

**TIP PROJECT: U-3344A**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

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PLAN FOR PROPOSED  
HIGHWAY EROSION CONTROL

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**WAKE COUNTY**

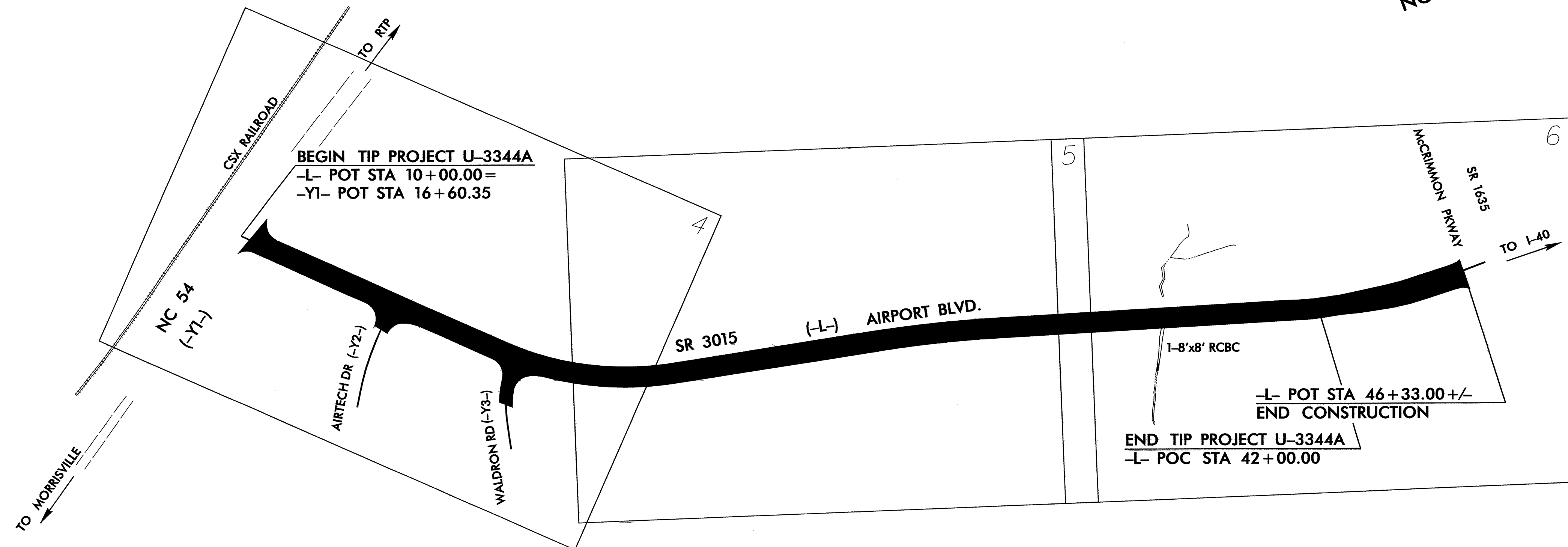
**LOCATION: MORRISVILLE - SR 3015 (AIRPORT BLVD.)  
FROM NC 54 TO McCRIMMON PARKWAY**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3344A	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	
1632.02	Type B	
1632.03	Type C	

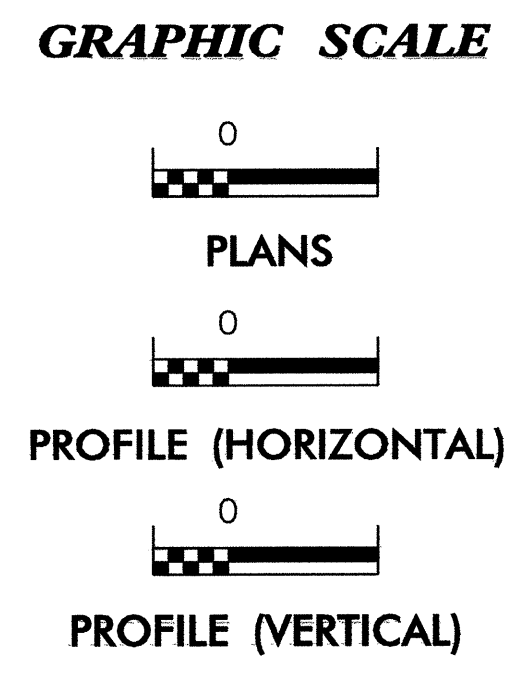


**THIS PROJECT CONTAINS  
EROSION CONTROL PLANS  
FOR CLEARING AND  
GRUBBING PHASE OF  
CONSTRUCTION.**

**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.*



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

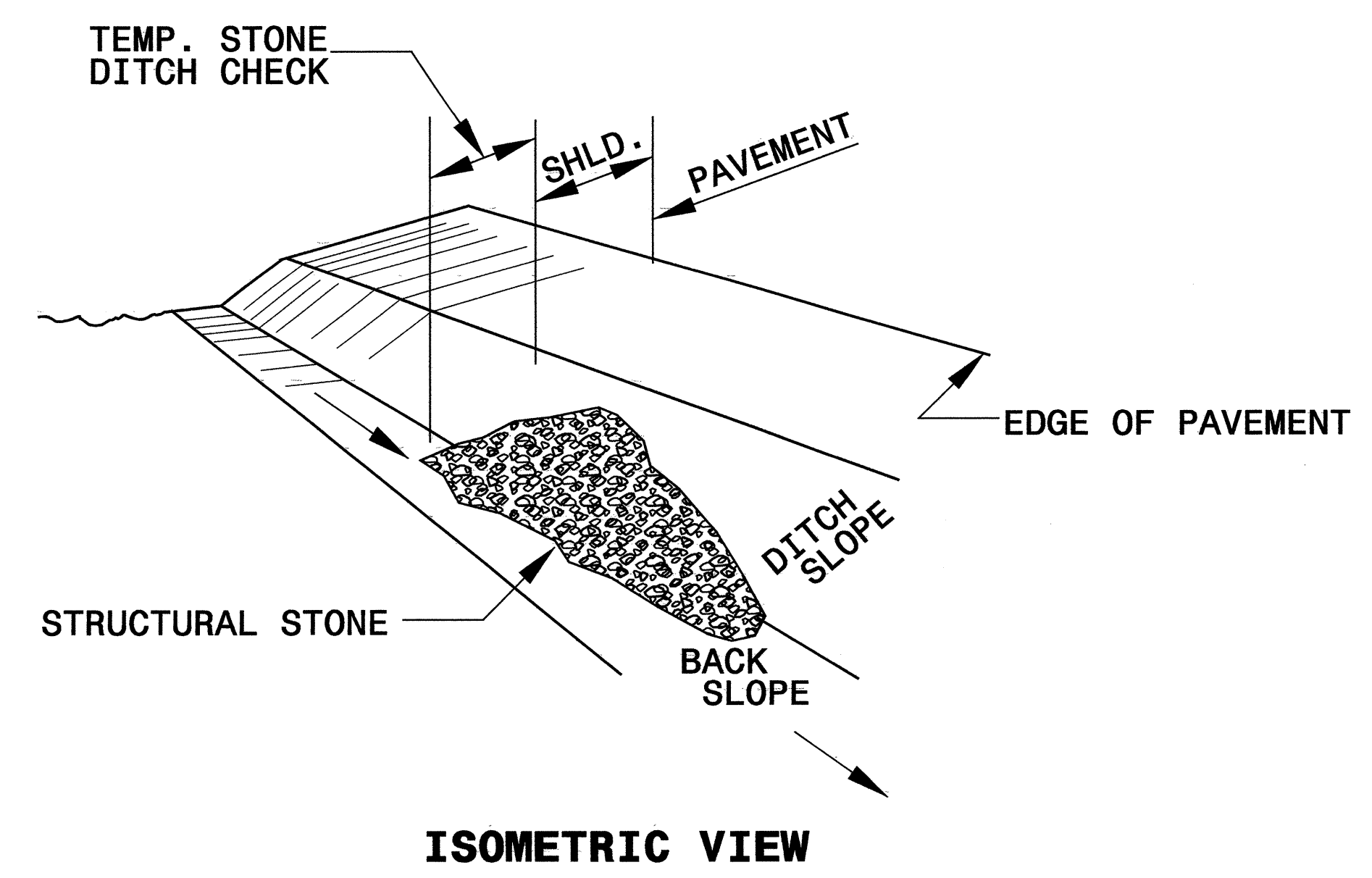
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated July 18, 2006 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type B
1607.01 Gravel Construction Entrance	1632.03 Rock Inlet Sediment Trap Type C
1622.01 Temporary Berms and Slope Drains	1633.01 Temporary Rock Silt Check Type A
1630.02 Silt Basin Type B	1634.02 Temporary Rock Sediment Dam Type B
1630.03 Temporary Silt Ditch	1635.02 Rock Pipe Inlet Sediment Trap Type B
1630.04 Stilling Basin	
1630.05 Temporary Diversion	

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C:\projects\3344a\design\3344a-ec-1-2006-05-10-10:42:00.dwg

PROJECT REFERENCE NO. U-3344A	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

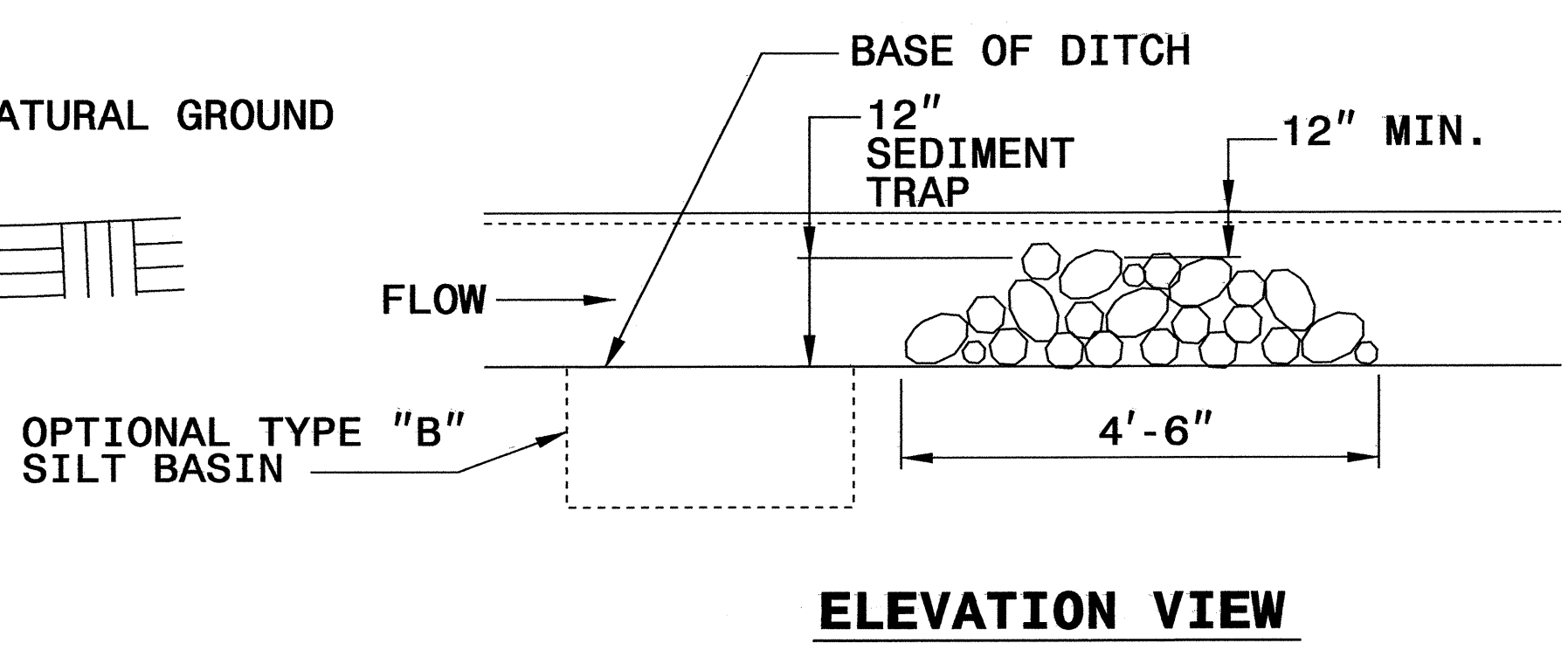
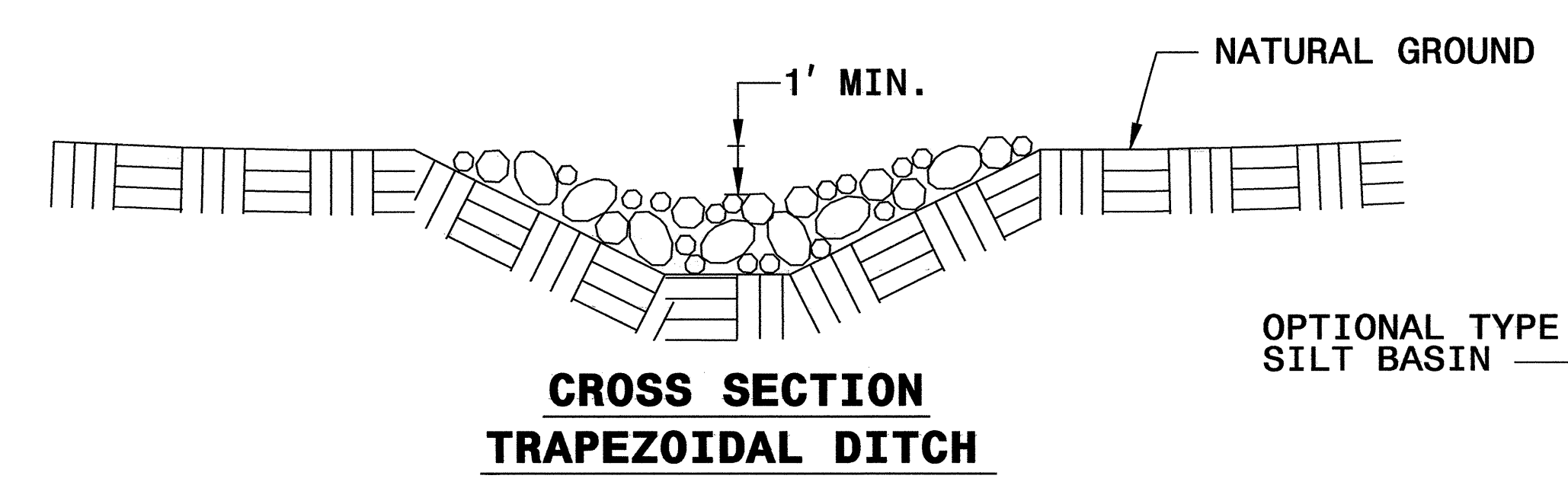
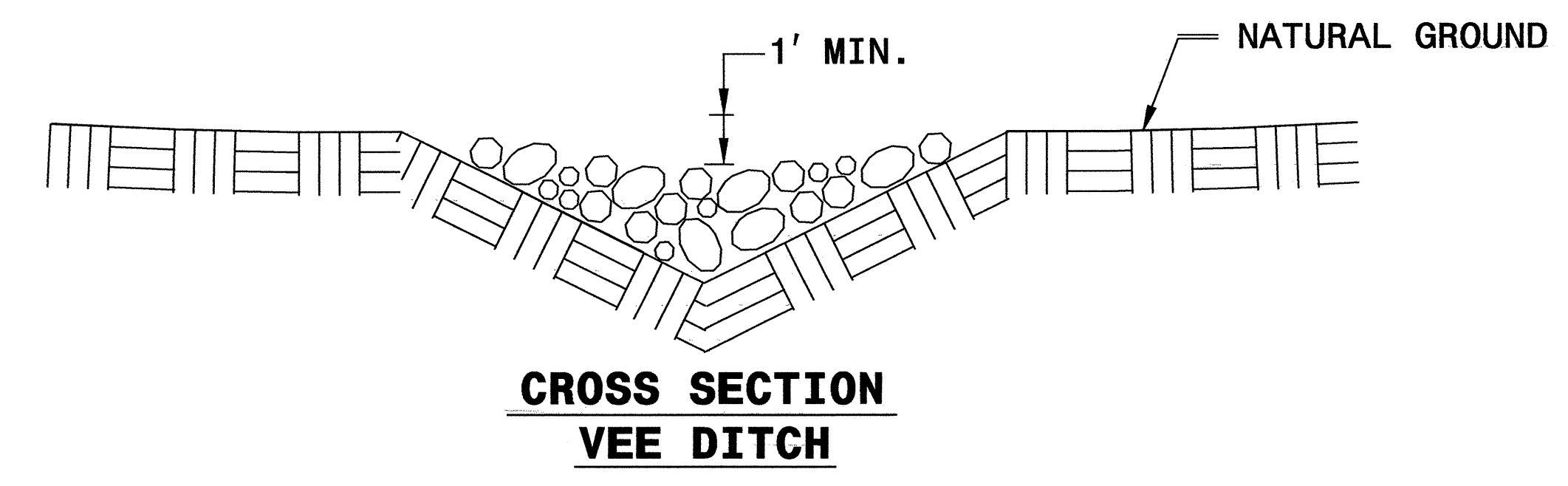
# TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



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-3344A	EC-4CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4

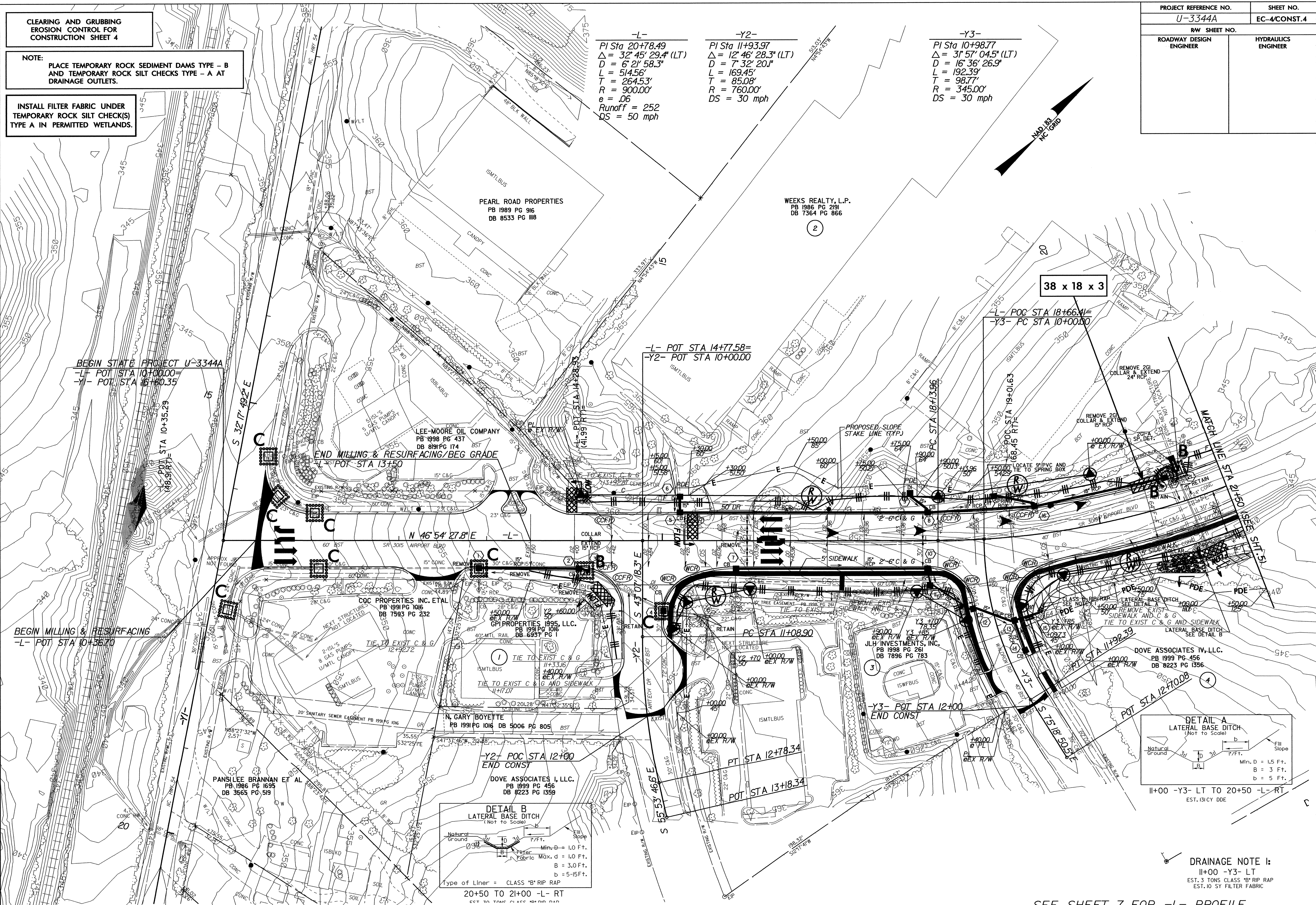
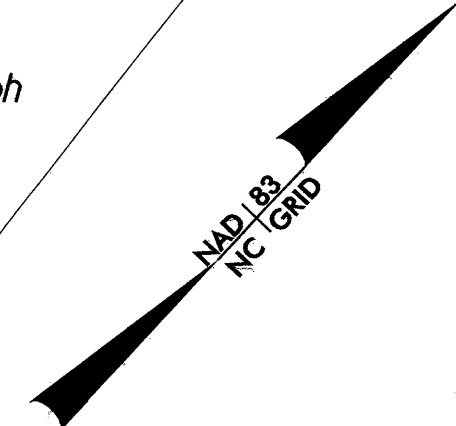
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

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

-L-  
PI Sta 20+78.49  
 $\Delta = 32' 45" 29.4" (LT)$   
 $D = 6' 21" 58.3"$   
 $L = 514.56'$   
 $T = 264.53'$   
 $R = 900.00'$   
 $e = .06$   
Runoff = 252  
DS = 50 mph

-Y2-  
PI Sta 11+93.97  
 $\Delta = 12' 46" 28.3" (LT)$   
 $D = 7' 32" 20.1"$   
 $L = 169.45'$   
 $T = 85.08'$   
 $R = 760.00'$   
DS = 30 mph

-Y3-  
PI Sta 10+98.77  
 $\Delta = 31' 57" 04.5" (LT)$   
 $D = 16' 36" 26.9"$   
 $L = 192.39'$   
 $T = 98.77'$   
 $R = 345.00'$   
DS = 30 mph



BEGIN STATE PROJECT U-3344A  
-L- POT STA 10+00.00=  
-Y- POT STA 16+60.35

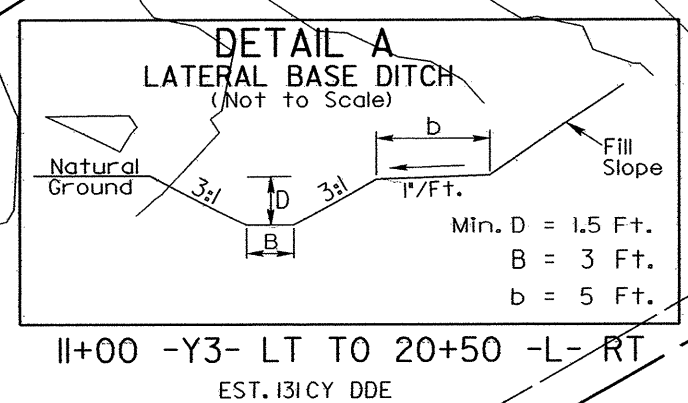
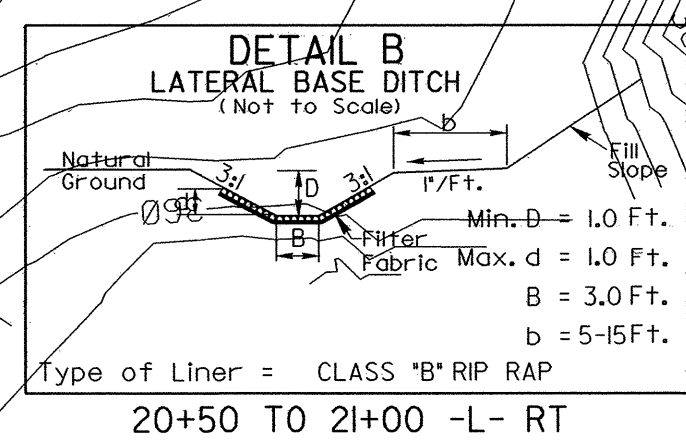
BEGIN MILLING & RESURFACING  
-L- POT STA 10+56.70

-L- POT STA 14+77.58=  
-Y2- POT STA 10+00.00

-L- POC STA 18+66.41=  
-Y3- PC STA 10+00.00

-Y2- POC STA 12+00  
END CONST

-Y3- POT STA 12+00  
END CONST



DRAINAGE NOTE 1:  
11+00 -Y3- LT  
EST. 3 TONS CLASS "B" RIP RAP  
EST. 10 SY FILTER FABRIC

NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED

SEE SHEET 7 FOR -L- PROFILE  
SEE SHEET 8 FOR -Y2- & -Y3- PROFILE



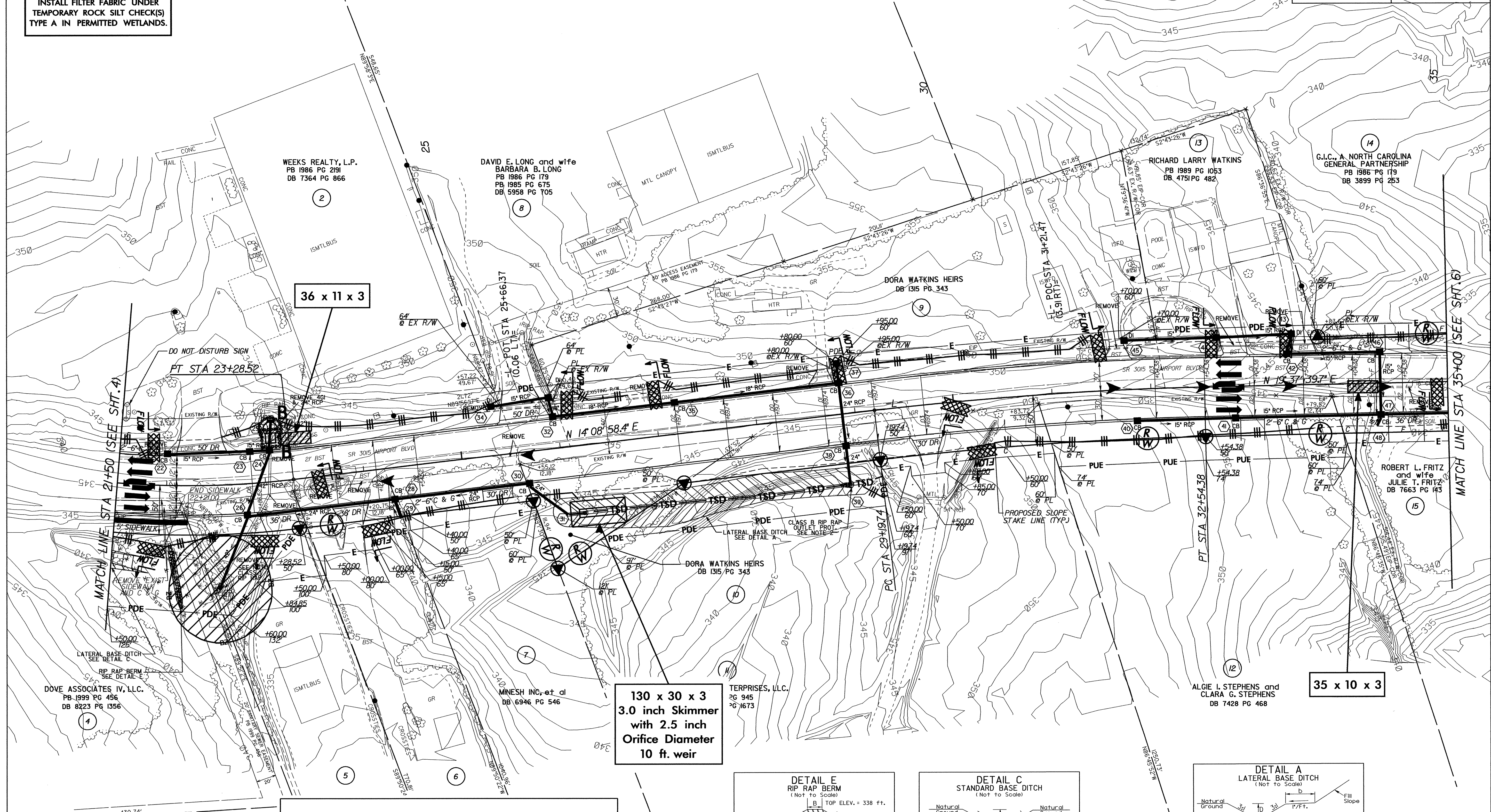
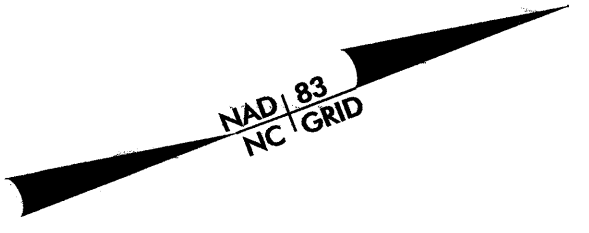
PROJECT REFERENCE NO. U-3344A	SHEET NO. EC-5/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 5

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

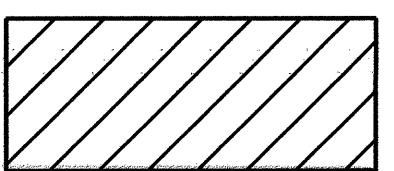
INSTALL FILTER FABRIC UNDER  
TEMPORARY ROCK SILT CHECK(S)  
TYPE A IN PERMITTED WETLANDS.

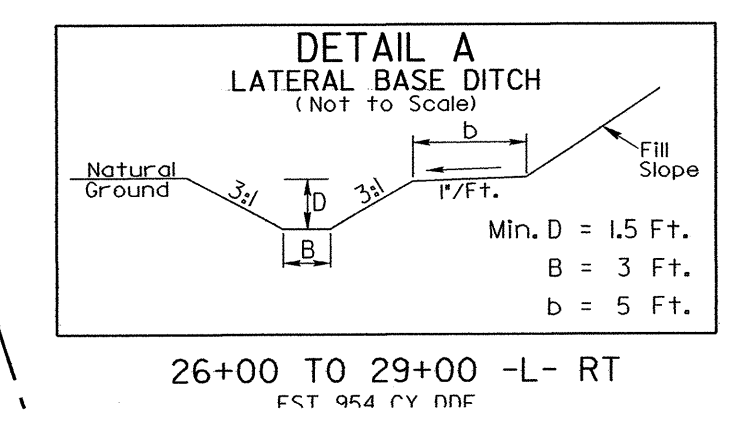
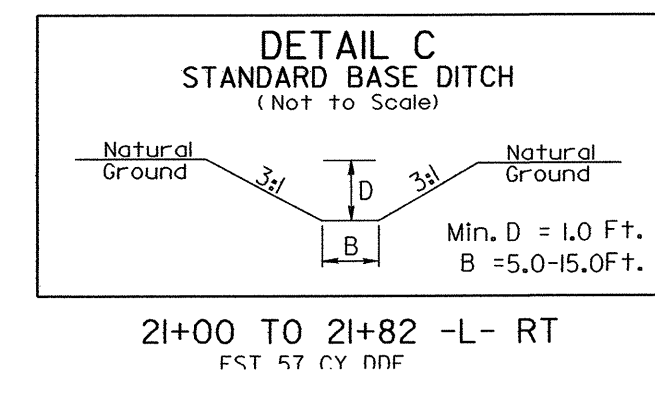
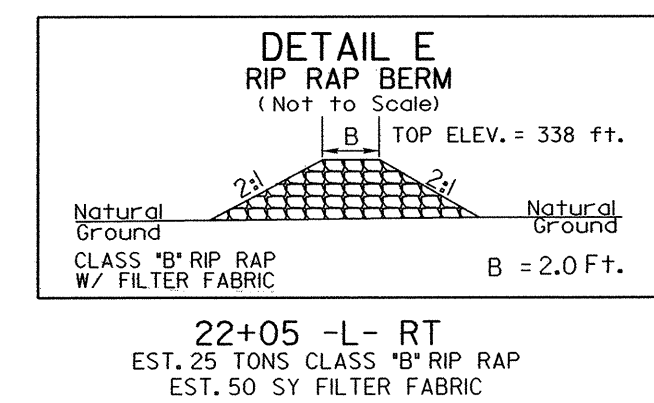
-L-  
PI Sta 30+87.19  
 $\Delta = 5' 28" 41.3" (RT)$   
 $D = 1' 38" 13.3"$   
 $L = 334.64'$   
 $T = 167.45'$   
 $R = 3,500.00'$   
 $e = .03$   
Runoff = 150  
DS = 50 mph



DRAINAGE NOTE 1:  
22+50 -L- RT  
EST 20 TONS CLASS "B" RIP RAP

DRAINAGE NOTE 2:  
28+87 -L- RT  
EST 5 TONS CLASS "B" RIP RAP

 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS



NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED

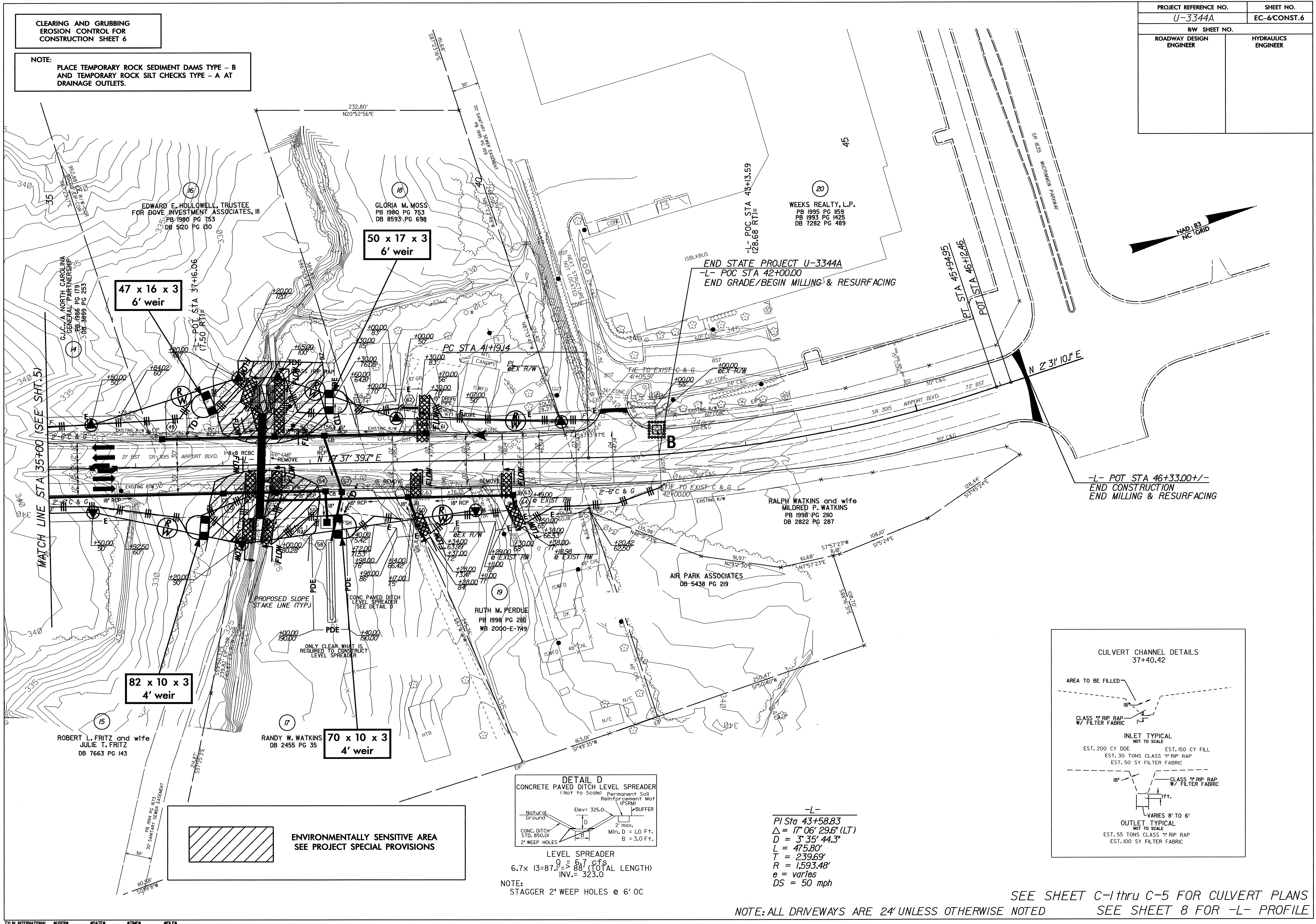
SEE SHEET 7 FOR -L- PROFILE



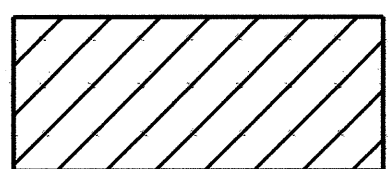
PROJECT REFERENCE NO.	SHEET NO.
U-3344A	EC-6/CONST. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

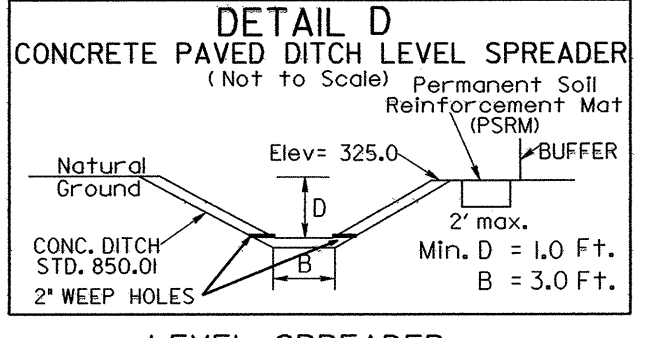
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 6

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



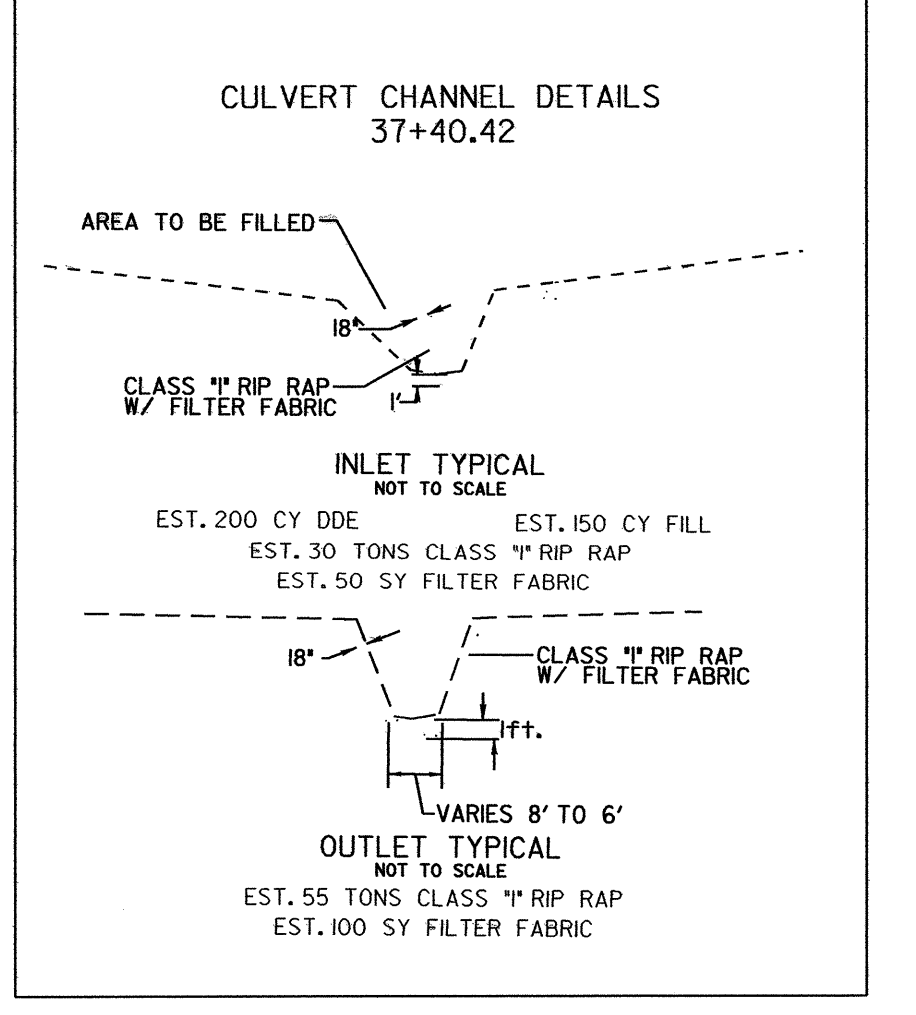
MATCH LINE STA 35+00 (SEE SHEET 5)

 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS



LEVEL SPREADER  
Q = 6.7 cfs  
6.7 x 13 = 87.1 = 88 (TOTAL LENGTH)  
INV. = 323.0  
NOTE:  
STAGGER 2" WEEP HOLES @ 6' OC

-L-  
PI Sta 43+58.83  
Δ = 17' 06" 29.6" (LT)  
D = 3' 35" 44.3"  
L = 475.80'  
T = 239.69'  
R = 1,593.48'  
e = varies  
DS = 50 mph



SEE SHEET C-1 thru C-5 FOR CULVERT PLANS  
SEE SHEET 8 FOR -L- PROFILE

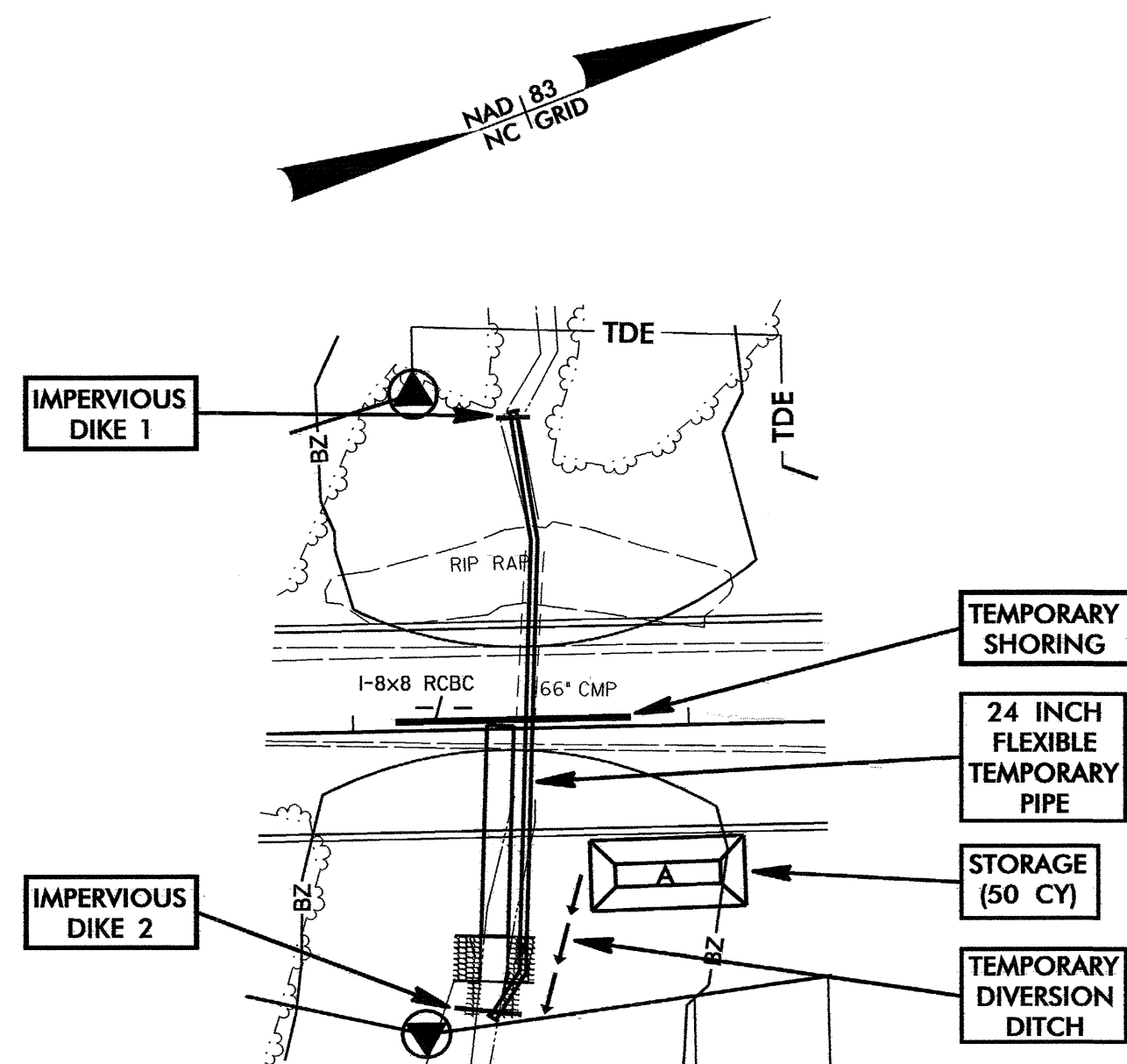
NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED

# CULVERT CONSTRUCTION SEQUENCE STA. 37+40 -L-

PROJECT REFERENCE NO. U-3344A	SHEET NO. EC-7/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

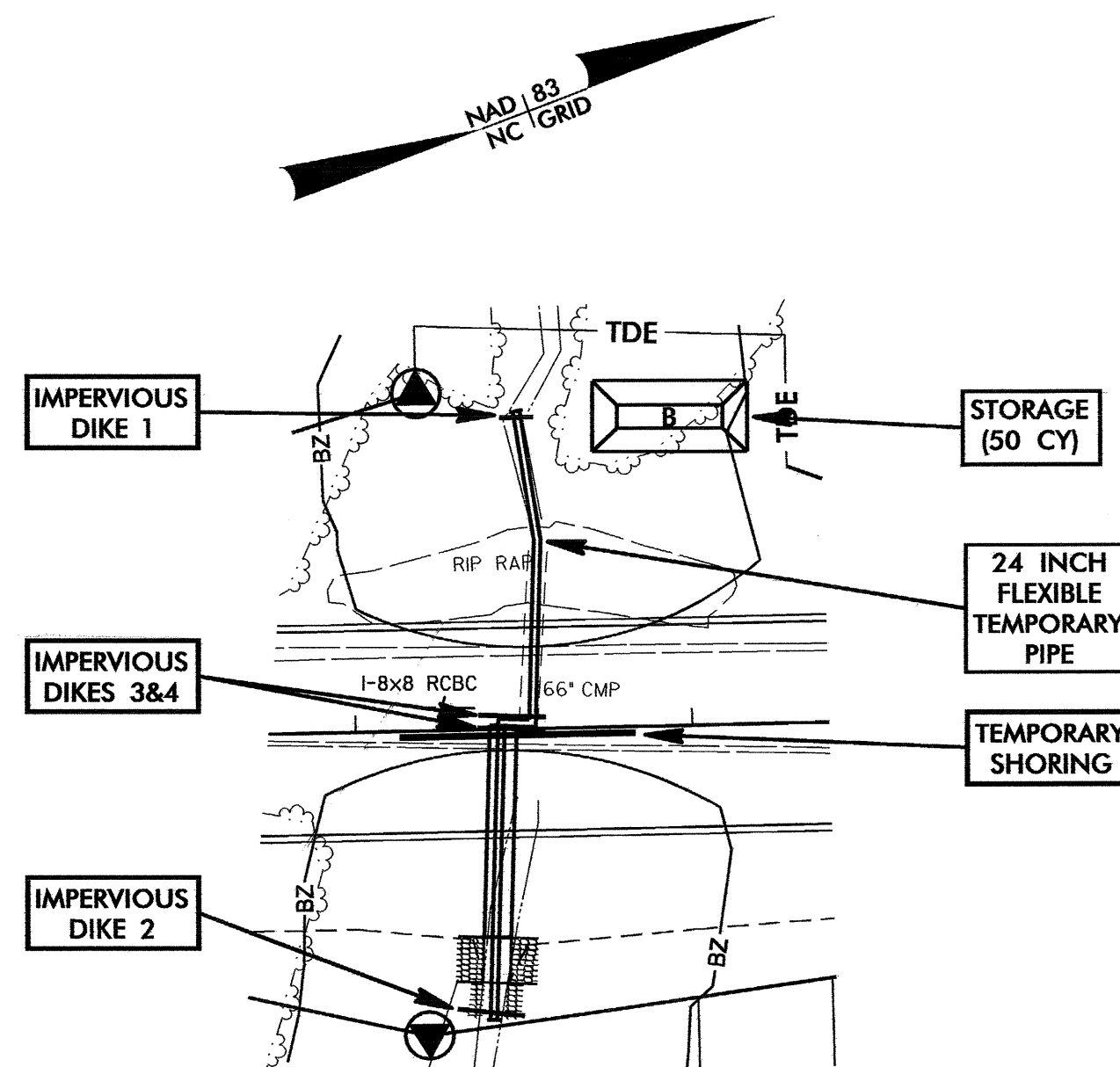
## PHASE I

1. CONSTRUCT STILLING BASIN 'A' (50 CY) AND TEMPORARY DIVERSION DITCH.
2. CONSTRUCT TEMPORARY PAVEMENT AND SHIFT TRAFFIC TO LEFT SIDE OF ROADWAY.
3. INSTALL TEMPORARY SHORING AND REMOVE 23 FEET OF 66" CMP ON DOWNSTREAM END.
4. CONSTRUCT IMPERVIOUS DIKES 1 AND 2, AND 24" FLEXIBLE TEMPORARY PIPE.
5. CONSTRUCT 76 FEET OF CULVERT ON DOWNSTREAM END AND OUTLET CHANNEL IMPROVEMENTS.



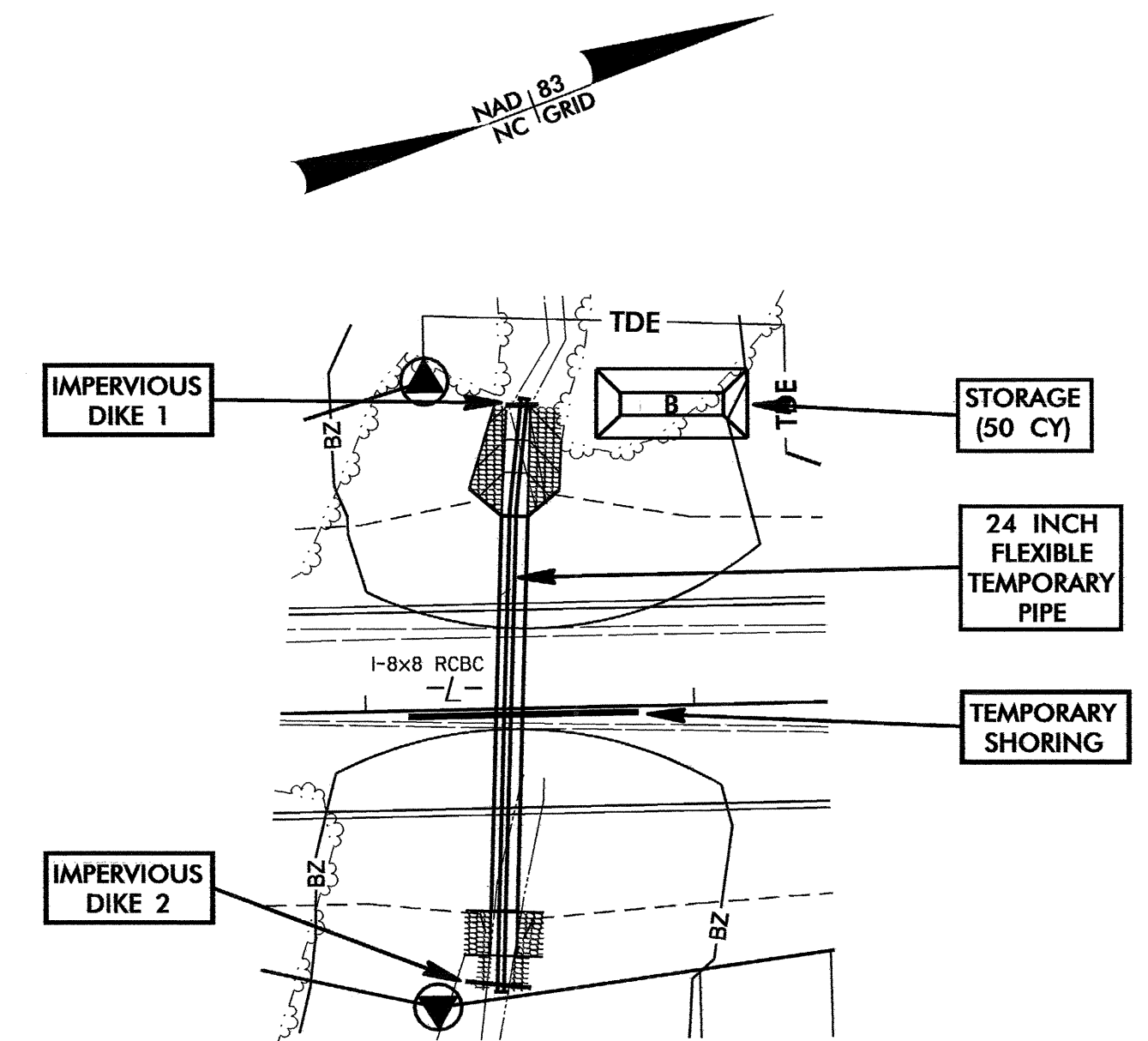
## PHASE II

6. CONSTRUCT IMPERVIOUS DIKES 3 AND 4, AND REALIGN 24" FLEXIBLE TEMPORARY PIPE.
7. CONSTRUCT STILLING BASIN 'B' (50 CY), AND REMOVE STILLING BASIN 'A'.
8. CONSTRUCT PROPOSED ROADWAY OVER COMPLETED DOWNSTREAM SECTION OF CULVERT AND SHIFT TRAFFIC.
9. REMOVE TEMPORARY SHORING FROM PHASE I AND CONSTRUCT TEMPORARY SHORING OVER COMPLETED DOWNSTREAM SECTION OF CULVERT.



## PHASE III

10. REMOVE IMPERVIOUS DIKES 3 AND 4, AND REALIGN 24" FLEXIBLE TEMPORARY PIPE.
11. REMOVE REMAINDER OF 66" CMP.
12. CONSTRUCT UPSTREAM SECTION OF CULVERT AND INLET CHANNEL IMPROVEMENTS.
13. COMPLETE ROADWAY.



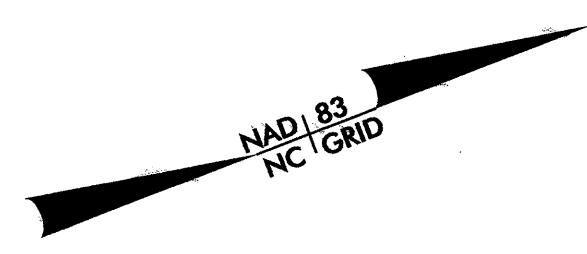




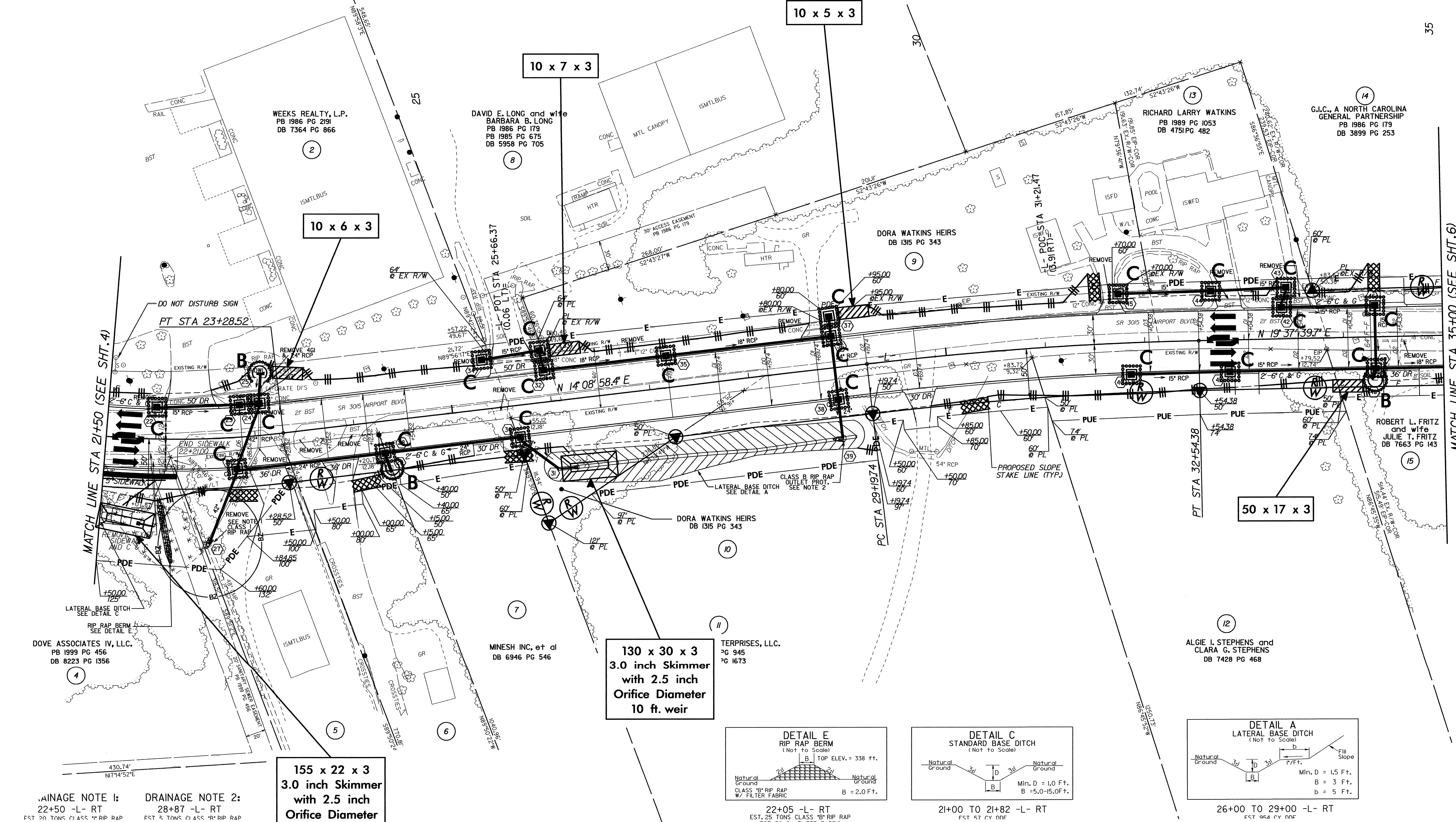


PROJECT REFERENCE NO.		SHEET NO.	
U-3344A		EC-9/CONST.5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

-L-  
 PI Sta 30+87.19  
 $\Delta = 5' 28' 41.3" (RT)$   
 $D = 1' 38' 13.3"$   
 $L = 334.64'$   
 $T = 167.45'$   
 $R = 3,500.00'$   
 $e = .03$   
 Runoff = 150  
 DS = 50 mph



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

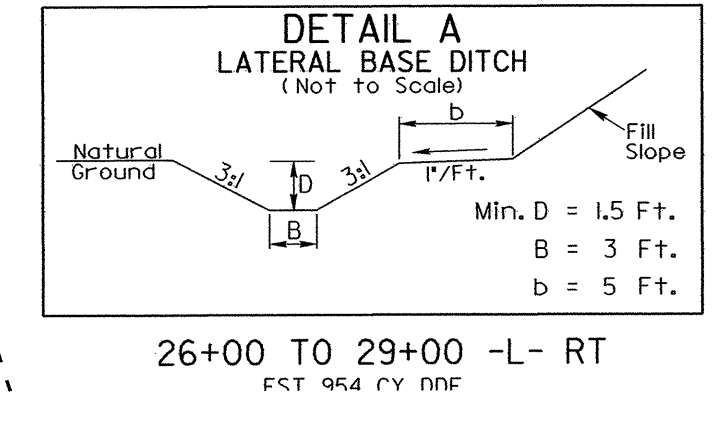
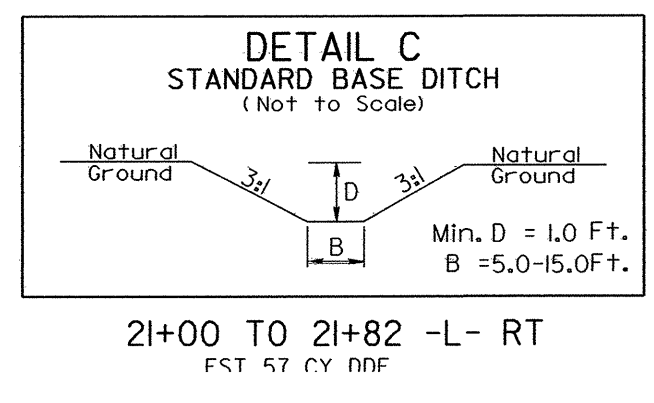
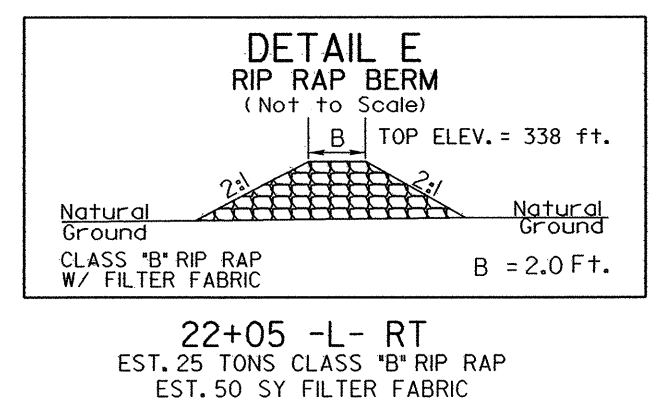


RAINAGE NOTE 1: 22+50 -L- RT  
 EST. 20 TONS CLASS "B" RIP RAP

RAINAGE NOTE 2: 28+87 -L- RT  
 EST. 5 TONS CLASS "B" RIP RAP

155 x 22 x 3  
 3.0 inch Skimmer  
 with 2.5 inch  
 Orifice Diameter  
 10 ft. weir

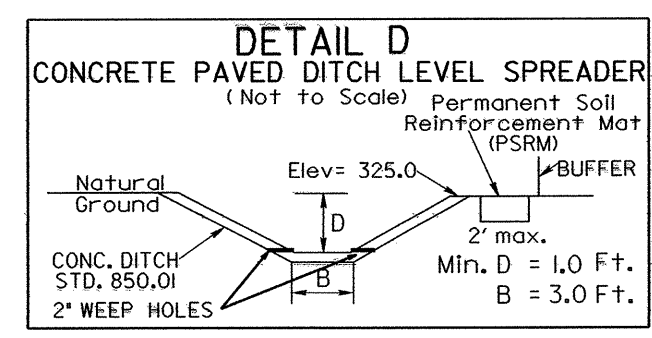
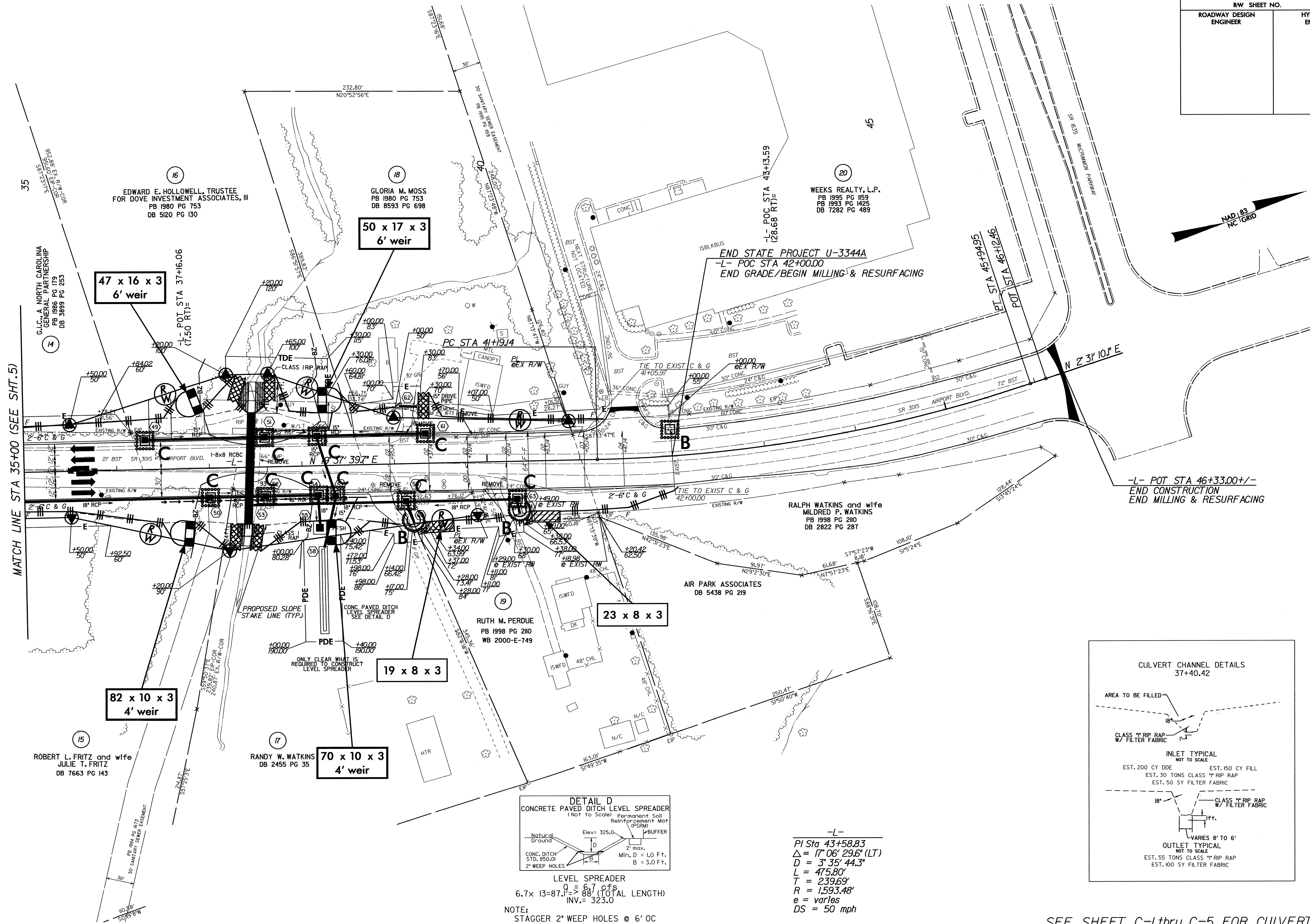
130 x 30 x 3  
 3.0 inch Skimmer  
 with 2.5 inch  
 Orifice Diameter  
 10 ft. weir



NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED

SEE SHEET 7 FOR -L- PROFILE

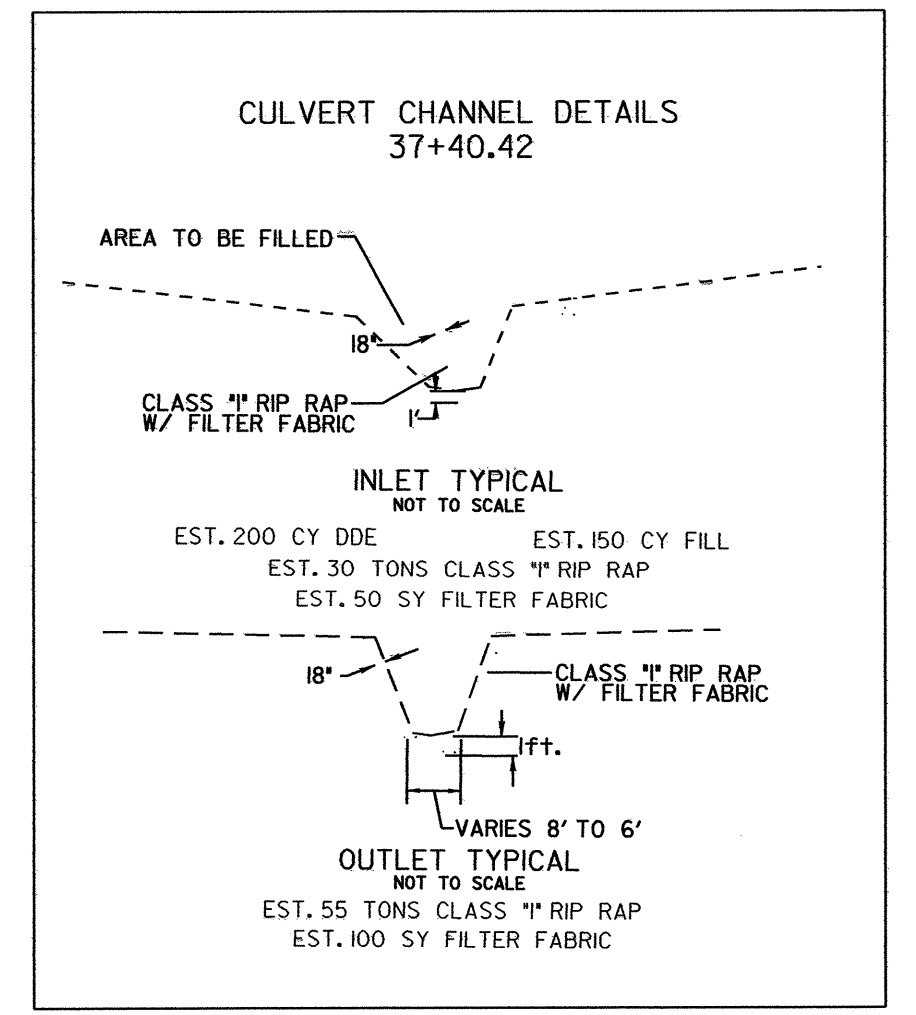
PROJECT REFERENCE NO.	SHEET NO.
U-3344A	EC-10/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



LEVEL SPREADER  
 6.7 x 13 = 87.1' = 88.1' (TOTAL LENGTH)  
 INV. = 323.0

NOTE:  
 STAGGER 2' WEEP HOLES @ 6' OC

-L-  
 PI Sta 43+58.83  
 $\Delta = 17' 06'' 29.6'' (LT)$   
 $D = 3' 35'' 44.3''$   
 $L = 475.80'$   
 $T = 239.69'$   
 $R = 1,593.48'$   
 $e = \text{varies}$   
 $DS = 50 \text{ mph}$



NOTE: ALL DRIVEWAYS ARE 24' UNLESS OTHERWISE NOTED

SEE SHEET C-1 thru C-5 FOR CULVERT PLANS  
 SEE SHEET 8 FOR -L- PROFILE