

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**BOX CULVERT JOINT TIE ASSEMBLIES**

STM:TRK

1 of 2

APPR:DMG:MJF:04-28-20  
FHWA:APPR:05-05-20

**a. Description.** This work consists of furnishing and installing galvanized metal tie rods, plate washers, lock washers and nuts, and acceptable soil and watertight sealant as filler to the access holes on the final 3 sections/2 joints of box culverts with openings of any size, unless otherwise detailed on the plans.

This work consists of furnishing and installing Box Culvert Joint Tie Assemblies as shown on the plans and Standard Plan R-84 Series. Alternative tie options may be approved by the Engineer.

**b. Materials.** Provide the following materials to construct the joint tie assemblies:

1. One inch diameter threaded rods meeting the requirements of *ASTM F1554, Grade 36*.
2. Two inch by two inch by 5/16 inch plate washers meeting the requirements of *ASTM A36/A36M*.
3. Flat circular washers meeting the requirements of *ASTM F436/F436M* to be placed over the plate washer and under the lock washer.
4. Lock washers meeting the requirements of *ANSI B18.21.1*.
5. Heavy hex nuts meeting the requirements of *ASTM A563, Grade A*.
6. Select and apply watertight and soil tight hole filler in accordance with subsection 713.02.B of the Standard Specification for Construction.

Ensure all hardware is galvanized in accordance with *ASTM A123/A123M* or *ASTM A153/A153M*, as applicable.

**c. Construction.** Install and maintain joint tie assemblies and hole filler during construction and backfilling activities. Use caution when placing and compacting backfill materials adjacent to the assemblies. Ensure damage to the joint tie assemblies or box culvert around the assemblies caused by the Contractor's operation is repaired or replaced at the Contractors expense.

Joint tie assemblies are intended to hold the box culvert sections in place throughout the design life and must not be used to pull the sections together during construction.

Apply tie rod hole filler in accordance with subsection 713.03.F of the Standard Specifications for Construction.

**d. Measurement and Payment.** The completed work, as described, is considered to be included in the price of the box culvert that uses the following pay item:

**Culv, Precast Conc Box, (span) foot by (rise) foot**

Joint Waterproofing and 36-inch wide geotextile filter fabric, placed below the joint tie, centered over the joint and on the exterior of the culvert will not be paid for separately but are considered included in the price for the box culvert.