



Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATIONS FOR BACKFILLING AND COMPACTION OF CULVERTS BY FLOODING

Effective Date
February 17, 2009

THE STANDARD SPECIFICATIONS, SERIES 2001, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

01120.01 Description

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

01120.02 Materials

Granular backfill material shall have 4% or less passing the No. 200 (75 μ m) sieve (e.g. washed concrete sand).

01120.03 Construction

When backfilling and compaction by flooding is required, granular backfill may be placed in lifts up to 2 feet (0.6 m) thick. The Contractor shall determine if box or pipe culverts need to be restrained and take appropriate actions to prevent floating of culverts during backfilling, flooding, and compaction.

Cohesive soil plugs shall be constructed at the inlet, outlet, and sides (if needed) prior to flooding.

Surface flooding each lift shall start at the inlet end of the pipe or box culvert and progress to the outlet. To ensure uniform surface flooding and adequate compaction, water shall be fan-sprayed in successive 6 to 8 foot (1.8 to 2.4 m) increments from a 2 inch (50 mm) diameter hose for 3 minutes within each increment. The hose shall be run fully; however, the water pressure shall be low enough to avoid erosion of cohesive soil plugs.

After flooding, the Contractor shall evaluate the effectiveness of the compaction with a vibratory pan compactor. If the pan compactor produces visible compaction, repeat flooding process until the pan compactor produces no visible compaction.

01120.04 Method of Measurement

The quantity of Flooded Backfill, in cubic yards (cubic meters), will be the quantity shown in the contract documents regardless of the compaction method. The quantity measured for payment will not be adjusted unless the quantity of pipe installed is adjusted.

01120.05 Basis of Payment

The Contractor will be paid the contract unit price for Flooded Backfill per cubic yard (cubic meters).

Water required for flooding, subdrains, porous backfill, restraining culverts against floating, and granular backfill will not be measured separately for payment, but will be considered incidental to the contract unit price bid for Flooded Backfill.