

REV. 12-18-95: CHANGED DRAWING NO. FROM ESC-STR-11 TO EC-STR-11.

REV. 5-27-01: CHANGED ITEM NOS. 303-15.01 TO 303-10.01 AND 740-03.01 TO 740-10.03. CHANGED DESCRIPTION FOR ITEM NOS. 709-05.05, 709-05.06, AND 709-05.07.

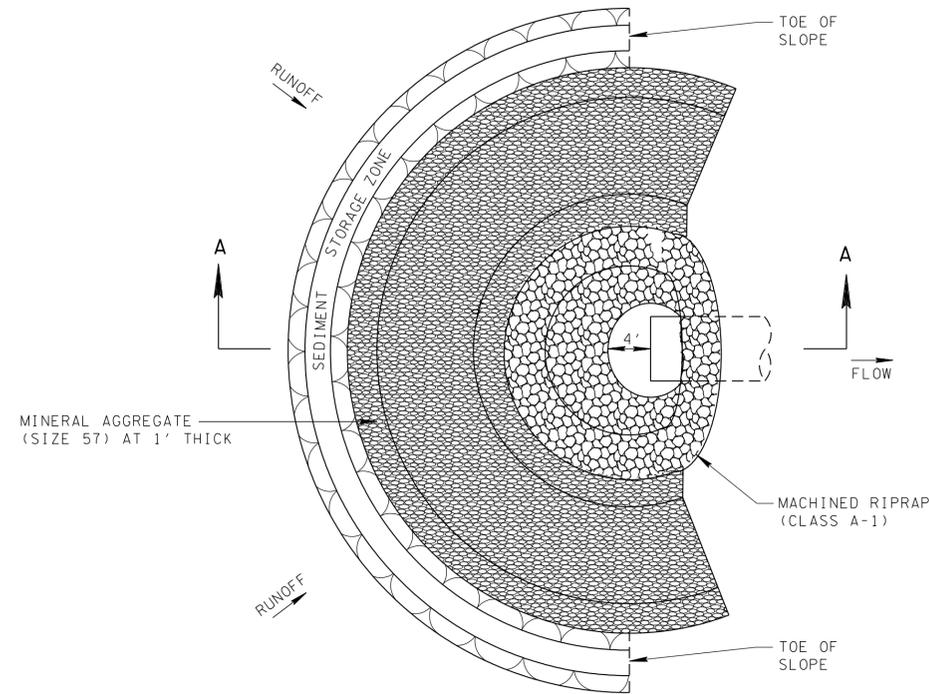
REV. 12-18-02: CHANGED GENERAL NOTE ①.

REV. 1-22-03: ADDED ADDITIONAL GEOTEXTILE FABRIC TO ALL SECTIONAL VIEWS.

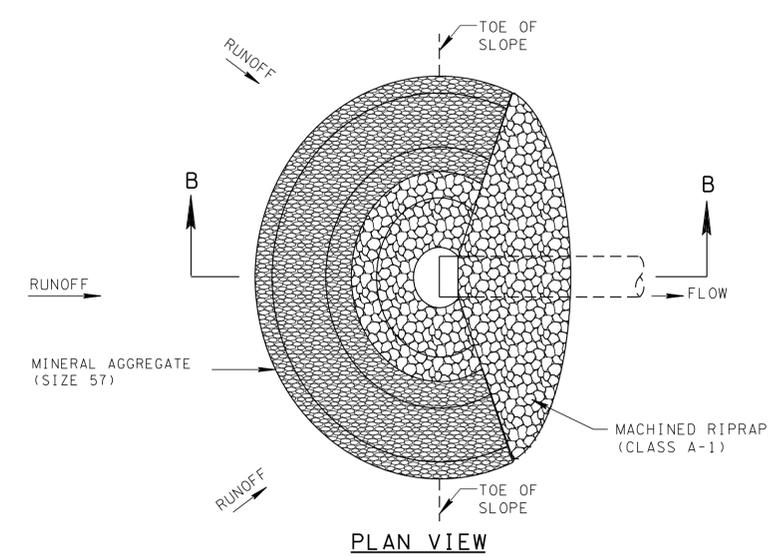
REV. 4-15-06: REFORMATTED SHEET, REVISED NOTES, MISC. EDITS TO DRAWING.

REV. 4-1-08: REMOVED DITCH AND CHANNEL APPLICATION, RENAMED DRAWING, REVISED NOTES, MISC. EDITS TO DRAWING.

DETAIL FOR UP TO 36" PIPE SIZE

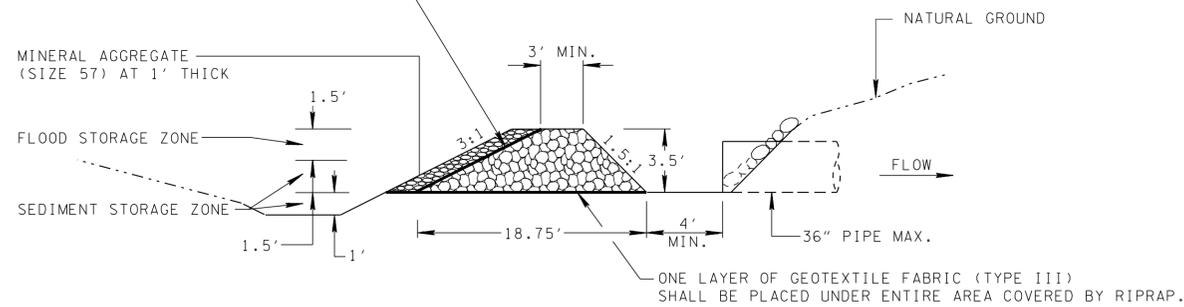


DETAIL FOR 18" TO 24" PIPE SIZE



TWO LAYERS OF GEOTEXTILE FABRIC (TYPE III) SHALL BE PLACED BETWEEN MINERAL AGGREGATE LAYER AND RIPRAP LAYER AND BETWEEN MINERAL AGGREGATE AND NATURAL GROUND.

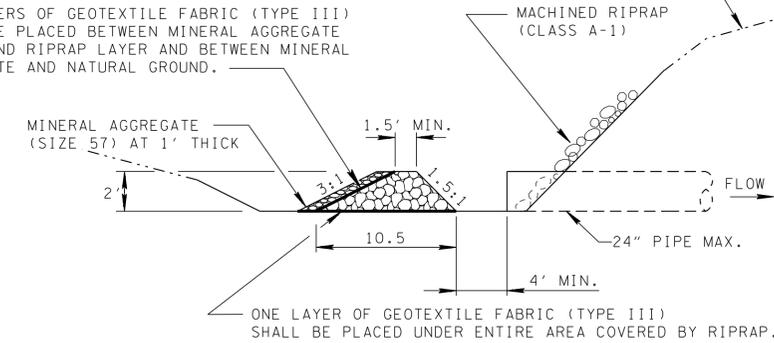
PLAN VIEW



SECTION A - A

TWO LAYERS OF GEOTEXTILE FABRIC (TYPE III) SHALL BE PLACED BETWEEN MINERAL AGGREGATE LAYER AND RIPRAP LAYER AND BETWEEN MINERAL AGGREGATE AND NATURAL GROUND.

NATURAL GROUND



SECTION B - B

CULVERT PROTECTION TYPE 1 GENERAL NOTES

- (A) CULVERT PROTECTION (TYPE 1) MAY BE USED AROUND A CULVERT INLET TO REDUCE FLOW VELOCITIES TO ALLOW SEDIMENTS TO DROP OUT. IT IS NORMALLY USED WHERE ALL OF THE INFLOW TO THE CULVERT IS ON-SITE RUNOFF. IT MAY ALSO BE USED WHERE A FILTRATION FUNCTION FOR VERY LOW FLOWS IS DESIRED.
- (B) CULVERT PROTECTION (TYPE 1) SHALL NOT BE USED IN STREAMS OR OTHER NATURAL WATER RESOURCES.
- (C) CULVERT PROTECTION (TYPE 1) SHOULD NOT BE USED IN DITCHES, SWALES, OR OTHER DEPRESSIONS WITH A DEPTH GREATER THAN 1 FOOT.
- (D) CULVERT PROTECTION (TYPE 1) SHOULD NOT BE USED AT THE CULVERT OUTLET.
- (E) WHERE CONDITIONS OF HIGH SEDIMENT FLOW EXIST, MACHINED RIPRAP (CLASS A-3) MAY BE USED IN LIEU OF MACHINED RIPRAP (CLASS A-1) FOR PIPES UP TO 24 INCHES IN DIAMETER WITH A DRAINAGE AREA LESS THAN 3 ACRES. IT MAY ALSO BE USED FOR PIPE FROM 24 INCHES IN DIAMETER WITH A DRAINAGE AREA LESS THAN 6 ACRES.
- (F) AT MOST SITES, THE MAXIMUM ALLOWABLE DRAINAGE AREA SHALL BE 30 ACRES. AT SITES WHICH DRAIN TO HIGH-QUALITY OR SEDIMENT-IMPAIRED STREAMS, THE MAXIMUM ALLOWABLE DRAINAGE AREA SHALL BE 20 ACRES.

- (G) ONLY GEOTEXTILE FABRIC (TYPE III) LISTED ON THE QUALIFIED PRODUCTS LIST SHALL BE USED.
- (H) CULVERT PROTECTION (TYPE 1) SHALL BE PAID FOR UNDER THE FOLLOWING ITEM NUMBERS:

203-01	ROAD & DRAINAGE EXCAVATION (UNCLASSIFIED) PER CUBIC YARD
303-10.01	MINERAL AGGREGATE (SIZE 57) PER TON
709-05.05	MACHINED RIPRAP (CLASS A-3) PER TON
709-05.06	MACHINED RIPRAP (CLASS A-1) PER TON
740-10.03	GEOTEXTILE (TYPE III) (EROSION CONTROL) PER SQUARE YARD

PAYMENT SHALL INCLUDE ALL MATERIALS AND LABOR NECESSARY FOR CONSTRUCTION, MAINTENANCE, AND REMOVAL OF CULVERT PROTECTION (TYPE 1).
- (I) SEDIMENT SHALL BE REMOVED FROM BEHIND THE CULVERT PROTECTION (TYPE 1) WHEN IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE STRUCTURE AND PAID FOR UNDER ITEM NUMBER 209-05, SEDIMENT REMOVAL PER CUBIC YARD.

MINOR REVISION -- FHWA APPROVAL NOT REQUIRED.

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

CULVERT
PROTECTION
TYPE 1

10-26-92 EC-STR-11

