Fort Belvoir Directorate of Public Works (DPW)
Municipal Separate Storm Sewer System (MS4) Program

Erosion & Sediment Control Technical Bulletin #1:
DEWATERING OPERATIONS

APPLICABILITY

This bulletin is applicable to Garrison, Tenant and Contractor Operations for emergency and non-emergency dewatering operations.

BACKGROUND

In order to comply with the Virginia Pollution Discharge Elimination System (VPDES), Virginia Stormwater Management Program (VSMP) Permits, and the Virginia Erosion and Sediment Control (ESC) Regulations published by the Virginia Department of Environmental Quality (VADEQ), specific guidelines must be followed during dewatering operations on construction sites and during maintenance and repair operations to prevent unauthorized discharges of sediment into the Fort Belvoir storm sewer system and wetlands.

NOTIFICATION

For construction sites, when dewatering operations, either emergency or non-emergency, are to be employed, please contact the ESC inspector that has been assigned to your project. All others may contact Ashley McMahon at 703-806-0026.

GENERAL CONSIDERATIONS

1. IN ALL INSTANCES, PUMPING DIRECTLY INTO THE STORM SEWER SYSTEM IS PROHIBITED!
2. The accumulated sediment which is removed from a dewatering device must be spread on-site and stabilized.
3. Furnishing materials necessary for meeting dewatering best management practice standards is the responsibility of the personnel performing the construction/maintenance activity.

BEST MANAGEMENT PRACTICES

The following practices are examples of potential best management practices to meet the minimum standards and regulations from VADEQ for use during both emergency and non-emergency dewatering operations.

1. **Geotextile Silt Bag:** Direct all pump discharge into a geotextile silt bag. The following specifications must be followed to insure proper use of a silt bag:
    - The silt bag must be sized according to the pump size.

- The silt bag must be located on top of non-erodible material. This can be well established grass, stone, pavement, riprap, etc. In no case may the silt bag be located on top of bare earth/mud.
- If the silt bag is located adjacent to a stormwater structure (curb inlet, yard inlet, etc), another erosion and sediment control measure should be used on that structure to further filter the water. For example, if the silt bag is placed on the pavement next to a curb inlet, install stone inlet protection or a gutter buddy on the curb inlet for additional filtration.
- The area where the silt bag is positioned must be flat or gently sloped to encourage the runoff to drain properly.
- Ensure that the water runoff from the silt bag is not causing erosion.
- Tie a water-tight connection between the hose and silt bag to prevent unfiltered water from leaving the silt bag.
- The silt bag should be checked on a regular basis to ensure there is **CLEAR** water leaving it.
- Replace the bag if it is damaged, when it no longer filters sediment (i.e. the exiting water is no longer clear), or is not passing water at a reasonable rate.
- Once full, the silt bag can either be disposed of altogether or opened up and the sediment distributed back onsite and stabilized.
- Restore the surface area beneath the bag to original condition upon removal of the silt bag.

2. **Existing Sediment Traps or Basins**: All pump discharge should be directed toward existing sediment traps or basins located within the construction site Limits of Disturbance (LOD) in such a manner not to cause bank erosion of the trap or basin.
    - Pump discharge into the trap or basin should be directed toward the point furthest away from the outfall to allow for the settling out of sediment before the water reaches the outfall.
    - Discharging directly into an outlet or riser is not authorized.
    - Additional slope and/or inlet protection may be warranted.
    - Existing sediment trap or basin must be properly maintained in accordance with Virginia Erosion and Sediment Control Handbook (VESCH) Standard and Specification 3.13 and 3.14.

3. **Filter Box (VESCH) Std & Spec 3.26, page III-241**: Direct all pump discharge through a filter box.
    - Consult VESCH for design and construction of the filter box.
    - The discharge from the filter box must be directed onto a well-established grass area a minimum distance of 50 feet between the discharge point and any channel.
    - Install gravel curb inlet sediment filters, or “rock socks”, to all curb inlets that may receive discharge water.
    - The device must be properly maintained in accordance with VESCH specifications to insure that the device adequately performs the function of sediment filtration.

4. **Portable Sediment Tank (VESCH Std & Spec 3.26, page III-239)**: Direct all pump discharge into a portable sediment tank.
    - Consult VESCH for design and construction of the portable sediment tank.
    - Transport sediment tanks that have reached their capacity to a location within the construction site LOD and redistribute onsite.
    - The device must be properly maintained in accordance with VESCH specifications to insure that the device adequately performs the function of sediment filtration.

5. **Straw Bale/Silt Fence Pit (VESCH Std & Spec 3.26, page III-243):** For exceptionally large dewatering operations, construct a straw bale/silt fence pit in an area without underground utilities or environmental constraints. Install gravel curb inlet sediment filters (VESCH Std & Spec 3.07), or "rock socks", to all curb inlets that may receive discharge water.

DPW-ENVIRONMENTAL DIVISION STORMWATER POC:

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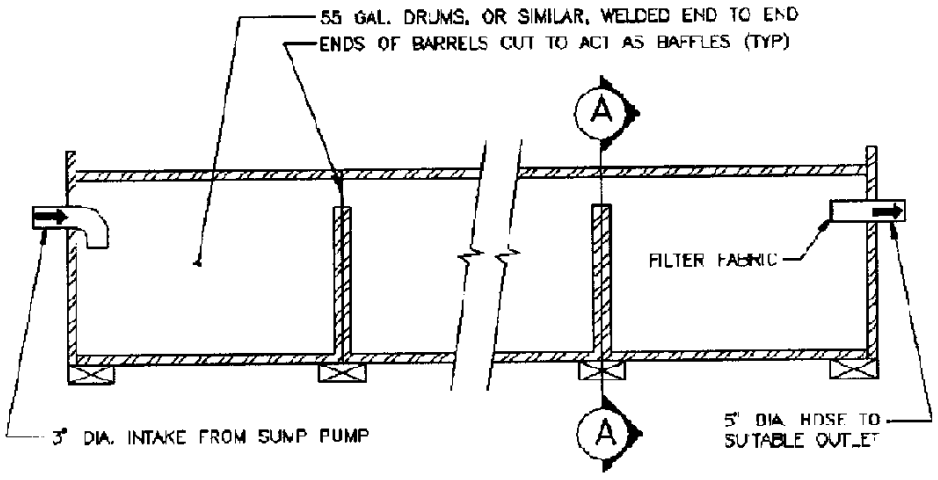
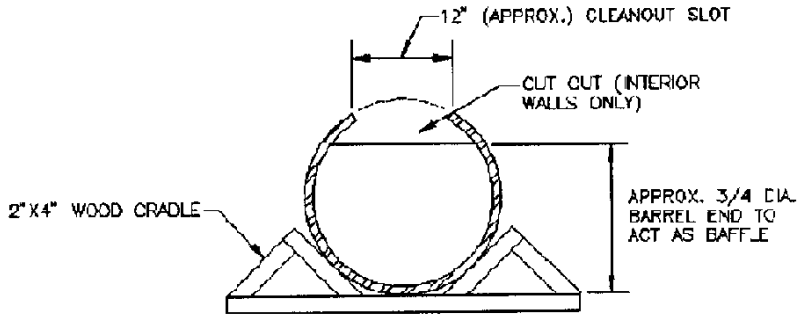
PORTABLE SEDIMENT TANK



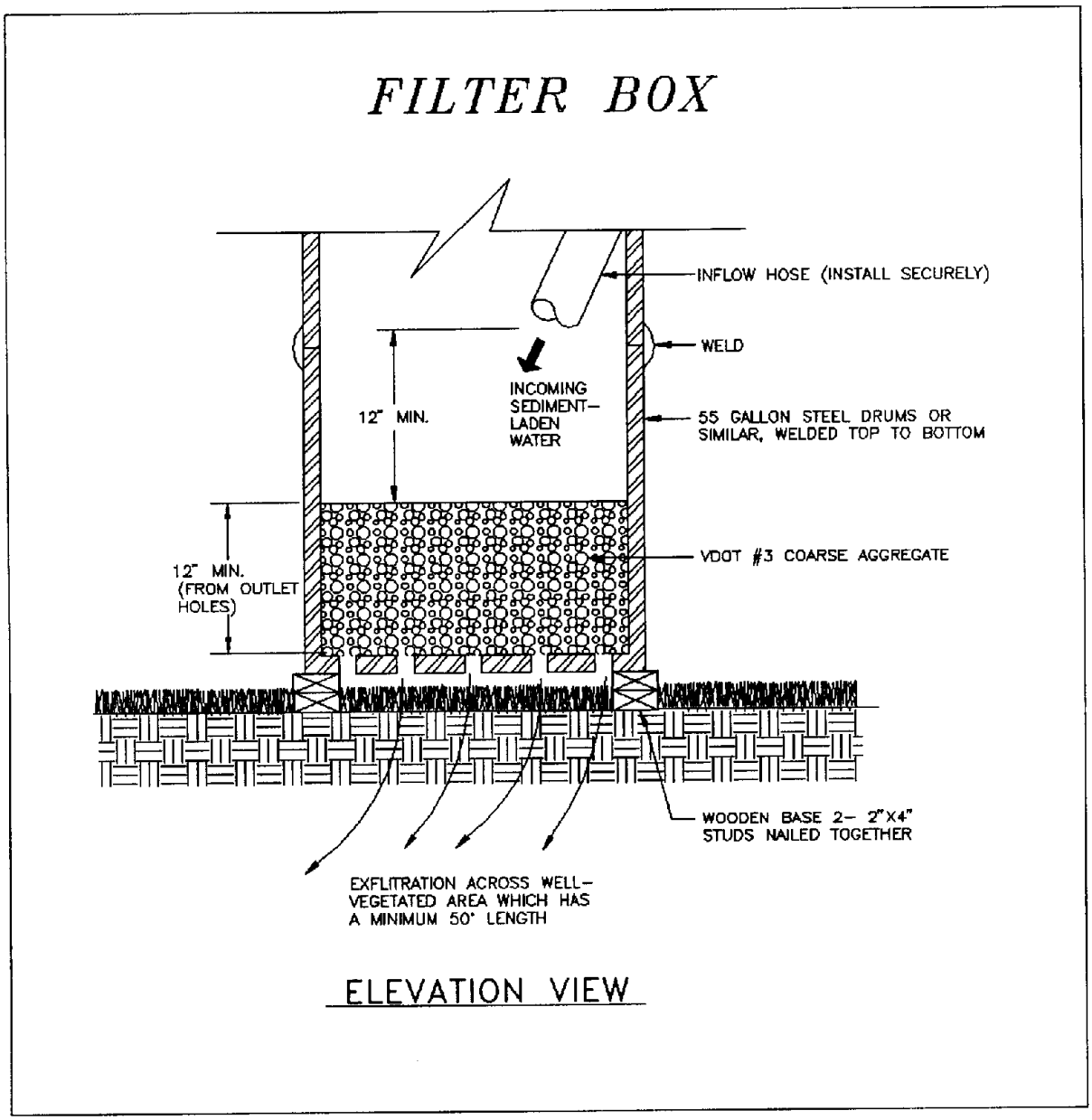
ELEVATION



CROSS-SECTION A-A

Source: USDA-SCS

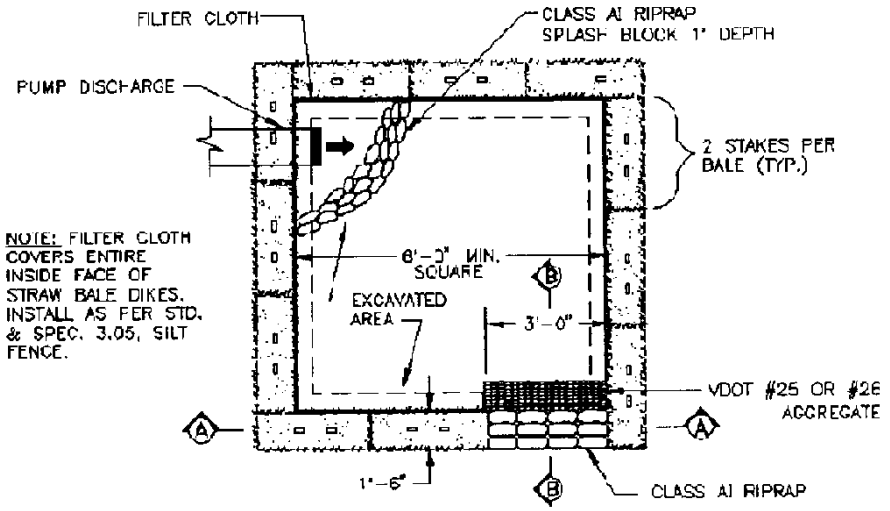
Plate 3.26-1



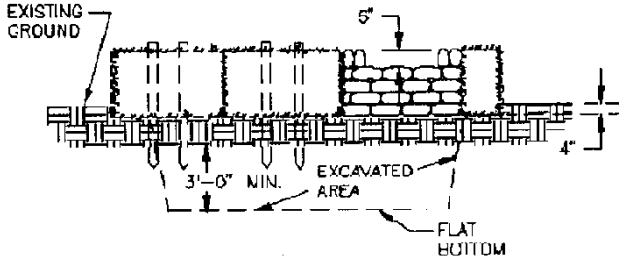
Source: Va. DSWC

Plate 3.26-2

STRAW BALE/SILT FENCE PIT



PLAN VIEW



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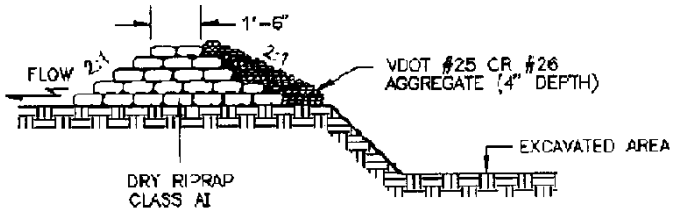
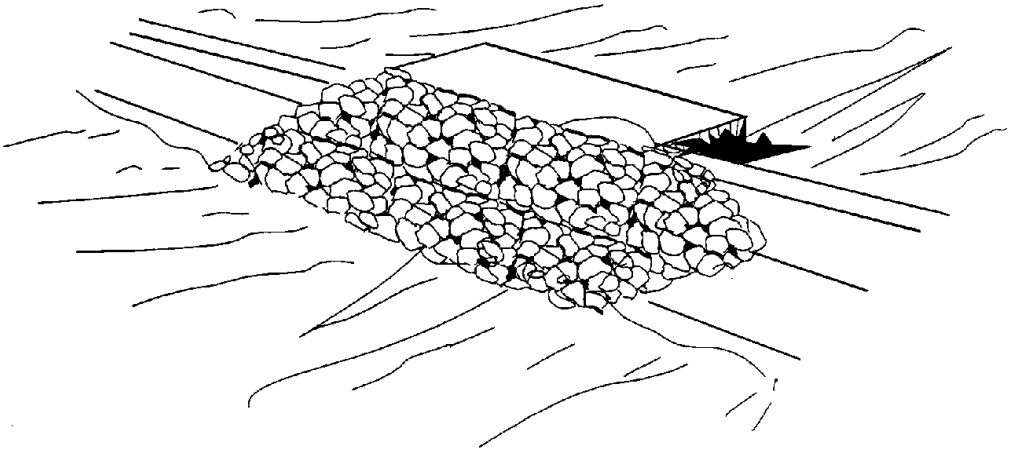


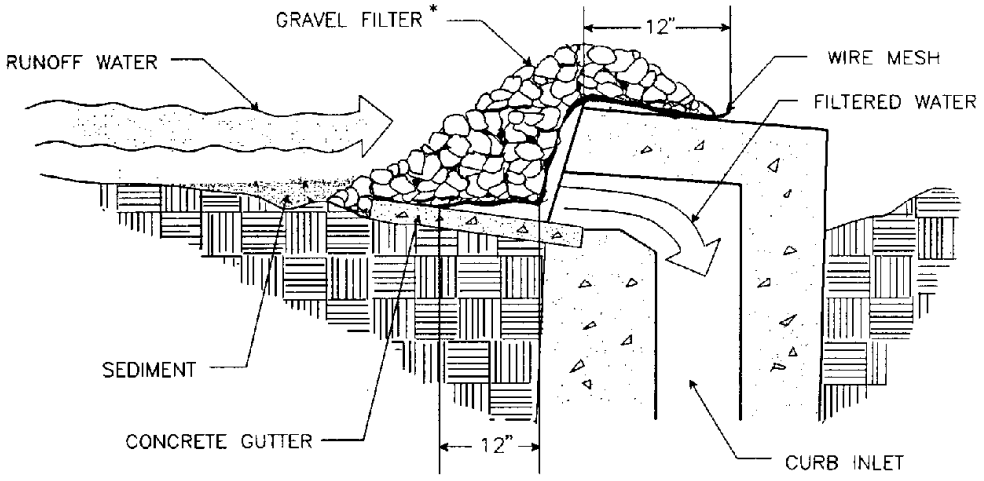
CROSS-SECTION B-B

Source: Va. DSWC

Plate 3.26-3

GRAVEL CURB INLET SEDIMENT FILTER





SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

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

Source: Va. DSWC Plate 3.07-6