



**SPECIAL PROVISIONS  
FOR  
CONNECTION TO EXISTING ARCH BOX**

**Des Moines County  
EDP-0977(650)--7Y-29**

**Effective Date  
October 20, 2020**

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

**155049.01 DESCRIPTION.**

This work consists of connecting proposed sewer pipe to an existing brick sewer arch box. The section includes all labor, materials, dewatering, equipment, temporary shoring and reinforcement, permanent shoring and reinforcement, and testing for installing a water-tight connection and preserve the integrity of existing sewer infrastructure.

**155049.02 MATERIALS.**

- A.** Concrete: Use Class C concrete complying with Section 2403 of the Standard Specifications as well as all related sections. Inspection shall be per Iowa DOT Materials I.M.s.
- B.** Concrete Collar (pre-cast): Comply with ASTM C 478.
- C.** Non-shrink Grout: Comply with Iowa DOT Materials I.M. 491.13.
- D.** Flexible, Watertight Gasket: Comply with ASTM C 923.
- E.** Waterstop: Provide elastomeric gasket that surrounds pipe and attaches with stainless steel bands and is designed to stop the movement of water along the interface between a pipe and a surrounding concrete collar.
- F.** Bedding (Class I) Material: Use material meeting the requirements of Section 4118 of the Standard Specifications.
  - 1.** The Engineer may allow the use of gravel or authorize a change in gradation subject to materials available locally at the time of construction.
  - 2.** The Engineer may authorize the use of crushed PCC for pipe sizes up to 12 inches.

- G. Backfill Material:** Use Class II material meeting the requirements of Article 2552.02, D, 1 of the Standard Specifications.

**155049.03 CONSTRUCTION.**

**A. Concrete Collar.**

1. For new pipes 12 inches or smaller, install two number 4 steel reinforcing hoops in collar around pipe. Pour concrete collar around pipe/structure junction to a minimum thickness and width of 6 inches, providing a minimum of 4 inches of concrete extending beyond the pipe opening.
2. For new pipes larger than 12 inches, install two number 4 steel reinforcing hoops in collar around pipe. Pour concrete collar around pipe/structure junction to minimum thickness and width of 9 inches, providing a minimum of 4 inches of concrete extending beyond the pipe opening.

**B. Pipe connection.**

**1. Cut and Chipped Opening.**

- a. Use for pipe sizes 12 inches in diameter or larger.
- b. Saw opening to approximate dimensions with a masonry saw. Saw to depth sufficient to sever reinforcing steel.
- c. Remove concrete and expand opening to a diameter at no more than 4 inches larger than the outside diameter of the new pipe.
- d. Leave a minimum of 6 inches of manhole or intake wall above and on the sides of the pipe.
- e. Cut off all reinforcing steel protruding from the structure wall.

**2. Cored Opening.**

- a. Core new openings in existing manholes or intakes for all pipes less than 12 inches in diameter.
- b. Opening to be no greater than 2 inches larger than the outside diameter of the pipe.
- c. Leave a minimum of 6 inches of manhole or intake wall above and on the sides of the pipe.

3. Fill opening: fill opening between manhole or intake wall and outside of pipe with nonshrink grout or construct a concrete collar around the pipe.

- C. Cleaning:** Clean all manholes, intakes, and structures by removing sheeting, bracing, shoring, forms, soil sediment, concrete waste, and other debris. Do not discharge soil sediment or debris to drainage channels or existing storm sewer or sanitary sewer system.

**D. Visual inspection:** Examine structure for:

1. Damage.
2. Slipped forms.
3. Indication of displacement of reinforcement.
4. Porous areas or voids.
5. Proper placement of seals, gaskets, and embedments.

**155049.04 METHOD OF MEASUREMENT.**

Pipe connections to a sewer arch box shall be measured per each connection point made.

**155049.05 BASIS OF PAYMENT.**

- A. Payment will be made at the unit price per each sewer pipe connection installed to a sewer arch box.
- B. Unit price includes, but is not limited to, excavation to make connection, coring or cutting into the existing sewer arch box, backfill material and bedding, pipe connections, grout, waterstop, concrete, concrete reinforcement, collars, bands, and testing for water-tightness.