

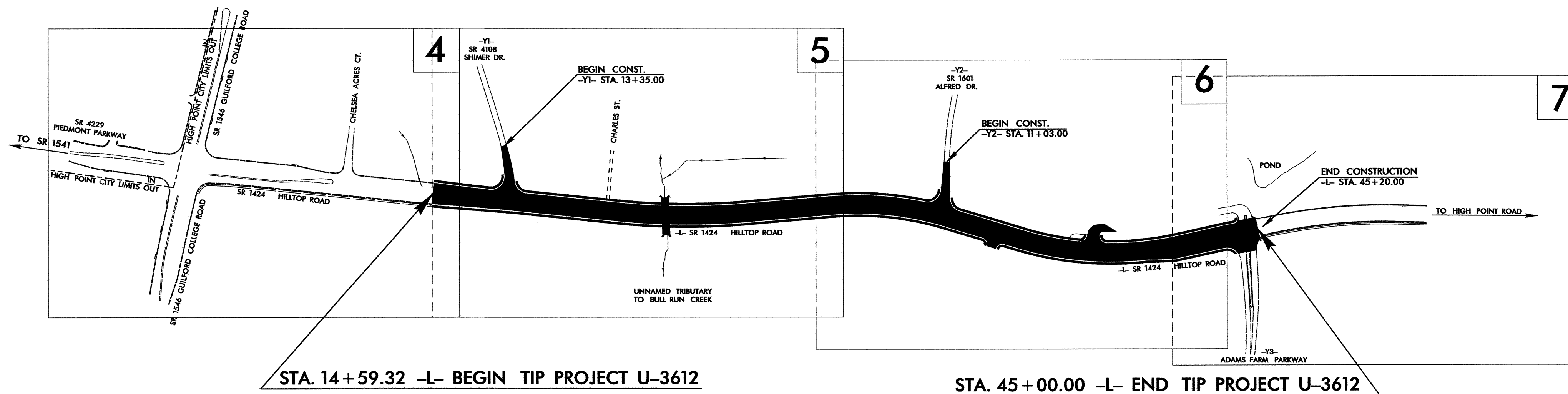
**TIP PROJECT: U-3612**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

**GUILFORD COUNTY**

**LOCATION: GREENSBORO - SR 1424 (HILLTOP ROAD) FROM EAST OF SR 1546 (GUILFORD COLLEGE ROAD) AT CHELSEA ACRES COURT TO ADAMS FARM PARKWAY**  
**TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB & GUTTER, GUARDRAIL, CULVERT, AND SIGNALS**



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3612	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

**EROSION AND SEDIMENT CONTROL MEASURES**

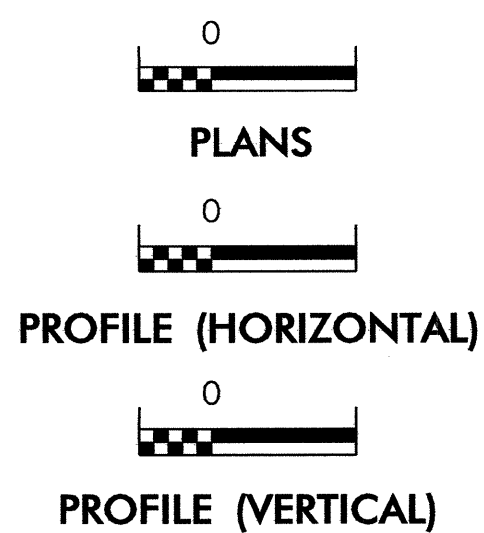
Std. #	Description	Symbol
	Streambank Reforestation	
1630.03	Temporary Silt Ditch	
1630.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.01	Riser Basin	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-B	
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	
	Rock Inlet Sediment Trap:	
1632.01	Type A	OR
1632.02	Type B	OR
1632.03	Type C	OR

**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**



ROADSIDE ENVIRONMENTAL UNIT  
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

Prepared In the Office of:  
**ROADSIDE ENVIRONMENTAL UNIT**  
1 South Wilmington St.  
Raleigh, NC 27611  
**2006 STANDARD SPECIFICATIONS**

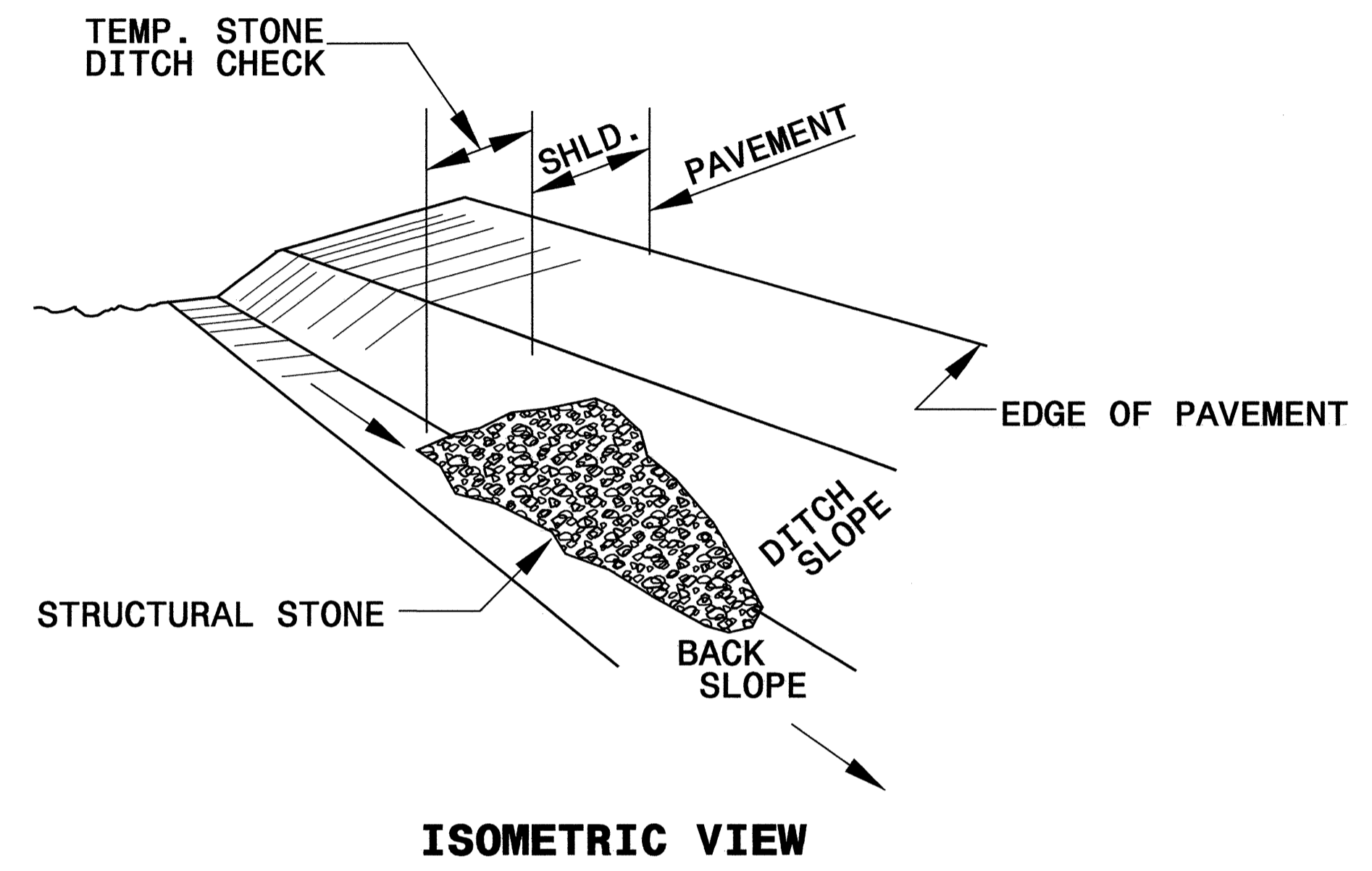
**Roadway Standard Drawings**

The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1630.06 Special Stilling Basin
1607.01 Gravel Construction Entrance	1632.02 Rock Inlet Sediment Trap Type B
1622.01 Temporary Berms and Slope Drains	1632.03 Rock Inlet Sediment Trap Type C
1630.02 Silt Basin Type B	1633.01 Temporary Rock Silt Check Type A
1630.04 Stilling Basin	1634.02 Temporary Rock Sediment Dam Type B
1630.05 Temporary Diversion	1635.02 Rock Pipe Inlet Sediment Trap Type B

PROJECT REFERENCE NO. <i>U-3612</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

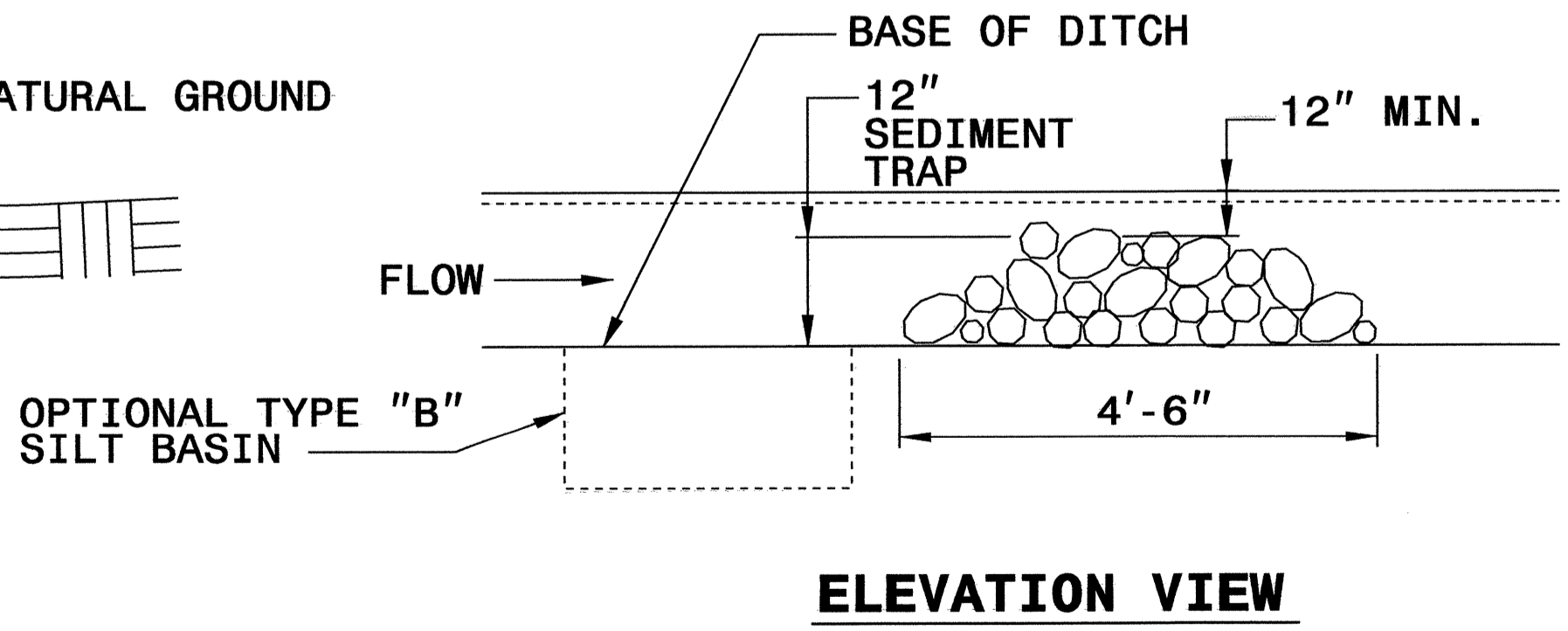
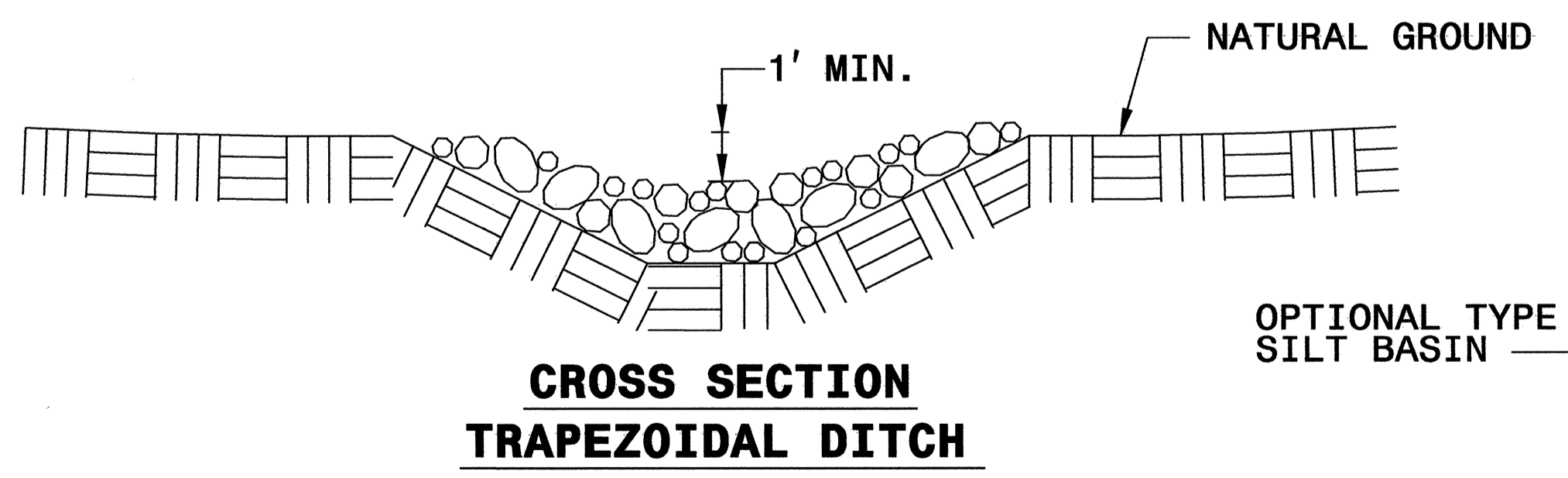
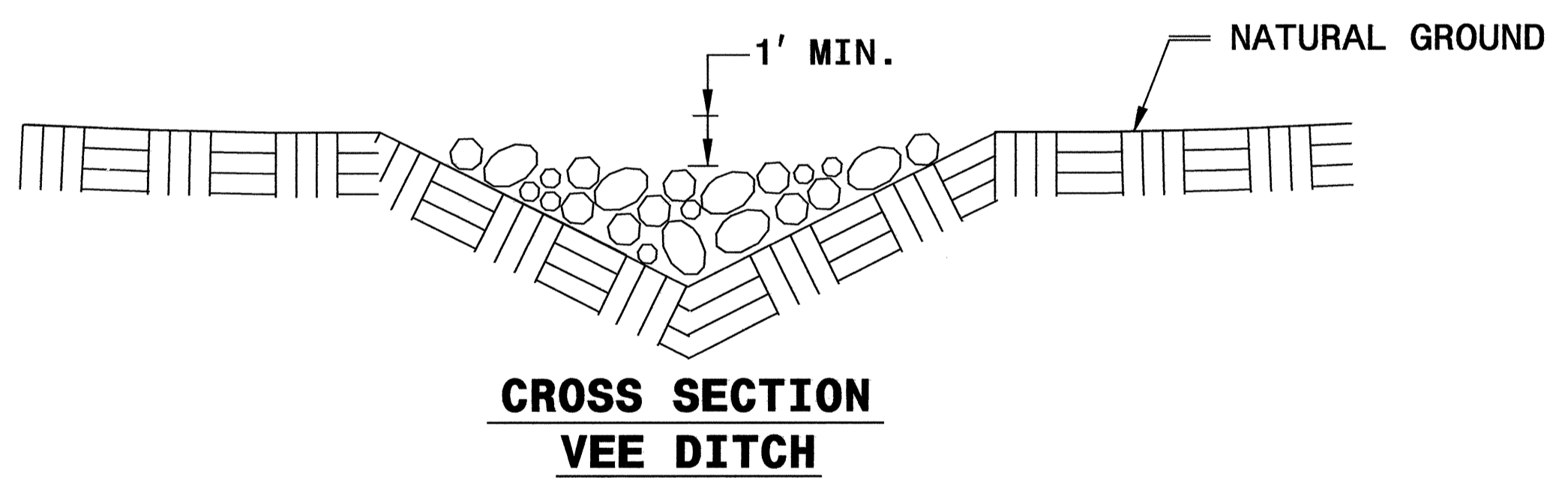
# TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



**NOTES:**

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.

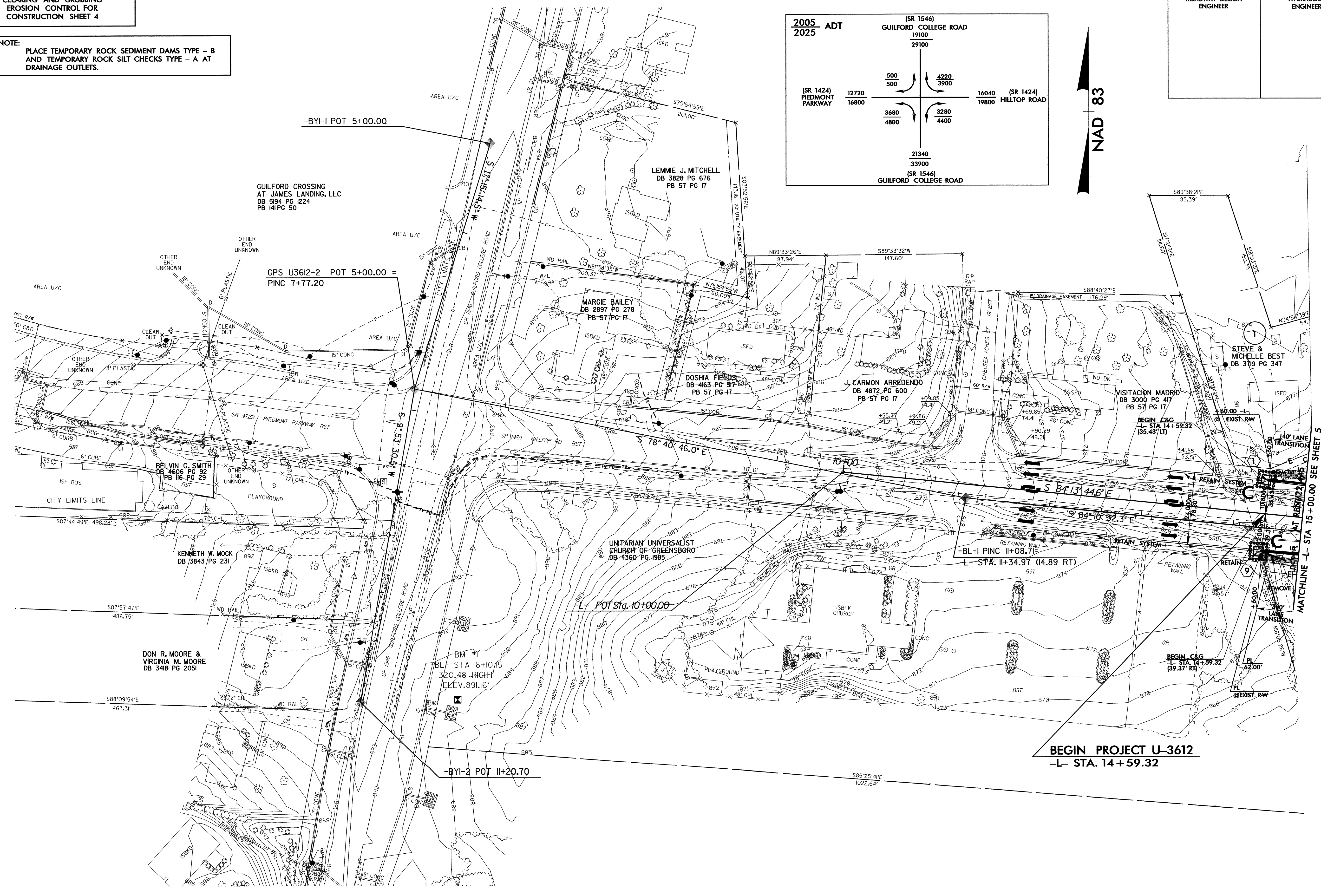
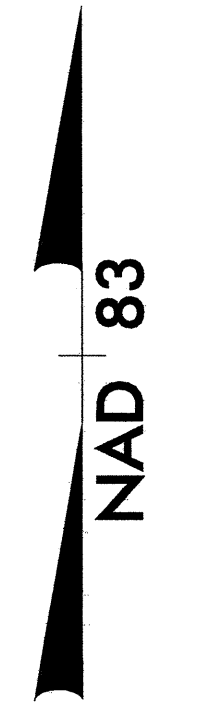
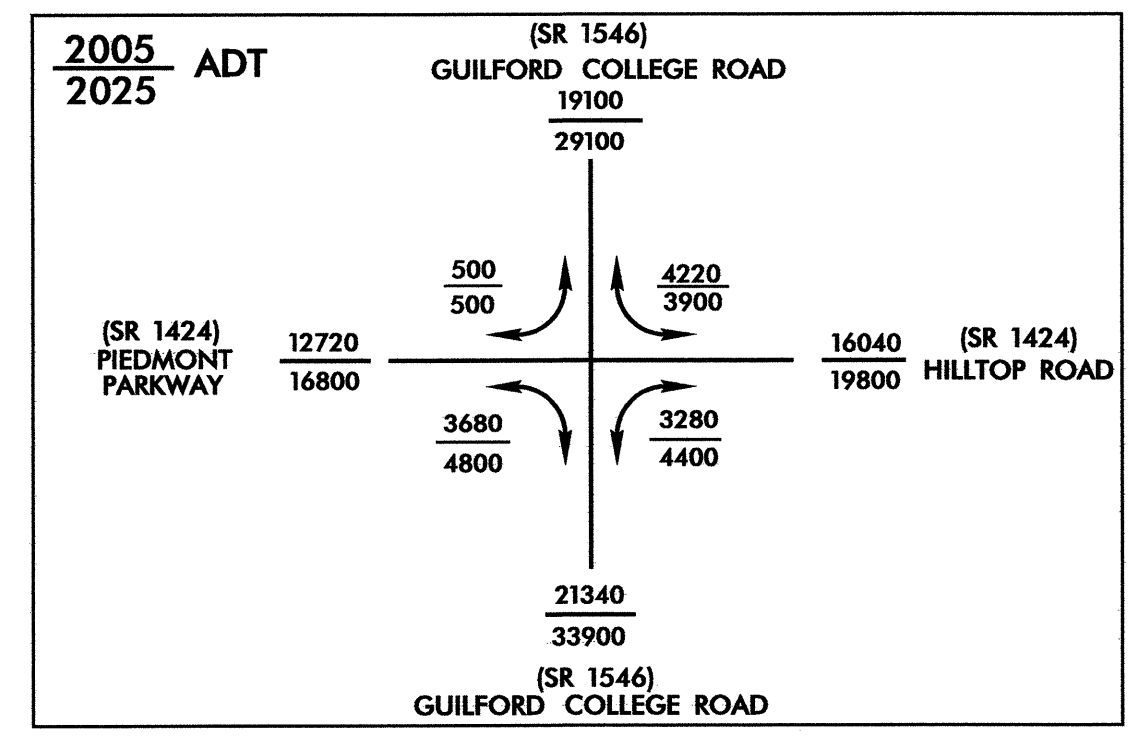




PROJECT REFERENCE NO.	SHEET NO.
U-3612	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**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.

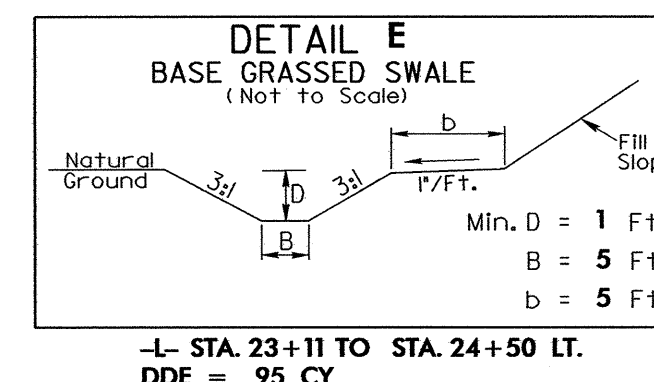
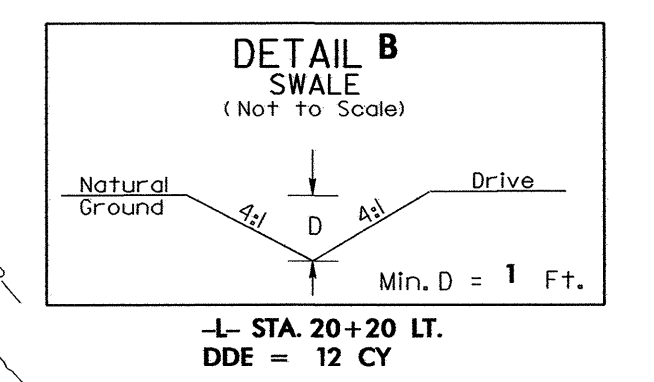
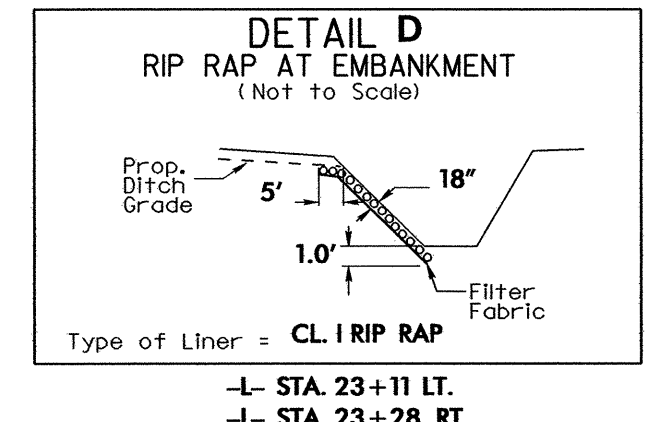
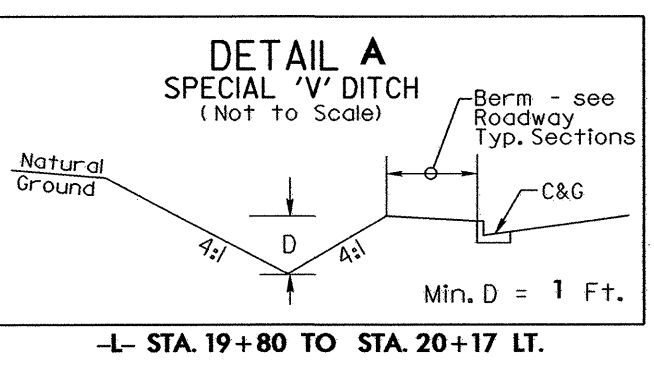
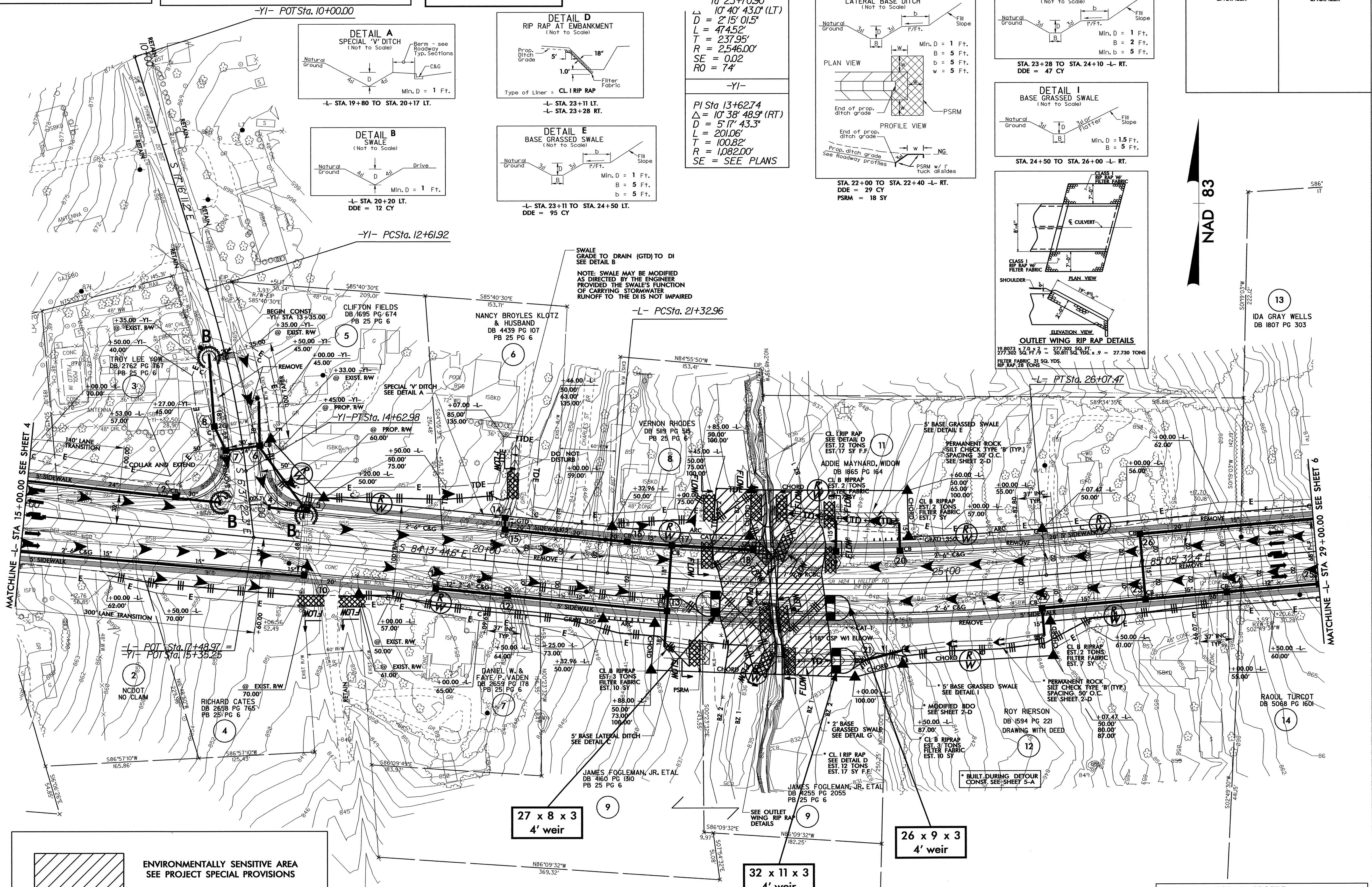


PROJECT REFERENCE NO.	SHEET NO.
U-3612	EC-5/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5 AND 5A

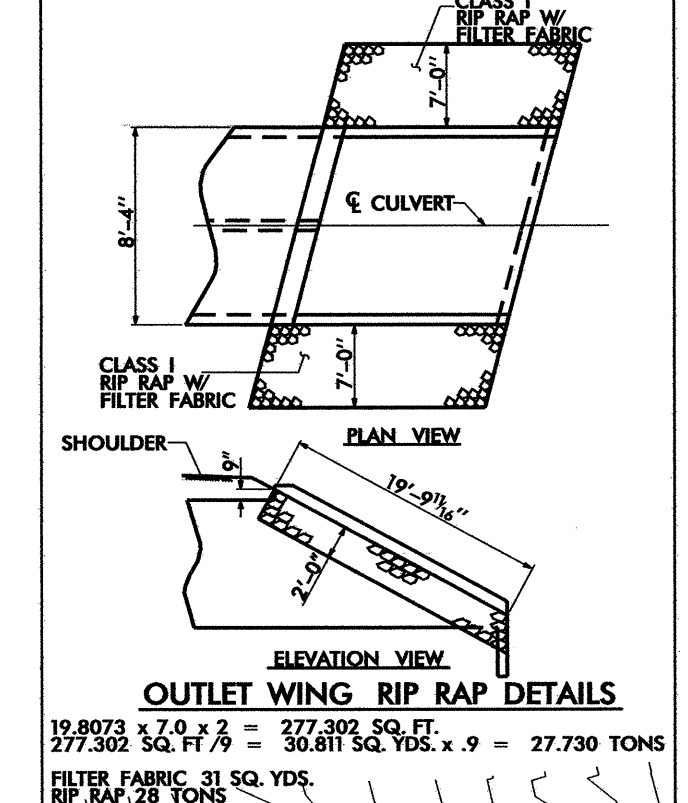
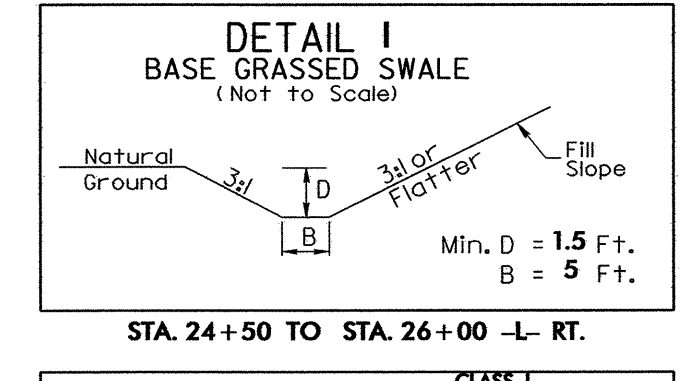
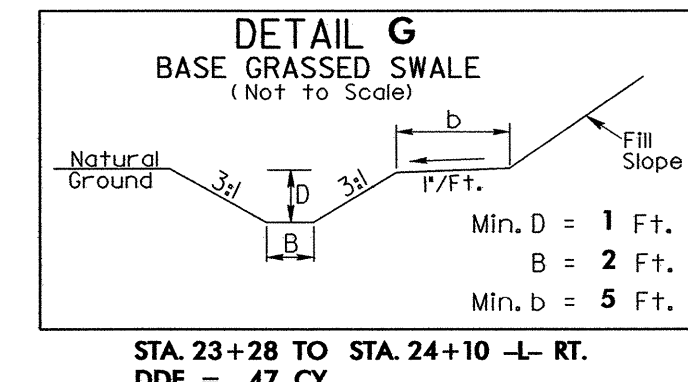
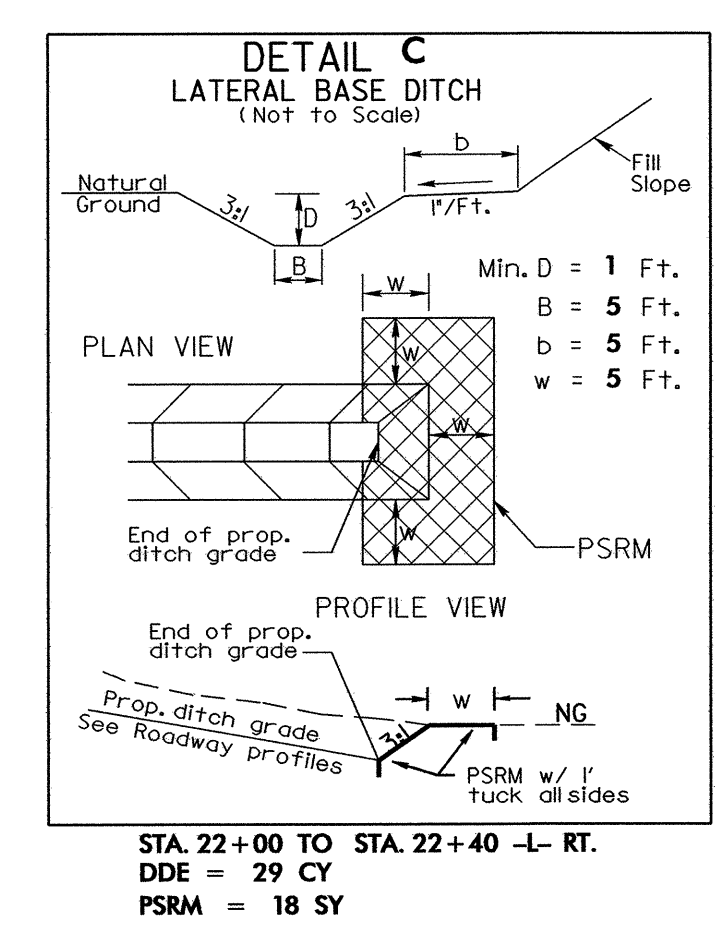
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

INSTALL FILTER FABRIC UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.



-L-  
to 23+70.90  
10' 40' 43.0" (LT)  
D = 2' 15' 01.5"  
L = 47.452'  
T = 237.95'  
R = 2,546.00'  
SE = 0.02  
RO = 74'

-YI-  
PI Sta 13+62.74  
Δ = 10' 38' 48.9" (RT)  
D = 5' 17' 43.3"  
L = 201.06'  
T = 100.82'  
R = 1,082.00'  
SE = SEE PLANS



24-APR-2006 13:41 9:11 ppp-o-ec REN\environmental\design\3612-rdy.psh.05.ec.dgn

ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

SEE SHEET 8 FOR -L- PROFILE  
SEE SHEET 10 FOR -YI- PROFILE  
SEE SHEET C-1 THRU C- FOR CULVERT PLANS

PROJECT REFERENCE NO. U-3612	SHEET NO. EC-6/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# CULVERT CONSTRUCTION SEQUENCE STA. 23+12.3 -L-

## PHASE Ia

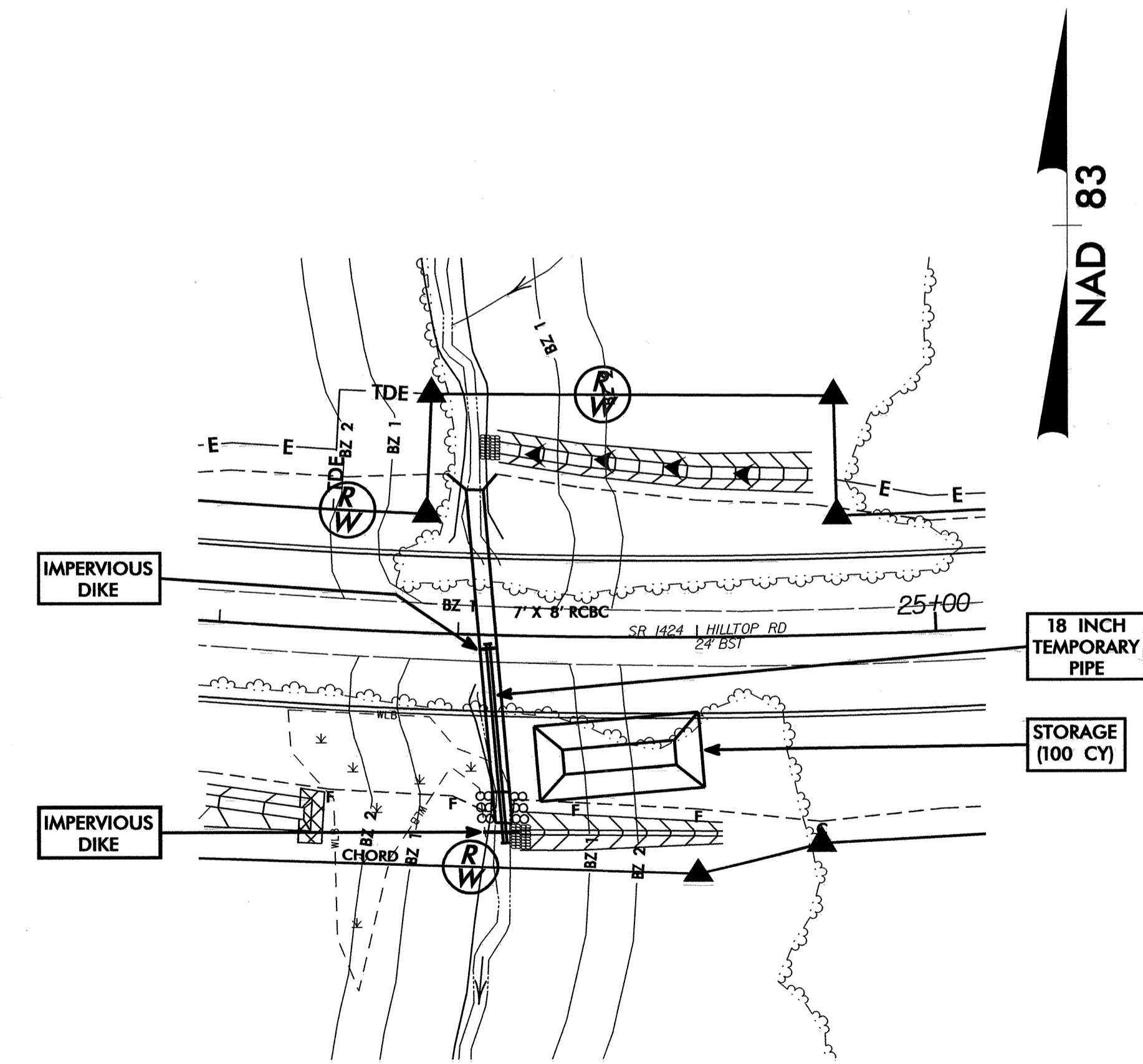
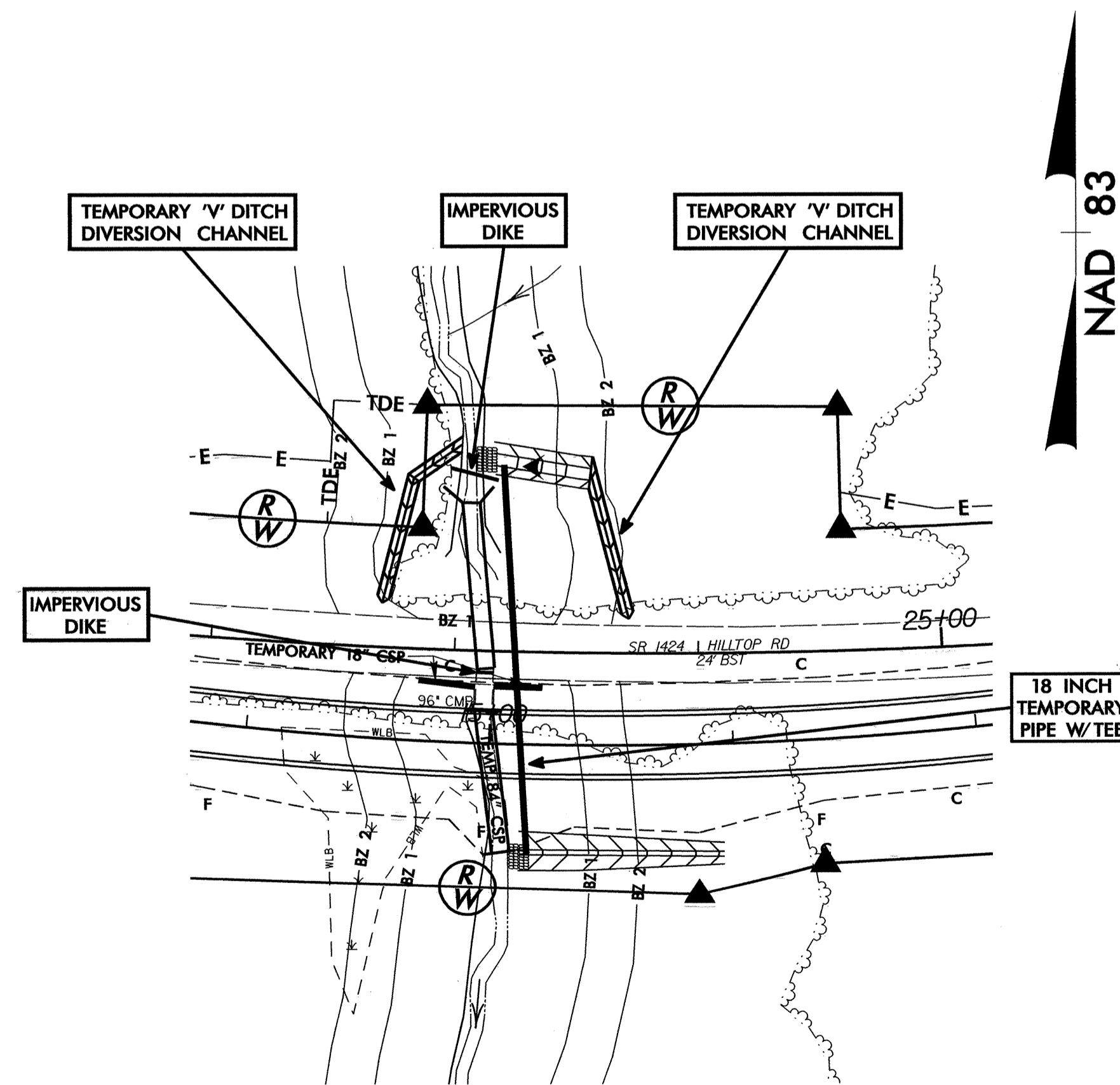
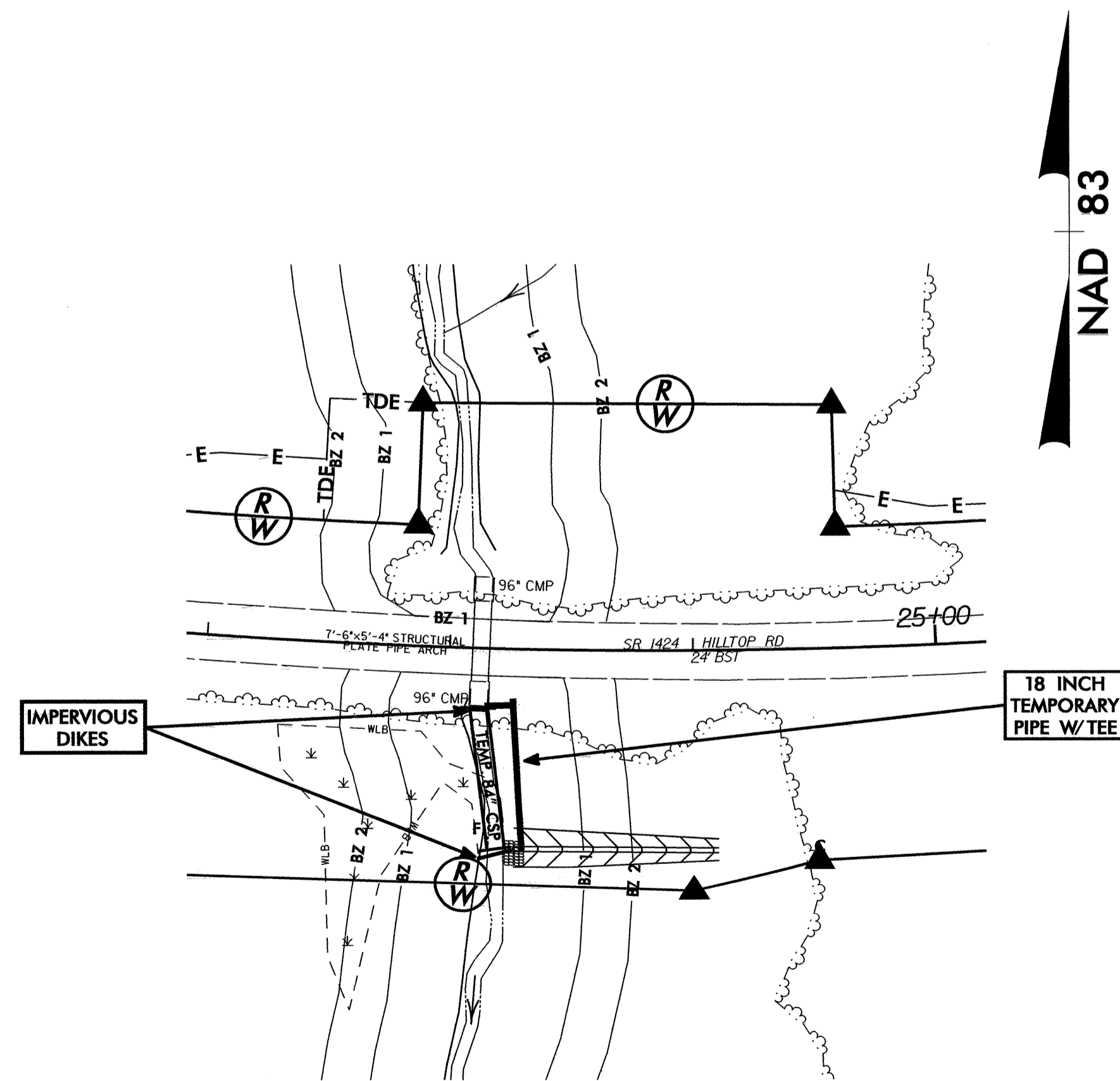
1. INSTALL AND UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING PHASE Ia CULVERT CONSTRUCTION.
2. CONSTRUCT PROPOSED LATERAL DITCH ON RIGHT OF -L-, INCLUDING ANY NECESSARY TEMPORARY DITCHES TO TIE EXISTING TO PROPOSED DITCH.
3. INSTALL 18" TEMPORARY PIPE WITH TEE AND IMPERVIOUS DIKES, DIVERTING FLOW FROM CHANNEL DOWNSTREAM OF EXISTING CULVERT. TEMPORARILY BLOCK UNUSED PIPE TEE STUB-OUT (FOR LATER USE).
4. INSTALL 84" TEMPORARY CSP WITH TEMPORARY HEADWALL IN STREAM BED.
5. REMOVE IMPERVIOUS DIKES AND PORTION OF 18" TEMPORARY PIPE (DISCONNECTING 18" PIPE FROM EXISTING CULVERT), ALLOWING FLOW THROUGH EXISTING CULVERT AND 84" PIPE.

## PHASE Ib

6. CONSTRUCT ON-SITE DETOUR.
7. INSTALL AND UTILIZE SPECIAL STILLING BASINS AS NEEDED DURING PHASE Ib CULVERT CONSTRUCTION.
8. CONSTRUCT PORTION OF PROPOSED DITCH(ES) AND TEMPORARY 'V' DITCH DIVERSION CHANNELS, AS NEEDED, TO DIVERT STORM FLOW UPSTREAM OF CONSTRUCTION AREA.
9. ONCE TRAFFIC IS SHIFTED TO THE DETOUR, CONSTRUCT IMPERVIOUS DIKES AND EXTEND 18" TEMPORARY PIPE TO CARRY FLOW FROM UPSTREAM COMPLETELY AROUND CONSTRUCTION AREA.
10. REMOVE AS MUCH OF EXISTING CULVERT AS POSSIBLE AND CONSTRUCT UPSTREAM PORTION OF PROPOSED CULVERT.
11. REMOVE IMPERVIOUS DIKES AND AS MUCH OF 18" TEMPORARY PIPE AS POSSIBLE, ALLOWING FLOW THROUGH UPSTREAM PORTION OF PROPOSED CULVERT AND 84" TEMPORARY CSP.

## PHASE II

12. CONSTRUCT PROPOSED ROADWAY LEFT OF -L- OVER UPSTREAM PORTION OF PROPOSED CULVERT WITH REQUIRED FABRIC WALL. SHIFT TRAFFIC.
13. CONSTRUCT STILLING BASIN (100 CY) ON RIGHT OF -L-, REMOVING DETOUR FILL AS NEEDED.
14. INSTALL 18" TEMPORARY PIPE AND CONSTRUCT IMPERVIOUS DIKES, CARRYING FLOW FROM UPSTREAM PORTION OF PROPOSED CULVERT TO BEYOND CONSTRUCTION AREA.
15. REMOVE REMAINDER OF EXISTING CULVERT AND ALL TEMPORARY PIPES (18" AND 84") INSTALLED IN PHASES Ia AND Ib.
16. CONSTRUCT DOWNSTREAM PORTION OF PROPOSED CULVERT AND ANY NECESSARY OUTLET CHANNEL IMPROVEMENTS.
17. COMPLETE ROADWAY.



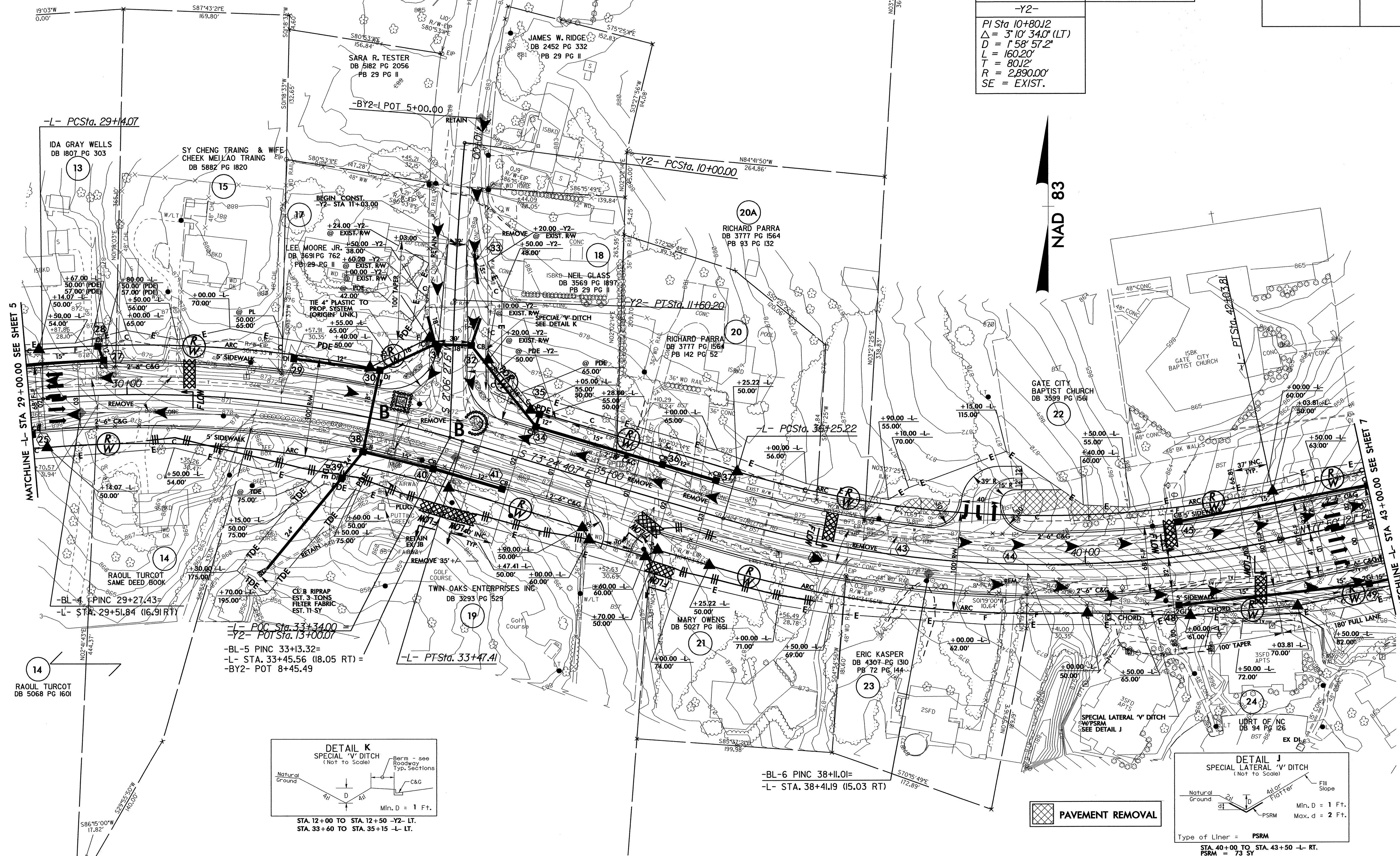
8/17/79

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 6

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

PROJECT REFERENCE NO. U-3612	SHEET NO. EC-7/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

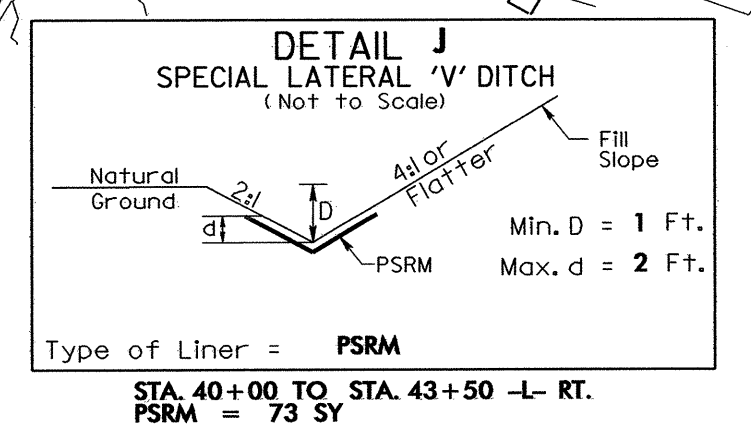
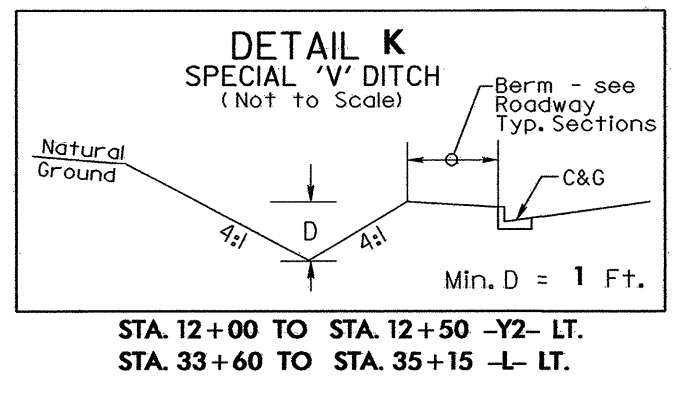
-L-	
PI Sta 31+33.32 Δ = 2' 29' 46.9" (RT) D = 4' 57' 38.4" L = 433.34' T = 219.25' R = 1,155.00' SE = 0.03 RO = SEE PLANS	PI Sta 39+20.74 Δ = 28' 45' 07.3" (LT) D = 4' 58' 09.4" L = 578.60' T = 295.53' R = 1,153.00' SE = 0.03 RO = SEE PLANS
-Y2-	
PI Sta 10+80.12 Δ = 3' 10' 34.0" (LT) D = 1' 58' 57.2" L = 160.20' T = 80.12' R = 2,890.00' SE = EXIST.	



NAD 83

MATCHLINE -L- STA 29+00.00 SEE SHEET 5

MATCHLINE -L- STA 43+00.00 SEE SHEET 7



PAVEMENT REMOVAL

-BL-6 PINC 38+11.01=  
-L- STA. 38+41.19 (15.03 RT)

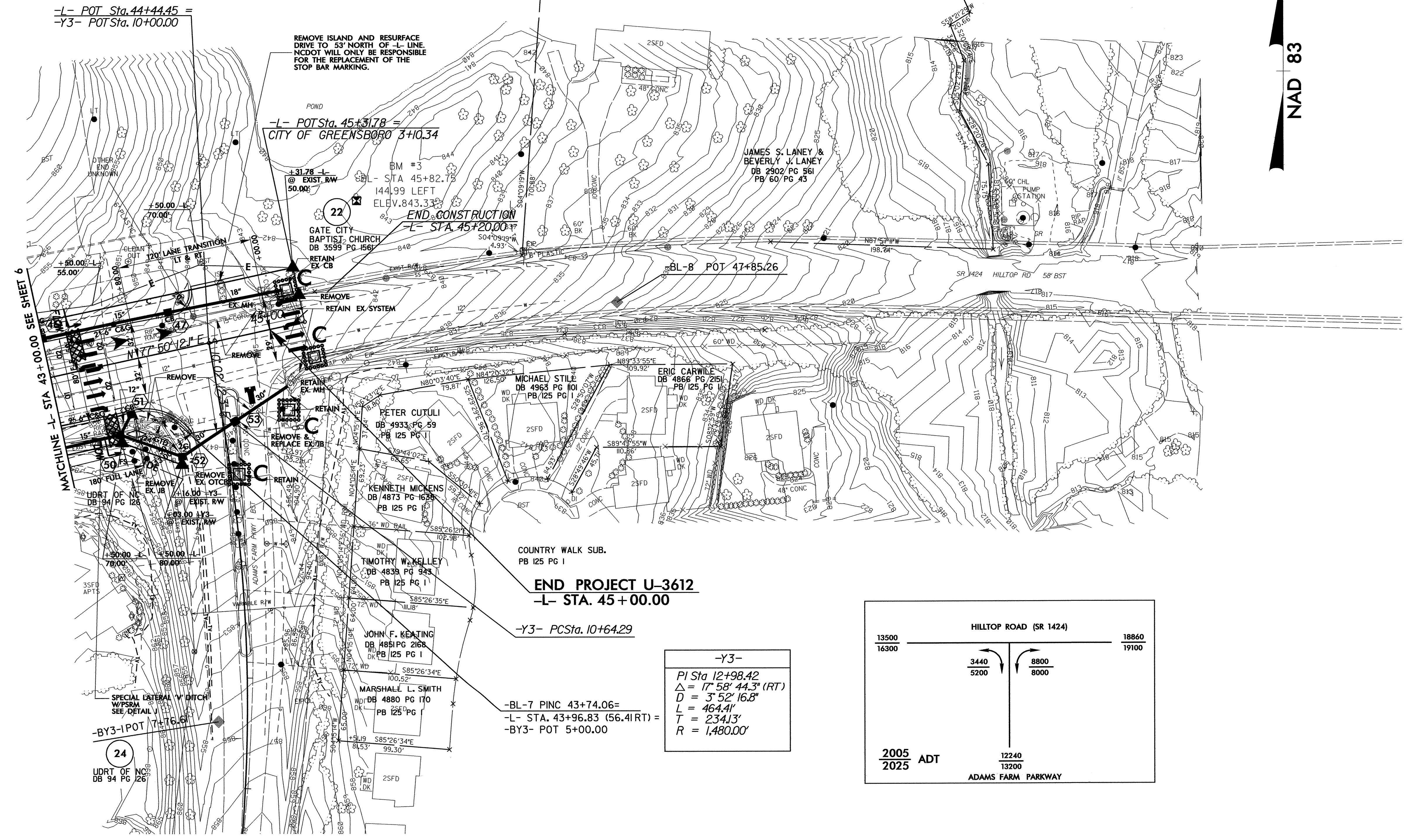
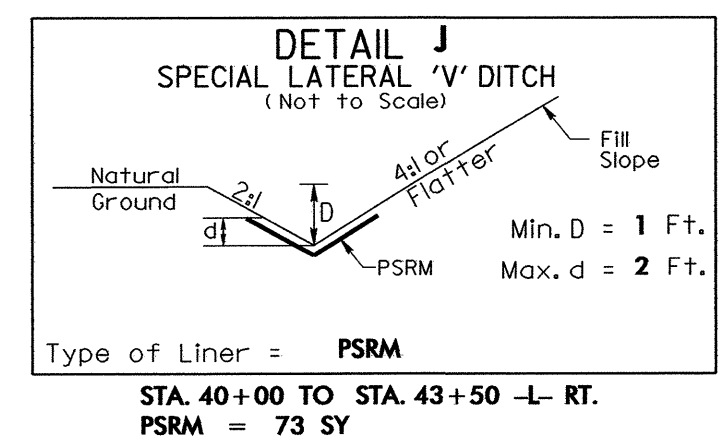
SEE SHEET 9 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y2- PROFILE

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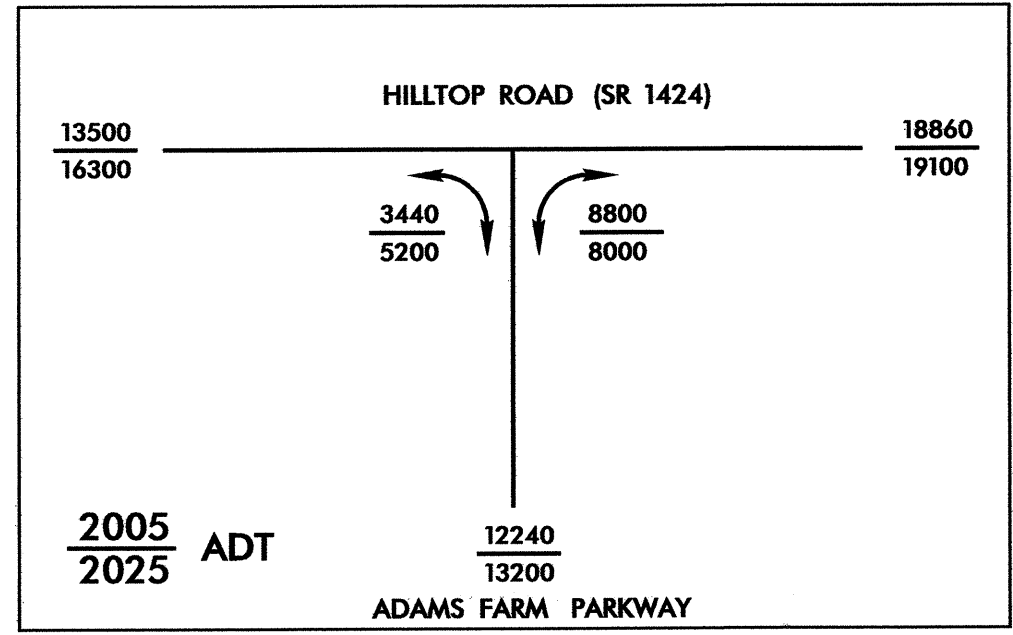
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**CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 7**

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



**-Y3-**  
 PI Sta 12+98.42  
 $\Delta = 17^{\circ} 58' 44.3" (RT)$   
 $D = 3^{\circ} 52' 16.8"$   
 $L = 464.41'$   
 $T = 234.13'$   
 $R = 1,480.00'$

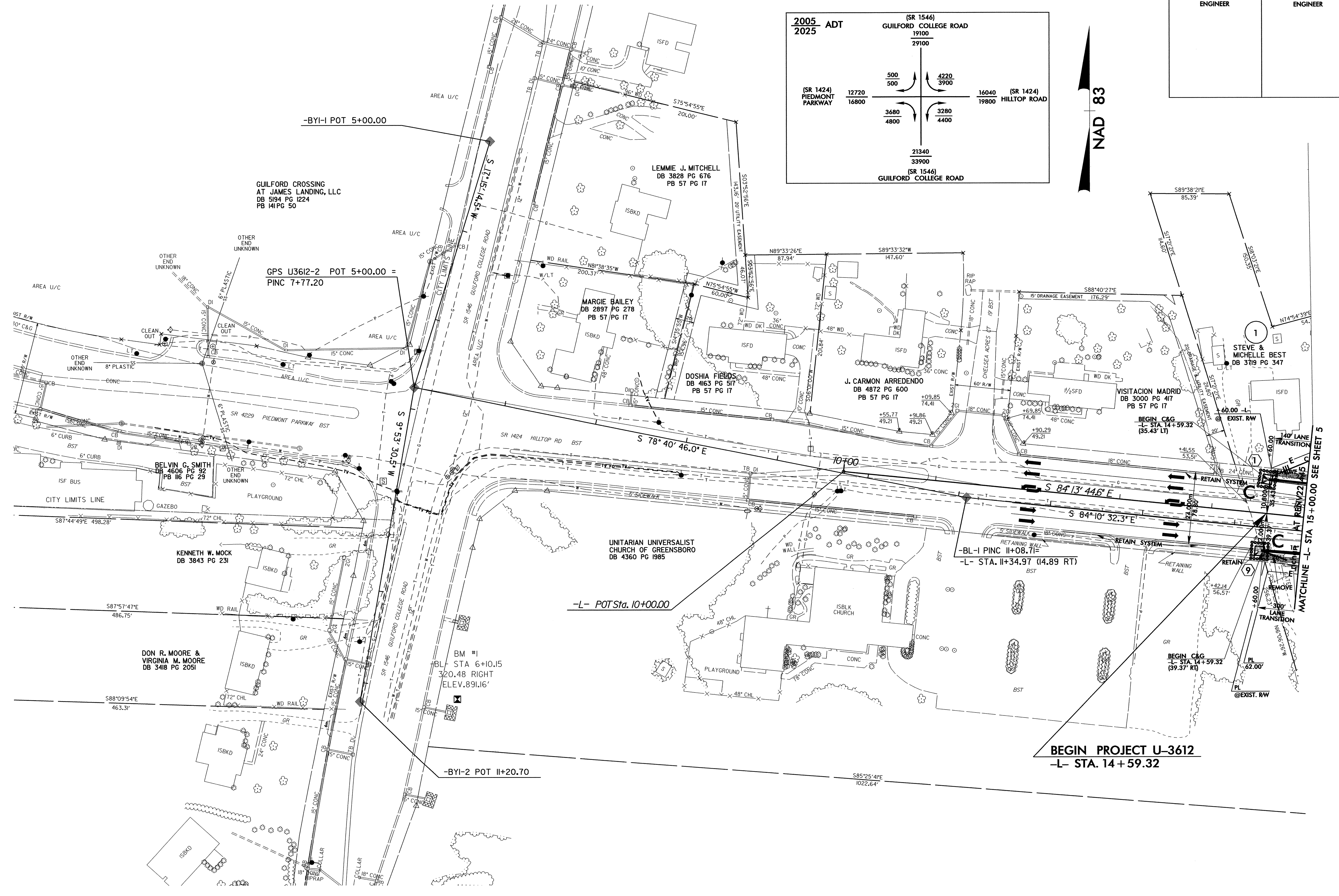
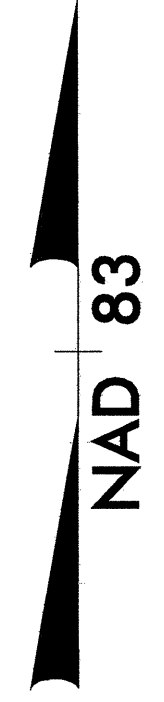
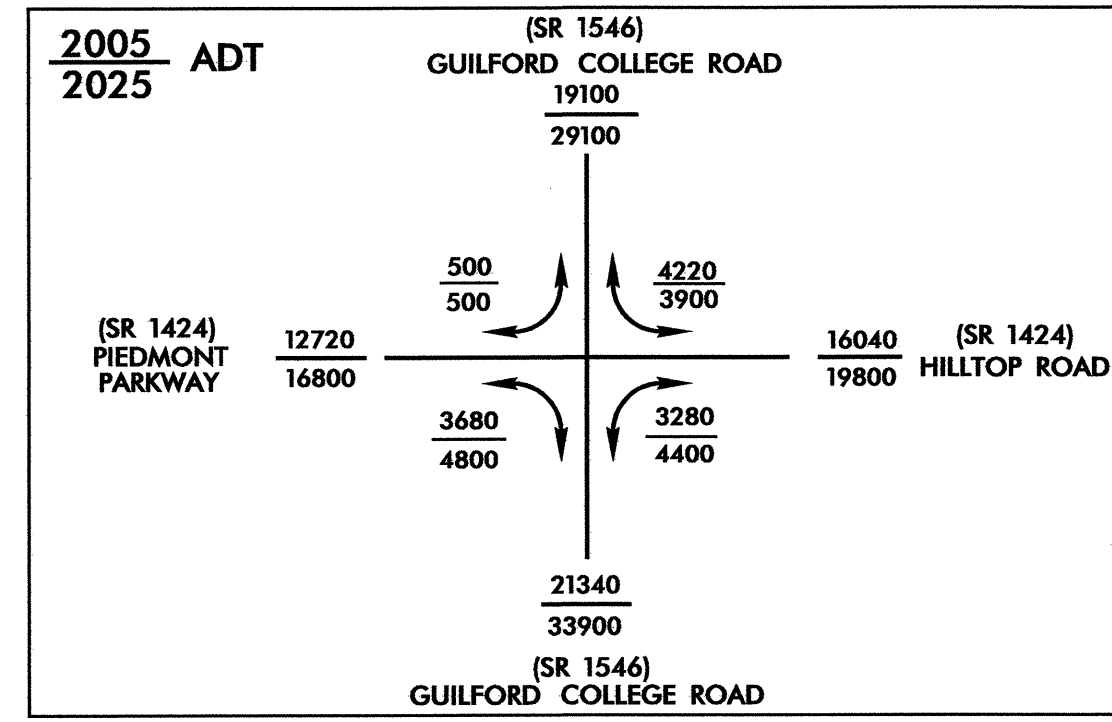


PROJECT REFERENCE NO. U-3612	SHEET NO. EC-8/CONST.7
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SEE SHEET 9 FOR -L- PROFILE



PROJECT REFERENCE NO.	SHEET NO.
U-3612	EC-9/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

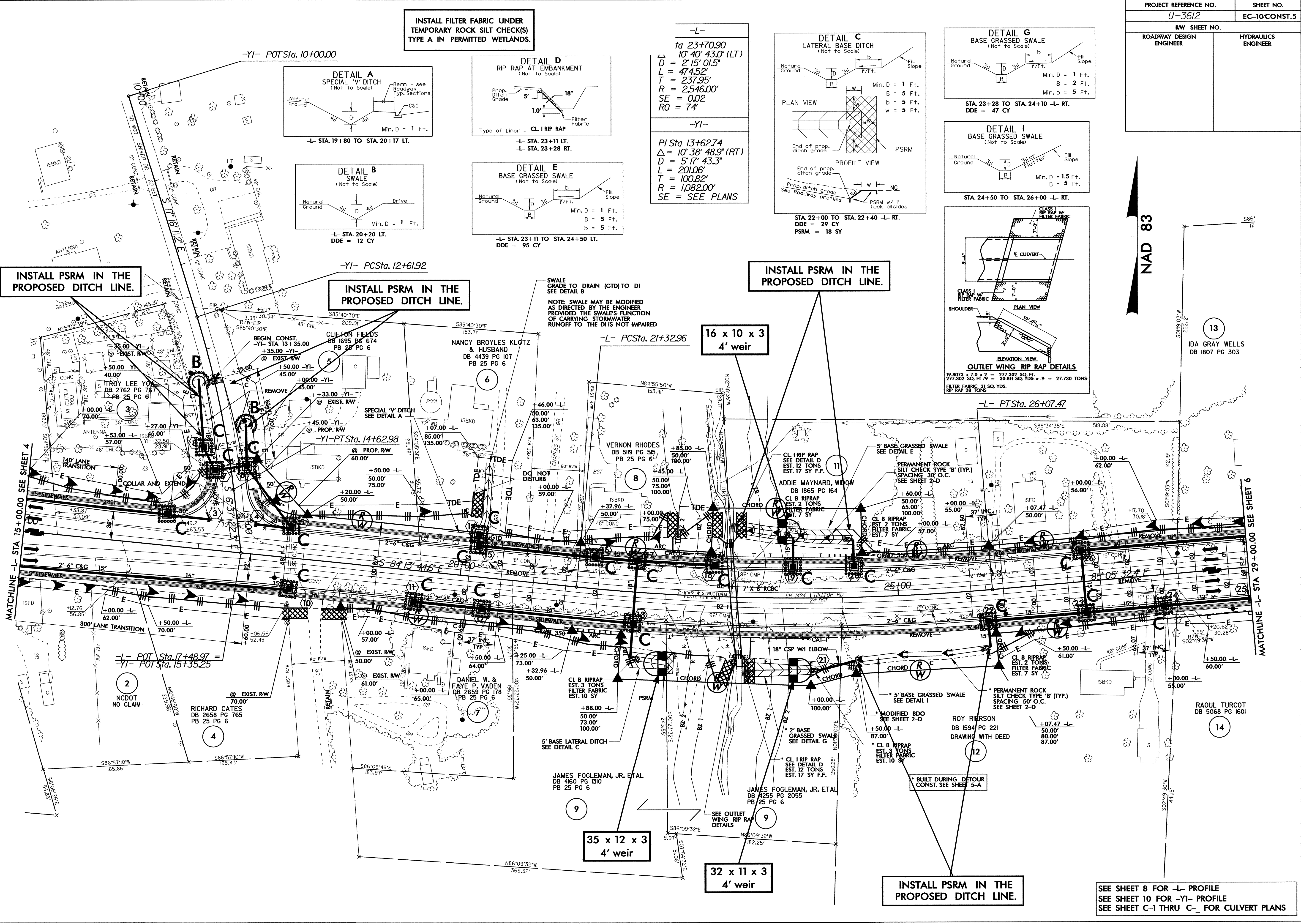


8/17/99

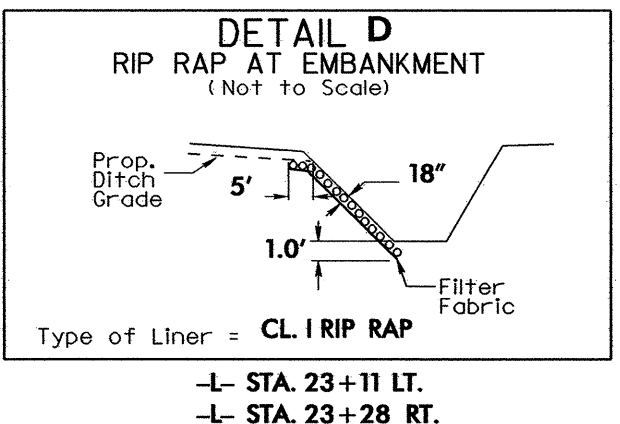
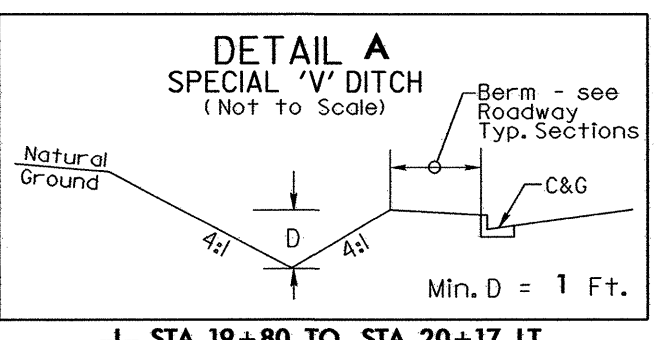
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SEE SHEET 8 FOR -L- PROFILE

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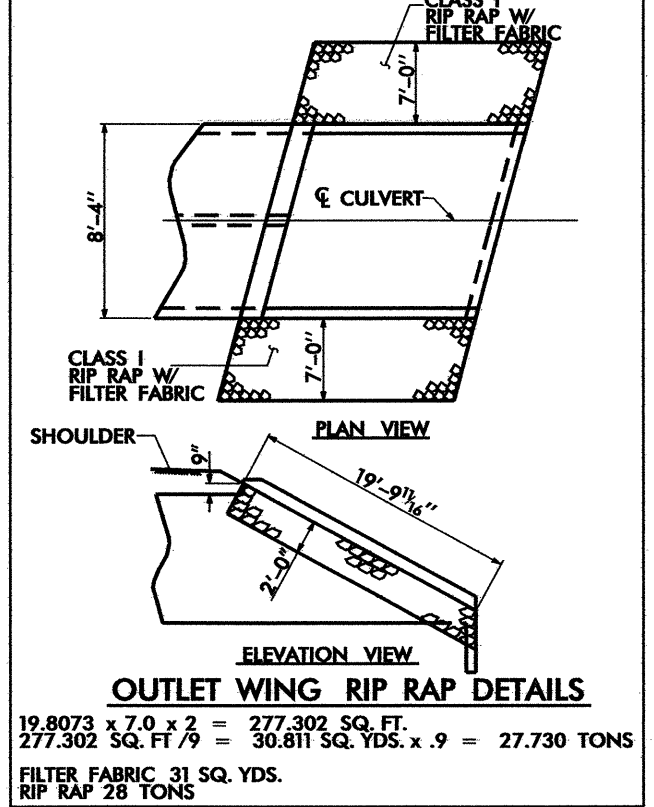
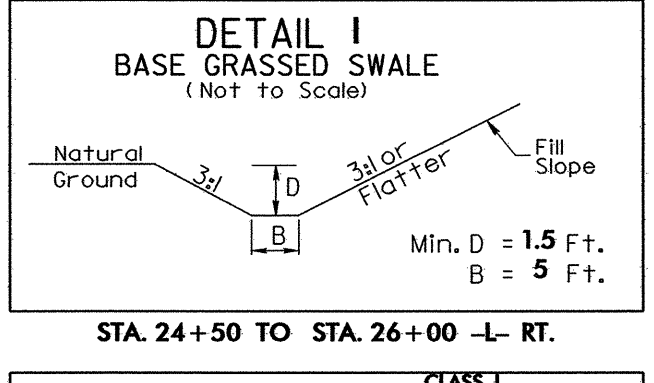
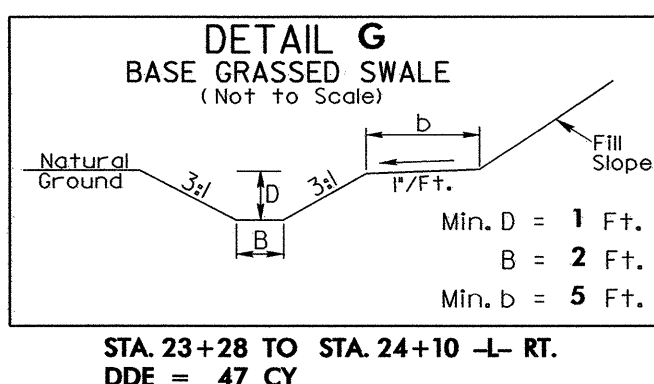
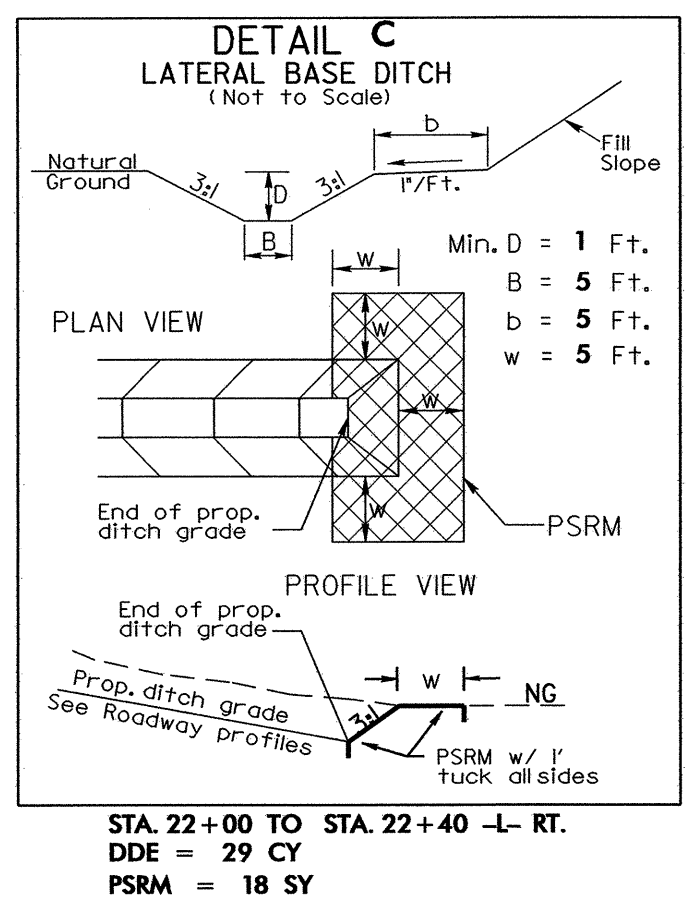


**INSTALL FILTER FABRIC UNDER TEMPORARY ROCK SILT CHECK(S) TYPE A IN PERMITTED WETLANDS.**



-L-  
ta 23+70.90  
10' 40' 43.0' (LT)  
D = 2' 15' 01.5"  
L = 47.452'  
R = 237.95'  
T = 2,546.00'  
SE = 0.02  
RO = 74'

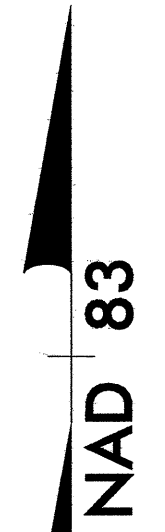
-YI-  
PI Sta 13+62.74  
Δ = 10' 38' 48.9' (RT)  
D = 5' 17' 43.3"  
L = 201.06'  
T = 100.82'  
R = 1082.00'  
SE = SEE PLANS



**INSTALL PSRM IN THE PROPOSED DITCH LINE.**

**INSTALL PSRM IN THE PROPOSED DITCH LINE.**

**INSTALL PSRM IN THE PROPOSED DITCH LINE.**

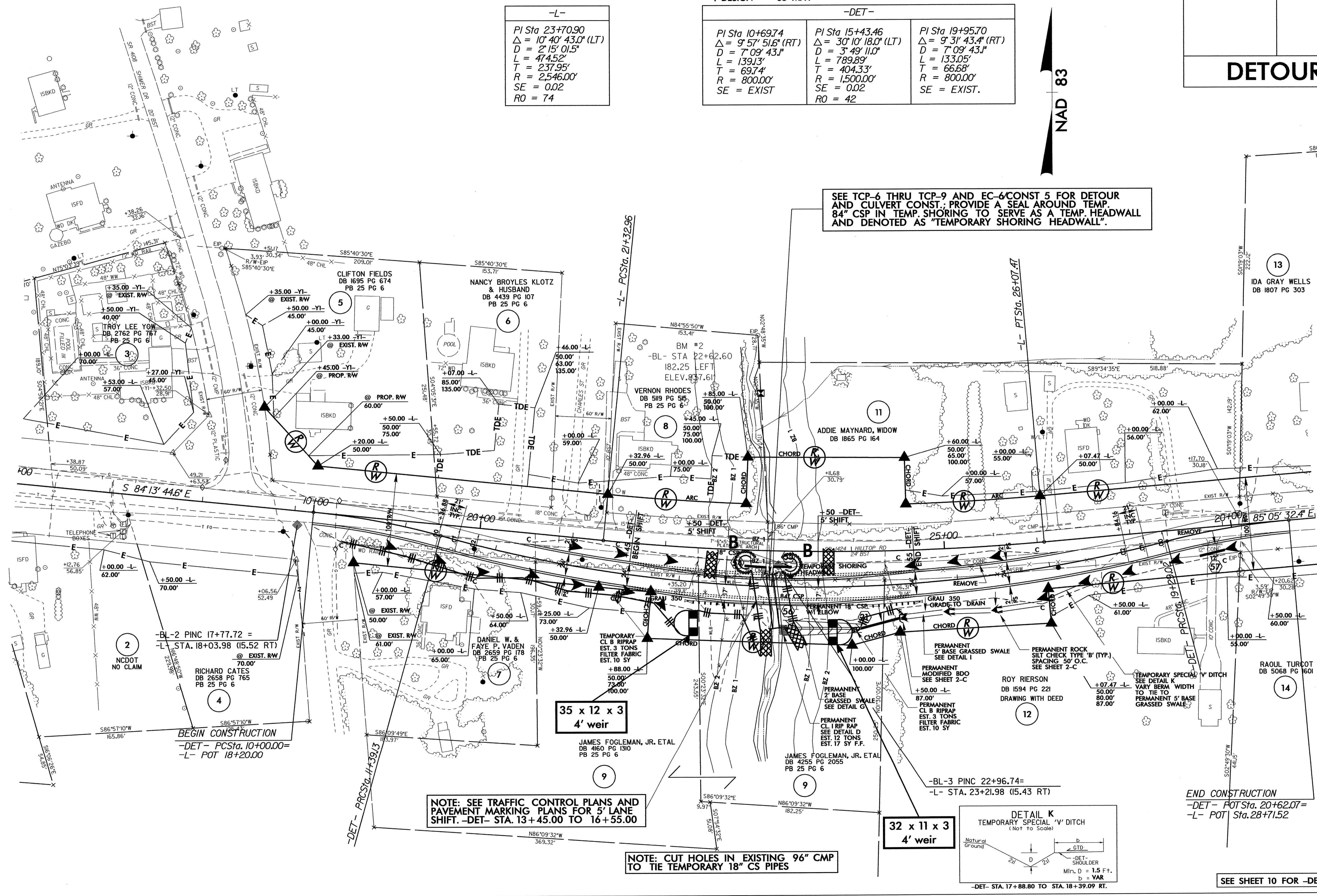
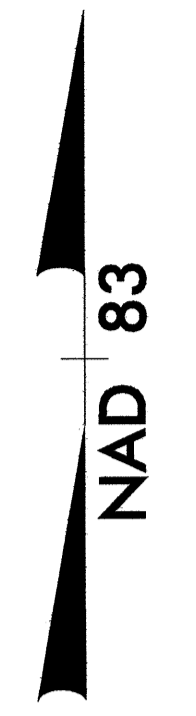


SEE SHEET 8 FOR -L- PROFILE  
SEE SHEET 10 FOR -YI- PROFILE  
SEE SHEET C-1 THRU C- FOR CULVERT PLANS

**V** DESIGN = 35 MPH

-L-
PI Sta 23+70.90
$\Delta = 10' 40" 43.0" (LT)$
$D = 2' 15" 01.5"$
$L = 47.452'$
$T = 237.95'$
$R = 2546.00'$
$SE = 0.02$
$RO = 74$

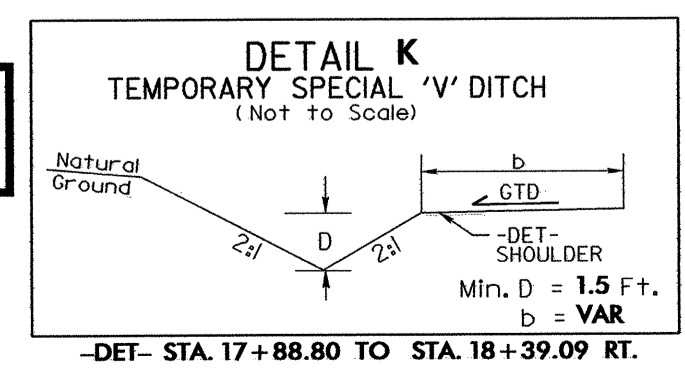
-DET-		
PI Sta 10+69.74	PI Sta 15+43.46	PI Sta 19+95.70
$\Delta = 9' 57" 51.6" (RT)$	$\Delta = 30' 10" 18.0" (LT)$	$\Delta = 9' 31" 43.4" (RT)$
$D = 7' 09" 43.1"$	$D = 3' 49" 11.0"$	$D = 7' 09" 43.1"$
$L = 139.13'$	$L = 789.89'$	$L = 133.05'$
$T = 69.74'$	$T = 404.33'$	$T = 66.68'$
$R = 800.00'$	$R = 1,500.00'$	$R = 800.00'$
$SE = EXIST$	$SE = 0.02$	$SE = EXIST.$
$RO = 74$	$RO = 42$	



SEE TCP-6 THRU TCP-9 AND EC-6/CONST 5 FOR DETOUR AND CULVERT CONST.; PROVIDE A SEAL AROUND TEMP. 84" CSP IN TEMP. SHORING TO SERVE AS A TEMP. HEADWALL AND DENOTED AS "TEMPORARY SHORING HEADWALL".

NOTE: SEE TRAFFIC CONTROL PLANS AND PAVEMENT MARKING PLANS FOR 5' LANE SHIFT. -DET- STA. 13+45.00 TO 16+55.00

NOTE: CUT HOLES IN EXISTING 96" CMP TO TIE TEMPORARY 18" CS PIPES



SEE SHEET 10 FOR -DET- PROFILE

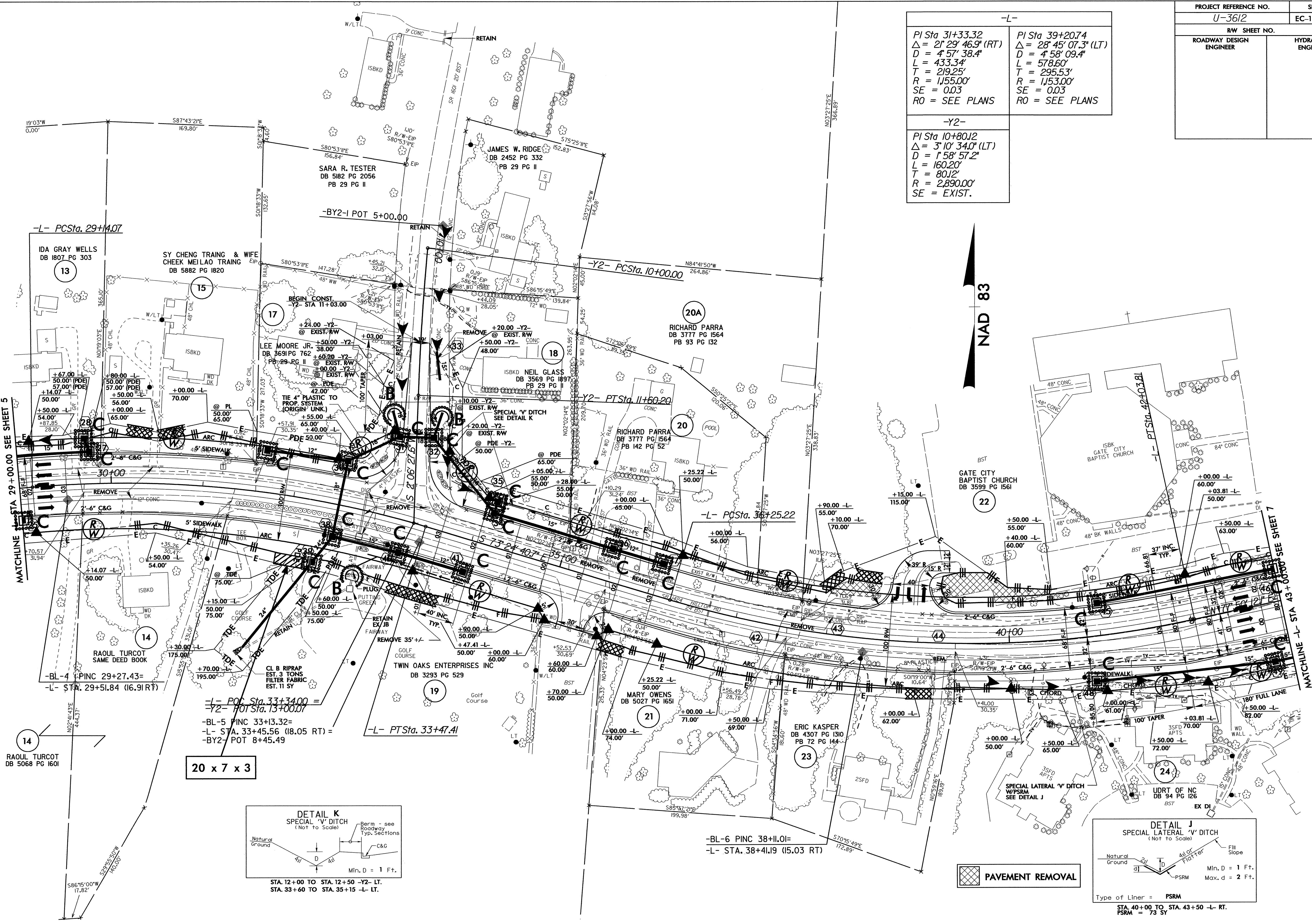
REVISIONS

8/17/99  
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 8/17/99

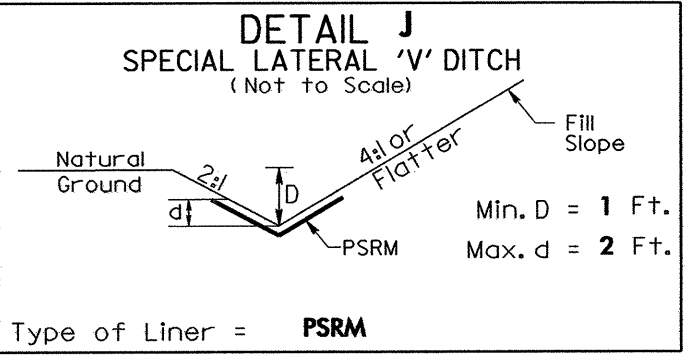
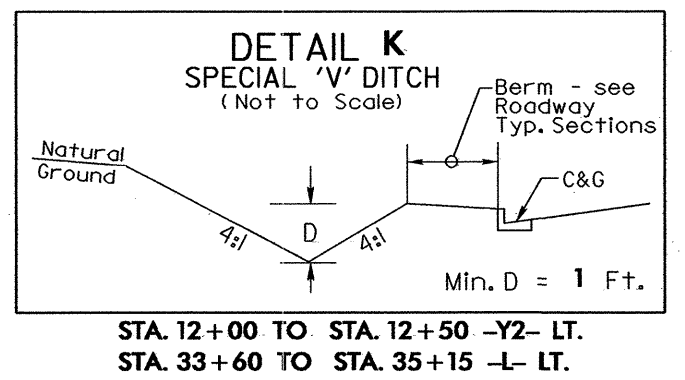
PROJECT REFERENCE NO.	SHEET NO.
U-3612	EC-12/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-	
PI Sta 31+33.32 $\Delta = 21' 29" 46.9" (RT)$ $D = 4' 57" 38.4"$ $L = 433.34'$ $T = 219.25'$ $R = 1455.00'$ $SE = 0.03$ $RO = \text{SEE PLANS}$	PI Sta 39+20.74 $\Delta = 28' 45" 07.3" (LT)$ $D = 4' 58" 09.4"$ $L = 578.60'$ $T = 295.53'$ $R = 1453.00'$ $SE = 0.03$ $RO = \text{SEE PLANS}$
-Y2-	
PI Sta 10+80.12 $\Delta = 3' 10" 34.0" (LT)$ $D = 1' 58" 57.2"$ $L = 160.20'$ $T = 80.12'$ $R = 2,890.00'$ $SE = \text{EXIST.}$	



NAD 83

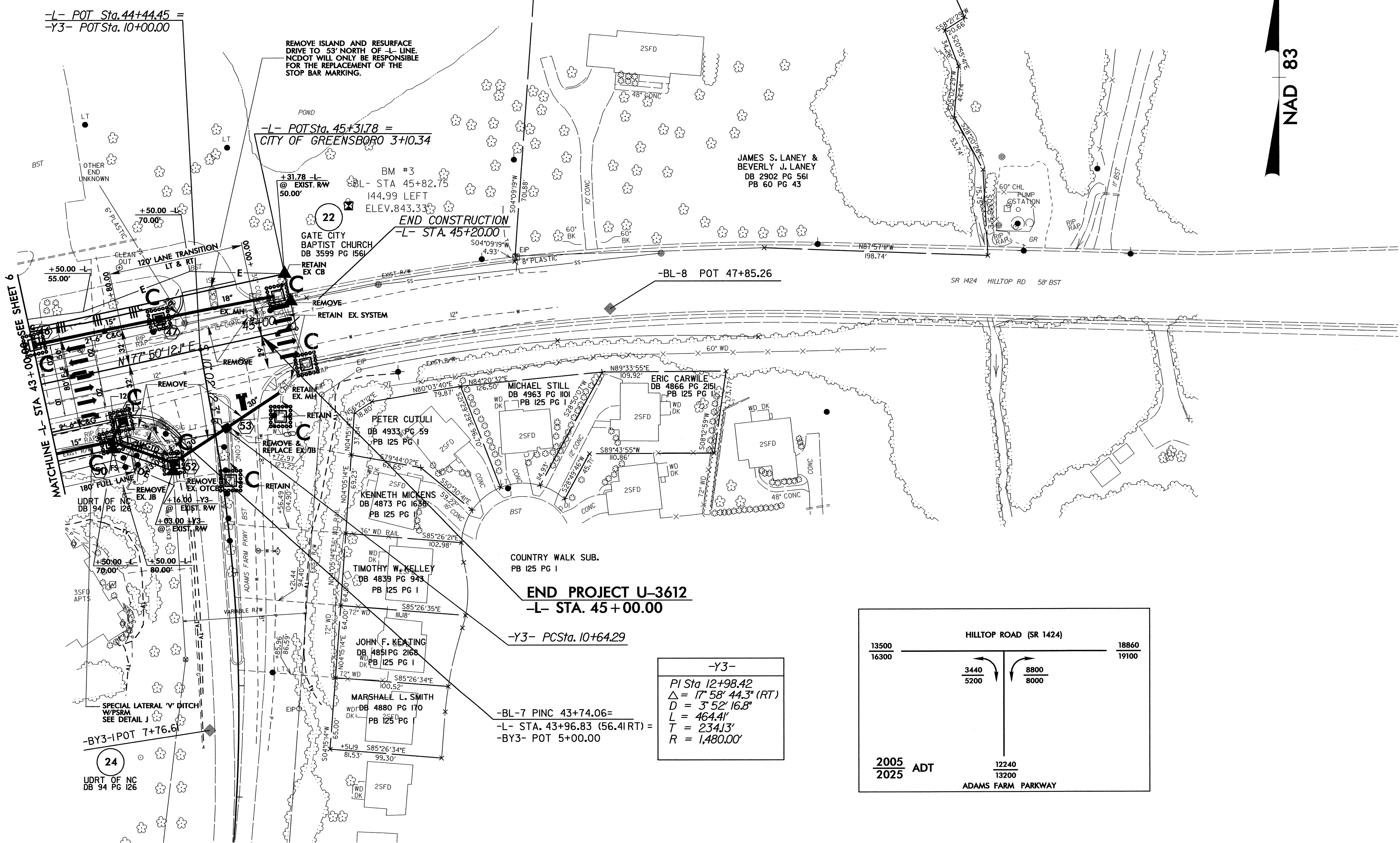
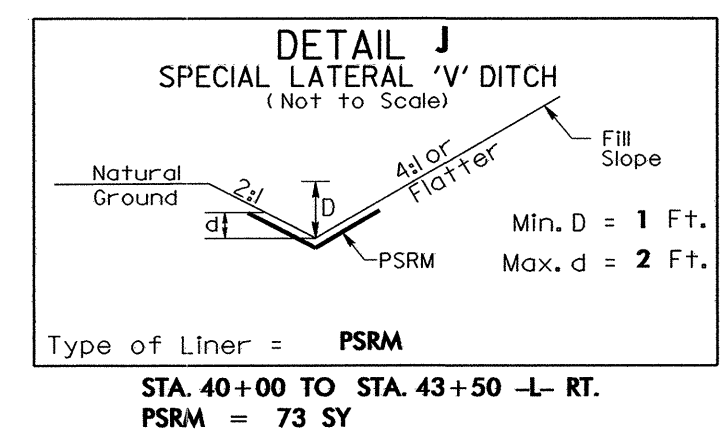
20 x 7 x 3



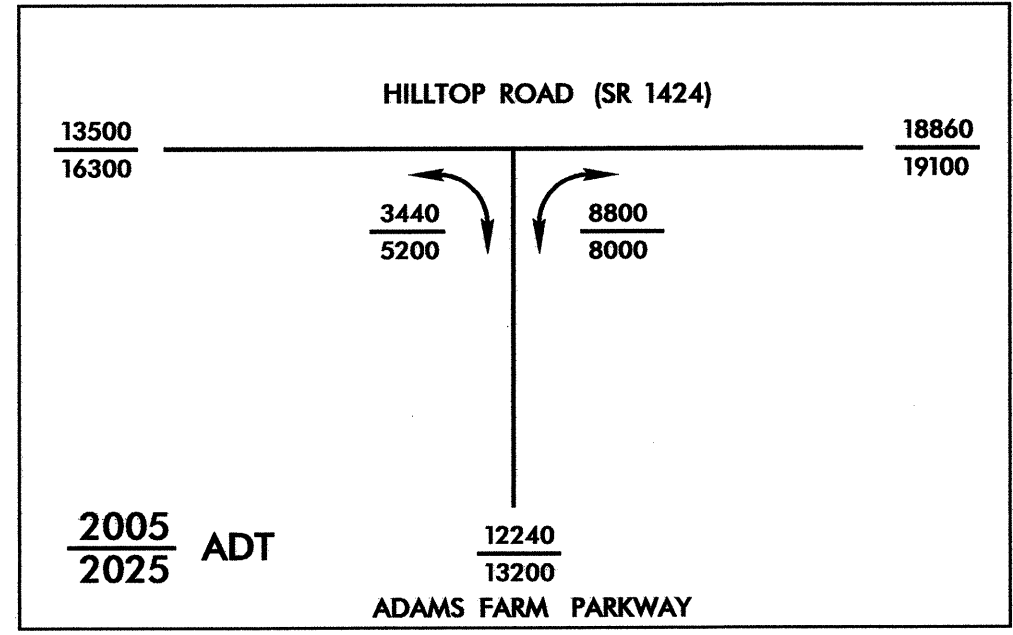
**PAVEMENT REMOVAL**

SEE SHEET 9 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y2- PROFILE

PROJECT REFERENCE NO. U-3612	SHEET NO. EC-13/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



-Y3-  
 PI Sta 12+98.42  
 $\Delta = 17^{\circ}58'44.3" (RT)$   
 $D = 3^{\circ}52'16.8"$   
 $L = 464.41'$   
 $T = 234.13'$   
 $R = 1,480.00'$



8/17/99  
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 3612

SEE SHEET 9 FOR -L- PROFILE