**SPSRW-XX, Special Stilling Basins**

Version Date: 7/24/2019 Revision Date: MM/DD/YYY by XXX

**1.0 DESCRIPTION**

The special stilling basins shall be used to filter turbid water from inside the work area during construction as shown in the plans. The work covered by this section, includes, but is not limited to furnishing all labor, materials, placing and installing Type 2 geotextile fabric, bedding drainage area, placing, maintaining, and removing the sediment filter bags, and removal and disposal of bedding and fabric as directed by the plans and the Engineer. Wood pallets or hay bales may be used in lieu of stone as directed. The quantity of sediment filter bags may be increased, decreased, or eliminated entirely at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

**2.0 MATERIALS**

The special stilling basins shall be a water permeable sediment filter bag that traps sand, silt, and fines as sediment laden water is pumped into it. The geotextile fabric shall meet the requirements described in Section 1056 *Geosynthetics* for Type 2 Fabric of the NCDOT Standard Specifications.

Stone bedding shall meet the requirements described in Section 1610 *Stone for Erosion Control* for Sediment Control Stone, Standard Size No. 5 or No. 57 of the NCDOT Standard Specifications.

**3.0 METHODS**

The special stilling basin shall be constructed with a sediment filter bag to a minimum size of 10’ x 15’ (3m x 4.6m) made from a non-woven fabric. It shall have a sewn-in 8 in. (20.3cm) (maximum) spout for receiving pump discharge. The bag seams shall be sewn with a double needle machine using a high strength thread. The seams shall have a minimum wide width strength as follows:

Test Method Minimum Specifications

ASTM D-4884 *Standard Test Method for Strength of Sewn or Bonded Seams of Geotextiles* - 60 lb. /in (10.7 kg/cm)

The fabric used to construct the sediment filter bag shall be stabilized to provide resistance to ultra-Violet degradation and meet the following specifications for flow rates, strength, and permeability:

|  |  |  |
| --- | --- | --- |
| **Property** | **Test Method** | **Minimum Specifications** |
|  |  | English | Metric |
| Weight  | ASTM D-3776 | 8.0 oz./yd. | 248.03 g/m |
| Grab tensile  | ASTM D-4632  | 200.0 lb.  | 90.72 kg |
| Puncture  | ASTM D-4833  | 130.0 lb. | 58.97 kg |
| Flow rate  | ASTM D-4491 | 80.0 gal/min/sf  | 0.47 l/s/sm |
| Permittivity  | ASTM D-4991  | 1.5 1/sec |
| UV Resistance  | ASTM D-4355 | 70.0 % |

The special stilling basins shall be placed so the incoming water flows into and through the sediment filter bag without causing erosion. The bag will be placed on a drainage layer consisting of at least 8”of coarse aggregate material over Type 2 geotextile fabric. The Contractor will grade the bed to ensure that the filtered water will exit at the desired location. The exit location shall be chosen to prevent erosion. The neck or spout of the bag shall be tied off tightly to stop the water from flowing out of the bag without going through the walls. The sediment filter bag shall be replaced and disposed of when it is ¾ full of sediment, when it is impractical for the bag to filter the sediment out at a reasonable flow rate, or when it becomes punctured or torn. Prior approval from the Engineer must be received before removal and replacement. The Contractor shall be responsible for providing a sufficient quantity of sediment filter bags to contain silt from pumped effluent during construction.

**4.0 MEASUREMENT**

The quantity of special stilling basins to be measured will be the actual number of sediment filter bags used during construction as specified and accepted by the Engineer.

The pumping operation will not be measured under this section, but will be measured in accordance with the *Pump Around Operation* Special Provision.

**5.0 PAYMENT**

The quantity of special stilling basins as measured above will be paid for at the contract unit price per each for "Special Stilling Basin". Such price and payment will be full compensation for work covered by this provision, including but not limited to furnishing all labor, materials, placing and installing Type 2 geotextile fabric, bedding drainage area, placing, maintaining, and removing the sediment filter bags, and removal and disposal of bedding and fabric.

Pumping Operation will be paid for separately in accordance with the *Pump Around Operation* Special Provision.

Payment will be made under:

**SPECIAL STILLING BASINS EA**