

EROSION AND SEDIMENT CONTROL NARRATIVE

Project Description:

The proposed project consists of installing approximately 4016 L.F. of sanitary sewer line at Andrew Lewis Place Subdivision in Roanoke County. The proposed project will disturb about 0.53 Acres of land during the course of the project.

Existing Site Conditions:

The subdivision lies between I-81 and US 460. The areas closest to 460 are the low points of the subdivision, with most of the storm runoff draining to a culvert that crosses McDaniel Drive which connects the subdivision to US 460. The subdivision vegetative cover is primarily residential yards. Drainage is conveyed by roadside ditches or swales which lie in behind homes.

Adjacent/Off-site Areas:

Since the project is within a residential subdivision, the properties of the various homeowners will be of concern as far as limiting sedimentation and disturbing the minimal amount of area necessary to install the sewer system. There are no off-site areas on the project.

Soils:

The project area is composed of the following soil types as taken from the NRCS soil survey map for Roanoke County dated December 16, 2007, Version 5.

1.) Soil Group 36A – Purdy silt loam

The Purdy silt loam is found in the low areas between US 460 and Andrew Ave. Typical soil profile for this soil type is: 0 to 12 inches – silt loam, 12 to 39 inches – silty clay, and 39 to 62 inches silty clay loam.

Properties and qualities

- Slope: 0 to 4 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Poorly drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
- Depth to water table: About 0 inches
- Frequency of flooding: None
- Frequency of ponding: Rare
- Available water capacity: High (about 9.3 inches)
- Erodibility Factor (K): 0.32
- Hydrologic Soil Group: D

2.) Soil Group 49B – Tumbling loam

This tumbling-urban land soil comprises the soil of the majority of the project area. The tumbling soil type areas have a typical soil profile of 0 to 11 inches – loam and 11 to 62 inches – gravelly clay.

Tumbling Properties and qualities

- Slope: 2 to 15 percent
- Depth to restrictive feature: More than 80 inches
- Drainage class: Well drained
- Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
- Depth to water table: More than 80 inches
- Frequency of flooding: None
- Frequency of ponding: None
- Available water capacity: Moderate (about 7.5 inches)
- Erodibility Factor (K): 0.32
- Hydrologic Soil Group: B

Urban Land Properties and qualities

- Slope: 2 to 15 percent
- Depth to restrictive feature: 10 inches to

Critical Areas:

Areas of concern for erosion on this project are the areas on Evelyn Drive and McDaniel Drive where the sewer will be installed outside of the pavement. In these areas, the road ditches will be disturbed in order to lay the sewer line. Once the sanitary sewer is installed along a section of ditch, a final grading reached, the ditch will need to be stabilized with seeding and silt fence installed perpendicular to the flow to aid in reducing flow velocities while the ditch stabilizes.

Erosion and Sediment Control Measures:

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices shall be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook, Third Edition.

Structural Measures:

- Silt Fence – Silt fence will be installed downslope of disturbed areas with minimal grades to filter sediment-laden runoff from sheet flow. Silt fence will also be installed perpendicular to drainage ditches which are disturbed by the construction of the sewer line in order to stabilize the ditch by slowing the flow velocity of stormwater in the ditch. See Section 3.05 of the Virginia Erosion and Sediment Control Handbook, latest edition for the standards and specifications of silt fence.

- Trench Dewatering – Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property. Dewatering devices shall be either the DIRTBAG by ACF Environmental or one of the measures shown in the details on this sheet and described in section 3.26 of the Virginia Erosion and Sediment Control Handbook, Third Edition.

Vegetative Measures:

- Permanent Seeding – Any areas disturbed during the course of the project shall be reseeded upon completion of the project. See sheet C-15 for the permanent seeding schedule and seeding mixtures to be used.
- Temporary Seeding –
 - Fertilizer shall be 10-20-10 formula and applied at the rate of (600) lbs per acre.
 - Lime shall be ground limestone containing not less than 85 percent of total carbonates and shall be applied at the rate of (2) tons per acre.
 - Seeding shall be Kentucky fescue #31, tall, 80 percent perennial ryegrass, 20 percent applied at the rate of 6 pounds per 1000 square feet.
 - Mulching shall be loose straw mulch applied at the rate of (1) ton per acre with asphalt tack coat to anchor against wind. Asphalt shall be applied at the rate of 480 gallons per acre.
 - Hydro-seeding is an acceptable method of seeding. Seed shall be applied with a mixture of fiber, fertilizer and water with an approved hydraulic sprayer. Fiber shall be applied at the rate of 2000 pounds per acre.

Management Strategies:

- No more than 100 linear feet of trench may be opened at one time.
- Excavated material shall be placed on the uphill side of trenches.
- Effluent from dewatering operations shall be filtered or passed through an approved sediment trapping device, or both, and discharged in a manner that does not adversely affect flowing streams or off-site property.
- Material used for backfilling trenches shall be properly compacted in order to minimize erosion and promote stabilization.
- Restabilization shall be accomplished in accordance with the Virginia Erosion and Sediment Control Regulations.
- Roadside Drainage ditches shall be maintained in such a way as to all on the conveyance of storm water runoff with minimal erosion during construction.
- Applicable safety regulations shall be complied with.
- If, during construction, the Erosion and Sediment Control reviewing officer considers the erosion and sediment items to be adequate, he may, at his discretion, require the addition of other control measures to prevent sediment laden stormwater from causing harm to downstream properties.
- Inspection shall be made during or immediately following initial installation of Erosion and Sediment Control Practices and within 48 hours following any runoff producing storm event and at the completion of the project.

Permanent Stabilization:

All areas disturbed by construction shall be stabilized with permanent seeding following backfilling of the utility trench. Seeding shall be done in accordance with the Permanent Seeding Mixture schedule on sheet C-15. Roadside ditches shall be stabilized with silt fence placed in the ditch until a good stand of grass has developed in order to reduce erosion during storm events. In all seeding operations, seed, fertilizer and lime will be applied prior to mulching.

Maintenance:

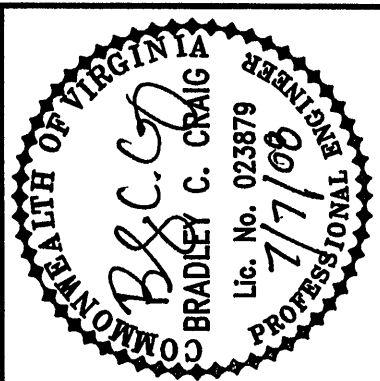
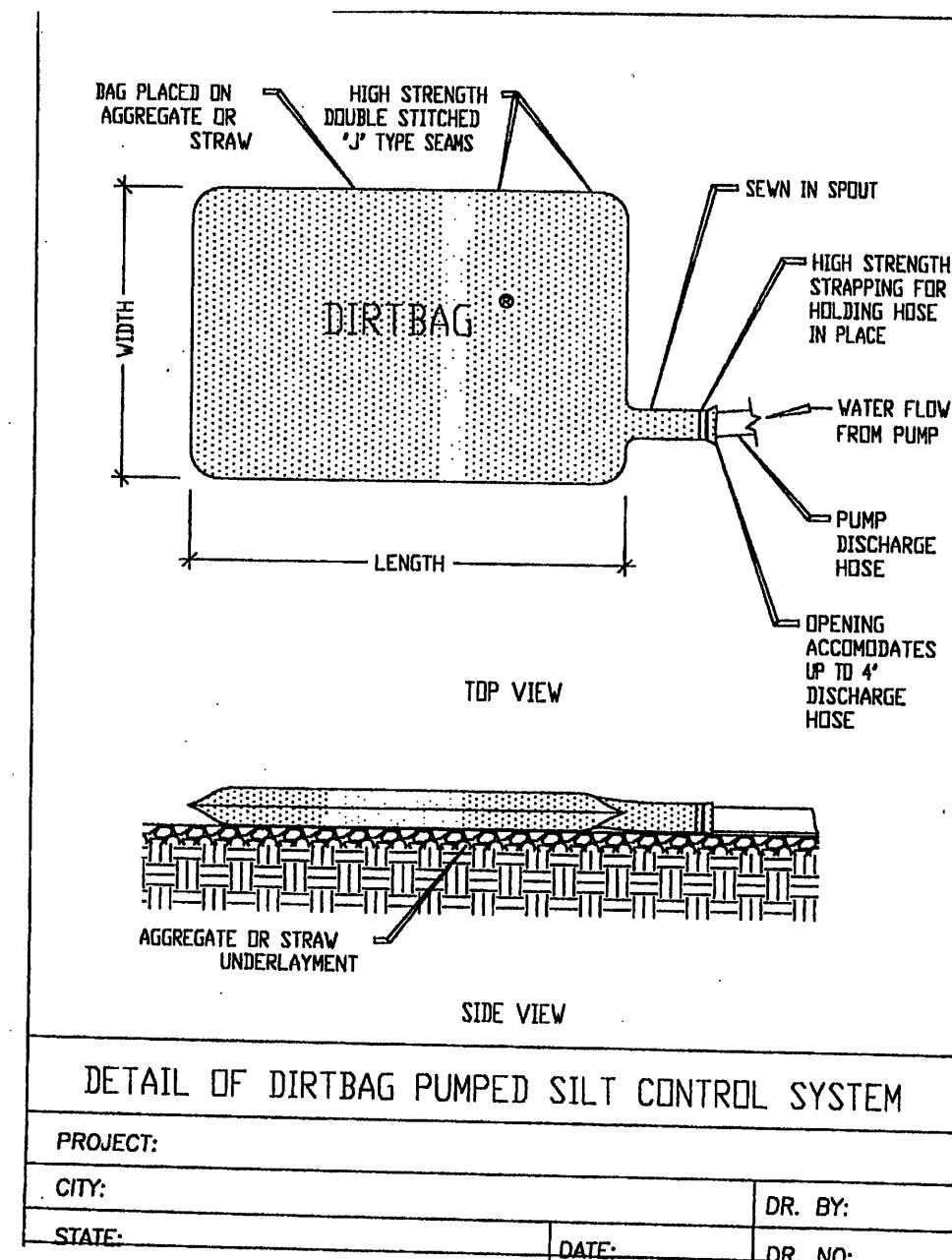
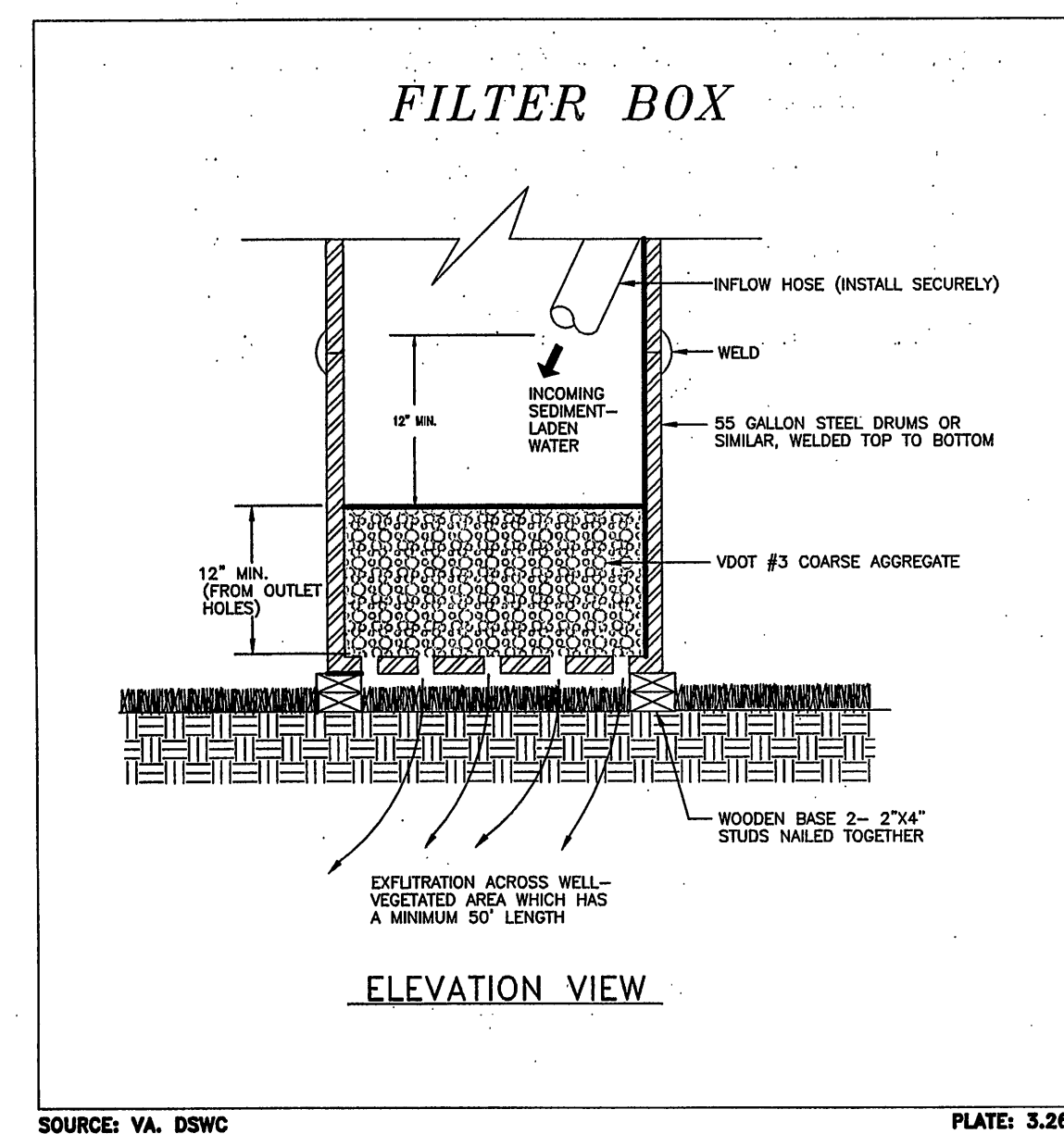
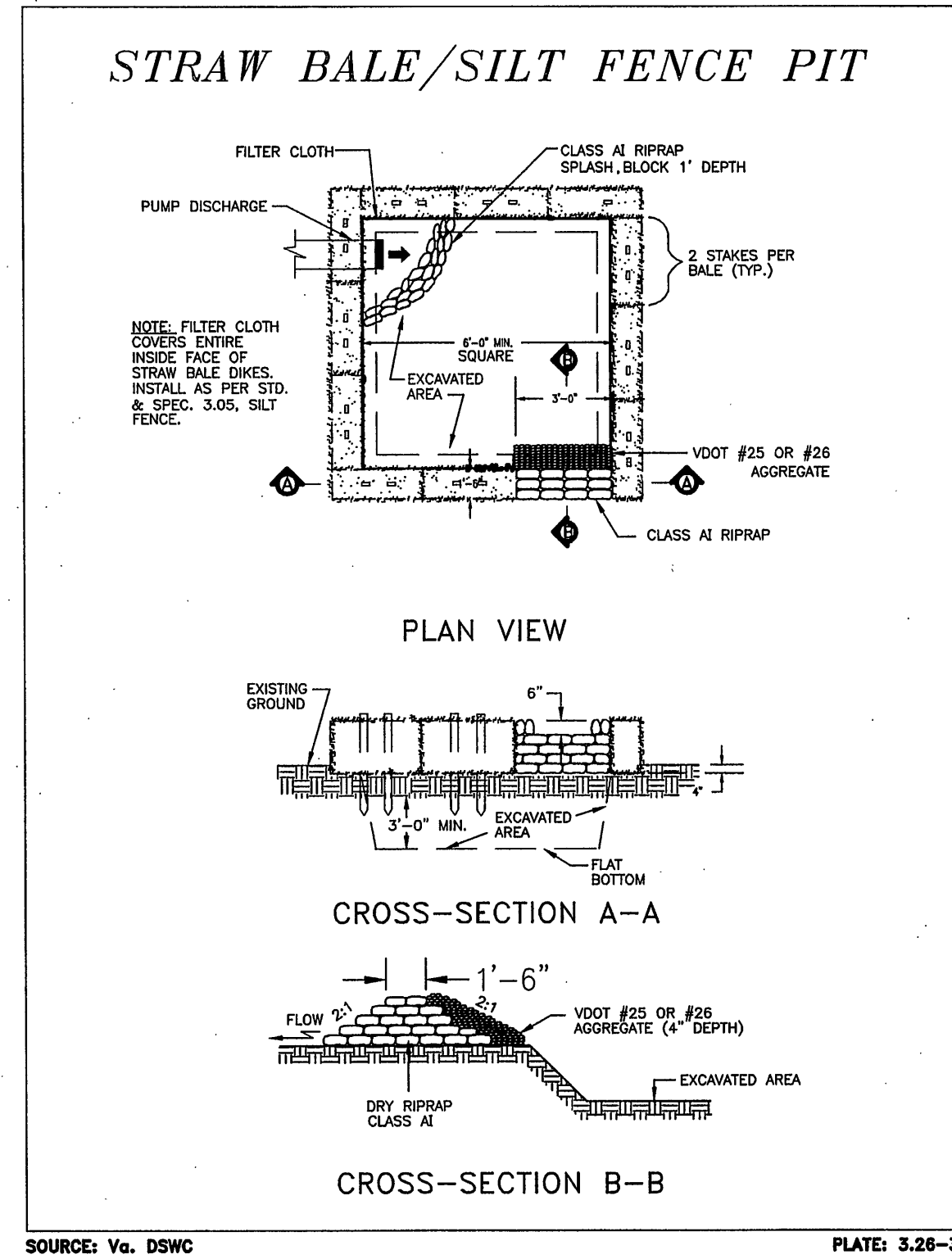
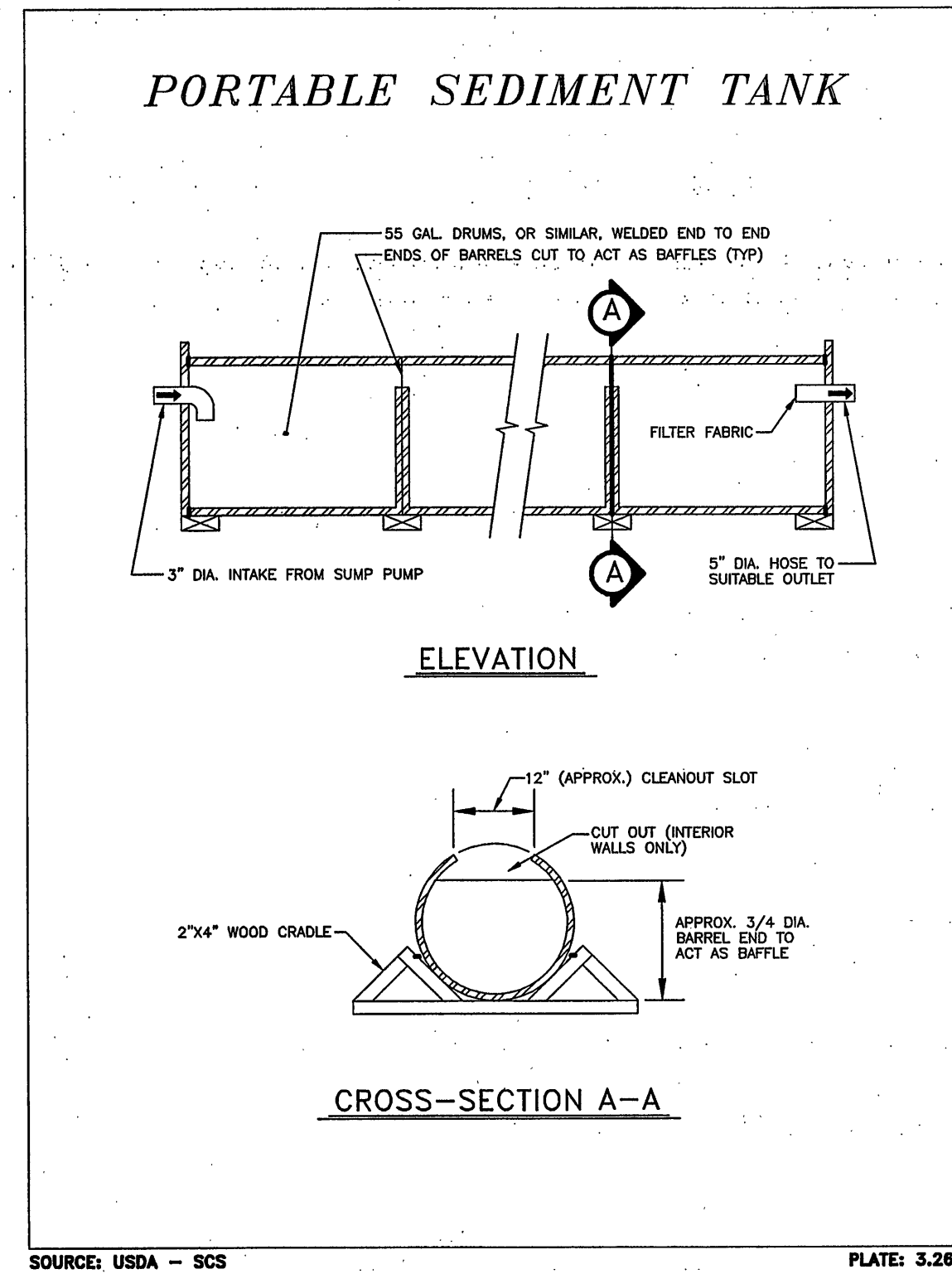
In general, all erosion and sediment control measures shall be checked daily and after each significant rainfall. The following items will be checked in particular:

- All seeded areas will be checked regularly to ensure that a good stand is maintained. Areas should be fertilized and reseeded as needed to produce a good stand of grass.
- Any silt fence installed on the project will be checked regularly and after every rainfall event for undermining or deterioration of the fabric. Sediment shall be removed when the level of sediment deposition reaches half way to the top of the barrier.
- Contractor shall remove sediment that accumulates in storm drain pipes and culverts that is caused by the construction activity.

General Erosion and Sediment Control Notes:

- ES-1: Unless otherwise indicated, all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the Virginia Erosion and Sediment Control Handbook and Virginia Regulations VR 625-02-00 Erosion and Sediment Control Regulations.
- ES-2: The plan approving authority must be notified one week prior to the pre-construction conference, one week prior to the commencement of land disturbing activity, and one week prior to the final inspection.
- ES-3: All erosion and sediment control measures are to be placed prior to or as the first step in clearing.
- ES-4: A copy of the approved erosion and sediment control plan shall be maintained on the site at all times.
- ES-5: Prior to commencing land disturbing activities in areas other than indicated on these plans (including, but not limited to, off-site borrow or waste areas), the contractor shall submit a supplementary erosion control plan to the owner for review and approval by the plan approving authority.

- ES-6: The contractor is responsible for installation of any additional erosion control measures necessary to prevent erosion and sedimentation as determined by the plan approving authority.
- ES-7: All disturbed areas are to drain to approved sediment control measures at all times aduring land disturbing activities and during site development until final stabilization is achieved.
- ES-8: During dewatering operations, water will be pumped into an approved filtering device.
- ES-9: The contractor shall inspect all erosion control measures periodically and after each runoff-producing reinfall event. Any necessary repairs or cleanup to maintain the effectiveness of the erosion control devices shall be made immediately.



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**EROSION AND SEDIMENT CONTROL
NARRATIVE AND DETAILS**
SALEM, VIRGINIA

Vertical Scale:
N/A

Horizontal Scale:
N/A

Commission Number:
2714

Sheet No.:

C-15