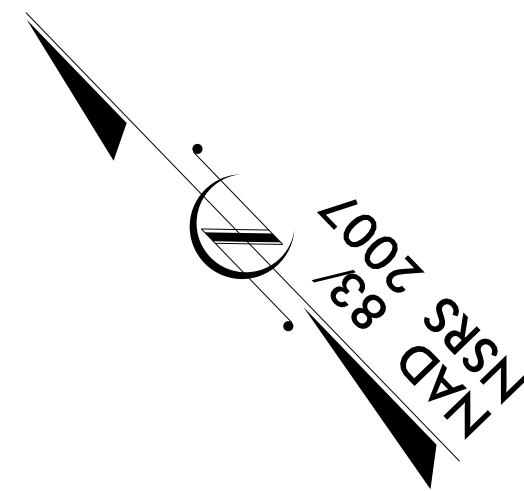


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**TIP PROJECT: B-4962**



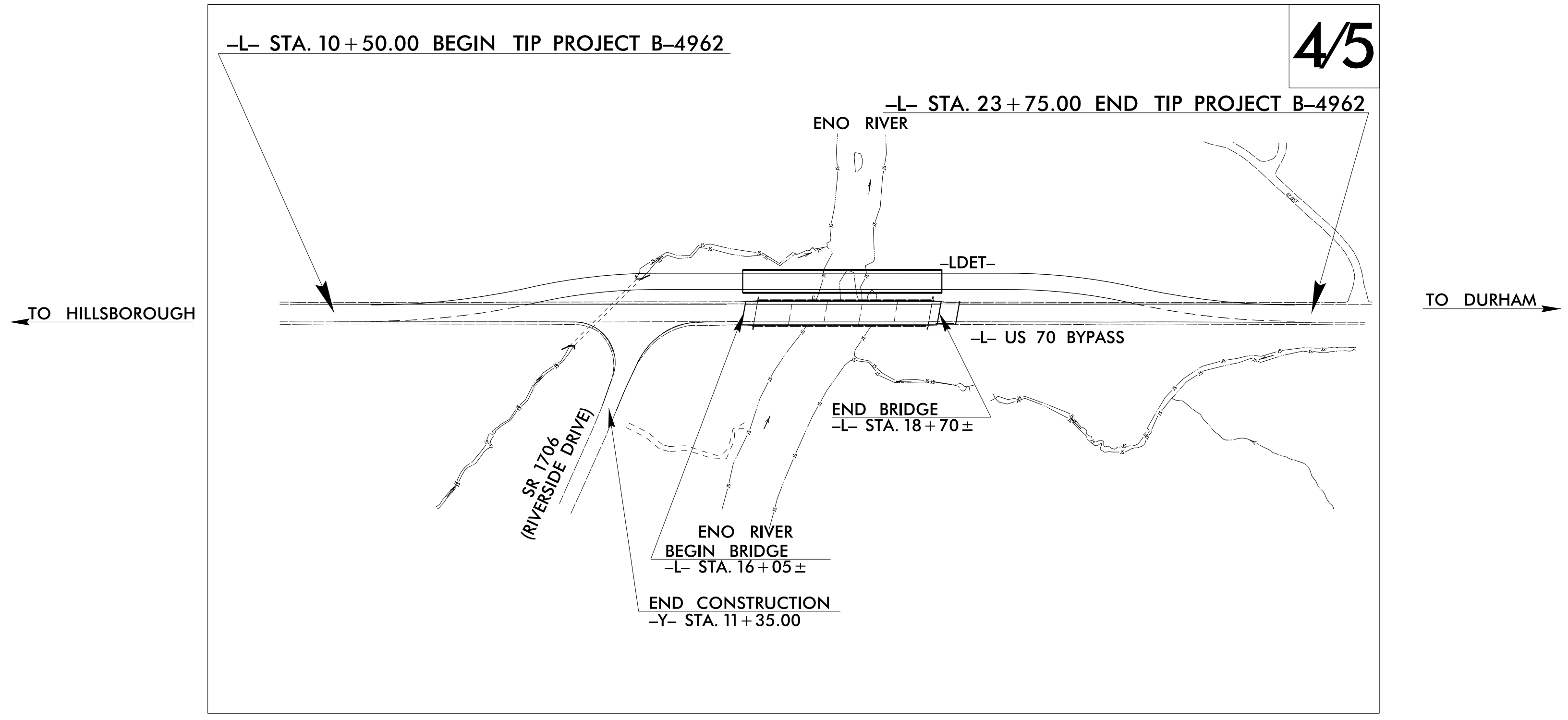
STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
 PLAN FOR PROPOSED  
 HIGHWAY EROSION CONTROL  
**ORANGE COUNTY**

**LOCATION: BRIDGE NO. 46 OVER ENO RIVER ON US 70 BYPASS**  
**TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERT**  
**EXTENSION, AND STRUCTURE**

|                 |                             |             |              |
|-----------------|-----------------------------|-------------|--------------|
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
| N.C.            | B-4962                      | EC-1        |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |

**EROSION AND SEDIMENT CONTROL MEASURES**

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



**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.

ROADSIDE ENVIRONMENTAL UNIT  
 DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

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

Prepared in the Office of:  
**ROADSIDE ENVIRONMENTAL UNIT**  
 1 South Wilmington St.  
 Raleigh, NC 27611  
**2018 STANDARD SPECIFICATIONS**  
 Designed by:  
**Noelle Ring, CPESC** **3456**  
NAME LEVEL III CERTIFICATION NO.

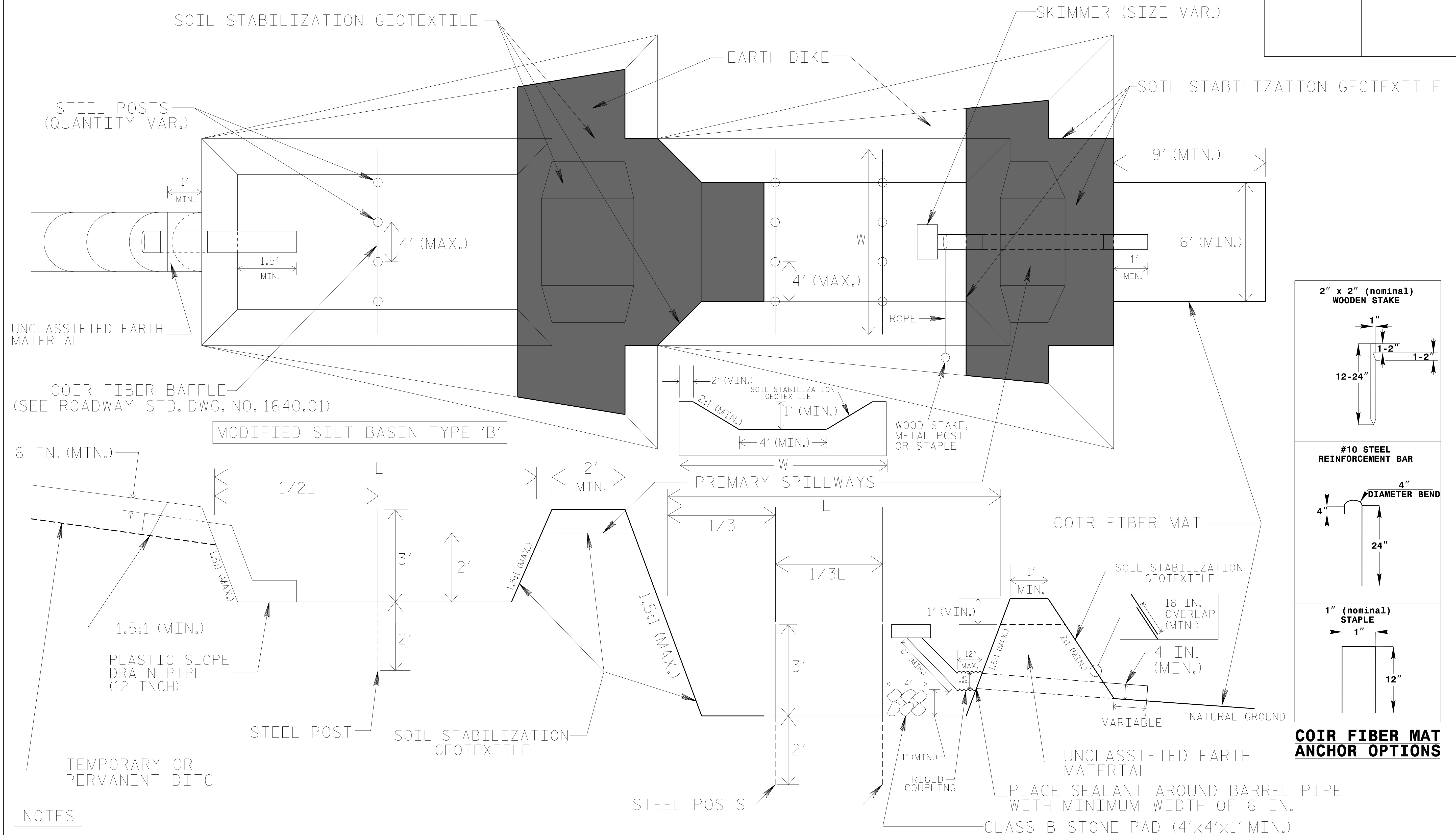
Roadway Standard Drawings

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 J      |
| 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 J     |
| 1630.01 Riser Basin                      | 1634.01 Temporary Rock Sediment Dam Type A   |
| 1630.02 Silt Basin Type J                | 1634.02 Temporary Rock Sediment Dam Type J   |
| 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 J |
| 1630.05 Temporary Diversion              | 1640.01 Coir Fiber Wattle                    |
| 1630.06 Special Stilling Basin           | 1645.01 Temporary Stream Crossing            |
| 1631.01 Matting Installation             |  |

# TIERED SKIMMER BASIN DETAIL

|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4962 | SHEET NO.<br>EC-2   |
| RW SHEET NO.                    |                     |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER |



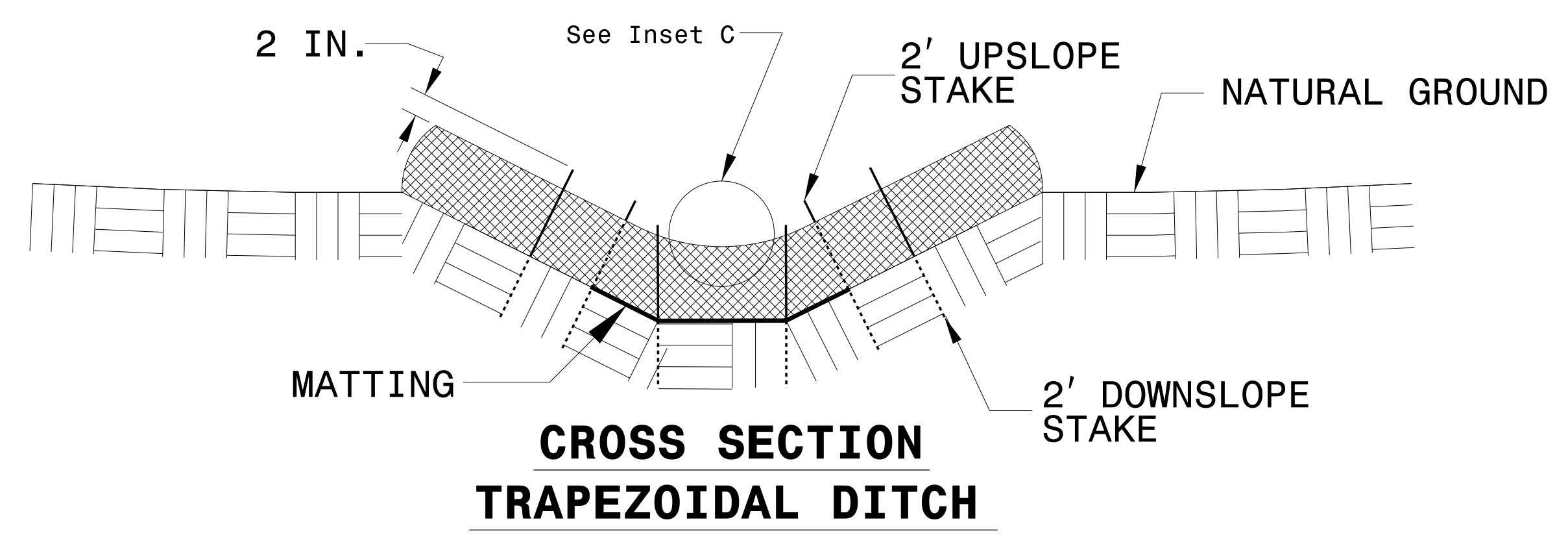
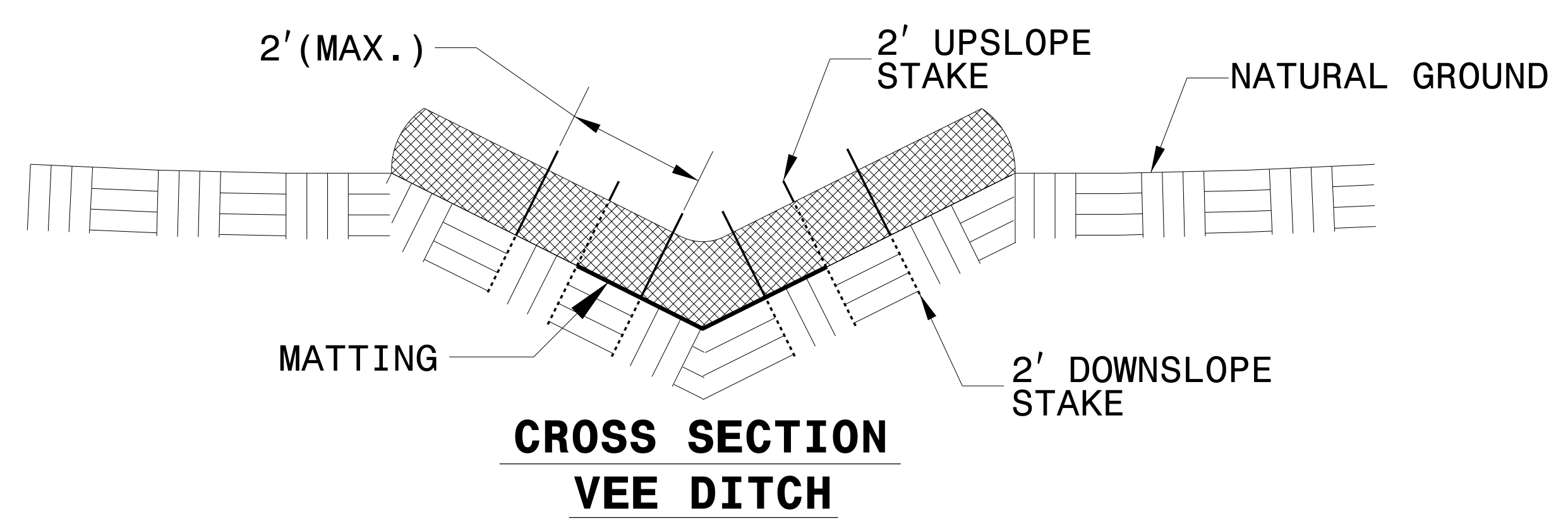
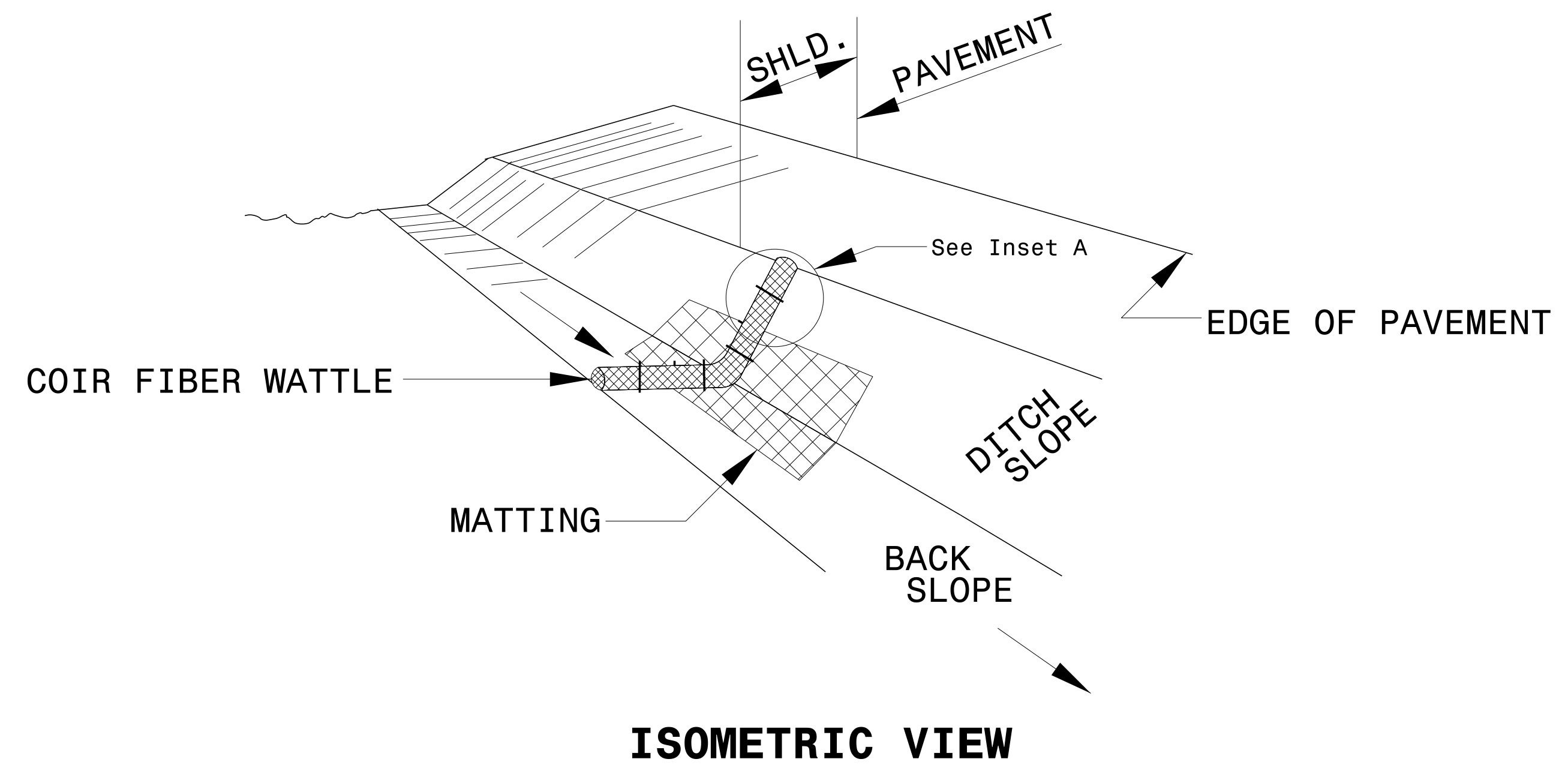
## NOTES

1. SEED AND PLACE MATTING FOR EROSION CONTROL ON INTERIOR AND EXTERIOR SIDESLOPES OF BASINS.
2. LIMIT HEIGHT OF EARTH DIKES TO 5 FT.
3. ADDITIONAL MODIFIED SILT BASINS TYPE 'B' MAY BE NEEDED DEPENDING ON SLOPE.
4. FOR BASIN DEPTHS OF 3FT., THE MINIMUM BASIN WIDTHS SHALL BE 9 FT.
5. DETERMINE PRIMARY SPILLWAY WEIRLENGTHS (FT.) USING  $Q/0.8$ , WHERE Q IS FLOW RATE (CFS) INTO UPPER BASIN.
6. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAYS SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

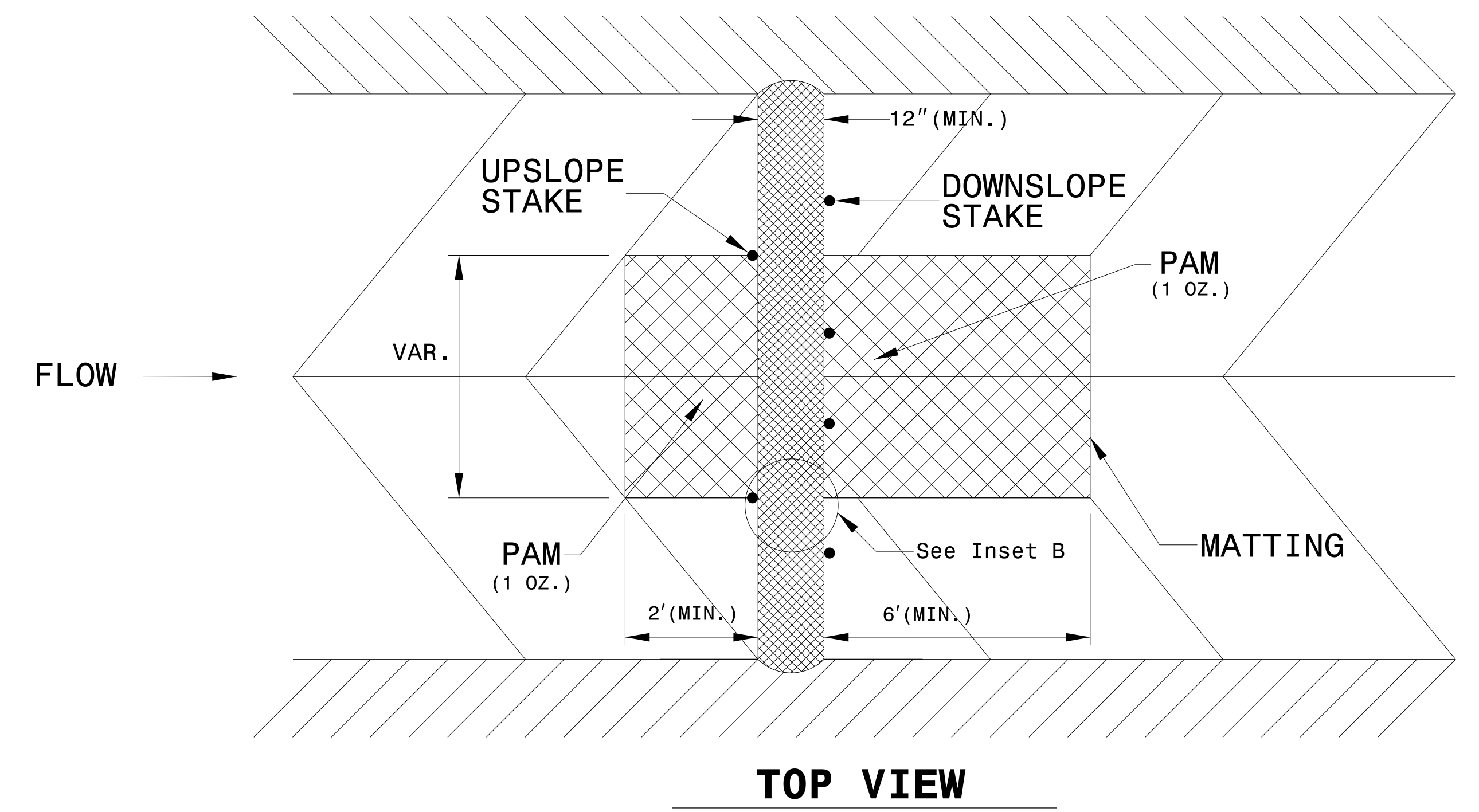
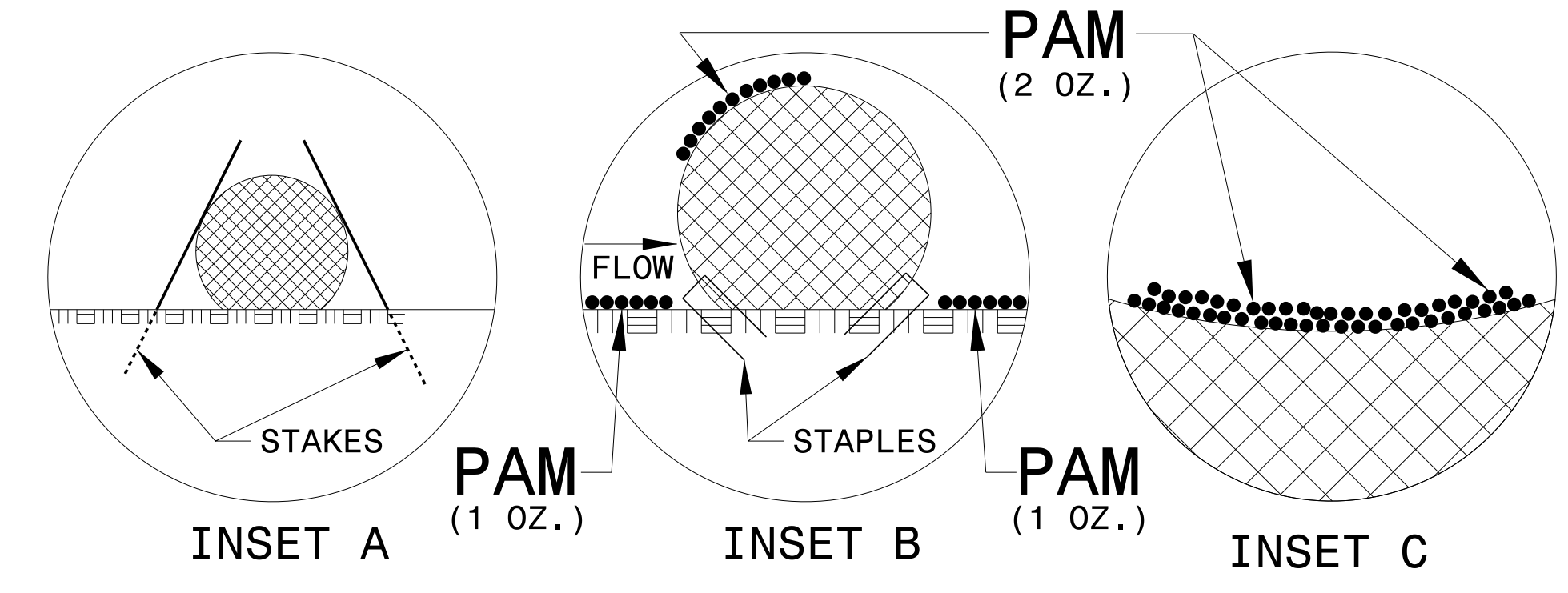
NOT TO SCALE

|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4962 | SHEET NO.<br>EC-2A  |
| RW SHEET NO.                    |                     |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER |

# COIR FIBER WATTLE WITH POLYACRYLAMIDE (PAM) DETAIL

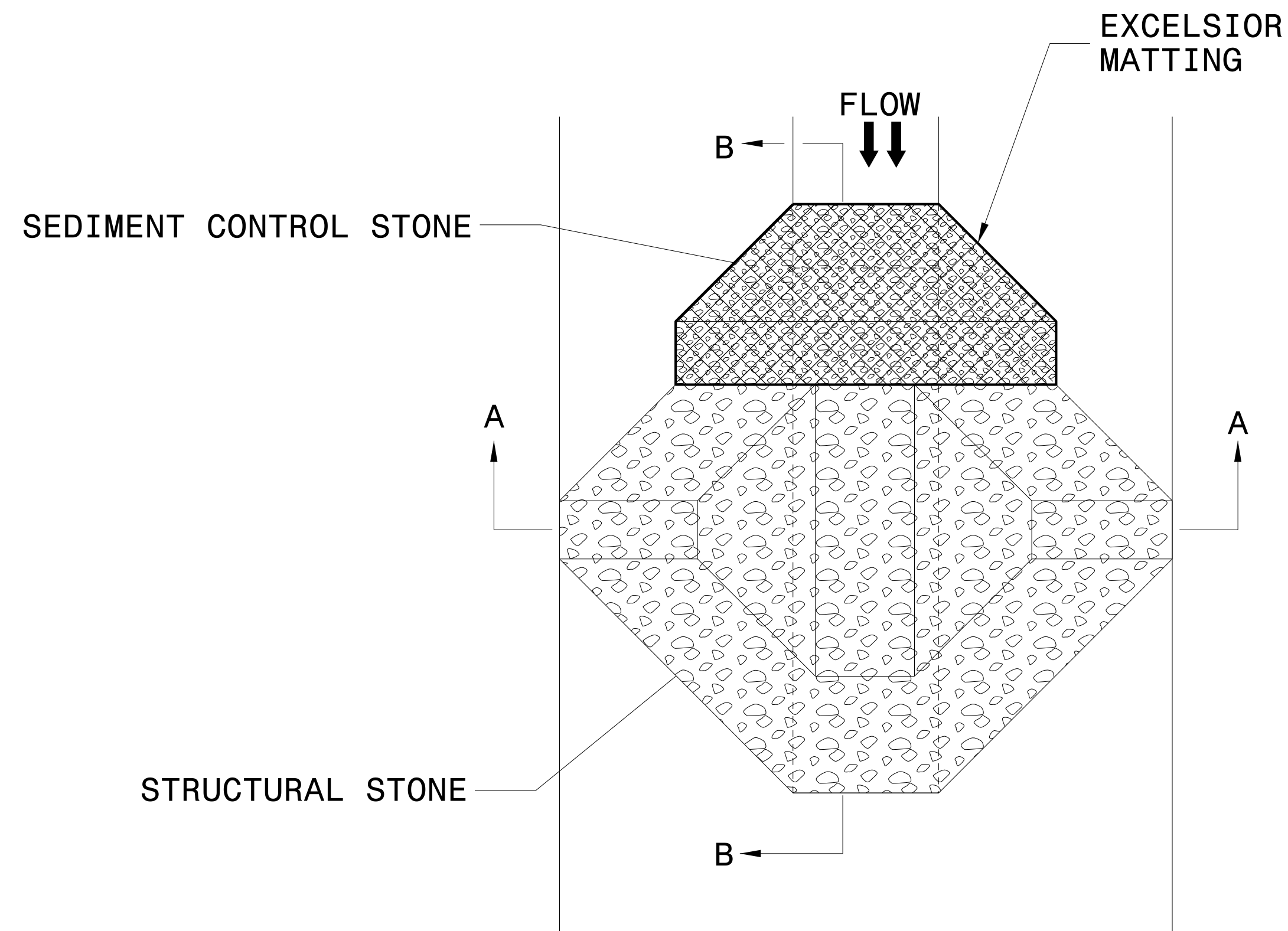


- NOTES:
- USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE.
  - USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.
  - ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AND AS DIRECTED.
  - INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
  - PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.
  - INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.
  - INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.
  - PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.
  - INITIALLY APPLY 2 OUNCES OF ANIONIC OR NEUTRALLY CHARGED PAM OVER WATTLE WHERE WATER WILL FLOW AND 1 OUNCE OF PAM ON MATTING ON EACH SIDE OF WATTLE. REAPPLY PAM AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.

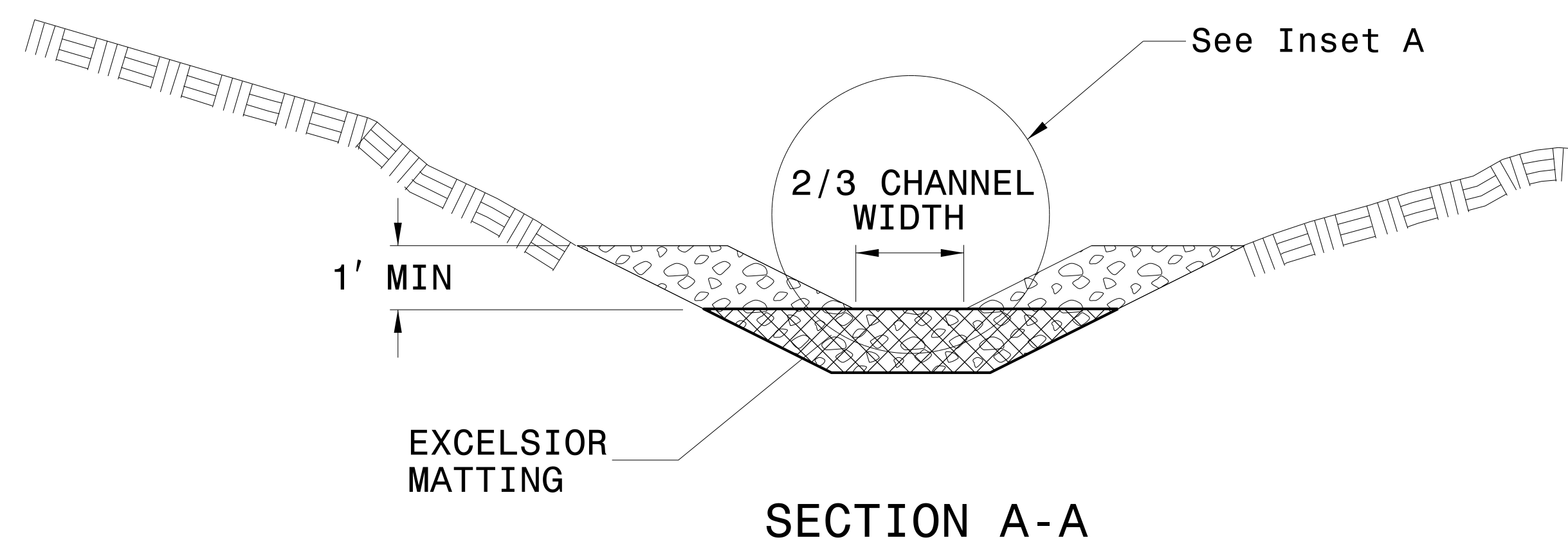


|                                 |                     |
|---------------------------------|---------------------|
| PROJECT REFERENCE NO.<br>B-4962 | SHEET NO.<br>EC-2B  |
| RW SHEET NO.                    |                     |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER |

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



PLAN



SECTION A-A

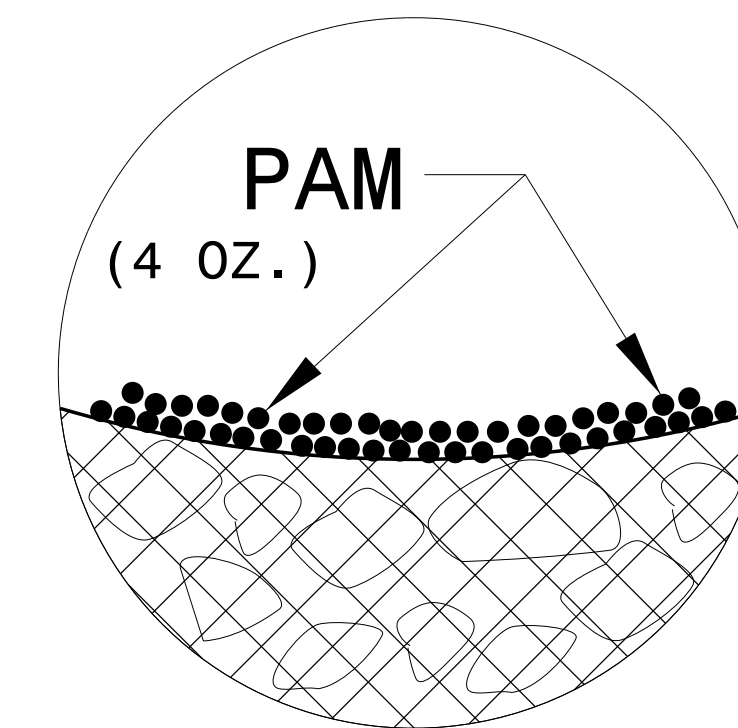
**NOTES:**

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

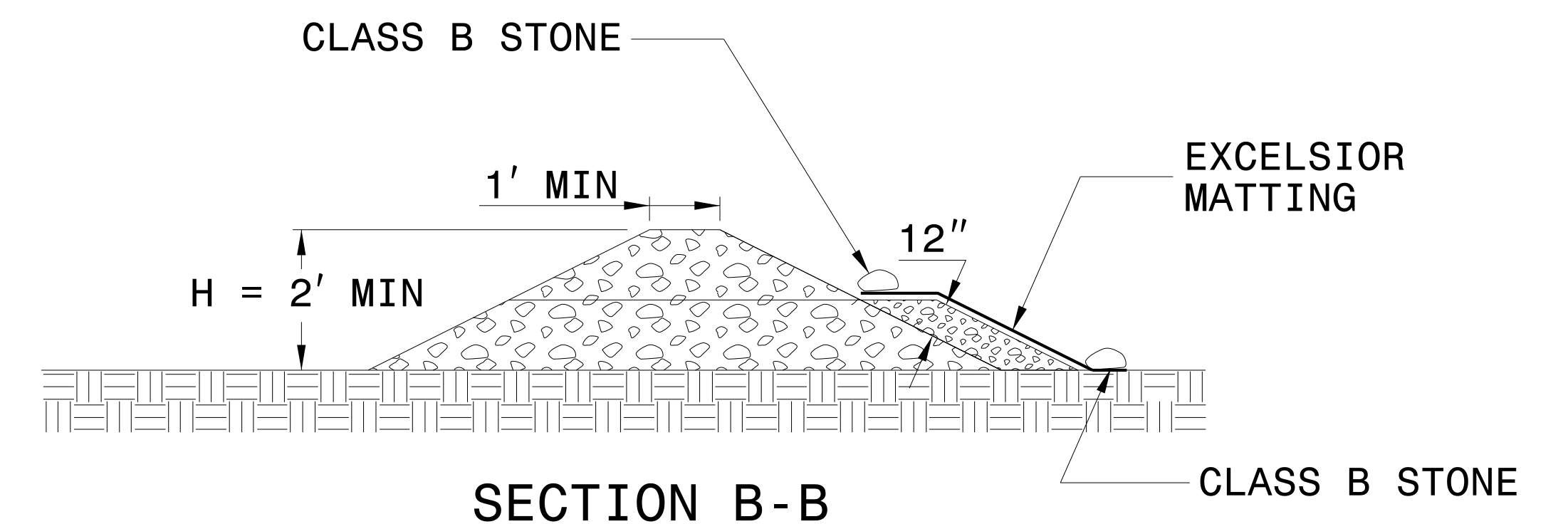
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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 B-B

NOT TO SCALE

DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

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|  |                          |
|--|--------------------------|
| PROJECT REFERENCE NO.<br><i>B-4962</i> | SHEET NO.<br><i>EC-3</i> |
| ROADWAY DESIGN<br>ENGINEER             | HYDRAULICS<br>ENGINEER   |

# ***SOIL STABILIZATION TIMEFRAMES***

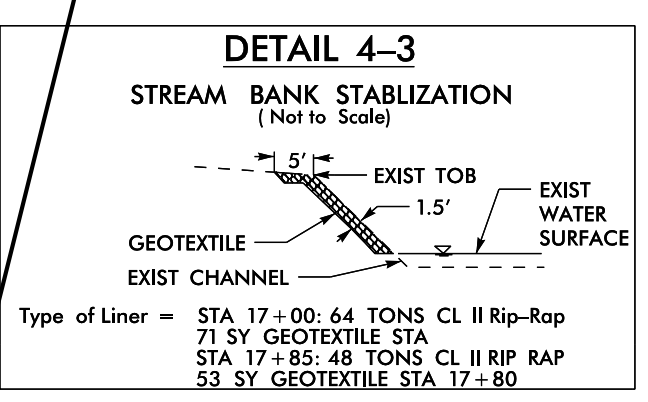
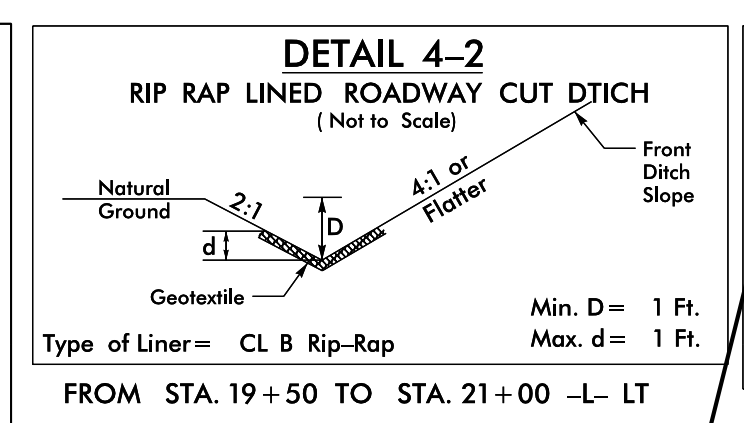
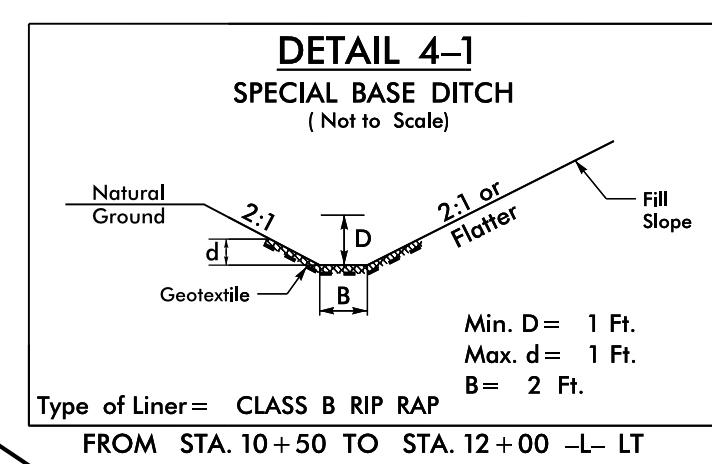
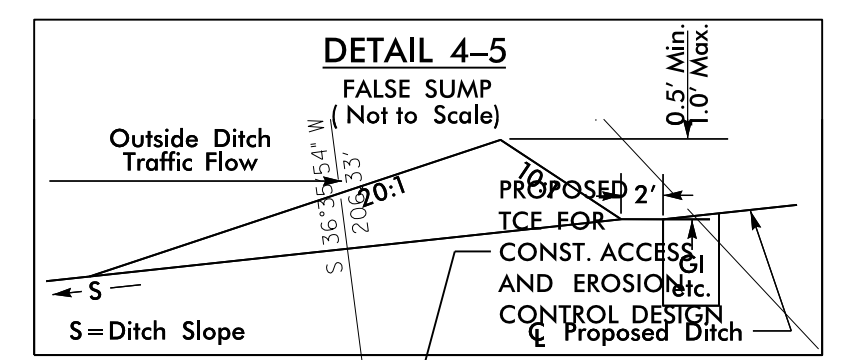
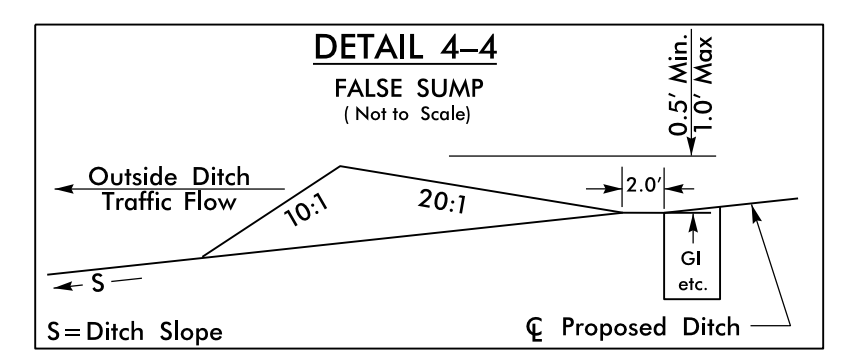
| <i>SITE DESCRIPTION</i>                      | <i>STABILIZATION TIME</i> | <i>TIMEFRAME EXCEPTIONS</i>  |
|--|---------------------------|--|
| PERIMETER DIKES, SWALES, DITCHES AND SLOPES  | 7 DAYS                    | NONE   |
| HIGH QUALITY WATER (HQW) ZONES               | 7 DAYS                    | 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.           |
| B-4962                  | EC-4/CONST.4        |
| RW SHEET NO.            |                     |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

**Modified Silt Basins**  
Type 'B'  
36 x 28 x 3  
15 ft. weir  
(See Tiered Skimmer Basin Detail)  
ID 4.1

**36 x 28 x 3**  
1.5 inch Skimmer  
with 1.375 inch  
Orifice Diameter  
15 ft. weir  
(See Tiered Skimmer Basin Detail)  
ID 4.1



100% SUSP/8 CWN

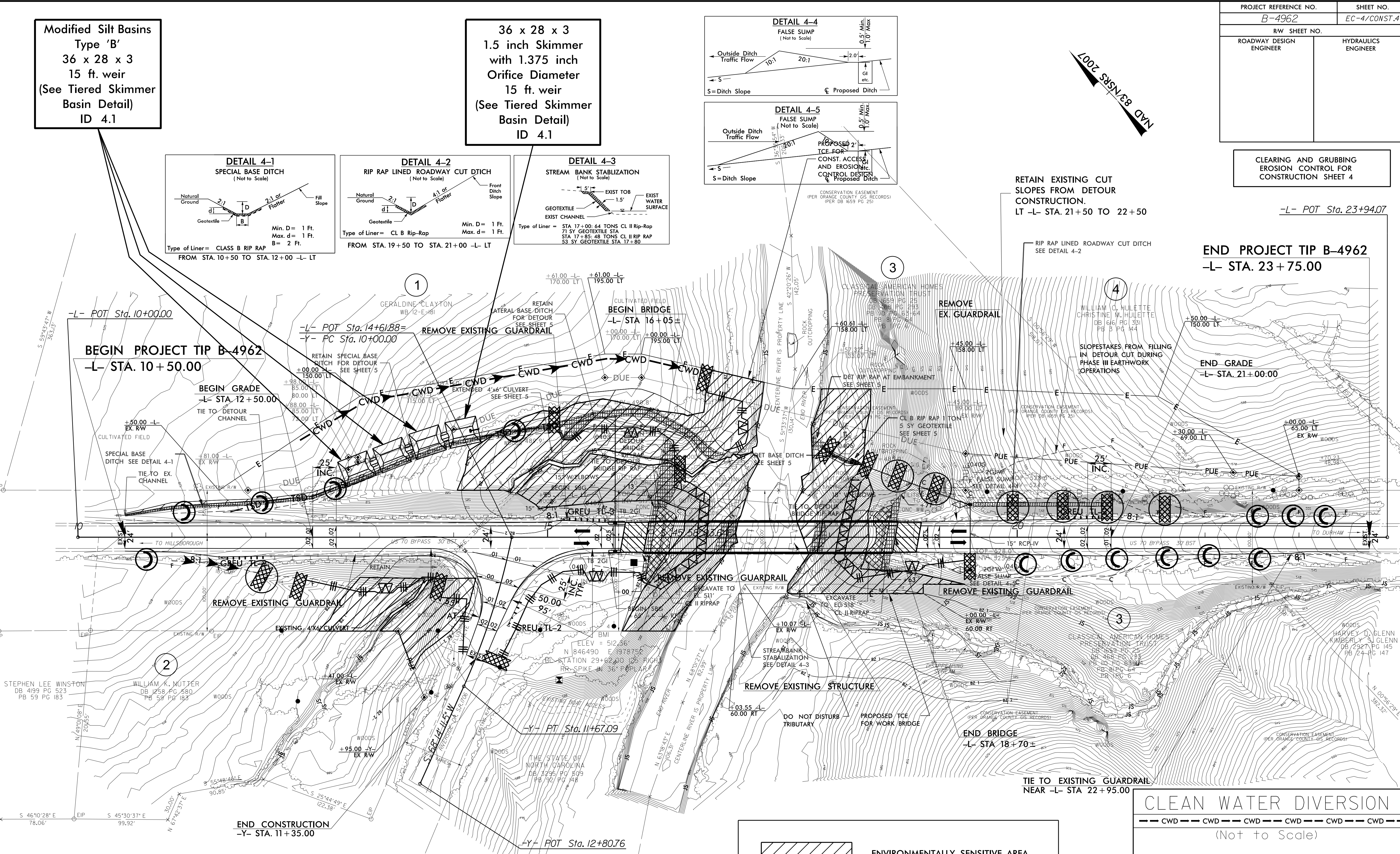
CLEARING AND GRUBBING  
EROSION CONTROL FOR  
CONSTRUCTION SHEET 4

RETAIN EXISTING CUT  
SLOPES FROM DETOUR  
CONSTRUCTION.  
LT -L- STA. 21+50 TO 22+50

-L- POT Sta. 23+94.07

**END PROJECT TIP B-4962**  
-L- STA. 23+75.00

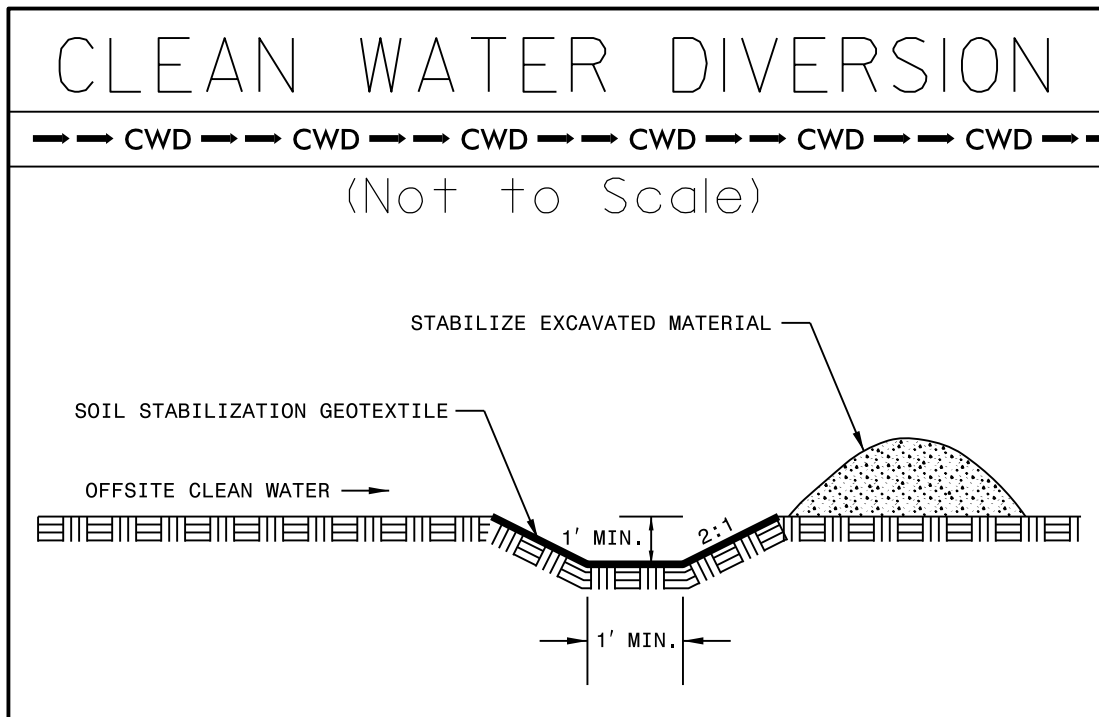
**END GRADE**  
-L- STA. 21+00.00



NOTE: UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

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



SEE SHEET 6 FOR -L- AND -Y- PROFILES  
SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

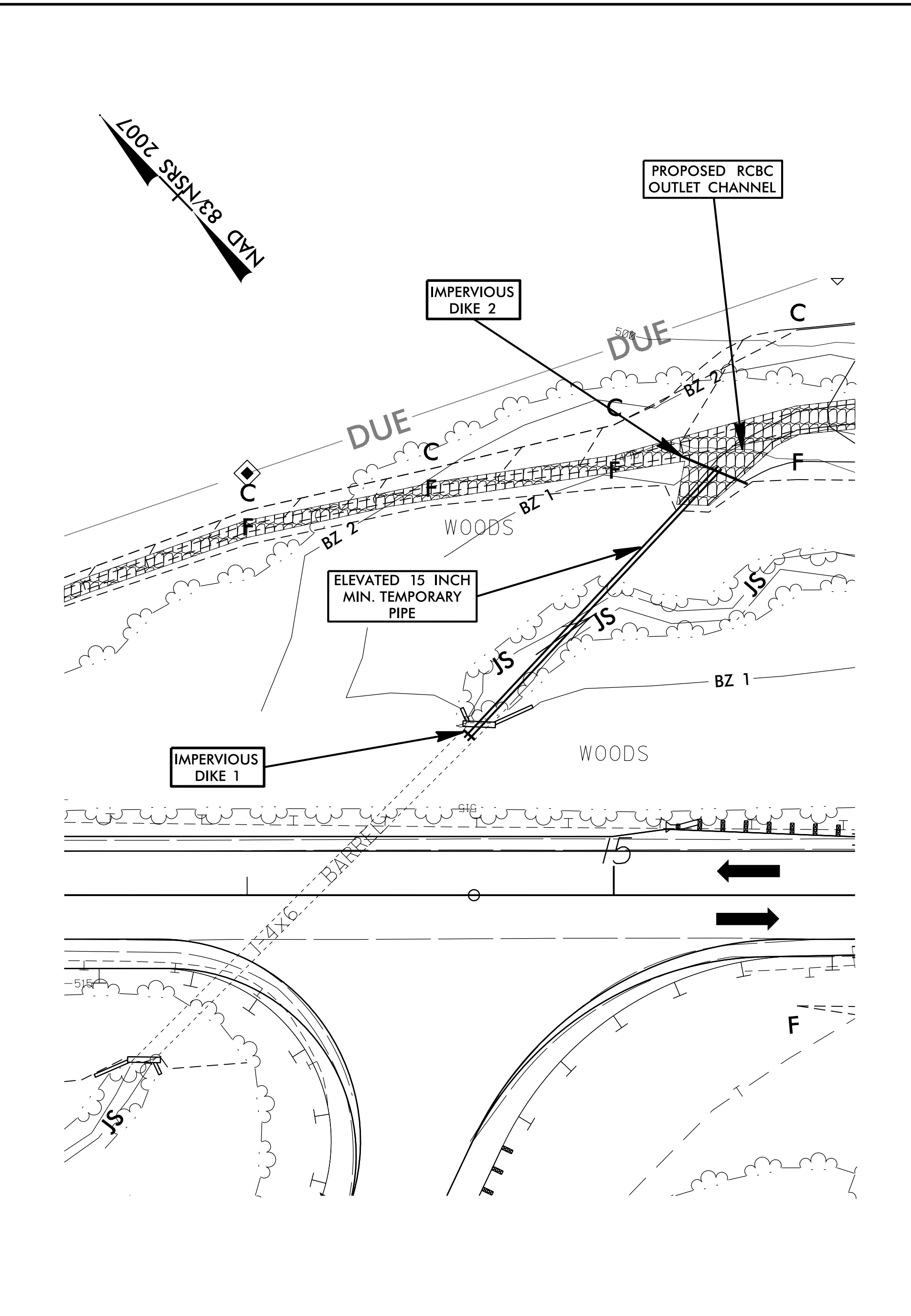
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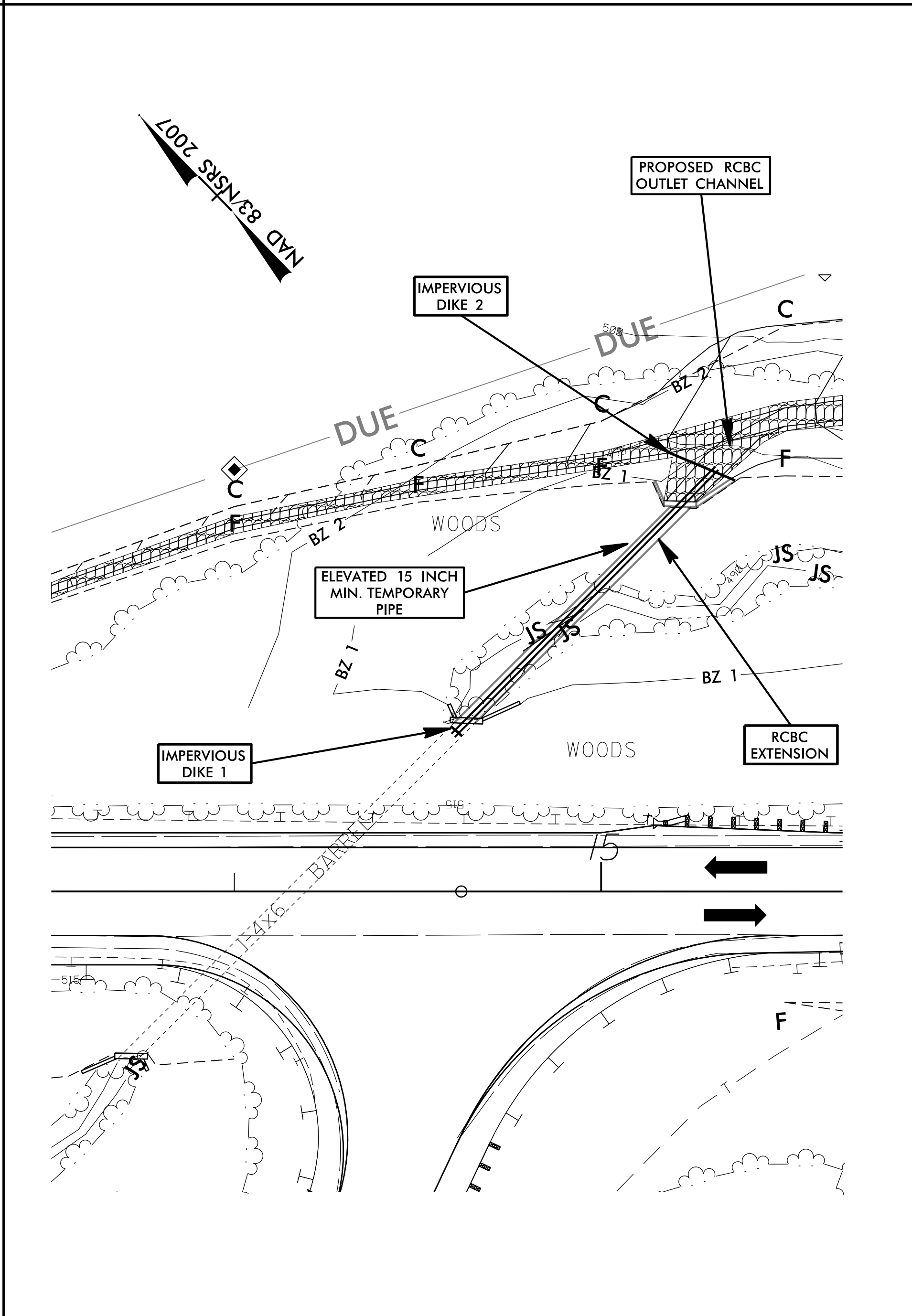
# CULVERT CONSTRUCTION SEQUENCE RCBC EXTENSION STA. 14 + 61.88 -L-

|                                 |                           |
|---------------------------------|---------------------------|
| PROJECT REFERENCE NO.<br>B-4962 | SHEET NO.<br>EC-5/CONST.4 |
| RW SHEET NO.                    |                           |
| ROADWAY DESIGN ENGINEER         | HYDRAULICS ENGINEER       |

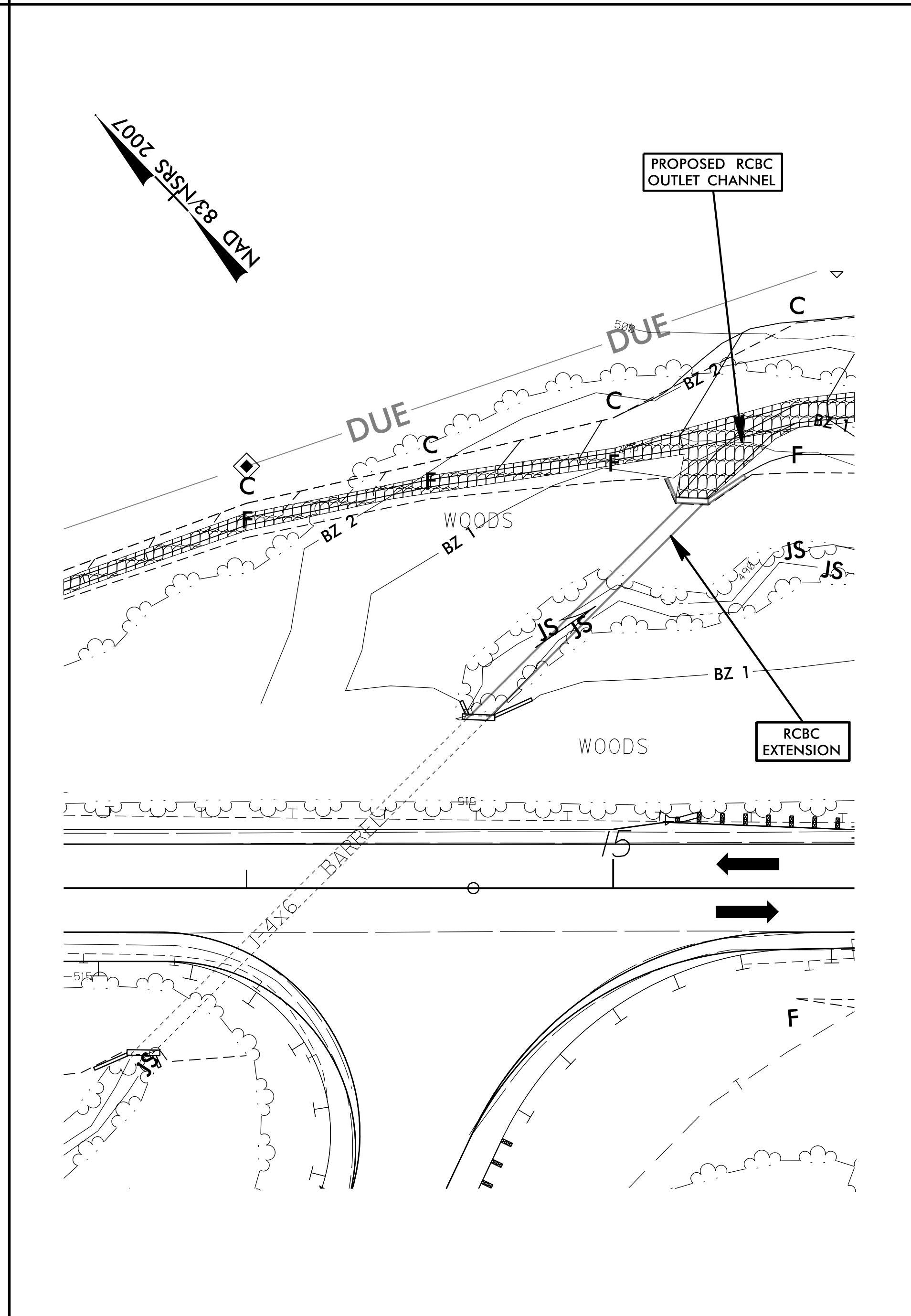
- PHASE 1  
PIPE THRU CONSTRUCTION SITE**
1. INSTALL ALL EC DEVICES NEEDED FOR CONSTRUCTION OF RCBC OUTLET CHANNEL.
  2. CONSTRUCT RCBC OUTLET CHANNEL.
  3. INSTALL SPECIAL STILLING BASIN UTILIZING THE OUTLET CHANNEL AS AN OUTFALL.
  4. INSTALL IMPERVIOUS DIKE 1 INSIDE EXISTING CULVERT, ELEVATED 15 INCH TEMPORARY PIPE AND IMPERVIOUS DIKE 2.
  5. DEWATER SITE AS NEEDED USING SPECIAL STILLING BASIN.



- PHASE 2  
CULVERT CONSTRUCTION**
1. CONSTRUCT RCBC CULVERT EXTENSION
  2. CONTINUE TO DEWATER SITE AS NEEDED USING SPECIAL STILLING BASIN.
  3. UPON COMPLETION OF RCBC EXTENSION REMOVE DIKES, TEMPORARY PIPE AND SPECIAL STILLING BASIN.



- PHASE 3  
CULVERT CONSTRUCTION**
1. CONSTRUCT EARTHEN FILL FOR ROADWAY EMBANKMENT.
  2. STABILIZE SITE.
  3. PROCEED TO DETOUR CONSTRUCTION.

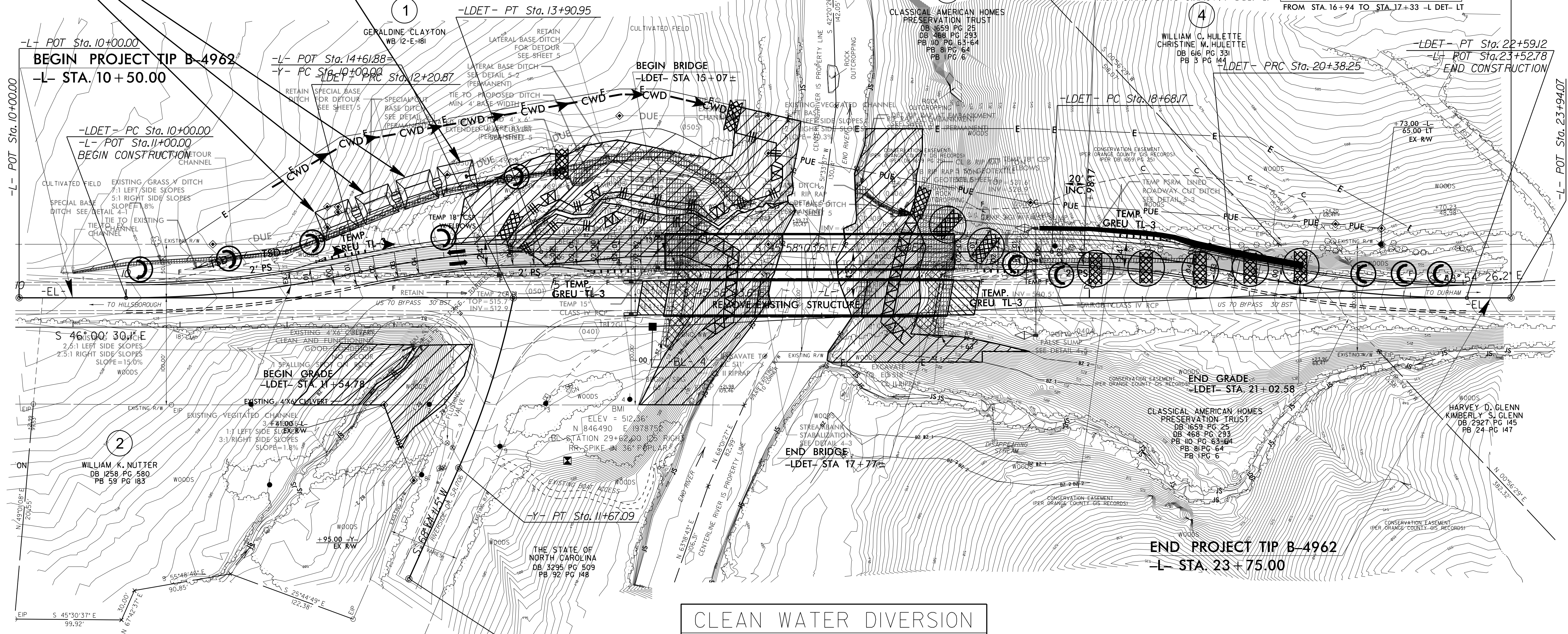
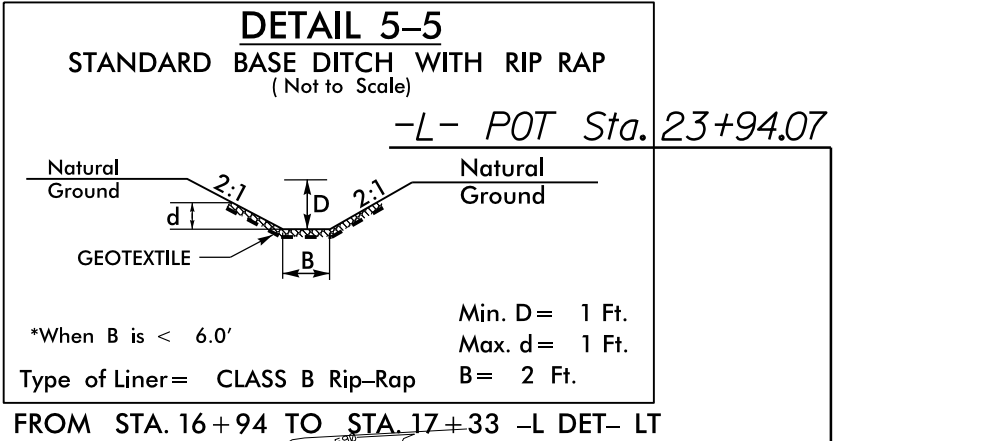
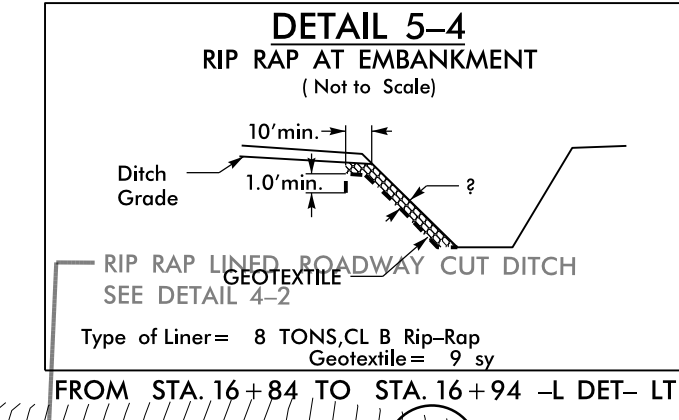
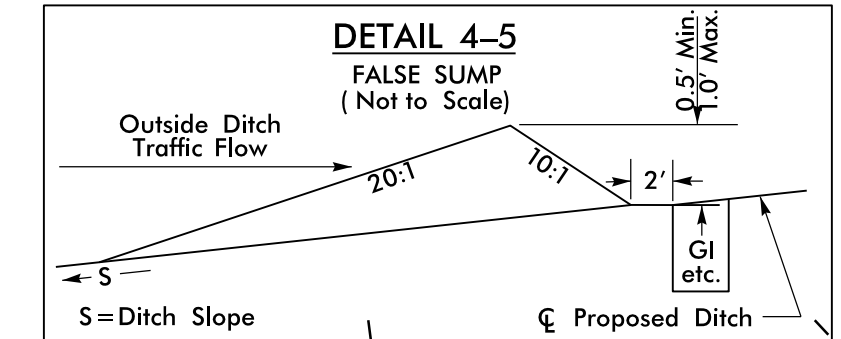
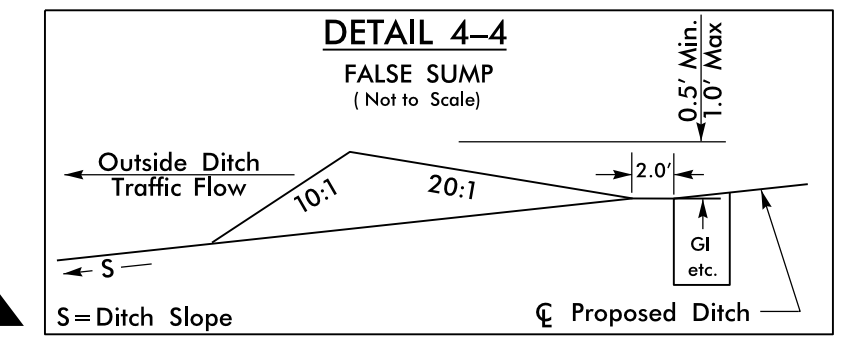
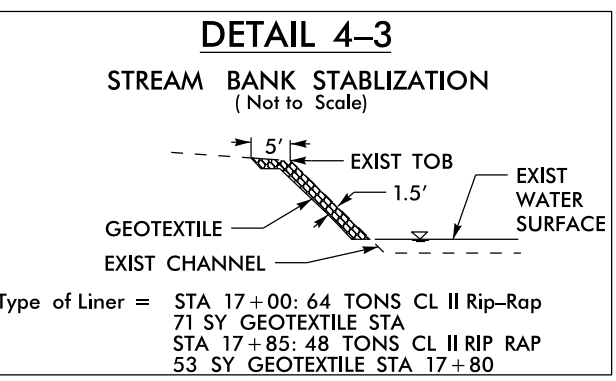
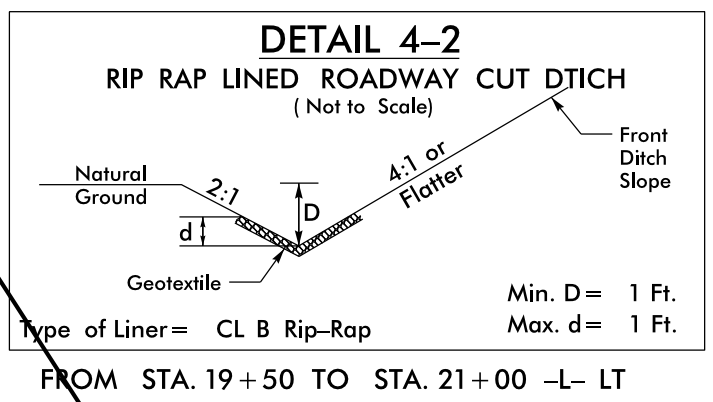
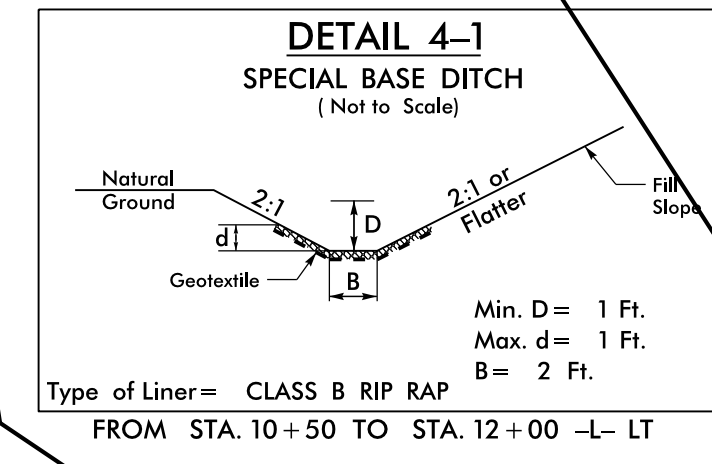


|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| B-4962                  | EC-6/CONST.5        |
| RW SHEET NO.            |                     |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

# DETOUR

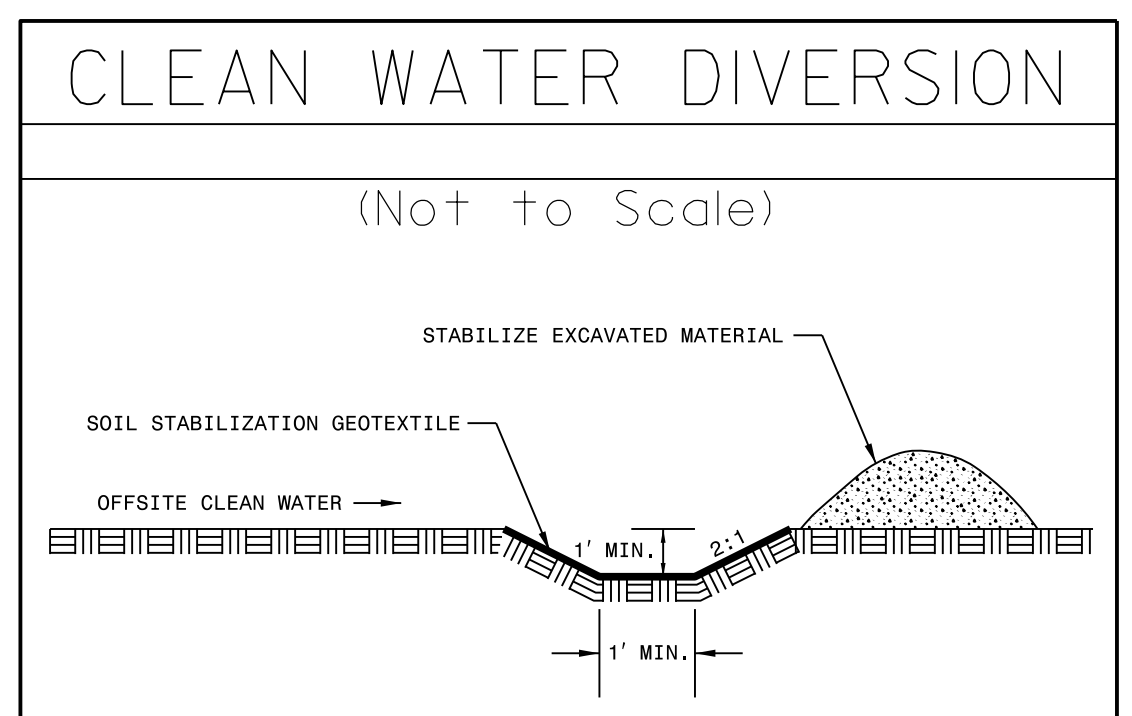
**Modified Silt Basins**  
Type 'B'  
36 x 28 x 3  
15 ft. weir  
(See Tiered Skimmer Basin Detail)  
ID 4.1

36 x 28 x 3  
1.5 inch Skimmer  
with 1.375 inch  
Orifice Diameter  
15 ft. weir  
(See Tiered Skimmer Basin Detail)  
ID 4.1



 ENVIRONMENTALLY SENSITIVE AREA  
SEE PROJECT SPECIAL PROVISIONS

NOTE:  
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



NOTE: SR 1706 (RIVERSIDE DRIVE) TO REMAIN CLOSED DURING THE DURATION OF THE ON-SITE DETOUR. ACCESS WILL BE PROVIDED BY THE WESTERN ACCESS OF SR 1706 (RIVERSIDE DRIVE) TO US 70 BYPASS.  
NOTE: ALL PROPOSED DETOUR DITCHES ARE TO REMAIN AS PERMANENT.

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 5

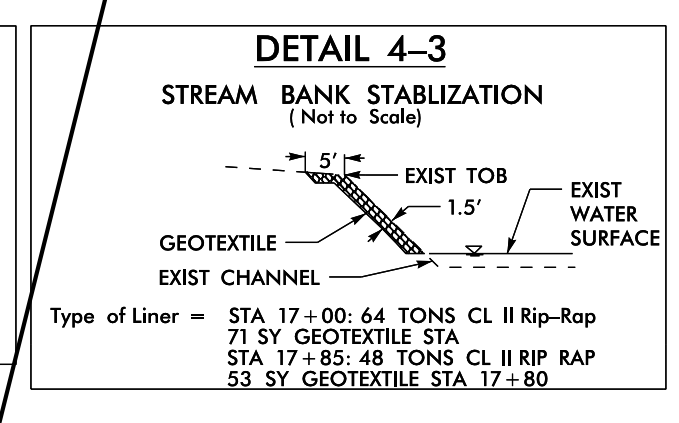
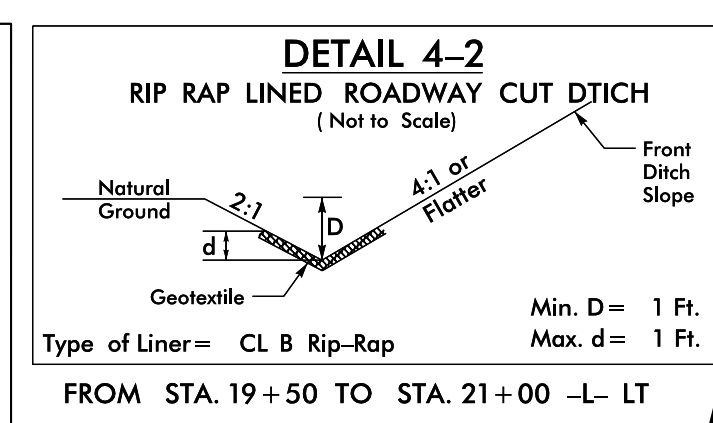
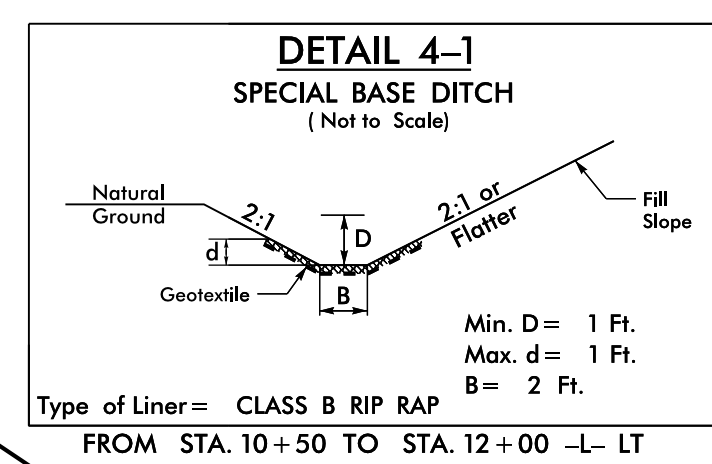
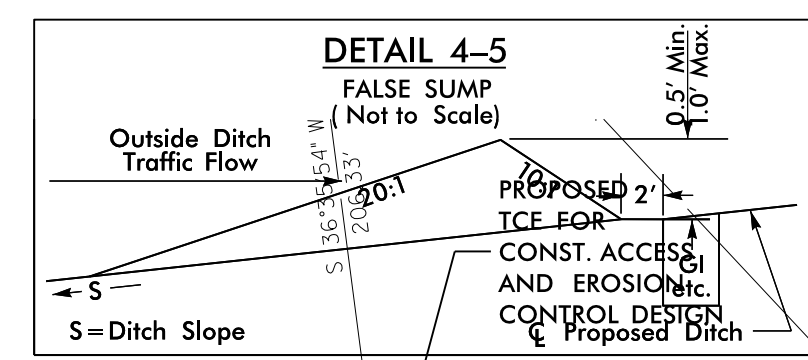
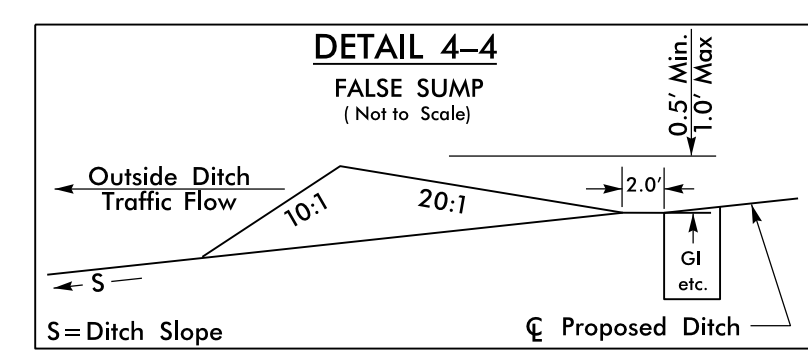
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|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| B-4962                  | EC-7/CONST.4        |
| RW SHEET NO.            |                     |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

**Modified Silt Basins**  
 Type 'B'  
 36 x 28 x 3  
 15 ft. weir  
 (See Tiered Skimmer Basin Detail)  
 ID 4.1

Place Matting for Erosion Control  
 on Slope as Work Allows.  
 Sta. 12+50 to Sta. 17+00 LT  
 Sta. 12+00 to 14+00 RT

36 x 28 x 3  
 1.5 inch Skimmer  
 with 1.375 inch  
 Orifice Diameter  
 15 ft. weir  
 (See Tiered Skimmer Basin Detail)  
 ID 4.1

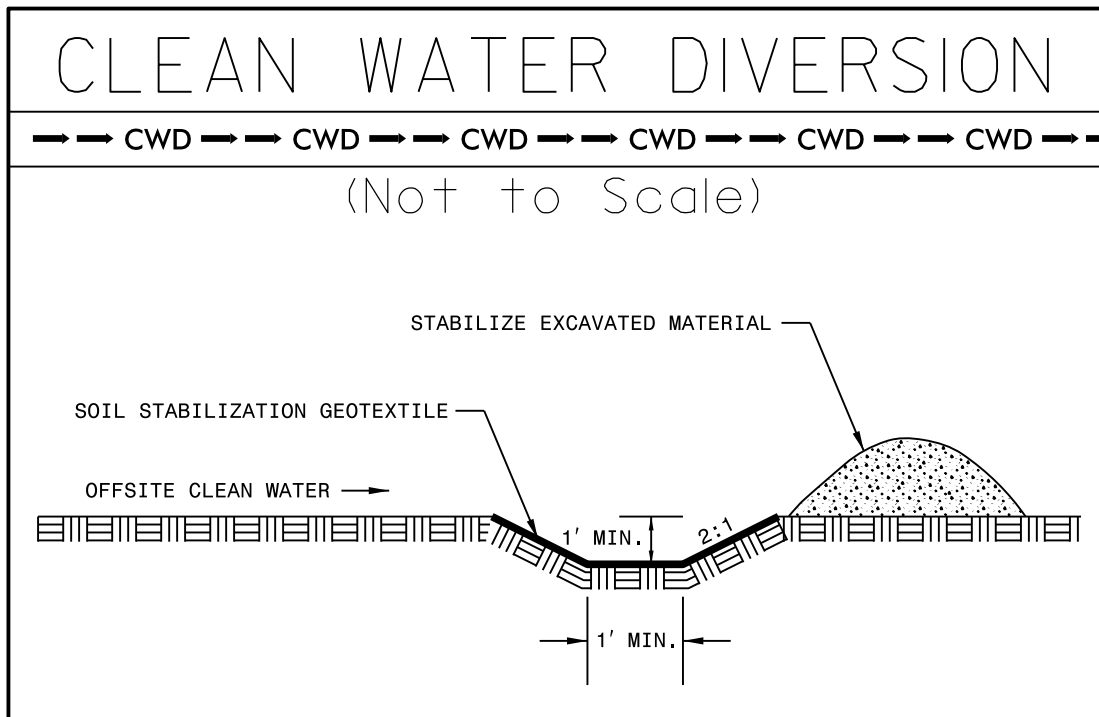
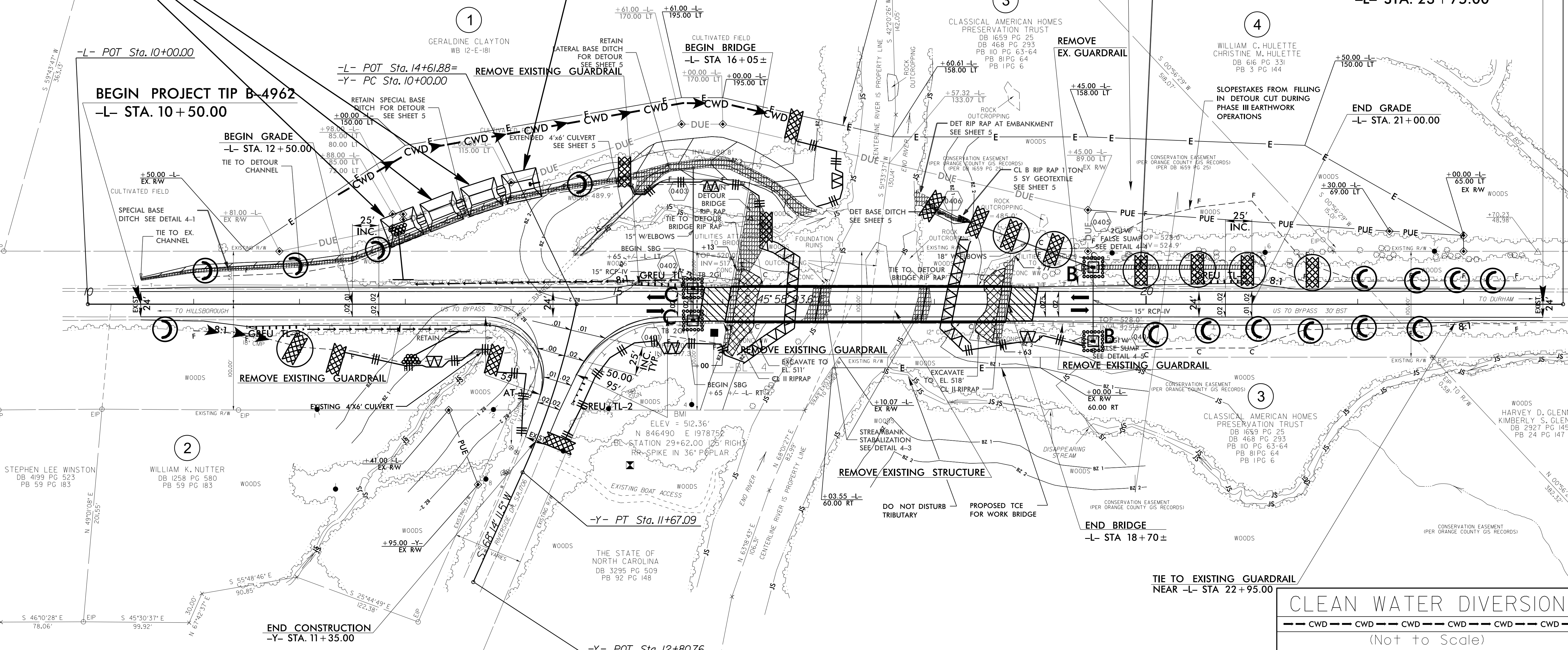


100% SUSP/8 CWN

RETAIN EXISTING CUT  
 SLOPES FROM DETOUR  
 CONSTRUCTION.  
 LT -L- STA. 21+50 TO 22+50

-L- POT Sta. 23+94.07

**END PROJECT TIP B-4962**  
 -L- STA. 23+75.00



SEE SHEET 6 FOR -L- AND -Y- PROFILES  
 SEE SHEETS S-1 THRU S-? FOR STRUCTURE PLANS

NOTE:  
 UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING  
 BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

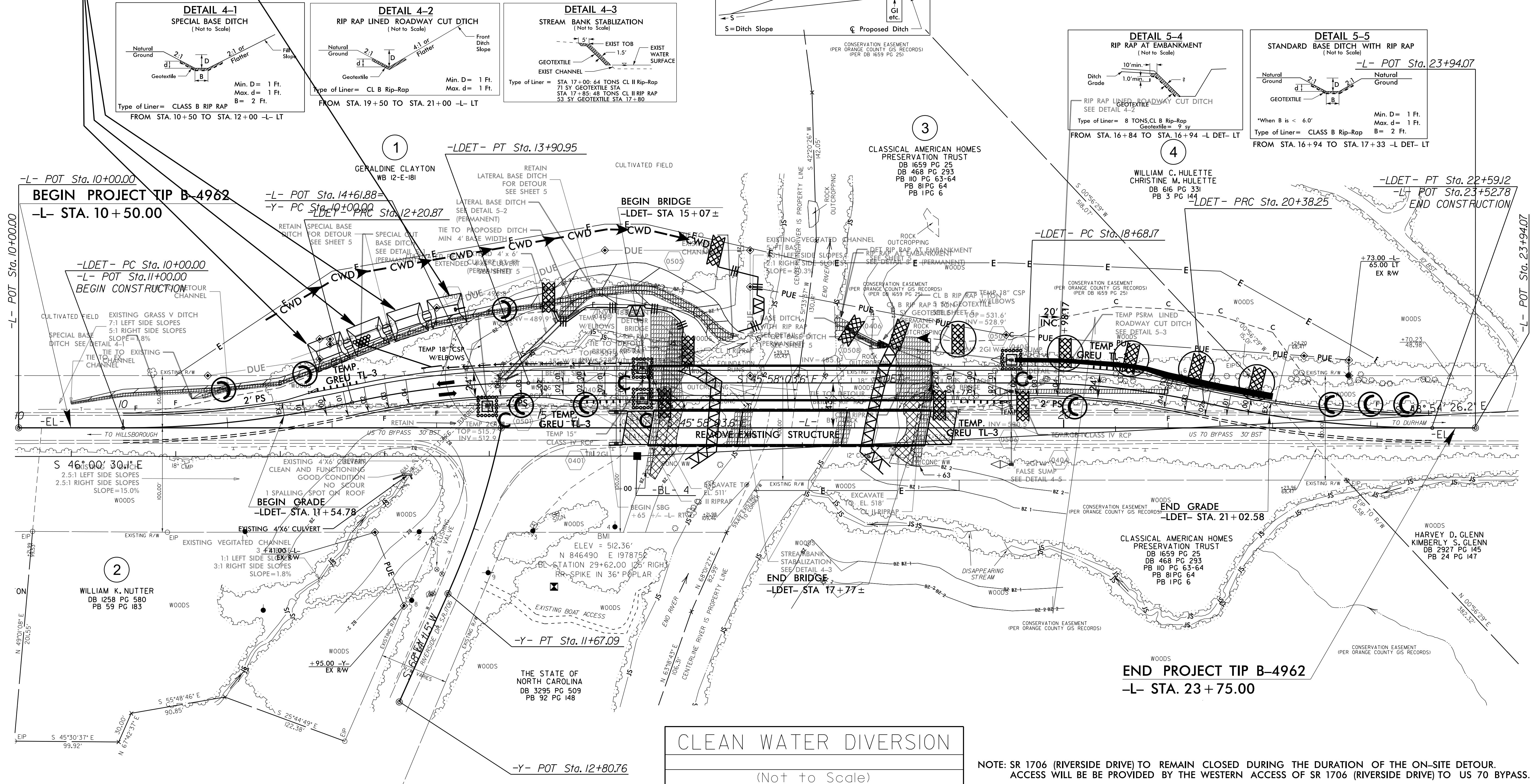
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|                         |                     |
|-------------------------|---------------------|
| PROJECT REFERENCE NO.   | SHEET NO.           |
| B-4962                  | EC-8/CONST.5        |
| RW SHEET NO.            |                     |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

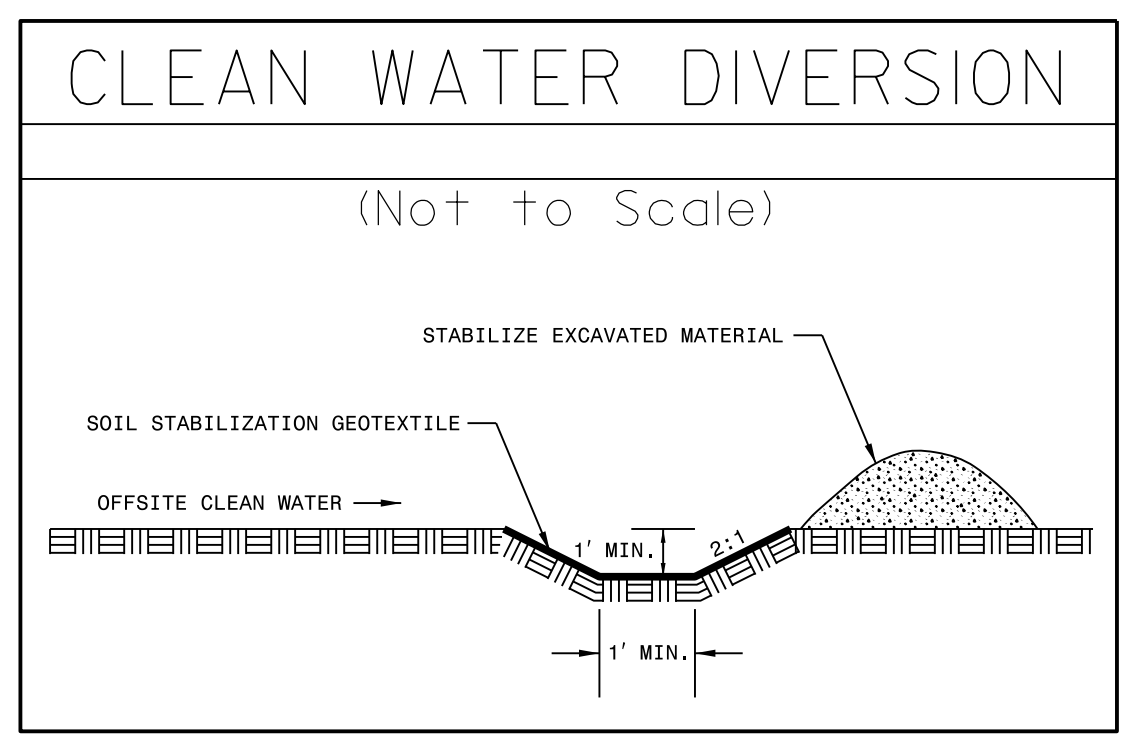
# DETOUR

**Modified Silt Basins**  
Type 'B'  
36 x 28 x 3  
15 ft. weir  
(See Tiered Skimmer Basin Detail)  
ID 4.1

36 x 28 x 3  
1.5 inch Skimmer  
with 1.375 inch  
Orifice Diameter  
15 ft. weir  
(See Tiered Skimmer Basin Detail)  
ID 4.1



**NOTE:**  
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.



**NOTE:** SR 1706 (RIVERSIDE DRIVE) TO REMAIN CLOSED DURING THE DURATION OF THE ON-SITE DETOUR. ACCESS WILL BE PROVIDED BY THE WESTERN ACCESS OF SR 1706 (RIVERSIDE DRIVE) TO US 70 BYPASS.  
**NOTE:** ALL PROPOSED DETOUR DITCHES ARE TO REMAIN AS PERMANENT.

Place Matting for Erosion Control on Slope as Work Allows.  
Sta. 12+00 to Sta. 15+50 LT and Sta. 17+00 to Sta. 18+00 LT.

For Slopes Excavated Greater Than 10 feet Install Matting for Erosion Control on Entire Slope as Work Allows.

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