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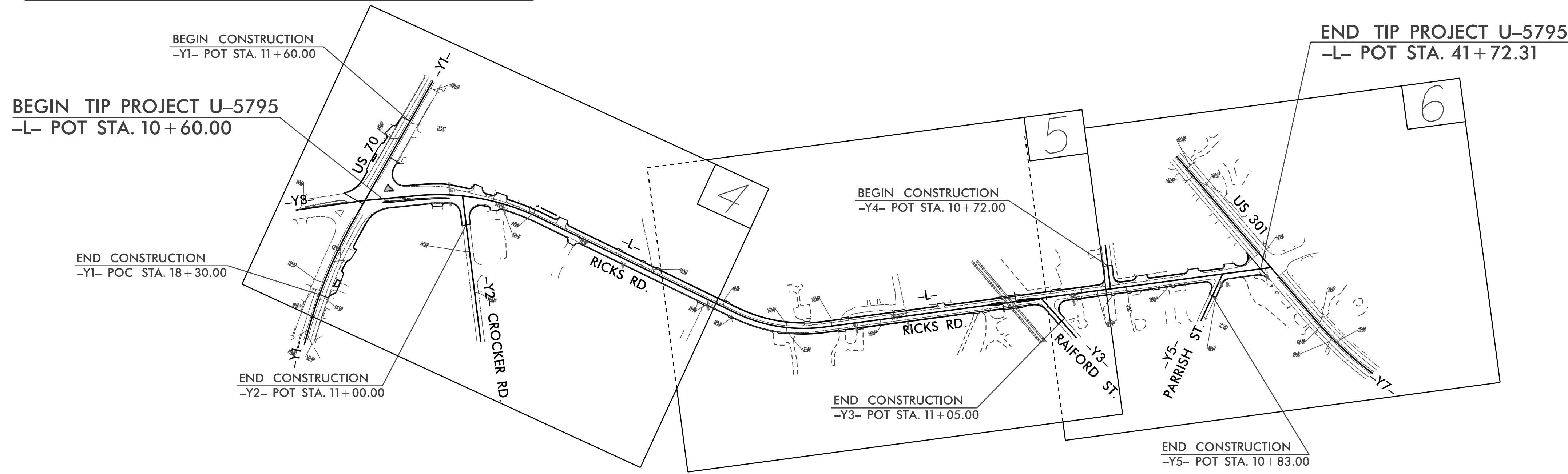
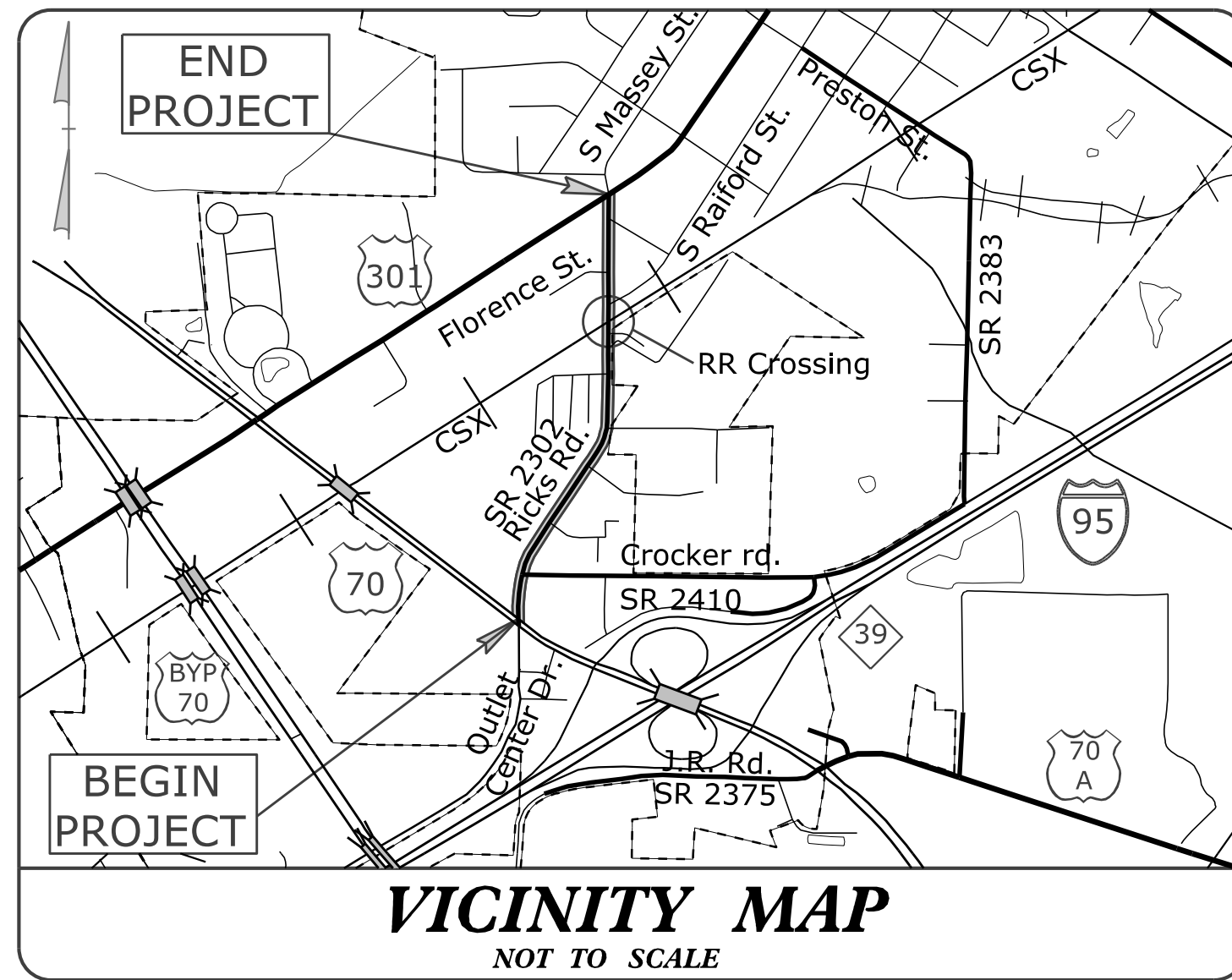
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**TIP PROJECT: U-5795**

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

**JOHNSTON COUNTY**

LOCATION: SR 2302 (RICKS ROAD) FROM US 70 TO US 301 IN SELMA  
TYPE OF WORK: GRADING, PAVING AND DRAINAGE



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5795	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

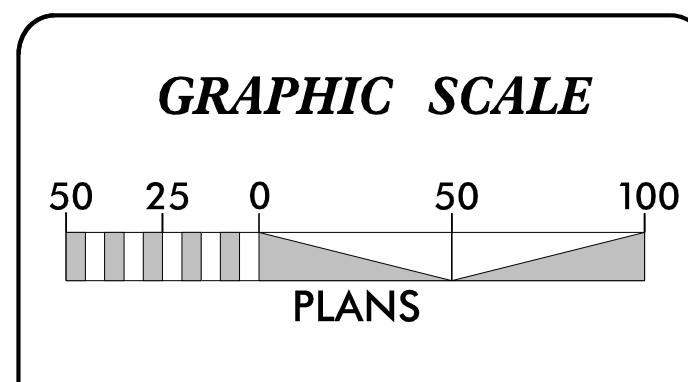
**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▲▲▲
1622.01	Temporary Berms and Slope Drains	▲▲▲
1630.02	Silt Basin Type B	▨
1633.01	Temporary Rock Silt Check Type-A	▨
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▨
1633.02	Temporary Rock Silt Check Type-B	▨
	Wattle / Coir Fiber Wattle	—
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	—
1634.01	Temporary Rock Sediment Dam Type-A	▨
1634.02	Temporary Rock Sediment Dam Type-B	▨
1635.01	Rock Pipe Inlet Sediment Trap Type-A	⊖
1635.02	Rock Pipe Inlet Sediment Trap Type-B	⊖
1630.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▭
	Rock Inlet Sediment Trap:	
1632.03	Type C	⊖
	Inlet Sediment Trap:	
SP.PROV.	Type F	⊖
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

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

THIS PROJECT HAS  
BEEN DESIGNED TO  
SENSITIVE WATERSHED  
STANDARDS.

ENVIRONMENTALLY  
SENSITIVE AREA(S) EXIST  
ON THIS PROJECT  
  
*Refer To E. C. Special Provisions  
for Special Considerations.*



**2018 STANDARD SPECIFICATIONS**

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ROADSIDE ENVIRONMENTAL UNIT  
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY  
WITH THE REGULATIONS SET FORTH BY THE  
NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 1, 2016  
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES DIVISION OF WATER QUALITY.

Prepared In the Office of:

**SUNGATE DESIGN GROUP, P.A.**

915 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27606  
TEL (919) 859-2243 FAX (919) 859-6258  
ENG FIRM LICENSE NO. C-890

Designed by:

**Randal C. Howard, PE, PLS** #3491

NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

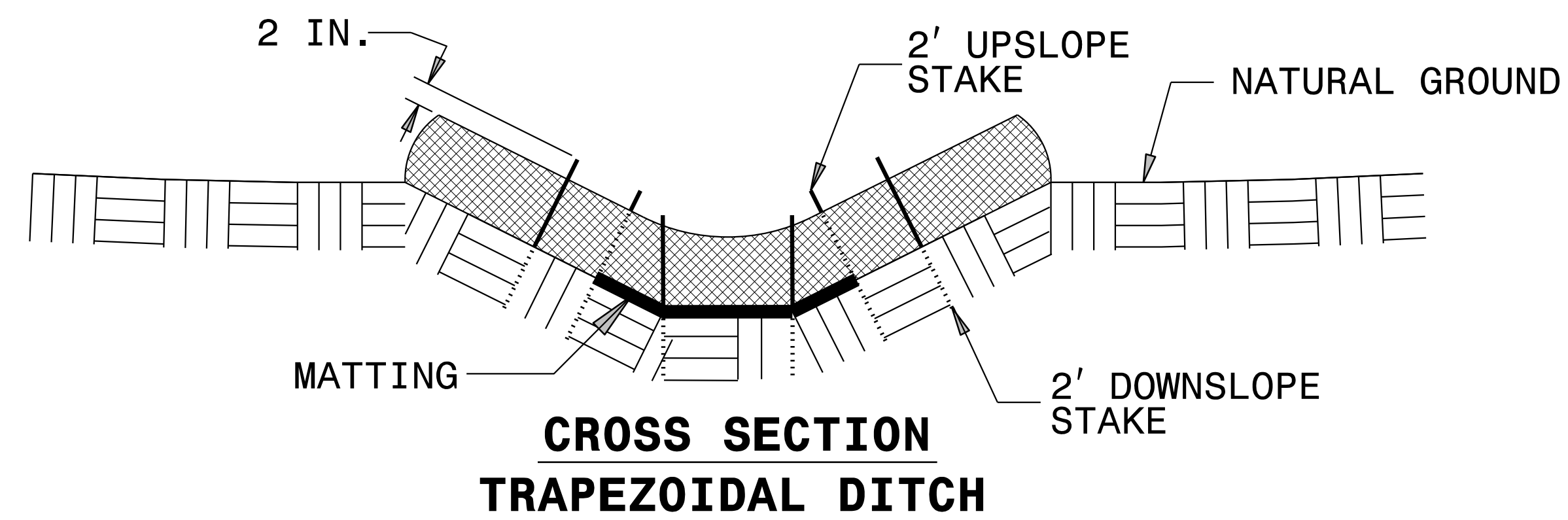
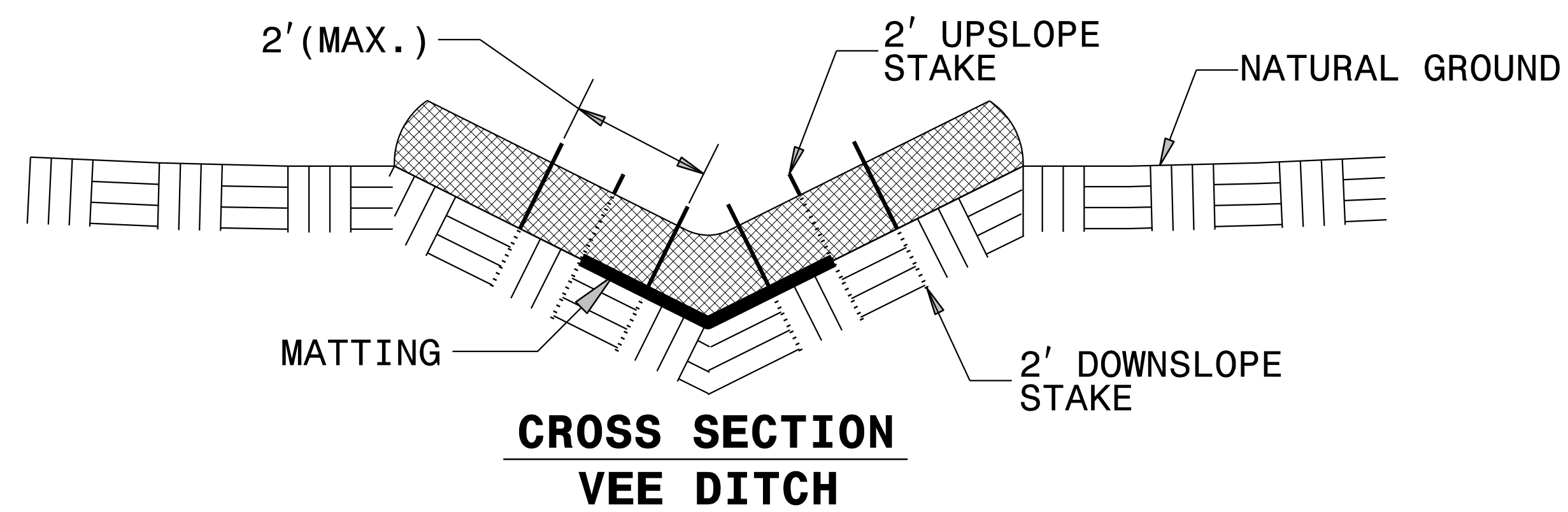
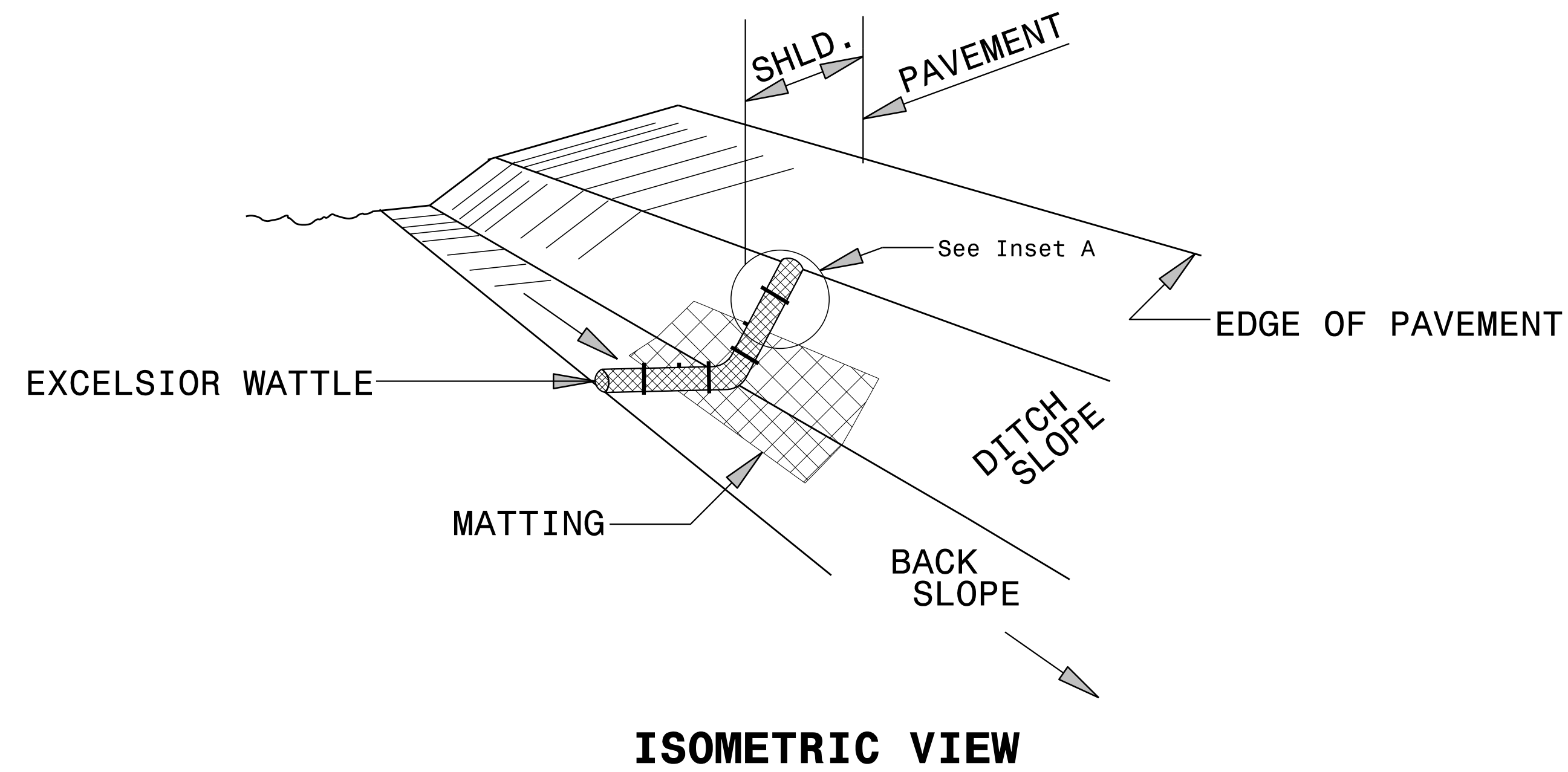
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2018 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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 3
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 3
1630.01 Riser Basin	1634.01 Temporary Rock Sediment Dam Type A
1630.02 Silt Basin Type 3	1634.02 Temporary Rock Sediment Dam Type 3
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 3
1630.05 Temporary Diversion	1640.01 Coir Fiber Jaffle
1630.06 Special Stilling Basin	1645.01 Temporary Stream Crossing
1631.01 Matting Installation	

10/17/18 EC-dan\_psh\_01.dgn  
RHoward

PROJECT REFERENCE NO. <i>U-5795</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# WATTLE DETAIL



**NOTES:**

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

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

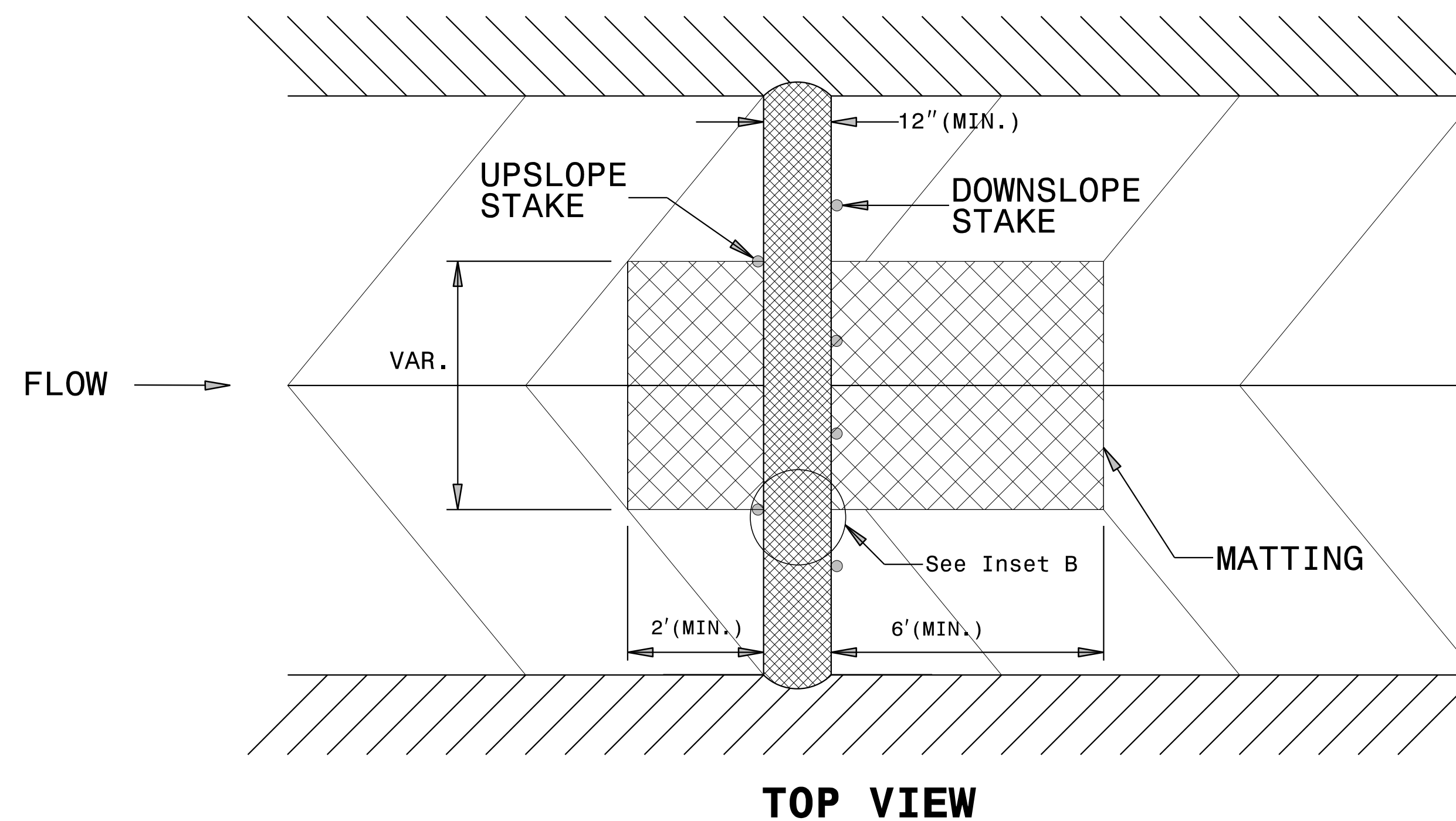
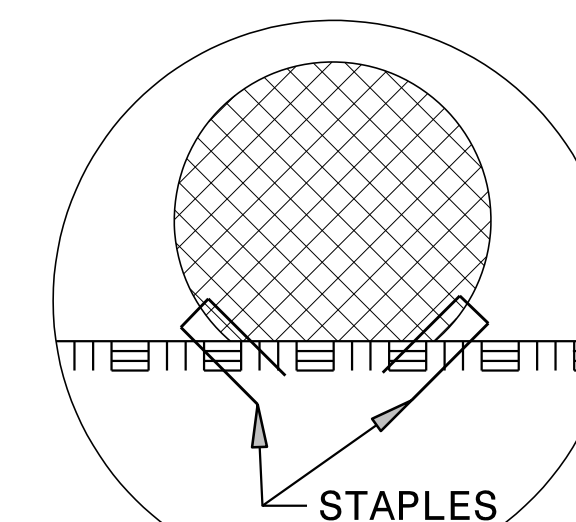
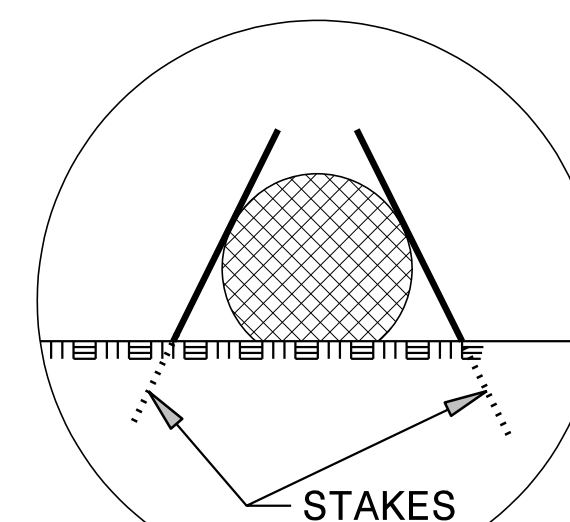
ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.

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.



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

<small>PROJECT REFERENCE NO.</small> <i>U-5795</i>	<small>SHEET NO.</small> <i>EC-3</i>
<small>ROADWAY DESIGN ENGINEER</small>	<small>HYDRAULICS ENGINEER</small>

**SOIL STABILIZATION SUMMARY SHEET**

**MATTING FOR EROSION CONTROL**

**PERMANENT SOIL REINFORCEMENT MAT**

<small>CONST SHEET NO.</small>	<small>LINE</small>	<small>FROM STATION</small>	<small>TO STATION</small>	<small>SIDE</small>	<small>ESTIMATE (SY)</small>
4	-L-	20+30	20+87	RT	40
5	-L-	23+60	24+50	RT	65
5	-L-	29+00	30+50	RT	105
			SUBTOTAL		105
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				1500
			TOTAL		1605
			SAY		1605

<small>CONST SHEET NO.</small>	<small>LINE</small>	<small>FROM STATION</small>	<small>TO STATION</small>	<small>SIDE</small>	<small>ESTIMATE (SY)</small>
4					

SUBTOTAL  
ADDITIONAL PSRM TO BE INSTALLED  
TOTAL  
SAY

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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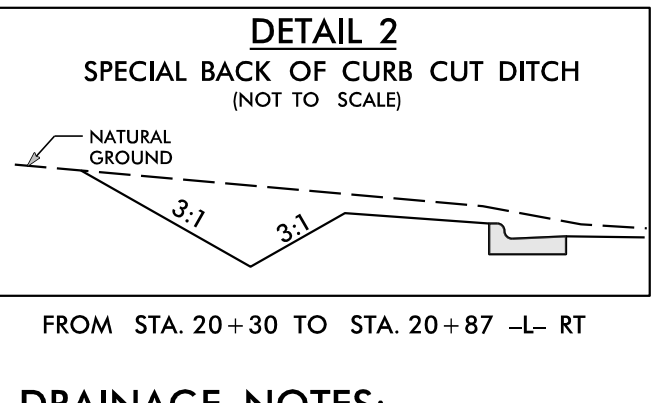
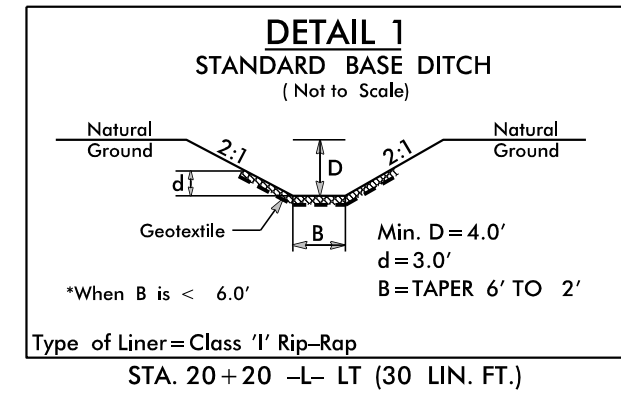
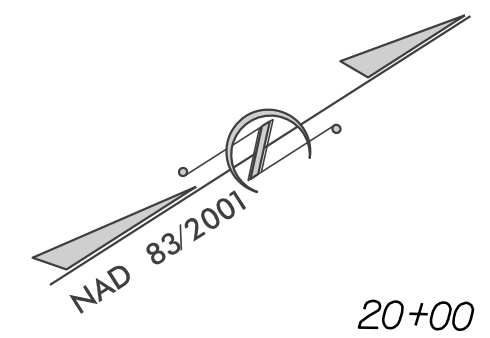
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PROJECT REFERENCE NO. <i>U-5795</i>	SHEET NO. <i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ***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.

## CLEARING AND GRUBBING PLAN



FROM STA. 20+30 TO STA. 20+87 -L- RT

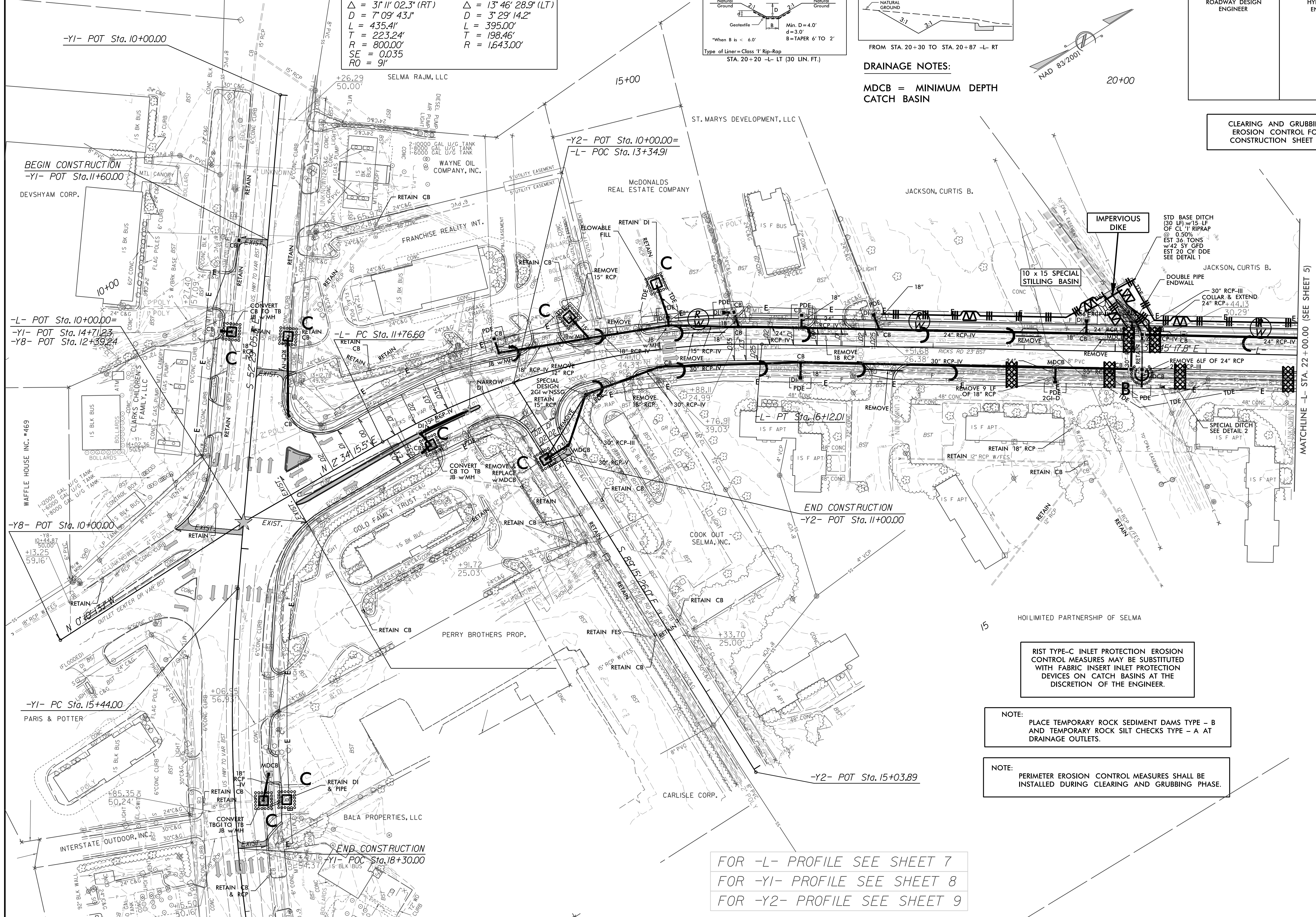
**DRAINAGE NOTES:**

MDCB = MINIMUM DEPTH CATCH BASIN

CURVE DATA

-L-	-Y1-
PI Sta 13+99.84	PI Sta 17+42.46
$\Delta = 31^{\circ} 11' 02.3''$ (RT)	$\Delta = 13^{\circ} 46' 28.9''$ (LT)
$D = 7^{\circ} 09' 43.1''$	$D = 3^{\circ} 29' 14.2''$
$L = 435.41'$	$L = 395.00'$
$T = 223.24'$	$T = 198.46'$
$R = 800.00'$	$R = 1,643.00'$
$SE = 0.035$	
$RO = 91'$	

EXISTING SIGNAL



**IMPERVIOUS DIKE**

**10 x 15 SPECIAL STILLING BASIN**

STD BASE DITCH (30 LF) w/15 LF OF CL 1" RIPRAP @ 0.50% EST 36 TONS w/42 SY GFD EST 20 CF DDE SEE DETAIL 1

DOUBLE PIPE ENDWALL

30" RCP-III COLLAR & EXTEND 24" RCP+44.13 30.29'

REMOVE 6LF OF 24" RCP

SPECIAL DITCH SEE DETAIL 2 IS F APT

RIST TYPE-C INLET PROTECTION EROSION CONTROL MEASURES MAY BE SUBSTITUTED WITH FABRIC INSERT INLET PROTECTION DEVICES ON CATCH BASINS AT THE DISCRETION OF THE ENGINEER.

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

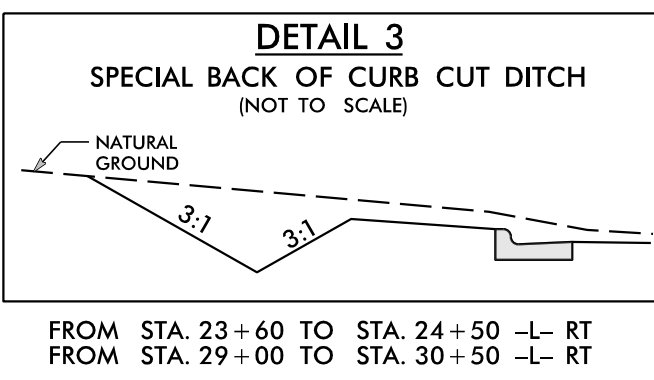
NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

FOR -L- PROFILE SEE SHEET 7  
 FOR -Y1- PROFILE SEE SHEET 8  
 FOR -Y2- PROFILE SEE SHEET 9

MATCHLINE -L- STA. 22+00.00 (SEE SHEET 5)

# CLEARING AND GRUBBING PLAN

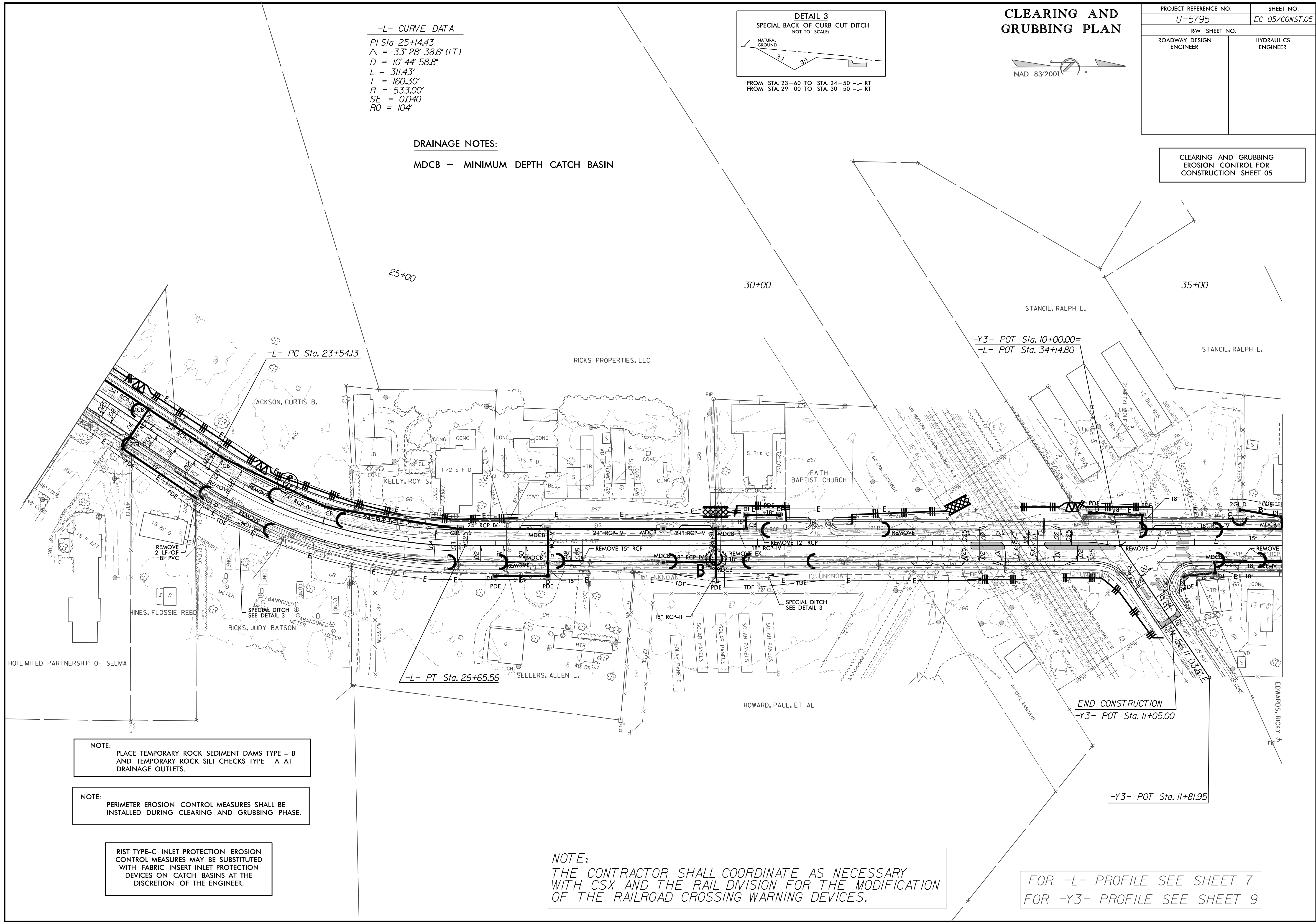
PROJECT REFERENCE NO. <i>U-5795</i>	SHEET NO. <i>EC-05/CONST.05</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**-L- CURVE DATA**  
 PI Sta 25+14.43  
 $\Delta = 33^\circ 28' 38.6''$  (LT)  
 $D = 10^\circ 44' 58.8''$   
 $L = 311.43'$   
 $T = 160.30'$   
 $R = 533.00'$   
 $SE = 0.040$   
 $RO = 104'$

**DRAINAGE NOTES:**  
 MDCB = MINIMUM DEPTH CATCH BASIN

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 05



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

NOTE:  
 PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

NOTE:  
 TYPE-C INLET PROTECTION EROSION CONTROL MEASURES MAY BE SUBSTITUTED WITH FABRIC INSERT INLET PROTECTION DEVICES ON CATCH BASINS AT THE DISCRETION OF THE ENGINEER.

NOTE:  
 THE CONTRACTOR SHALL COORDINATE AS NECESSARY WITH CSX AND THE RAIL DIVISION FOR THE MODIFICATION OF THE RAILROAD CROSSING WARNING DEVICES.

FOR -L- PROFILE SEE SHEET 7  
 FOR -Y3- PROFILE SEE SHEET 9

# CLEARING AND GRUBBING PLAN

PROJECT REFERENCE NO. U-5795	SHEET NO. EC-06/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06

### DRAINAGE NOTES:

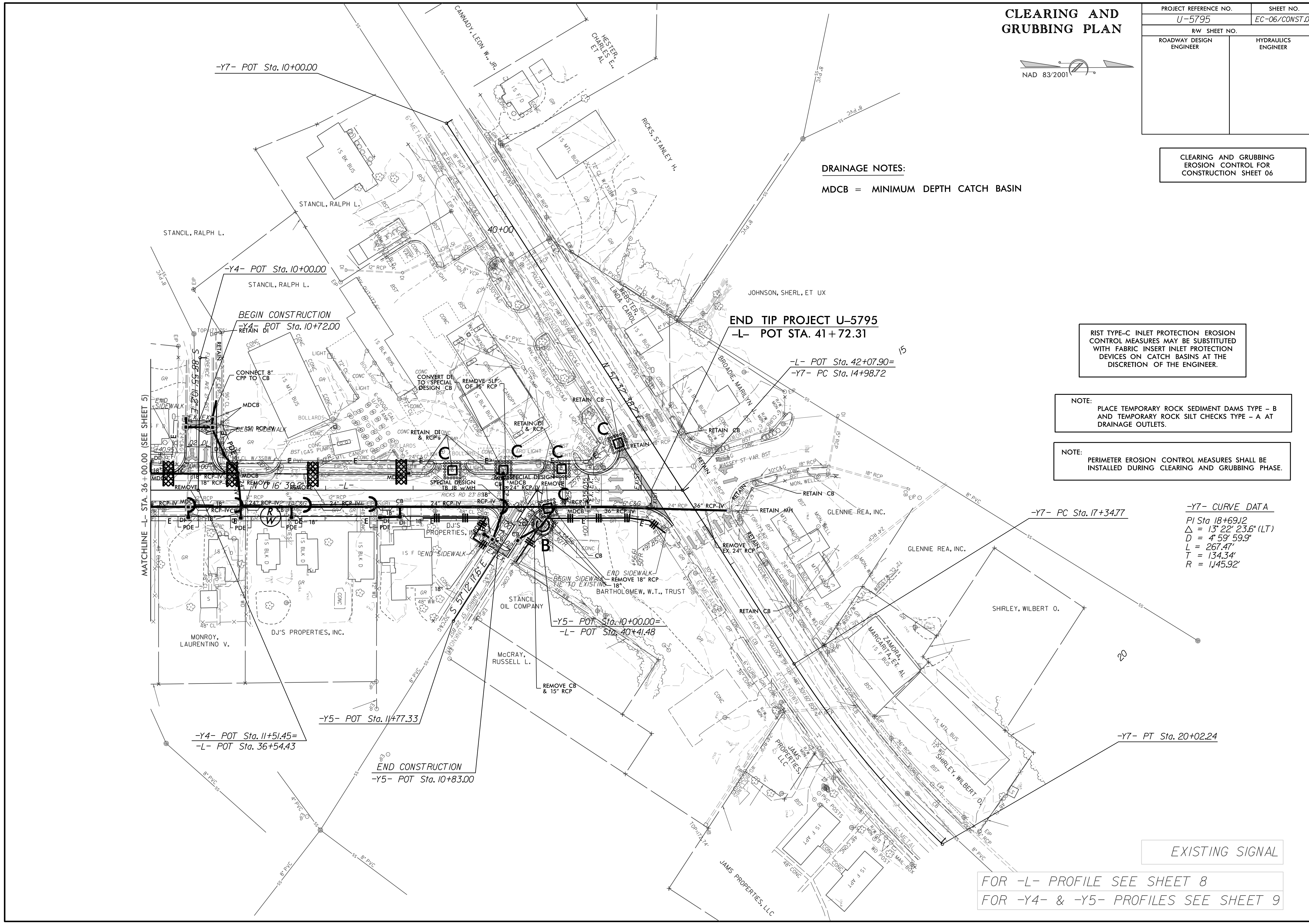
MDCB = MINIMUM DEPTH CATCH BASIN

RIST TYPE-C INLET PROTECTION EROSION CONTROL MEASURES MAY BE SUBSTITUTED WITH FABRIC INSERT INLET PROTECTION DEVICES ON CATCH BASINS AT THE DISCRETION OF THE ENGINEER.

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

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

**-Y7- CURVE DATA**  
 PI Sta 18+69.12  
 $\Delta = 13^{\circ} 22' 23.6" (LT)$   
 $D = 4' 59' 59.9"$   
 $L = 267.47'$   
 $T = 134.34'$   
 $R = 1,145.92'$



EXISTING SIGNAL

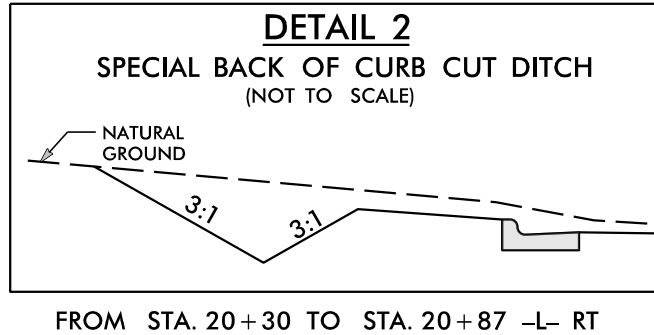
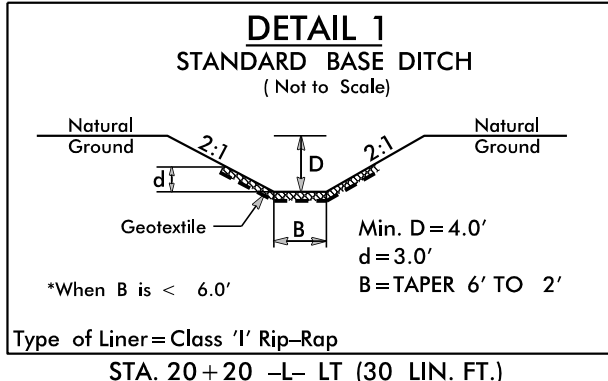
FOR -L- PROFILE SEE SHEET 8  
 FOR -Y4- & -Y5- PROFILES SEE SHEET 9



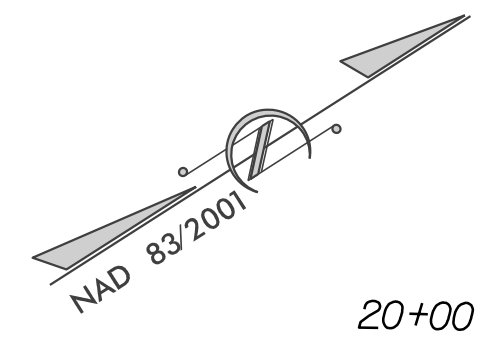
EXISTING SIGNAL

CURVE DATA

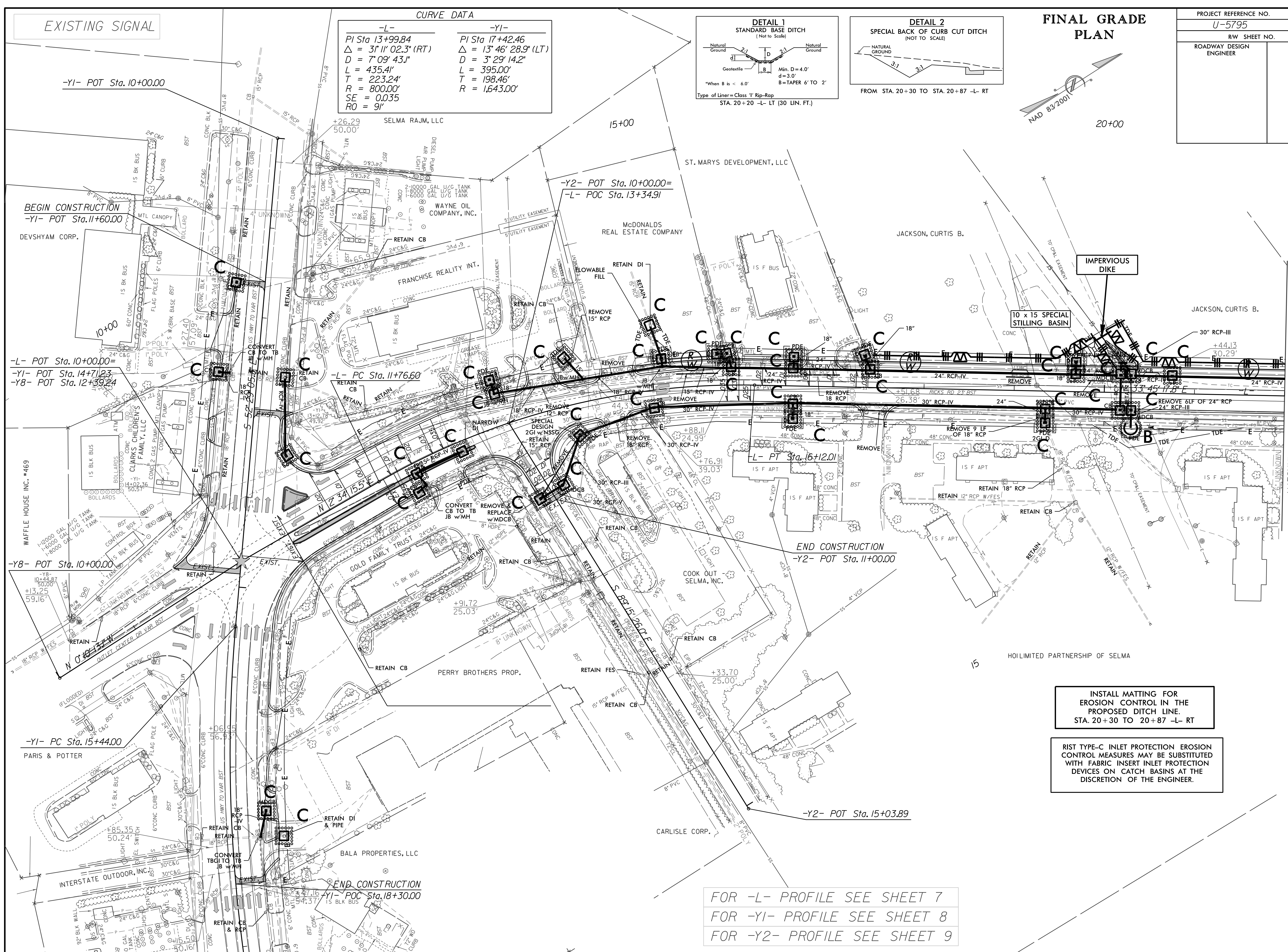
-L-	-Y1-
PI Sta 13+99.84	PI Sta 17+42.46
$\Delta = 31^{\circ} 11' 02.3" (RT)$	$\Delta = 13^{\circ} 46' 28.9" (LT)$
$D = 7^{\circ} 09' 43.1"$	$D = 3^{\circ} 29' 14.2"$
$L = 435.41'$	$L = 395.00'$
$T = 223.24'$	$T = 198.46'$
$R = 800.00'$	$R = 1,643.00'$
$SE = 0.035$	
$RO = 91'$	



FINAL GRADE PLAN



PROJECT REFERENCE NO. U-5795	SHEET NO. EC-07/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCHLINE -L- STA. 22+00.00 (SEE SHEET 5)

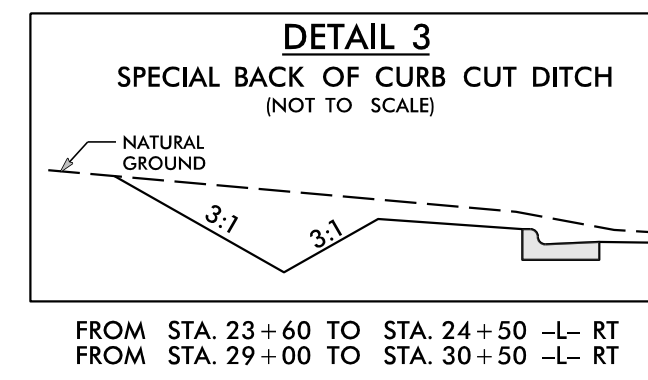
INSTALL MATTING FOR EROSION CONTROL IN THE PROPOSED DITCH LINE. STA. 20+30 TO 20+87 -L- RT

R15 TYPE-C INLET PROTECTION EROSION CONTROL MEASURES MAY BE SUBSTITUTED WITH FABRIC INSERT INLET PROTECTION DEVICES ON CATCH BASINS AT THE DISCRETION OF THE ENGINEER.

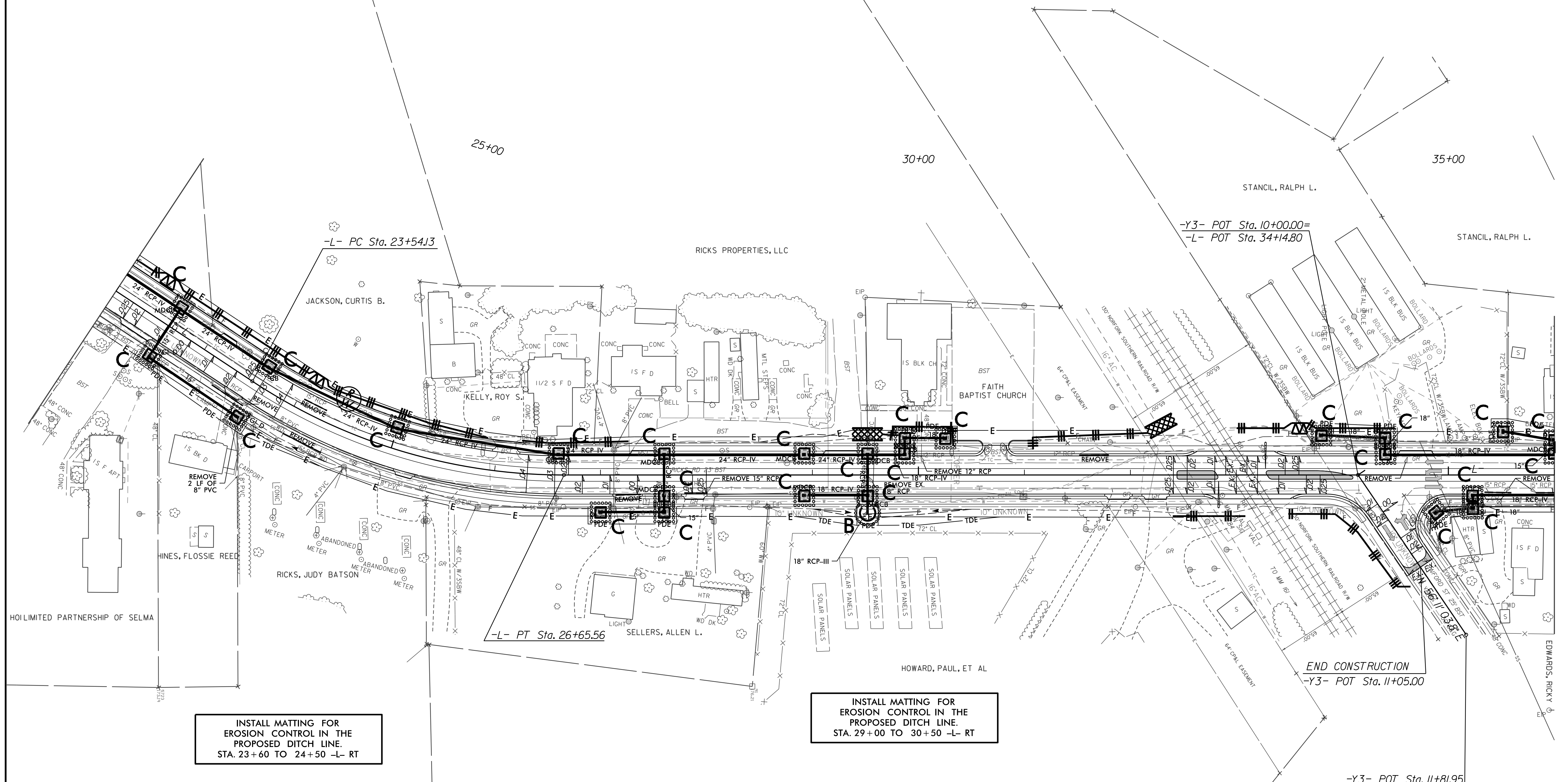
FOR -L- PROFILE SEE SHEET 7  
 FOR -Y1- PROFILE SEE SHEET 8  
 FOR -Y2- PROFILE SEE SHEET 9

**FINAL GRADE  
PLAN**

PROJECT REFERENCE NO. <i>U-5795</i>	SHEET NO. <i>EC-08/CONST.05</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**-L- CURVE DATA**  
 PI Sta 25+14.43  
 $\Delta = 33^\circ 28' 38.6''$  (LT)  
 $D = 10^\circ 44' 58.8''$   
 $L = 311.43'$   
 $T = 160.30'$   
 $R = 533.00'$   
 $SE = 0.040$   
 $RO = 104'$



INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.  
STA. 23+60 TO 24+50 -L- RT

INSTALL MATTING FOR  
EROSION CONTROL IN THE  
PROPOSED DITCH LINE.  
STA. 29+00 TO 30+50 -L- RT

RIST TYPE-C INLET PROTECTION EROSION  
CONTROL MEASURES MAY BE SUBSTITUTED  
WITH FABRIC INSERT INLET PROTECTION  
DEVICES ON CATCH BASINS AT THE  
DISCRETION OF THE ENGINEER.

**NOTE:**  
THE CONTRACTOR SHALL COORDINATE AS NECESSARY  
WITH CSX AND THE RAIL DIVISION FOR THE MODIFICATION  
OF THE RAILROAD CROSSING WARNING DEVICES.

FOR -L- PROFILE SEE SHEET 7  
FOR -Y3- PROFILE SEE SHEET 9

# FINAL GRADE PLAN

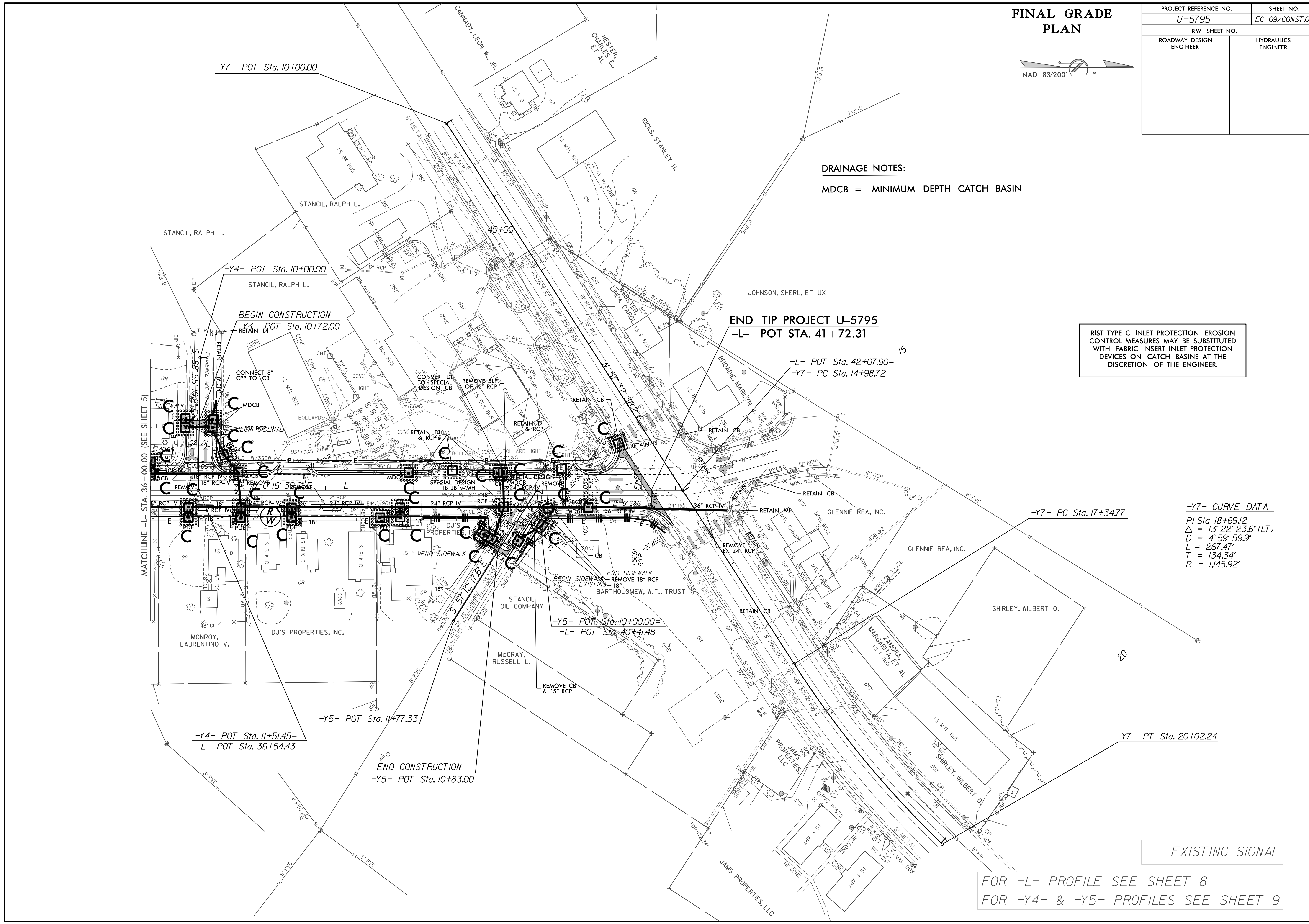
PROJECT REFERENCE NO.	SHEET NO.
U-5795	EC-09/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



### DRAINAGE NOTES:

MDCB = MINIMUM DEPTH CATCH BASIN

RISER TYPE-C INLET PROTECTION EROSION CONTROL MEASURES MAY BE SUBSTITUTED WITH FABRIC INSERT INLET PROTECTION DEVICES ON CATCH BASINS AT THE DISCRETION OF THE ENGINEER.



**-Y7- CURVE DATA**  
 PI Sta 18+69.12  
 $\Delta = 13^{\circ} 22' 23.6" (LT)$   
 $D = 459' 59.9"$   
 $L = 267.47'$   
 $T = 134.34'$   
 $R = 1,145.92'$

EXISTING SIGNAL

FOR -L- PROFILE SEE SHEET 8  
 FOR -Y4- & -Y5- PROFILES SEE SHEET 9