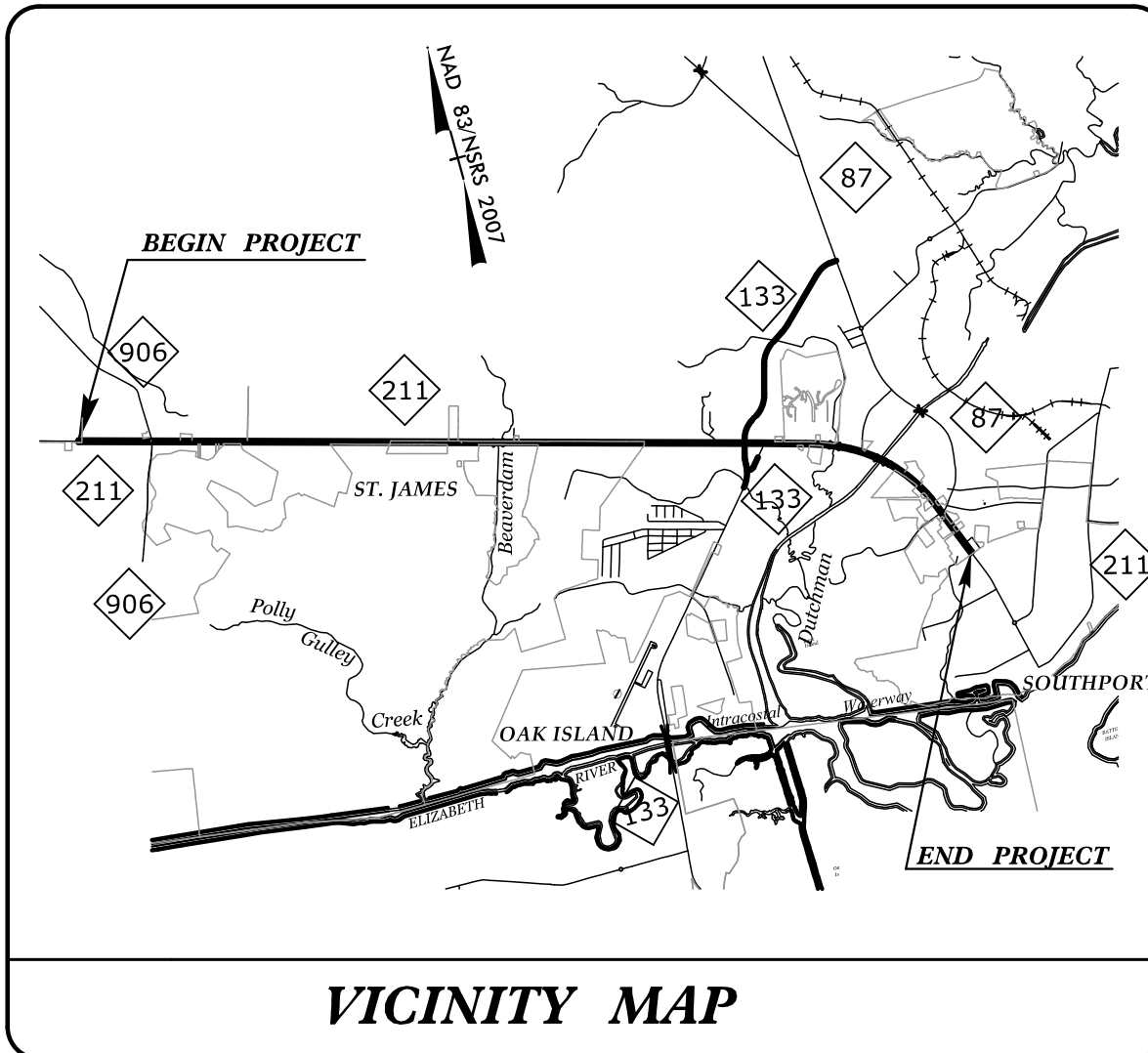


TIP PROJECT: R-5021



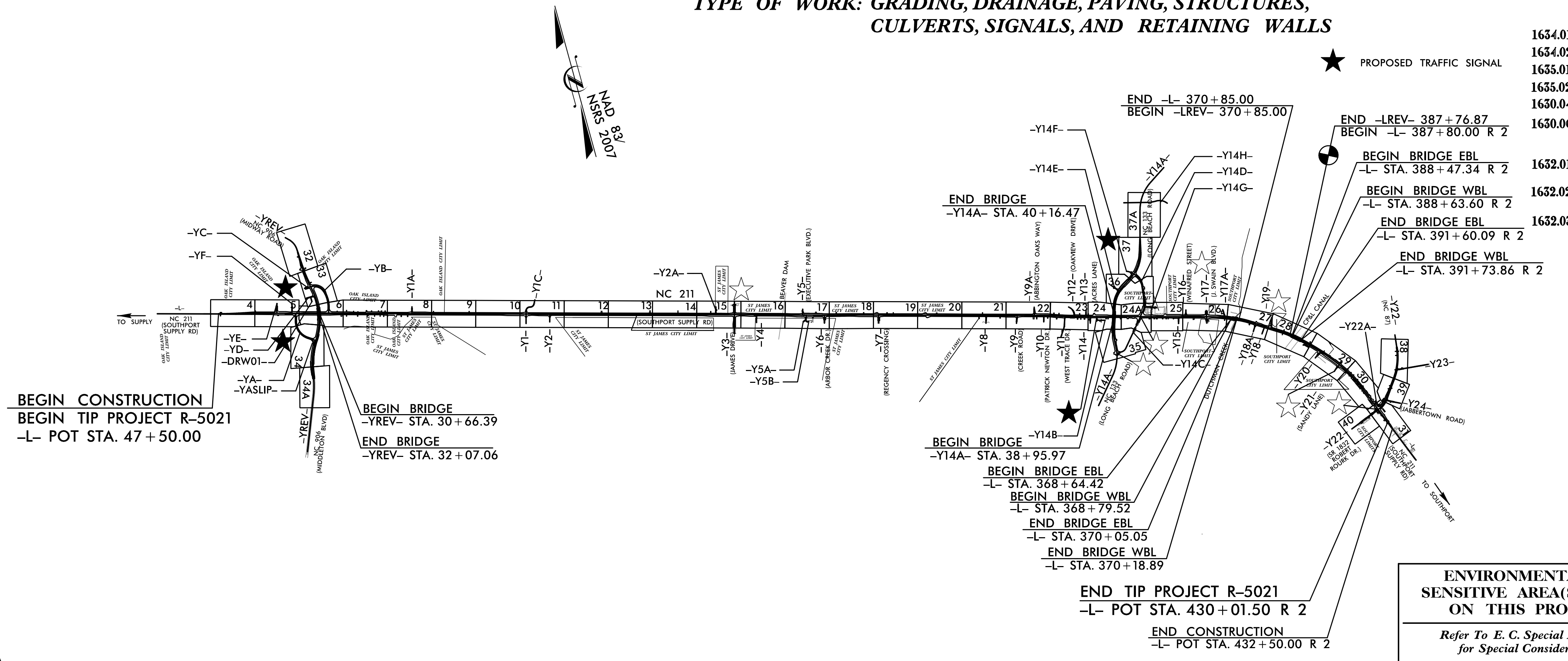
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

BRUNSWICK COUNTY

LOCATION: NC 211 FROM WEST OF NC 906 (MIDWAY ROAD)
TO EAST OF NC 87

TYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,
CULVERTS, SIGNALS, AND RETAINING WALLS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5021	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	—
1630.05	Temporary Diversion	— TD —
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	— S —
1622.01	Temporary Berms and Slope Drains	— B —
1630.02	Silt Basin Type B	— SB —
1633.01	Temporary Rock Silt Check Type-A	— RSC —
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	— RSC/PAM —
1633.02	Temporary Rock Silt Check Type-B	— RSC/B —
	Wattle/Coir Fiber Wattle	— W —
	Wattle/Coir Fiber Wattle with Polyacrylamide (PAM)	— W/PAM —
1634.01	Temporary Rock Sediment Dam Type-A	— RSD/A —
1634.02	Temporary Rock Sediment Dam Type-B	— RSD/B —
1635.01	Rock Pipe Inlet Sediment Trap Type-A	— RPIA —
1635.02	Rock Pipe Inlet Sediment Trap Type-B	— RPIB —
1630.04	Stilling Basin	— SB —
1630.06	Special Stilling Basin	— SSB —
	Rock Inlet Sediment Trap:	
	Type A	A
	Type B	B
	Type C	C
	Skimmer Basin	— SB —
	Tiered Skimmer Basin	— TSB —
	Infiltration Basin	— IB —

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

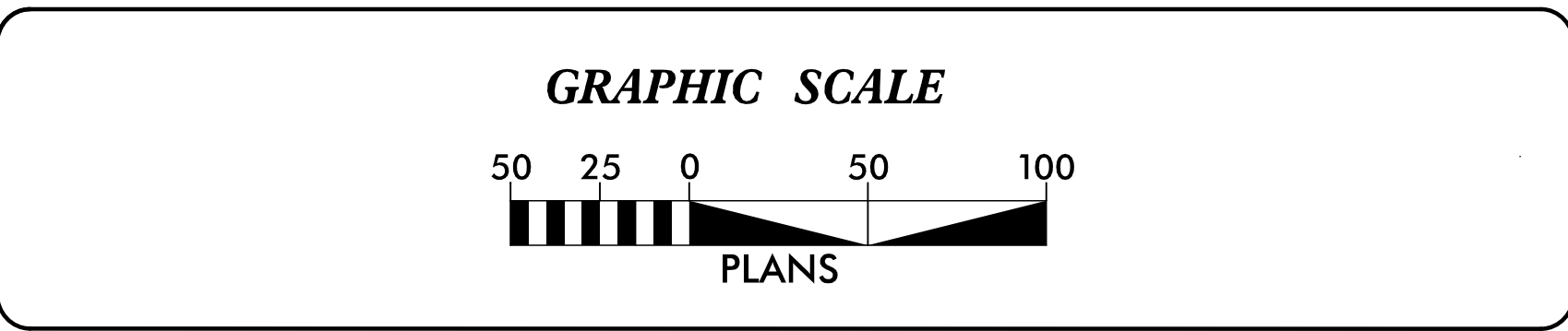
**THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.**

**ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT**

Refer To E. C. Special Provisions
for Special Considerations.

HIGH QUALITY WATER(S) EXIST
ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. -L- 210+75 /363+50
to Sta. -L- 232+00 /375+50
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.**

HNTB

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

Prepared In the Office of:

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

Designed by:

NATALIE CHAN, P.E. 3444

NAME LEVEL III CERTIFICATION NO.

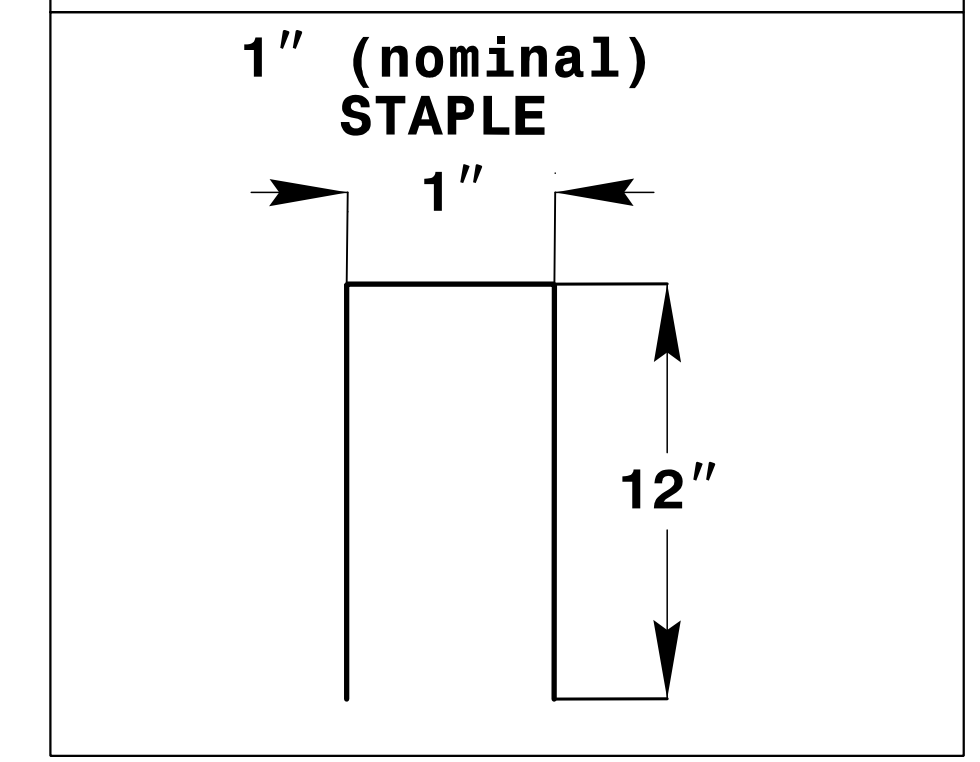
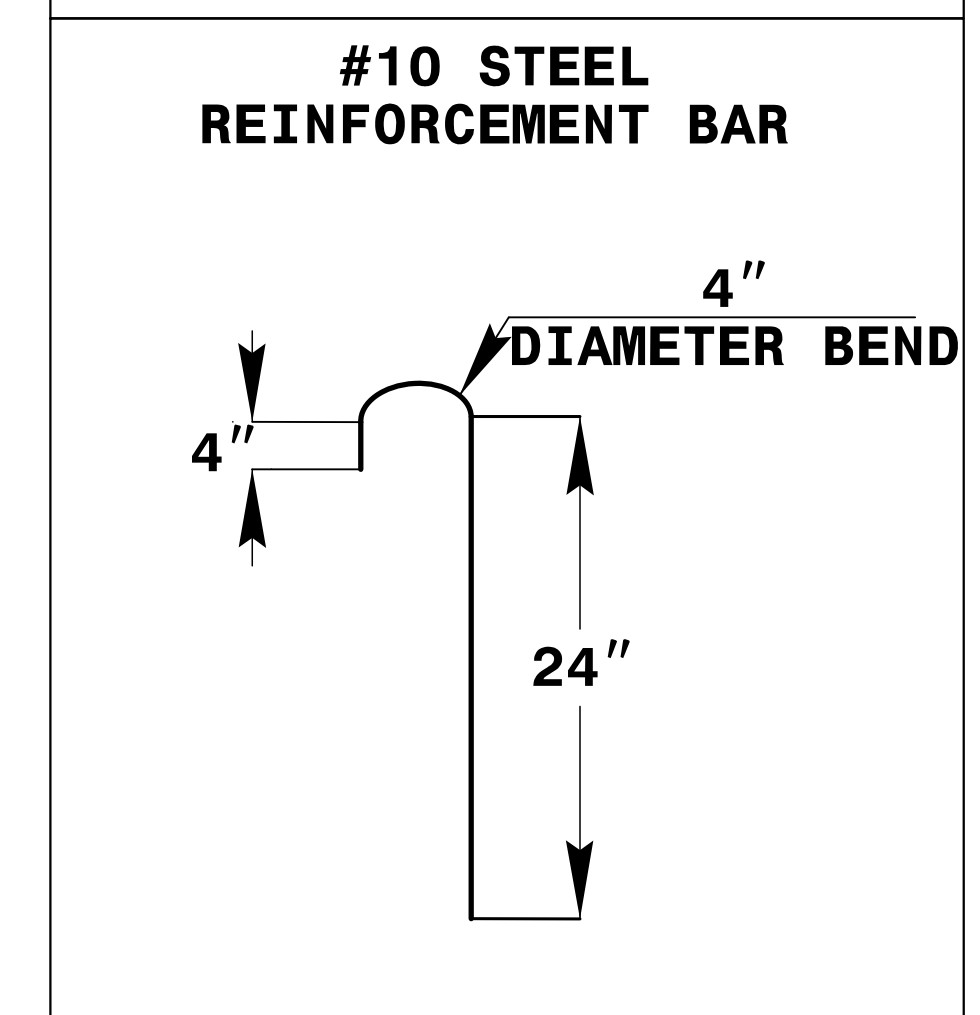
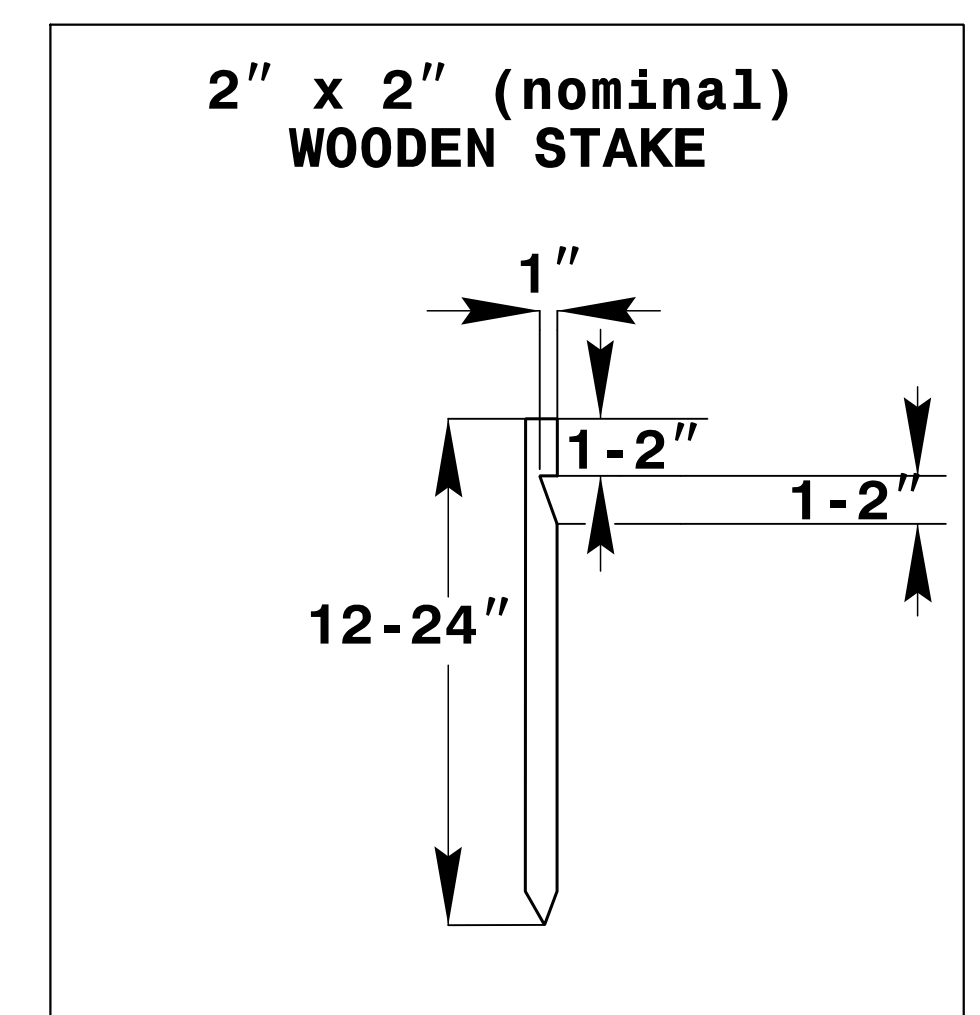
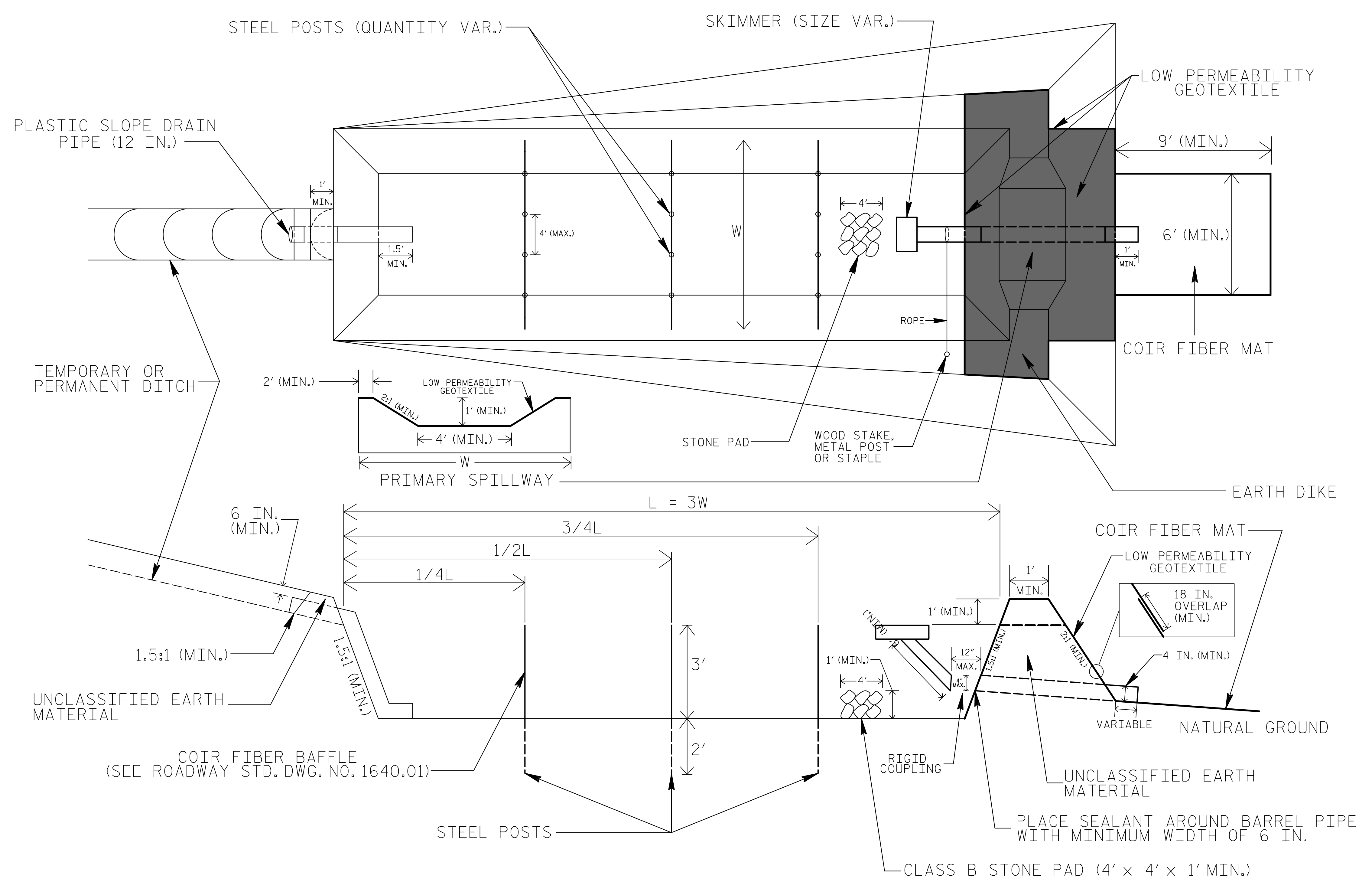
Roadway Standard Drawings

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. <i>R-5021</i>	SHEET NO. <i>EC-2</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SKIMMER BASIN WITH BAFFLES DETAIL (EAST)



COIR FIBER MAT ANCHOR OPTIONS

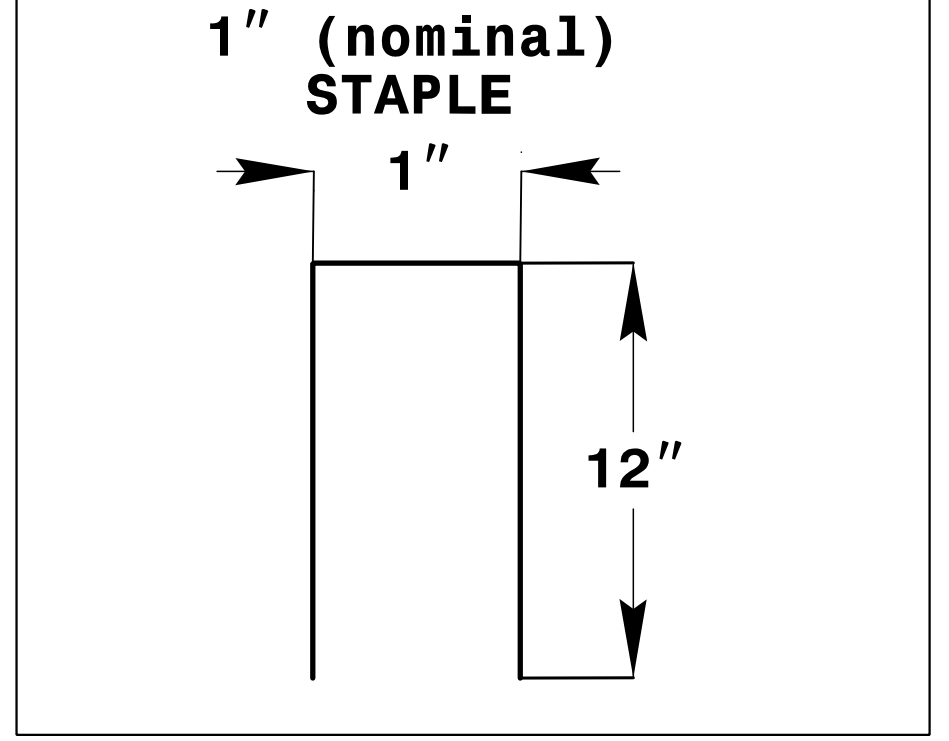
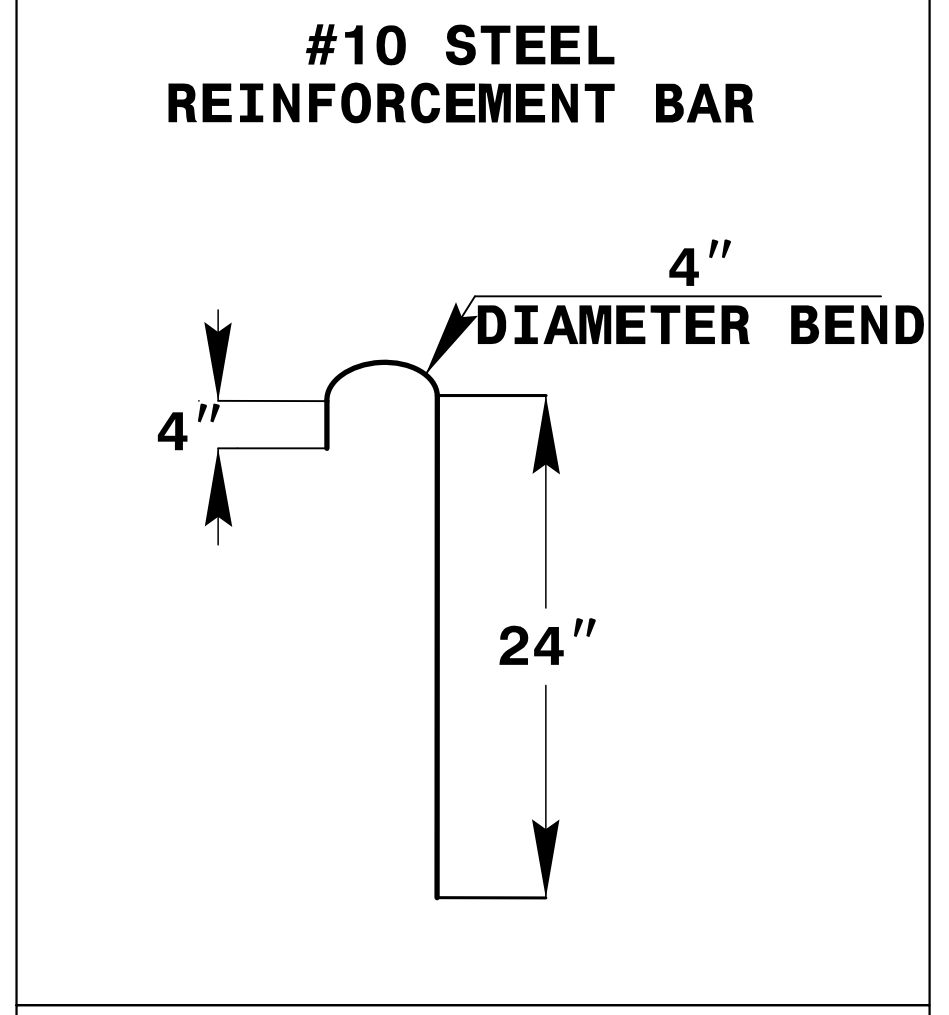
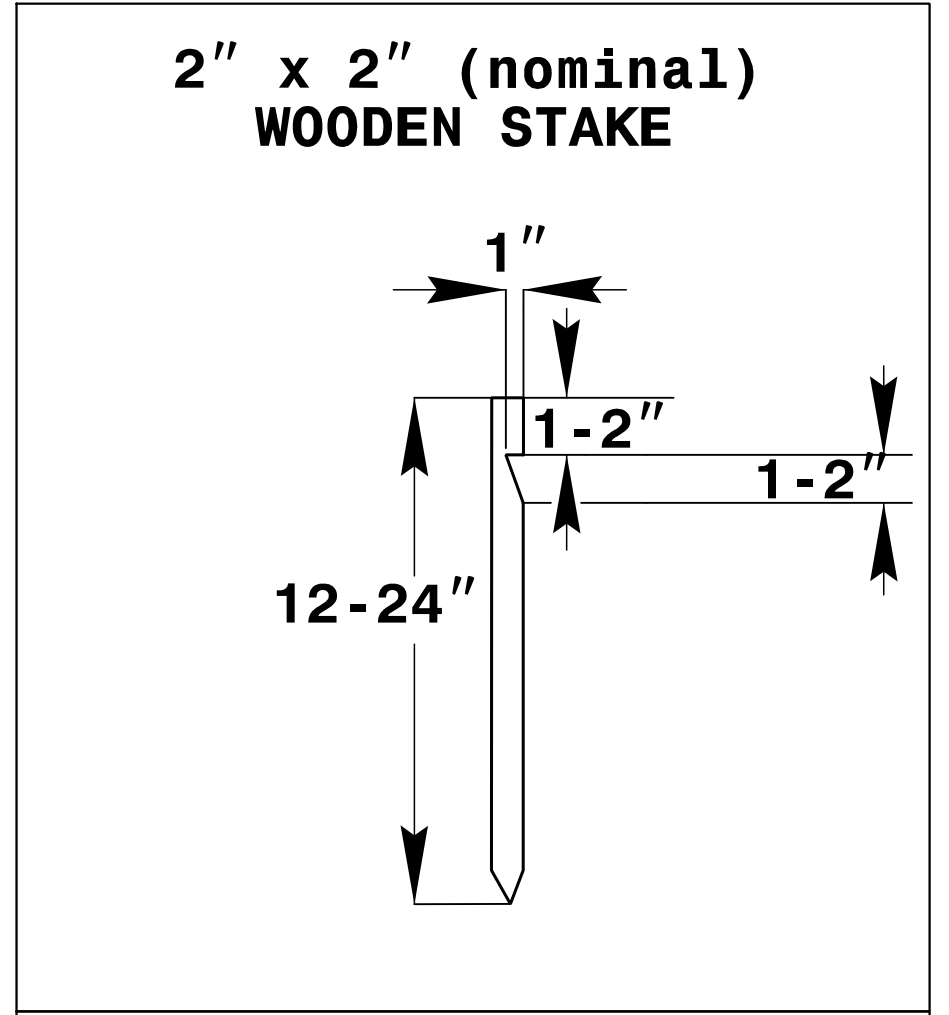
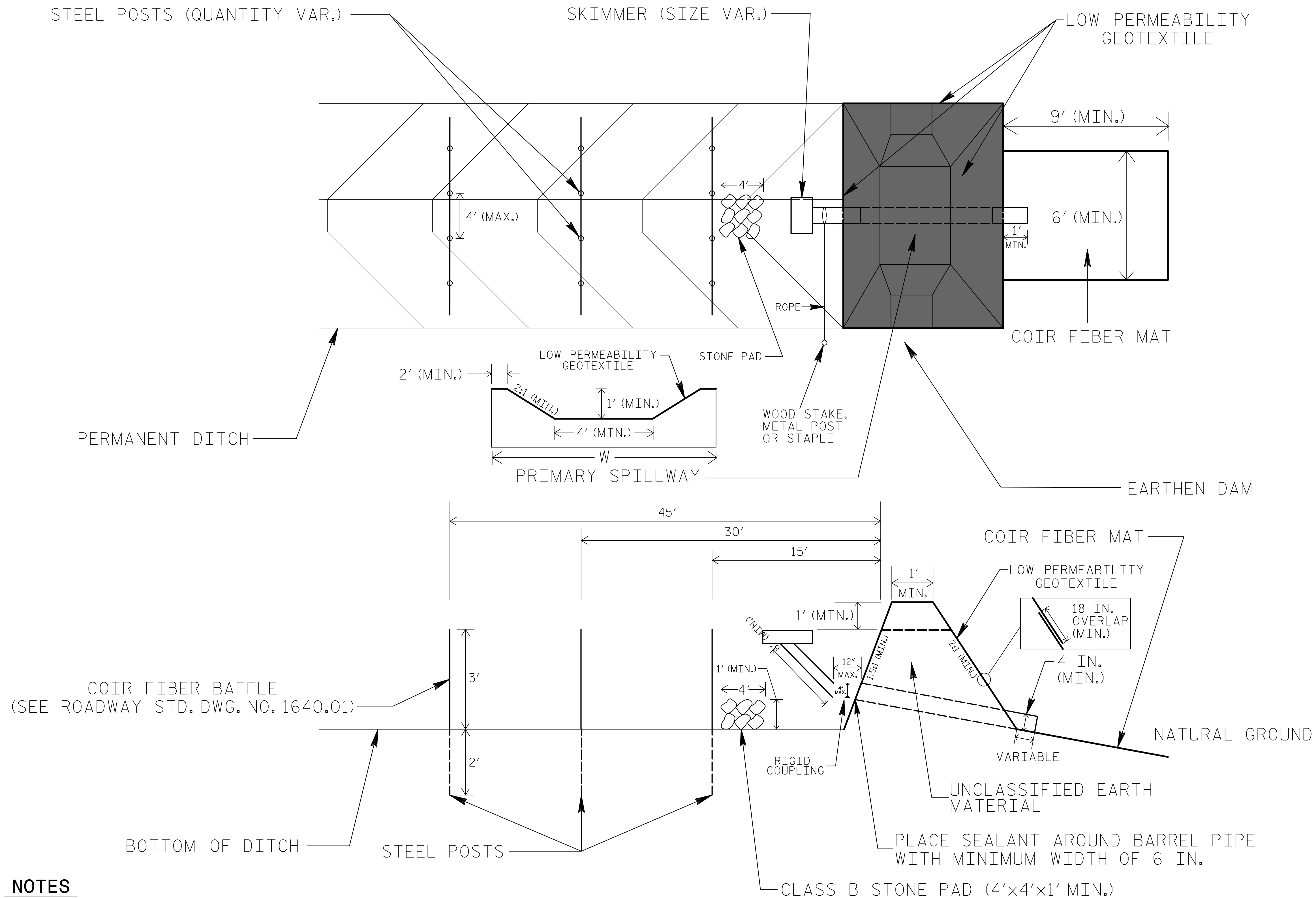
NOTES

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

EARTHEN DAM WITH SKIMMER DETAIL (EAST)

PROJECT REFERENCE NO. <i>R-5021</i>	SHEET NO. <i>EC-2A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



COIR FIBER MAT ANCHOR OPTIONS

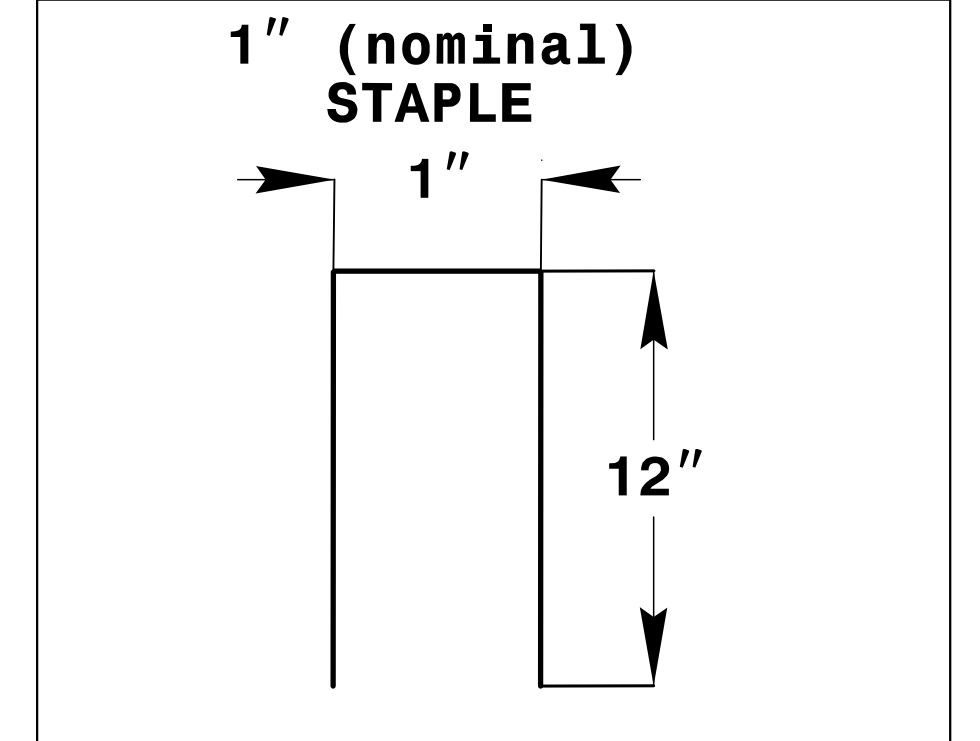
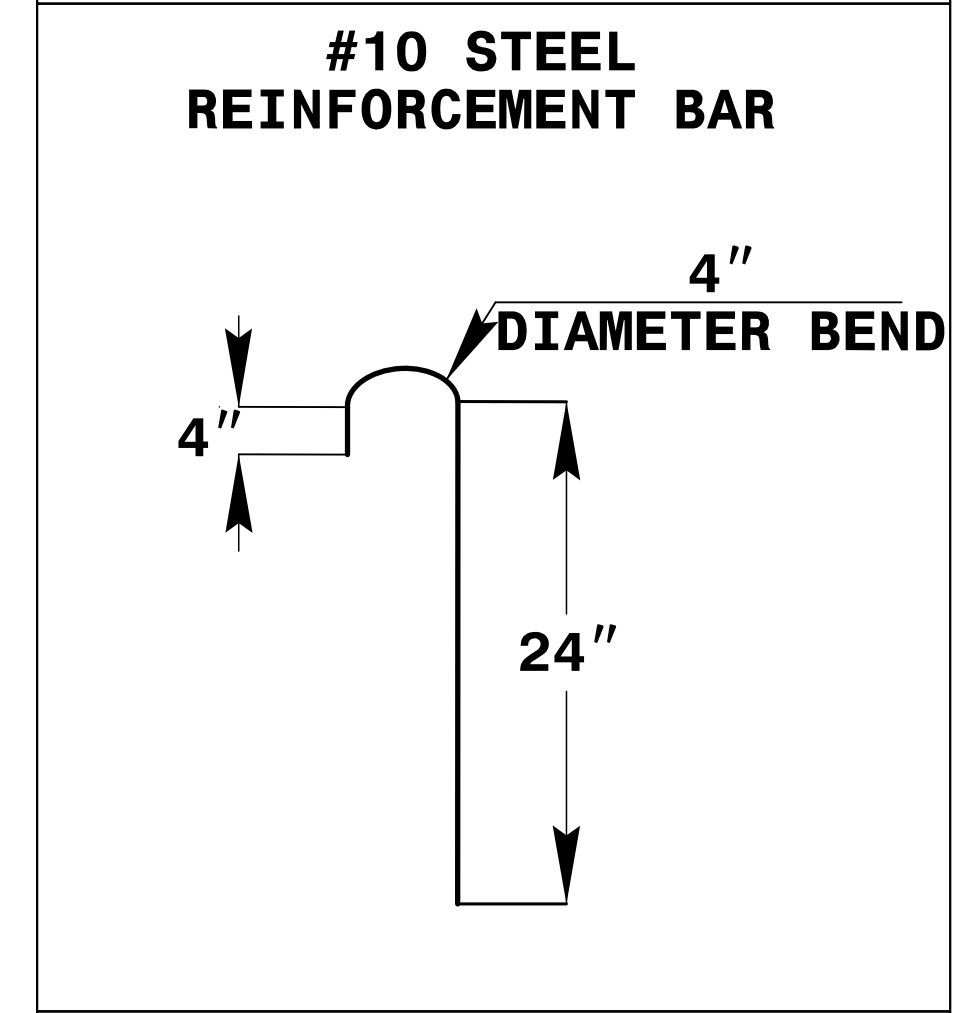
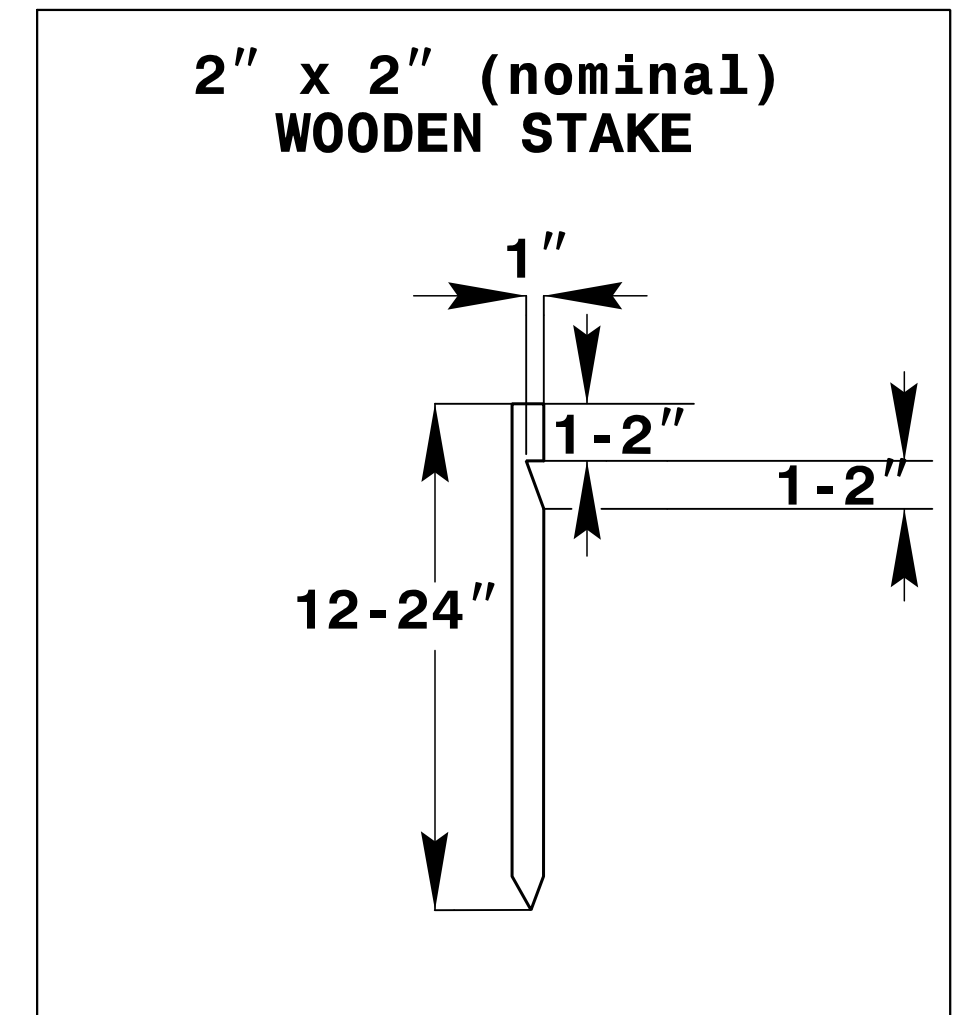
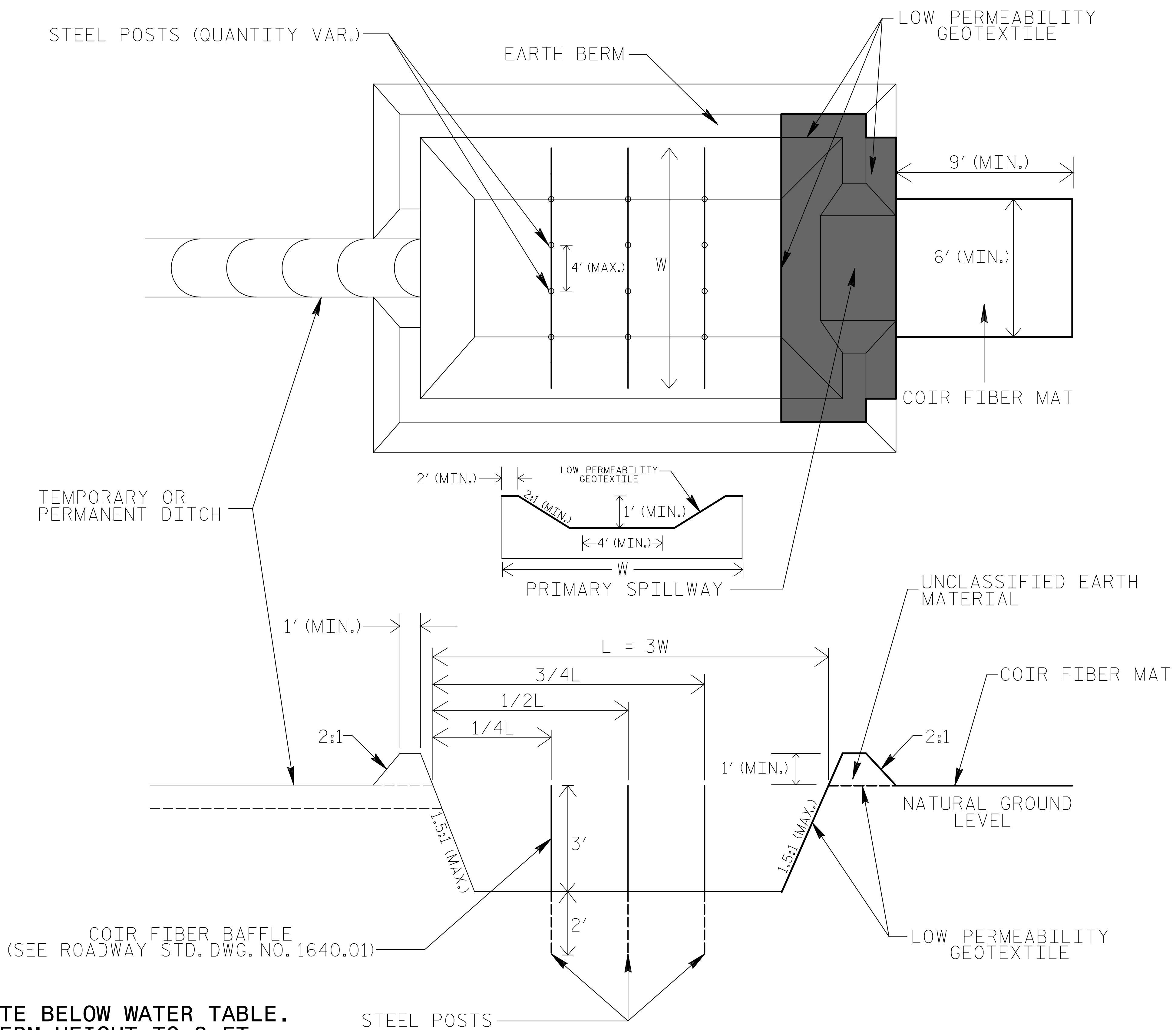
NOTES

1. LIMIT EARTHEN DAM HEIGHT TO 5 FT.
2. DETERMINE PRIMARY SPILLWAY LENGTH (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.
3. LOW PERMEABILITY GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

INFILTRATION BASIN WITH BAFFLES DETAIL (EAST)

PROJECT REFERENCE NO. R-5021	SHEET NO. EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



COIR FIBER MAT ANCHOR OPTIONS

NOTES

1. DO NOT EXCAVATE BELOW WATER TABLE.
2. LIMIT EARTH BERM HEIGHT TO 3 FT.
3. AVOID COMPACTING BOTTOM OF BASIN.
4. FOR BASIN DEPTH OF 3 FT., THE MINIMUM BASIN WIDTH SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY LENGTH (FT.) USING $Q/0.8$, WHERE Q IS FLOW RATE (CFS) INTO BASIN.

NOT TO SCALE

BORROW PIT DEWATERING BASIN DETAIL

PROJECT REFERENCE NO. <i>R-5021</i>	SHEET NO. <i>EC-2C</i>
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.

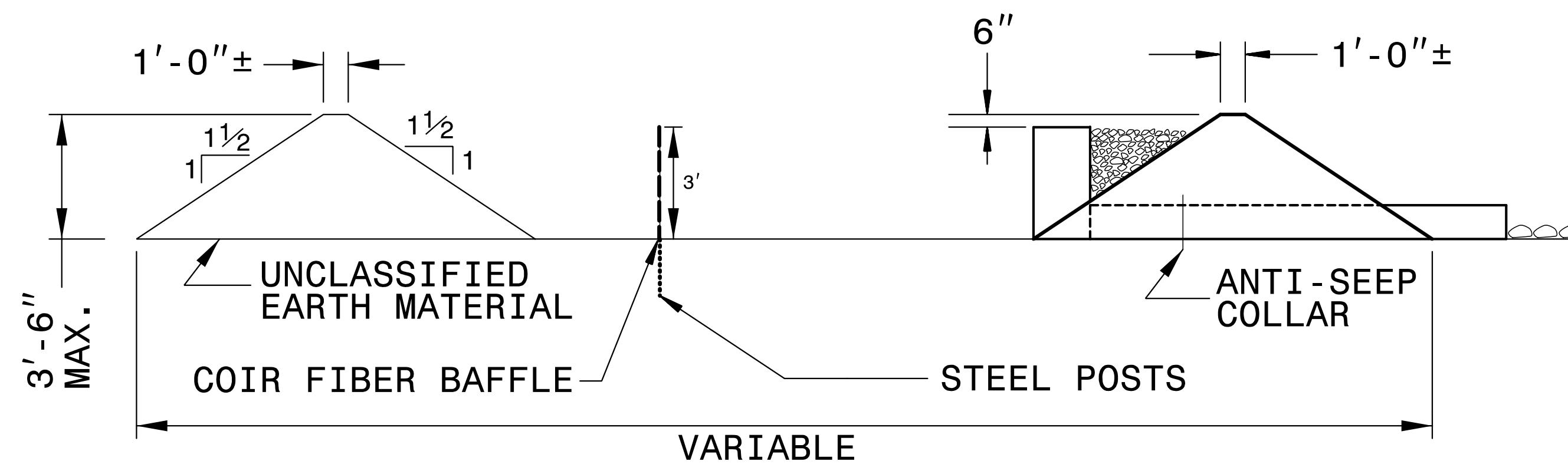
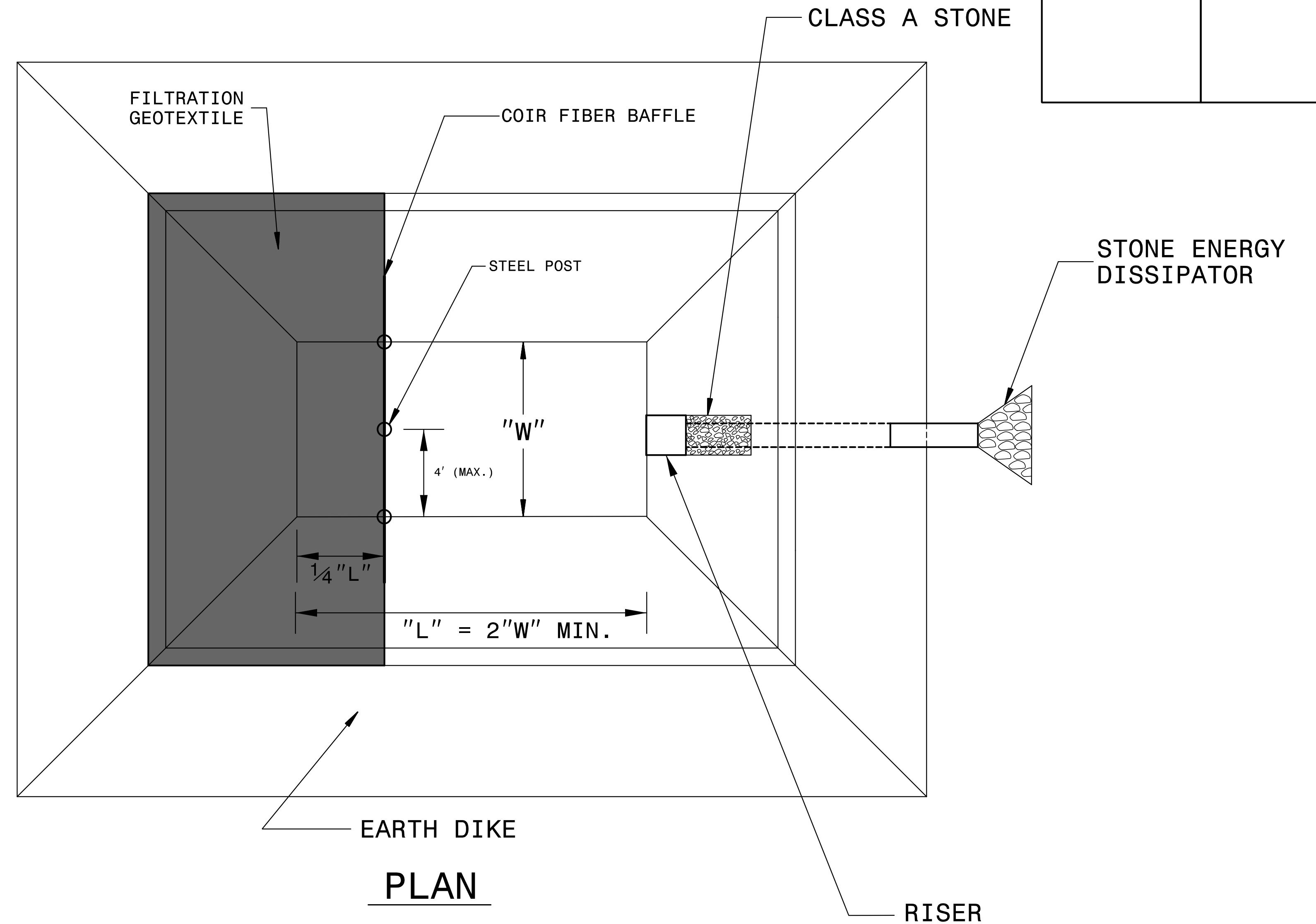
DO NOT EXCEED 3½ FT. IN HEIGHT FOR THE EARTH DIKES REQUIRED FOR BORROW PIT DEWATERING BASIN.

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. <i>R-5021</i>	SHEET NO. <i>EC-2D</i>
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.

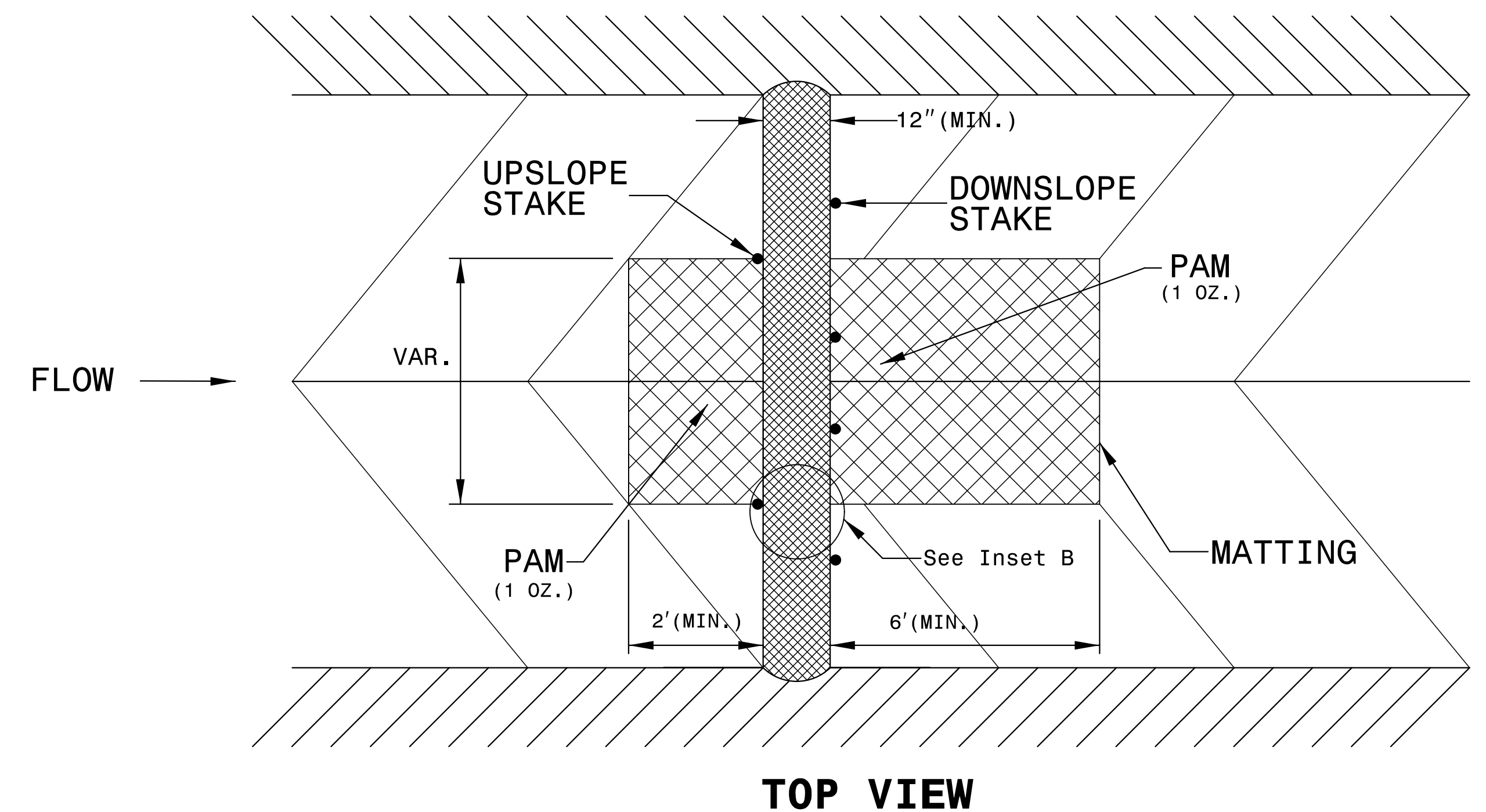
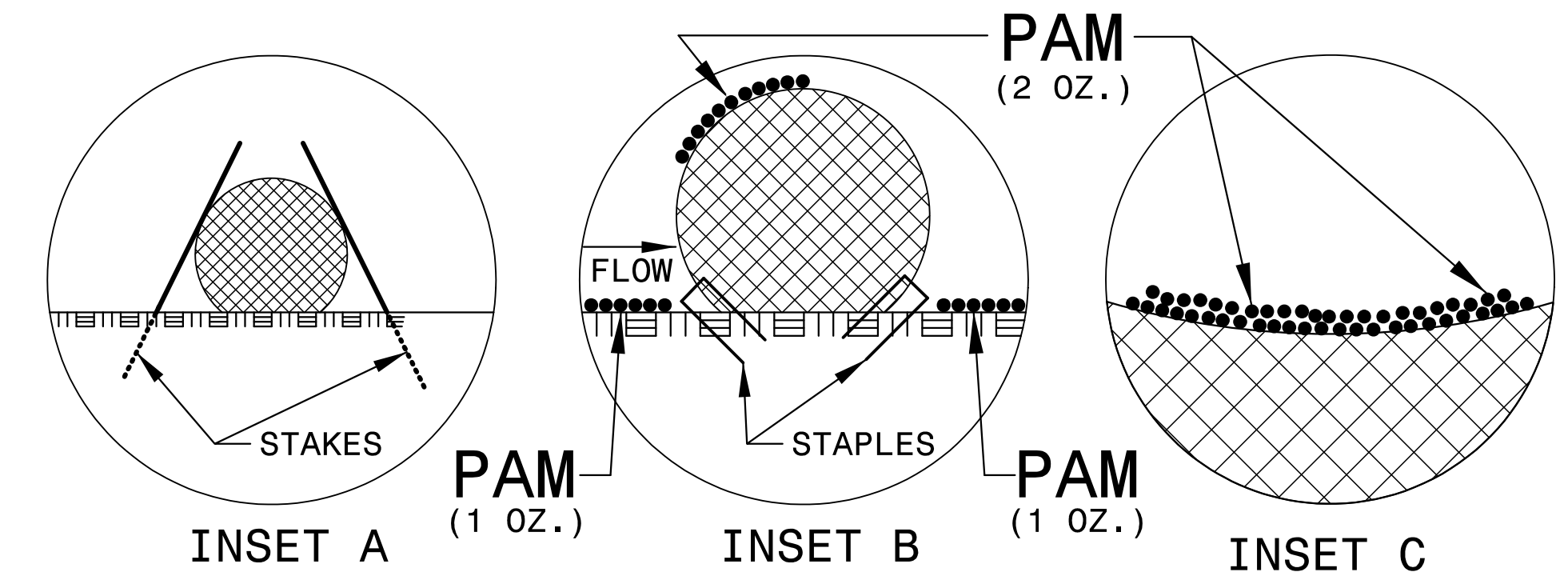
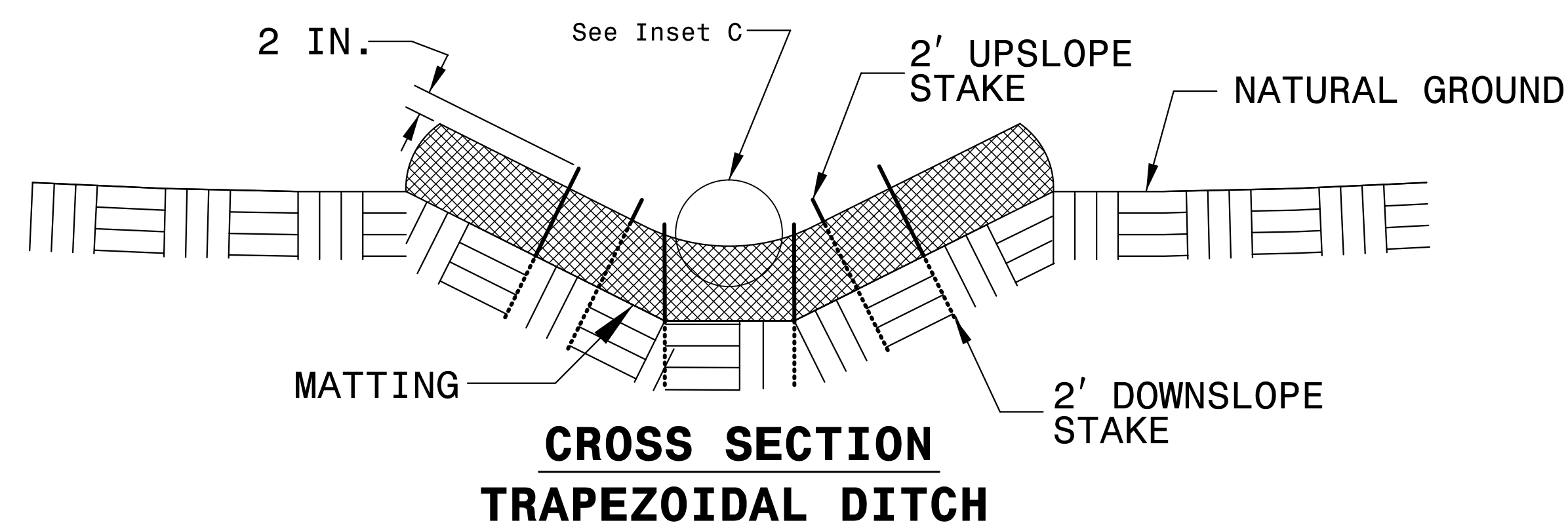
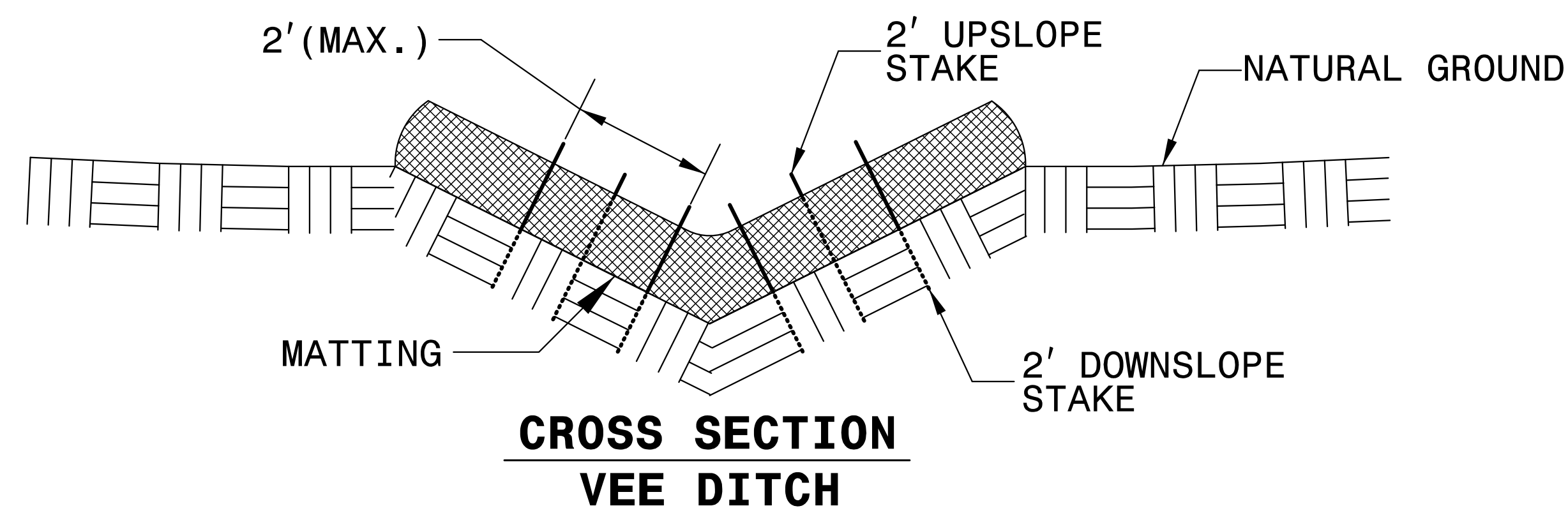
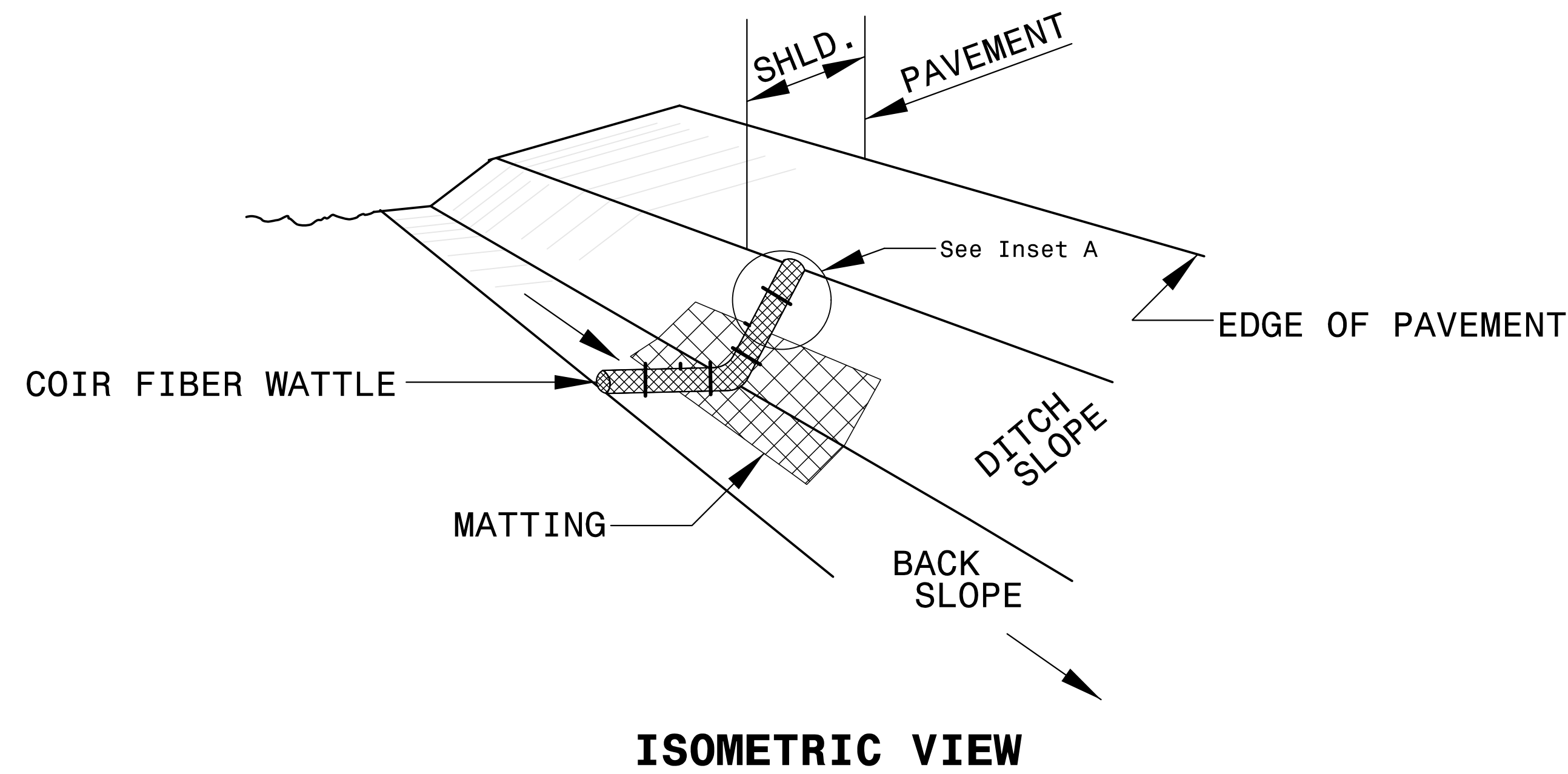
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

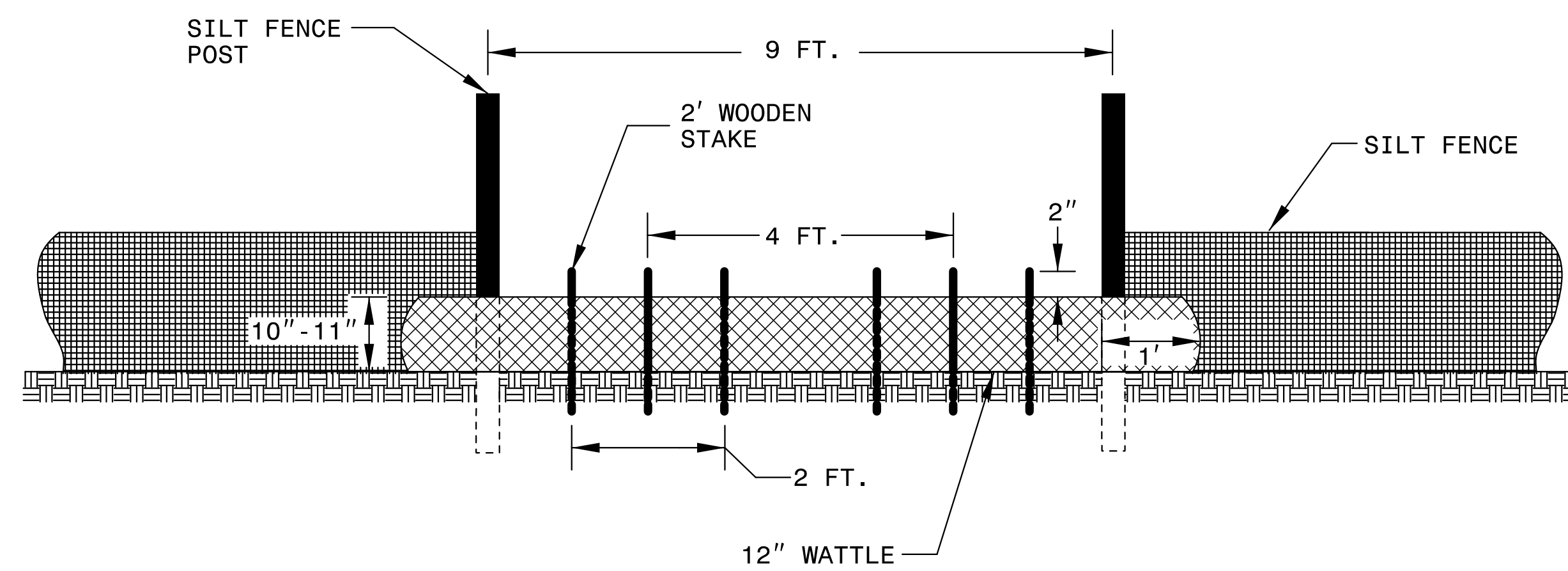
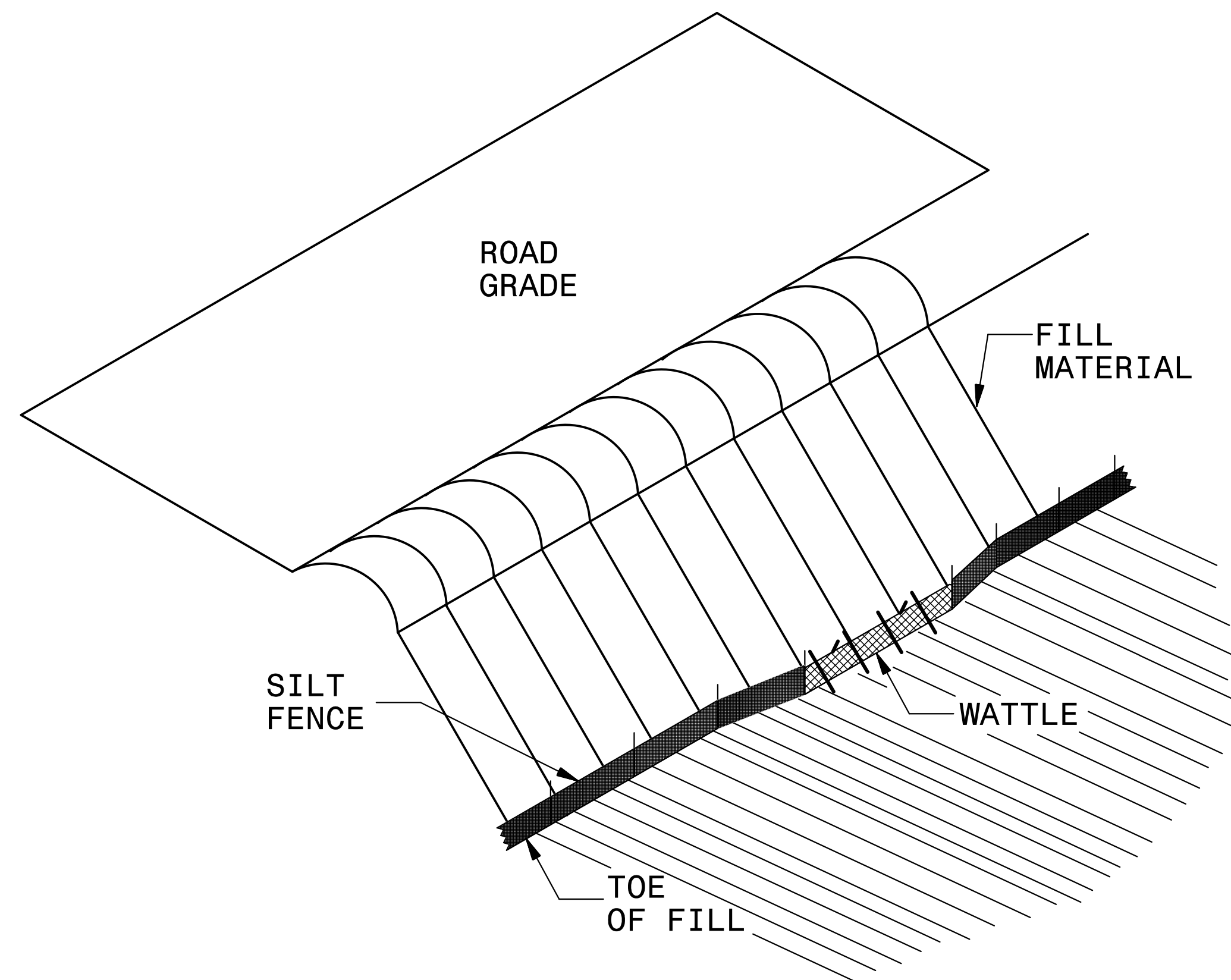
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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

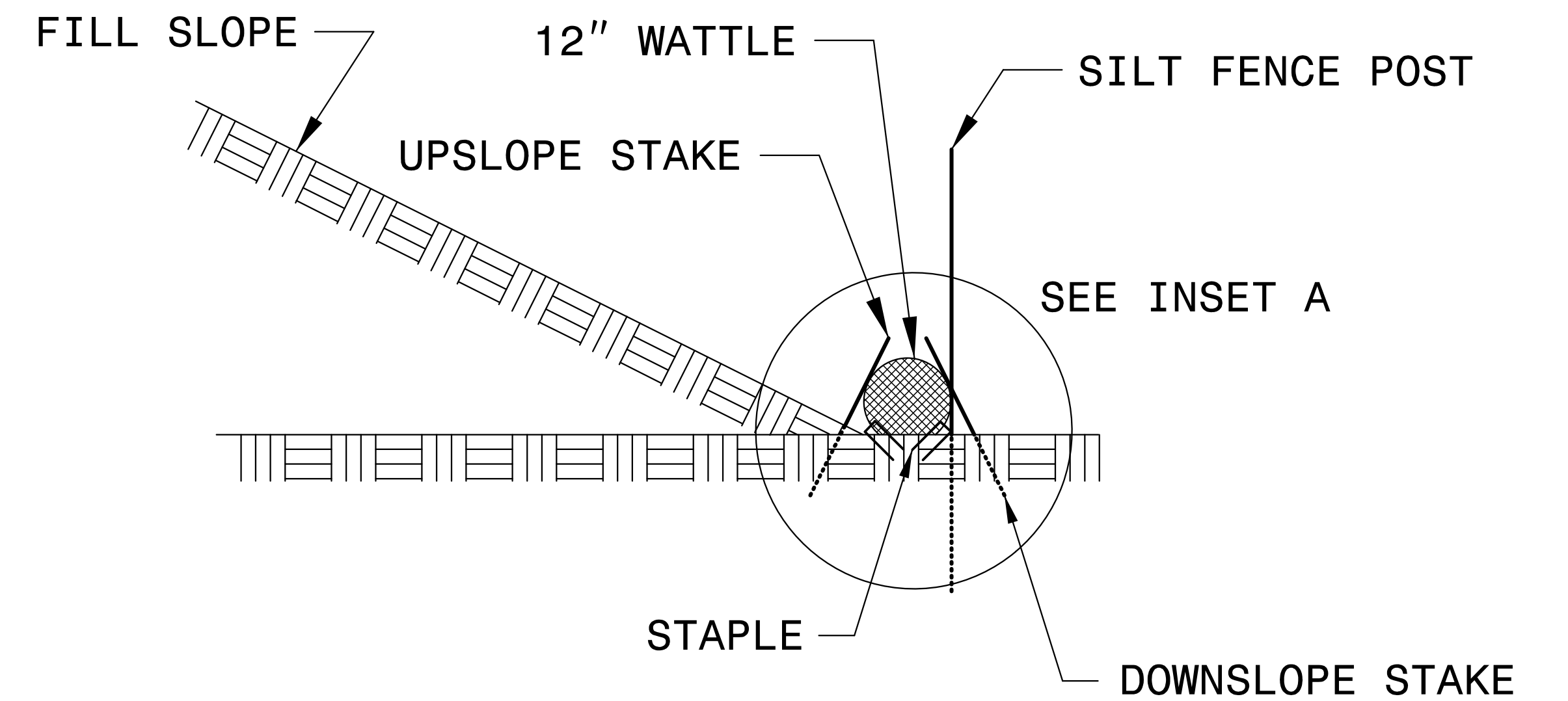
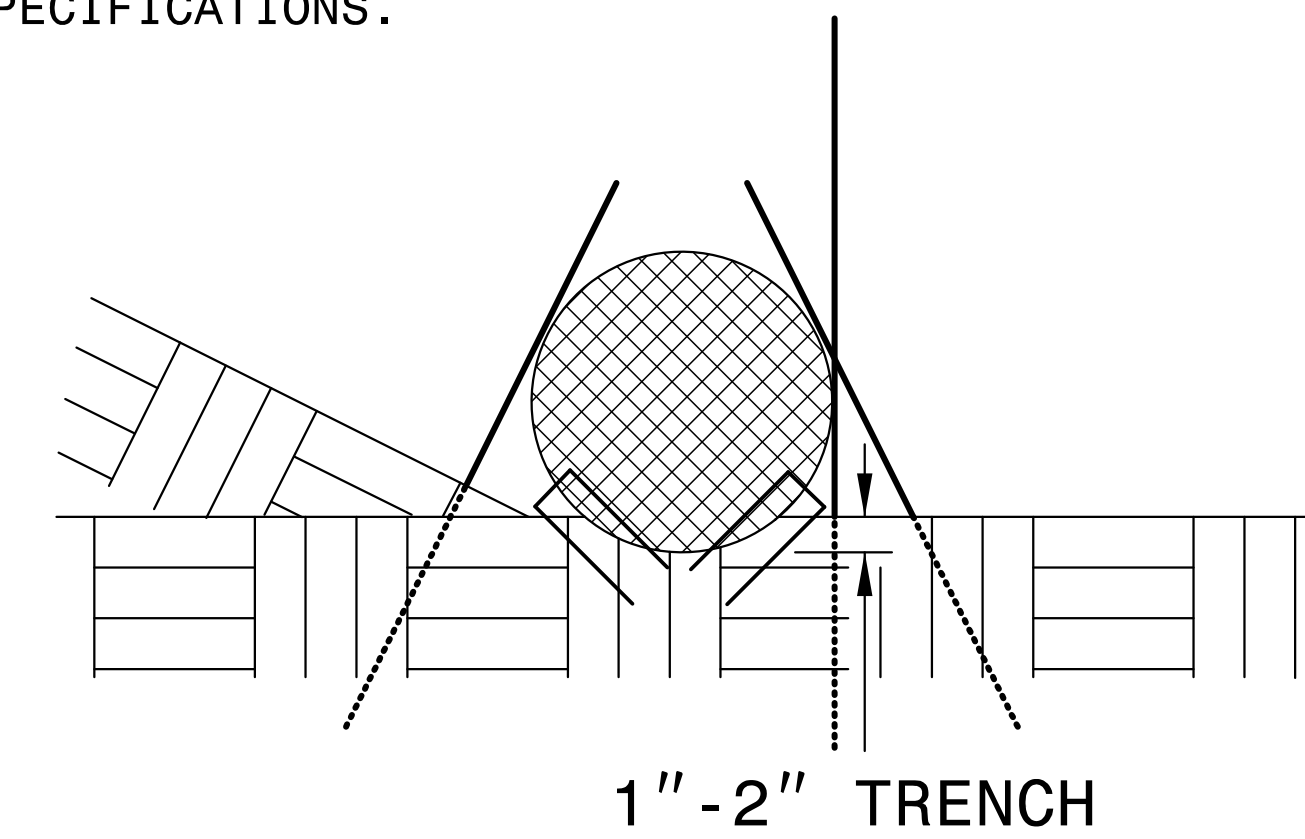
PROJECT REFERENCE NO. <i>R-5021</i>	SHEET NO. <i>EC-2E</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



NOTES:

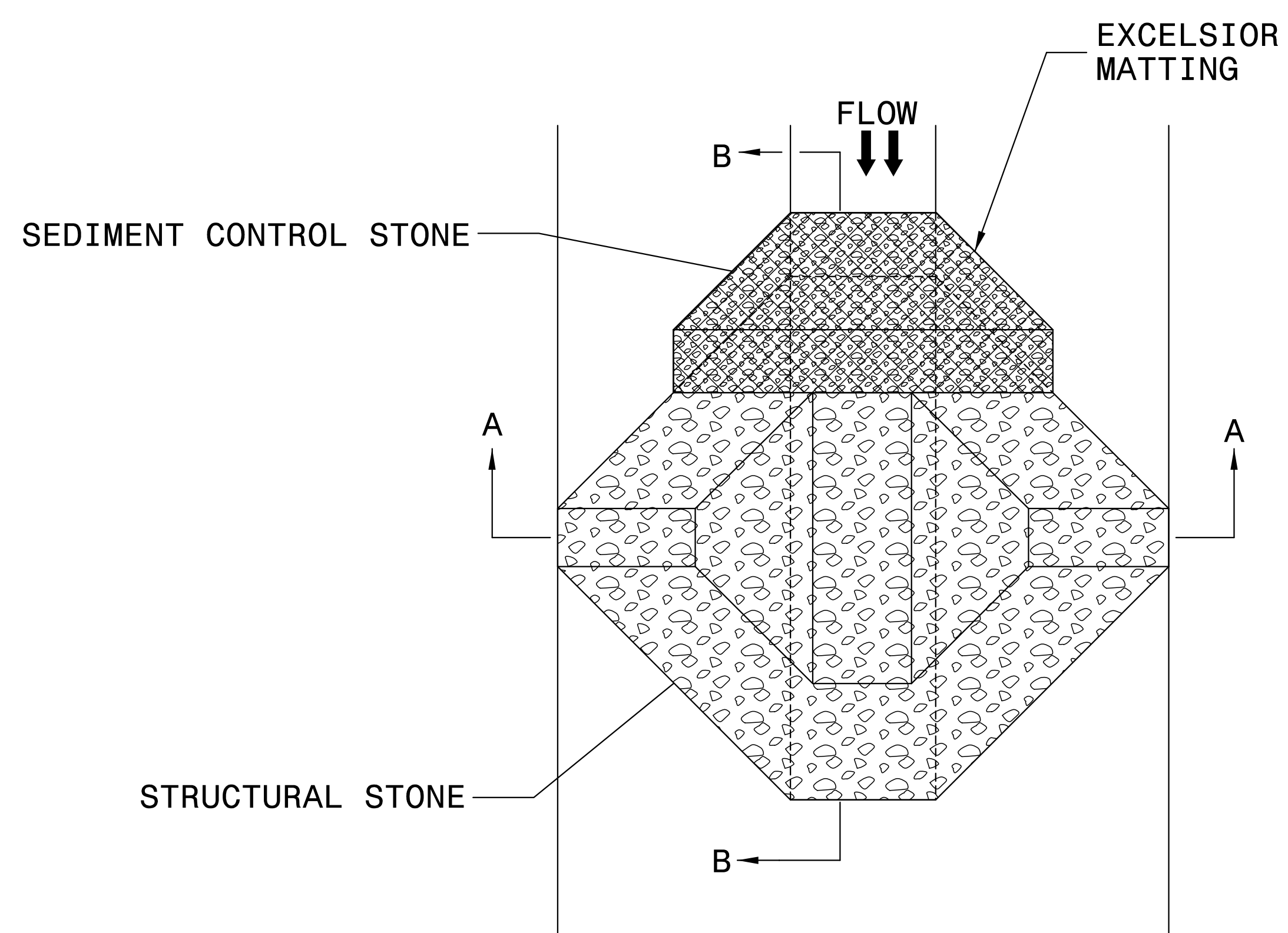
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.
- EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.
- DO NOT PLACE WATTLE ON TOE OF SLOPE.
- USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
- INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE 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. <i>R-5021</i>	SHEET NO. <i>EC-2F</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

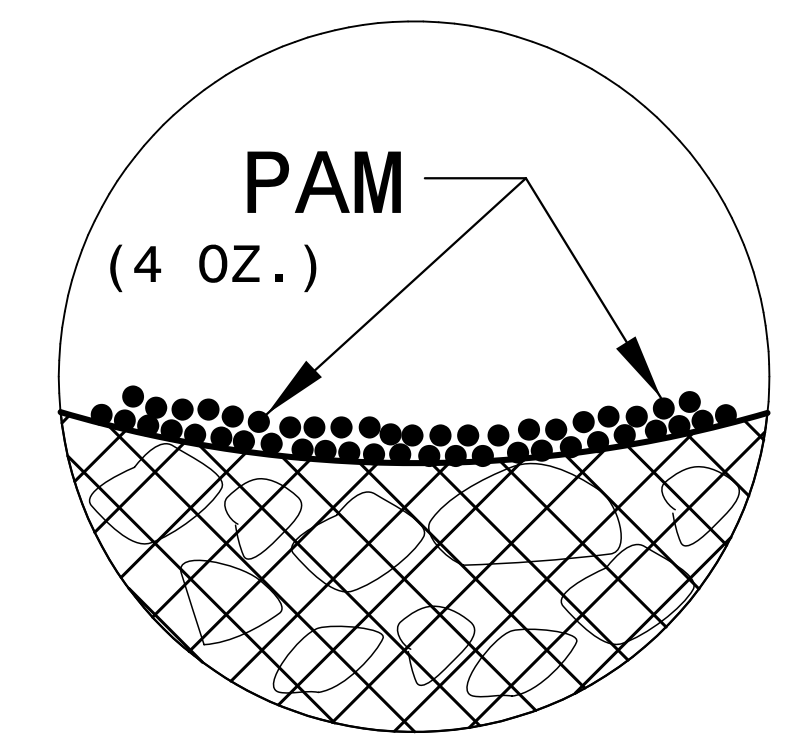
NOTES:

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

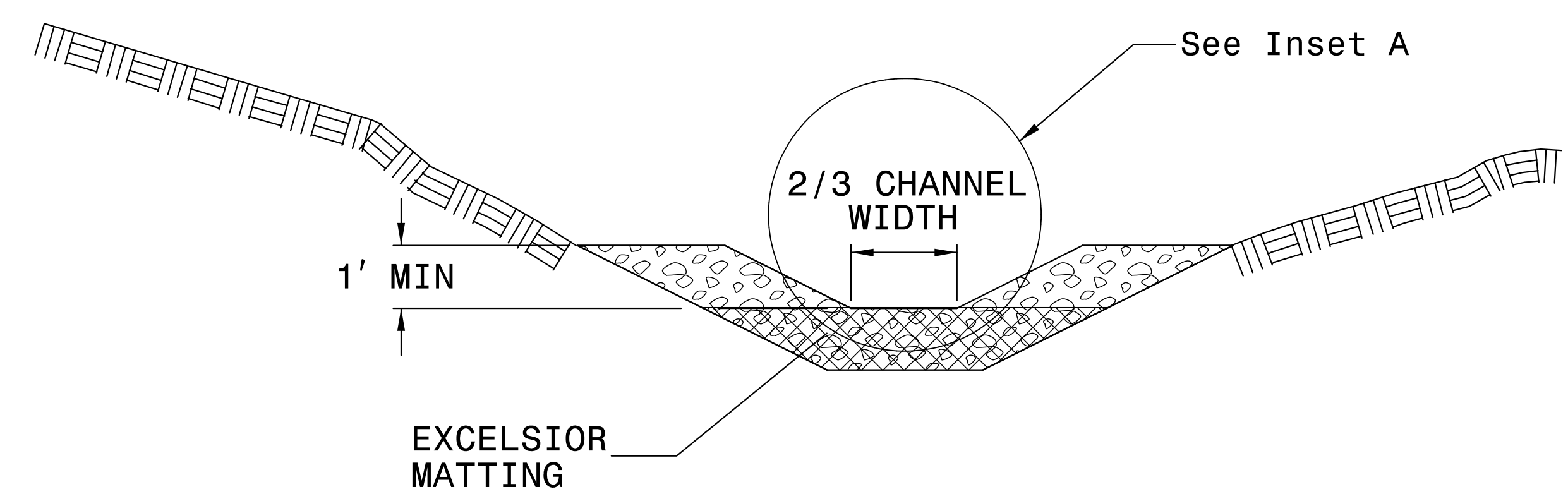
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

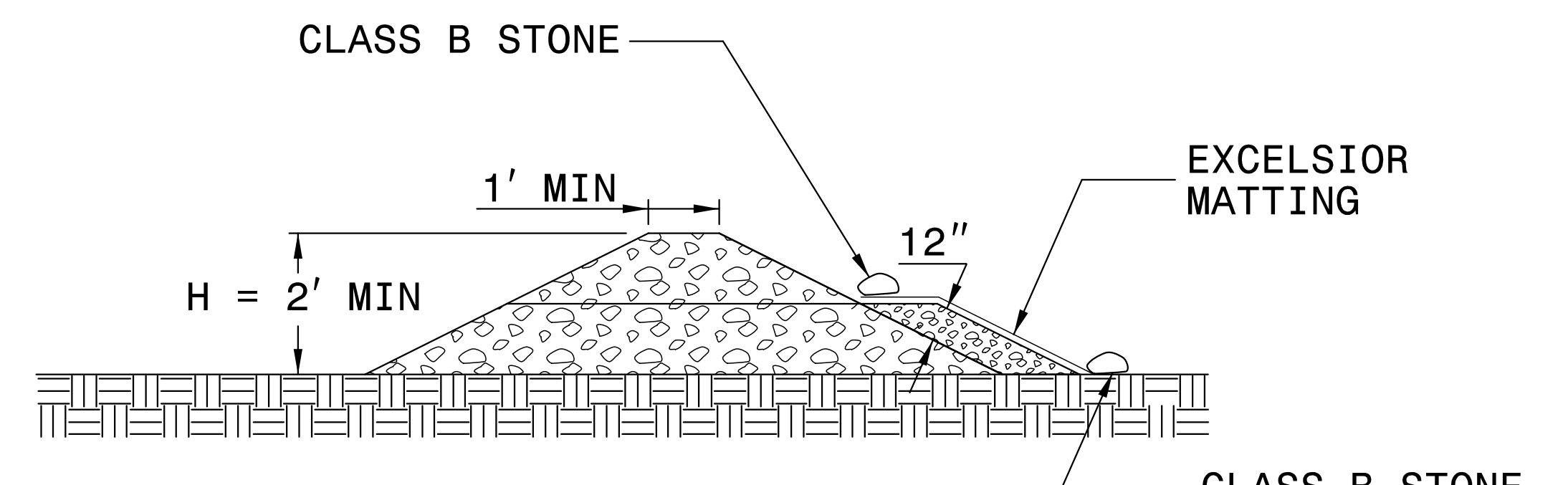
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>R-5021</i>	SHEET NO. <i>EC-3C</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.

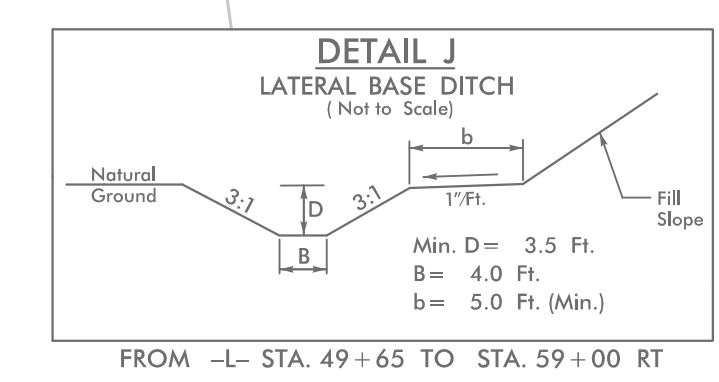
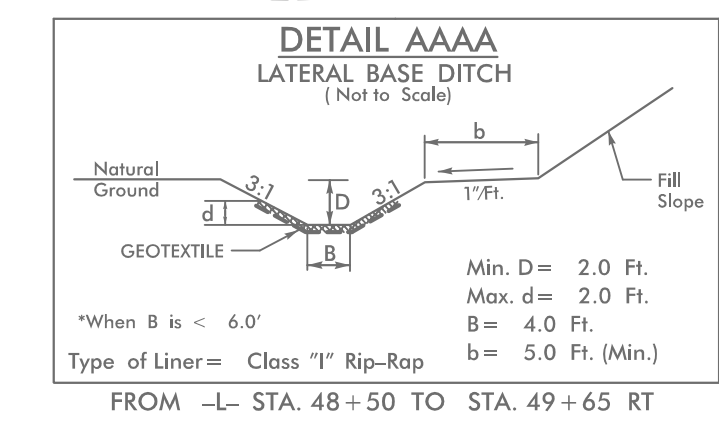
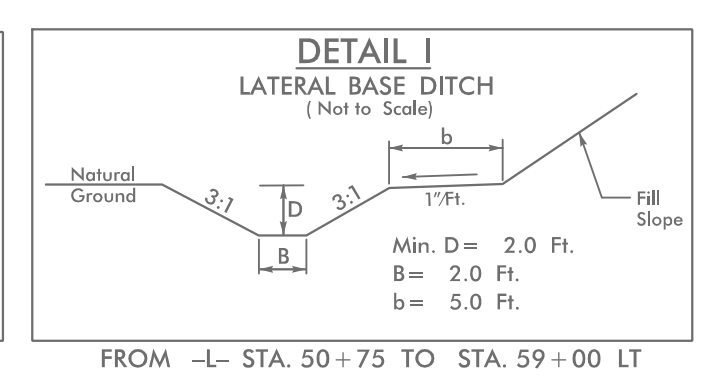
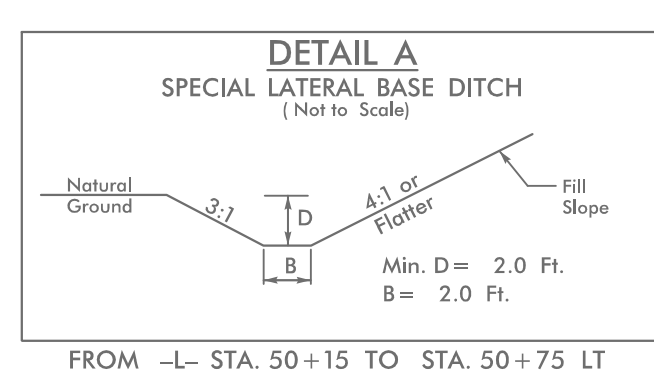
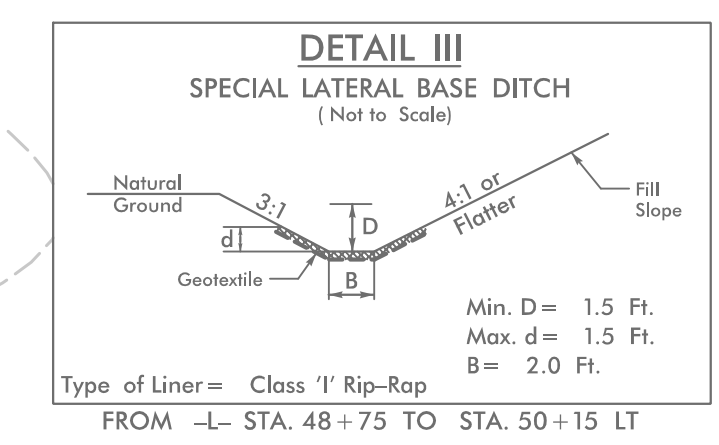
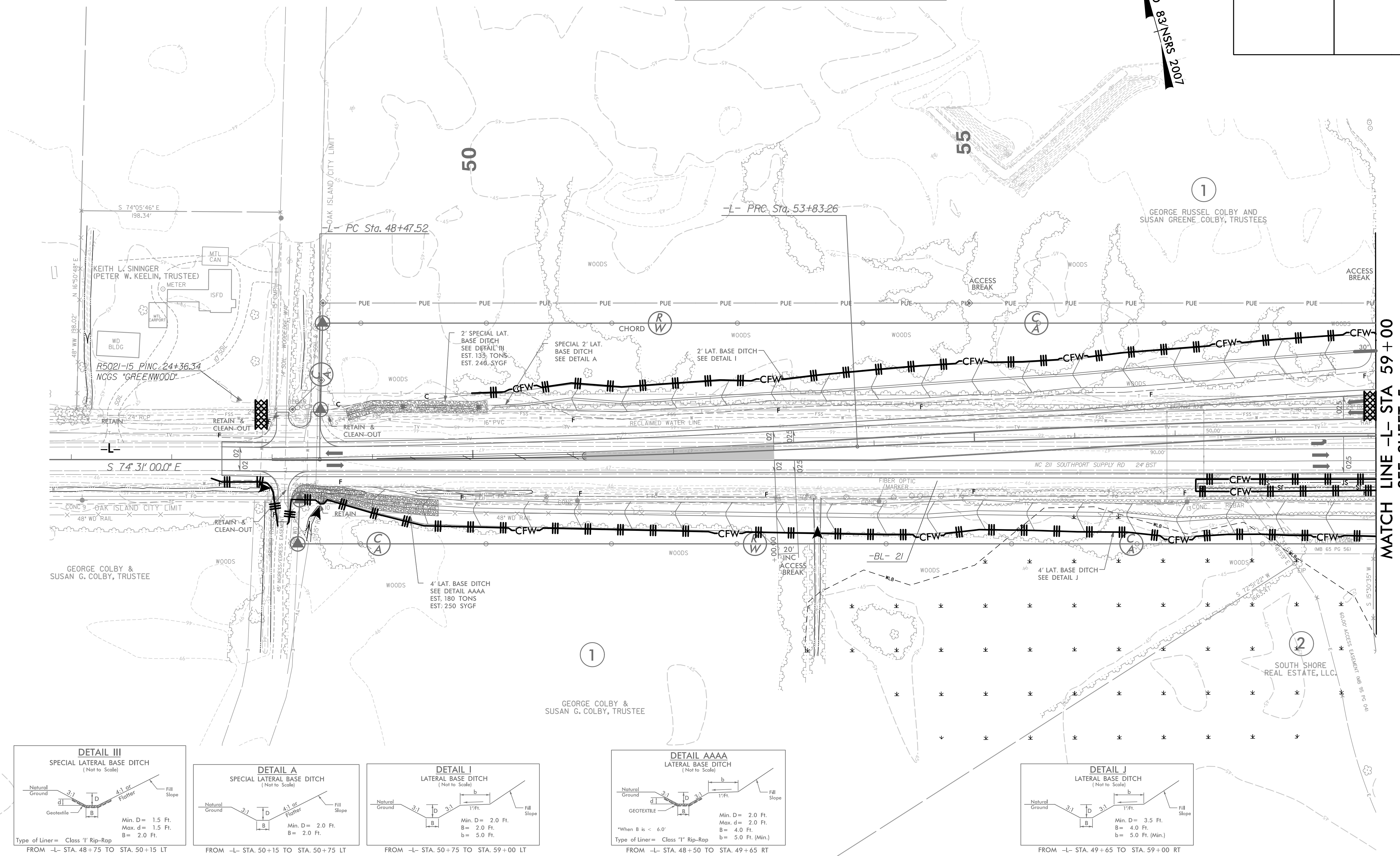
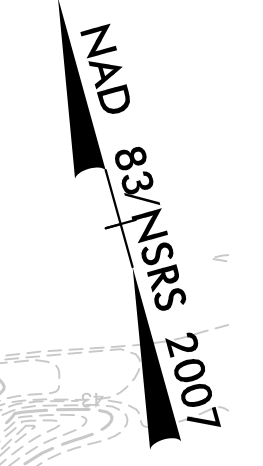
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PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-4/CONST.4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE:
 UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND 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 4



- NOTE:
1. ALL DRIVEWAY RADII ARE 20' UNLESS NOTED ON PLANS.
 2. PAVED TURNOUTS FOR SHOULDER SECTION SHOULD EXTEND 50' UNLESS NOTED ON PLANS.

FOR -L- PROFILE, SEE SHEET 41
 FOR DRAINAGE DETAILS, SEE SHEETS 2D-1 THRU 2D-3

MATCH LINE -L- STA 59+00
 SEE SHEET 5

11/2/2008 11:50:11 EC_PSH4.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-5/CONST.5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

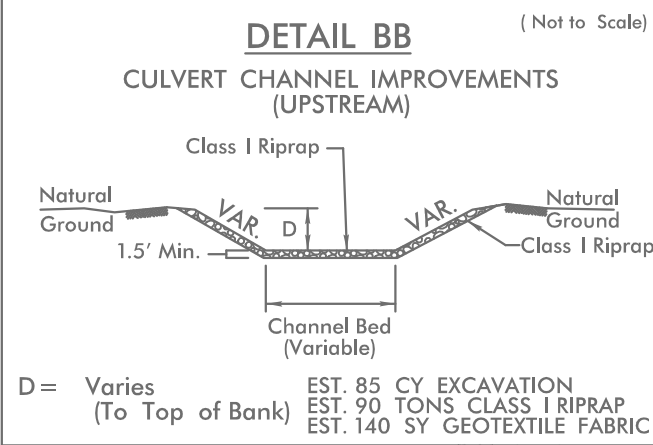
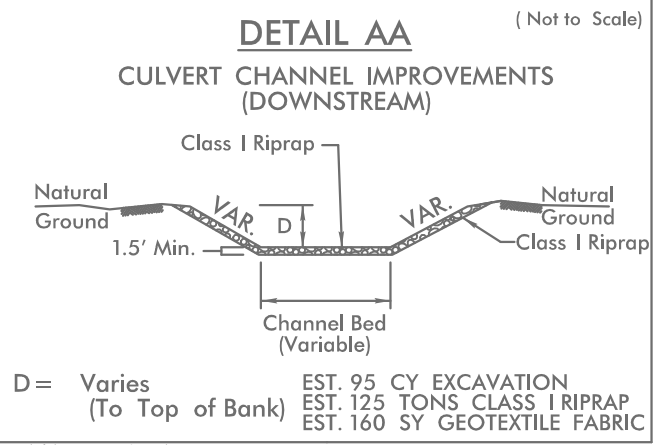
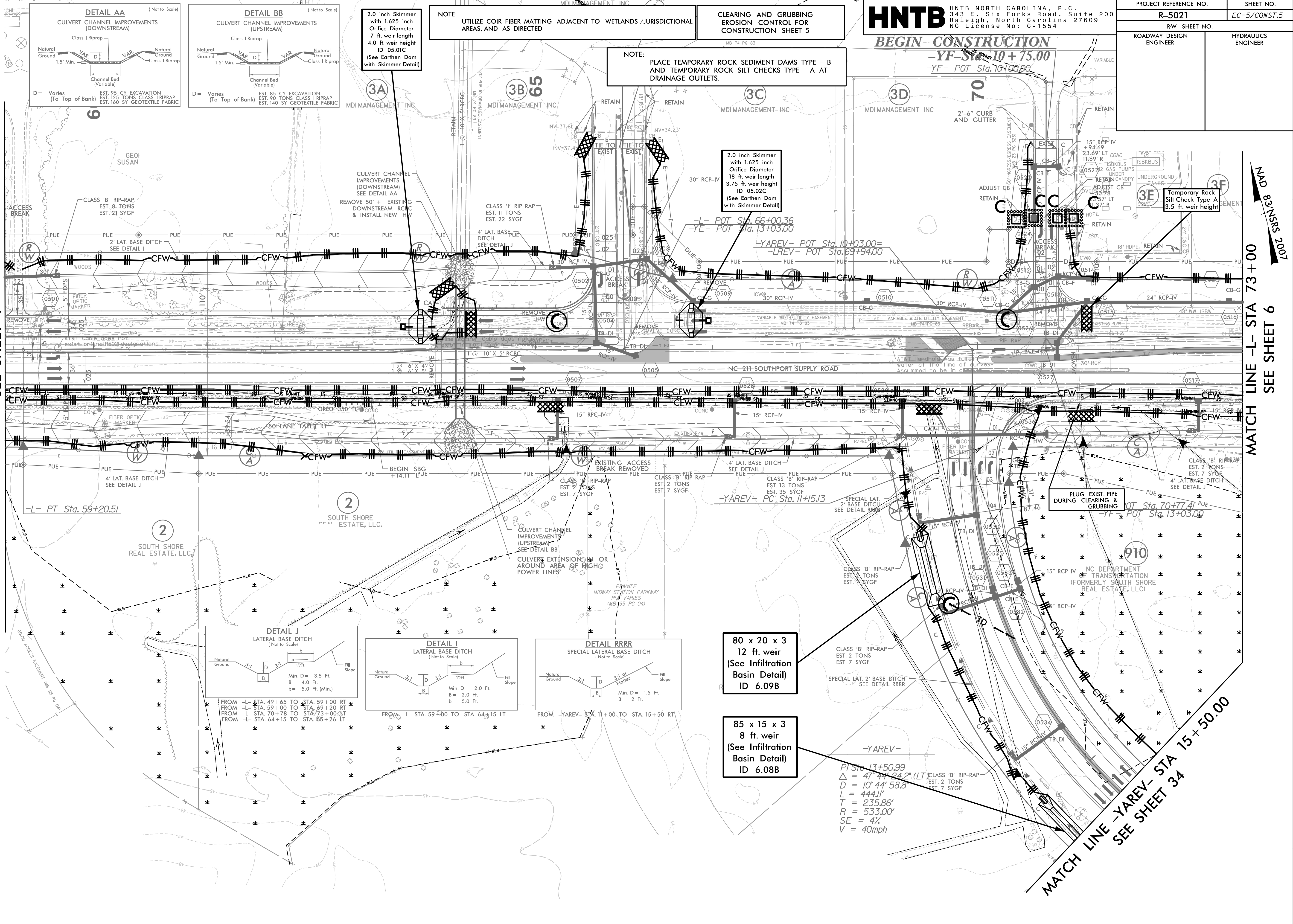
HNTB HNTB NORTH CAROLINA, P.C.
 343 E. Six Forks Road, Suite 200
 Raleigh, North Carolina 27609
 NC License No: C-1554

BEGIN CONSTRUCTION
 -YF- Sta. 10+75.00
 -YF- POT Sta. 10+70.00

MATCH LINE -L- STA 59+00
 SEE SHEET 4

MATCH LINE -L- STA 73+00
 SEE SHEET 6

10/19/2021
 R-5021_EC_PSH5.dgn
 HNTB



2.0 inch Skimmer with 1.625 inch Orifice Diameter 7 ft. weir length 4.0 ft. weir height ID 05.01C (See Earthen Dam with Skimmer Detail)

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND AS DIRECTED

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 5

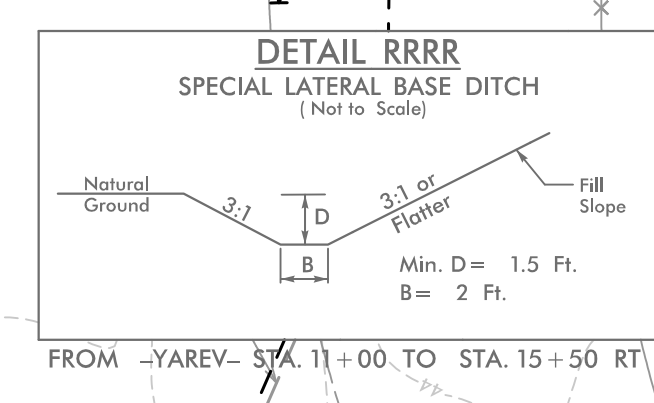
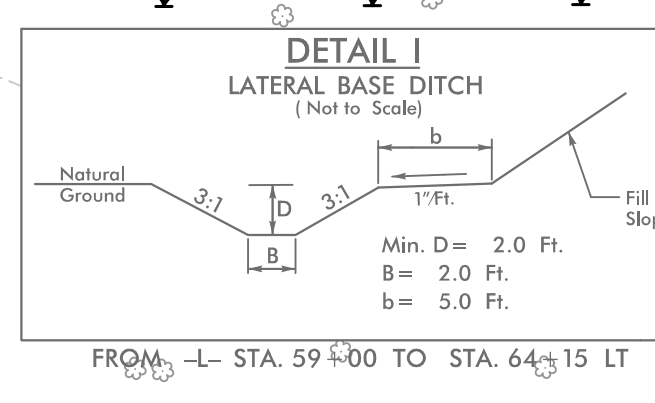
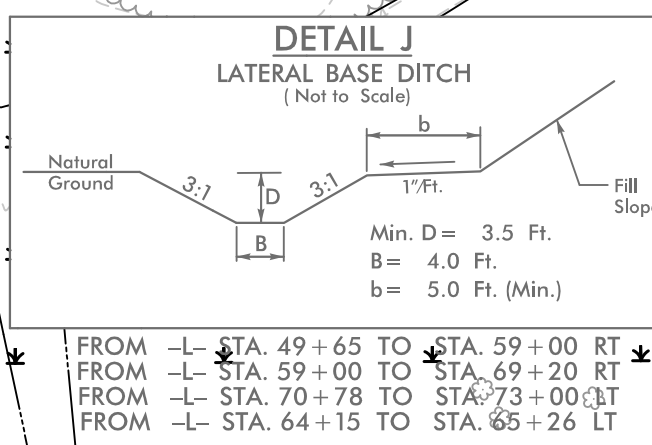
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

2.0 inch Skimmer with 1.625 inch Orifice Diameter 18 ft. weir length 3.75 ft. weir height ID 05.02C (See Earthen Dam with Skimmer Detail)

Temporary Rock Silt Check Type A 3.5 ft. weir height

80 x 20 x 3 12 ft. weir (See Infiltration Basin Detail) ID 6.09B

85 x 15 x 3 8 ft. weir (See Infiltration Basin Detail) ID 6.08B



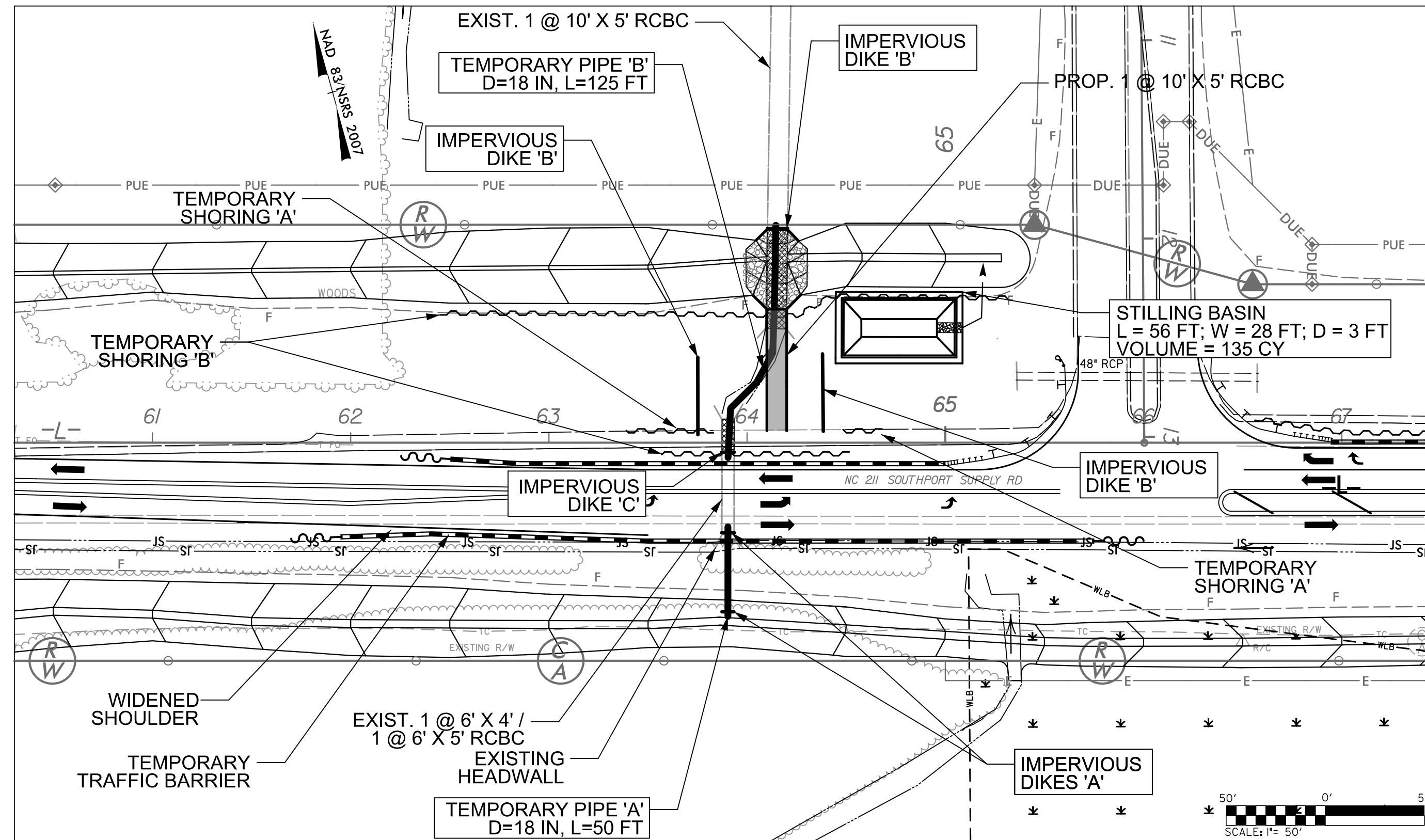
-YAREV-
 P/S Sta. 13+50.99
 $\Delta = 47' 44" 24.2"$ (LT)
 D = 10' 44" 58.8"
 L = 444.1'
 T = 235.86'
 R = 533.00'
 SE = 4%
 V = 40mph

MATCH LINE -YAREV- STA 15+50.00
 SEE SHEET 34

R-5021 CULVERT PHASING 1 OF 6 NC 211 OVER UT TO RIVER SWAMP BRUNSWICK COUNTY -L- 64+15

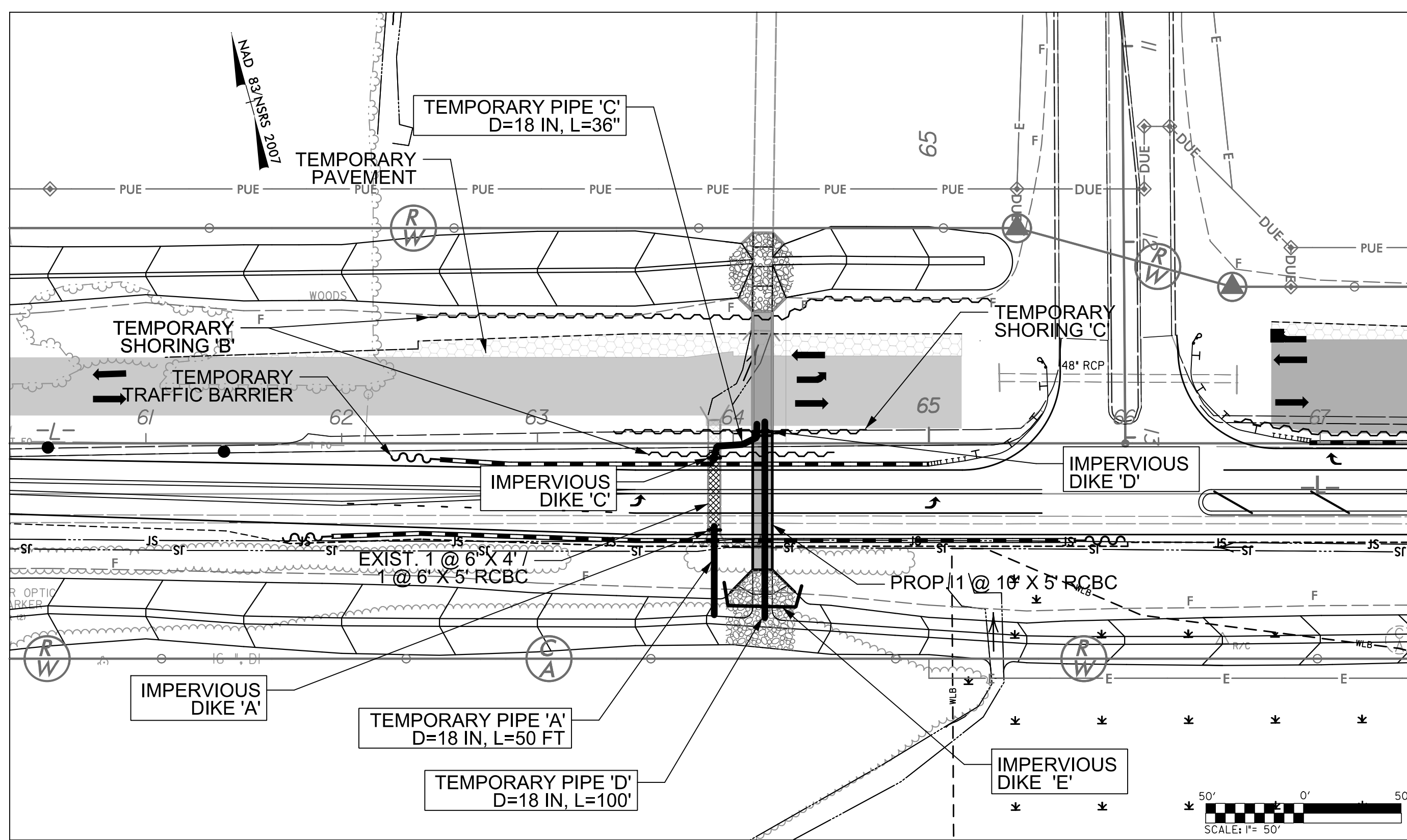
HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO. <i>R-5021</i>	SHEET NO. <i>EC-5A/CONST.5</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PHASE I

1. CONSTRUCT STILLING BASIN T SIZE SPECIFIED AT THE LOCATION SHOWN.
2. INSTALL TEMPORARY PIPE 'A', IMPERVIOUS DIKES 'A', AND REMOVE EXISTING SOUTH SIDE HEADWALL. CONSTRUCT WIDENED SHOULDER RIGHT OF -L-. INSTALL TEMPORARY SHORING 'A' AND 'B' AND TEMPORARY TRAFFIC BARRIER AND SHIFT TRAFFIC RIGHT.
3. CONSTRUCT IMPERVIOUS DIKES 'B' AND 'C' AND TEMPORARY PIPE 'B'.
4. DEWATER CONSTRUCTION AREA(S) INTO STILLING BASIN.
5. REMOVE HEADWALL, WINGWALLS AND APPROX. 50 FT OF THE EXISTING 1 @ 10' X 5' RCBC. REMOVE HEADWALL, WINGWALLS AND APPROX. 15 FT OF THE EXISTING 1 @ 6' X 5' RCBC.
6. CONSTRUCT NEW HEADWALL AND WINGALLS ON EXIST. 1 @ 10' X 5' RCBC.
7. CONSTRUCT APPROXIMATELY 62 FT OF THE PROPOSED 1 @ 10' x 5' RCBC, INCLUDING HEADWALL AND WINGWALLS. CONSTRUCT DOWNSTREAM CHANNEL IMPROVEMENTS. ADJUST TEMPORARY PIPE 'B' AS NEEDED.
8. REMOVE STILLING BASIN.



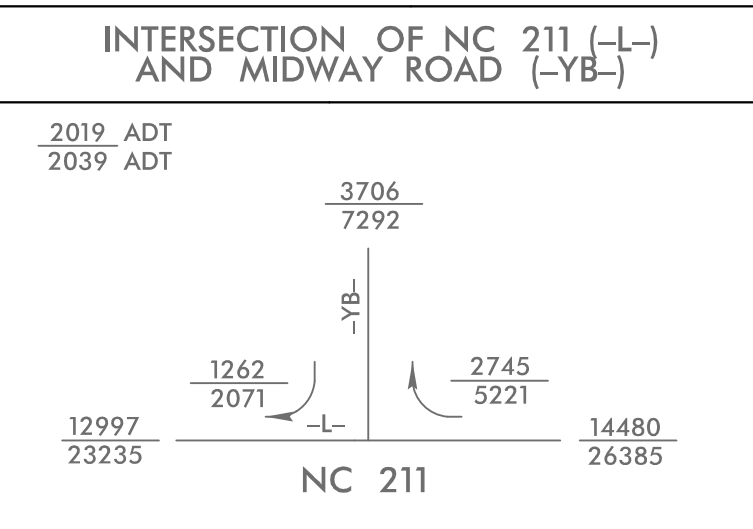
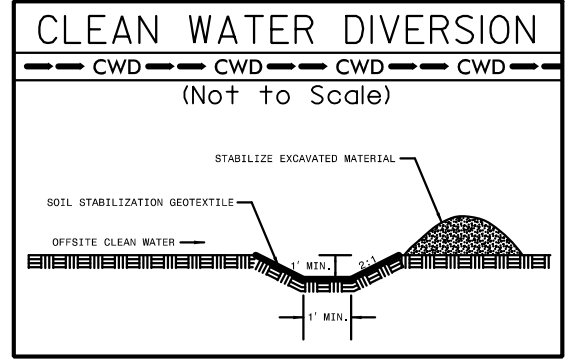
PHASE II

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING PHASE II CULVERT CONSTRUCTION.
2. INSTALL TEMPORARY SHORING 'C'.
3. REMOVE IMPERVIOUS DIKES 'B' AND TEMPORARY PIPE 'B'. INSTALL IMPERVIOUS DIKE 'D' AND TEMPORARY PIPE 'C'.
4. CONSTRUCT PROPOSED WESTBOUND LANES OF NC 211 INCLUDING TEMPORARY PAVEMENT. INSTALL TEMPORARY TRAFFIC BARRIER. SHIFT TRAFFIC TO PROPOSED WESTBOUND LANES.
5. REMOVE IMPERVIOUS DIKES 'A' AND 'C' AND TEMPORARY PIPE 'A' AND 'C'. INSTALL IMPERVIOUS DIKES 'E' AND TEMPORARY PIPE 'D'.
6. CONSTRUCT REMAINDER OF PROPOSED 1 @ 10' x 5' RCBC INCLUDING HEADWALL AND WINGWALLS.
7. REMOVE REMAINDER OF EXISTING 1 @ 6' X 4' / 6' X 5' RCBC.
8. REMOVE IMPERVIOUS DIKES 'D' AND 'E', TEMPORARY PIPE 'D', AND TEMPORARY SHORINGS 'B' & 'C'.
9. CONSTRUCT PROPOSED EAST BOUND NC 211 AND REMOVE REMAINING SPECIAL STILLING BASIN(S).
10. COMPLETE UPSTREAM CHANNEL IMPROVEMENTS.
11. COMPLETE CONSTRUCTION OF EASTBOUND AND WESTBOUND LANES AND SHIFT TRAFFIC INTO FINAL PATTERN.

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-6/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 6

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

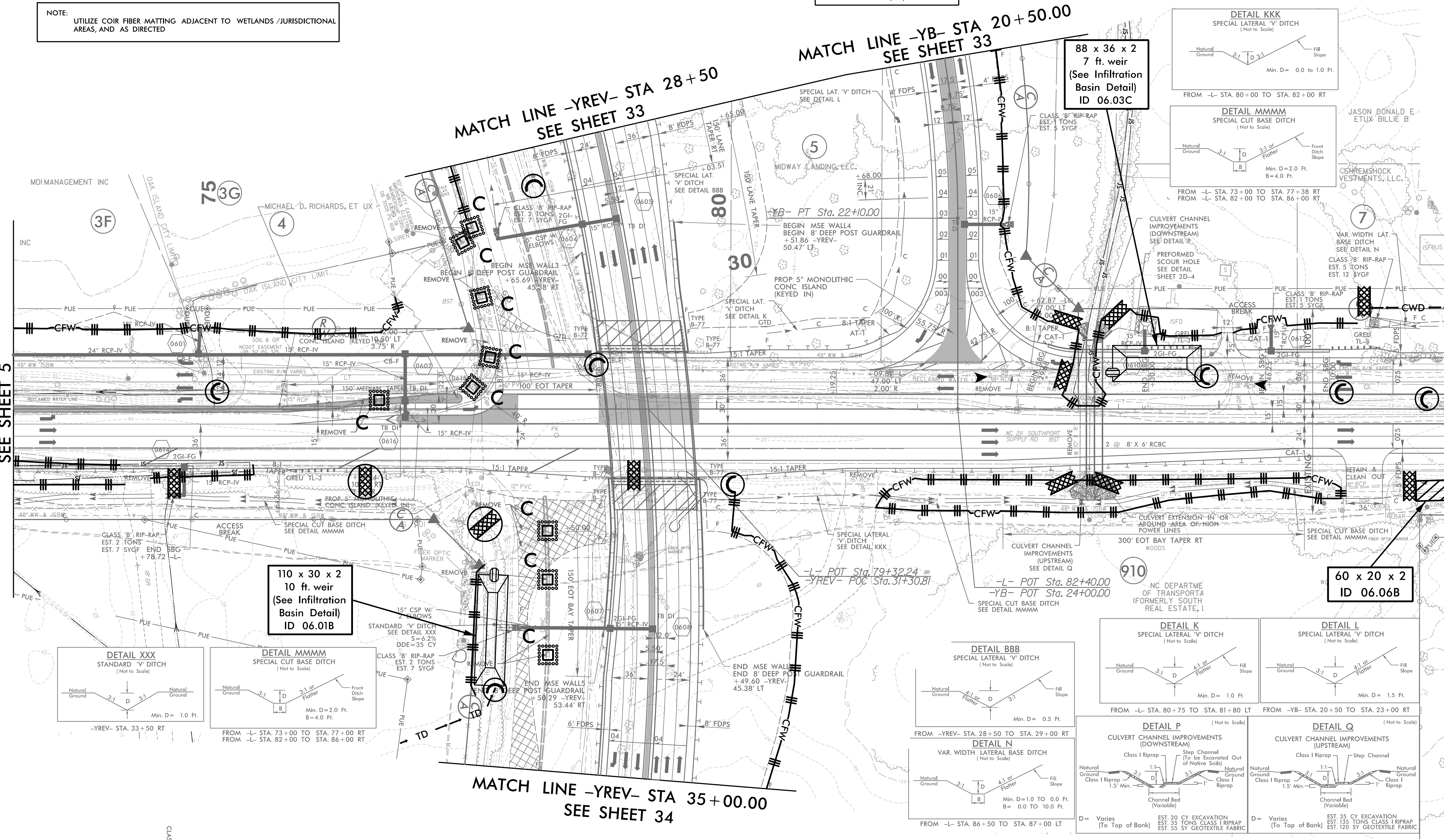


MD
 83 NSRS 2007

NOTE:
 UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL
 AREAS, AND AS DIRECTED

MATCH LINE -L- STA 73+00.00
 SEE SHEET 5

MATCH LINE -L- STA 87+25.00 SEE SHEET 7



MATCH LINE -YREV- STA 28+50
 SEE SHEET 33

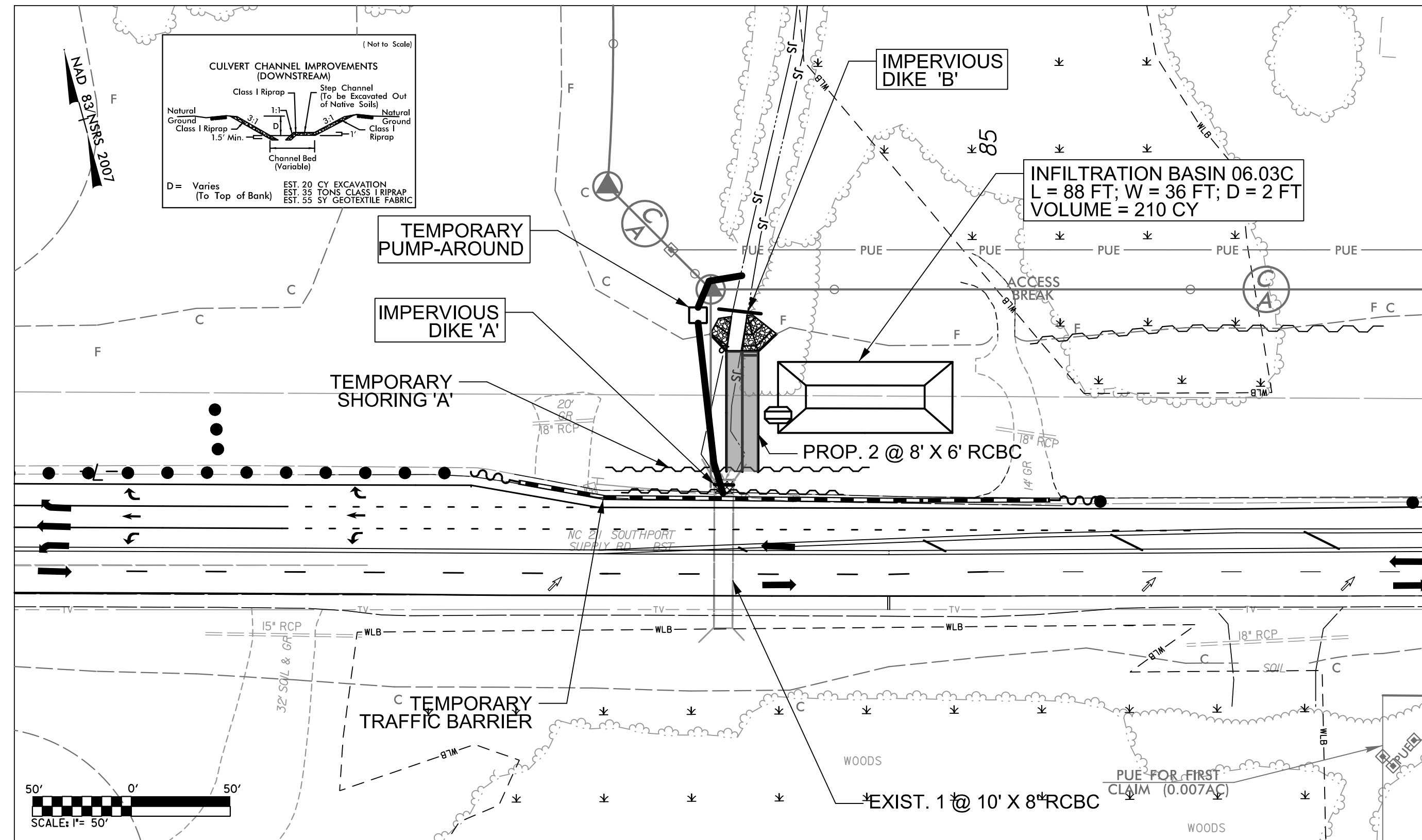
MATCH LINE -YB- STA 20+50.00
 SEE SHEET 33

MATCH LINE -YREV- STA 35+00.00
 SEE SHEET 34

R-5021 CULVERT PHASING 2 OF 6
 NC 211 OVER RIVER SWAMP
 BRUNSWICK COUNTY
 -L- 83+75

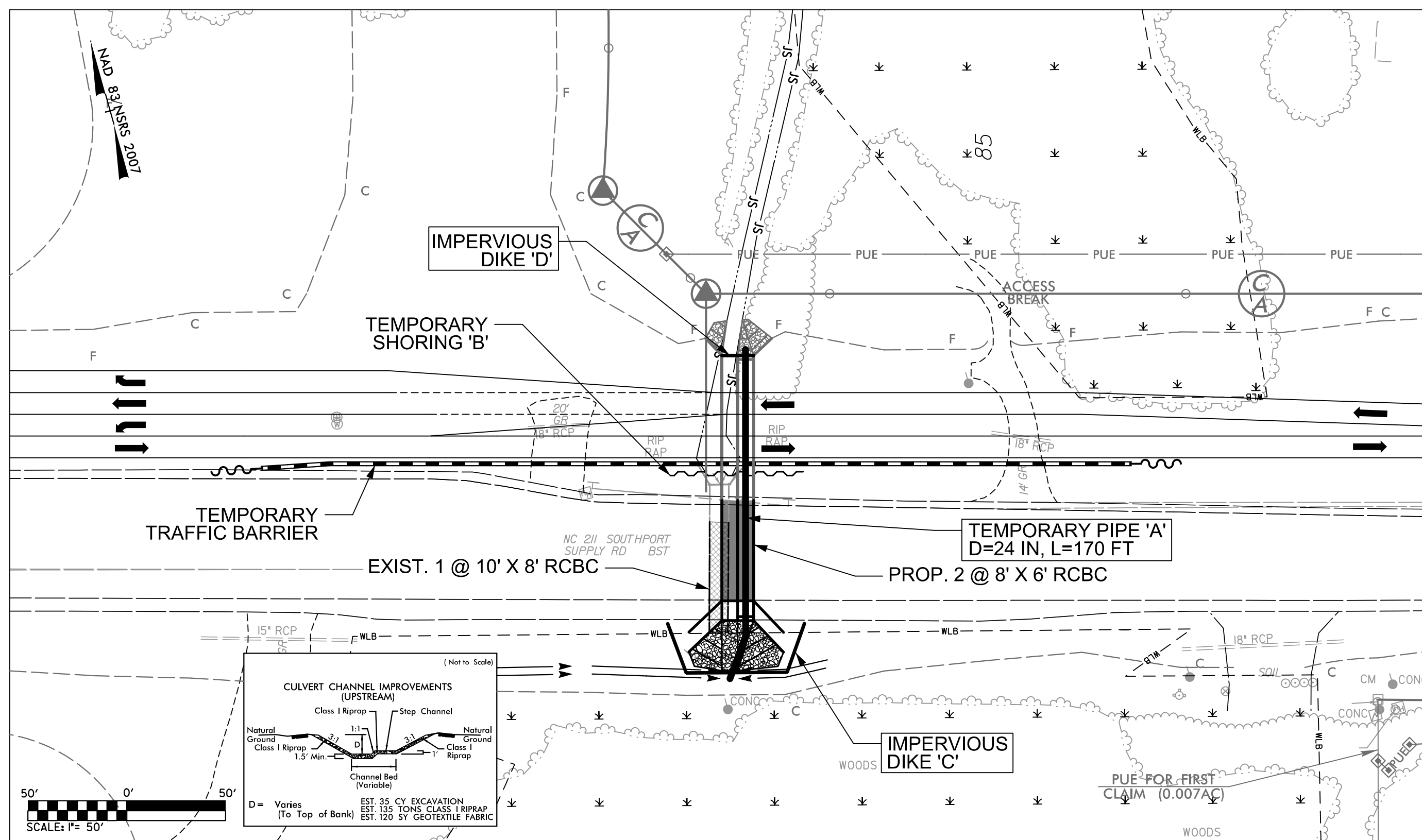
HNTB HNTB NORTH CAROLINA, P.C.
 343 E. Six Forks Road, Suite 200
 Raleigh, North Carolina 27609
 NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-6A/CONST.6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PHASE I

1. UTILIZE INFILTRATION BASIN 06.03C AS STILLING BASIN.
2. INSTALL TEMPORARY SHORING 'A' AND TEMPORARY TRAFFIC BARRIER AND SHIFT TRAFFIC RIGHT.
3. CONSTRUCT IMPERVIOUS DIKES 'A' & 'B', INSTALL PUMP-AROUND.
4. DEWATER CONSTRUCTION AREA INTO INFILTRATION BASIN 06.03C.
5. REMOVE HEADWALL, WINGWALLS, AND APPROX. 7 FT OF EXISTING 1 @ 10' X 8' RCBC.
6. CONSTRUCT APPROXIMATELY 61 FT OF PROPOSED 2 @ 8' x 6' RCBC AND DOWNSTREAM CHANNEL IMPROVEMENTS.
7. CONSTRUCT PROPOSED WESTBOUND LANES OF NC 211.



PHASE II

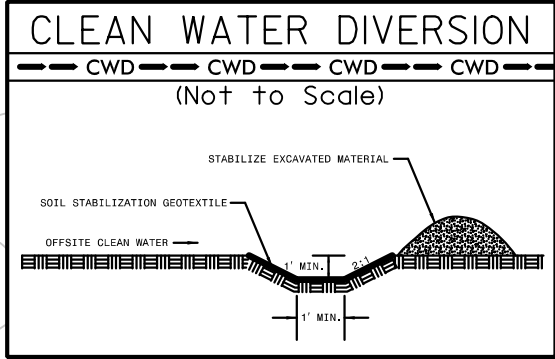
1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING PHASE II CULVERT CONSTRUCTION.
2. INSTALL TEMPORARY SHORING 'B', ADJUST TEMPORARY TRAFFIC BARRIER CONFIGURATION AND SHIFT TRAFFIC ONTO WESTBOUND LANES OF NC 211.
3. INSTALL IMPERVIOUS DIKES 'C' & 'D', INSTALL TEMPORARY PIPE 'A'. DEWATER CONSTRUCTION AREA INTO SPECIAL STILLING BASIN(S).
4. REMOVE PUMP-AROUND, IMPERVIOUS DIKES 'A' & 'B', AND TEMPORARY SHORING 'A'.
5. REMOVE REMAINDER OF EXISTING 1 @ 10' X 8' RCBC.
6. CONSTRUCT REMAINDER OF PROPOSED 2 @ 8' x 6' RCBC & UPSTREAM WINGWALLS AND CONSTRUCT UPSTREAM CHANNEL IMPROVEMENTS.
7. REMOVE IMPERVIOUS DIKES 'C' & 'D', TEMPORARY PIPE 'A', TEMPORARY SHORING 'B', AND TEMPORARY TRAFFIC BARRIER. CONSTRUCT PROPOSED EASTBOUND NC 211.
8. COMPLETE CONSTRUCTION OF EASTBOUND AND WESTBOUND LANES, REMOVE REMAINING SPECIAL STILLING BASIN(S) AND SHIFT TRAFFIC INTO FINAL PATTERN.

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
	EC-7/CONST.7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

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.

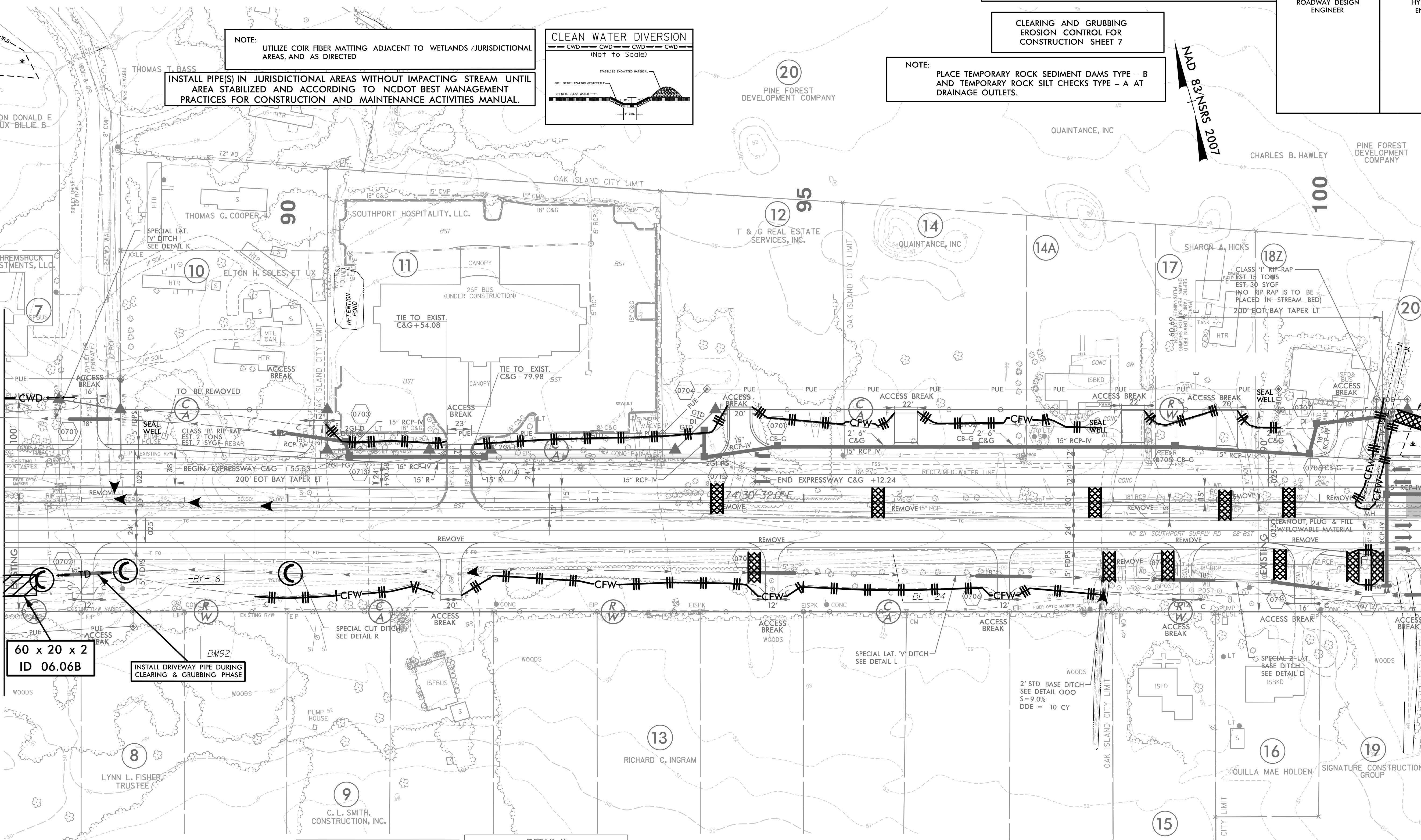


NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

MAD 8/1/NS/S 2007

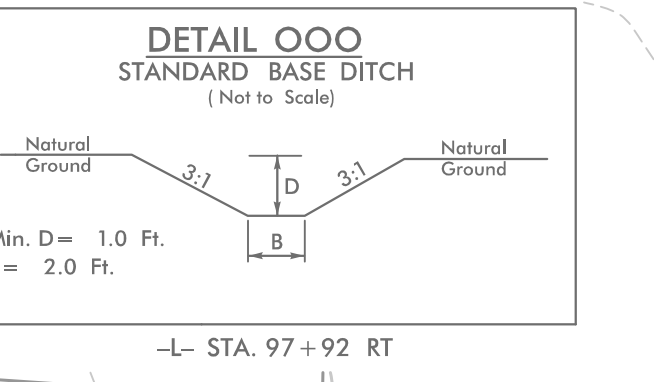
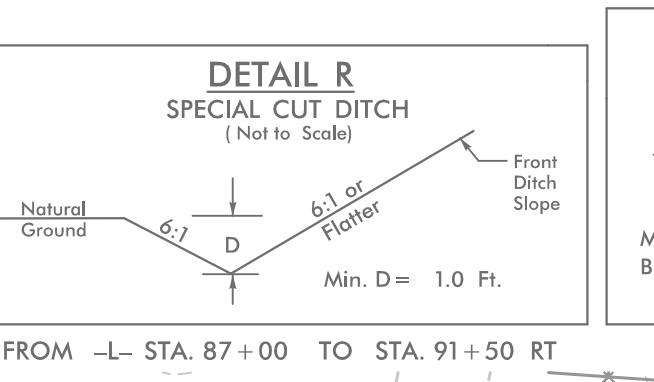
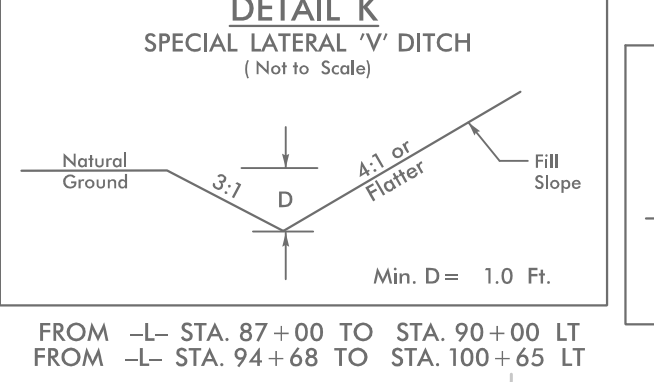
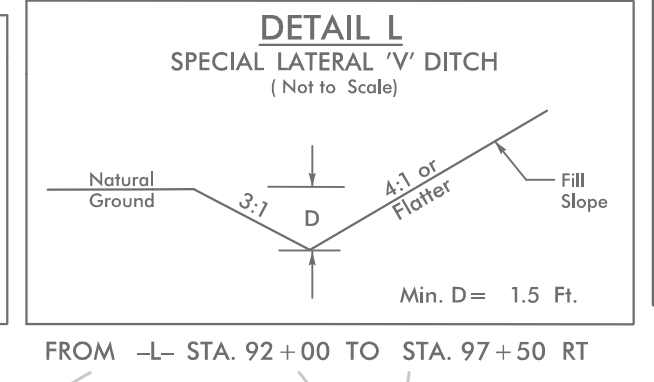
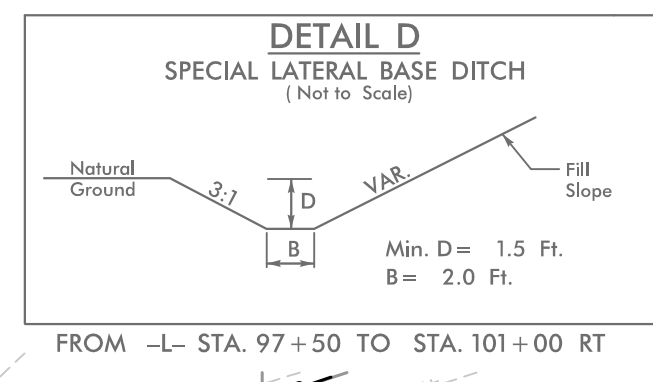
MATCH LINE -L- STA 87 + 25.00
SEE SHEET 6

MATCH LINE -L- STA 101 + 00.00
SEE SHEET 8



60 x 20 x 2
ID 06.06B

INSTALL DRIVEWAY PIPE DURING CLEARING & GRUBBING PHASE



4/21/2008 L.E.C.-PSHT.dgn

5/14/99

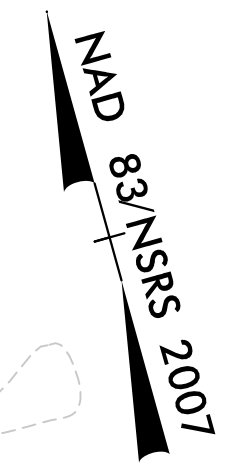
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-8/CONST.8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 8

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

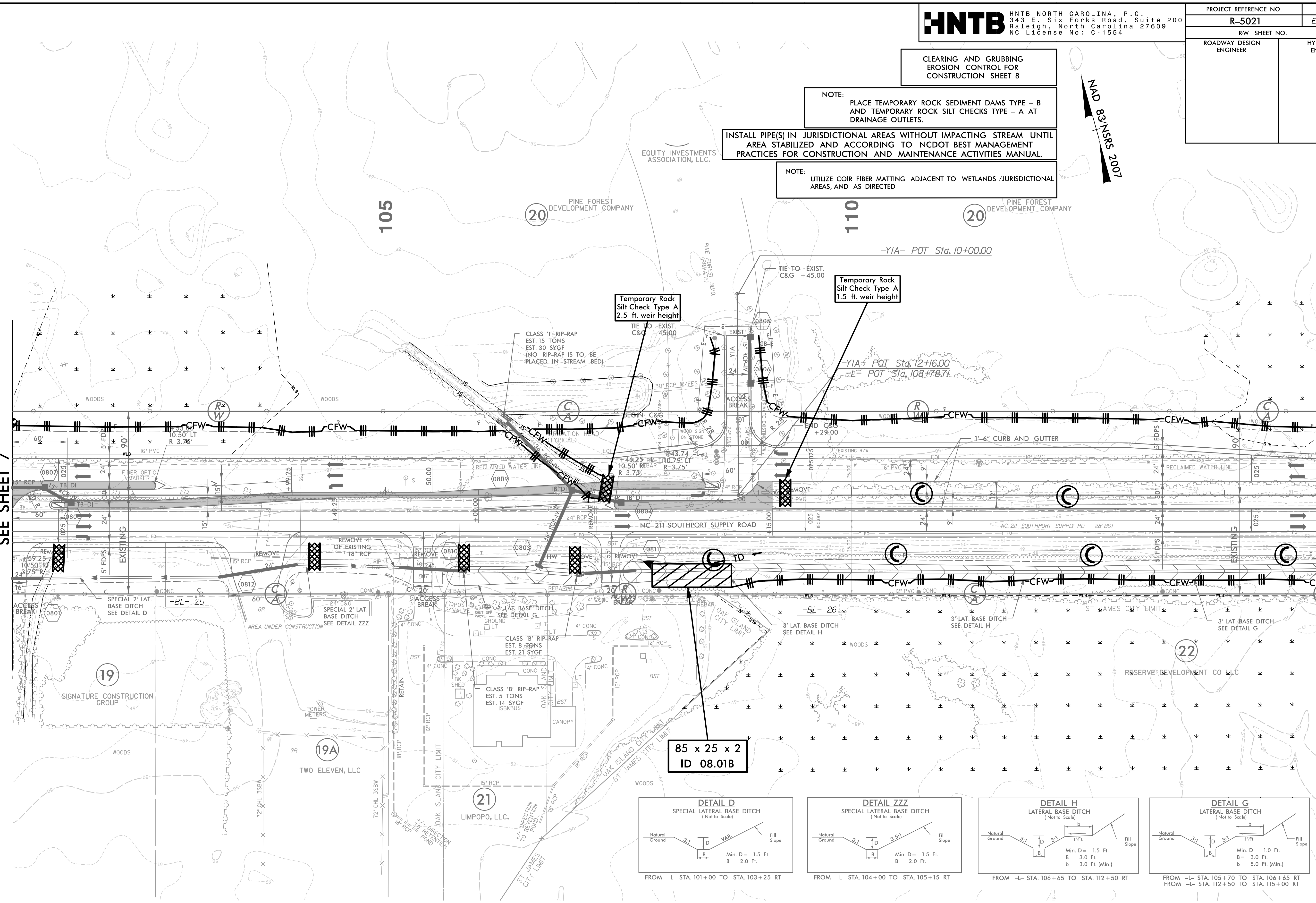
INSTALL PIPE(S) IN JURISDICTIONAL AREAS WITHOUT IMPACTING STREAM UNTIL
 AREA STABILIZED AND ACCORDING TO NCDOT BEST MANAGEMENT
 PRACTICES FOR CONSTRUCTION AND MAINTENANCE ACTIVITIES MANUAL.

NOTE:
 UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL
 AREAS, AND AS DIRECTED



MATCH LINE -L- STA 101+00.00
 SEE SHEET 7

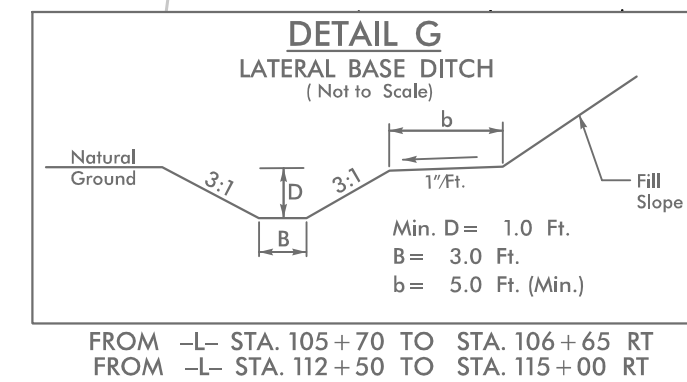
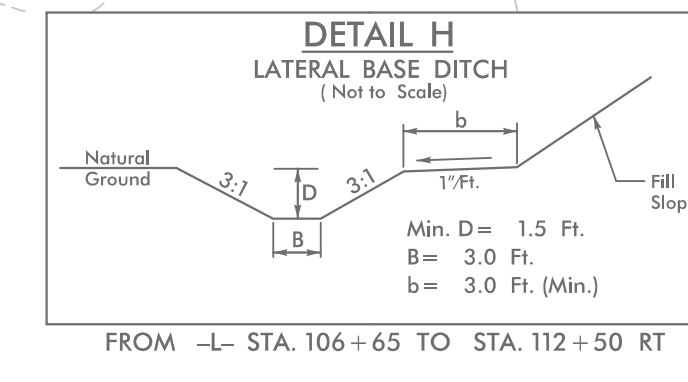
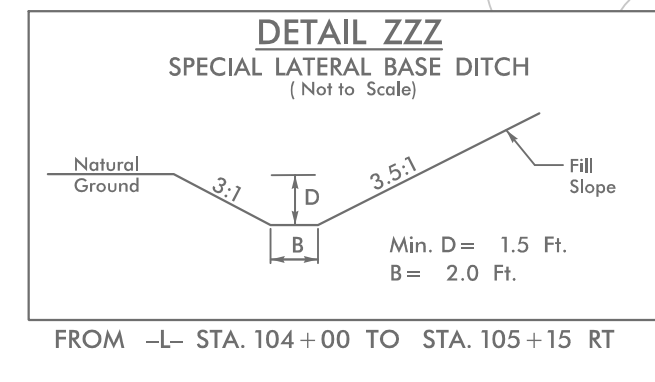
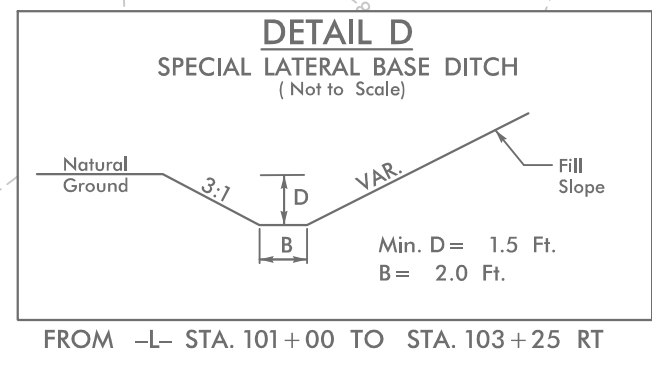
MATCH LINE -L- STA 115+00.00
 SEE SHEET 9



Temporary Rock
 Silt Check Type A
 2.5 ft. weir height

Temporary Rock
 Silt Check Type A
 1.5 ft. weir height

85 x 25 x 2
 ID 08.01B



11/2/2008 L.E.C._PSH8.dgn

5/14/99

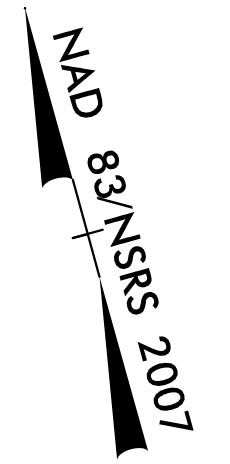
NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND AS DIRECTED

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 9

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

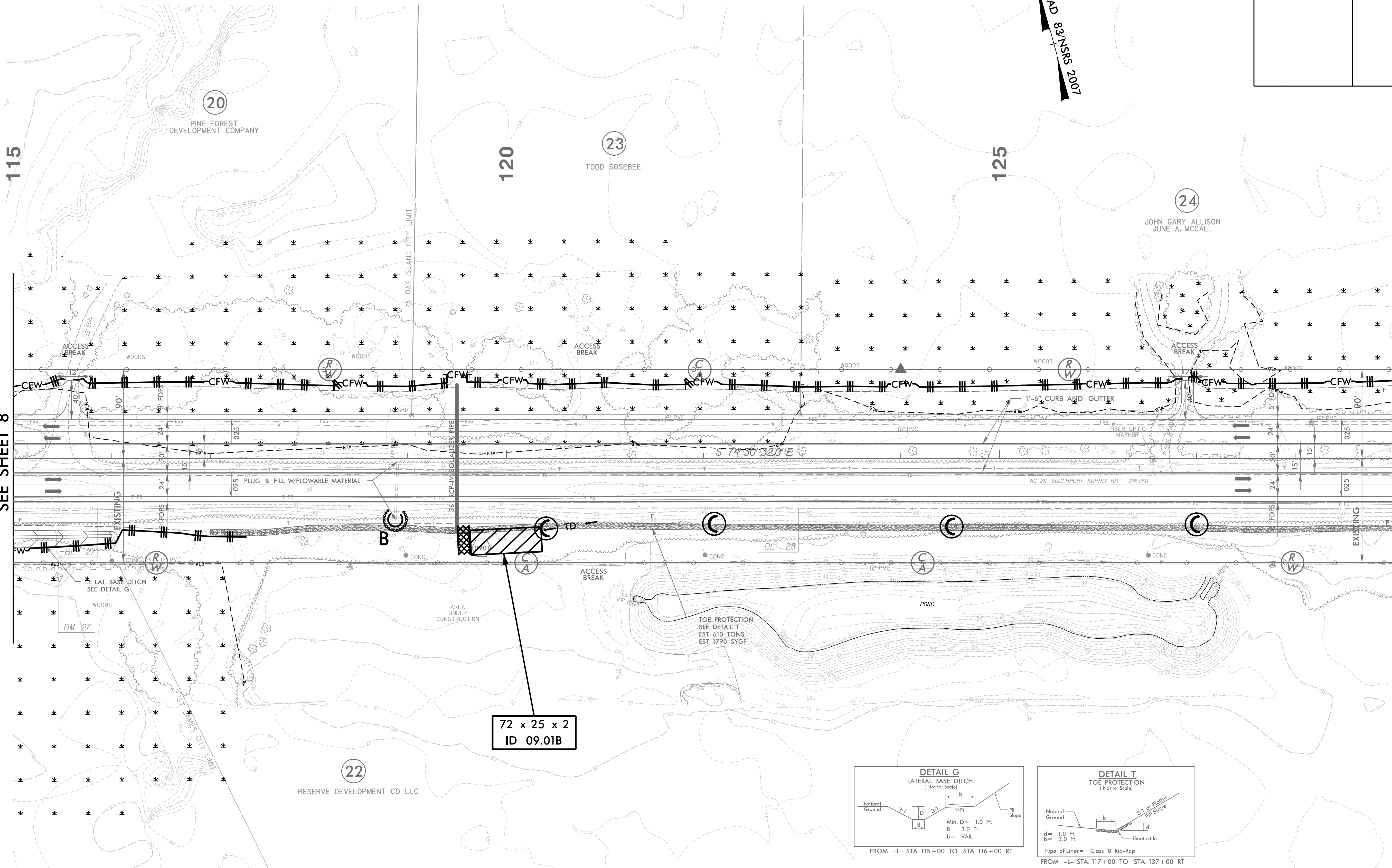
HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-9/CONST.9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

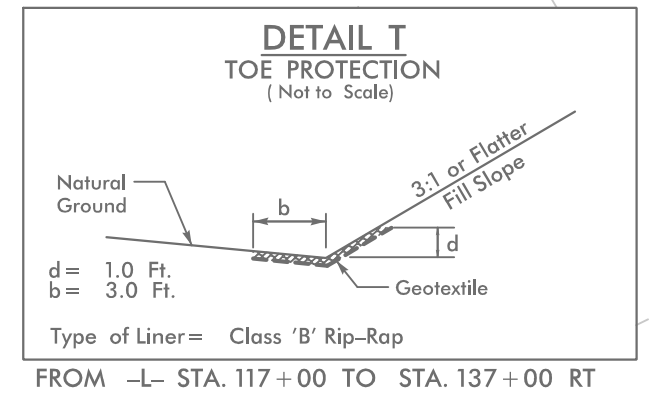
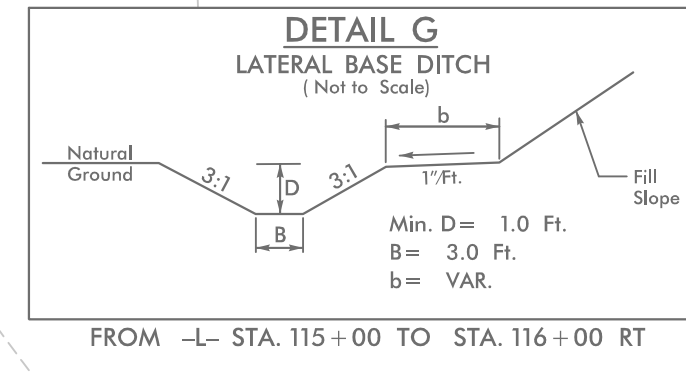


MATCH LINE -L- STA 115 + 00.00
SEE SHEET 8

MATCH LINE -L- STA 129 + 00.00
SEE SHEET 10



72 x 25 x 2
ID 09.01B



5/17/2021_EC_PSH9.dgn

5/14/99

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Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-10/CONST.10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

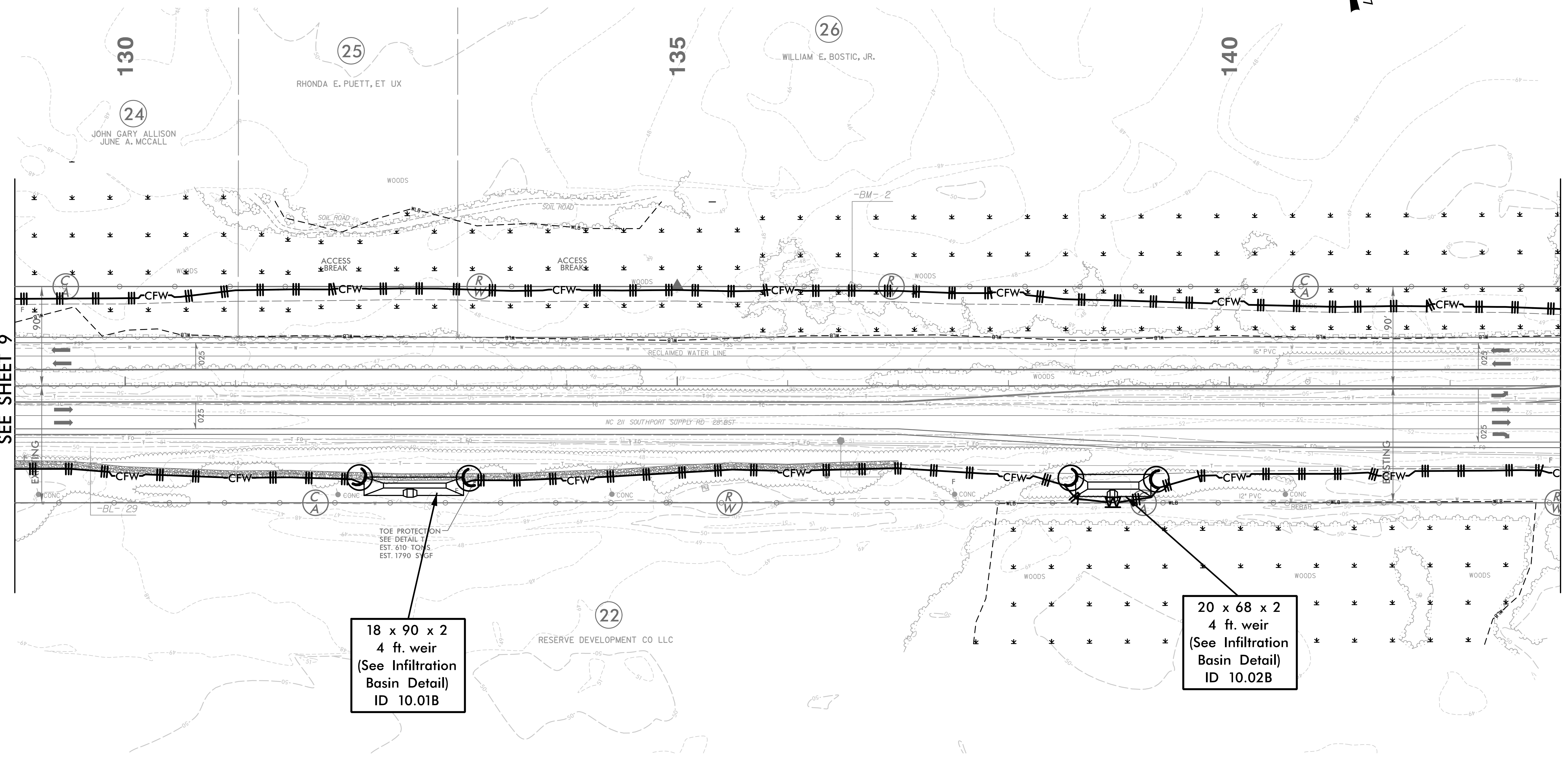
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 10

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

MAD 8/NSRS 2007

MATCH LINE -L- STA 129 + 00.00
SEE SHEET 9

MATCH LINE -L- STA 143 + 00.00
SEE SHEET 11



18 x 90 x 2
4 ft. weir
(See Infiltration
Basin Detail)
ID 10.01B

20 x 68 x 2
4 ft. weir
(See Infiltration
Basin Detail)
ID 10.02B

5/17/2021 EC_PSH10.dgn

5/14/99

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 11

BEGIN CONSTRUCTION
-Y1C- Sta. 10+00.00

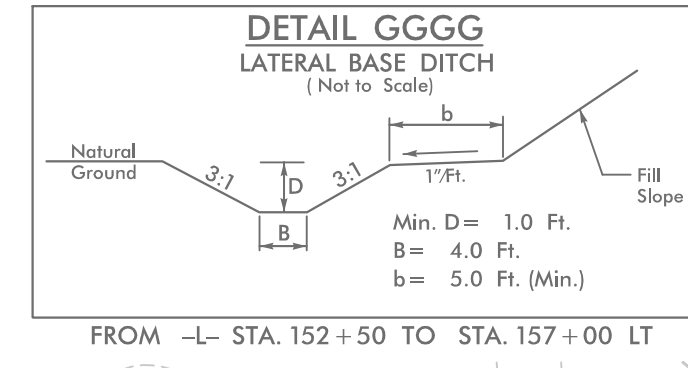
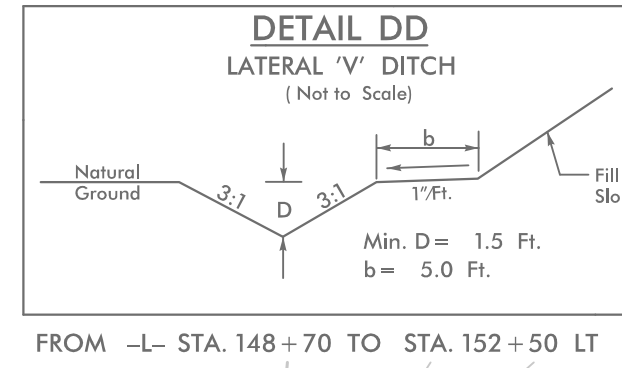
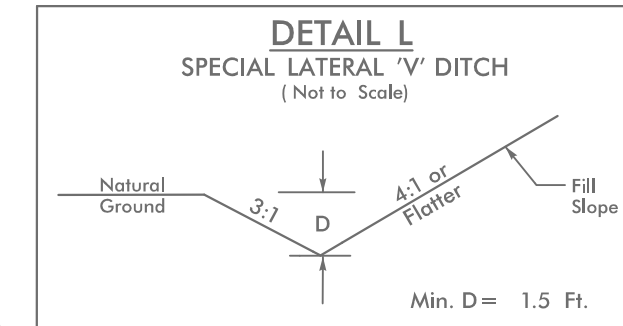
-Y1C- POT Sta. 9+00.00

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

NOTE:
UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL
AREAS, AND AS DIRECTED

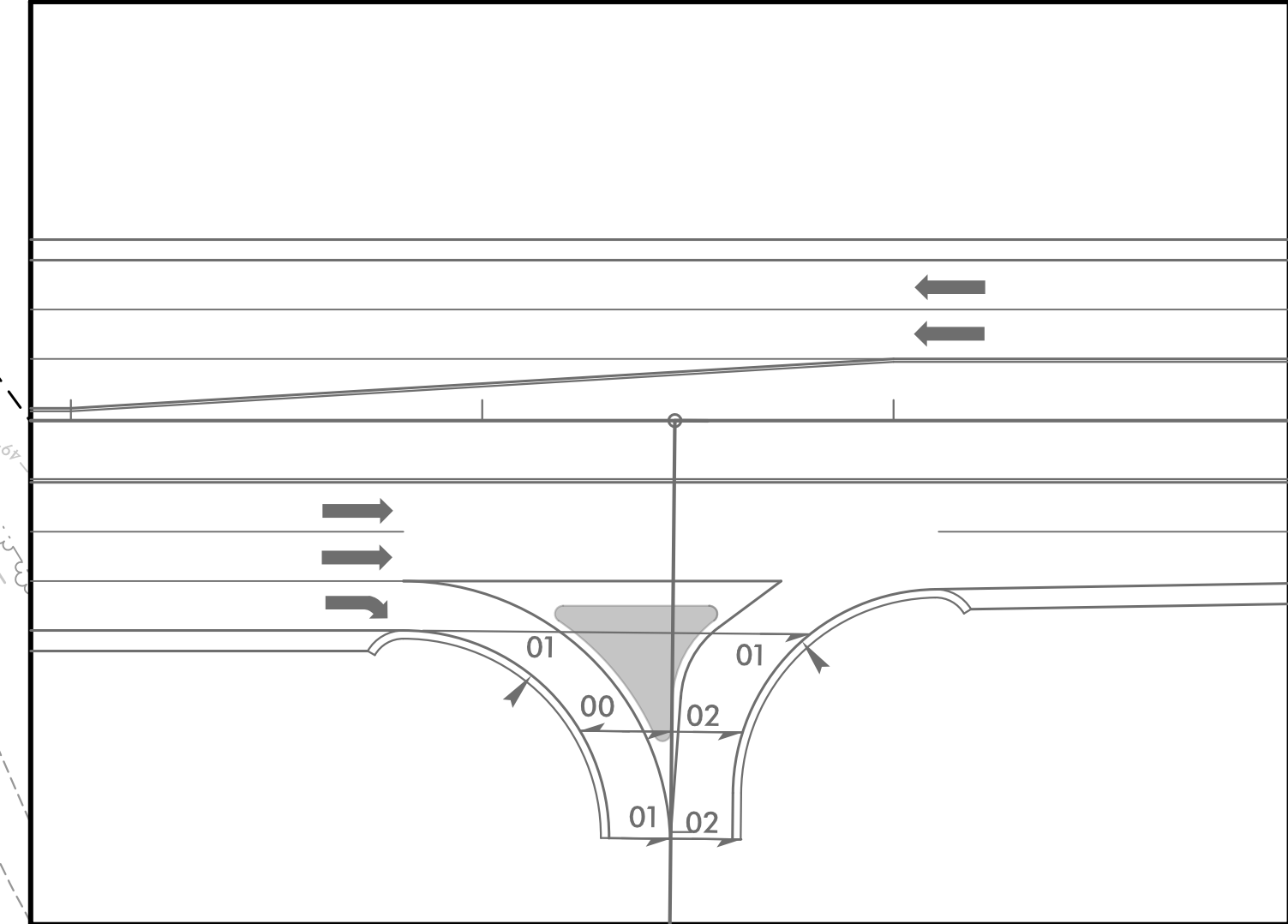
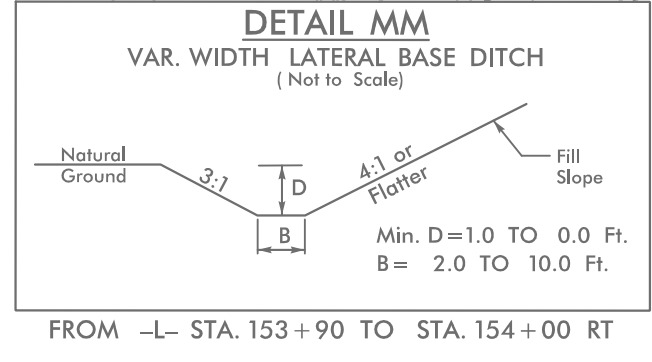
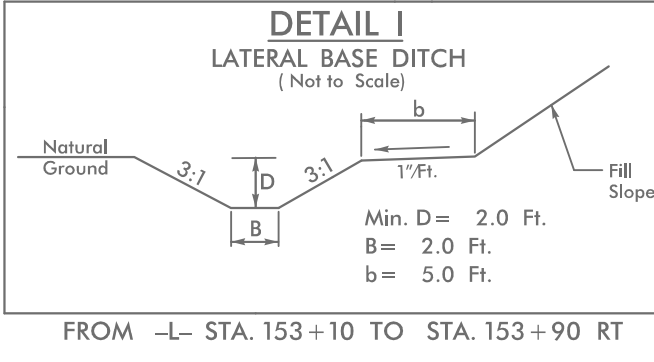
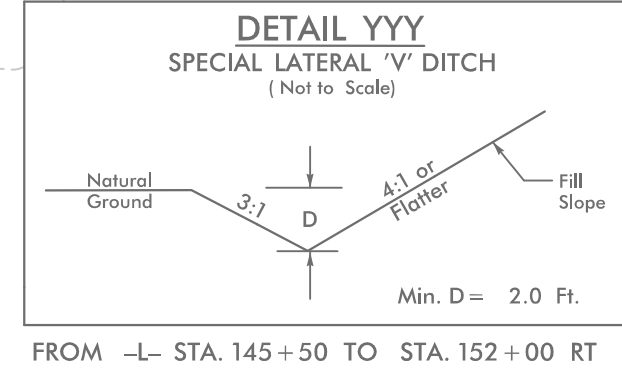
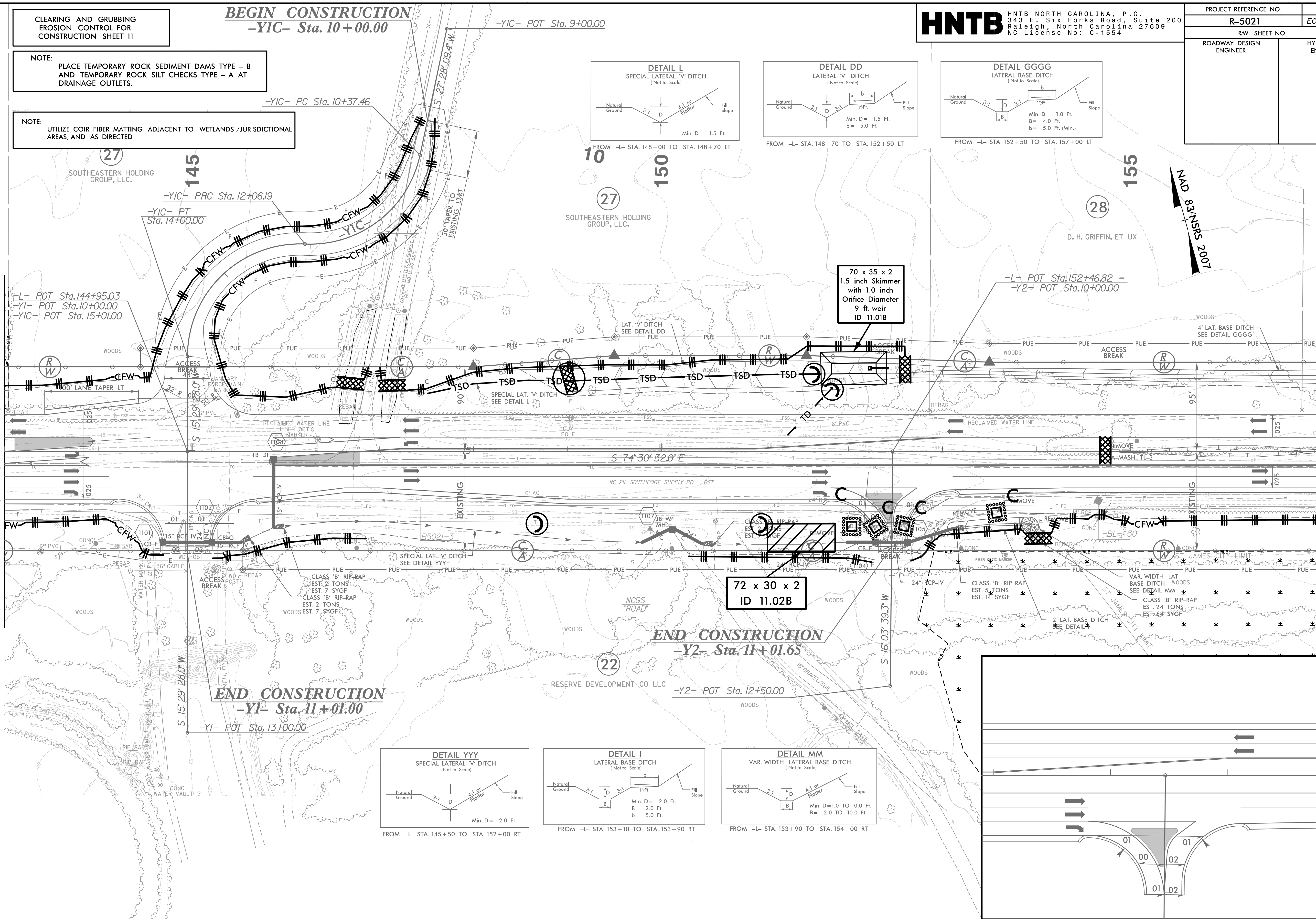
HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-II/CONST-II
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCH LINE -L- STA 143 + 00.00
SEE SHEET 10

MATCH LINE -L- STA 157 + 00.00
SEE SHEET 12



5/17/2021_EC_PSH11.dgn

5/14/99

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 12

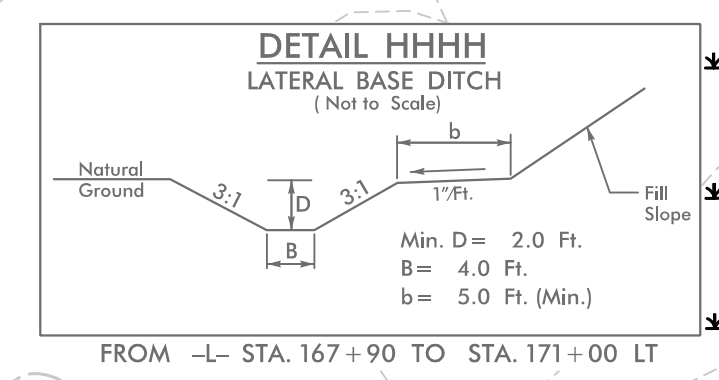
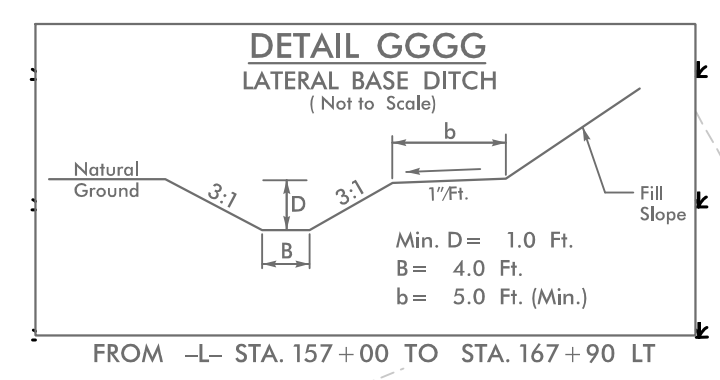
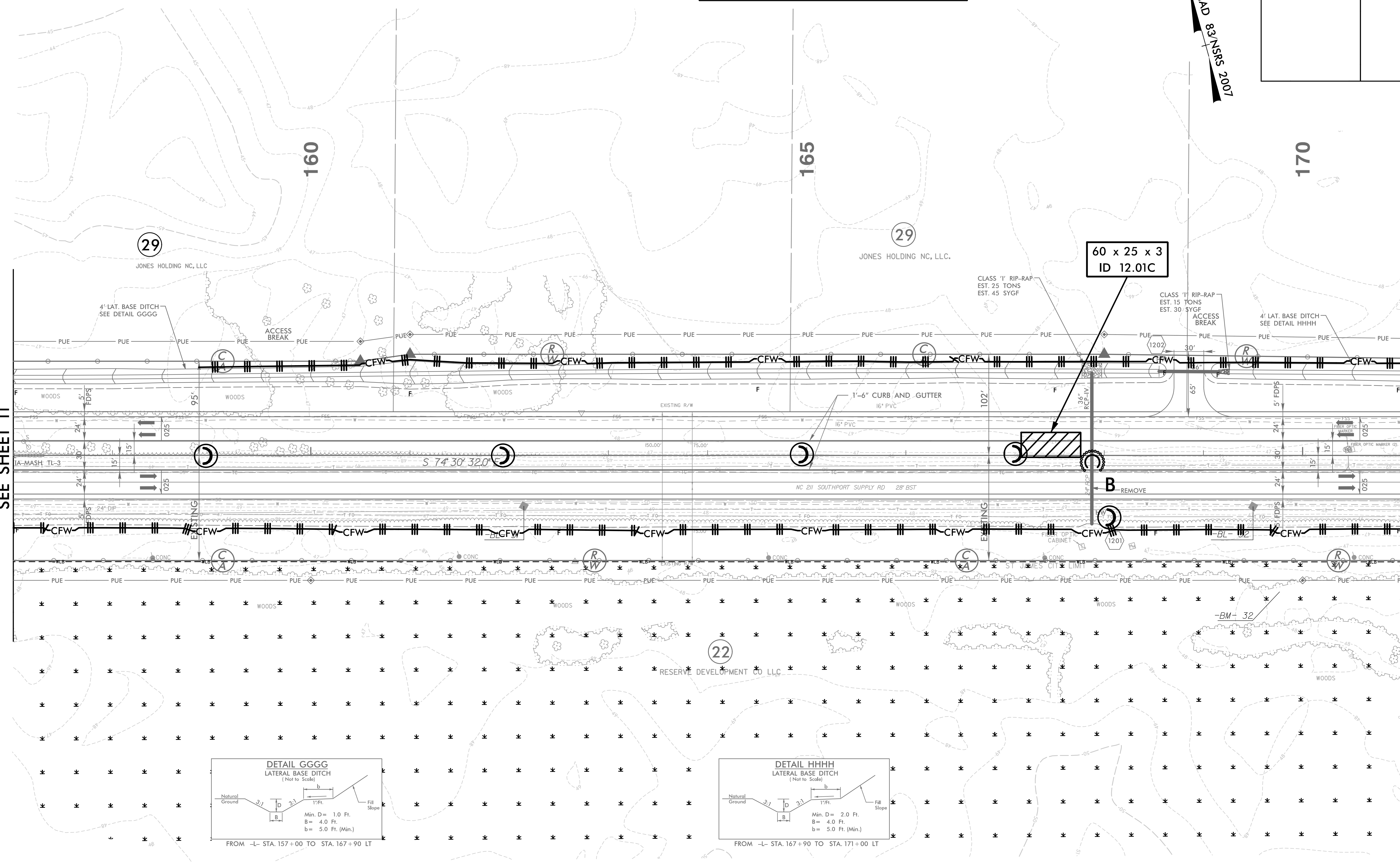
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-12/CONST.12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE -L- STA 157 + 00.00
SEE SHEET 11

MATCH LINE -L- STA 171 + 00.00
SEE SHEET 13



5/14/2001 EC_PSH12.dgn

5/14/99

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

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

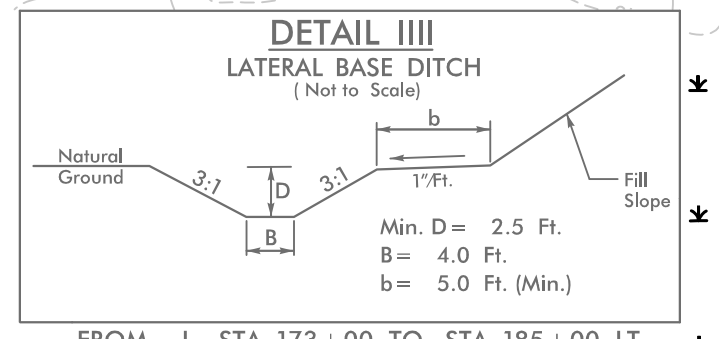
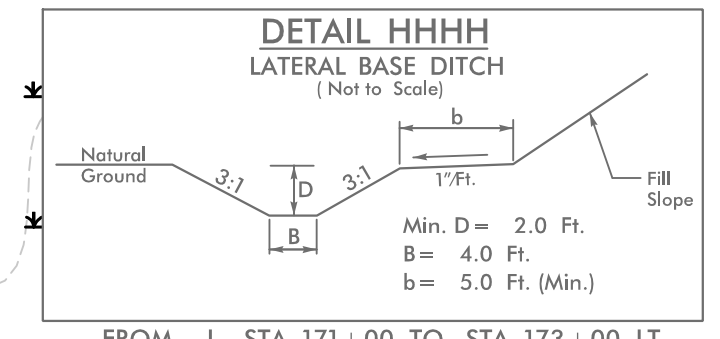
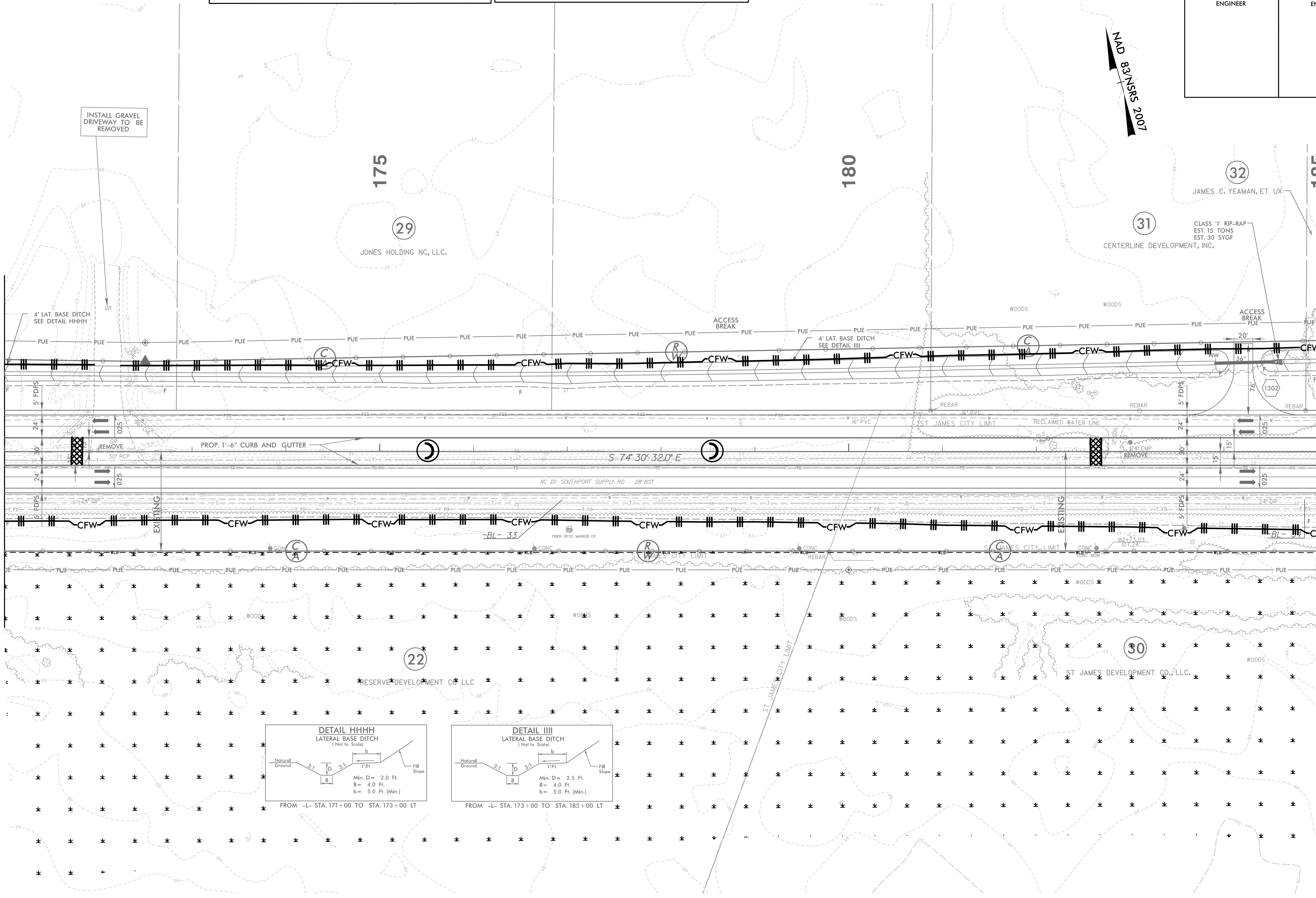
CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 13

HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-13/CONST.13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE -L- STA 171 + 00.00
SEE SHEET 12

MATCH LINE -L- STA 185 + 00.00
SEE SHEET 14



5/14/2021_EC_PSH13.dgn

5/14/99

HNTB HNTB NORTH CAROLINA, P.C.
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Raleigh, North Carolina 27609
NC License No: C-1554

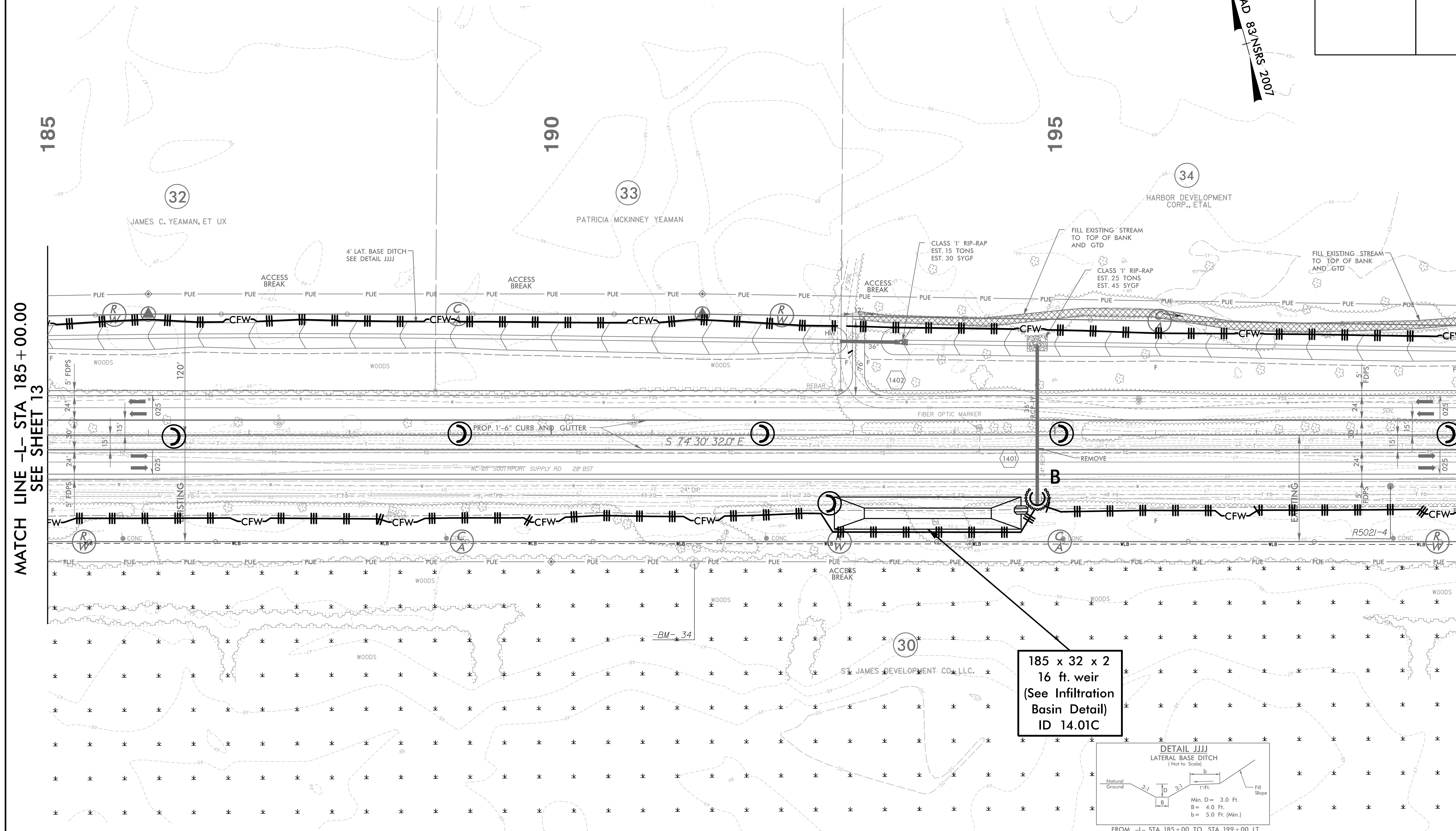
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-14/CONST.14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND 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 14

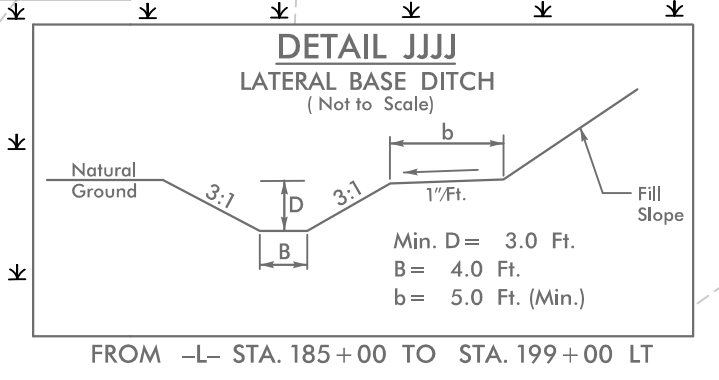
NAD 83/NSRS 2007



MATCH LINE -L- STA 185 + 00.00
SEE SHEET 13

MATCH LINE -L- STA 199 + 00.00
SEE SHEET 15

185 x 32 x 2
16 ft. weir
(See Infiltration Basin Detail)
ID 14.01C



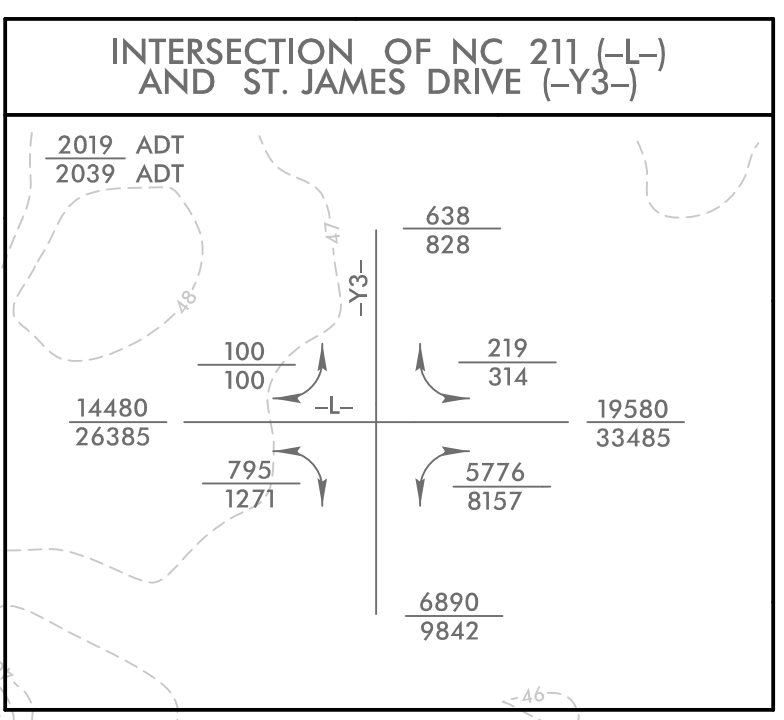
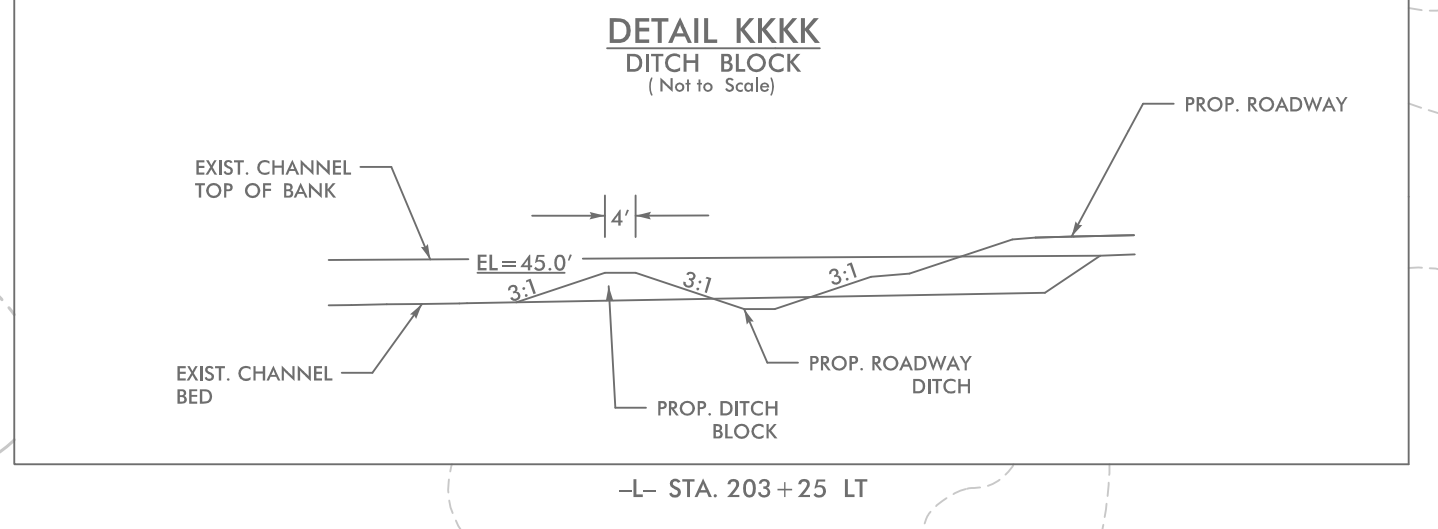
11/2/2008
14.01_EC_PSH14.dgn

5/14/99

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

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 15

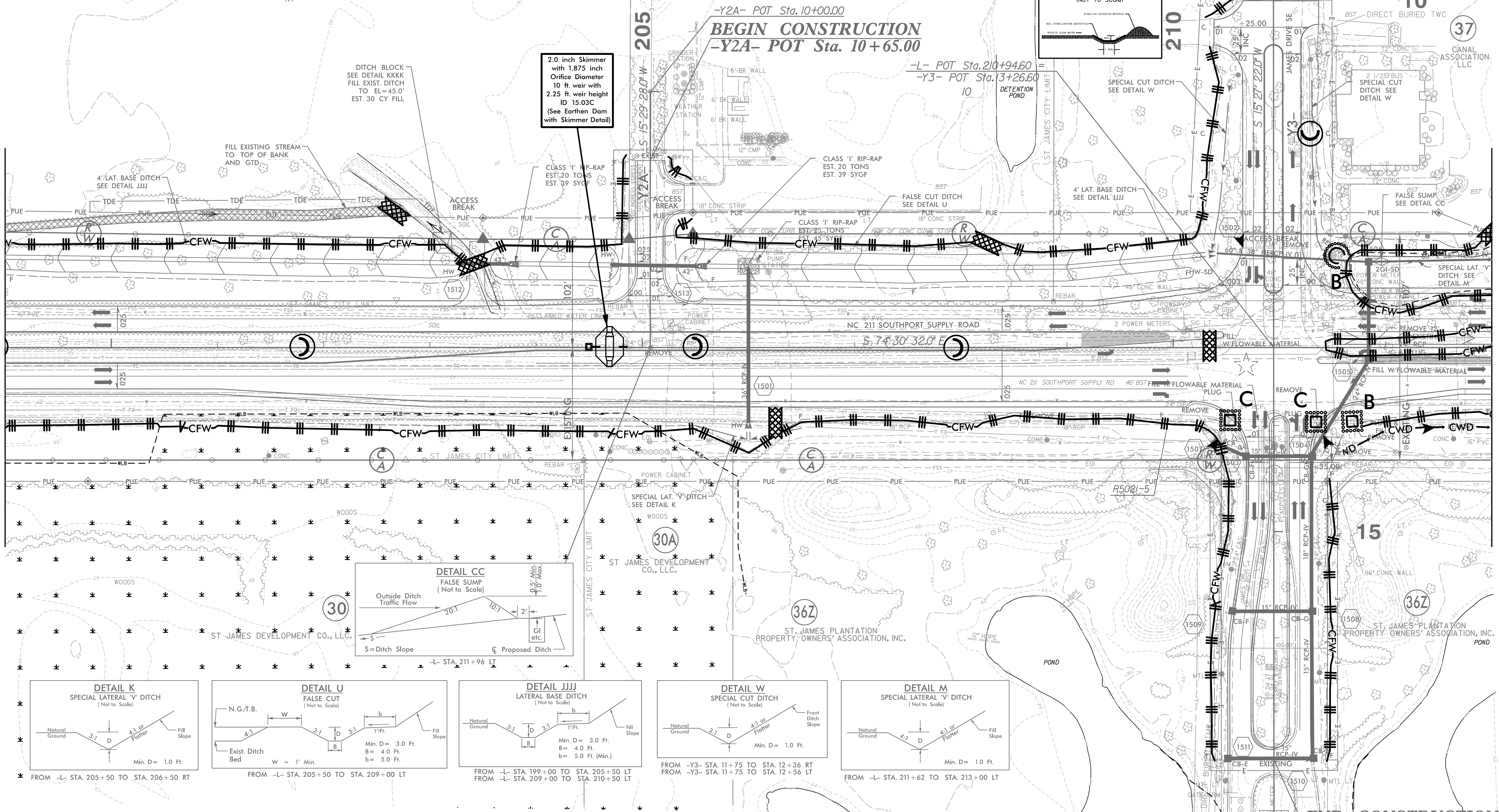


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PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-15/CONST.15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

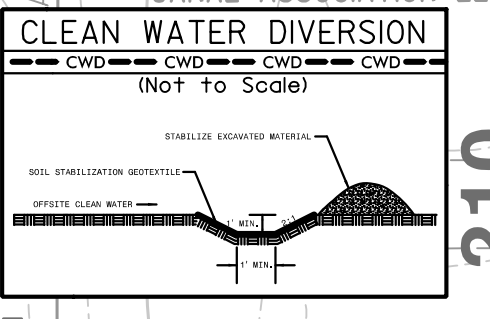
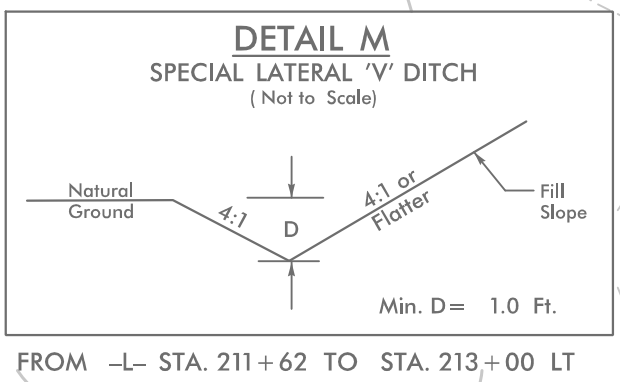
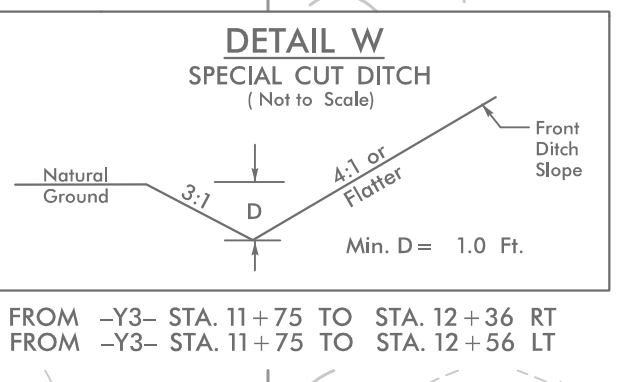
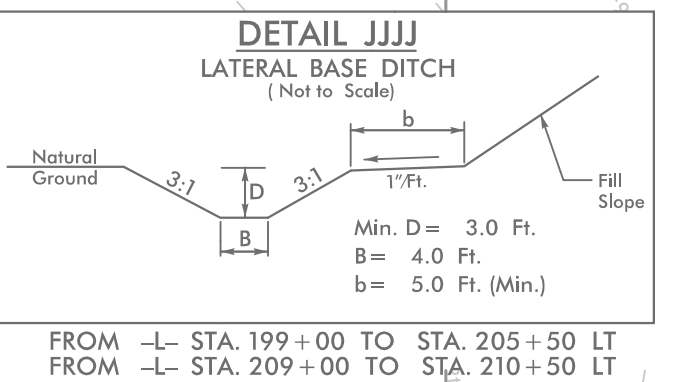
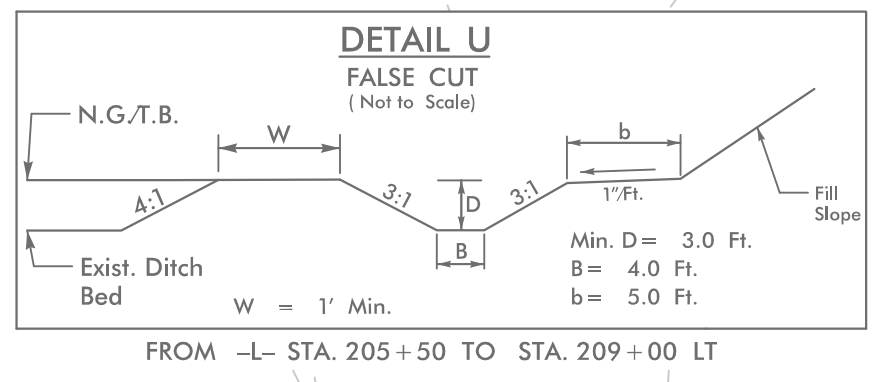
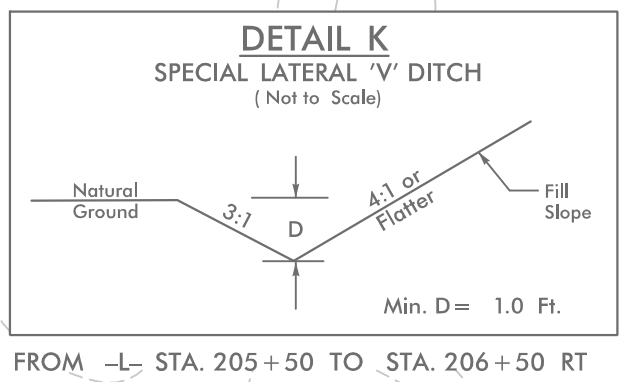
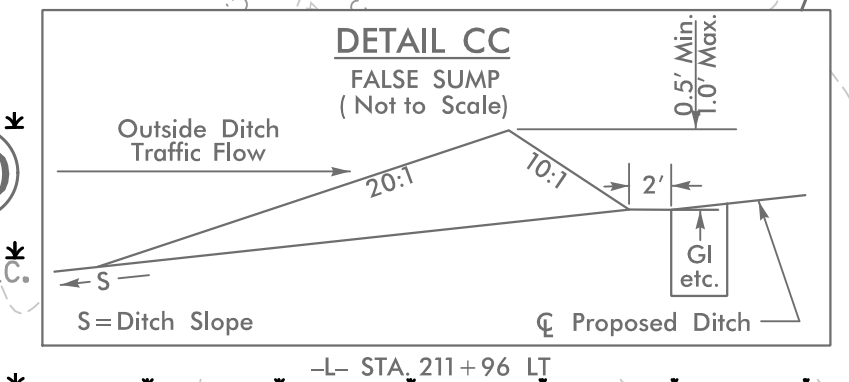
MATCH LINE -L- STA 199 + 00.00 SEE SHEET 14

MATCH LINE -L- STA 213 + 00.00 SEE SHEET 16



2.0 inch Skimmer with 1.875 inch Office Diameter 10 ft. weir with 2.25 ft. weir height ID 15.03C (See Earthen Dam with Skimmer Detail)

DITCH BLOCK SEE DETAIL KKKK FILL EXIST. DITCH TO EL=45.0' EST. 30 CY FILL



BEGIN CONSTRUCTION -Y3- Sta: 10 + 00.00

BEGIN CONSTRUCTION -Y2A- POT Sta. 10 + 65.00

END CONSTRUCTION -Y3- Sta. 17 + 15.00

FOR -L- PROFILE, SEE SHEET 46
FOR -Y2A- & -Y3- PROFILES, SEE SHEET 60
FOR INTERSECTION DETAIL, SEE SHEET 2B-1
FOR DRAINAGE DETAILS, SEE SHEETS 2D-1 THRU 2D-3

4/21/2021_EC_PSH15.dgn

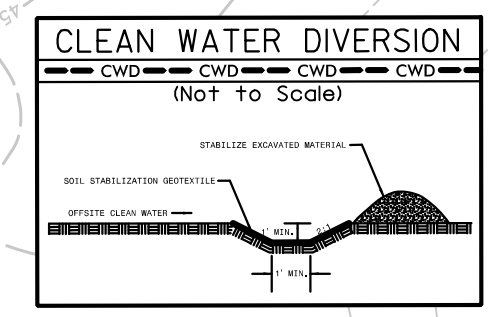
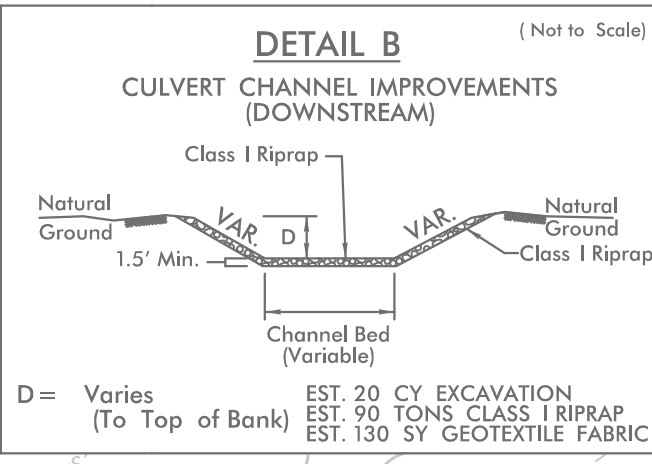
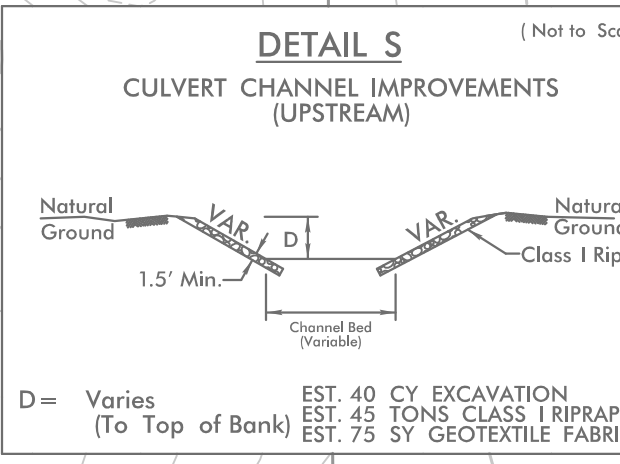
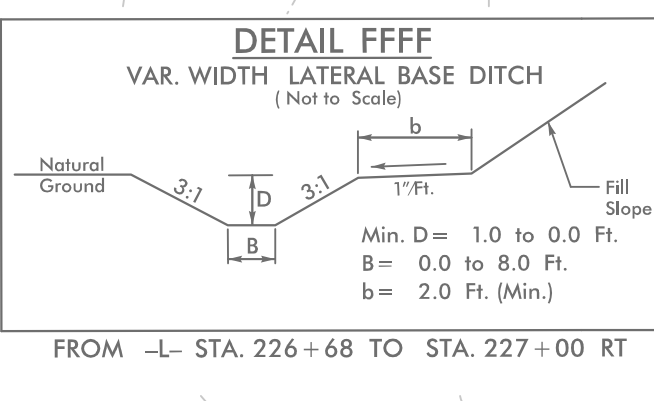
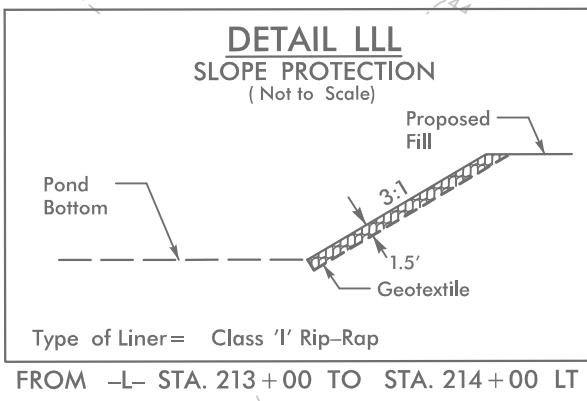
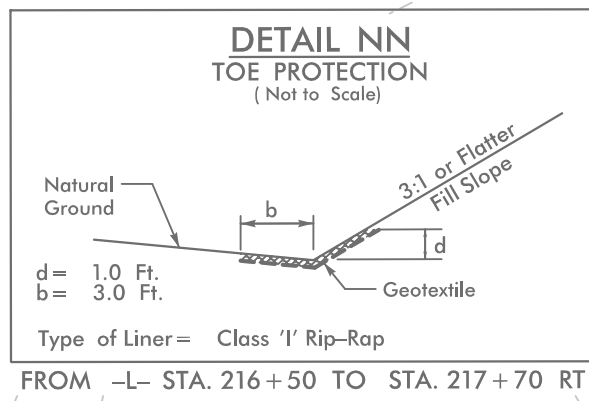
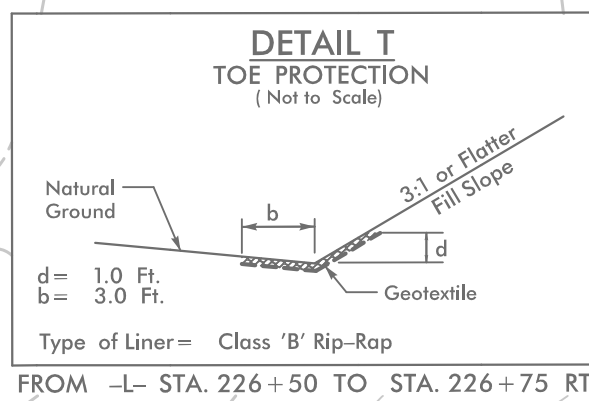
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-16/CONST.16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 16

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

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED



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.

MATCH LINE -L- STA 213+00.00
SEE SHEET 15

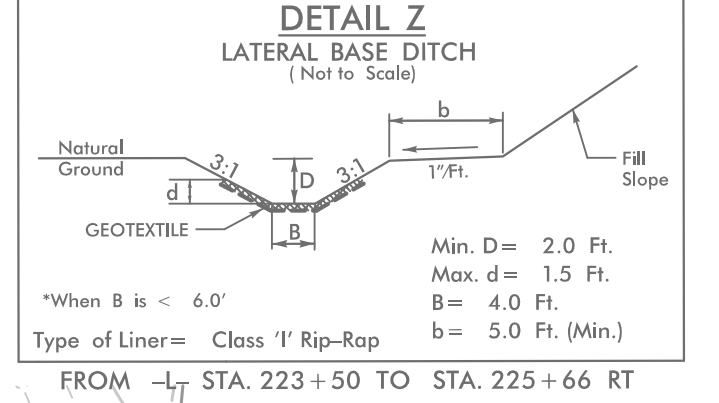
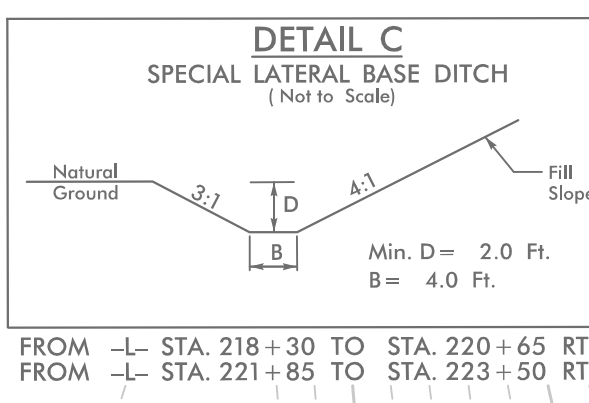
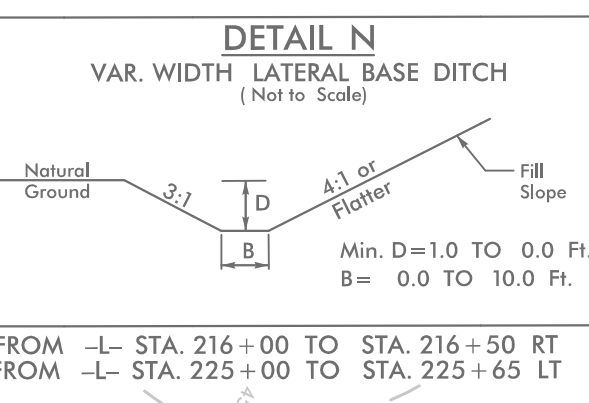
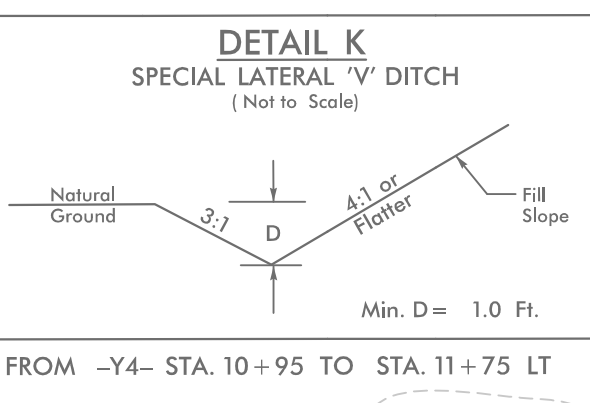
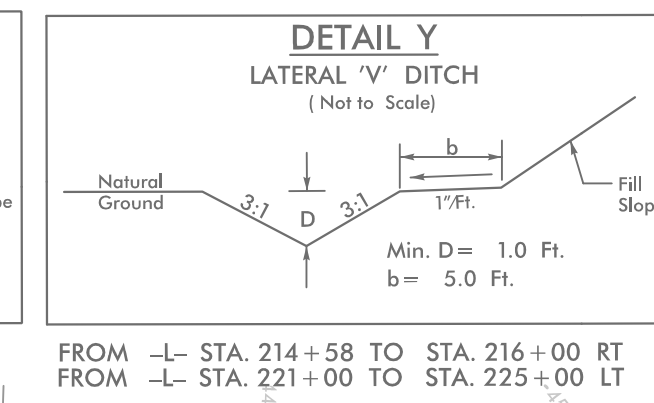
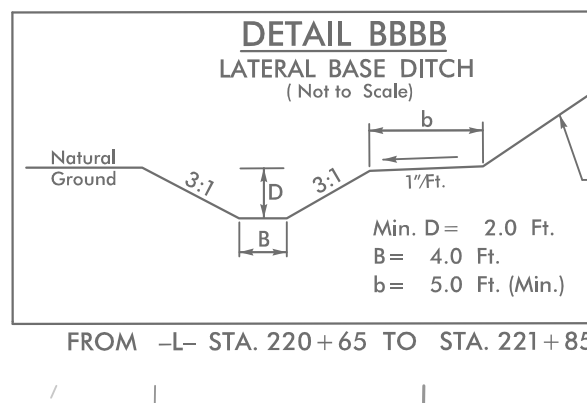
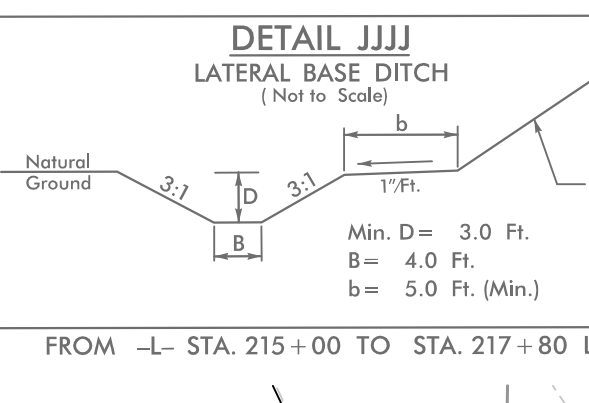
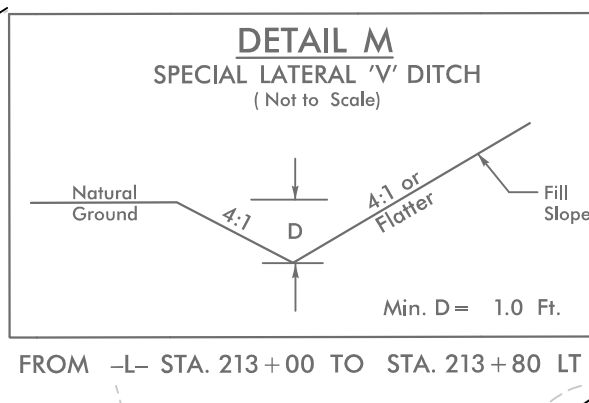
MATCH LINE -L- STA 227+00.00
SEE SHEET 17

150 x 75 x 2 2.5 inch Skimmer with 2.125 inch Orifice Diameter 43 ft. weir ID 16.01B

54 x 22 x 3 4 ft. weir (See Infiltration Basin Detail) ID 16.03B

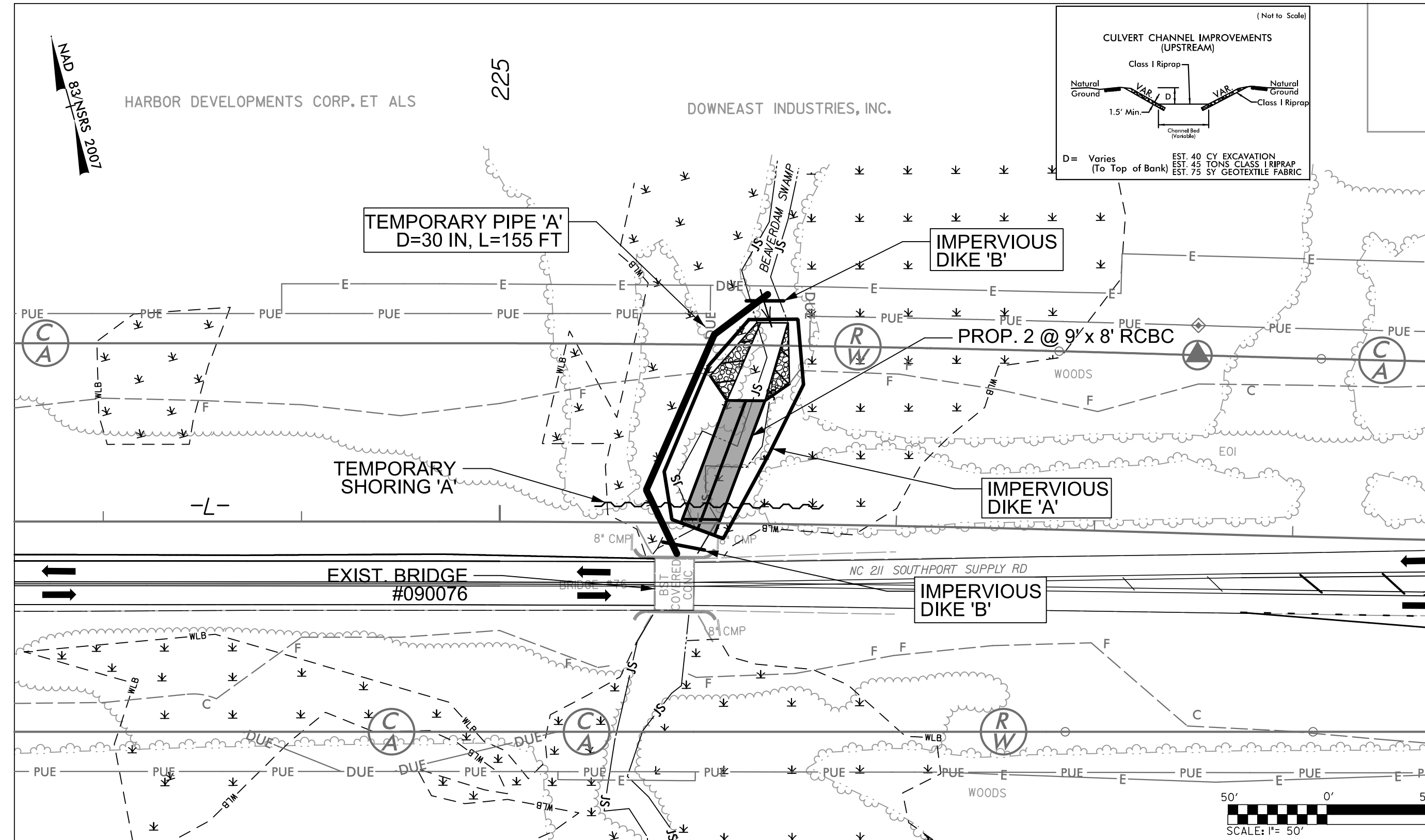
1.5 inch Skimmer with 1.125 inch Orifice Diameter 4 ft. weir with 2.25 ft. weir height ID 16.02B (See Earthen Dam with Skimmer Detail)

Pi Sta 226+59.46
 $\Delta = 1' 48' 42.9'' (RT)$
 $D = 0' 28' 38.9''$
 $L = 379.49'$
 $T = 189.76'$
 $R = 12,000.00'$
 $SF = NC$



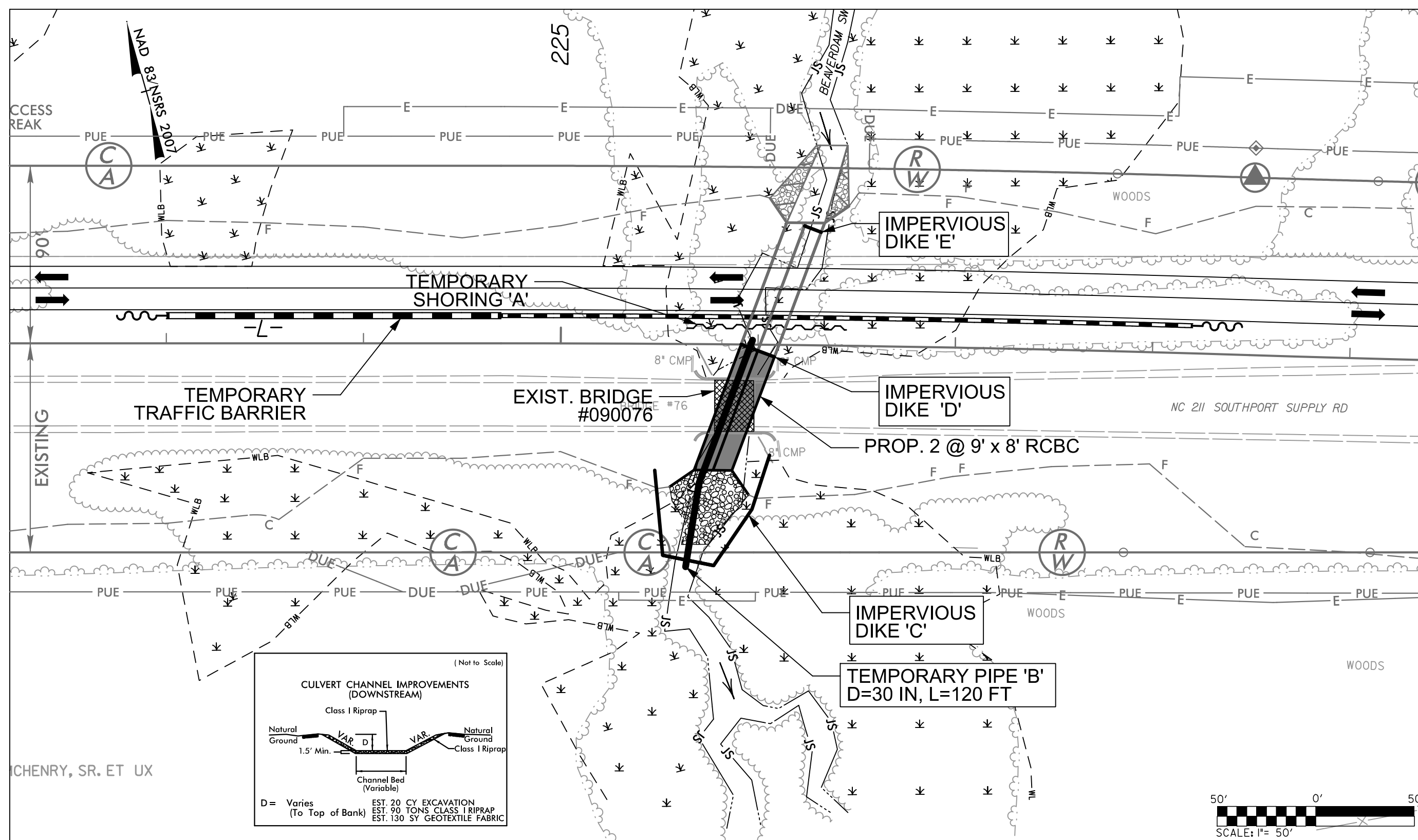
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-16A/CONST.16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

R-5021 CULVERT PHASING 3 OF 6 NC 211 OVER BEAVERDAM SWAMP BRUNSWICK COUNTY -L- 226+01



PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING CULVERT CONSTRUCTION.
2. INSTALL IMPERVIOUS DIKE 'A' AROUND WORK AREA. INSTALL IMPERVIOUS DIKES 'B' AND TEMPORARY PIPE 'A'.
3. DEWATER CONSTRUCTION AREA INTO SPECIAL STILLING BASIN(S).
4. CONSTRUCT APPROXIMATELY 70 FT OF PROPOSED 2 @ 9' x 8' RCBC. CONSTRUCT HEADWALL, WINGWALLS, AND UPSTREAM CHANNEL IMPROVEMENTS.
4. REMOVE IMPERVIOUS DIKE(S) 'A' & 'B' & TEMPORARY PIPE 'A'. INSTALL TEMPORARY SHORING 'A' AND CONSTRUCT PROPOSED WESTBOUND NC 211.



PHASE II

1. INSTALL TEMPORARY TRAFFIC BARRIER. SHIFT TRAFFIC TO PROPOSED WESTBOUND NC 211.
2. REMOVE EXISTING BRIDGE #090076 IN ITS ENTIRETY.
3. INSTALL IMPERVIOUS DIKES 'C', 'D', & 'E'. INSTALL TEMPORARY PIPE 'B'.
4. DEWATER CONSTRUCTION AREA(S) INTO SPECIAL STILLING BASIN(S) AS NEEDED.
5. CONSTRUCT REMAINDER OF PROPOSED 2 @ 9' x 8' RCBC. CONSTRUCT HEADWALL, WINGWALLS, AND DOWNSTREAM CHANNEL IMPROVEMENTS.
6. REMOVE IMPERVIOUS DIKES 'C', 'D', & 'E', TEMPORARY SHORING 'A', TEMPORARY PIPE 'B' AND ANY REMAINING SPECIAL STILLING BASIN(S).
7. CONSTRUCT EASTBOUND LANES OF PROPOSED NC 211.
8. COMPLETE CONSTRUCTION OF EASTBOUND AND WESTBOUND LANES AND SHIFT TRAFFIC INTO FINAL PATTERN.

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-17/CONST.17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

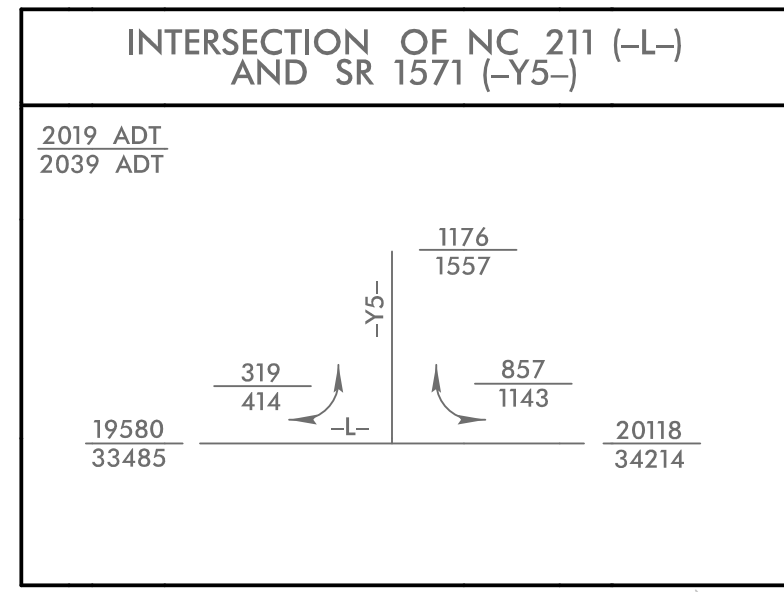
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 Raleigh, North Carolina 27609
 NC License No: C-1554

CEILING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 17

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

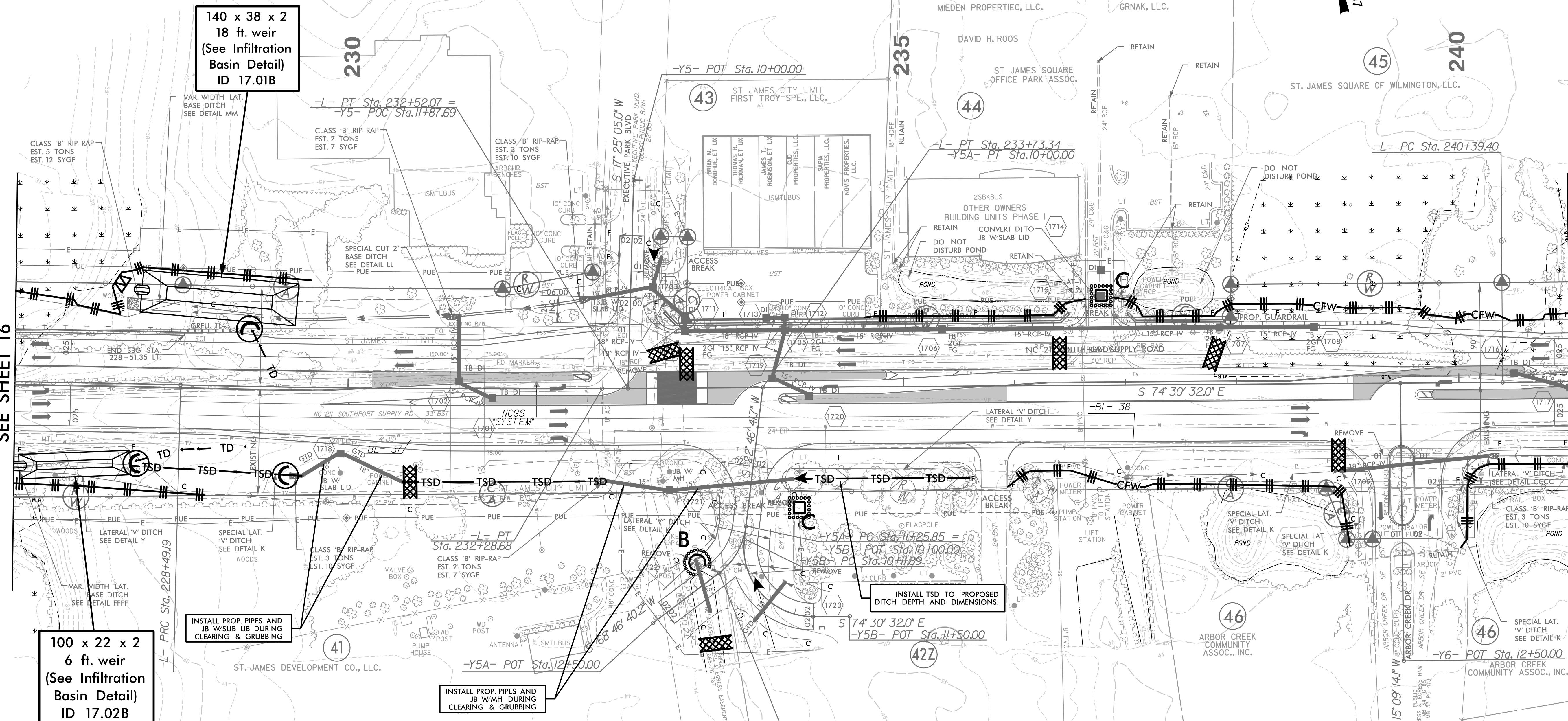
NOTE:
 UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL
 AREAS, AND AS DIRECTED

NOTE:
 INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU
 OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED.



MATCH LINE -L- STA 227+00.00
 SEE SHEET 16

MATCH LINE -L- STA 241+00.00
 SEE SHEET 18

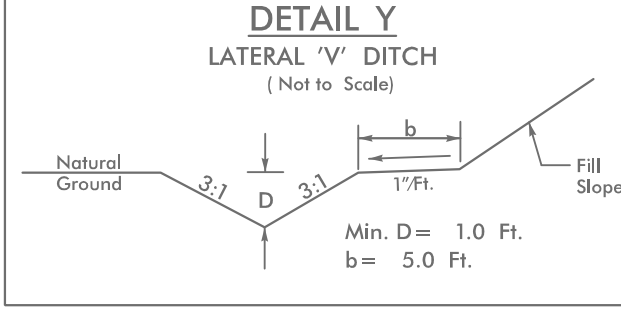
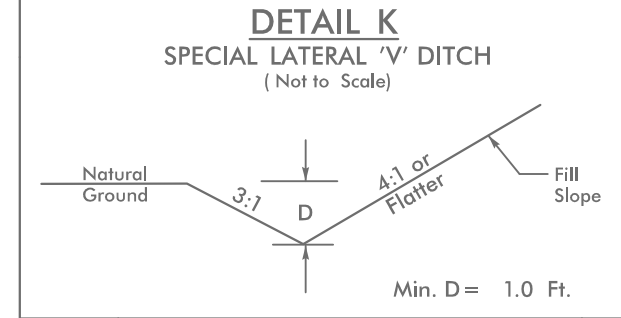
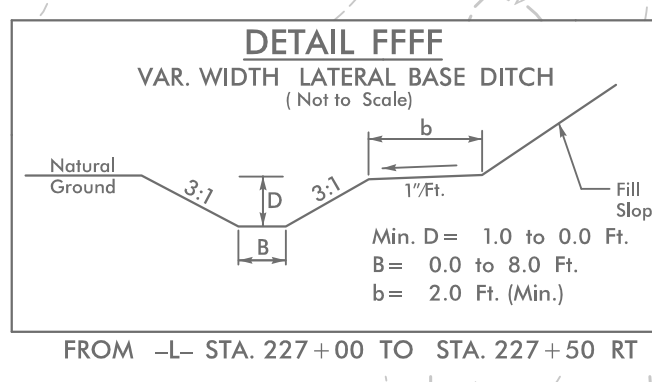
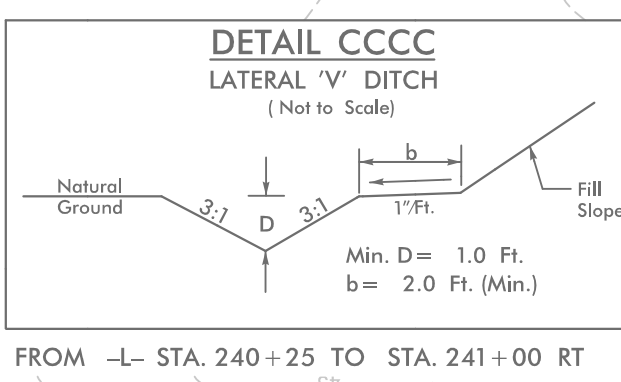
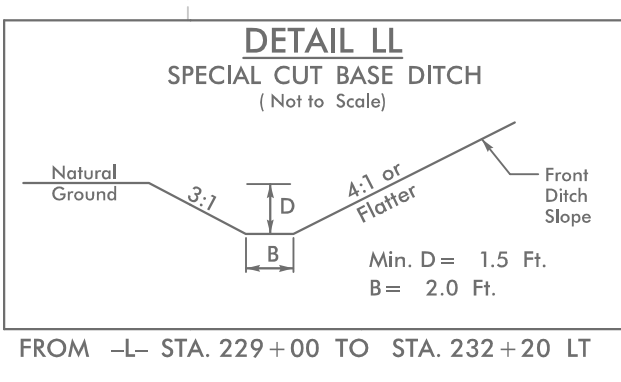
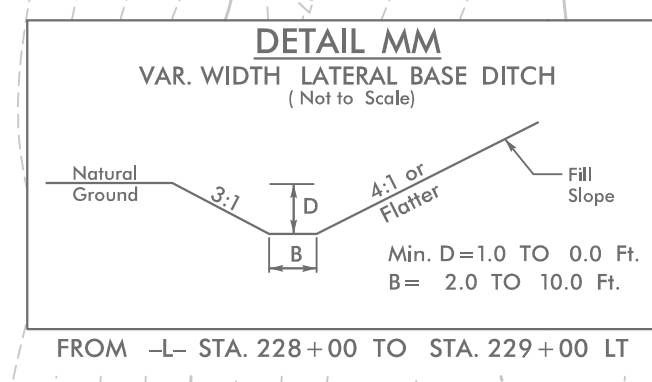


100 x 22 x 2
 6 ft. weir
 (See Infiltration
 Basin Detail)
 ID 17.02B

INSTALL PROP PIPES AND
 JB W/SLAB LIB DURING
 CLEARING & GRUBBING

INSTALL PROP PIPES AND
 JB W/WH DURING
 CLEARING & GRUBBING

INSTALL TSD TO PROPOSED
 DITCH DEPTH AND DIMENSIONS.



FROM -L- STA. 237+00 TO STA. 238+93 RT
 FROM -Y6- STA. 10+75 TO STA. 11+25 LT
 FROM -L- STA. 228+25 TO STA. 232+30 RT
 FROM -Y5A- STA. 11+00 TO STA. 12+25 RT
 FROM -Y5B- STA. 10+00 TO STA. 11+00 LT

FROM -L- STA. 227+50 TO STA. 228+25 RT
 FROM -L- STA. 233+25 TO STA. 235+50 RT

5/14/99

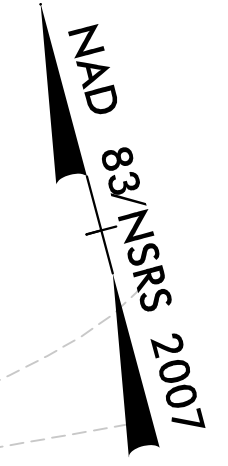
NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

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

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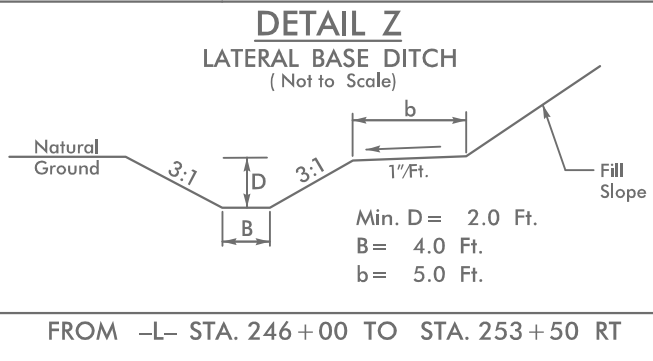
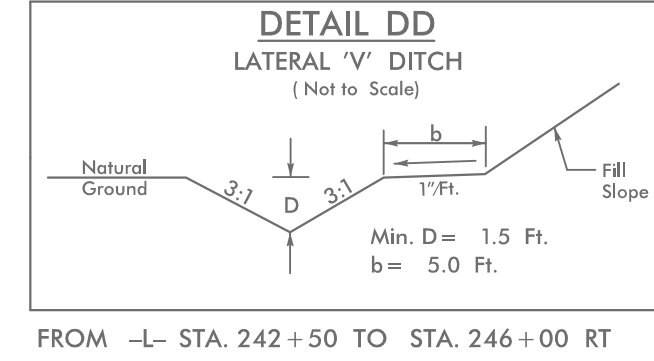
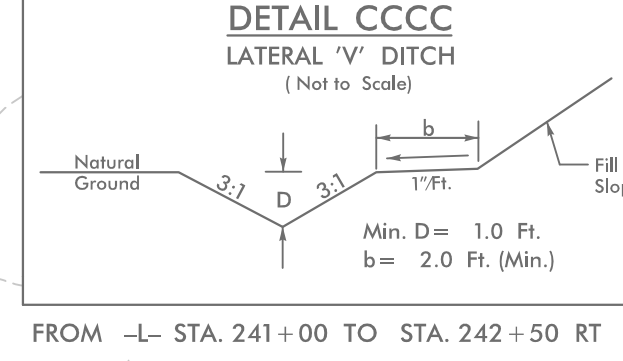
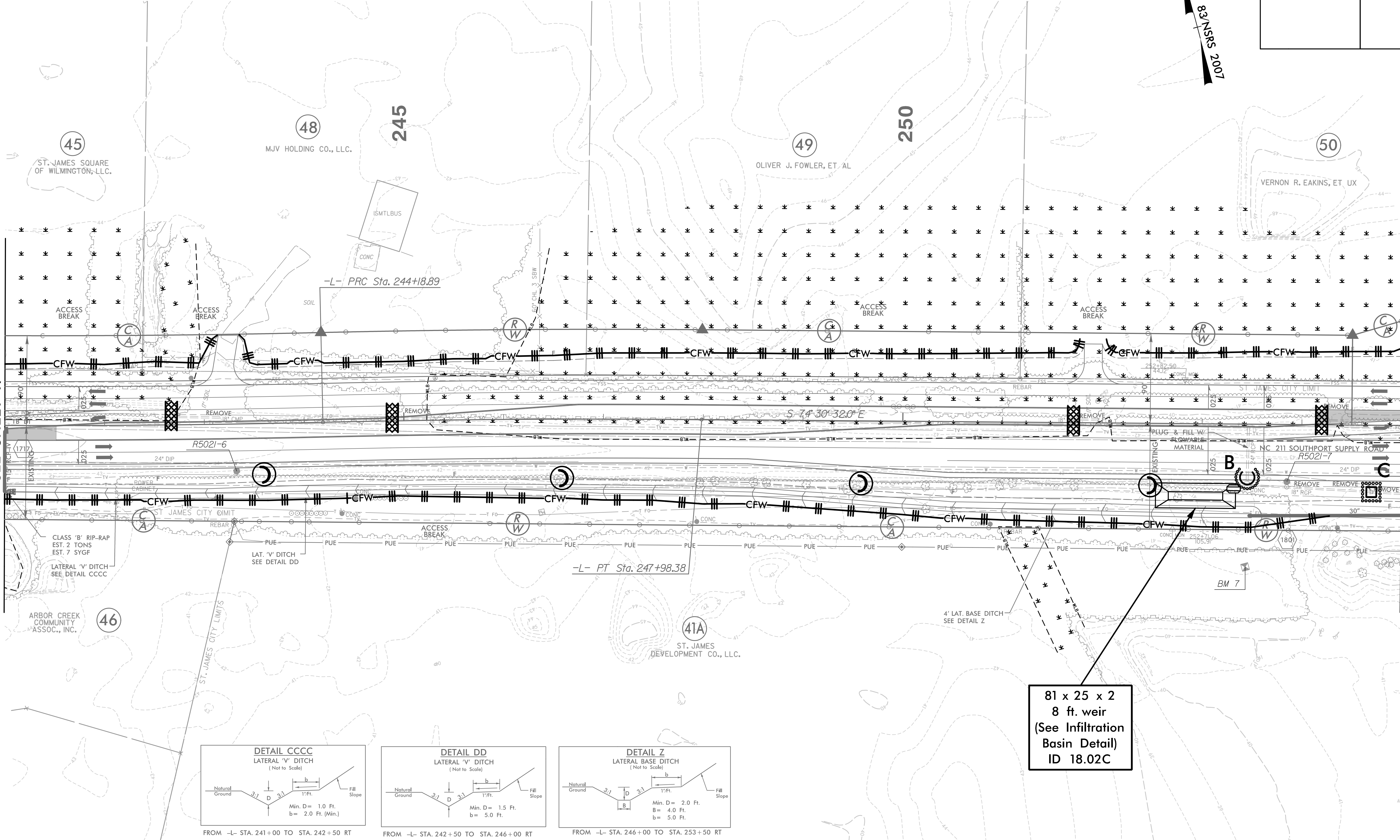
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-18/CONST.18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 18



MATCH LINE -L- STA 241+00.00
SEE SHEET 17

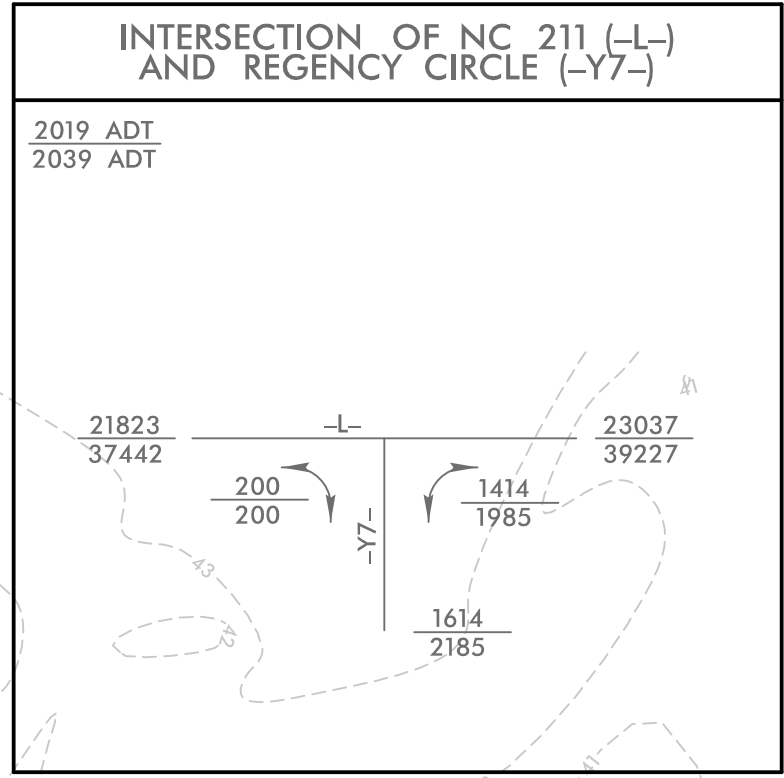
MATCH LINE -L- STA 255+00.00
SEE SHEET 19



81 x 25 x 2
8 ft. weir
(See Infiltration Basin Detail)
ID 18.02C

4/22/2021
4/22/2021 EC_PSH18.dgn
HNTB

5/14/99



NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

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NC License No: C-1554

PROJECT REFERENCE NO. R-5021	SHEET NO. EC-19/CONST.19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

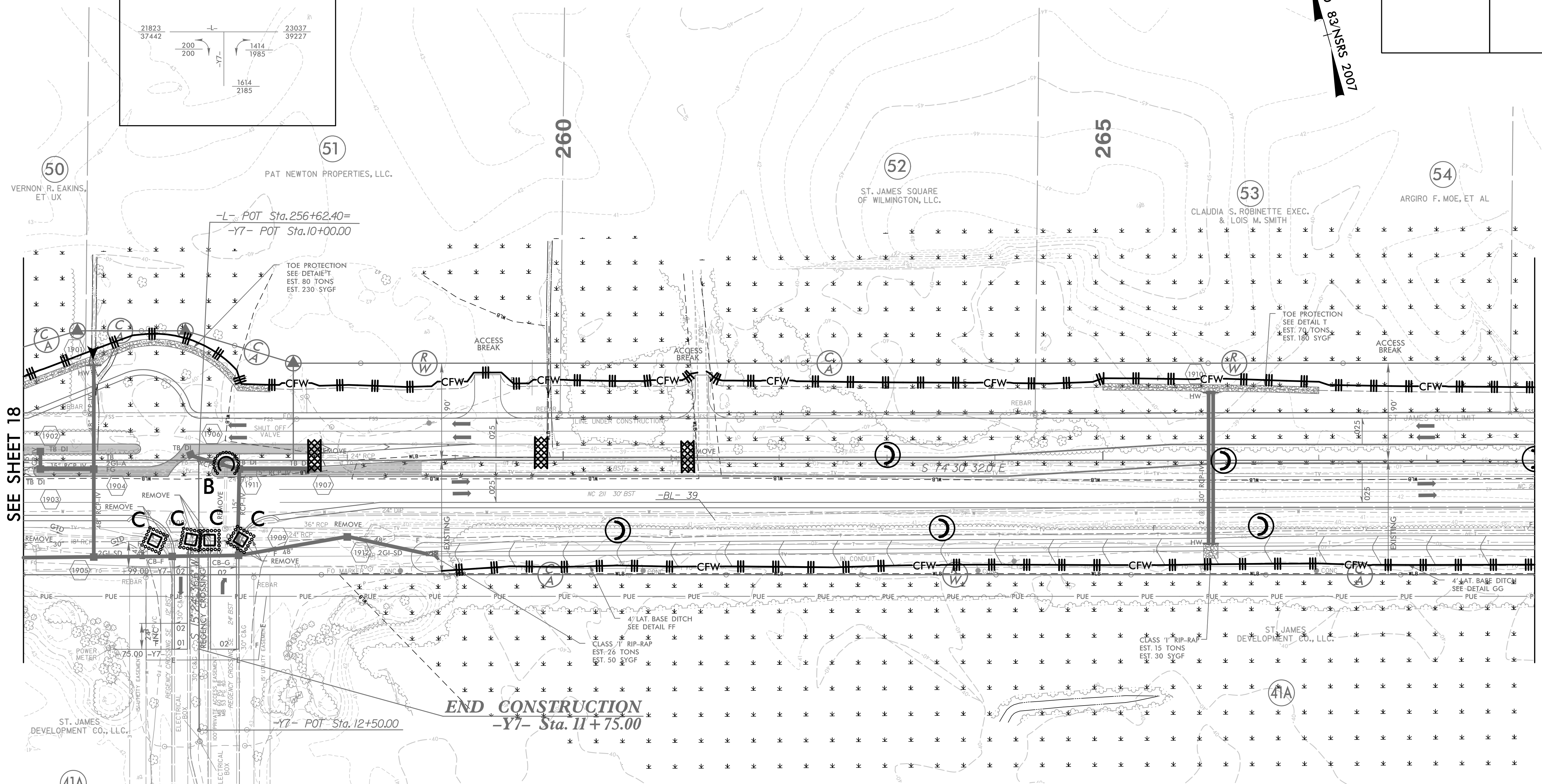
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 19

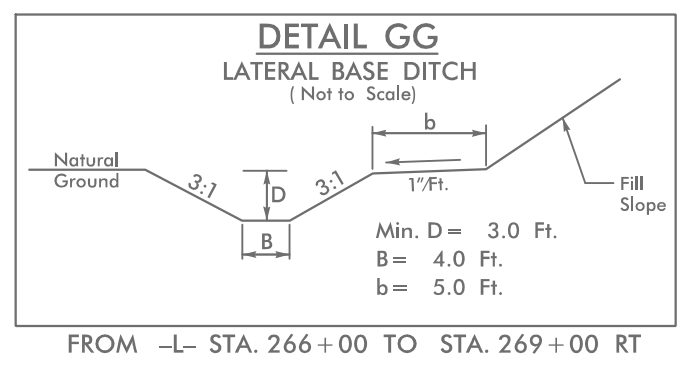
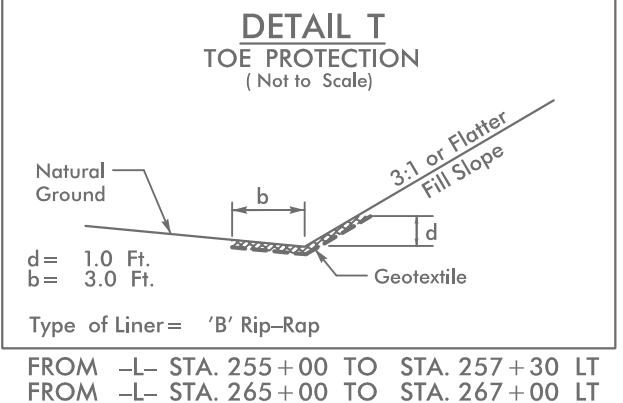
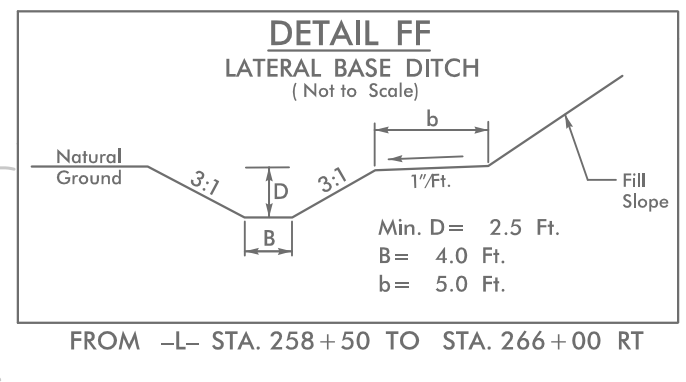
NAD 83 NSRS 2007

MATCH LINE -L- STA 255 + 00.00
SEE SHEET 18

MATCH LINE -L- STA 269 + 00.00
SEE SHEET 20



END CONSTRUCTION
-Y7- Sta. 11 + 75.00



5/14/99

5/14/2021_EC_PSH20.dgn

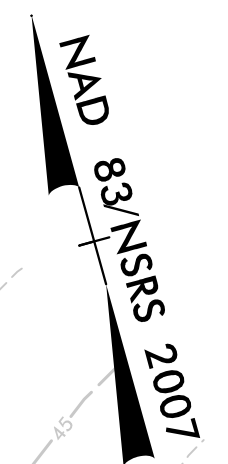
NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL AREAS, AND AS DIRECTED

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

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NC License No: C-1554

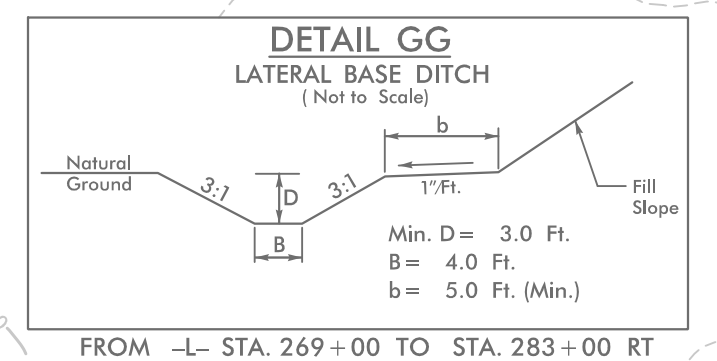
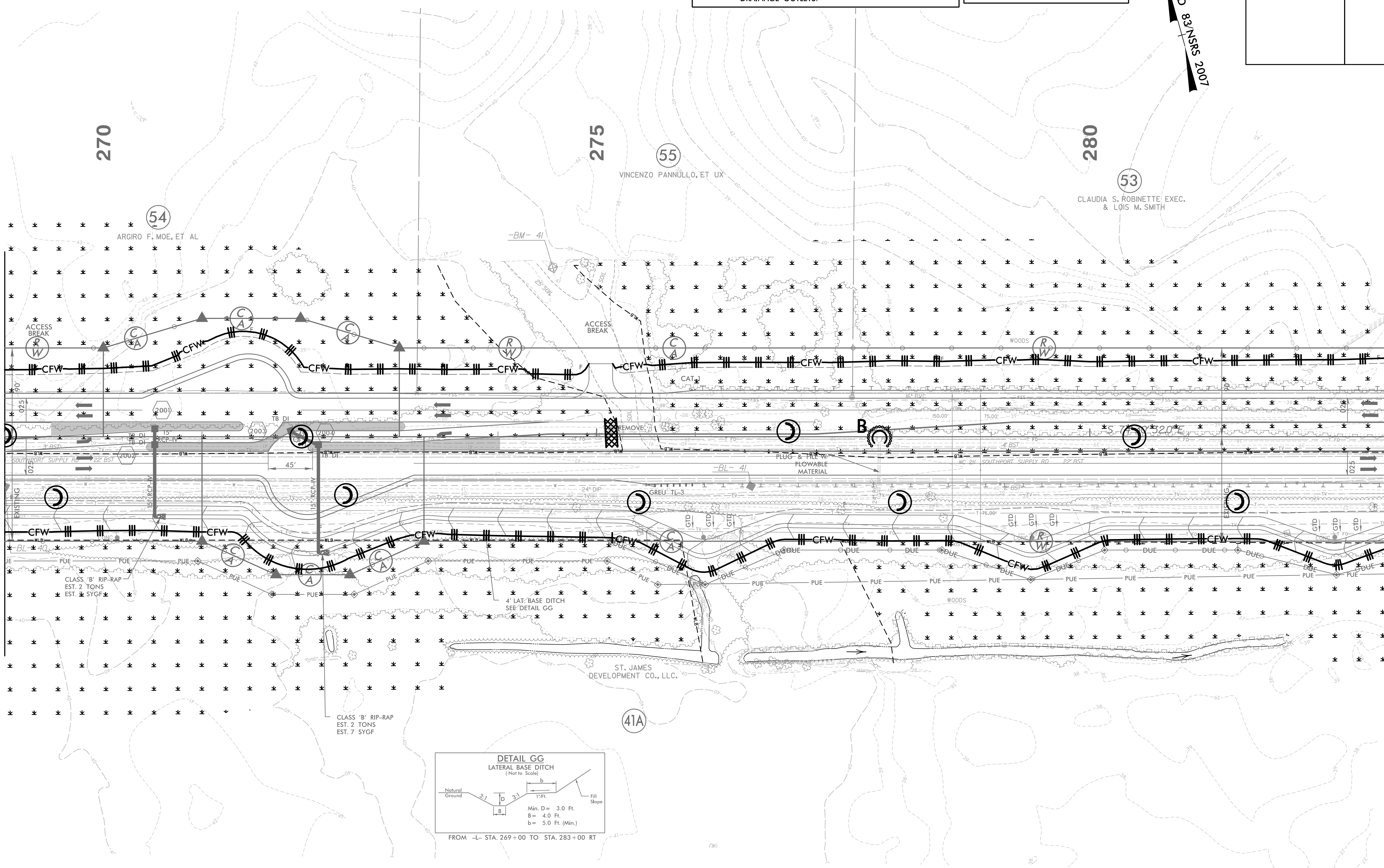
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 20

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-20/CONST.20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

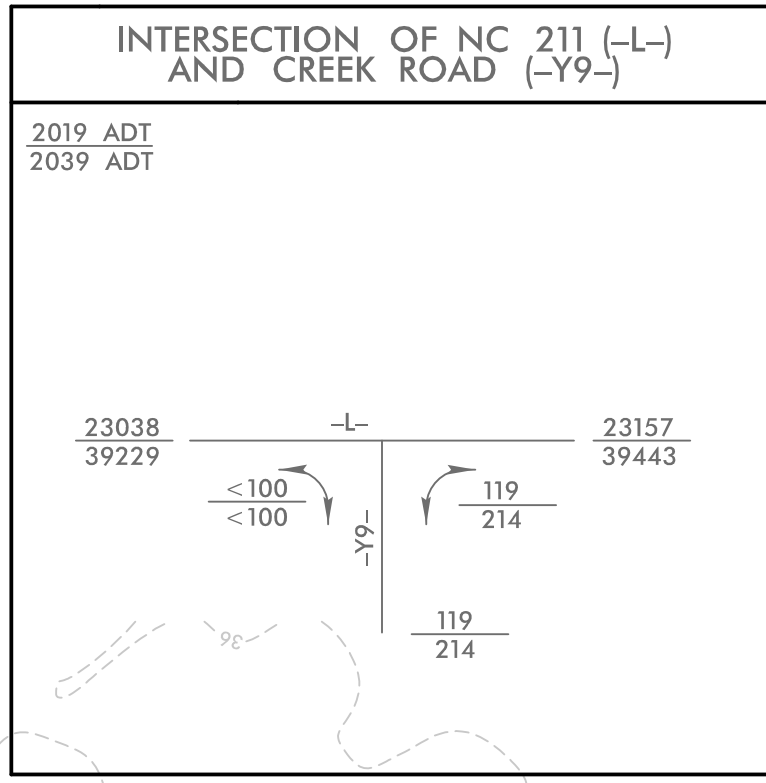


MATCH LINE -L- STA 269+00.00
SEE SHEET 19

MATCH LINE -L- STA 283+00.00
SEE SHEET 21



5/14/99



NOTE:
UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND AS DIRECTED

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NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-22/CONST.22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 22

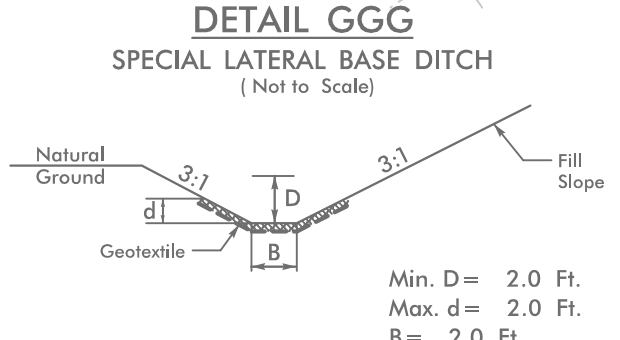
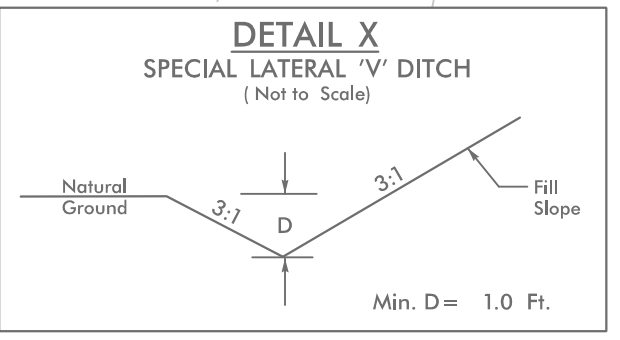
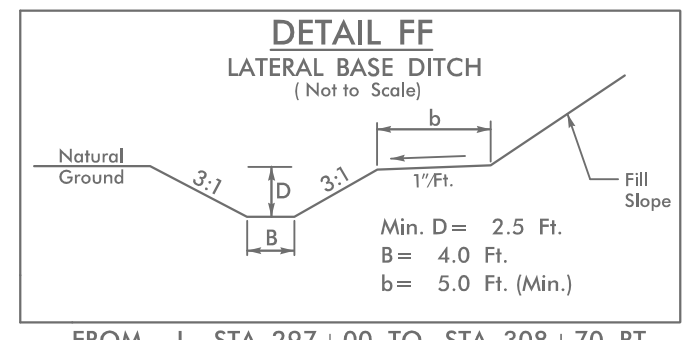
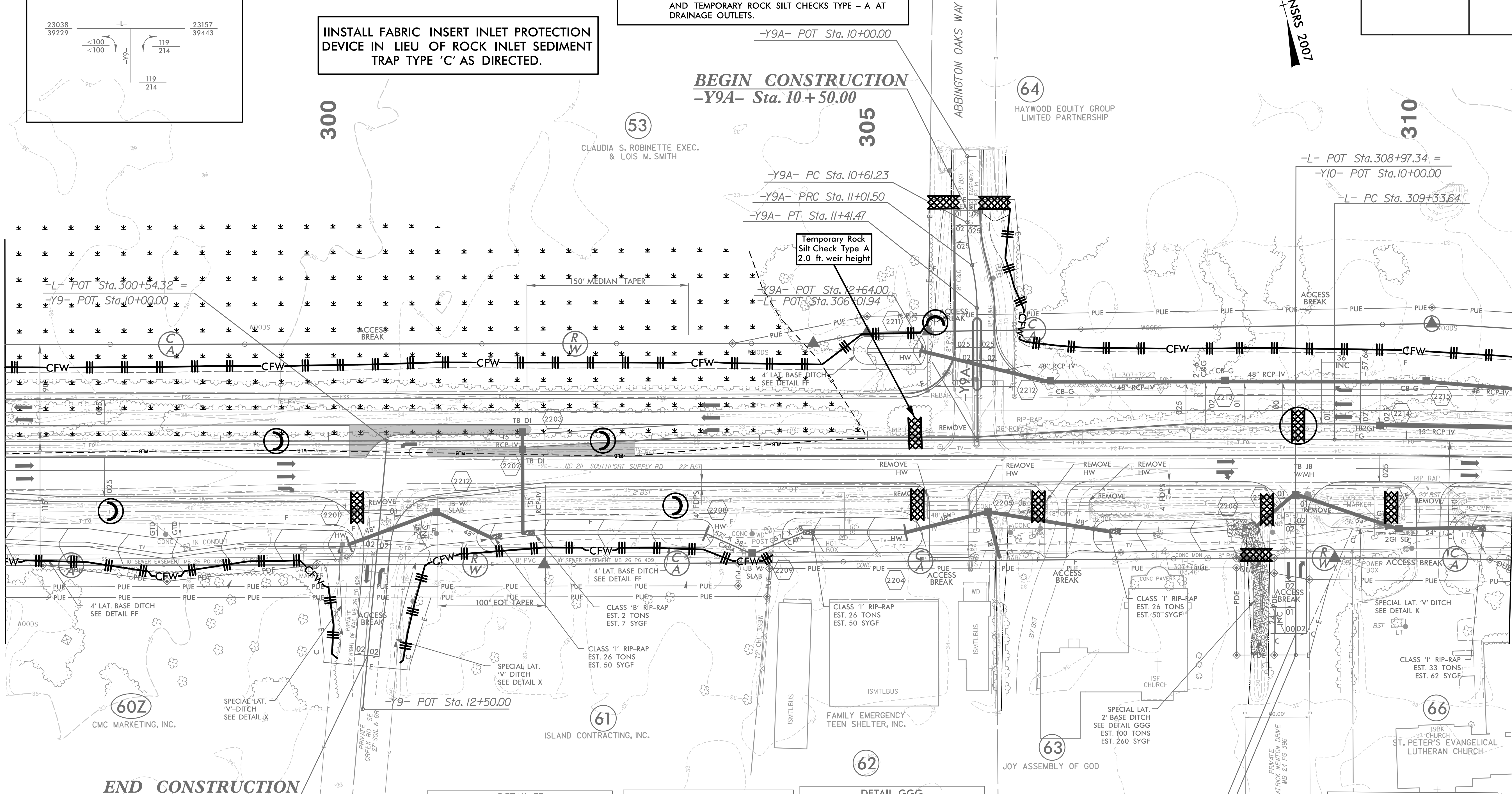
NOTE:
PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B
AND TEMPORARY ROCK SILT CHECKS TYPE - A AT
DRAINAGE OUTLETS.

INSTALL FABRIC INSERT INLET PROTECTION
DEVICE IN LIEU OF ROCK INLET SEDIMENT
TRAP TYPE 'C' AS DIRECTED.

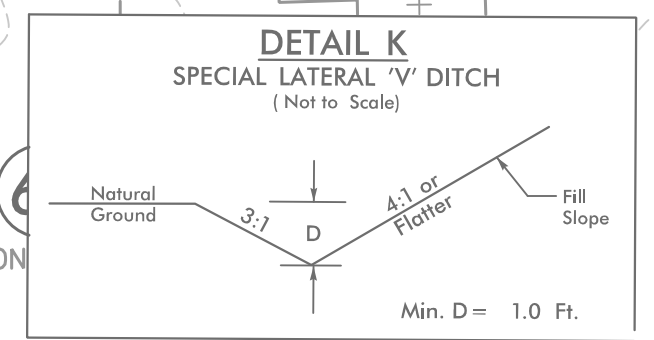
NAD
83NRSR 2007

MATCH LINE -L- STA 297 + 00.00
SEE SHEET 21

MATCH LINE -L- STA 311 + 00.00
SEE SHEET 23



END CONSTRUCTION
-Y10- Sta. 11 + 80.00
-Y10- POT Sta. 12+00.00



10/13/2021 EC_PSH22.dgn

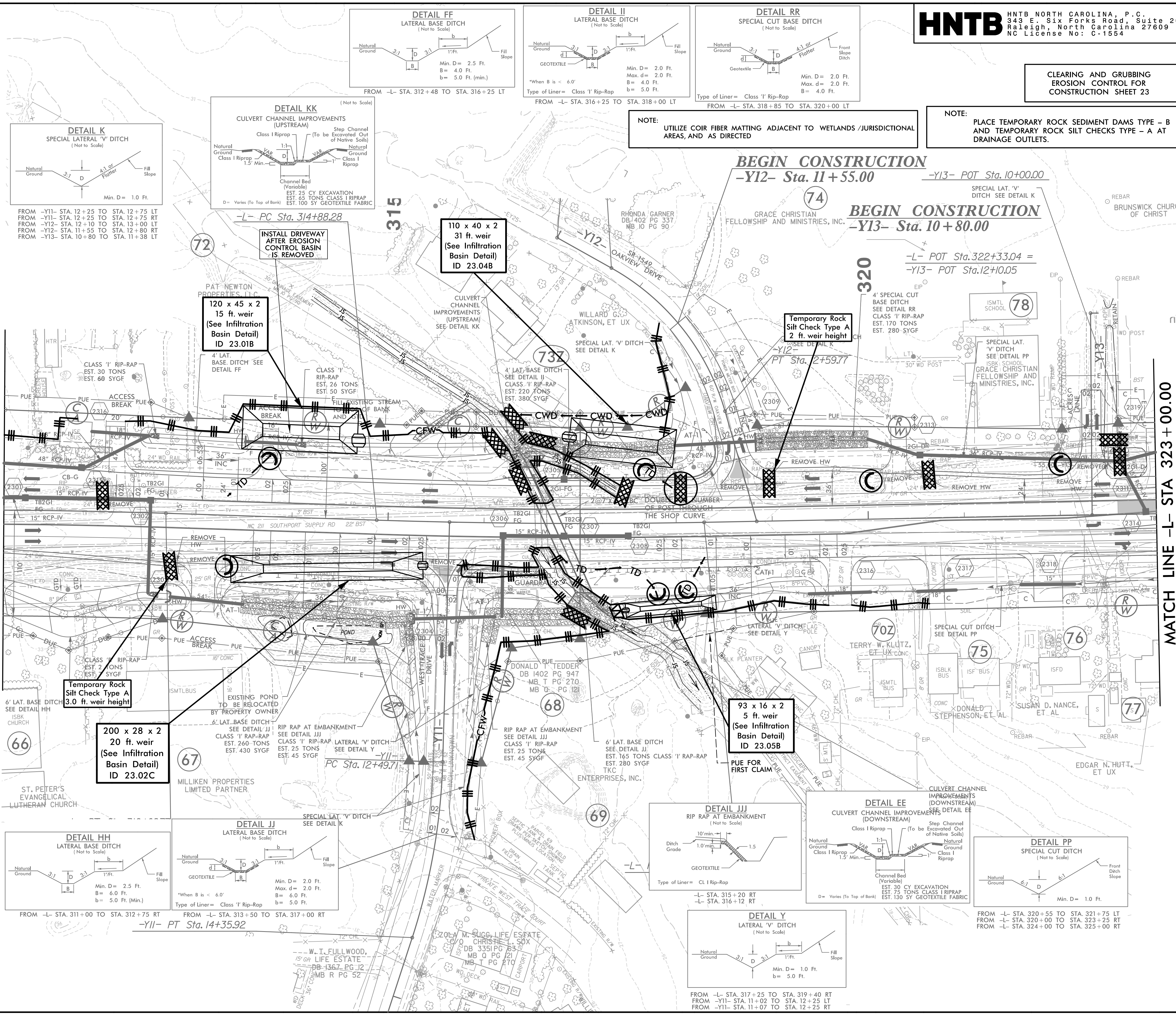
5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-23/CONST.23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CLEARING AND GRUBBING
 EROSION CONTROL FOR
 CONSTRUCTION SHEET 23

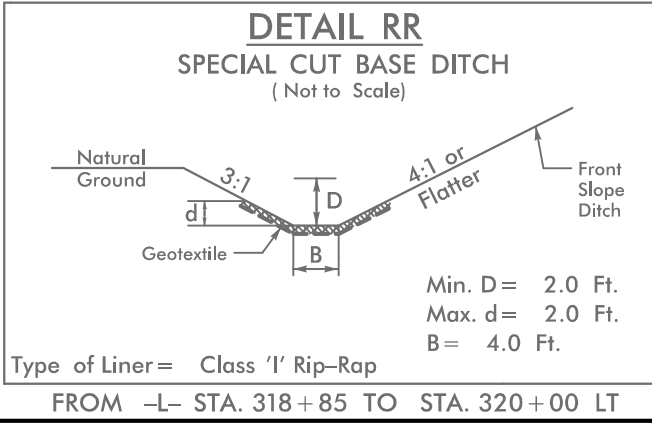
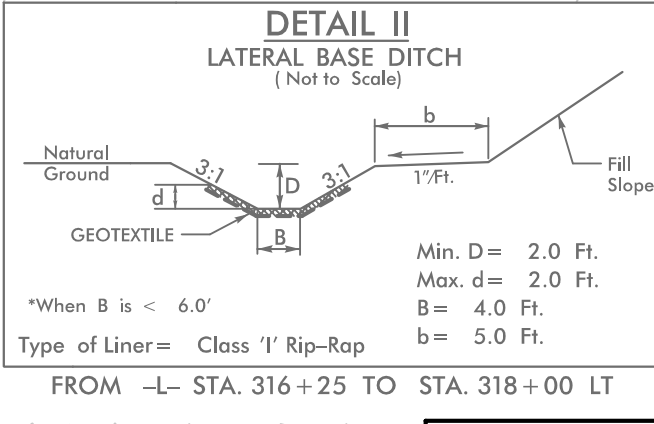
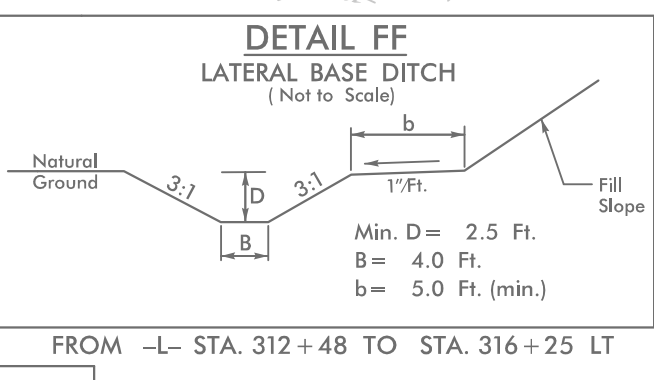
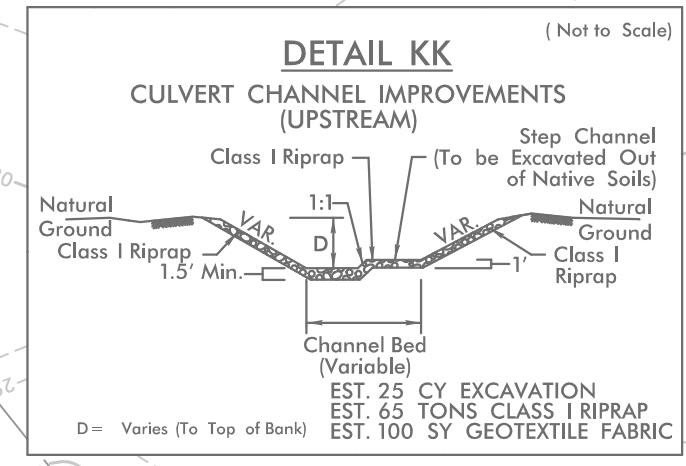
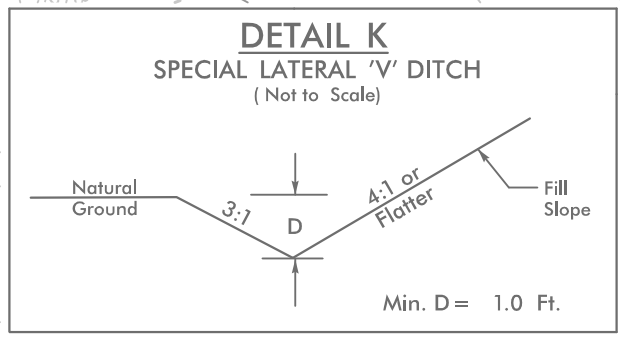
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND AS DIRECTED



MATCH LINE -L- STA 311+00.00
 SEE SHEET 22

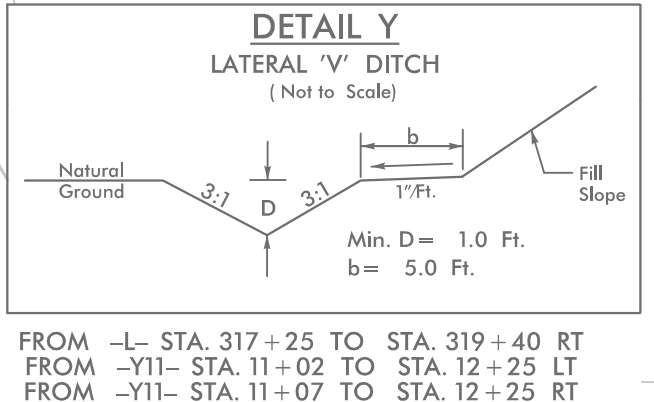
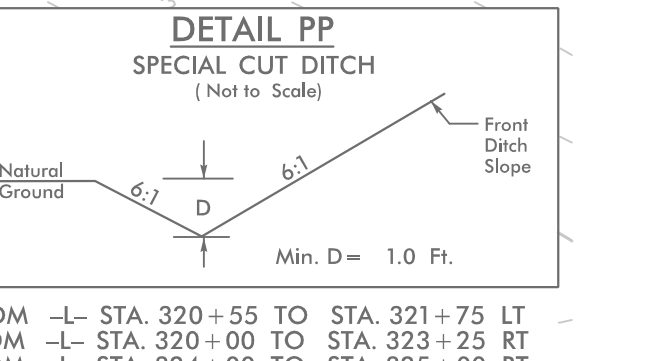
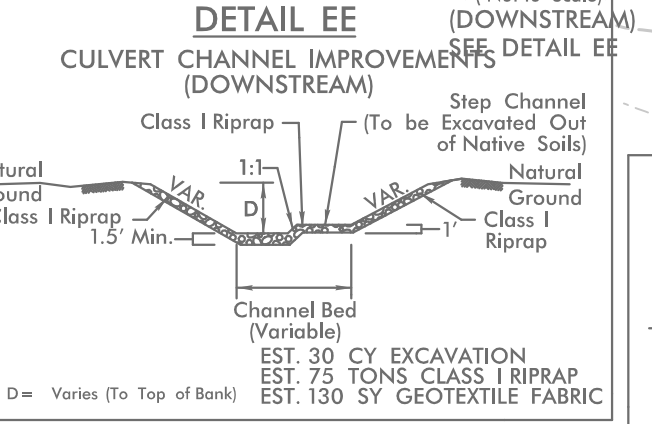
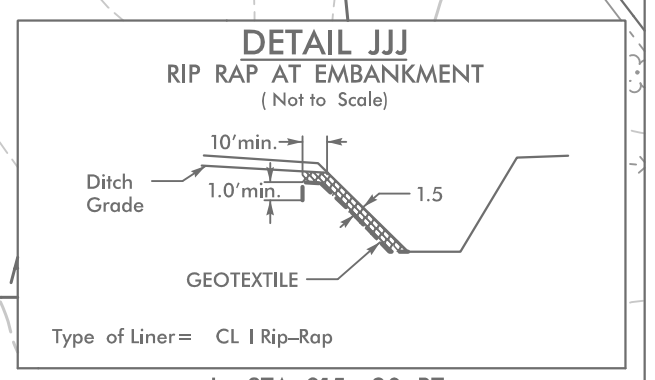
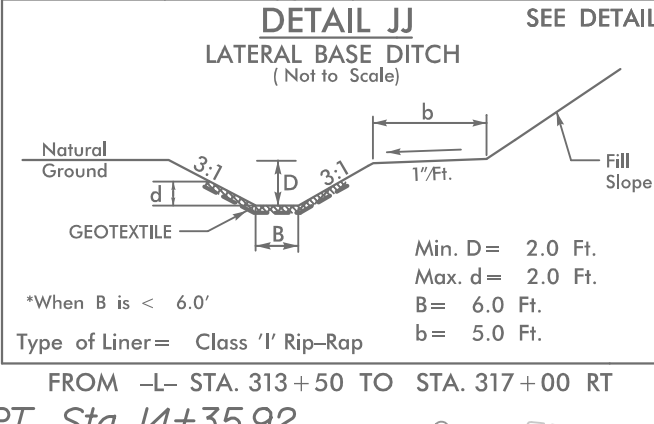
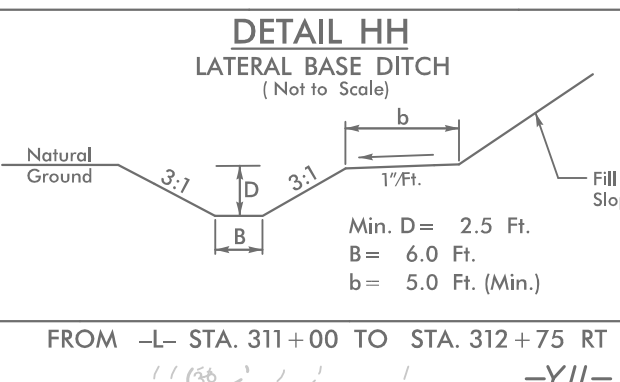
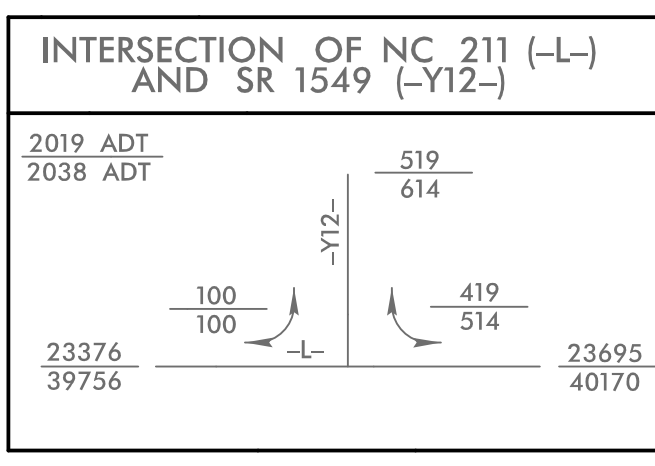
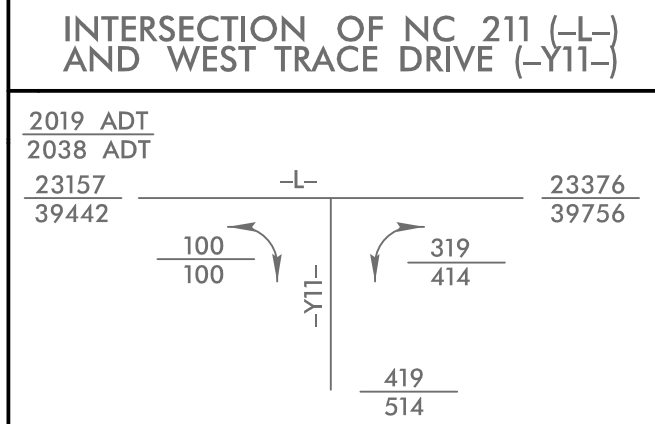
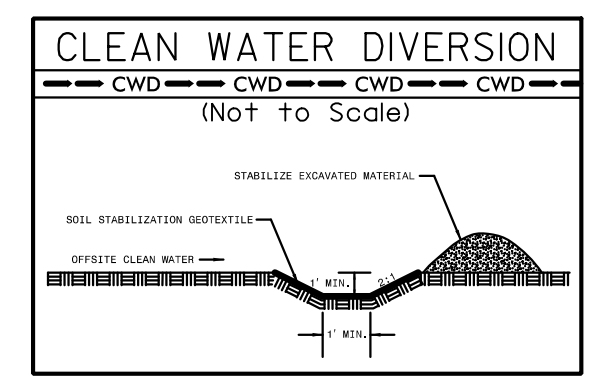
MATCH LINE -L- STA 323+00.00
 SEE SHEET 24



BEGIN CONSTRUCTION
 -Y12- Sta. 11+55.00

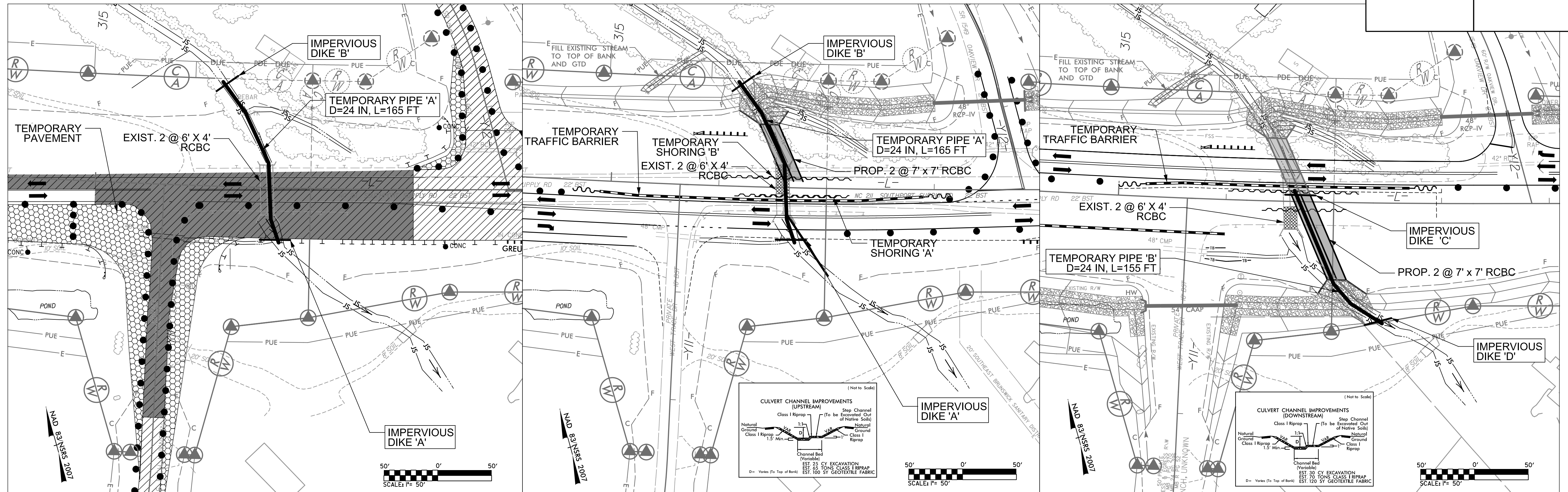
BEGIN CONSTRUCTION
 -Y13- Sta. 10+80.00

-L- POT Sta. 322+33.04 =
 -Y13- POT Sta. 12+10.05



10/13/2021 EC_PSH23.dgn

**R-5021 CULVERT PHASING 4 OF 6
NC 211 OVER UT TO JUMP AND RUN CREEK
BRUNSWICK COUNTY
-L- 316+72**



PHASE I

1. UTILIZE SPECIAL STILLING BASIN(S) AS NEEDED DURING CULVERT CONSTRUCTION.
2. INSTALL IMPERVIOUS DIKES 'A' & 'B'. INSTALL TEMPORARY PIPE 'A'.
3. DEWATER CONSTRUCTION AREA(S) INTO SPECIAL STILLING BASIN(S).
4. CONSTRUCT TEMPORARY FILL AND PAVEMENT.

PHASE II

1. SHIFT TRAFFIC TO TEMPORARY PAVEMENT. INSTALL TEMPORARY SHORING 'A' AND REMOVE APPROX. 27' OF EXISTING 2 @ 6' X 4' RCBC.
2. CONSTRUCT APPROX. 57' OF PROPOSED 2 @ 7' X 7' RCBC AND UPSTREAM CHANNEL IMPROVEMENTS.
3. INSTALL TEMPORARY SHORING 'B' AND CONSTRUCT WESTBOUND LANES OF PROPOSED NC 211.

PHASE III

1. SHIFT TRAFFIC TO PROPOSED WESTBOUND LANES OF NC 211.
2. REMOVE TEMPORARY PIPE 'A'. INSTALL IMPERVIOUS DIKES 'C' & 'D'. REMOVE IMPERVIOUS DIKES 'A' & 'B'. INSTALL TEMPORARY PIPE 'B'. REMOVE REMAINDER OF EXISTING 2 @ 6'X4' RCBC.
4. DEWATER CONSTRUCTION AREA(S) INTO SPECIAL STILLING BASIN(S).
5. CONSTRUCT REMAINDER OF PROPOSED 2 @ 7' x 7' RCBC AND DOWNSTREAM CHANNEL IMPROVEMENTS.
6. REMOVE IMPERVIOUS DIKES 'C' & 'D'. REMOVE TEMPORARY PIPE 'B' AND ANY REMAINING SPECIAL STILLING BASIN(S). CONSTRUCT EAST BOUND LANES OF PROPOSED NC 211.
7. REMOVE TEMPORARY SHORINGS AND COMPLETE CONSTRUCTION OF EASTBOUND AND WESTBOUND LANES AND SHIFT TRAFFIC INTO FINAL PATTERN.

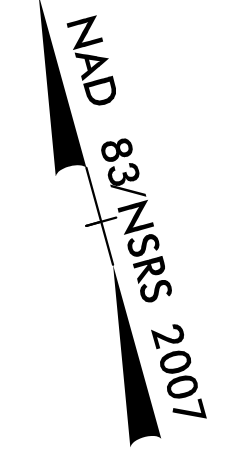
5/14/99

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 24

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PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-24/CONST.24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



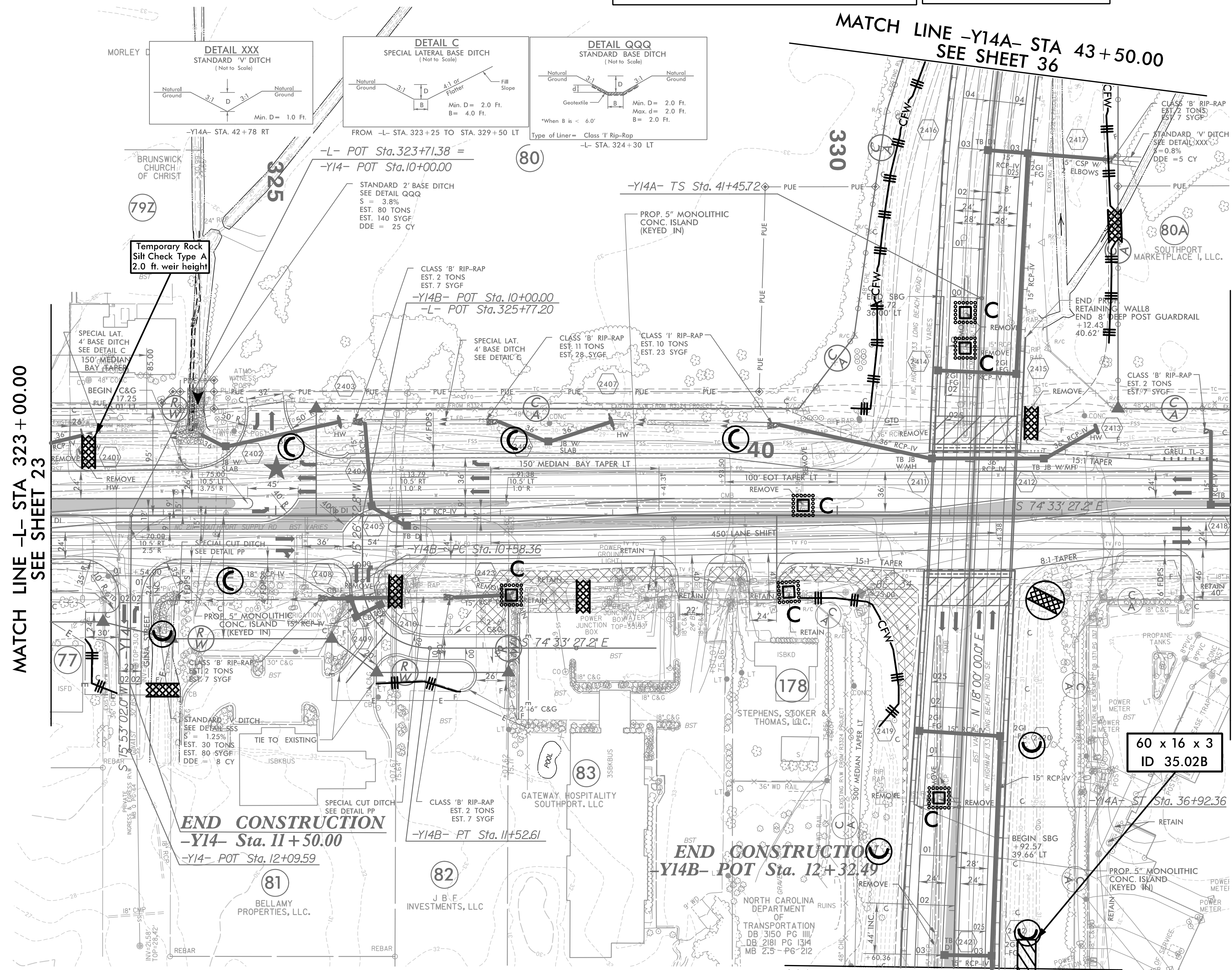
★ PROPOSED TRAFFIC SIGNAL

NOTE: INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED.

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND AS DIRECTED

MATCH LINE -L- STA 323 + 00.00 SEE SHEET 23

MATCH LINE -L- STA 333 + 50.00 SEE SHEET 24A



MATCH LINE -Y14- STA 35 + 50.00 SEE SHEET 35

5/14/2021_EC_PSH24.dgn

5/14/99

NOTE: UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS / JURISDICTIONAL AREAS, AND 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 24A

DO NOT DISTURB FENCE AROUND BRUNSWICK ELECTRIC PARCEL

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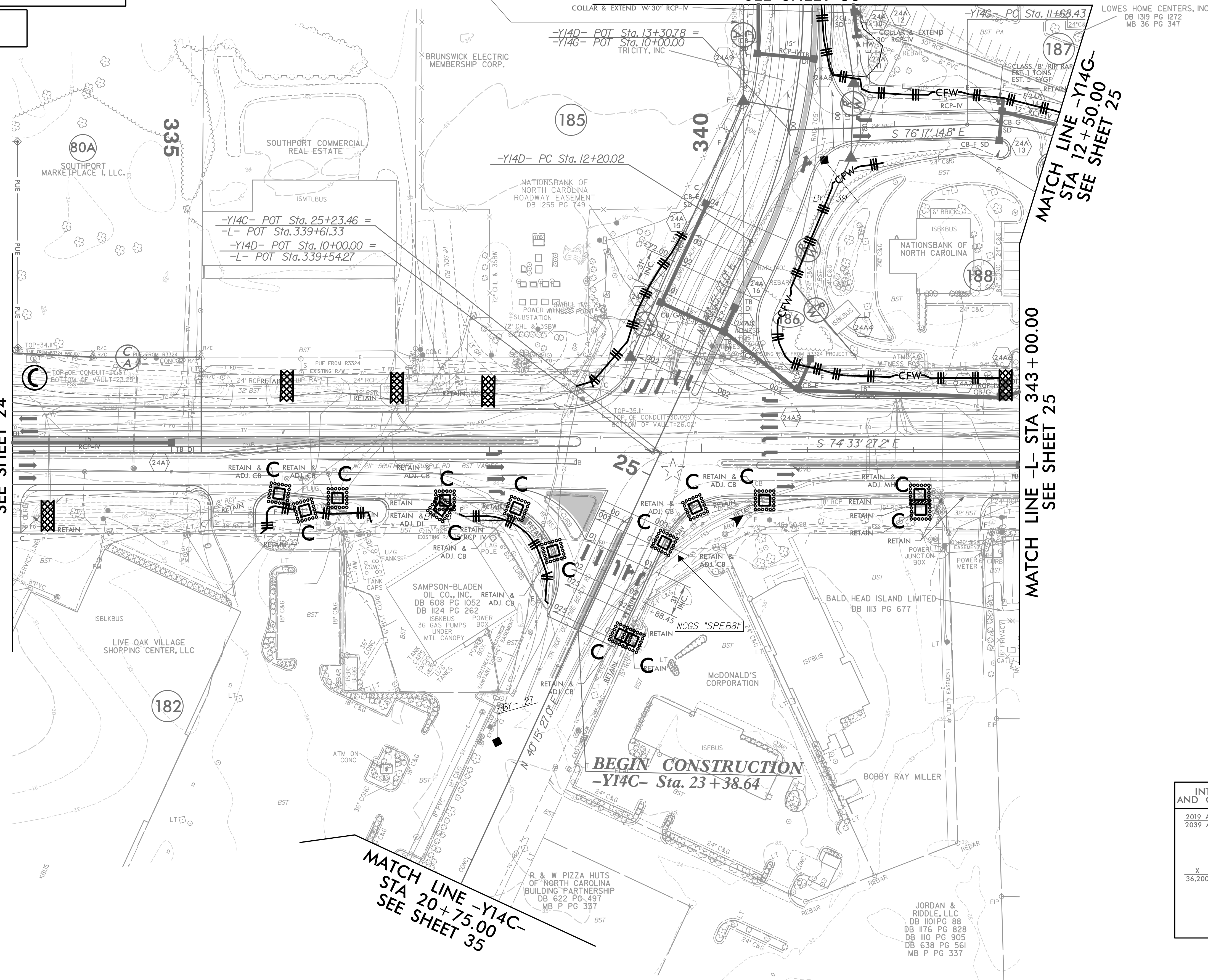
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-24A/CONST.24A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE -Y14D- STA 14 + 50.00
SEE SHEET 36

MATCH LINE -L- STA 333 + 50.00
SEE SHEET 24

MATCH LINE -L- STA 343 + 00.00
SEE SHEET 25

MATCH LINE -Y14G- STA 12 + 50.00
SEE SHEET 25



EXISTING TRAFFIC SIGNAL

NAD 83 NTSRS 2007

INTERSECTION OF NC 211 (-L-) AND OLD LONGBEACH RD (-Y14CD-)

2019 ADT	2039 ADT		
		-Y14D-	X
			28,800
	X	X	X
	13,500	-L-	8,500
X			X
36,200			38,100
	X	X	X
	4,500	-Y14C-	11,400
			X
			22,700

MATCH LINE -Y14C- STA 20 + 75.00
SEE SHEET 35

4/21/2021 EC_PSH24A.dgn

5/14/99

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU OF ROCK INLET SEDIMENT TRAP TYPE 'C' 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 25

HNTB HNTB NORTH CAROLINA, P.C. 343 E. Six Forks Road, Suite 200 Raleigh, North Carolina 27609 NC License No: C-1554

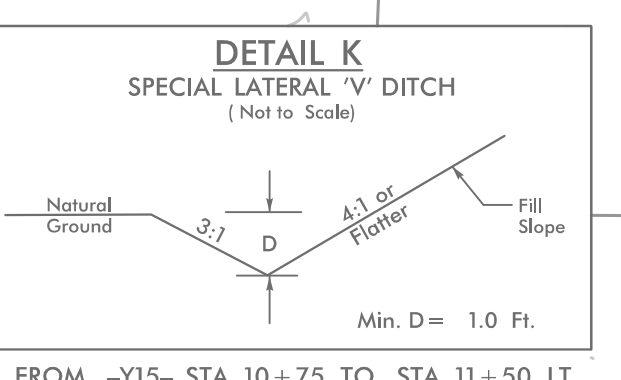
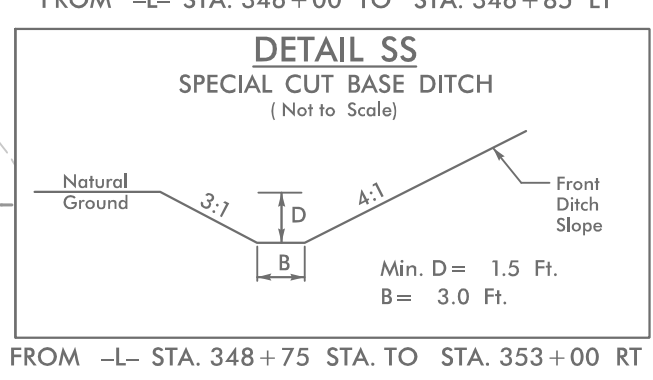
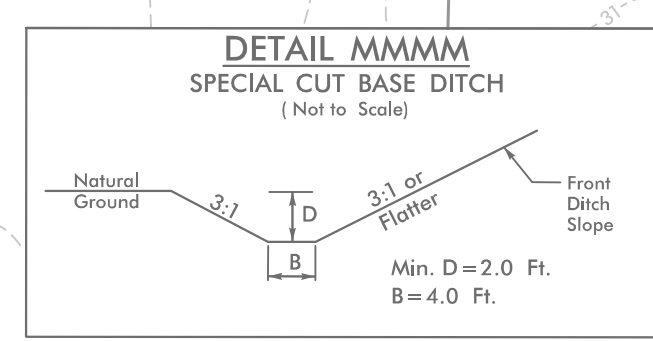
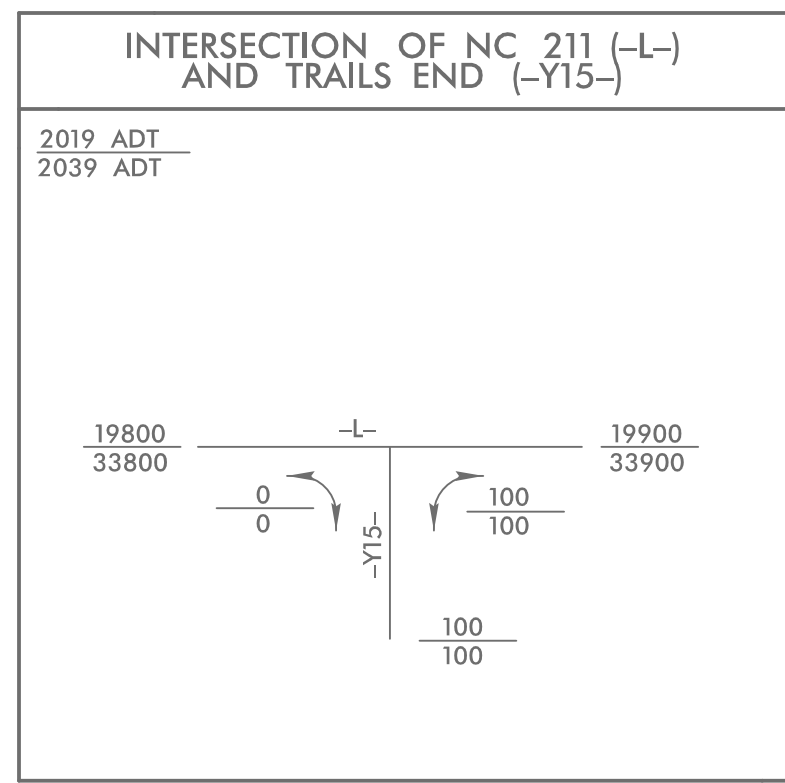
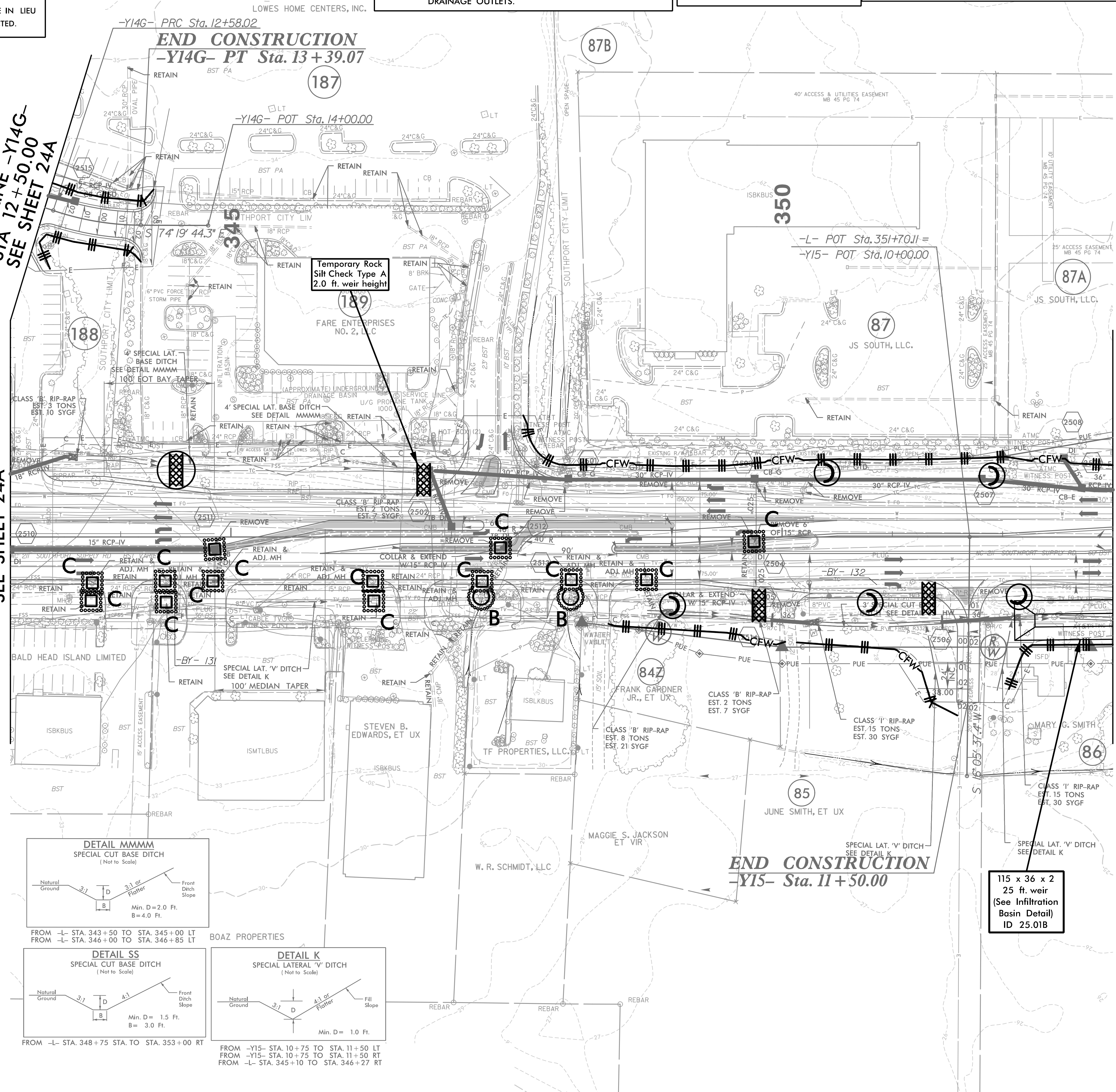
PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-25/CONST.25
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE -Y14G- STA 12+50.00 SEE SHEET 24A

MATCH LINE -L- STA 343+00.00 SEE SHEET 24A

MATCH LINE -L- STA 353+00.00 SEE SHEET 26

NAD 83/NSRS 2007



115 x 36 x 2
25 ft. weir
(See Infiltration
Basin Detail)
ID 25.01B

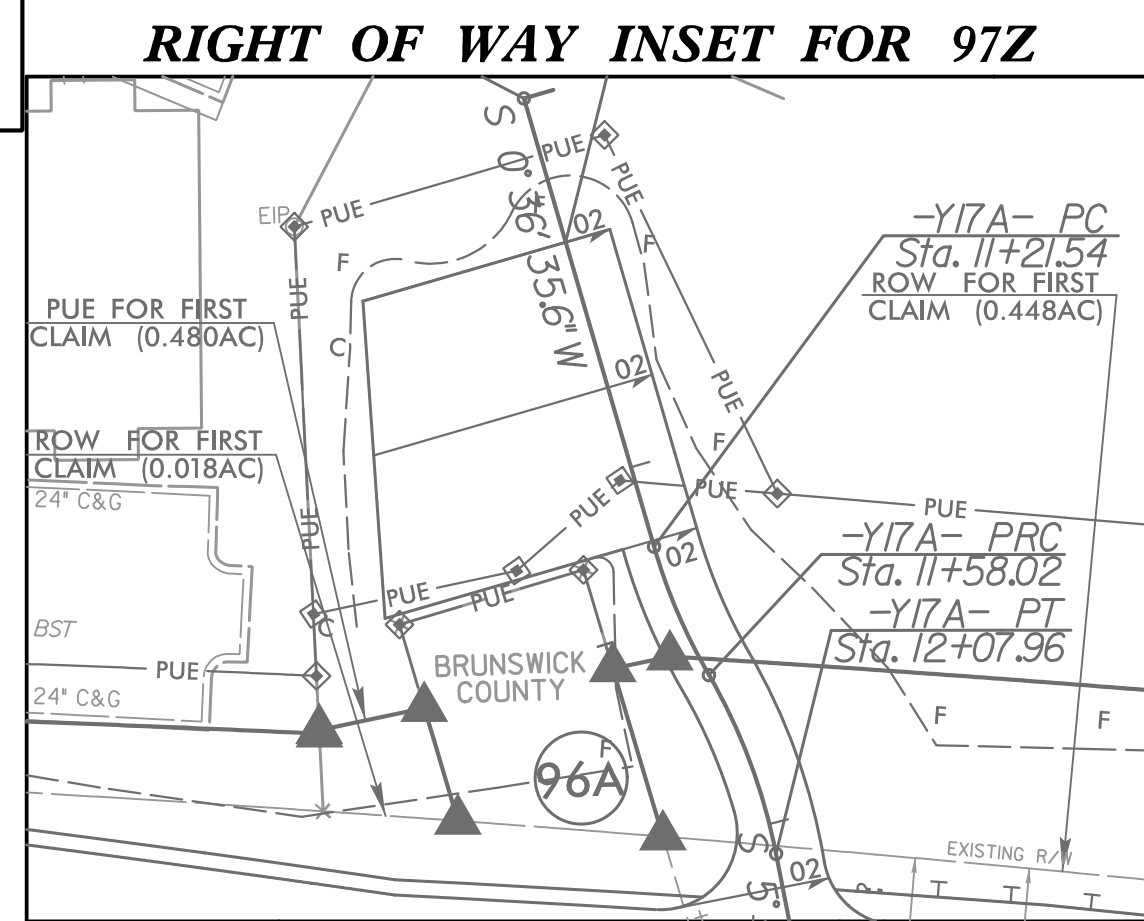
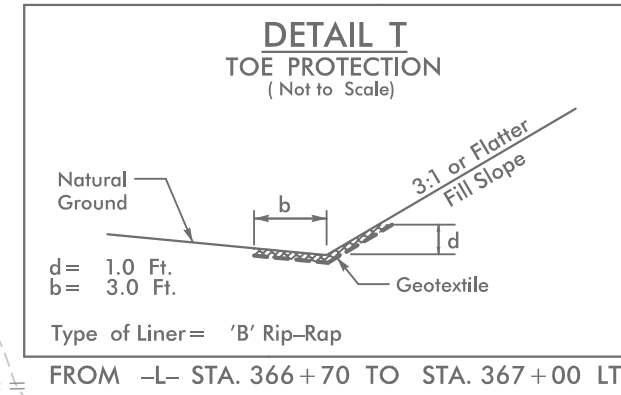
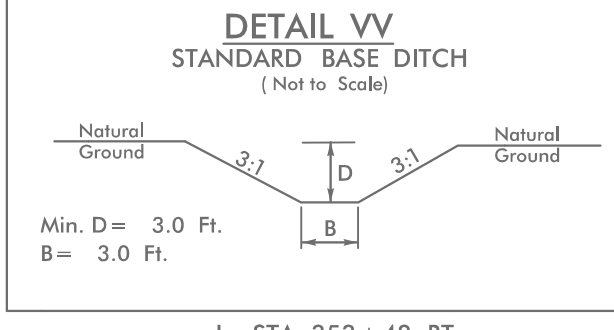
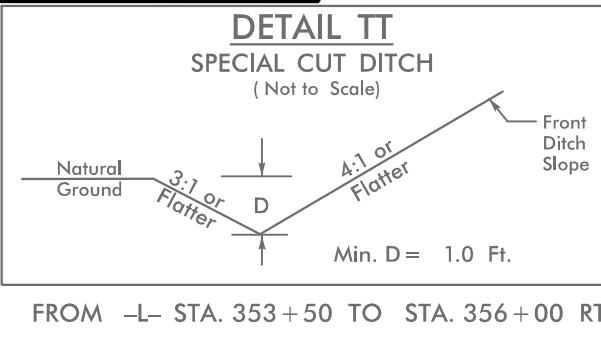
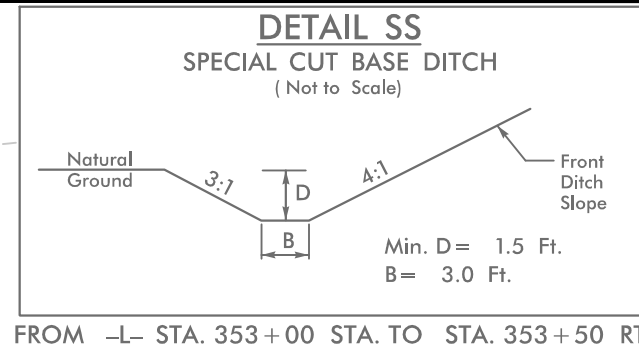
5/14/2021.EC_PSH25.dgn

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 26

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

INSTALL FABRIC INSERT INLET PROTECTION DEVICE IN LIEU
OF ROCK INLET SEDIMENT TRAP TYPE 'C' AS DIRECTED.

NOTE:
UTILIZE COIR FIBER MATTING ADJACENT TO WETLANDS /JURISDICTIONAL
AREAS, AND AS DIRECTED

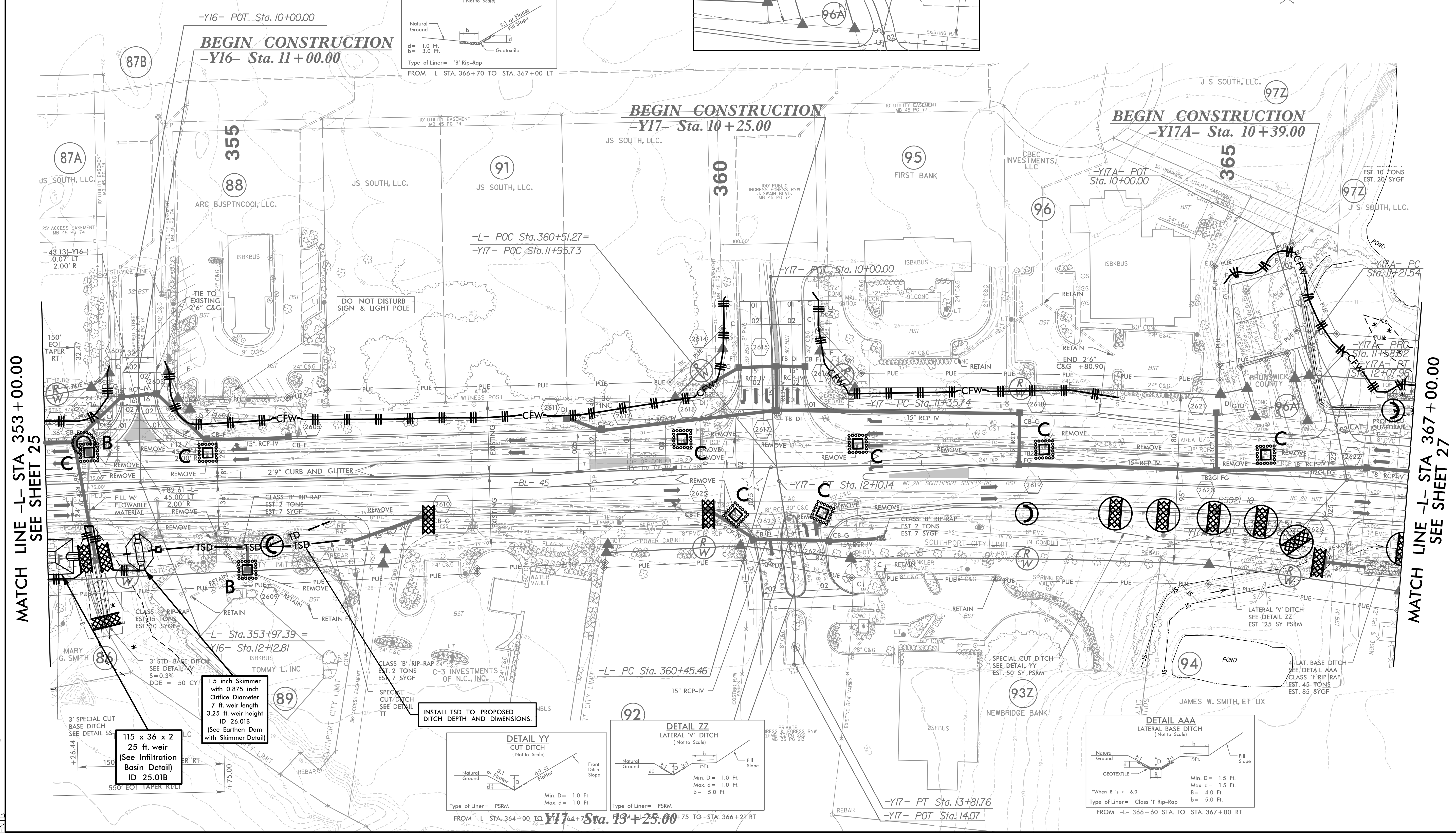


HNTB HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
R-5021	EC-26/CONST.26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



EXISTING TRAFFIC SIGNAL



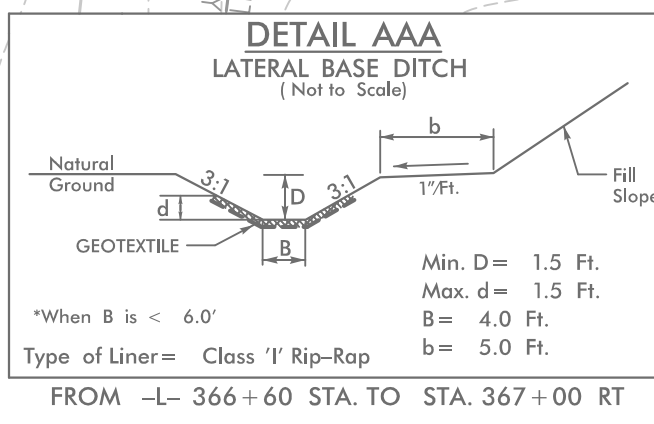
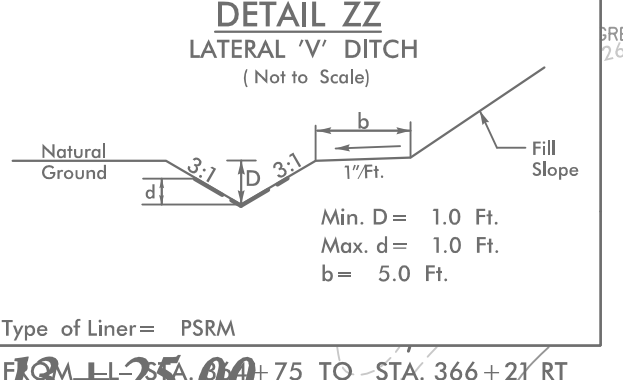
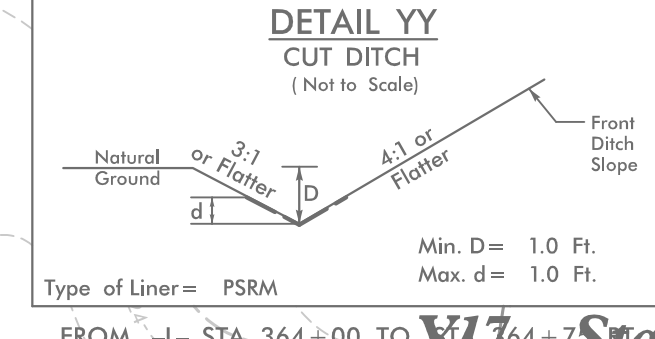
MATCH LINE -L- STA 353 + 00.00
SEE SHEET 25

MATCH LINE -L- STA 367 + 00.00
SEE SHEET 27

115 x 36 x 2
25 ft. weir
(See Infiltration
Basin Detail)
ID 25,01B

1.5 inch Skimmer
with 0.875 inch
Orifice Diameter
7 ft. weir length
ID 26,01B
(See Earthen Dam
with Skimmer Detail)

INSTALL TSD TO PROPOSED
DITCH DEPTH AND DIMENSIONS.



5/14/2021-EC_PSH26.dgn