

**ITEM 714**

**STONE OUTLET SEDIMENT TRAP**

714.1 Description. This work shall consist of furnishing, installing, maintaining, and removing temporary erosion protection and sediment control stone outlet sediment traps utilized during construction and prior to final stabilization, in accordance with these specifications and construction drawings, and as directed by the Engineer. A sediment trap is a small temporary basin formed by excavation and/or an embankment to intercept sediment-laden runoff and to trap and retain the sediment. A sediment trap usually is installed at points of discharge from disturbed areas less than 5 acres. If drainage site is larger than 5 acres, multiple sediment traps shall be used or Item 717 – Sediment Basins shall be used. For design and usage criteria, the latest edition of *the Storm Water Management Handbook for Construction Activities, prepared by City of Houston, Harris County, and Harris County Flood Control District*, shall be referenced.

714.2 Materials. Geotextile fabric (filter fabric) shall consist of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins in a woven fabric. The geotextile fabric shall meet the following specifications:

**Geotextile Fabric Properties: The geotextile fabric used shall equal or exceed the stated property values listed in Table 1 below:**

Table 1

Silt fence Geotextile Fabric Properties			Requirements Unsupported Silt Fence	
	Units	Supported Silt Fence	Geotextile Elongation ≥50%	Geotextile Elongation <50%
Grab Strength				
Machine Direction	lbs	90	123	123
X-Machine Direction	lbs	90	100	100
Permittivity	sec-1	0.05	0.05	0.05
Apparent Opening Size (Maximum average roll value)	Mm/sieve	0.6/30	0.6/30	0.6/30
Ultraviolet Stability (Retained Tensile Strength)	%	70 after 500 hrs exposure	70 after 500 hrs exposure	70 after 500 hrs exposure
NOTES: 1. Table 1 adapted from AASHTO M 288 Geotextile Specification for Highway Applications Table 6. Temporary Silt Fence Property Requirements.				

2. All numeric values in Table 1 except Apparent Opening Size (AOS) represent minimum average roll values (MARV). Values for AOS represent maximum average roll values.

Geotextile fabric shall contain stabilizers and/or inhibitors to make the fabric resistant to deterioration resulting from exposure to sunlight or heat. Geotextile fabric shall be resistant to commonly encountered soil chemicals, mildew, rot, and insects. Geotextile fabric shall be free of defects or flaws that affect its physical and/or filtering properties. Geotextile fabric shall provide an expected useable life comparable to the anticipated construction period.

Aggregate fill shall consist of crushed stone and shall be open graded with most of the fines removed. Aggregate fill shall be a minimum 3 inches in diameter and less than 1/2 cubic feet in volume, unless otherwise shown on the construction drawings. Aggregate fill shall be composed of clean, hard, durable material free from adherent coatings, salt, alkali, dirt, clay, loam, shale, soft or flaky materials, or organic and injurious matter.

714.3 Construction Methods. No clearing and grubbing or rough cutting, other than as specifically directed by the Engineer to allow for soil testing, surveying and installation of erosion protection and sediment control measures, shall be permitted until sediment control and erosion protection systems are in-place.

Stone outlet sediment traps shall be installed at the location and by the dimensions shown on the construction drawings, in accordance with the drawings attached to this specification, and as directed by the Engineer. Stone outlet sediment traps shall be constructed in accordance with an approved schedule that clearly describes the timing during the construction process that the various erosion control measures will be implemented.

Fill material for embankment shall be free of roots, woody vegetation oversized rocks, or other organic or objectionable matter. The area under the embankment shall be cleared, grubbed and stripped of vegetation and root mat. Embankments shall be compacted in maximum 8-inch lifts. Each layer or lift shall be compacted to a minimum of 90% of standard proctor density (ASTM Method D698).

The limits of excavation and outlet length and height shall be as shown on the construction drawings. Side slopes shall be 2:1 or flatter.

The Contractor shall maintain a minimum of 6 inches between the top of the core material and the top of the stone outlet. A minimum of 4 inches between the bottom of the core material and the existing ground shall be maintained. A minimum of 1 foot between the top of the stone outlet and the top of embankment shall be maintained.

Rock shall be embedded a minimum of 4 inches into the existing ground. The core shall be a minimum of 1 foot in height and width and shall be wrapped in a single layer of geotextile fabric.

The Contractor shall inspect stone outlet sediment traps at least once every fourteen calendar days and within 24-hours of the end of a storm event of 0.5 inches rainfall or greater. The Contractor shall remove projections or other irregularities which will impede normal flow. The Contractor shall redress and re-stabilize stone stabilization as necessary to maintain the specified thickness, height and width. Erosion protection and sediment control systems shall be maintained by the Contractor until final stabilization. Damage caused to erosion protection and sediment control system shall be repaired immediately. Upon removal of the stone outlet sediment trap, the area shall be graded per the construction drawings and stabilized with vegetation, or other.

The Contractor is responsible for removal and disposal of sediment and debris from the stone outlet sediment trap and as directed by the Engineer. Sediment and debris shall not be allowed to flush into the storm sewer system, waterways, jurisdictional wetlands, or onto adjacent properties. Sediment deposits shall be removed before they reach one-third of the height of the stone outlet.

Uncontaminated sediment can be placed at the project spoil site or, if properly handled, spread out to supplement fill requirements. The Engineer will designate how the sediment deposits are to be handled. Uncontaminated sediment shall not be placed in waterways or jurisdictional wetlands, unless as approved by the Engineer. If sediment has been contaminated, then it shall be disposed of in accordance with the applicable federal, state and local regulations. Off-site disposal shall be the responsibility of the Contractor.

After final stabilization and at the direction of the Engineer, the Contractor shall be responsible for removing all erosion protection and sediment control systems that are not permanent, from the project.

714.4 Quality Assurance. The Contractor is responsible for the control of the quality of materials incorporated into the construction and the quality of completed construction. The County will engage materials engineering services to provide quality assurance testing and inspection to assist the County Engineer in determining the acceptability of materials and completed construction. Quality assurance services provided by the County do not relieve the Contractor of his responsibility for quality control. The Materials Engineer shall not have control of the means, methods, techniques, sequences or procedures of construction selected by the Contractor.

The Materials Engineer will determine the moisture density relationship to be used in the construction of embankment, in accordance with ASTM Method D698. The Materials Engineer will determine the in-place density in accordance with ASTM D2922 or ASTM D1556.

714.5 Measurement and Payment. When paid for directly as a pay item, measurement and payment for stone outlet sediment traps shall be by each unit, complete and in-place.

Payment for stone outlet sediment trap(s) will include and be full compensation for all labor, equipment, materials, supervision and all incidental expenses for construction of these items, complete in-place including, but not limited to, embankment and excavation, protection of trees, maintenance requirements, repair and replacement of damaged sections, removal of sediment deposits, redressing of aggregate, and removal of erosion protection and sediment control systems after final stabilization.

Note: This specification requires a drawing

END OF ITEM 714