

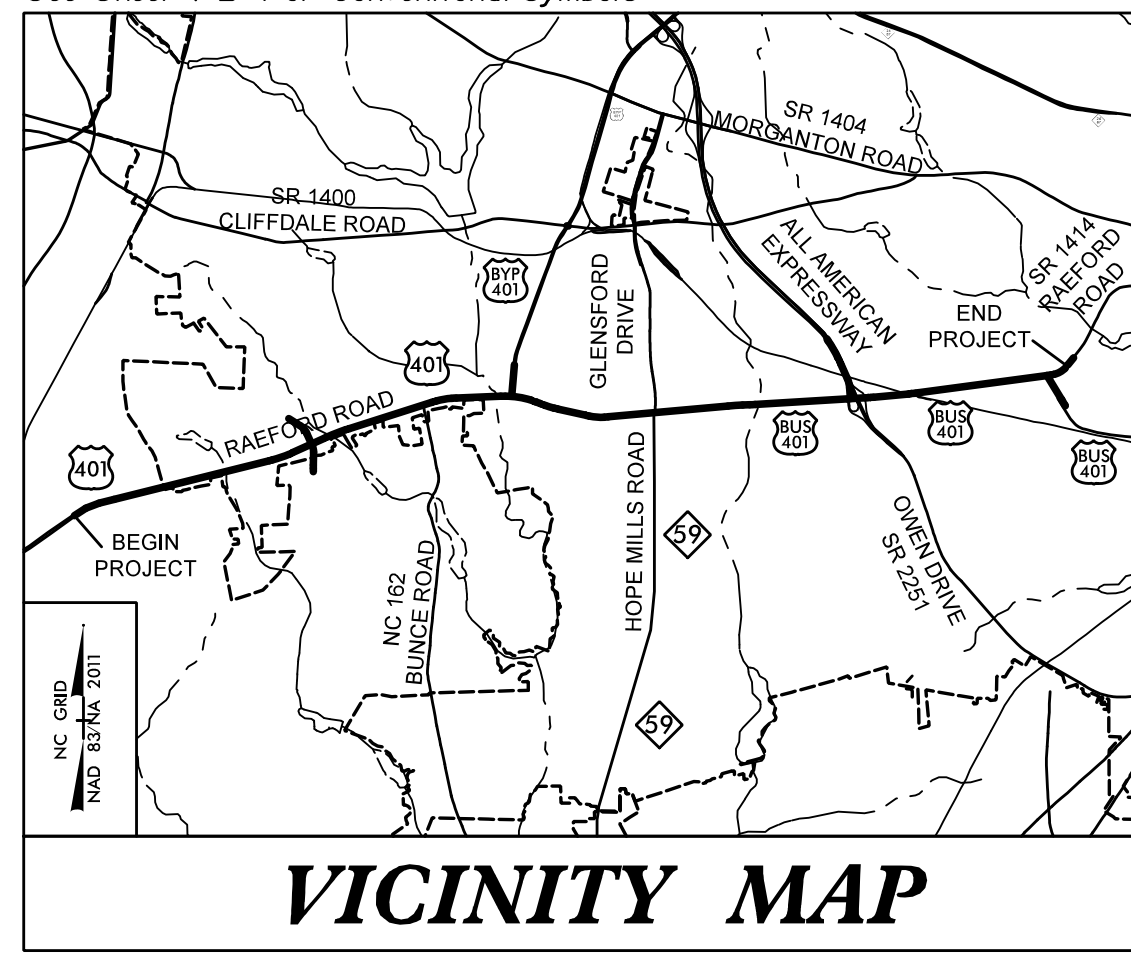
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**This file or an individual page  
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**TIP PROJECT: U-4405**

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols



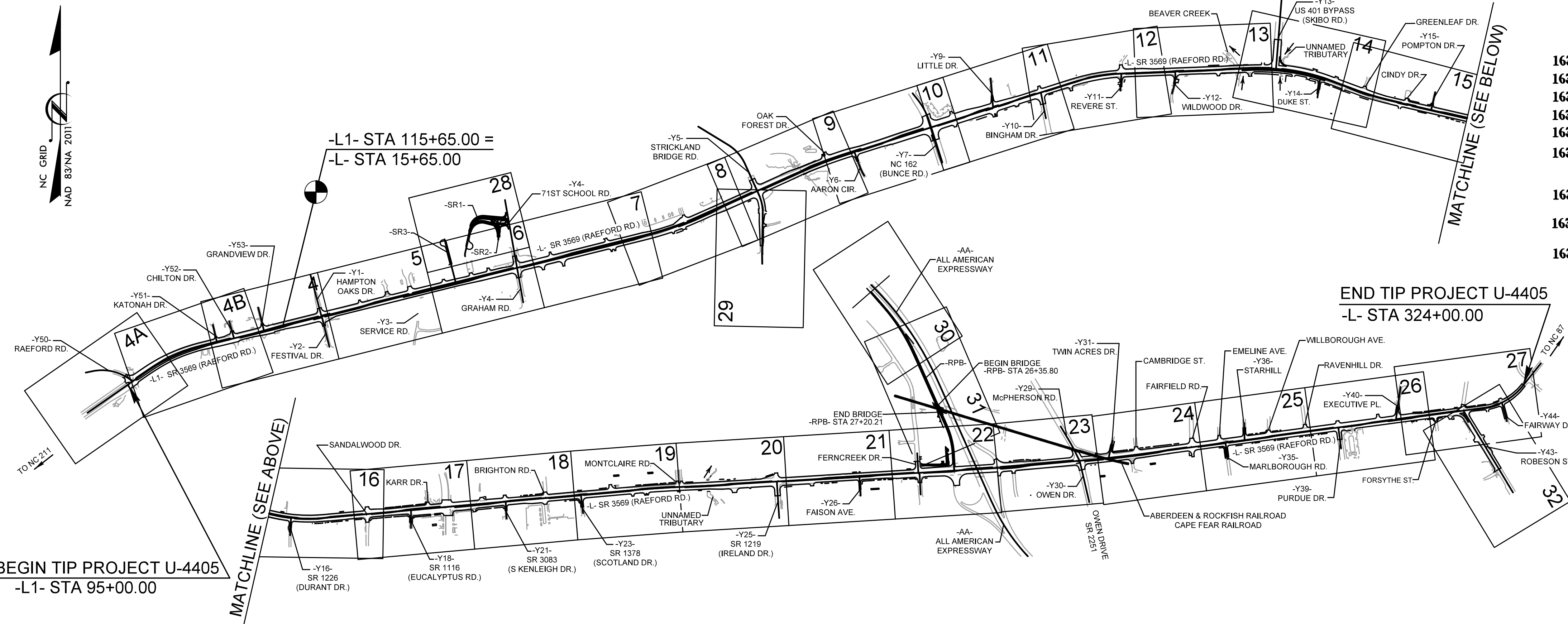
# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

## PLAN FOR PROPOSED HIGHWAY EROSION CONTROL

### **CUMBERLAND COUNTY**

**LOCATION: US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF  
FAIRWAY DRIVE IN FAYETTEVILLE**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING,  
STRUCTURE, RETAINING WALLS, AND NOISE WALLS**



**THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.  
\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED**

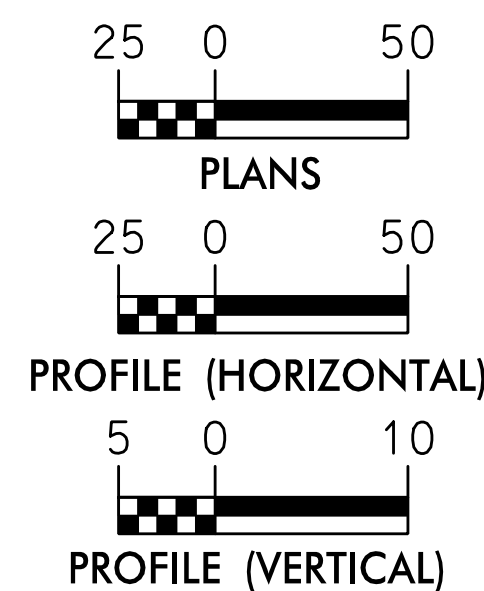
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39049.1.1	STPDA-0401(230)	PE	

#### EROSION AND SEDIMENT CONTROL MEASURES

Sed. #	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	--->
1650.02	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	⌒
1650.04	Stilling Basin	▭
1630.06	Special Stilling Basin	▭
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	▭
	Tiered Skimmer Basin	▭
	Infiltration Basin	▭

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

#### GRAPHIC SCALE



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

Prepared In the Office of:



NC FIRM LICENSE No: F-1148  
1151 SE Cary Parkway  
Suite 101  
Cary, NC 27518  
(919) 557-0929

Designed by:

**REID B. ROBOL, PE**  
NAME

**3409**  
LEVEL III CERTIFICATION NO.

Reviewed In the Office of:

#### ROADSIDE ENVIRONMENTAL UNIT

1 South Wilmington St.  
Raleigh, NC 27611

#### 2018 STANDARD SPECIFICATIONS

Reviewed by:

**MARK STALEY, CPESC, CPSWQ**

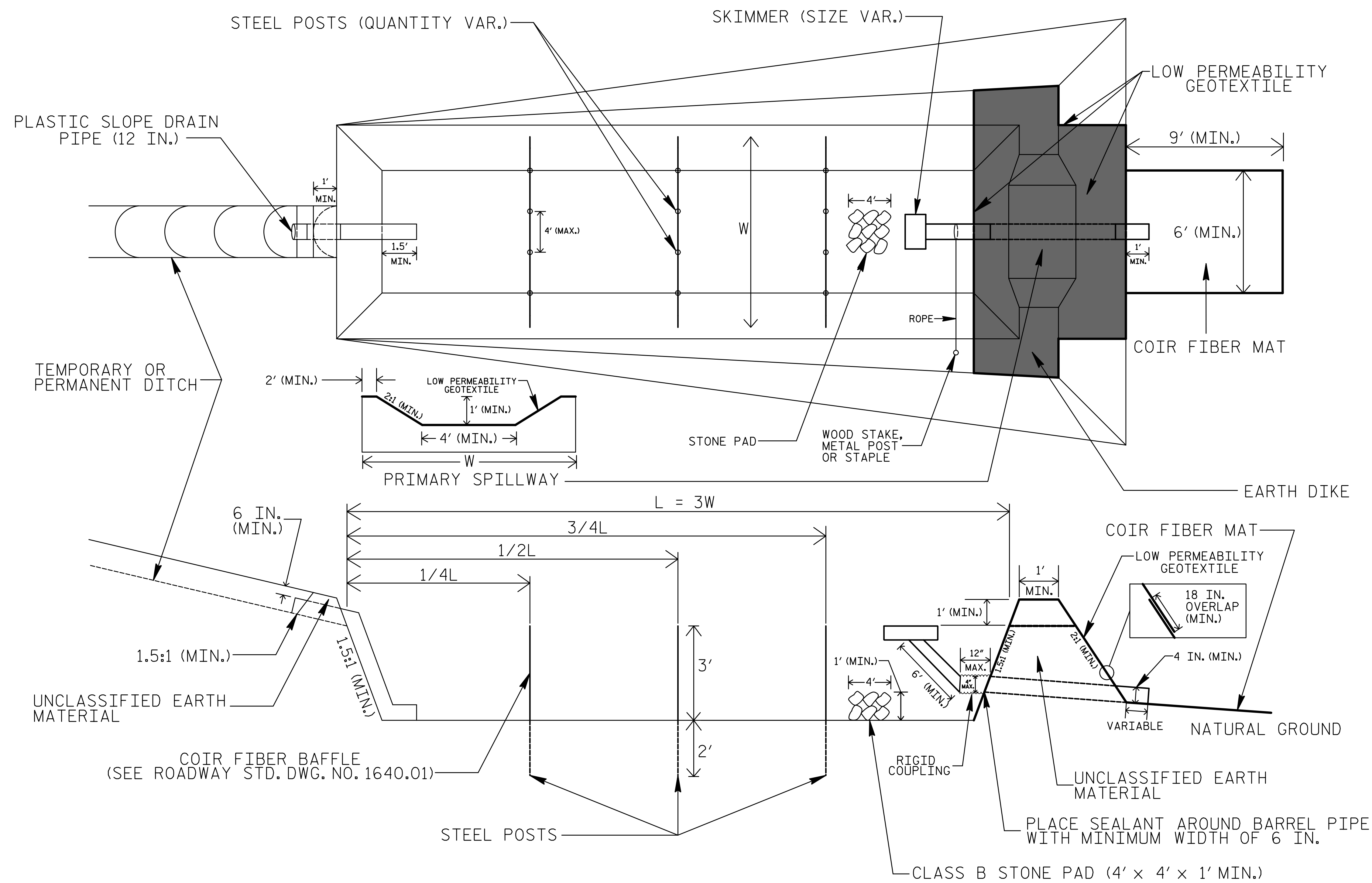
#### Roadway Standard Drawings

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	

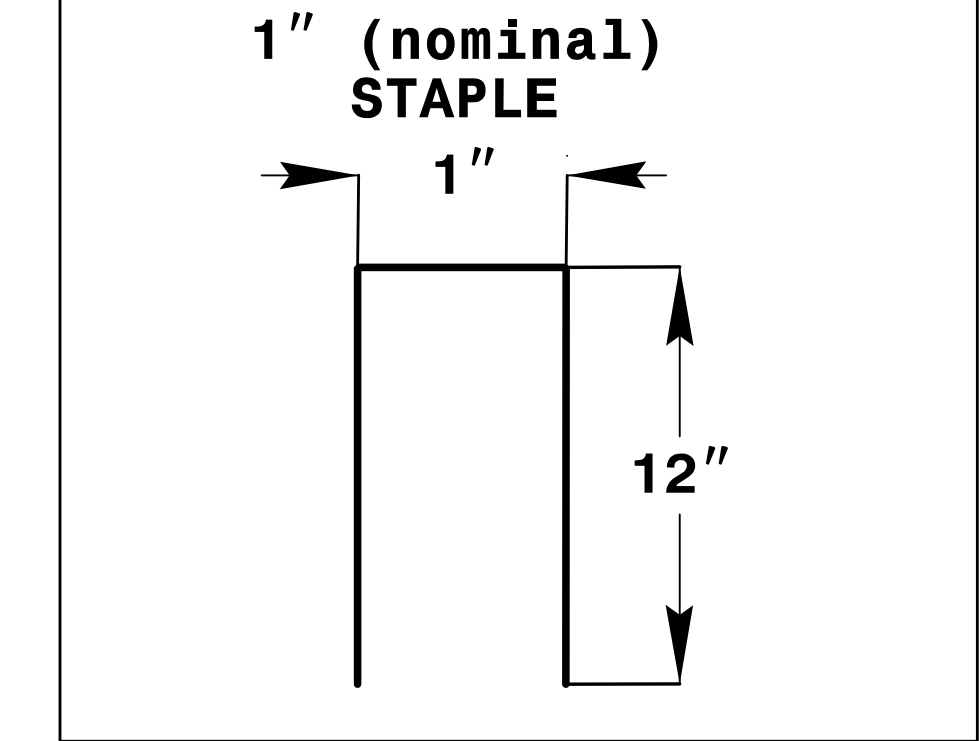
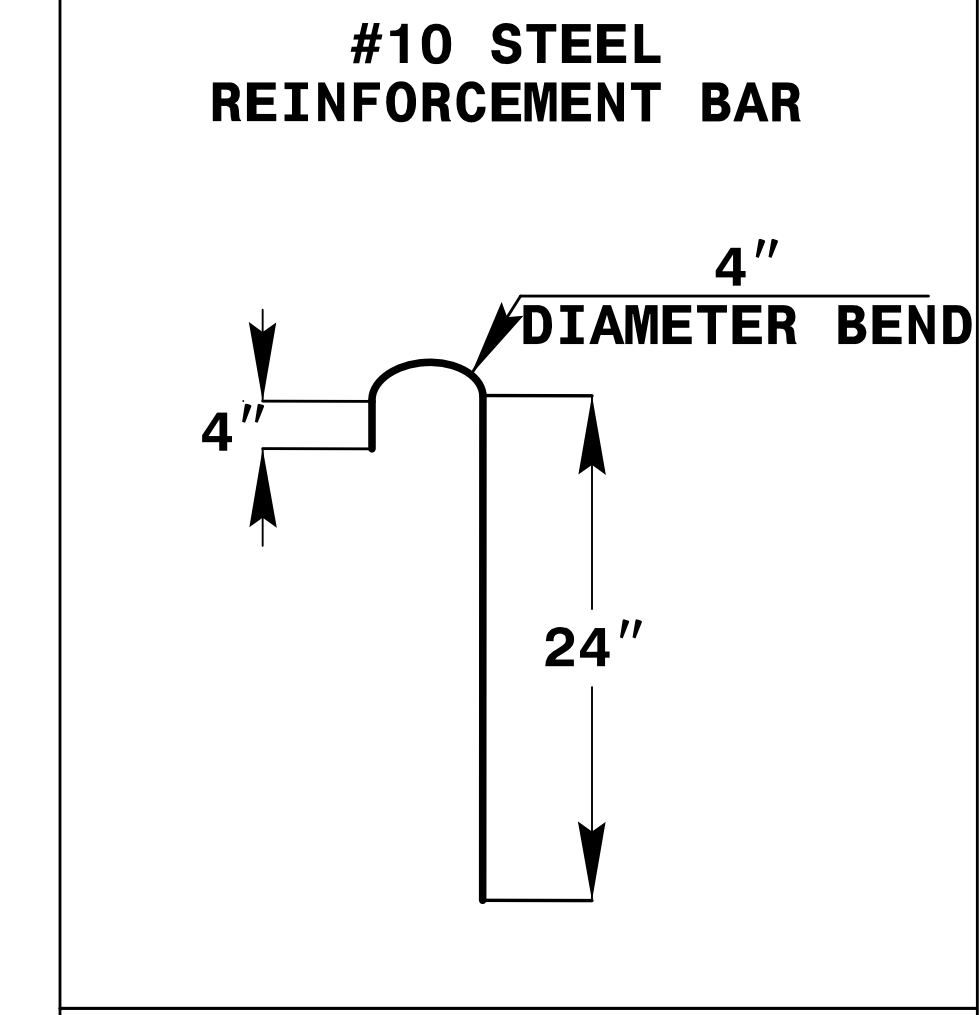
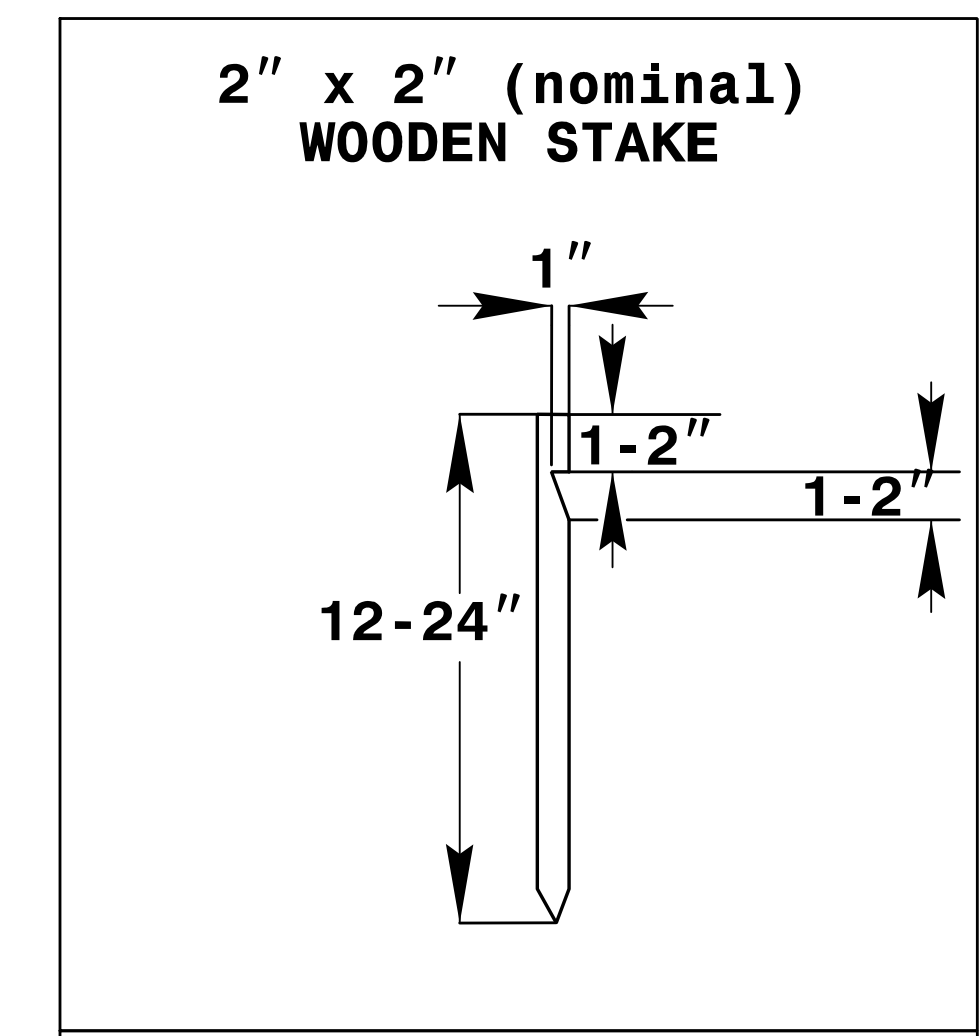
PROJECT REFERENCE NO. U-4405	SHEET NO. EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



## NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES.
2. LIMIT EARTH DIKE HEIGHT TO 5 FT.
3. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
4. DETERMINE PRIMARY SPILLWAY WEIR LENGTH (FT.) USING  $Q/0.8$ , WHERE Q IS FLOW RATE (CFS) INTO BASIN.
5. PLASTIC SLOPE DRAIN PIPE AT INLET OF BASIN MAY BE REPLACED BY FILTRATION GEOTEXTILE OR TARP AS DIRECTED.
6. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

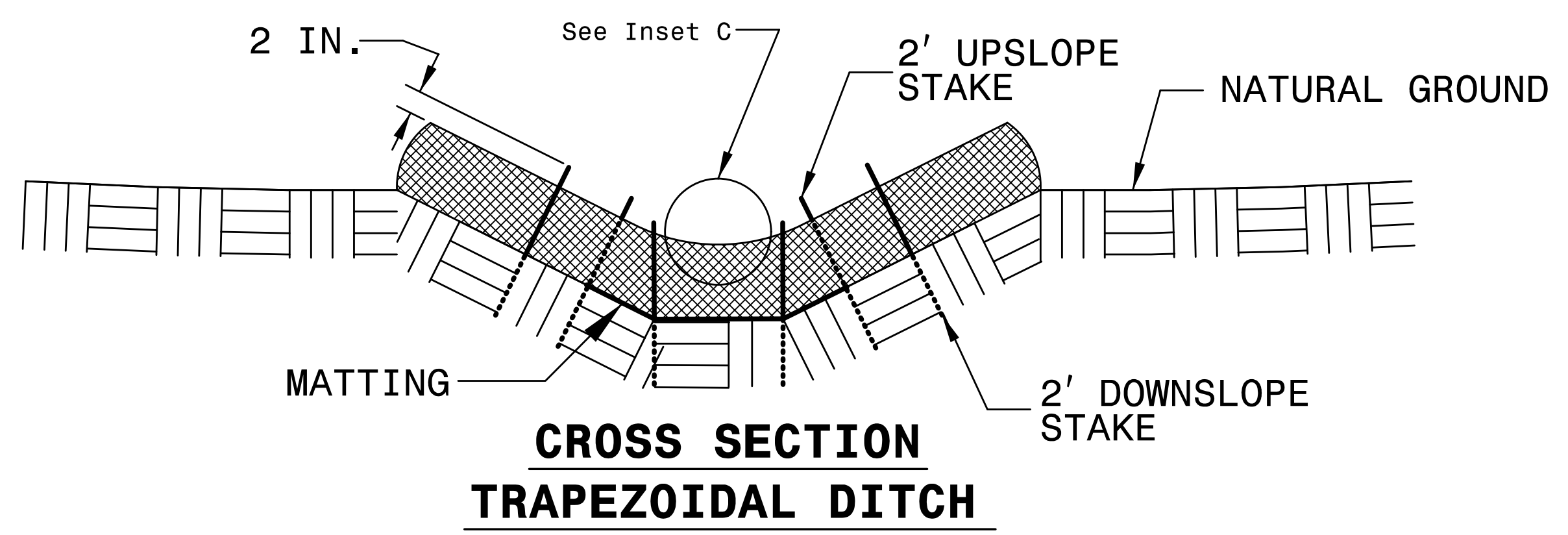
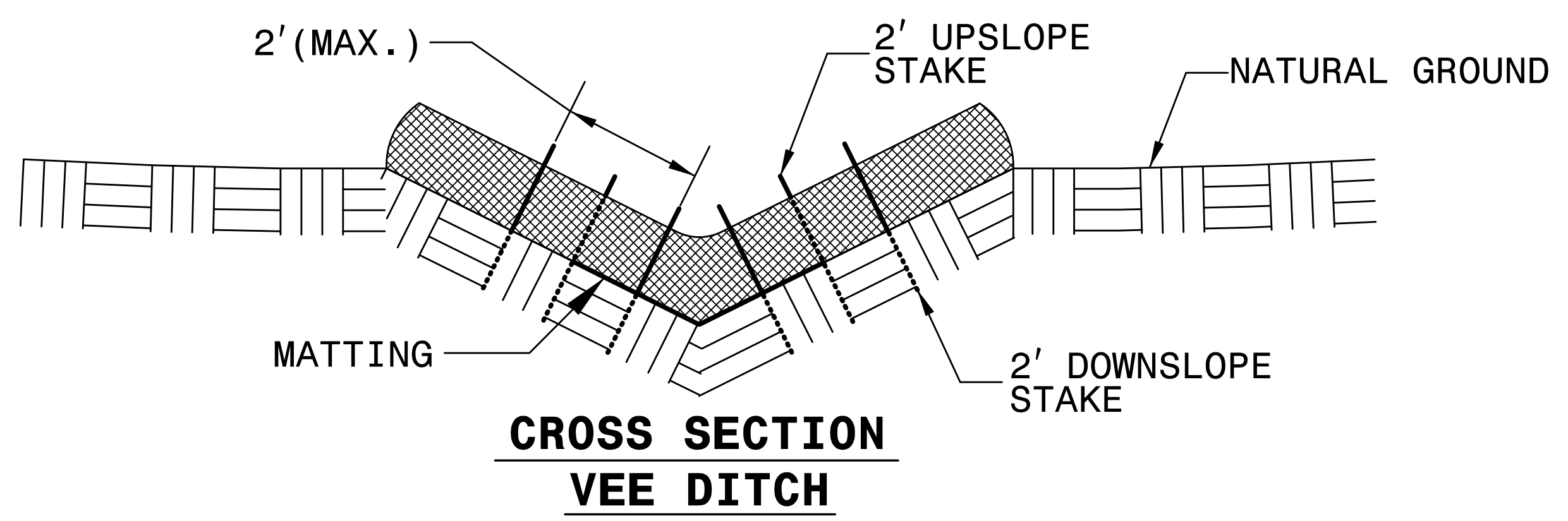
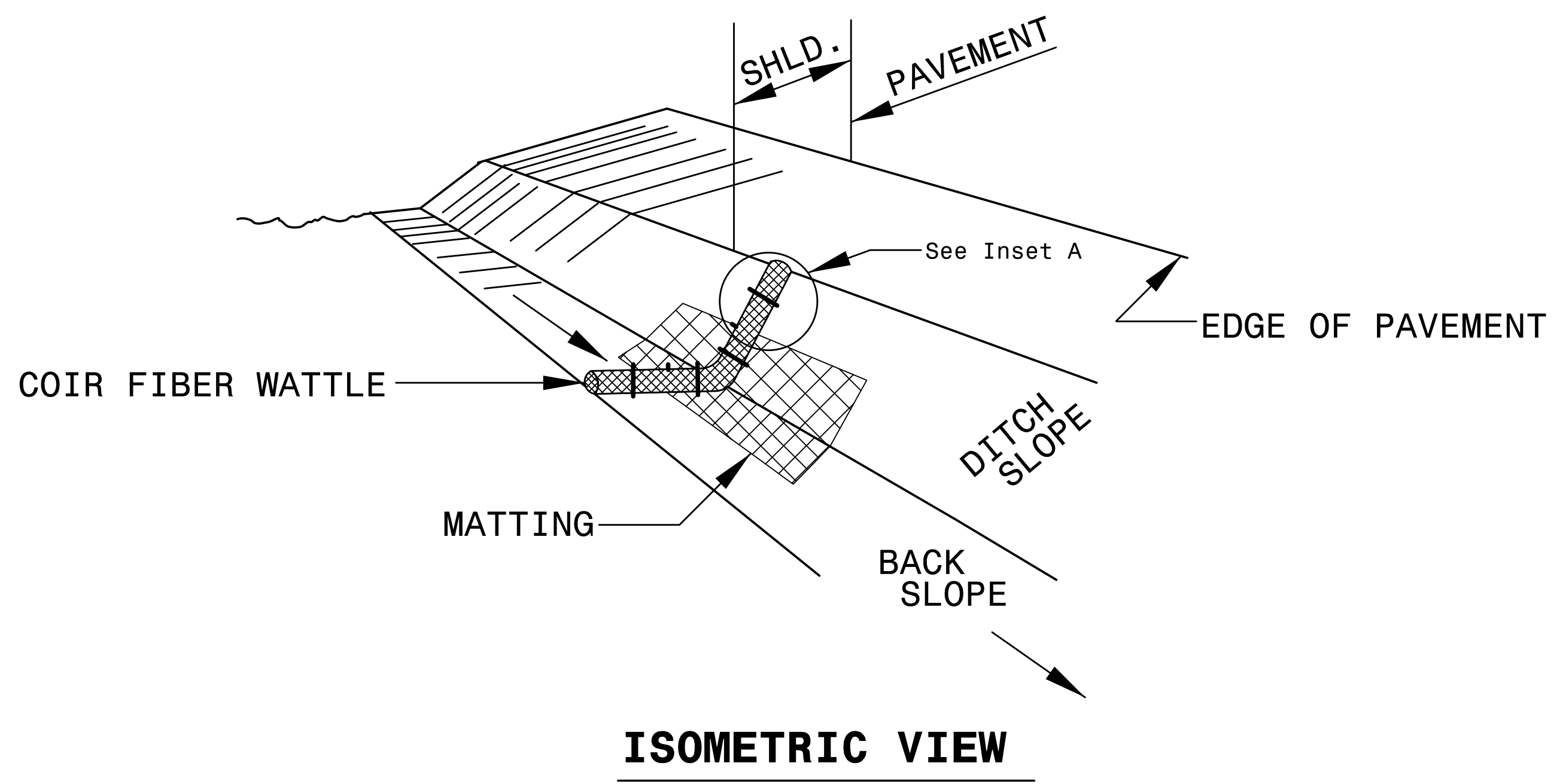


## COIR FIBER MAT ANCHOR OPTIONS

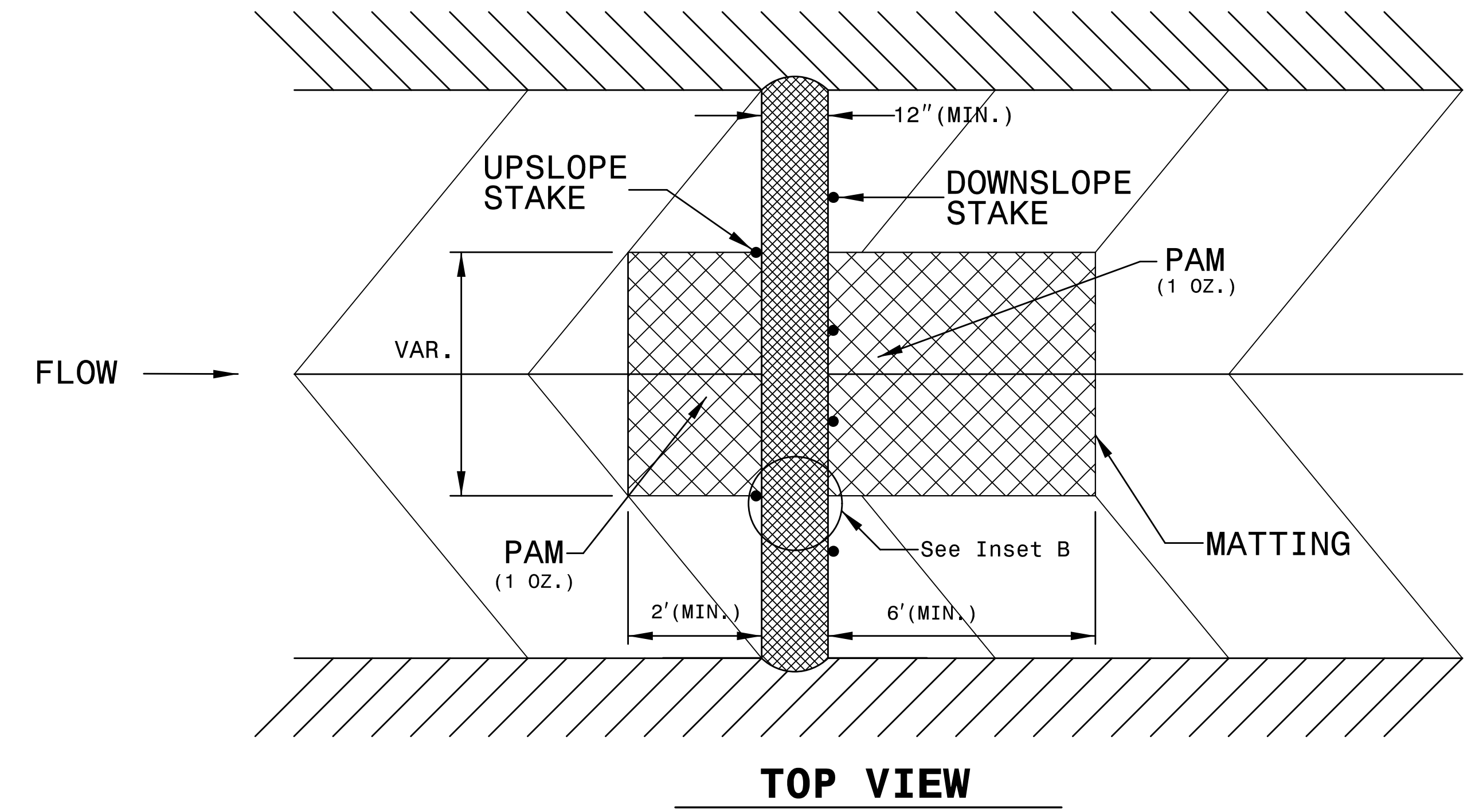
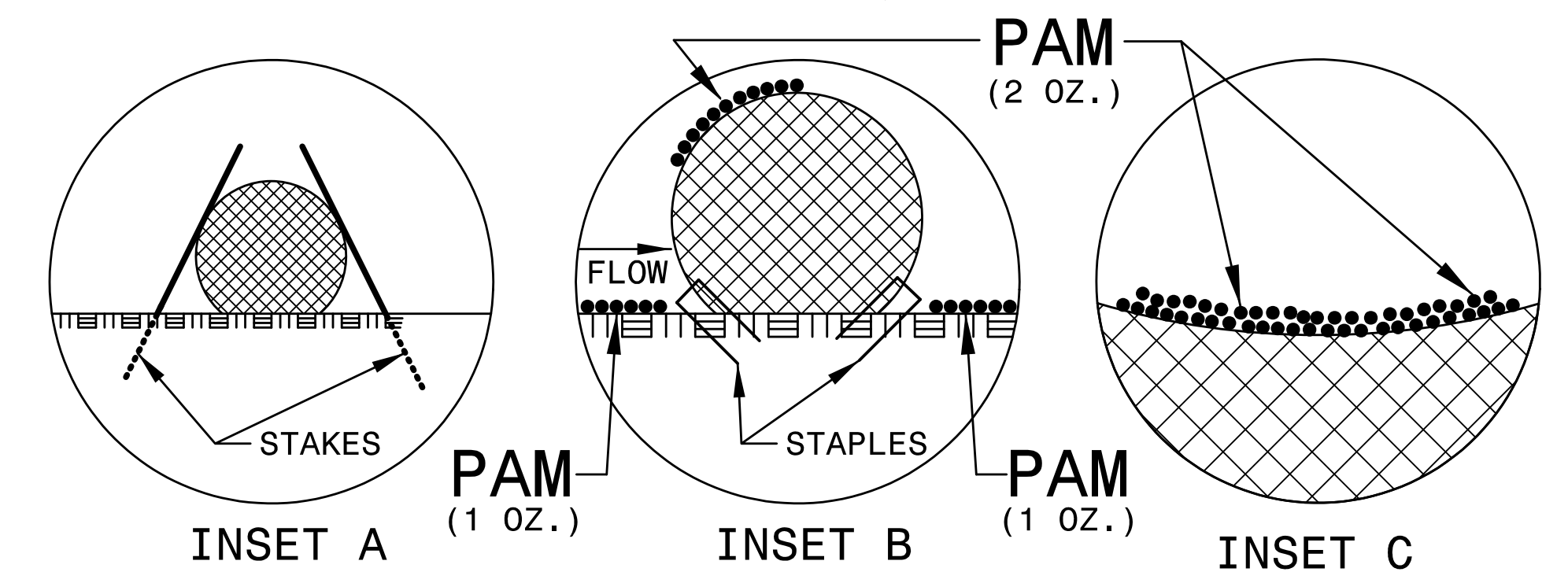
NOT TO SCALE

PROJECT REFERENCE NO. U-4405	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

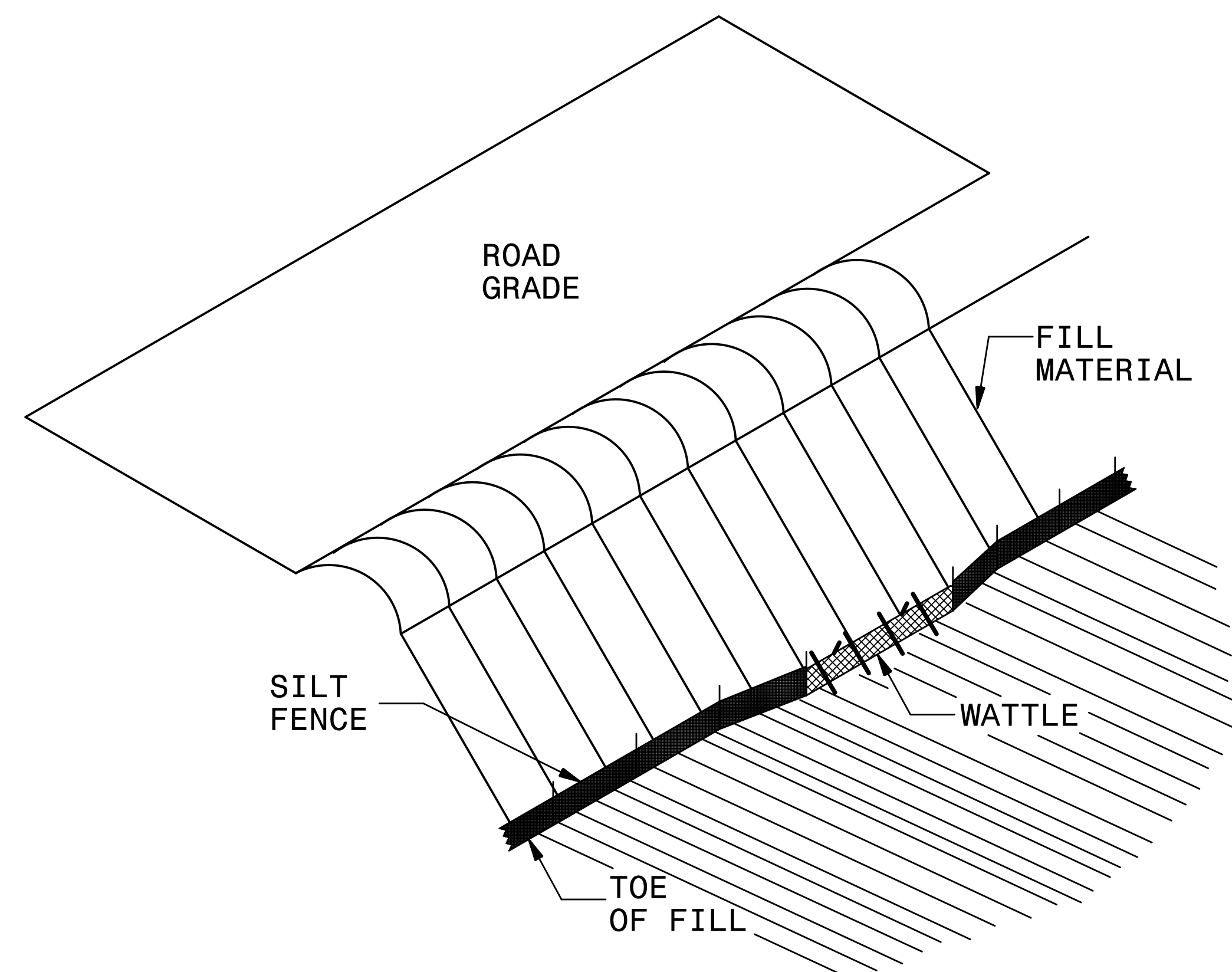


- NOTES:
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE 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.

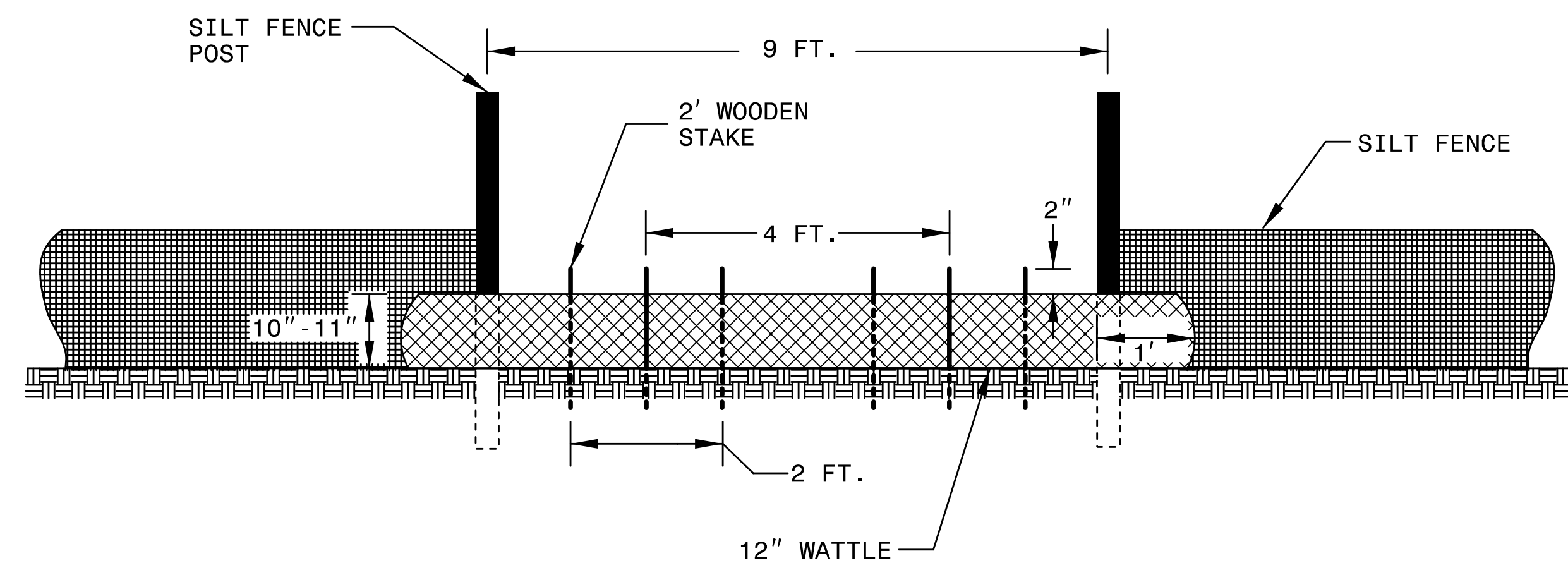


# SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO. U-4405	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**ISOMETRIC VIEW**

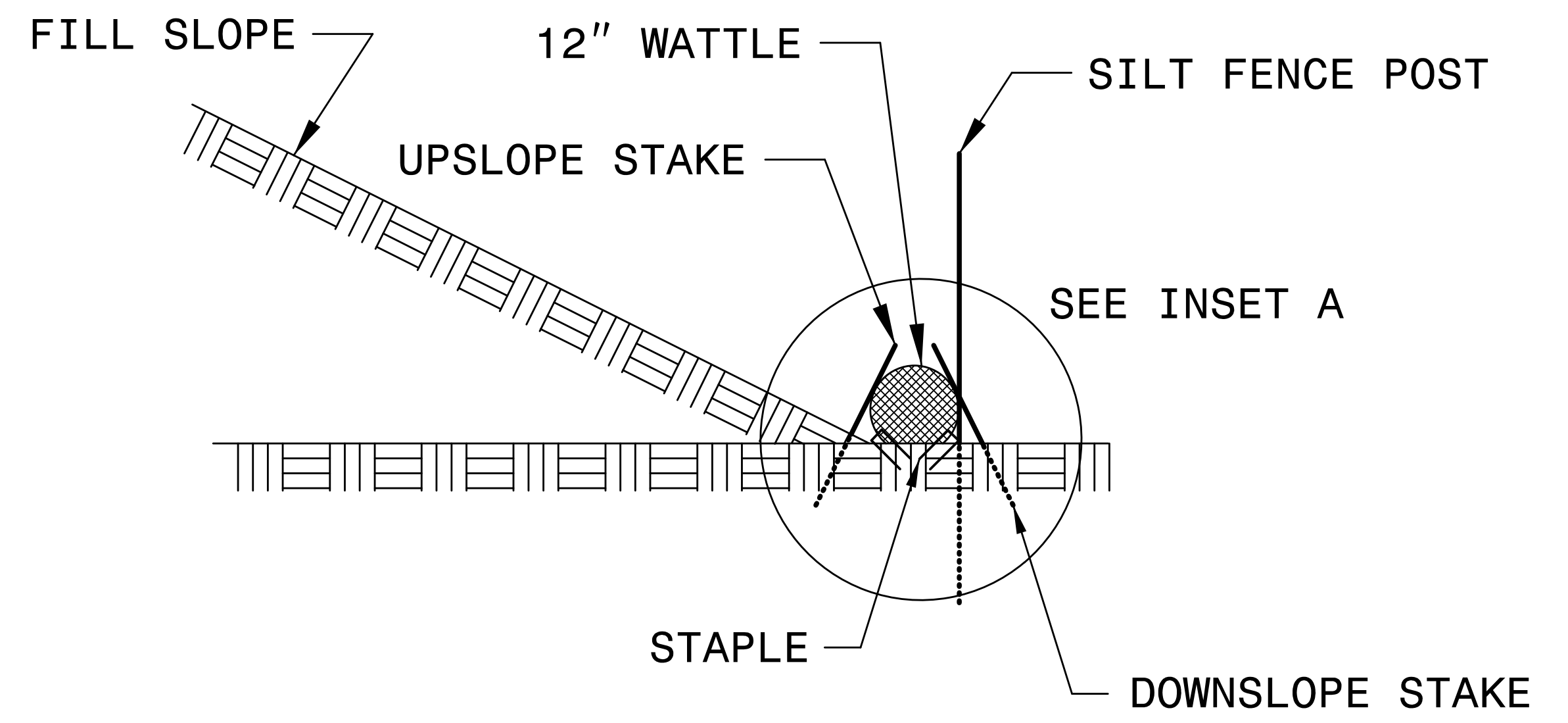
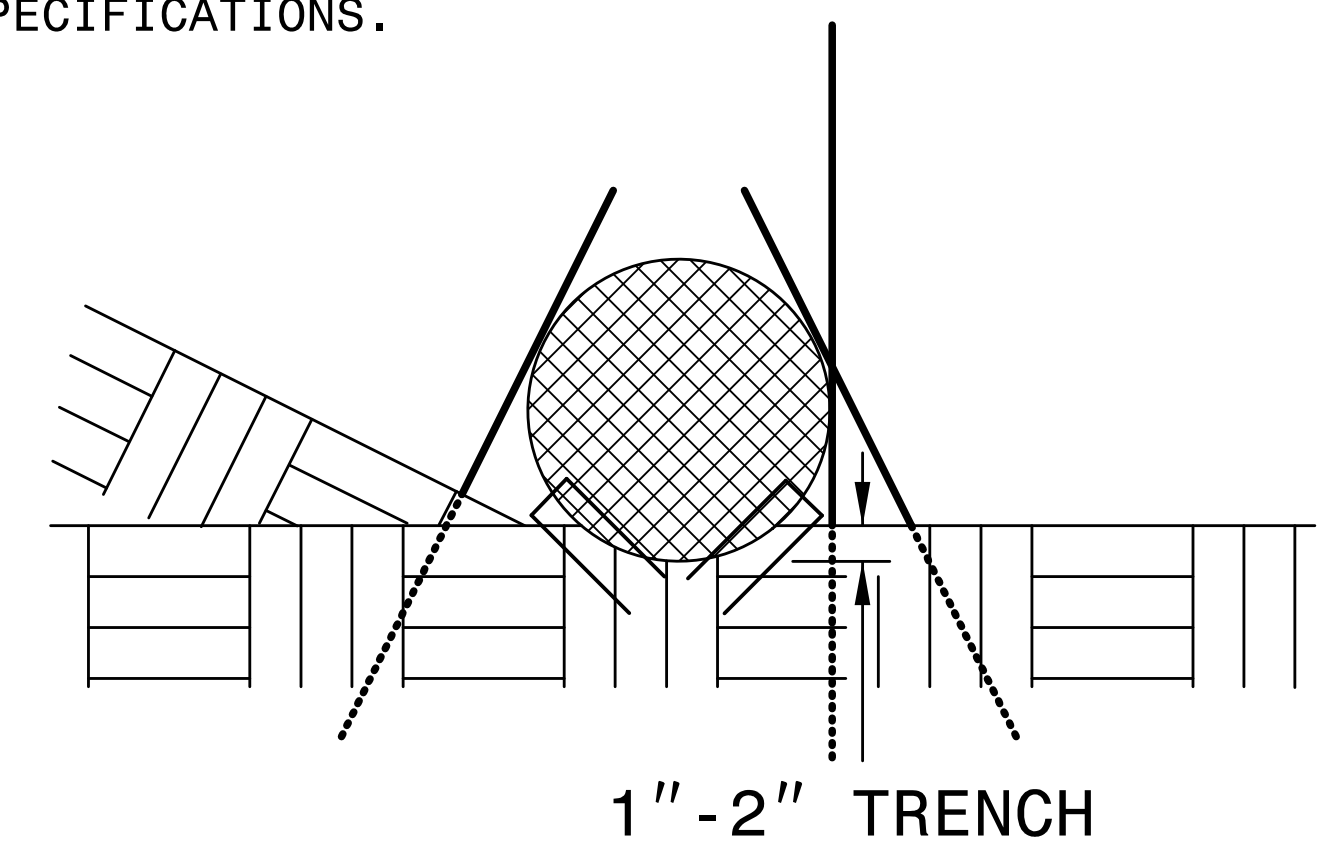


**VIEW FROM SLOPE**

**NOTES:**

- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.
- 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.
- WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.
- INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

**INSET A**



**SIDE VIEW**

# BORROW PIT DEWATERING BASIN DETAIL

PROJECT REFERENCE NO. U-4405	SHEET NO. EC-2C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## GENERAL NOTES:

DETERMINE BORROW PIT DEWATERING BASIN SIZE USING  $V = 8.0203 * Q * T$ , WHERE V IS VOLUME (FT<sup>3</sup>), Q IS PUMP FLOW RATE (GPM), AND T IS DEWATERING TIME (HR). USE MAXIMUM FLOW RATE OF 1000 GPM AND A MINIMUM DEWATERING TIME OF 2 HOURS.

RISER SHALL BE A NON-PERFORATED, SMOOTH OR CORRUGATED MATERIAL WITH A FLASHBOARD OPTION.

CONSTRUCT THE COIR FIBER BAFFLE IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1640.01 AND WITH MATERIAL THAT MEETS THE SPECIFICATIONS OF ROADWAY STANDARD 1640-14.

PROVIDE 5' STEEL POSTS OF THE SELF-FASTENER ANGLE STEEL TYPE. INSTALL STEEL POSTS WITH NO MORE THAN 3' OF THE POST APPEARING ABOVE THE GROUND.

ATTACH THE COIR FIBER MAT TO THE STEEL POSTS WITH WIRE OR OTHER ACCEPTABLE MEANS AND STAPLED INTO THE BOTTOM AND SIDE SLOPES OF THE BASIN WITH 12" STAPLES.

INSTALL TYPE 2 GEOTEXTILE ON SIDESLOPES AND BOTTOM OF BASIN AT INLET AS SHOWN IN THE DETAIL.

USE THE TYPICAL SECTION SHOWN FOR THE BORROW PIT DEWATERING BASIN AS A GUIDE. THE BASIN MAY HAVE ANY TYPE CONFIGURATION AS LONG AS SUFFICIENT VOLUME IS PROVIDED AND PROVISIONS ARE MADE FOR A NON-PERFORATED RISER.

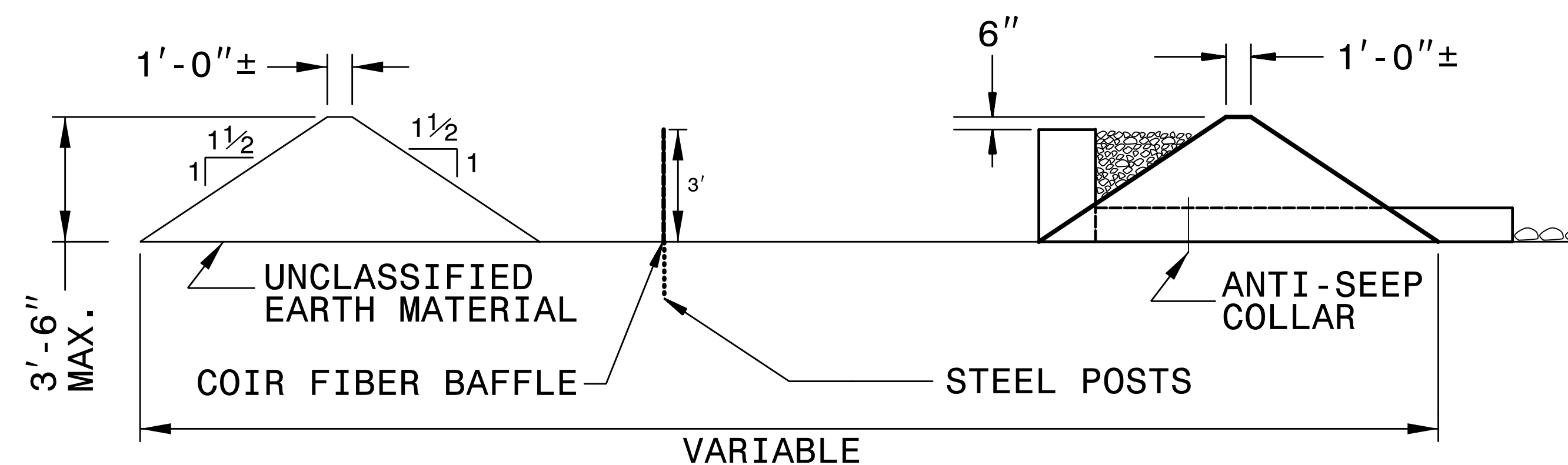
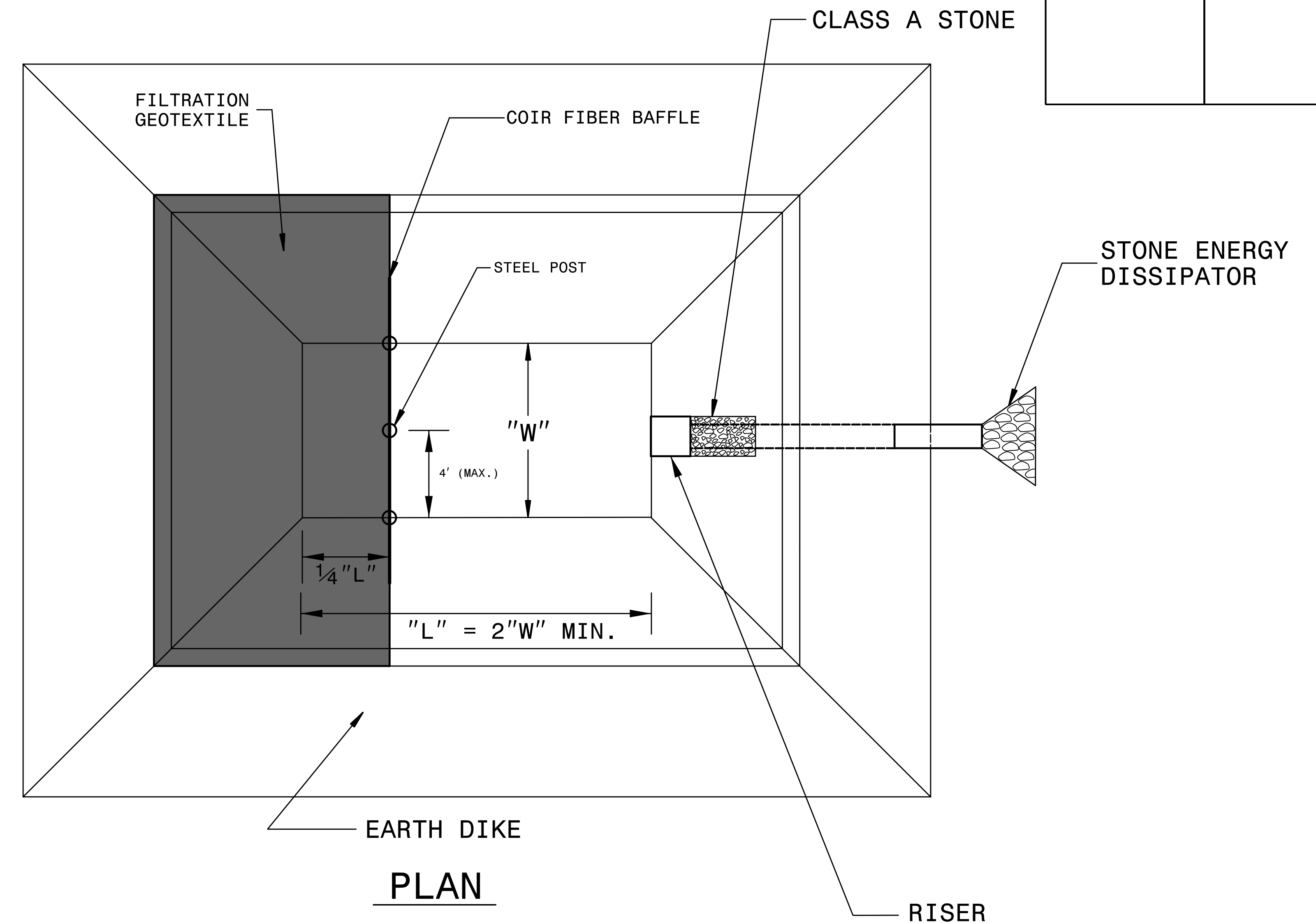
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

THE BORROW PIT DEWATERING BASIN SIZE IS VARIABLE AND DEPENDENT ON SPECIFIC SITE REQUIREMENTS AS WELL AS PROPOSED CONSTRUCTION OPERATIONS.

SUBMIT THE SIZE, LOCATION AND RISER PIPE MATERIAL FOR APPROVAL PRIOR TO CONSTRUCTION.

PUMP THE EFFLUENT INTO THE BORROW PIT DEWATERING BASIN TO A MAXIMUM DEPTH OF 6 IN. BELOW TOP OF EARTH DIKE.

PROVIDE A STONE ENERGY DISSIPATOR PAD AT THE OUTLET OF THE PUMP DISCHARGE HOSE AND OUTLET OF THE RISER BARREL IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 876.02 FOR OUTLET W/O DITCH.

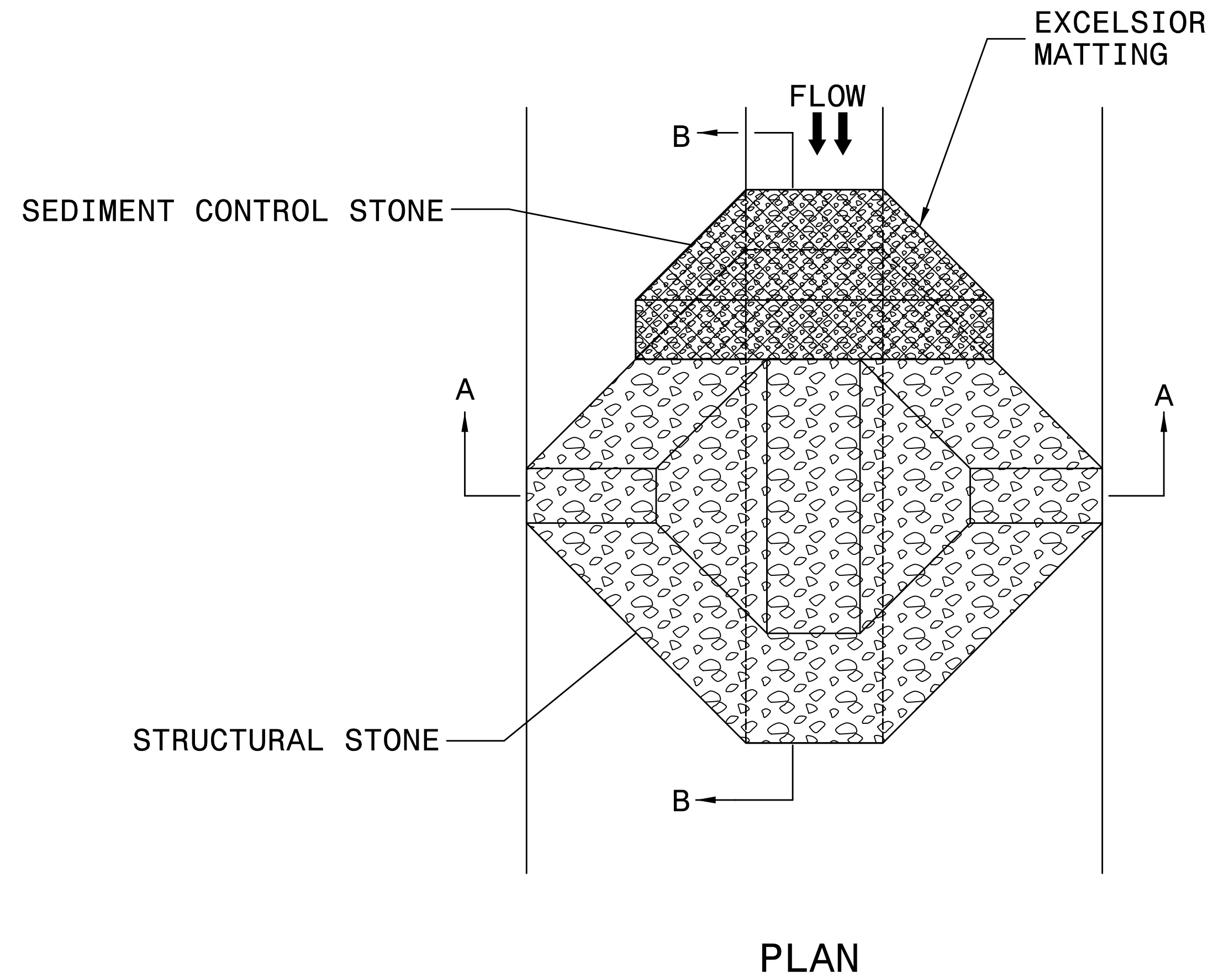


TYPICAL SECTION VIEW

NOT TO SCALE

PROJECT REFERENCE NO. U-4405	SHEET NO. EC-2D
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



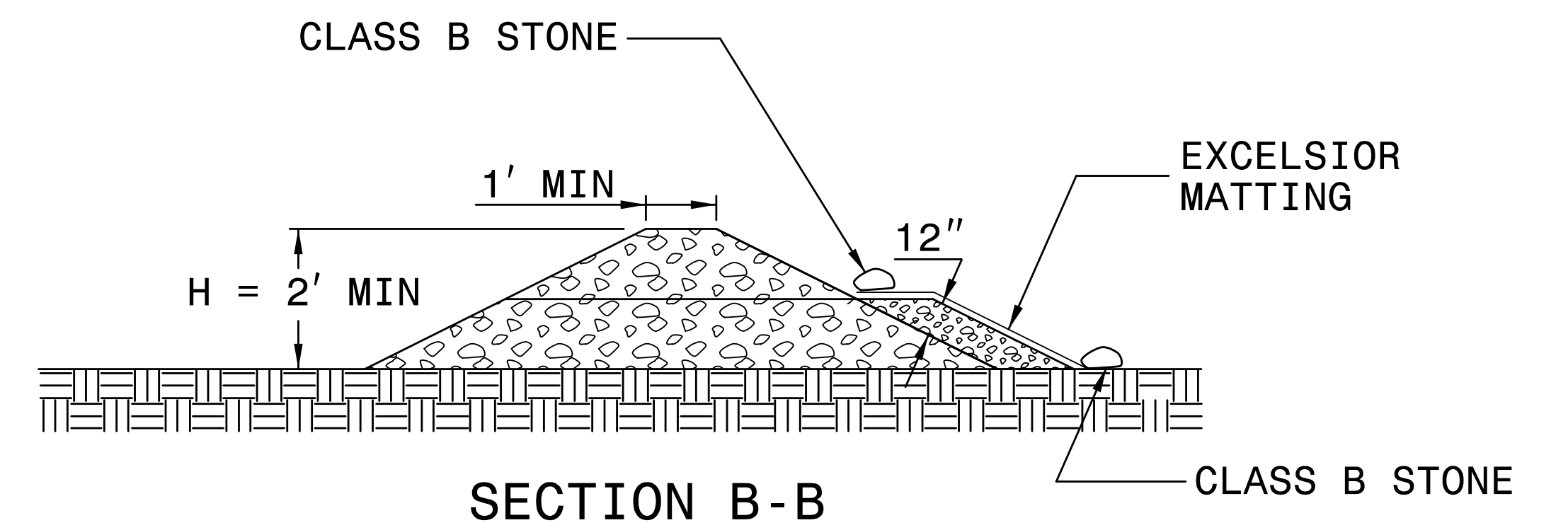
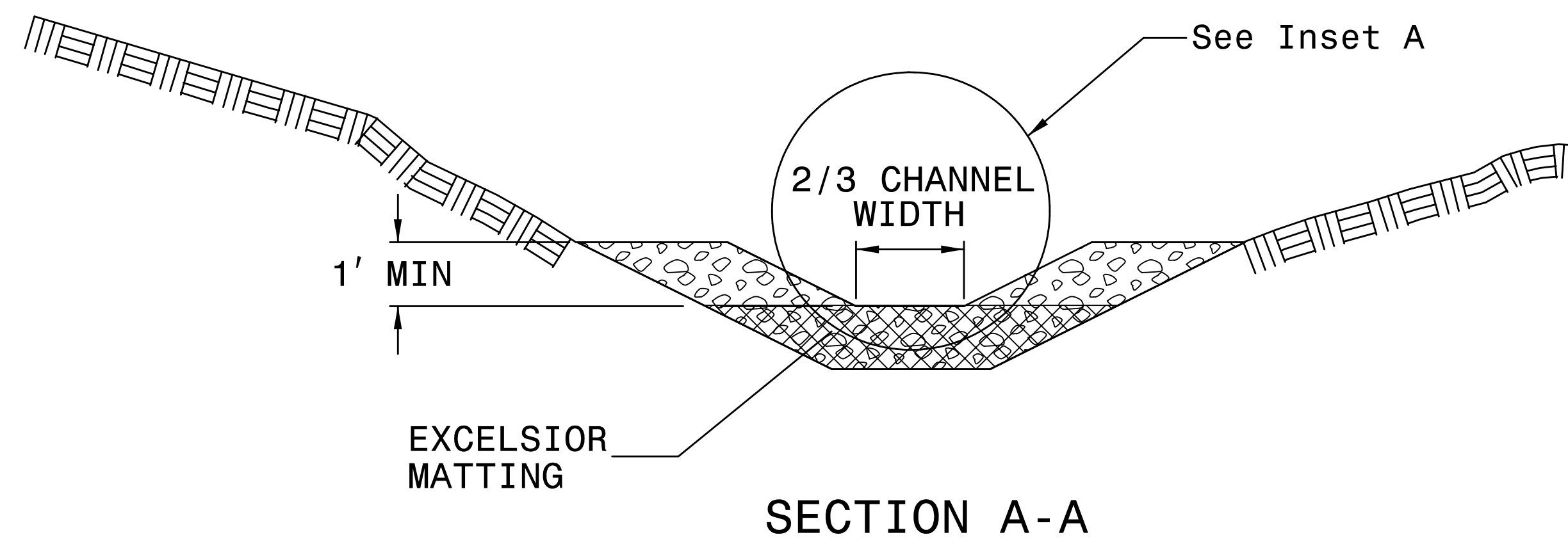
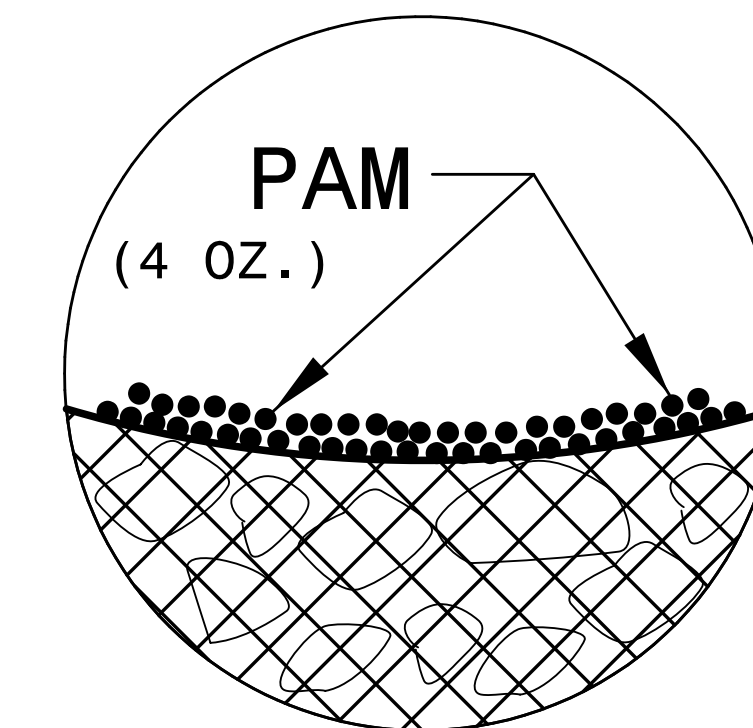
**NOTES:**

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

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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## ***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.





PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-04/CONST. 4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4A

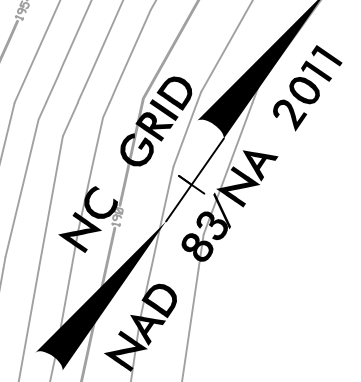
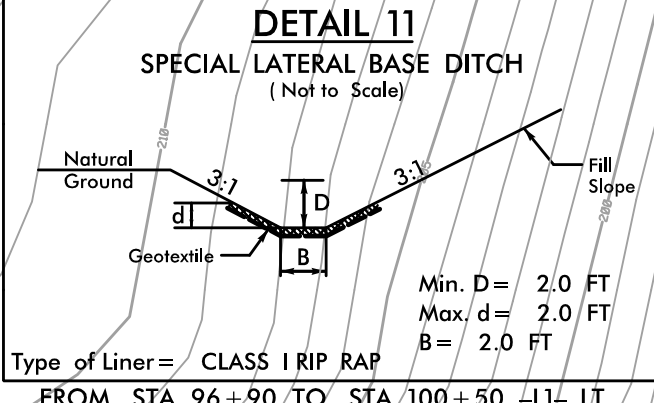
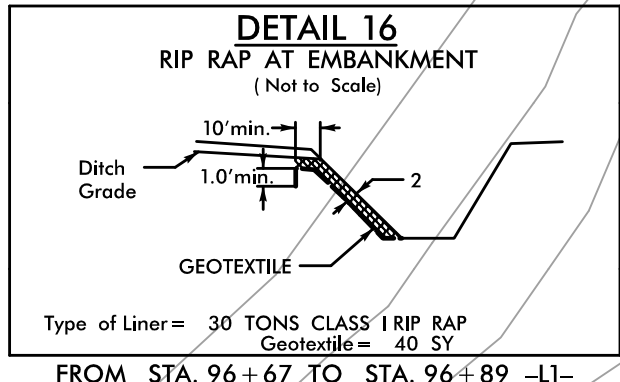
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

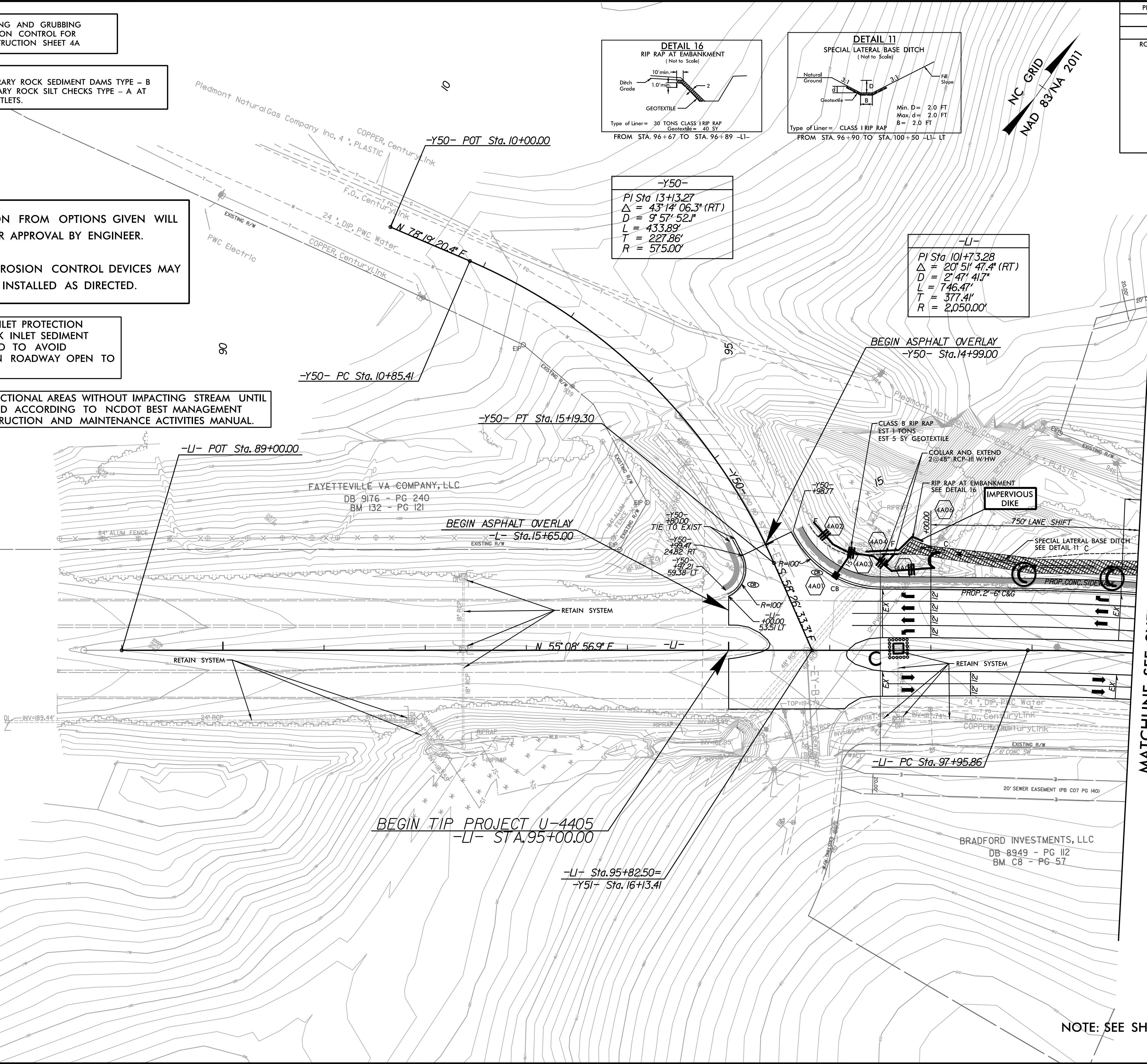
INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL  
AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT  
PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.



-Y50-  
PI Sta 13+13.27  
 $\Delta = 43'14''06.3''$  (RT)  
D = 9'57'52.1"  
L = 433.89'  
T = 227.86'  
R = 575.00'

-LI-  
PI Sta 101+73.28  
 $\Delta = 20'51'47.4''$  (RT)  
D = 2'47'41.7"  
L = 746.47'  
T = 377.41'  
R = 2,050.00'



MATCHLINE SEE SHEET 4B  
-LI- STA 99+00

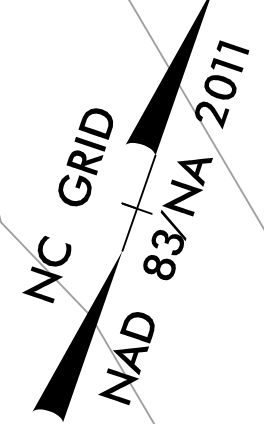
NOTE: SEE SHEET 52 FOR -LI- PROFILE

REVISIONS

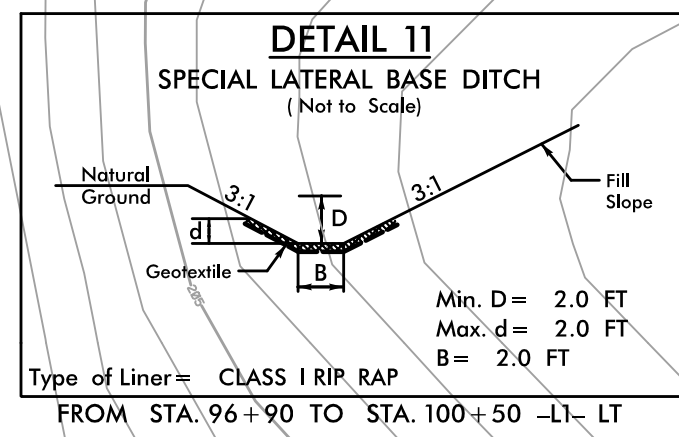
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-05/CONST. 4B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4B

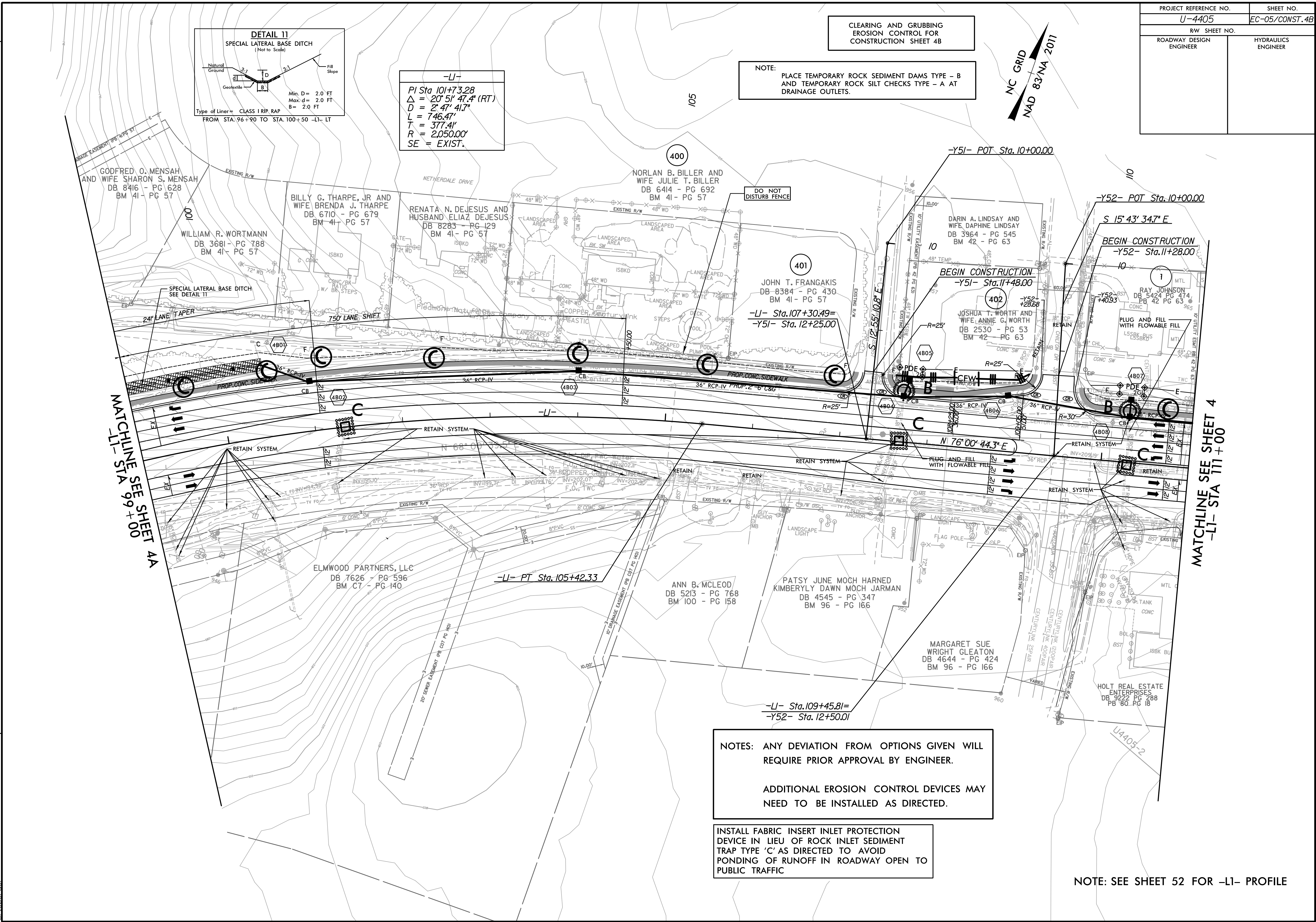


NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.



**-L1-**  
PI Sta 101+73.28  
 $\Delta = 20^\circ 51' 47.4''$  (RT)  
D = 2' 47.41"  
L = 746.47'  
T = 377.41'  
R = 2,050.00'  
SE = EXIST.

8/17/99  
  
 REVISIONS  
  
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 8/17/99



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

NOTE: SEE SHEET 52 FOR -L1- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-06/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

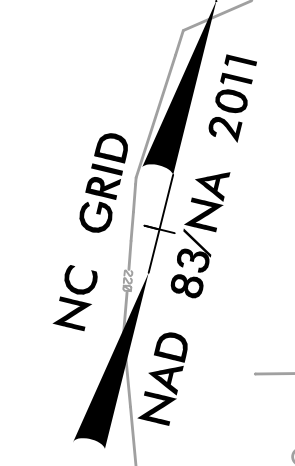
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

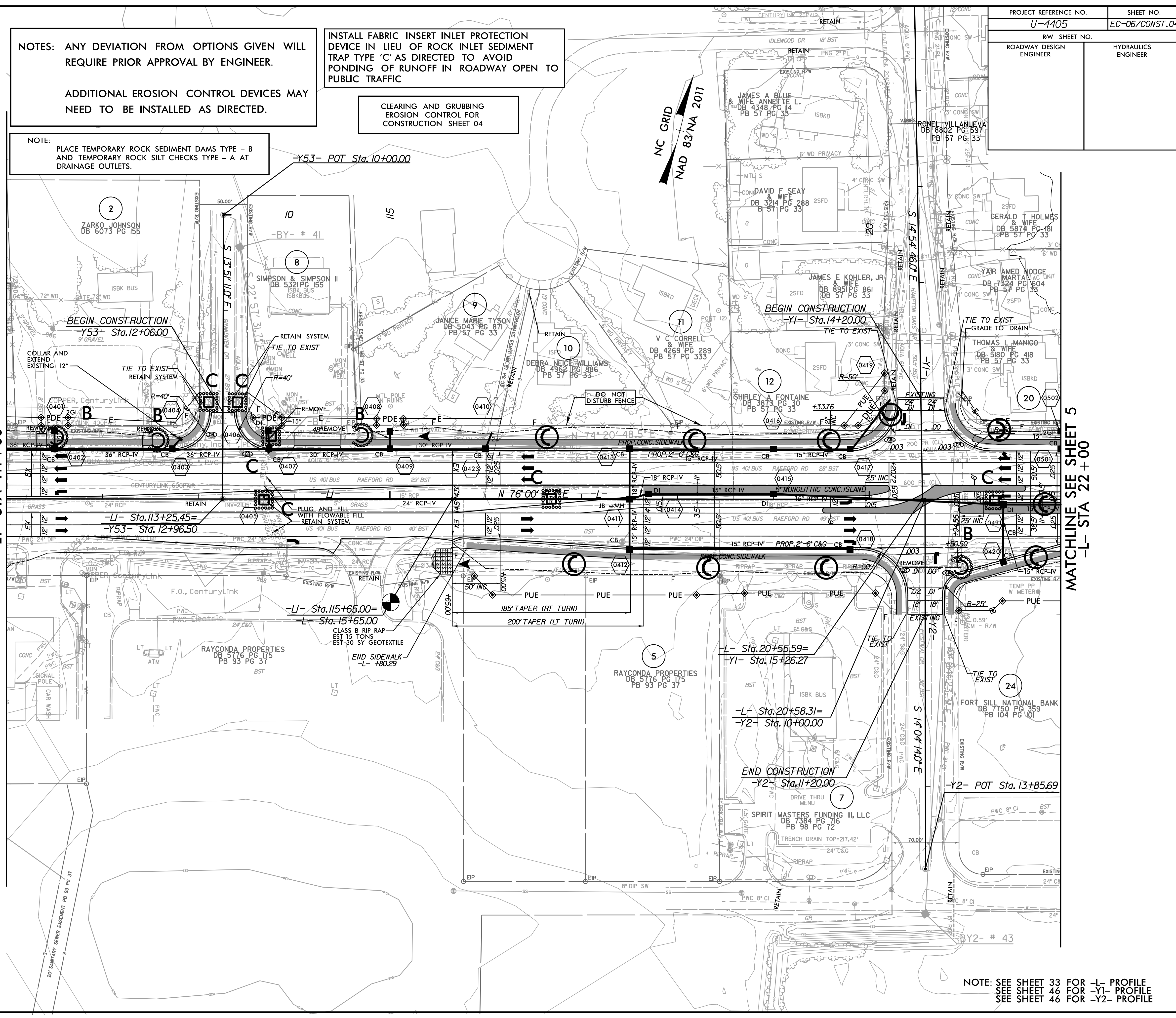
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 04

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



MATCHLINE SEE SHEET 4B  
-L1- STA 11+00

MATCHLINE SEE SHEET 5  
-L- STA 22+00



REVISIONS

8/17/99

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alobae

PROP CONC SIDEWALK

NOTE: SEE SHEET 33 FOR -L- PROFILE  
SEE SHEET 46 FOR -Y1- PROFILE  
SEE SHEET 46 FOR -Y2- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-07/CONST.05
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.

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 05

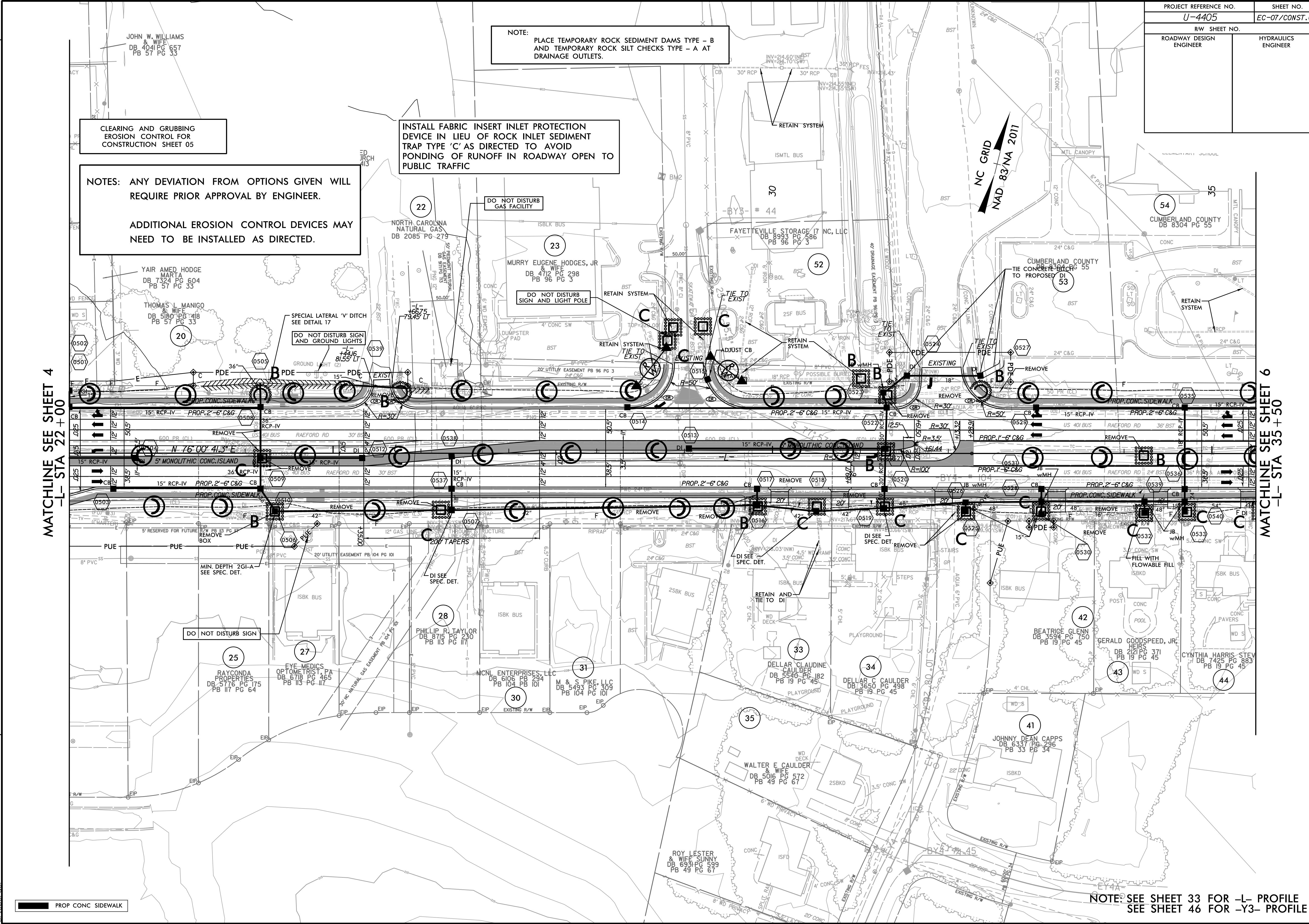
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

MATCHLINE SEE SHEET 4  
-L- STA 22 + 00

MATCHLINE SEE SHEET 6  
-L- STA 35 + 50



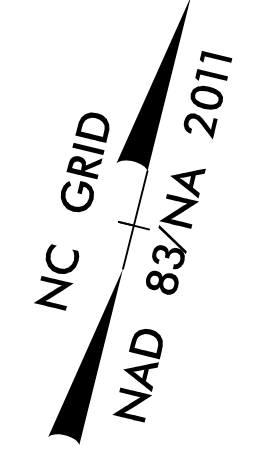
PROP CONC SIDEWALK

NOTE: SEE SHEET 33 FOR -L- PROFILE  
SEE SHEET 46 FOR -Y3- PROFILE

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-08/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06

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

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

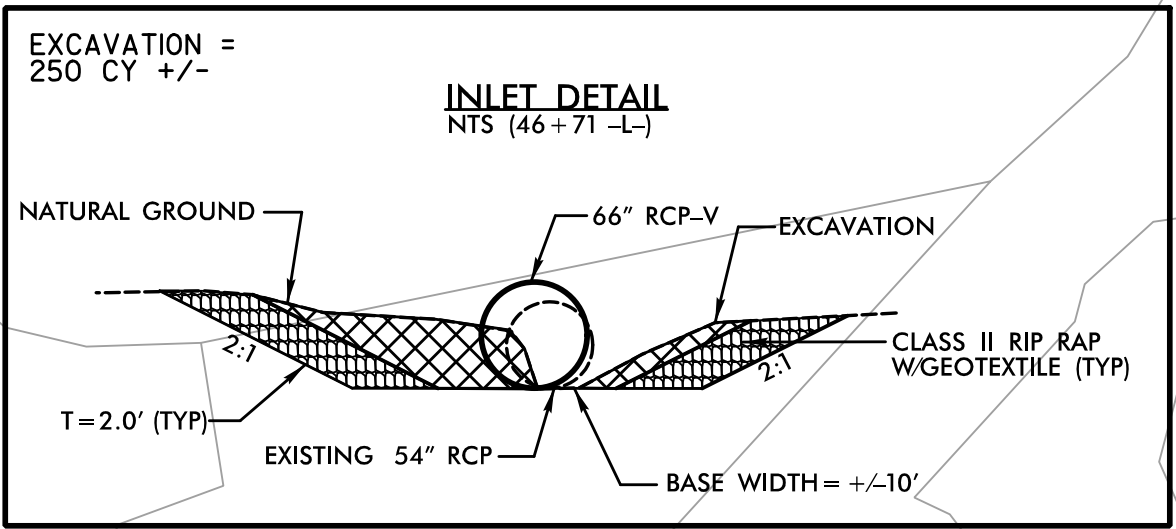
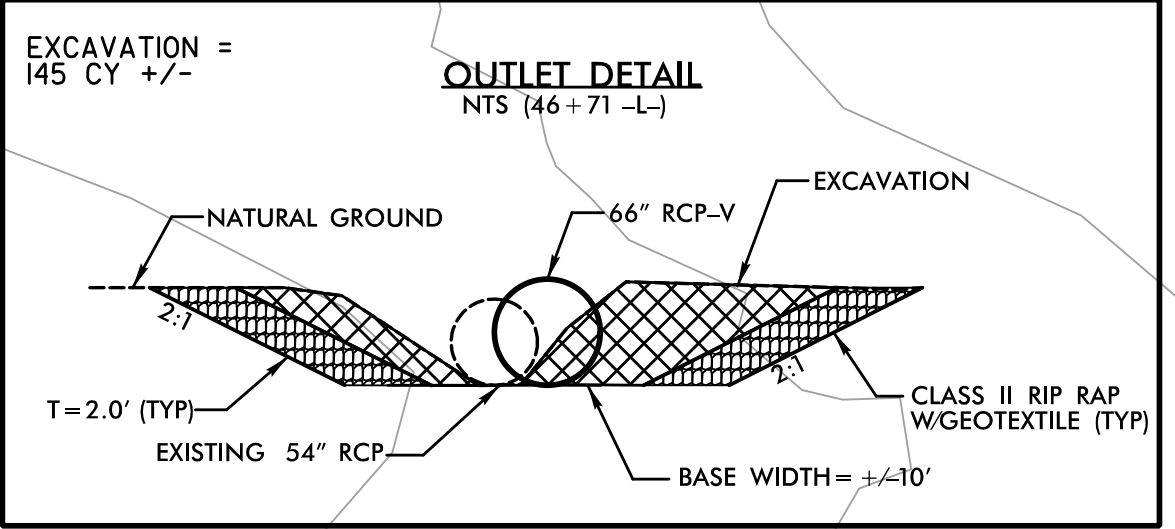
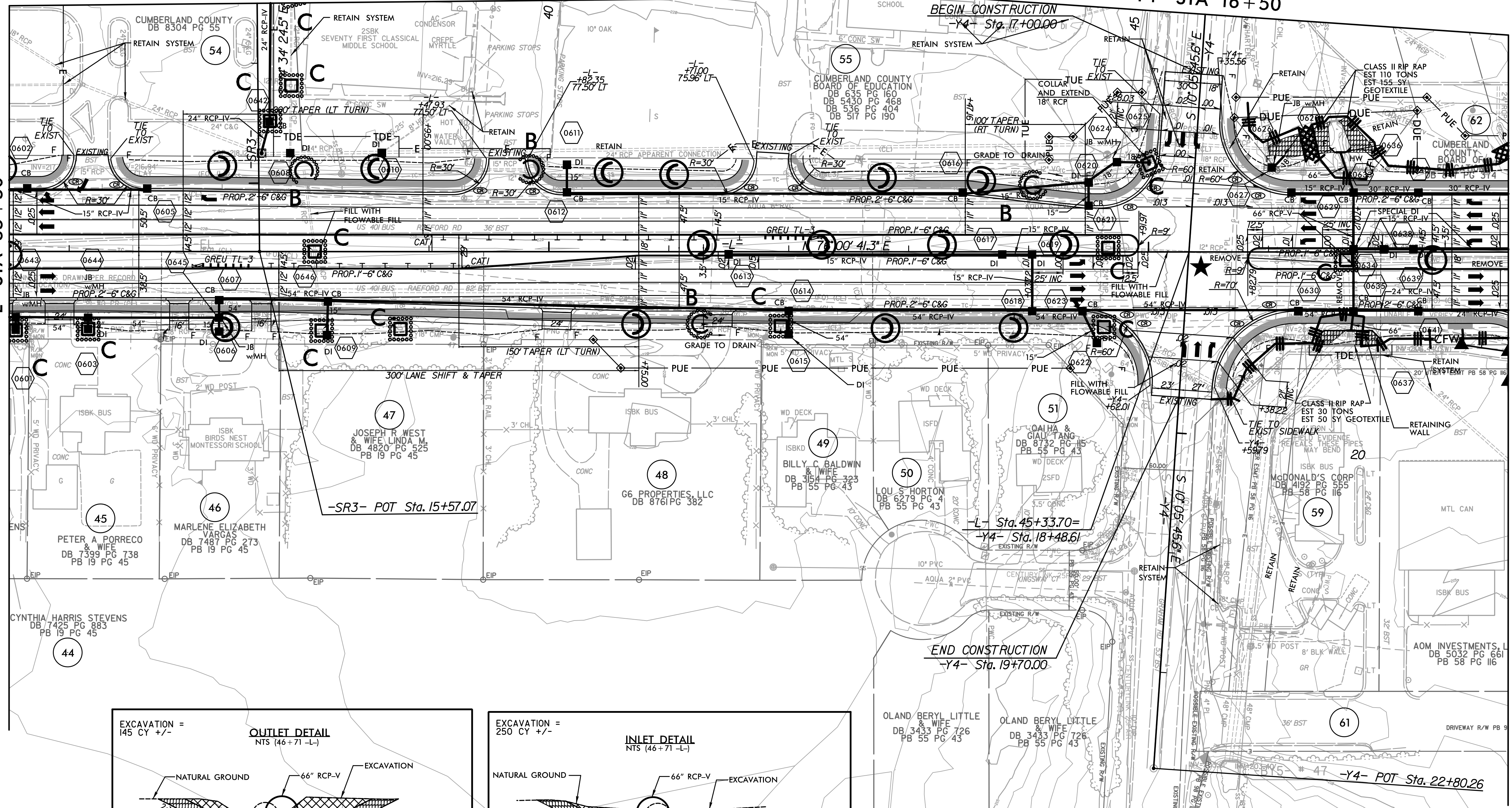
INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

MATCHLINE SEE SHEET 28  
-SR3- STA 13+50

MATCHLINE SEE SHEET 28  
-Y4- STA 16+50

MATCHLINE SEE SHEET 5  
-L- STA 35+50

MATCHLINE SEE SHEET 7  
-L- STA 48+00



★ PROPOSED SIGNAL

■ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 33&34 FOR -L- PROFILE  
SEE SHEET 46 FOR -Y4- PROFILE

REVISIONS

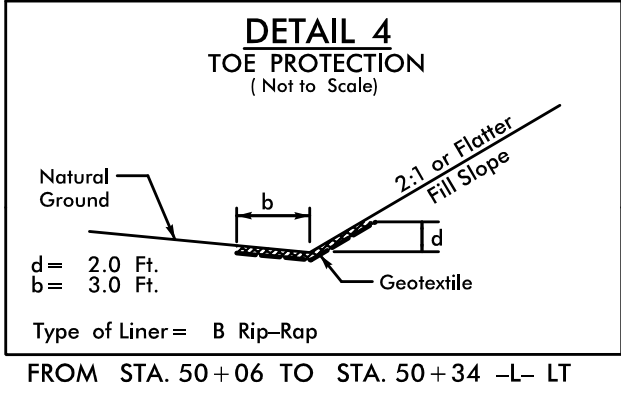
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-09/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

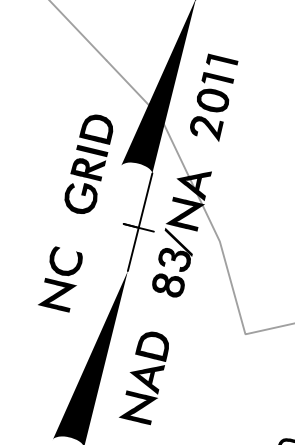
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

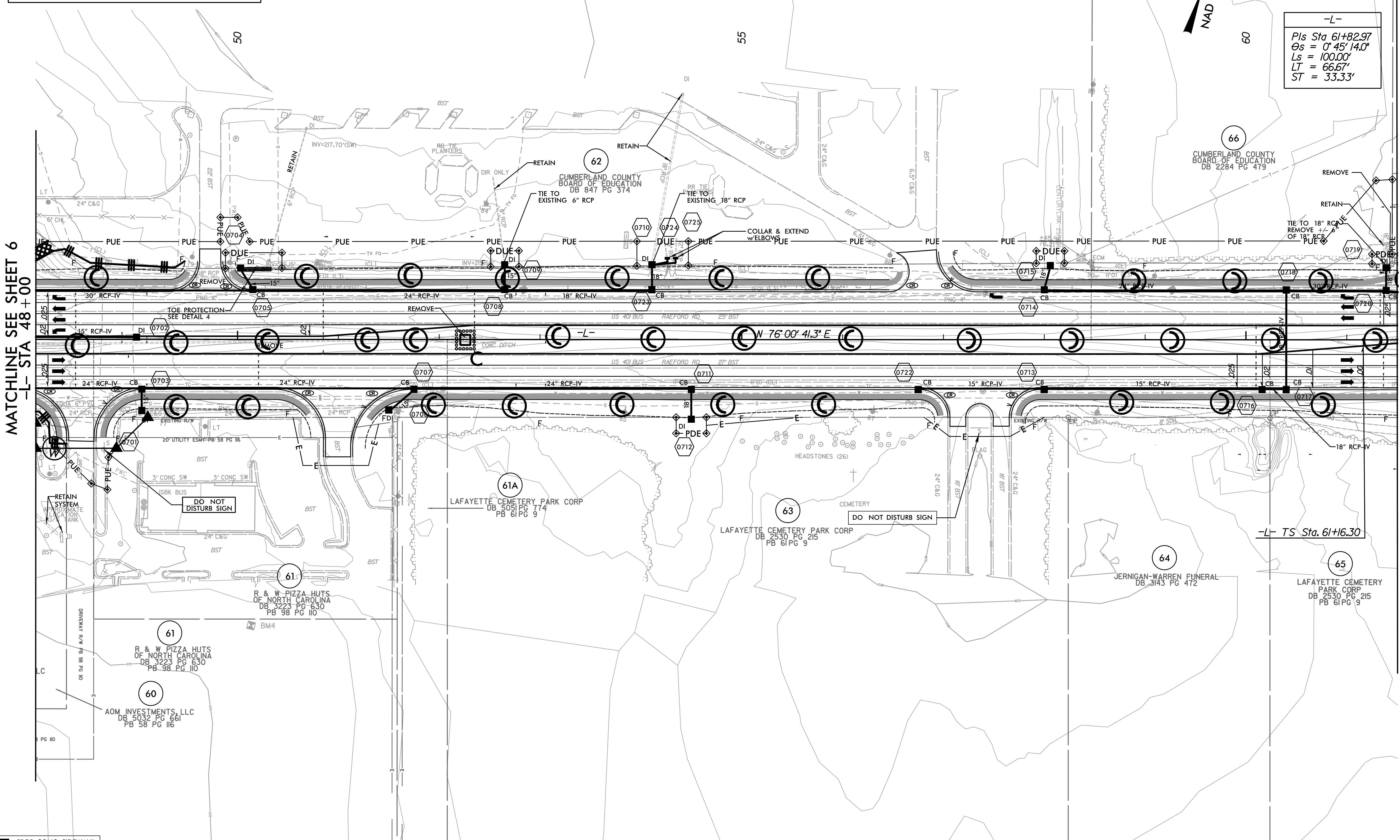


NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 07



-L-  
Pls Sta 61+82.97  
Os = 0' 45' 14.0"  
Ls = 100.00'  
LT = 66.67'  
ST = 33.33'



MATCHLINE SEE SHEET 6  
-L- STA 48+00

MATCHLINE SEE SHEET 8  
-L- STA 61+50

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PROF CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 34 FOR -L- PROFILE

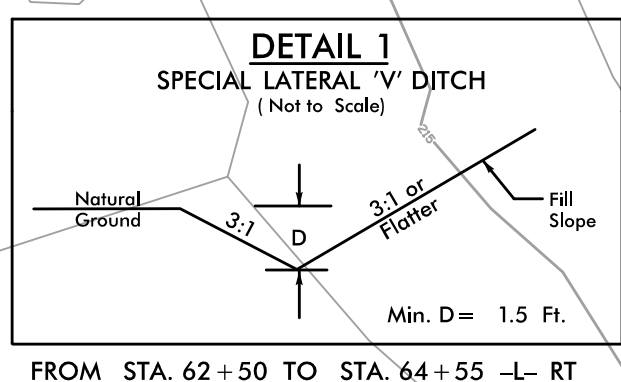
PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-10/CONST.08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

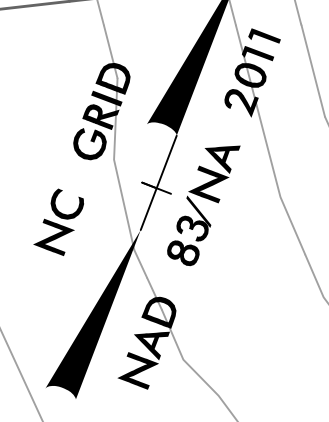
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 08

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.



INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC



MATCHLINE SEE SHEET 7  
-L- STA 61+50

MATCHLINE SEE SHEET 9  
-L- STA 74+75

8/17/99

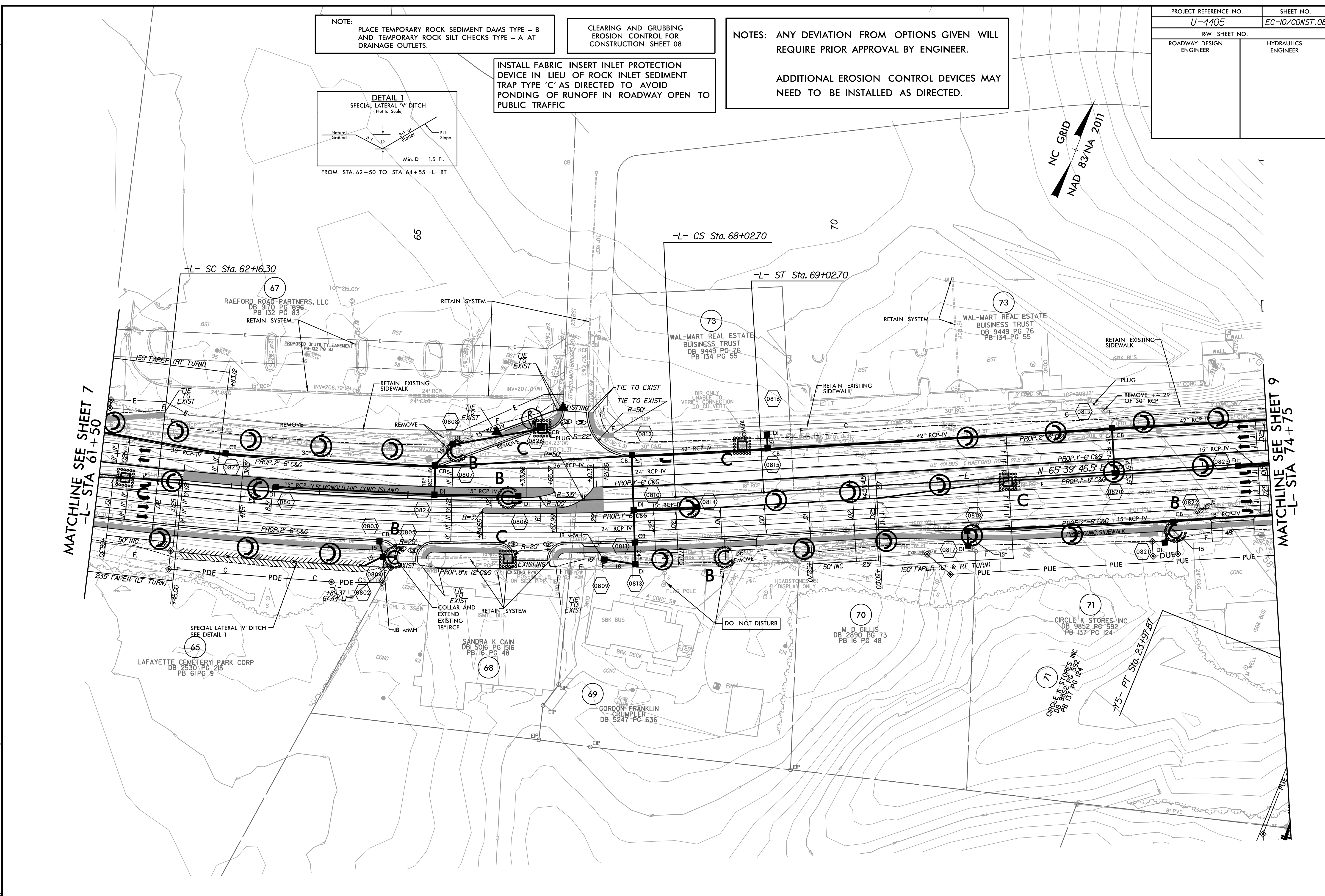
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PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 34 & 35 FOR -L- PROFILE



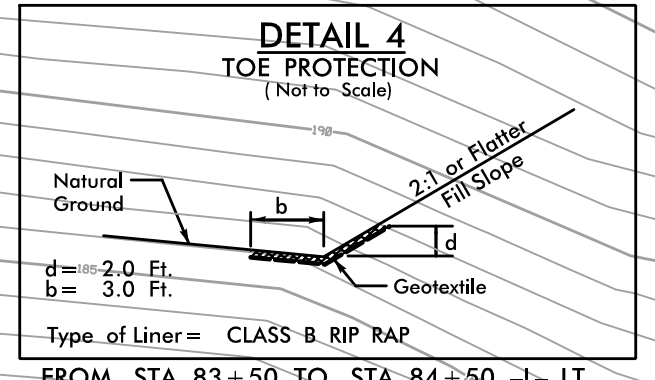
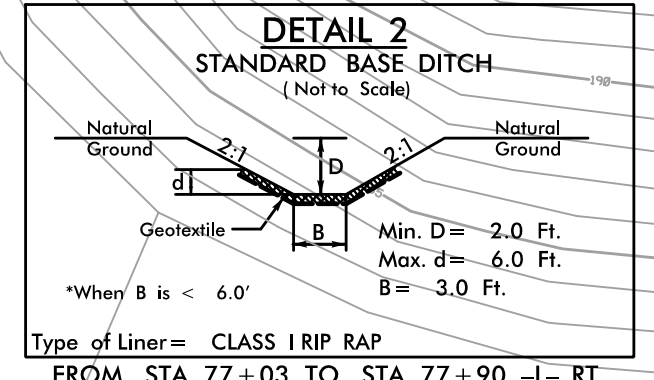


PROJECT REFERENCE NO. U-4405	SHEET NO. EC-II/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 09

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

-Y5-  
PI Sta 15+94.46  
 $\Delta = 34' 10" 44.0" (RT)$   
 $D = 10' 44" 58.8"$   
 $L = 317.95'$   
 $T = 163.86'$   
 $R = 533.00'$

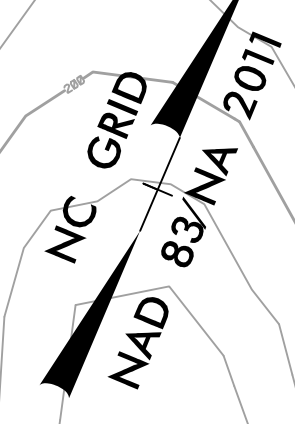


-L-  
PI Sta 81+21.39  
 $\Theta_s = 0' 27" 17.0"$   
 $L_s = 100.00'$   
 $LT = 66.67'$   
 $ST = 33.33'$

PI Sta 84+71.94  
 $\Delta = 5' 45" 54.2" (RT)$   
 $D = 0' 54" 34.0"$   
 $L = 633.90'$   
 $T = 317.22'$   
 $R = 6,300.00'$   
 $SE = 0.025$

PI Sta 88+21.95  
 $\Theta_s = 0' 27" 17.0"$   
 $L_s = 100.00'$   
 $LT = 66.67'$   
 $ST = 33.33'$

40 x 20 x 3  
1.5 inch Skimmer  
with 0.75 inch  
Orifice Diameter  
4 ft weir  
ID 9.1



MATCHLINE SEE SHEET 8  
-L- STA 74+75

MATCHLINE SEE SHEET 29  
-Y5- STA 23+00

MATCHLINE SEE SHEET 10  
-L- STA 88+00

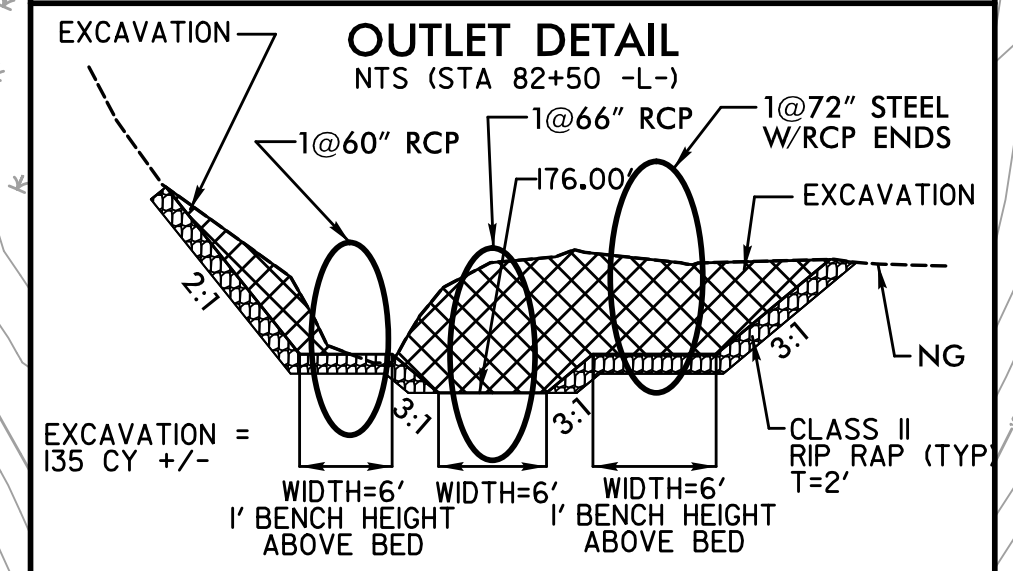
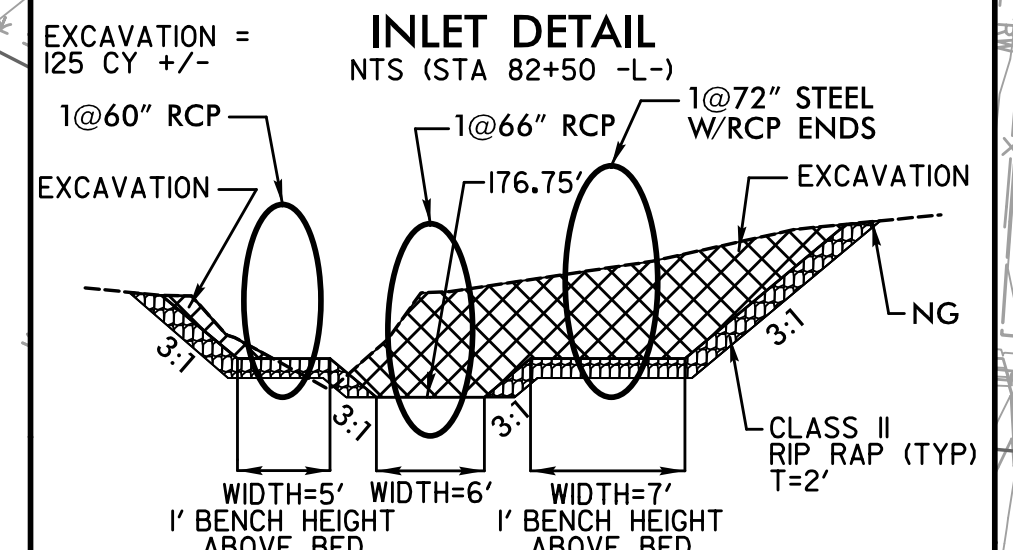
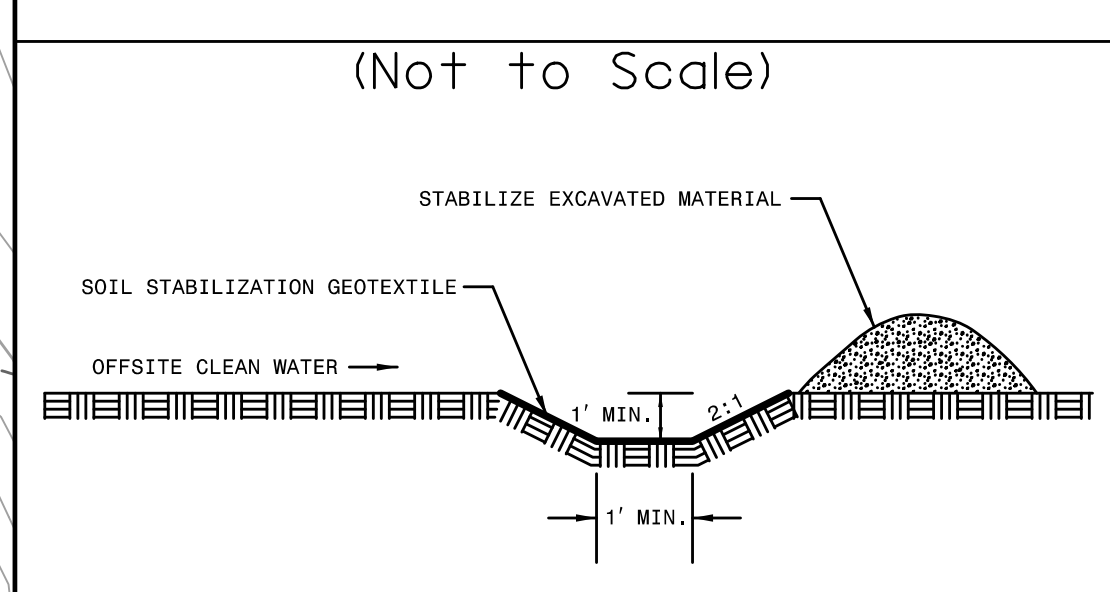
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

-Y5-  
PI Sta 22+82.12  
 $\Delta = 25' 18" 13.3" (RT)$   
 $D = 10' 44" 58.8"$   
 $L = 235.39'$   
 $T = 119.65'$   
 $R = 533.00'$   
 $SE = 0.02$

CLEAN WATER DIVERSION



NOTE: SEE SHEET 35 FOR -L- PROFILE  
SEE SHEET 46 FOR -Y5- PROFILE

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REVISIONS  
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★ PROPOSED SIGNAL  
▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-12/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

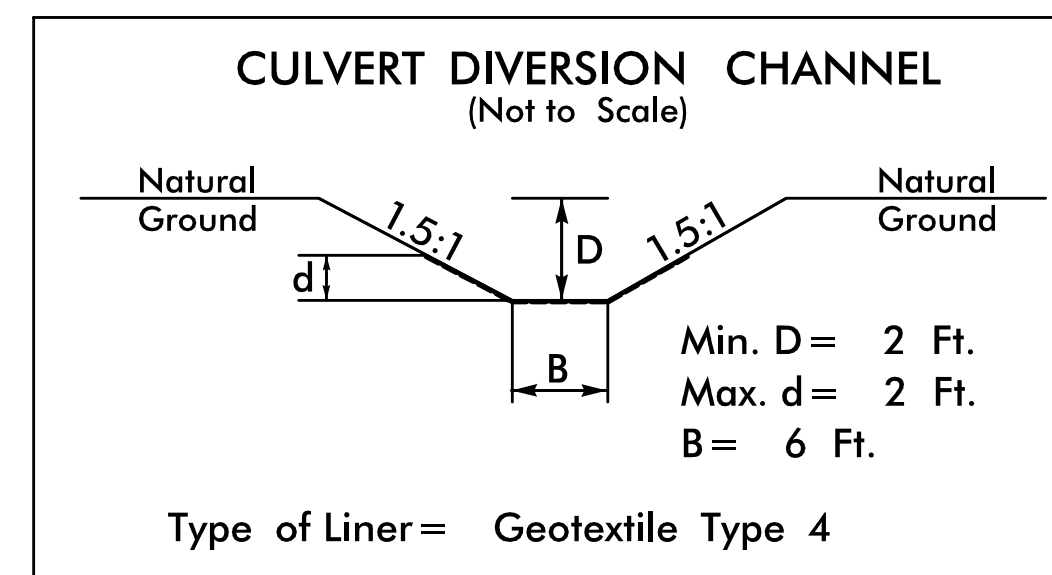
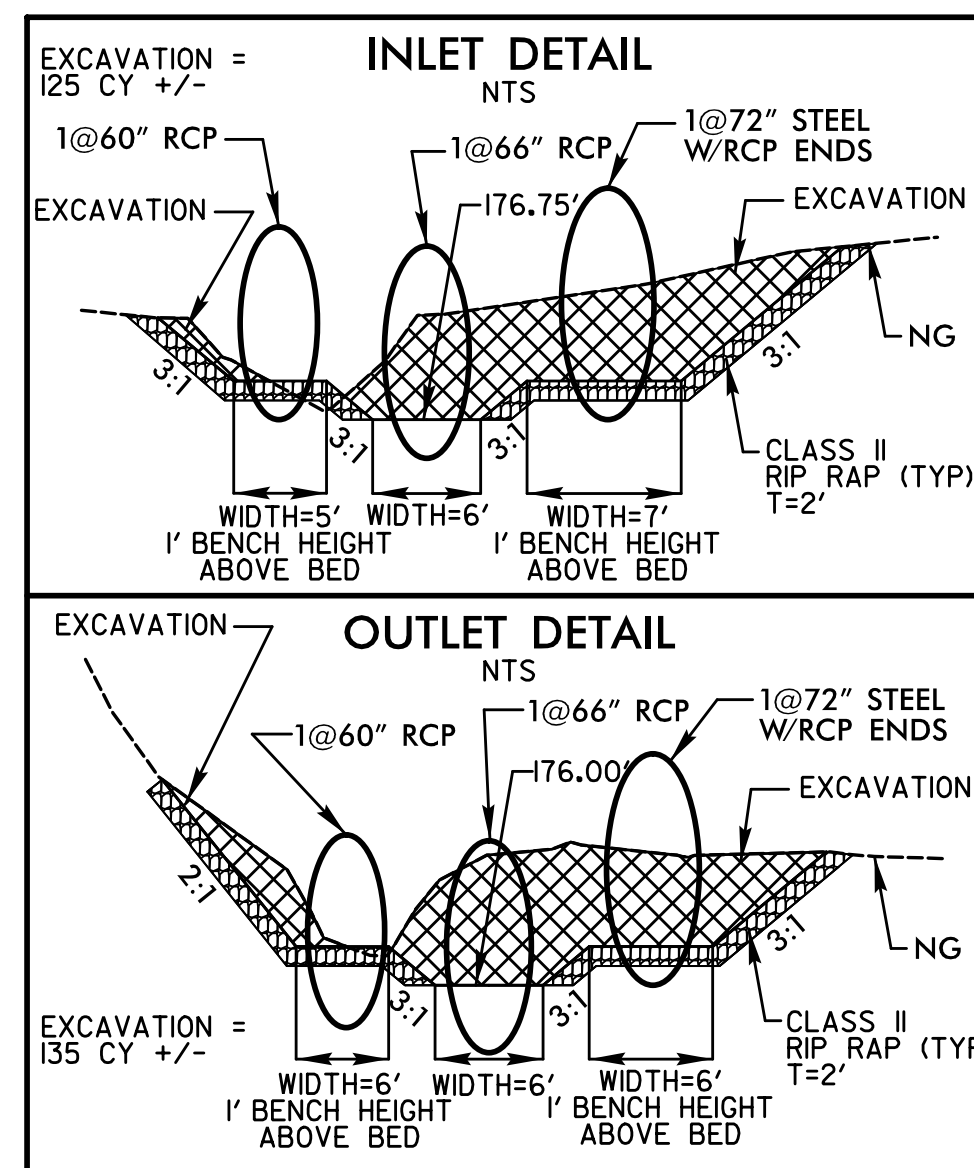
# CULVERT CONSTRUCTION SEQUENCE STA. 82+48 -L-

## PHASE I

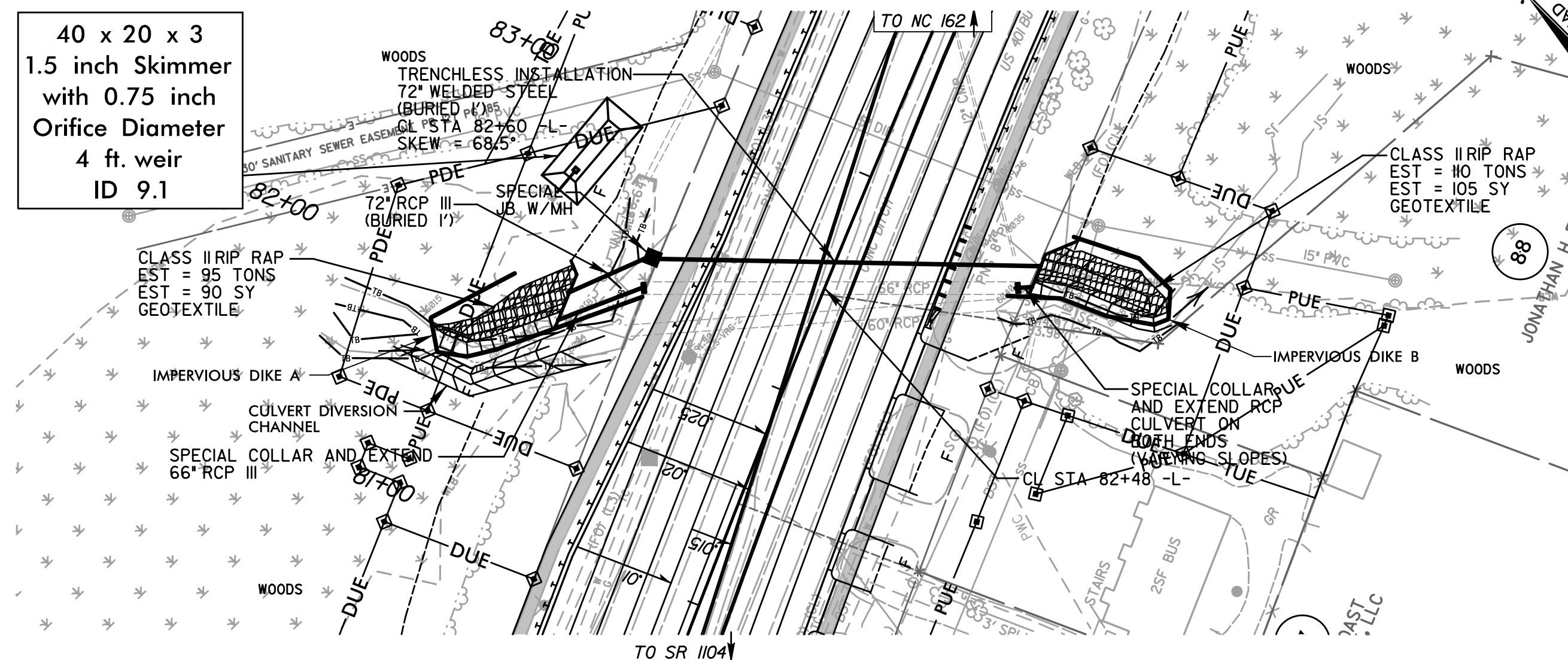
1. UTILIZE SKIMMER BASIN 9.1 AS STILLING BASIN UPSTREAM, AND SPECIAL STILLING BASIN(S) DOWNSTREAM.
2. CONSTRUCT IMPERVIOUS DIKES A AND B AND CULVERT DIVERSION CHANNEL
3. DIVERT WATER INTO CULVERT DIVERSION CHANNEL AND EXISTING 60" RCP
4. INSTALL 72" WELDED STEEL PIPE BY TRENCHLESS METHOD
5. CONSTRUCT CHANNEL AND EAST BANK UPSTREAM AND DOWNSTREAM
6. INSTALL JB W/MH AND 72" RCP
7. COLLAR AND EXTEND EXISTING 66" RCP ON BOTH ENDS
8. REMOVE IMPERVIOUS DIKES A AND B AND CULVERT DIVERSION CHANNEL

## PHASE II

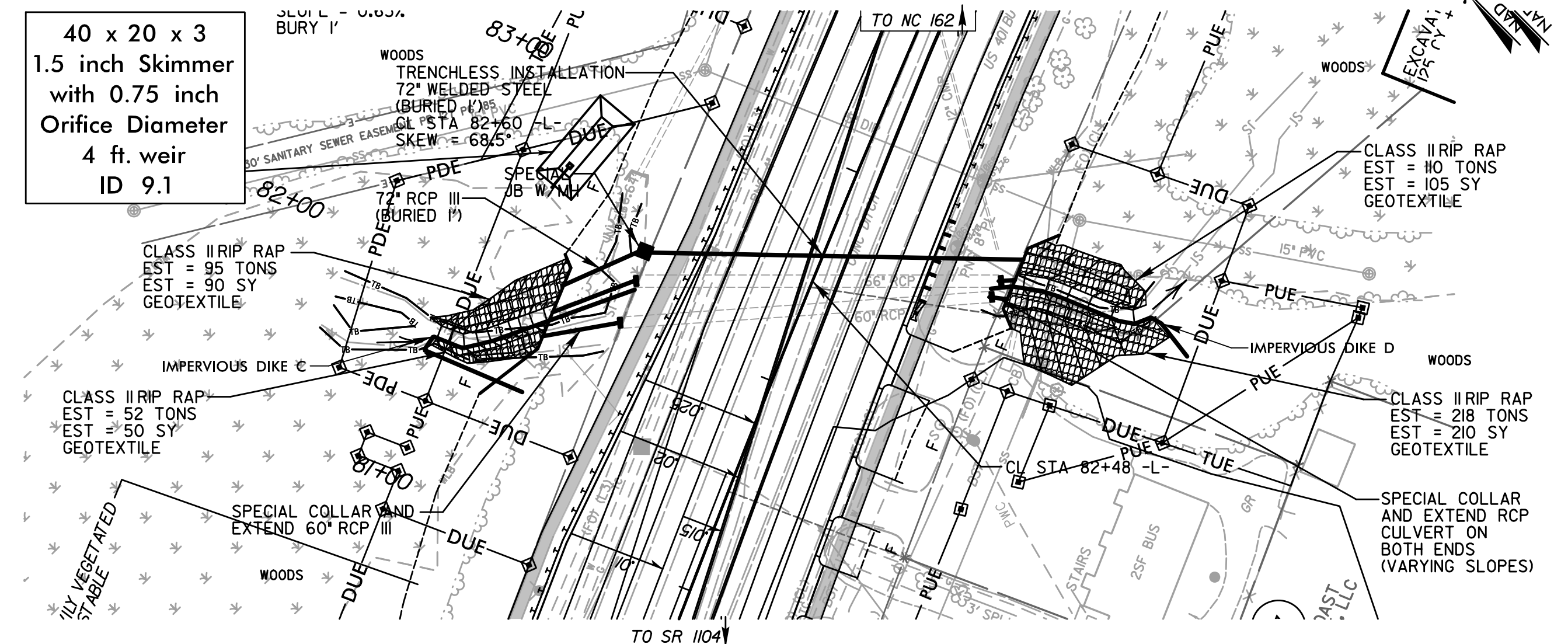
9. CONSTRUCT IMPERVIOUS DIKES C AND D
10. DIVERT FLOW INTO MAIN CHANNEL AND 66" RCP
11. CONSTRUCT WEST BANK UPSTREAM AND DOWNSTREAM
12. COLLAR AND EXTEND EXISTING 60" RCP ON BOTH ENDS
13. REMOVE IMPERVIOUS DIKES C AND D AND ANY REMAINING SPECIAL STILLING BASIN(S)
14. COMPLETE ROADWAY



40 x 20 x 3  
1.5 inch Skimmer  
with 0.75 inch  
Orifice Diameter  
4 ft. weir  
ID 9.1



40 x 20 x 3  
1.5 inch Skimmer  
with 0.75 inch  
Orifice Diameter  
4 ft. weir  
ID 9.1





PROJECT REFERENCE NO. U-4405	SHEET NO. EC-14/CONST.11
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

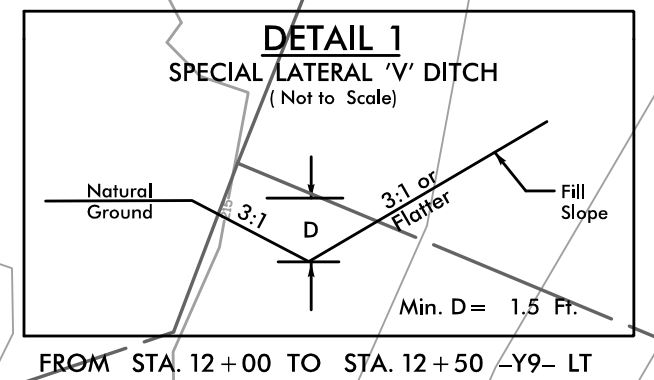
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

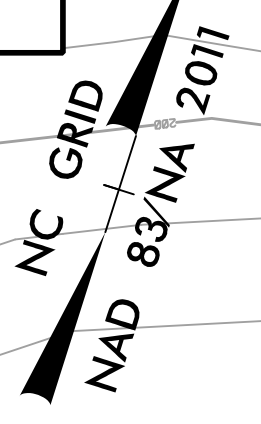
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 11

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC



FROM STA. 12+00 TO STA. 12+50 -Y9- LT



MATCHLINE SEE SHEET 10  
-L- STA 101+50

MATCHLINE SEE SHEET 12  
-L- STA 115+00

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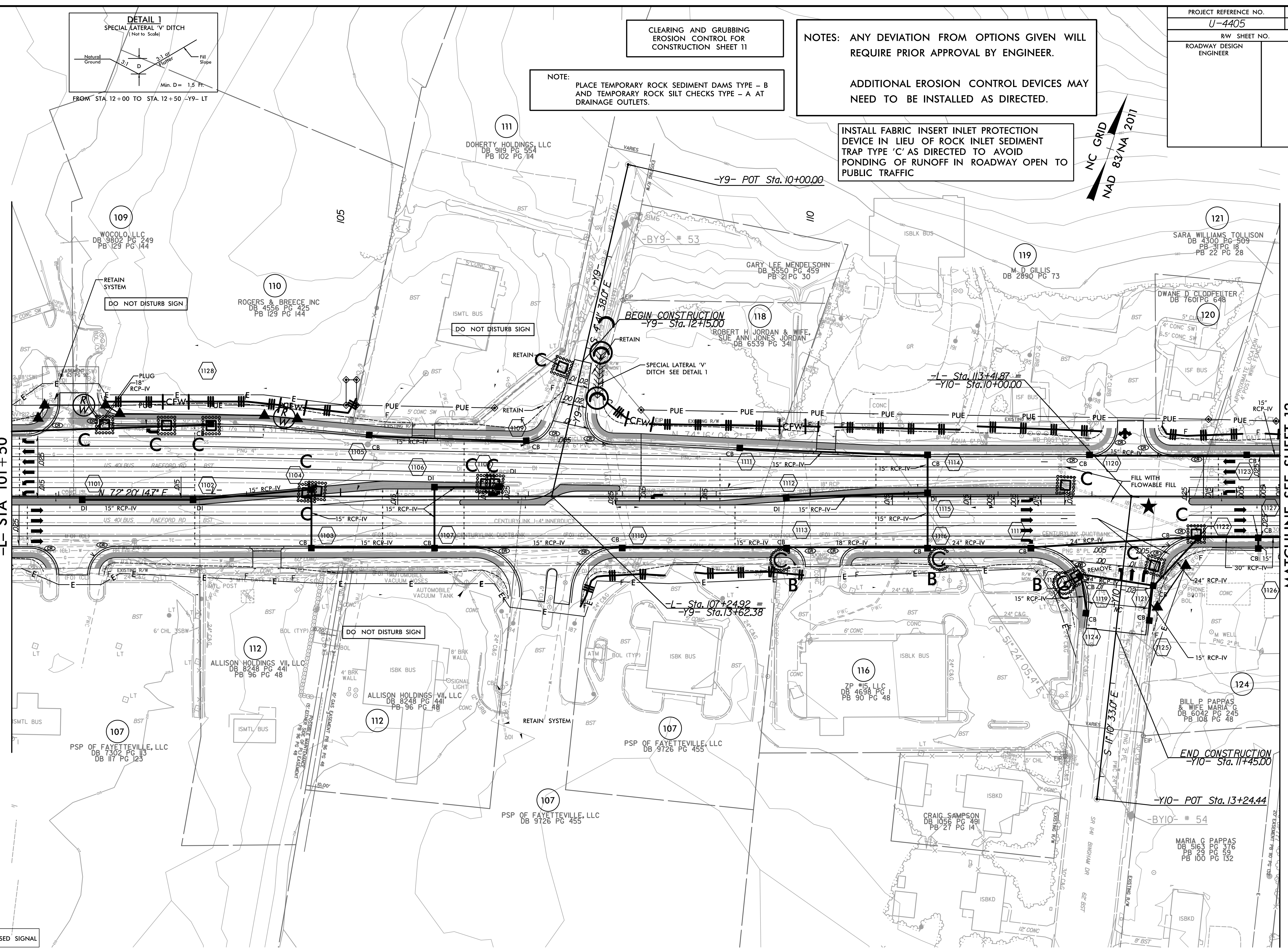
REVISIONS

★ PROPOSED SIGNAL

▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 36 FOR -L- PROFILE  
SEE SHEET 47 FOR -Y9- PROFILE  
SEE SHEET 47 FOR -Y10- PROFILE



8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-15/CONST.12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-		
PIs Sta 117+70.17	PI Sta 120+68.70	PIs Sta 123+65.48
$\theta_s = 1' 47" 25.8"$	$\Delta = 11' 49" 28.7" (RT)$	$\theta_s = 1' 47" 25.8"$
$L_s = 150.00'$	$D = 2' 23" 14.4"$	$L_s = 150.00'$
$LT = 100.00'$	$L = 495.31'$	$LT = 100.00'$
$ST = 50.00'$	$T = 248.54'$	$ST = 50.00'$
	$R = 2,400.00'$	
	$SE = 0.03$	

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

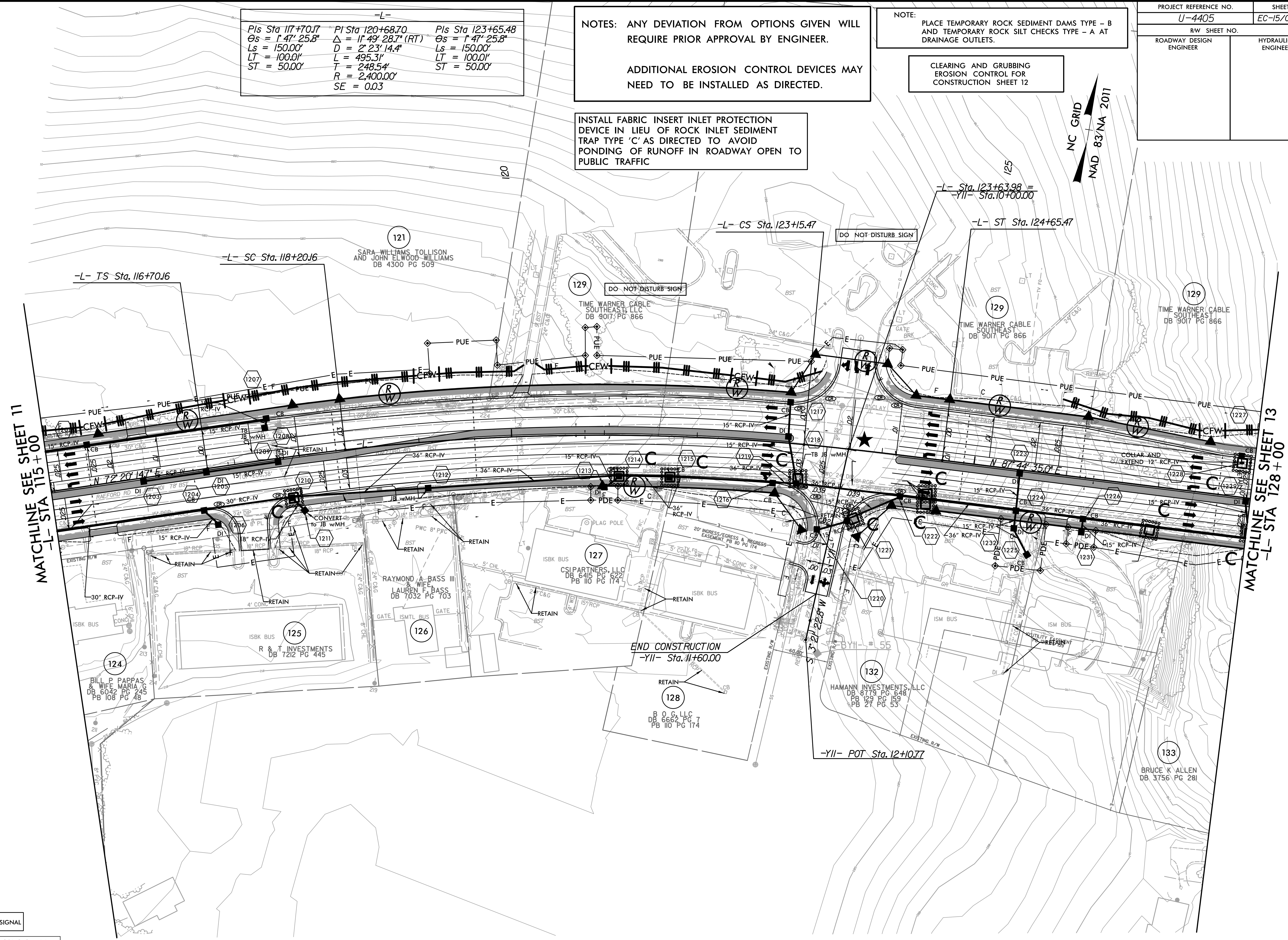
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

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 12

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

NC GRID  
NAD 83/NA 2011



MATCHLINE SEE SHEET 11  
-L- STA 115 + 00

MATCHLINE SEE SHEET 13  
-L- STA 128 + 00

REVISIONS

★ PROPOSED SIGNAL

▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

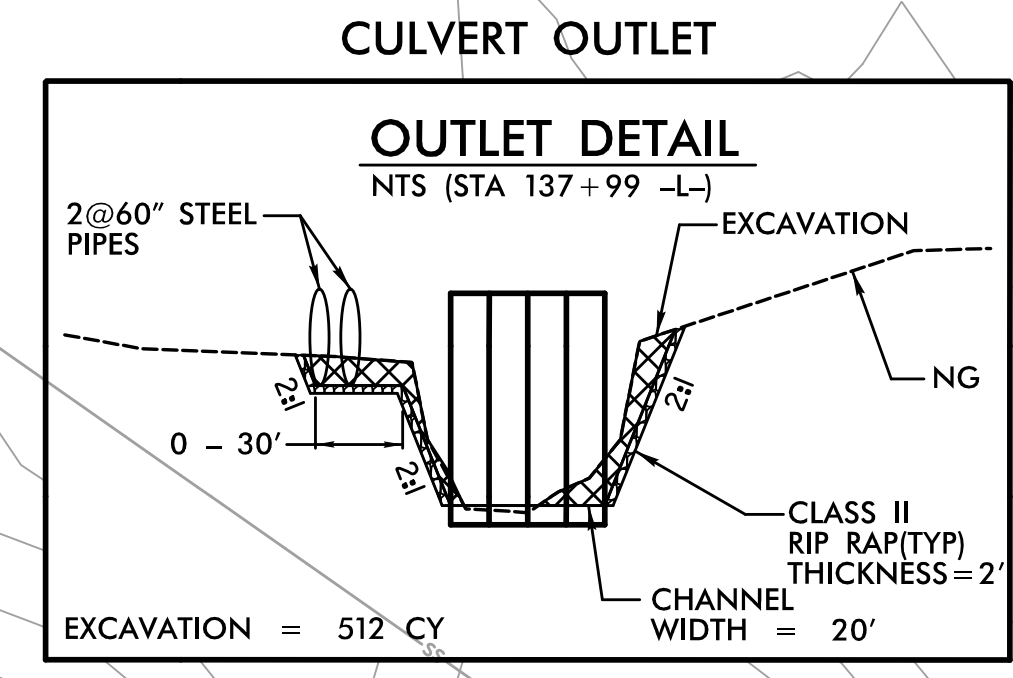
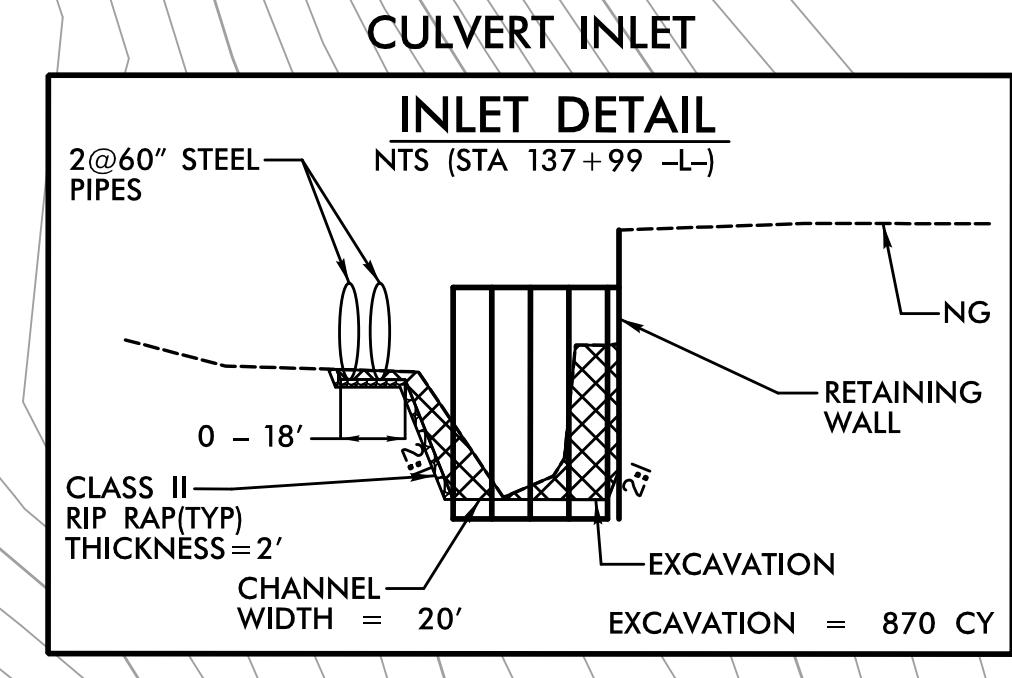
NOTE: SEE SHEET 36 & 37 FOR -L- PROFILE  
SEE SHEET 47 FOR -YII- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-16/CONST.13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

-L-  
 PIs Sta 139+95.56 PI Sta 144+71.01  
 $\Delta = 1' 43' 07.9"$   $\Delta = 19' 18' 58.8"$  (RT)  
 $L_s = 150.00'$   $D = 2' 17' 30.6"$   
 $L_t = 100.00'$   $L = 842.83'$   
 $ST = 50.00'$   $T = 425.45'$   
 $SE = 0.03$

CLEARING AND GRUBBING  
 EROSION CONTROL FOR  
 CONSTRUCTION SHEET 13



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.  
 ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

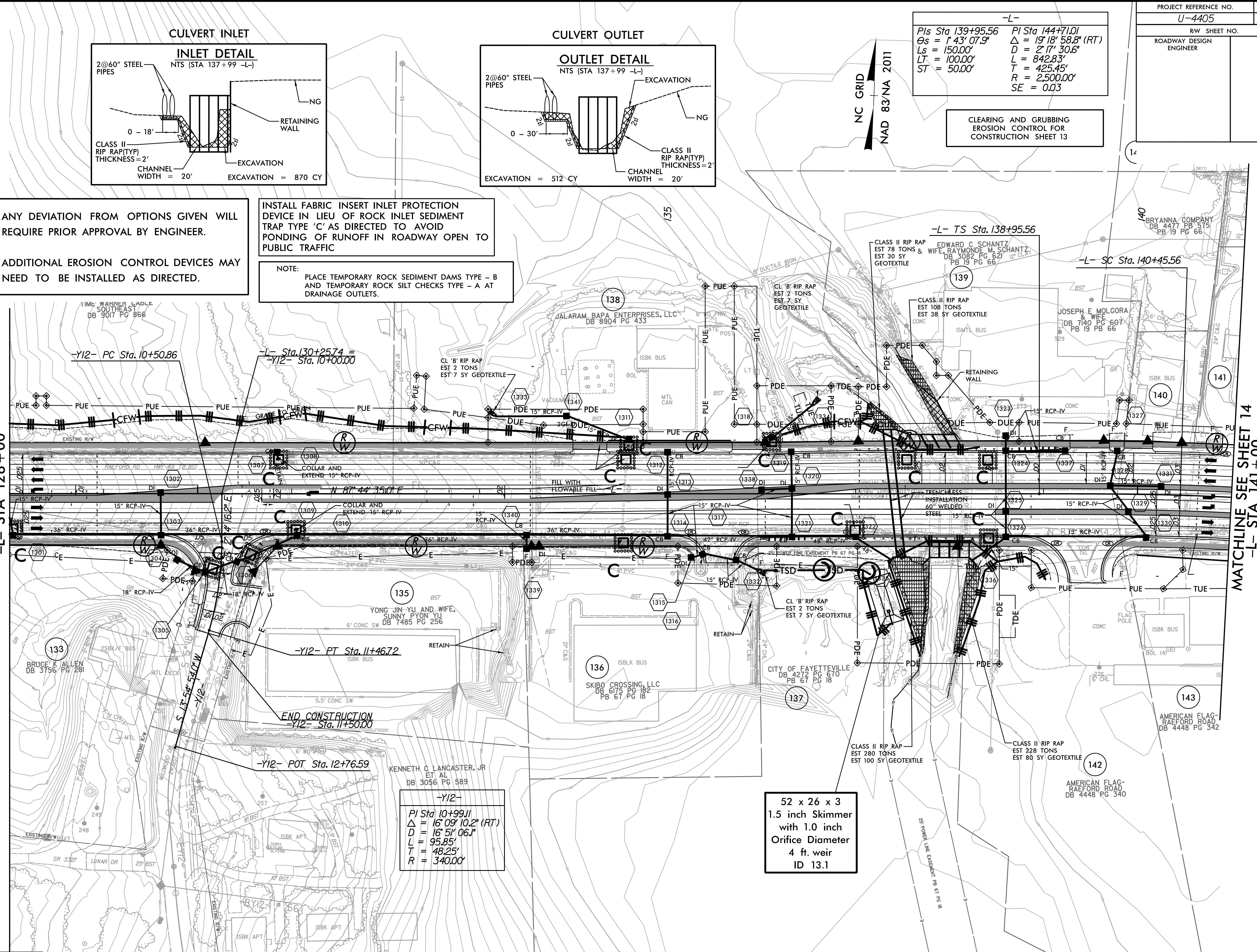
INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

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

NC GRID  
 NAD 83/NA 2011

MATCHLINE SEE SHEET 12  
 -L- STA 128+00

MATCHLINE SEE SHEET 14  
 -L- STA 141+00



-Y12-  
 PI Sta 10+99.11  
 $\Delta = 16' 09' 10.2"$  (RT)  
 $D = 16' 51' 06.1"$   
 $L = 95.85'$   
 $T = 48.25'$   
 $R = 340.00'$

52 x 26 x 3  
 1.5 inch Skimmer  
 with 1.0 inch  
 Orifice Diameter  
 4 ft. weir  
 ID 13.1

NOTE: SEE SHEET 37 FOR -L- PROFILE  
 SEE SHEET 47 FOR -Y12- PROFILE

REVISIONS

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PROP CONC SIDEWALK  
 \*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
 REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00



PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-18/CONST.14
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

PI Sta 144+71.01 $\Delta = 19' 18" 58.8" (RT)$ $D = 2' 17" 30.6"$ $L = 842.83'$ $T = 425.45'$ $R = 2,500.00'$ $SE = 0.03$	Pls Sta 149+38.40 $\Theta_s = 1' 43" 07.9"$ $Ls = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	Pls Sta 153+04.56 $\Theta_s = 1' 14" 50.5"$ $Ls = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	PI Sta 155+10.17 $\Delta = 5' 10" 21.2" (LT)$ $D = 1' 39" 47.4"$ $L = 311.01'$ $T = 155.61'$ $R = 3,445.00'$ $SE = 0.03$
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CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 14

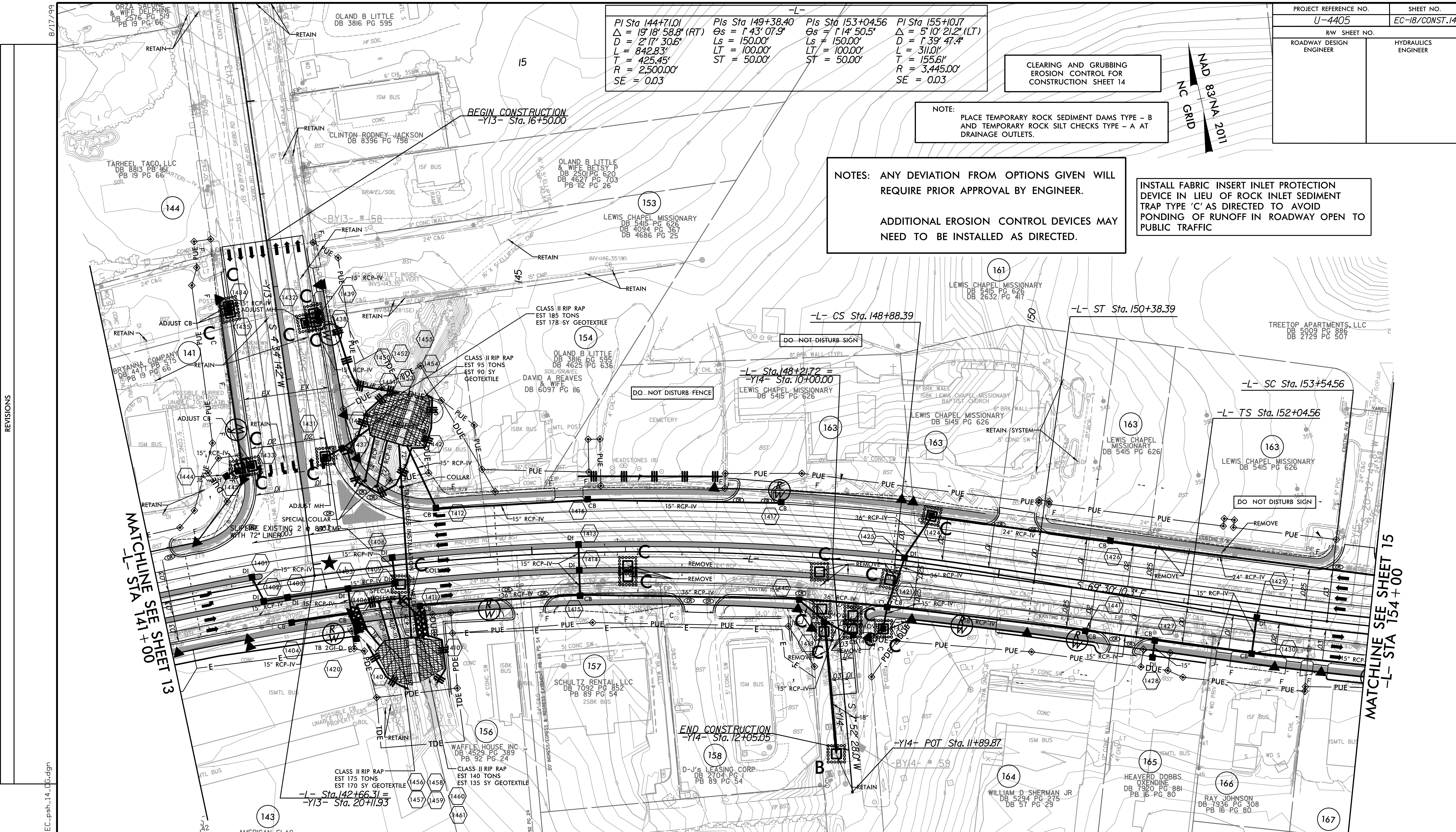
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

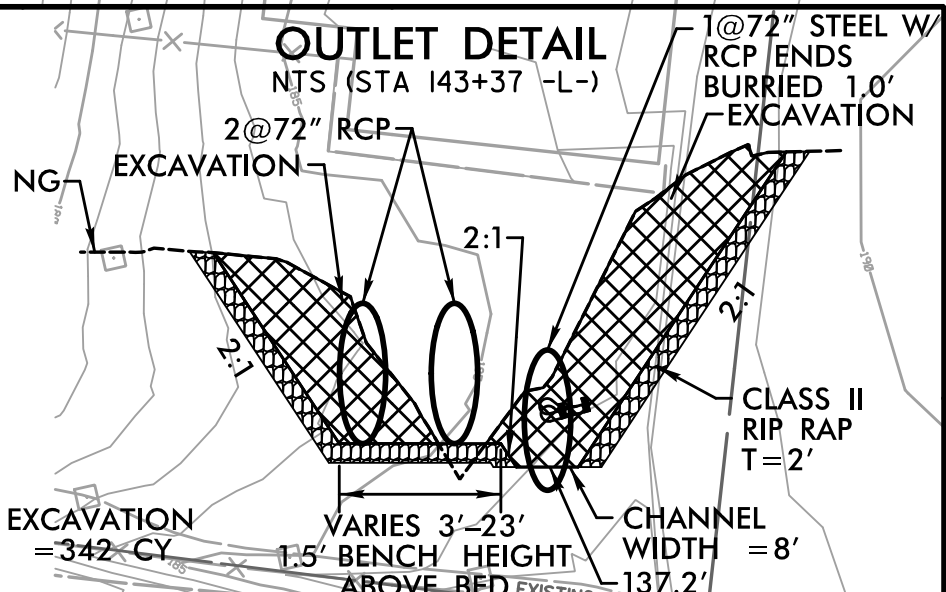
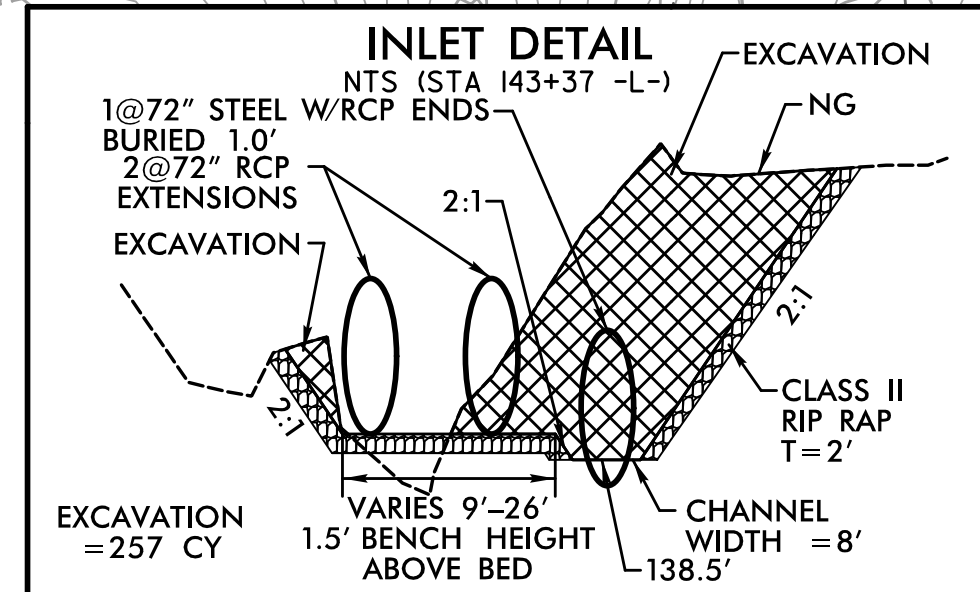
NAD 83/NA 2011  
NC GRID



REVISIONS

MATCHLINE SEE SHEET 13  
-L- STA 141+00

MATCHLINE SEE SHEET 15  
-L- STA 154+00



NOTE: SEE SHEET 37 & 38 FOR -L- PROFILE  
SEE SHEET 47 FOR -Y13- PROFILE  
SEE SHEET 48 FOR -Y14- PROFILE

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1406.dgn

★ PROPOSED SIGNAL  
▬ PROP CONC SIDEWALK  
\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00



PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-19/CONST.14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

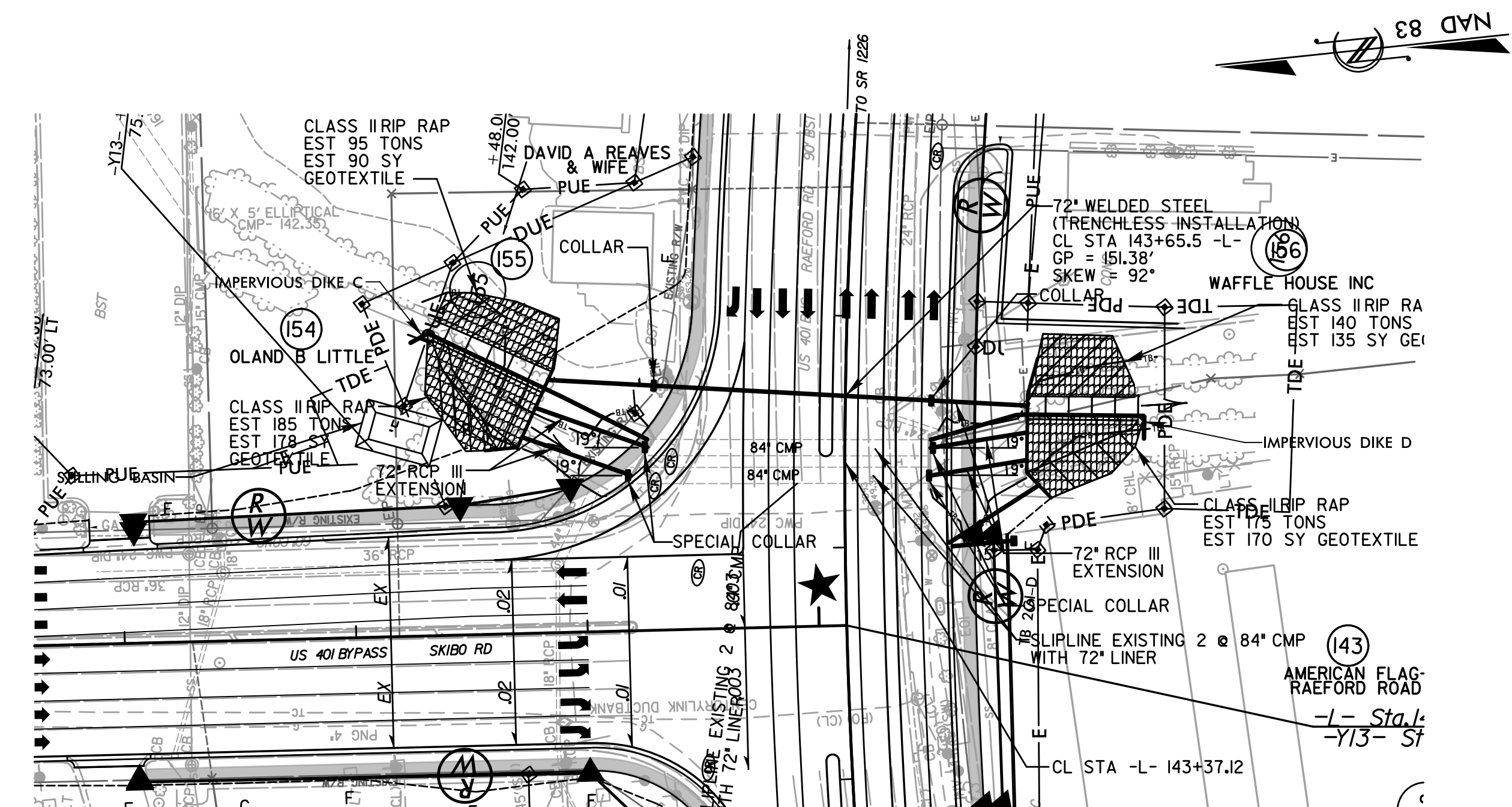
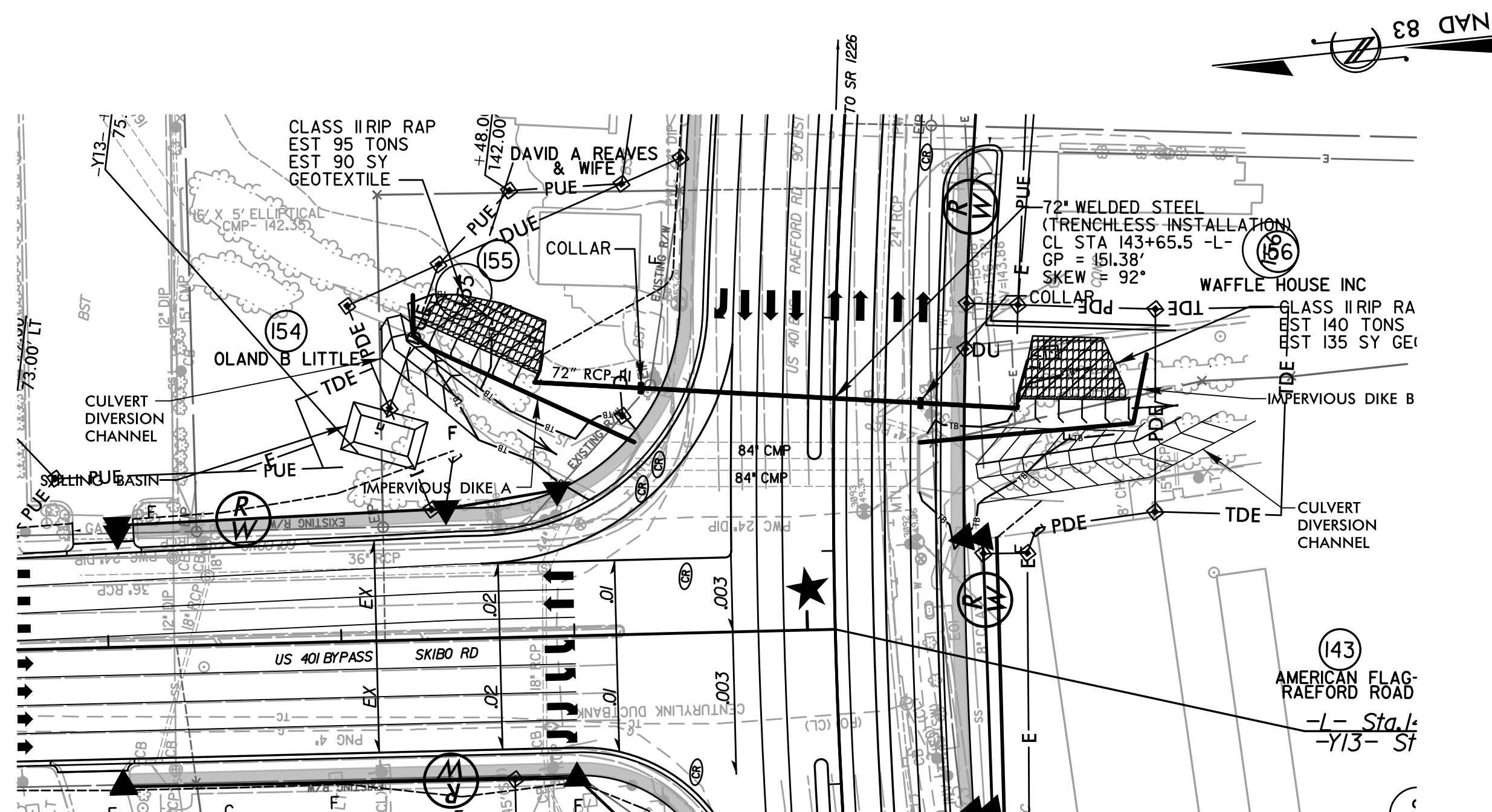
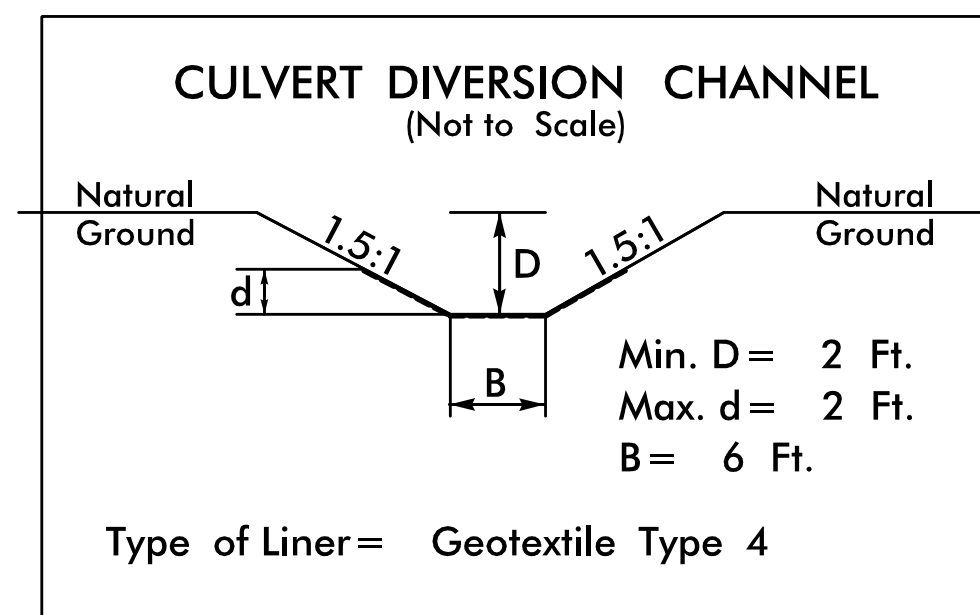
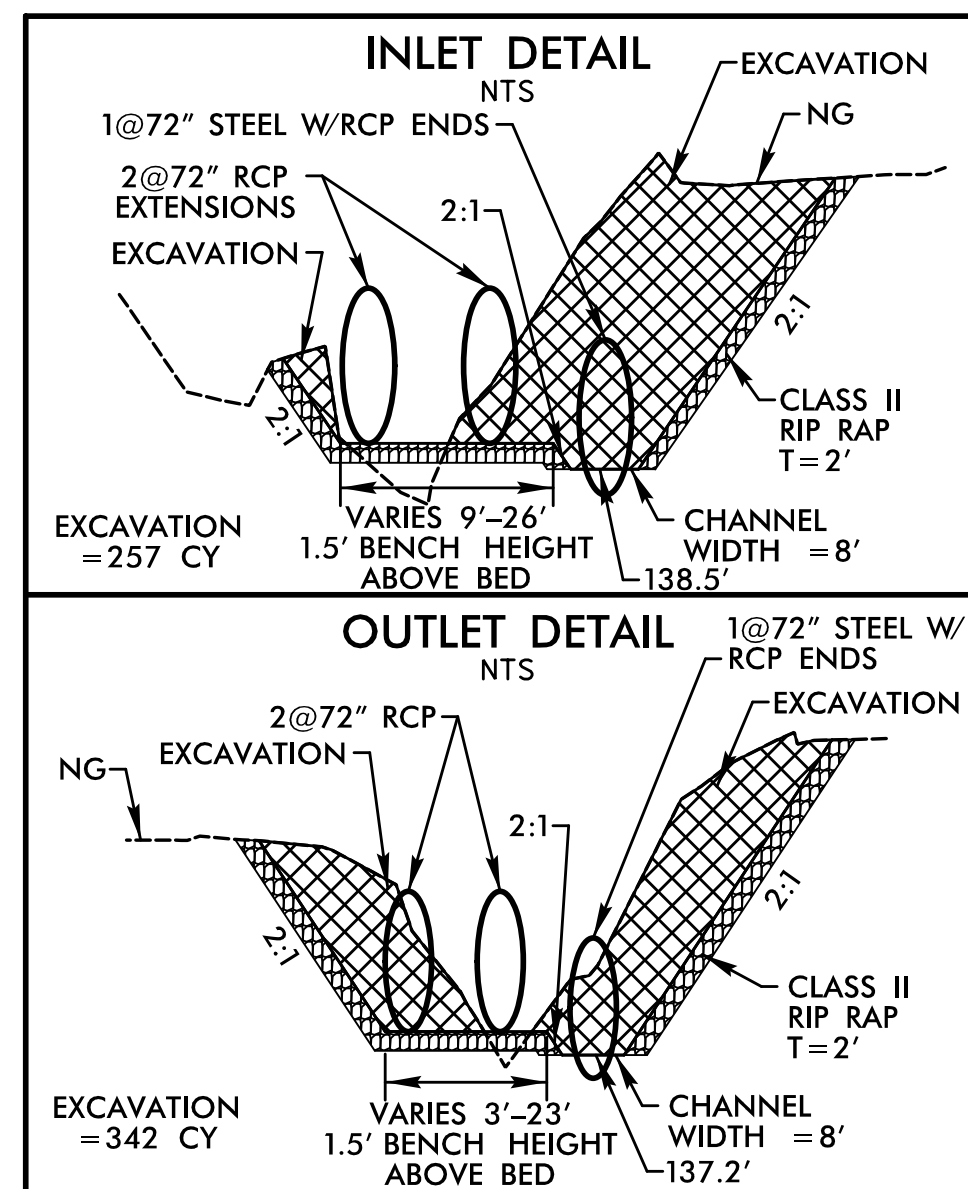
# CULVERT CONSTRUCTION SEQUENCE STA. 143+37 -L-

## PHASE I

1. CONSTRUCT STILLING BASIN, MINIMUM VOLUME REQUIRED:UPSTREAM = 30 CY, DOWNSTREAM = UTILIZE SPECIAL STILLING BASIN(S)
2. INSTALL PROPOSED 72" WELDED STEEL PIPE BY TRENCHLESS METHOD
3. CONSTRUCT CULVERT DIVERSION CHANNELS AND IMPERVIOUS DIKES A AND B
4. DIVERT FLOW INTO CULVERT DIVERSION CHANNELS AND EXISTING 2@84" CMPs.
5. COLLAR AND EXTEND PROPOSED 72" RCP ON BOTH ENDS
6. CONSTRUCT EAST BANK AT INLET AND OUTLET AND STABILIZE
7. REMOVE CULVERT DIVERSION CHANNELS AND IMPERVIOUS DIKES A AND B

## PHASE II

8. CONSTRUCT IMPERVIOUS DIKES C AND D AND DIVERT FLOW INTO PROPOSED 72" PIPE
9. CONSTRUCT BENCHES AND WEST BANKS AT INLET AND OUTLET AND STABILIZE
10. INSTALL 72" LINER IN EXISTING 2@84" CMP
11. COLLAR AND EXTEND EXISTING 2@84" CMP WITH 72" RCP EXTENTIONS ON BOTH ENDS
12. REMOVE IMPERVIOUS DIKES C AND D, STILLING BASIN, AND ANY REMAINING SPECIAL STILLING BASIN(S)
13. COMPLETE ROADWAY



PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-20/CONST. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 15

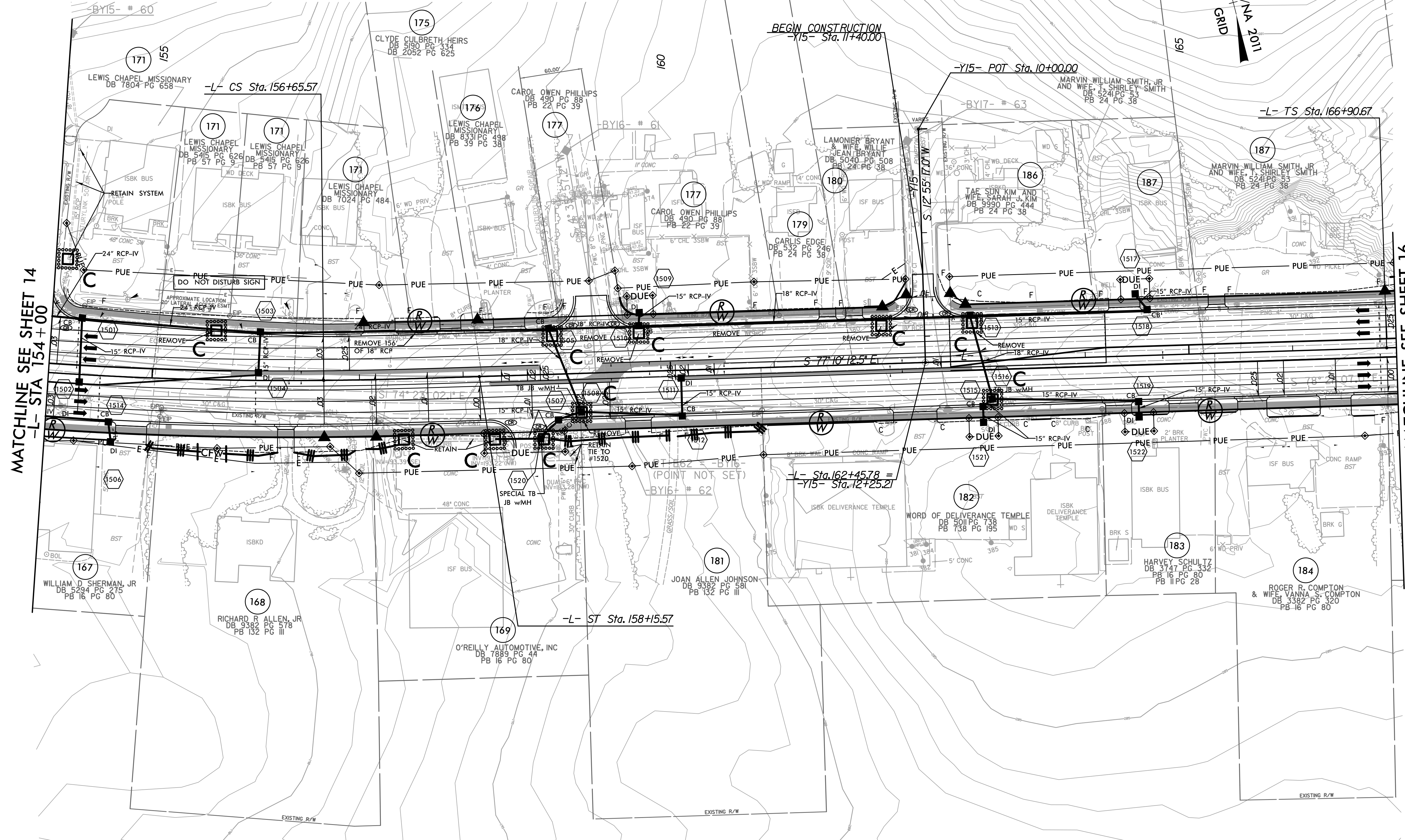
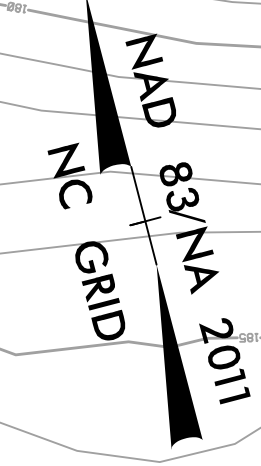
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

PI Sta 155+10.7 $\Delta = 5' 10" 21.2'$ (LT) $D = 1' 39" 47.4'$ $L = 311.0'$ $T = 155.6'$ $R = 3,445.00'$ $SE = 0.03$	Pls Sta 157+15.57 $\Delta_s = 1' 14" 50.5'$ $L_s = 150.00'$ $LT = 100.00'$ $ST = 50.00'$	Pls Sta 167+90.68 $\Delta_s = 2' 14" 59.4'$ $L_s = 150.00'$ $LT = 100.00'$ $ST = 50.00'$
---	--	--



MATCHLINE SEE SHEET 14  
-L- STA 154+00

MATCHLINE SEE SHEET 16  
-L- STA 167+00

REVISIONS

8/17/99

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15/08/2008

PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 38 FOR -L- PROFILE  
SEE SHEET 48 FOR -Y15- PROFILE

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 16

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

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

NAD 83/NA 2011  
NC GRID

-L-  
PIs Sta 167+90.68    PI Sta 170+65.98    PIs Sta 173+39.22  
Os = 2' 14' 59.4"    Δ = 13' 27' 18.9" (LT)    Os = 2' 14' 59.4"  
Ls = 150.00'        D = 2' 59' 59.2"        Ls = 150.00'  
LT = 100.01'        L = 448.54'            LT = 100.01'  
ST = 50.01'         T = 225.31'            ST = 50.01'  
R = 1910.00'        SE = 0.03

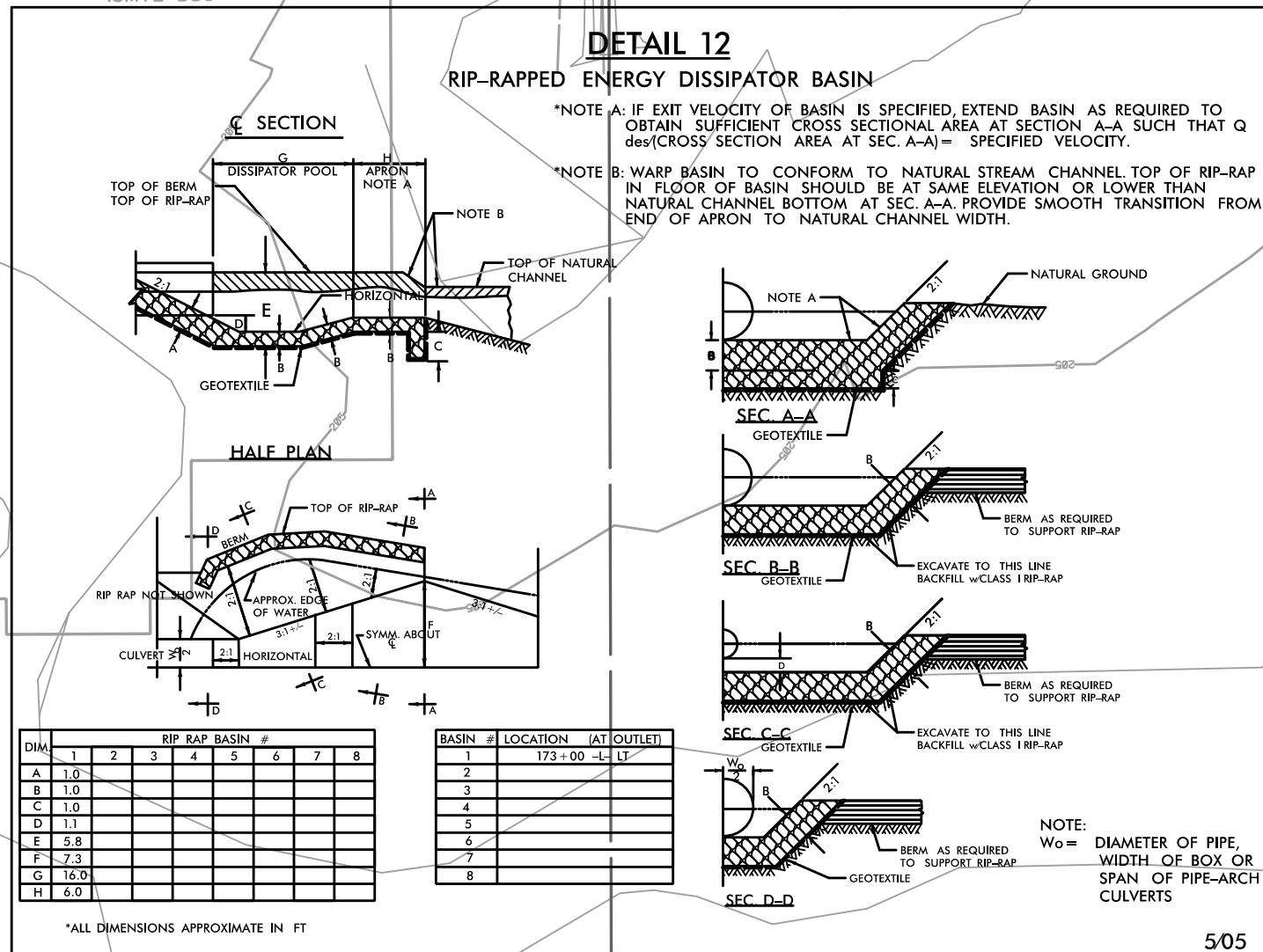
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

MATCHLINE SEE SHEET 15  
-L- STA 167+00

MATCHLINE SEE SHEET 17  
-L- STA 180+00

-Y16-  
PI Sta 11+23.85  
Δ = 3' 32' 29.4" (LT)  
D = 5' 43' 46.5"  
L = 61.81'  
T = 30.92'  
R = 1,000.00'



NOTE: SEE SHEET 38 & 39 FOR -L- PROFILE  
SEE SHEET 48 FOR -Y16- PROFILE

8/17/99

REVISIONS

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\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-22/CONST.17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 17

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

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

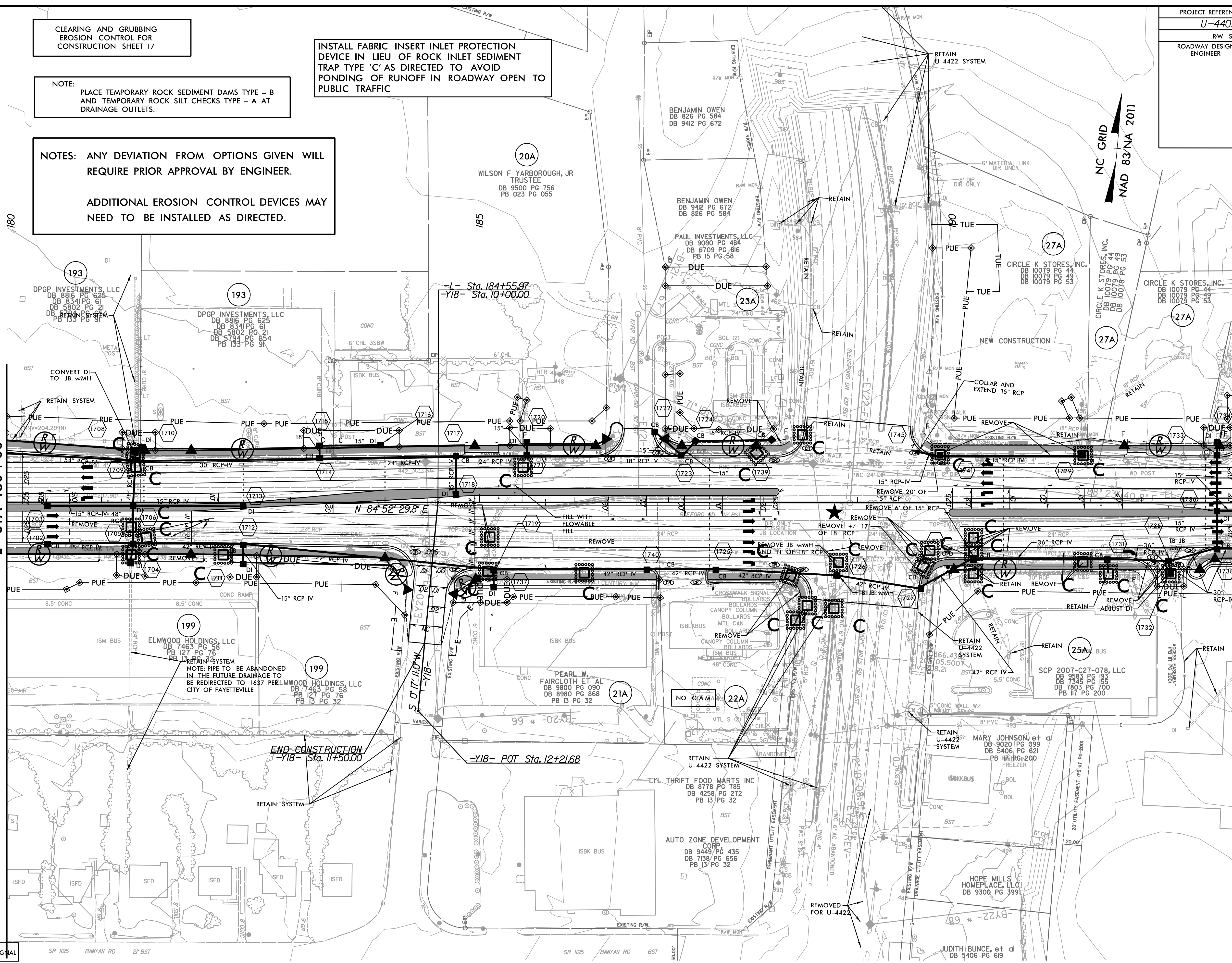
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

NC GRID  
NAD 83/NA 2011

MATCHLINE SEE SHEET 16  
-L- STA 180+00

MATCHLINE SEE SHEET 18  
-L- STA 193+00



REVISIONS

★ PROPOSED SIGNAL

■ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 39 FOR -L- PROFILE  
SEE SHEET 48 FOR -Y18- PROFILE

8/17/99  
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-23/CONST.18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 18

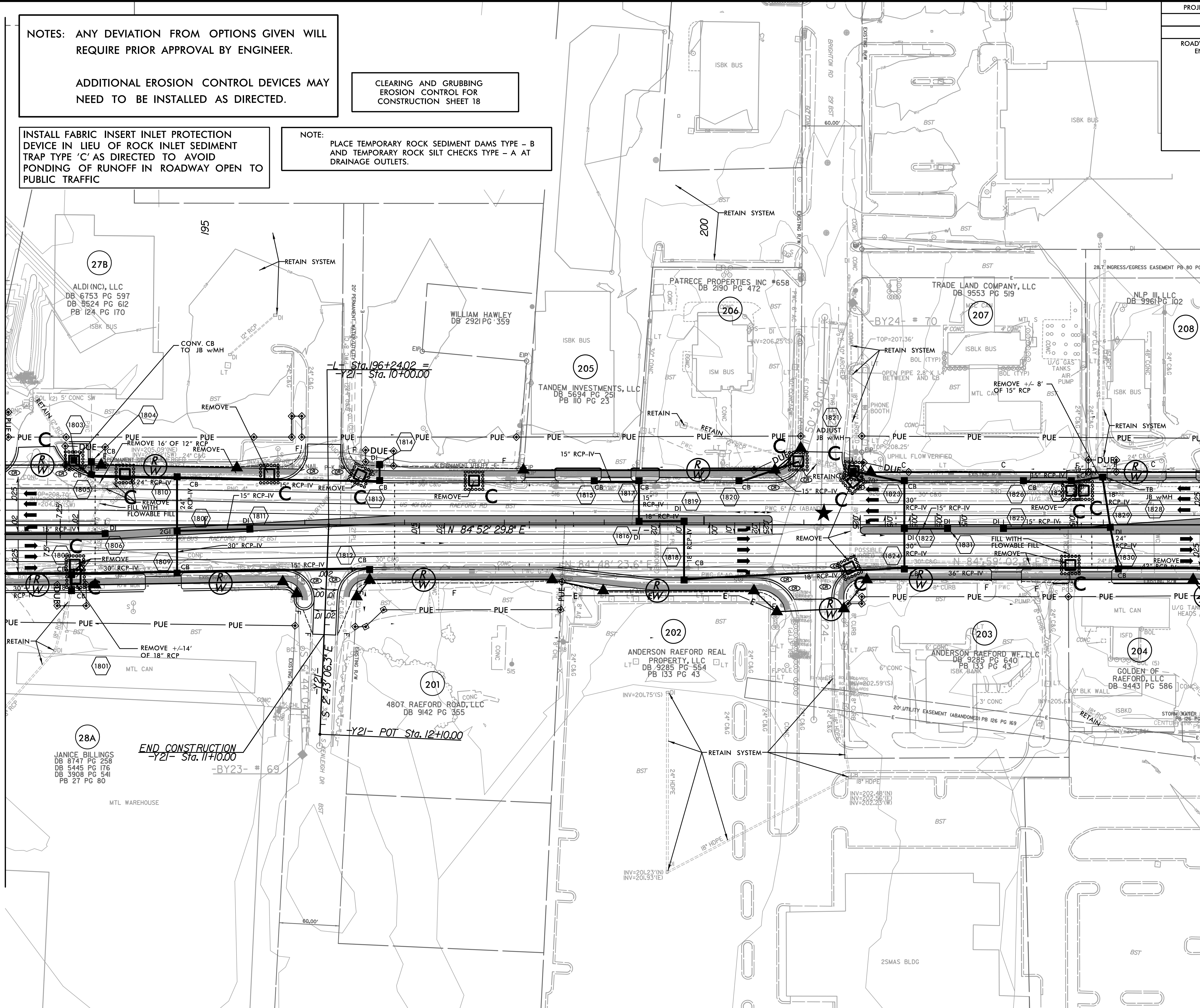
INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

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

NC GRID  
NAD 83/NA 2011

MATCHLINE SEE SHEET 17  
-L- STA 193+00

MATCHLINE SEE SHEET 19  
-L- STA 205+00



REVISIONS

★ PROPOSED SIGNAL

■ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 39 FOR -L- PROFILE  
SEE SHEET 48 FOR -Y21- PROFILE

8/17/99

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8/17/99

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 19

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

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

-L-  
PI Sta 215+19.81  
 $\Delta = 2' 4" 44.8" (RT)$   
 $D = 0' 34' 22.6"$   
 $L = 470.50'$   
 $T = 235.29'$   
 $R = 10,000.00'$   
SE = NC

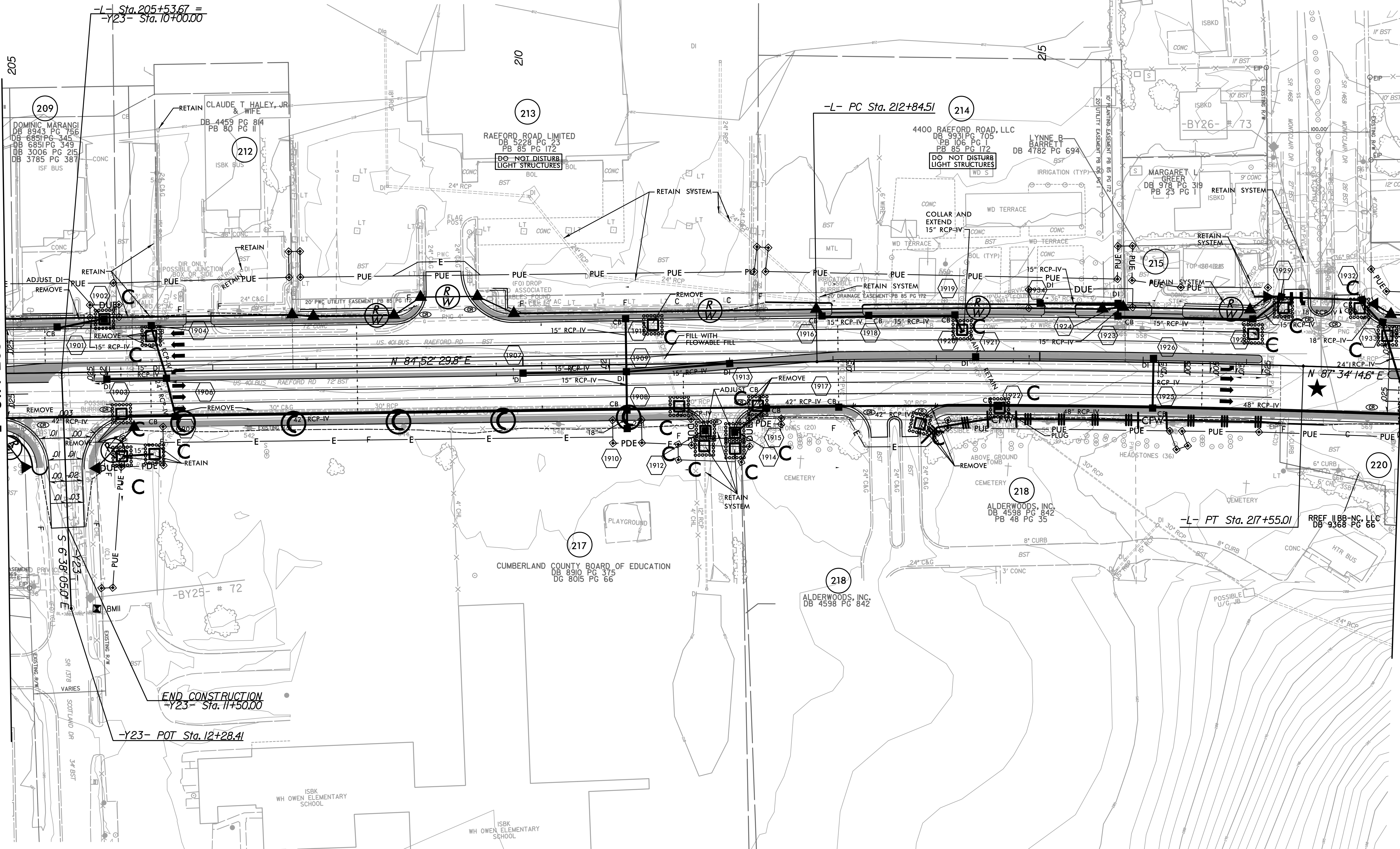
NC GRID  
NAD 83/NA 2011

PROJECT REFERENCE NO. U-4405	SHEET NO. EC-24/CONST.19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

MATCHLINE SEE SHEET 18  
-L- STA 205+00

MATCHLINE SEE SHEET 20  
-L- STA 218+50



★ PROPOSED SIGNAL

▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 39 & 40 FOR -L- PROFILE  
SEE SHEET 48 FOR -Y23- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-25/CONST.20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 20

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

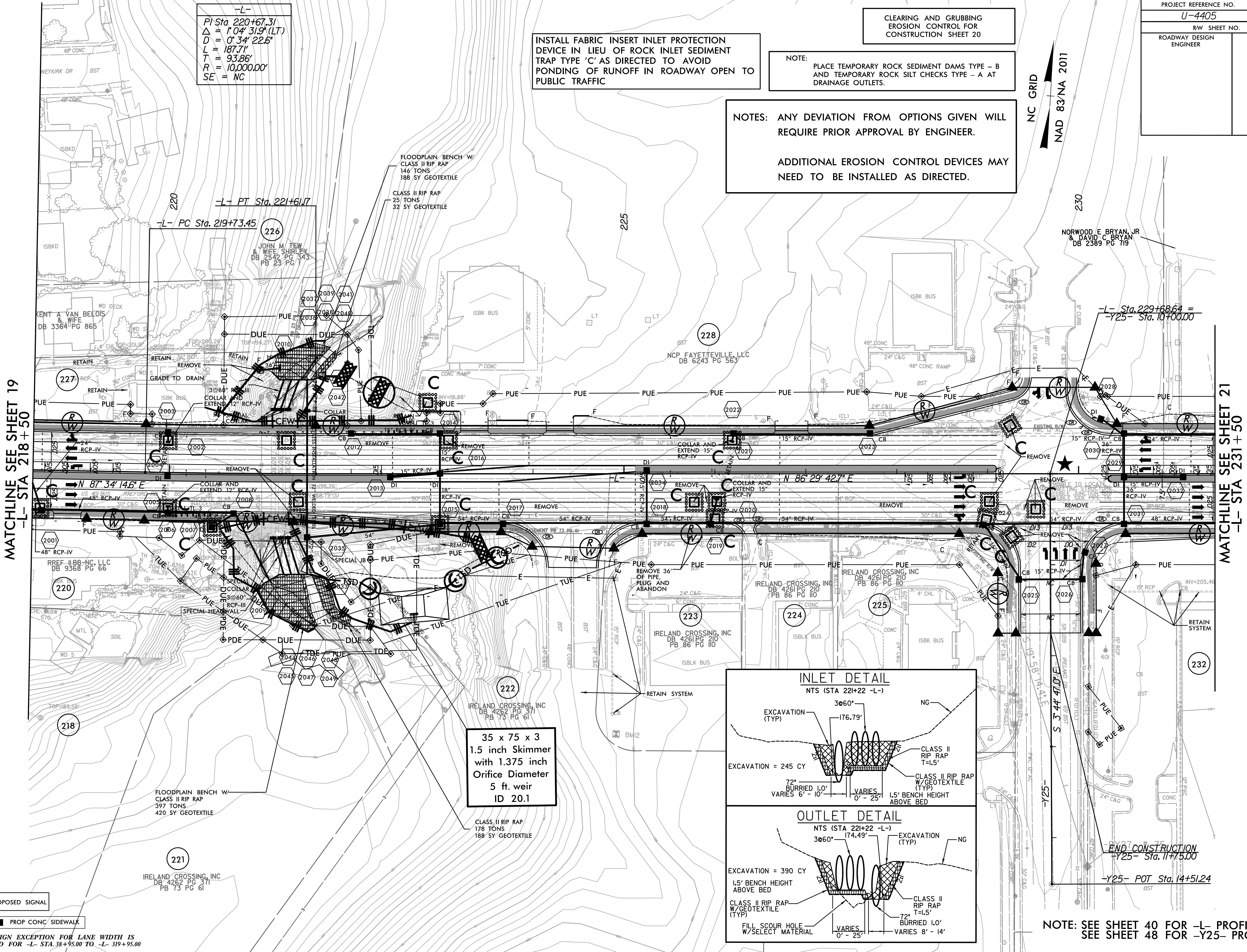
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

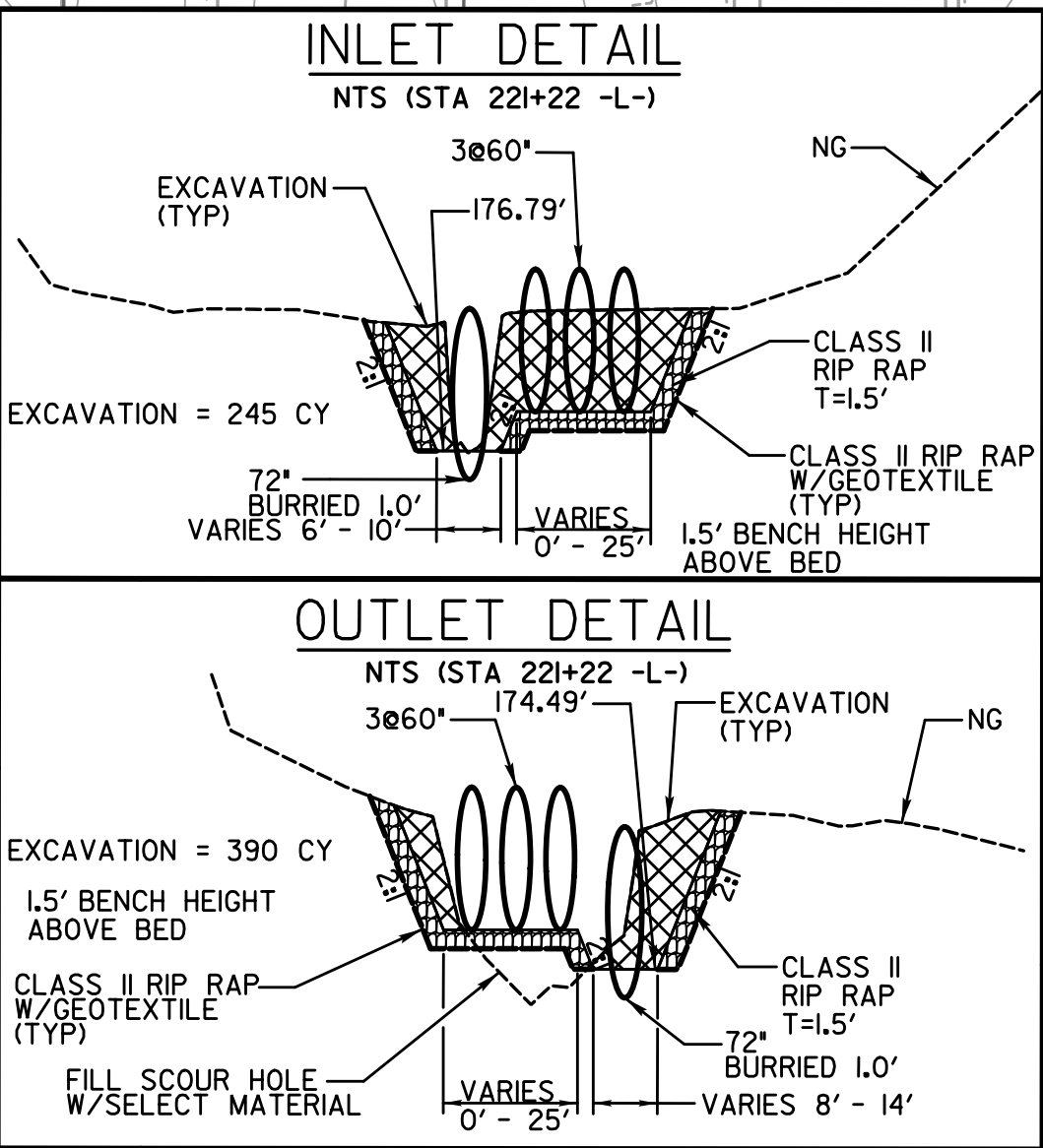
-L-  
 PI Sta 220+67.31  
 $\Delta = 1.04' 31.9" (LT)$   
 $D = 0' 34' 22.6"$   
 $L = 187.71'$   
 $T = 93.86'$   
 $R = 10,000.00'$   
 $SE = NC$

NC GRID  
 NAD 83/NA 2011



MATCHLINE SEE SHEET 19  
 -L- STA 218+50

MATCHLINE SEE SHEET 21  
 -L- STA 231+50



35 x 75 x 3  
 1.5 inch Skimmer  
 with 1.375 inch  
 Orifice Diameter  
 5 ft. weir  
 ID 20.1

END CONSTRUCTION  
 -Y25- Sta. 11+75.00  
 -Y25- POT Sta. 14+51.24

NOTE: SEE SHEET 40 FOR -L- PROFILE  
 SEE SHEET 48 FOR -Y25- PROFILE

REVISIONS

★ PROPOSED SIGNAL

▬ PROP CONC/ SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-26/CONST.20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

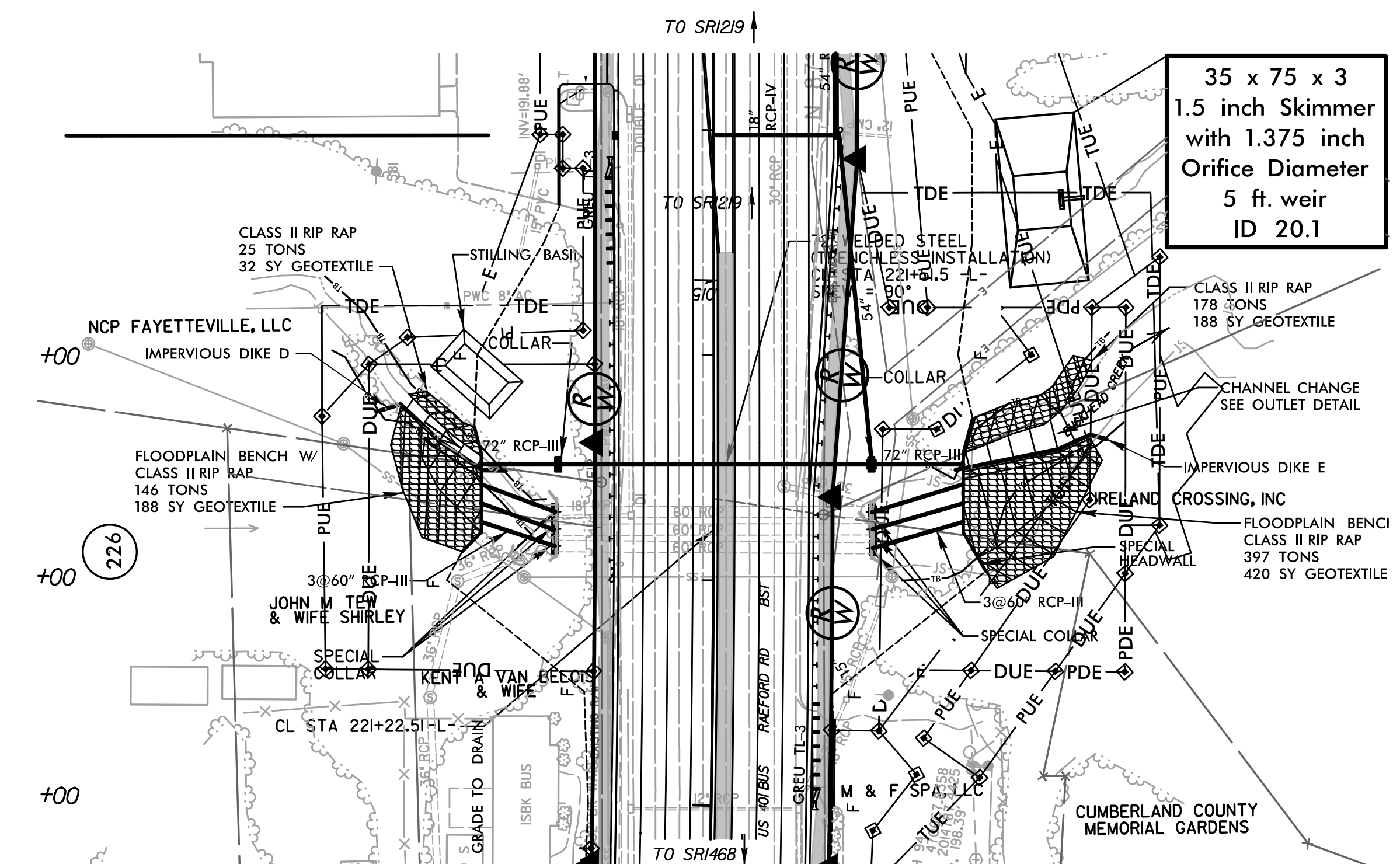
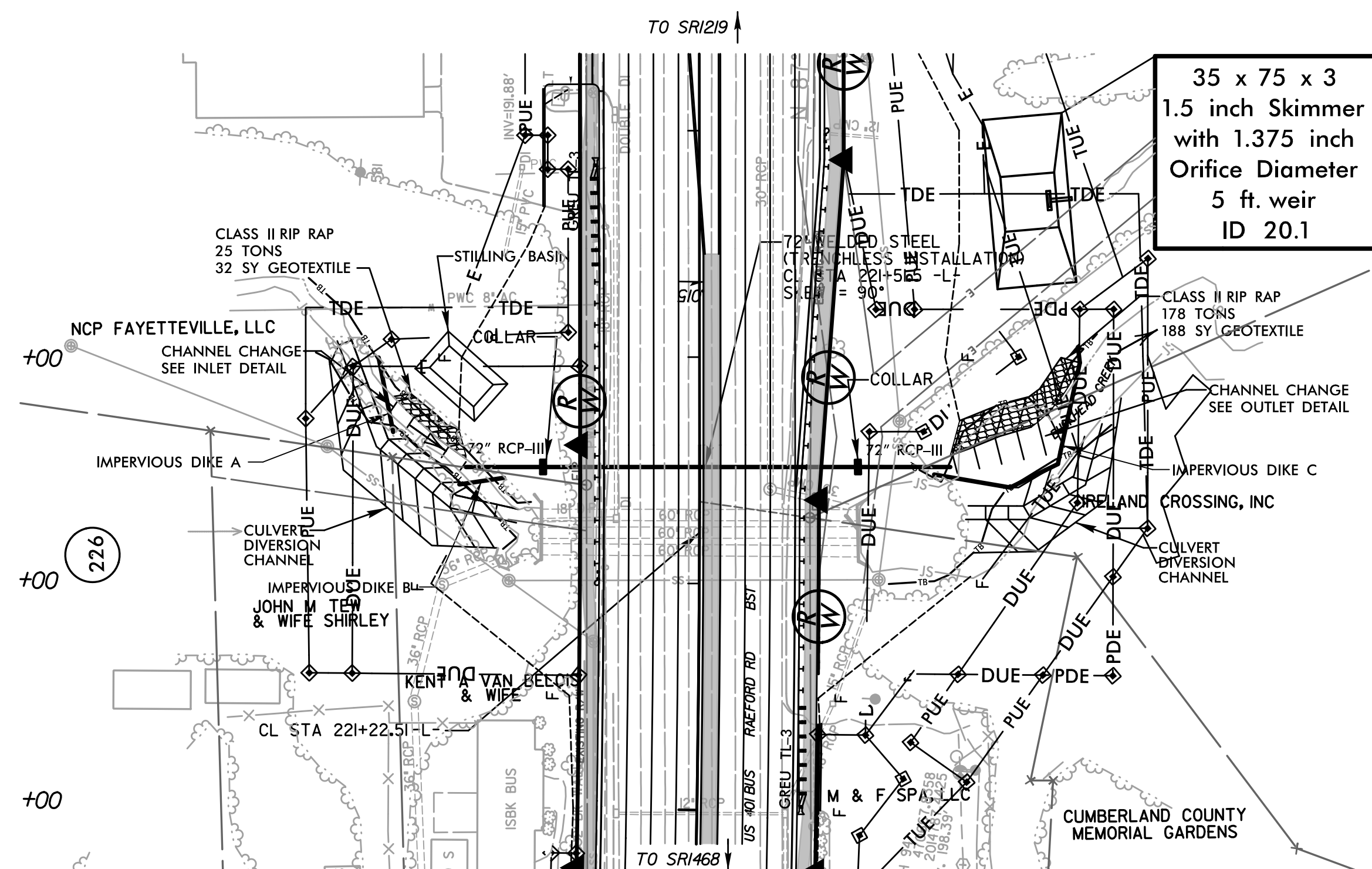
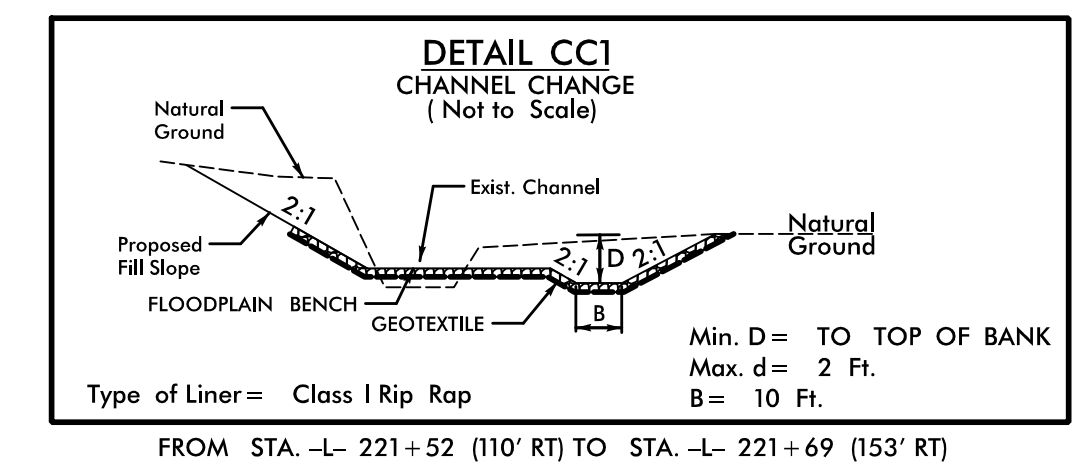
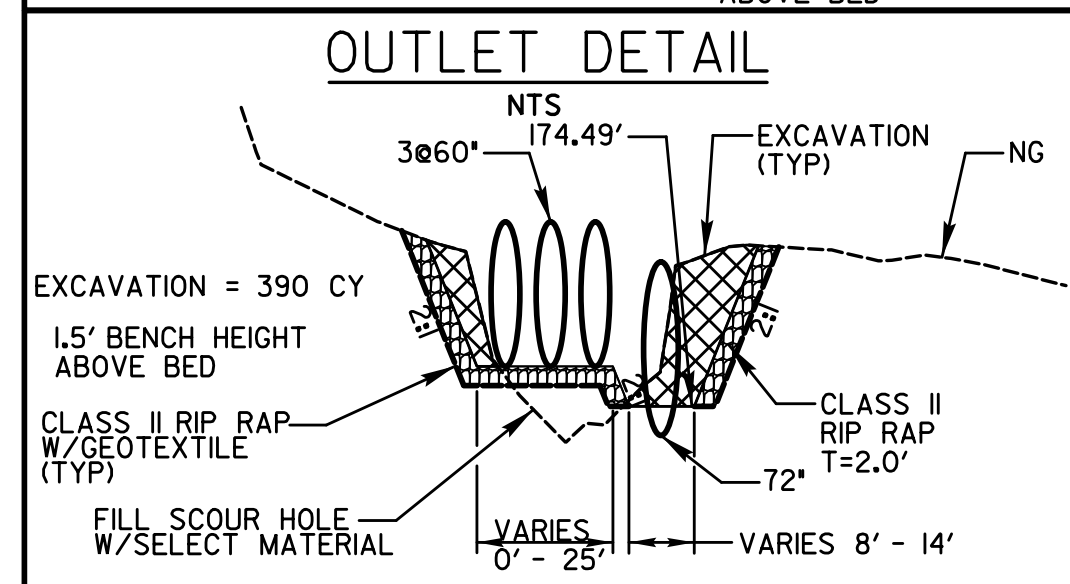
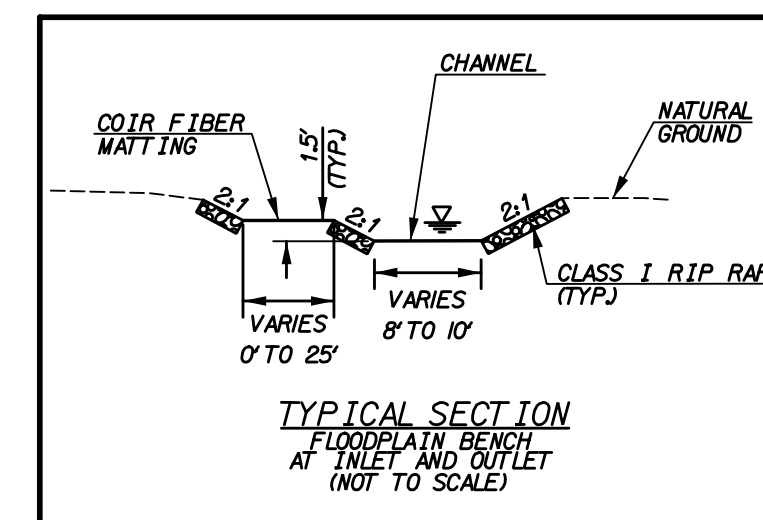
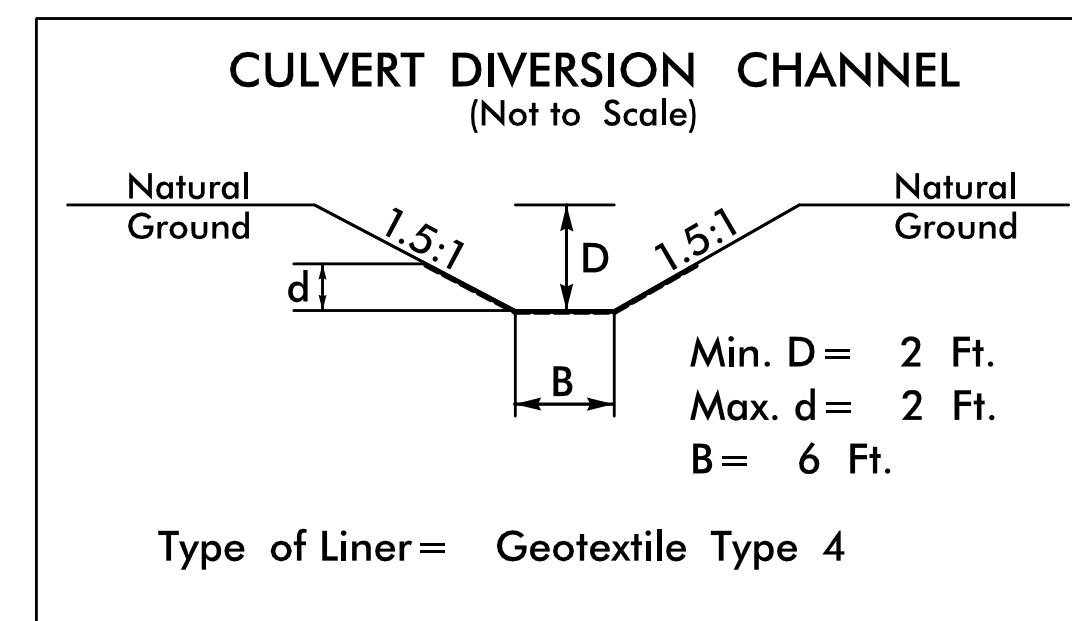
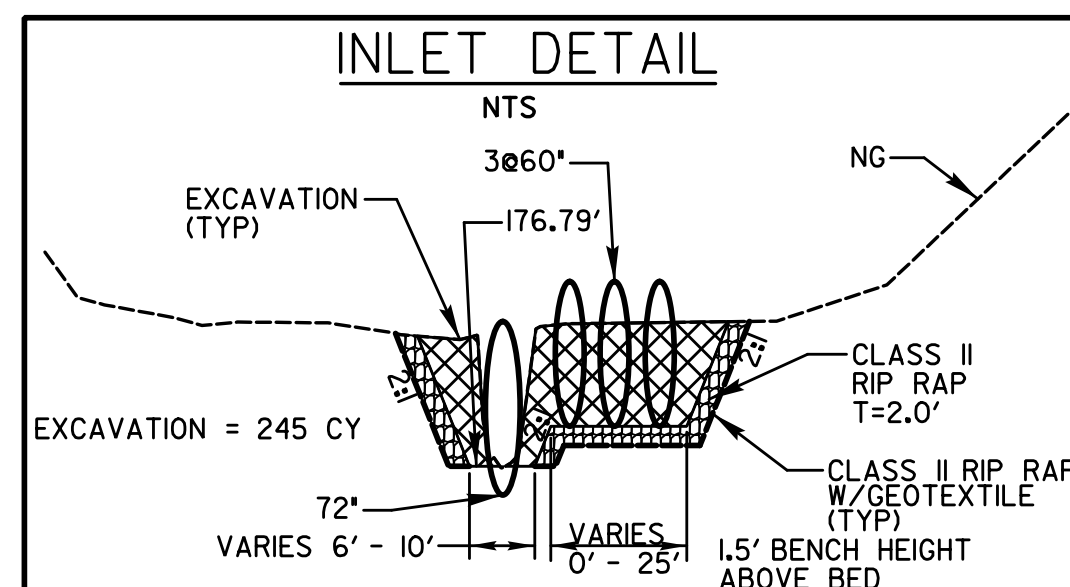
# CULVERT CONSTRUCTION SEQUENCE STA. 221+22 -L-

## PHASE I

1. CONSTRUCT STILLING BASINS, MINIMUM VOLUME REQUIRED:UPSTREAM = 37 CY, DOWNSTREAM = 154 CY (UTILIZE SKIMMER BASIN 20.1 AS DOWNSTREAM STILLING BASIN)
2. INSTALL 72" PIPE BY TRENCHLESS METHOD FROM PROPOSED COLLAR TO PROPOSED COLLAR
3. CONSTRUCT CULVERT DIVERSION CHANNELS AND IMPERVIOUS DIKES A, B, AND C
4. DIVERT FLOW INTO CULVERT DIVERSION CHANNELS AND EXISTING 3@60" RCP
5. COLLAR AND EXTEND PROPOSED 72" PIPE
6. CONSTRUCT EAST BANK OF INLET AND OUTLET CHANNEL AND STABILIZE
7. REMOVE IMPERVIOUS DIKES A, B, AND C AND CULVERT DIVERSION CHANNELS

## PHASE II

8. CONSTRUCT IMPERVIOUS DIKES D AND E, DIVERTING FLOW THROUGH 72" PIPE
9. CONSTRUCT FLOODPLAIN BENCHES AND WEST SIDE OF BANK AT INLET AND OUTLET AND STABILIZE
10. COLLAR AND EXTEND EXISTING 3@60" RCP
11. REMOVE IMPERVIOUS DIKES D AND E AND STILLING BASIN.
12. COMPLETE ROADWAY





PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-27/CONST.21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

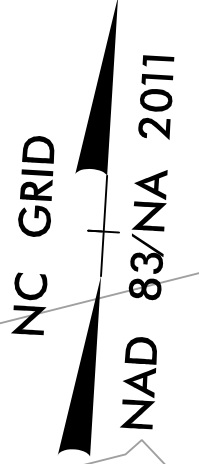
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 21

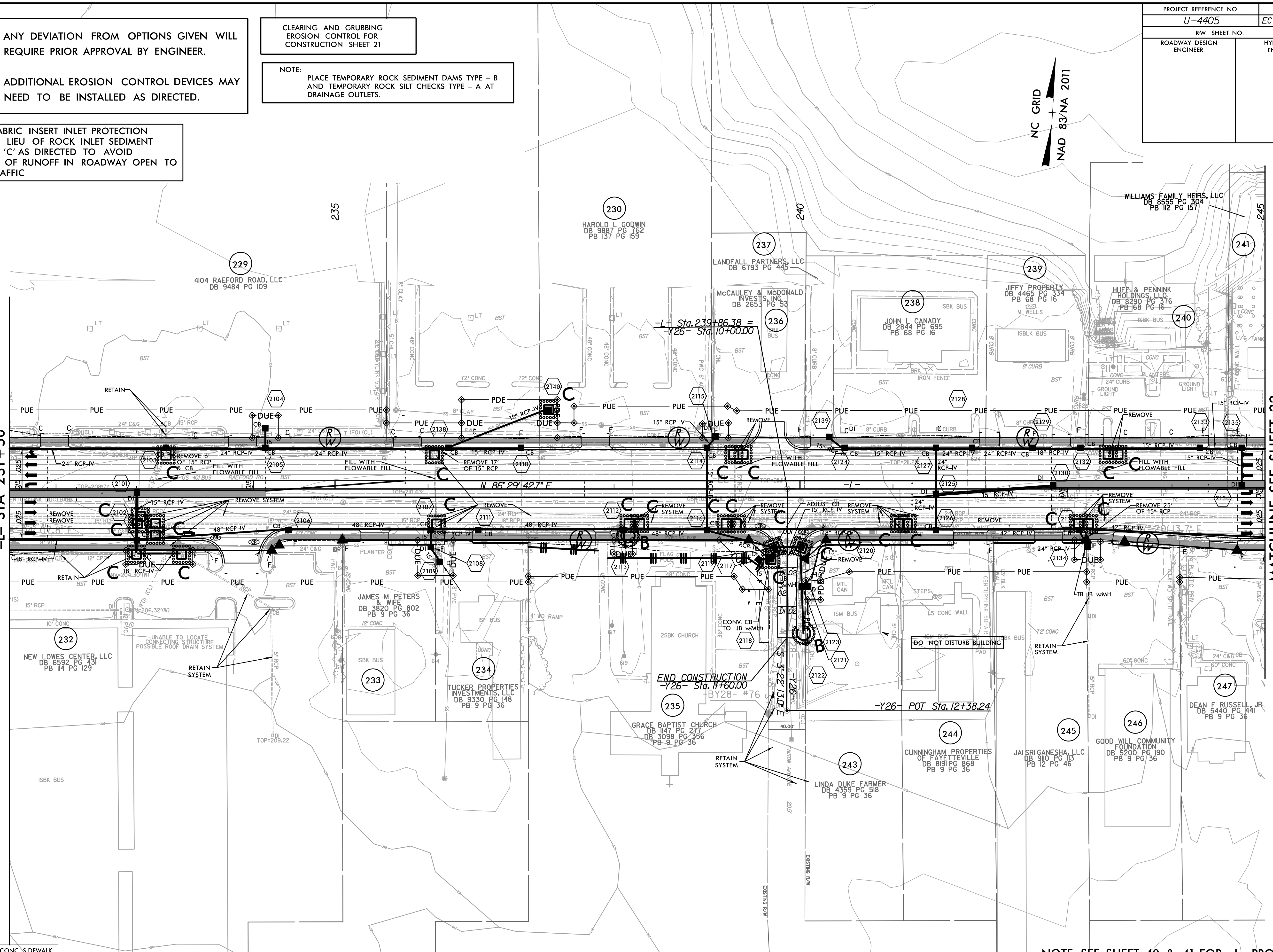
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC



MATCHLINE SEE SHEET 20  
-L- STA 231+50

MATCHLINE SEE SHEET 22  
-L- STA 245+00



PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 40 & 41 FOR -L- PROFILE  
SEE SHEET 48 FOR -Y26- PROFILE

REVISIONS

8/17/99  
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PROJECT REFERENCE NO. U-4405	SHEET NO. EC-28/CONST.22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 22

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

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

-L-  
 PIs Sta 257+51.40  
 $\theta_s = 0^\circ 31' 15.1''$   
 $L_s = 100.00'$   
 $LT = 66.67'$   
 $ST = 33.33'$

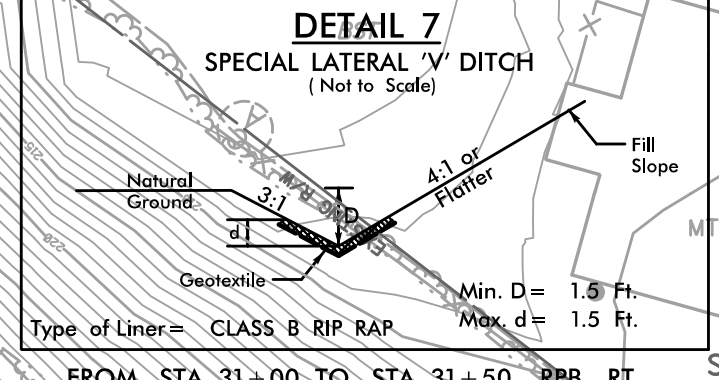
PI Sta 258+20.74  
 $\Delta = 0^\circ 45' 00.9''$  (LT)  
 $D = 1^\circ 02' 30.3''$   
 $L = 72.02'$   
 $T = 36.01'$   
 $R = 5,500.00'$   
 $SE = 0.025$

-RPB-  
 PI Sta 31+40.19  
 $\Delta = 14^\circ 06' 13.2''$  (RT)  
 $D = 6^\circ 21' 58.3''$   
 $L = 221.54'$   
 $T = 111.33'$   
 $R = 900.00'$   
 $SE = 0.08$

-AA-  
 PIs Sta 37+96.65  
 $\theta_s = 5^\circ 00' 00.0''$   
 $L_s = 400.00'$   
 $LT = 266.77'$   
 $ST = 133.43'$

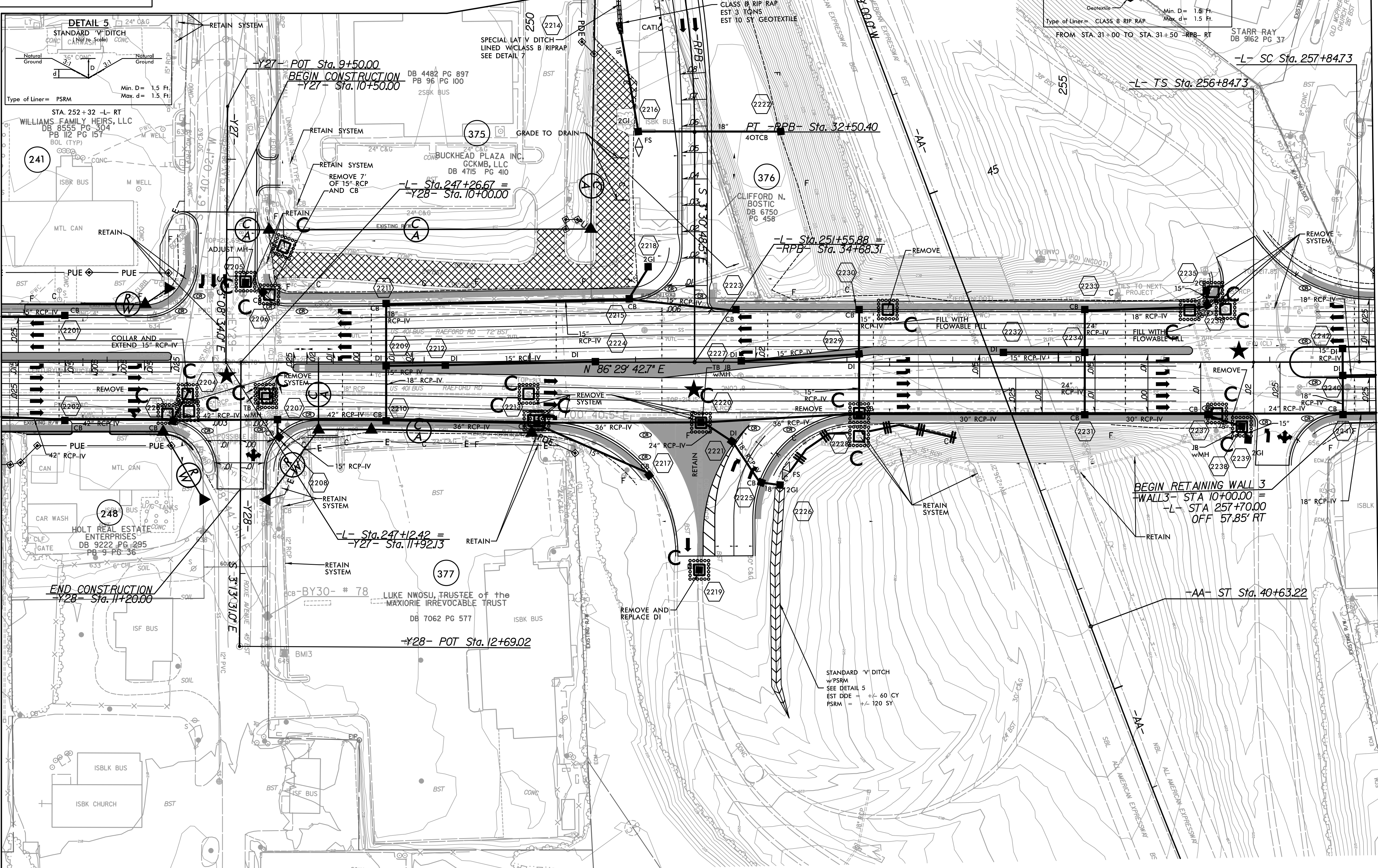
NC GRID  
 NAD 83/NA 2011

MATCHLINE SEE SHEET 31  
 -RPB- STA 31+00



MATCHLINE SEE SHEET 21  
 -L- STA 245+00

MATCHLINE SEE SHEET 23  
 -L- STA 258+00



★ PROPOSED SIGNAL

▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 41 FOR -L- PROFILE  
 SEE SHEET 49 FOR -Y28- PROFILE  
 SEE SHEET 45 FOR -RPB- PROFILE

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-29/CONST. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

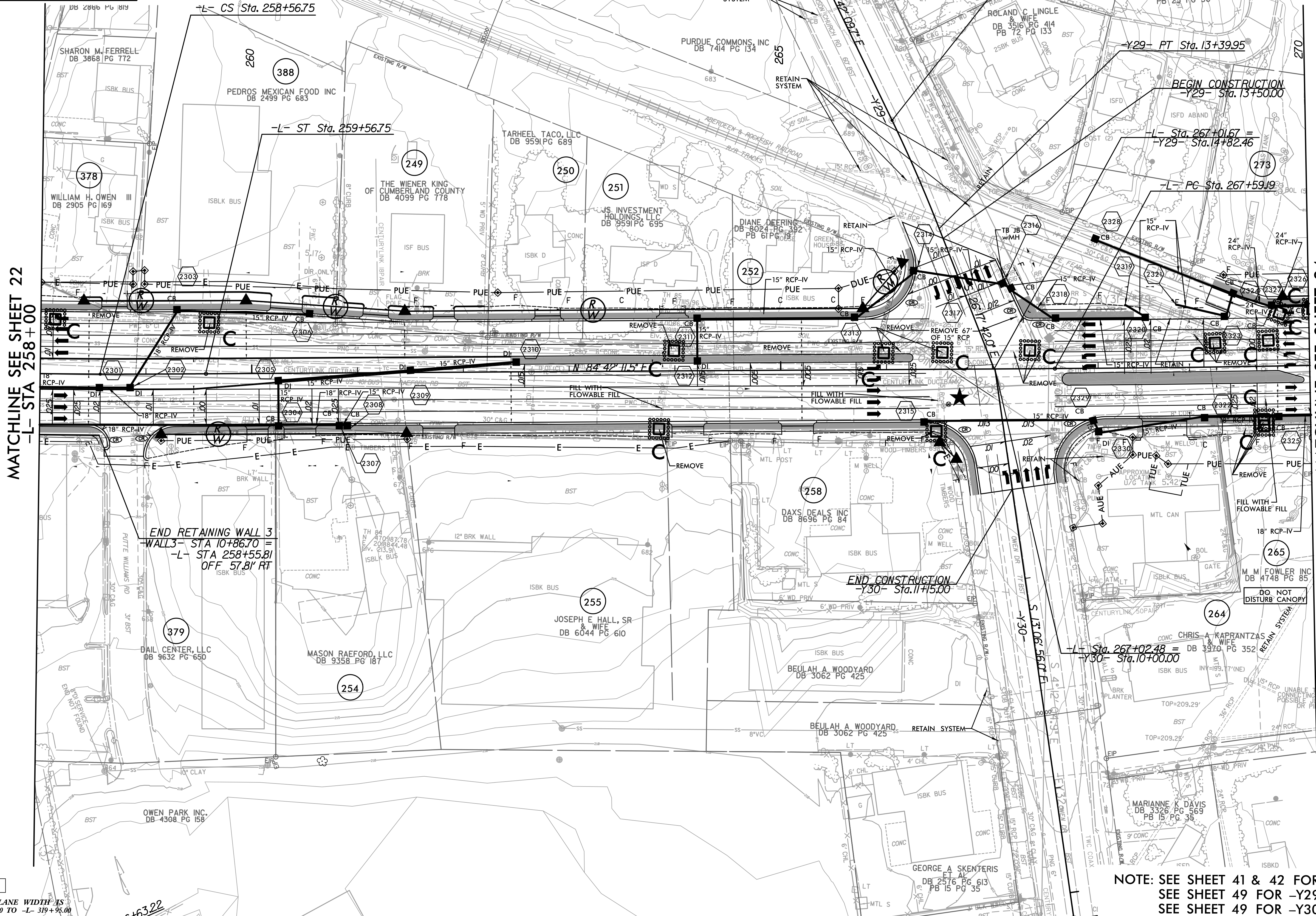
INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

-L-  
 PIs Sta 258+90.08  
 $\theta_s = 0^\circ 31' 15.1''$   
 $L_s = 100.00'$   
 $LT = 66.67'$   
 $ST = 33.33'$

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 23

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

-Y29-  
 PI Sta 12+84.20  
 $\Delta = 4^\circ 24' 27.7'' (RT)$   
 $D = 3^\circ 57' 05.2''$   
 $L = 111.55'$   
 $T = 55.80'$   
 $R = 1,450.00'$



MATCHLINE SEE SHEET 22  
-L- STA 258+00

MATCHLINE SEE SHEET 24  
-L- STA 270+00

NC GRID  
NAD 83/NA 2011

- ★ PROPOSED SIGNAL
- ▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 41 & 42 FOR -L- PROFILE  
 SEE SHEET 49 FOR -Y29- PROFILE  
 SEE SHEET 49 FOR -Y30- PROFILE

REVISIONS

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 10:29:28 AM  
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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-30/CONST.24
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 24

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

NC GRID  
NAD 83/NA 2011

MATCHLINE SEE SHEET 23  
-L- STA 270+00

MATCHLINE SEE SHEET 25  
-L- STA 283+00

8/17/99

REVISIONS

10:29:39 AM  
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★ PROPOSED SIGNAL

▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

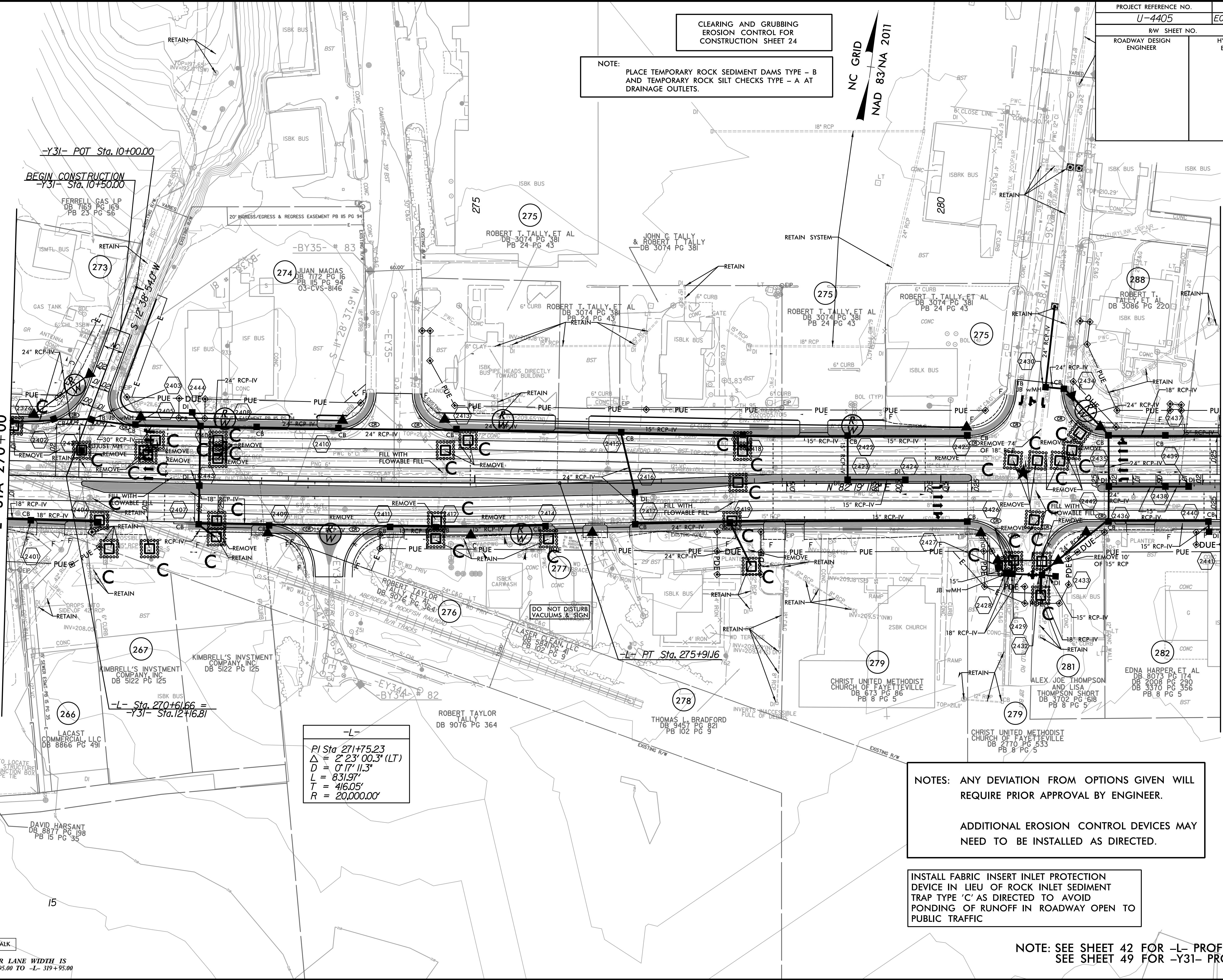
-L-  
PI Sta 271+75.23  
Δ = 2° 23' 00.3" (LT)  
D = 0° 17' 11.3"  
L = 831.97'  
T = 416.05'  
R = 20,000.00'

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

NOTE: SEE SHEET 42 FOR -L- PROFILE  
SEE SHEET 49 FOR -Y31- PROFILE



PROJECT REFERENCE NO. U-4405	SHEET NO. EC-31/CONST.25
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

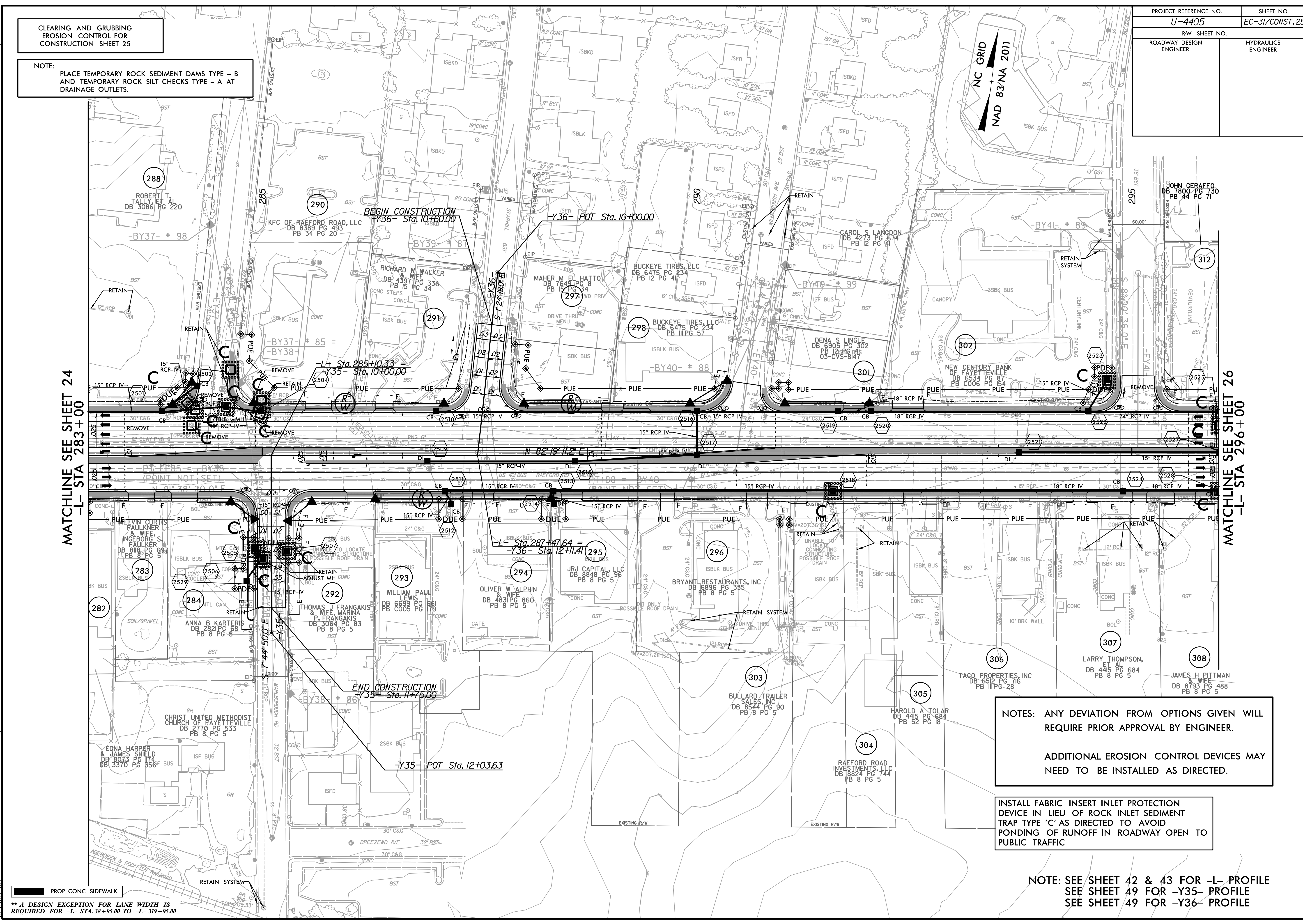
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 25

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

8/17/99

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R:\cadd\ec

PROP CONC SIDEWALK  
\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00



MATCHLINE SEE SHEET 24  
-L- STA 283+00

MATCHLINE SEE SHEET 26  
-L- STA 296+00

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.  
  
ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

NOTE: SEE SHEET 42 & 43 FOR -L- PROFILE  
SEE SHEET 49 FOR -Y35- PROFILE  
SEE SHEET 49 FOR -Y36- PROFILE

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-32/CONST.26
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 26

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

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

NC GRID  
NAD 83/NA 2011

MATCHLINE SEE SHEET 25  
-L- STA 296+00

MATCHLINE SEE SHEET 27  
-L- STA 309+50

8/17/99

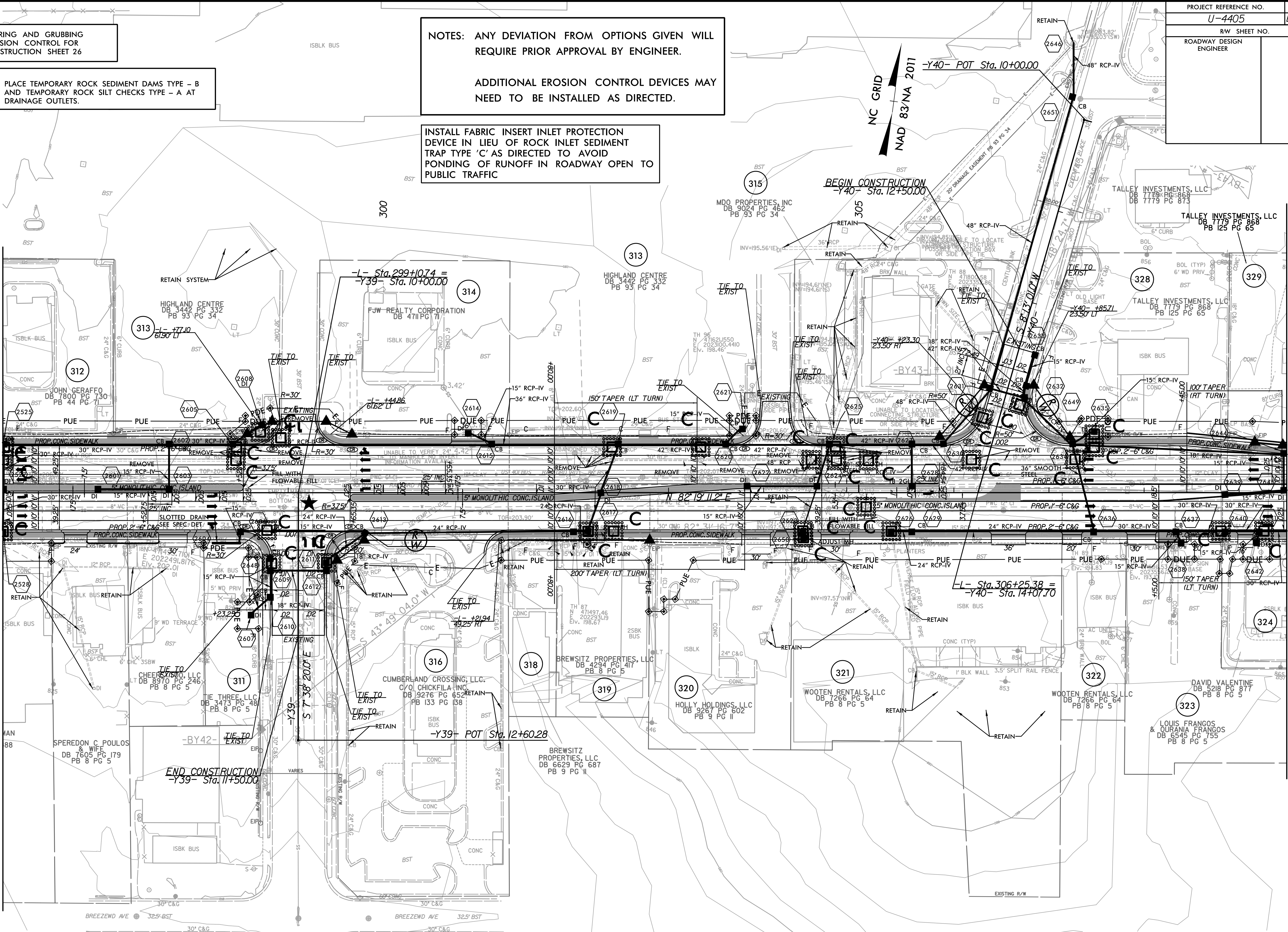
REVISIONS

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★ PROPOSED SIGNAL  
▬ PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS  
REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 43 FOR -L- PROFILE  
SEE SHEET 49 FOR -Y39- PROFILE  
SEE SHEET 49 FOR -Y40- PROFILE



PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-33/CONST.27
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 27

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

NC GRID  
NAD 83/NA 2011

END TIP PROJECT U-4405  
-L- Sta. 324+00.00

-L-  
PI Sta 320+13.00  
 $\Delta = 43^{\circ} 34' 29.9" (LT)$   
 $D = 8' 00" 48.2"$   
 $L = 543.78'$   
 $T = 285.80'$   
 $R = 715.00'$   
 $SE = 0.04$

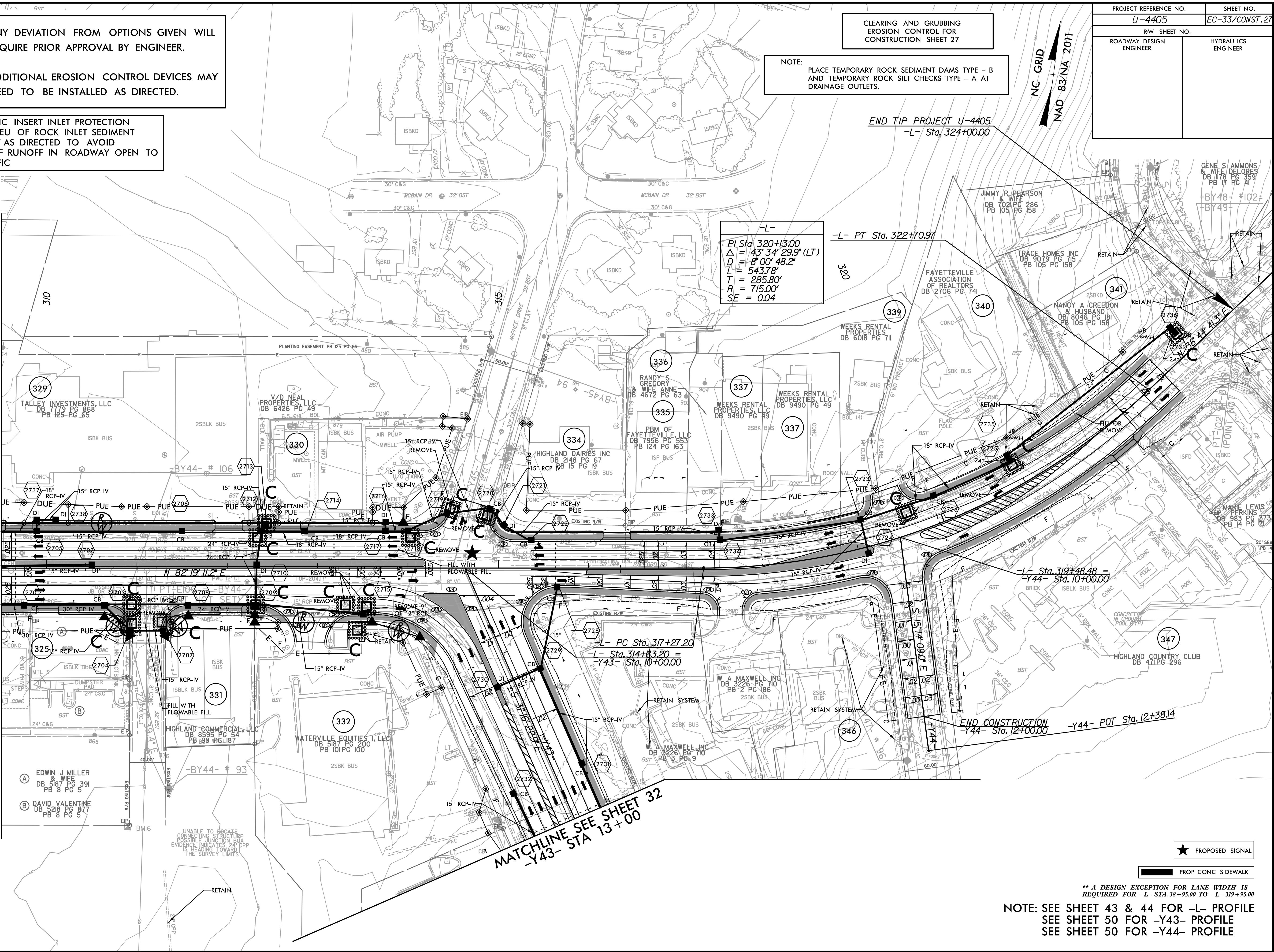
-L- PT Sta. 322+70.97

-L- Sta. 319+48.48 =  
-Y44- Sta. 10+00.00

END CONSTRUCTION  
-Y44- Sta. 12+00.00

MATCHLINE SEE SHEET 32  
-Y43- STA 13+00

MATCHLINE SEE SHEET 26  
-L- STA 309+50



- (A) EDWIN J MILLER & WIFE DELORES DB 5187 PG 391 PB 8 PG 5
- (B) DAVID VALENTE DB 5218 PG 877 PB 8 PG 5

UNABLE TO LOCATE CONNECTING STRUCTURE POSSIBLE JUNCTION BOX EVIDENCE INDICATES PUP IS HEADING TOWARD THE SURVEY LIMITS

★ PROPOSED SIGNAL

PROP CONC SIDEWALK

\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED FOR -L- STA. 38+95.00 TO -L- 319+95.00

NOTE: SEE SHEET 43 & 44 FOR -L- PROFILE  
SEE SHEET 50 FOR -Y43- PROFILE  
SEE SHEET 50 FOR -Y44- PROFILE

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-34/CONST.28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 28

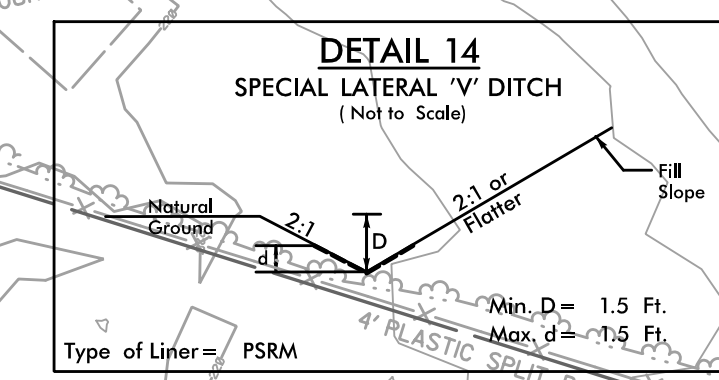
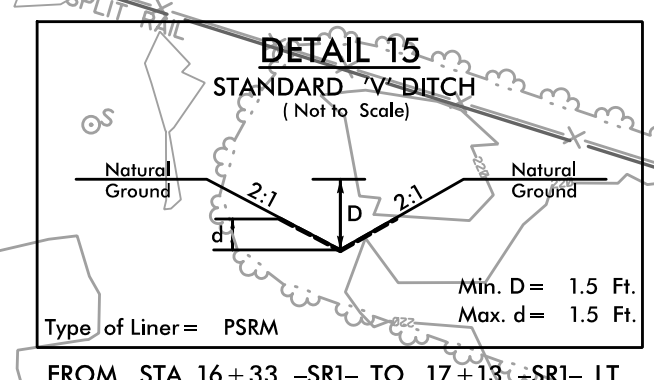
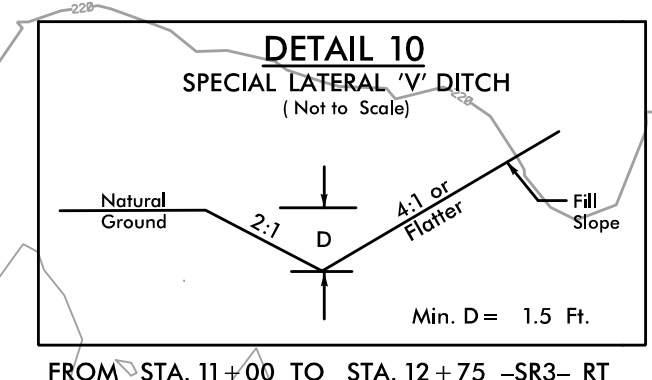
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B  
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT  
DRAINAGE OUTLETS.

**-SRI-**

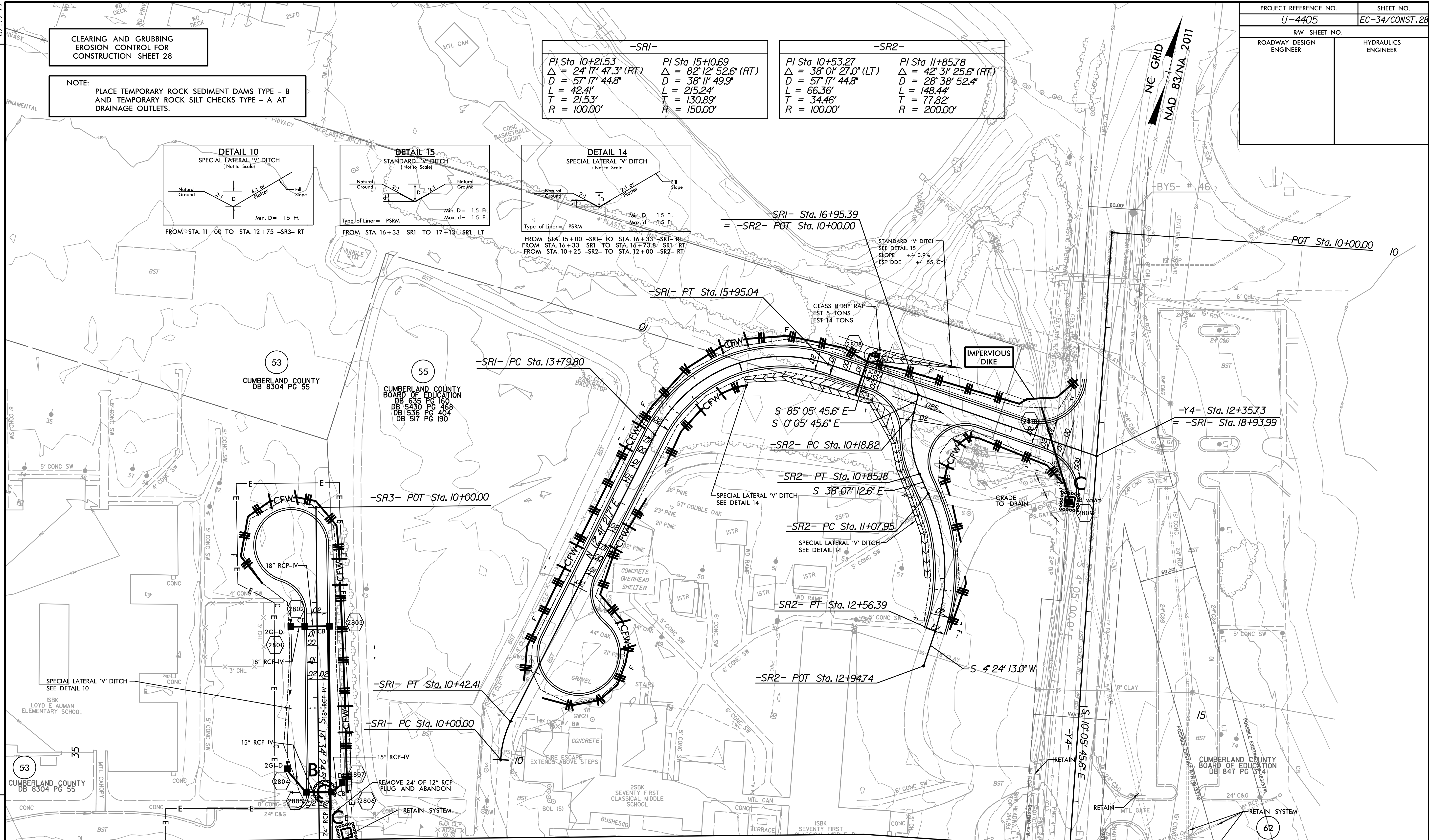
PI Sta 10+21.53 Δ = 24° 17' 47.3" (RT) D = 57° 17' 44.8" L = 42.41' T = 21.53' R = 100.00'	PI Sta 15+10.69 Δ = 82° 12' 52.6" (RT) D = 38° 11' 49.9" L = 215.24' T = 130.89' R = 150.00'
---	---

**-SR2-**

PI Sta 10+53.27 Δ = 38° 01' 27.0" (LT) D = 57° 17' 44.8" L = 66.36' T = 34.46' R = 100.00'	PI Sta 11+85.78 Δ = 42° 31' 25.6" (RT) D = 28° 38' 52.4" L = 148.44' T = 77.82' R = 200.00'
---	--



REVISIONS  
 8/17/99  
 2/21/01  
 Environmental Design u4405\_REL\_EC\_psh\_28\_IG.dgn  
 EC:barber



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

MATCHLINE SEE SHEET 6  
-SR3- STA 13+50

MATCHLINE SEE SHEET 6  
-Y4- STA 16+50

NOTE: SEE SHEET 50 FOR -SRI- PROFILE  
SEE SHEET 51 FOR -SR2- PROFILE  
SEE SHEET 51 FOR -SR3- PROFILE

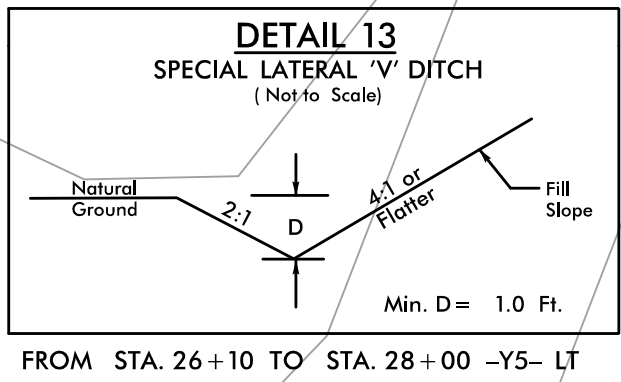


PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-35/CONST.29
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC



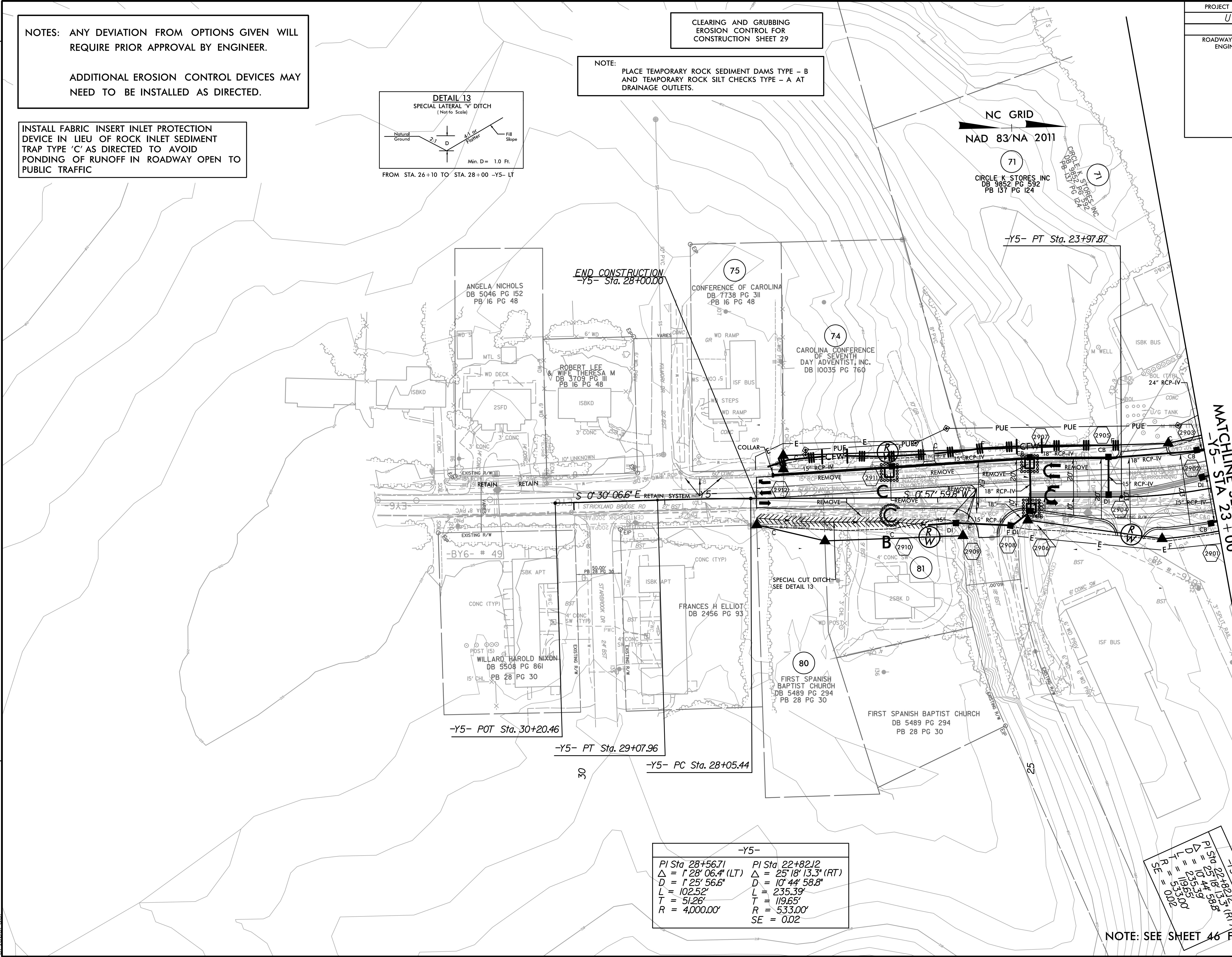
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 29

NC GRID  
NAD 83/NA 2011

REVISIONS

8/17/99  
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MATCHLINE SEE SHEET 9  
-Y5- STA 23+00

-Y5-	
PI Sta 28+56.71	PI Sta 22+82.12
$\Delta = 1' 28' 06.4''$ (LT)	$\Delta = 25' 18' 13.3''$ (RT)
$D = 1' 25' 56.6''$	$D = 10' 44' 58.8''$
$L = 102.52'$	$L = 235.39'$
$T = 51.26'$	$T = 119.65'$
$R = 4,000.00'$	$R = 533.00'$
	$SE = 0.02$

-Y5-	
PI Sta 22+82.12	PI Sta 22+82.12
$\Delta = 10' 44' 58.8''$	$\Delta = 10' 44' 58.8''$
$L = 235.39'$	$L = 235.39'$
$T = 119.65'$	$T = 119.65'$
$R = 533.00'$	$R = 533.00'$
	$SE = 0.02$

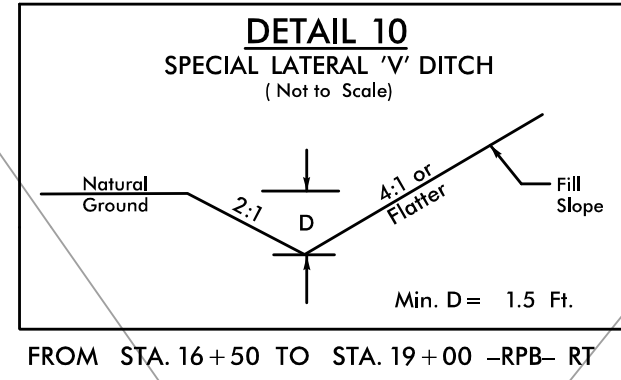
NOTE: SEE SHEET 46 FOR -Y5- PROFILE

8/17/99

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC



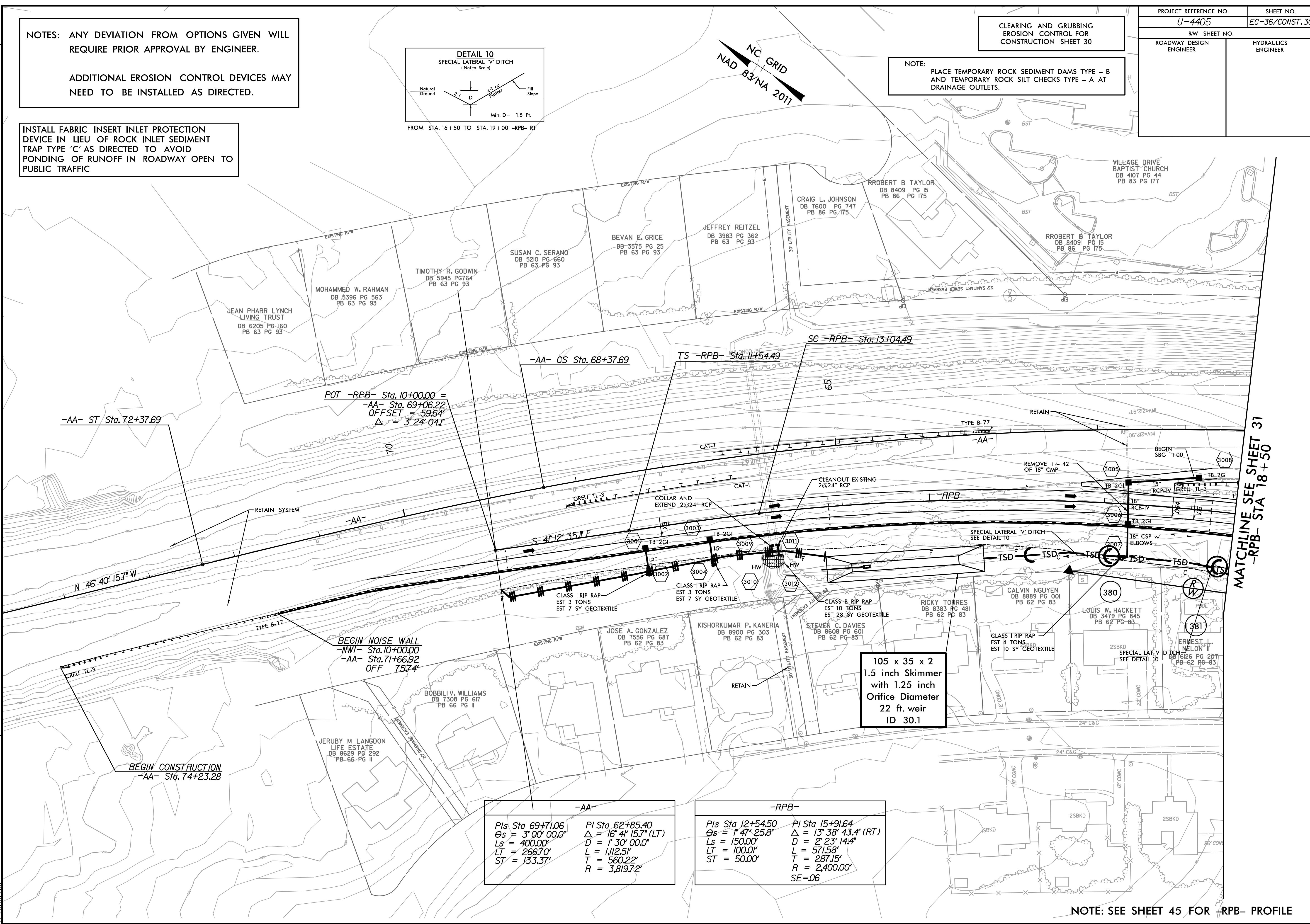
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 30

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

PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-36/CONST.30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REVISIONS

MATCHLINE SEE SHEET 31 -RPB- STA 18+50



-AA- ST Sta. 72+37.69

POT -RPB- Sta. 10+00.00 =  
 -AA- Sta. 69+06.22  
 OFFSET = 59.64'  
 Δ = 3° 24' 04.1"

-AA- CS Sta. 68+37.69

TS -RPB- Sta. 11+54.49

SC -RPB- Sta. 13+04.49

N 46° 40' 15.7" W

BEGIN NOISE WALL  
 -NW- Sta. 10+00.00  
 -AA- Sta. 71+66.92  
 OFF 75.74'

BEGIN CONSTRUCTION  
 -AA- Sta. 74+23.28

105 x 35 x 2  
 1.5 inch Skimmer  
 with 1.25 inch  
 Orifice Diameter  
 22 ft. weir  
 ID 30.1

-AA-	
Pls Sta 69+71.06	Pl Sta 62+85.40
Os = 3° 00' 00.0"	Δ = 16° 41' 15.7" (LT)
Ls = 400.00'	D = 1° 30' 00.0"
LT = 266.70'	L = 1112.5'
ST = 133.37'	T = 560.22'
	R = 3,819.72'

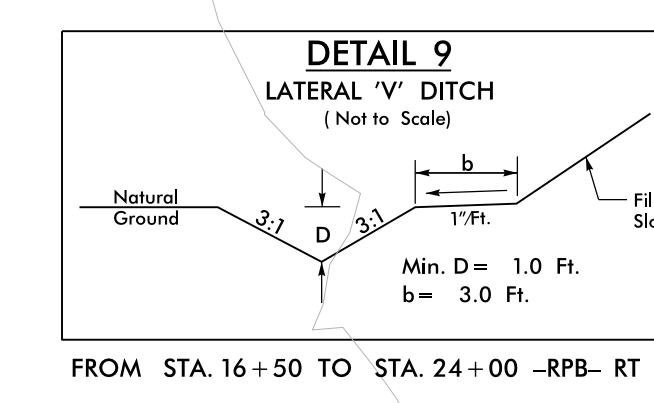
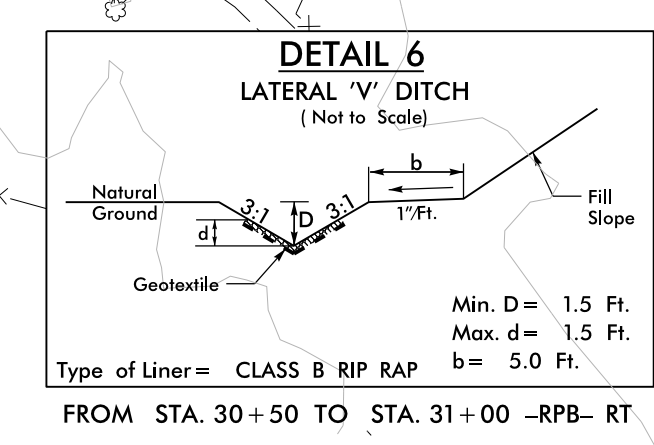
-RPB-	
Pls Sta 12+54.50	Pl Sta 15+91.64
Os = 1° 47' 25.8"	Δ = 13° 38' 43.4" (RT)
Ls = 150.00'	D = 2° 23' 14.4"
LT = 100.00'	L = 571.58'
ST = 50.00'	T = 287.15'
	R = 2,400.00'
	SE=.06

NOTE: SEE SHEET 45 FOR -RPB- PROFILE

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CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 31

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



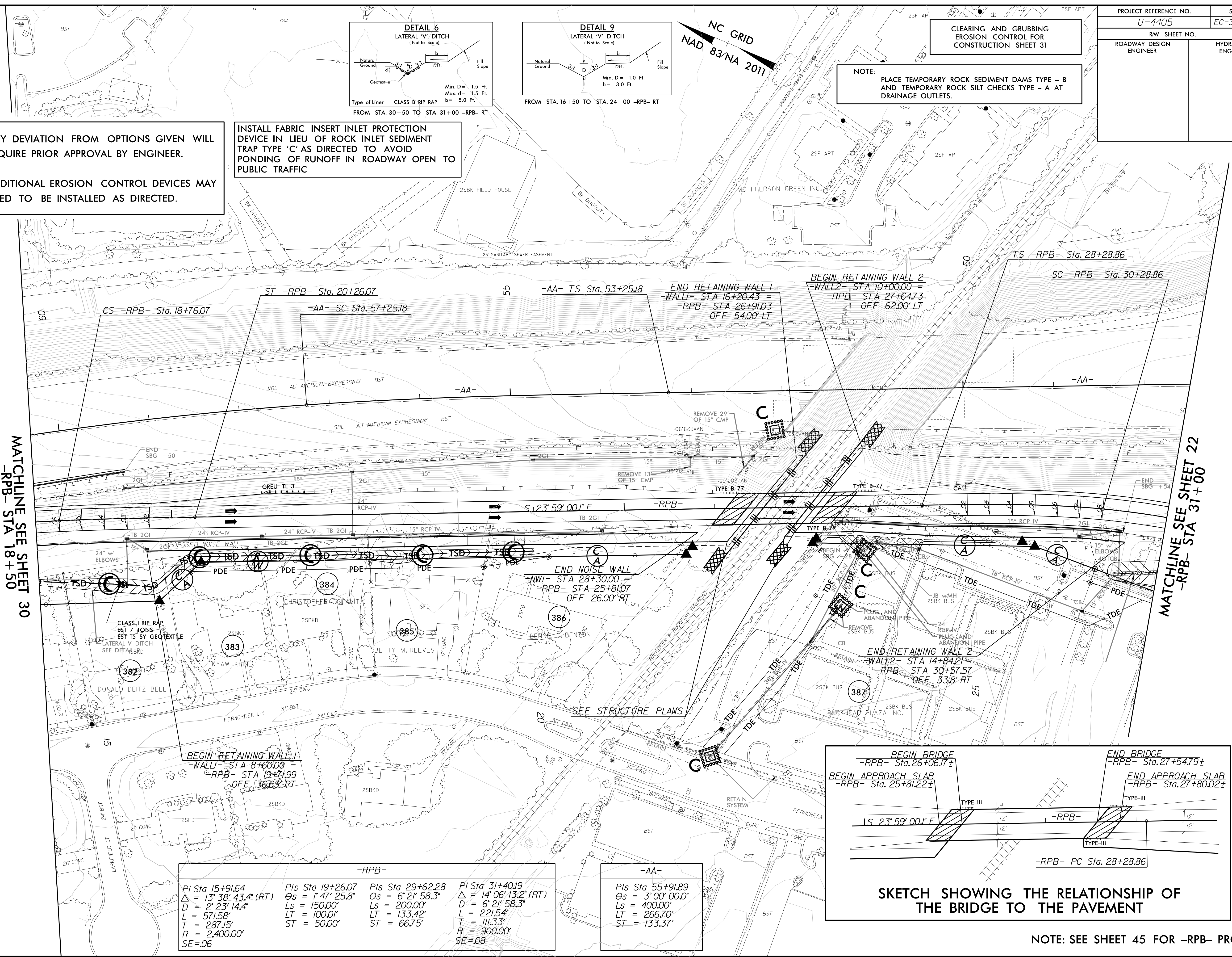
NC GRID  
NAD 83/NA 2011

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL  
REQUIRE PRIOR APPROVAL BY ENGINEER.  
  
ADDITIONAL EROSION CONTROL DEVICES MAY  
NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION  
DEVICE IN LIEU OF ROCK INLET SEDIMENT  
TRAP TYPE 'C' AS DIRECTED TO AVOID  
PONDING OF RUNOFF IN ROADWAY OPEN TO  
PUBLIC TRAFFIC

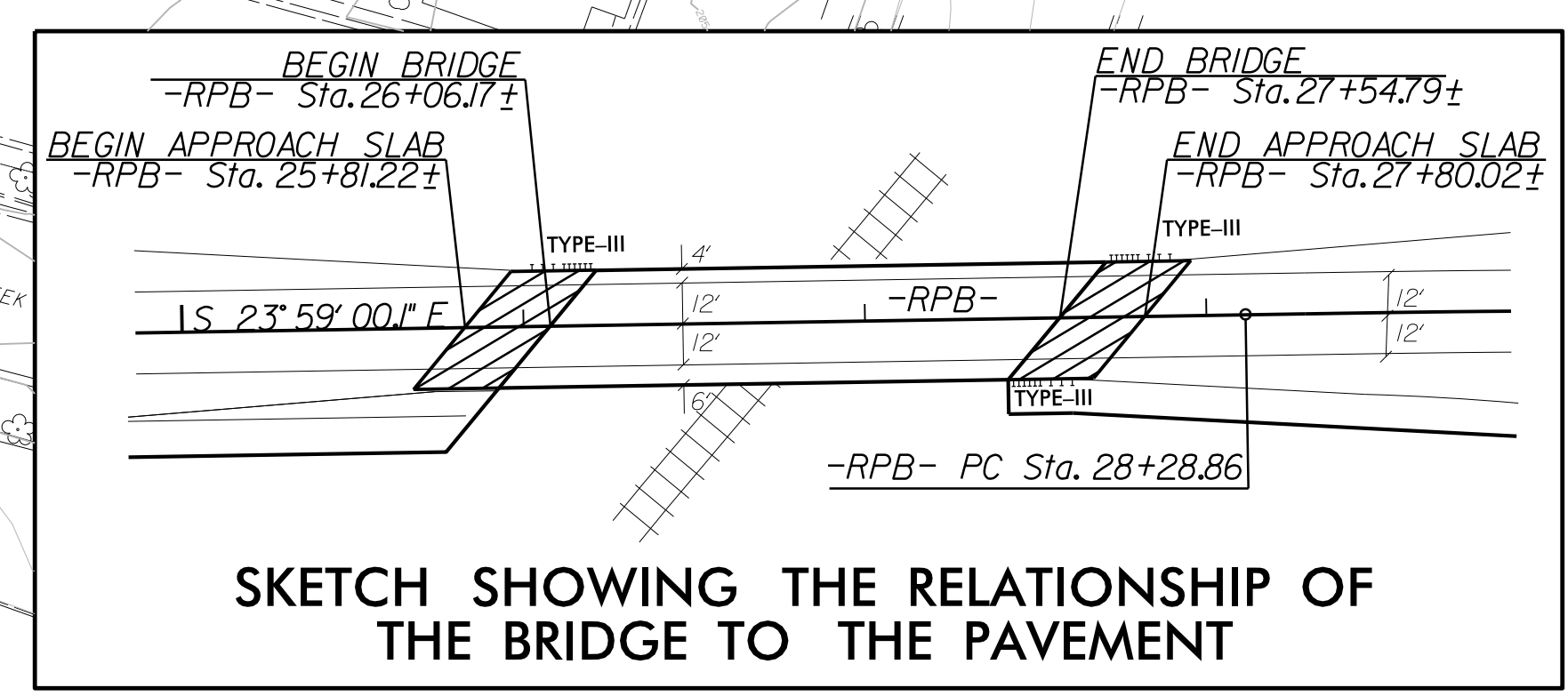
MATCHLINE SEE SHEET 30  
-RPB- STA 18+50

MATCHLINE SEE SHEET 22  
-RPB- STA 31+00



-RPB-			
PI Sta 15+91.64	PIs Sta 19+26.07	PIs Sta 29+62.28	PI Sta 31+40.19
$\Delta = 13^\circ 38' 43.4''$ (RT)	$\Delta s = 1' 47' 25.8''$	$\Delta s = 6' 21' 58.3''$	$\Delta = 14^\circ 06' 13.2''$ (RT)
$D = 2' 23' 14.4''$	$Ls = 150.00'$	$Ls = 200.00'$	$D = 6' 21' 58.3''$
$L = 571.58'$	$LT = 100.01'$	$LT = 133.42'$	$L = 221.54'$
$T = 287.15'$	$ST = 50.00'$	$ST = 66.75'$	$T = 111.33'$
$R = 2,400.00'$			$R = 900.00'$
$SE = .06$			$SE = .08$

-AA-	
PIs Sta 55+91.89	$\Delta s = 3' 00' 00.0''$
$Ls = 400.00'$	$LT = 266.70'$
$ST = 133.37'$	



NOTE: SEE SHEET 45 FOR -RPB- PROFILE

REVISIONS

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8/17/99

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 32

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

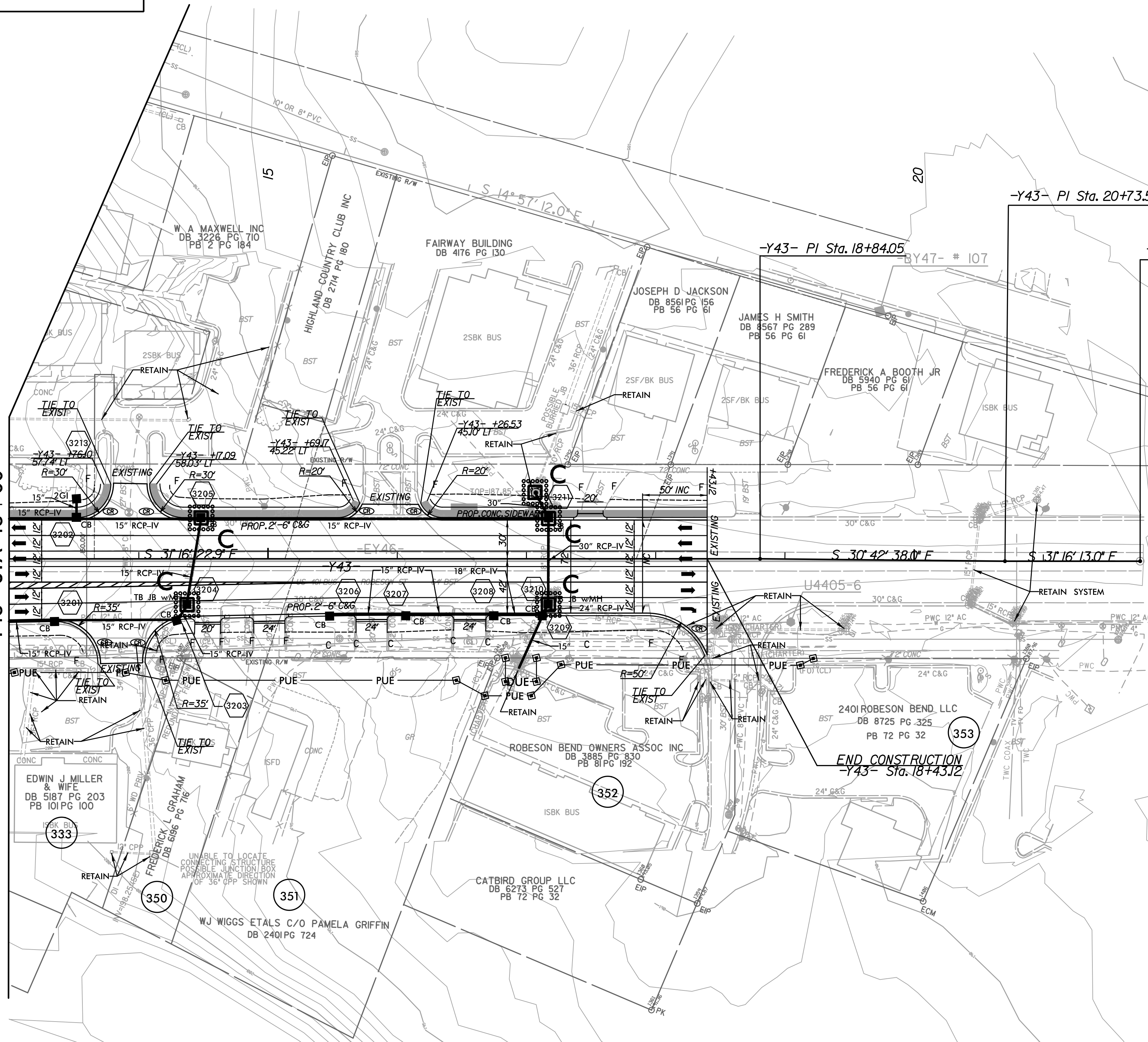
PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-38/CONST.32
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NC GRID  
NAD 83/NA 2011

-Y43-	
PI Sta 18+97.74	PI Sta 21+17.77
$\Delta = 0' 29' 06.2" (RT)$	$\Delta = 0' 28' 56.2" (LT)$
$D = 1' 25' 56.6"$	$D = 1' 25' 56.6"$
$L = 33.86'$	$L = 33.67'$
$T = 16.93'$	$T = 16.83'$
$R = 4,000.00'$	$R = 4,000.00'$

REVISIONS

MATCHLINE SEE SHEET 27  
-Y43- STA 13+00



NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

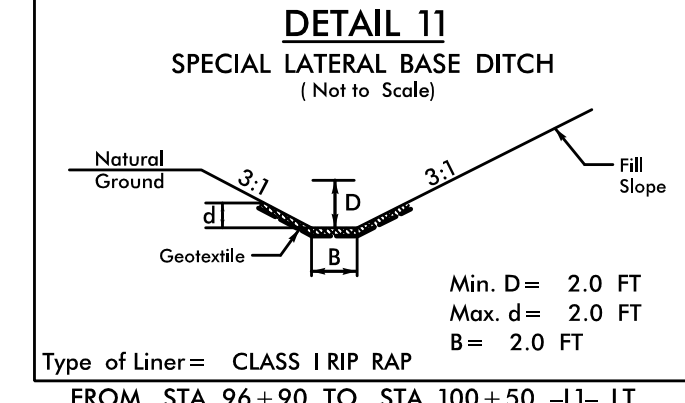
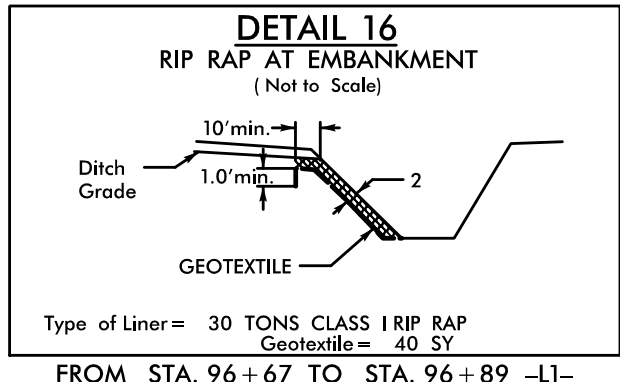
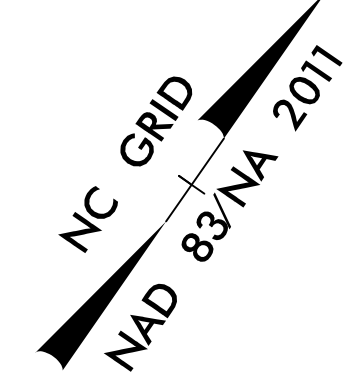
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

NOTE: SEE SHEET 50 FOR -Y43- PROFILE

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PROJECT REFERENCE NO.	SHEET NO.
U-4405	EC-39/CONST. 4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



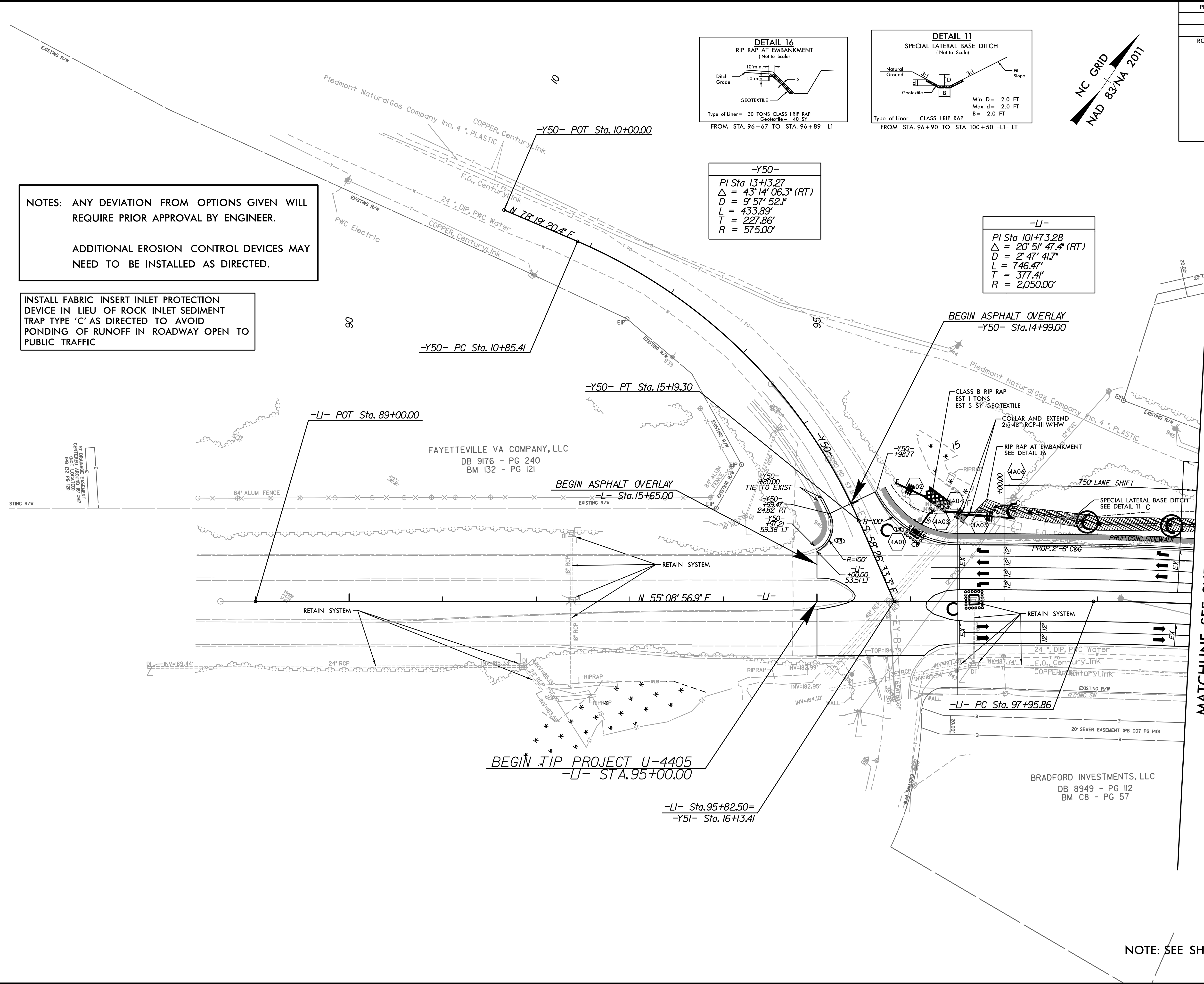
**-Y50-**  
PI Sta 13+13.27  
 $\Delta = 43' 14" 06.3" (RT)$   
 $D = 9' 57" 52.1"$   
 $L = 433.89'$   
 $T = 227.86'$   
 $R = 575.00'$

**-LI-**  
PI Sta 101+73.28  
 $\Delta = 20' 51' 47.4" (RT)$   
 $D = 2' 47' 41.7"$   
 $L = 746.47'$   
 $T = 377.41'$   
 $R = 2,050.00'$

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC



MATCHLINE SEE SHEET 4B  
-LI- STA 99+00

NOTE: SEE SHEET 52 FOR -LI- PROFILE

REVISIONS

8/17/99  
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