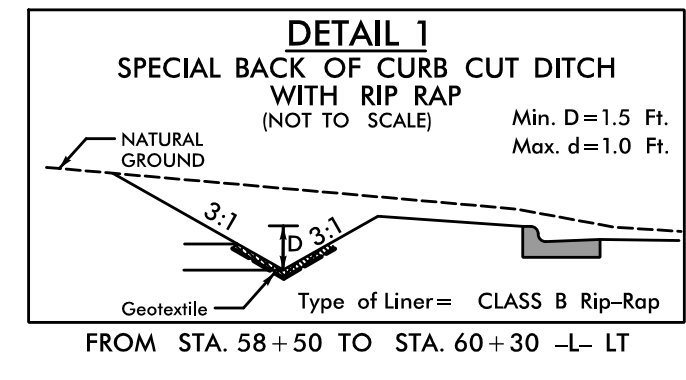
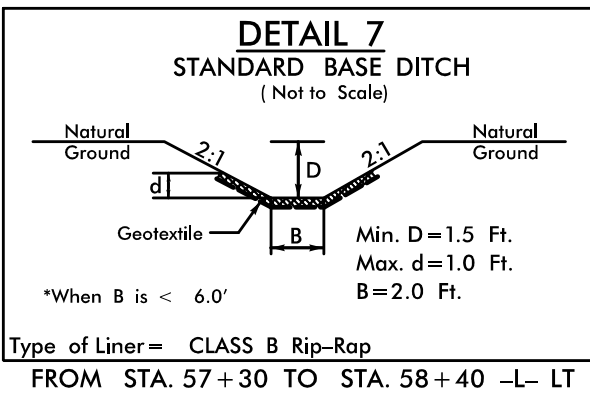
**48' x 32' x 3'**  
1.5 inch Skimmer  
with 1.4 inch  
Orifice Diameter  
12 ft. weir  
(See Tiered Skimmer  
Basin Detail)  
ID 7.1

**Modified Silt Basin**  
Type 'B'  
48' x 32' x 3'  
12 ft. weir  
(See Tiered Skimmer  
Basin Detail)  
ID 7.1

NOTE:  
UTILIZE FABRIC INSERT INLET PROTECTION DEVICES  
IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C,  
TO AVOID IMPOUNDMENT OF RUNOFF IN  
ROADWAY OPEN TO TRAFFIC

MATCHLINE -L- STA. 51+00.00 (SEE SHEET 6)

MATCHLINE -L- STA. 65+00.00 (SEE SHEET 8)



FOR -L- PROFILE SEE SHEET 12

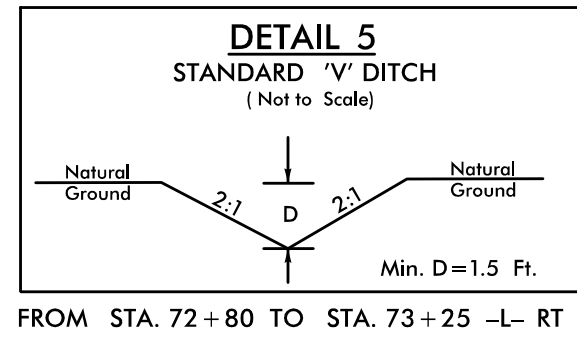
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abarham



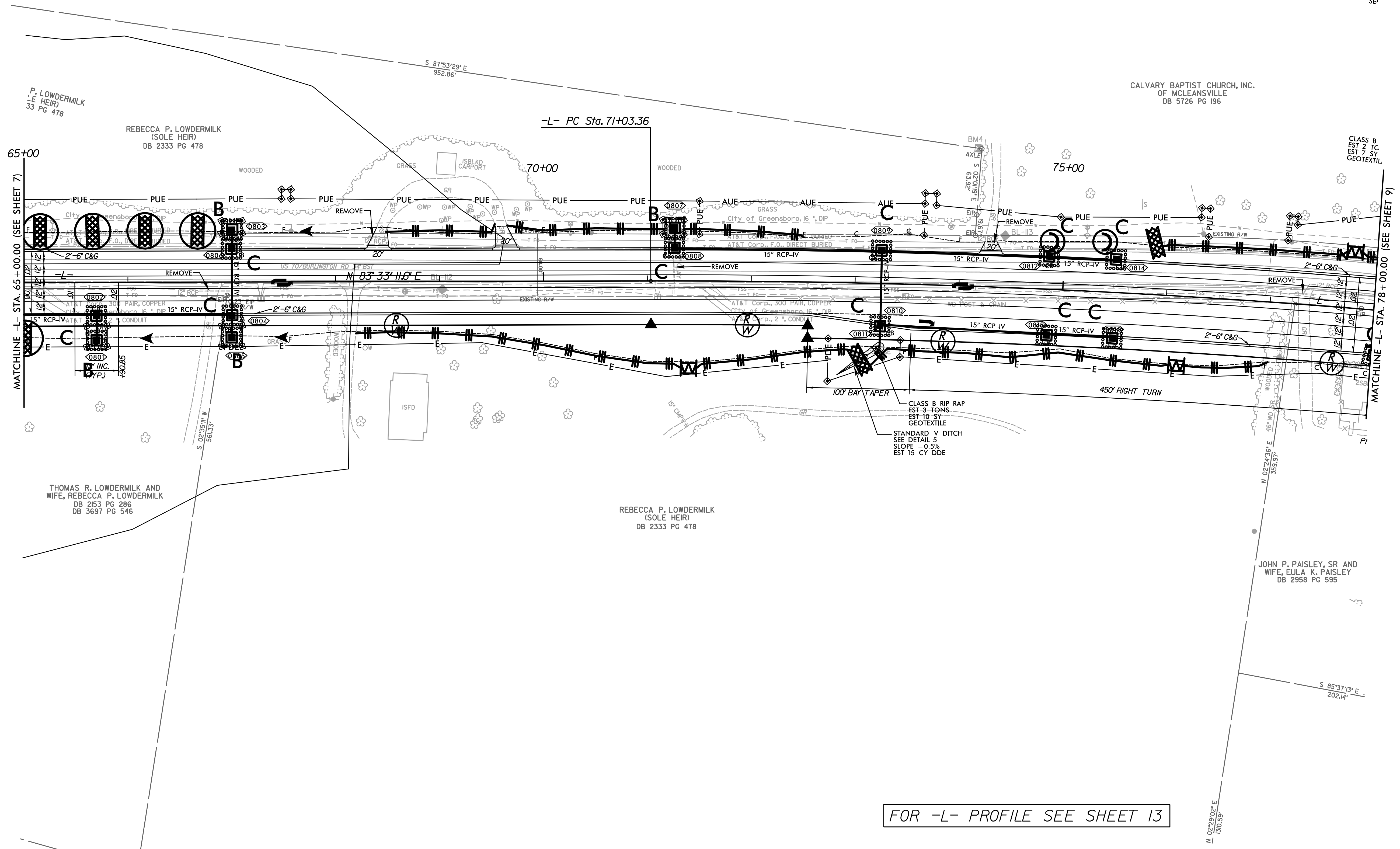
PROJECT REFERENCE NO.	SHEET NO.
U-2581BA	EC-16/CONST.08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTE: UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC



**-L- CURVE DATA**  
 PI Sta 78+31.90  
 $\Delta = 10^{\circ}12'58.5"$  (RT)  
 $D = 0^{\circ}42'10.9"$   
 $L = 1,453.20'$   
 $T = 728.53'$   
 $R = 8,150.00'$   
 SE = NC



FOR -L- PROFILE SEE SHEET 13

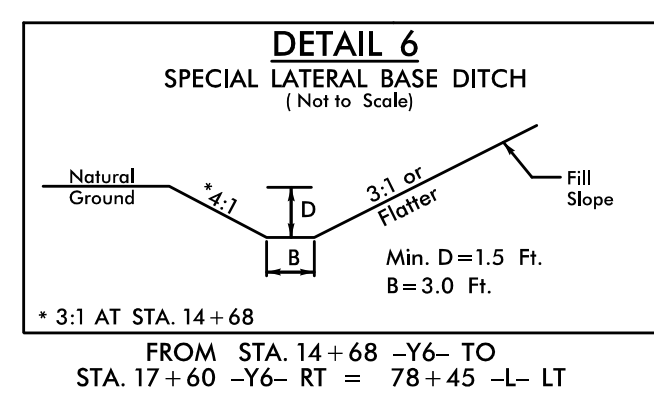
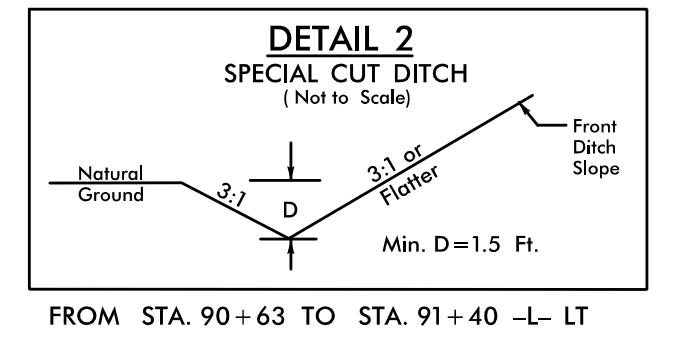
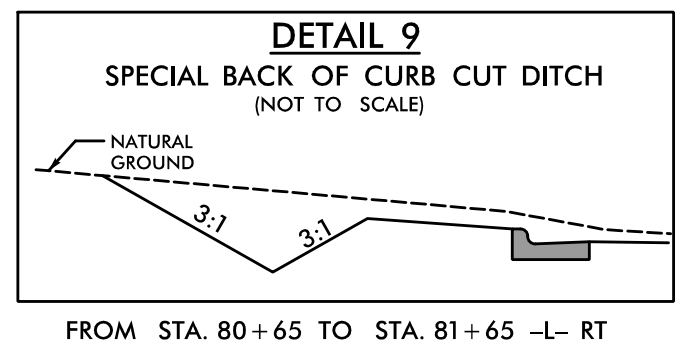
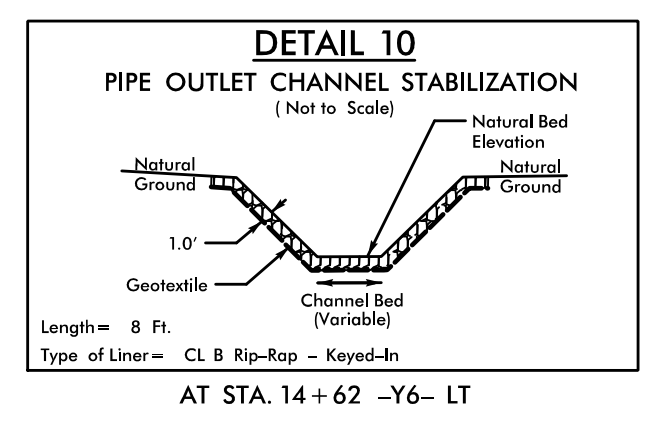
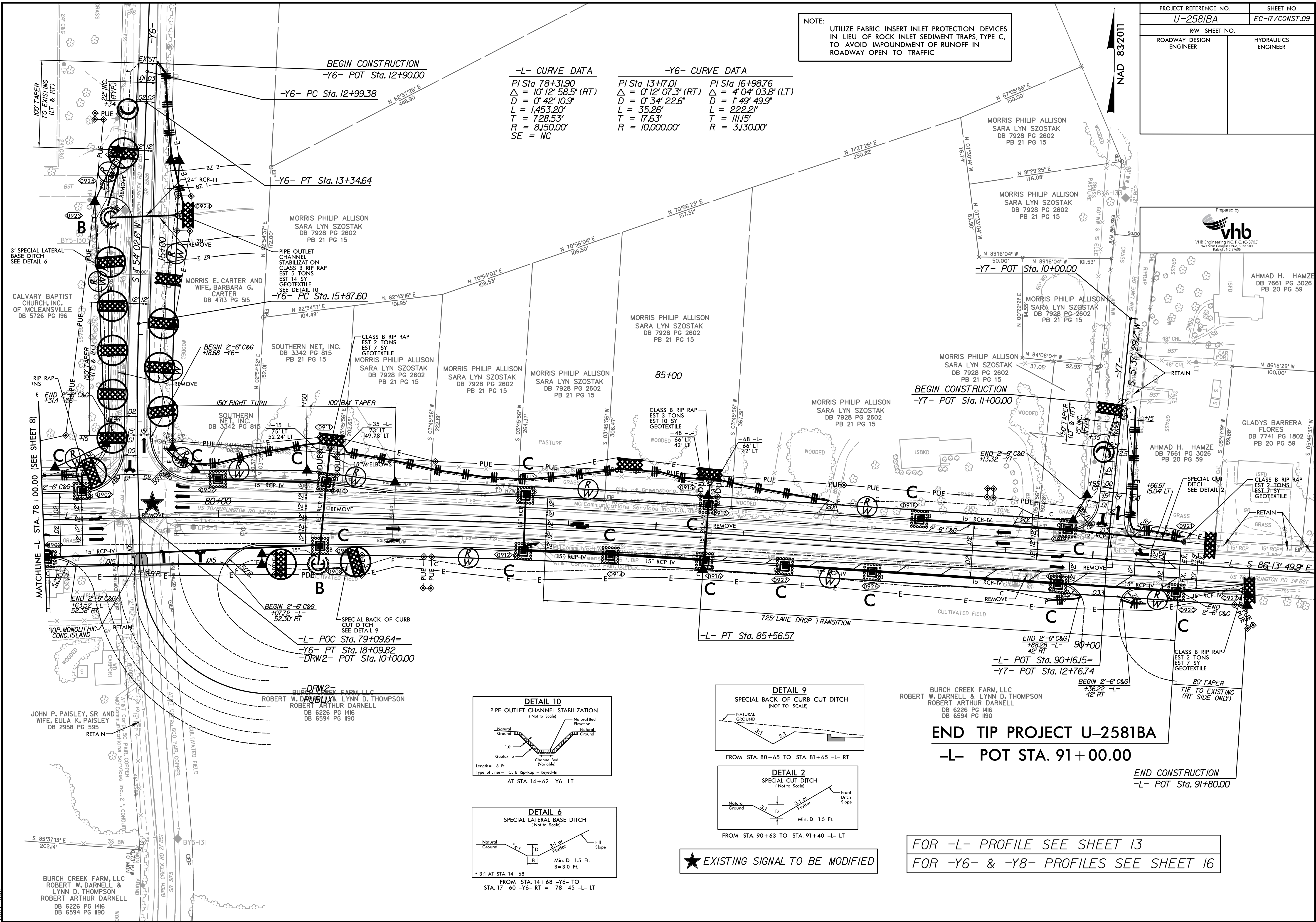


8/17/99

PROJECT REFERENCE NO. <b>U-2581BA</b>	SHEET NO. <b>EC-17/CONST.09</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC

-L- CURVE DATA		-Y6- CURVE DATA	
PI Sta 78+31.90	$\Delta = 10^{\circ}12'58.5"$ (RT)	PI Sta 13+17.01	$\Delta = 0^{\circ}12'07.3"$ (RT)
$D = 0^{\circ}42'10.9"$	$L = 1,453.20'$	$\Delta = 4^{\circ}04'03.8"$ (LT)	$D = 1^{\circ}49'49.9"$
$T = 728.53'$	$R = 8,150.00'$	$L = 35.26'$	$L = 222.21'$
$SE = NC$		$T = 17.63'$	$T = 111.5'$
		$R = 10,000.00'$	$R = 3,130.00'$



★ EXISTING SIGNAL TO BE MODIFIED

**END TIP PROJECT U-2581BA**  
-L- POT STA. 91+00.00

END CONSTRUCTION  
-L- POT STA. 91+80.00

FOR -L- PROFILE SEE SHEET 13  
FOR -Y6- & -Y8- PROFILES SEE SHEET 16

9:55:04 AM R:\Environmental\Design\PSHU2581BA\_REU\_psh9\_FINAL.dgn

BURCH CREEK FARM, LLC  
ROBERT W. DARNELL & LYNN D. THOMPSON  
ROBERT ARTHUR DARNELL  
DB 6226 PG 1416  
DB 6594 PG 1190

BURCH CREEK FARM, LLC  
ROBERT W. DARNELL & LYNN D. THOMPSON  
ROBERT ARTHUR DARNELL  
DB 6226 PG 1416  
DB 6594 PG 1190

BURCH CREEK FARM, LLC  
ROBERT W. DARNELL & LYNN D. THOMPSON  
ROBERT ARTHUR DARNELL  
DB 6226 PG 1416  
DB 6594 PG 1190



Prepared by  
VHB Engineering Inc. (C-3105)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

AHMAD H. HAMZE  
DB 7661 PG 3026  
PB 20 PG 59

GLADYS BARRERA FLORES  
DB 7741 PG 1802  
PB 20 PG 59

ISFD CLASS B RIP RAP  
EST 2 TONS  
EST 7 SY  
GEOTEXTILE

RETAIN

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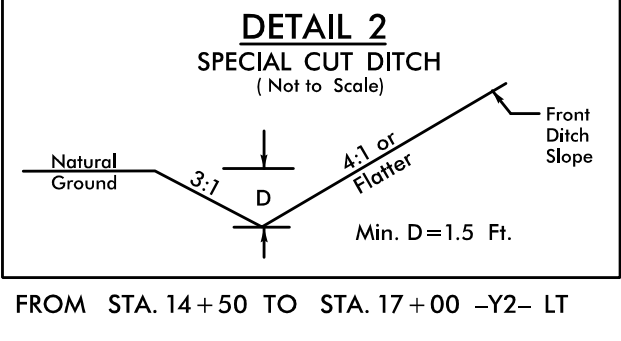
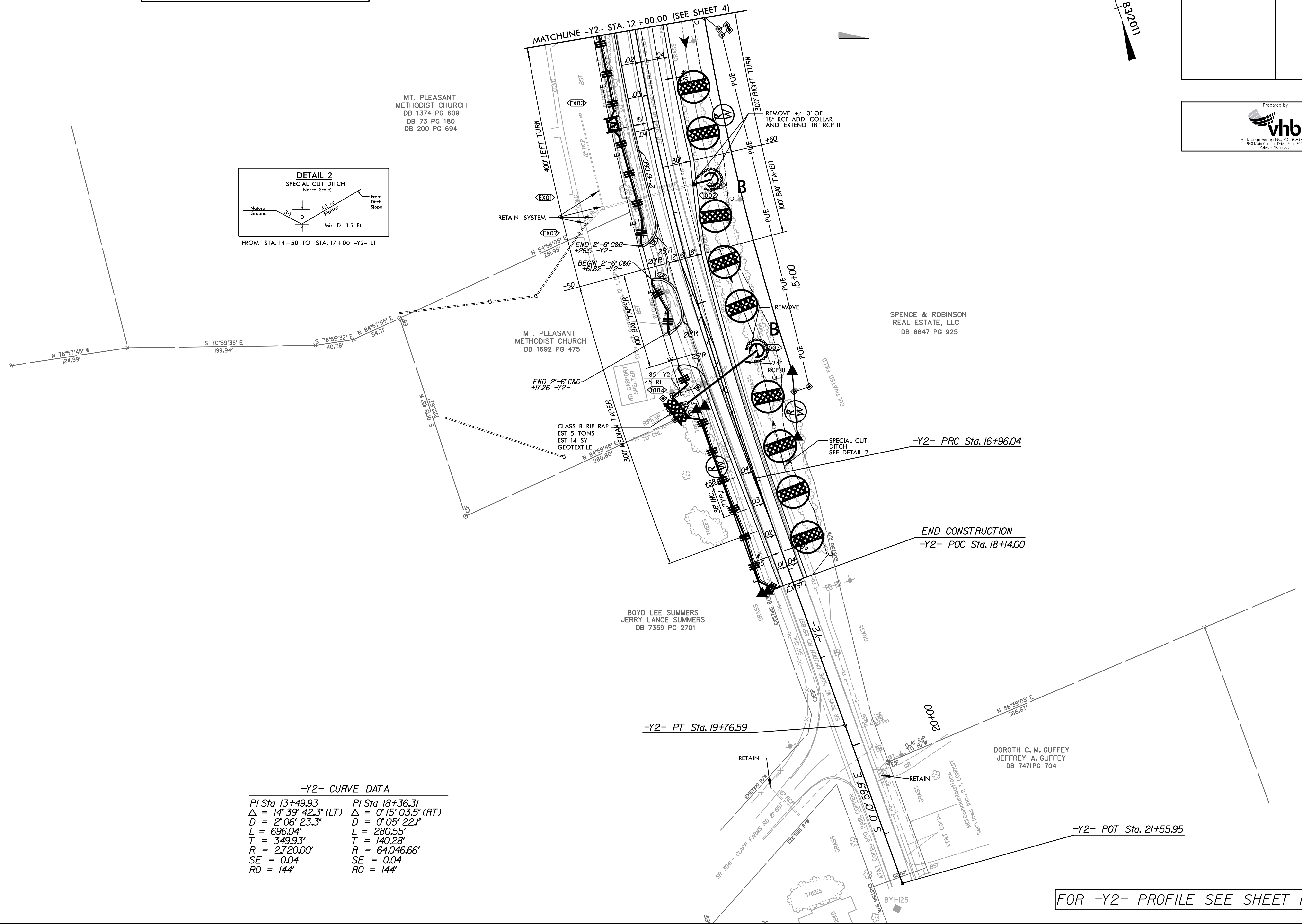
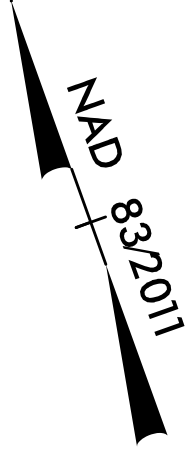
RETAIN

RETAIN



NOTE: UTILIZE FABRIC INSERT INLET PROTECTION DEVICES IN LIEU OF ROCK INLET SEDIMENT TRAPS, TYPE C, TO AVOID IMPOUNDMENT OF RUNOFF IN ROADWAY OPEN TO TRAFFIC

PROJECT REFERENCE NO.		SHEET NO.	
U-2581BA		EC-18/CONST.10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



FROM STA. 14+50 TO STA. 17+00 -Y2- LT

-Y2- CURVE DATA

PI Sta 13+49.93	PI Sta 18+36.31
$\Delta = 14^{\circ} 39' 42.3''$ (LT)	$\Delta = 0^{\circ} 15' 03.5''$ (RT)
D = 2' 06" 23.3"	D = 0' 05" 22.1"
L = 696.04'	L = 280.55'
T = 349.93'	T = 140.28'
R = 2,720.00'	R = 64,046.66'
SE = 0.04	SE = 0.04
RO = 144'	RO = 144'

FOR -Y2- PROFILE SEE SHEET 14