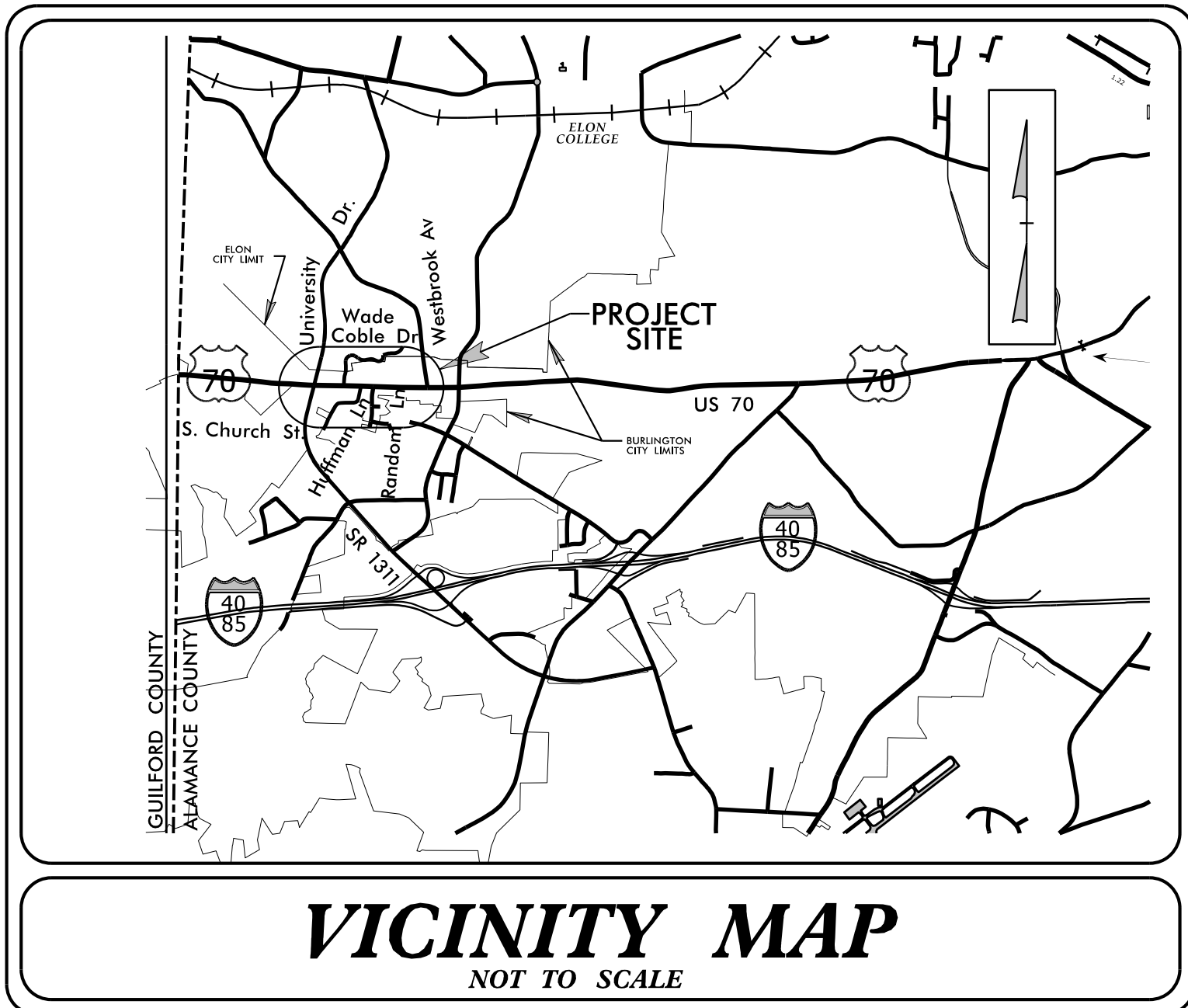


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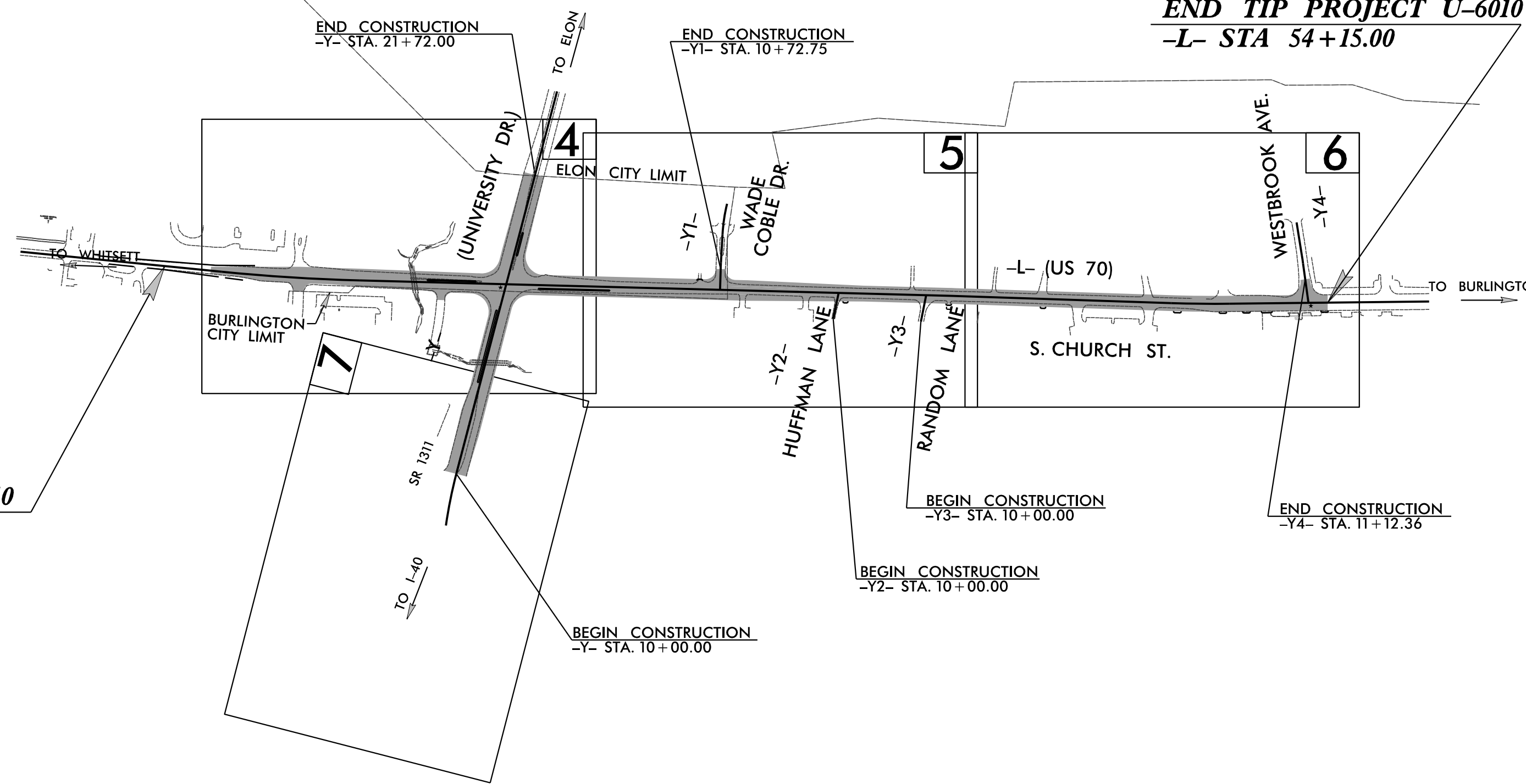
**TIP PROJECT: U-6010**



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

LOCATION: US 70 AT UNIVERSITY DRIVE IN BURLINGTON

TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS  
CULVERT EXTENSIONS AND PAVEMENT MARKING



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-6010	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47145.1.1		PE	
47145.2.1		ROW/UTIL	
47145.3.1		CONST	

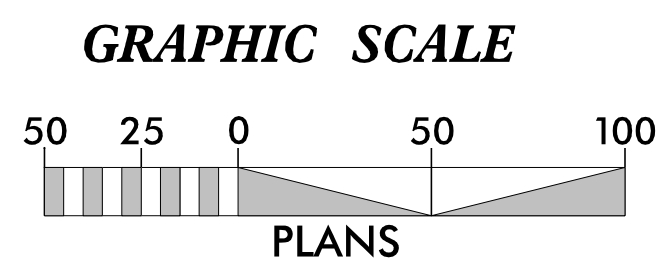
**EROSION AND SEDIMENT CONTROL MEASURES**

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	TSF
1606.01	Special Sediment Control Fence	SSCF
1622.01	Temporary Berms and Slope Drains	TBSD
1630.02	Silt Basin Type B	SB
1633.01	Temporary Rock Silt Check Type-A	TRSCA
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	TRSCA-PAM
1633.02	Temporary Rock Silt Check Type-B	TRSCB
	Wattle / Coir Fiber Wattle	W/CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	W/CFW-PAM
1634.01	Temporary Rock Sediment Dam Type-A	TRSDA
1634.02	Temporary Rock Sediment Dam Type-B	TRSDB
1635.01	Rock Pipe Inlet Sediment Trap Type-A	RPISTRA
1635.02	Rock Pipe Inlet Sediment Trap Type-B	RPISTRB
1630.04	Stilling Basin	SB
1630.06	Special Stilling Basin	SSB
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	SKB
	Tiered Skimmer Basin	TSKB
	Infiltration Basin	IB

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

THIS PROJECT HAS  
BEEN DESIGNED TO  
SENSITIVE WATERSHED  
STANDARDS.

ENVIRONMENTALLY  
SENSITIVE AREA(S) EXIST  
ON THIS PROJECT  
*Refer To E. C. Special Provisions  
for Special Considerations.*



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.

Reviewed in the Office of:  
**ROADSIDE ENVIRONMENTAL  
FIELD OPERATIONS  
DIVISIONS 7 & 8**  
1530 South 7th St.  
Sanford, NC 27330  
**2018 STANDARD SPECIFICATIONS**  
Reviewed by:  
**AARON HARPER, PE**

Prepared in the Office of:  
**SUNGATE DESIGN GROUP, P.A.**  
905 JONES FRANKLIN ROAD  
RALEIGH, NORTH CAROLINA 27606  
TEL (919) 859-2243  
ENG FIRM LICENSE NO. C-890  
Designed by:  
**ERIC M. LEONHART, EI** 3502  
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-6010	SHEET NO. EC-2
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.

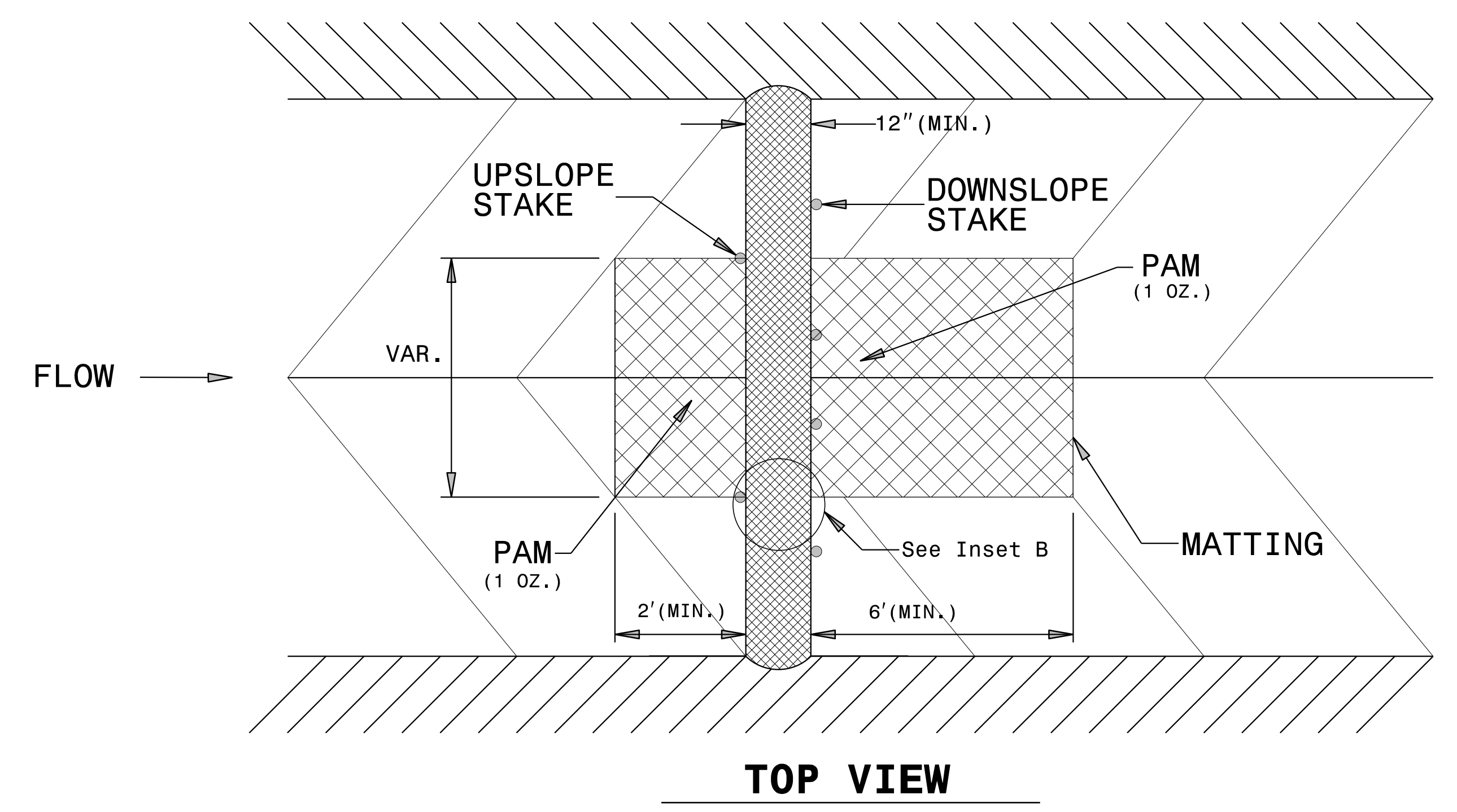
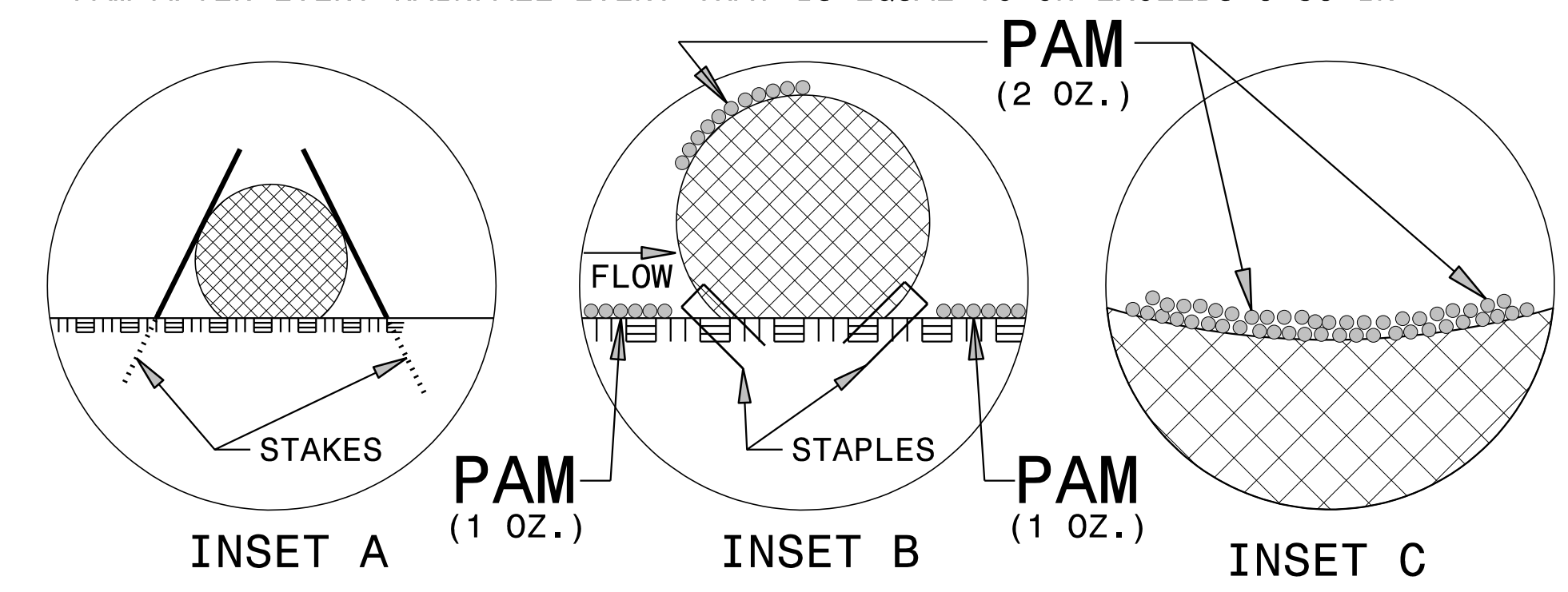
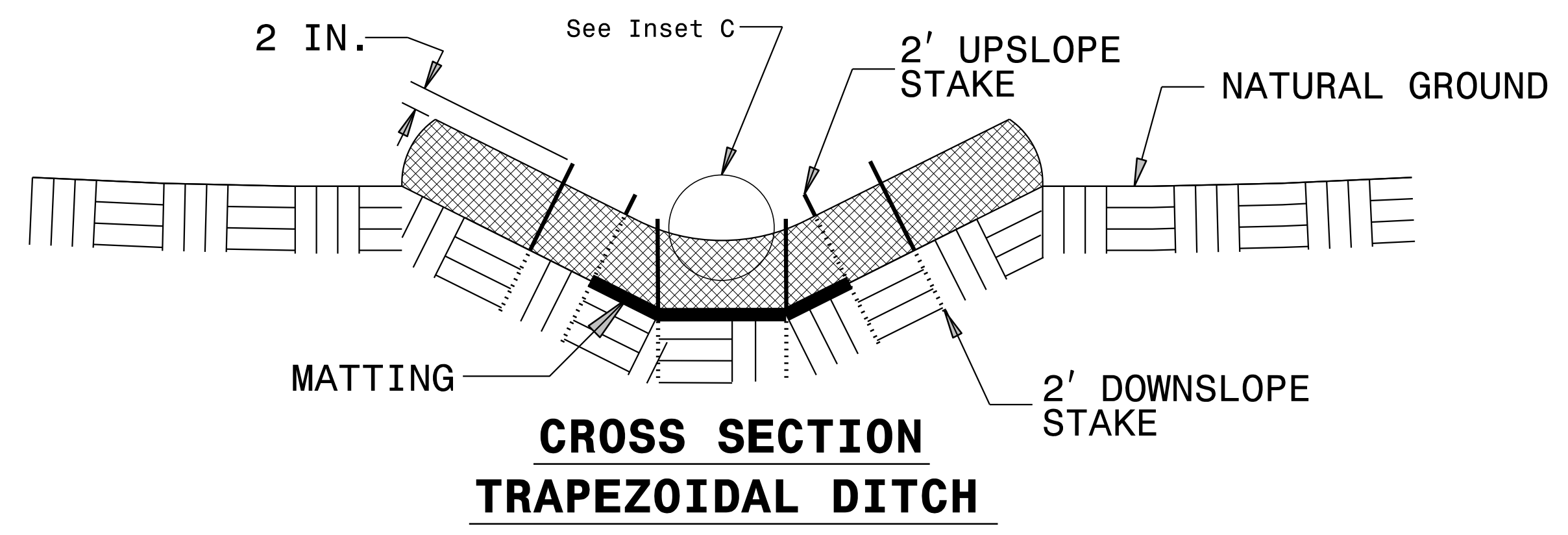
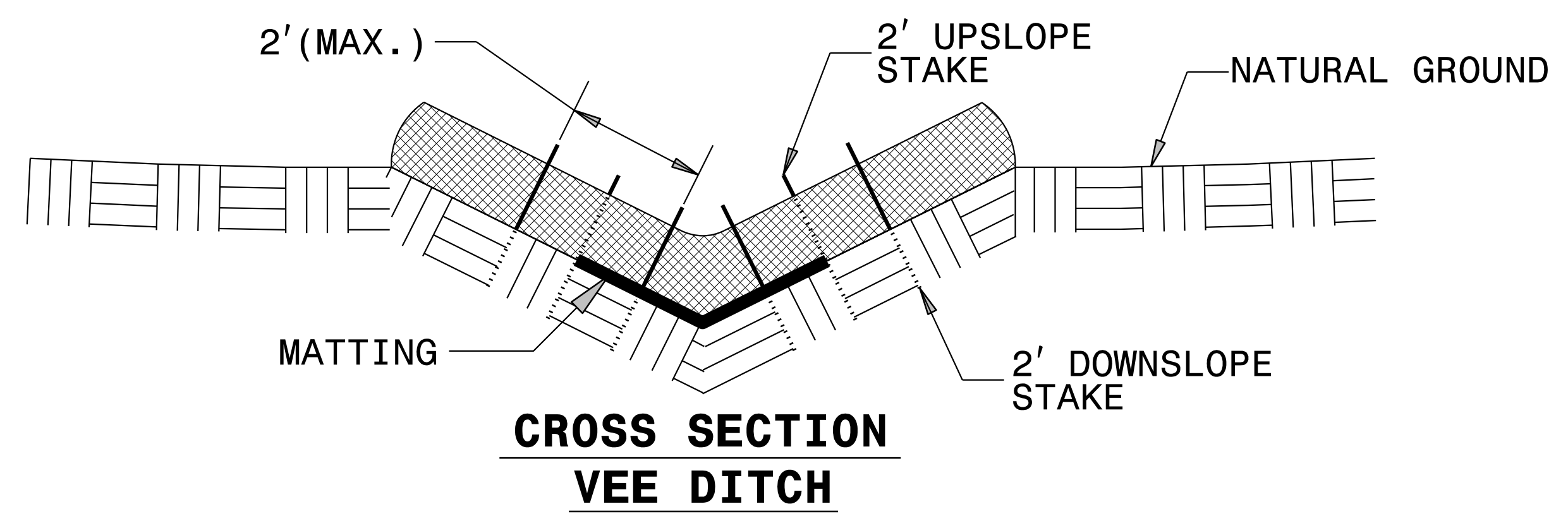
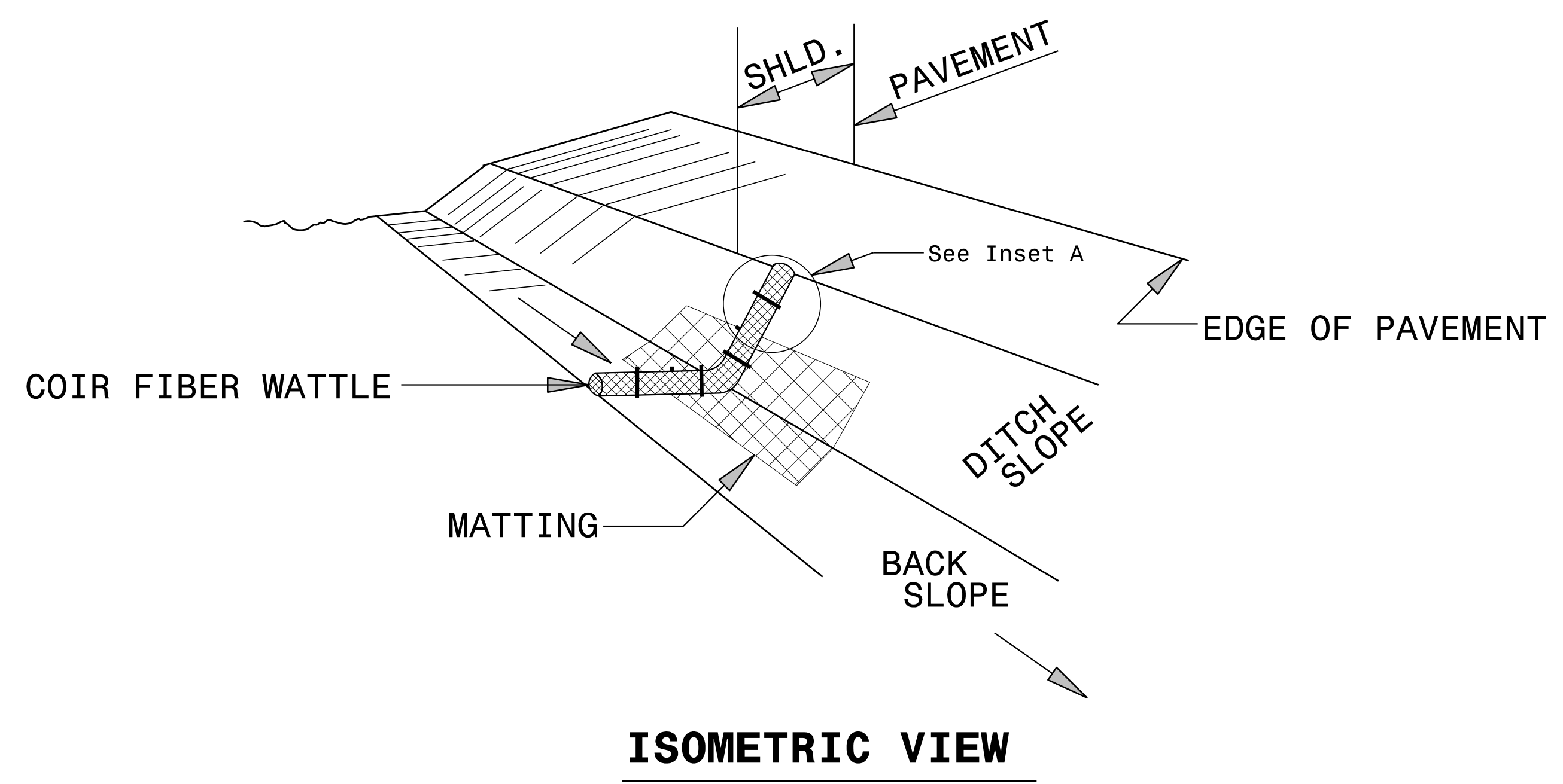
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

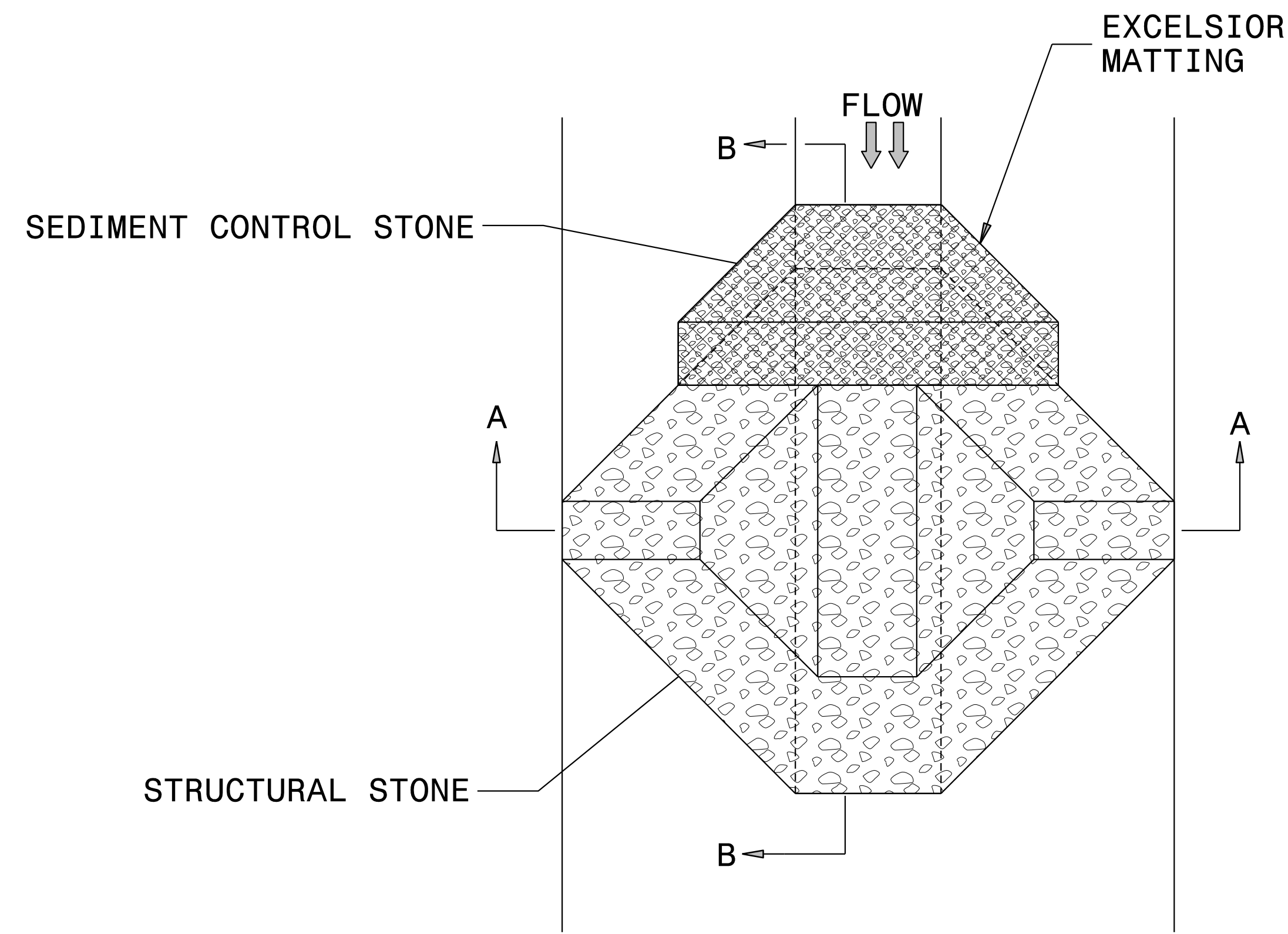
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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.



PROJECT REFERENCE NO. U-6010	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

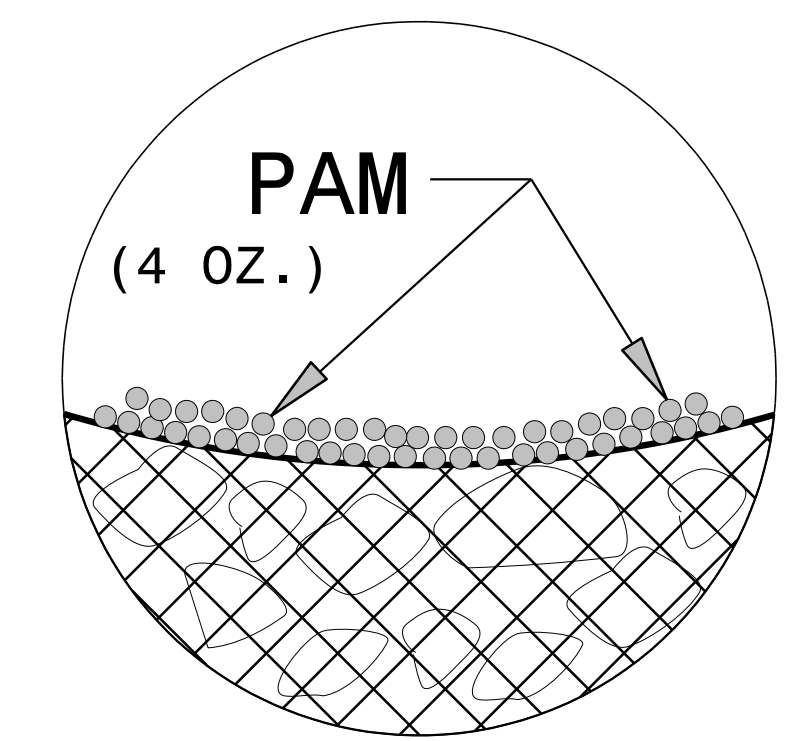
**NOTES:**

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

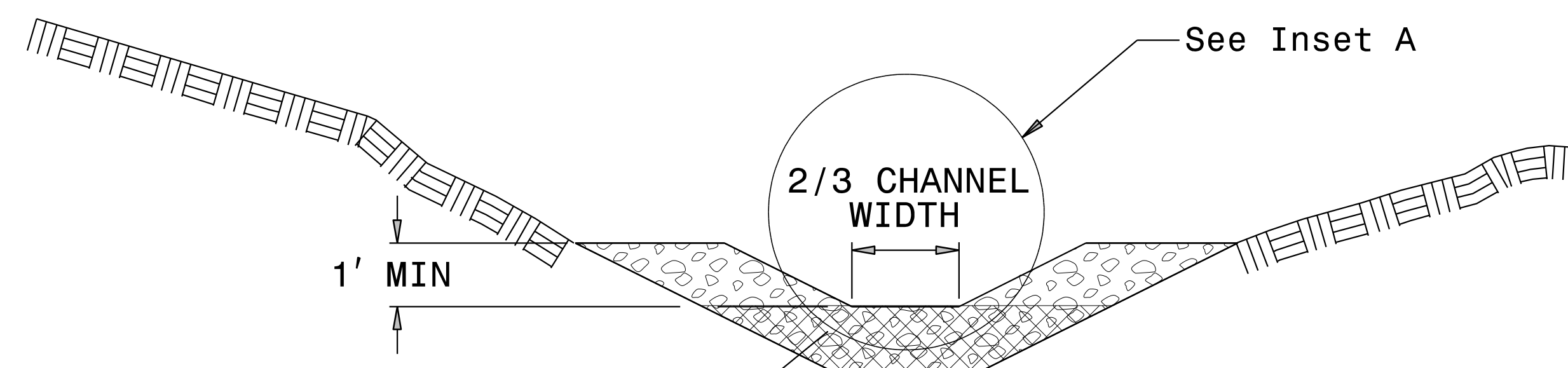
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

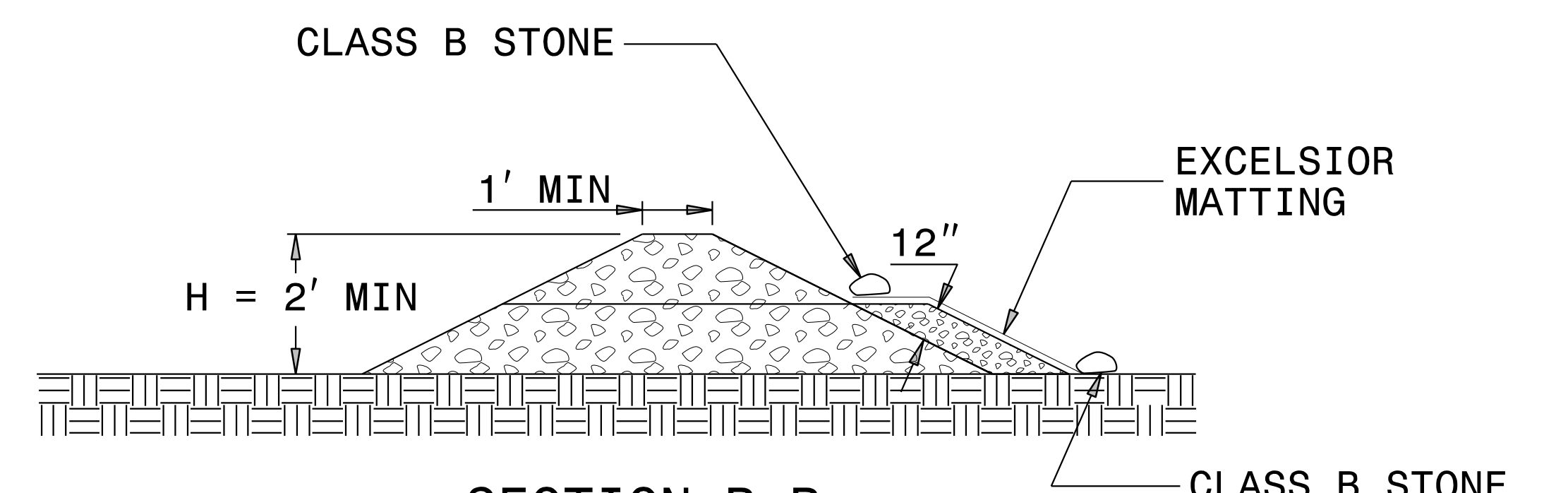
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE



DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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PROJECT REFERENCE NO. <i>U-6010</i>	SHEET NO. <i>EC-3A</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.	SHEET NO.
U-6010	EC-04/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

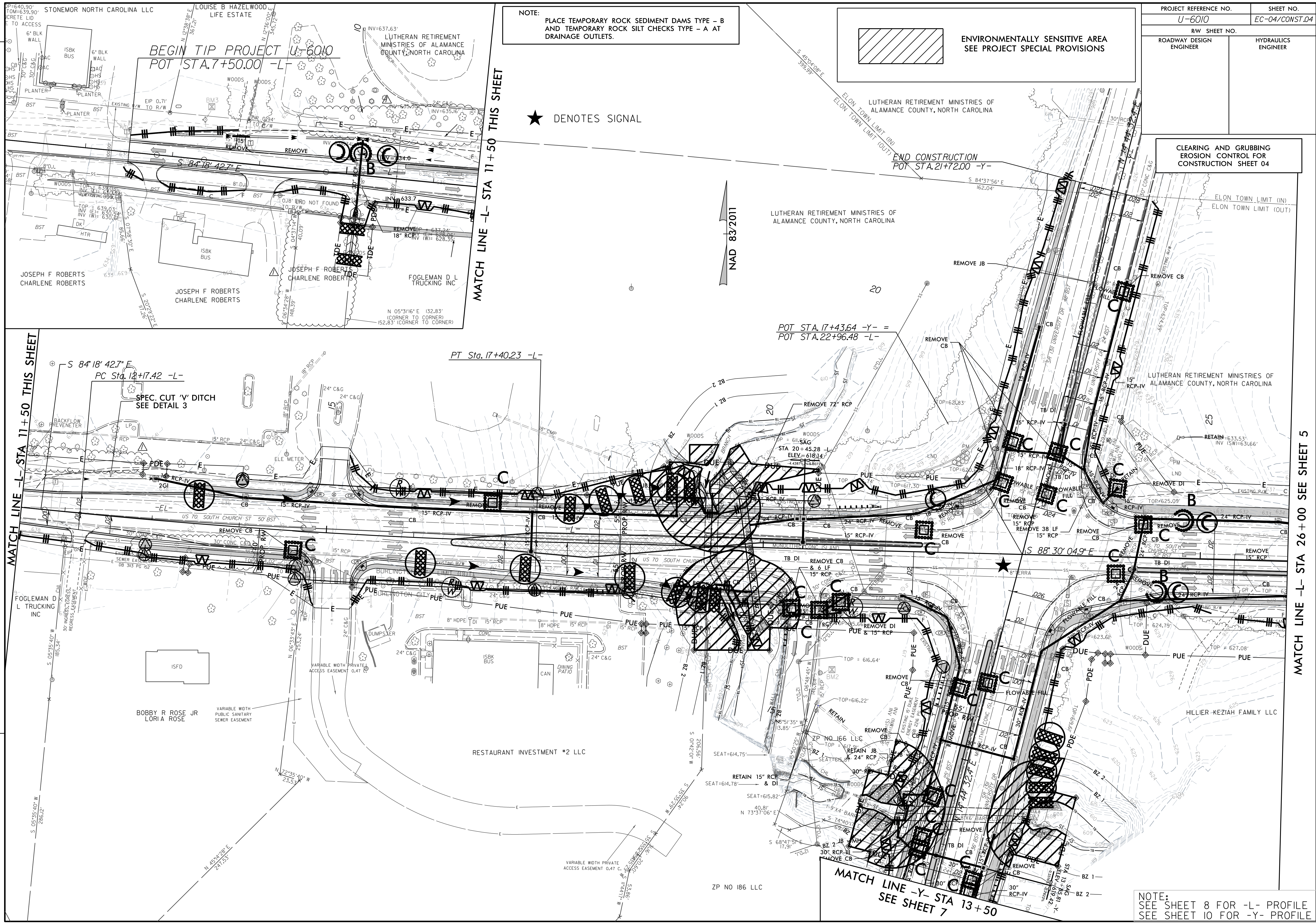
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

★ DENOTES SIGNAL

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04

1:11/15/2019 - REVISED CONSTRUCTION EASEMENT ON PARCEL NO.1. REVISED RIGHT-OF-WAY FOR PARCEL NO.4. ADDED PARCEL NO.23.



MATCH LINE -L- STA 11+50 THIS SHEET

MATCH LINE -L- STA 11+50 THIS SHEET

MATCH LINE -L- STA 26+00 SEE SHEET 5

MATCH LINE -Y- STA 13+50  
SEE SHEET 7

NOTE:  
SEE SHEET 8 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y- PROFILE

# 2@6'x8' RCBC CONSTRUCTION SEQUENCE STA. 19+40 -L- 1@8'x7' PRECAST BOX CULVERT CONSTRUCTION SEQUENCE STA. 19+85 -L- MICHAELS BRANCH

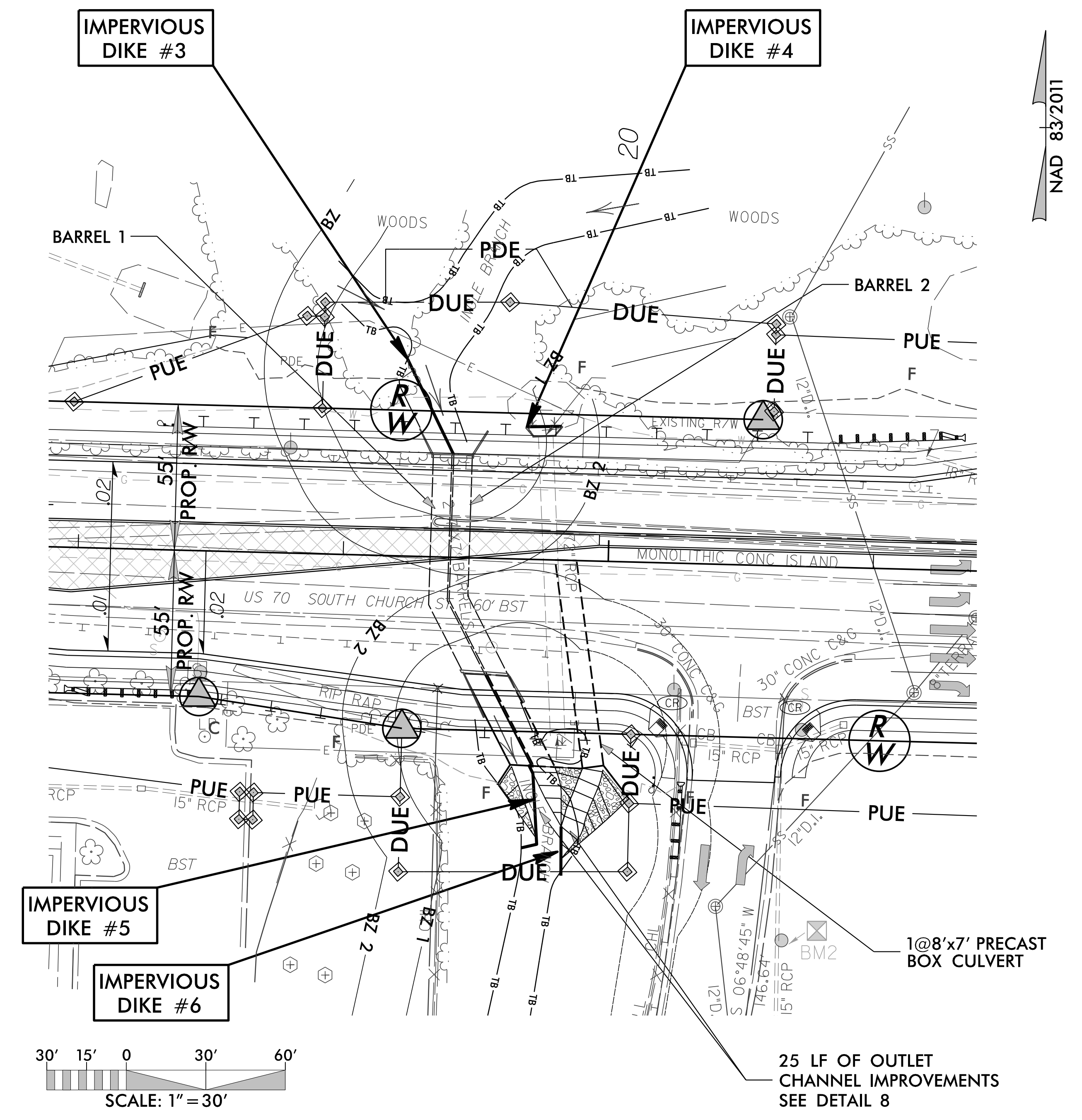
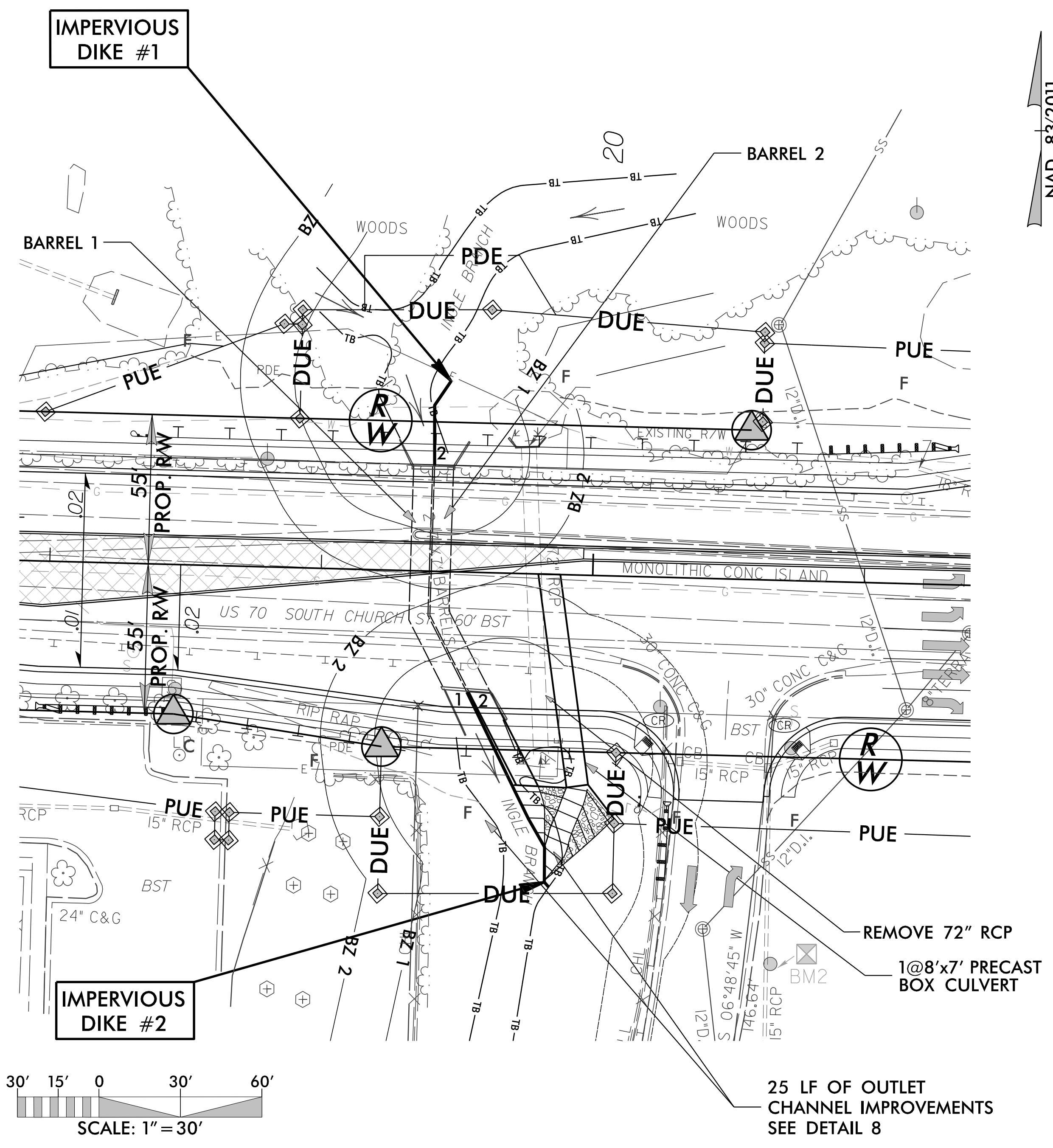
PROJECT REFERENCE NO. <i>U-6010</i>	SHEET NO. <i>EC-04A/CONST.04</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

## PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED THROUGHOUT CONSTRUCTION OF CULVERTS.
2. SHIFT TRAFFIC TO WESTBOUND LANES OF US 70.
3. EXCAVATE ROAD AND COVER SOIL ON EASTBOUND SIDE OF US 70.
4. INSTALL IMPERVIOUS DIKES #1 AND #2, AND DIVERT FLOW TO BARREL 1.
5. DEWATER CONSTRUCTION AREA, UTILIZE SPECIAL STILLING BASINS FOR PUMPED EFFLUENT.
6. ON DOWNSTREAM SIDE, REMOVE +/- 67 LF OF EXISTING 72" RCP.
7. INSTALL +/- 78 LF 8'X7' PRECAST BOX CULVERT AND CONSTRUCT ASSOCIATED OUTLET CHANNEL IMPROVEMENTS.
8. CONSTRUCT BARREL 2 EXTENSION (+/- 42 LF) AND ASSOCIATED OUTLET CHANNEL IMPROVEMENTS.

## PHASE II

1. REMOVE IMPERVIOUS DIKES #1 AND #2.
2. INSTALL IMPERVIOUS DIKES #3, #4, #5, AND #6, AND DIVERT FLOW TO BARREL 2.
3. DEWATER CONSTRUCTION AREA, UTILIZE SPECIAL STILLING BASINS FOR PUMPED EFFLUENT.
4. CONSTRUCT BARREL 1 EXTENSION (+/- 38 LF) AND ASSOCIATED OUTLET CHANNEL IMPROVEMENTS.
5. REMOVE IMPERVIOUS DIKES #3, #4, #5, AND #6.
6. COMPLETE ROADWAY IMPROVEMENTS ON EASTBOUND SIDE OF US 70.



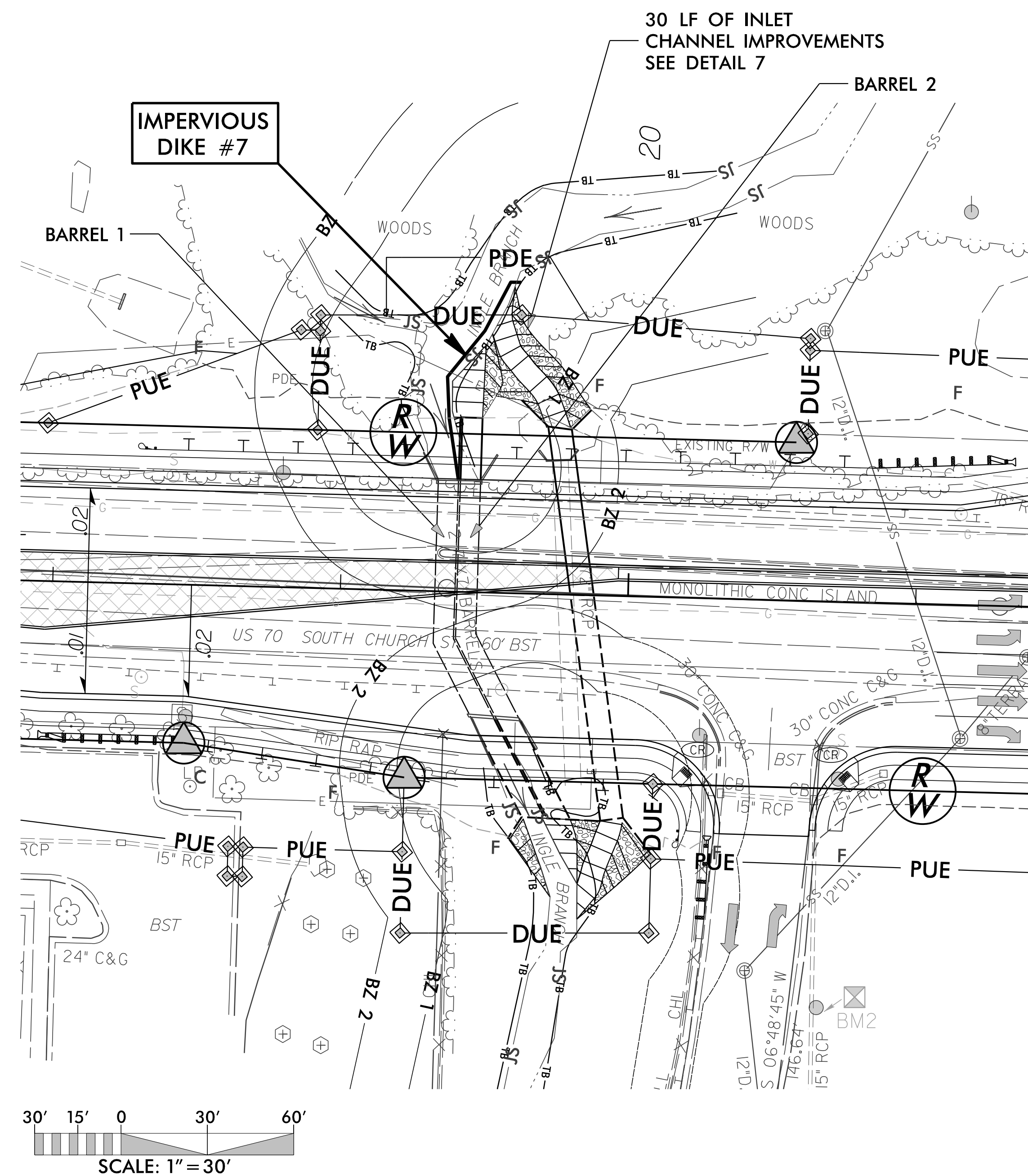


# 2@6'x8' RCBC CONSTRUCTION SEQUENCE STA. 19+40 -L- 1@8'x7' PRECAST BOX CULVERT CONSTRUCTION SEQUENCE STA. 19+85 -L- MICHAELS BRANCH

PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-04B/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

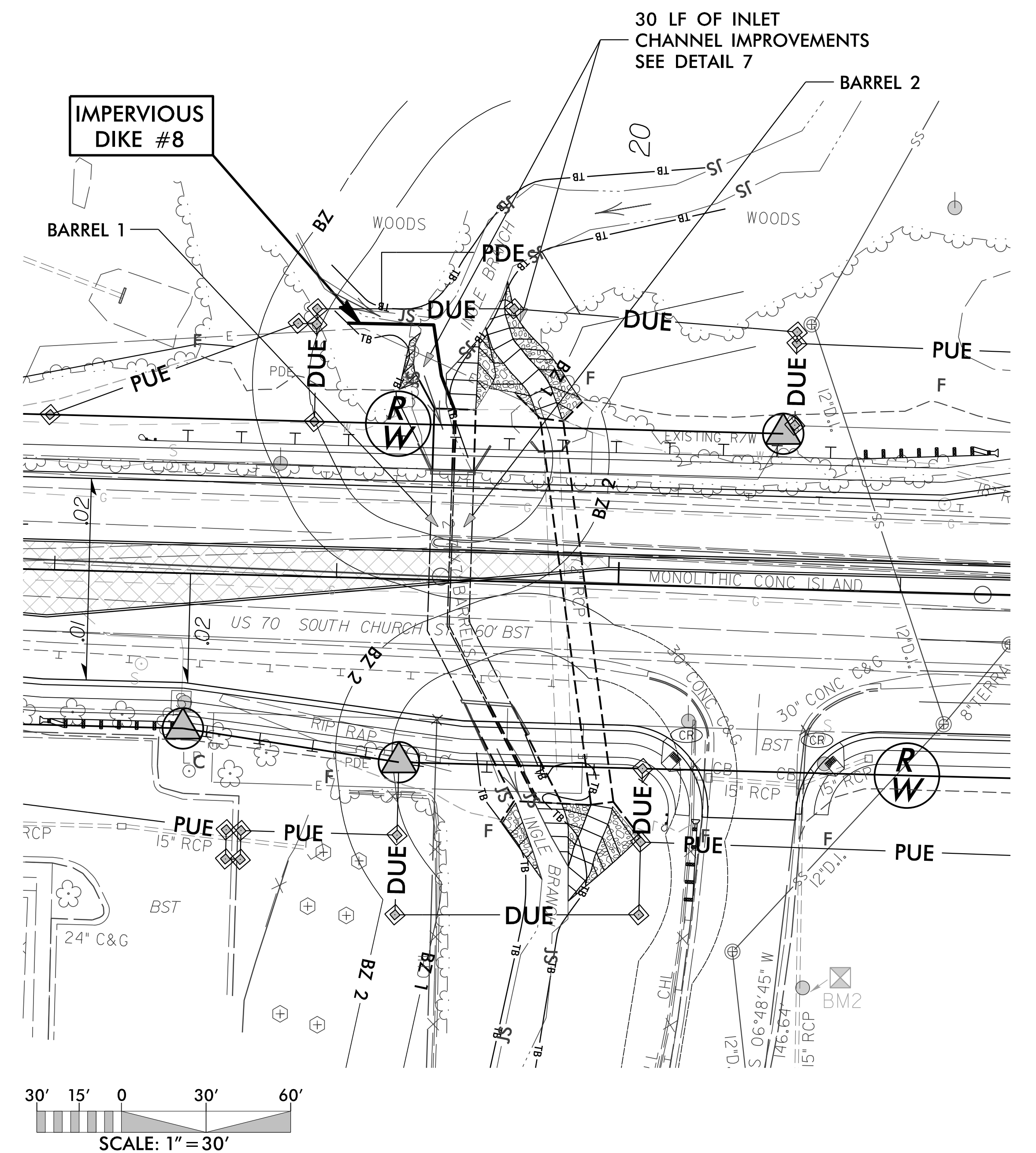
## PHASE III

1. SHIFT TRAFFIC TO EASTBOUND LANES OF US 70.
2. EXCAVATE ROAD AND COVER SOIL ON WESTBOUND SIDE OF US 70
3. INSTALL IMPERVIOUS DIKES #7, AND DIVERT FLOW TO EXISTING BARREL 1.
4. DEWATER CONSTRUCTION AREA, UTILIZING SPECIAL STILLING BASINS FOR PUMPED EFFLUENT.
5. REMOVE REMAINDER OF EXISTING 72" RCP.
6. INSTALL REMAINDER OF 1@8'x7' PRECAST BOX CULVERT AND CONSTRUCT ASSOCIATED INLET CHANNEL IMPROVEMENTS.
7. CONSTRUCT BARREL 2 EXTENSION (+/- 22 LF) AND ASSOCIATED INLET CHANNEL IMPROVEMENTS.



## PHASE IV

1. REMOVE IMPERVIOUS DIKE #7.
2. INSTALL IMPERVIOUS DIKE #8, AND DIVERT WATER THROUGH EASTERN 6'x8' RCBC BARREL EXTENSION.
3. DEWATER CONSTRUCTION AREA, UTILIZING SPECIAL STILLING BASINS FOR PUMPED EFFLUENT.
4. CONSTRUCT BARREL 1 EXTENSION (+/- 22 LF) AND INLET CHANNEL IMPROVEMENTS.
5. REMOVE IMPERVIOUS DIKE #8 AND ANY REMAINING SPECIAL STILLING BASIN(S).
6. COMPLETE ROADWAY IMPROVEMENTS ON WESTBOUND SIDE OF US 70.



PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-04C/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

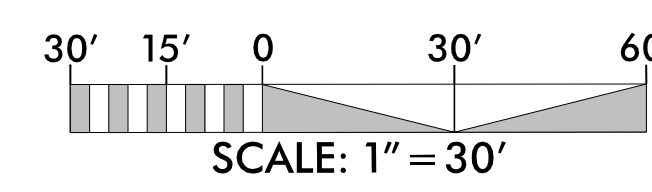
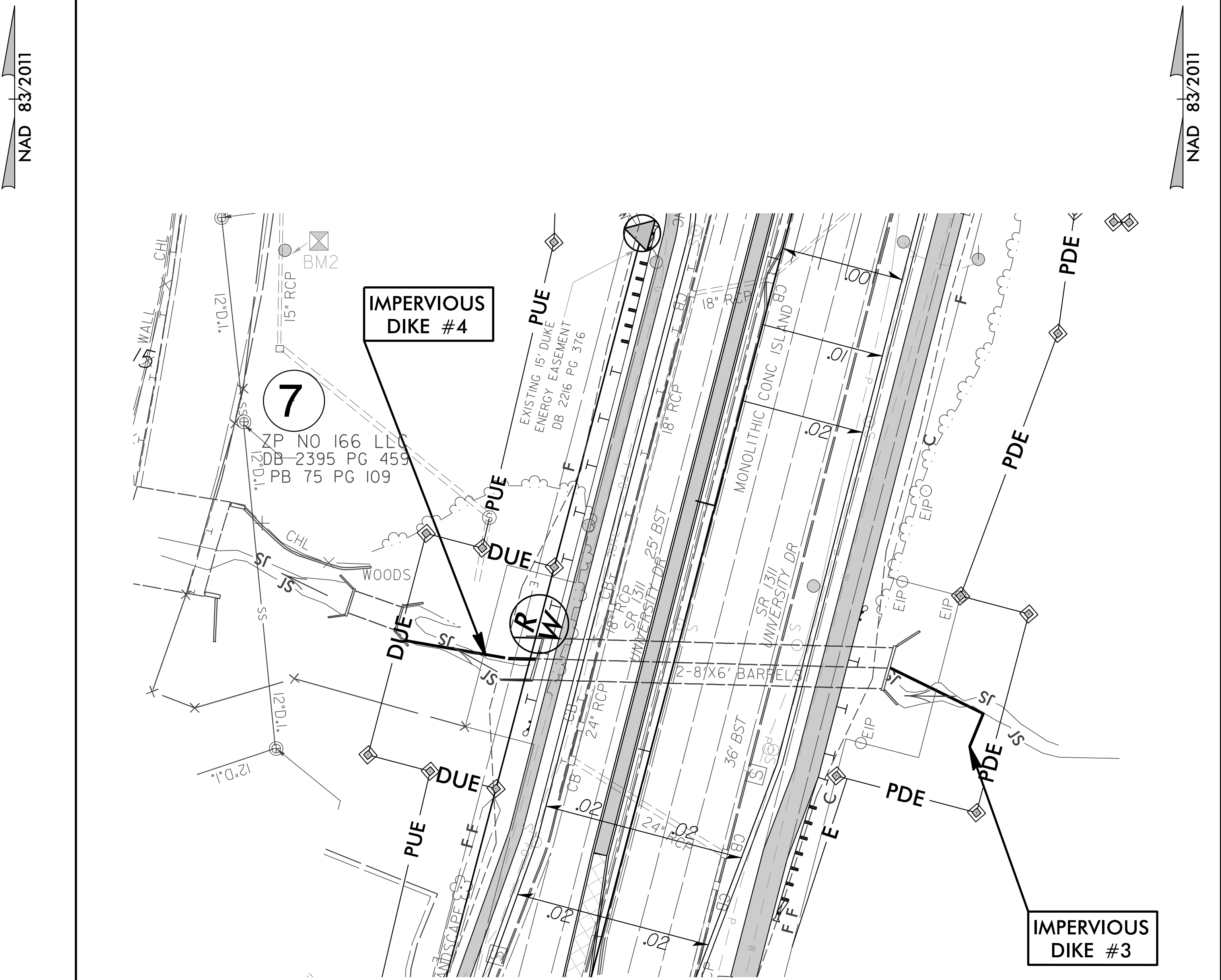
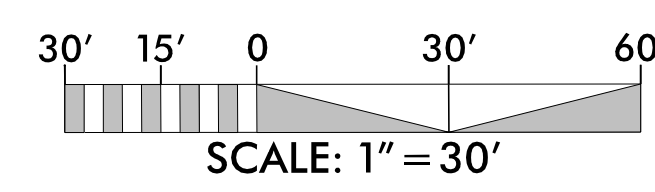
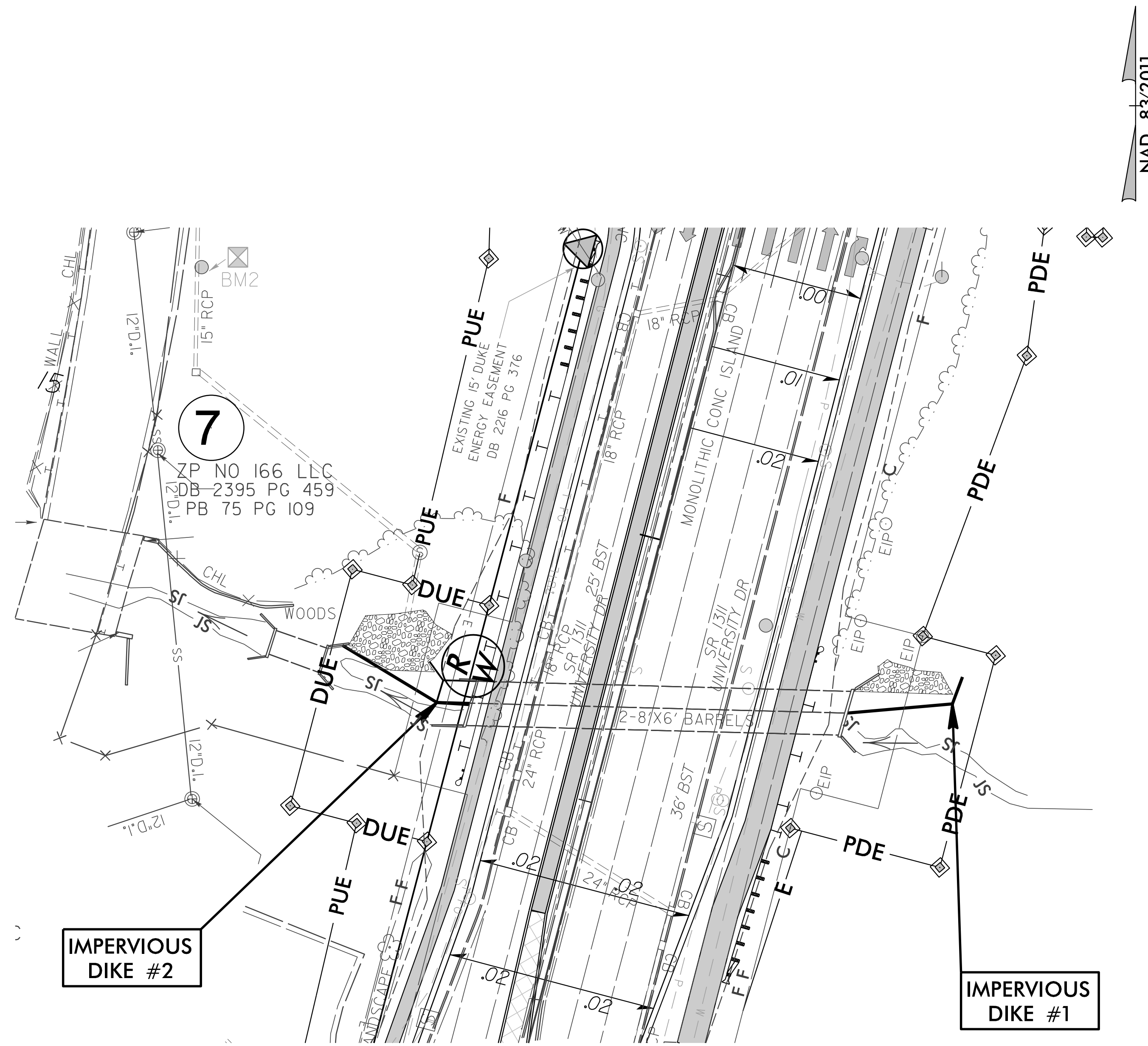
# 2@6'X6' RCBC CONSTRUCTION SEQUENCE STA. 14+36 -Y- UT TO MICHAELS BRANCH

## PHASE I

## PHASE II

1. INSTALL IMPERVIOUS DIKES #1 & #2
2. DEWATER CONSTRUCTION AREA, UTILIZE SPECIAL STILLING BASINS FOR PUMPED EFFLUENT
3. CONSTRUCT +/- 13' CULVERT EXTENSION ON NORTHERN BARREL, AND INSTALL BANK STABILIZATION ON NORTH BANKS
4. REMOVE IMPERVIOUS DIKES #1 & #2

1. INSTALL IMPERVIOUS DIKES #3 & #4 TO DIVERT FLOW TO NORTHERN BARREL
2. DE-WATER CONSTRUCTION AREA, UTILIZE SPECIAL STILLING BASINS FOR PUMPED EFFLUENT
3. CONSTRUCT +/- 13' CULVERT EXTENSION ON SOUTHERN BARREL, AND INSTALL BANK STABILIZATION ON SOUTH BANKS
4. REMOVE IMPERVIOUS DIKES #3 & #4

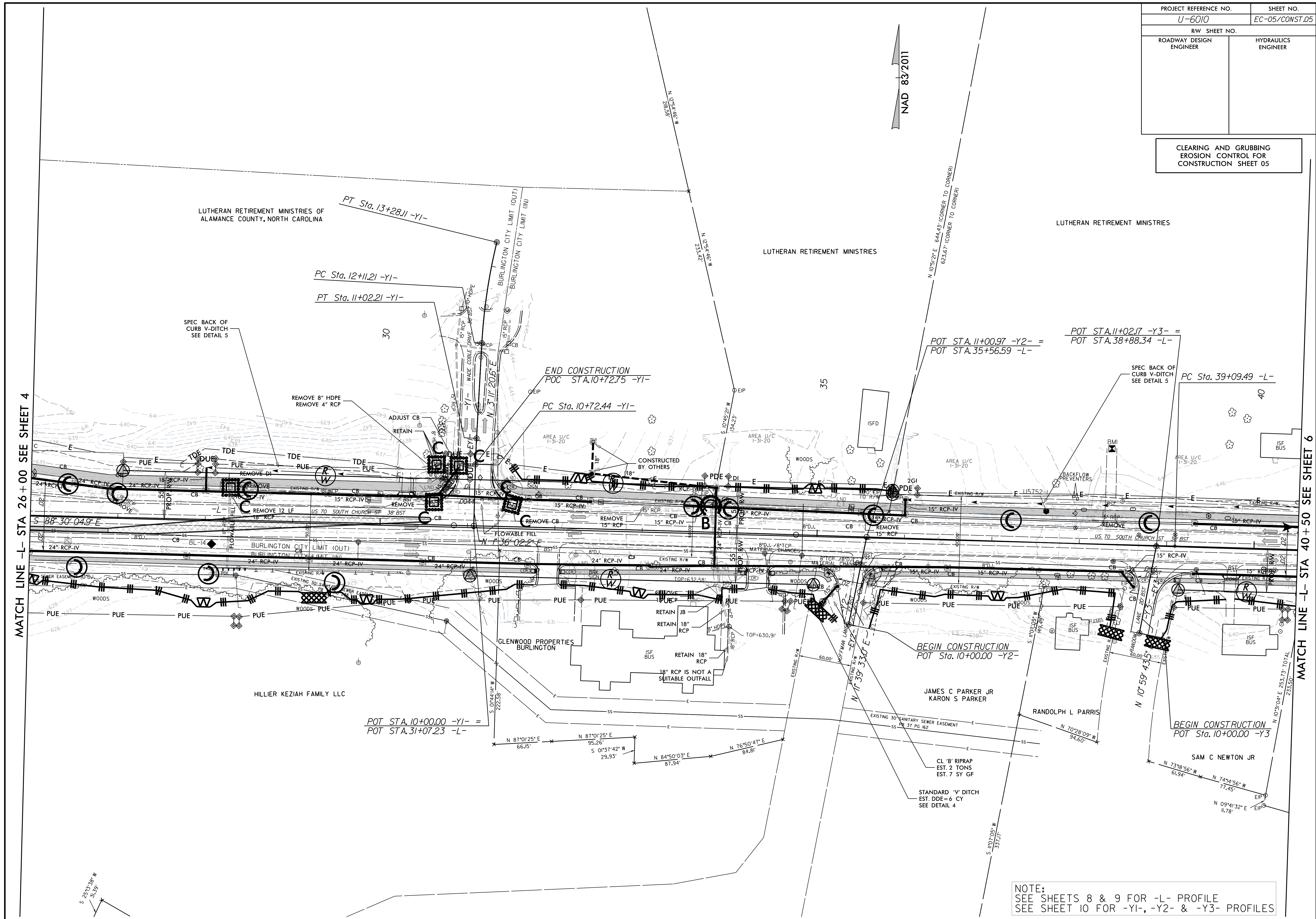


NAD 83/2011

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-05/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 05



MATCH LINE -L- STA 26+00 SEE SHEET 4

MATCH LINE -L- STA 40+50 SEE SHEET 6

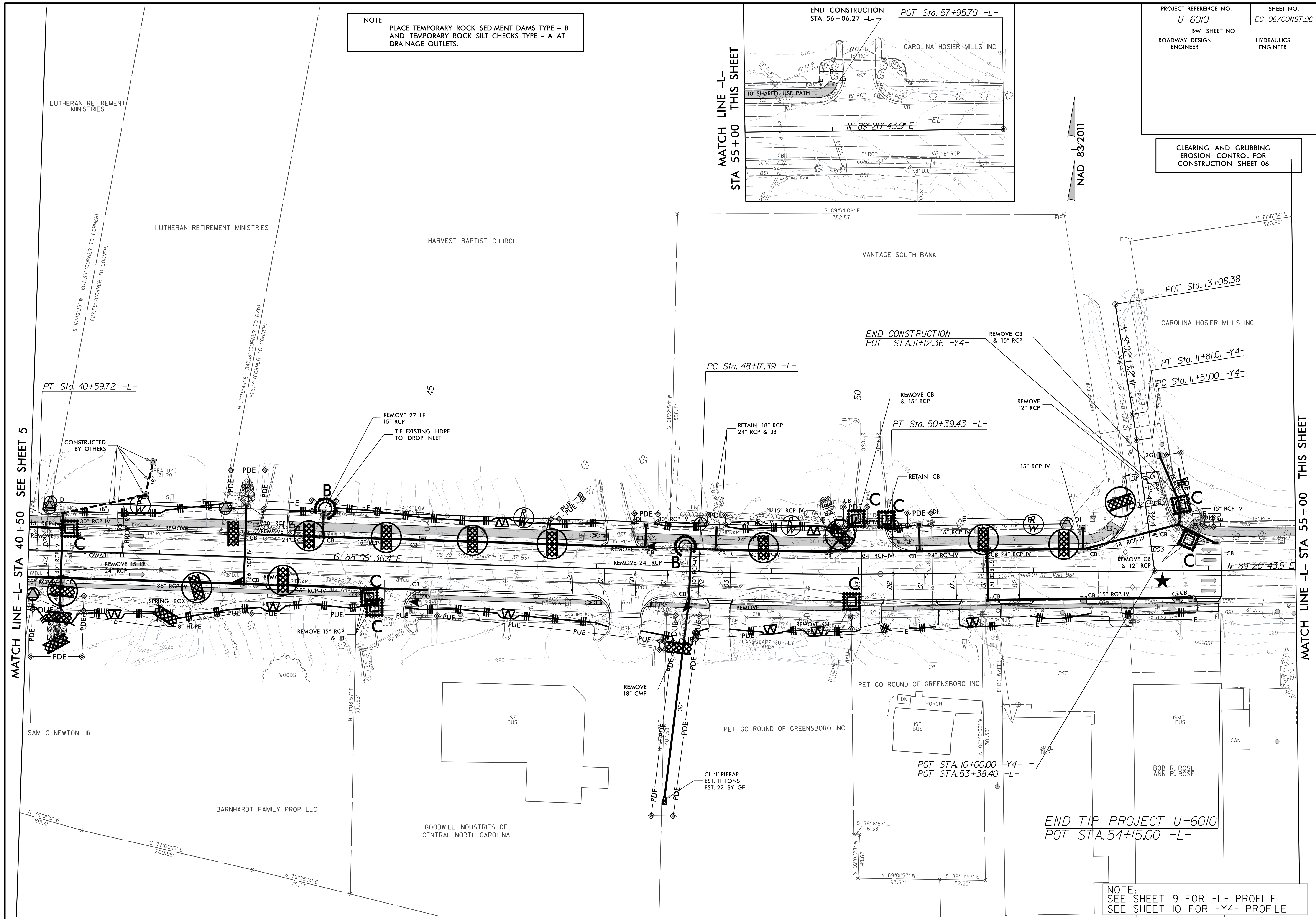
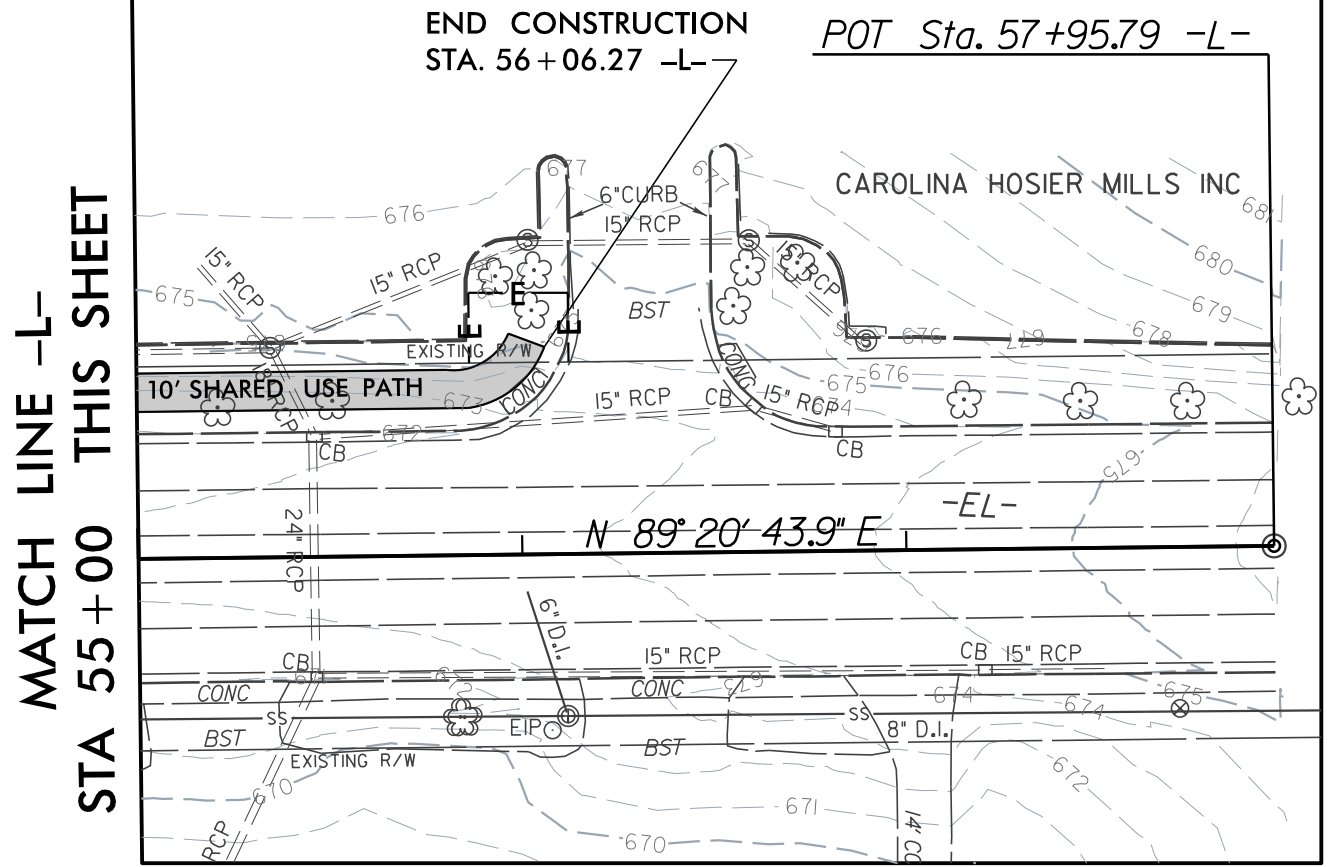
NAD 83/2011

NOTE:  
SEE SHEETS 8 & 9 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y1-, -Y2- & -Y3- PROFILES

PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-06/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.



MATCH LINE -L- STA 40+50 SEE SHEET 5

MATCH LINE -L- STA 55+00 THIS SHEET

END TIP PROJECT U-6010  
POT STA. 54+15.00 -L-

NOTE:  
SEE SHEET 9 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y4- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-07/CONST.07
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 07

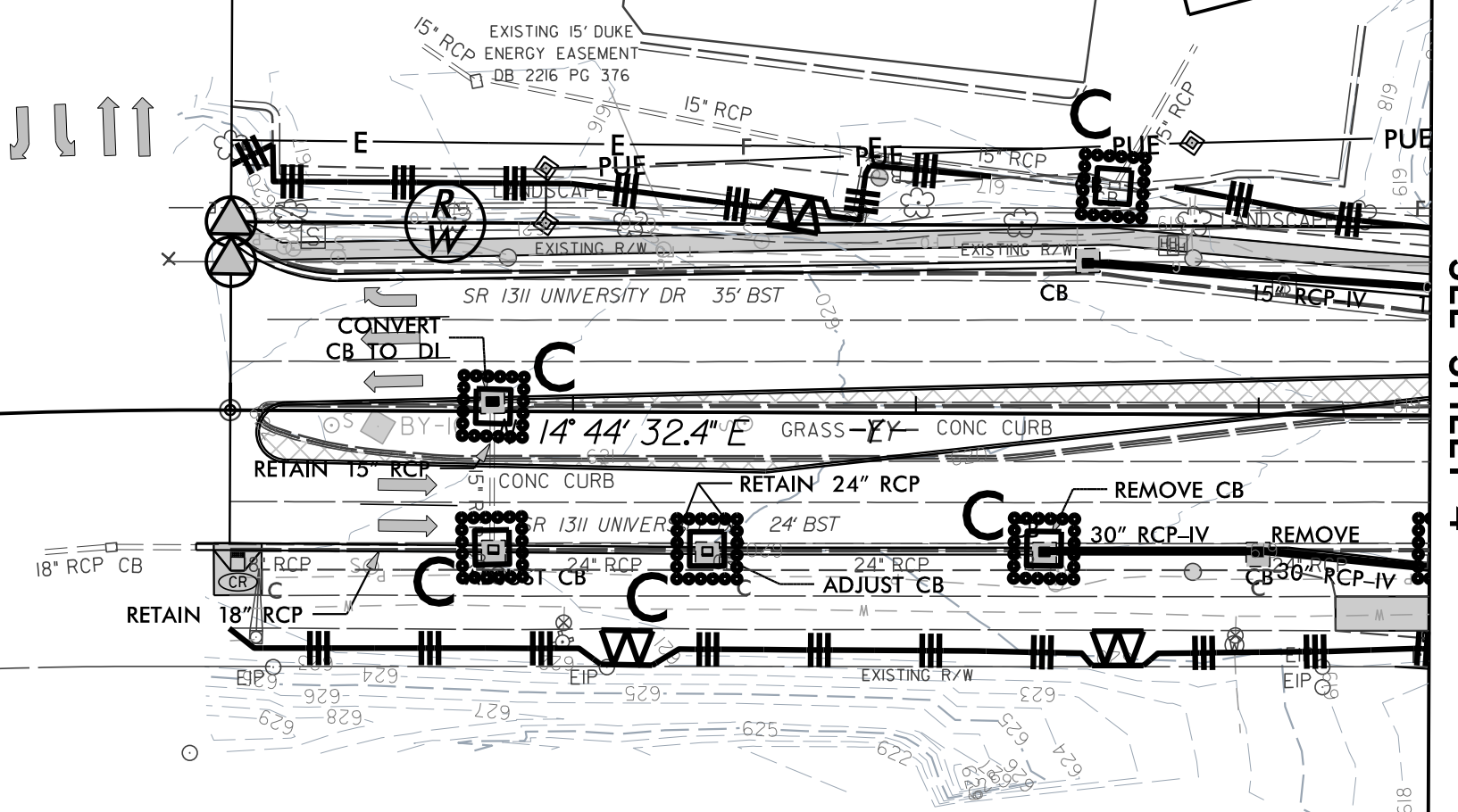
NAD 83/2011

-Y- PC Sta. 8+00.00

BEGIN CONSTRUCTION  
PT Sta. 10+00.00 -Y-

ZP NO 186 LLC

ISF BUS

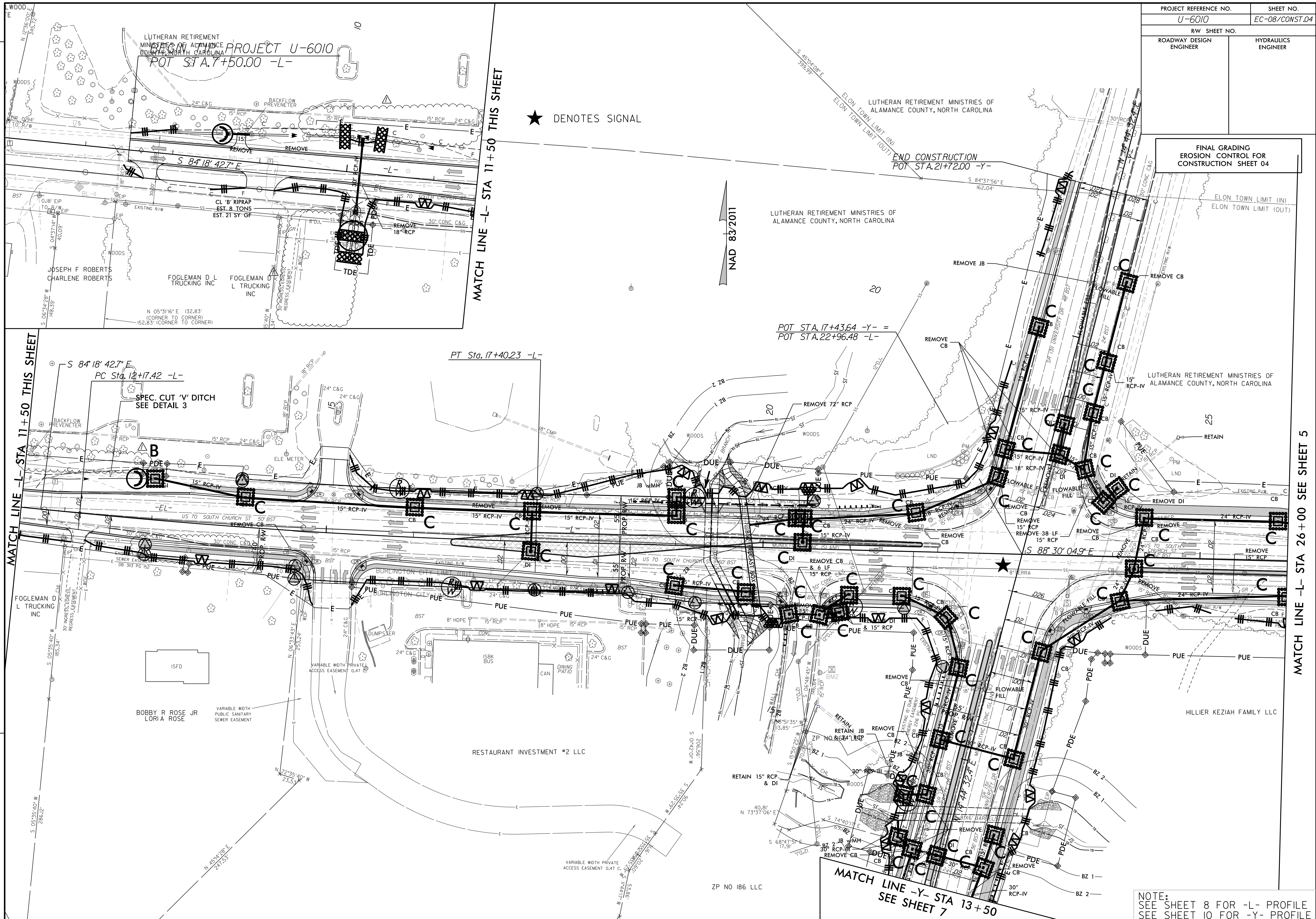


MATCH LINE -Y- STA 13+50  
SEE SHEET 4

NOTE:  
SEE SHEET 10 FOR -Y- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-08/CONST.04
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 04



★ DENOTES SIGNAL

MATCH LINE -L- STA 11+50 THIS SHEET

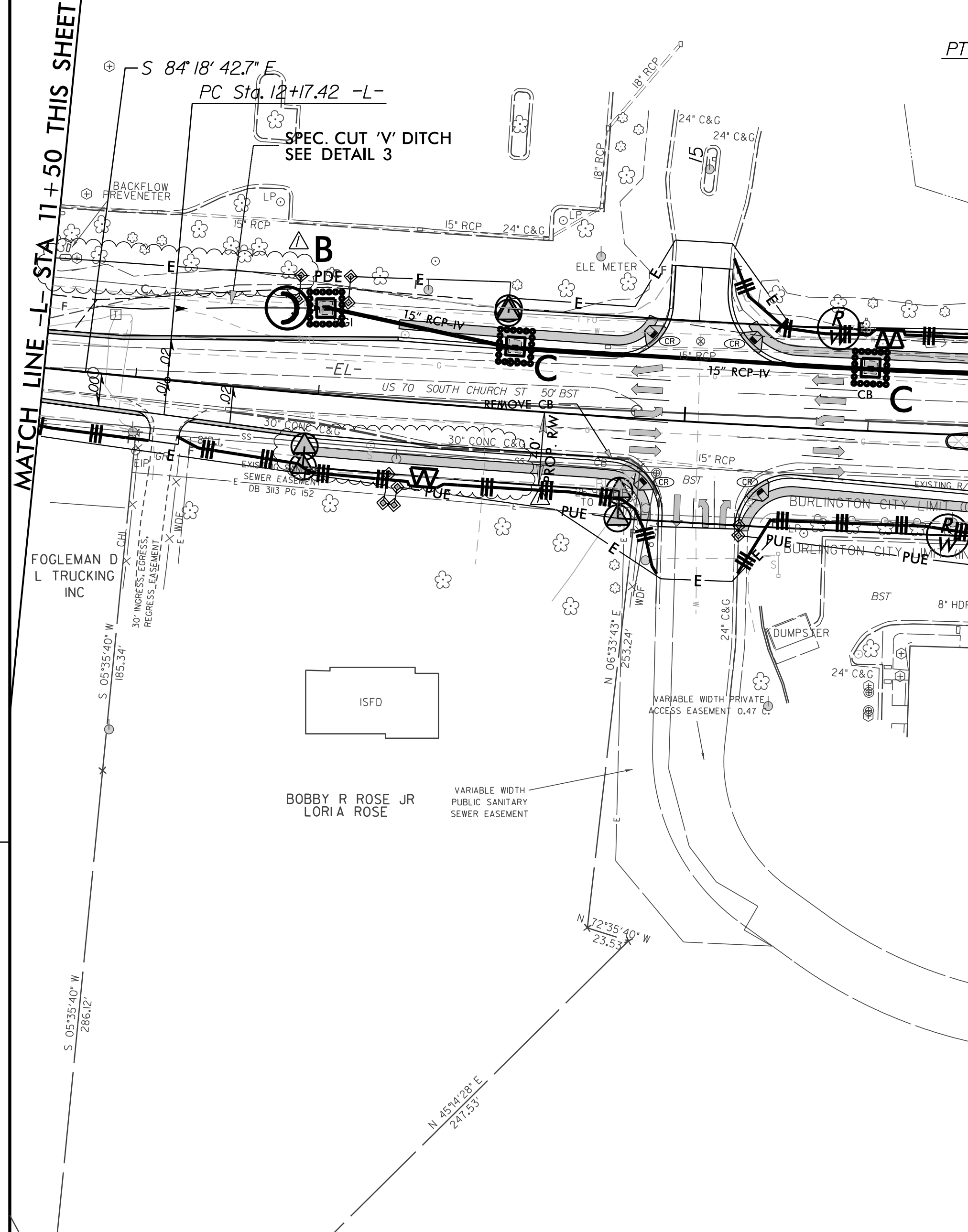
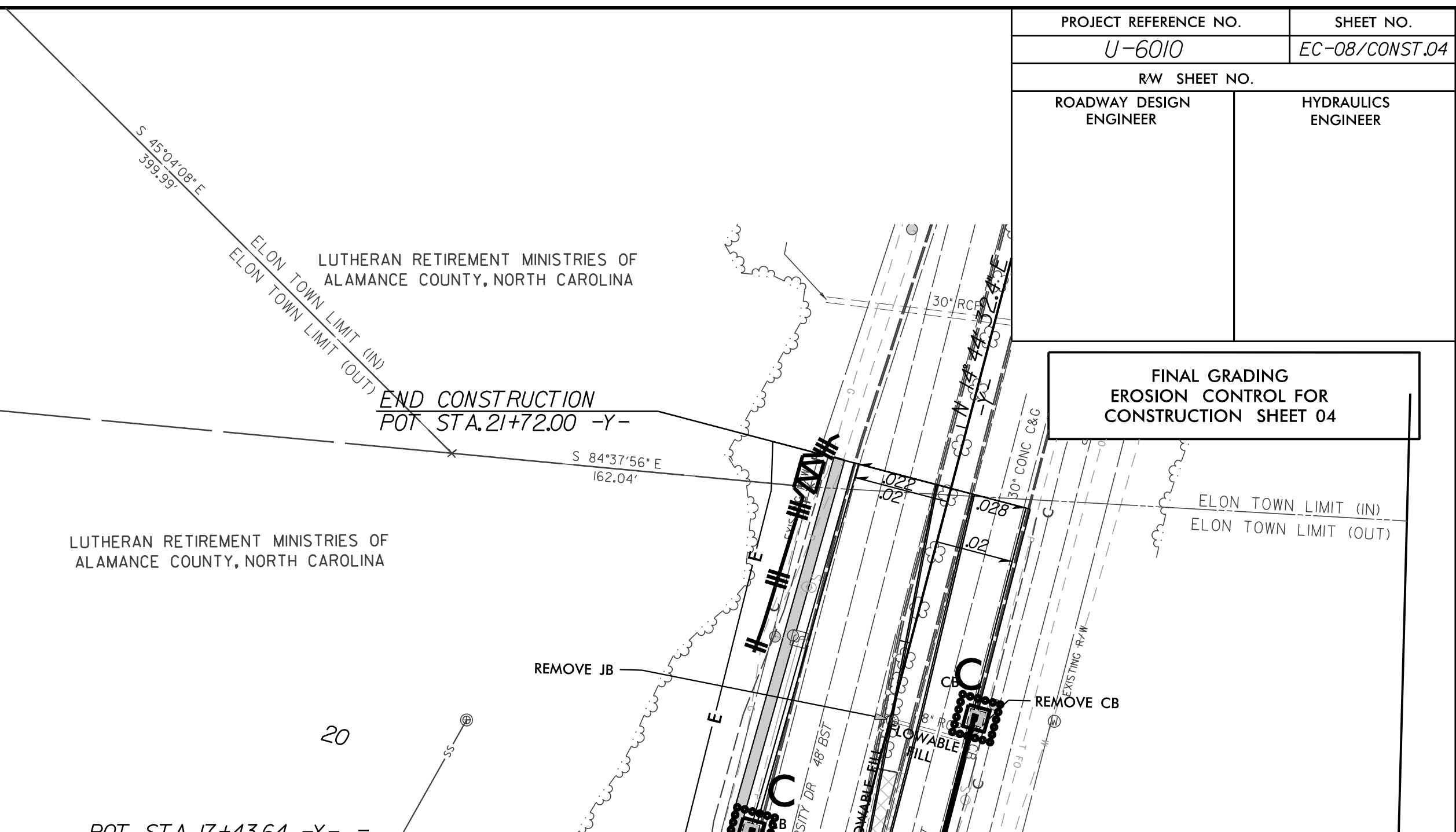
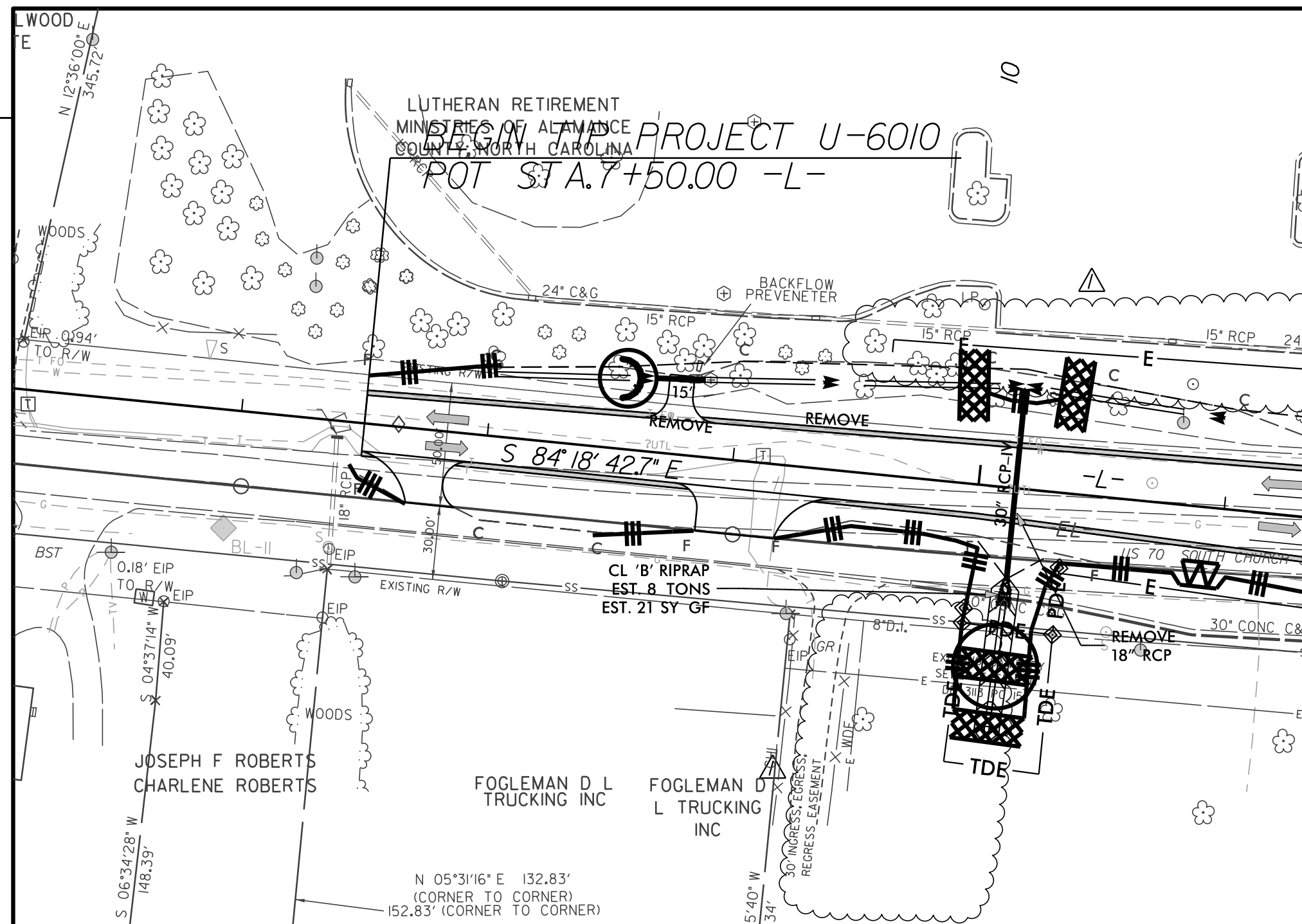
MATCH LINE -L- STA 26+00 SEE SHEET 5

MATCH LINE -L- STA 11+50 THIS SHEET

MATCH LINE -Y- STA 13+50  
SEE SHEET 7

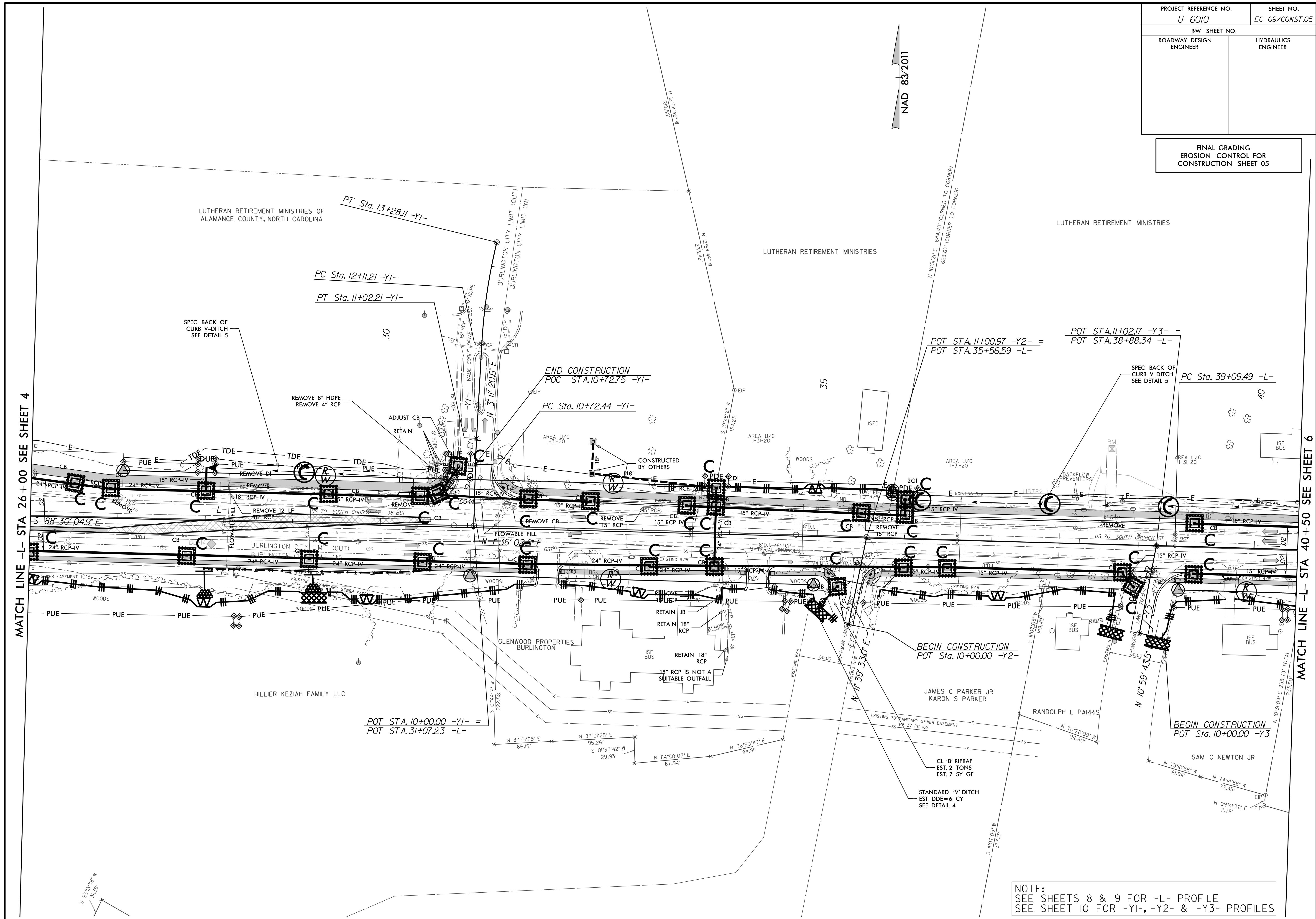
NOTE:  
SEE SHEET 8 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y- PROFILE

REVISIONS



PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-09/CONST.05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 05



MATCH LINE -L- STA 26+00 SEE SHEET 4

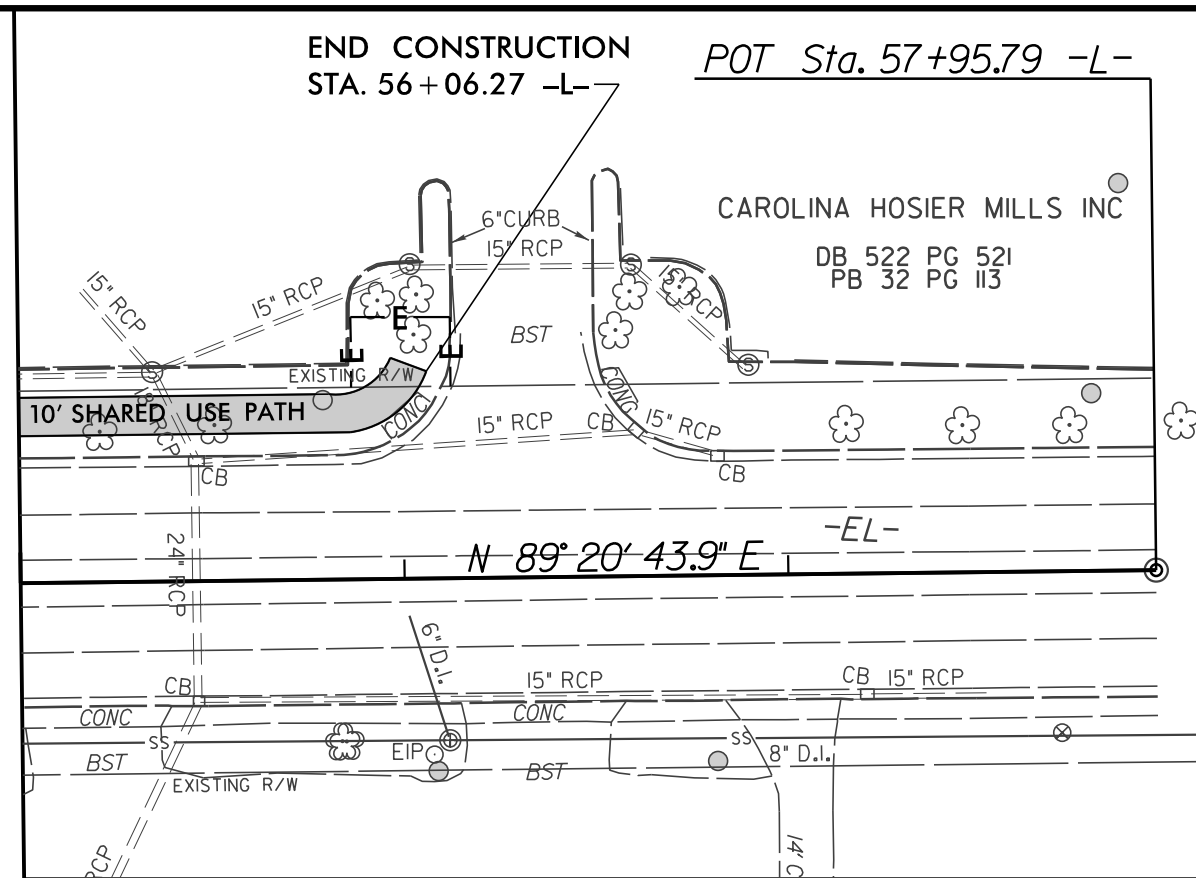
MATCH LINE -L- STA 40+50 SEE SHEET 6

NAD 83/2011

NOTE:  
SEE SHEETS 8 & 9 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y1-, -Y2- & -Y3- PROFILES

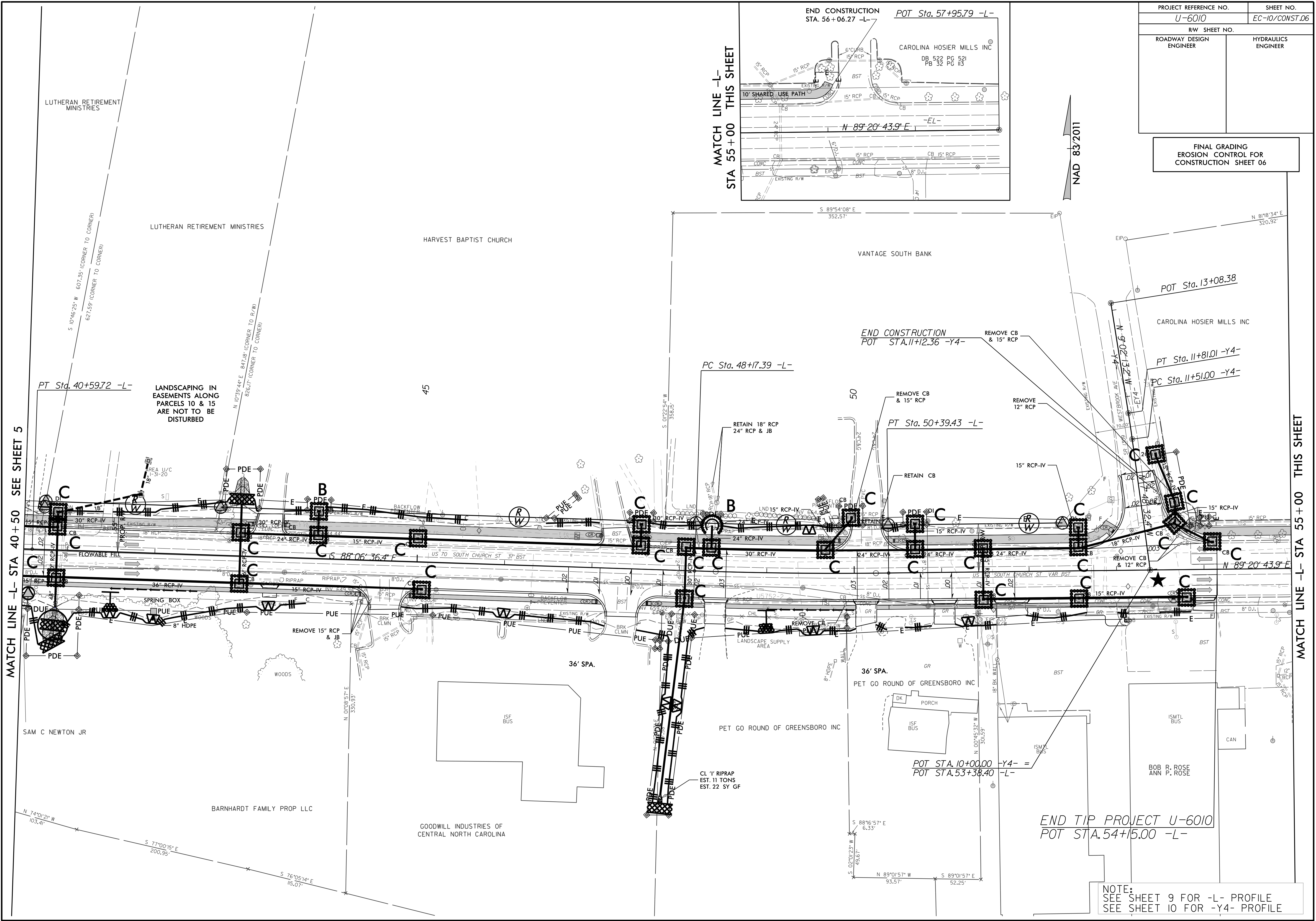
PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-10/CONST.06
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 06



MATCH LINE -L-  
STA 55+00 THIS SHEET

NAD 83/2011



MATCH LINE -L- STA 40+50 SEE SHEET 5

MATCH LINE -L- STA 55+00 THIS SHEET

NOTE:  
SEE SHEET 9 FOR -L- PROFILE  
SEE SHEET 10 FOR -Y4- PROFILE



PROJECT REFERENCE NO.	SHEET NO.
U-6010	EC-II/CONST.07
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

FINAL GRADING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 07

NAD 83/2011

BEGIN CONSTRUCTION  
PT Sta. 10+00.00 -Y-

-Y- PC Sta. 8+00.00

6  
ZP NO 186 LLC

8  
HILLIER KEZIAH FAMILY LLC

MATCH LINE -Y- STA 13+50  
SEE SHEET 4

NOTE:  
SEE SHEET 10 FOR -Y- PROFILE

