

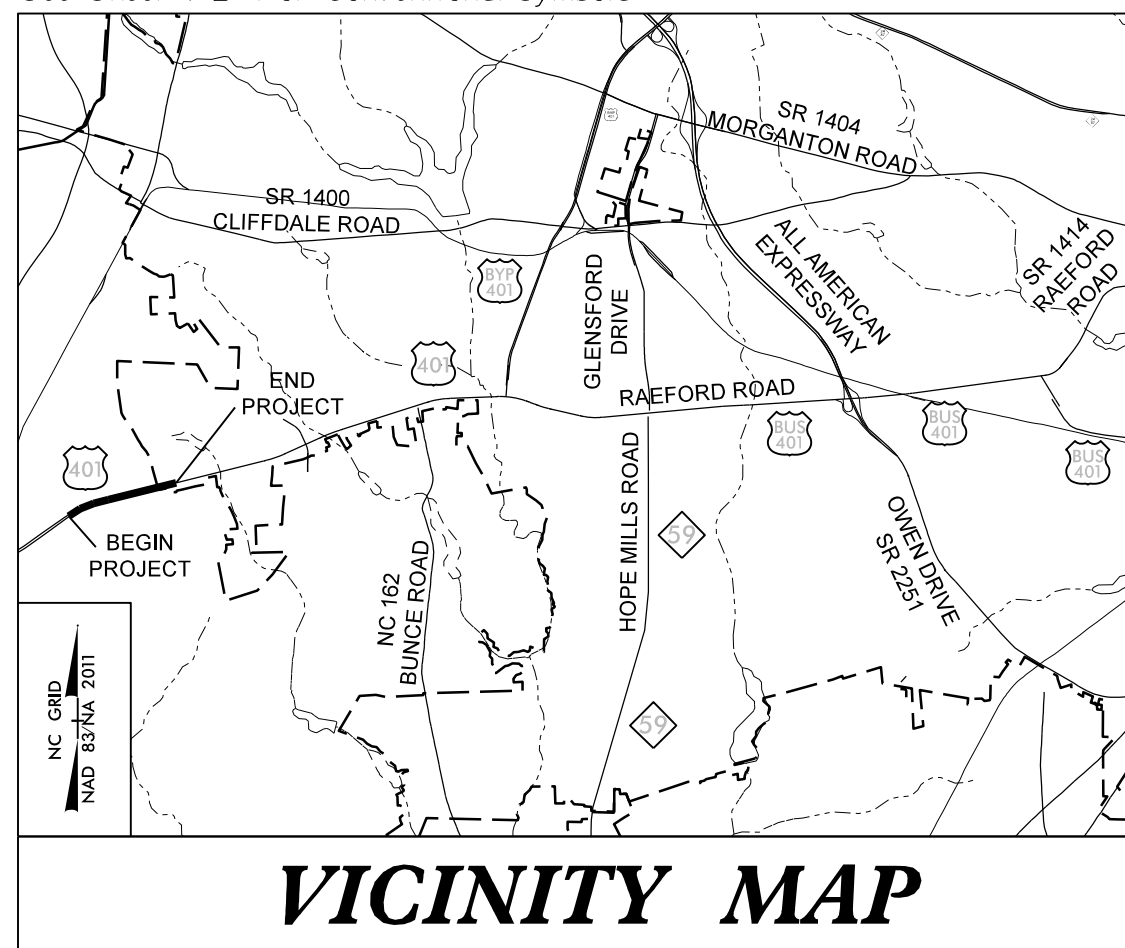
**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

TIP PROJECT: U-4405A

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

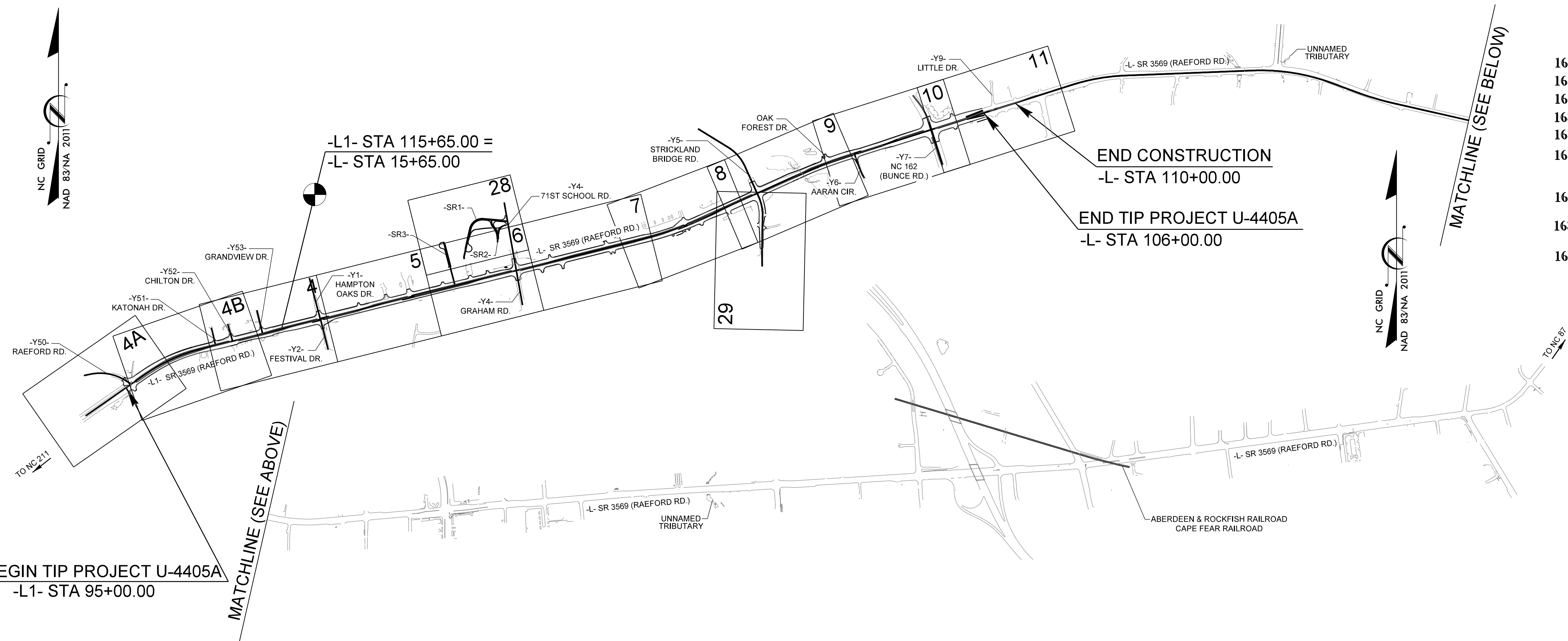


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

CUMBERLAND COUNTY

LOCATION: US 401 FROM OLD RAEFORD ROAD TO EAST OF NC 162
(BUNCE RD) IN FAYETTEVILLE

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



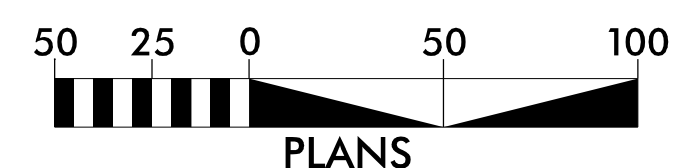
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405-A	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39049.1.FR2	STPDA-0401(230)	PE	
39049.2.2	STPDA-0401(230)	R/W	
39049.2.4	STPDA-0401(230)	UTIL	
39049.3.2	STPDA-0401(230)	CONST	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	III III III
1606.01	Special Sediment Control Fence	X X X X X X
1622.01	Temporary Berms and Slope Drains	TD
1630.02	Silt Basin Type B	[Symbol]
1633.01	Temporary Rock Silt Check Type-A	[Symbol]
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	[Symbol]
1633.02	Temporary Rock Silt Check Type-B	[Symbol]
	Wattle/Coir Fiber Wattle	[Symbol]
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	[Symbol]
1634.01	Temporary Rock Sediment Dam Type-A	[Symbol]
1634.02	Temporary Rock Sediment Dam Type-B	[Symbol]
1635.01	Rock Pipe Inlet Sediment Trap Type-A	[Symbol]
1635.02	Rock Pipe Inlet Sediment Trap Type-B	[Symbol]
1630.04	Stilling Basin	[Symbol]
1630.06	Special Stilling Basin	[Symbol]
	Rock Inlet Sediment Trap:	
1632.01	Type A	A [Symbol]
1632.02	Type B	B [Symbol]
1632.03	Type C	C [Symbol]
	Skimmer Basin	[Symbol]
	Tiered Skimmer Basin	[Symbol]
	Infiltration Basin	[Symbol]

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

GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.



VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

Prepared in the Office of:



VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

Designed by:

REID B. ROBOI, PE

3409

NAME

LEVEL III CERTIFICATION NO.

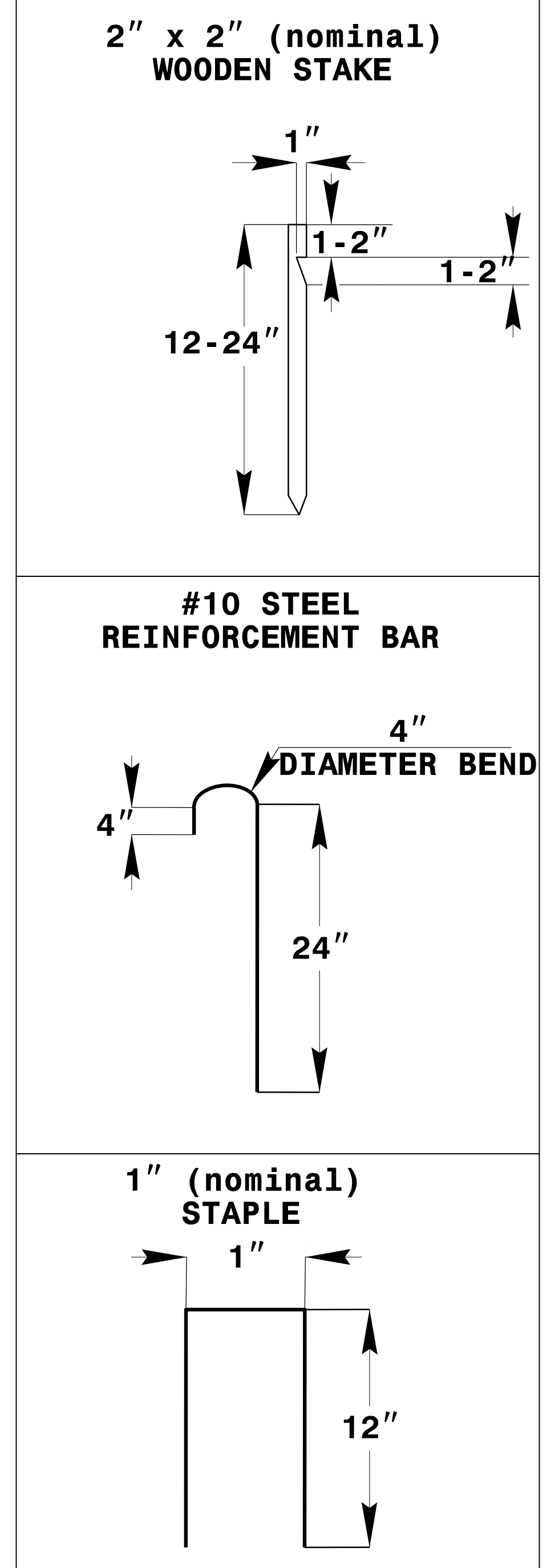
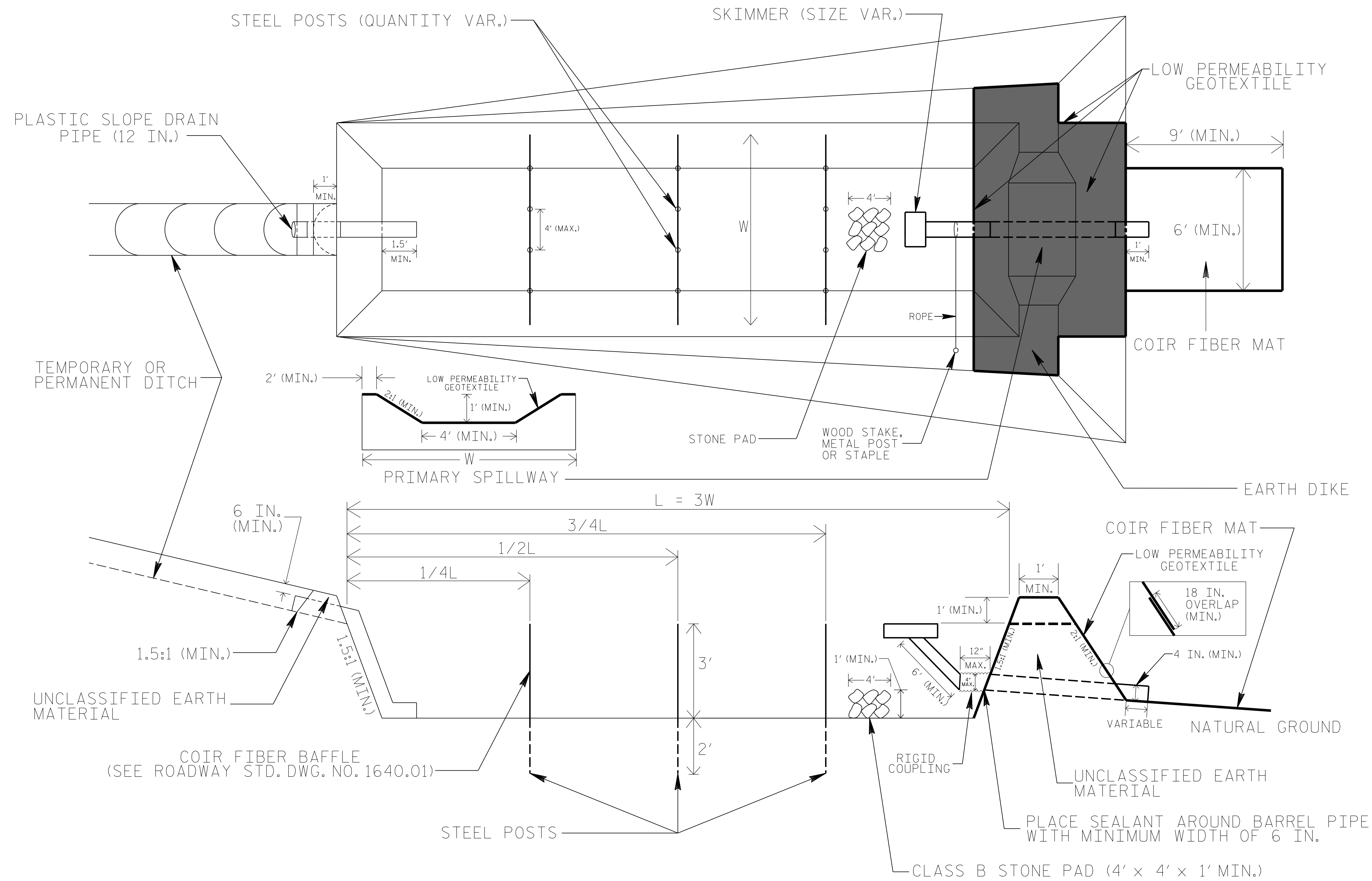
Roadway Standard Drawings

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

1604.01 Railroad Erosion Control Detail	1632.01 Rock Inlet Sediment Trap Type A
1605.01 Temporary Silt Fence	1632.02 Rock Inlet Sediment Trap Type 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)



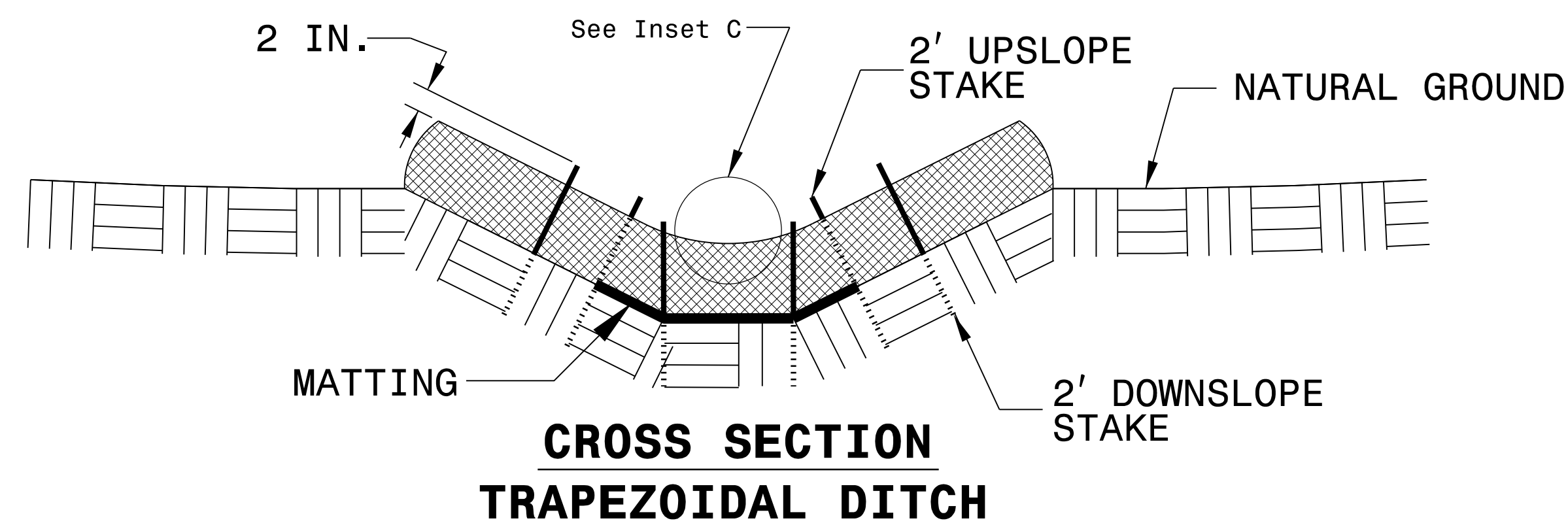
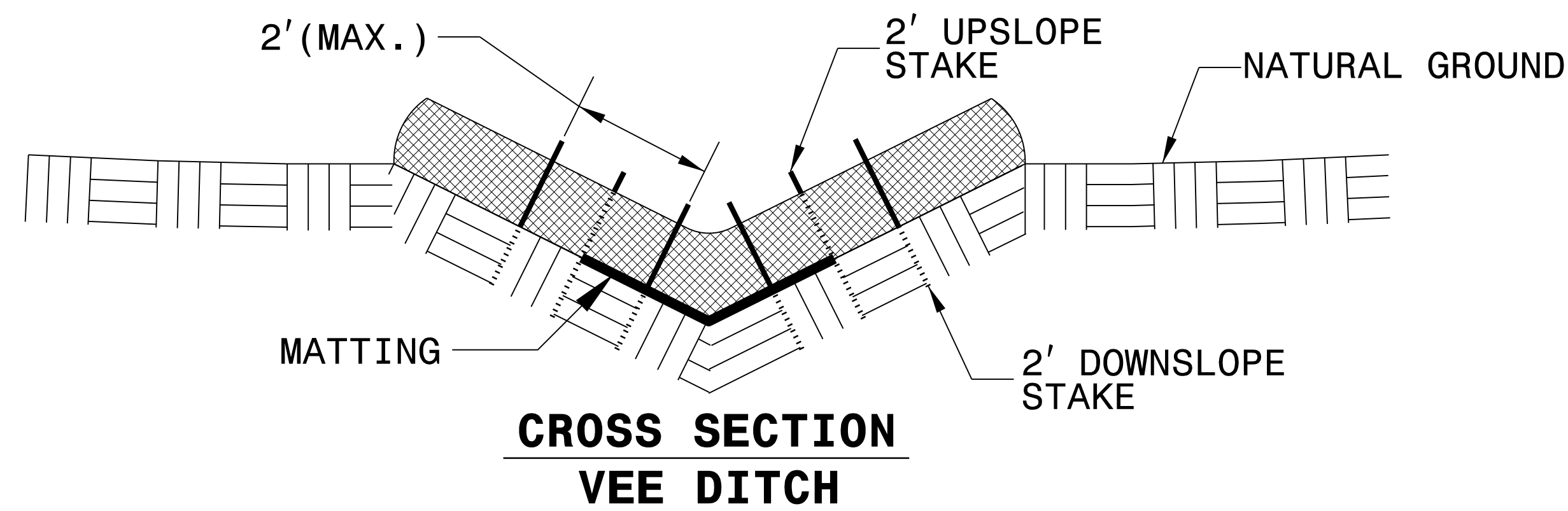
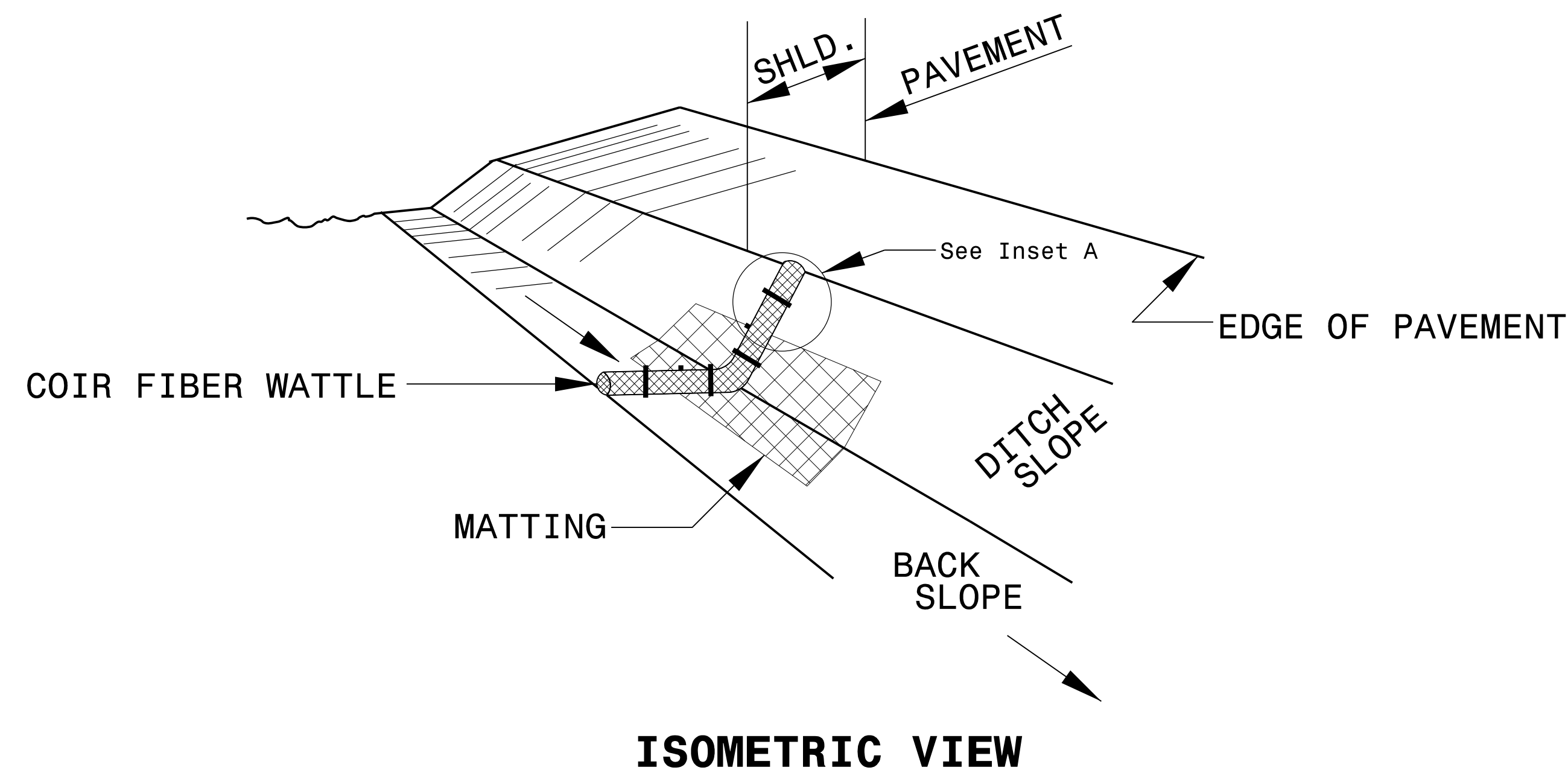
NOTES

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.).

NOT TO SCALE

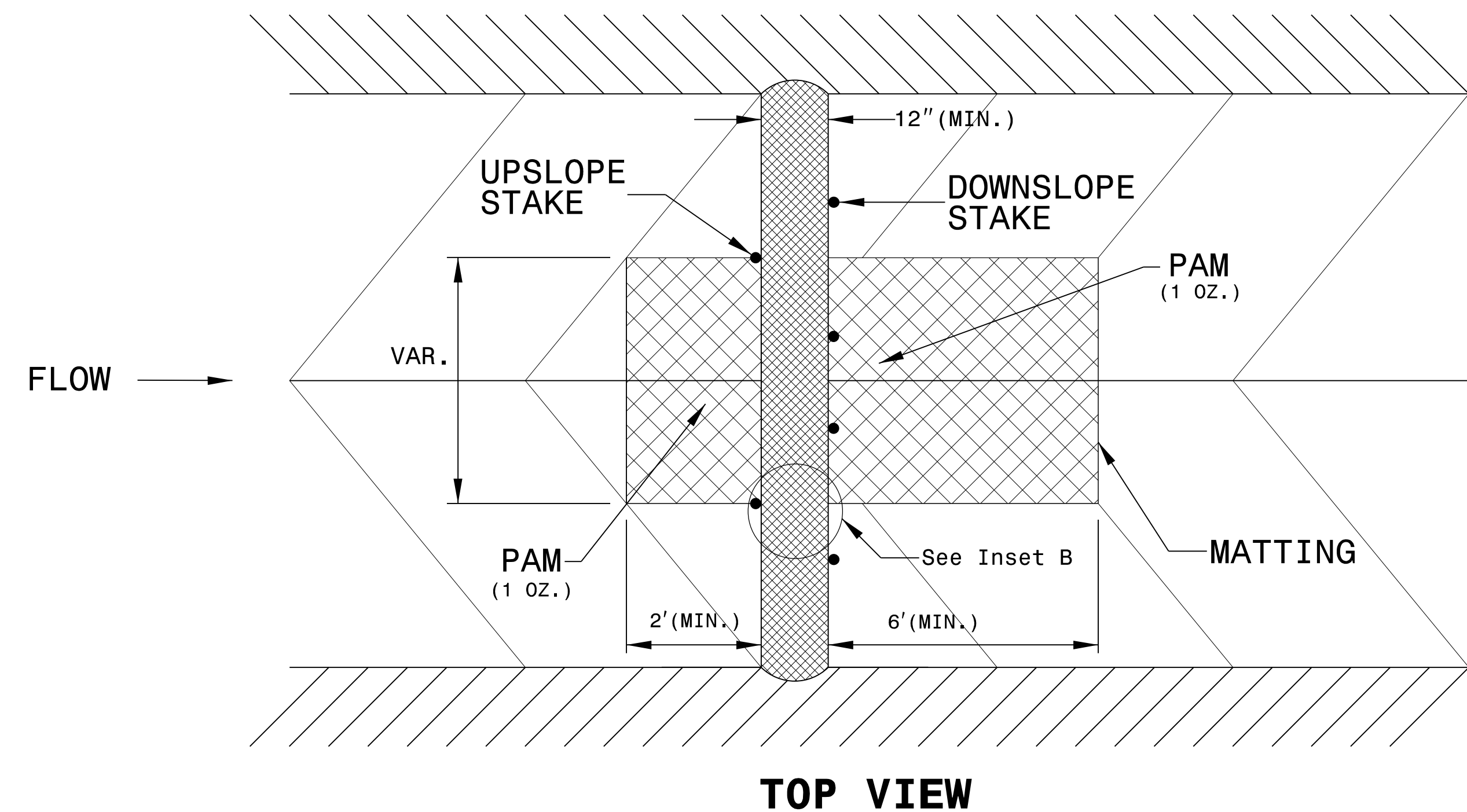
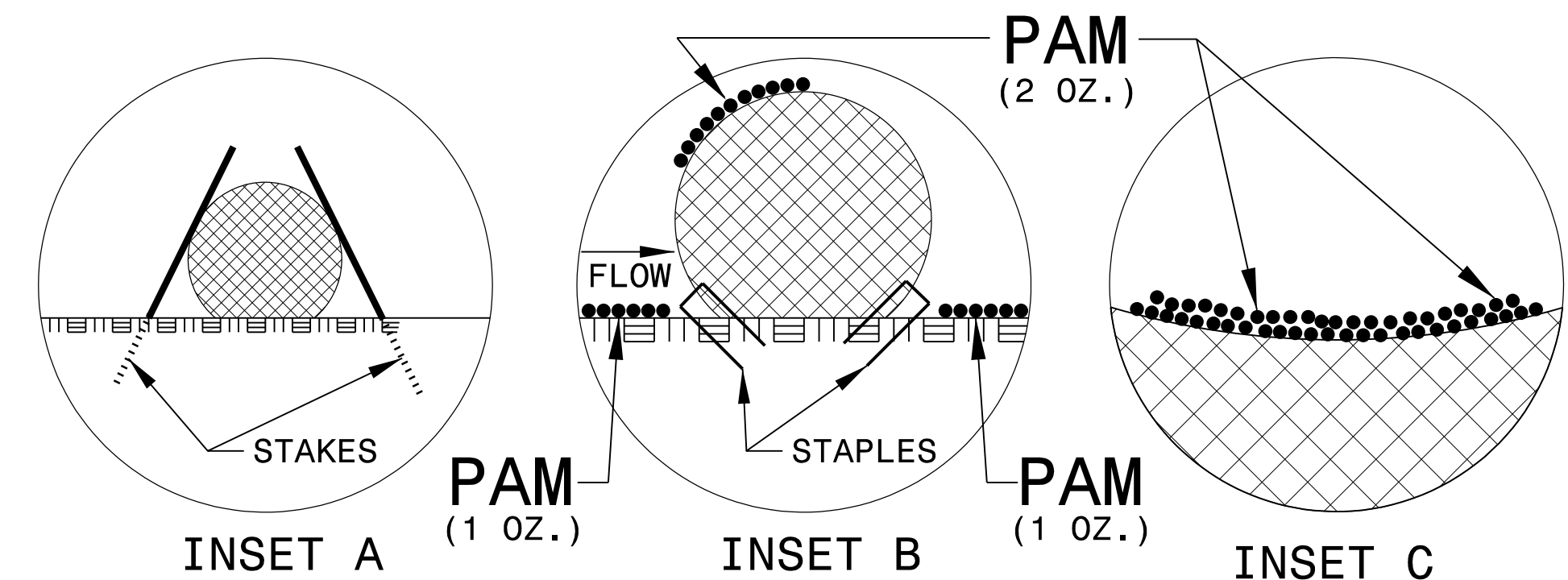
PROJECT REFERENCE NO. U-4405	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL



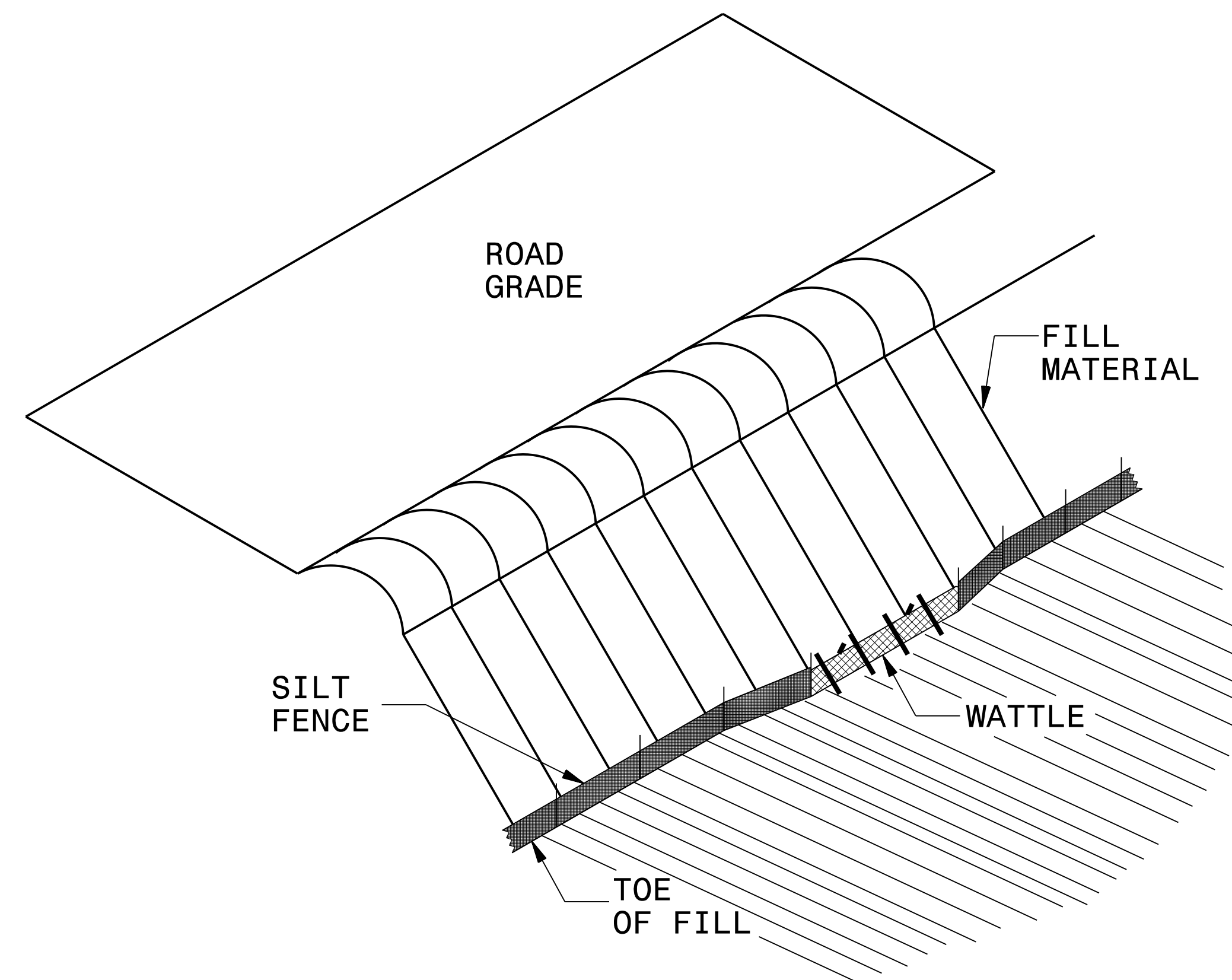
NOTES:

- 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.

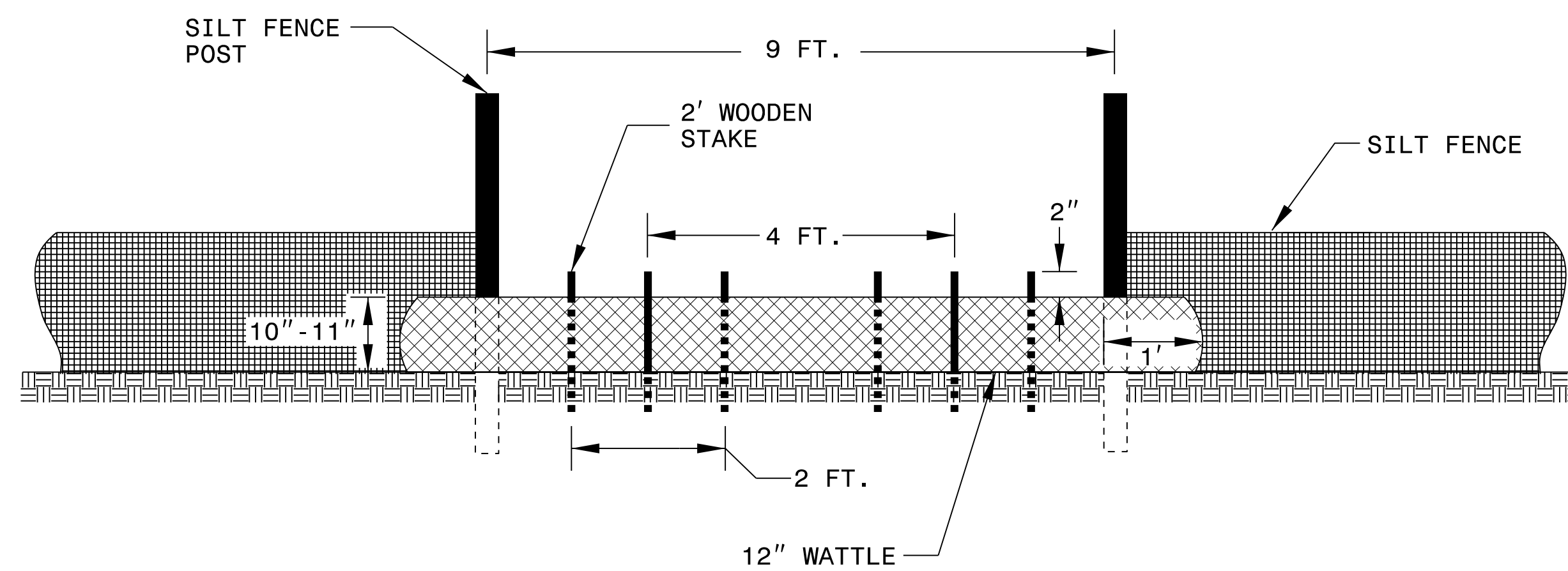


SILT FENCE COIR FIBER WATTLE BREAK DETAIL

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.

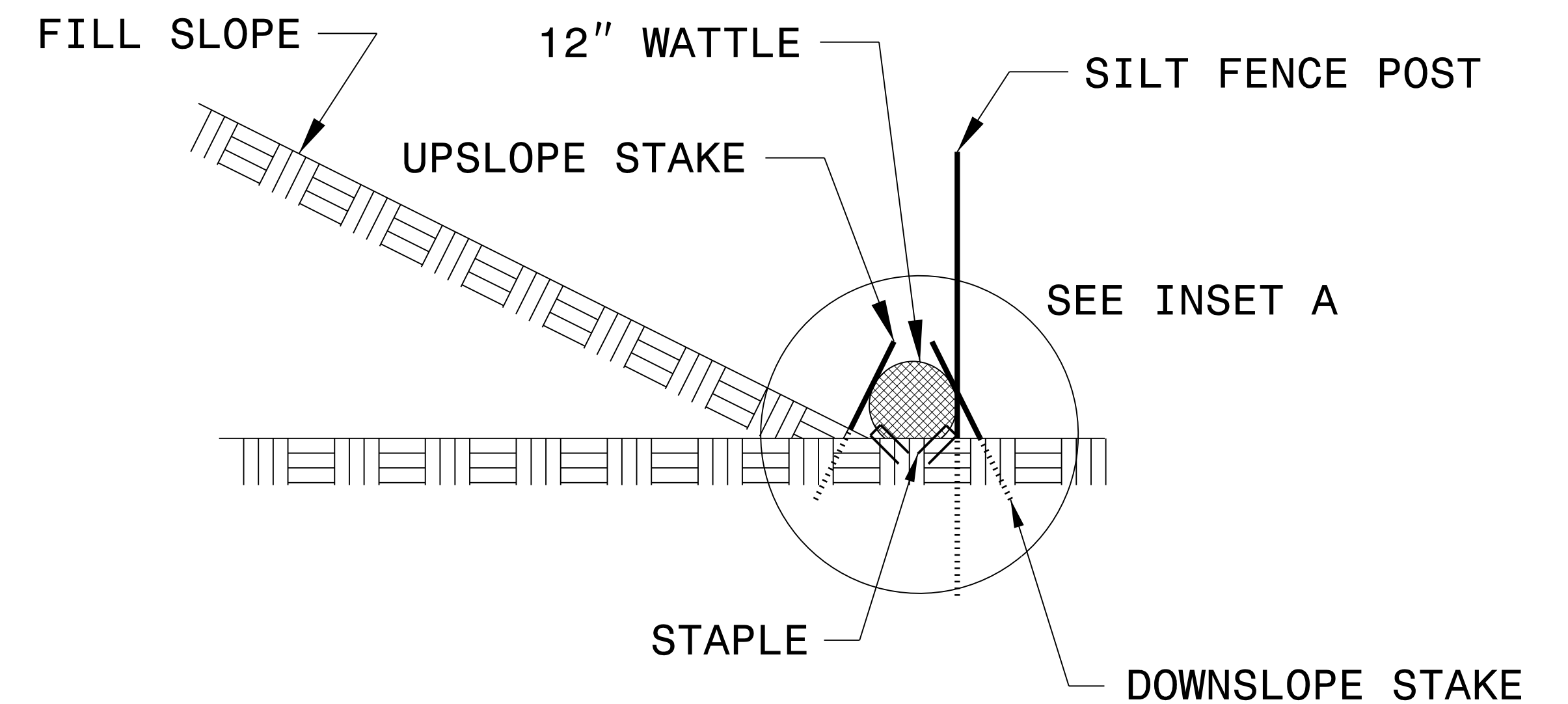
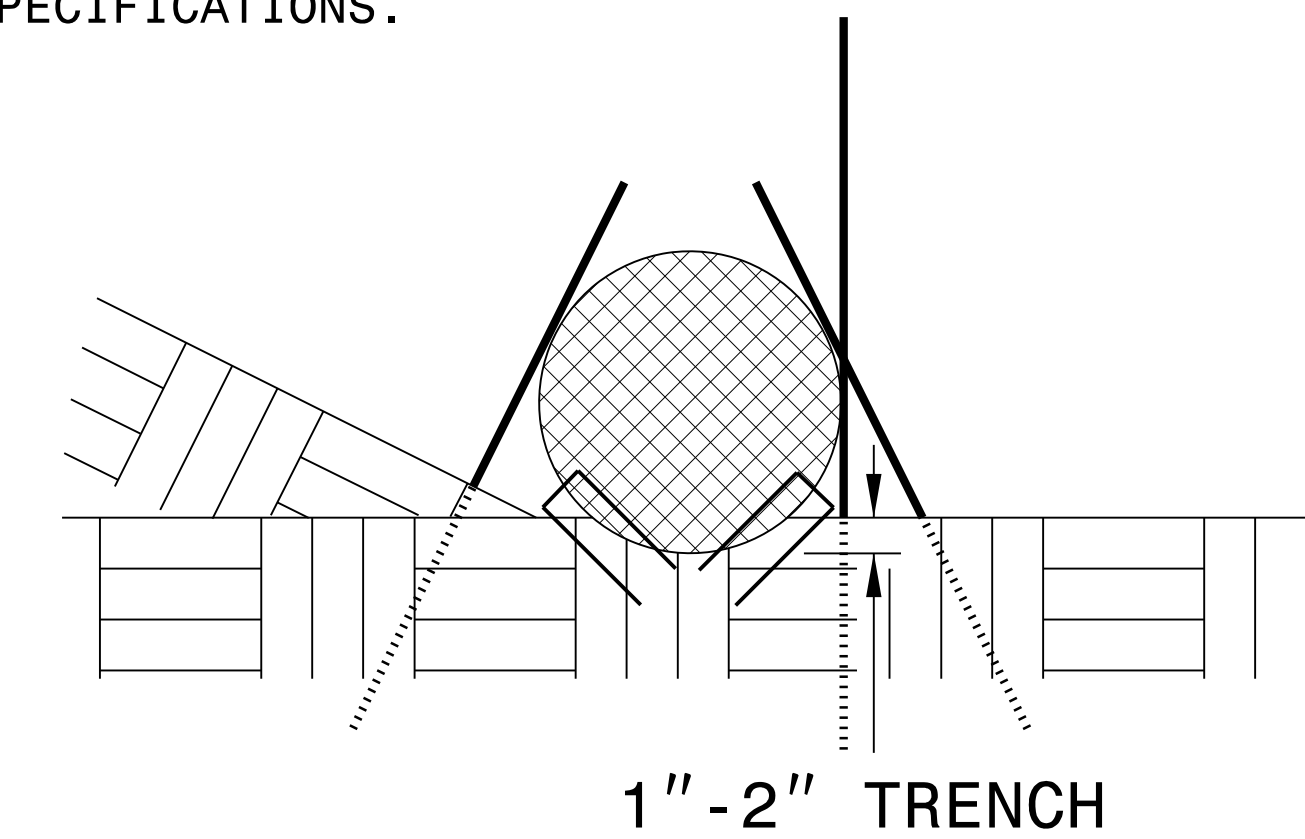
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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 (FT³), 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.

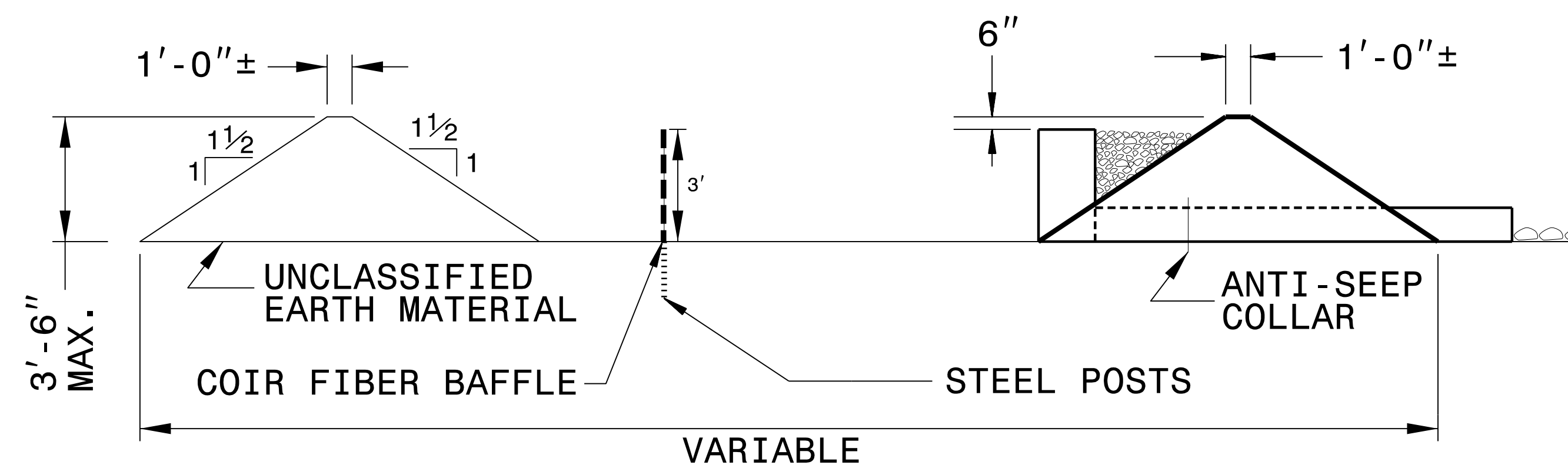
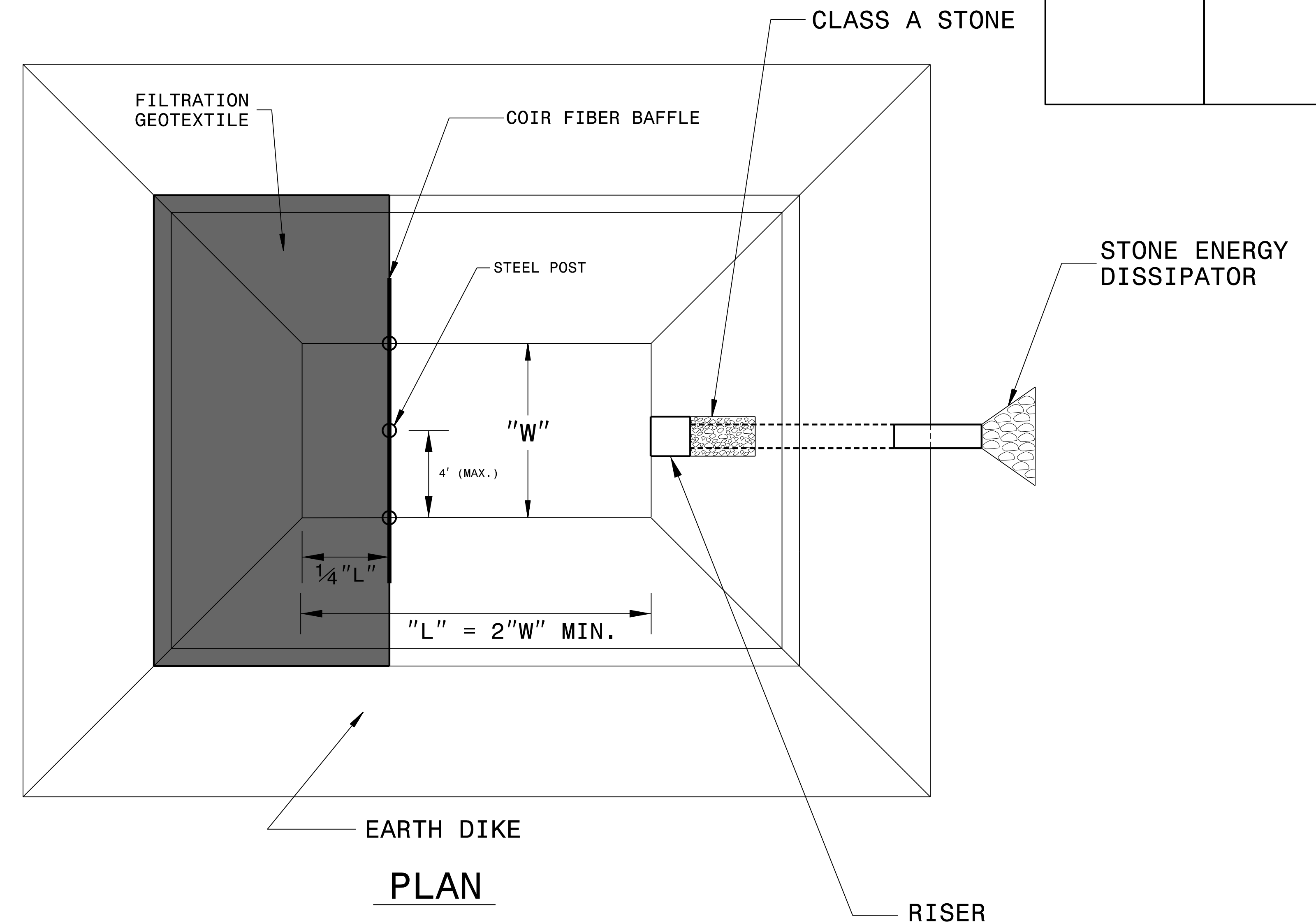
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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.

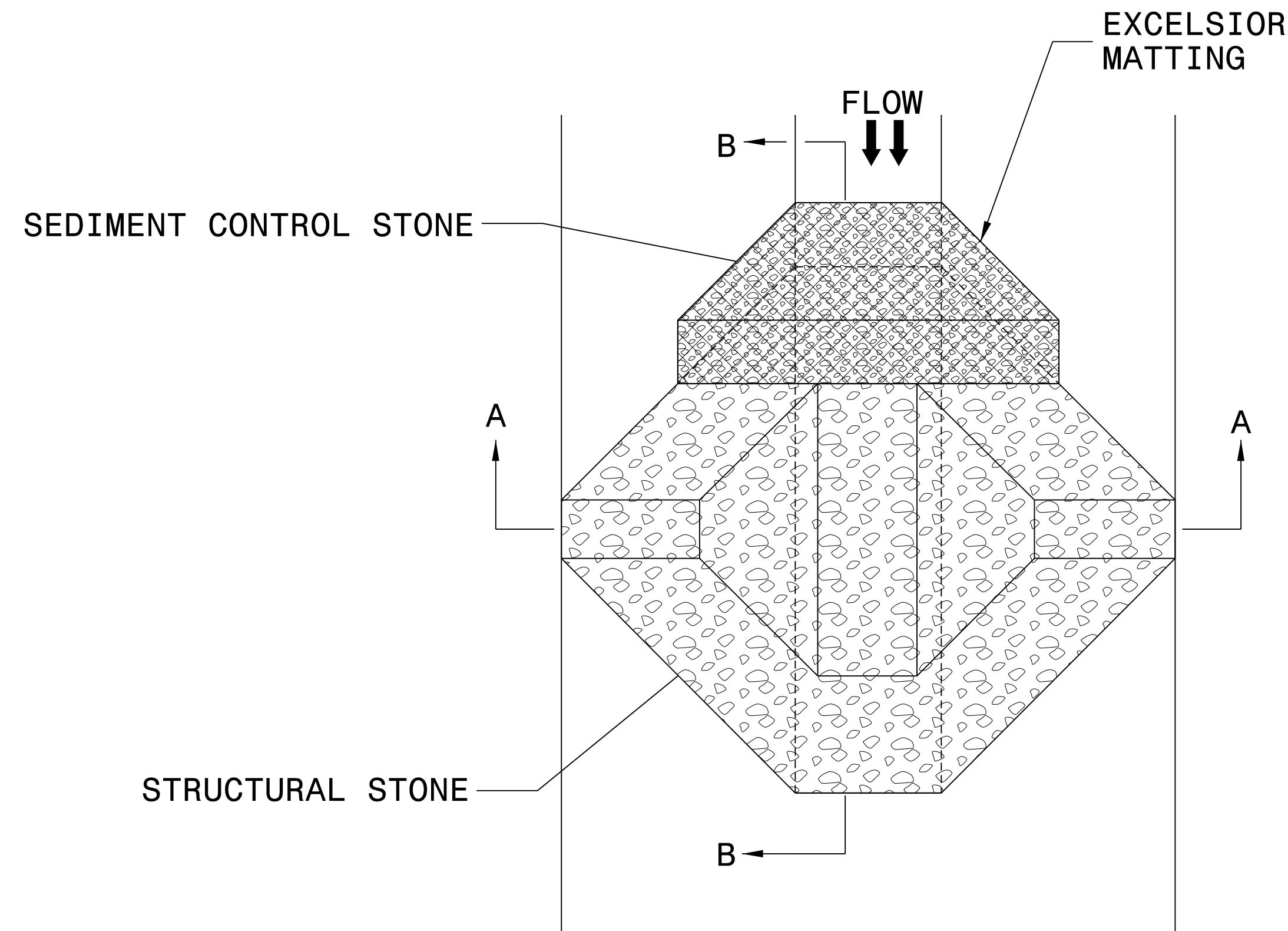


TYPICAL SECTION VIEW

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)



PLAN

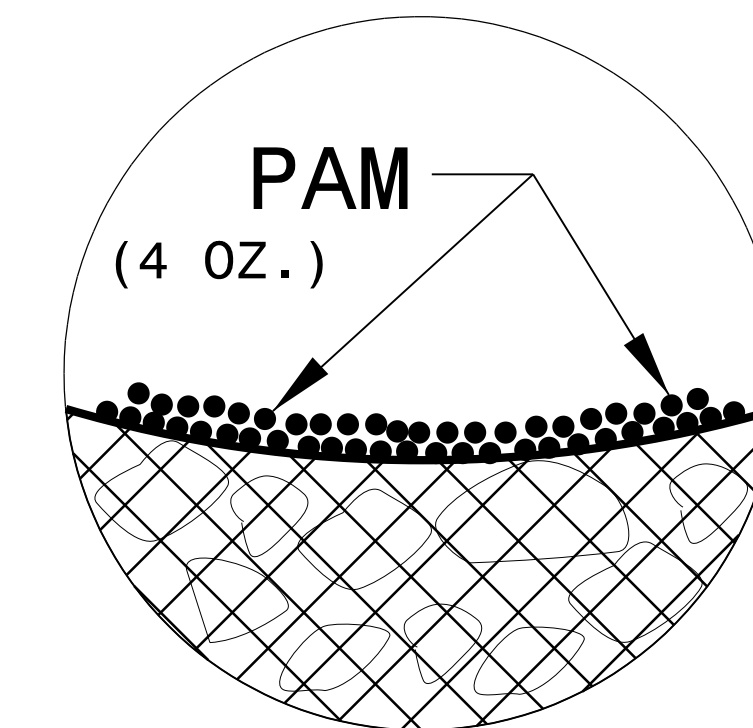
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

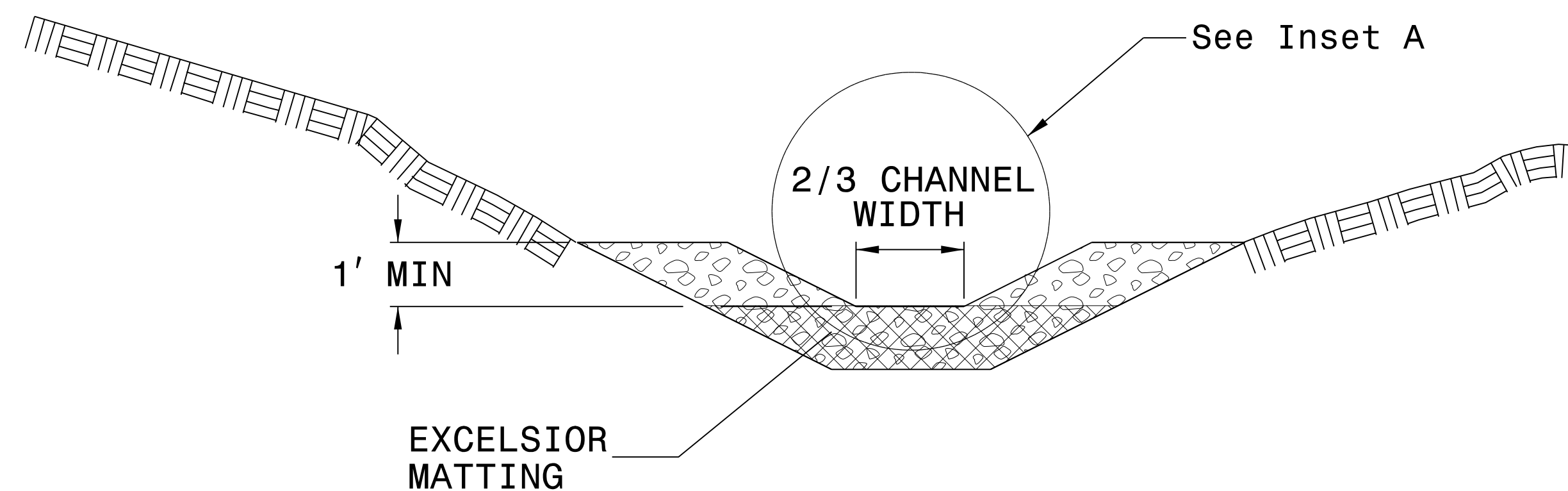
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

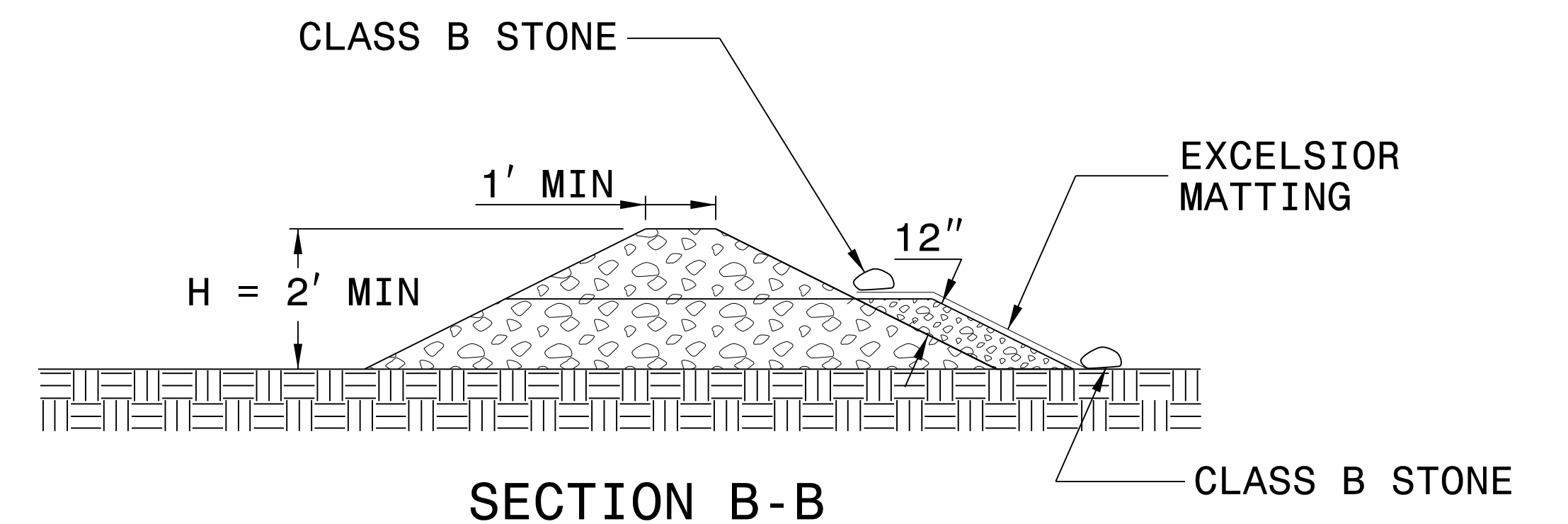
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4A

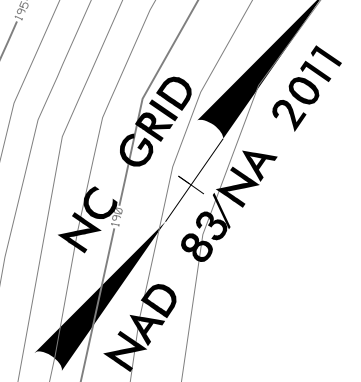
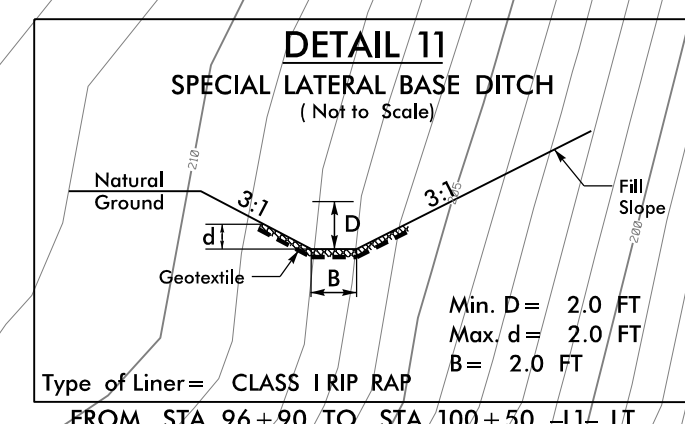
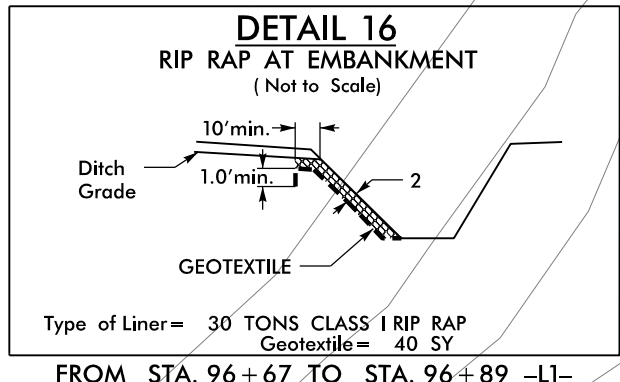
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

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.



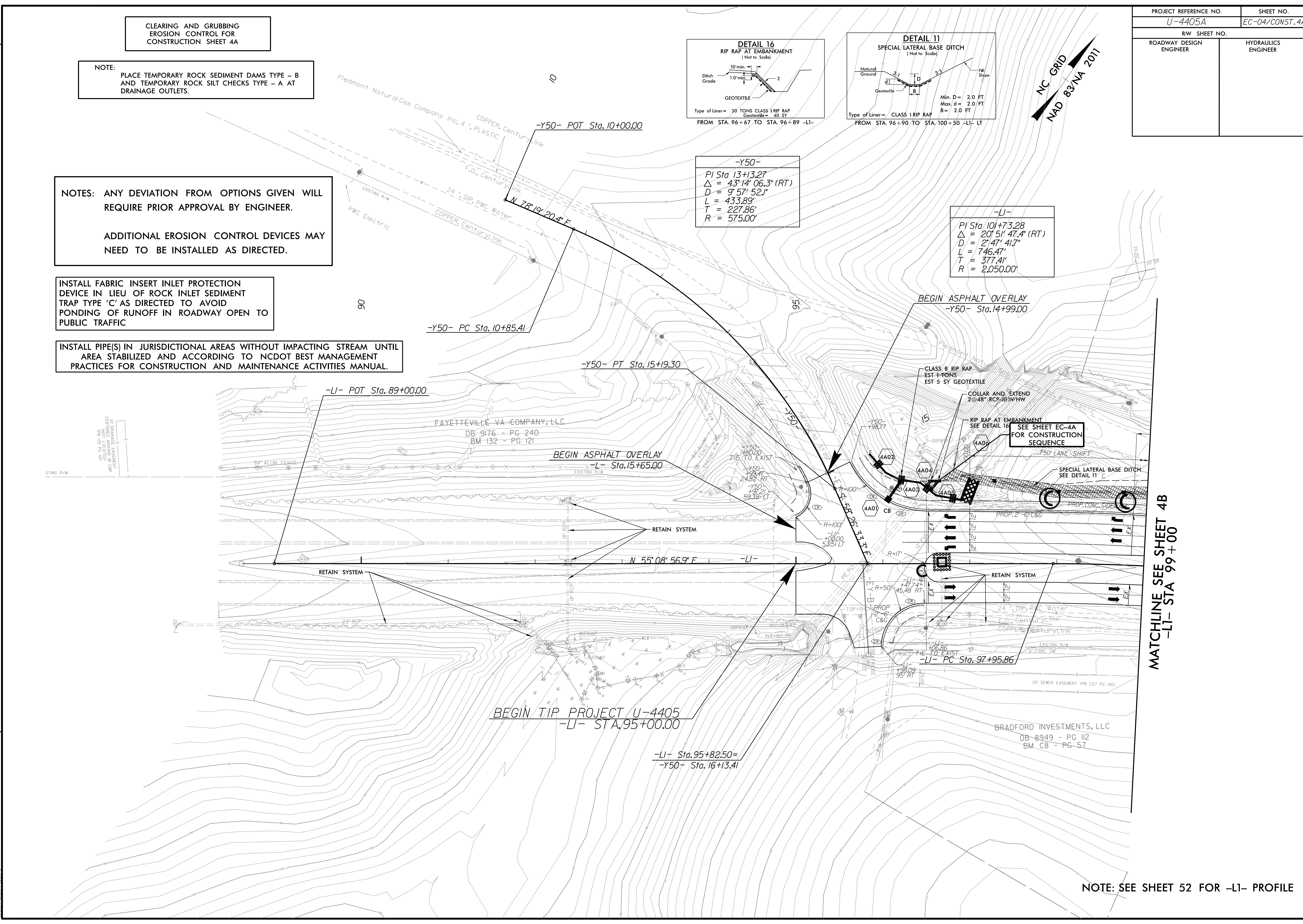
-Y50-
PI Sta 13+13.27
 $\Delta = 43^{\circ}14'06.3''$ (RT)
D = 9' 57" 52.1"
L = 433.89'
T = 227.86'
R = 575.00'

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

8/17/99

REVISIONS

7/6/2021
U-4405_REU_EC_psh_04A.dgn



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

NOTE: SEE SHEET 52 FOR -LI- PROFILE

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

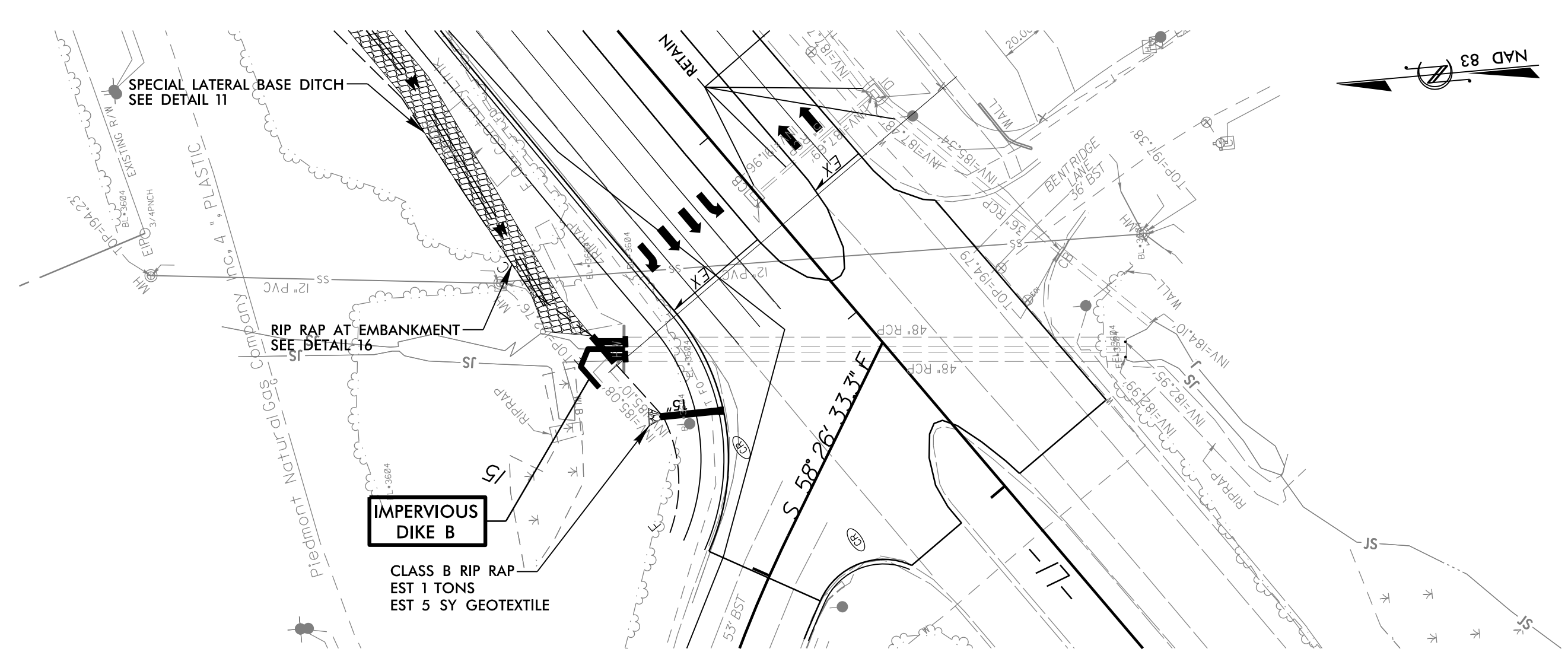
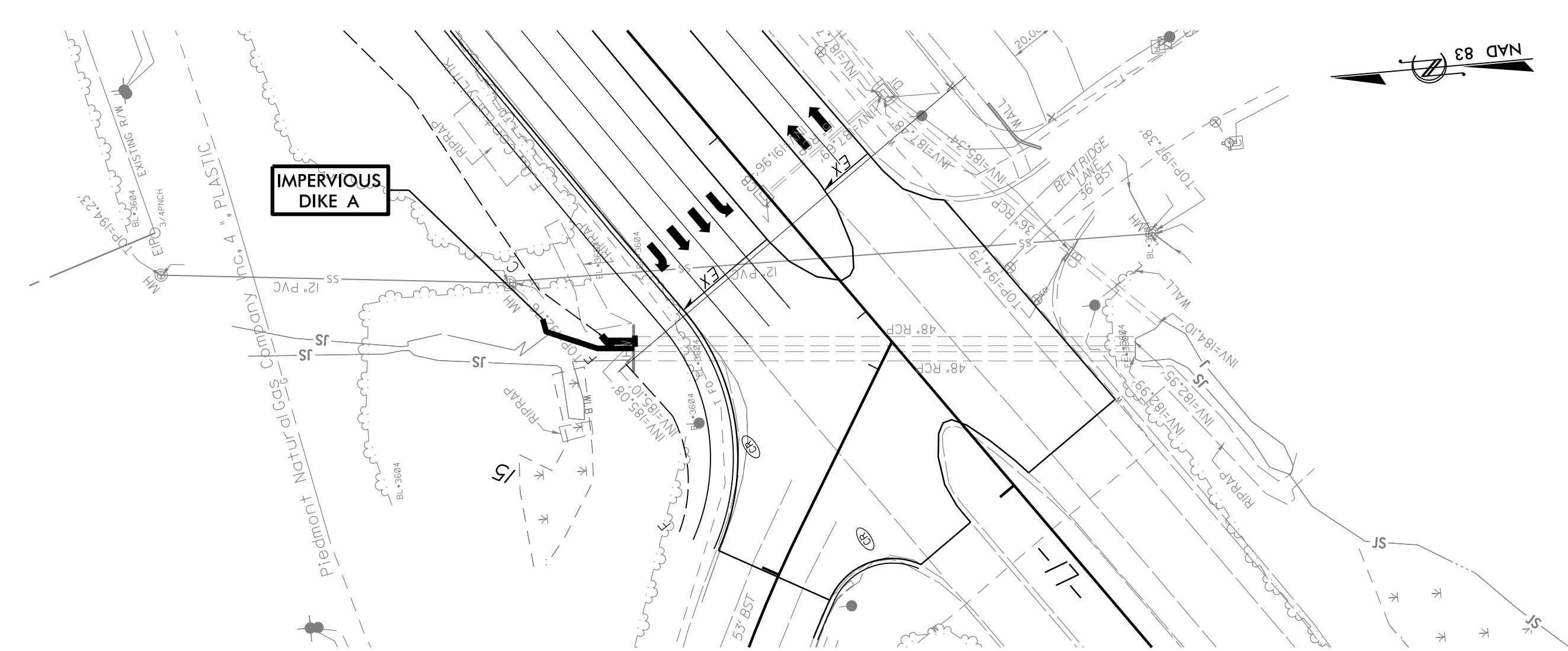
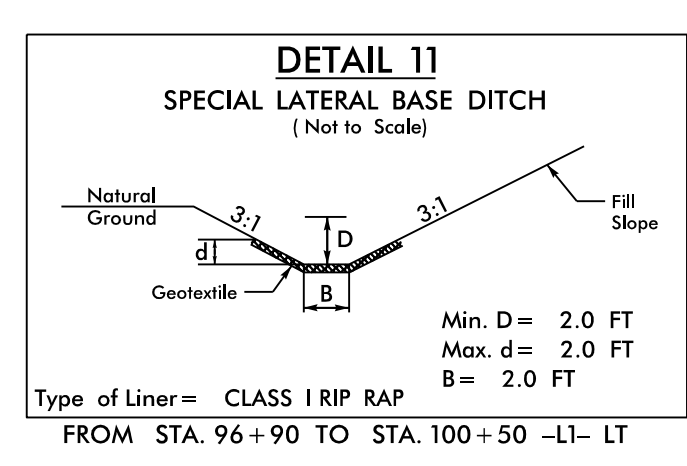
CULVERT CONSTRUCTION SEQUENCE STA. 95 + 79 -L1-

PHASE I

1. INSTALL SPECIAL STILLING BASIN(S) AS NEEDED.
2. INSTALL IMPERVIOUS DIKE A AND DIVERT WATER THROUGH THE EXISTING 48" RCP WEST BARREL.
3. INSTALL COLLAR AND EXTEND 48" RCP WITH HEADWALL FOR THE EAST BARREL.
4. PROCEED TO PHASE II.

PHASE II

9. REMOVE IMPERVIOUS DIKE A.
10. INSTALL IMPERVIOUS DIKE B AND DIVERT WATER THROUGH THE 48" RCP EAST BARREL.
11. INSTALL COLLAR AND EXTEND 48" RCP WITH HEADWALL FOR THE WEST BARREL.
12. REMOVE IMPERVIOUS DIKE B AND ANY REMAINING SPECIAL STILLING BASIN(S).
13. COMPLETE ROADWAY.

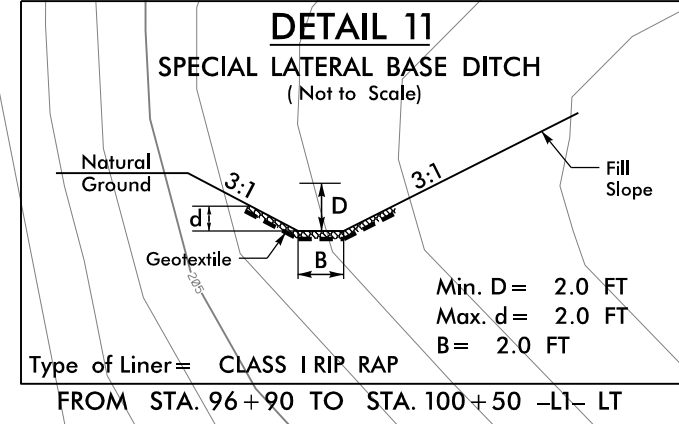


PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-05/CONST. 4B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4B

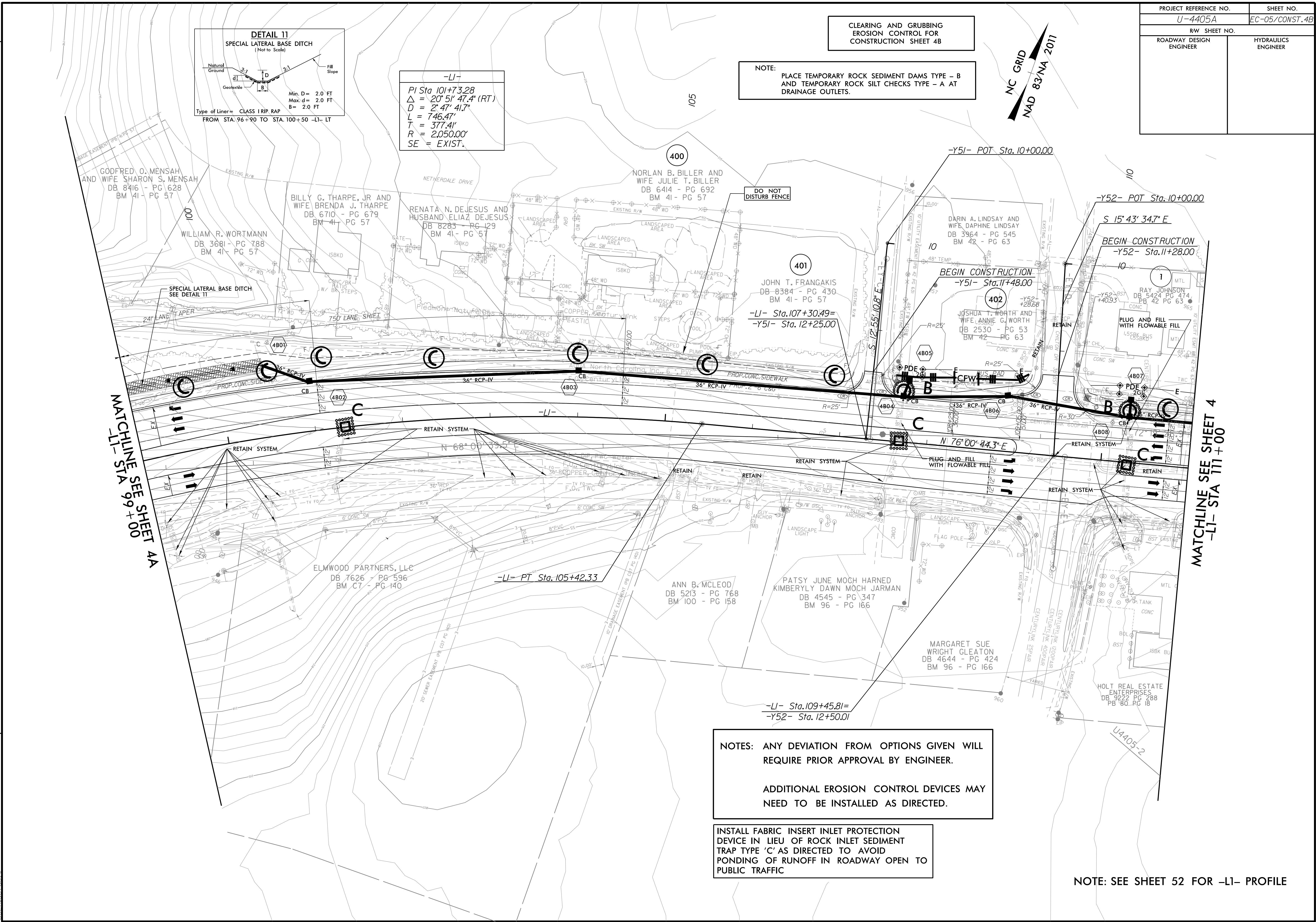
NC GRID
NAD 83/NA 2011

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



-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'
SE = EXIST.

8/17/99
7/6/2021
U4405-REV.UC_psh_04B.dgn
USF



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 -LI- PROFILE

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

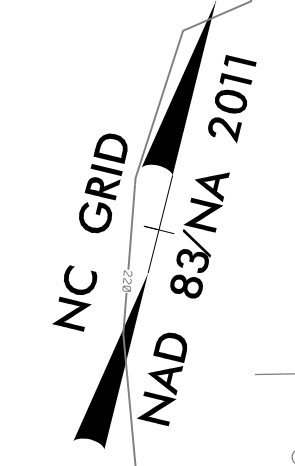
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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

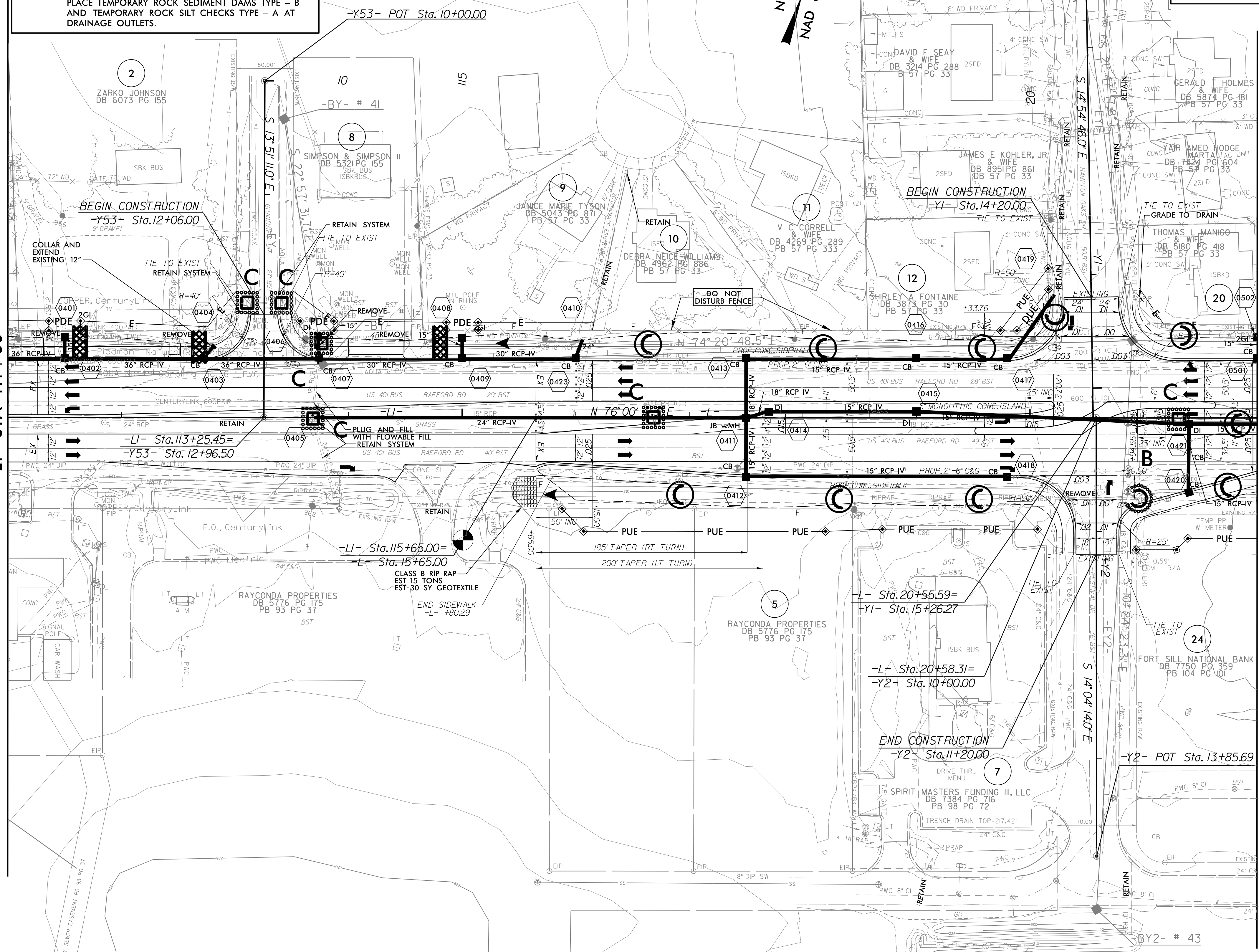
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 04

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



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

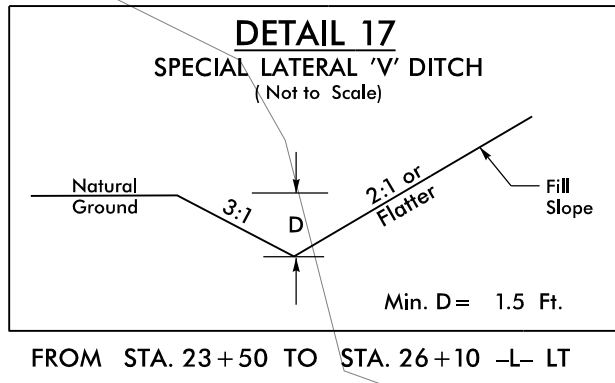
REVISIONS

8/17/99

7/6/2021
U:\4405\REV\EC_psh_04_C.G.dgn
US:Eric

PROP CONC SIDEWALK

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	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

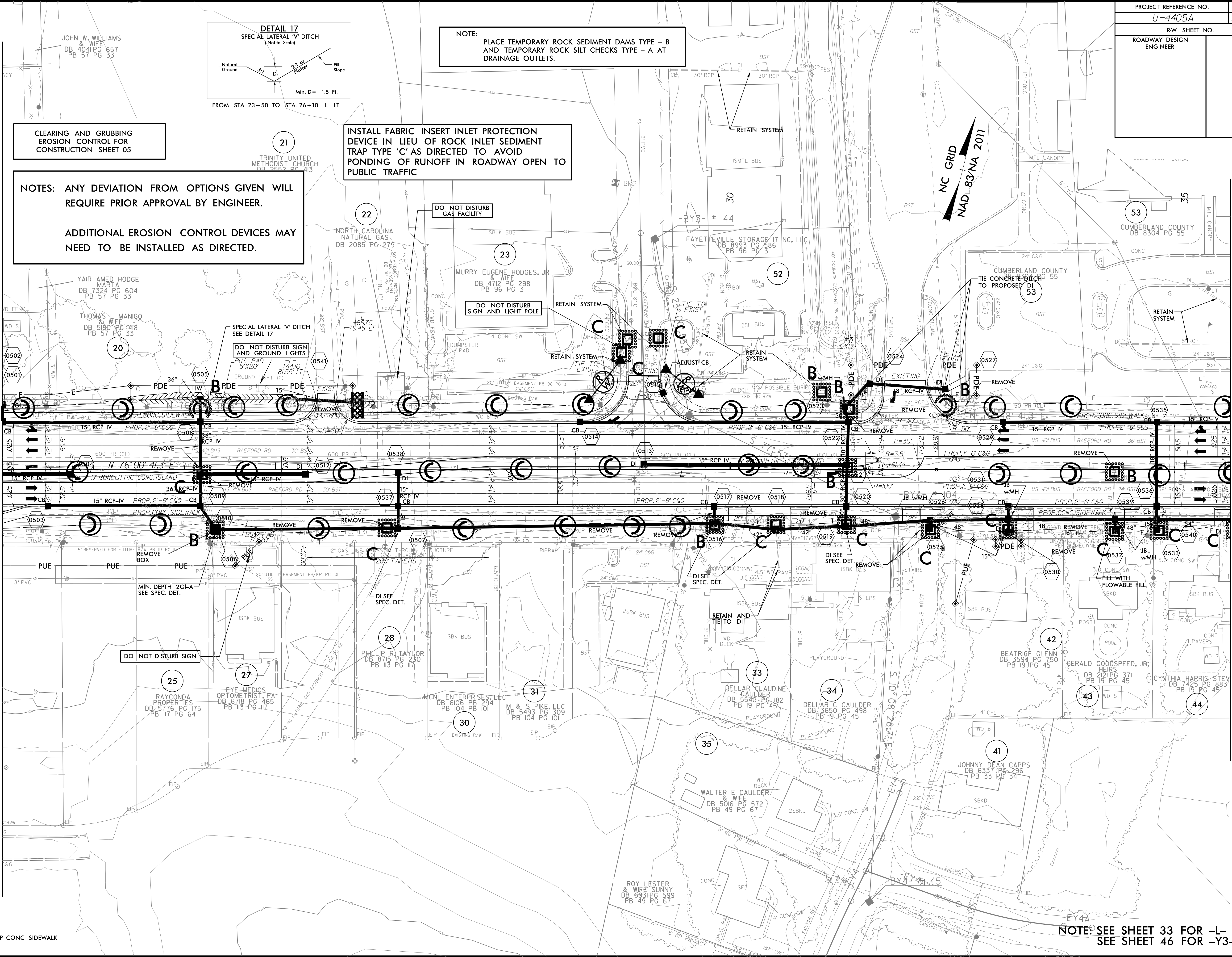
MATCHLINE SEE SHEET 4
-L- STA 22 + 00

MATCHLINE SEE SHEET 6
-L- STA 35 + 50

8/17/99
7/6/2021
U:\Projects\4405_REU_EC_psh_05_CG.dgn
15:48:11

PROF CONC SIDEWALK

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



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

NC GRID
NAD 83/NA 2011

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.

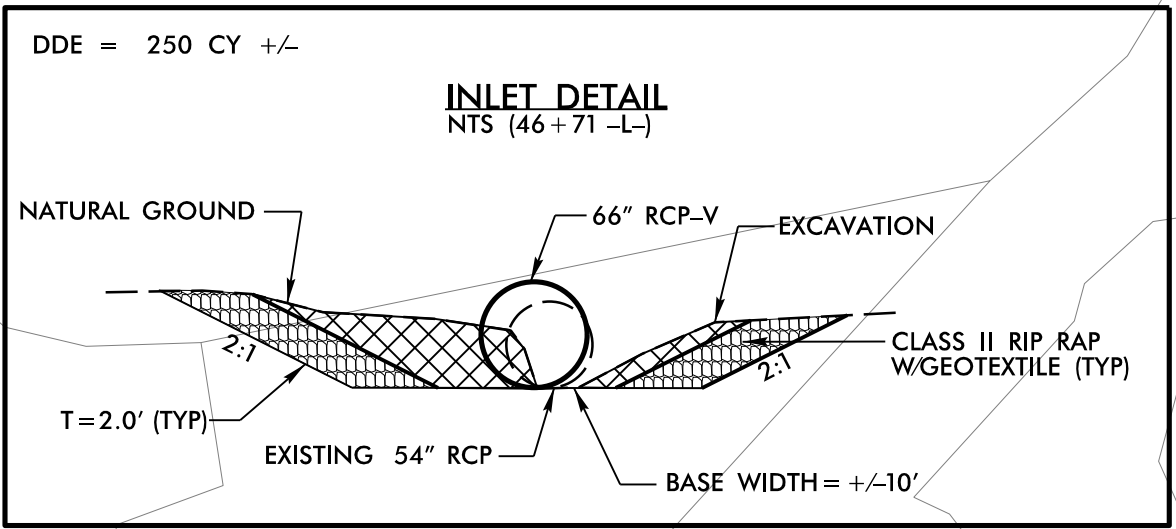
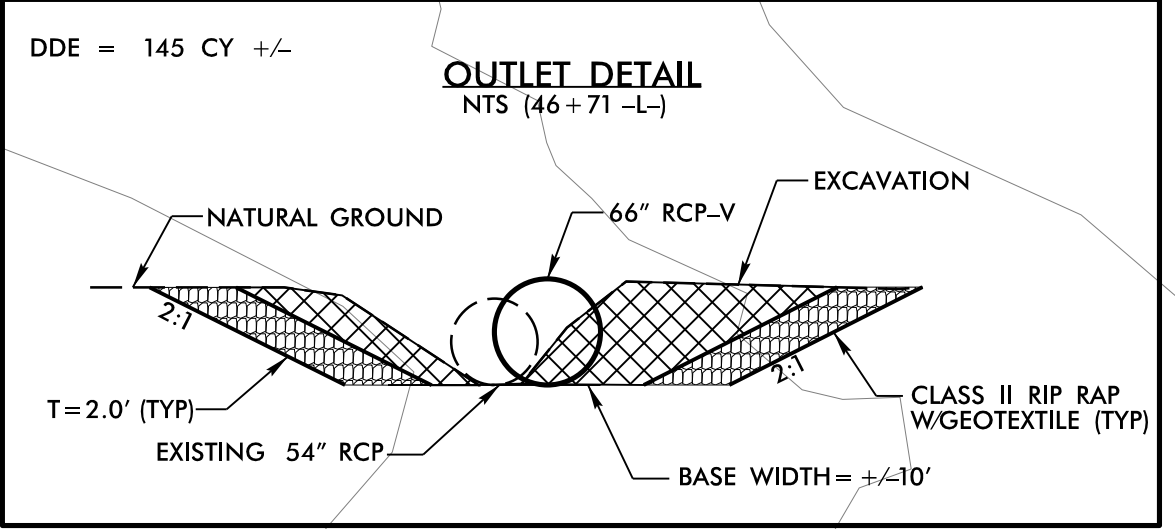
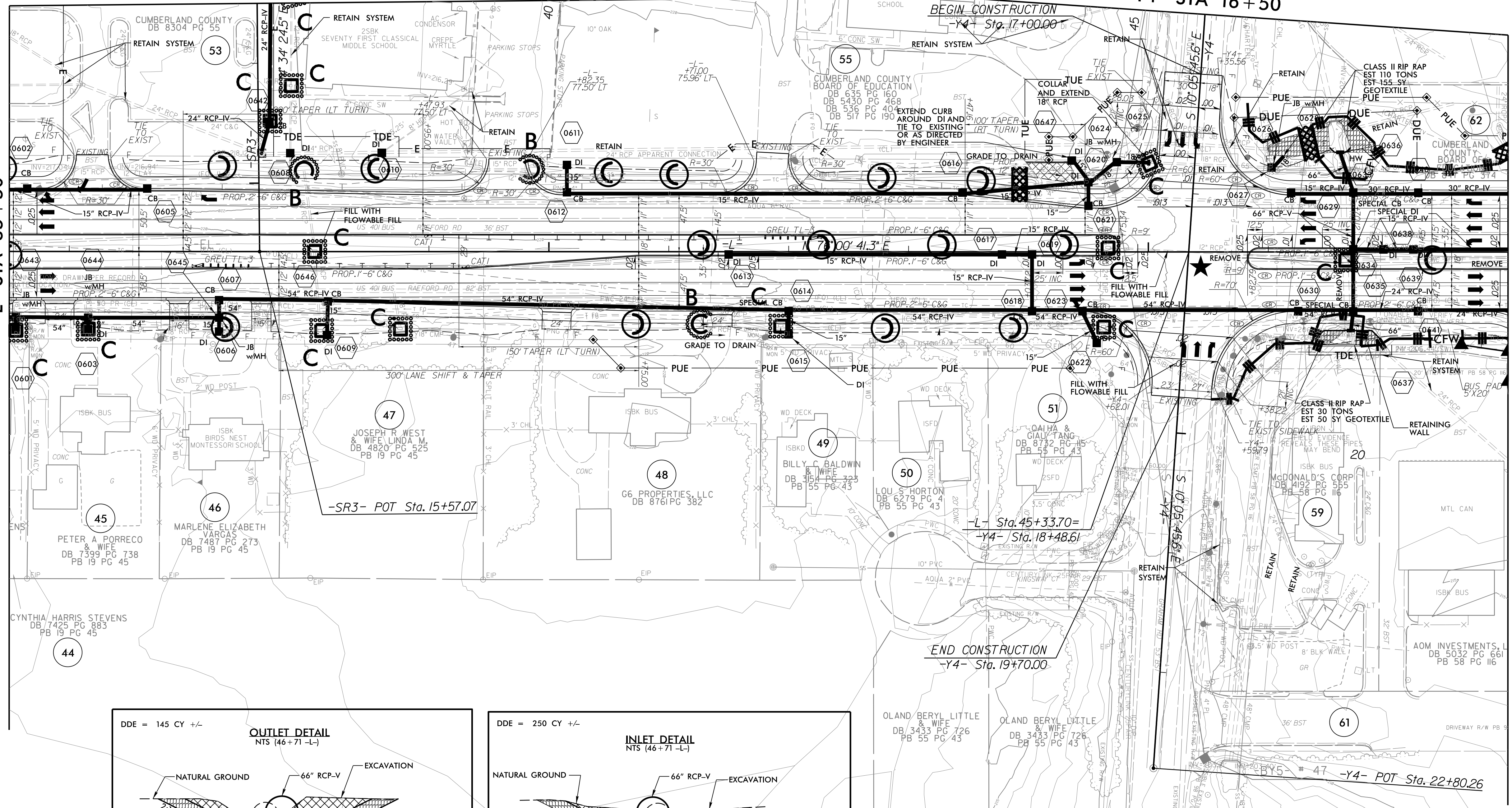
INSTALL FABRIC INSERT INLET PROTECTION
DEVICE IN LIEU OF ROCK INLET SEDIMENT
TRAP TYPE 'C' AS DIRECTED TO AVOID
PONDING OF RUNOFF IN ROADWAY OPEN TO
PUBLIC TRAFFIC

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

8/17/99

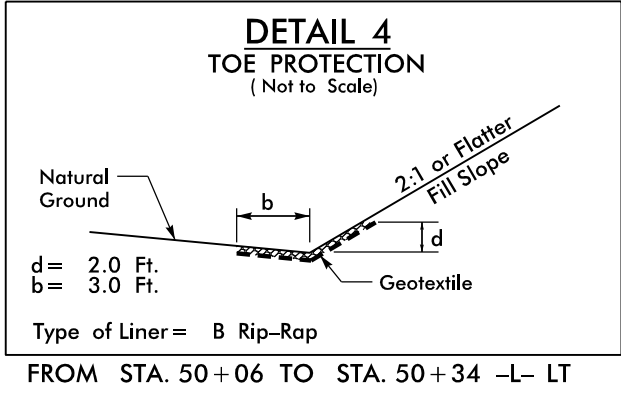
7/6/2021
U-4405-REV-EC-psd-CG.dgn
JSE/ELC/MLT

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

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

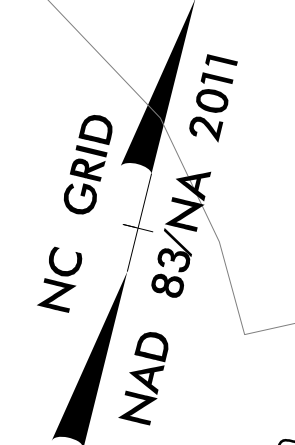
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

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

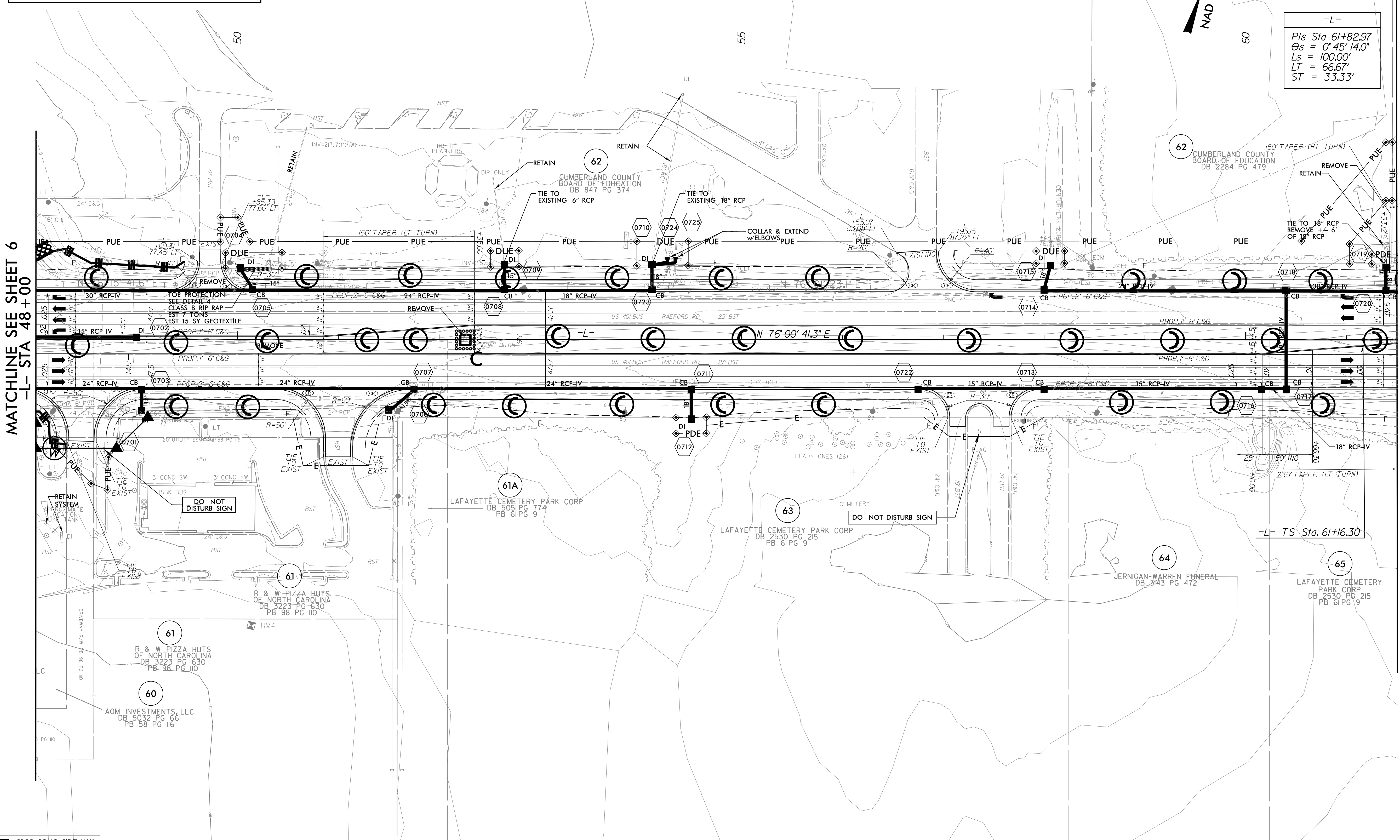


NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

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

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 FOR -L- PROFILE

REVISIONS

8/17/99
7/6/2021
I:\Projects\4405\REV\EC_psh_07_C.G.dgn

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

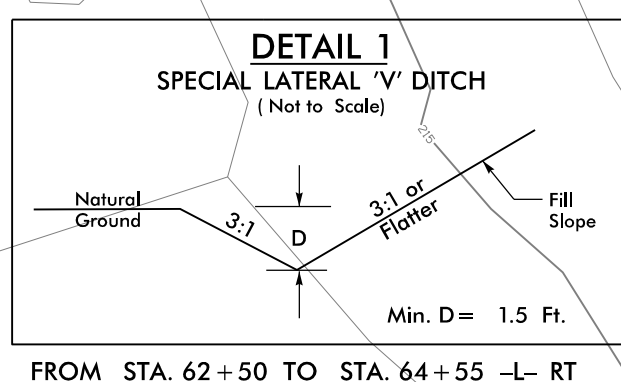
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 08

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

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

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



NC GRID
NAD 83/NA 2011

MATCHLINE SEE SHEET 7
-L- STA 61+50

MATCHLINE SEE SHEET 9
-L- STA 74+75

8/17/99

REVISIONS

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

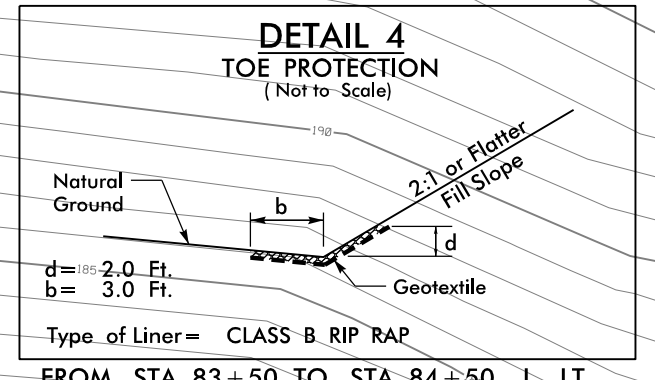
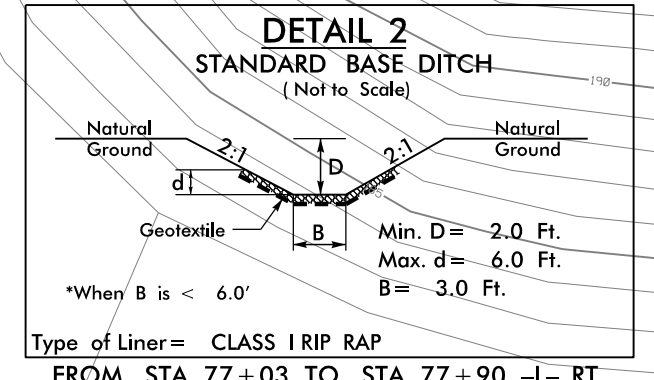
7/6/2021
U:\4405\REV\EC_psh_08_CG.dgn
JSE

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 09

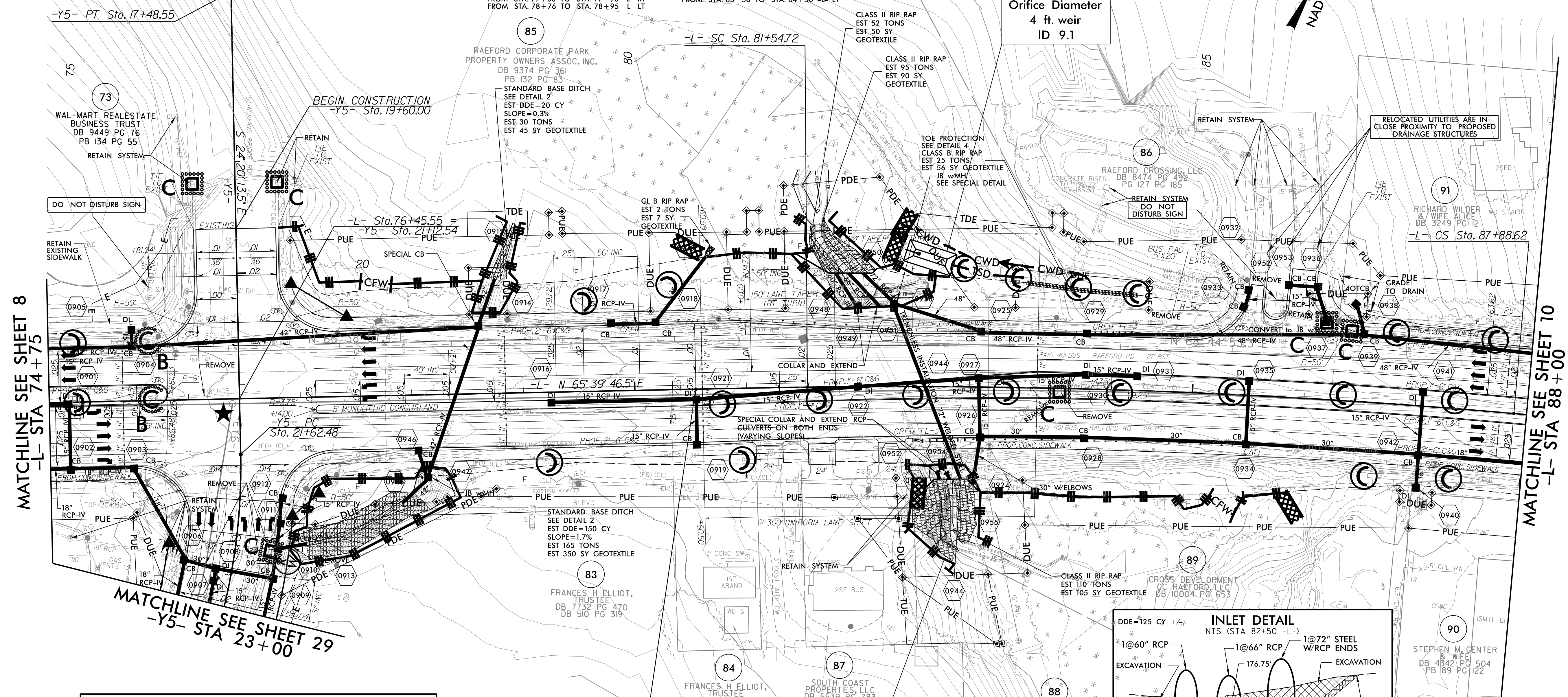
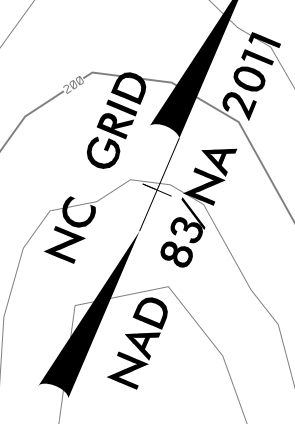
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

-Y5-
PI Sta 15+94.46
Δ = 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
Θs = 0° 27' 17.0"
Ls = 100.00'
LT = 66.67'
ST = 33.33'
PI Sta 84+71.94
Δ = 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
Θs = 0° 27' 17.0"
Ls = 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

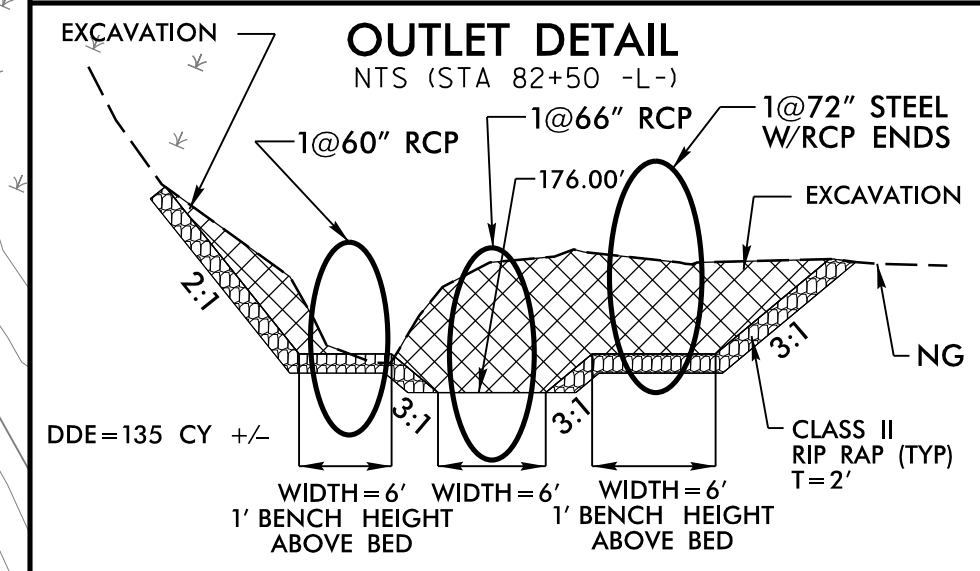
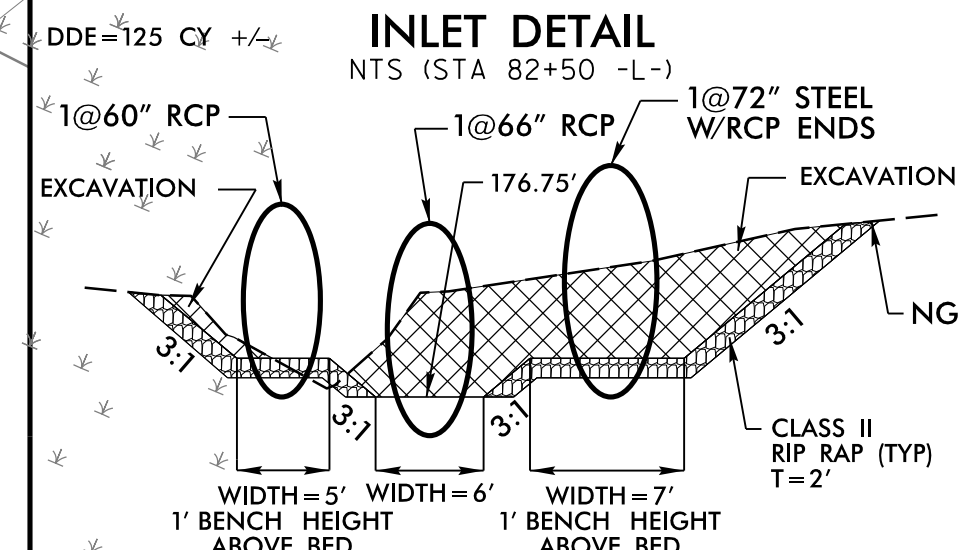
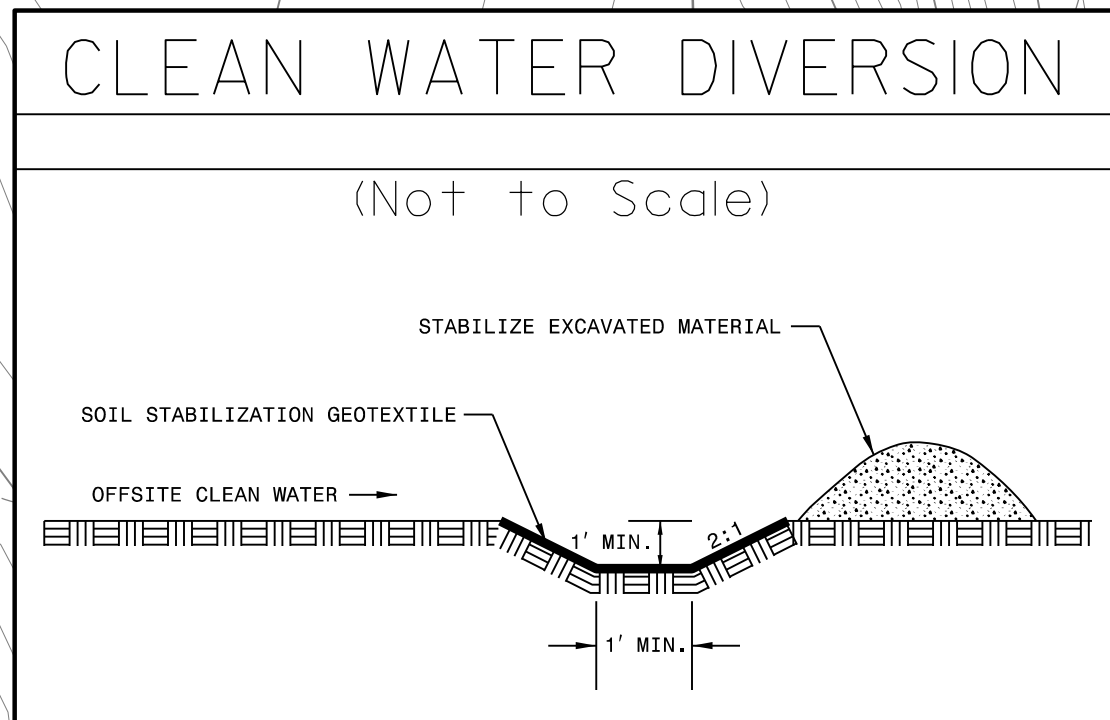
MATCHLINE SEE SHEET 10
-L- STA 88+00

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
Δ = 25° 18' 13.3" (RT)
D = 10' 44" 58.8"
L = 235.39'
T = 119.65'
R = 533.00'
SE = 0.02



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

★ PROPOSED SIGNAL
— PROP CONC SIDEWALK

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

REVISIONS

7/6/2021 11:44:03 REV.LC_psh_09_CG.dgn 8/17/09

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

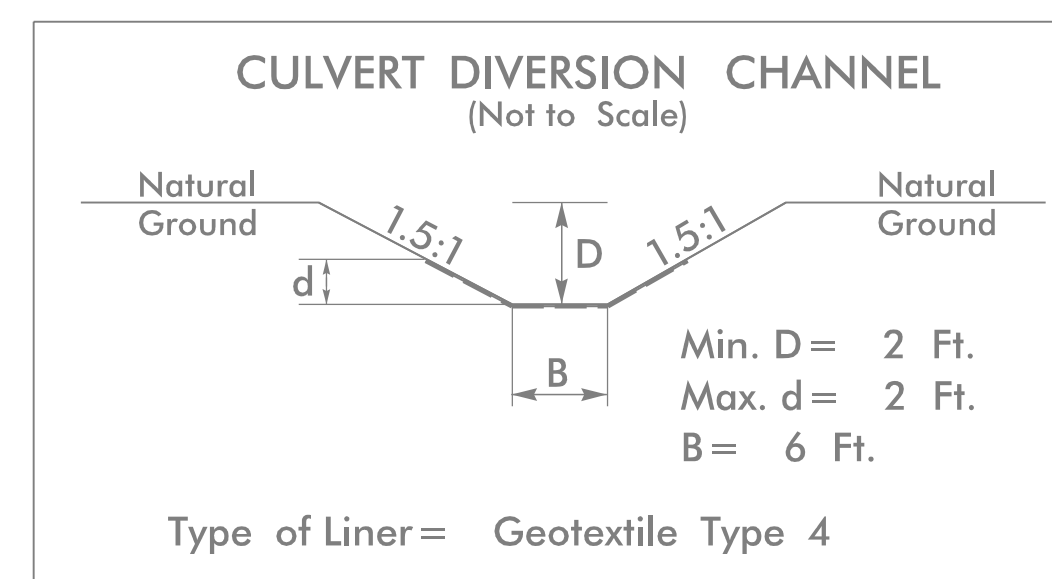
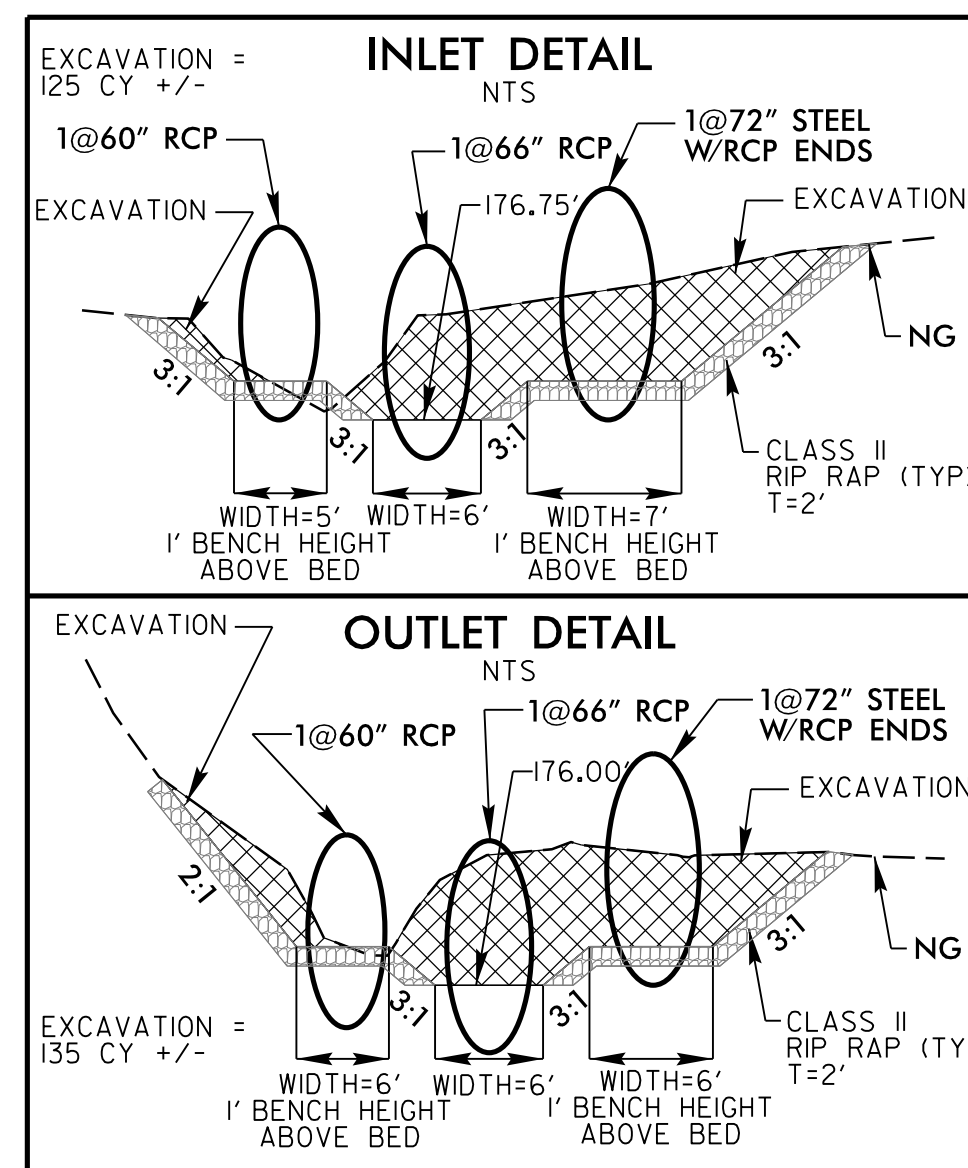
CULVERT CONSTRUCTION SEQUENCE STA. 82+48 -L-

PHASE I

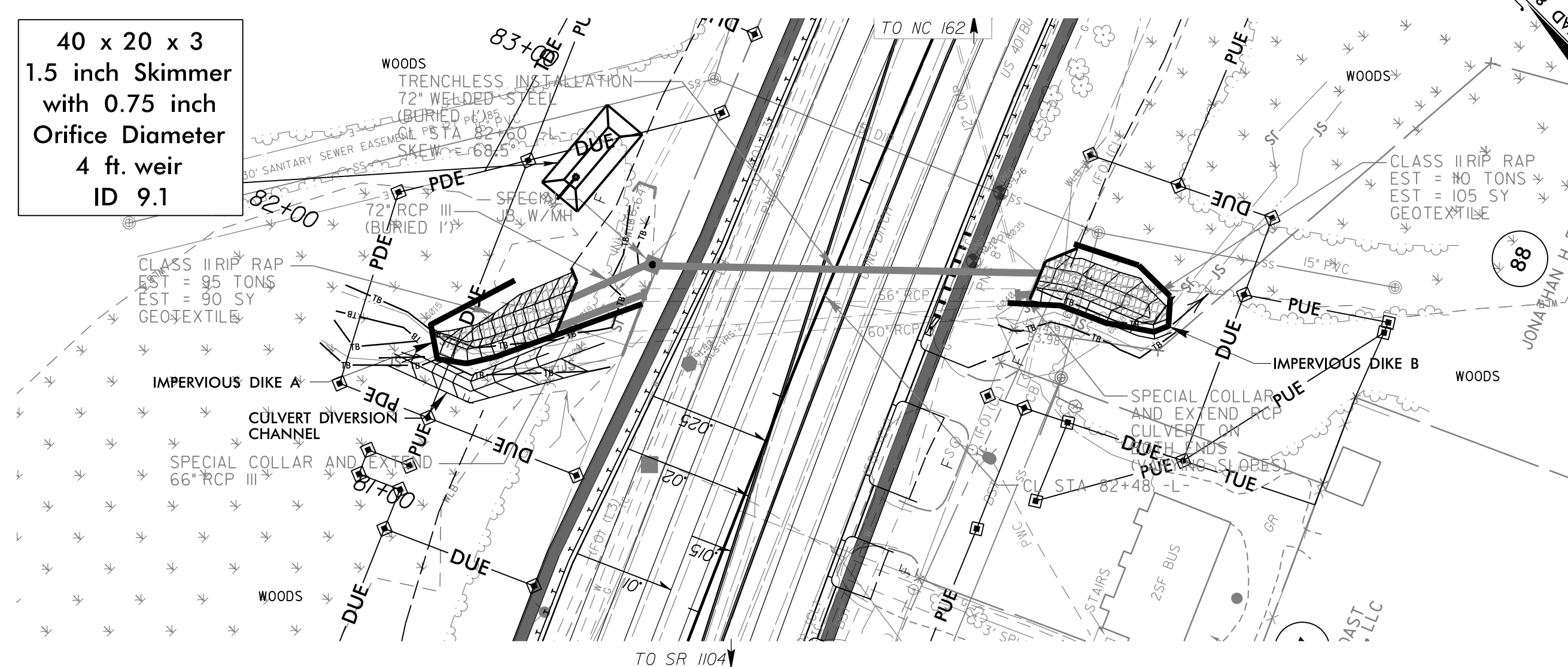
1. UTILIZE SKIMMER BASIN 9.1 AS STILLING BASIN UPSTREAM, AND SPECIAL STILLING BASIN(S) DOWNSTREAM.
2. CONSTRUCT IMPERVIOUS DIKES A AND B AND CULVERT DIVERSION CHANNEL
3. DIVERT WATER INTO CULVERT DIVERSION CHANNEL AND EXISTING 60" RCP
4. INSTALL 72" WELDED STEEL PIPE BY TRENCHLESS METHOD
5. CONSTRUCT 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

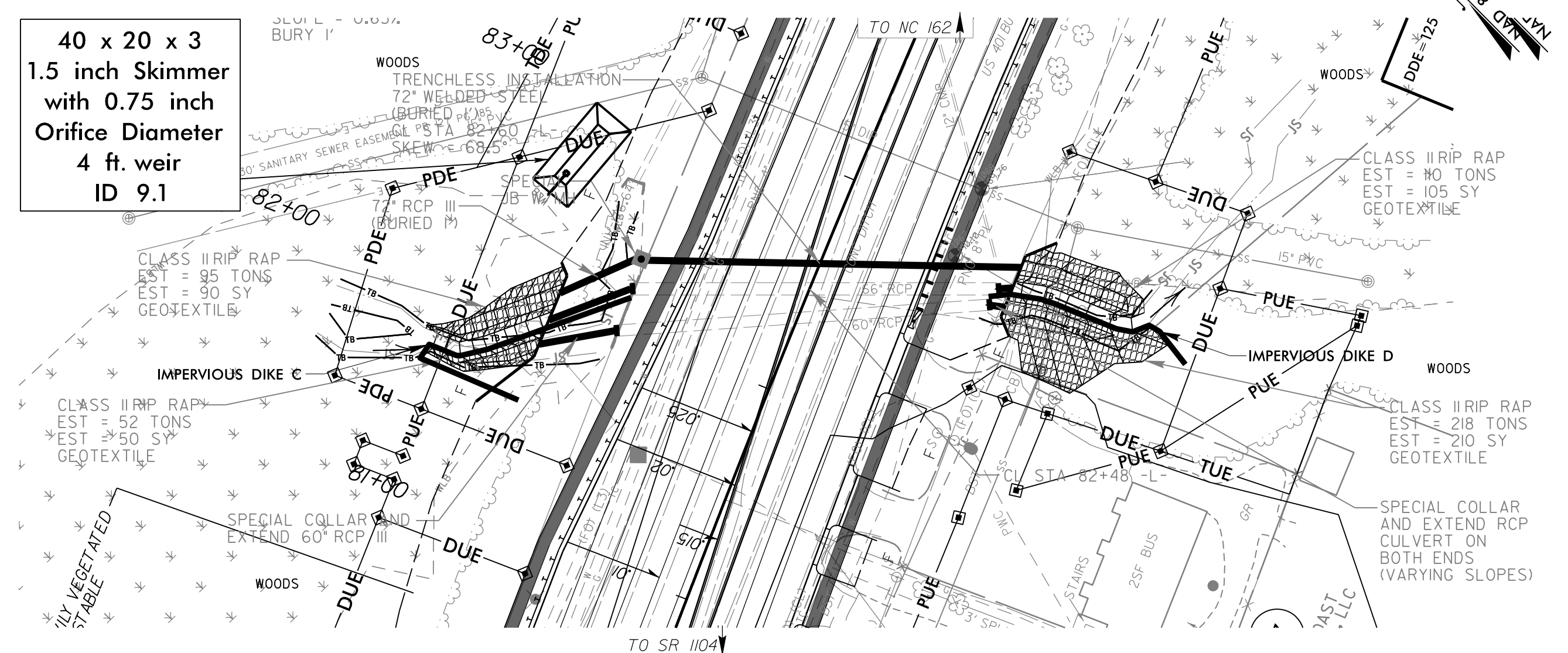
9. CONSTRUCT IMPERVIOUS DIKES C AND D
10. DIVERT FLOW INTO MAIN CHANNEL AND 66" RCP
11. CONSTRUCT WEST BANK UPSTREAM AND DOWNSTREAM
12. COLLAR AND EXTEND EXISTING 60" RCP ON BOTH ENDS
13. REMOVE IMPERVIOUS DIKES C AND D AND ANY REMAINING SPECIAL STILLING BASIN(S)
14. COMPLETE ROADWAY



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-4405A	SHEET NO. EC-13/CONST.10
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

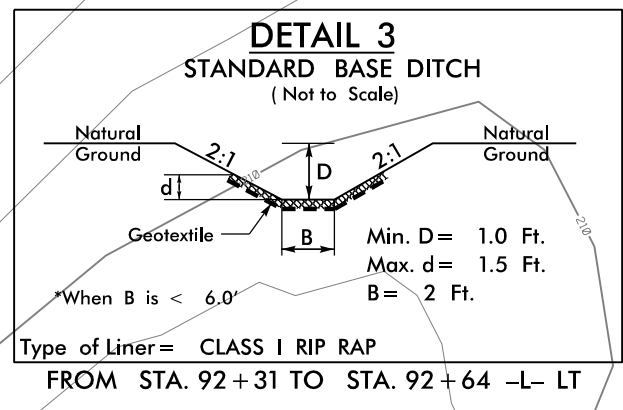
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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

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 10

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 88+21.95
 Os = 0' 27' 17.0"
 Ls = 100.00'
 LT = 66.67'
 ST = 33.33'

STANDARD BASE DITCH
 W/CLASS 1 RIP RAP
 SEE DETAIL 3
 EST 65 TONS
 EST 120 CY GEOTEXTILE
 EST DDE = 30 CY
 SLOPE = 6.0%

-Y7-
 PI Sta 12+57.36
 Δ = 20° 39' 00.6" (RT)
 D = 6' 30' 00.0"
 L = 317.69'
 T = 160.59'
 R = 881.47'

-Y6-
 PI Sta 12+56.41
 Δ = 10° 40' 14.2" (LT)
 D = 11' 01' 06.3"
 L = 96.84'
 T = 48.56'
 R = 520.00'

MATCHLINE SEE SHEET 9
-L- STA 88+00

MATCHLINE SEE SHEET 11
-L- STA 101+50

8/17/99
7/6/2021
U-4405-REV.UC-psh.10.CG.dgn
10:58:11 AM

★ 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 35&36 FOR -L- PROFILE
 SEE SHEET 47 FOR -Y6- PROFILE
 SEE SHEET 47 FOR -Y7- PROFILE

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 11

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.

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

8/17/99

REVISIONS

MATCHLINE SEE SHEET 10
-L- STA 101+50

MATCHLINE SEE SHEET 12
-L- STA 115+00

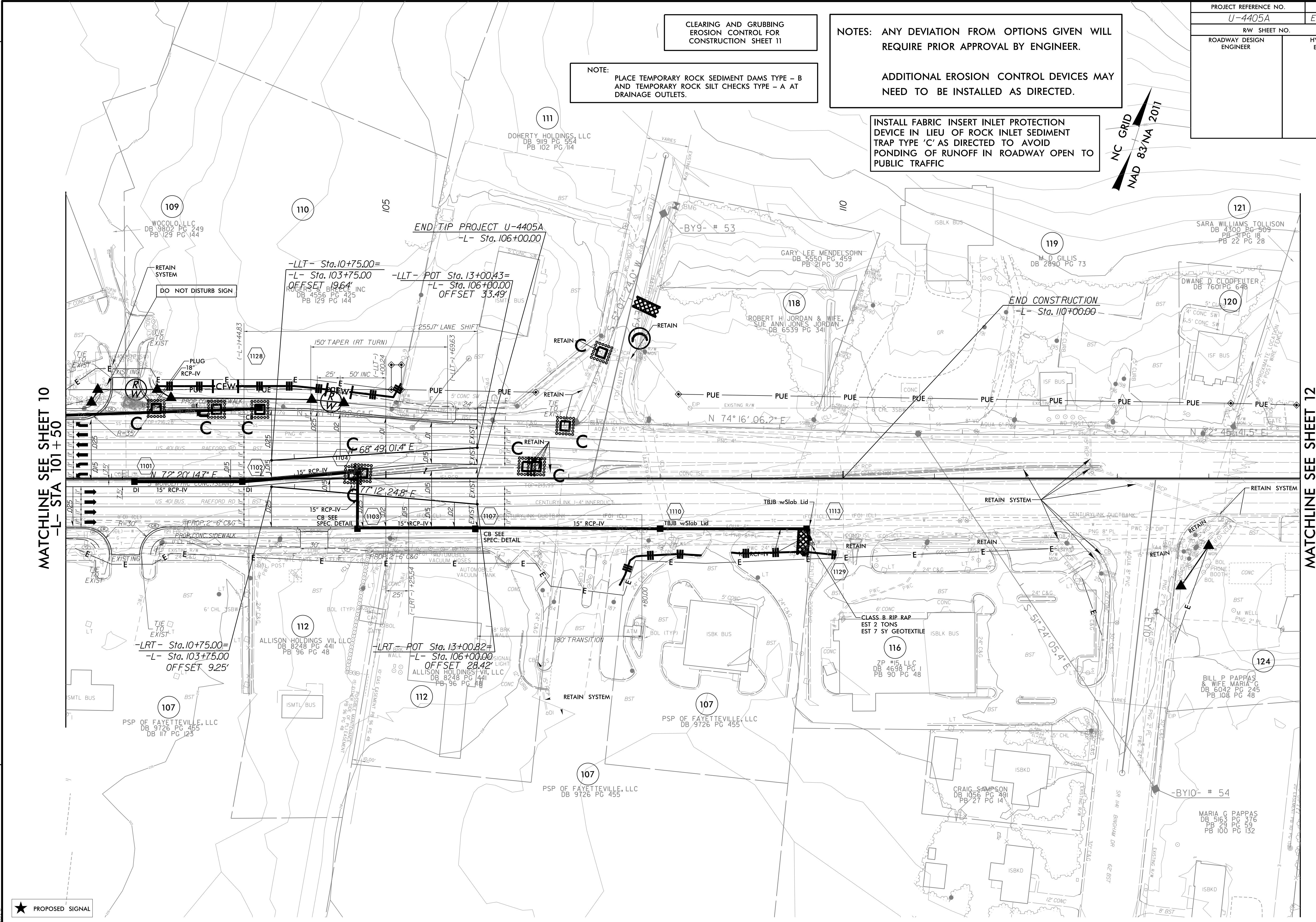
★ PROPOSED SIGNAL

▬ 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 36 FOR -L- PROFILE
SEE SHEET 47 FOR -Y9- PROFILE
SEE SHEET 47 FOR -Y10- PROFILE

7/6/2021
U-4405A-REV-EC_psh.11-CG.dgn
11:51:11 AM



PROJECT REFERENCE NO. U-4405A	SHEET NO. EC-15/CONST.28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 28

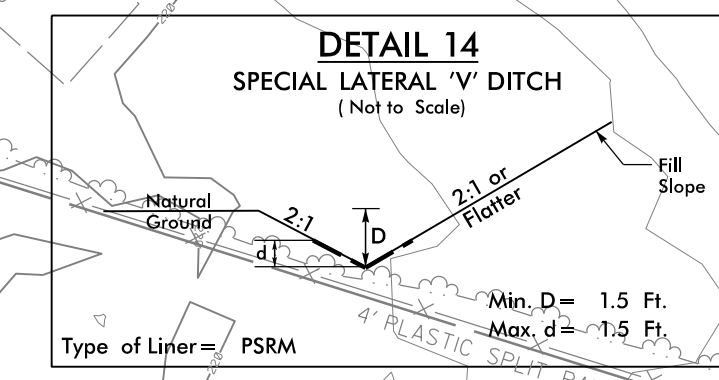
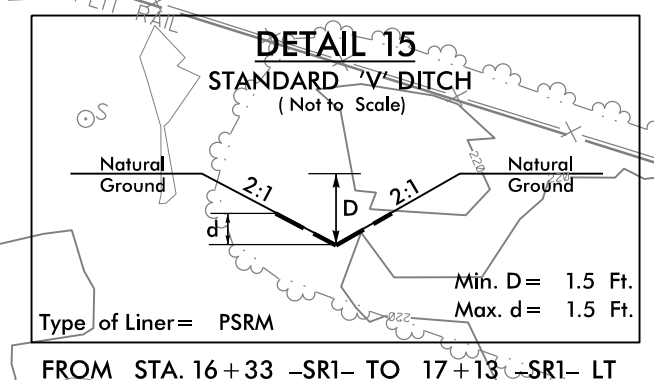
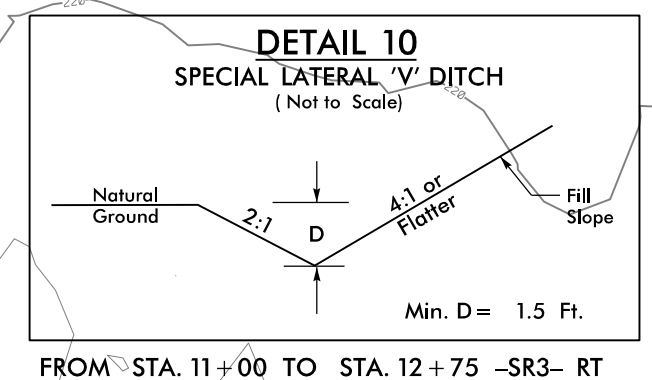
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

-SRI-
PI Sta 10+21.53
 $\Delta = 24' 17" 47.3" (RT)$
D = 57' 17" 44.8"
L = 42.41'
T = 21.53'
R = 100.00'

PI Sta 15+10.69
 $\Delta = 82' 12" 52.6" (RT)$
D = 38' 11" 49.9"
L = 215.24'
T = 130.89'
R = 150.00'

-SR2-
PI Sta 10+53.27
 $\Delta = 38' 01" 27.0" (LT)$
D = 57' 17" 44.8"
L = 66.36'
T = 34.46'
R = 100.00'

PI Sta 11+85.78
 $\Delta = 42' 31" 25.6" (RT)$
D = 28' 38" 52.4"
L = 148.44'
T = 77.82'
R = 200.00'

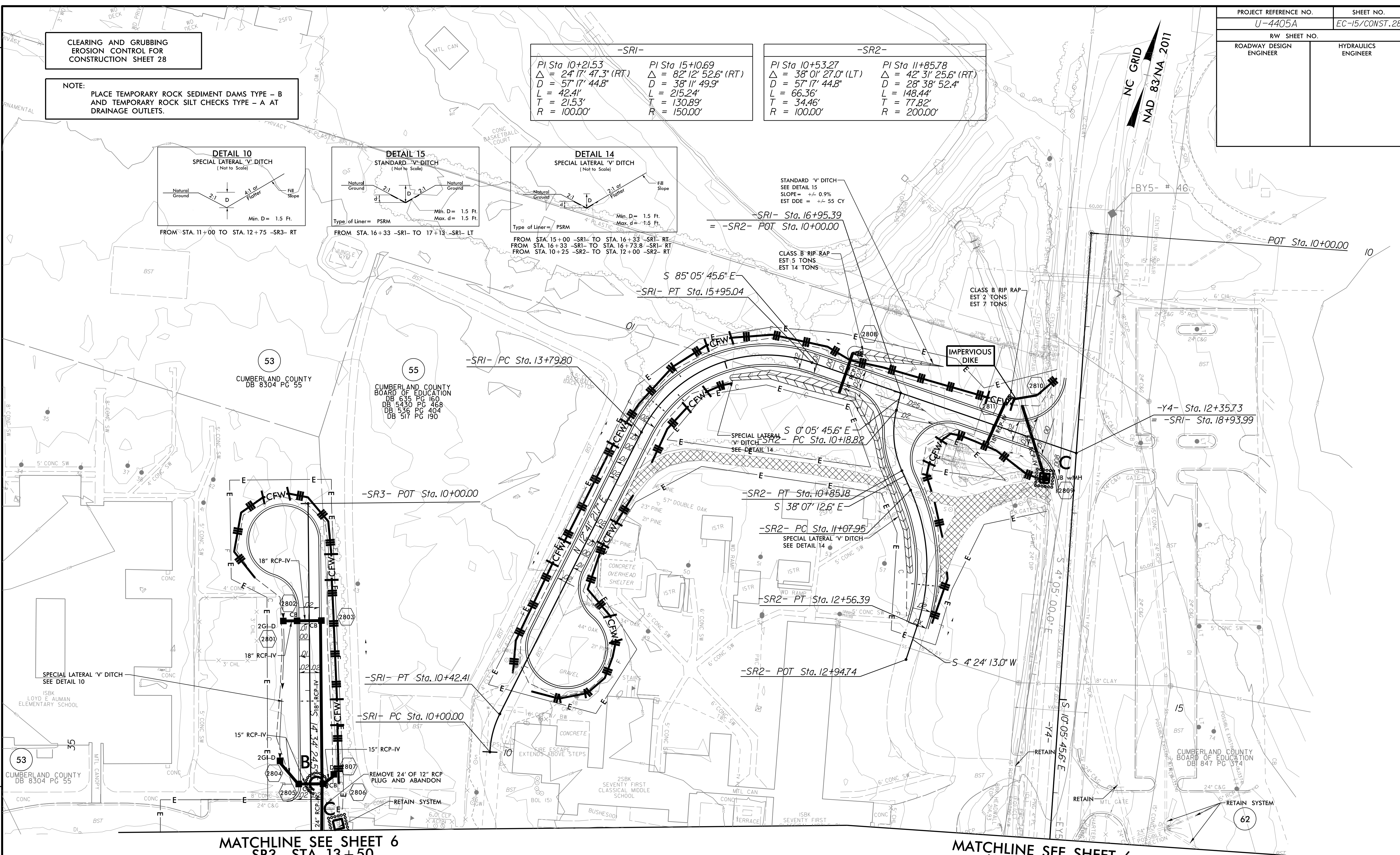


STANDARD 'V' DITCH
SEE DETAIL 15
SLOPE = +/- 0.9%
EST DDE = +/- 55 CY

CLASS B RIP RAP
EST 5 TONS
EST 14 TONS

CLASS B RIP RAP
EST 2 TONS
EST 7 TONS

IMPERVIOUS
DIKE



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 -SRI- PROFILE
SEE SHEET 51 FOR -SR2- PROFILE
SEE SHEET 51 FOR -SR3- PROFILE

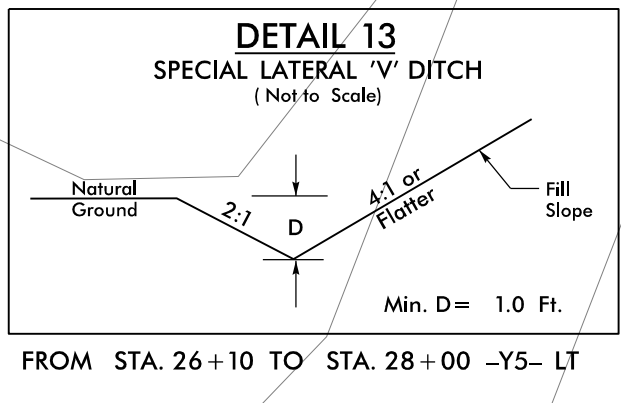
7/6/2021
15:44:03=REV.UC_psh_28-CG.dgn
15:44:03=REV.UC_psh_28-CG.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-16/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



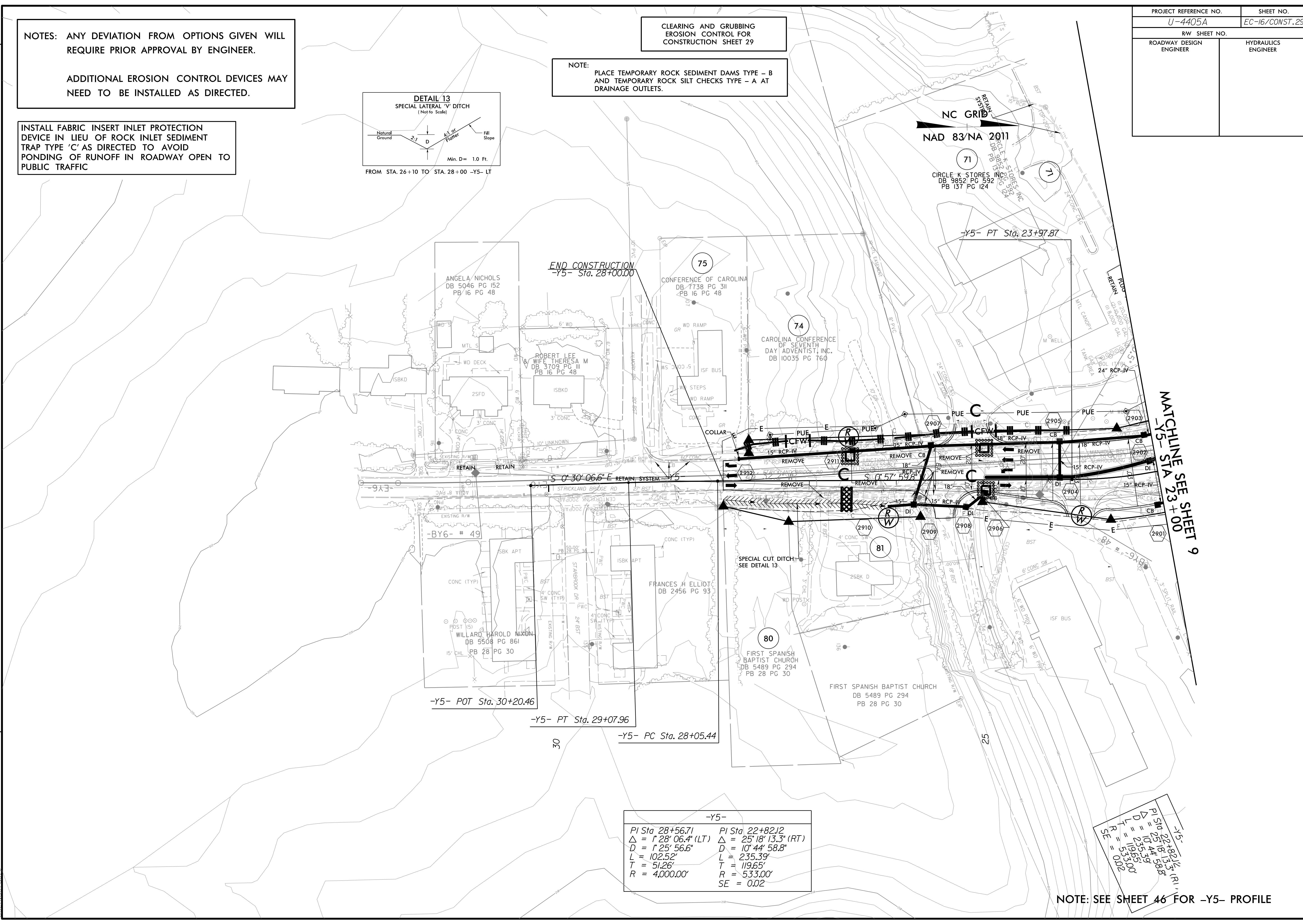
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 29

REVISIONS

8/17/99

7/6/2021
I:\14405\REV\EC_psh_29_CG.dgn
USF

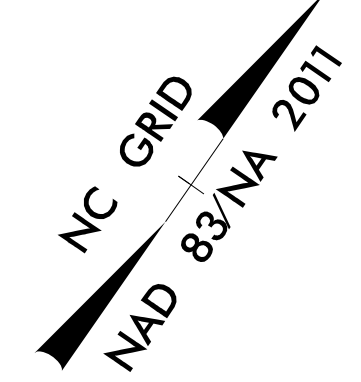
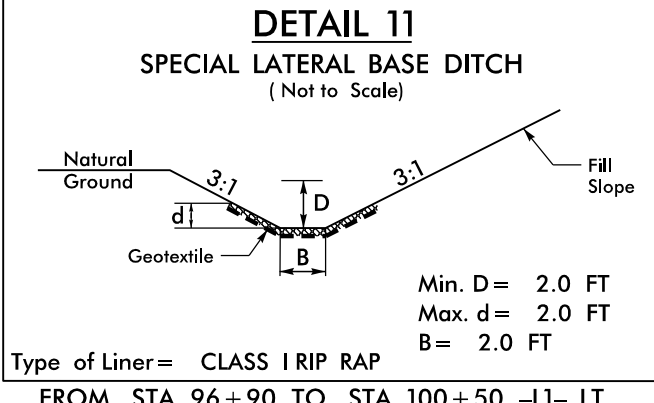
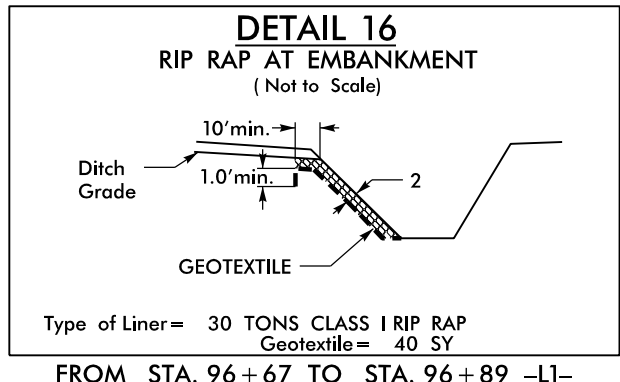


-Y5-	
PI Sta 28+56.71	PI Sta 22+82.12
$\Delta = 1' 28' 06.4''$ (LT)	$\Delta = 25' 18' 13.3''$ (RT)
$D = 1' 25' 56.6''$	$D = 10' 44' 58.8''$
$L = 102.52'$	$L = 235.39'$
$T = 51.26'$	$T = 119.65'$
$R = 4,000.00'$	$R = 533.00'$
	$SE = 0.02$

-Y5-	PI Sta 22+82.12
$\Delta = 10' 44' 58.8''$	
$D = 235.39'$	
$L = 119.65'$	
$R = 533.00'$	
$SE = 0.02$	

NOTE: SEE SHEET 46 FOR -Y5- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-17/CONST. 4A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



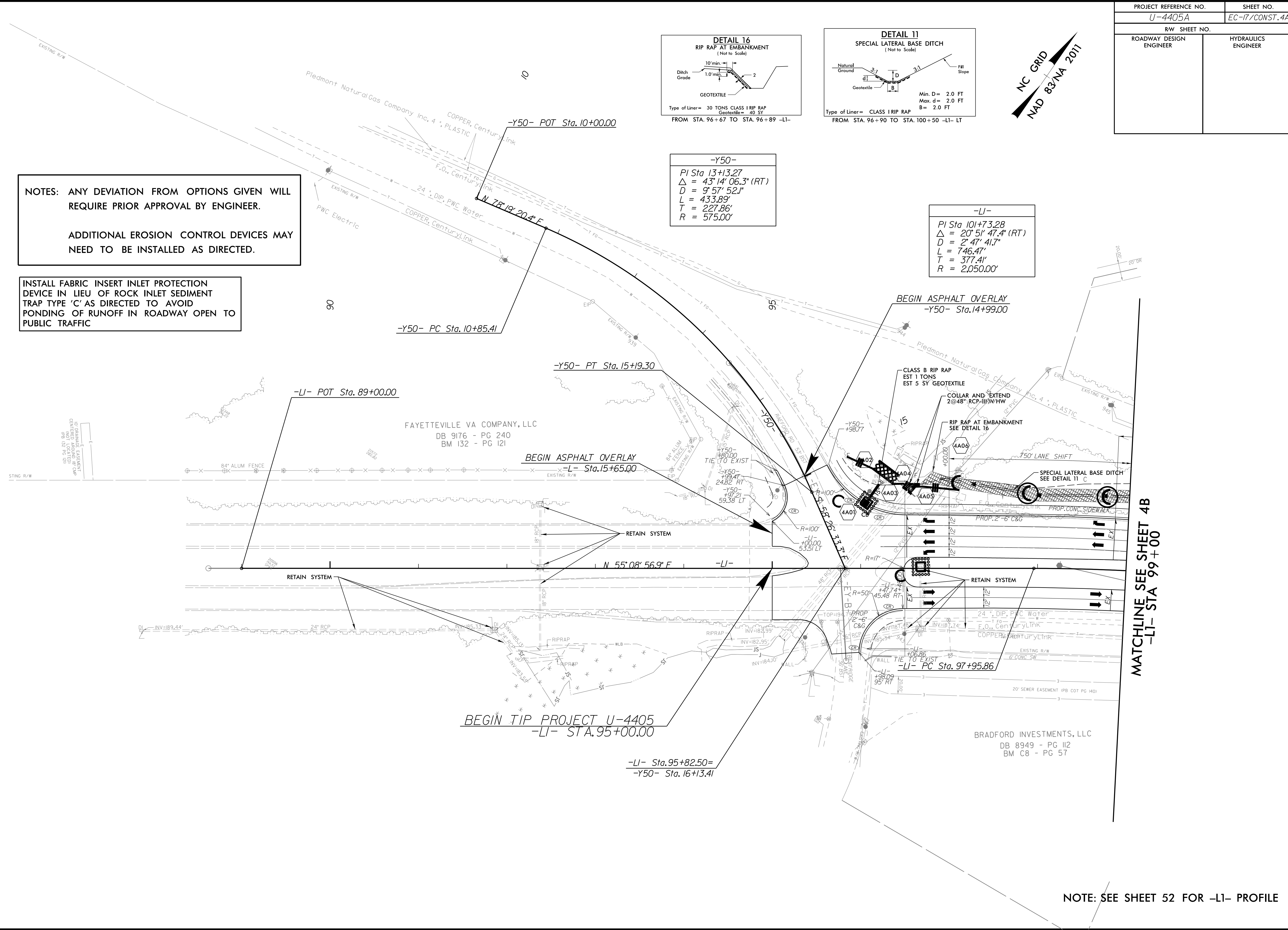
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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

-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

8/17/99

7/6/2021 U-4405-REV.UC_psh_04A_Final.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-19/CONST.04
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

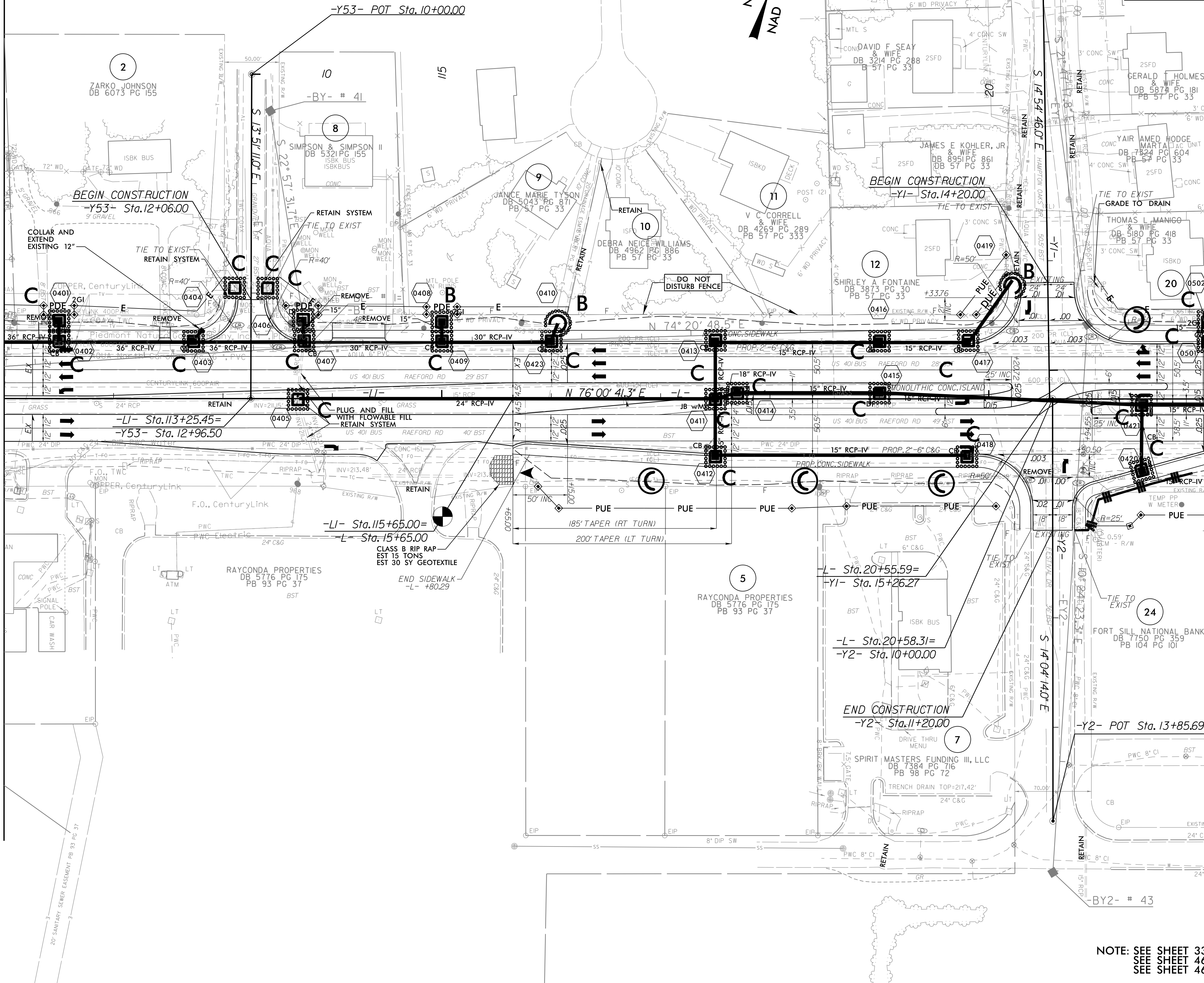
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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

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
-L1- STA 11+00

MATCHLINE SEE SHEET 5
-L- STA 22+00



REVISIONS

NO.	DATE	DESCRIPTION

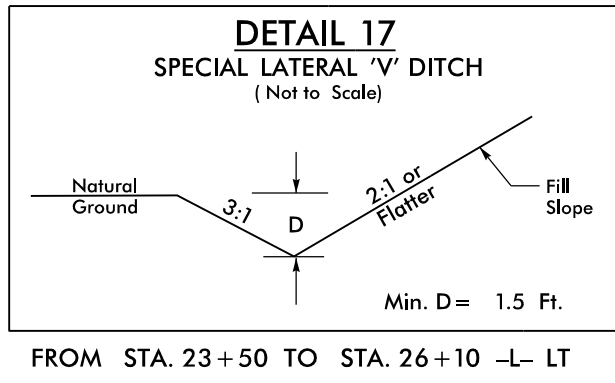
8/17/99

7/6/2021
U:\4405\REV\EC_psh_04_Final.dgn
US:R:\1011

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-4405A	EC-20/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



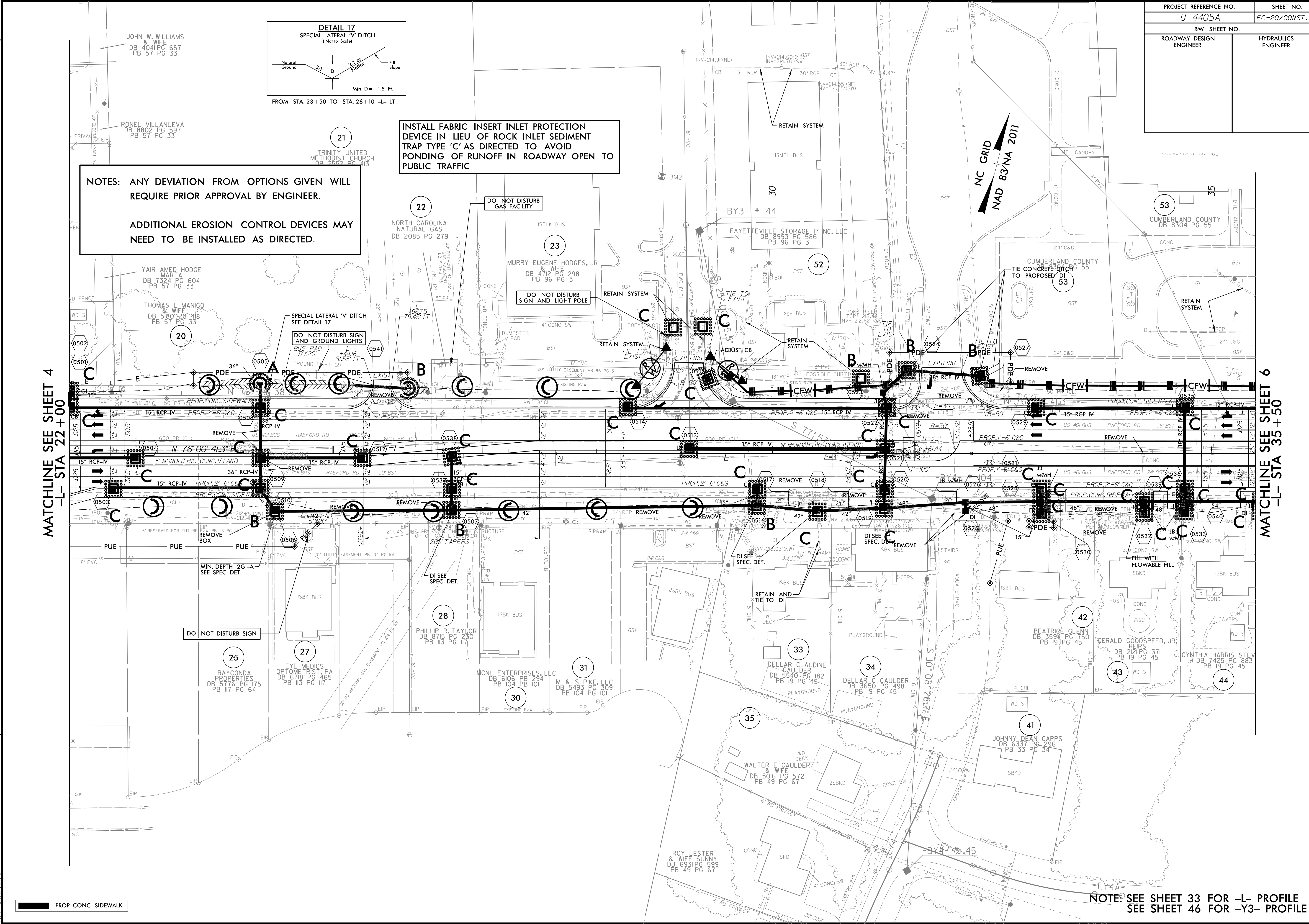
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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

MATCHLINE SEE SHEET 4 -L- STA 22 +00

MATCHLINE SEE SHEET 6 -L- STA 35 +50



PROF CONC SIDEWALK

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

REVISIONS

8/17/99
7/6/2021
U:\Projects\4405_REU\EC_psh_05_Final.dgn
10/15/2021

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-21/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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.

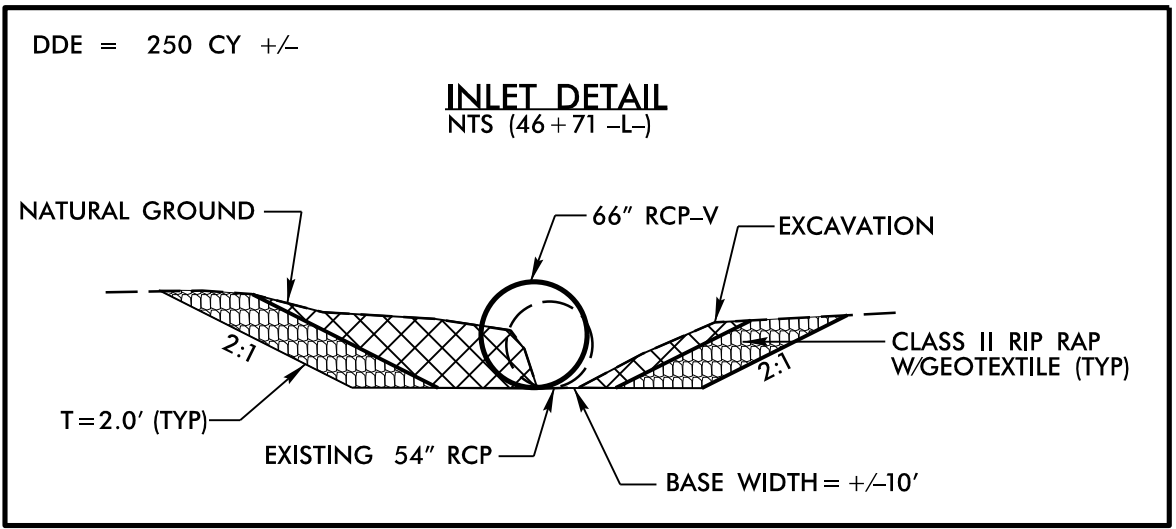
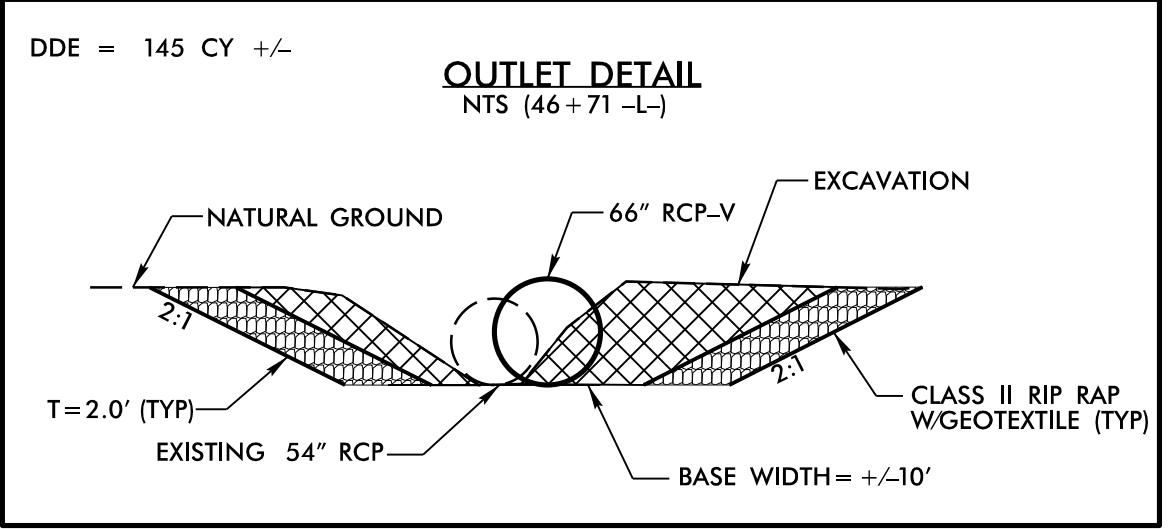
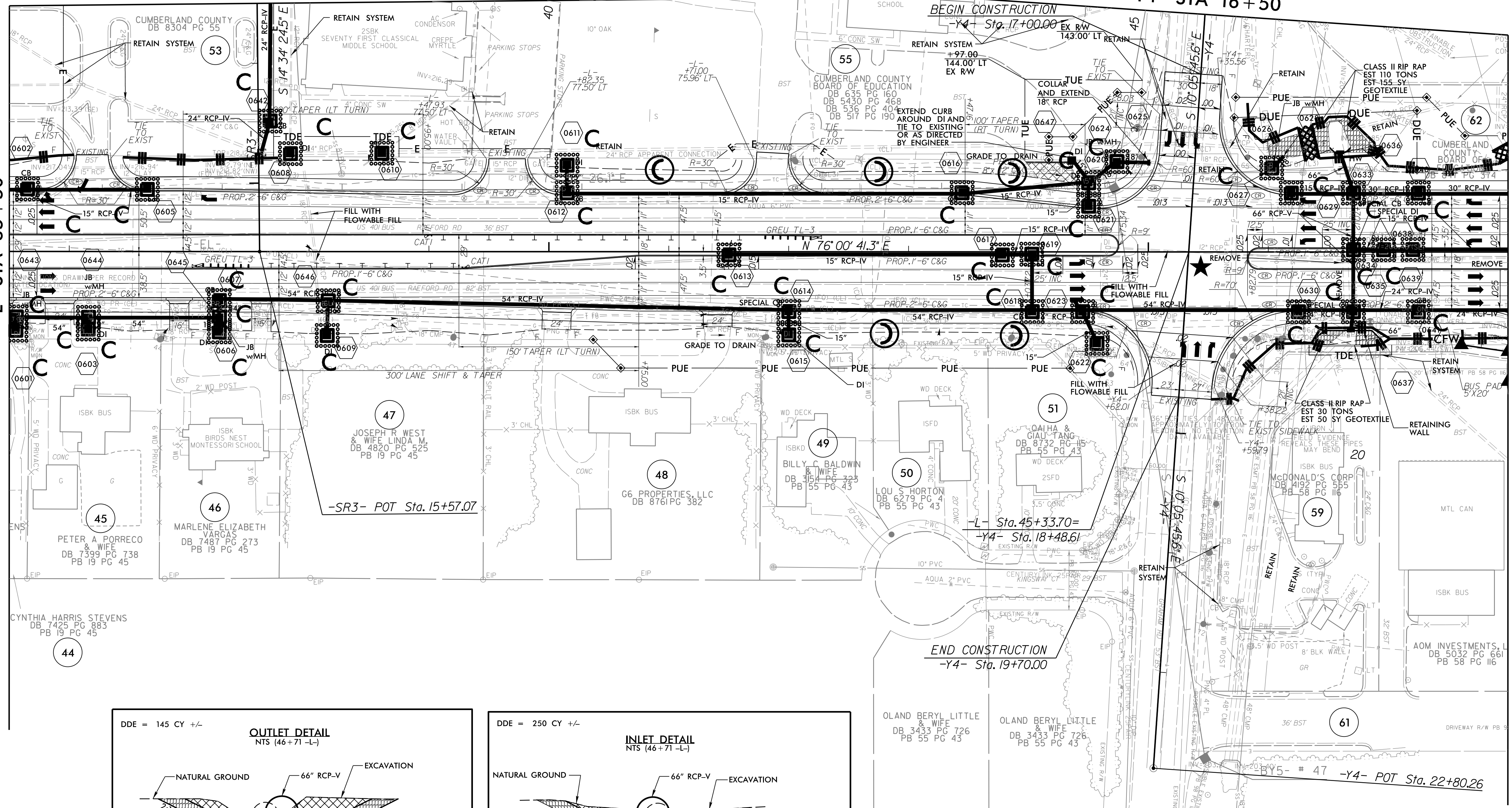
INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED TO AVOID PONDING OF RUNOFF IN ROADWAY OPEN TO PUBLIC TRAFFIC

MATCHLINE SEE SHEET 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

8/17/99

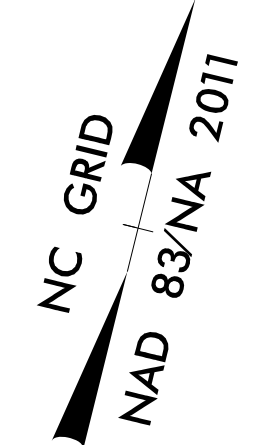
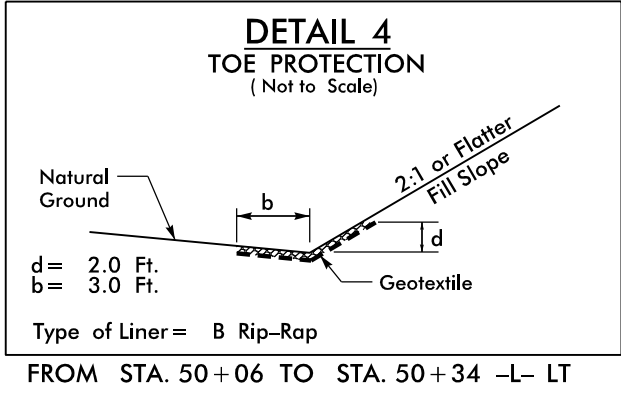
7/6/2021
U-4405-REV-EC-psd-Final.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-22/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

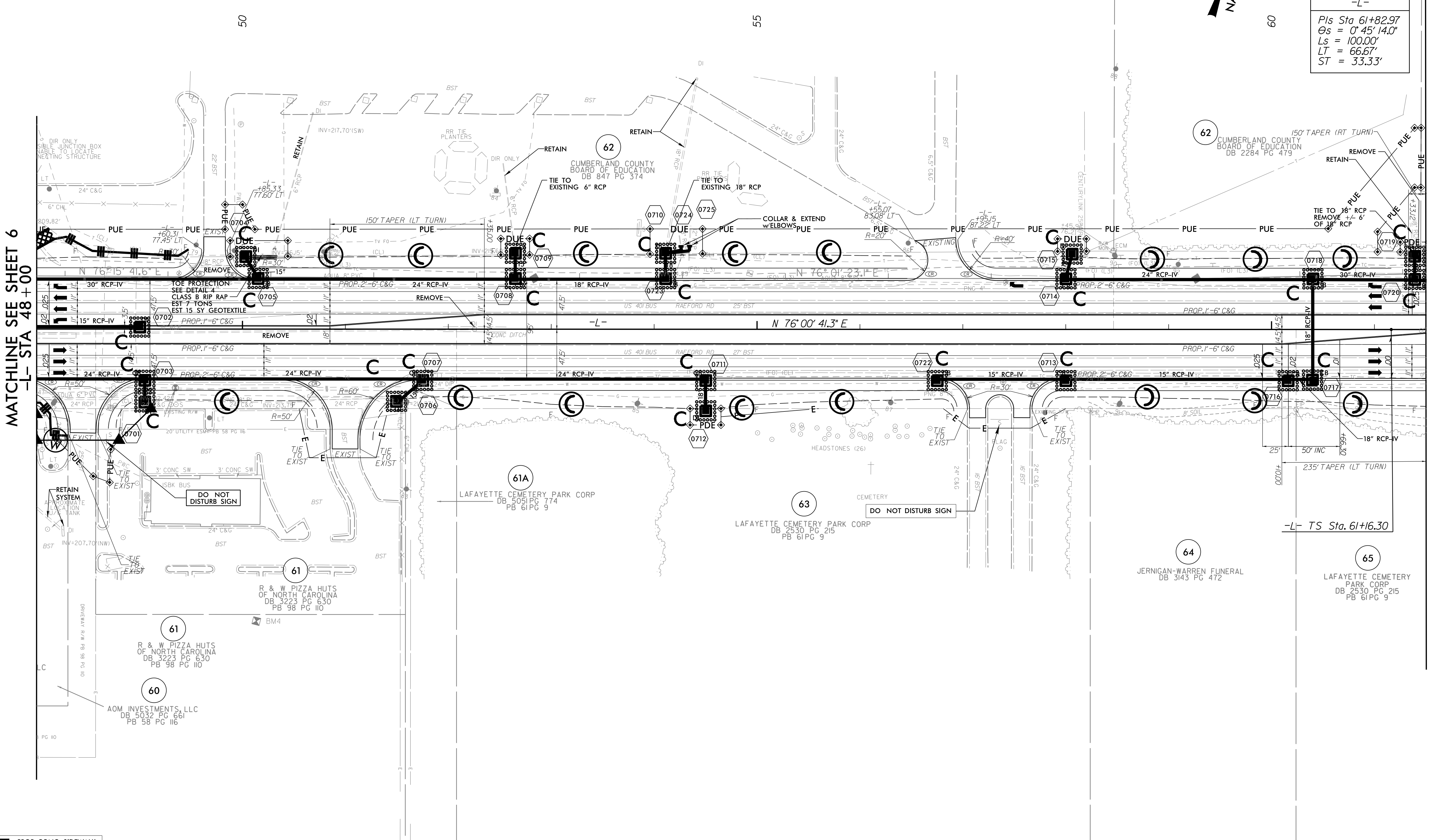
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

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



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



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 FOR -L- PROFILE

REVISIONS

8/17/99

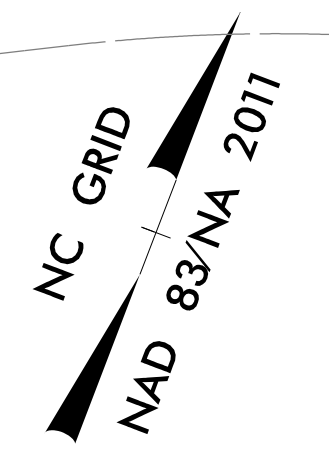
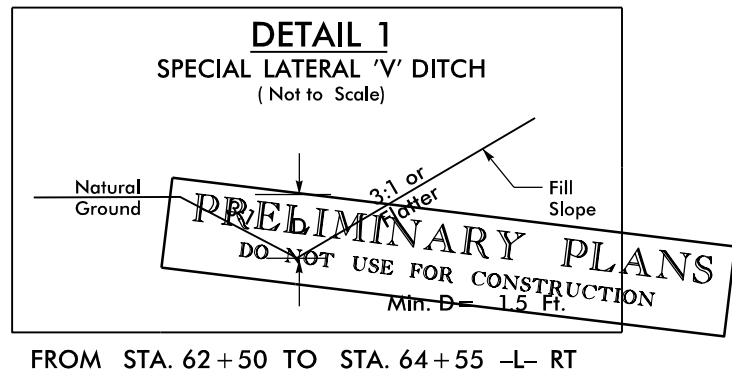
7/6/2021
I:\Projects\4405-REU\EC_psh_07_Final.dgn

PROJECT REFERENCE NO.		SHEET NO.	
U-4405A		EC-23/CONST.08	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

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

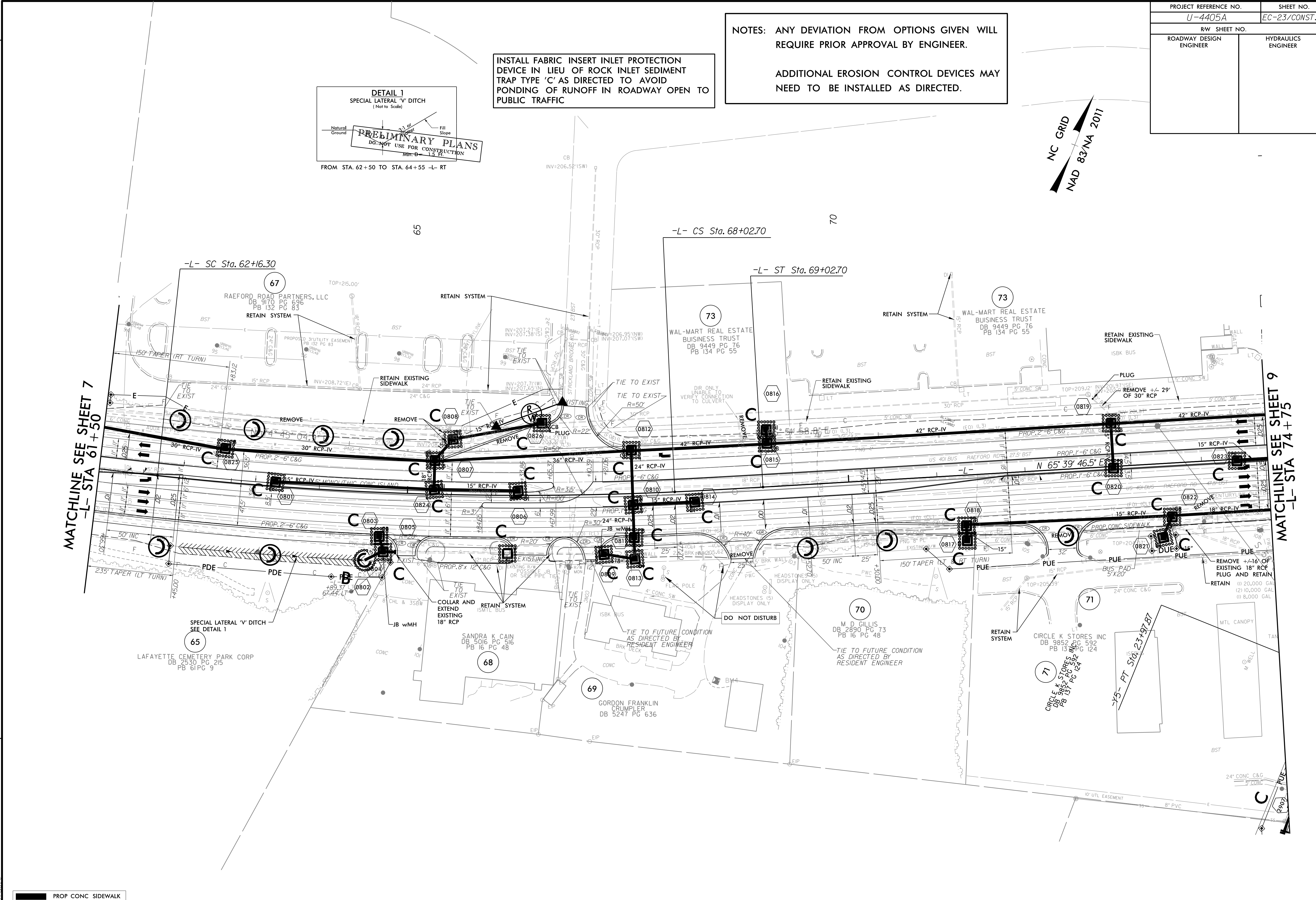
ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED.

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



MATCHLINE SEE SHEET 7
-L- STA 61+50

MATCHLINE SEE SHEET 9
-L- STA 74+75



REVISIONS

PROP CONC SIDEWALK

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

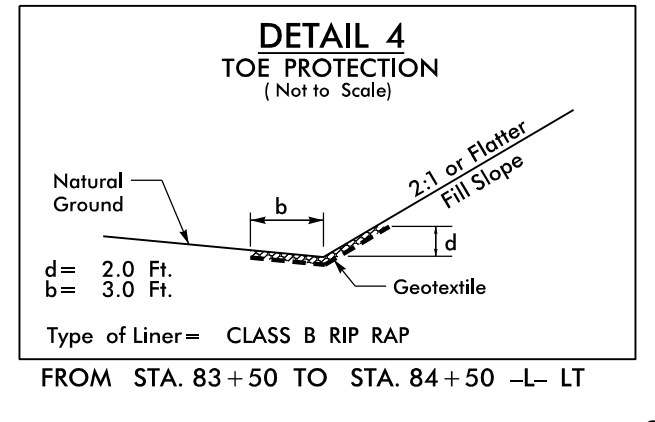
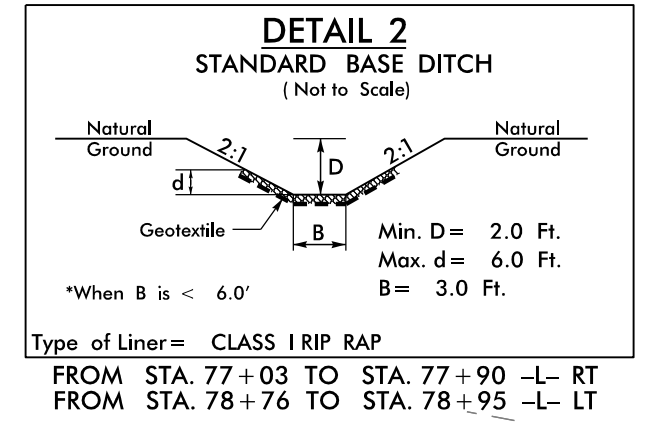
NOTE: SEE SHEET 34 & 35 FOR -L- PROFILE

8/17/99
7/6/2021
U:\4405\REV\EC_psh_08_Final.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-24/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

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



-L-
 PIs 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)
 $D = 0' 54" 34.0"$
 $L = 633.90'$
 $T = 317.22'$
 $R = 6,300.00'$
 $SE = 0.025$
 PIs 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

NC GRID
 NAD 83/NA 2011

MATCHLINE SEE SHEET 8
 -L- STA 74+75

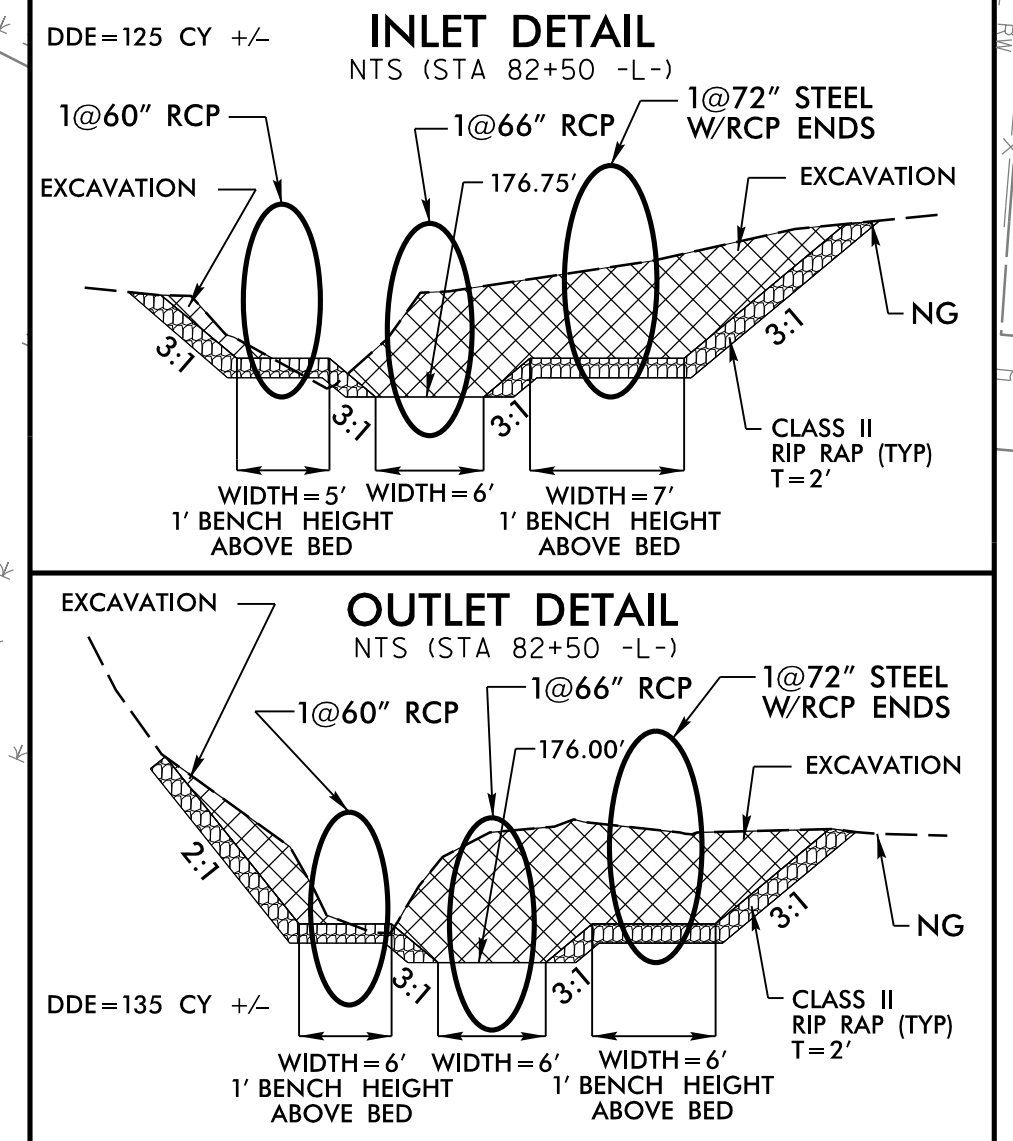
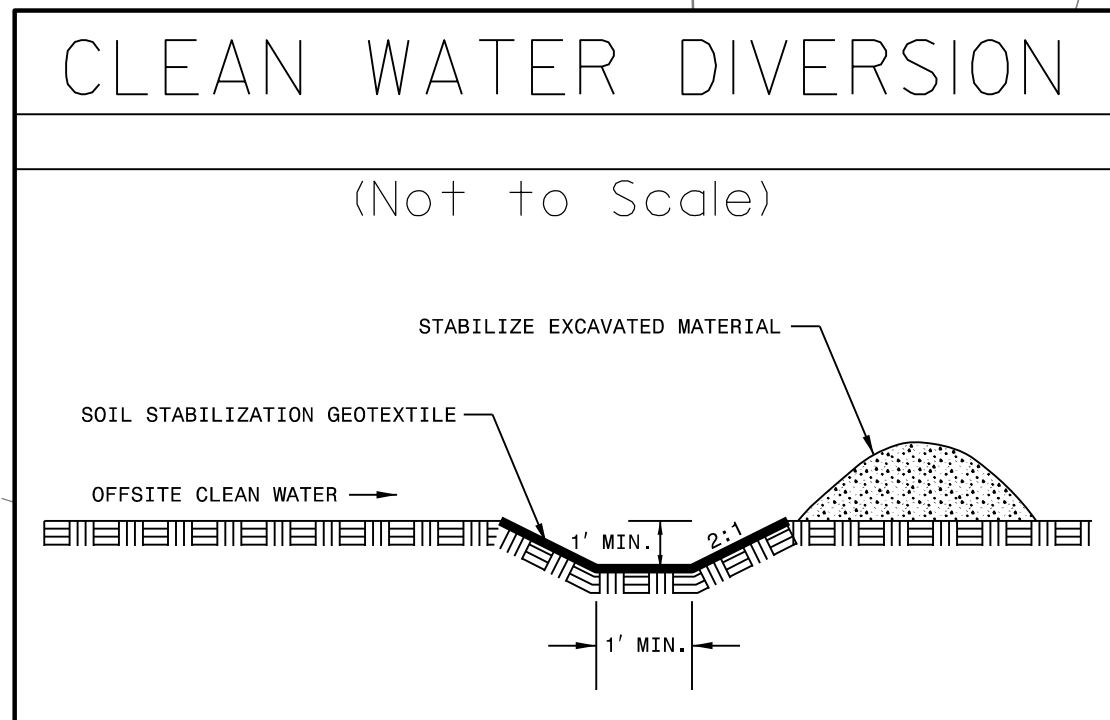
MATCHLINE SEE SHEET 29
 -Y5- STA 23+00

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)
 $D = 10' 44" 58.8"$
 $L = 235.39'$
 $T = 119.65'$
 $R = 533.00'$
 $SE = 0.02$



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

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

REVISIONS

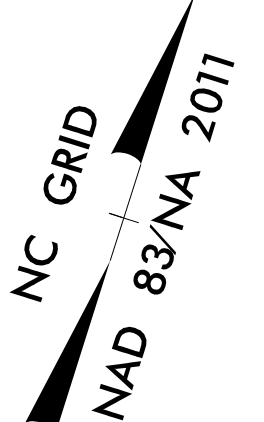
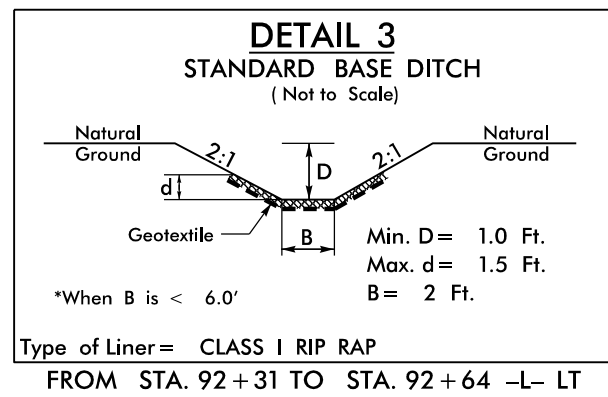
8/17/09
 7/6/2021
 U:\4405\REV\EC_psh_09_Final.dgn

PROJECT REFERENCE NO. U-4405A	SHEET NO. EC-25/CONST.10
RW 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.

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



-Y7-
 PI Sta 12+57.36
 $\Delta = 20^\circ 39' 00.6''$ (RT)
 $D = 6^\circ 30' 00.0''$
 $L = 317.69'$
 $T = 160.59'$
 $R = 881.47'$

-L-
 PIs Sta 88+21.95
 $\Theta_s = 0^\circ 27' 17.0''$
 $L_s = 100.00'$
 $LT = 66.67'$
 $ST = 33.33'$

STANDARD BASE DITCH
 WCLASS 1 RIP RAP
 SEE DETAIL 3
 EST 65 TONS
 EST 120 CY GEOTEXTILE
 EST DDE = 30 CY
 SLOPE = 6.0%

-Y6-
 PI Sta 12+56.41
 $\Delta = 10^\circ 40' 14.2''$ (LT)
 $D = 11^\circ 01' 06.3''$
 $L = 96.84'$
 $T = 48.56'$
 $R = 520.00'$

MATCHLINE SEE SHEET 9
-L- STA 88+00

MATCHLINE SEE SHEET 11
-L- STA 101+50

8/17/99

REVISIONS

7/6/2021
 U:\4405\REV\EC_psh_10_Final.dgn
 User: jf101

★ 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 35&36 FOR -L- PROFILE
 SEE SHEET 47 FOR -Y6- PROFILE
 SEE SHEET 47 FOR -Y7- PROFILE

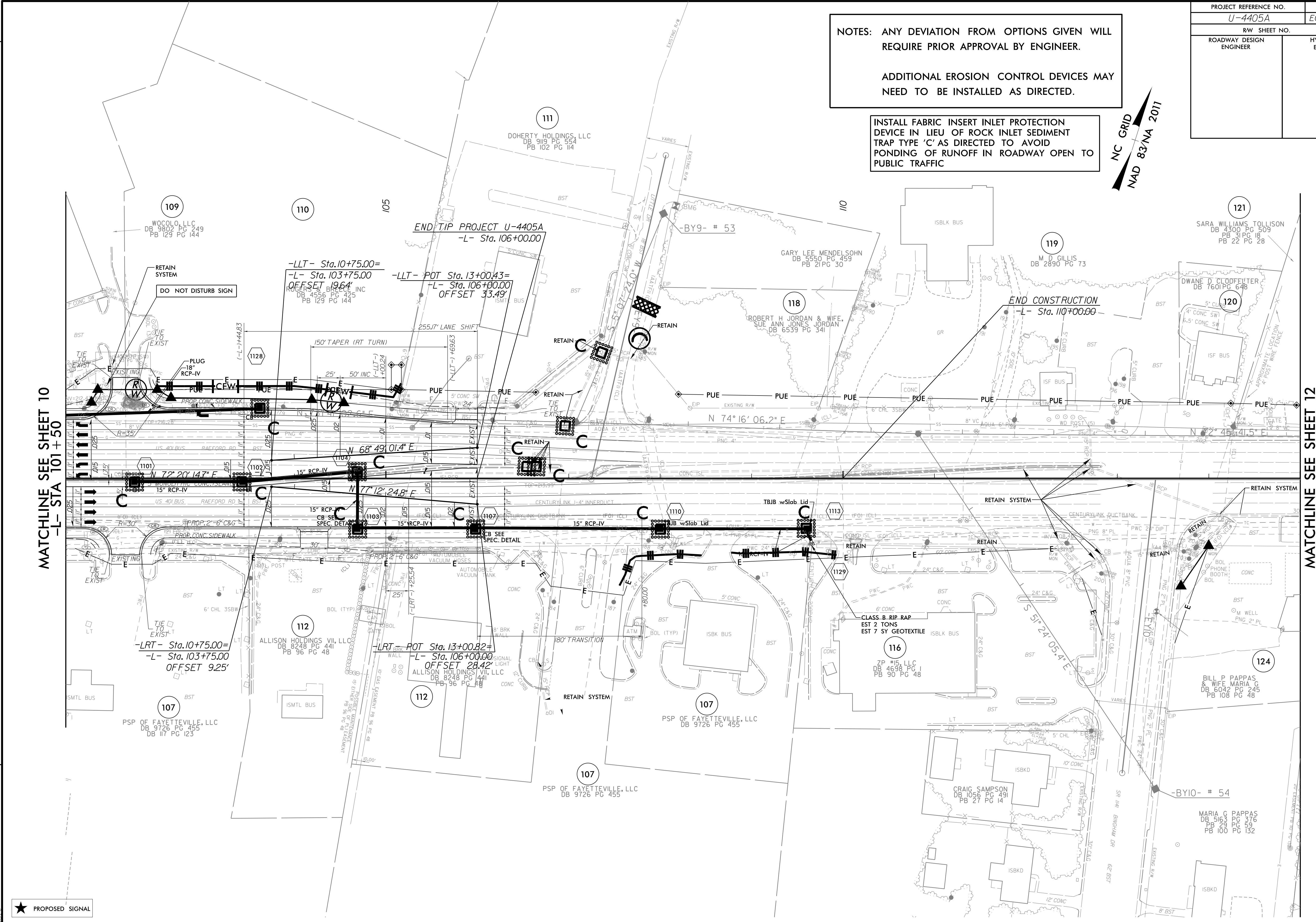
PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-26/CONST.II
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

NC GRID
NAD 83/NA 2011



MATCHLINE SEE SHEET 10
-L- STA 101 + 50

MATCHLINE SEE SHEET 12
-L- STA 115 + 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 36 FOR -L- PROFILE
SEE SHEET 47 FOR -Y9- PROFILE
SEE SHEET 47 FOR -Y10- PROFILE

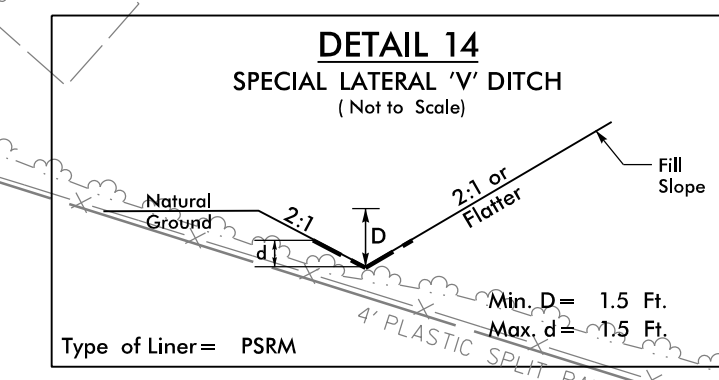
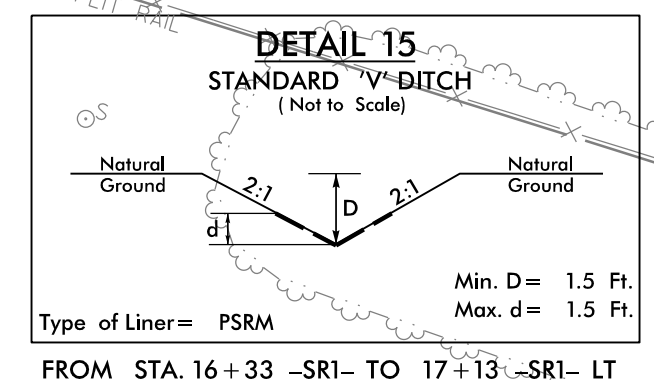
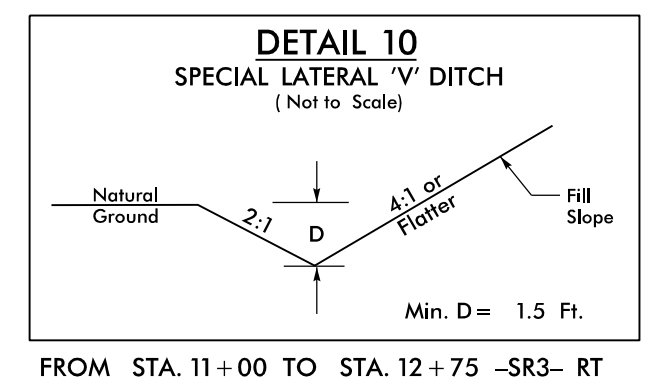
REVISIONS

8/17/99

7/6/2021
U-4405A_REU_EC_psh_11.dgn

PROJECT REFERENCE NO. U-4405A	SHEET NO. EC-27/CONST.28
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

-SR1-		-SR2-	
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'	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'



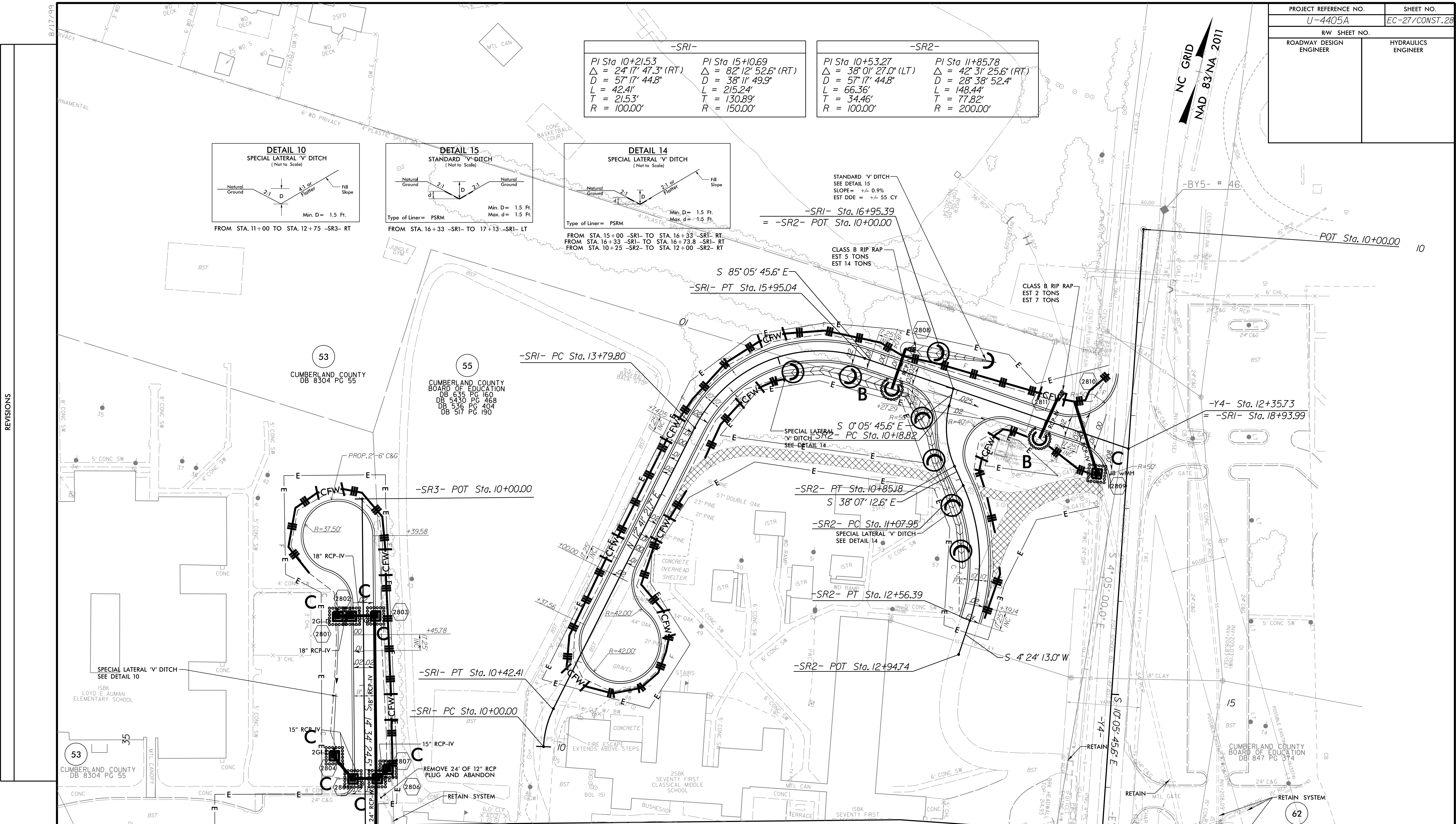
STANDARD 'V' DITCH
SEE DETAIL 15
SLOPE = +/- 0.9%
EST DDE = +/- 55 CY

-SR1- Sta. 16+95.39
= -SR2- POT Sta. 10+00.00

CLASS B RIP RAP
EST 5 TONS
EST 14 TONS

CLASS B RIP RAP
EST 2 TONS
EST 7 TONS

-Y4- Sta. 12+35.73
= -SR1- Sta. 18+93.99



MATCHLINE SEE SHEET 6
-SR3- STA 13+50

MATCHLINE SEE SHEET 6
-Y4- STA 16+50

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 -SR1- PROFILE
SEE SHEET 51 FOR -SR2- PROFILE
SEE SHEET 51 FOR -SR3- PROFILE

REVISIONS

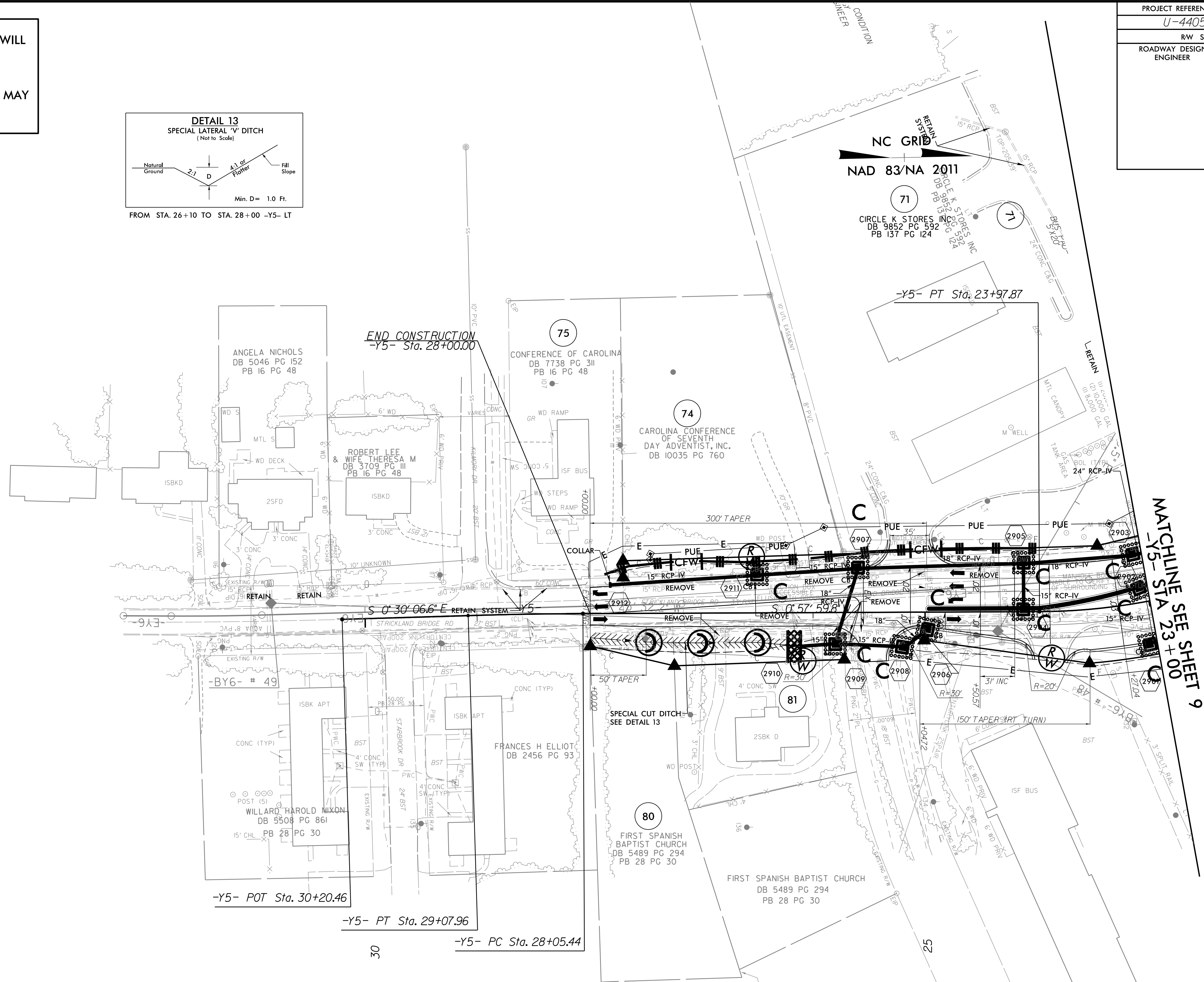
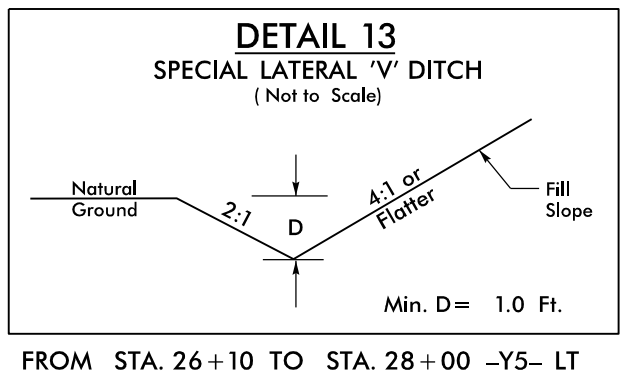
7/6/2021
1:14:40:31-REV.UC-psh_28-Final.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4405A	EC-28/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



REVISIONS

MATCHLINE SEE SHEET 9
-Y5- STA 23+00

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

-Y5-	
PI Sta 22+82.12	PI Sta 22+82.12
$\Delta = 10^{\circ} 44' 58.8''$	$\Delta = 10^{\circ} 44' 58.8''$
$D = 25^{\circ} 18' 13.3''$	$D = 25^{\circ} 18' 13.3''$
$L = 119.65'$	$L = 119.65'$
$T = 53.502'$	$T = 53.502'$
$R = 533.00'$	$R = 533.00'$
	$SE = 0.02$

NOTE: SEE SHEET 46 FOR -Y5- PROFILE

8/17/99

7/6/2021
I:\Projects\4405-REU\EC_psh_29_Final.dgn
IS:R:\r\l\l