

ITEM 708

FILTER FABRIC FENCE

708.1 Description. This work shall consist of furnishing, installing, maintaining, and removing temporary erosion protection and sediment control filter fabric fence in accordance with these specifications and construction drawings, and as directed by the Engineer. The filter fabric fence consists of a geotextile fabric stretched across and attached to supporting posts or frame and entrenched. This work shall be performed during construction operations and prior to final stabilization to control erosion and sedimentation.

708.2 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 $\geq 50\%$	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.

Fence posts shall be either steel or hardwood, essentially straight, with a minimum length of 4-feet. Hardwood posts shall be 2-inch x 2-inch minimum, or equivalent. Metal posts shall be either studded T or U type with a minimum weight of 1.28 lbs per linear foot. Fin anchors shall be used to resist post movement as directed by the Engineer.

Attachment of geotextile fabric to posts shall be with wire ties or staples. Wire ties shall be 14 gage minimum. Staples for wood posts shall be No. 9 wire minimum with a 1/2 inch minimum crown length.

A prefabricated unit with geotextile fabric and posts meeting the minimum specifications in this item may be used in lieu of a constructed filter fabric fence.

708.3 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.

Filter fabric fences shall be installed at the locations shown on the construction drawings and in accordance with the drawing attached to this specification or as directed by the Engineer. Filter fabric fences 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. Filter fabric fence shall be installed so as surface runoff will percolate through the system and allow sediment to be retained and accumulated.

Posts shall be driven to a minimum depth of 1 foot into the ground.

Posts shall be a minimum of 18" above the ground. Posts shall be placed with a maximum spacing of 4 feet and be installed on a slight angle toward the anticipated runoff.

Trenches shall be dug along the uphill side of the fence to anchor at least 8 inches of the fabric to prevent underflow. The trench shall be a 6-inch x 6-inch square or a 4 inch deep V-trench. The fabric shall be placed against the side of the trench with approximately 2 inches across the bottom in the upstream direction. The trench then shall be backfilled and hand tamped as approved by the Engineer.

Using wire ties or staples, the geotextile fabric shall be attached to the posts at the top and midsection. Additional ties or staples shall be added to secure the fabric to the posts as directed by the Engineer.

Geotextile fabric shall be provided in continuous rolls and cut to the length of the designated fence, so as to minimize joints. When joints of two sections of fabric are necessary, the fabric shall be spliced together only at a support post. The fabric shall be overlapped a minimum of 6 inches at a post, folded, and secured at six or more places. Splices in concentrated flow areas will not be permitted.

Geotextile fabric shall be attached at the end posts at a minimum of four locations. Geotextile fabric shall be entrenched and attached to the posts so as a minimum of 18 inches of the fabric is above the ground. The trench then shall be backfilled and hand tamped as approved by the Engineer.

The Contractor shall inspect filter fabric fence erosion protection and sediment control systems at least once every fourteen calendar days, within 24-hours of the end of a storm event of 0.5 inches rainfall or greater, and daily during prolonged rainfalls. Contractor shall remove projections or other irregularities, which will impede normal flow. All erosion protection and sediment control systems shall be maintained by the Contractor until final stabilization of the site. Damage caused to erosion protection and sediment control systems shall be repaired immediately.

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

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. Offsite disposal shall be the responsibility of the Contractor.

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

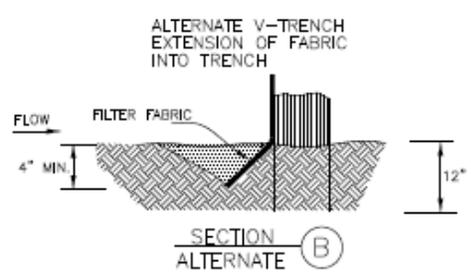
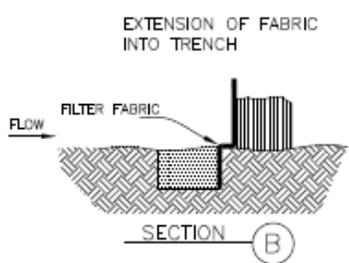
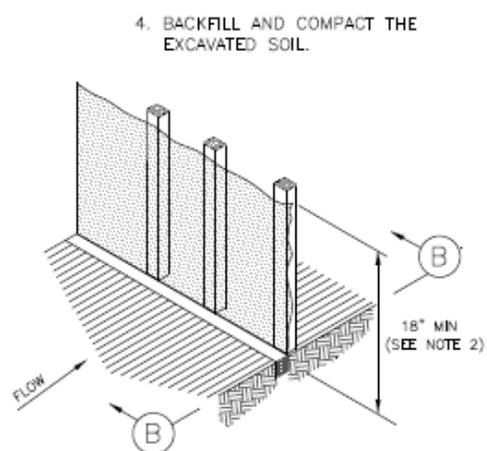
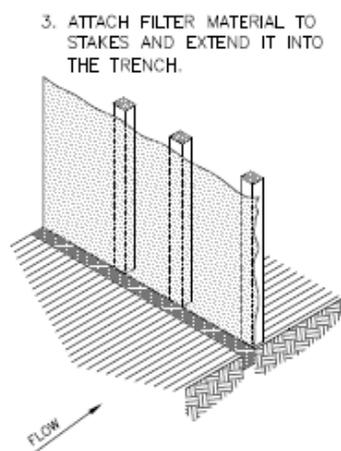
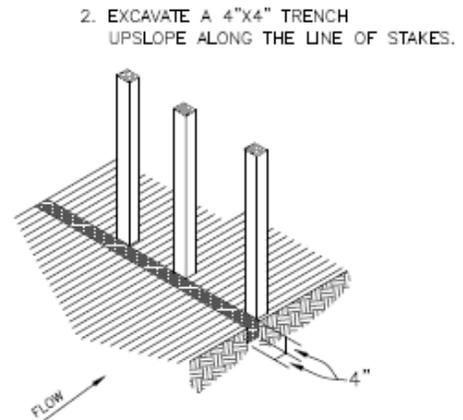
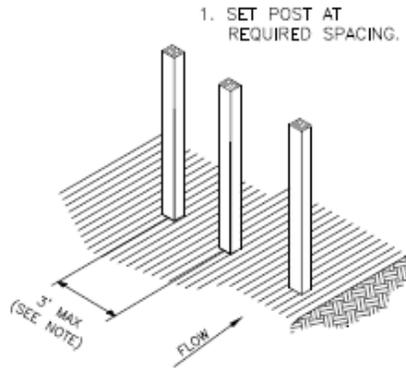
708.4 Quality Assurance. The Contractor is responsible for the control of the quality of materials incorporated into the construction and quality of completed construction. The City will have the option to engage materials engineering services to provide quality assurance testing and inspection to assist the City Engineer in determining the acceptability of materials and

completed construction. Quality assurance services provided by the City 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.

708.5 Measurement and Payment. When paid for separately as a pay item, measurement and payment for filter fabric fence shall be by the linear foot, complete and in-place, measurement being made along the centerline of the top of the fence.

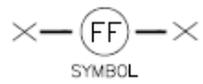
Payment for filter fabric fence shall include and be full compensation for all labor, equipment, materials, supervision and for all incidental expenses for the construction of this item, complete and in-place, including but not limited to furnishing and placing all materials, maintenance requirements, repair and replacement of damaged sections, removal and disposal of sediment deposits and debris, and removal and disposal of erosion protection and sediment control systems after final stabilization.

If no separate Bid Item is provided on the Proposal for “Filter Fabric Fence”, then it is considered a subsidiary item for construction of the Project and there will be no separate measurement or payment.



CONSTRUCTION NOTES

1. 2-INCH BY 2-INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN. OF 8 INCHES. IF PRE-ASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF A FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS AND FOLDED.



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END OF ITEM 708