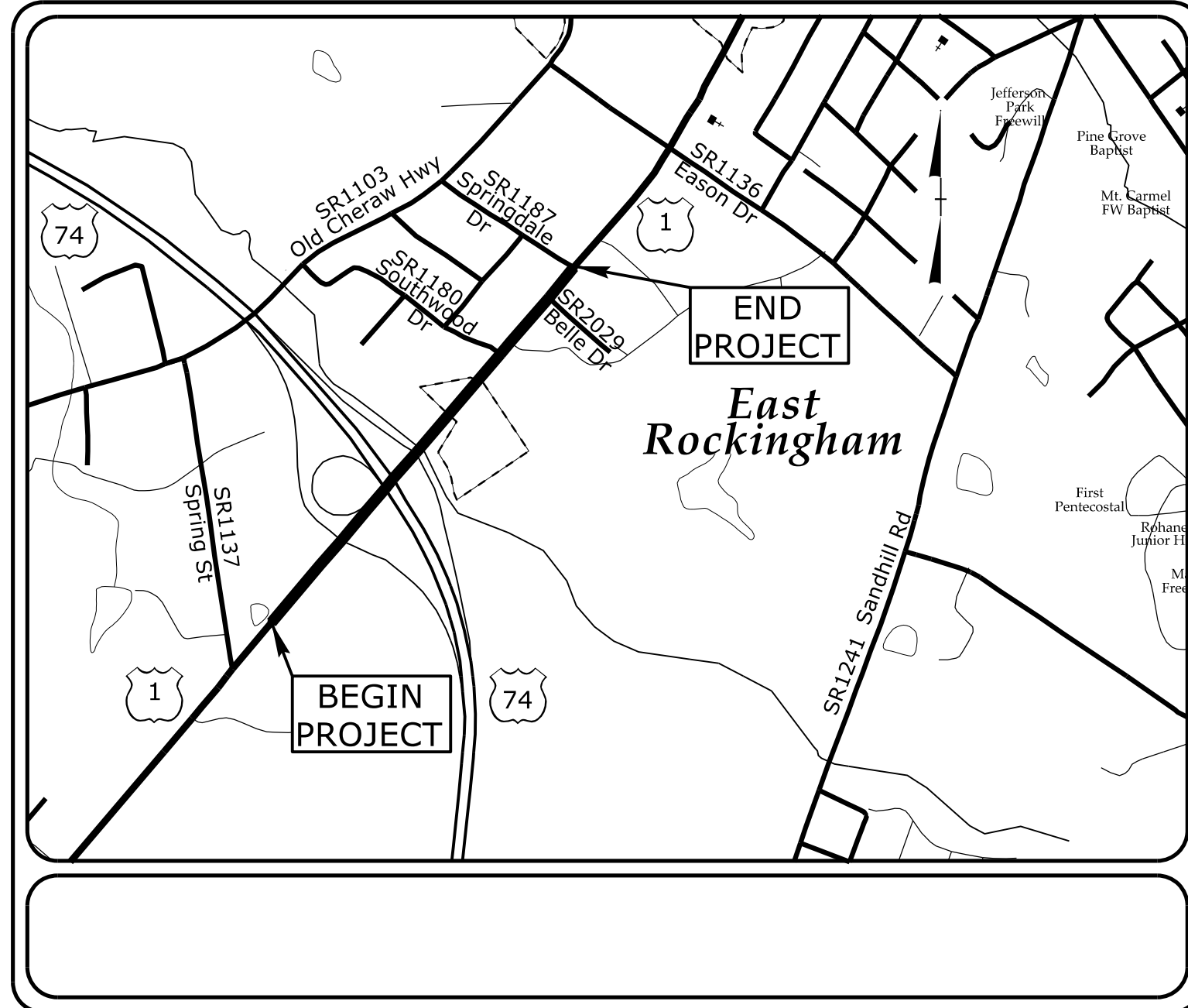


TIP PROJECT: I-5979

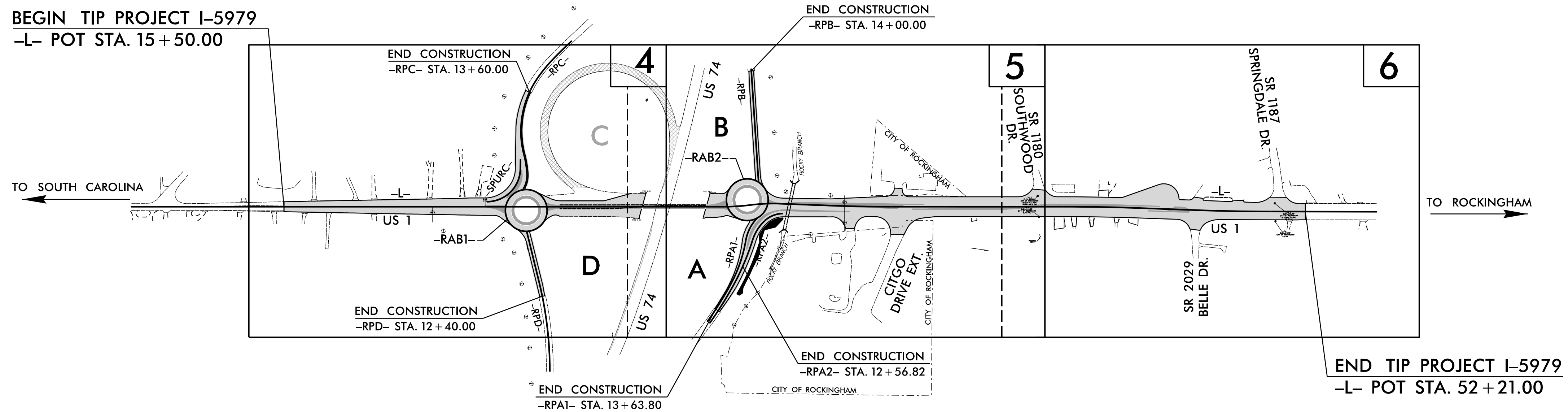
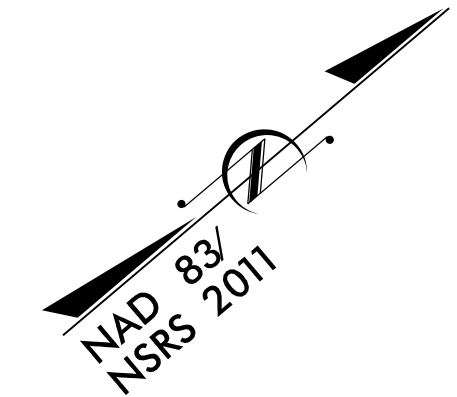


STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 PLAN FOR PROPOSED
 HIGHWAY EROSION CONTROL
RICHMOND COUNTY

LOCATION: US 74 (FUTURE I-74) / US 1 (EXIT 311).
 INTERCHANGE IMPROVEMENTS AT US 1
 FROM JUST WEST OF THE EASTBOUND US 74 RAMP
 TO SR 1187 (SPRINGDALE DR.)

TYPE OF WORK: GRADING, PAVING, AND DRAINAGE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5979	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



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

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:

COURTNEY A. CARPENTER, PE 3811
 NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C.
 Department of Transportation - Raleigh, N. C., dated January 2024
 and the latest revision thereto are applicable to this project and by
 reference hereby are considered a part of these plans.

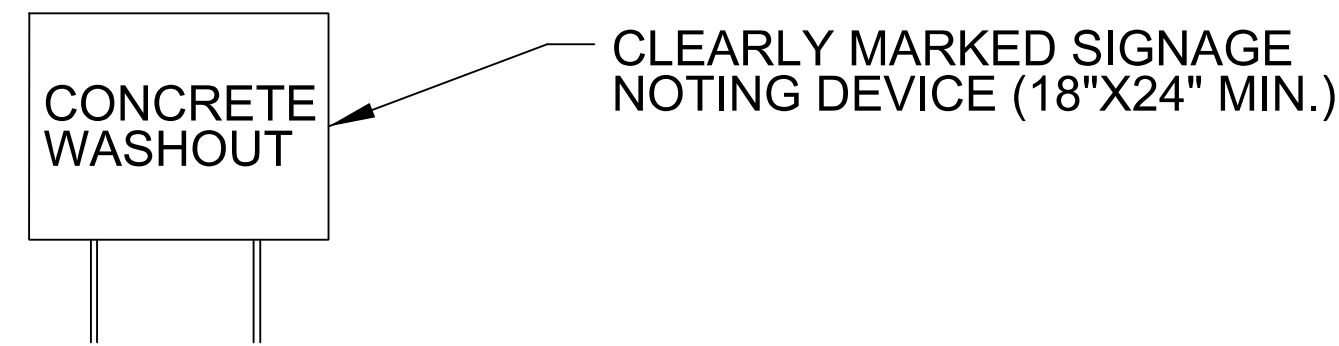
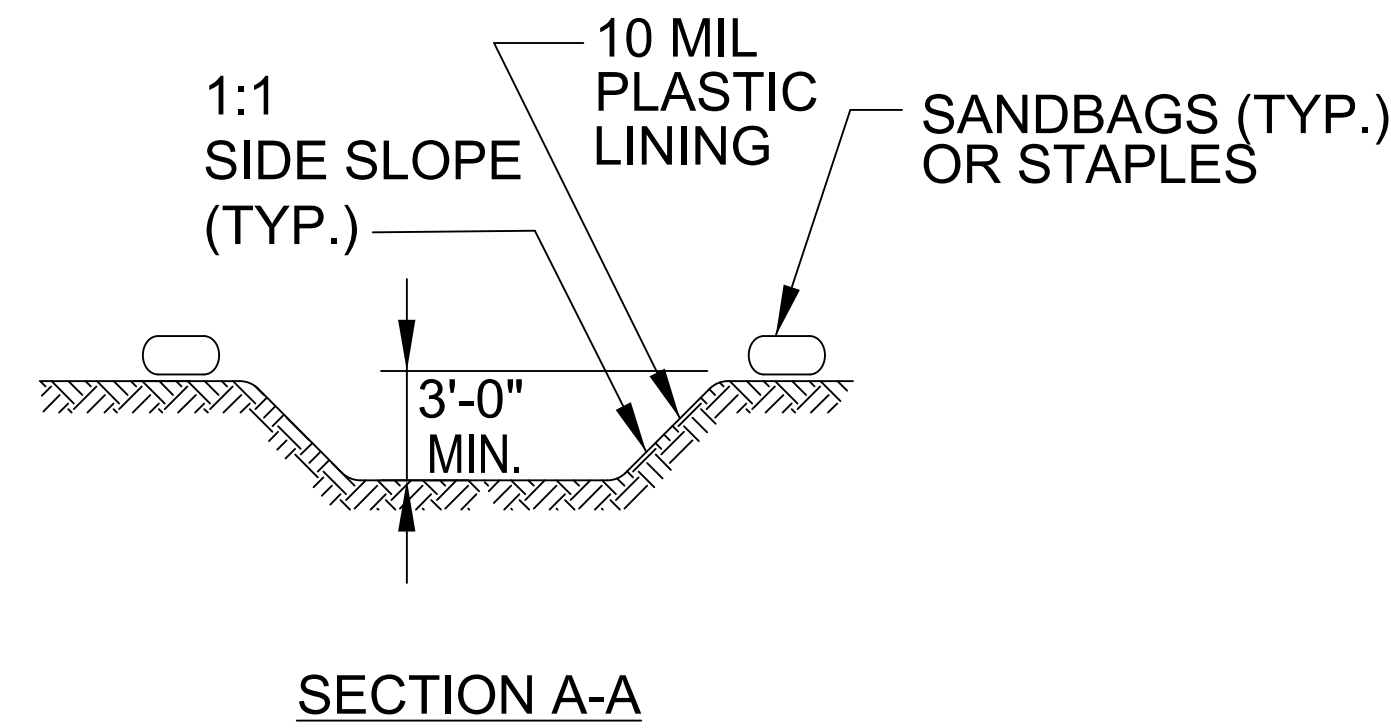
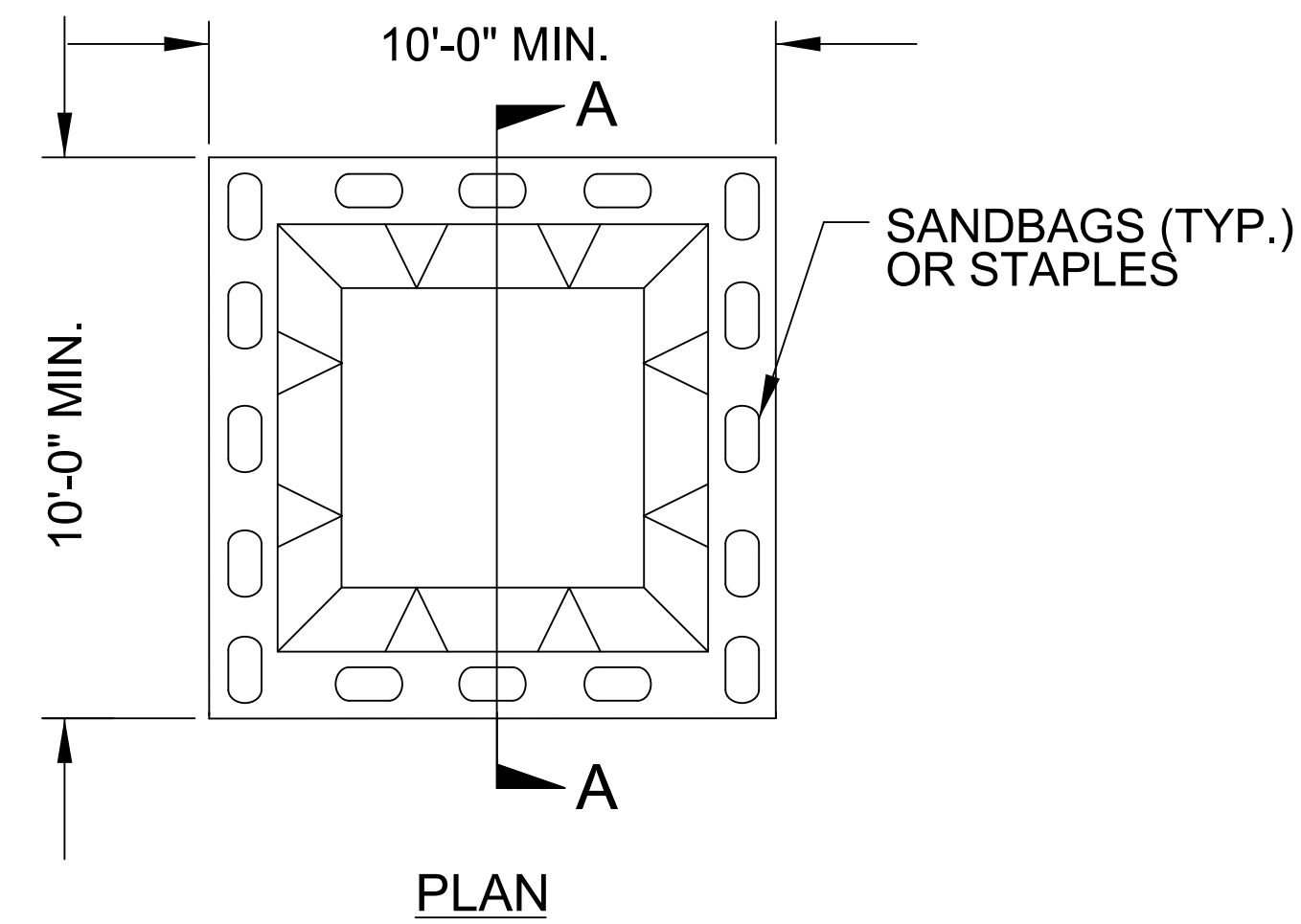
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. I-5979	SHEET NO. EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A	A	1636.03	Excelsior Wattle Barrier	
1632.02	Type B	B	1636.03	Coir Fiber Wattle Barrier	
1632.03	Type C	C			

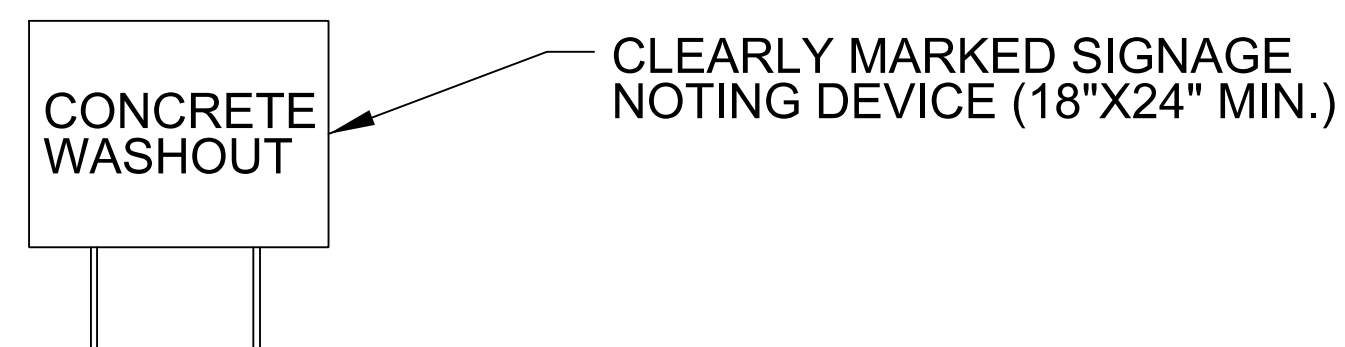
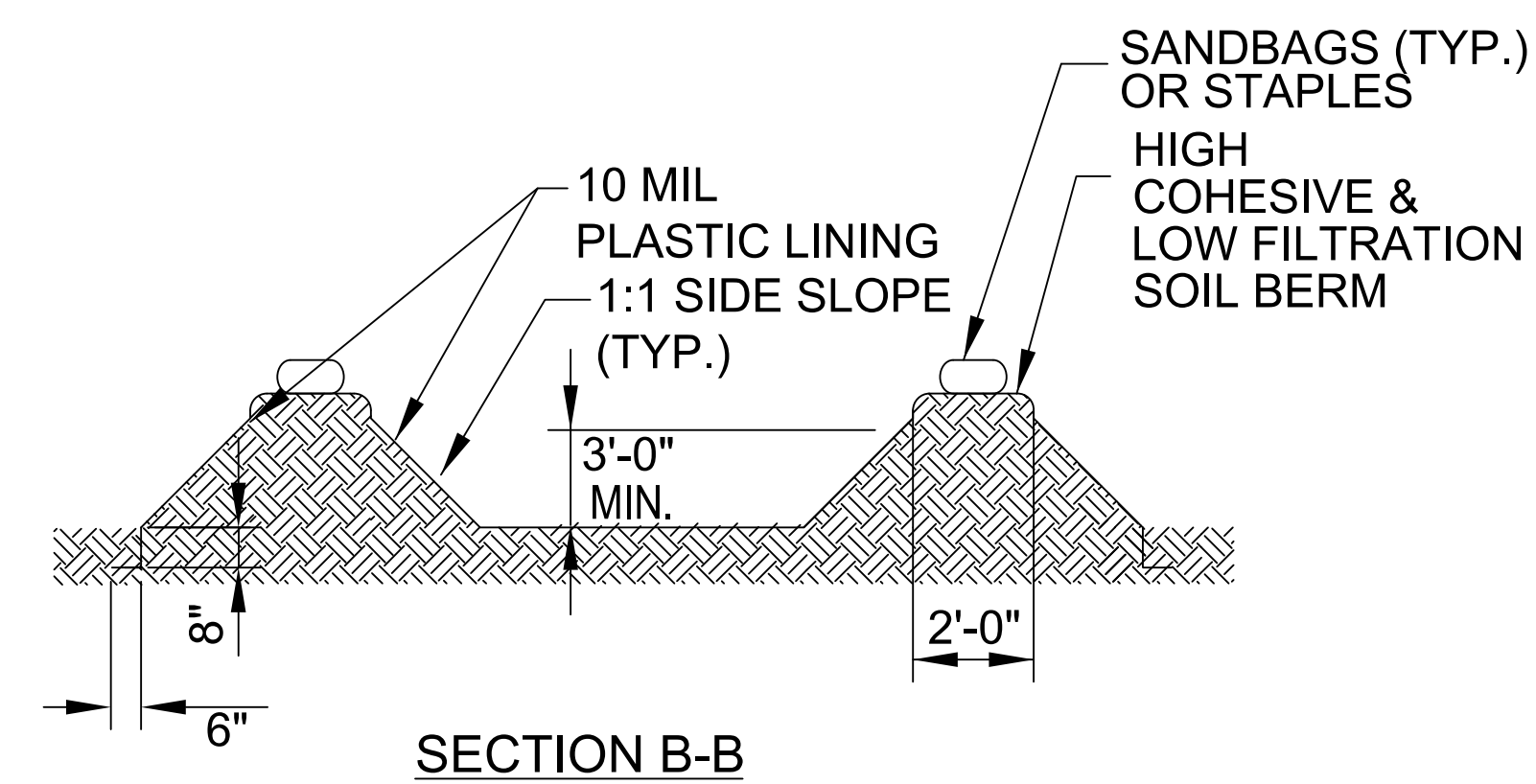
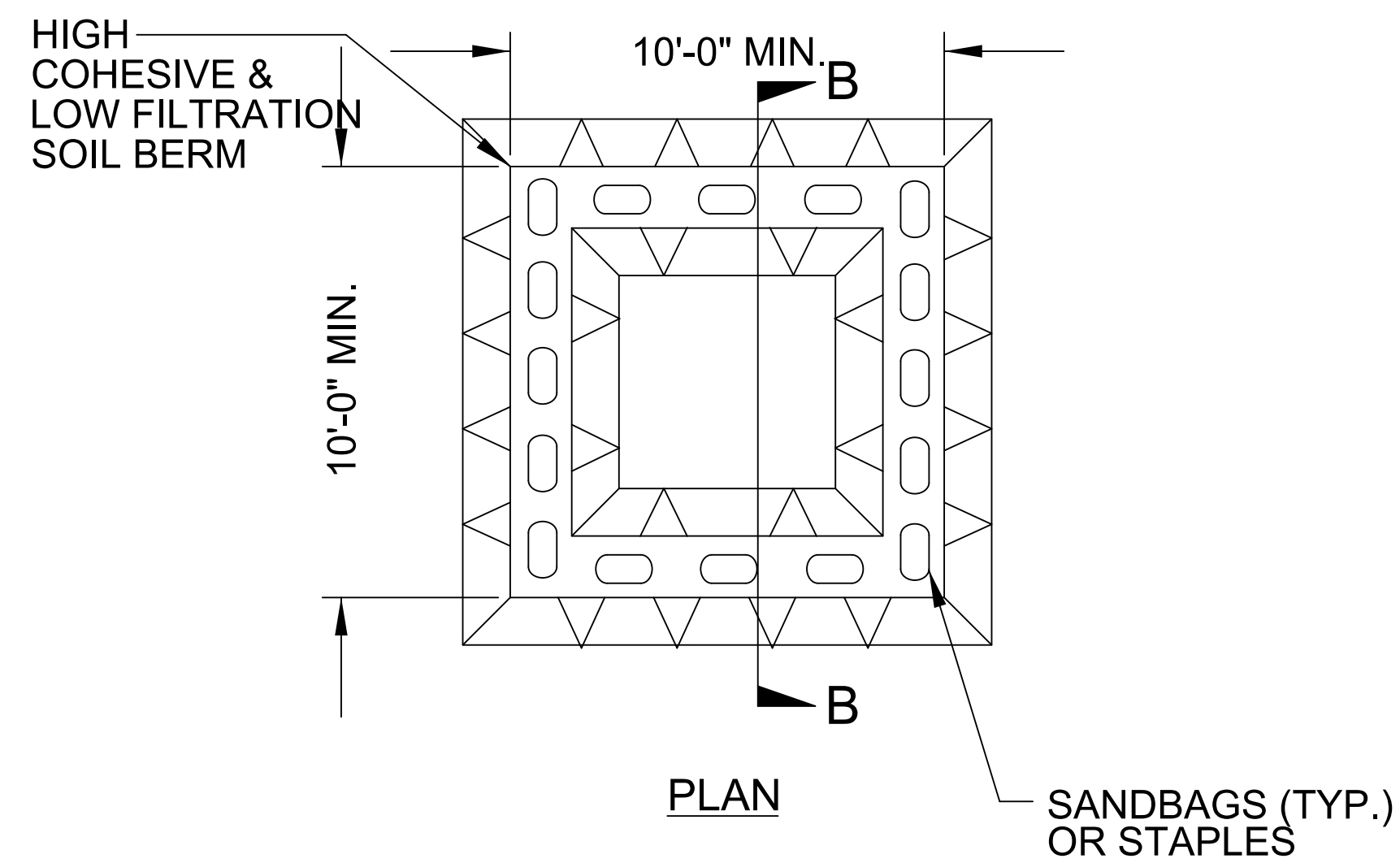
PROJECT REFERENCE NO. 1-5979	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

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



ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

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

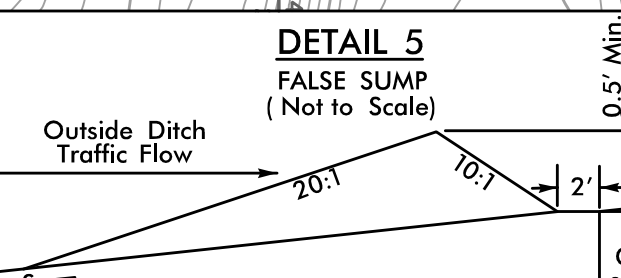
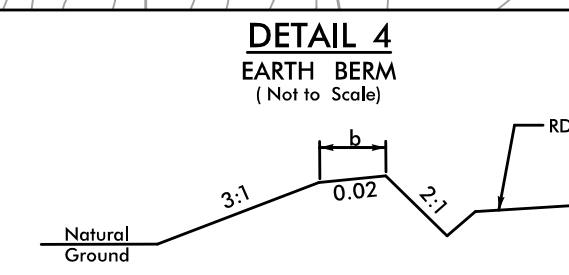
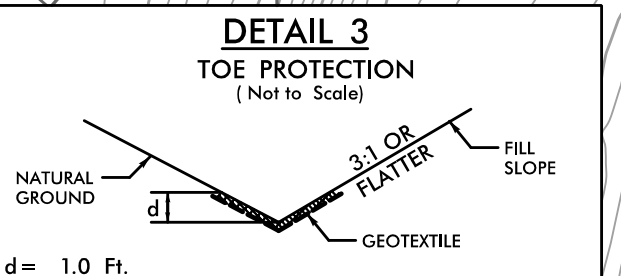
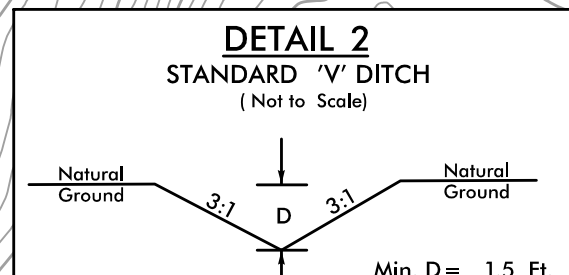
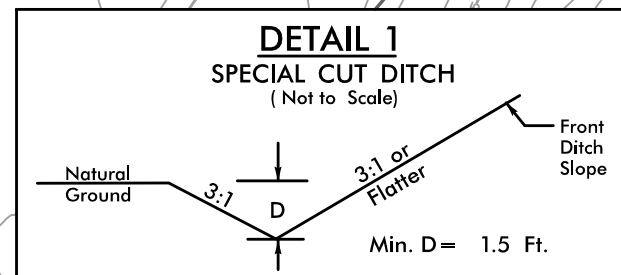
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>I-5979</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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

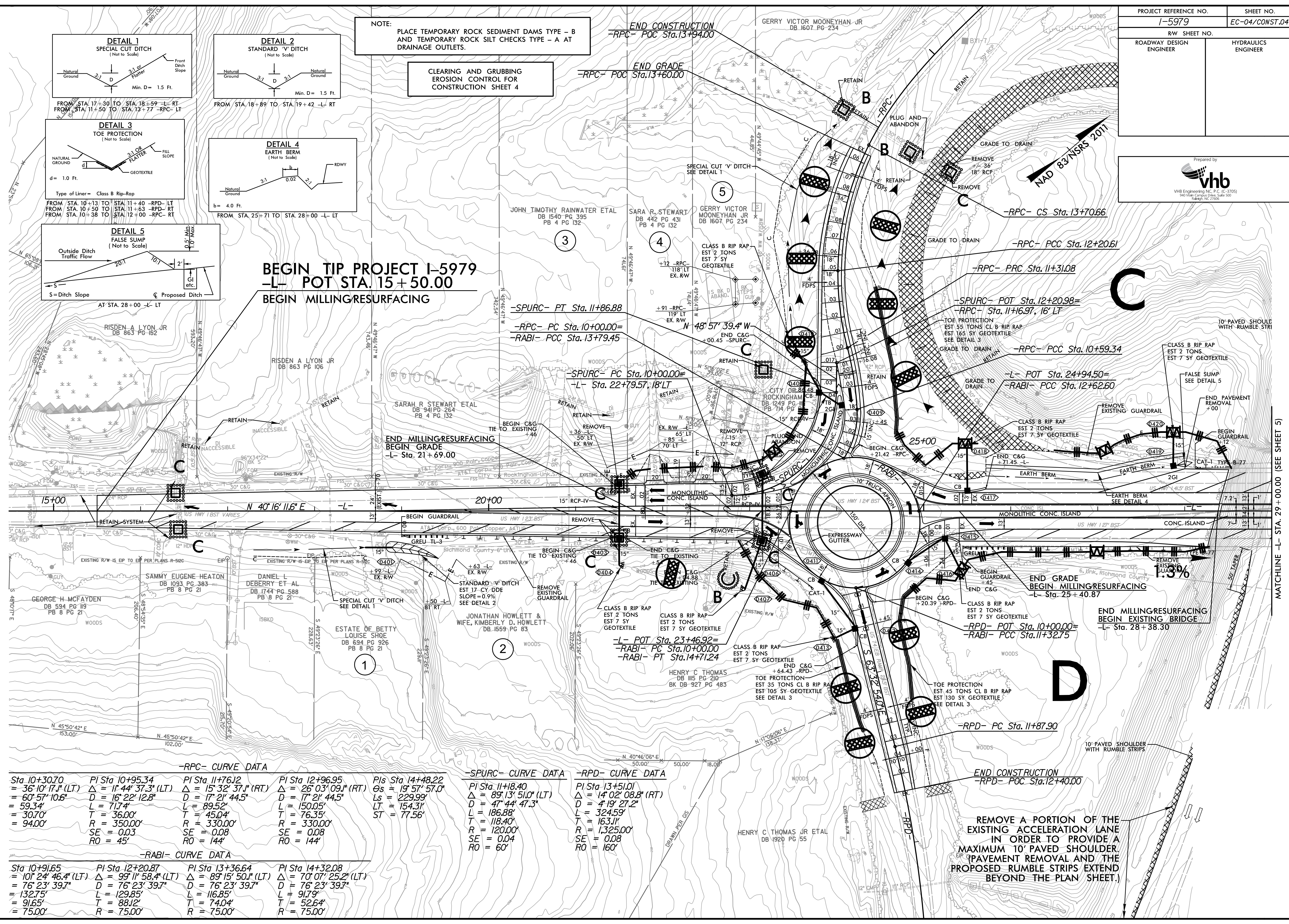
PROJECT REFERENCE NO. 1-5979		SHEET NO. EC-04/CONST.04	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



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

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

BEGIN TIP PROJECT 1-5979
-L- POT STA. 15+50.00
BEGIN MILLING/RESURFACING

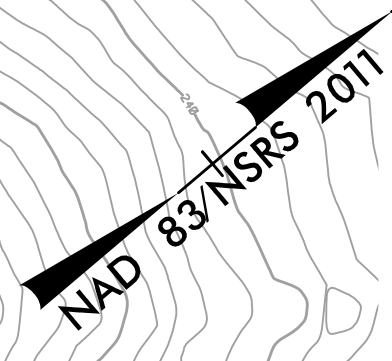


-RPC- CURVE DATA			-SPURC- CURVE DATA			-RPD- CURVE DATA		
Sta 10+30.70	PI Sta 10+95.34	PI Sta 11+76.12	PI Sta 12+96.95	PI Sta 14+48.22	PI Sta 11+18.40	PI Sta 13+51.01	PI Sta 13+51.01	PI Sta 13+51.01
= 36° 10' 17.1" (LT)	Δ = 11° 44' 37.3" (LT)	Δ = 15° 32' 37.1" (RT)	Δ = 26° 03' 09.1" (RT)	Os = 19° 57' 57.0"	Δ = 89° 13' 51.0" (LT)	Δ = 14° 02' 08.8" (RT)	Δ = 14° 02' 08.8" (RT)	Δ = 14° 02' 08.8" (RT)
= 60° 57' 10.6"	D = 16° 22' 12.8"	D = 17° 21' 44.5"	D = 17° 21' 44.5"	Ls = 229.99'	D = 47° 44' 47.3"	D = 4° 19' 27.2"	D = 4° 19' 27.2"	D = 4° 19' 27.2"
= 59.34'	L = 71.74'	L = 89.52'	L = 150.05'	L = 154.31'	L = 186.88'	L = 324.59'	L = 324.59'	L = 324.59'
= 30.70'	T = 36.00'	T = 45.04'	T = 76.35'	T = 118.40'	T = 118.40'	T = 163.11'	T = 163.11'	T = 163.11'
= 94.00'	R = 350.00'	R = 330.00'	R = 330.00'	R = 120.00'	R = 120.00'	R = 1,325.00'	R = 1,325.00'	R = 1,325.00'
	SE = 0.03	SE = 0.08	SE = 0.08	SE = 0.04	SE = 0.08	SE = 0.08	SE = 0.08	SE = 0.08
	RO = 45'	RO = 144'	RO = 144'	RO = 60'	RO = 160'	RO = 160'	RO = 160'	RO = 160'

-RABI- CURVE DATA			
Sta 10+91.65	PI Sta 12+20.87	PI Sta 13+36.64	PI Sta 14+32.08
= 101° 24' 46.4" (LT)	Δ = 99° 11' 58.4" (LT)	Δ = 89° 15' 50.1" (LT)	Δ = 70° 07' 25.2" (LT)
= 76° 23' 39.7"	D = 76° 23' 39.7"	D = 76° 23' 39.7"	D = 76° 23' 39.7"
= 132.75'	L = 129.85'	L = 116.85'	L = 91.79'
= 91.65'	T = 88.12'	T = 74.04'	T = 52.64'
= 75.00'	R = 75.00'	R = 75.00'	R = 75.00'

REMOVE A PORTION OF THE EXISTING ACCELERATION LANE IN ORDER TO PROVIDE A MAXIMUM 10' PAVED SHOULDER. (PAVEMENT REMOVAL AND THE PROPOSED RUMBLE STRIPS EXTEND BEYOND THE PLAN SHEET.)

PROJECT REFERENCE NO.	SHEET NO.
1-5979	EC-05/CONST.05
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



-L- CURVE DATA

PI Sta 31+77.10 Δ = 7' 17" 09.9" (LT) D = 8' 11" 06.4" L = 89.02' T = 44.57' R = 700.00'	PI Sta 32+79.67 Δ = 9' 29' 34.0" (RT) D = 8' 11" 06.4" L = 115.98' T = 58.12' R = 700.00'	PI Sta 36+17.63 Δ = 2' 12' 24.1" (LT) D = 0' 57' 17.7" L = 23.08' T = 15.56' R = 6,000.00'
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-RPA1- CURVE DATA

PI Sta 10+47.93 Δ = 35' 26' 22.4" (LT) D = 38' 11" 49.9" L = 92.78' T = 47.93' R = 150.00' SE = 0.04 RO = 60'	PI Sta 11+80.18 Δ = 6' 35' 35.9" (LT) D = 11' 27' 33.0" L = 173.06' T = 42.66' R = 162.00' SE = 0.02 RO = 30'	PI Sta 13+46.65 Δ = 6' 19' 10.5" (RT) D = 4' 24' 26.5" L = 143.39' T = 71.77' R = 1,300.00' SE = 0.02 RO = 30'
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-RPA2- CURVE DATA

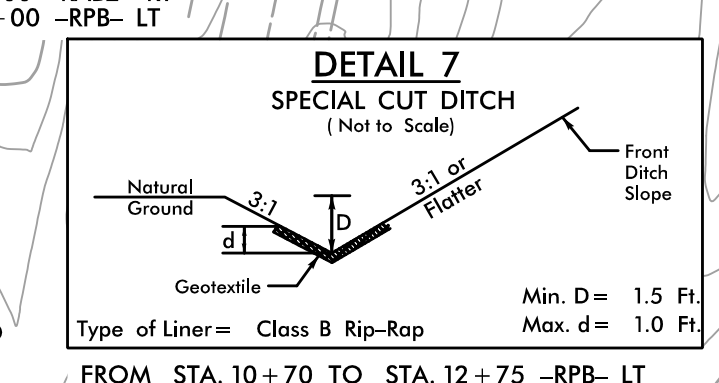
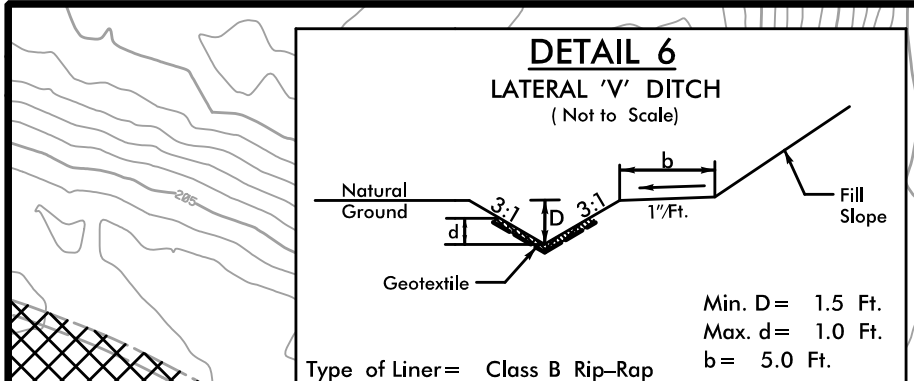
PI Sta 10+38.43 Δ = 43' 13' 39.2" (LT) D = 59' 04' 04.1" L = 73.18' T = 38.43' R = 97.00' SE = 0.03 RO = 45'	PI Sta 11+15.84 Δ = 29' 30' 18.3" (LT) D = 35' 22' 04.0" L = 83.42' T = 42.66' R = 162.00' SE = 0.02 RO = 30'	PI Sta 12+48.11 Δ = 12' 01' 20.1" (RT) D = 19' 49' 50.7" (RT) L = 182.34' T = 91.51' R = 869.00' SE = 0.05 RO = 75'	PI Sta 14+21.67 Δ = 6' 19' 10.5" (RT) D = 4' 22' 25.4" L = 144.49' T = 72.32' R = 1,310.00' SE = 0.05 RO = 75'
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-RAB2- CURVE DATA

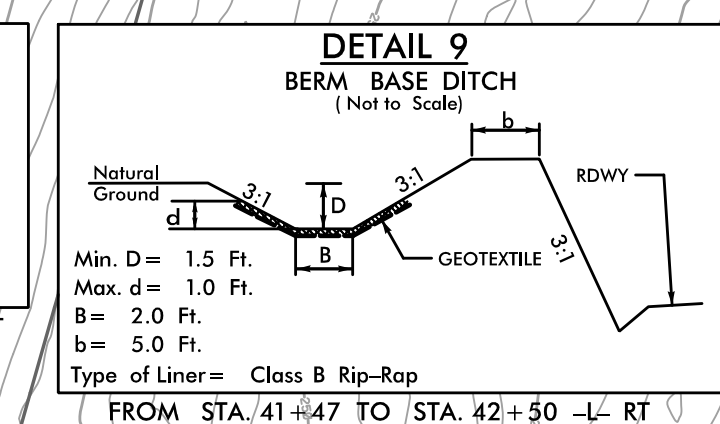
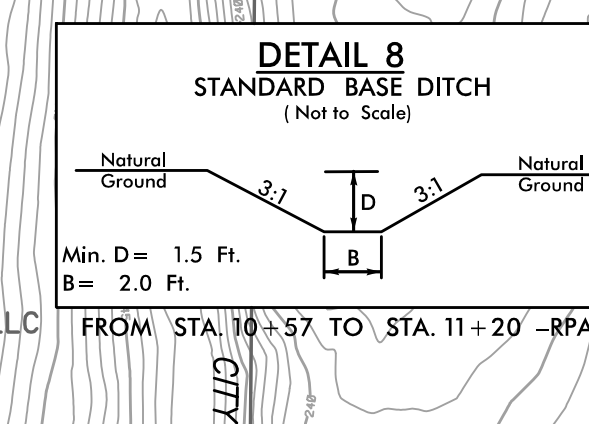
PI Sta 10+88.46 Δ = 99' 24' 45.8" (LT) D = 76' 23' 39.7" L = 130.13' T = 88.46' R = 75.00'	PI Sta 11+65.32 Δ = 50' 16' 25.1" (LT) D = 76' 23' 39.7" L = 65.81' T = 35.19' R = 75.00'	PI Sta 12+46.50 Δ = 67' 58' 10.7" (LT) D = 76' 23' 39.7" L = 88.97' T = 50.56' R = 75.00'	PI Sta 15+04.87 Δ = 142' 20' 38.4" (LT) D = 76' 23' 39.7" L = 186.33' T = 219.96' R = 75.00'
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NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5



45 x 20 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 5.1



NOTE: USE STD. DWG. 275.01, DETAIL NO. 1 FOR ROCK PLATING (500 SY) AT -RPA1- STA. 11+84.00 TO STA. 12+79.00 LEFT AND -RPA2- STA. 10+00.00 TO STA. 12+57.00 LEFT.

FOR -RAB2- DETAIL SEE SHEET 2B-2
FOR ISLAND DETAIL SEE SHEET 2B-3

FOR -L- PROFILE SEE SHEET 7
FOR -RPA1- & -RPA2- PROFILES SEE SHEET 8
FOR -RPB- PROFILE SEE SHEET 9
FOR -RAB2- PROFILE SEE SHEET 10

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PROJECT REFERENCE NO.		SHEET NO.	
I-5979		EC-06/CONST.06	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER			

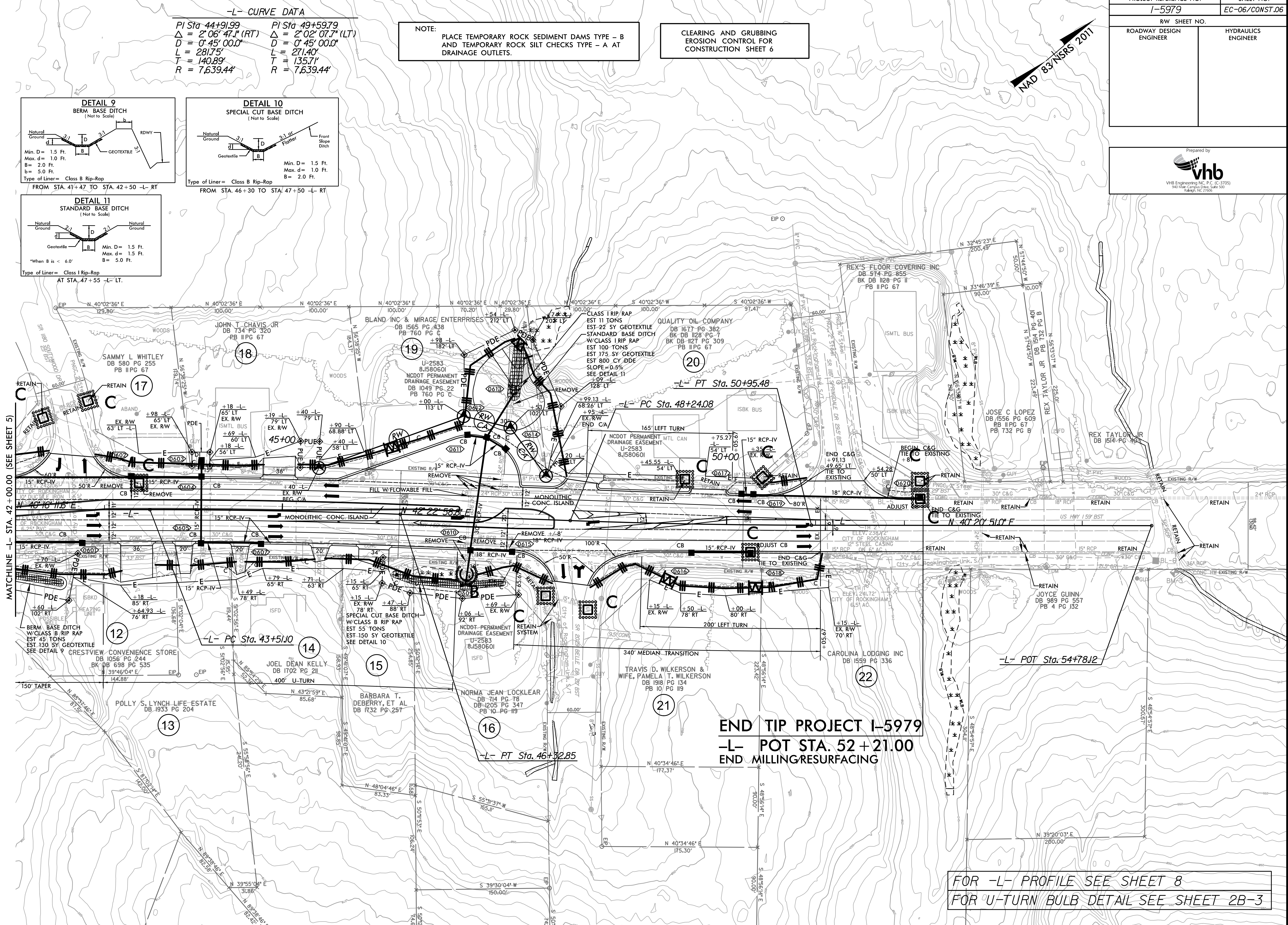
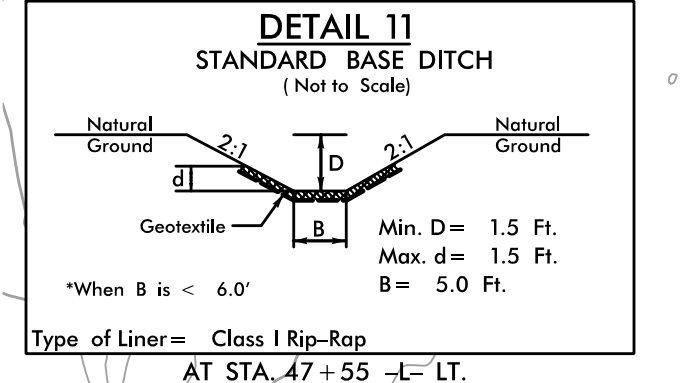
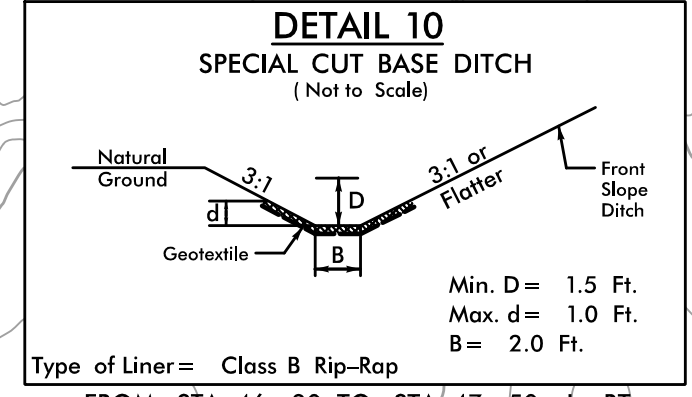
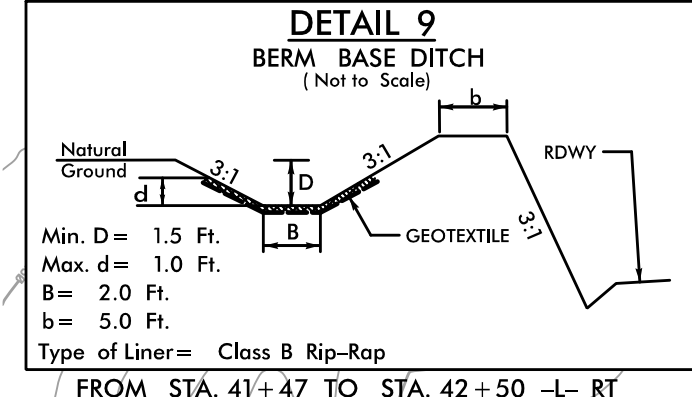
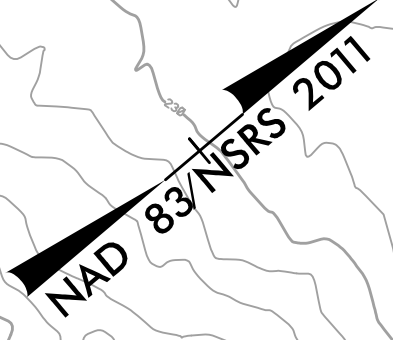


-L- CURVE DATA

PI Sta 44+91.99 Δ = 2° 06' 47.1" (RT) D = 0' 45' 00.0" L = 281.75' T = 140.89' R = 7,639.44'	PI Sta 49+59.79 Δ = 2° 02' 07.7" (LT) D = 0' 45' 00.0" L = 271.40' T = 135.71' R = 7,639.44'
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NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 6

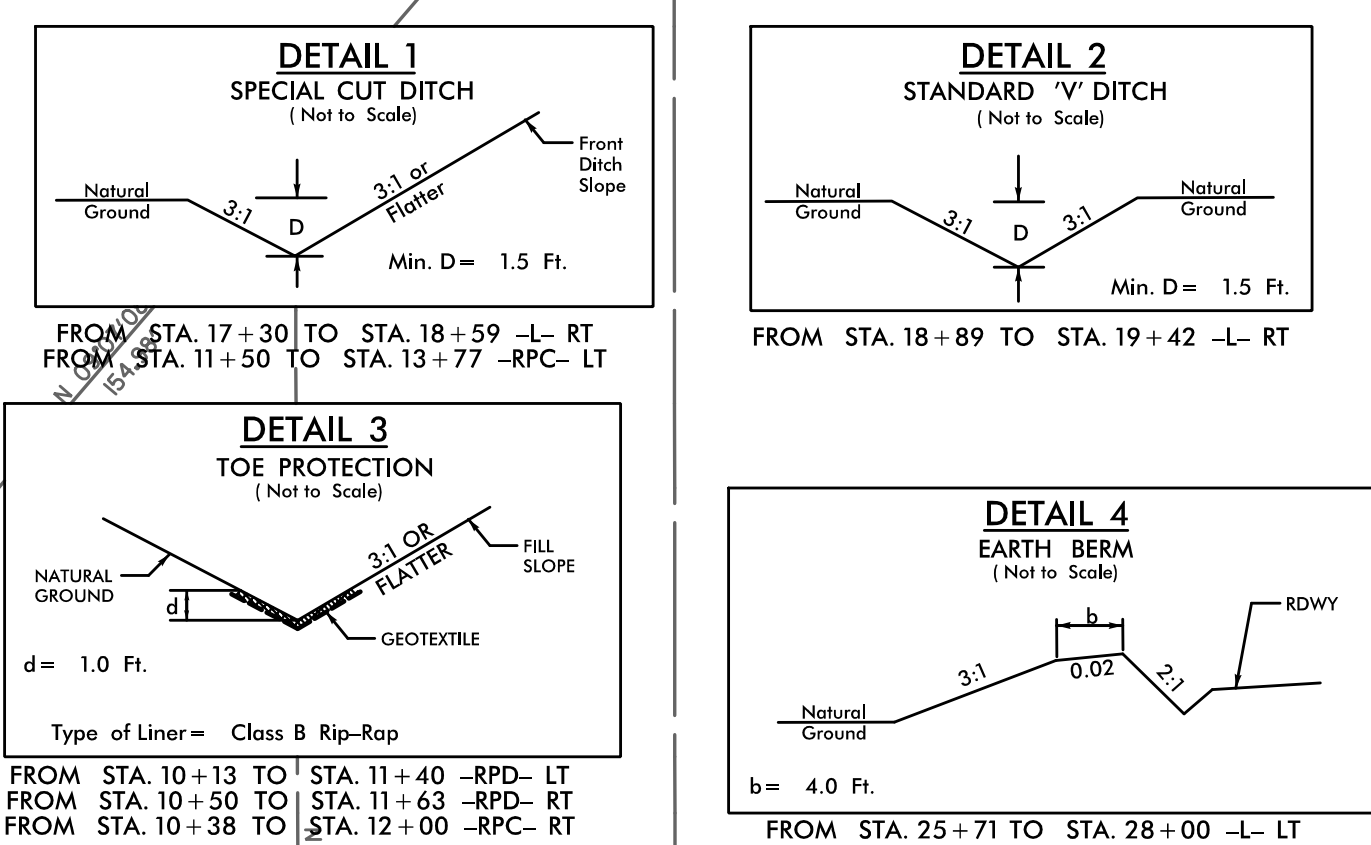


MATCHLINE -L- STA. 42+00.00 (SEE SHEET 5)

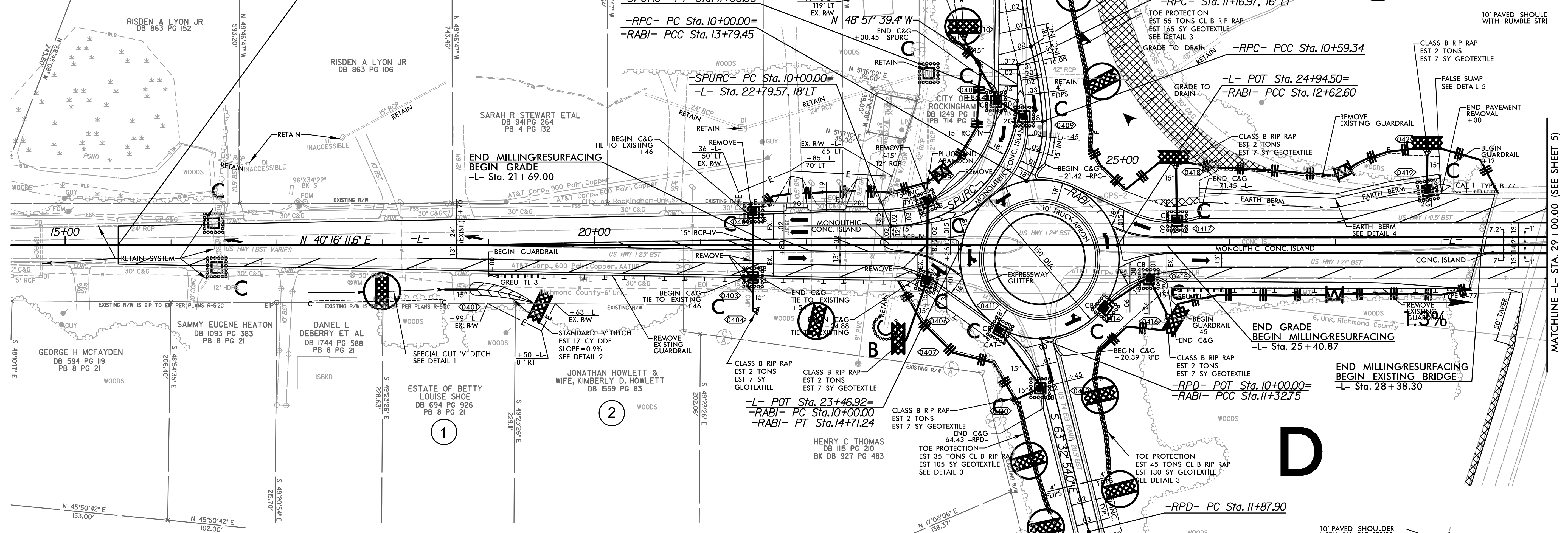
END TIP PROJECT I-5979
-L- POT STA. 52+21.00
END MILLING/RESURFACING

FOR -L- PROFILE SEE SHEET 8
FOR U-TURN BULB DETAIL SEE SHEET 2B-3

PROJECT REFERENCE NO.	SHEET NO.
1-5979	EC-07/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BEGIN TIP PROJECT I-5979
-L- POT STA. 15+50.00
BEGIN MILLING/RESURFACING



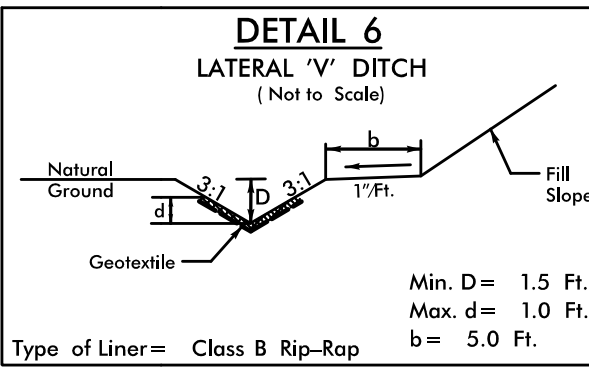
-RPC- CURVE DATA				
Sta 10+30.70	PI Sta 10+95.34	PI Sta 11+76.12	PI Sta 12+96.95	PIs Sta 14+48.22
= 36° 10' 17.1" (LT)	Δ = 11° 44' 37.3" (LT)	Δ = 15° 32' 37.1" (RT)	Δ = 26° 03' 09.1" (RT)	Os = 19° 57' 57.0"
= 60° 57' 10.6"	D = 16° 22' 12.8"	D = 17° 21' 44.5"	D = 17° 21' 44.5"	Ls = 229.99'
= 59.34'	L = 71.74'	L = 89.52'	L = 150.05'	LT = 154.31'
= 30.70'	T = 36.00'	T = 45.04'	T = 76.35'	ST = 77.56'
= 94.00'	R = 350.00'	R = 330.00'	R = 330.00'	
	SE = 0.03	SE = 0.08	SE = 0.08	
	RO = 45'	RO = 144'	RO = 144'	

-SPURC- CURVE DATA				
PI Sta 11+8.40	PI Sta 13+51.01			
Δ = 89° 13' 51.0" (LT)	Δ = 14° 02' 08.8" (RT)			
D = 47° 44' 47.3"	D = 4° 19' 27.2"			
L = 186.88'	L = 324.59'			
T = 118.40'	T = 163.11'			
R = 120.00'	R = 1,325.00'			
SE = 0.04	SE = 0.08			
RO = 60'	RO = 160'			

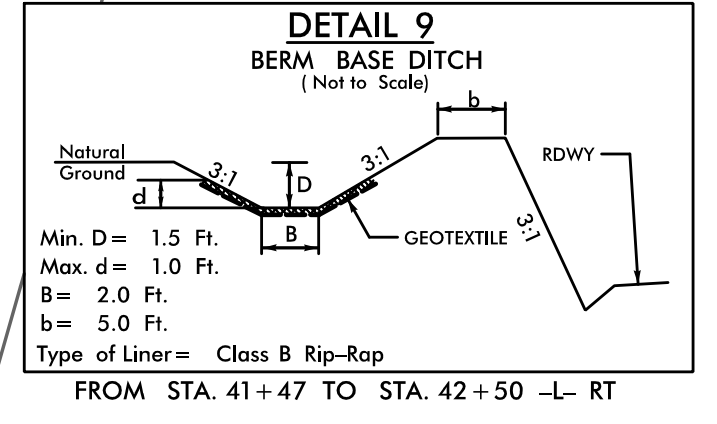
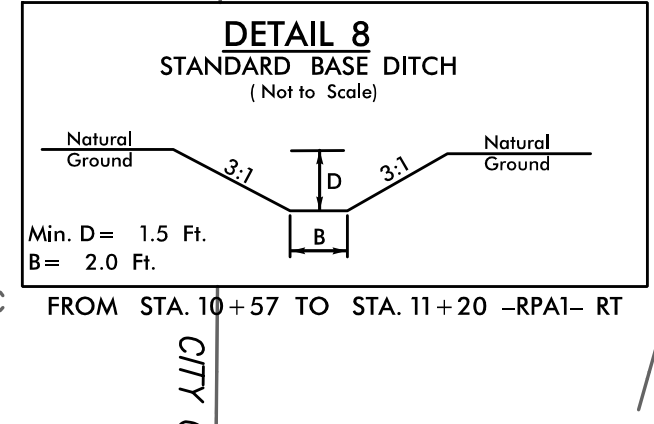
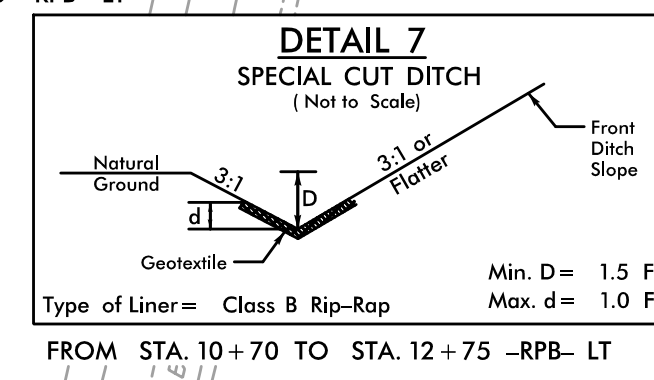
-RPD- CURVE DATA				
PI Sta 10+91.65	PI Sta 12+20.87	PI Sta 13+36.64	PI Sta 14+32.08	
Δ = 101° 24' 46.4" (LT)	Δ = 99° 11' 58.4" (LT)	Δ = 89° 15' 50.1" (LT)	Δ = 70° 07' 25.2" (LT)	
D = 76° 23' 39.7"	D = 76° 23' 39.7"	D = 76° 23' 39.7"	D = 76° 23' 39.7"	
L = 132.75'	L = 129.85'	L = 116.85'	L = 91.79'	
T = 91.65'	T = 88.12'	T = 74.04'	T = 52.64'	
R = 75.00'	R = 75.00'	R = 75.00'	R = 75.00'	

REMOVE A PORTION OF THE EXISTING ACCELERATION LANE IN ORDER TO PROVIDE A MAXIMUM 10' PAVED SHOULDER. (PAVEMENT REMOVAL AND THE PROPOSED RUMBLE STRIPS EXTEND BEYOND THE PLAN SHEET.)

8/17/99



45 x 20 x 3
1.5 inch Skimmer
with 0.75 inch
Orifice Diameter
4 ft. weir
ID 5.1



-L- CURVE DATA

PI Sta 31+77.10 Δ = 7° 17' 09.9" (LT) D = 8° 11' 06.4" L = 89.02' T = 44.57' R = 700.00'	PI Sta 32+79.67 Δ = 9° 29' 34.0" (RT) D = 8° 11' 06.4" L = 115.98' T = 58.12' R = 700.00'	PI Sta 36+17.63 Δ = 2° 12' 24.1" (LT) D = 0° 57' 17.7" L = 231.08' T = 115.56' R = 6,000.00'
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-RPA1- CURVE DATA

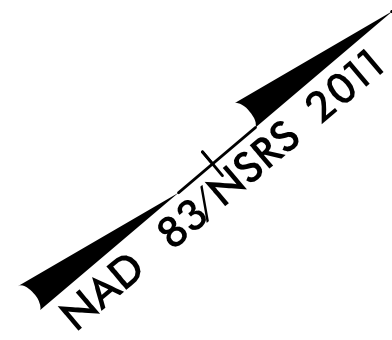
PI Sta 10+47.93 Δ = 35° 26' 22.4" (LT) D = 38° 11' 49.9" L = 92.78' T = 47.93' R = 150.00' SE = 0.04 RO = 60'	PI Sta 11+80.18 Δ = 6° 35' 35.9" D = 11° 27' 33.0" L = 173.06' T = 87.40' R = 500.00' SE = 0.02 RO = 30'	PI Sta 13+46.65 Δ = 6° 19' 10.5" (RT) D = 4° 24' 26.5" L = 143.39' T = 71.77' R = 1,300.00' SE = 0.02 RO = 30'
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-RPA2- CURVE DATA

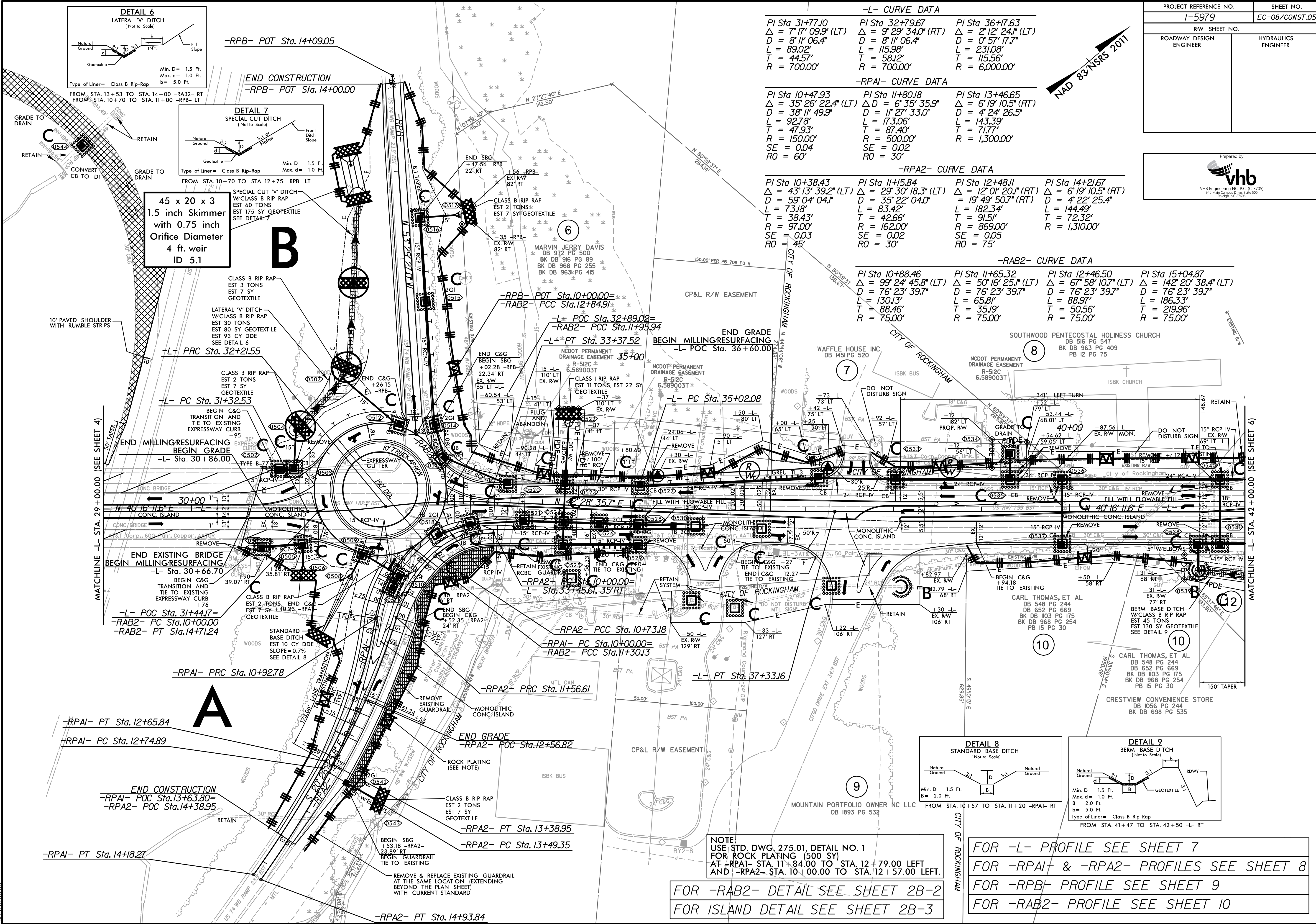
PI Sta 10+38.43 Δ = 43° 13' 39.2" (LT) D = 59° 04' 04.1" L = 73.18' T = 38.43' R = 97.00' SE = 0.03 RO = 45'	PI Sta 11+15.84 Δ = 29° 30' 18.3" (LT) D = 35° 22' 04.0" L = 83.42' T = 42.66' R = 162.00' SE = 0.02 RO = 30'	PI Sta 12+48.11 Δ = 12° 01' 20.1" (RT) D = 19° 49' 50.7" (RT) L = 83.42' T = 91.51' R = 869.00' SE = 0.05 RO = 75'	PI Sta 14+21.67 Δ = 6° 19' 10.5" (RT) D = 4° 22' 25.4" L = 144.49' T = 72.32' R = 1,310.00' SE = 0.05 RO = 75'
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-RAB2- CURVE DATA

PI Sta 10+88.46 Δ = 99° 24' 45.8" (LT) D = 76° 23' 39.7" L = 130.13' T = 88.46' R = 75.00'	PI Sta 11+65.32 Δ = 50° 16' 25.1" (LT) D = 76° 23' 39.7" L = 65.81' T = 35.19' R = 75.00'	PI Sta 12+46.50 Δ = 67° 58' 10.7" (LT) D = 76° 23' 39.7" L = 88.97' T = 50.56' R = 75.00'	PI Sta 15+04.87 Δ = 142° 20' 38.4" (LT) D = 76° 23' 39.7" L = 186.33' T = 219.96' R = 75.00'
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PROJECT REFERENCE NO. I-5979	SHEET NO. EC-08/CONST.05
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	



NOTE:
USE STD. DWG. 275.01, DETAIL NO. 1
FOR ROCK PLATING (500 SY)
AT -RPA1- STA. 11+84.00 TO STA. 12+79.00 LEFT
AND -RPA2- STA. 10+00.00 TO STA. 12+57.00 LEFT.

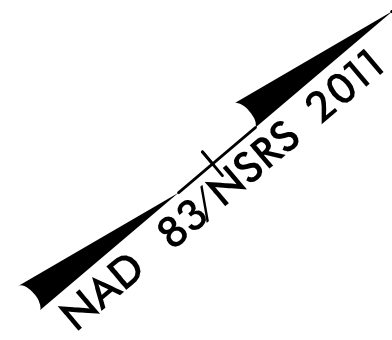
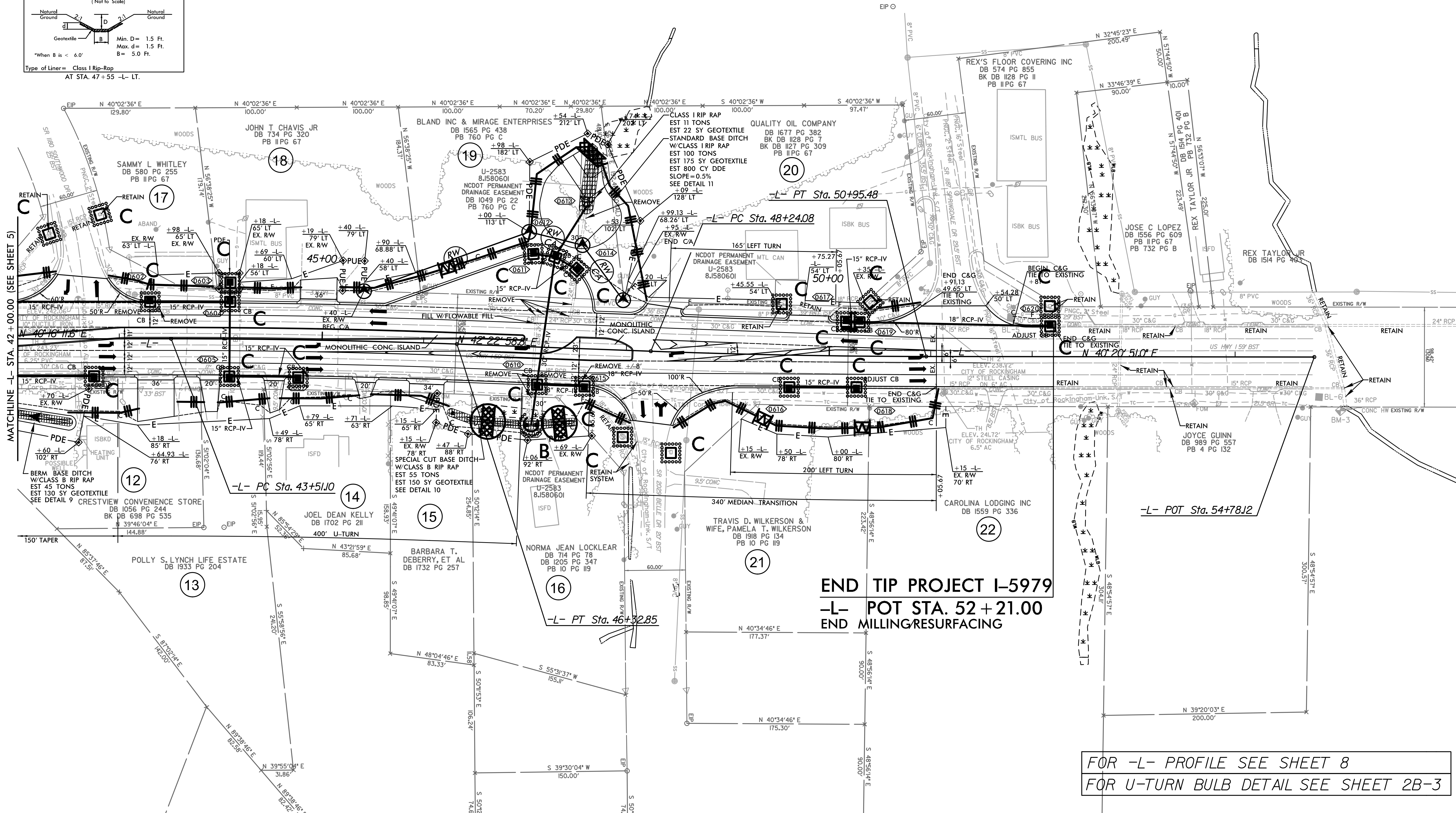
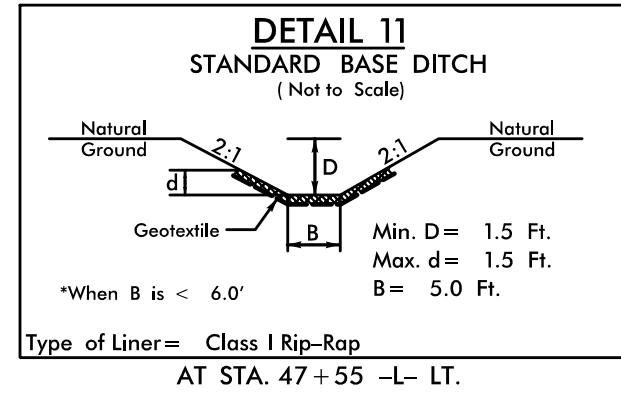
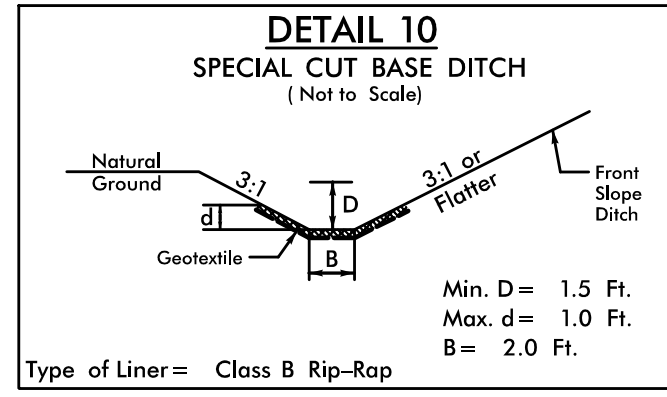
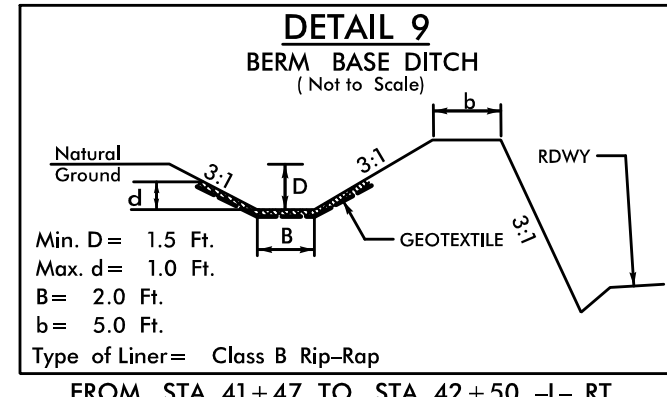
FOR -RAB2- DETAIL SEE SHEET 2B-2
FOR ISLAND DETAIL SEE SHEET 2B-3

FOR -L- PROFILE SEE SHEET 7
FOR -RPA1- & -RPA2- PROFILES SEE SHEET 8
FOR -RPB- PROFILE SEE SHEET 9
FOR -RAB2- PROFILE SEE SHEET 10

3:00:07 PM R:\Environmental\Design\I5979_REU_EC_psh05_Final.dgn

-L- CURVE DATA

PI Sta 44+91.99	PI Sta 49+59.79
$\Delta = 2' 06' 47.1''$ (RT)	$\Delta = 2' 02' 07.7''$ (LT)
$D = 0' 45' 00.0''$	$D = 0' 45' 00.0''$
$L = 281.75'$	$L = 271.40'$
$T = 140.89'$	$T = 135.71'$
$R = 7,639.44'$	$R = 7,639.44'$



PROJECT REFERENCE NO. I-5979		SHEET NO. EC-09/CONST.06	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

Prepared by

vhb
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