ITEM 605.60 17- TIRE SHRED SAMPLING & COLLECTION POINT

DESCRIPTION

The work consists of furnishing and installing Tire Shred Sampling Collection Point(s) at locations shown on the plans or established by the Engineer.

A Tire Shred Sampling Collection Point is a basin used to collect, sample and monitor the quality of the water that migrates through the tire shred embankment.

The following figures are included as part of this specification for reference and the detailing of the Tire Shred Sampling Collection Point:

Figure 1	Tire Shred Sampling Collection Point Detail
Figure 2	Outlet Boot Connection Details
Figure 3	Outlet Boot Fabrication Detail

MATERIALS

A. Underdrain Filter

Provide underdrain filter conforming to the provisions of Section 605-Underdrains, §605-2.02 Granular Filter Materials, B. Underdrain Filter Type II.

B. Geotextile

Provide geotextile stabilization conforming to the requirements specified in §737-01E. Geotextile Stabilization.

C. Cushion Sand

Provide cushion sand conforming to the provisions of Section 703 - Aggregates, §703-06, Cushion Sand.

D. Concrete

Provide Class A concrete conforming to the provisions of Section 501 - Portland Cement Concrete - General.

E. PVC Pipe

Provide PVC pipe conforming to the provisions of Section 706 - Concrete, Clay and Plastic Pipe, §706-15, PVC Drain Pipe System.

F. Gaskets

Provide gaskets conforming to the provisions of ASTM D23212.

CONSTRUCTION DETAILS

A. General

Construct Tire Shred Sampling Collection Point(s) at the locations indicated on the Contract Plans. The collection points outside of the tire shred embankment are the control sections. Construct these collection points so that their tops are 125 mm ± 25 mm below existing ground surface. The collection points within the limits of the tire shred embankment are the monitoring sections. Construct these collection points so that they are immediately beneath the bottom of the geotextile underdrain that is used to surround the tire shred course.

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B. PVC Pipe System Installation

Install a polyvinyl chloride (PVC) pipe system in a trench leading from the center of the collection point to the face of the side slope as shown on the tire shred sampling collection point detail (Figure 1). Supply all pipes and fittings with gasket type joints. In no case will glues, solvents or adhesives be allowed to assemble the PVC pipe system by installing a temporary plug in the end of the discharge pipe and filling the completed PVC pipe system with potable water for a period of not less than 24 hours. Upon completion of the leak test, repair any leaks and then retest the PVC pipe system at no additional cost to the Sate. Once a successful leak test has been obtained, remove the water from the PVC pipe system.

Backfill the trenches with the same soil that was excavated from the trenches, except no material greater than 50 mm in size will be allowed in contact with the PVC pipe system. Compact the backfill in conformance with the provisions of §203-3.15 Fill and Backfill and Structures, Culverts, Pipes, Conduits and Direct Buried Cables. Cast the concrete collar around the inlet to the PVC pipe system as shown on the tire shred sampling collection point detail (Figure 1). The top of the cast-in-place collar will have a slope of 5% towards the collection point inlet.

C. Cushion Sand Installation

Place a 150 mm thick layer of cushion sand as shown on the tire shred sampling collection point detail (Figure 1). The layer of cushion sand will have a slope of 5% toward the center of the collection point inlet. Compact the layer of cushion sand conforming to the provisions of §203-3.12 Compaction and to a density of not less than 90 percent of Standard Proctor Maximum.

D. High Density Polyethylene (HDPE) Liner Installation

Place a non-reinforced high density polyethylene (HDPE) liner on and flush to the prepared layer of cushion sand so that the perimeter of the liner extends a minimum of 0.3 meters beyond the edge of the basin. Construct an outlet boot integral to and locate it in the center of the liner. Fabricate the outlet boot from the same materials as the liner using extrusion welding. The dimensions of the outlet boot and the location of the extrusion welds are shown in the outlet boot fabrication detail (Figure 3). The outlet boot shall be attached to the liner using extrusion welding as shown on the outlet boot fabrication detail (Figure 3). In no case will glue, solvents or adhesives be used to attach the outlet boot to the liner. Slope the outlet boot inside the inlet of the drainage system and hold it in place with a retainer ring machined from PVC pipe as shown on the outlet boot connection detail (Figure 2). In no case will glues, solvents or adhesives be used to attach the outlet boot to the inlet of the drainage system.

E. Geotextile and Underdrain Backfill Installation

After placing the HDPE liner, cover it with a layer of geotextile undercut. Fill the collection point basin with underdrain filter. The first lift of backfill shall be 200 mm thick. Subsequent lifts shall be no greater than 200 mm thick. Compact the underdrain filter conforming to the revisions of §605-3.02, Underdrain Filter.

Take care not to damage the HDPE liner during compaction. Any damage must be repaired at no cost to the State.

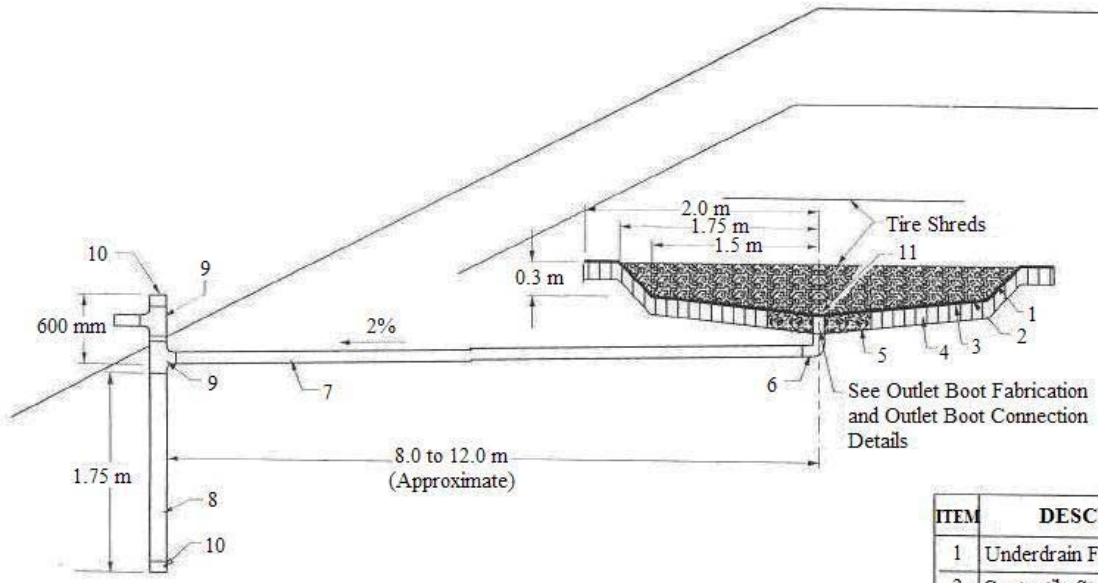
For the collection points being used as control sections, place a layer of geotextile underdrain on to of the underdrain backfill prior to normal embankment construction.

METHOD OF MEASUREMENT

The quantity of Tire Shred Sampling Collection Points to be paid is the number of each collection point installed, leak tested and accepted by the Engineer.

BASIS OF PAYMENT

Include in the unit price bid per collection point the cost of furnishing all labor materials and equipment necessary to satisfactorily complete the work in conformance with the provision of the Tires Shred Sampling Collection Point details and specifications.



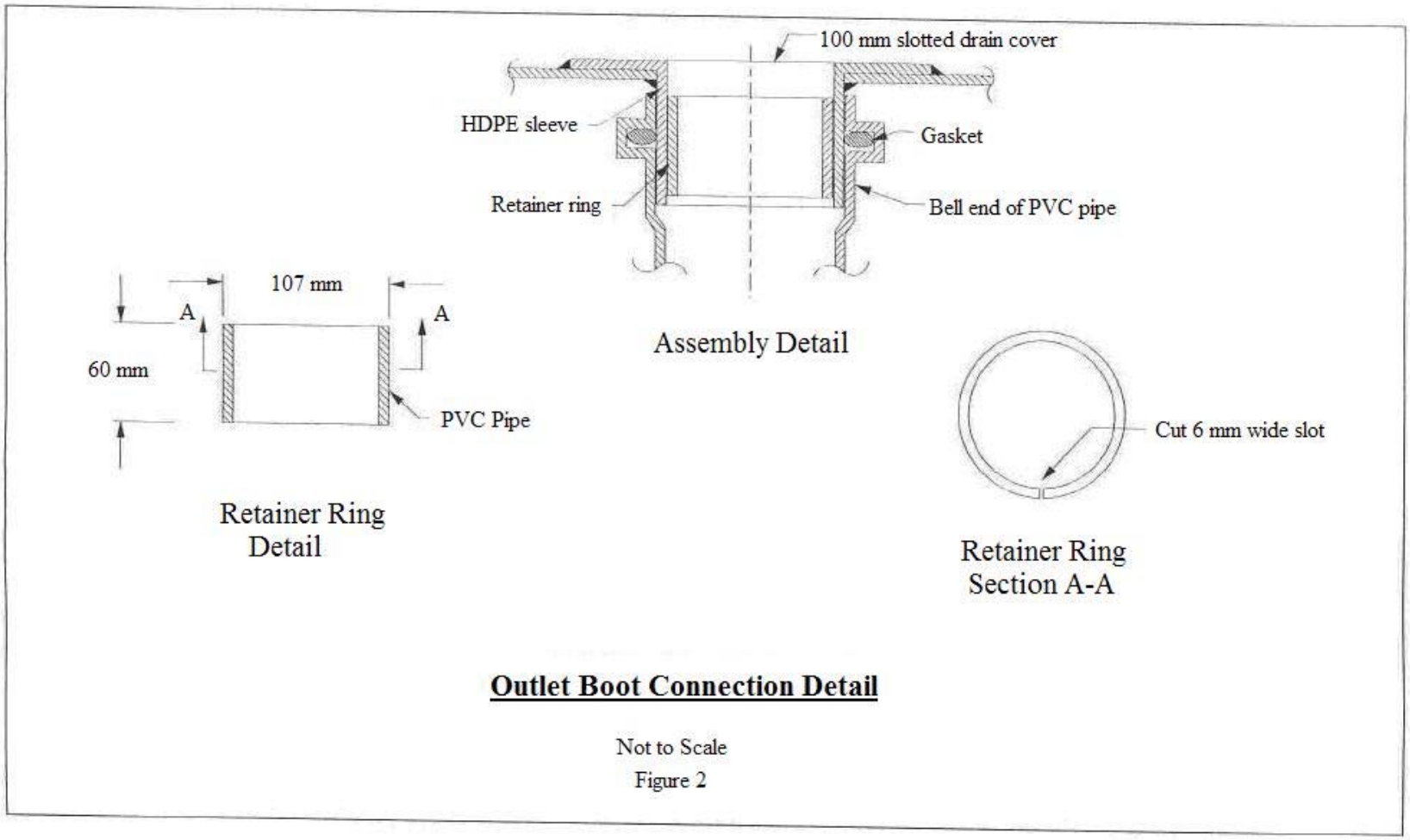
ITEM	DESCRIPTION
1	Underdrain Filter
2	Geotextile Stabilization
3	Nonreinforced, 5.0 m x 5.0 m HDPE membrane, 30-thickness with 100 mm nominal diameter integral outlet boot
4	Cusion Sand Layer, 150 mm thick
5	Cast-in-Place Concrete Colar, 450 mm-square by 150 mm thick
6	100 mm PVC elbow
7	100 mm PVC pipe
8	150 mm PVC pipe
9	150 mm x 150 mm x 100 mm PVC tee
10	150 mm solid PVC end cap
11	100 mm slotted drain cover

NOTE:
1. The Tire Shred Sampling Collection Point is square in plan.
2. All PVC pipe, tees, elbows and caps are nominal size.

Tire Shred Sampling Collection Point Detail

Not to Scale

Figure 1



Outlet Boot Connection Detail

Not to Scale

Figure 2

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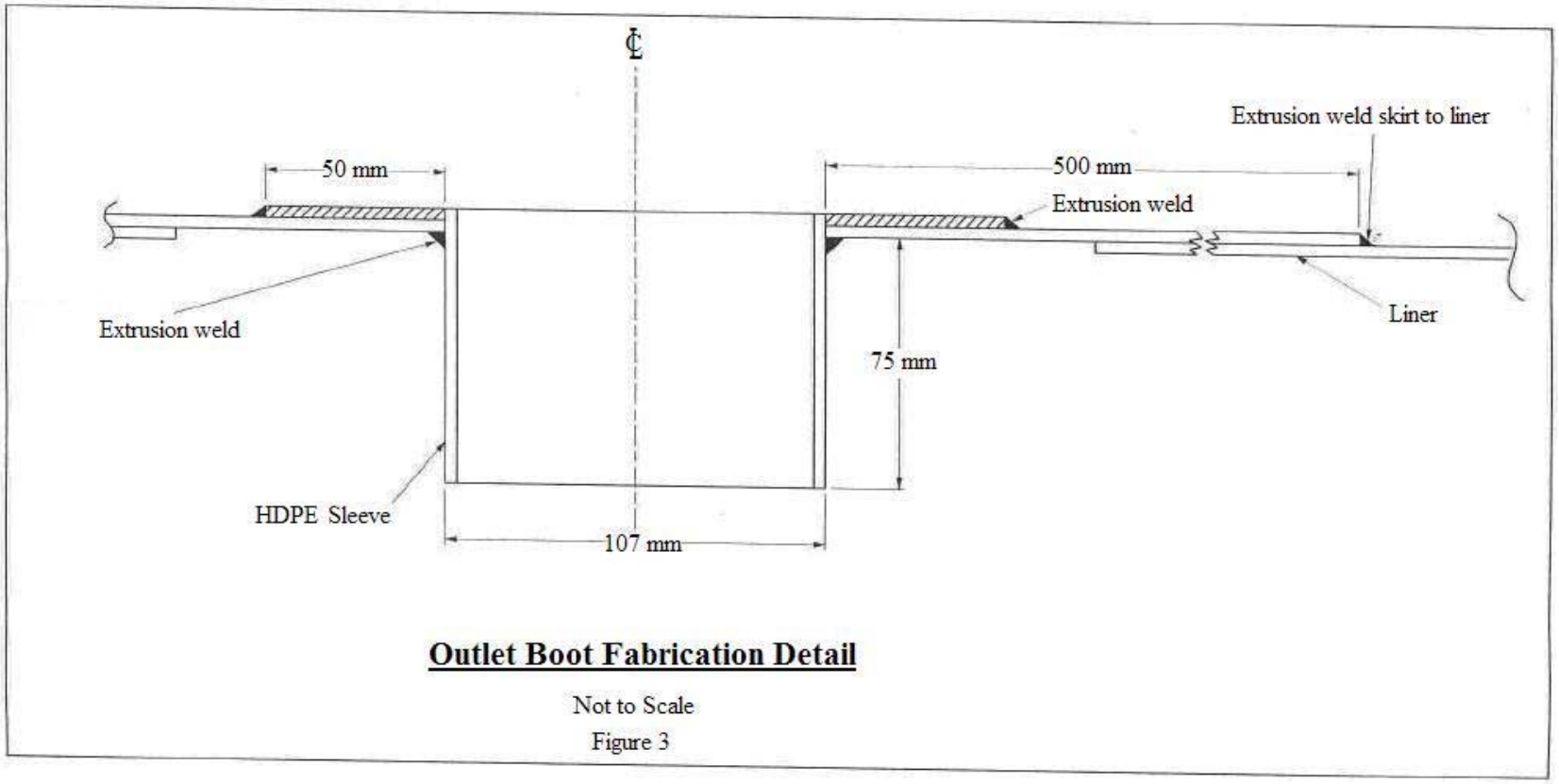

Outlet Boot Fabrication Detail

Not to Scale

Figure 3

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