

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

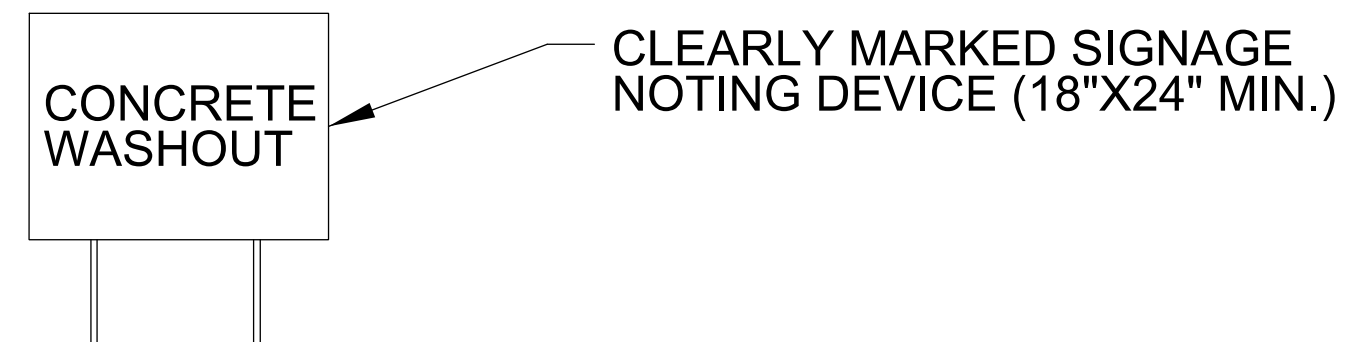
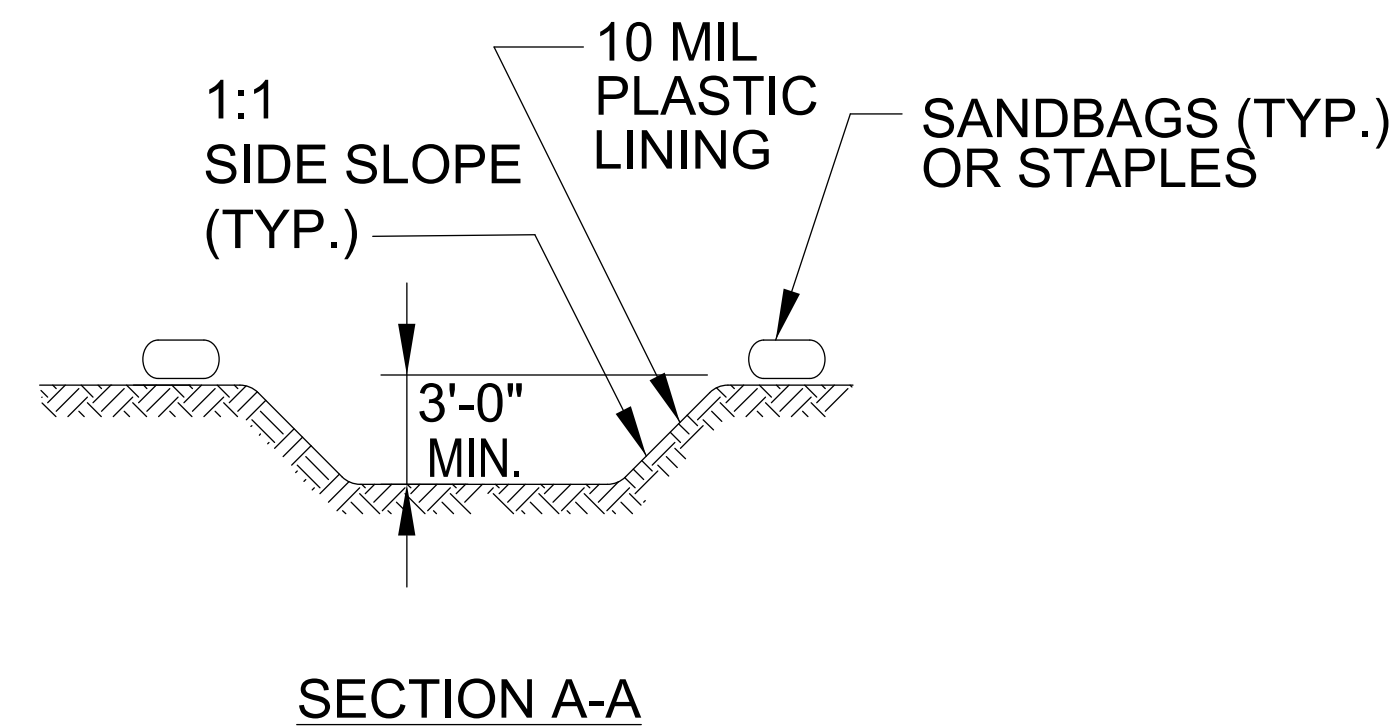
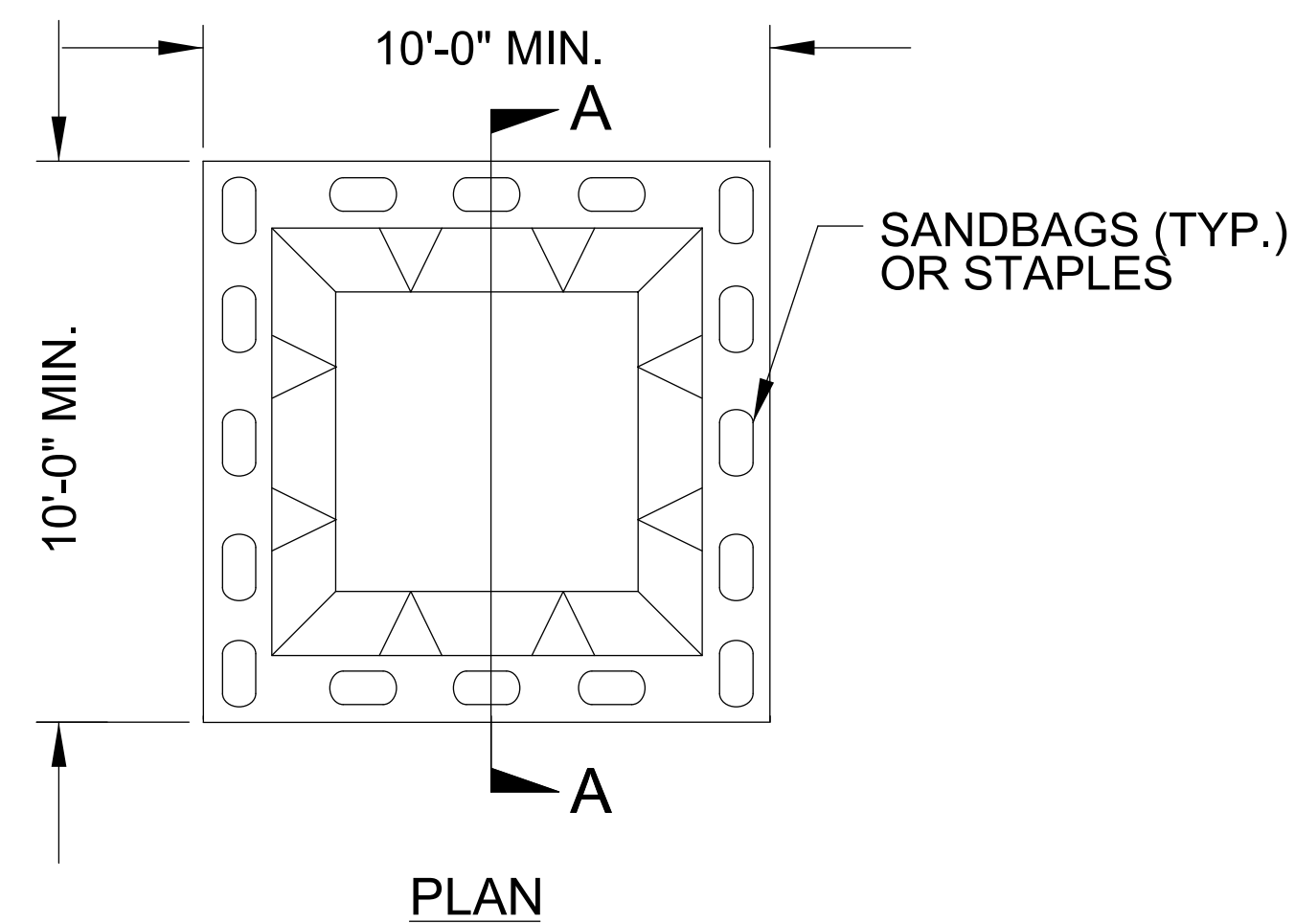
PROJECT REFERENCE NO. W03293	SHEET NO. EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A		1636.03	Excelsior Wattle Barrier	
1632.02	Type B		1636.03	Coir Fiber Wattle Barrier	
1632.03	Type C				

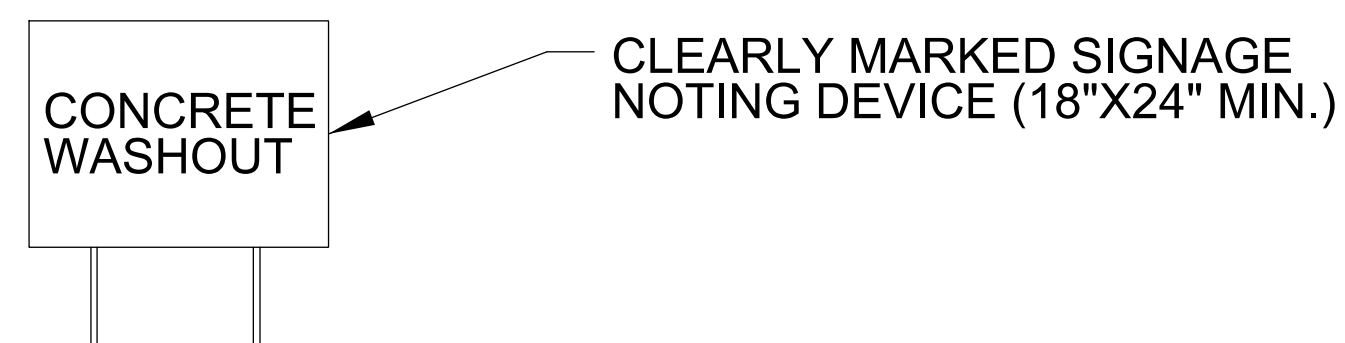
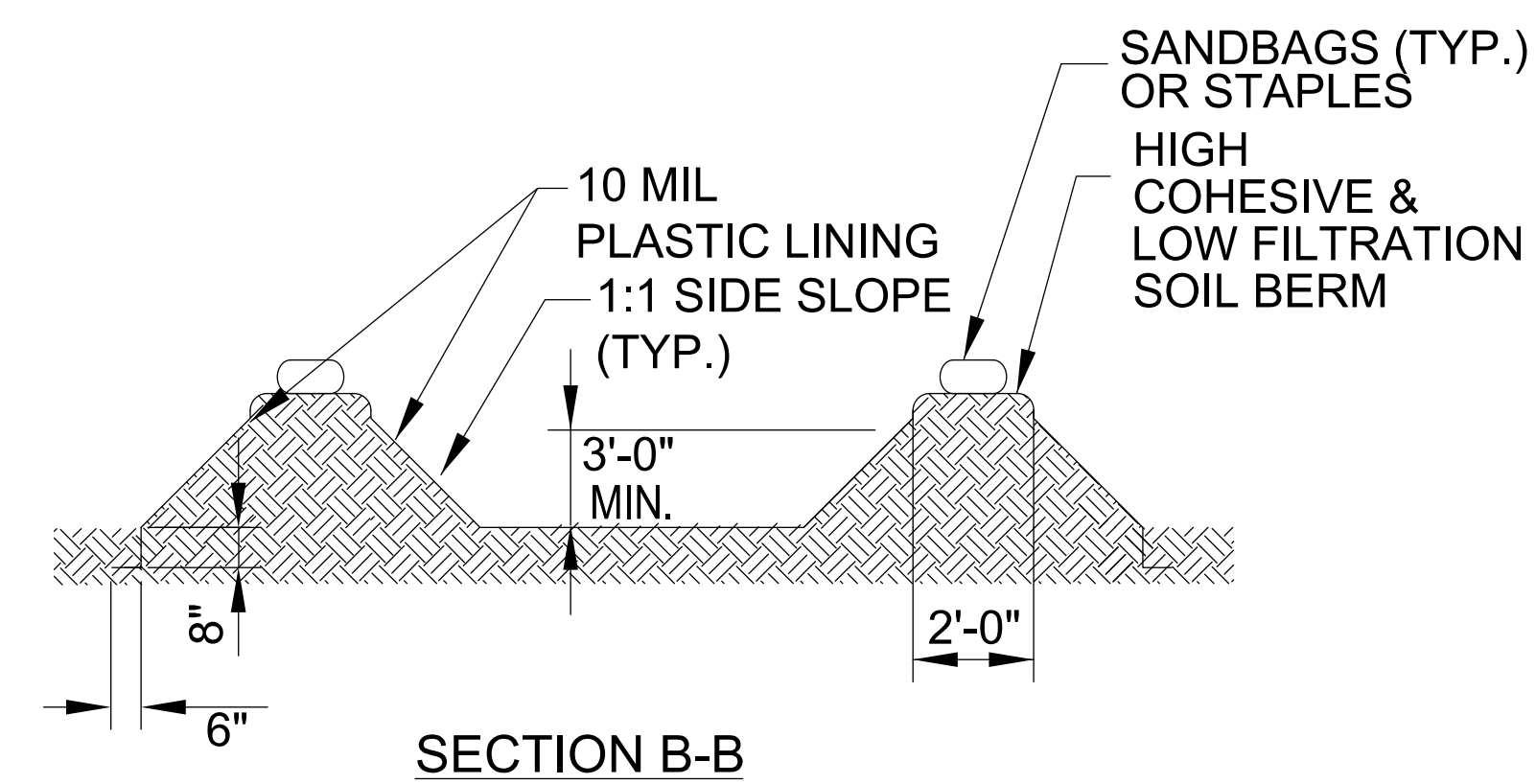
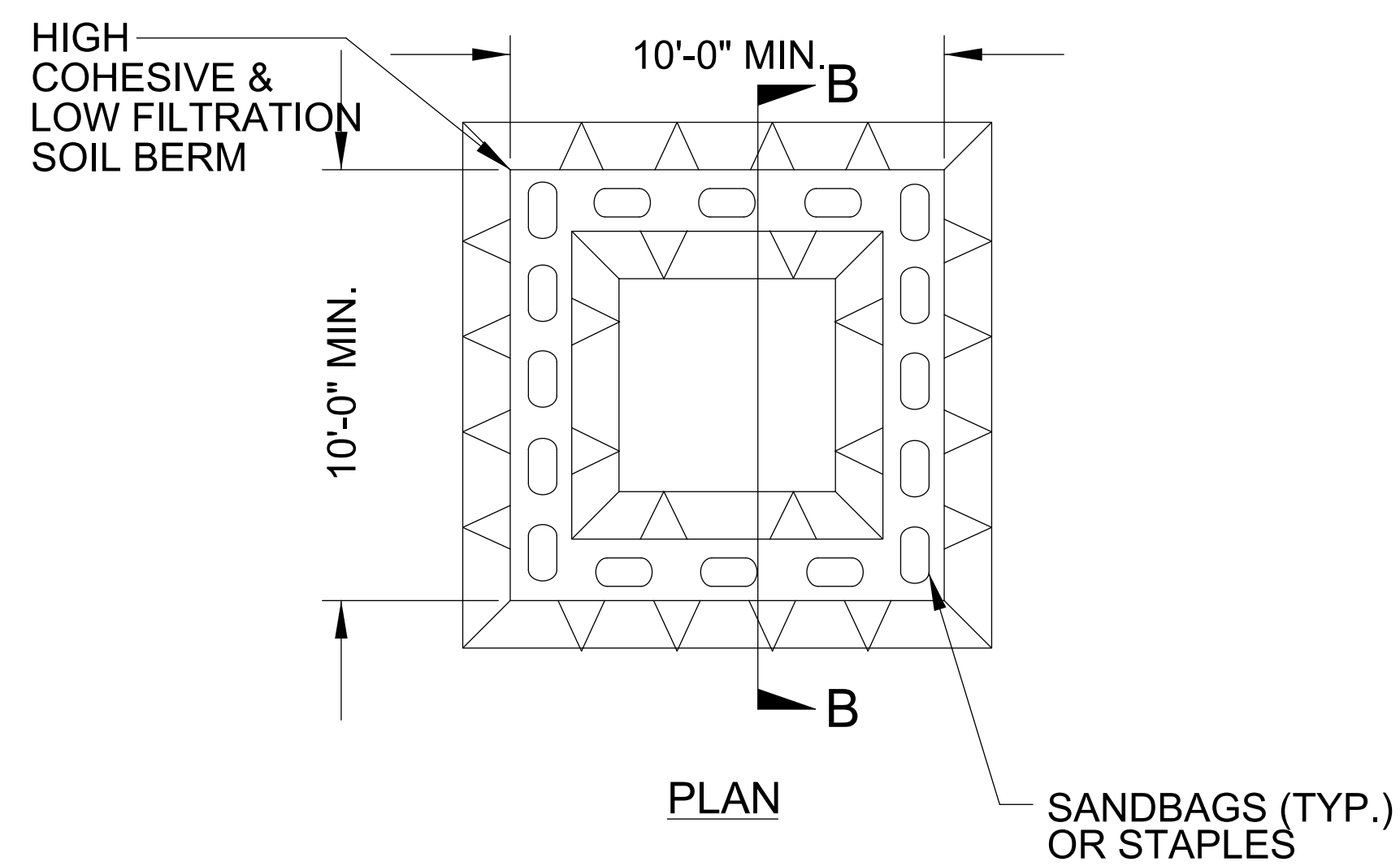
PROJECT REFERENCE NO. W03293	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

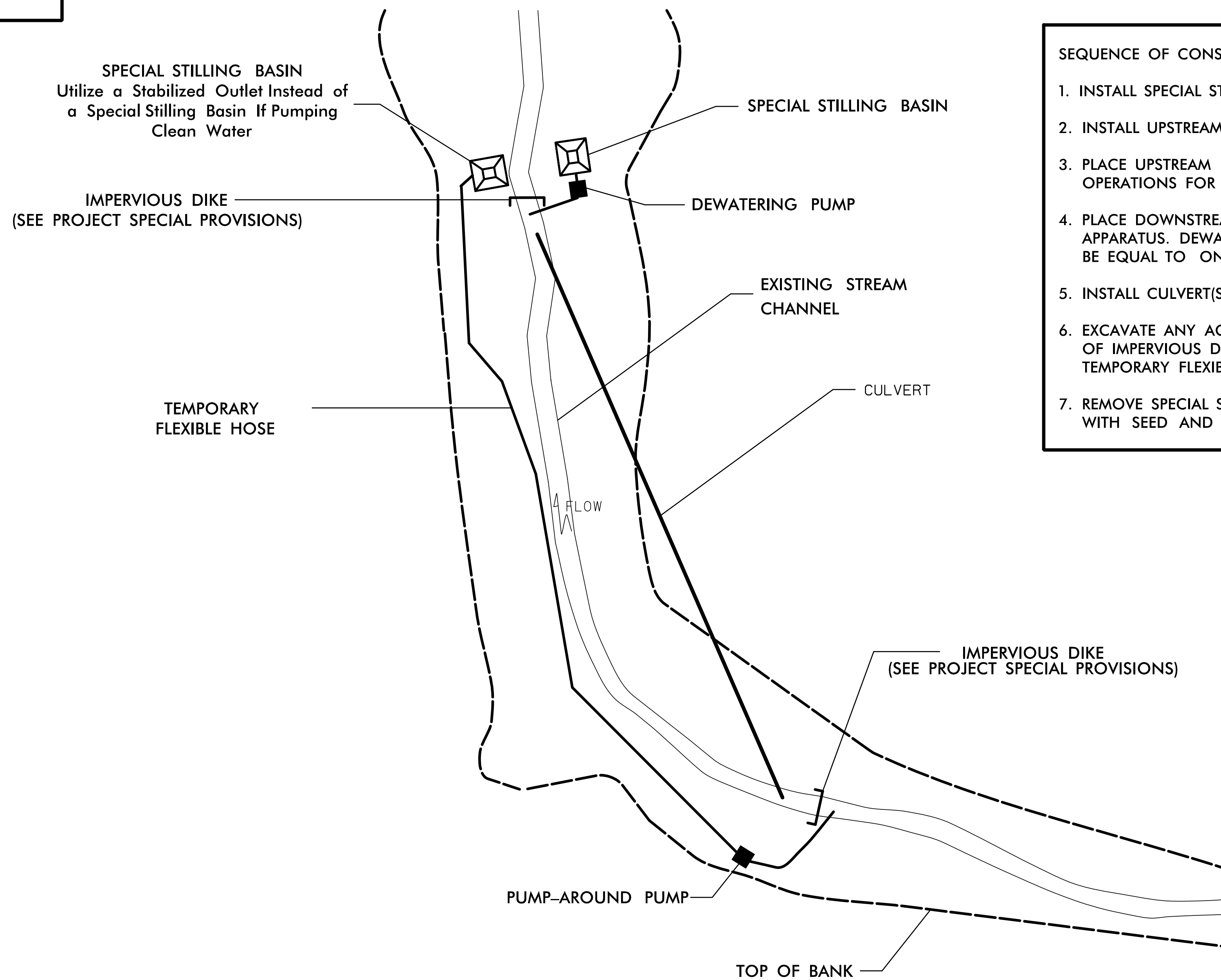
- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PROJECT REFERENCE NO. W03293	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EXAMPLE OF PUMP-AROUND OPERATION

NOTES:

- 1) All excavation shall be performed in only dry or isolated areas of the work zone.
- 2) Impervious dikes are to be used to isolate work from stream flow when necessary.
- 3) Maintenance of stream flow operations shall be incidental to the work. This includes polyethylene sheeting, diversion pipes, pumps and hoses.
- 4) Pumps and hoses shall be of sufficient size to dewater the work area.



- SEQUENCE OF CONSTRUCTION FOR TYPICAL WORK AREA**
1. INSTALL SPECIAL STILLING BASIN(S).
 2. INSTALL UPSTREAM PUMP AND TEMPORARY FLEXIBLE HOSE.
 3. PLACE UPSTREAM IMPERVIOUS DIKE AND BEGIN PUMPING OPERATIONS FOR STREAM DIVERSION.
 4. PLACE DOWNSTREAM IMPERVIOUS DIKE AND PUMPING APPARATUS. DEWATER ENTRAPPED AREA. AREA TO BE DEWATERED SHALL BE EQUAL TO ONE DAY'S WORK.
 5. INSTALL CULVERT(S) IN ACCORDANCE WITH THE PLANS.
 6. EXCAVATE ANY ACCUMULATED SILT AND DEWATER BEFORE REMOVAL OF IMPERVIOUS DIKES. REMOVE IMPERVIOUS DIKES, PUMPS, AND TEMPORARY FLEXIBLE HOSE. (DOWNSTREAM IMPERVIOUS DIKES FIRST).
 7. REMOVE SPECIAL STILLING BASIN(S) AND BACKFILL. STABILIZE DISTURBED AREA WITH SEED AND MULCH.

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STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>W03293</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

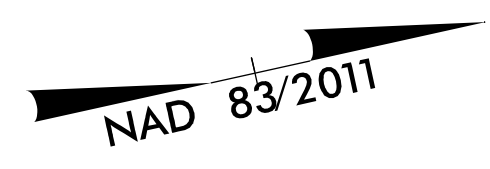
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES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


DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

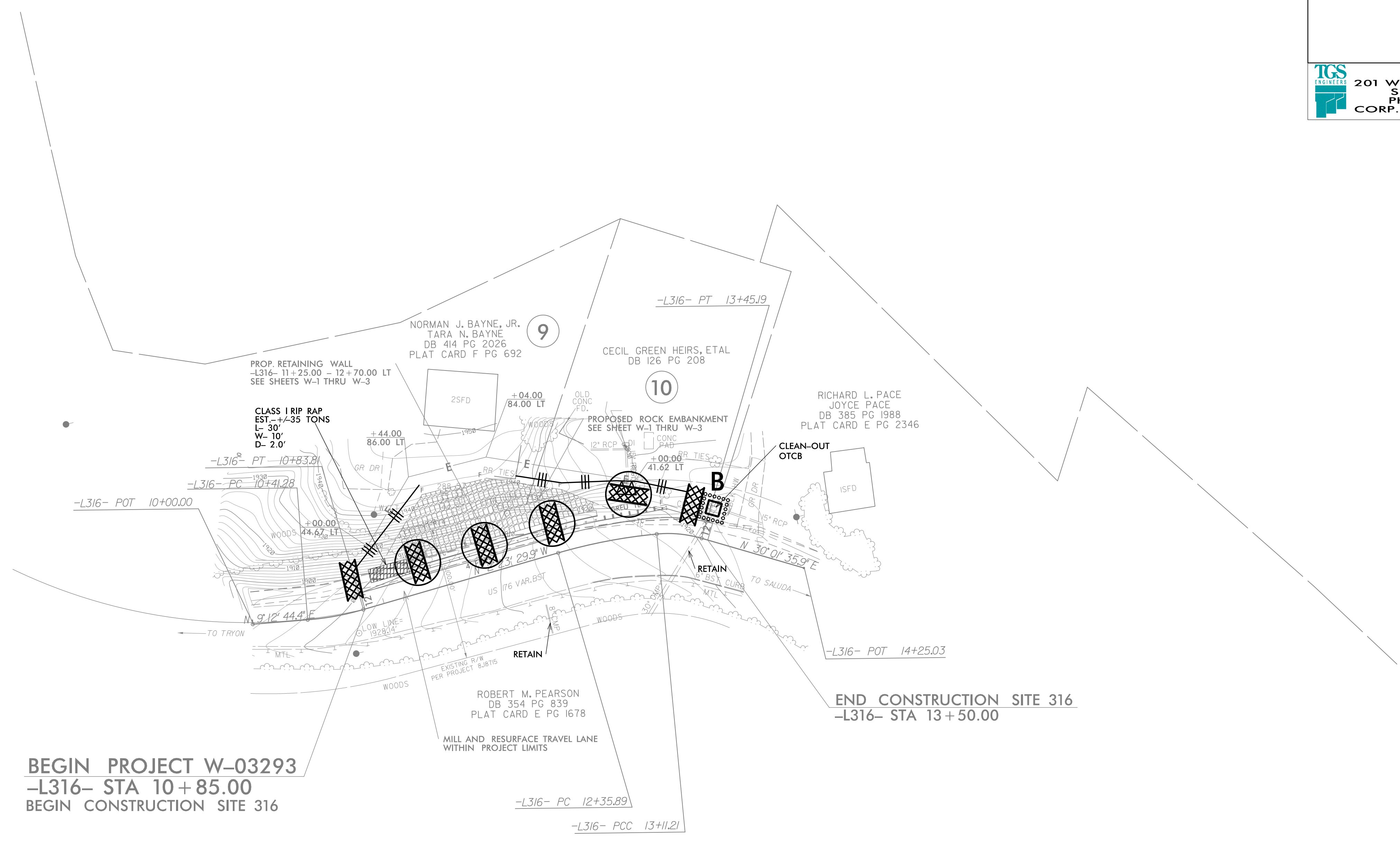
PROJECT REFERENCE NO. W03293	SHEET NO. EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES




PROJECT REFERENCE NO.		SHEET NO.	
W03293		EC-04/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			



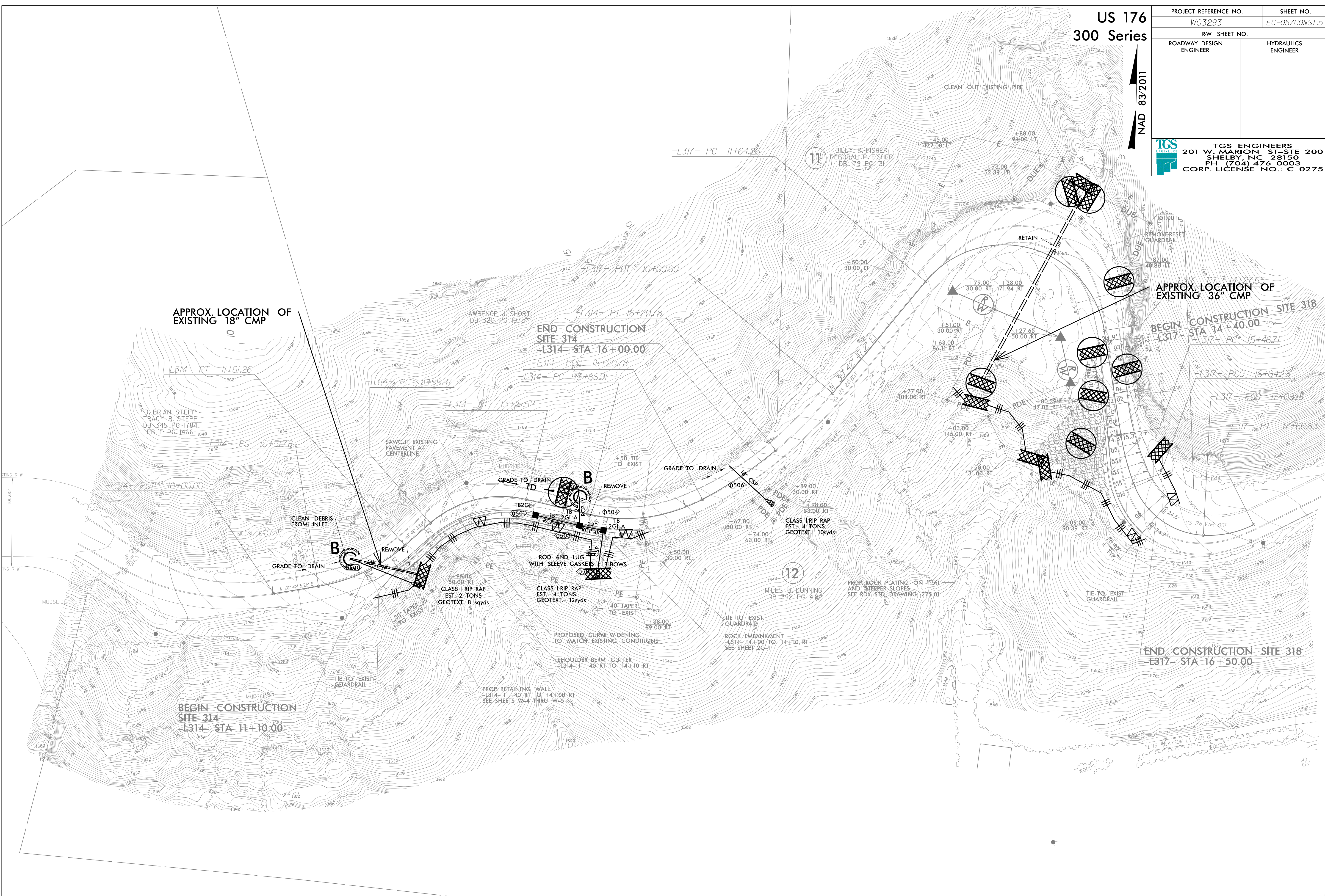
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

US 176 300 Series

PROJECT REFERENCE NO. W03293		SHEET NO. EC-05/CONST.5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			

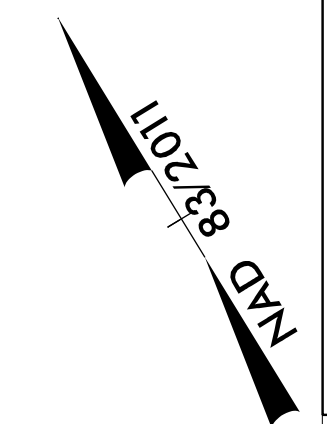
NAD 83/2011




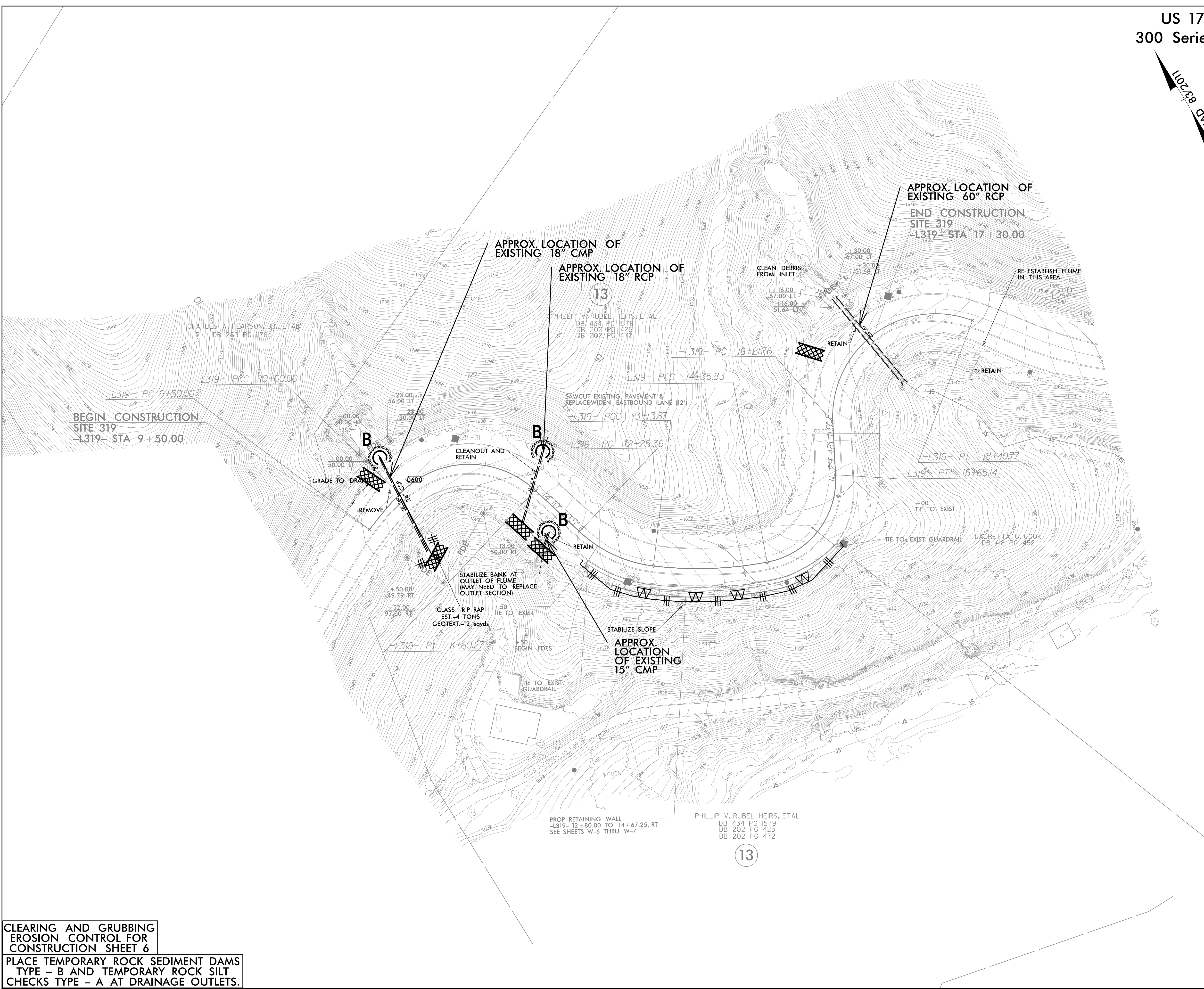
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5

INSTALL LARGE PIPES VIA PUMP AROUND. REFER TO PUMP AROUND DETAIL ON EC-02B.

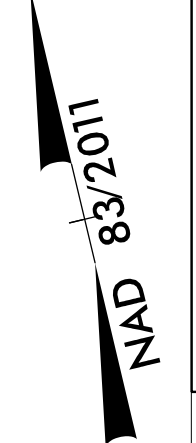



PROJECT REFERENCE NO. W03293		SHEET NO. EC-06/CONST.6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			

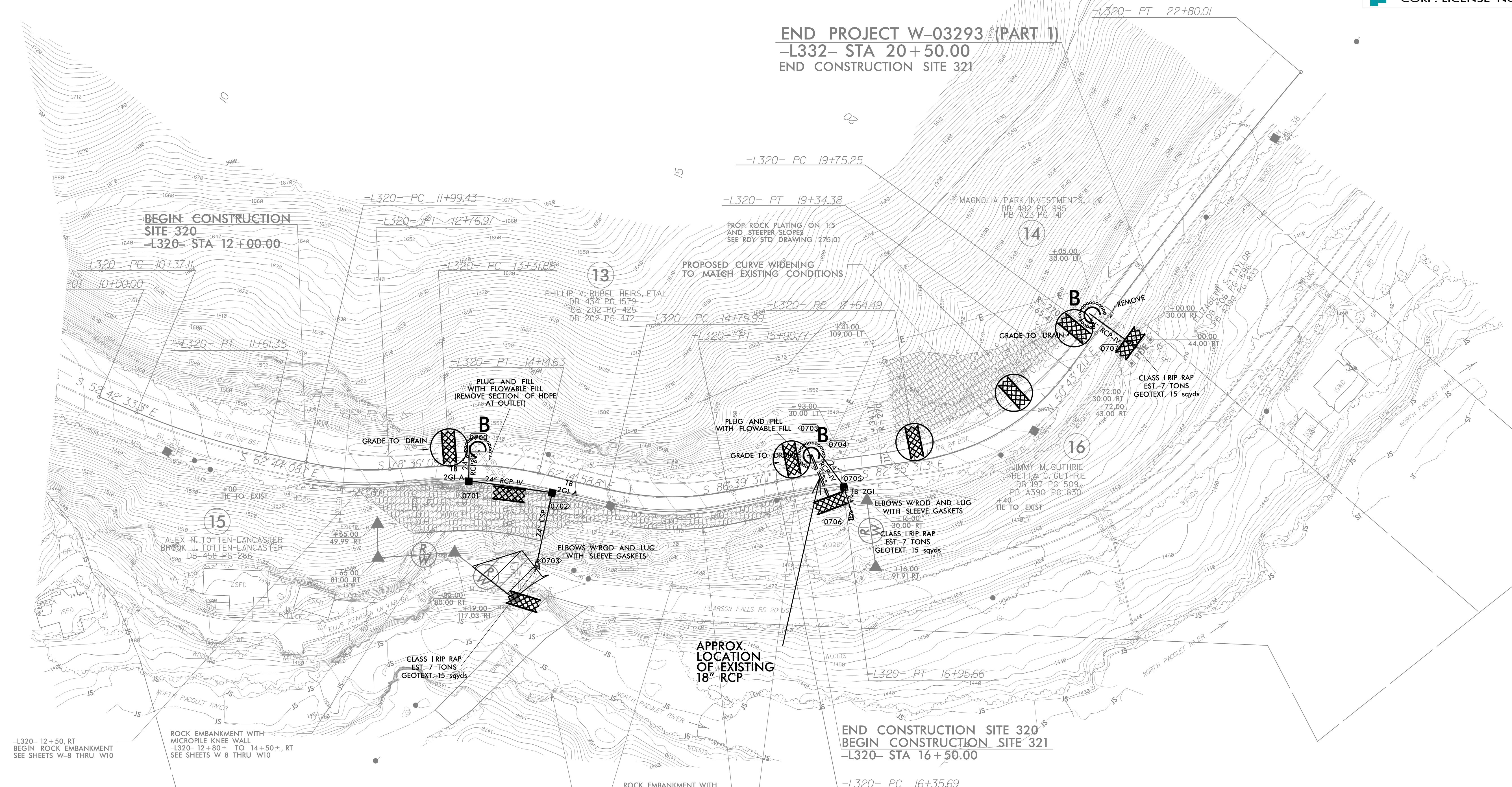


**CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 6**

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



PROJECT REFERENCE NO. W03293		SHEET NO. EC-07/CONST.7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			



-L320- 12+50, RT
BEGIN ROCK EMBANKMENT
SEE SHEETS W-8 THRU W10

ROCK EMBANKMENT WITH
MICROPILE KNEE WALL
-L320- 12+80± TO 14+50±, RT
SEE SHEETS W-8 THRU W10

ROCK EMBANKMENT WITH
MICROPILE KNEE WALL
-L320- 15+07± TO 16+14±, RT
SEE SHEETS W-8 THRU W10

-L320- 16+50, RT
END ROCK EMBANKMENT
SEE SHEETS W-8 THRU W10

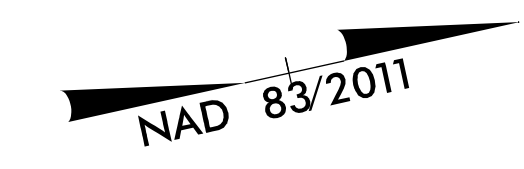
FUTURE PROJECT BP14-R038


CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 7

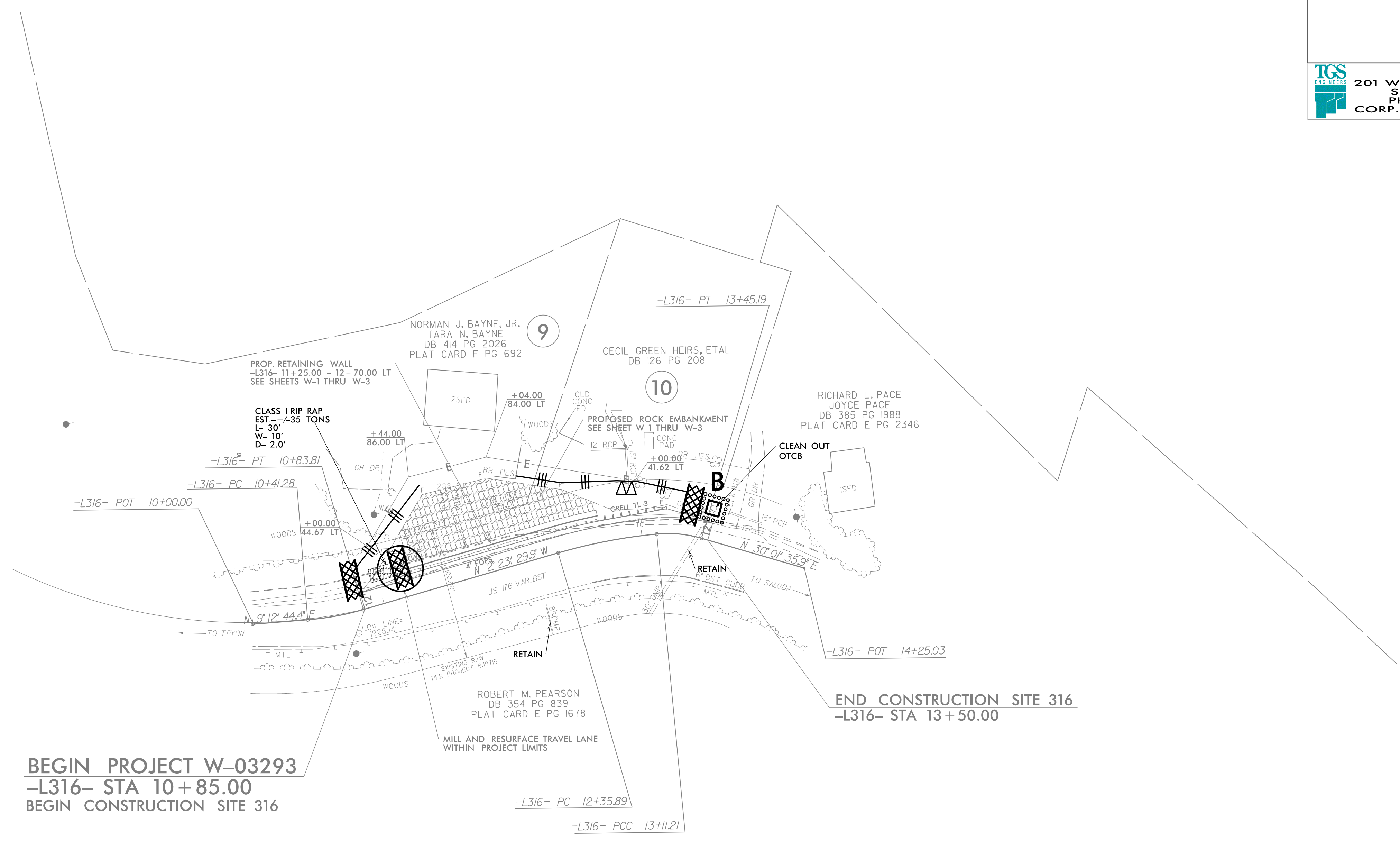
 ENVIRONMENTALLY
SENSITIVE AREA
SEE PROJECT
SPECIAL PROVISIONS

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

US 176 300 Series




PROJECT REFERENCE NO. W03293		SHEET NO. EC-08/CONST.4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			



BEGIN PROJECT W-03293
-L316- STA 10+85.00
BEGIN CONSTRUCTION SITE 316

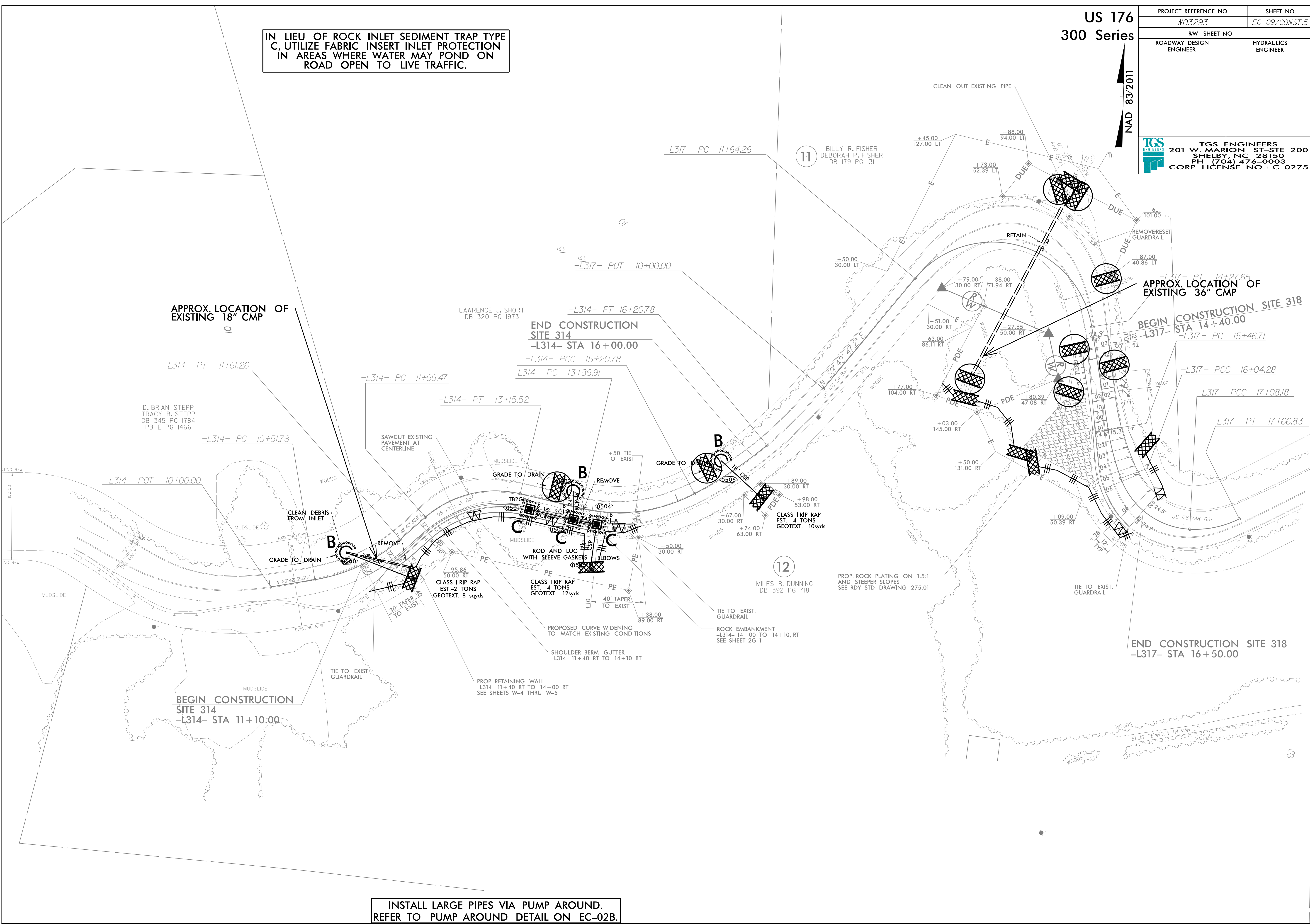
END CONSTRUCTION SITE 316
-L316- STA 13+50.00

US 176 300 Series

PROJECT REFERENCE NO. W03293	SHEET NO. EC-09/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

NAD 83/2011



APPROX. LOCATION OF EXISTING 18" CMP

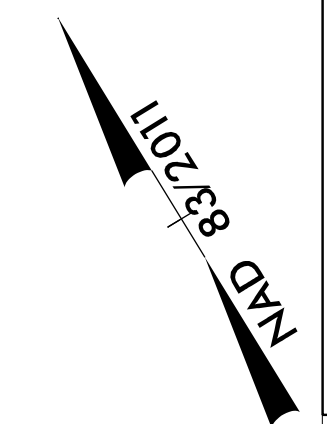
APPROX. LOCATION OF EXISTING 36" CMP


BEGIN CONSTRUCTION SITE 314
-L314- STA 11+10.00

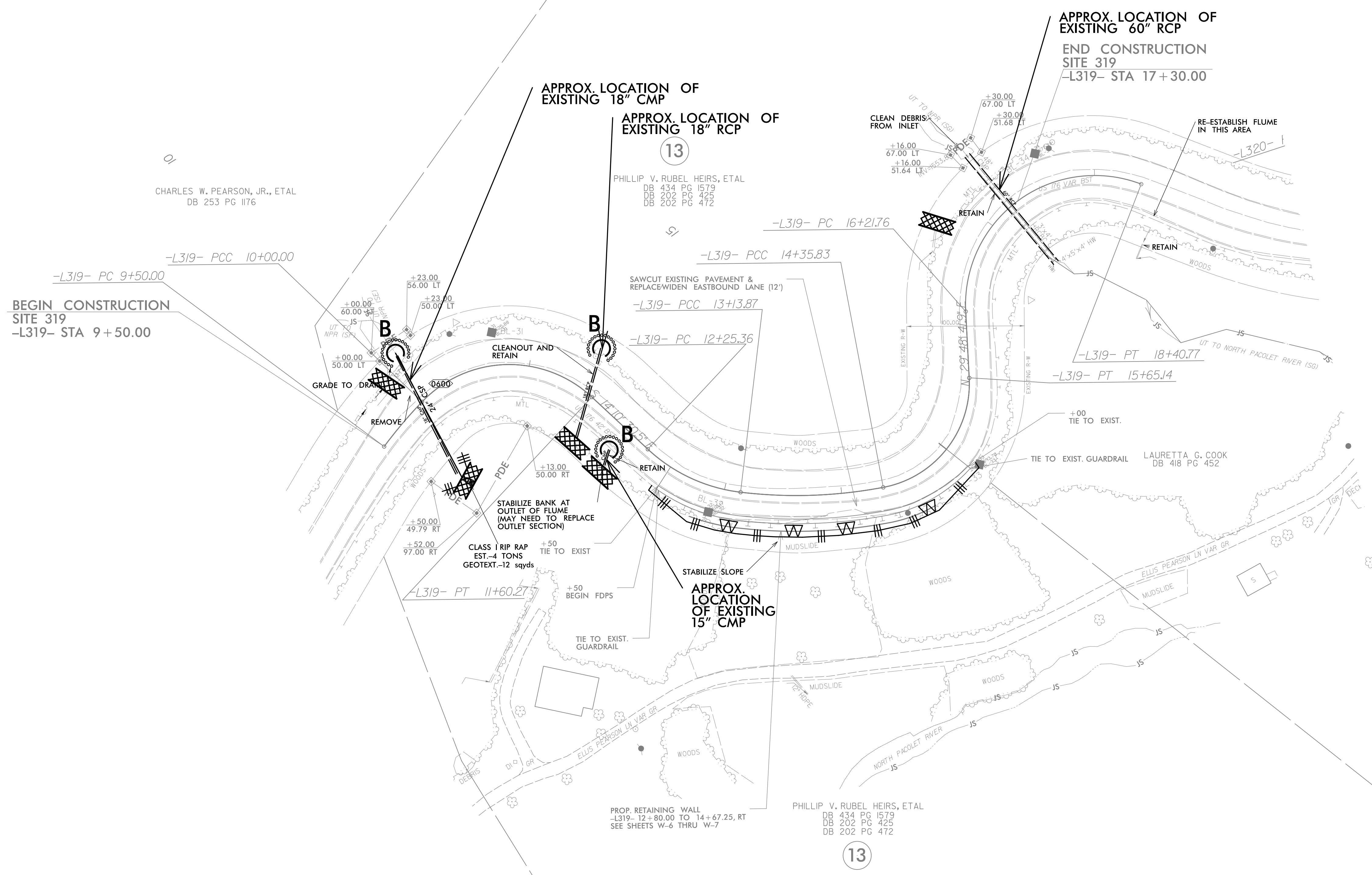
END CONSTRUCTION SITE 314
-L314- STA 16+00.00

END CONSTRUCTION SITE 318
-L317- STA 16+50.00

INSTALL LARGE PIPES VIA PUMP AROUND.
REFER TO PUMP AROUND DETAIL ON EC-02B.



PROJECT REFERENCE NO. W03293		SHEET NO. EC-10/CONST.6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275			



CHARLES W. PEARSON, JR., ETAL
DB 253 PG 1176

PHILLIP V. RUBEL HEIRS, ETAL
DB 434 PG 1579
DB 202 PG 425
DB 202 PG 472


SAWCUT EXISTING PAVEMENT &
REPLACE/WIDEN EASTBOUND LANE (12')

LAURETTA G. COOK
DB 418 PG 452

PHILLIP V. RUBEL HEIRS, ETAL
DB 434 PG 1579
DB 202 PG 425
DB 202 PG 472

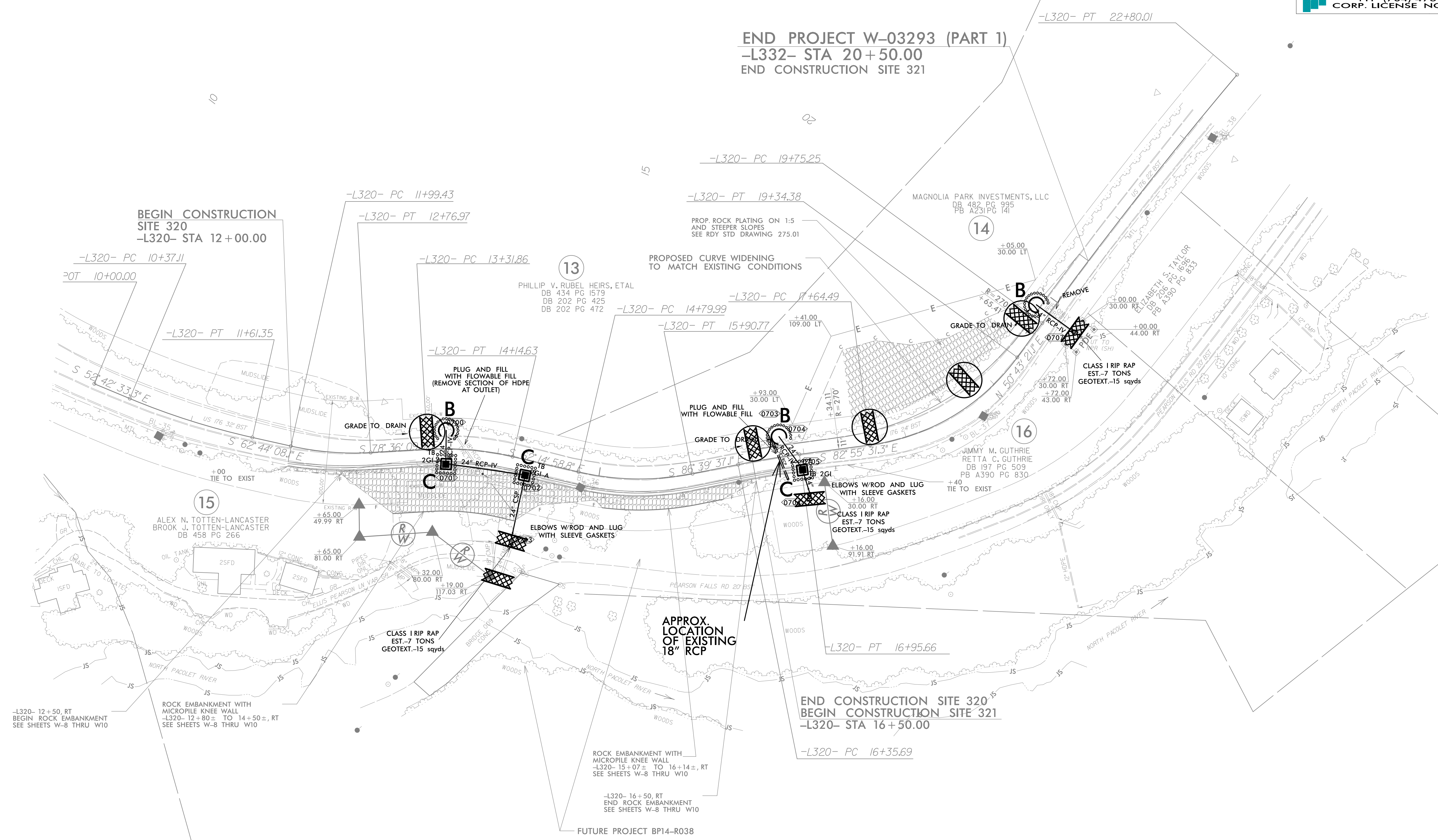
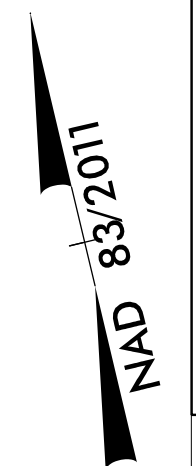
PROP. RETAINING WALL
-L319- 12+80.00 TO 14+67.25, RT
SEE SHEETS W-6 THRU W-7

13

PROJECT REFERENCE NO. W03293	SHEET NO. EC-II/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
 TGS ENGINEERS 201 W. MARION ST-STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	

IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE C, UTILIZE FABRIC INSERT INLET PROTECTION IN AREAS WHERE WATER MAY POND ON ROAD OPEN TO LIVE TRAFFIC.

INSTALL MATTING FOR EROSION CONTROL ON ALL GRADED DITCHES AND GRADED SLOPES THAT DO NOT ALREADY CALL FOR OTHER MEANS OF PERMANENT OR TEMPORARY STABILIZATION



-L320- 12+50, RT
BEGIN ROCK EMBANKMENT
SEE SHEETS W-8 THRU W10

ROCK EMBANKMENT WITH
MICROPILE KNEE WALL
-L320- 12+80± TO 14+50±, RT
SEE SHEETS W-8 THRU W10

ROCK EMBANKMENT WITH
MICROPILE KNEE WALL
-L320- 15+07± TO 16+14±, RT
SEE SHEETS W-8 THRU W10

-L320- 16+50, RT
END ROCK EMBANKMENT
SEE SHEETS W-8 THRU W10

FUTURE PROJECT BP14-R038