



**SPECIAL PROVISIONS
FOR
MAINTAINABLE DRAIN FILTERS**

**Hardin County
MB-175-1(503)186--77-42**

**Effective Date
March 15, 2022**

THE STANDARD SPECIFICATIONS, SERIES OF 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

150788.01 DESCRIPTION.

This work consists of furnishing and installing a weep hole maintainable drain filter assembly, including all necessary hardware at the location(s) shown on the plans. This item includes all work required to core drill a weep hole in the existing reinforced concrete box (RCB) culvert, and install the maintainable drain filter assembly. Ensure all work and materials are in accordance with the standard specifications, except as modified herein.

150788.02 MATERIALS.

- A.** Provide drain filter housings fabricated from stainless steel in accordance with AISI 316. Drain filter housings must consist of a flat mounting plate flange to permanently mount the assembly to the existing structure shown on the plans in accordance with the size and shape of the weep hole. If required for mounting purposes, ensure adapter plates are made of the same material as the drain filter housings. Ensure drain filter housings consist of a perforated conical shell, extending into the existing structure a minimum of 3 inches, and providing a minimum of 30 square inches of perforated surface area. Ensure perforations in the conical shell portion of the housing are at least 1/8 inch diameter, but not greater than 3/8 inch diameter, and account for greater than 50 percent of the conical shell surface area. Ensure mounting hardware is stainless steel.
- B.** Provide a flexible and compressible gasket to ensure a watertight seal between the mounting plate and the existing structure.
- C.** Provide a rigid plastic cartridge type insert containing geotextile fabric that attaches to the steel drain filter flange and is removable to allow for periodic inspection and maintenance. Ensure the cartridge is flame retardant and ultraviolet (UV) resistant. Provide woven geotextile fabric in accordance with Section 4196 of the Standard Specifications except as modified in the table below.

Table SP-150788.02-1: Geotextile Physical Requirements

Property	Test Method	Unit	Value
CBR Puncture Strength, minimum	ASTM D6241	lbs	1250
Apparent Opening Size, maximum	ASTM D4751	U.S. Sieve	30
Percent Open Area, minimum	COE-02215	%	8
Permittivity, minimum	ASTM D4491	sec ⁻¹	1.5
Flow Rate, minimum	ASTM D4491	gal/min/ft ²	115
UV Resistance (at 500 hours), minimum	ASTM D4355	% strength retained	90

- D. Ensure the removable geotextile fabric cartridge includes a one-way check valve to prevent water and debris from entering the filter. Protect the one-way check valve by a cover.
- E. Provide stone backfill material in accordance with Section 4131 of the Standard Specifications.
- F. In case of conflict between manufacturer's recommendations and the requirements listed in this specification, the Engineer will determine which governs.

150788.03 CONSTRUCTION.

A. Weep Holes.

Core drill the 4 inch diameter weep holes through the existing RCB culvert exterior walls and wingwalls at the locations shown on the plans. Ensure the weep hole is flushed with water to remove any dust or debris prior to installing the drain filter. Minimize the amount of soil loss during construction.

B. Drain Filter.

Install the drain filter flange flush with the existing structure. Orient the drain filter in accordance with the manufacturer's recommendations. Mount the drain filter using stainless steel screws with washers appropriate for the material of the existing structure. Utilize the drain filter housing flange as a template for drilling holes. Epoxy seal around the housing for any possible openings of the core per manufacturer's recommendations.

150788.04 METHOD OF MEASUREMENT.

Measurement will be by count for each Maintainable Drain Filter installed.

150788.05 BASIS OF PAYMENT.

- A. Payment for each Maintainable Drain Filter will be paid for at the contract unit price per each for the quantity furnished and installed.
- B. Payment is full compensation for furnishing all material, labor, and equipment required to complete the work according to the contract documents.