**SKIMMER BASIN WITH BAFFLES: (East)**

**Description**

Provide a skimmer basin to remove sediment from construction site runoff at locations shown in the erosion control plans. See the Skimmer Basin with Baffles Detail sheet provided in the erosion control plans. Work includes constructing sediment basin, installation of temporary slope drain pipe and coir fiber baffles, furnishing, installation and cleanout of skimmer, providing and placing stone pad on bottom of basin underneath skimmer device, providing and placing a geotextile spillway liner, providing coir fiber mat stabilization for the skimmer outlet, disposing of excess materials, removing temporary slope drain, coir fiber baffles, geotextile liner and skimmer device, backfilling basin area with suitable material and providing proper drainage when basin area is abandoned.

**Materials**

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| **Item** | **Section** |
| Stone for Erosion Control, Class B | 1042 |
| Geotextile for Soil Stabilization, Type 4 | 1056 |
| Fertilizer for Temporary Seeding | 1060-2 |
| Seed for Temporary Seeding | 1060-4 |
| Seeding and Mulching | 1060-4 |
| Matting for Erosion Control | 1060-8 |
| Staples | 1060-8 |
| Coir Fiber Mat | 1060-14 |
| Temporary Slope Drain | 1622-2 |
| Coir Fiber Baffle | 1640 |

Provide appropriately sized and approved skimmer device.

Provide Schedule 40 PVC pipe with a length of 6 ft. to attach to the skimmer and the coupling connection to serve as the arm pipe. For skimmer sizes of 2.5 in. and smaller, the arm pipe diameter shall be 1.5 inches. For skimmer sizes of 3 in. and larger, refer to manufacturer recommendation.

Provide 4” diameter Schedule 40 PVC pipe to attach to coupling connection of skimmer to serve as the barrel pipe through the earthen dam.

The geotextile for the spillway liner shall meet the following minimum physical properties for low permeability, woven polypropylene geotextiles:

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| **Property** | **Test Method** | **Value** | **Unit** |
| Tensile Strength | ASTM D-4632 | 315 | lb. |
| Tensile Elongation (Maximum) | ASTM D-4632 | 15 | % |
| Trapezoidal Tear | ASTM D-4533 | 120 | lbs. |
| CBR Puncture | ASTM D-6241 | 900 | lbs. |
| UV Resistance  (% retained at 500 hrs.) | ASTM D-4355 | 70 | % |
| Apparent Opening Size (AOS) | ASTM D-4751 | 40 | US Std. Sieve |
| Permittivity | ASTM D-4491 | 0.05 | sec-1 |
| Water Flow Rate | ASTM D-4491 | 4 | gal/min/ft2 |

Anchors: Staples, stakes, or reinforcement bars shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with a 1"- 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

**Construction Methods**

Excavate basin according to the erosion control plans with basin surface free of obstructions, debris, and pockets of low-density material. Install temporary slope drain pipe and construct the primary spillway according to the Skimmer Basin with Baffles Detail sheet in the erosion control plans. Temporary slope drain pipe at inlet of basin may be replaced by Type 4 geotextile as directed. Construct the coir fiber baffles according to *Roadway Standard Drawings* No. 1640.01 and Section 1640 of the *Standard Specifications*.

Install skimmer device according to manufacturer recommendations. Install 4” Schedule 40 PVC pipe into dam on the lower side of basin 1 ft. from the bottom of the basin and according to the detail, and extend the pipe so the basin will drain. Attach a 6 ft. arm pipe to the coupling connection and skimmer according to manufacturer recommendations. The coupling shall be rigid and non-buoyant and not exceed a diameter of 4” and 12” in length. Attach the rope included with the skimmer to the tee between the vent socket and the tube inlet, and the other end to a wooden stake or metal post. Clean out skimmer device when it becomes clogged with sediment and/or debris and is unable to float at the top of water in skimmer basin. Take appropriate measures to avoid ice accumulation in the skimmer device. Construct a stone pad of Class B stone directly underneath the skimmer device at bottom of basin. The pad shall be a minimum of 12” in height, and shall have a minimum cross sectional area of 4 ft. by 4 ft.

Line primary spillway with low permeability polypropylene geotextile unrolled in the direction of flow and lay smoothly but loosely on soil surface without creases. Bury edges of geotextile in a trench at least 5" deep and tamp firmly. If geotextile for the primary spillway is not one continuous piece of material, make horizontal overlaps a minimum of 18" with upstream geotextile overlapping the downstream geotextile. Secure geotextile with eleven gauge wire staples shaped into a *u* shape with a length of not less than 12" and a throat not less than 1" in width. Place staples along outer edges and throughout the geotextile a maximum of 3 ft. horizontally and vertically. Geotextile shall be placed to the bottom and across the entire width of the basin according to the Skimmer Basin with Baffles detail. Place sealant inside basin around barrel pipe on top of geotextile with a minimum width of 6 in.

At the skimmer outlet, provide a smooth soil surface free from stones, clods, or debris that will prevent contact of the coir fiber matting with the soil. Unroll the matting and apply without stretching such that it will lie smoothly but loosely on the soil surface. Wooden stakes, reinforcement bars, or staples may be used as anchors in accordance with the details in the plans and as directed. Place anchors across the matting at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the matting 3 ft. apart.

All bare side slope sections of the skimmer basin shall be seeded with a temporary or permanent seed mix as directed and in accordance with Articles 1620-3, 1620-4, 1620-5, 1660-4, 1660-5 and 1660-7 of the *Standard Specifications*. Straw or excelsior matting shall be installed on all bare side slope sections immediately upon the completion of seeding and in accordance with Article 1631-3 of the *Standard Specifications*.

**Measurement and Payment**

*Silt Excavation* will be measured and paid for in accordance with Article 1630-4 of the *Standard Specifications*, as calculated from the typical section throughout the length of the basin as shown on the final approved plans.

*Geotextile for Soil Stabilization* will be measured and paid for in accordance with Article 270-4 of the *Standard Specifications*.

*Low Permeability Geotextile* will be measured and paid for as the actual number of square yards measured along the surface of the spillway over which the geotextile is installed and accepted.

*Coir Fiber Baffles* will be measured and paid for in accordance with Article 1640-4 of the *Standard Specifications*.

*\_\_" Skimmer* will be measured in units of each. *\_\_” Skimmer* will be measured and paid for as the maximum number of each size skimmer acceptably installed and in use at any one time during the life of the project. Barrel and arm pipe, cleanout, relocation and reinstallation of *\_\_” Skimmer* is considered incidental to the measurement of the quantity of *\_\_” Skimmer* and no separate payment will be made. No separate payment shall be made if *\_\_” Skimmer*, barrel and/or arm pipe(s) are damaged by ice accumulation.

*Coir Fiber Mat* will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

*Temporary Slope Drain* will be measured and paid for in accordance with Article 1622-4 of the *Standard Specifications*.

*Stone for Erosion Control, Class \_\_* will be measured and paid for in accordance with Article 1610-4 of the *Standard Specifications*.

*Seeding and Mulching* will be measured and paid for in accordance with Article 1660-8 of the *Standard Specifications*.

*Seed for Temporary Seeding* will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

*Fertilizer for Temporary Seeding* will be measured and paid for in accordance with Article 1620-6 of the *Standard Specifications*.

*Matting for Erosion Control* will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

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| **Pay Item** | **Pay Unit** |
| \_\_" Skimmer | Each |
| Coir Fiber Mat | Square Yard |
| Low Permeability Geotextile | Square Yard |