



**SUPPLEMENTAL SPECIFICATIONS
FOR
BACKFILLING AND COMPACTION OF PIPE AND REINFORCED BOX CULVERTS BY FLOODING**

**Effective Date
January 21, 2015**

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SUPPLEMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

12013.01 DESCRIPTION.

This specification describes backfill and compaction requirements for culverts using flooding. Apply Sections 2402, 2415, 2416, and 2417 of the Standard Specifications unless modified by this specification.

12013.02 MATERIALS.

- A.** Use floodable backfill material meeting the requirements of Section 4134 of the Standard Specifications.
- B.** When required, use porous backfill material meeting the requirements of Section 4131 of the Standard Specifications.
- C.** When shown in the contract documents, use perforated subdrain meeting requirements of Section 4143 of the Standard Specifications.

12013.03 CONSTRUCTION.

- A.** When backfilling and compaction by flooding is required, backfill may be placed in lifts up to 2 feet (0.6 m) thick. Place backfill simultaneously on both sides of culvert. Determine if pipe culverts need to be restrained and take appropriate actions to prevent floating of culverts during backfilling, flooding, and compaction.
- B.** Begin surface flooding for each lift at the inlet end of the culvert and progress to the outlet. To ensure uniform surface flooding and adequate compaction, fan-spray water in successive 6 to 8 foot (1.8 to 2.4 m) increments using a 2 inch (50 mm) diameter hose for three minutes within each increment. Run hose fully, but with water pressure low enough to avoid eroding cohesive soil plugs.
- C.** After flooding, evaluate effectiveness of compaction with a vibratory pan compactor. If pan compactor produces visible compaction, repeat flooding process until pan compactor produces no visible compaction.

12013.04 METHOD OF MEASUREMENT.

Quantity of Flooded Backfill, in cubic yards (cubic meters), will be the quantity shown in the contract documents, including pipe culverts installed by fill installation. Quantity measured for payment will not be adjusted unless the quantity of culvert installed is adjusted.

12013.05 BASIS OF PAYMENT.

Contractor will be paid contract unit price for Flooded Backfill per cubic yard (cubic meters). Backfill material, subdrains, restraining culverts against floating, and water required for flooding will not be measured separately for payment, but will be considered incidental to the contract unit price bid for Flooded Backfill.