

Where culvert and associated drainage system is to be made operational prior to permanent stabilization of the disturbed drainage area. Different types of structures are applicable to different conditions (see Plates 3.08-1 and 3.08-2).

Conditions Where Practice Applies

## Planning Considerations

When construction on a project reaches a stage where culverts and other storm sewer appurtenances are installed and many areas are brought to a desired grade, the erosion control measures used in the early stages normally need to be modified or may need to be removed altogether. At that time, there is a need to provide protection at the points where runoff will leave the area via culverts and drop or curb inlets.

Similar to drop and curb inlets, culverts which are made operational prior to stabilization of the associated drainage areas can convey large amounts of sediment to natural drainageways. In case of extreme sediment loading, the pipe or pipe system itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the culvert by using one of the methods noted in this section.

### General Guidelines (All Types)

- The inlet protection device shall be constructed in a manner that will facilitate cleanout and disposal of trapped sediment and minimize interference with construction
- The inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause excessive inconvenience or damage to adjacent areas or structures:
- Design criteria more specific to each particular inlet protection device will be found in Plates 3.08-1 through 3.08-2.

# Design Criteria

- Silt Fence Culvert Inlet Protection
- three months.

1992

A 2-inch x 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.

Concrete blocks shall be placed on their sides across the front of the inlet and

- abutting the spacer blocks as depicted in Plate 3.07-8. Wire mesh shall be placed over the outside vertical face (webbing) of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire mesh with 1/2-inch openings shall be used.
- e. Coarse aggregate shall be piled against the wire to the top of the barrier as
- If the stone filter becomes clogged with sediment so that it no longer. adequately performs its function, the stone must be pulled away from the blocks, cleaned and/or replaced.

- The structure shall be inspected after each rain and repairs made as needed.
- Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not
- Structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

BLOCK & GRAVEL CURB INLET SEDIMENT FILTER - CURB INLET \_\_\_\_\_ \_\_\_\_\_ --- FILTERED WATER 2" X 4" WOOD STUD

SPECIAL APPLICATION

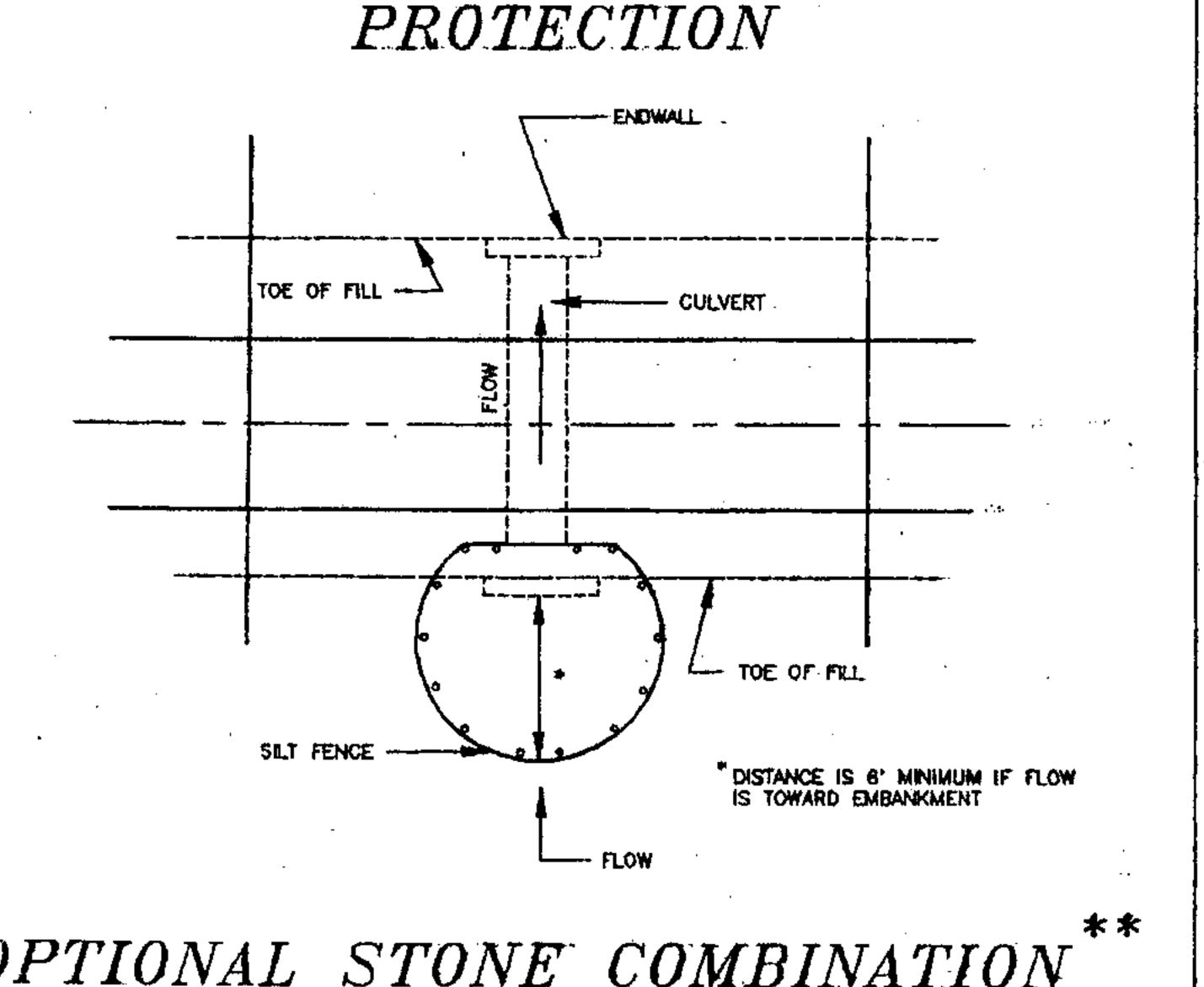
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

\* GRAVEL SHALL BE VDOT #3, #357 OR #5 COARSE AGGREGATE

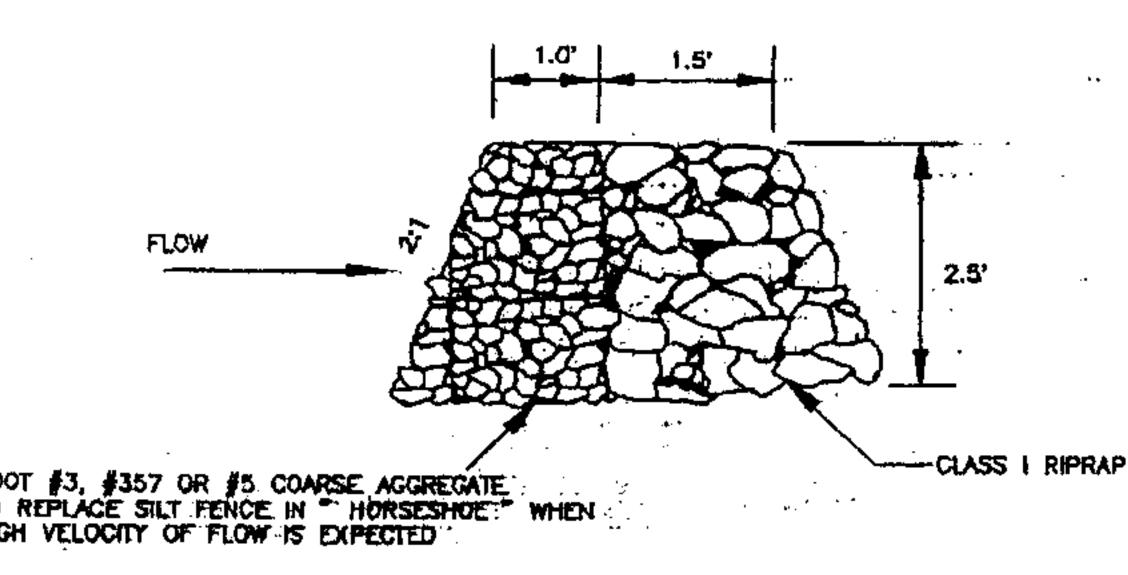
Source: Va. DSWC

Plate 3.07-8

SILT FENCE CULVERT INLET



OPTIONAL STONE COMBINATION



Sheets and Va. DSWC

STD & SPEC 3.08

CULVERT INLET PROTECTION

3.08

A sediment filter located at the inlet to storm sewer culverts.

- To prevent sediment from entering, accumulating in and being transferred by a culvert and associated drainage system prior to permanent stabilization of a disturbed project area.
- To provide erosion control at culvert inlets during the phase of a project where elevation and drainage patterns change, causing original control measures to be ineffective or in need of removal.



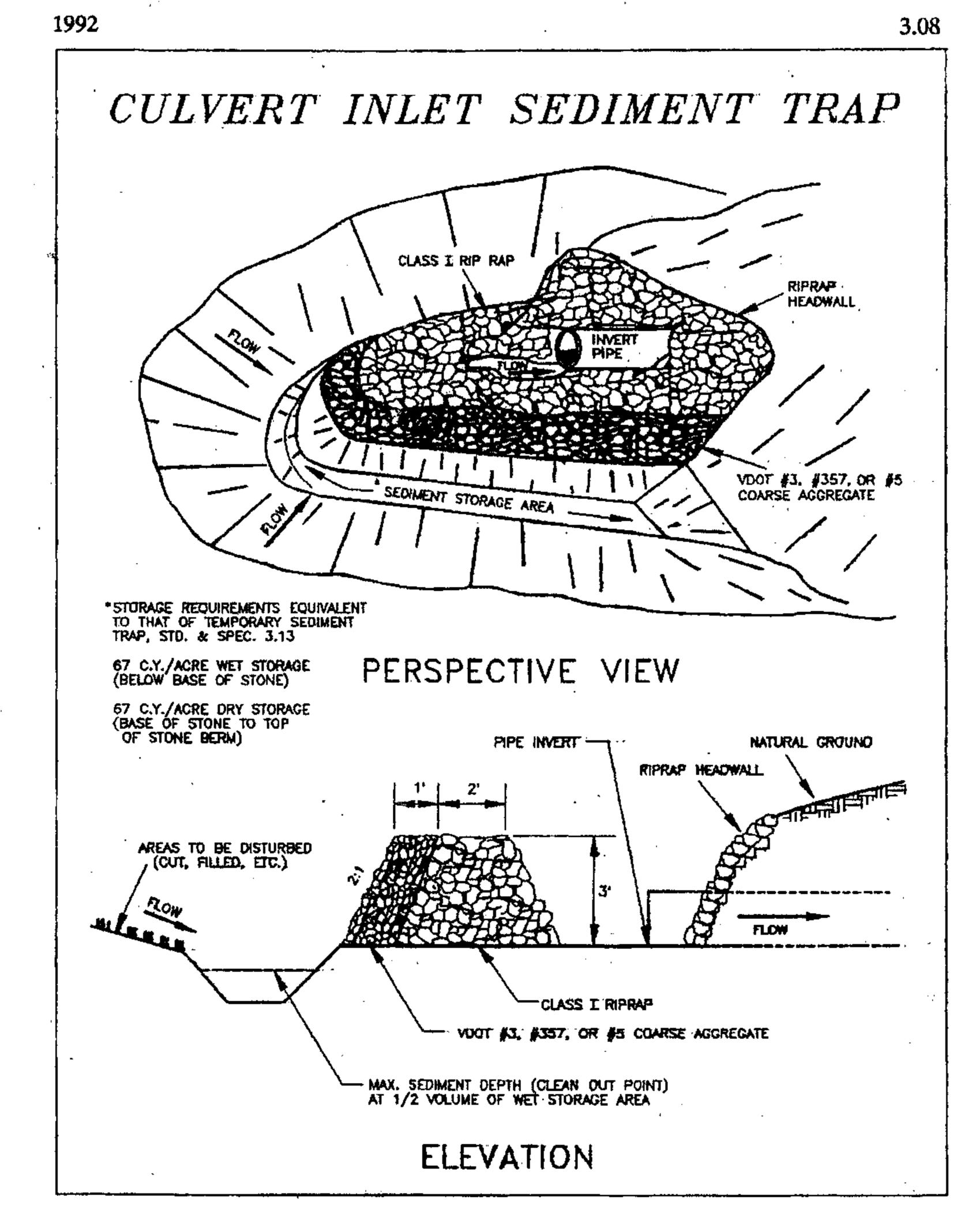


Plate 3.08-2

JOB NO. 04287-06 THIS DRAWING IS THE PROPERTY

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PER COUNTY COMMENTS

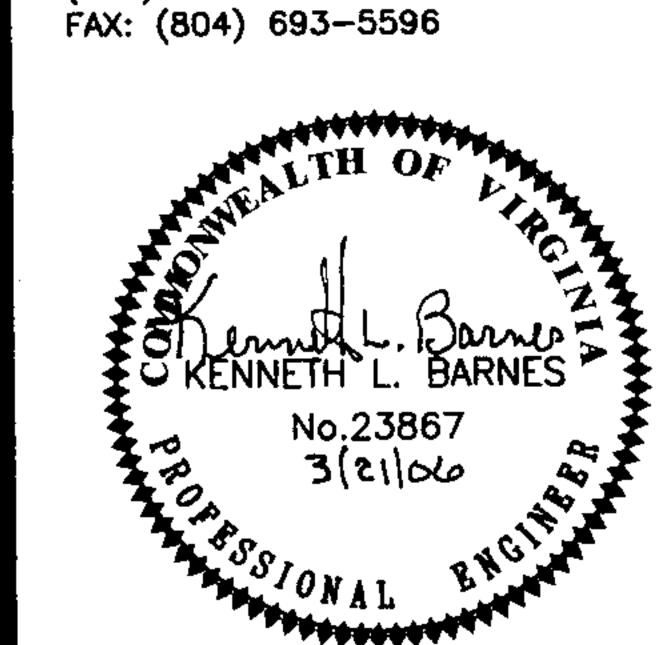


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Waterside Jordan Point

Condominiums

Bland District Prince George County, Virginia

Erosion Control Notes &

Details

SHEET NO:

a. No formal design is required.

Silt fence culvert inlet protection has an expected maximum usable life of

The maximum area draining to this practice shall not exceed one acre.

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Culvert Inlet Sediment Trap

Plate 3.08-1.

Culvert Inlet Sediment Trap

Silt Fence Culvert Inlet Protection

be used to construct the measure.

Geometry of the design will be a "horseshoe" shape around the culvert inlet

Runoff storage requirements shall be in accordance with information outlined

Culvert inlet sediment traps have a maximum expected useful life of 18

The height of the silt fence (in front of the culvert opening) shall be a

Extra strength filter fabric with a maximum spacing of stakes of 3 feet shall

The placement of silt fence should be approximately 6 feet from the culvert

in the direction of incoming flow, creating a "horseshoe" shape as shown in

If silt fence cannot be installed properly or the flow and/or velocity of flow

to the culvert protection is excessive and may breach the structure, the stone

The maximum area draining to this practice shall not exceed 3 acres.

Construction Specifications

minimum of 16 inches and shall not exceed 34 inches.

combination noted in Plate 3.08-1 should be utilized.

under Std. & Spec. 3.13, TEMPORARY SEDIMENT TRAP.

The toe of riprap (composing the sediment filter dam) shall be no closer than 24" from the culvert opening in order to provide an acceptable emergency outlet for flows from larger storm events.

All other "Construction Specifications" found within Std. & Spec. 3.13, TEMPORARY SEDIMENT TRAP, also apply to this practice.

The proper installation of the culvert inlet sediment trap is a viable substitute

for the installation of the TEMPORARY SEDIMENT TRAP.

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VDOT #3, #357 OR #5 COARSE AGGREGATE
TO REPLACE SILT FENCE IN " HORSESHOE!" WHEN
HIGH VELOCITY OF FLOW IS EXPECTED Source: Adapted from VDOT Standard

Plate 3.08-1

Source: North Carolina Sediment Control Commission

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