

**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.**

09.08/2017

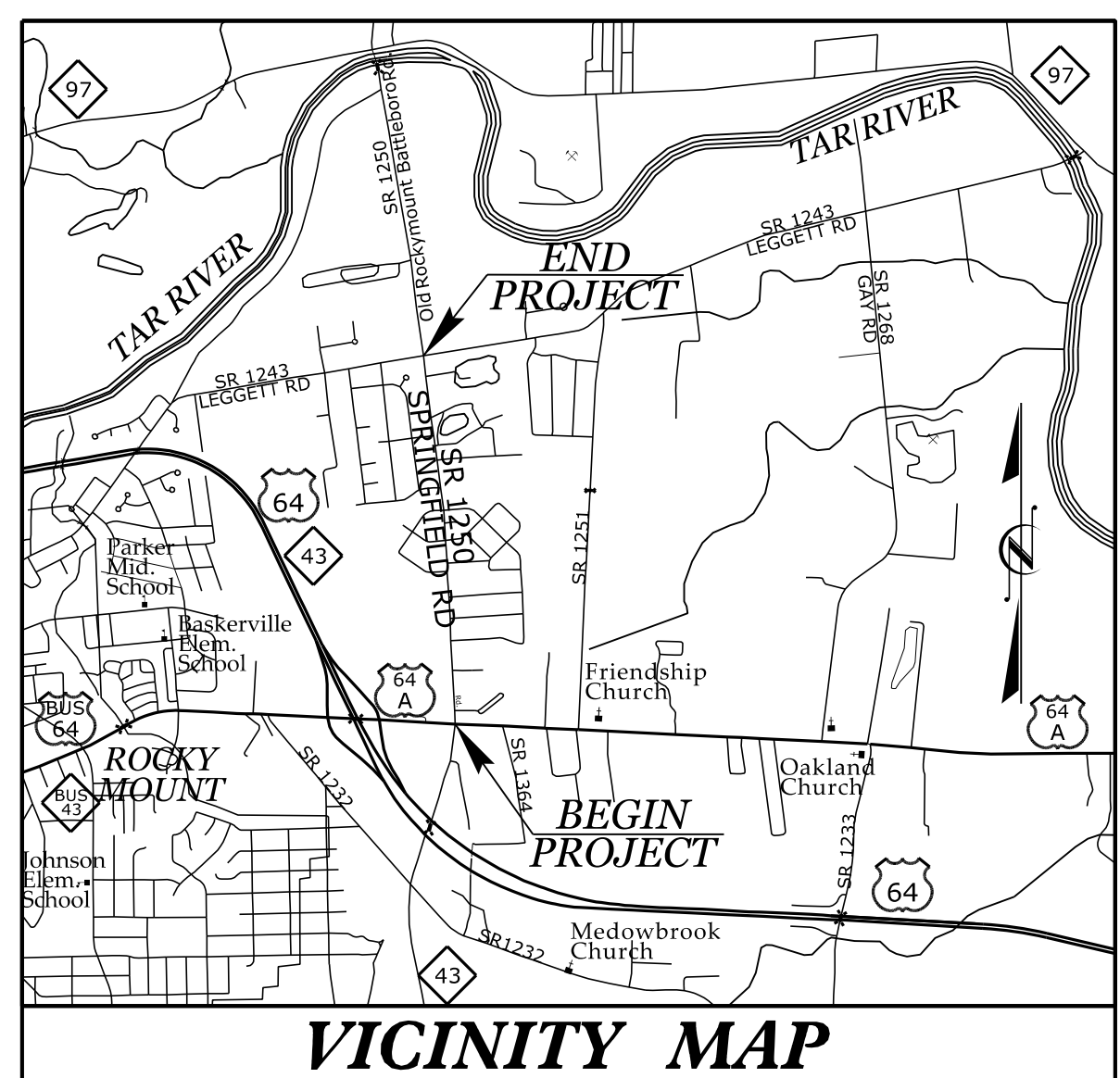
See Sheet 1-A For Index of Sheets

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

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4762	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39930.1.2		PE	
39930.2.2		RW, UTL.	
39930.3.2		CONST.	

TIP PROJECT: U-4762



VICINITY MAP

EDGECOMBE COUNTY

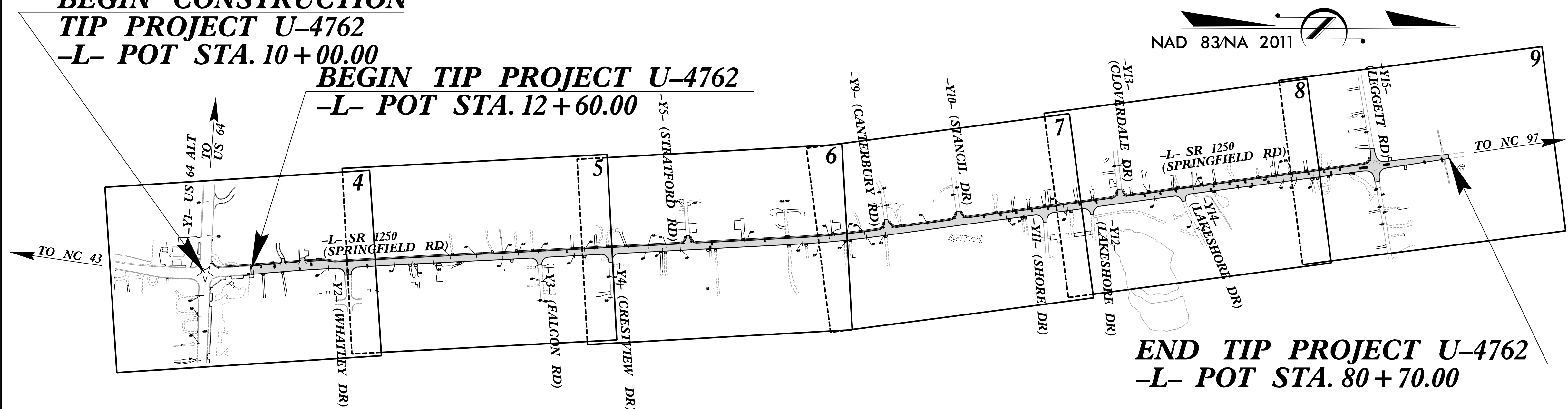
LOCATION: SR 1250 (SPRINGFIELD ROAD) FROM US-64 ALTERNATE  
TO SR 1243 (LEGETT ROAD).

TYPE OF WORK: GRADING, DRAINAGE & PAVING

ENVIRONMENTALLY SENSITIVE AREAS  
EXIST ON THIS PROJECT  
THIS PROJECT HAS BEEN DESIGNED TO  
SENSITIVE WATERSHED STANDARDS

BEGIN CONSTRUCTION  
TIP PROJECT U-4762  
-L- POT STA. 10 + 00.00

BEGIN TIP PROJECT U-4762  
-L- POT STA. 12 + 60.00



END TIP PROJECT U-4762  
-L- POT STA. 80 + 70.00

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1650.03	Temporary Silt Ditch	
1650.05	Temporary Diversion	
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	

1650.02	Silt Basin Type B	
1635.01	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)	

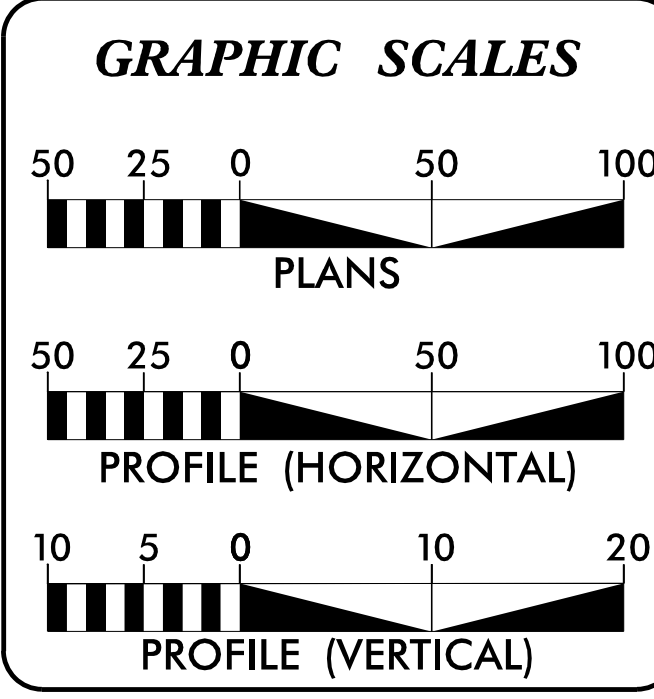
1654.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	
1632.02	Type B	
1632.03	Type C	

Skimmer Basin	
Tiered Skimmer Basin	
Infiltration Basin	

★ UPGRADE SIGNAL

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

CONTRACT: C203972



ROADSIDE ENVIRONMENTAL UNIT  
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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

**CALYX**  
ENGINEERS + CONSULTANTS  
Formerly Mulkey Engineers & Consultants

7500 EAST INDEPENDENCE  
BOULEVARD, SUITE 100  
CHARLOTTE, NC 28227  
phone: 704.537.7300  
CALYXengineers.com  
NC License # F-1333

Prepared in the Office of:  
**ROADSIDE ENVIRONMENTAL UNIT**  
1 South Wilmington St.  
Raleigh, NC 27611

2012 STANDARD SPECIFICATIONS

Reviewed by:  
**WES CHANDLER, EI**  
NAME

Roadway Standard Drawings

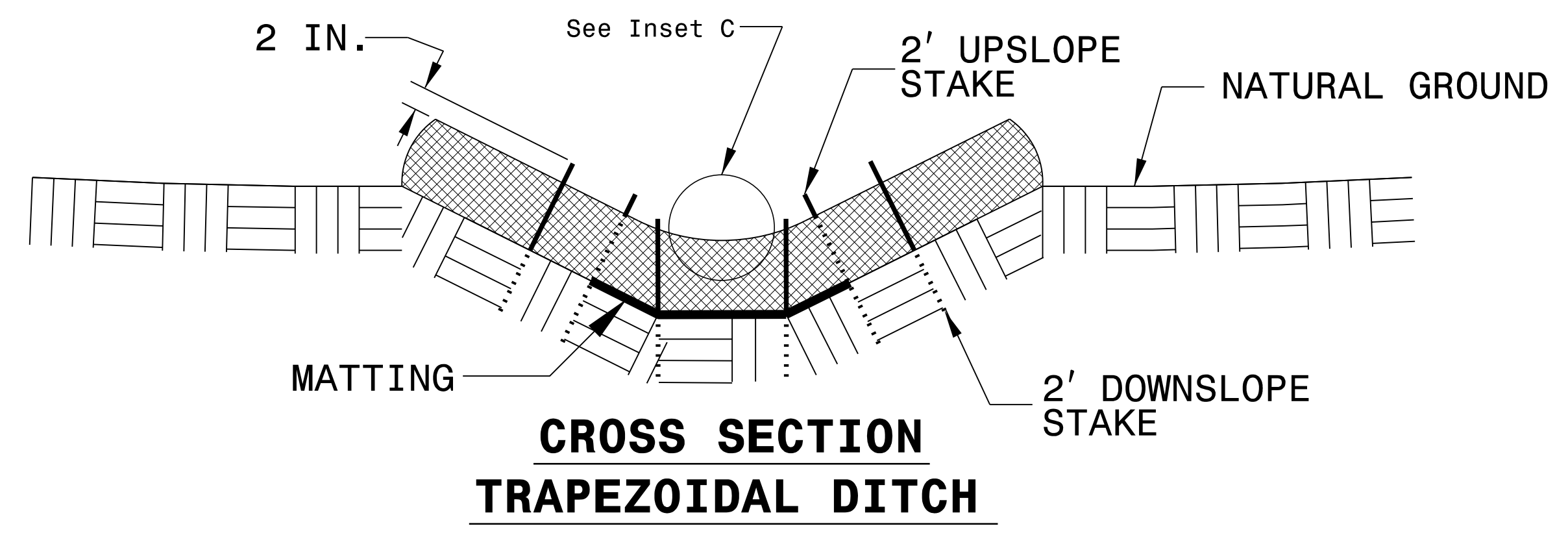
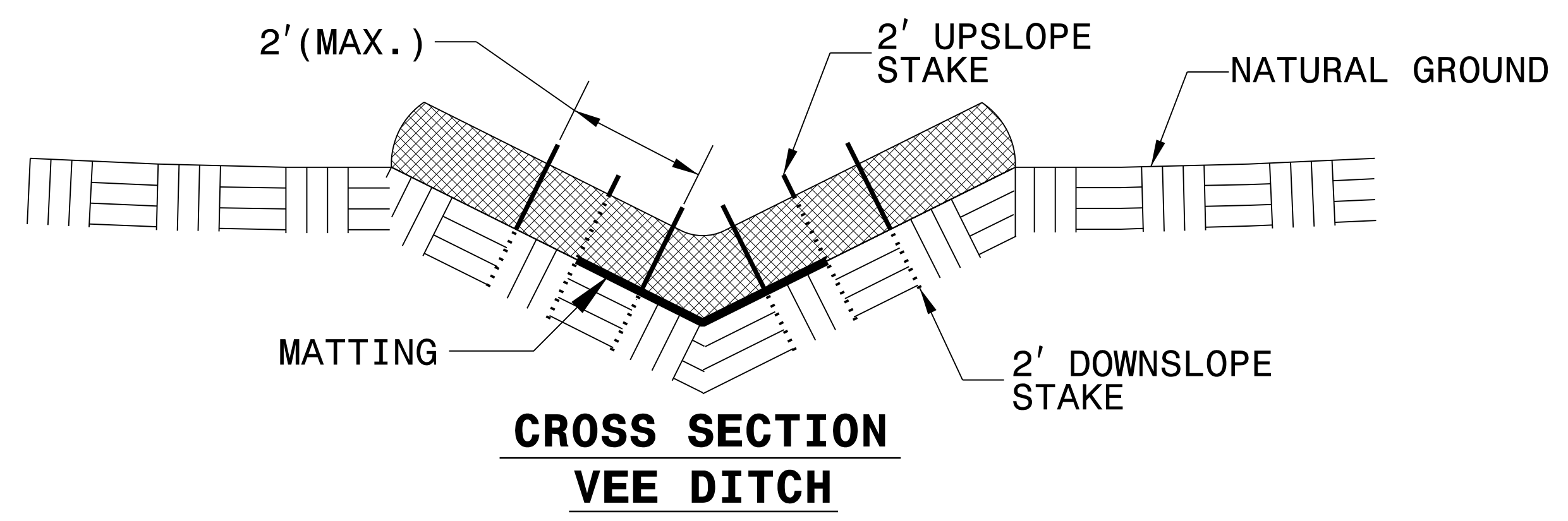
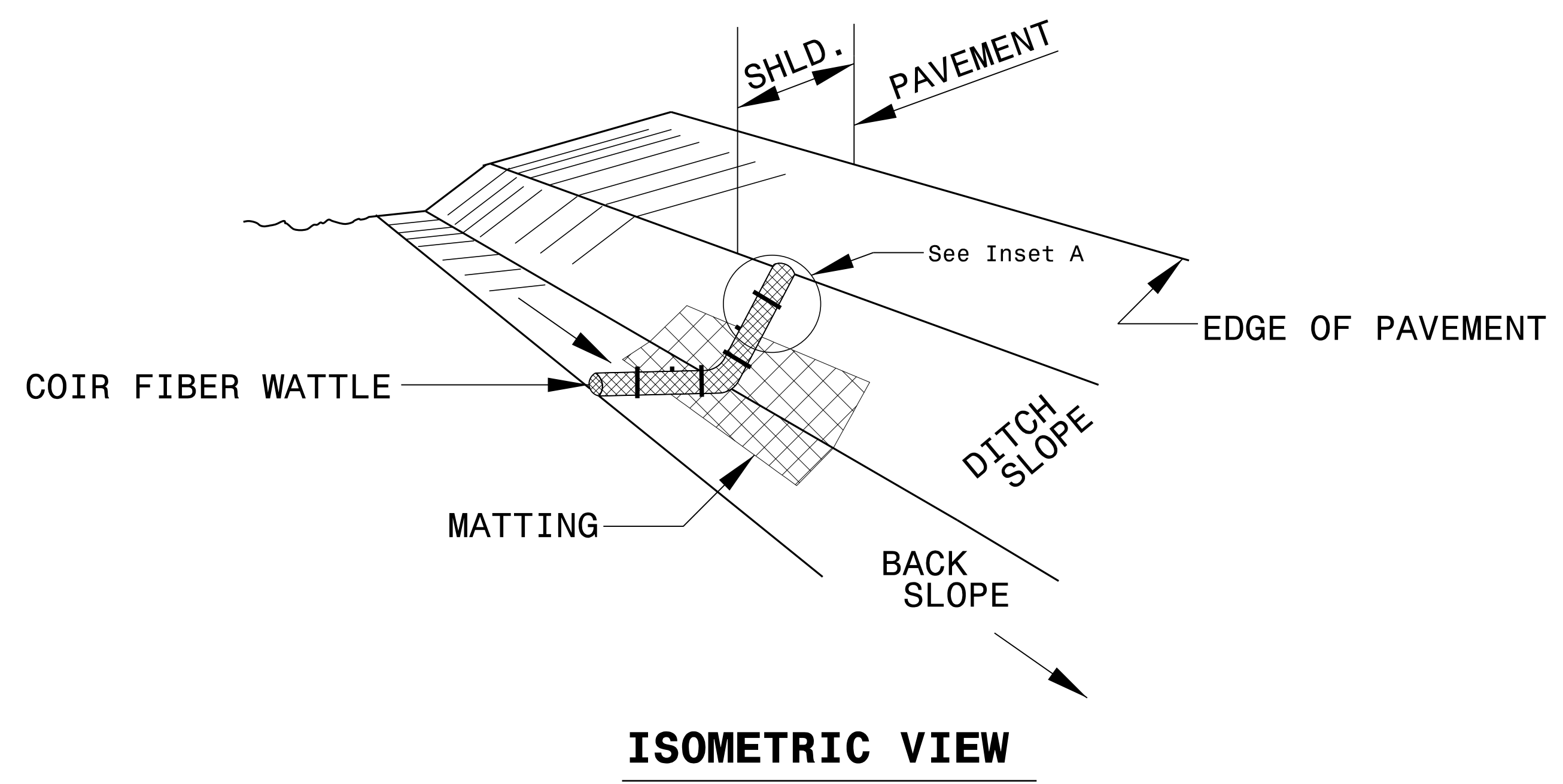
The following roadway english standards as appear in "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2012 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

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	

5/18/2017  
R:\Environment\Design\U-4762\_hyd\_EC\_tsh.dgn  
Keys

PROJECT REFERENCE NO. U-4762	SHEET NO. EC-02
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.

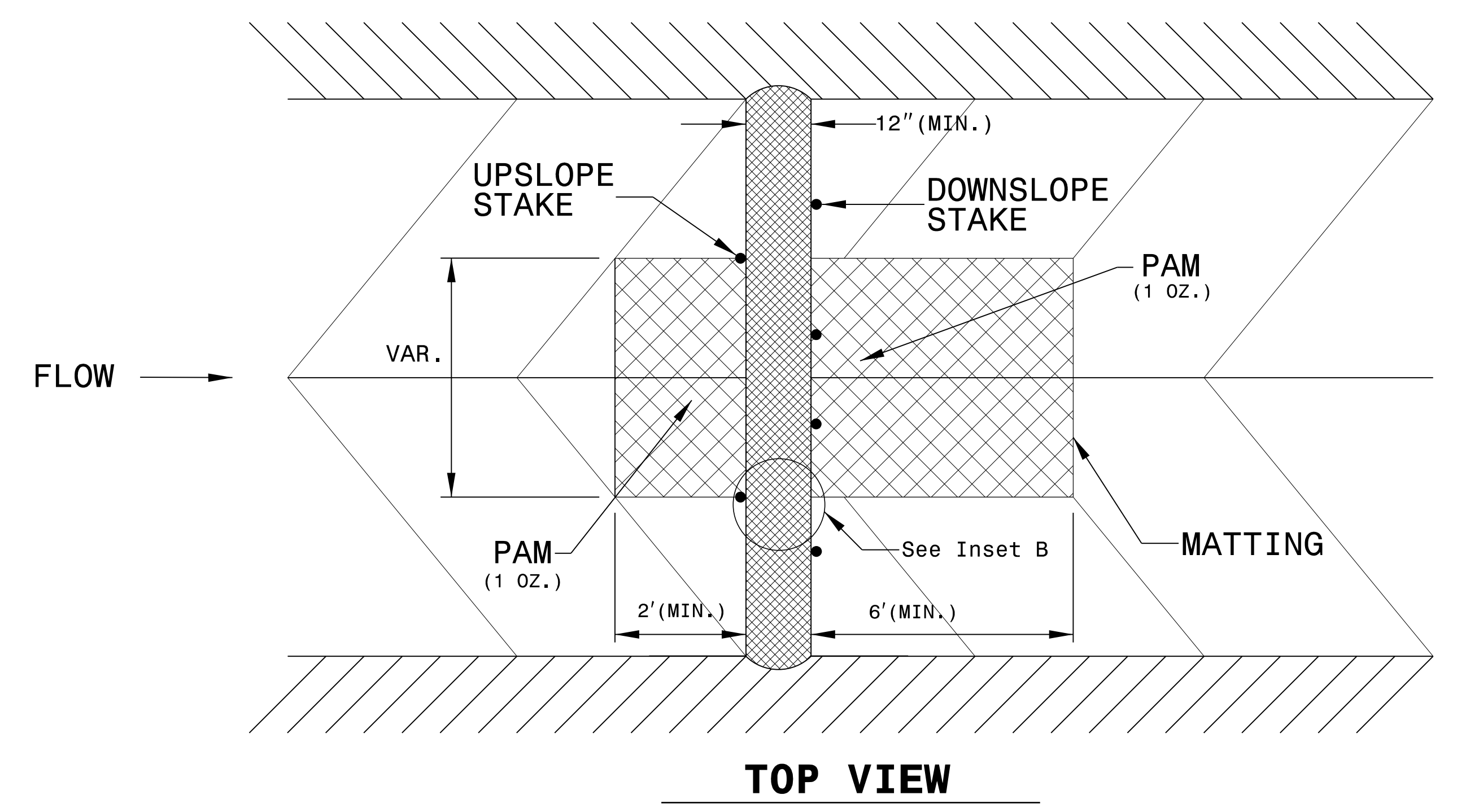
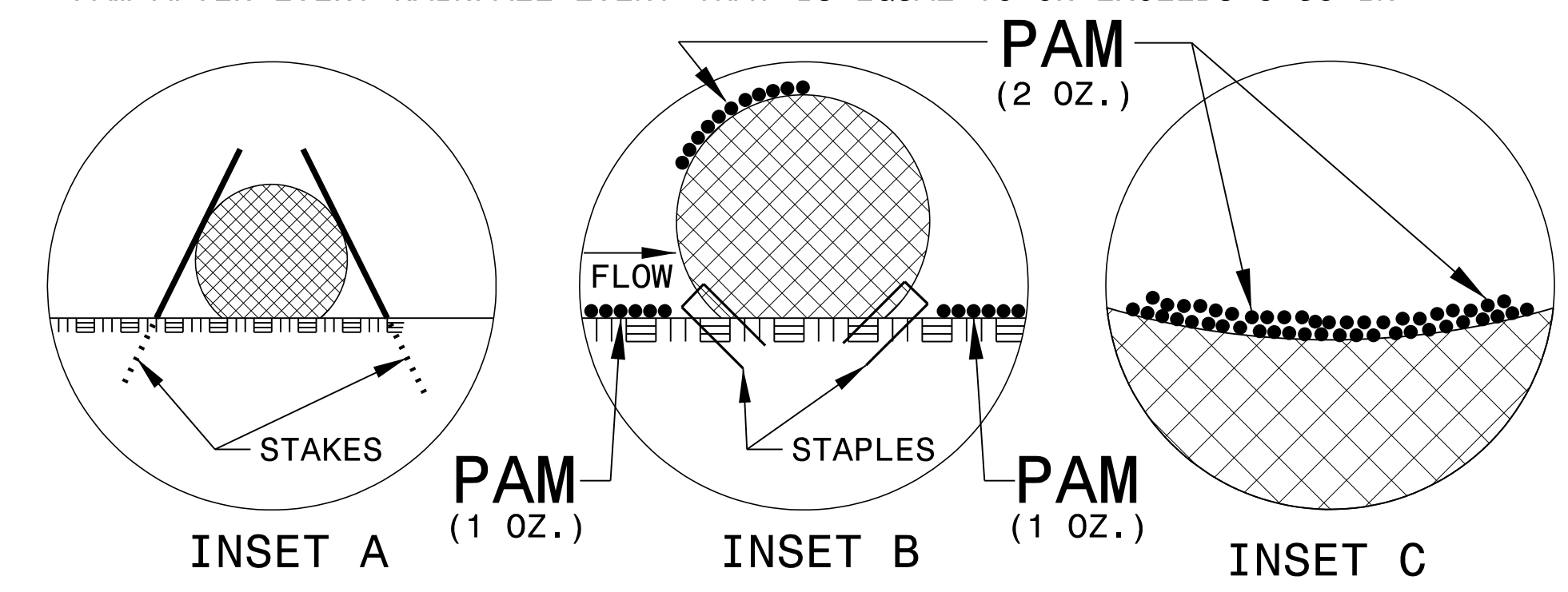
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

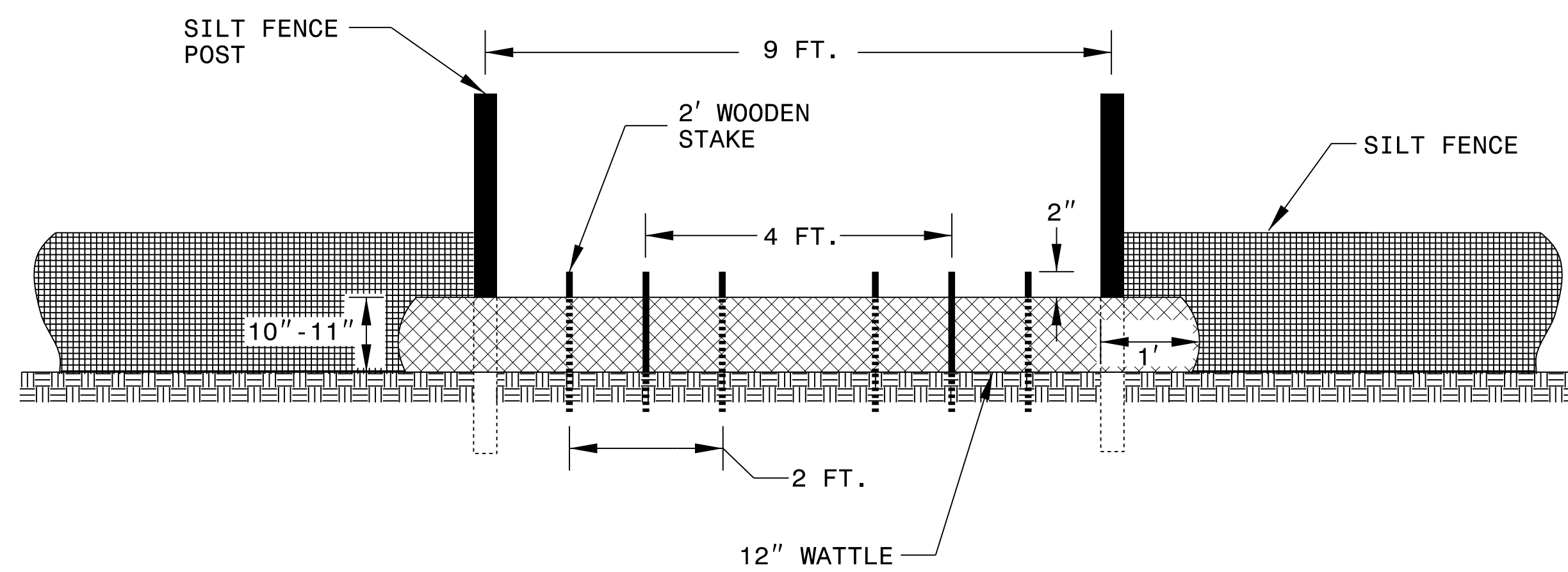
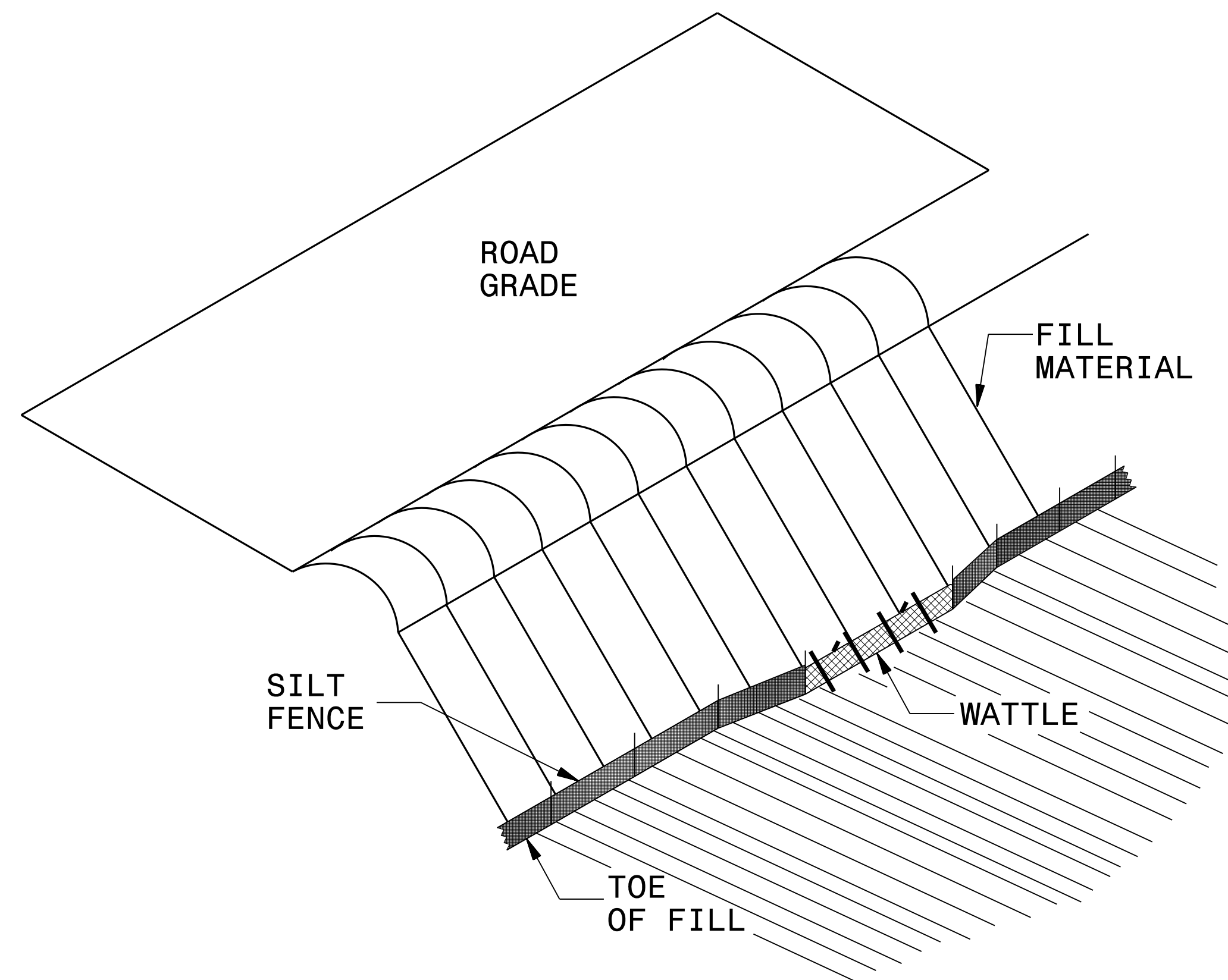
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

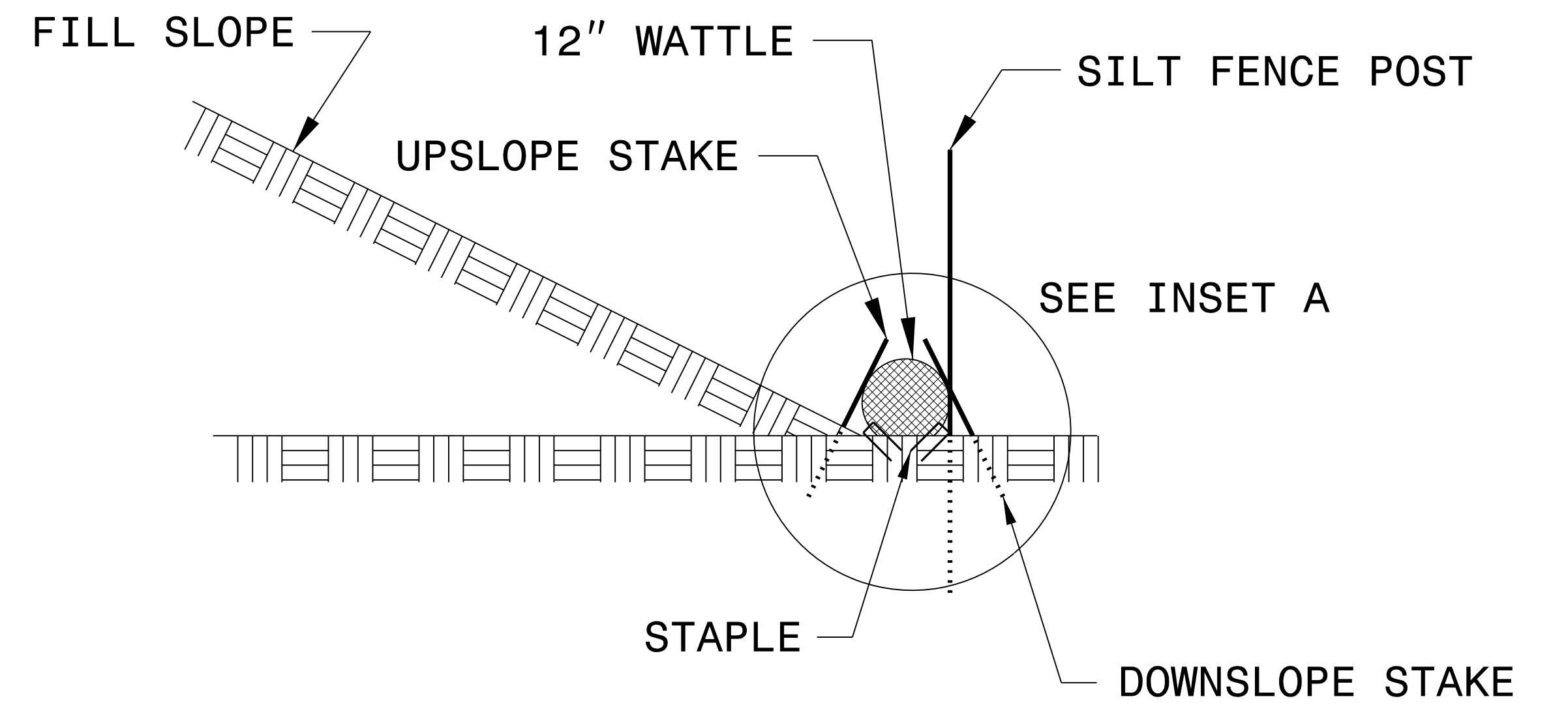
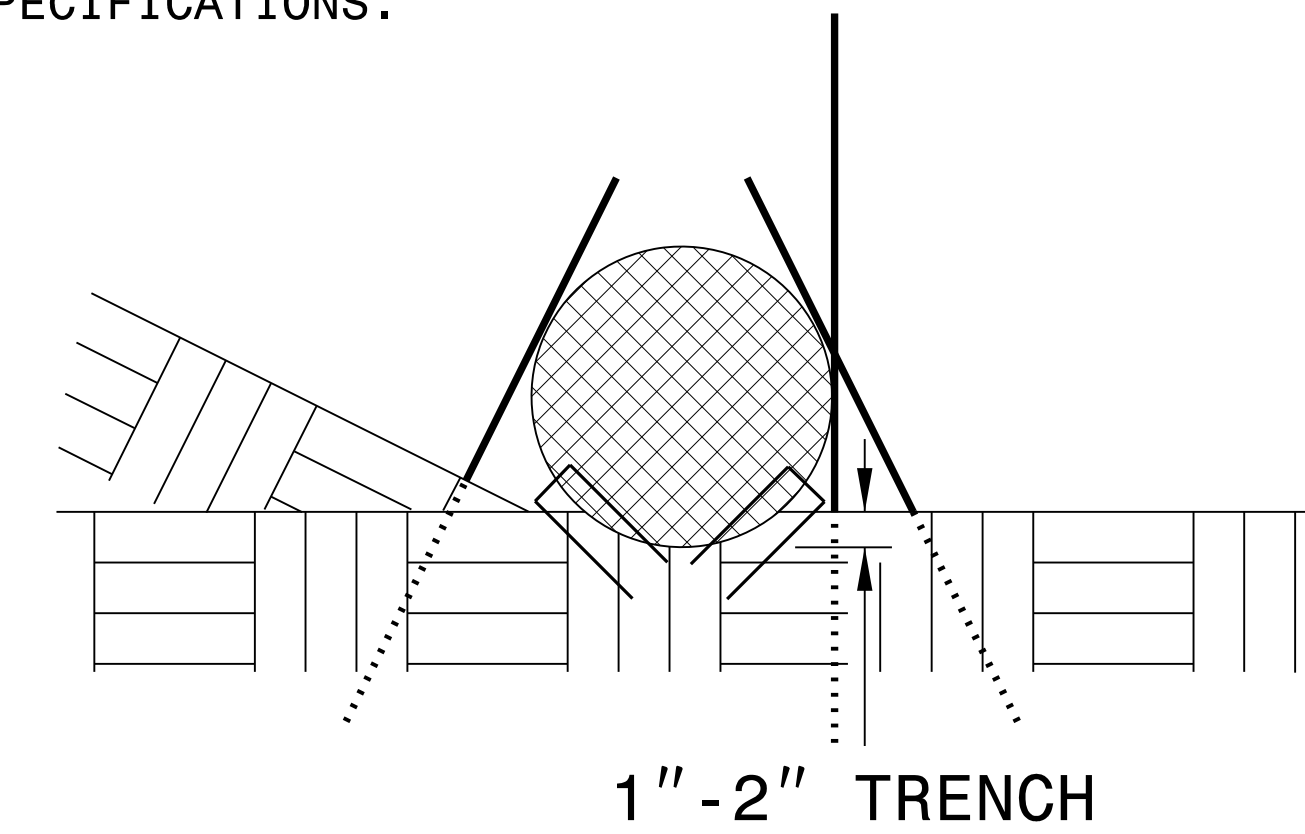
PROJECT REFERENCE NO. U-4762	SHEET NO. EC-02A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



**NOTES:**

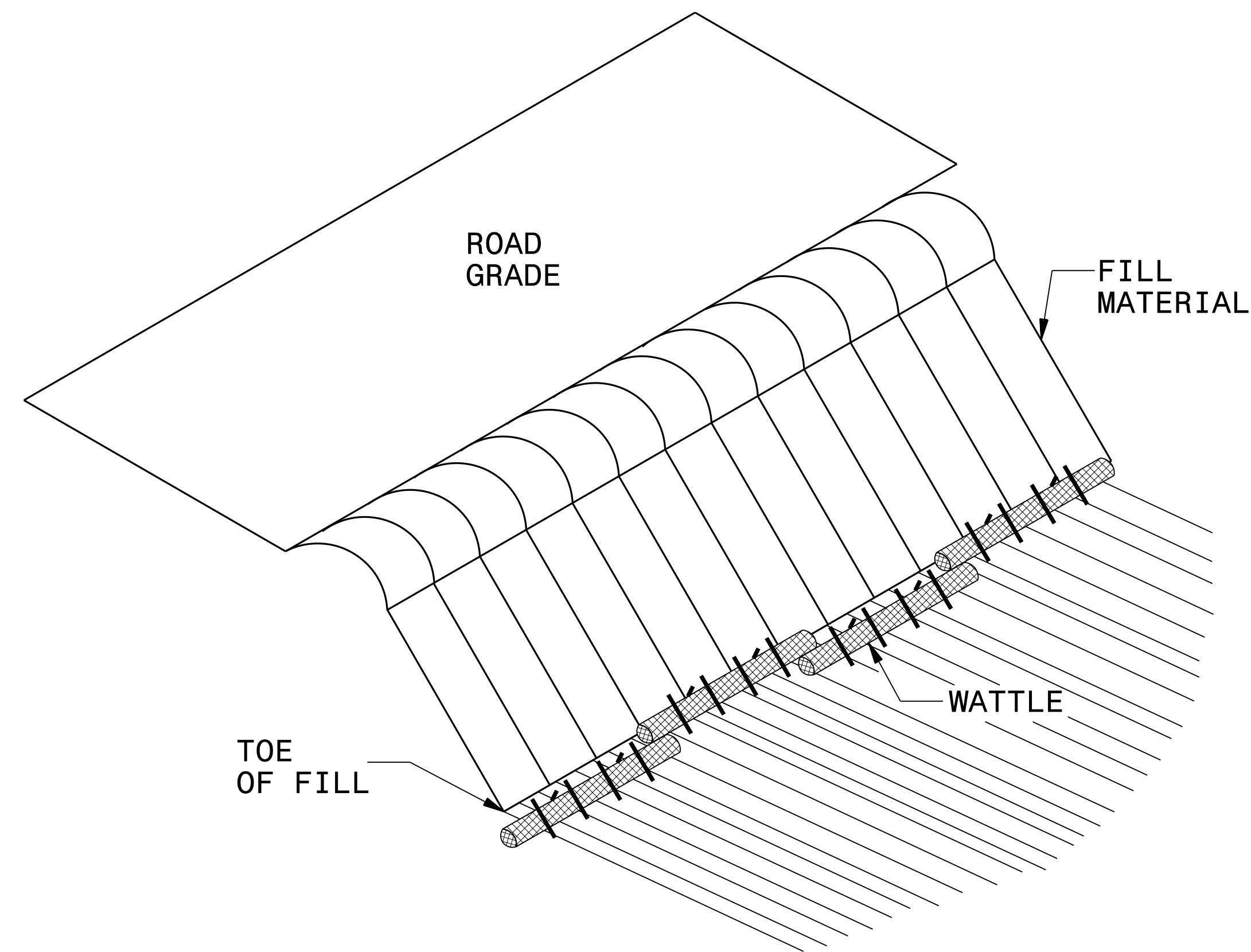
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE 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

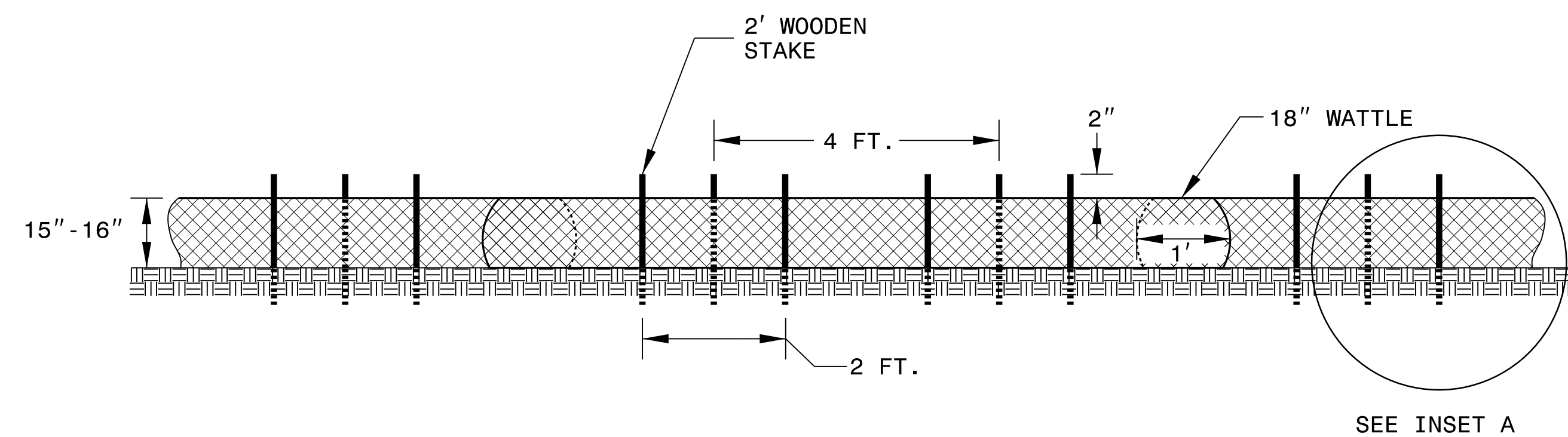


PROJECT REFERENCE NO.	SHEET NO.
U-4762	EC-02B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# COIR FIBER WATTLE BARRIER DETAIL



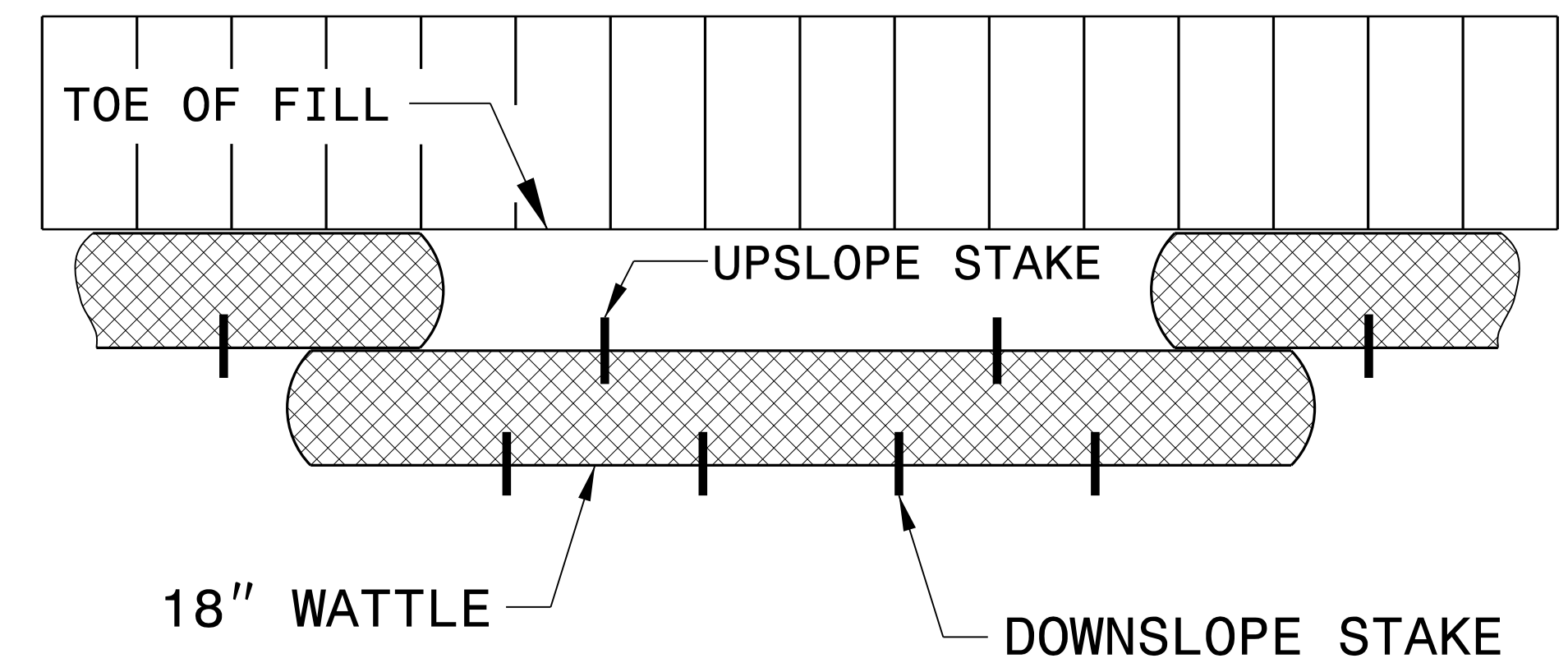
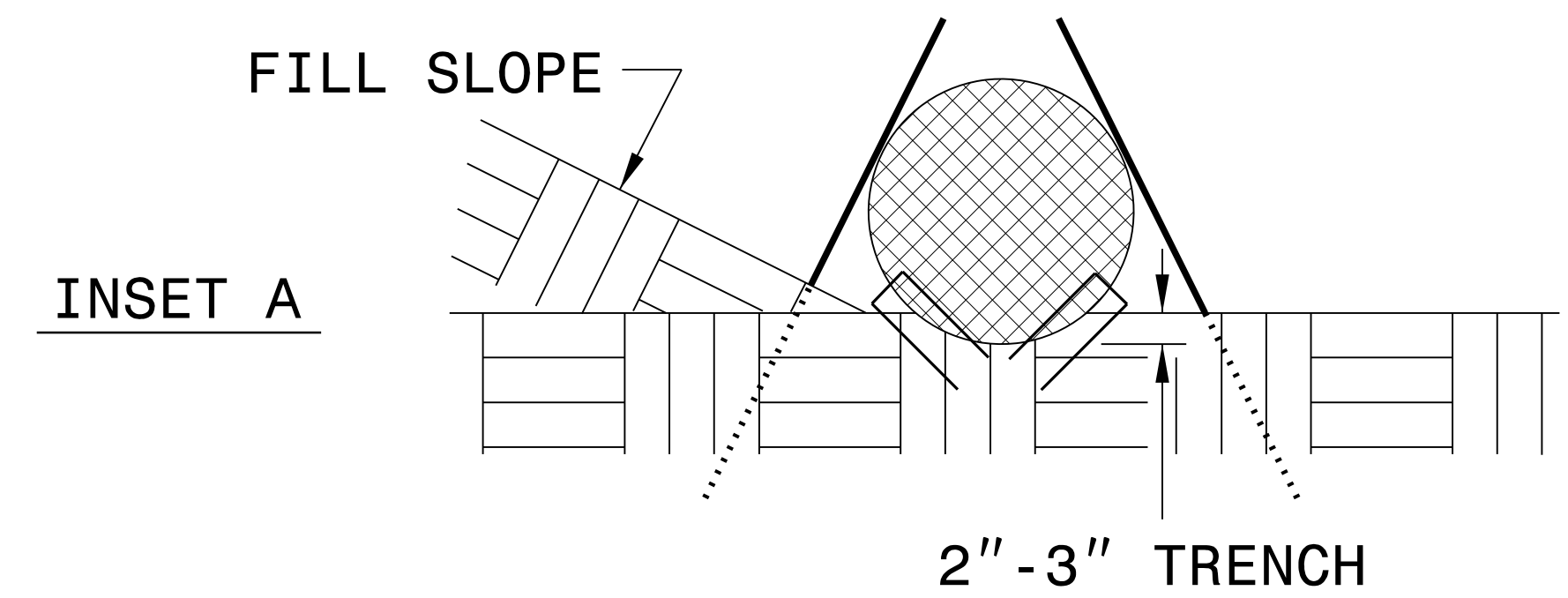
**ISOMETRIC VIEW**



**FRONT VIEW**

**NOTES:**

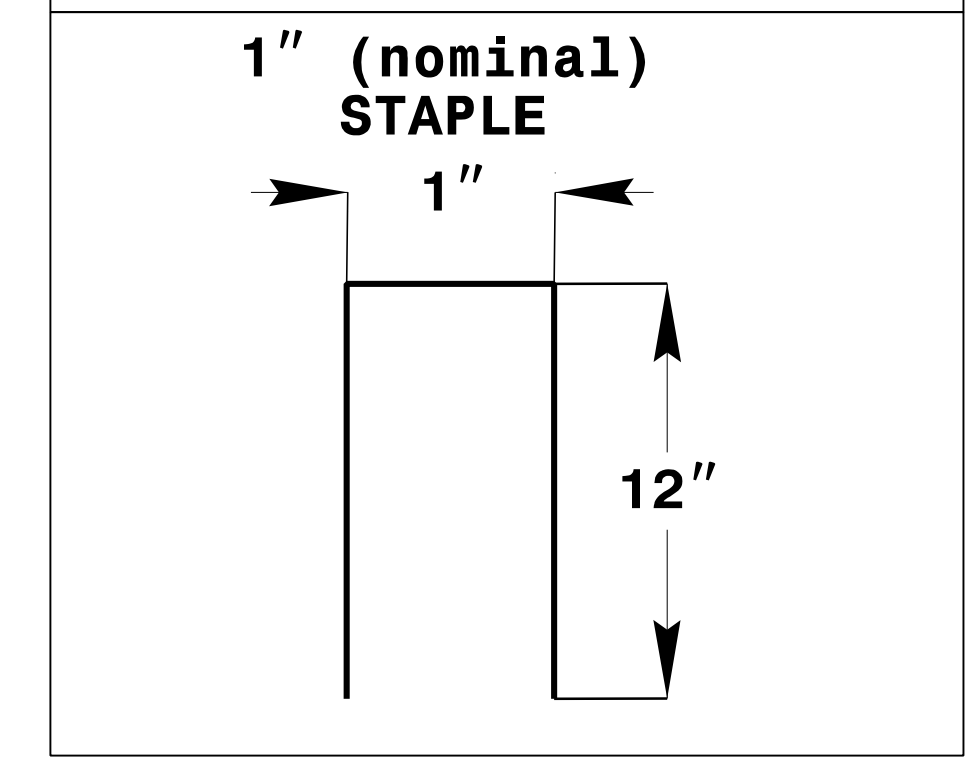
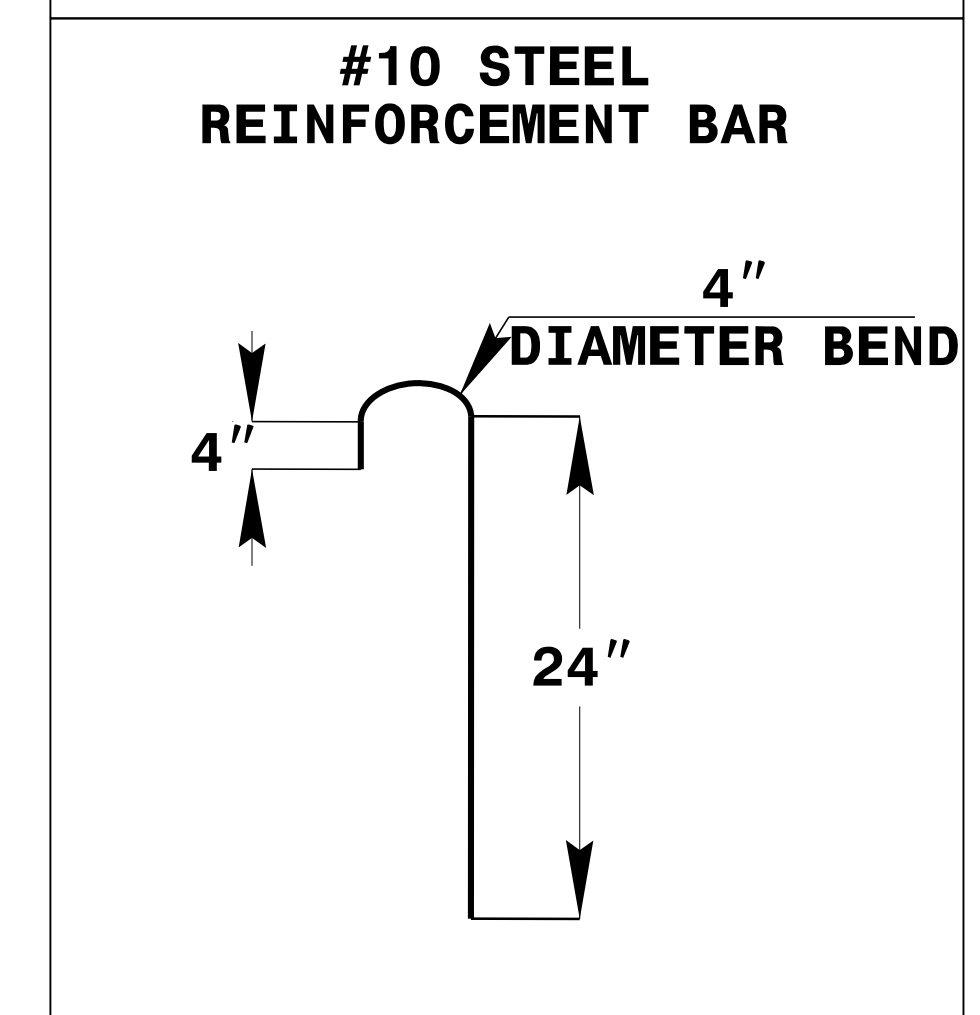
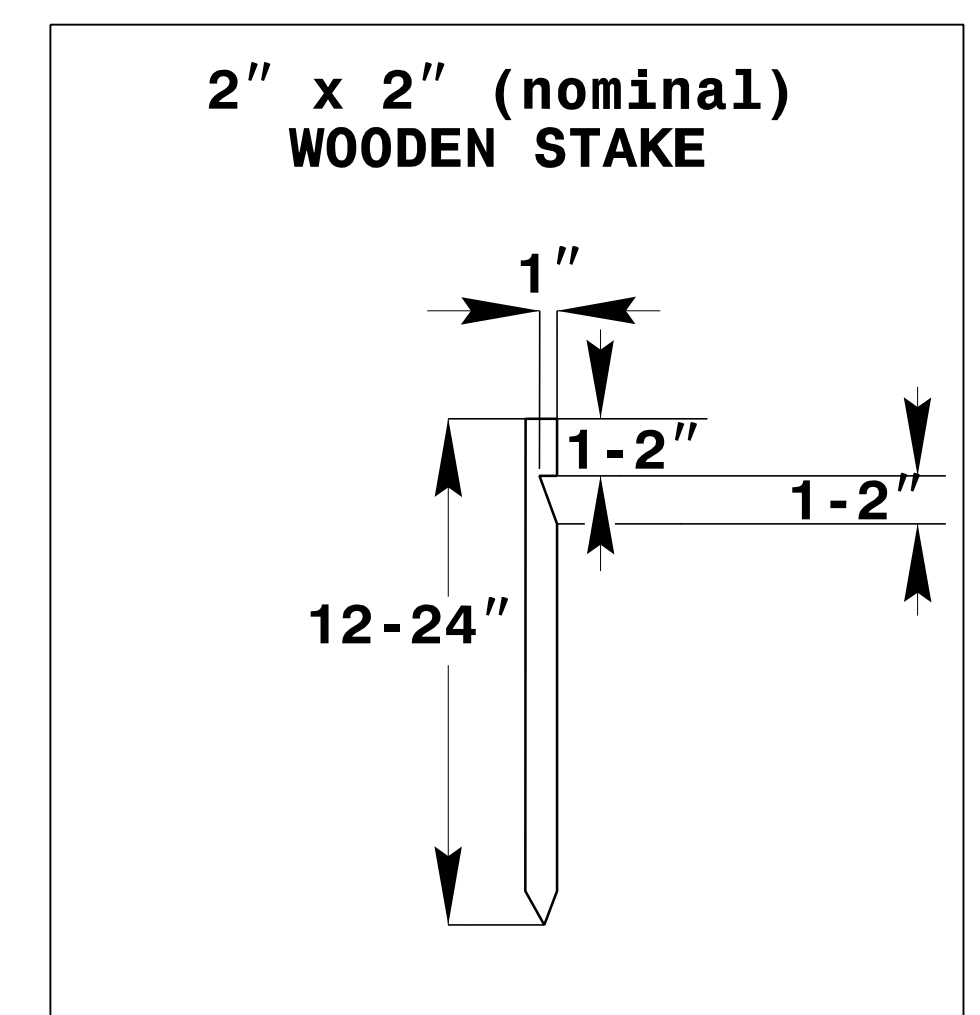
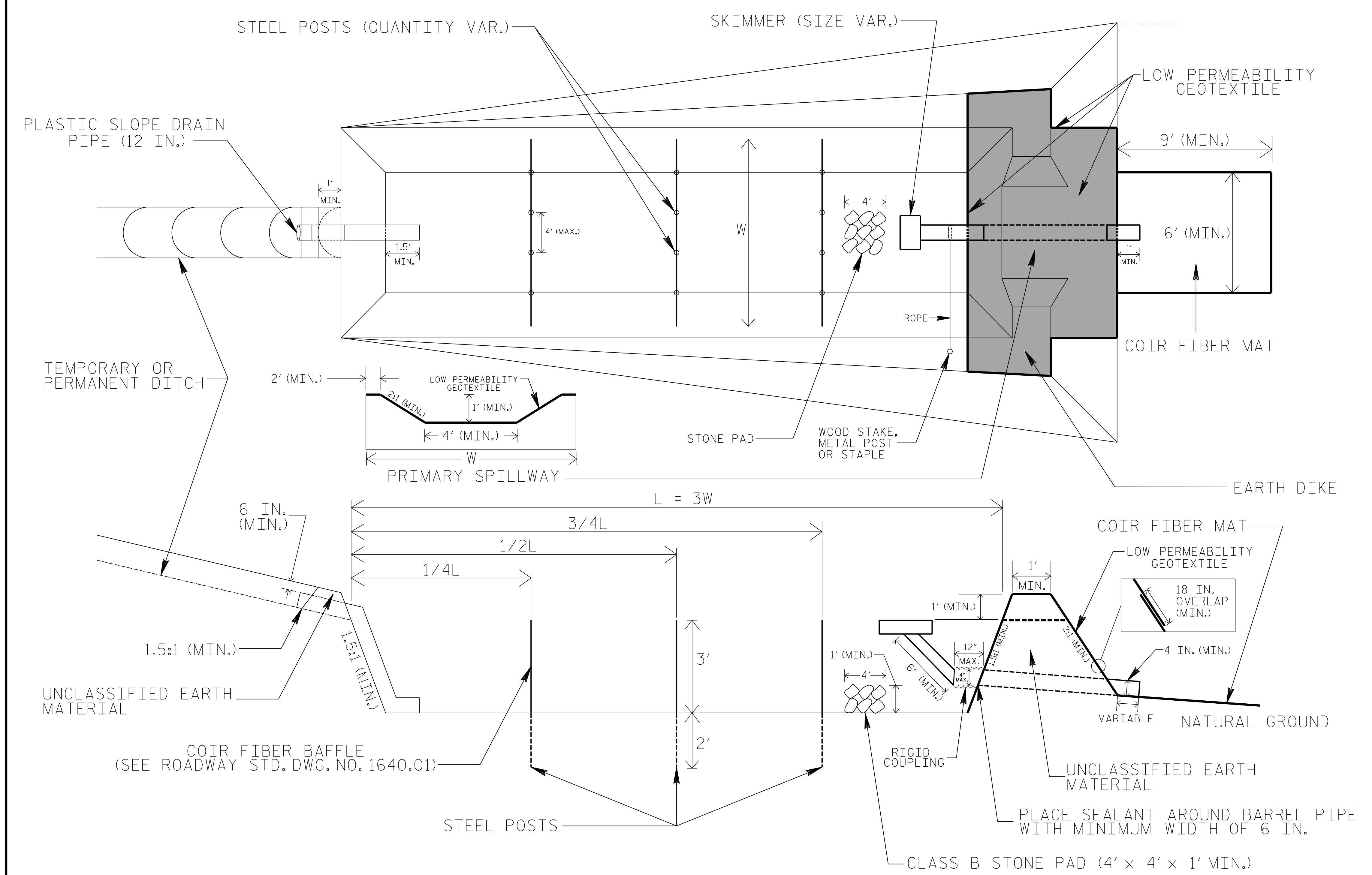
- USE MINIMUM 18 IN. NOMINAL DIAMETER COIR FIBER (COCONUT) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLES ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 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.
- FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.



**TOP VIEW**

PROJECT REFERENCE NO. U-4762	SHEET NO. EC-02C
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



## COIR FIBER MAT ANCHOR OPTIONS

### 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



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

---



---

PROJECT REFERENCE NO. <i>U-4762</i>	SHEET NO. <i>EC-03A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

# ***SOIL STABILIZATION TIMEFRAMES***

<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.



PROJECT REFERENCE NO. U-4762	SHEET NO. EC-04/CONST.04
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**TRAFFIC DATA**  
US 64 ALT  
-Y1-

10500	15200
3500	2200
5100	3200
5500	3800
8000	5500
800	400
1200	600
6000	8700

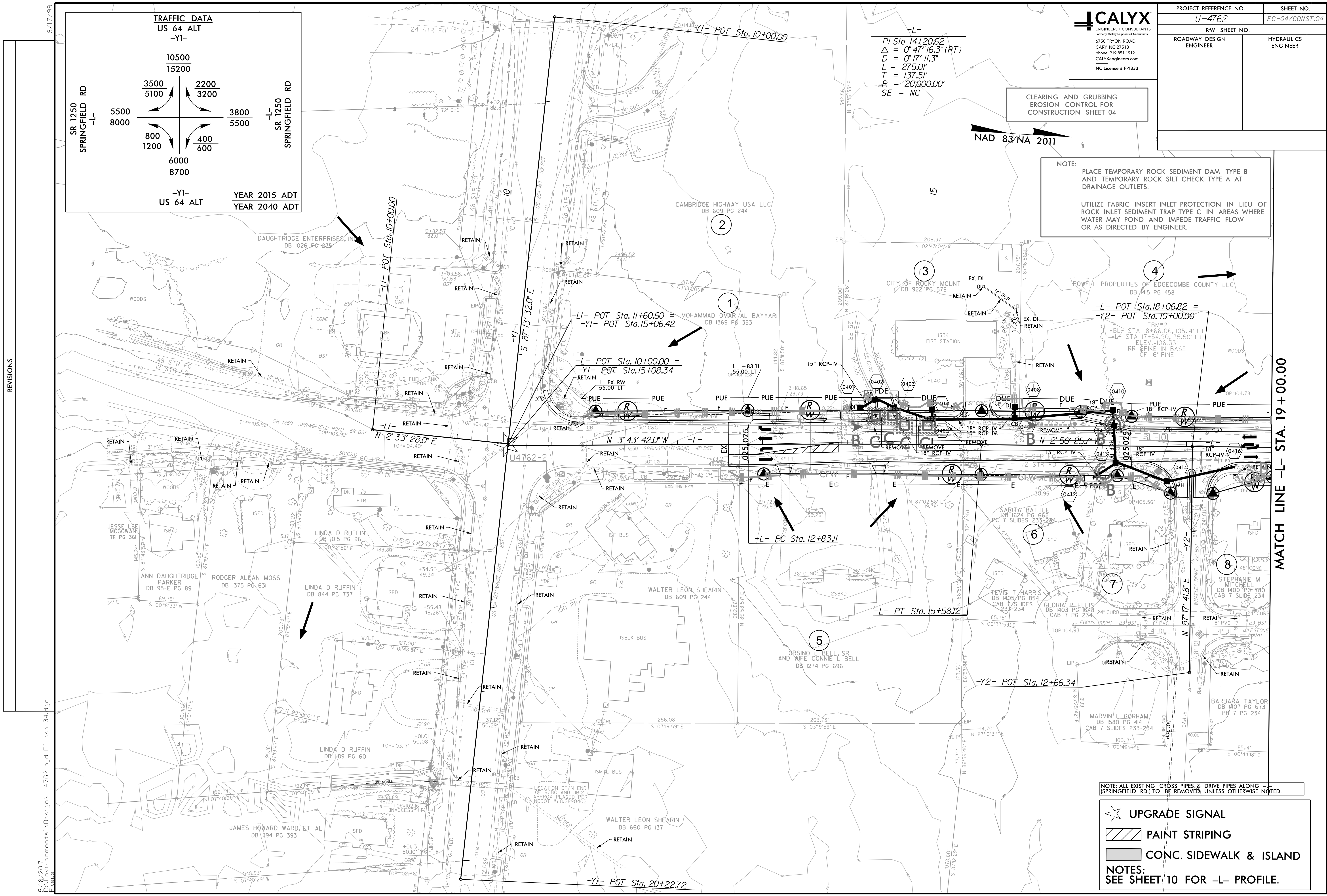
-Y1-  
US 64 ALT

YEAR 2015 ADT  
YEAR 2040 ADT

PI Sta 14+20.62  
Δ = 0° 47' 16.3" (RT)  
D = 0° 17' 11.3"  
L = 275.0'  
T = 137.5'  
R = 20,000.00'  
SE = NC

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B  
AND TEMPORARY ROCK SILT CHECK TYPE A AT  
DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF  
ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE  
WATER MAY POND AND IMPEDE TRAFFIC FLOW  
OR AS DIRECTED BY ENGINEER.



REVISIONS

MATCH LINE -L- STA. 19+00.00

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

- ★ UPGRADE SIGNAL
  - ▨ PAINT STRIPING
  - CONC. SIDEWALK & ISLAND
- NOTES:  
SEE SHEET 10 FOR -L- PROFILE.

F:\18\2017\RAE\Environmental\Design\U-4762\hyd\_EC\_psh\_04.dgn

8/17/99

PROJECT REFERENCE NO. U-4762	SHEET NO. EC-05/CONST.05
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

**CALYX**  
ENGINEERS & CONSULTANTS  
Family Safety Engineers & Consultants  
6750 TRYON ROAD  
CARY, NC 27518  
phone: 919.851.1912  
CALYXengineers.com  
NC License # F-1333

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 05

NAD 83/NA 2011

$PI\ Sta\ 23+43.30$   
 $\Delta = 0^{\circ}28'05.1''(RT)$   
 $D = 0^{\circ}06'05.2''$   
 $L = 461.44'$   
 $T = 230.72'$   
 $R = 56,483.69'$   
 $SE = NC$

$PI\ Sta\ 26+62.15$   
 $\Delta = 0^{\circ}24'01.7''(LT)$   
 $D = 0^{\circ}13'38.0''$   
 $L = 176.25'$   
 $T = 88.12'$   
 $R = 25,215.05'$   
 $SE = NC$

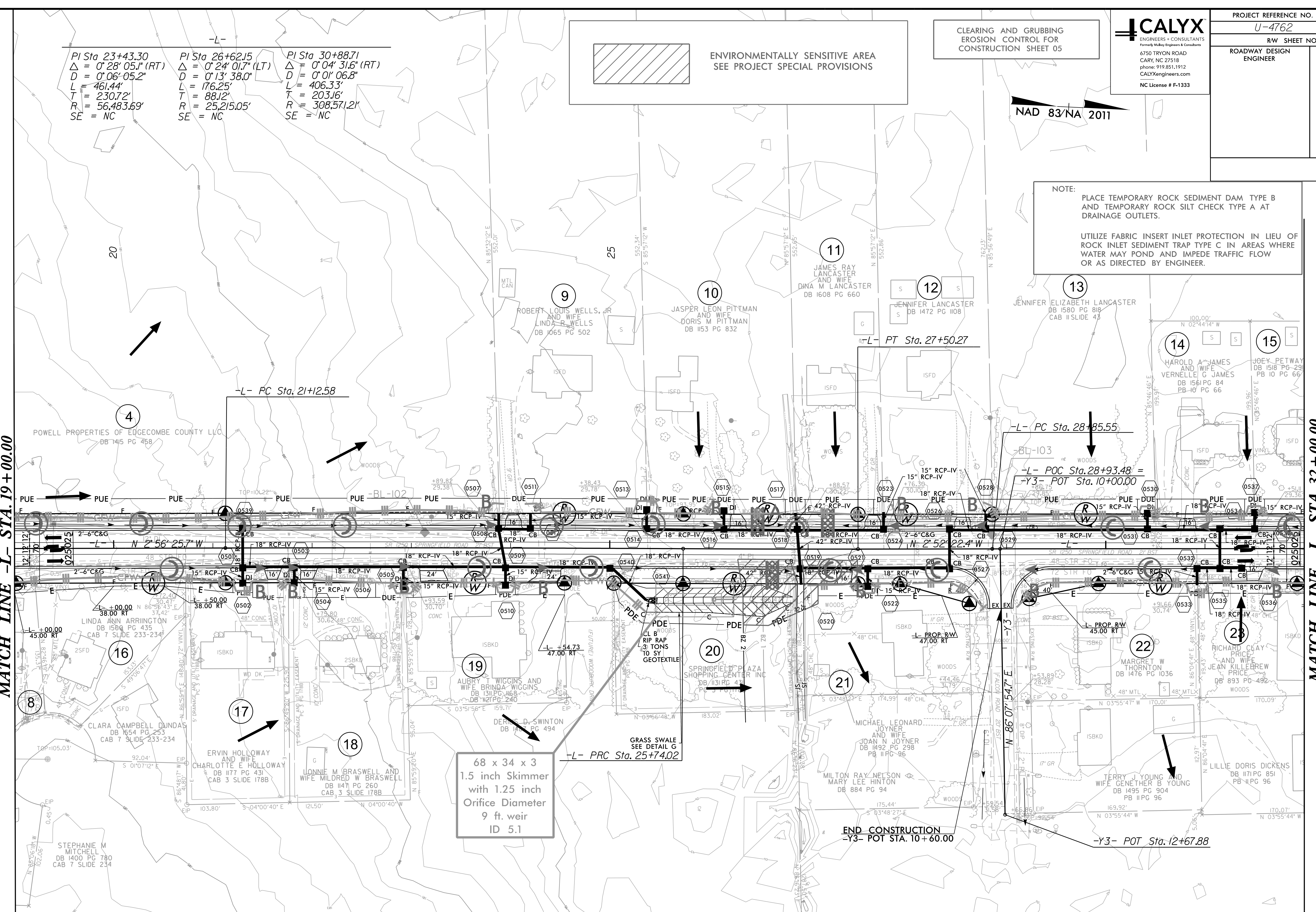
$PI\ Sta\ 30+88.71$   
 $\Delta = 0^{\circ}04'31.6''(RT)$   
 $D = 0^{\circ}01'06.8''$   
 $L = 406.33'$   
 $T = 203.16'$   
 $R = 308,571.21'$   
 $SE = NC$

ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

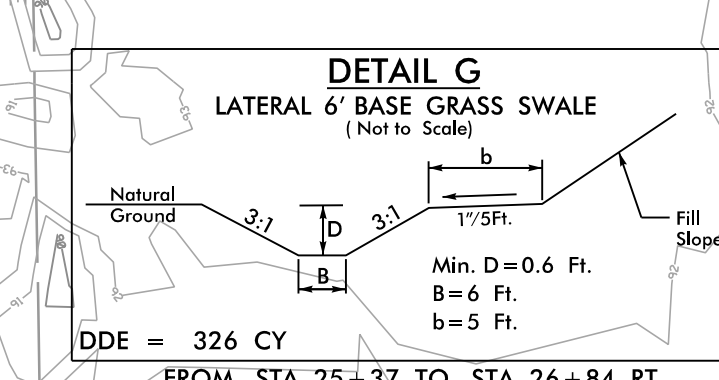
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

MATCH LINE -L- STA. 19+00.00

MATCH LINE -L- STA. 32+00.00



68 x 34 x 3  
1.5 inch Skimmer  
with 1.25 inch  
Orifice Diameter  
9 ft. weir  
ID 5.1



CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
SEE SHEET 10 FOR -L- PROFILE.

REVISIONS

F:\8\2017  
R:\Environmental\Design\U-4762\hyd\_EC\_psh\_05.dgn  
E:\8\2017

**CALYX**  
ENGINEERS + CONSULTANTS  
6750 TRYON ROAD  
CARY, NC 27518  
phone: 919.851.1912  
CALYXengineers.com  
NC License # F-1333

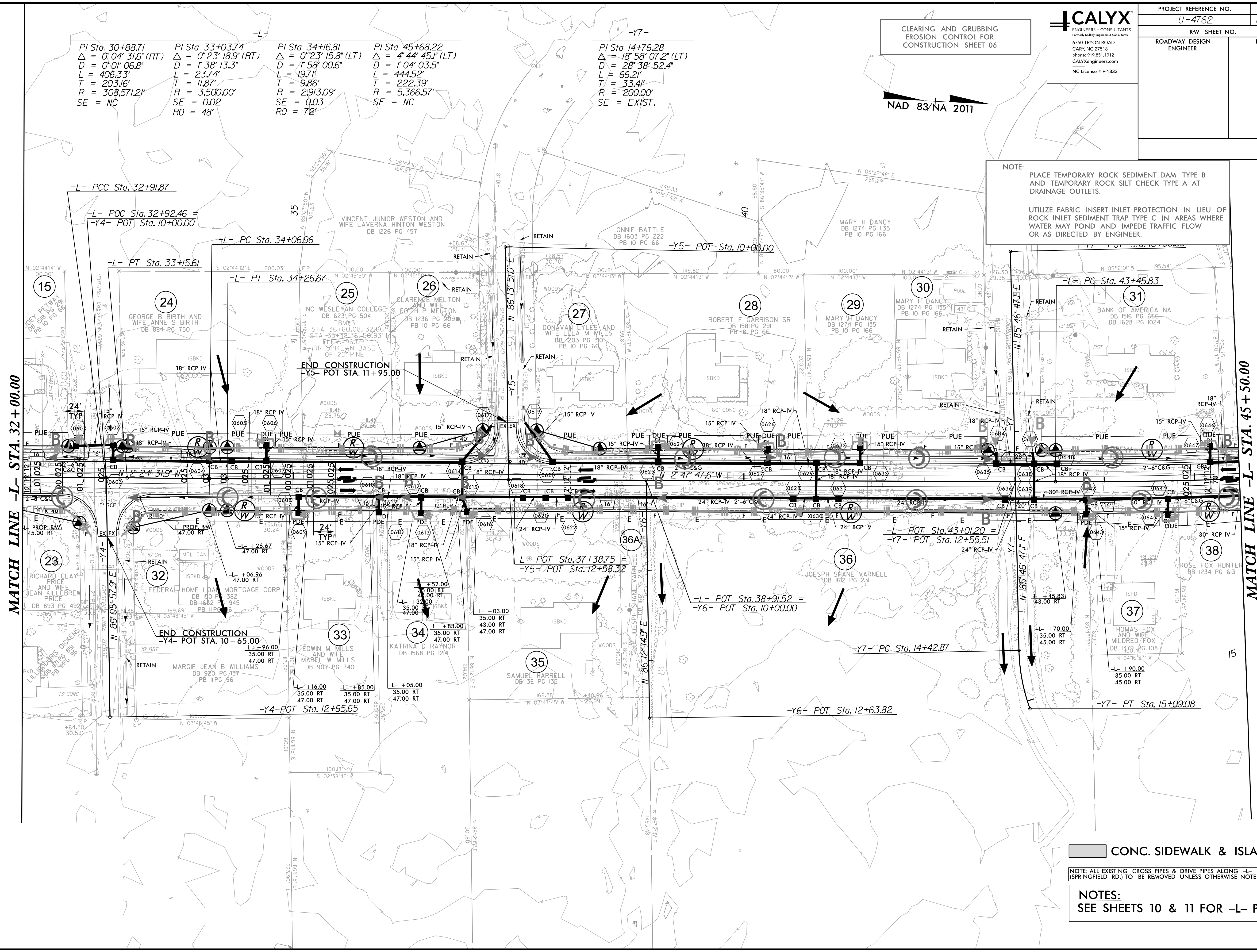
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06

NAD 83/NA 2011

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.

UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

<p>PI Sta. 30+88.71 Δ = 0° 04' 31.6" (RT) D = 0' 01' 06.8" L = 406.33' T = 203.16' R = 308,571.21" SE = NC</p>	<p>PI Sta. 33+03.74 Δ = 0° 23' 18.9" (RT) D = 1' 38' 13.3" L = 23.74' T = 11.87' R = 3,500.00' SE = 0.02 RO = 48'</p>	<p>PI Sta. 34+16.81 Δ = 0° 23' 15.8" (LT) D = 1' 58' 00.6" L = 19.71' T = 9.86' R = 2,913.09' SE = 0.03 RO = 72'</p>	<p>PI Sta. 45+68.22 Δ = 4° 44' 45.1" (LT) D = 1' 04' 03.5" L = 444.52' T = 222.39' R = 5,366.57' SE = NC</p>	<p>PI Sta. 14+76.28 Δ = 18° 58' 07.2" (LT) D = 28' 38' 52.4" L = 66.21' T = 33.41' R = 200.00' SE = EXIST.</p>
--	---	--	--	--



REVISIONS

8.17.09  
F:\8\2017\Environmental\Design\U-4762\_hyd\_EC\_psh\_06.dgn  
E:\8\2017\Environmental\Design\U-4762\_hyd\_EC\_psh\_06.dgn

CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
SEE SHEETS 10 & 11 FOR -L- PROFILE.

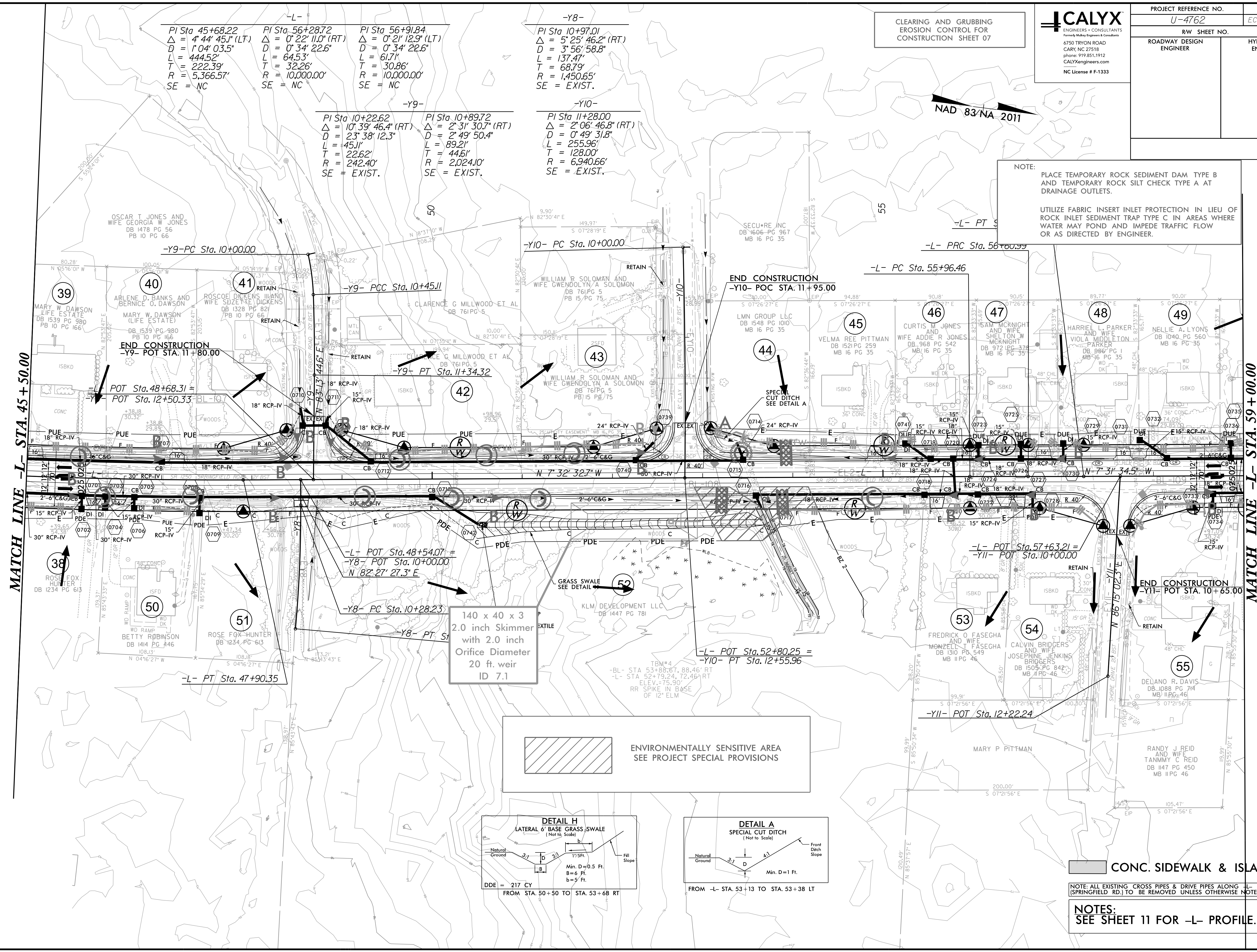
PROJECT REFERENCE NO. <b>U-4762</b>	SHEET NO. <b>EC-07/CONST.07</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 07

NAD 83/NA 2011

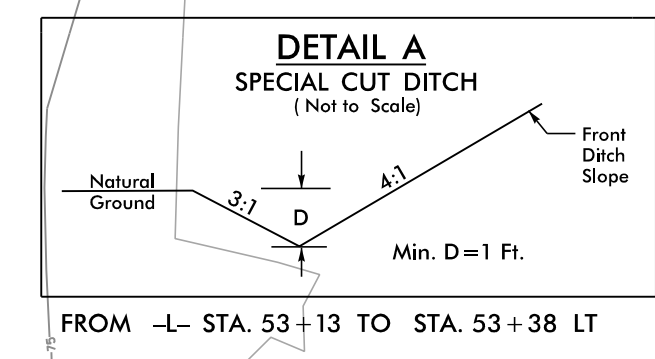
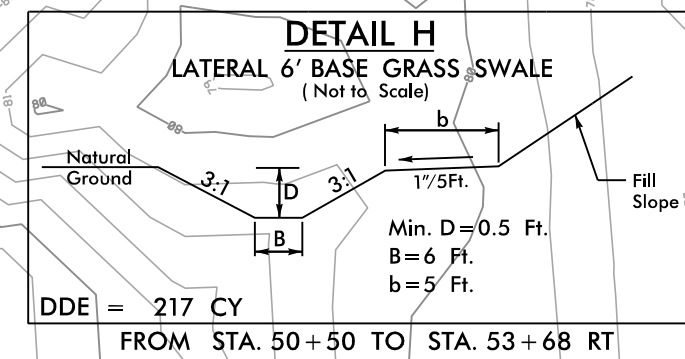
<p><b>-L-</b></p> <p>PI Sta 45+68.22 Δ = 4' 44" 45.1" (LT) D = 1' 04" 03.5" L = 444.52' T = 222.39' R = 5,366.57' SE = NC</p>	<p><b>-L-</b></p> <p>PI Sta 56+28.72 Δ = 0' 22" 11.0" (RT) D = 0' 34" 22.6" L = 64.53' T = 32.26' R = 10,000.00' SE = NC</p>	<p><b>-L-</b></p> <p>PI Sta 56+91.84 Δ = 0' 21" 12.9" (LT) D = 0' 34" 22.6" L = 61.71' T = 30.86' R = 10,000.00' SE = NC</p>	<p><b>-Y8-</b></p> <p>PI Sta 10+97.01 Δ = 5' 25" 46.2" (RT) D = 3' 56" 58.8" L = 137.47' T = 68.79' R = 1,450.65' SE = EXIST.</p>
<p><b>-Y9-</b></p> <p>PI Sta 10+22.62 Δ = 10' 39" 46.4" (RT) D = 23' 38" 12.3" L = 45.11' T = 22.62' R = 242.40' SE = EXIST.</p>	<p><b>-Y9-</b></p> <p>PI Sta 10+89.72 Δ = 2' 31' 30.7" (RT) D = 2' 49' 50.4" L = 89.21' T = 44.61' R = 2,024.10' SE = EXIST.</p>	<p><b>-Y10-</b></p> <p>PI Sta 11+28.00 Δ = 2' 06" 46.8" (RT) D = 0' 49' 31.8" L = 255.96' T = 128.00' R = 6,940.66' SE = EXIST.</p>	

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.



140 x 40 x 3  
2.0 inch Skimmer  
with 2.0 inch  
Orifice Diameter  
20 ft. weir  
ID 7.1

ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS



CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
SEE SHEET 11 FOR -L- PROFILE.

REVISIONS

8/17/09  
F:\8\2017 Environmental\Design\U-4762\_hyd\_EC\_psh\_07.dgn  
8/17/09

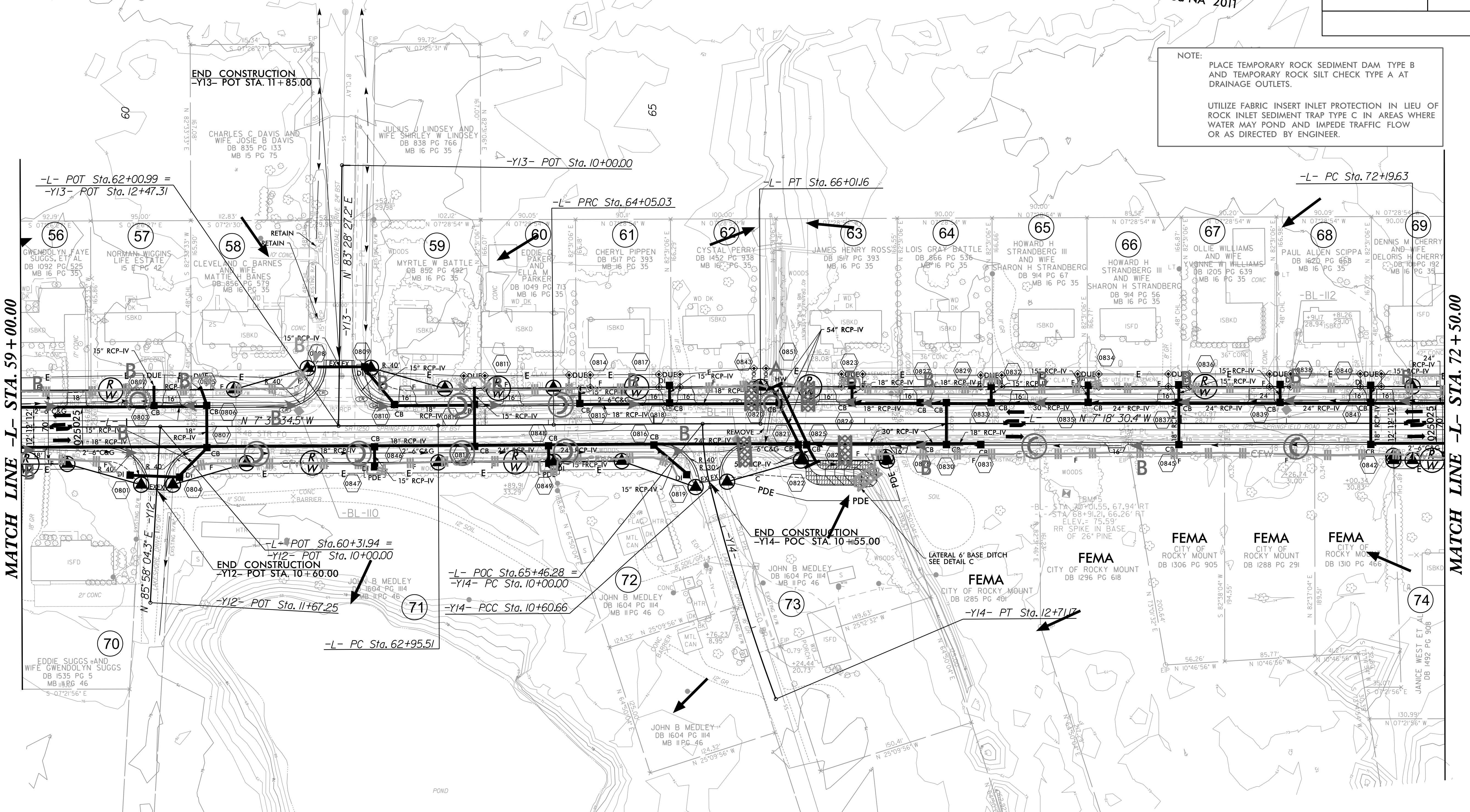
**CALYX**  
ENGINEERS + CONSULTANTS  
6750 TRYON ROAD  
CARY, NC 27518  
PHONE: 919.851.1912  
CALYXengineers.com  
NC License # F-1333

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 08

NAD 83/NA 2011

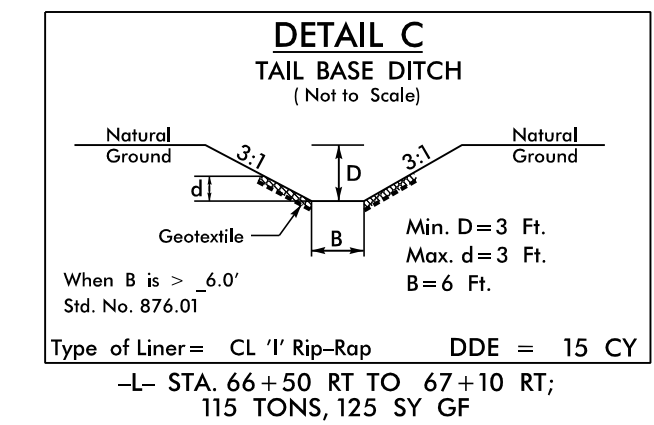
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

-L-	-Y14-
PI Sta 63+50.27 Δ = 0° 16' 31.6" (LT) D = 0° 15' 05.4" L = 109.52' T = 54.76' R = 22,780.85' SE = NC	PI Sta 10+30.48 Δ = 13° 54' 05.2" (LT) D = 22° 55' 05.9" L = 60.66' T = 30.48' R = 250.00' SE = EXIST.
PI Sta 65+03.10 Δ = 0° 29' 35.8" (RT) D = 0° 15' 05.4" L = 196.13' T = 98.06' R = 22,780.85' SE = NC	PI Sta 11+66.02 Δ = 6° 27' 06.9" (LT) D = 3° 03' 53.6" L = 210.51' T = 105.37' R = 1,869.43' SE = EXIST.
PI Sta 72+57.89 Δ = 0° 06' 34.6" (LT) D = 0° 08' 35.7" L = 76.51' T = 38.26' R = 40,000.00' SE = NC	



MATCH LINE -L- STA. 59+00.00

MATCH LINE -L- STA. 72+50.00



CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
SEE SHEETS 11 & 12 FOR -L- PROFILE.

REVISIONS

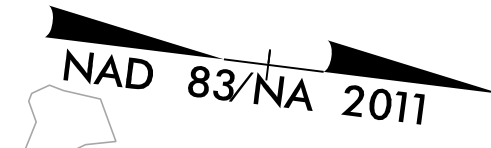
8/17/2017  
F:\E\2017\Commentary\Design\U-4762\_hyd\_EC\_psh\_08.dgn  
E:\E\2017\Commentary\Design\U-4762\_hyd\_EC\_psh\_08.dgn

8/17/99  
REVISIONS  
5/18/2017  
RAE:\environmental\Design\U-4762\_hyd\_EC\_psh\_09.dgn

**CALYX**  
ENGINEERS & CONSULTANTS  
4750 TRYON ROAD  
CARY, NC 27518  
phone: 919.851.1912  
CALYXengineers.com  
NC License # F-1333

PROJECT REFERENCE NO.	SHEET NO.
U-4762	EC-09/CONST.09
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

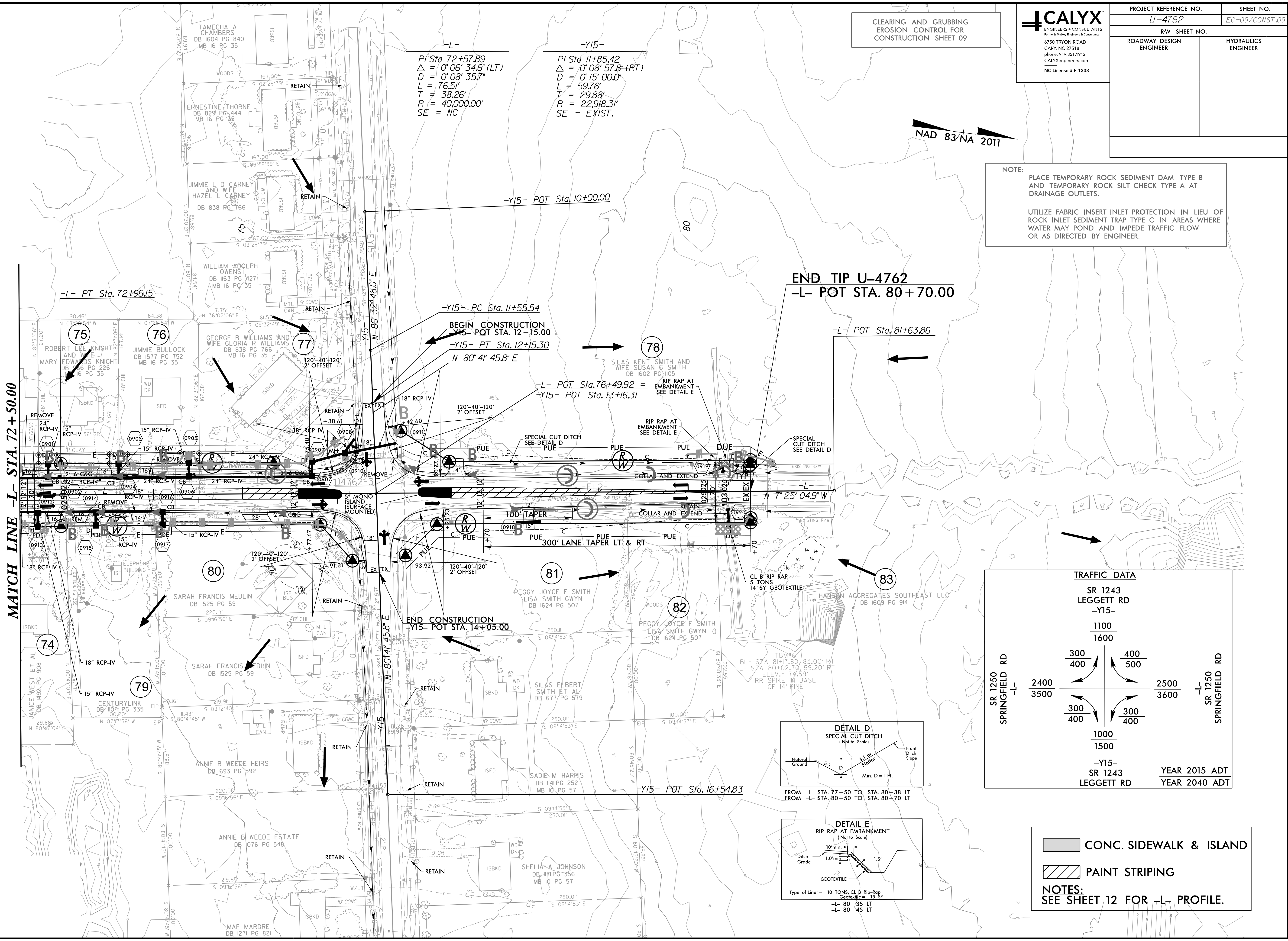
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 09



NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B  
AND TEMPORARY ROCK SILT CHECK TYPE A AT  
DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF  
ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE  
WATER MAY POND AND IMPEDE TRAFFIC FLOW  
OR AS DIRECTED BY ENGINEER.

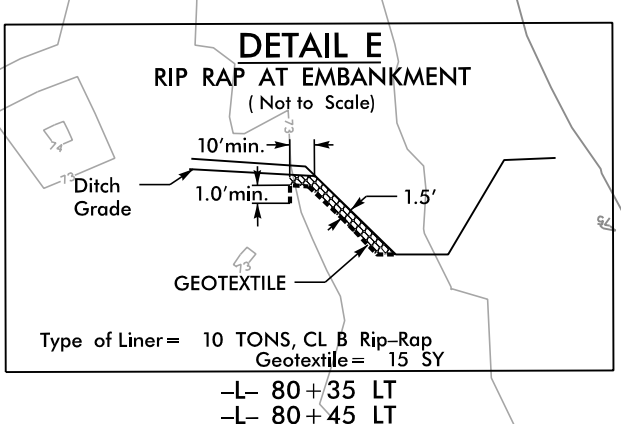
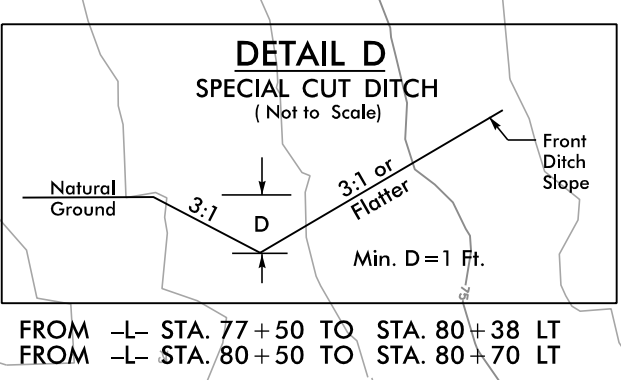
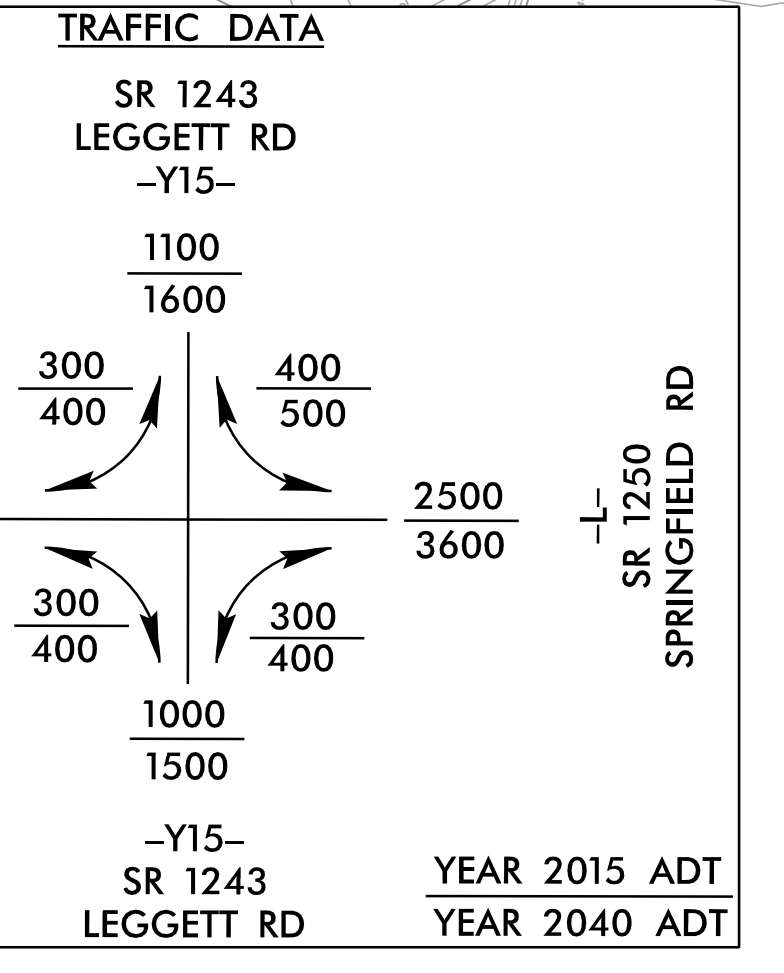
MATCH LINE -L- STA. 72+50.00

END TIP U-4762  
-L- POT STA. 80+70.00



-L-  
PI Sta 72+57.89  
 $\Delta = 0'06'34.6''$  (LT)  
 $D = 0'08'35.7''$   
 $L = 76.5'$   
 $T = 38.26'$   
 $R = 40,000.00'$   
SE = NC

-Y15-  
PI Sta 11+85.42  
 $\Delta = 0'08'57.8''$  (RT)  
 $D = 0'15'00.0''$   
 $L = 59.76'$   
 $T = 29.88'$   
 $R = 22,918.31'$   
SE = EXIST.



CONC. SIDEWALK & ISLAND  
PAINT STRIPING

NOTES:  
SEE SHEET 12 FOR -L- PROFILE.

PROJECT REFERENCE NO. <b>U-4762</b>	SHEET NO. <b>EC-10/CONST.04</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

**TRAFFIC DATA**  
US 64 ALT  
-Y1-

10500	15200
3500	2200
5100	3200
5500	3800
8000	5500
800	400
1200	600
6000	8700

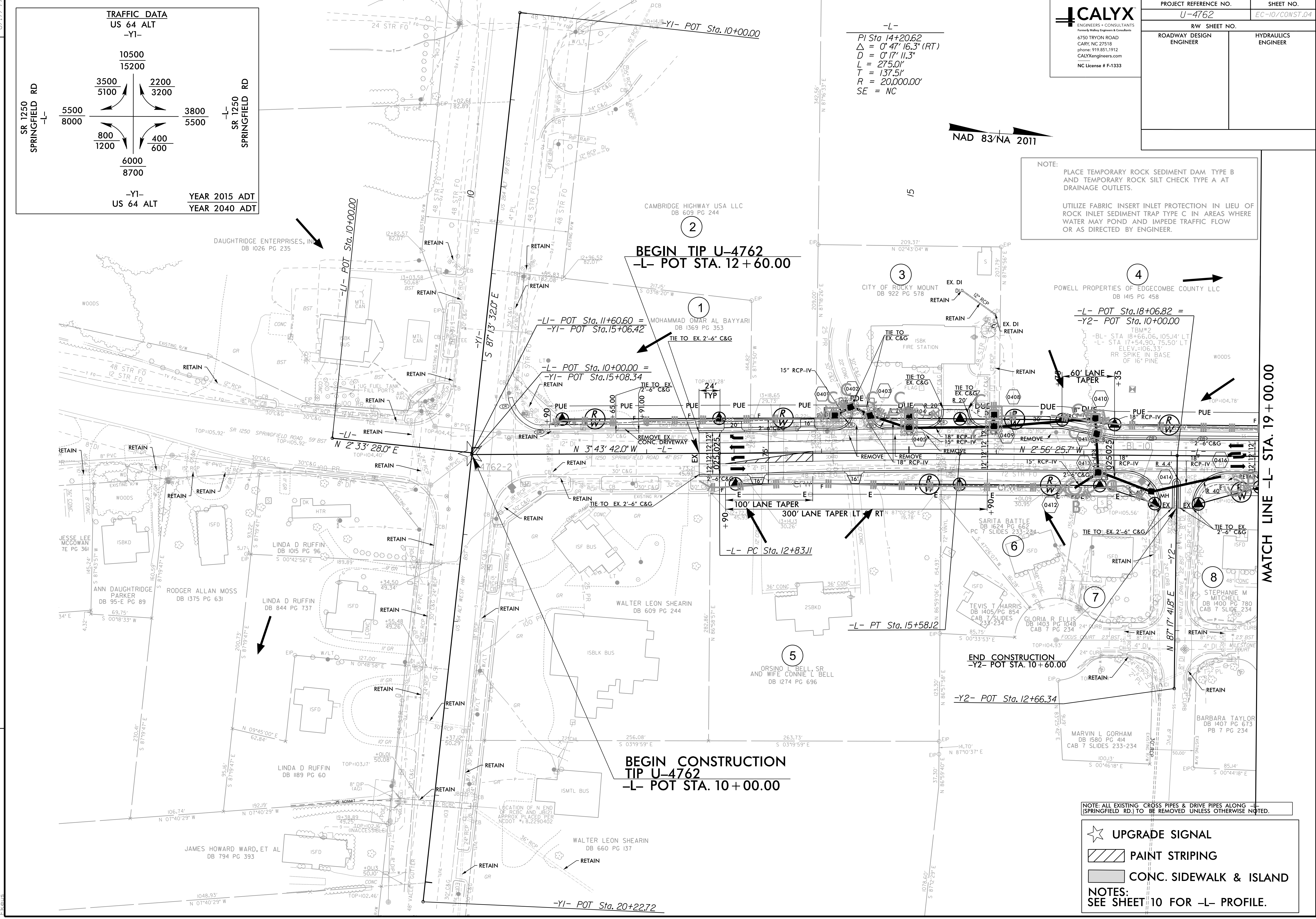
-Y1-  
US 64 ALT

YEAR 2015 ADT  
YEAR 2040 ADT

-L-  
PI Sta 14+20.62  
 $\Delta = 0' 47' 16.3'' (RT)$   
 $D = 0' 17' 11.3''$   
 $L = 275.0'$   
 $T = 137.5'$   
 $R = 20,000.00'$   
SE = NC

NAD 83/NA 2011

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.



**BEGIN TIP U-4762**  
-L- POT STA. 12+60.00

**BEGIN CONSTRUCTION**  
TIP U-4762  
-L- POT STA. 10+00.00

**END CONSTRUCTION**  
-Y2- POT STA. 10+60.00  
-Y2- POT STA. 12+66.34

-L- POT Sta. 18+06.82 =  
-Y2- POT Sta. 10+00.00

MATCH LINE -L- STA. 19+00.00

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

- ☆ UPGRADE SIGNAL
  - ▨ PAINT STRIPING
  - CONC. SIDEWALK & ISLAND
- NOTES:  
SEE SHEET 10 FOR -L- PROFILE.

REVISIONS

8/17/99  
8/18/2017  
C:\Documents\Design\U-4762\hyd\_EC\_psh\_10.dgn  
E:\Users\jlewis

8/17/99  
 REVISIONS  
 5/18/2017  
 R:\E:\environmental\Design\U-4762\_hyd\_EC\_psh\_11.dgn  
 EC

-L-		
PI Sta 23+43.30	PI Sta 26+62.15	PI Sta 30+88.71
$\Delta = 0^{\circ} 28' 05.1''$ (RT)	$\Delta = 0^{\circ} 24' 01.7''$ (LT)	$\Delta = 0^{\circ} 04' 31.6''$ (RT)
D = 0' 06' 05.2"	D = 0' 13' 38.0"	D = 0' 01' 06.8"
L = 461.44'	L = 176.25'	L = 406.33'
T = 230.72'	T = 88.12'	T = 203.16'
R = 56,483.69'	R = 25,215.05'	R = 308,571.21'
SE = NC	SE = NC	SE = NC

**CALYX**  
 ENGINEERS + CONSULTANTS  
 6750 TRYON ROAD  
 CARY, NC 27518  
 phone: 919.851.1912  
 CALYXengineers.com  
 NC License # F-1333

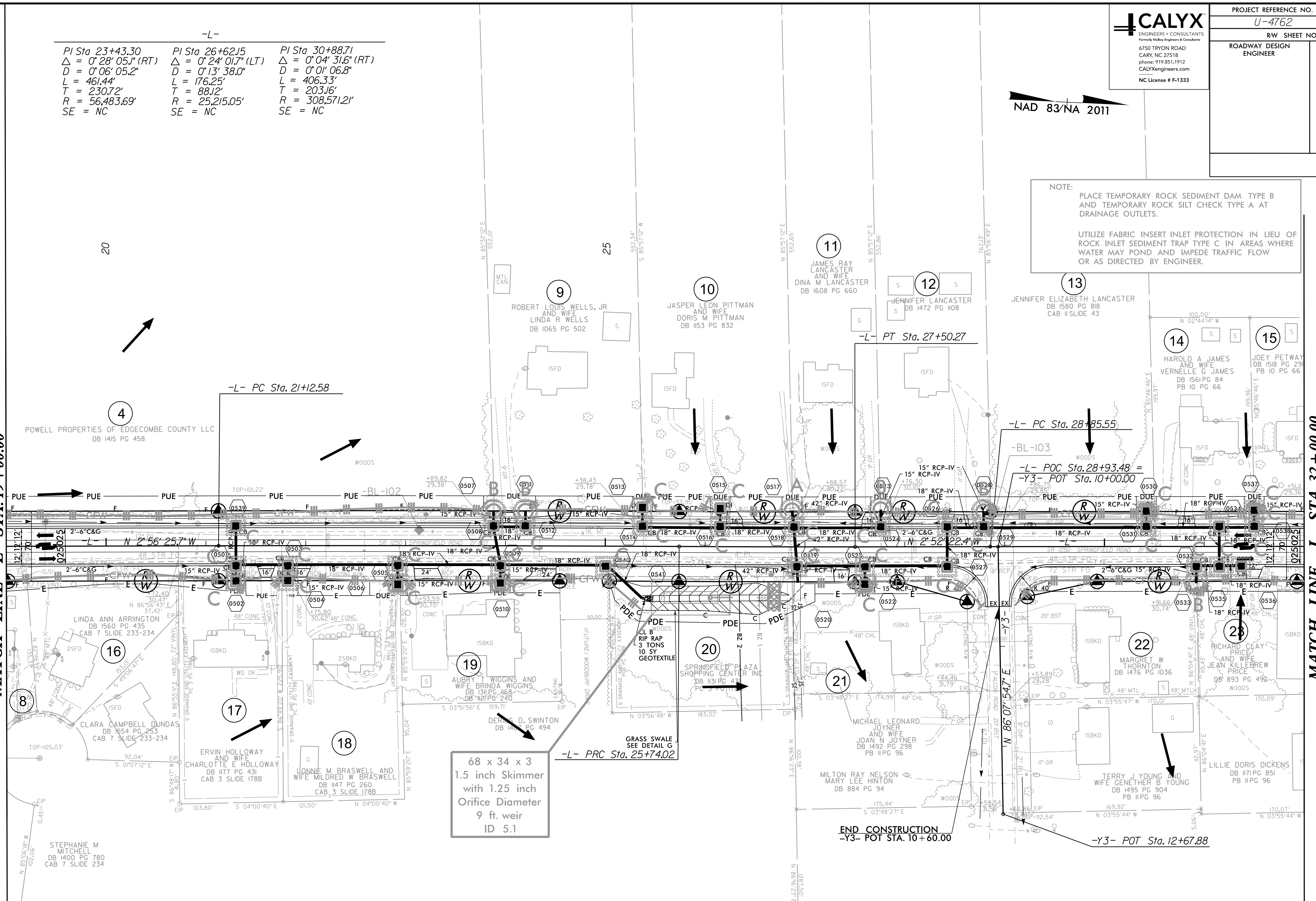
PROJECT REFERENCE NO. U-4762	SHEET NO. EC-11/CONST.05
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

NAD 83/NA 2011

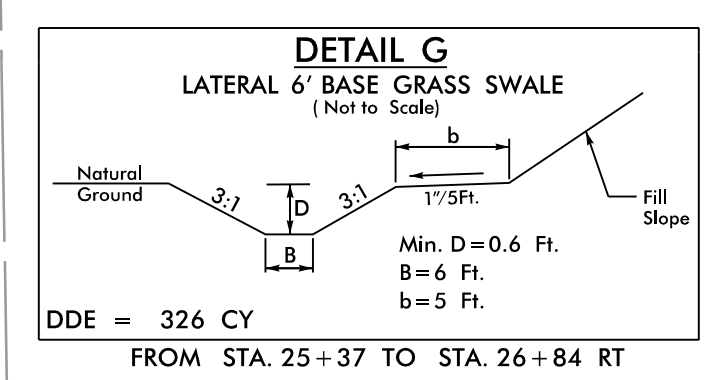
NOTE:  
 PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
 UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

MATCH LINE -L- STA. 19+00.00

MATCH LINE -L- STA. 32+00.00



68 x 34 x 3  
 1.5 inch Skimmer  
 with 1.25 inch  
 Orifice Diameter  
 9 ft. weir  
 ID 5.1



CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
 SEE SHEET 10 FOR -L- PROFILE.



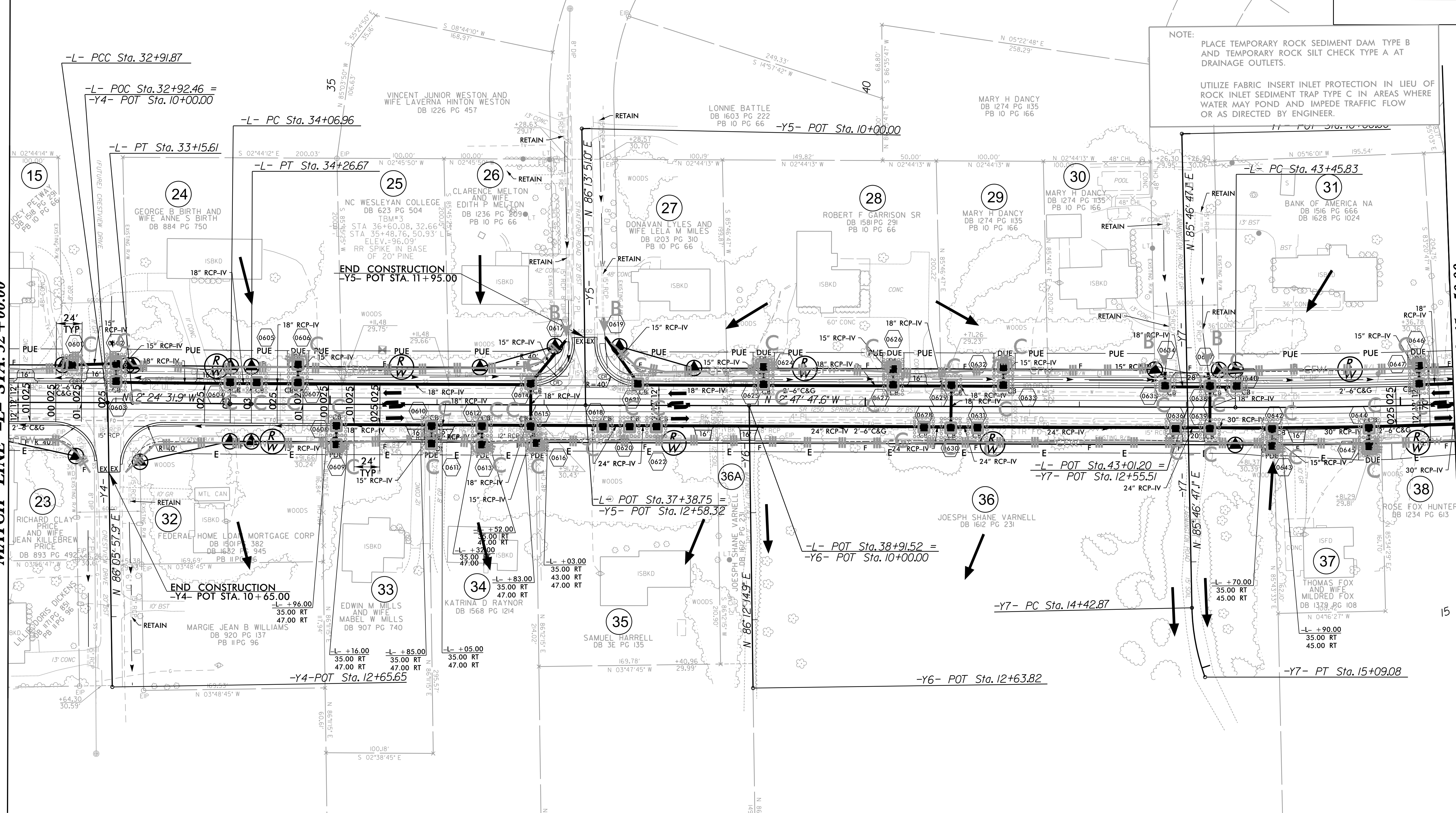
-L-		-Y7-	
PI Sta 30+88.71 Δ = 0° 04' 31.6" (RT) D = 0' 01' 06.8" L = 406.33' T = 203.16' R = 308,571.21' SE = NC	PI Sta 33+03.74 Δ = 0° 23' 18.9" (RT) D = 1' 38' 13.3" L = 237.4' T = 11.87' R = 3,500.00' SE = 0.02 RO = 48'	PI Sta 34+16.81 Δ = 0° 23' 15.8" (LT) D = 1' 58' 00.6" L = 197.1' T = 9.86' R = 2,913.09' SE = 0.03 RO = 72'	PI Sta 45+68.22 Δ = 4° 44' 45.1" (LT) D = 1' 04' 03.5" L = 444.52' T = 222.39' R = 5,366.57' SE = NC
PI Sta 14+76.28 Δ = 18° 58' 07.2" (LT) D = 28' 38' 52.4" L = 66.21' T = 33.41' R = 200.00' SE = EXIST.			

NAD 83/NA 2011

NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

MATCH LINE -L- STA. 32+00.00

MATCH LINE -L- STA. 45+50.00



CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
SEE SHEETS 10 & 11 FOR -L- PROFILE.

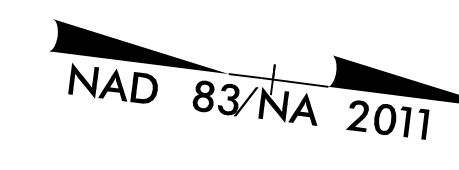
REVISIONS

8.17.09  
5/18/2017  
C:\Users\jcommental\Design\U-4762\_hyd\_EC\_psh\_12.dgn

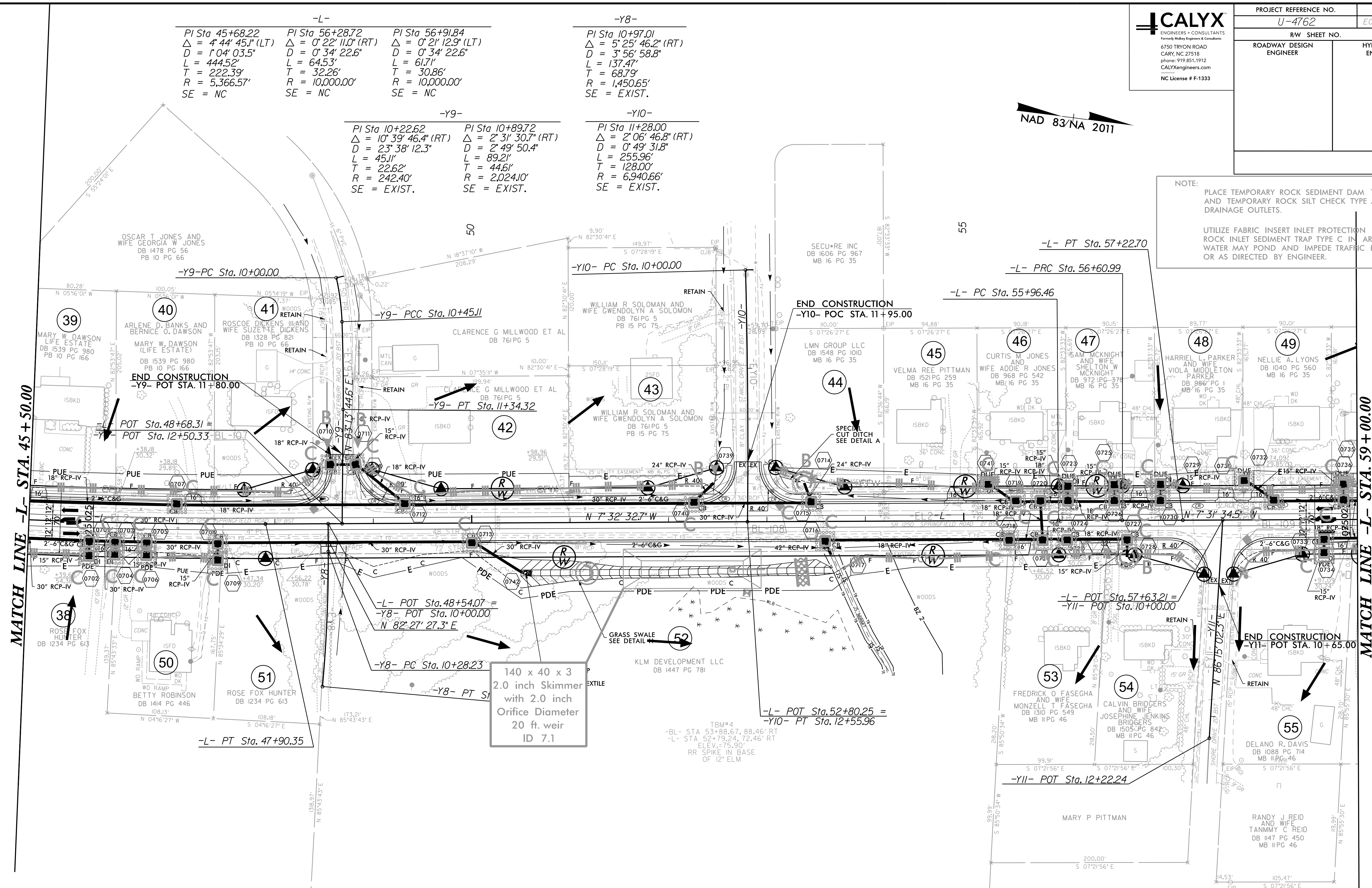
-L-			-Y8-		
PI Sta 45+68.22	PI Sta 56+28.72	PI Sta 56+91.84	PI Sta 10+97.01		
$\Delta = 4' 44' 45.1''$ (LT)	$\Delta = 0' 22' 11.0''$ (RT)	$\Delta = 0' 21' 12.9''$ (LT)	$\Delta = 5' 25' 46.2''$ (RT)		
D = 1'04' 03.5"	D = 0' 34' 22.6"	D = 0' 34' 22.6"	D = 3' 56' 58.8"		
L = 444.52'	L = 64.53'	L = 61.71'	L = 137.47'		
T = 222.39'	T = 32.26'	T = 30.86'	T = 68.79'		
R = 5,366.57'	R = 10,000.00'	R = 10,000.00'	R = 1,450.65'		
SE = NC	SE = NC	SE = NC	SE = EXIST.		

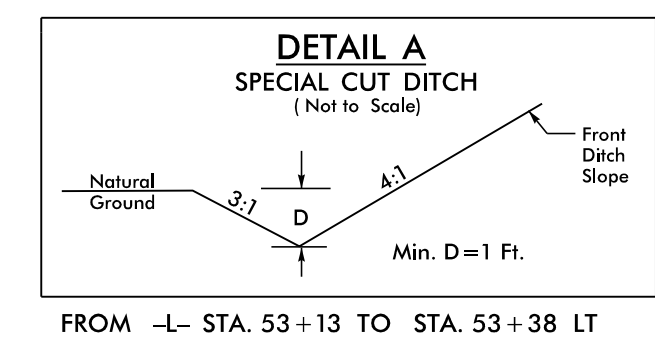
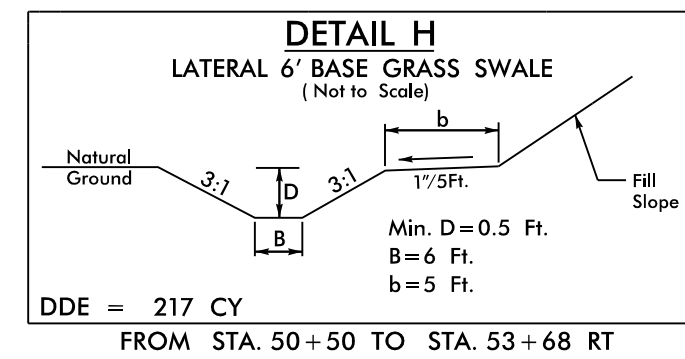
-Y9-		-Y10-	
PI Sta 10+22.62	PI Sta 10+89.72	PI Sta 11+28.00	
$\Delta = 10' 39' 46.4''$ (RT)	$\Delta = 2' 31' 30.7''$ (RT)	$\Delta = 2' 06' 46.8''$ (RT)	
D = 23' 38' 12.3"	D = 2' 49' 50.4"	D = 0' 49' 31.8"	
L = 45.11'	L = 89.21'	L = 255.96'	
T = 22.62'	T = 44.61'	T = 128.00'	
R = 242.40'	R = 2,024.10'	R = 6,940.66'	
SE = EXIST.	SE = EXIST.	SE = EXIST.	



NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.



140 x 40 x 3  
2.0 inch Skimmer  
with 2.0 inch  
Orifice Diameter  
20 ft. weir  
ID 7.1



**CONC. SIDEWALK & ISLAND**

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

**NOTES:**  
SEE SHEET 11 FOR -L- PROFILE.

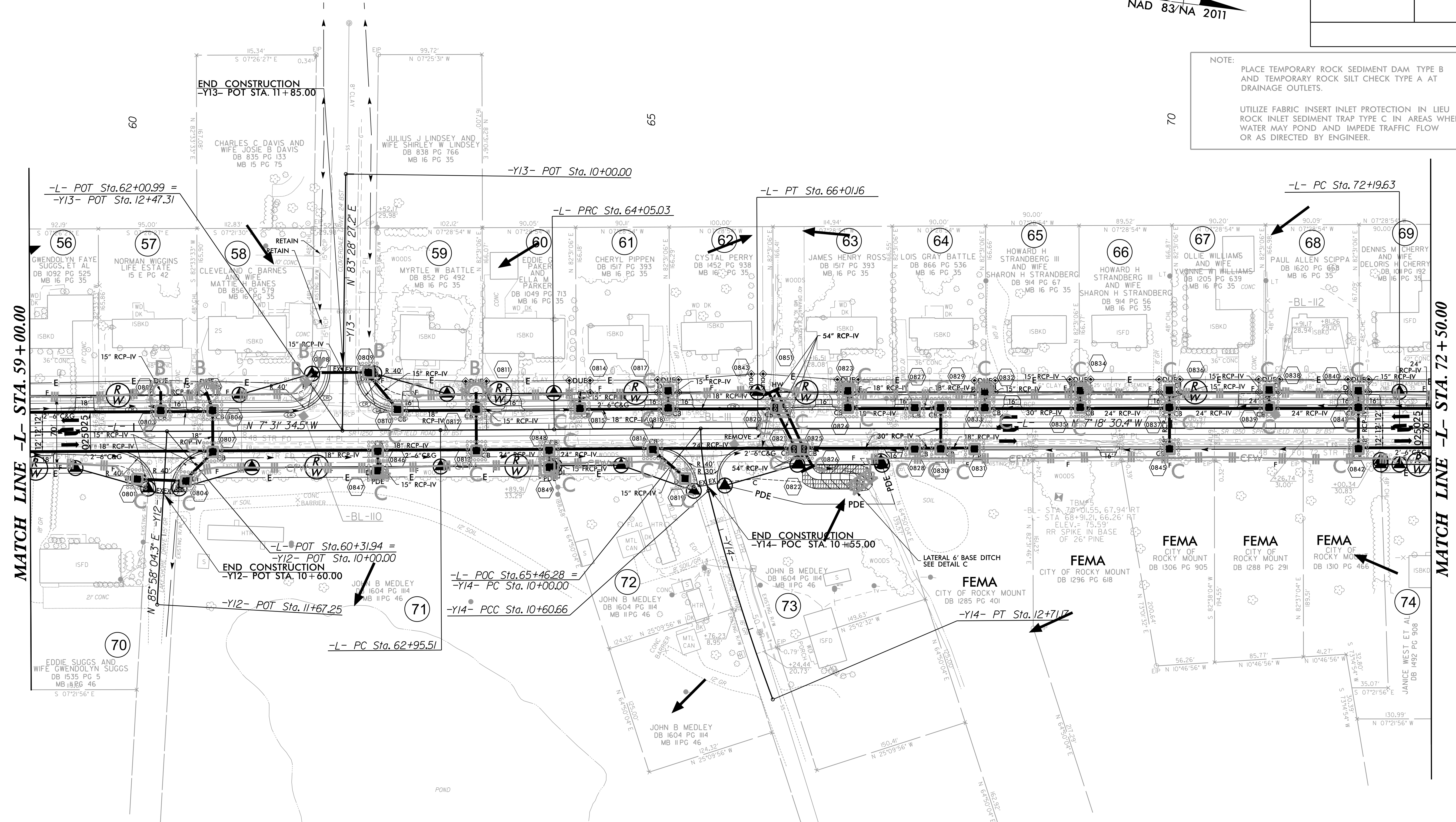
REVISIONS  
 8/17/99  
 5/18/2017  
 R:\Environmental\Design\U-4762\_hyd\_EC\_psh\_13.dgn  
 EC-13



NOTE: PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.

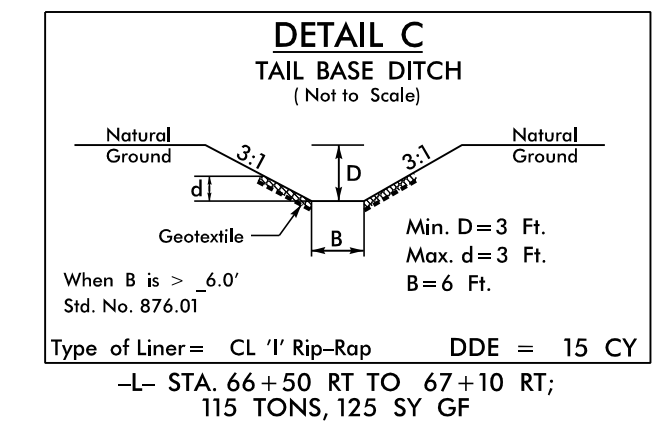
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPED TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

-L-			-Y14-	
PI Sta 63+50.27	PI Sta 65+03.10	PI Sta 72+57.89	PI Sta 10+30.48	PI Sta 11+66.02
$\Delta = 0' 16' 31.6" (LT)$	$\Delta = 0' 29' 35.8" (RT)$	$\Delta = 0' 06' 34.6" (LT)$	$\Delta = 13' 54' 05.2" (LT)$	$\Delta = 6' 27' 06.9" (LT)$
$D = 0' 15' 05.4"$	$D = 0' 15' 05.4"$	$D = 0' 08' 35.7"$	$D = 22' 55' 05.9"$	$D = 3' 03' 53.6"$
$L = 109.52'$	$L = 196.13'$	$L = 76.51'$	$L = 60.66'$	$L = 210.51'$
$T = 54.76'$	$T = 98.06'$	$T = 38.26'$	$T = 30.48'$	$T = 105.37'$
$R = 22,780.85'$	$R = 22,780.85'$	$R = 40,000.00'$	$R = 250.00'$	$R = 1,869.43'$
SE = NC	SE = NC	SE = NC	SE = EXIST.	SE = EXIST.



MATCH LINE -L- STA. 59+00.00

MATCH LINE -L- STA. 72+50.00



CONC. SIDEWALK & ISLAND

NOTE: ALL EXISTING CROSS PIPES & DRIVE PIPES ALONG -L- (SPRINGFIELD RD.) TO BE REMOVED UNLESS OTHERWISE NOTED.

NOTES:  
SEE SHEETS 11 & 12 FOR -L- PROFILE.

REVISIONS

8.17.09  
8.17.09  
F:\8\2017\2017\Commentary\Design\U-4762\_Hyd\_EC\_psh\_14.dgn  
E:\8\2017\2017\Commentary\Design\U-4762\_Hyd\_EC\_psh\_14.dgn

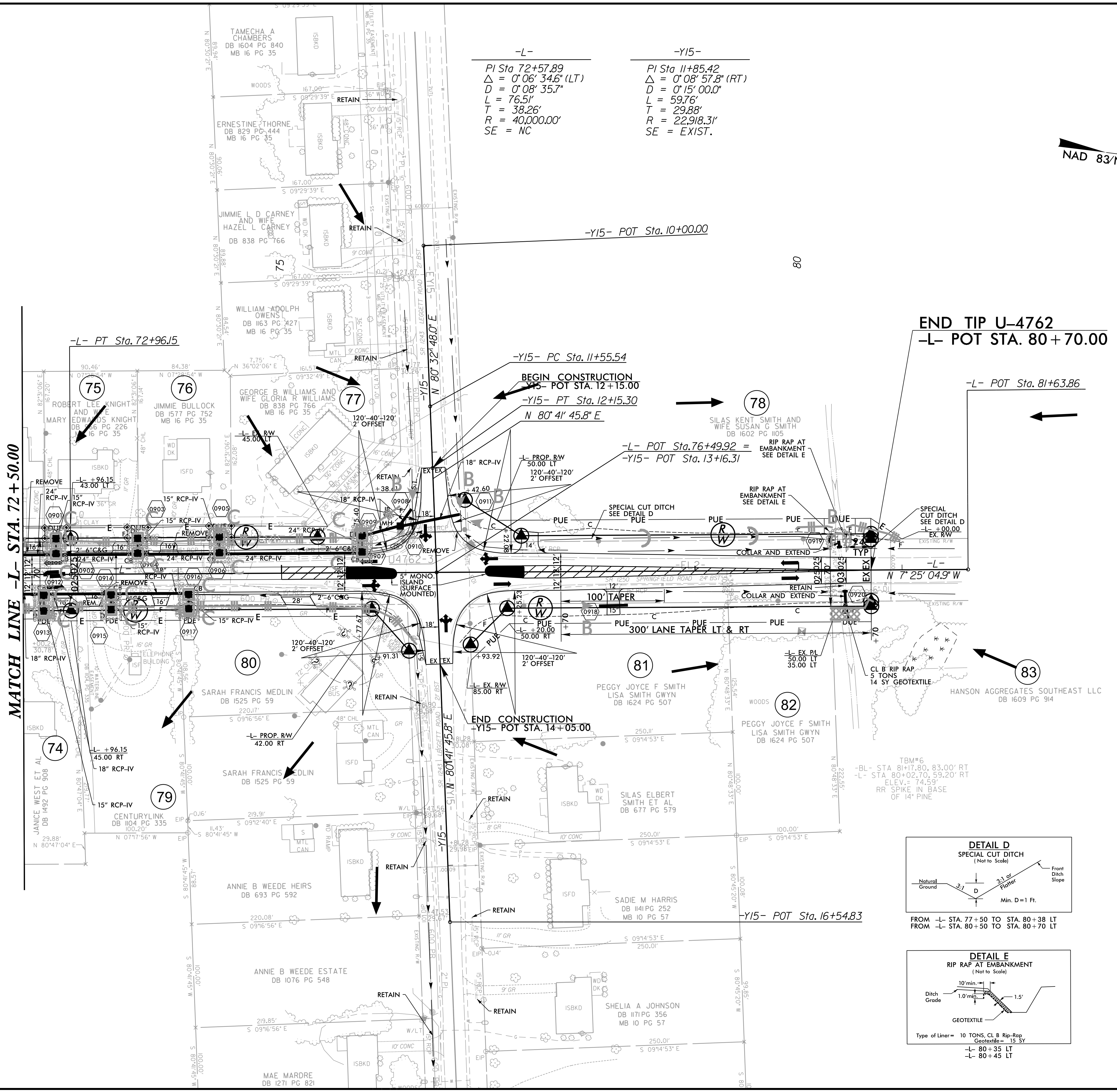
PROJECT REFERENCE NO. <b>U-4762</b>	SHEET NO. <b>EC-15/CONST.09</b>
RW SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	

NAD 83/NA 2011

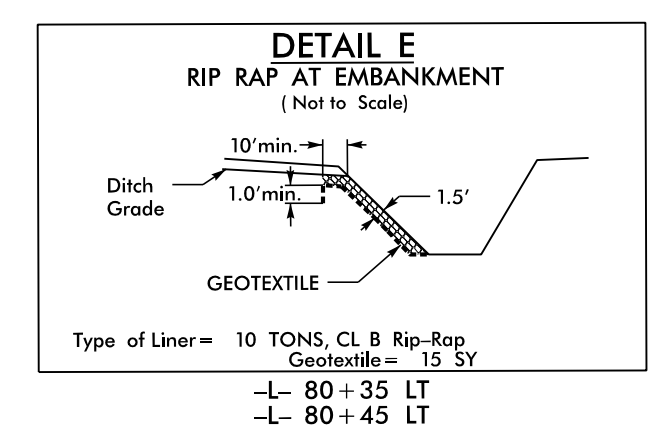
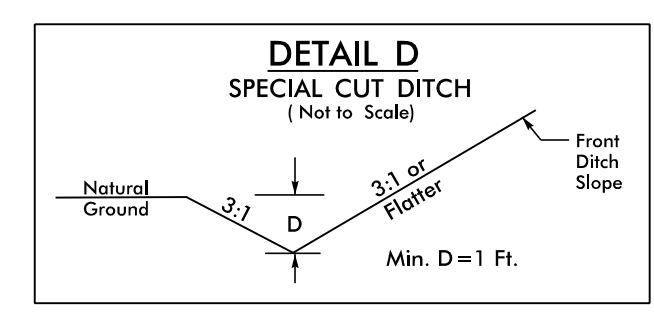
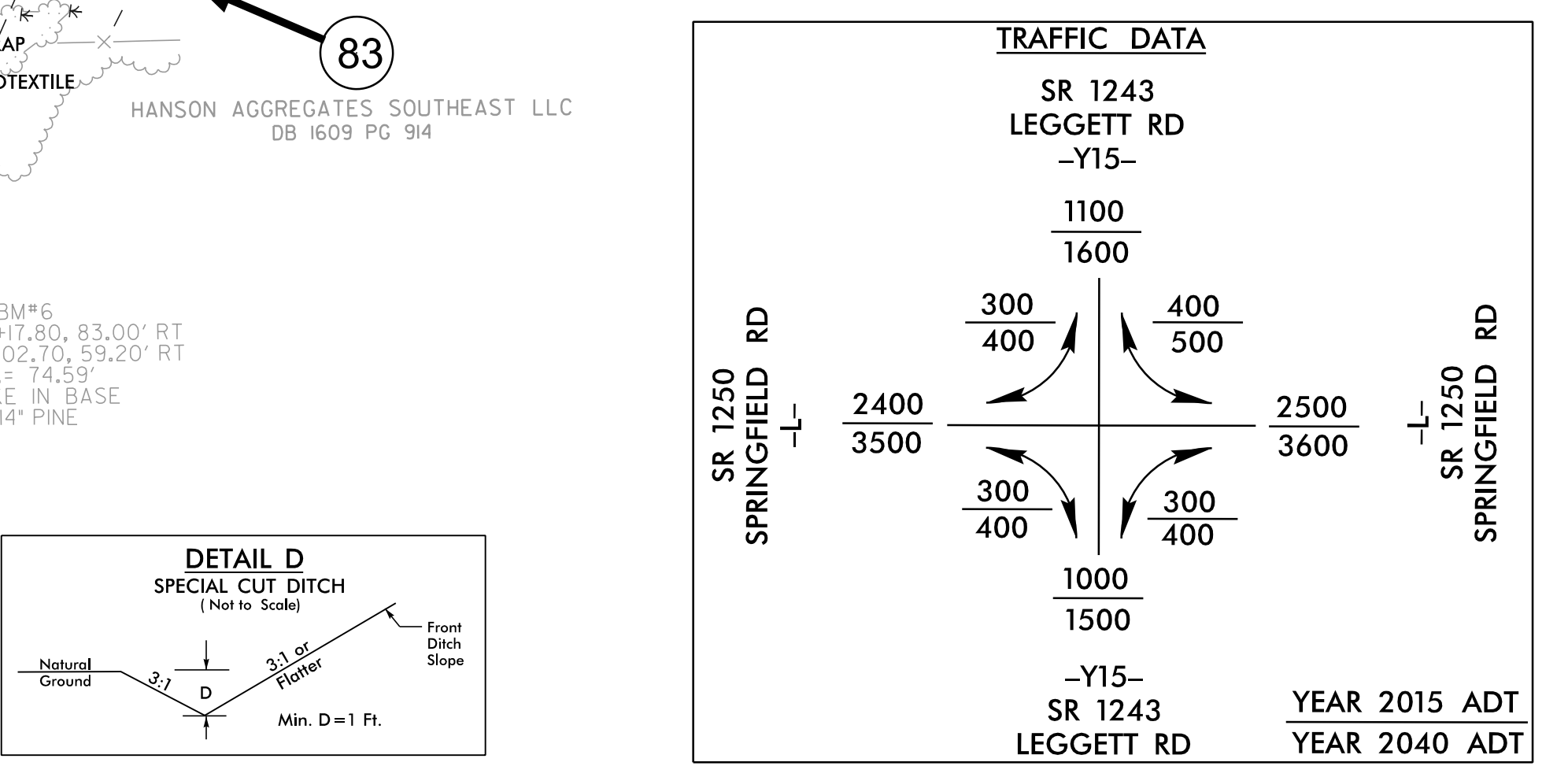
NOTE:  
PLACE TEMPORARY ROCK SEDIMENT DAM TYPE B AND TEMPORARY ROCK SILT CHECK TYPE A AT DRAINAGE OUTLETS.  
  
UTILIZE FABRIC INSERT INLET PROTECTION IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C IN AREAS WHERE WATER MAY POND AND IMPEDE TRAFFIC FLOW OR AS DIRECTED BY ENGINEER.

**-L-**  
PI Sta 72+57.89  
 $\Delta = 0^{\circ}06'34.6"$  (LT)  
D = 0'08'35.7"  
L = 76.5'  
T = 38.26'  
R = 40,000.00'  
SE = NC

**-Y15-**  
PI Sta 11+85.42  
 $\Delta = 0^{\circ}08'57.8"$  (RT)  
D = 0'15'00.0"  
L = 59.76'  
T = 29.88'  
R = 22,918.31'  
SE = EXIST.



END TIP U-4762  
-L- POT STA. 80+70.00



CONC. SIDEWALK & ISLAND  
PAINT STRIPING

NOTES:  
SEE SHEET 12 FOR -L- PROFILE.

REVISIONS

8/17/99  
8/18/2017  
R:\Environmental\Design\U-4762\_hyd\_EC\_psh\_15.dgn