

ROAD COMMISSION FOR OAKLAND COUNTY

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

RCOC/DESIGN:JOB

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RCOC20SP406A  
ORG:11-25-22

**a. Description**

This work consists of furnishing and installing bolts, plate washers, flat washers, nuts, and sealant for filling any joint tie holes through the box culvert wall. This special provision applies to box culverts with openings of any size. This work consists of providing all labor, equipment and materials necessary to furnish and install Box Culvert Joint Tie Assemblies as described herein, and as shown on the plans. This special provision is to be used in conjunction with the specification for box culverts.

**b. Materials**

Furnish the following materials or approved equivalent:

1. ½"x6"x4'-2" long ASTM Grade 36 steel plates.
2. 1 inch diameter ASTM A307 Grade B bolt.
3. 2 inch by 2 inch by 5/16 inch ASTM F423 plate washers.
4. ASTM F436 flat washers
5. 1 inch diameter ASTM A563 heavy hex head nuts.
6. 1 inch diameter 8NC Dayton Superior F-42 Loop Ferrule Insert or approved equal
7. Select tie rod hole filler in accordance with subsection 713.02.B of the Standard Specifications for Construction.

All plates and hardware must be steel, 36 ksi minimum, galvanized in accordance with ASTM A153 and ASTM A123.

**c. Shop Drawings**

Box Culvert Joint Tie Assemblies shall be shown on the box culvert shop drawings.

**d. Construction**

Install and maintain joint tie assemblies and hole filler during construction and backfilling activities. Upon application the cold applied culvert joint sealer and/or waterproofing membrane as specified on the plans, install a 36-inch wide strip of geotextile blanket centered on the box culvert joint. Joint tie assemblies are required on the final 3 sections/2 joints of box culvert on both sides unless otherwise shown on the Plans. Joint tie assemblies shall be placed at ½ the rise of the box culvert minus 6 inches.

Use caution when placing and compacting backfill materials adjacent to the assemblies. Damage to the joint tie assemblies caused by the Contractor's operation must be repaired at no cost to the Department.

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.

All threaded portions of the joint tie assembly protruding beyond what is required for fastening shall be ground or cut off with and the final surfaces coated with zinc rich paint. Flame cutting is prohibited. All protruding elements of the joint tie assemblies shall be smooth (have a surface roughness average not greater than 500 micro inches.)

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

**e. Measurement and Payment**

The completed work, as described, will be measured and paid for at the contract unit price using the following pay item(s):

<b>Pay Item</b>	<b>Pay Unit</b>
Box Culvert Joint Tie Assemblies.....	LSUM

**Box Culvert Joint Tie Assemblies** includes all costs associated with preparing shop drawings, manufacture and installation of the joint ties.

Cold-applied culvert joint sealer and geotextile blanket on the exterior of the culvert will not be paid for separately but are included in the price for the box culvert.

Box culvert waterproofing membrane will be paid for separately as shown in the plans.

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