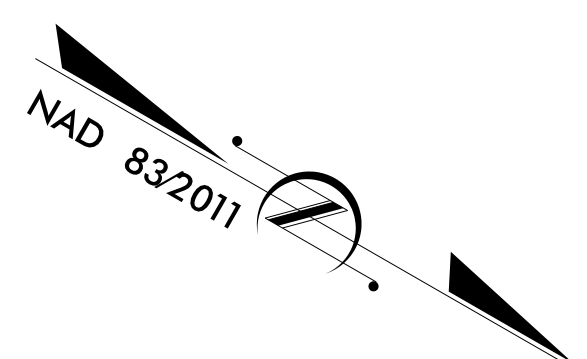


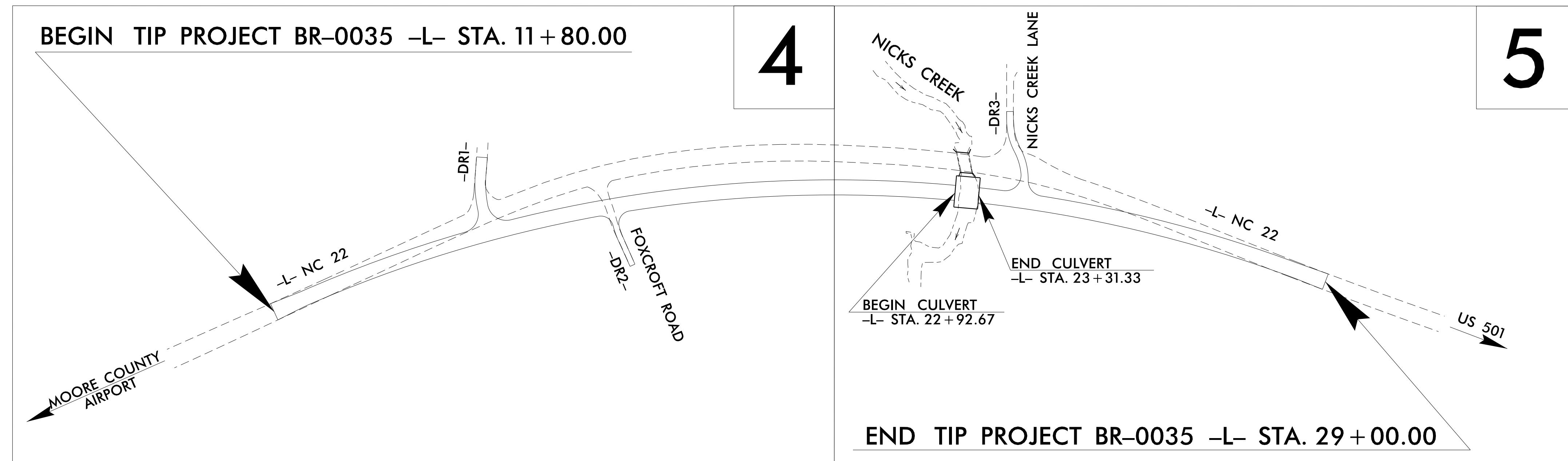
TIP PROJECT: BR-0035

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



LOCATION: BRIDGE NO. 24 ON NC 22 OVER NICKS CREEK

TYPE OF WORK: GRADING, DRAINAGE, PAVING AND CULVERT



| | | | |
|-----------------|-----------------------------|-------------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | BR-0035 | 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 | ▲ |
| 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.

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 APRIL 1, 2019 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 3456
 NAME LEVEL III CERTIFICATION NO.

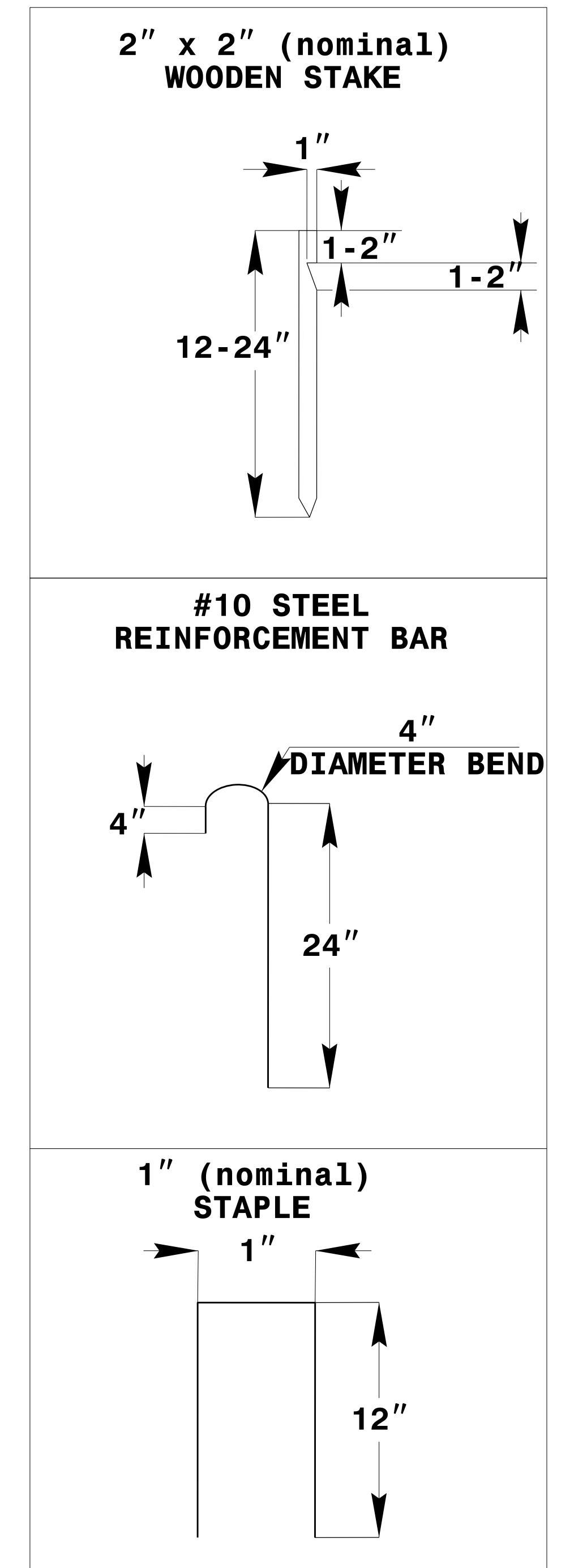
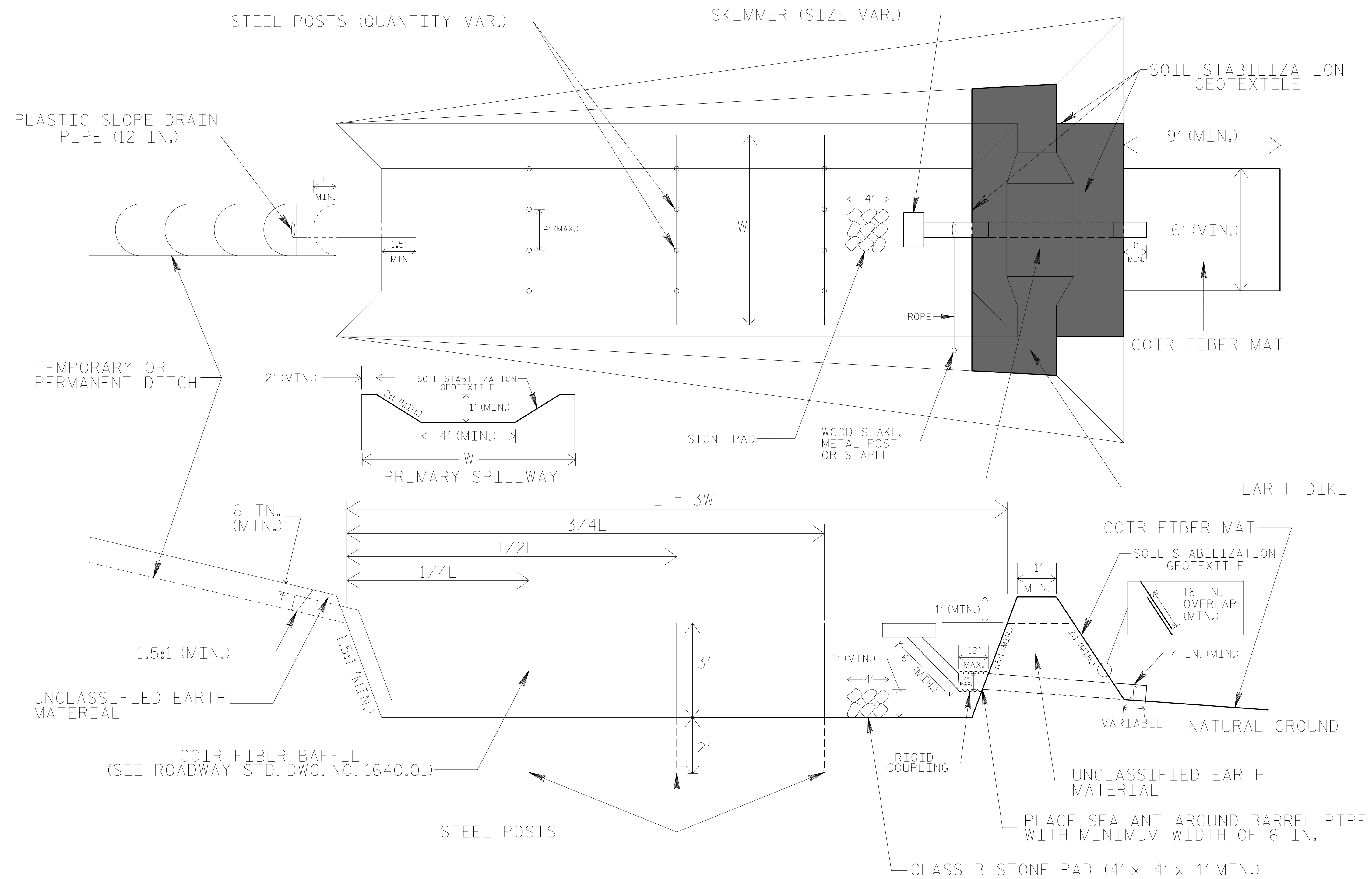
Roadway Standard Drawings

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 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 Wattle |
| 1630.06 Special Stilling Basin | 1645.01 Temporary Stream Crossing |
| 1631.01 Matting Installation | |

| | |
|----------------------------------|---------------------|
| PROJECT REFERENCE NO. BR-0035 | SHEET NO. EC-2 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

SKIMMER BASIN WITH BAFFLES DETAIL



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. SOIL STABILIZATION GEOTEXTILE FOR PRIMARY SPILLWAY SHALL BE ONE CONTINUOUS PIECE OF MATERIAL OR OVERLAPPED 18 IN. (MIN.).

NOT TO SCALE

| | |
|----------------------------------|---------------------|
| PROJECT REFERENCE NO. BR-0035 | SHEET NO. 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.

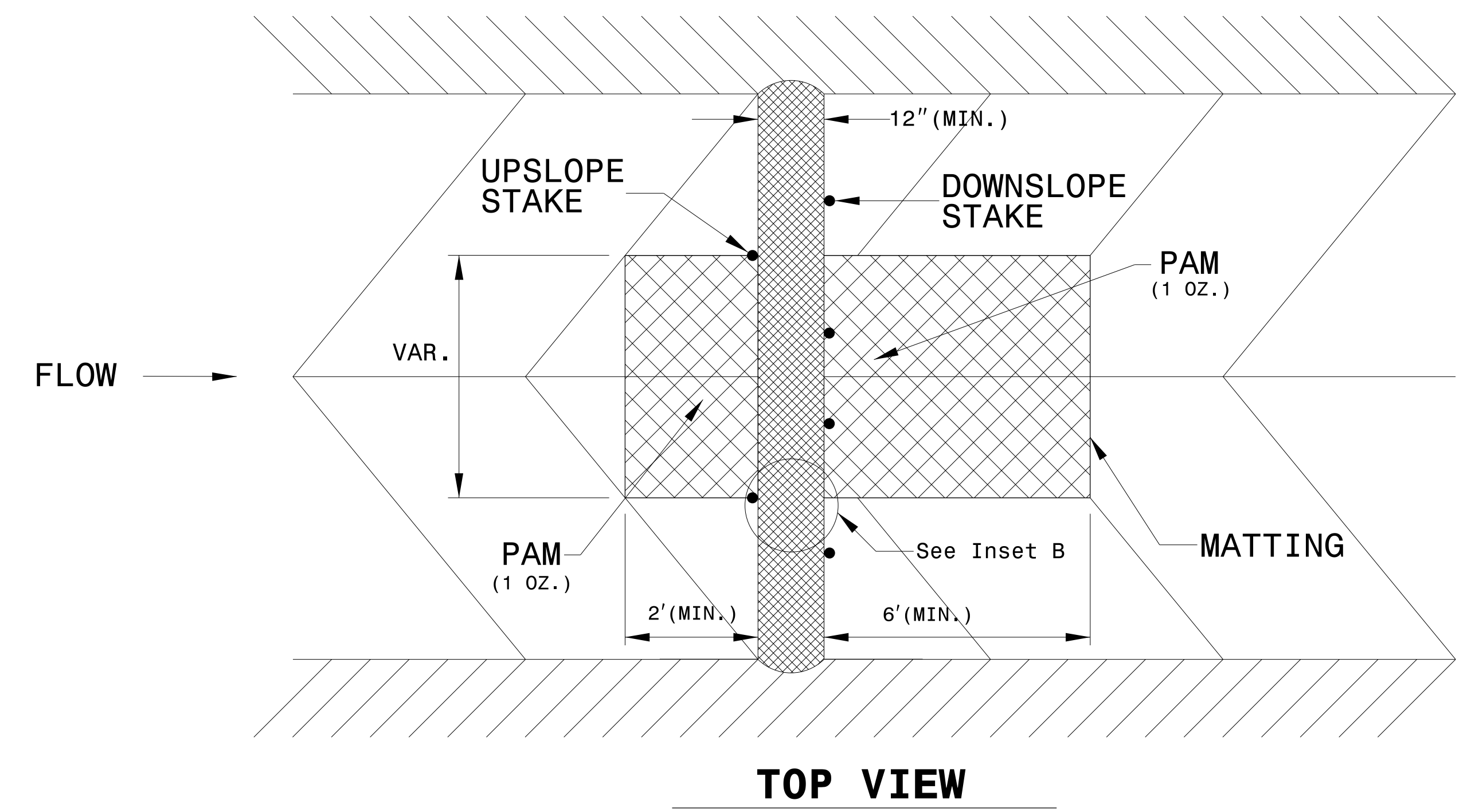
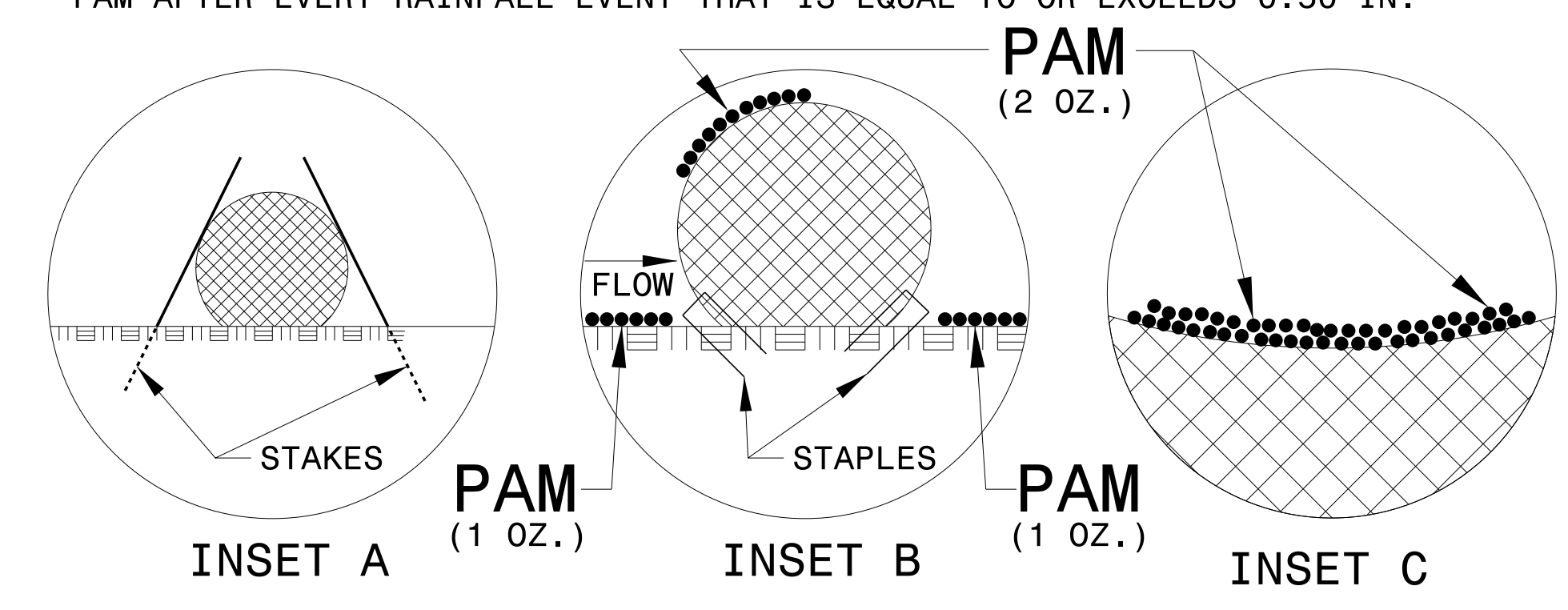
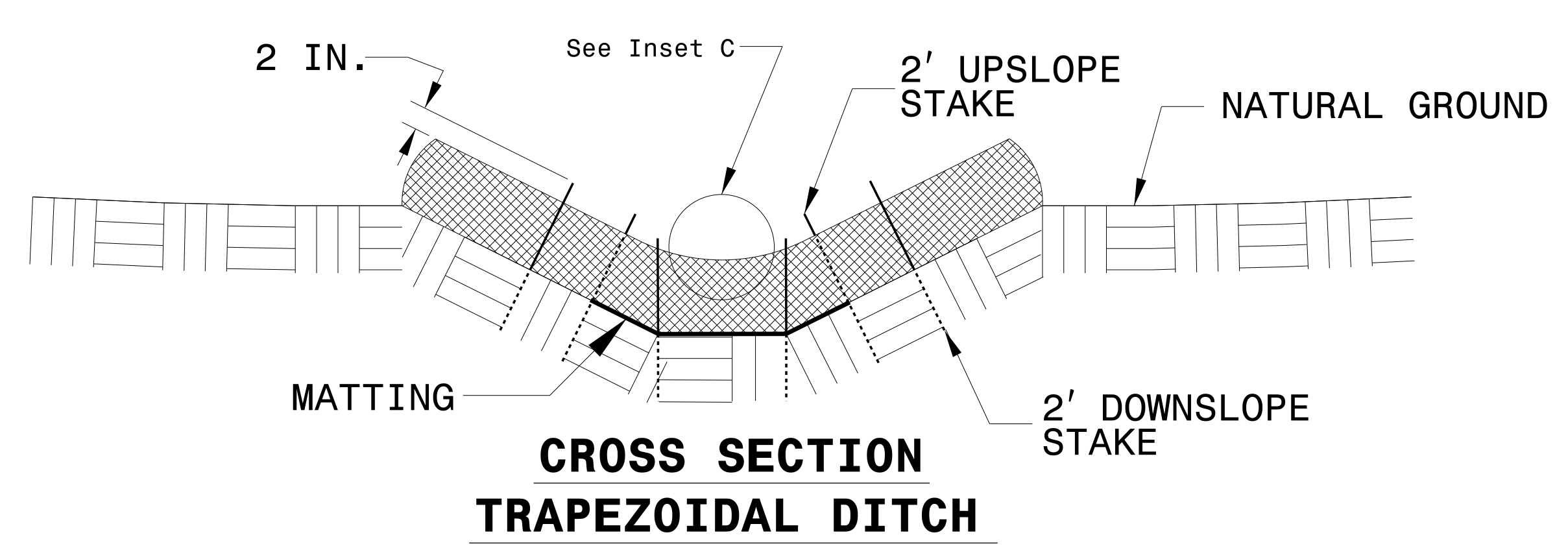
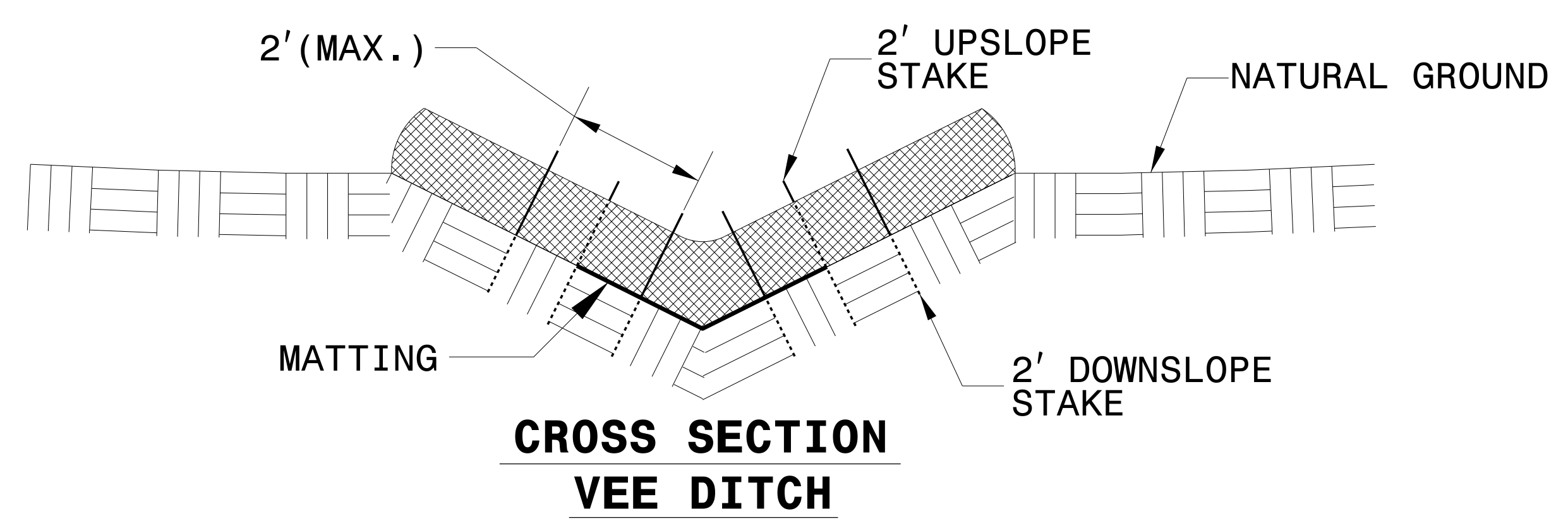
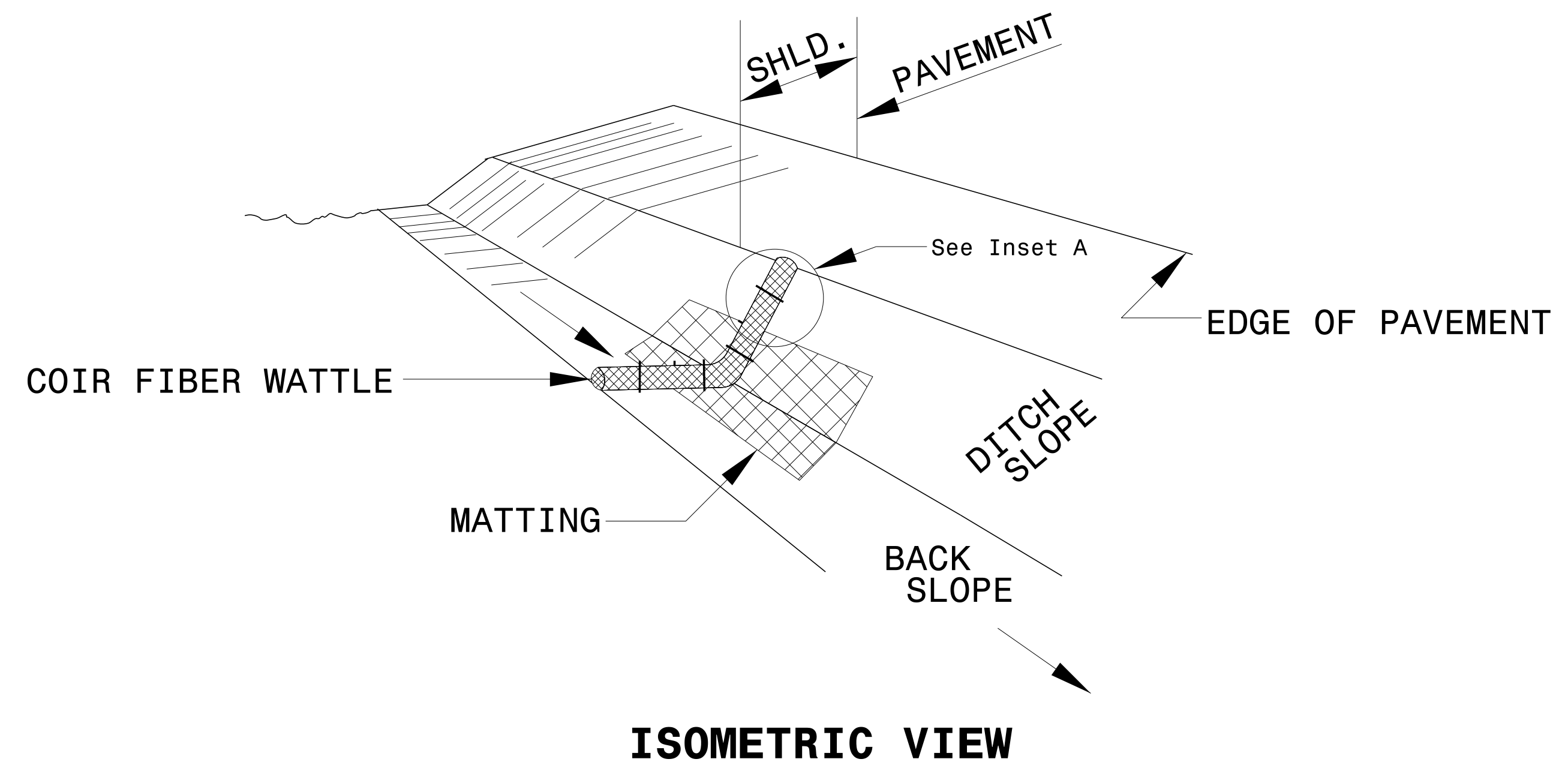
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

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.

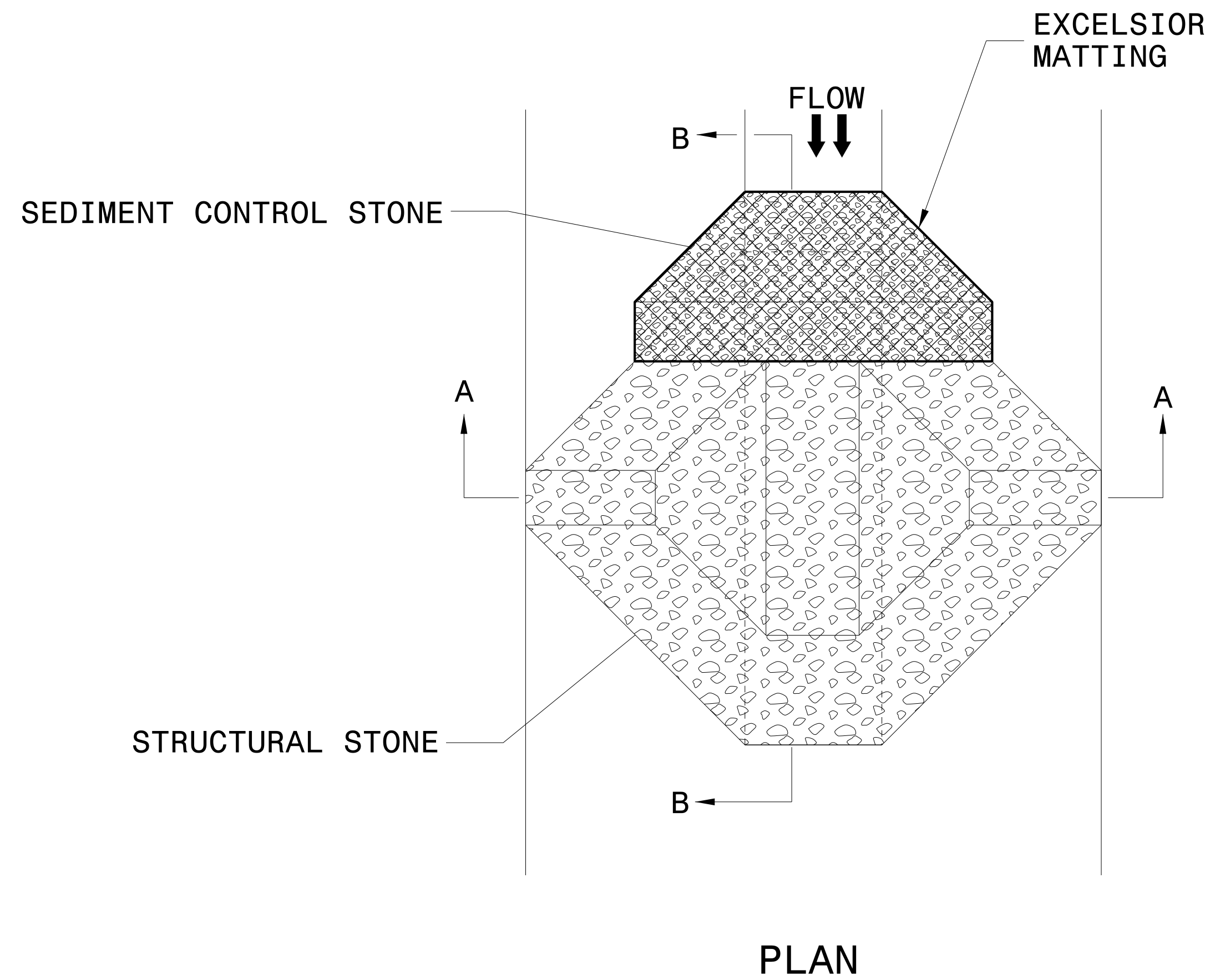
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

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-0035 | SHEET NO. EC-2B |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

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



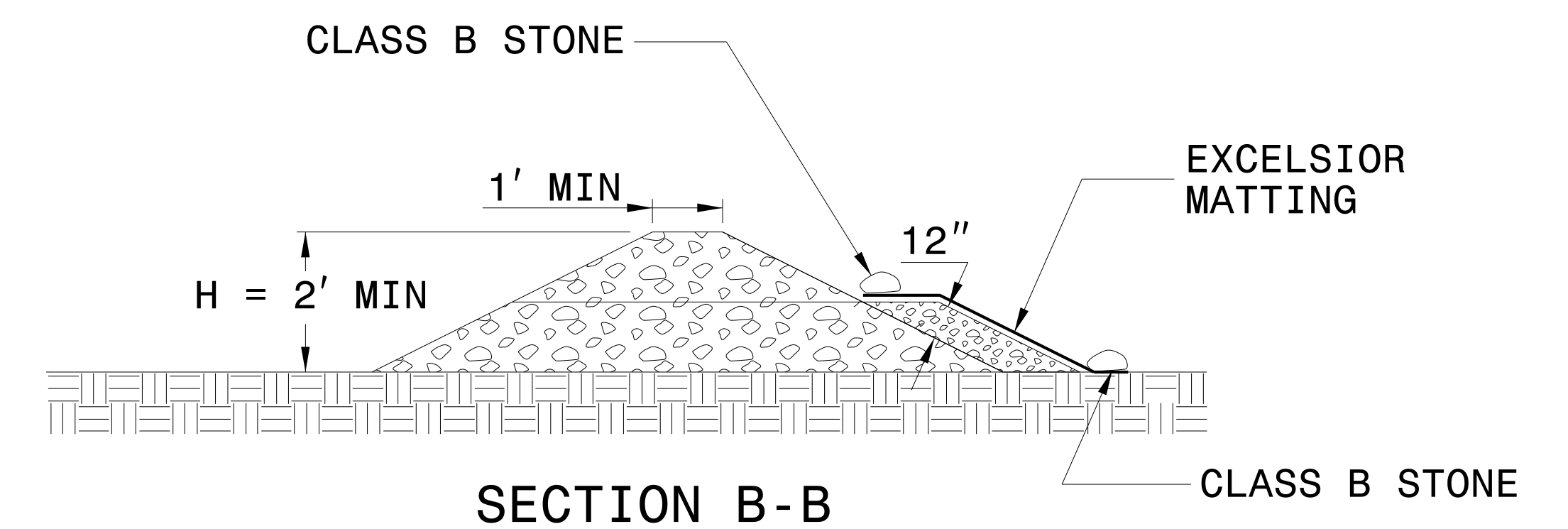
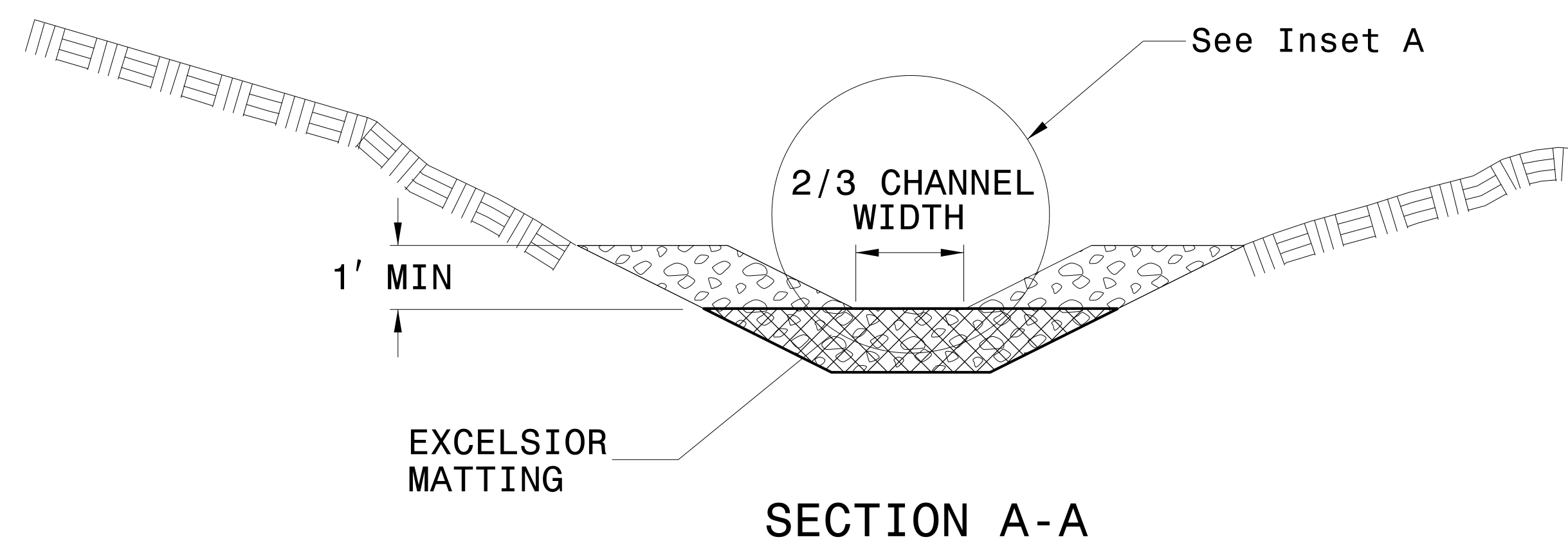
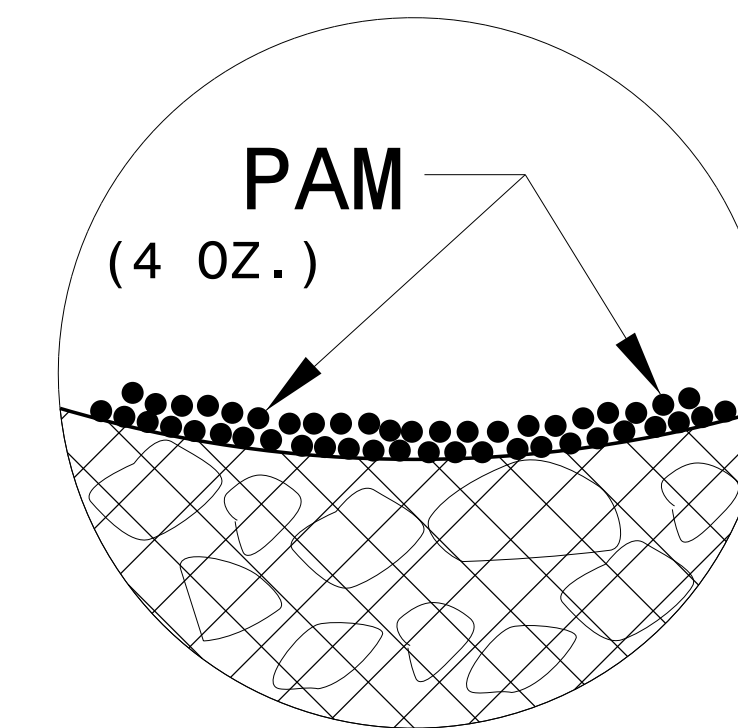
NOTES:

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.



NOT TO SCALE

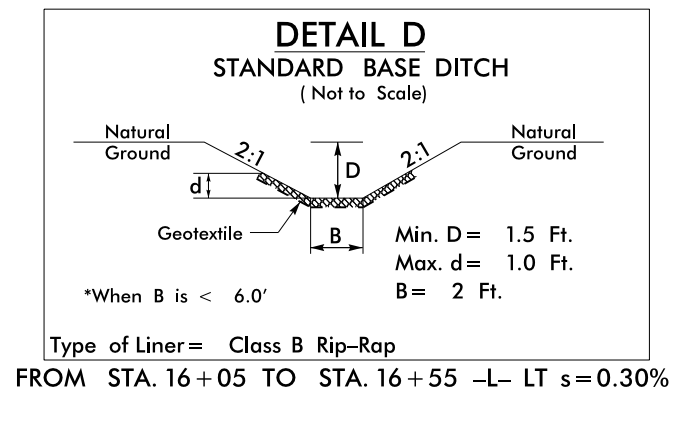
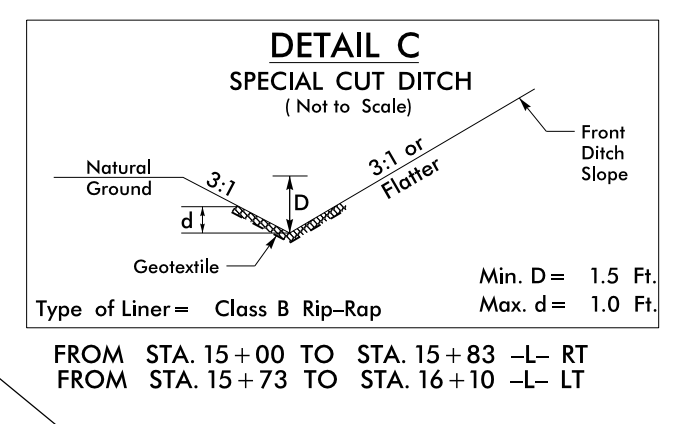
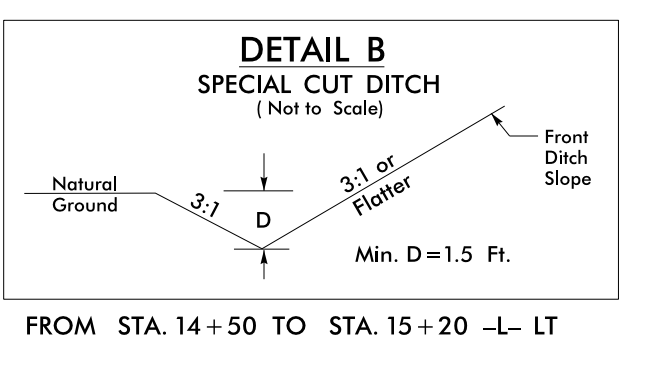
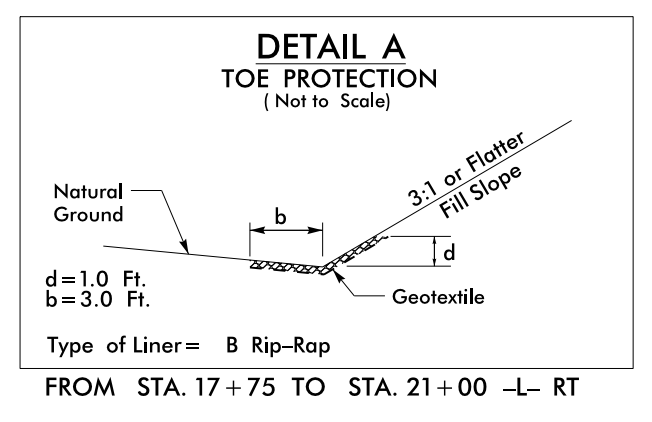
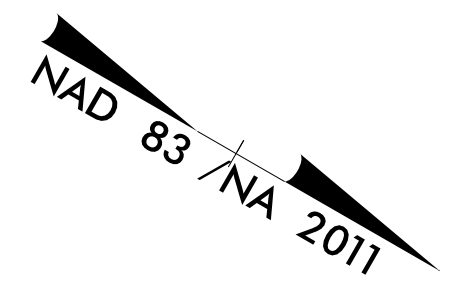
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

| | |
|---|---------------------------|
| PROJECT REFERENCE NO. <i>BR-0035</i> | SHEET NO. <i>EC-3A</i> |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

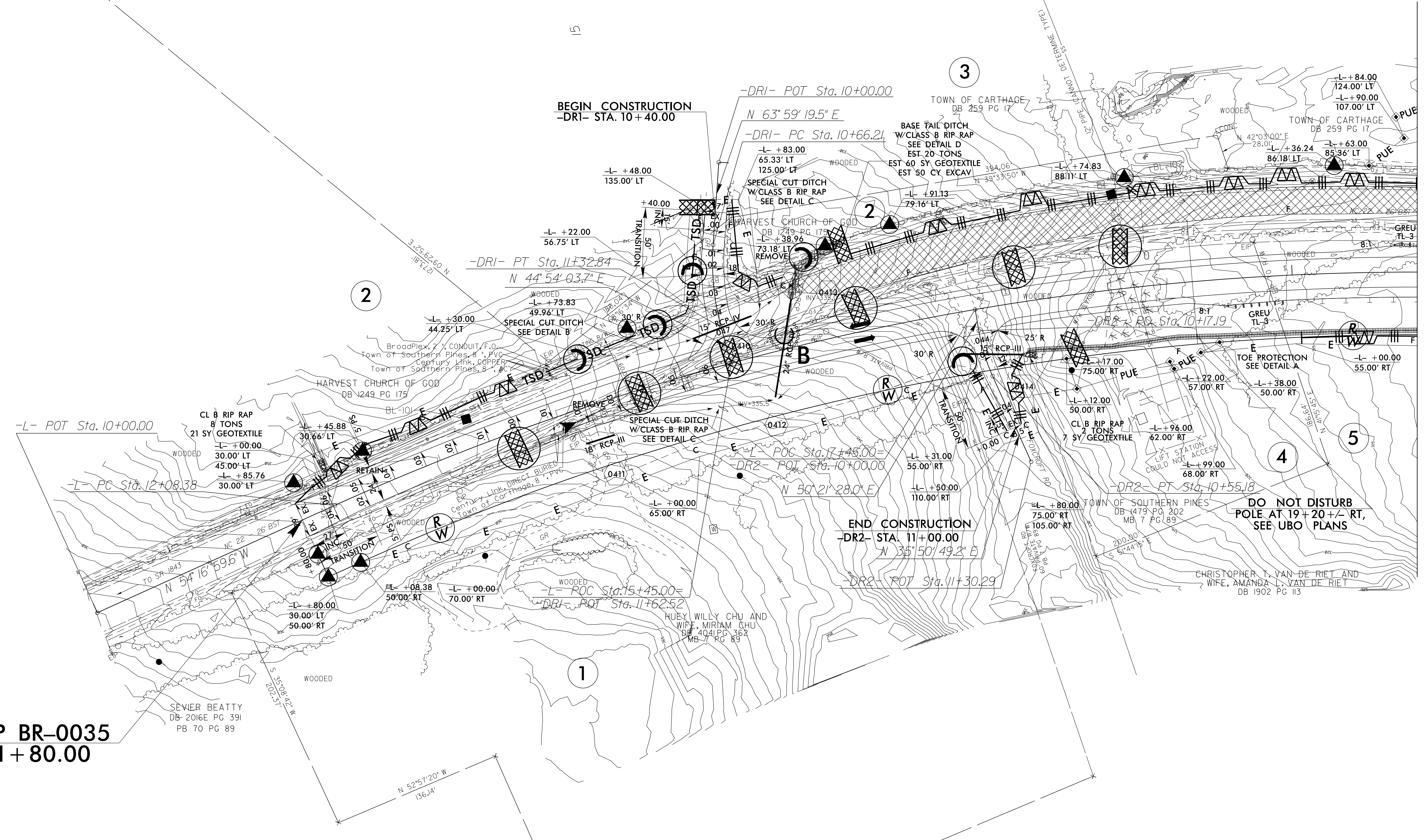
SOIL STABILIZATION TIMEFRAMES

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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4



| | |
|--|---|
| -L- | |
| PI Sta 20+86.24 Δ = 45° 22' 21.6" (RT) D = 2° 43' 42.1" L = 1,663.00' T = 877.86' R = 2,100.00' RO = SEE PLANS SE = .06 | |
| -DRI- | |
| PI Sta 10+99.84 Δ = 19° 05' 15.8" (LT) D = 28° 38' 52.4" L = 66.63' T = 33.63' R = 200.00' | -DR2- |
| | PI Sta 10+36.29 Δ = 14° 30' 38.7" (LT) D = 38° 11' 49.9" L = 37.99' T = 19.10' R = 150.00' |



BEGIN TIP BR-0035
-L- STA. 11+80.00

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

REVISIONS

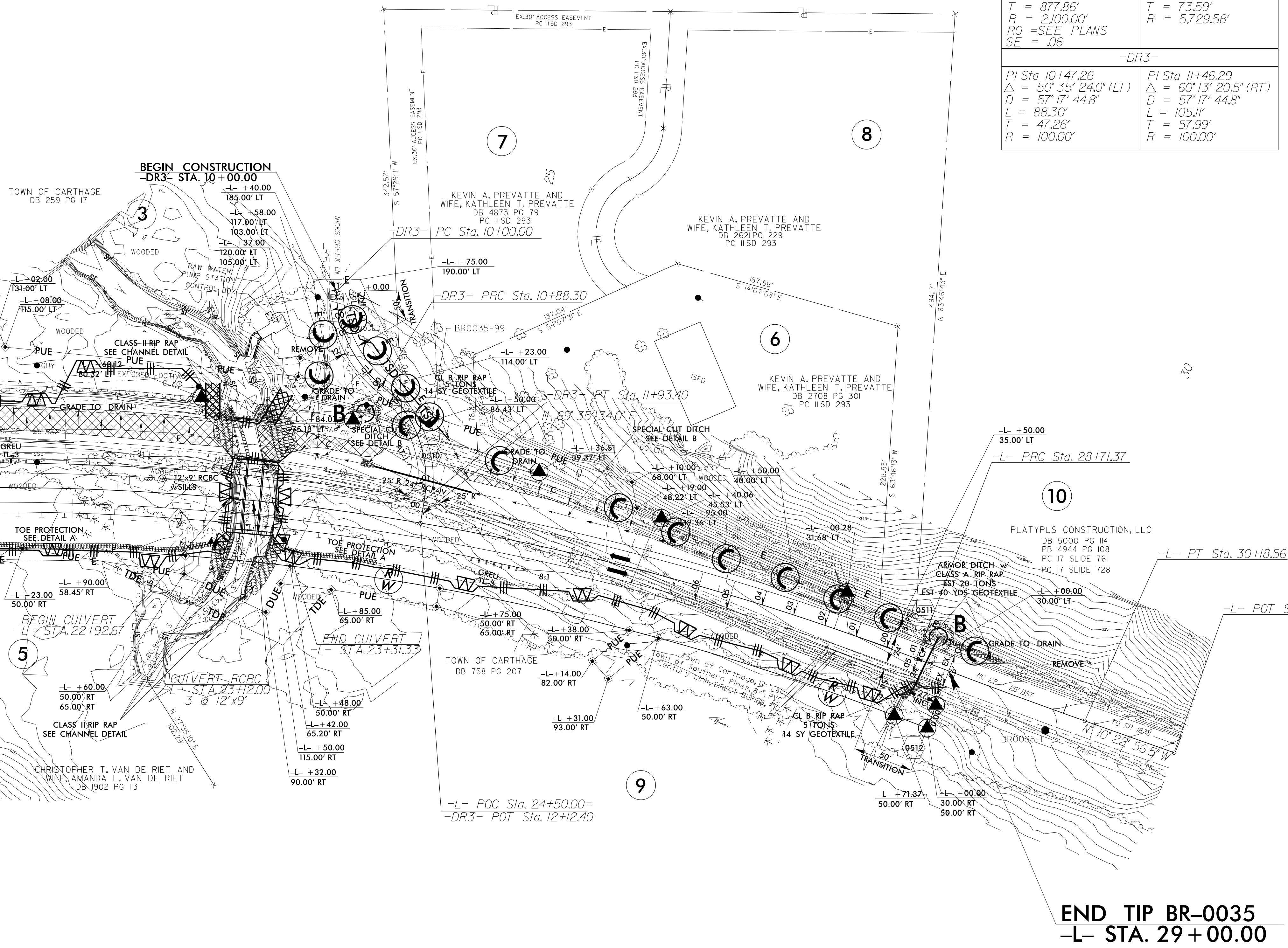
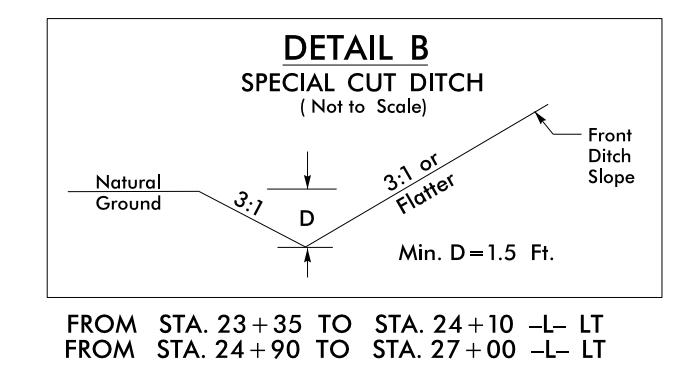
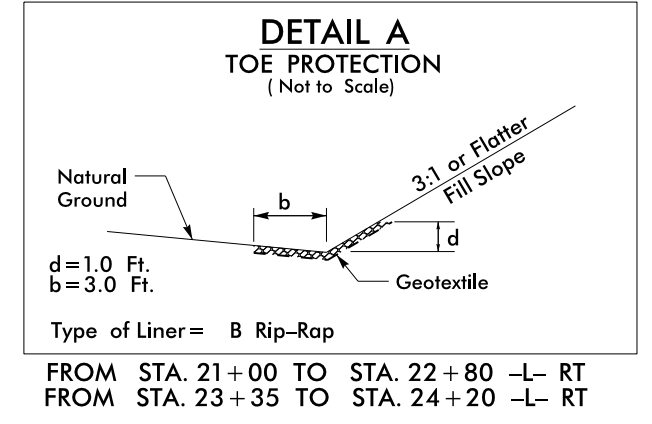
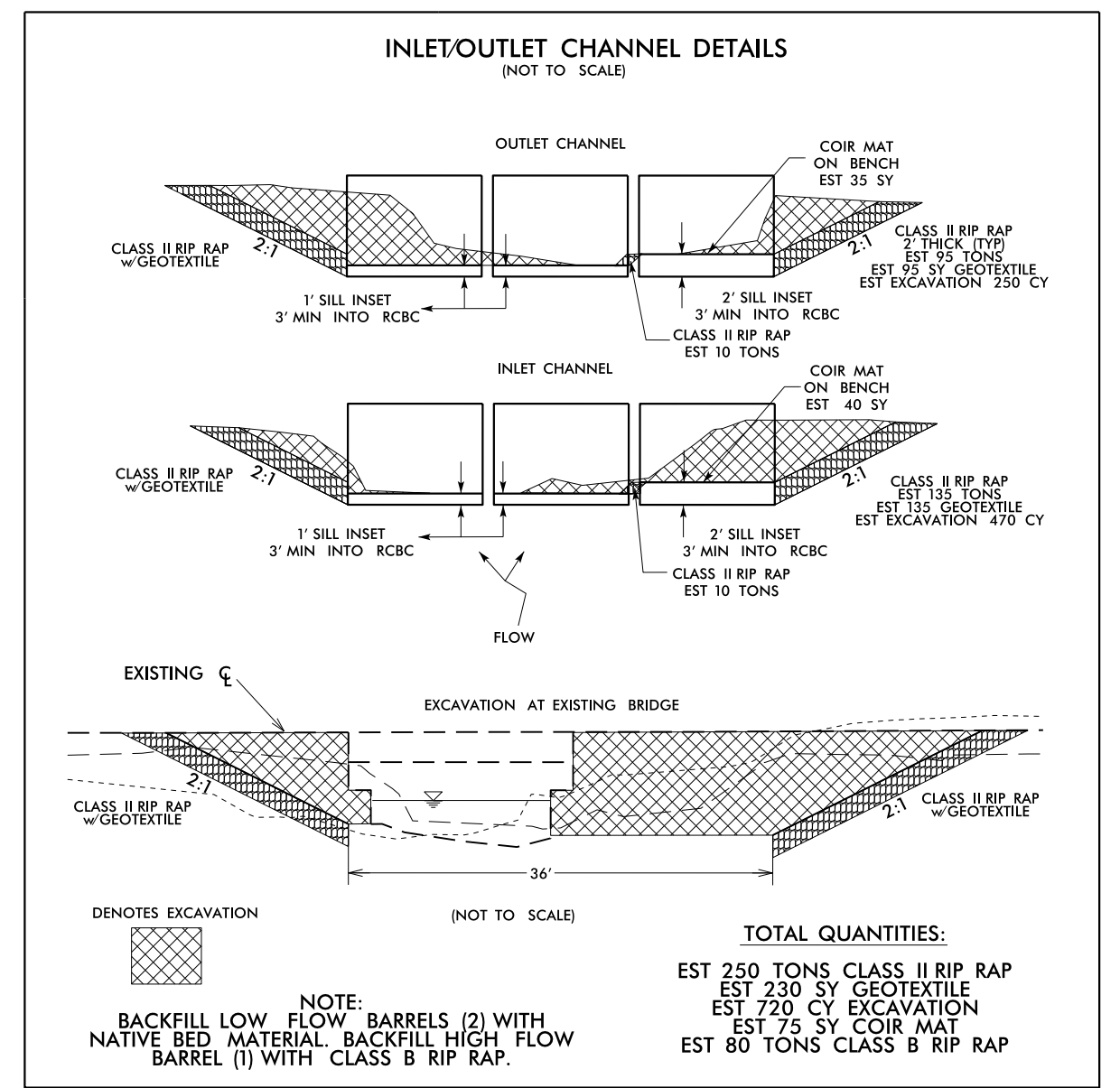
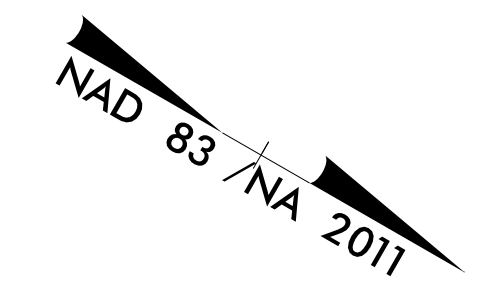
MATCHLINE -L- STA. 21+00.00 SEE SHEET 5

8/17/99

CONSTRUCTION

**CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5**

| | |
|--|--|
| -L- | |
| PI Sta 20+86.24 Δ = 45° 22' 21.6" (RT) D = 2° 43' 42.1" L = 1,663.00' T = 877.86' R = 2,100.00' RO = SEE PLANS SE = .06 | PI Sta 29+44.97 Δ = 1° 28' 18.5" (LT) D = 1° 00' 00.0" L = 147.18' T = 73.59' R = 5,729.58' |
| -DR3- | |
| PI Sta 10+47.26 Δ = 50° 35' 24.0" (LT) D = 57° 17' 44.8" L = 88.30' T = 47.26' R = 100.00' | PI Sta 11+46.29 Δ = 60° 13' 20.5" (RT) D = 57° 17' 44.8" L = 105.11' T = 57.99' R = 100.00' |



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

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

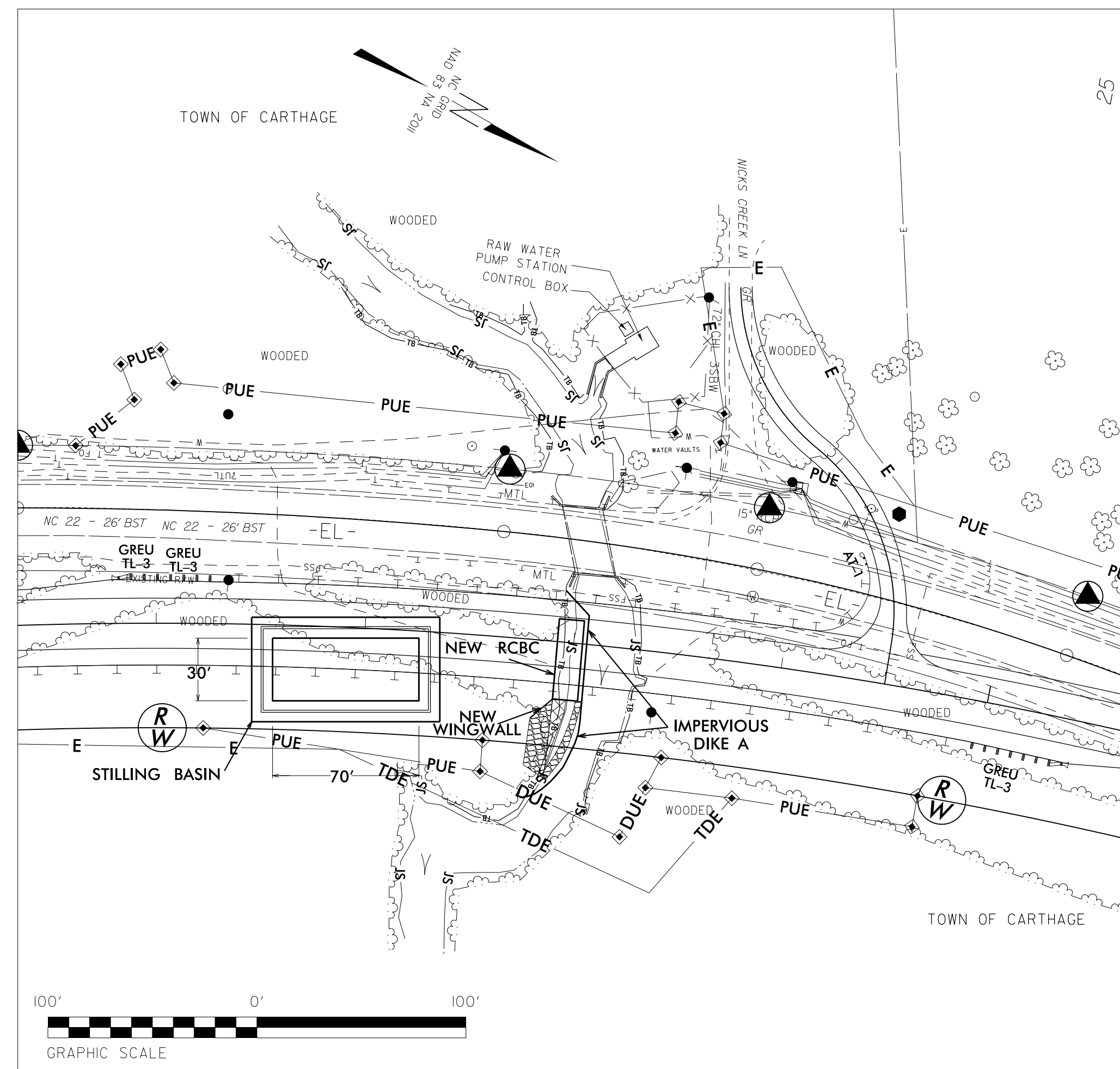
8/17/99
REVISIONS
MATCHLINE -L- STA. 21+00.00 SEE SHEET 4
END TIP BR-0035 -L- STA. 29+00.00

CULVERT CONSTRUCTION SEQUENCE 3@12' x 9' STA. 23+12 -L-

| | |
|----------------------------------|----------------------------|
| PROJECT REFERENCE NO. BR-0035 | SHEET NO. EC-5A/CONST.5 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

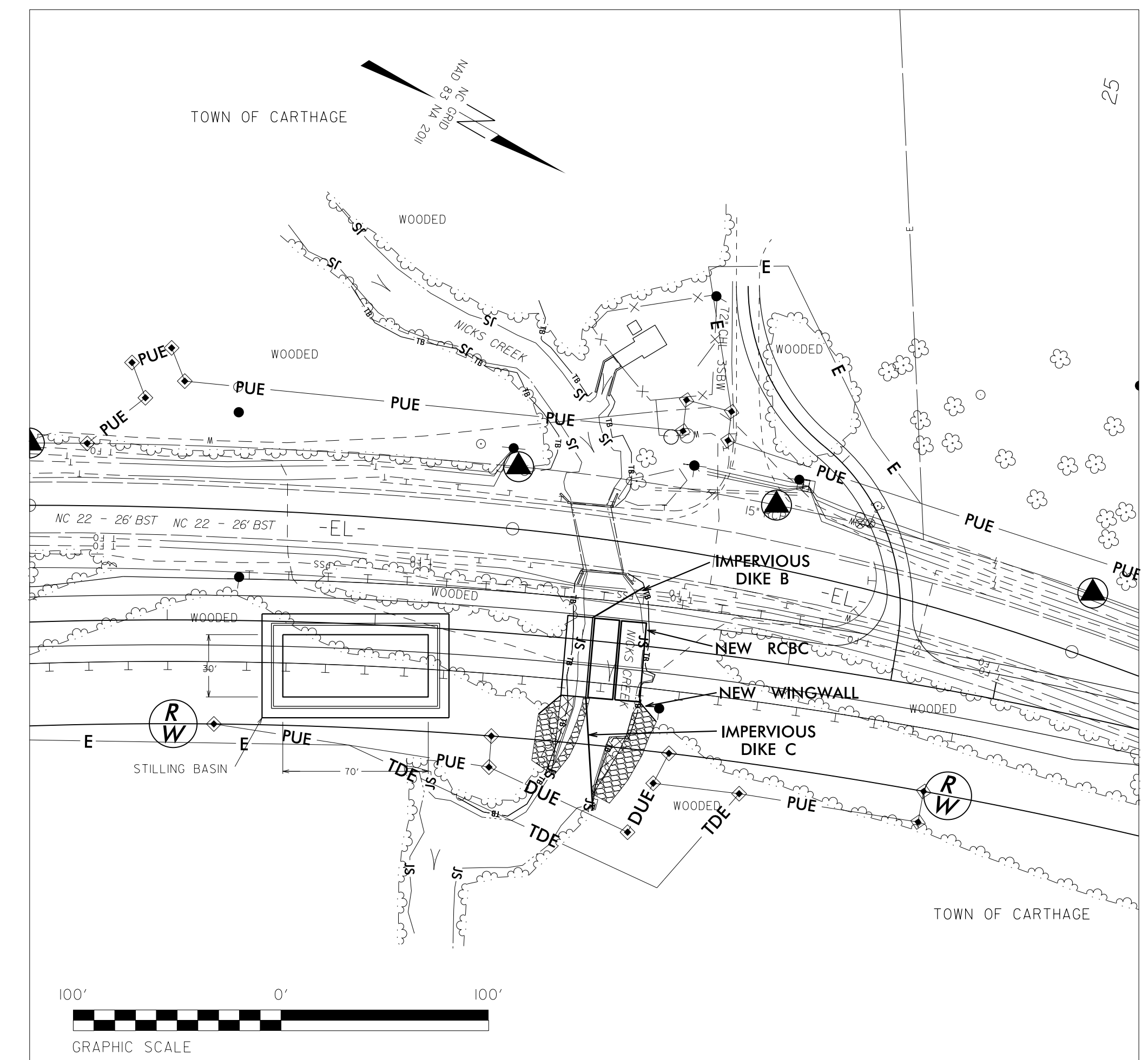
PHASE I

1. MAINTAIN TRAFFIC ON EXISTING ROADWAY.
2. CONSTRUCT TEMPORARY STILLING BASIN. (MINIMUM 340 CUBIC YARDS)
3. INSTALL IMPERVIOUS DIKE A AND DEWATER WORK AREA INTO STILLING BASIN.
4. CONSTRUCT DOWNSTREAM SECTION (38' +/-), ONE BARREL, WINGWALL AND OUTLET PROTECTION OF PROPOSED RCBC. (SOUTH SIDE BARREL)



PHASE II

1. CONTINUE TO MAINTAIN TRAFFIC ON EXISTING ROADWAY.
2. CONTINUE TO UTILIZE STILLING BASIN FROM PHASE I TO DEWATER WORK AREA, MAINTAIN AS NECESSARY.
3. INSTALL IMPERVIOUS DIKES B AND C, REMOVE IMPERVIOUS DIKE A ALLOWING STREAM TO FLOW THROUGH COMPLETED SECTION OF RCBC.
4. DEWATER WORK AREA AND CONSTRUCT DOWNSTREAM SECTION (45' +/-), TWO BARRELS, WINGWALL AND OUTLET PROTECTION OF PROPOSED RCBC. (CENTER AND NORTH BARRELS).
5. REMOVE IMPERVIOUS DIKES B AND C ALLOWING FLOW THROUGH COMPLETED PORTION OF NEW CULVERT, REMOVE STILLING BASIN..



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| PROJECT REFERENCE NO. BR-0035 | SHEET NO. EC-5B/CONST.5 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |

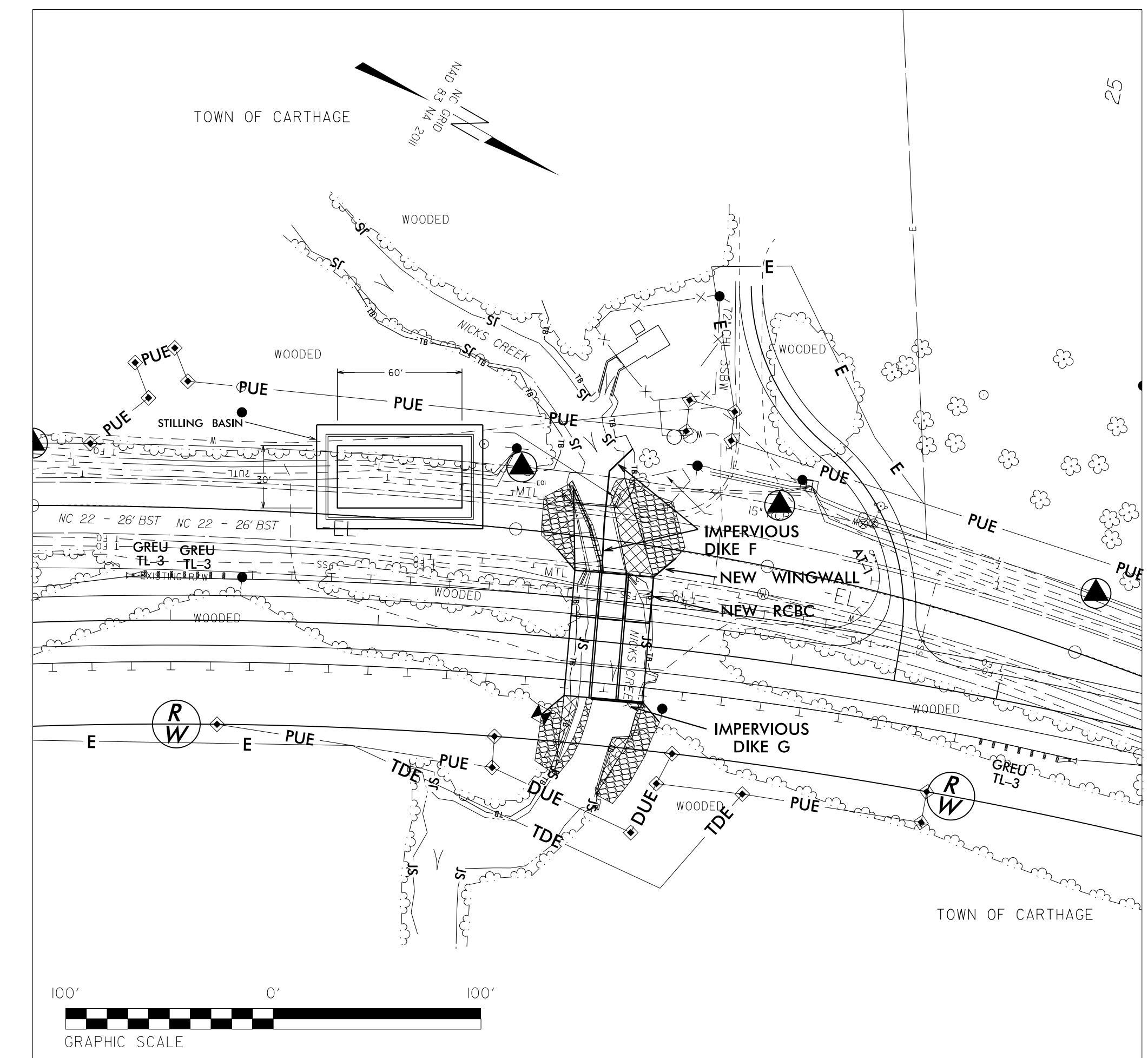
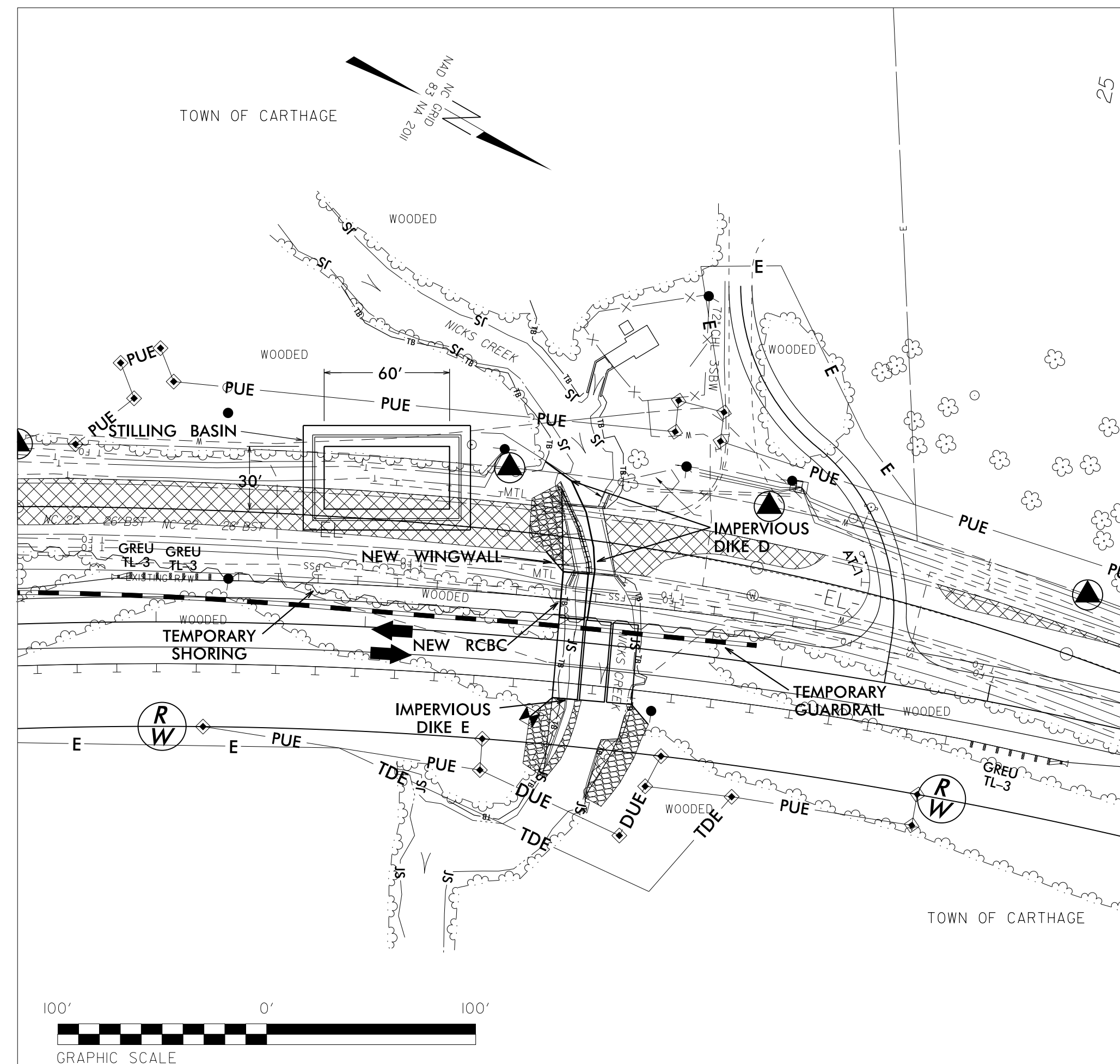
CULVERT CONSTRUCTION SEQUENCE STA. 23+12 -L-

PHASE III

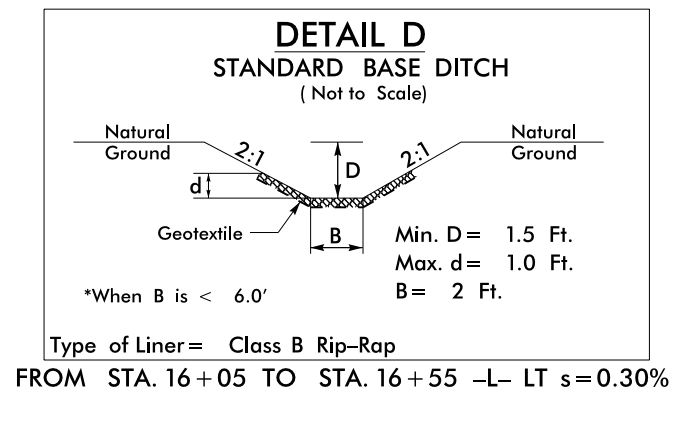
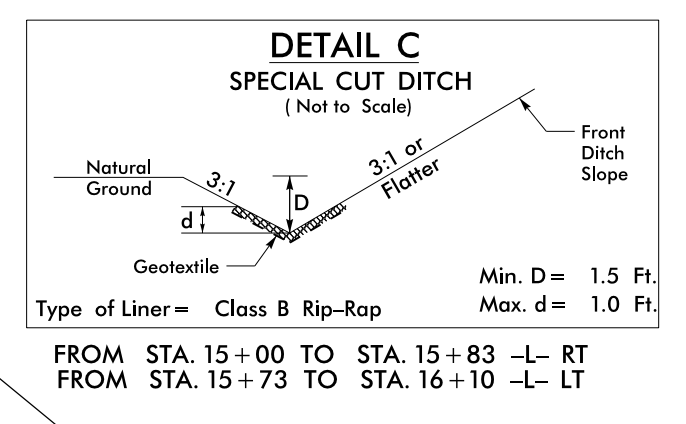
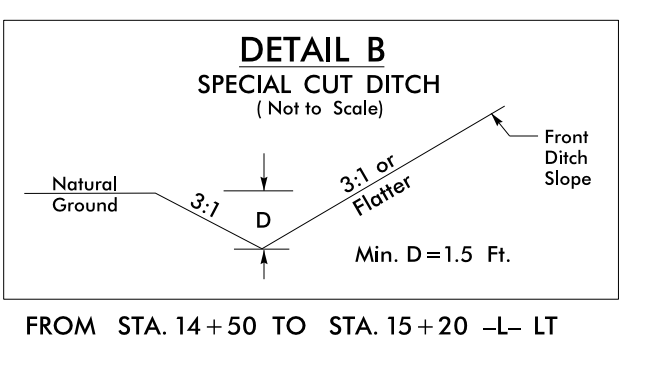
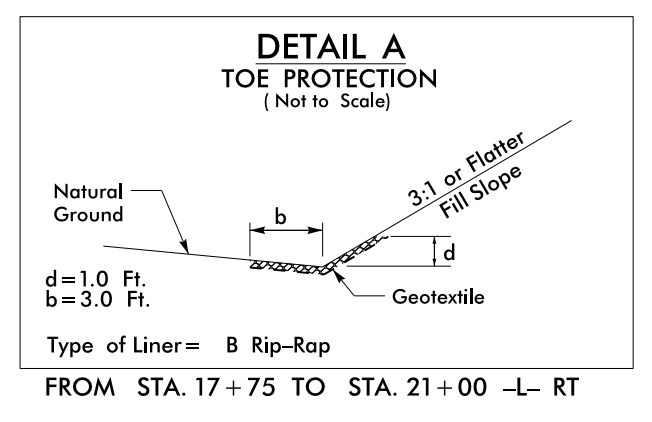
1. INSTALL TEMPORARY SHORING, AND CONSTRUCT NEW ROADWAY OVER CONSTRUCTED PORTION OF PROPOSED CULVERT.
2. MOVE TRAFFIC TO NEW ROADWAY.
3. REMOVE EXISTING BRIDGE AND ASPHALT.
4. CONSTRUCT TEMPORARY STILLING BASIN. (MINIMUM 300 CUBIC YARDS).
5. INSTALL IMPERVIOUS DIKES D AND E, UTILIZE STILLING BASIN TO DEWATER WORK AREA.
6. EXCAVATE SOUTH SIDE OF INLET CHANNEL TO FULL BUILD-OUT.
7. CONSTRUCT UPSTREAM SECTION (22' +/-), ONE BARREL, WINGWALL AND INLET PROTECTION OF PROPOSED RCBC. (SOUTH SIDE BARREL)

PHASE IV

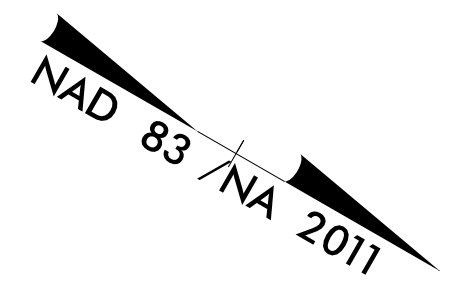
1. CONTINUE TO UTILIZE STILLING BASIN FROM PHASE III TO DEWATER WORK AREA, MAINTAIN AS NECESSARY.
2. INSTALL IMPERVIOUS DIKES F AND G, REMOVE IMPERVIOUS DIKE D AND E ALLOWING STREAM TO FLOW THROUGH NEWLY COMPLETED SECTION OF RCBC.
3. EXCAVATE NORTH SIDE OF INLET CHANNEL TO FULL BUILD OUT.
4. CONSTRUCT UPSTREAM SECTION (22' +/-), TWO BARRELS, WINGWALL AND INLET PROTECTION OF PROPOSED RCBC. (CENTER AND NORTH SIDE BARRELS)
5. REMOVE REMAINING IMPERVIOUS DIKES, REMOVE STILLING BASIN AND TEMPORARY SHORING ALLOWING STREAM TO FLOW THROUGH COMPLETED CULVERT. COMPLETE ROADWAY.



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| PROJECT REFERENCE NO. BR-0035 | SHEET NO. EC-6/CONST.4 |
| RW SHEET NO. | HYDRAULICS ENGINEER |
| ROADWAY DESIGN ENGINEER | |



| | |
|--|---|
| -L- | -DR2- |
| PI Sta 20+86.24 Δ = 45° 22' 21.6" (RT) D = 2° 43' 42.1" L = 1,663.00' T = 877.86' R = 2,100.00' RO = SEE PLANS SE = .06 | PI Sta 10+36.29 Δ = 14° 30' 38.7" (LT) D = 38° 11' 49.9" L = 37.99' R = 19.10' T = 150.00' |
| -DRI- | |
| PI Sta 10+99.84 Δ = 19° 05' 15.8" (LT) D = 28° 38' 52.4" L = 66.63' T = 33.63' R = 200.00' | |



Place Matting for Erosion Control on Slope as Work Allows. Sta. 16+50 to Sta. 21+00 LT

BEGIN TIP BR-0035 -L- STA. 11+80.00

Place Matting for Erosion Control on Slope as Work Allows. Sta. 18+00 to Sta. 21+00 RT

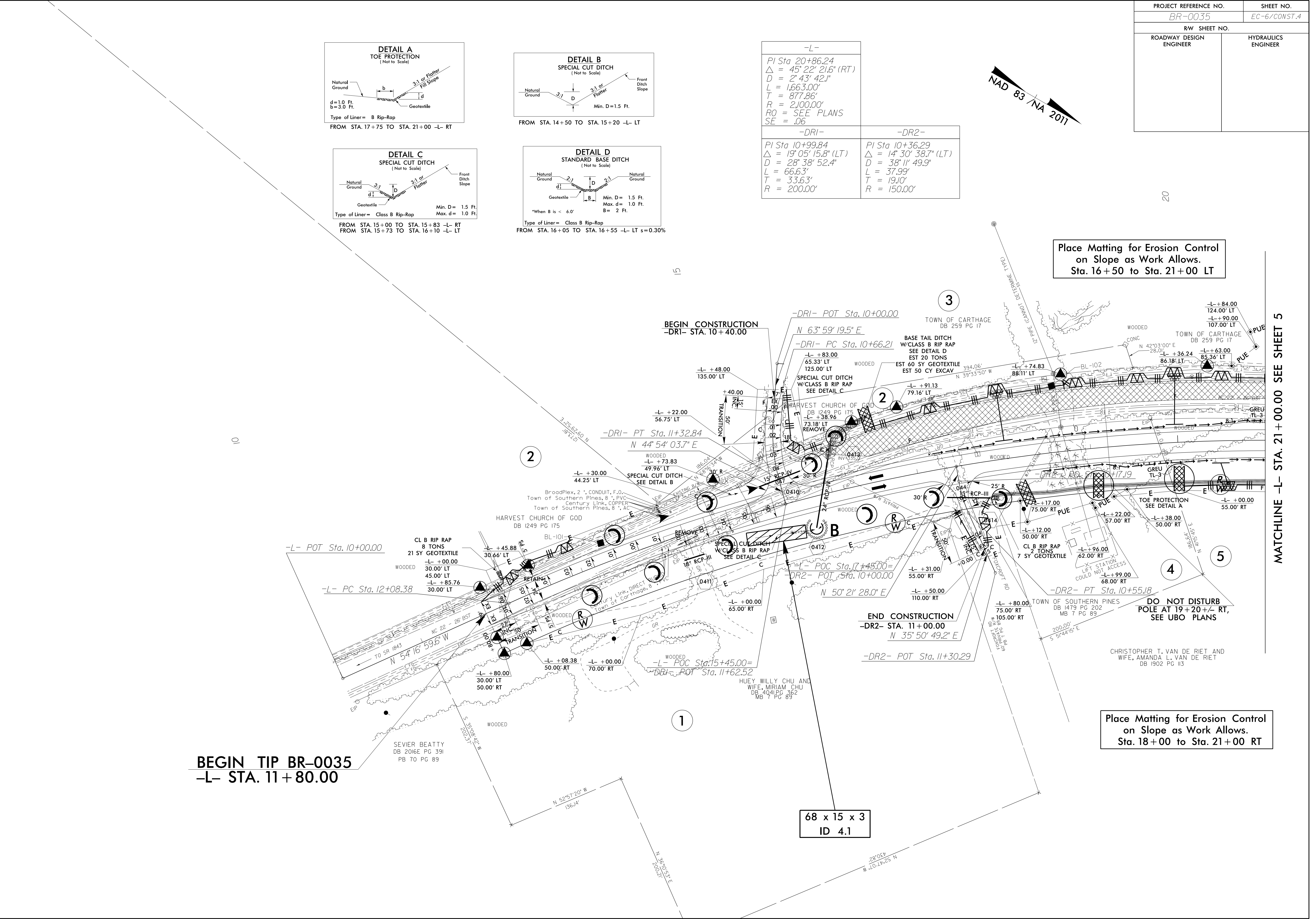
68 x 15 x 3 ID 4.1

MATCHLINE -L- STA. 21+00.00 SEE SHEET 5

REVISIONS

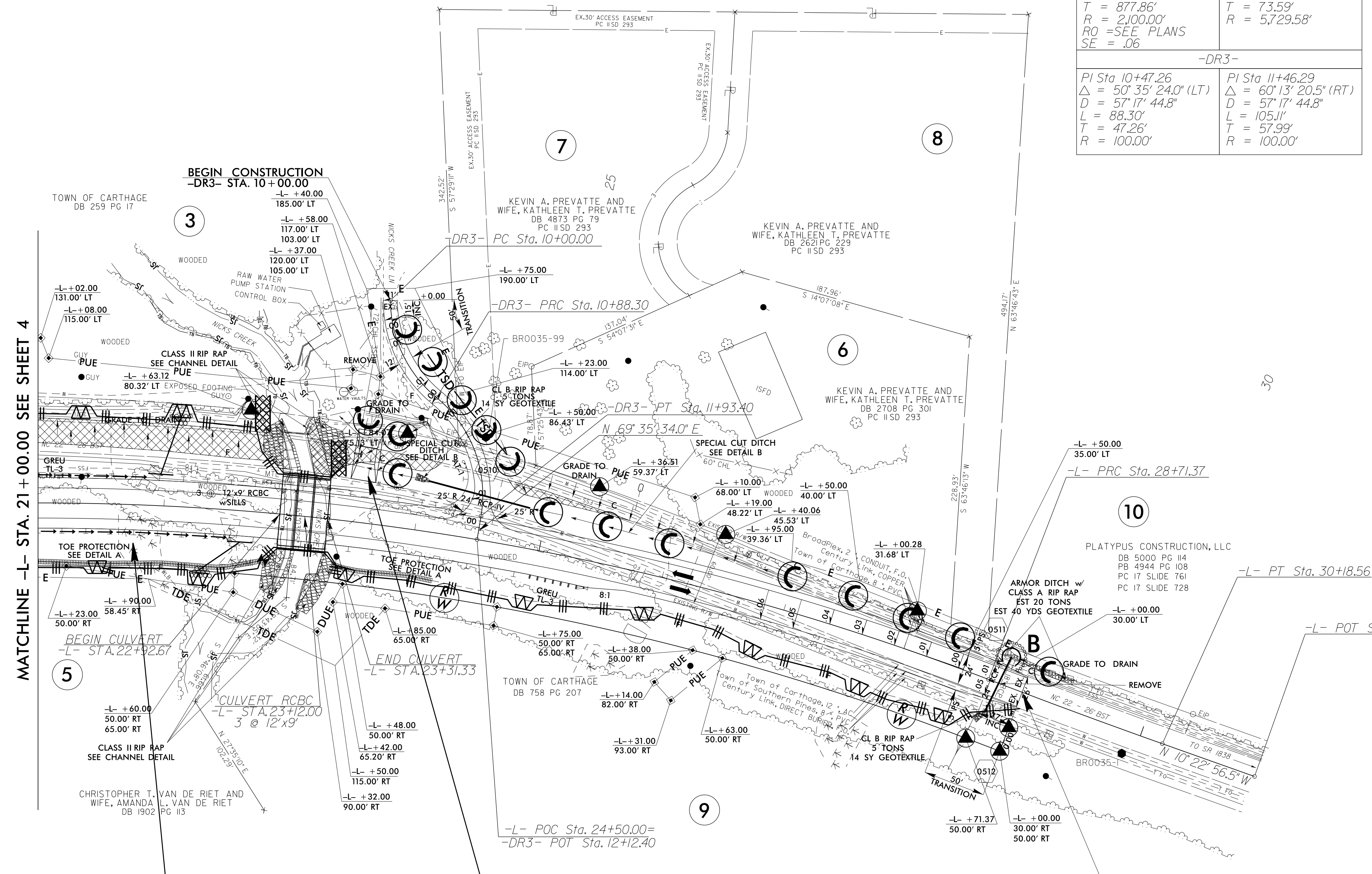
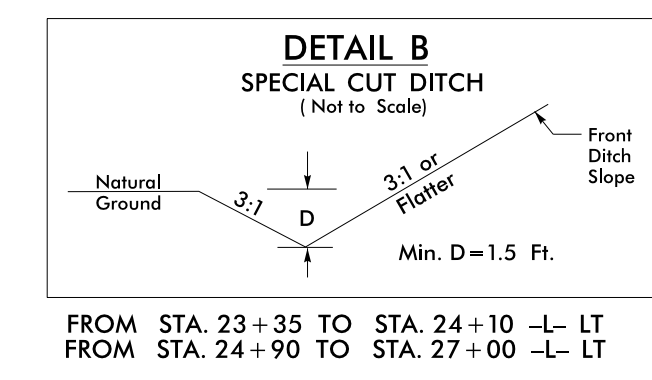
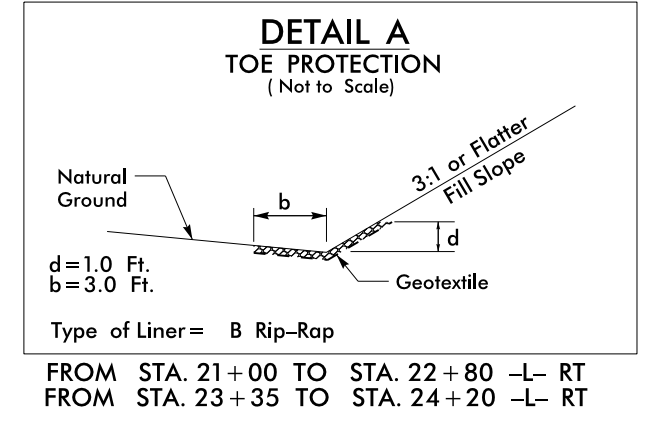
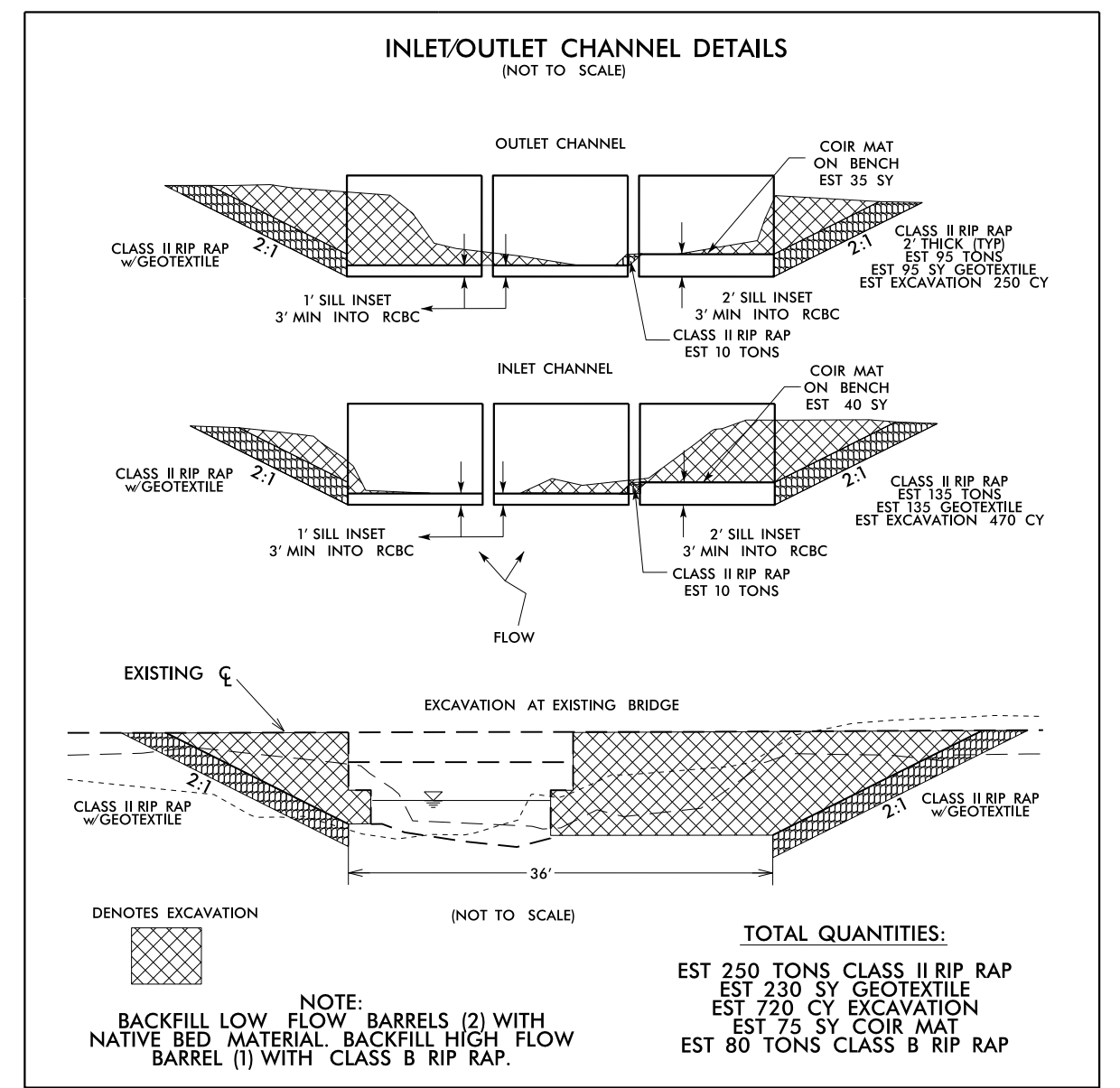
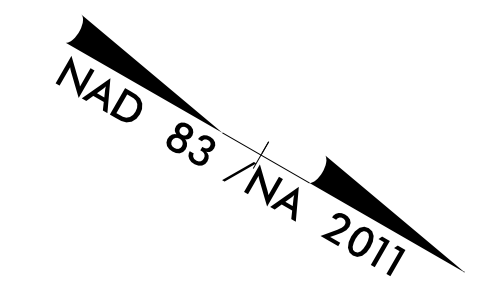
8/17/99

CONSTRUCTION



Place Matting for Erosion Control on Slope as Work Allows. Sta. 21+00 to Sta. 23+00 LT

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|--|--|
| -L- | |
| PI Sta 20+86.24 Δ = 45° 22' 21.6" (RT) D = 2° 43' 42.1" L = 1,663.00' T = 877.86' R = 2,100.00' RO = SEE PLANS SE = .06 | PI Sta 29+44.97 Δ = 1° 28' 18.5" (LT) D = 1° 00' 00.0" L = 147.18' T = 73.59' R = 5,729.58' |
| -DR3- | |
| PI Sta 10+47.26 Δ = 50° 35' 24.0" (LT) D = 57° 17' 44.8" L = 88.30' T = 47.26' R = 100.00' | PI Sta 11+46.29 Δ = 60° 13' 20.5" (RT) D = 57° 17' 44.8" L = 105.11' T = 57.99' R = 100.00' |



MATCHLINE -L- STA. 21+00.00 SEE SHEET 4

Place Matting for Erosion Control on Slopes Adjacent to Permitted Wetlands as Work Allows.

20 x 40 x 3
1.5 inch Skimmer
with 0.750 inch
Orifice Diameter
4 ft. weir
ID 5.1

Place Matting for Erosion Control on Slope as Work Allows. Sta. 21+00 to Sta. 28+50 RT

END TIP BR-0035
-L- STA. 29+00.00

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

REVISIONS

8/17/99

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