



## Iowa Department of Transportation

### SPECIAL PROVISIONS FOR WATER CONTROL GATES

Pottawattamie County  
IMN-029-3(126)48--0E-78

Effective Date  
May 15, 2012

THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

#### **090207.01 DESCRIPTION.**

The Work consists of furnishing all labor, material, and equipment for placement of sluice gates and flap gates, complete, as specified in the contract documents.

#### **090207.02 MATERIALS.**

##### **A. General.**

Water control gates shall be cast iron conforming to ASTM A126-B. Sluice gates shall comply with the requirements of the American Water Works Association (AWWA) C560, Standard for Cast-Iron Slide Gates.

##### **B. Acceptable Manufacturers.**

Subject to compliance with the contract documents the following manufacturers are acceptable:

- Rodney Hunt
- Hydro Gate Corporation
- Waterman

##### **C. Sluice Gates.**

1. Provide gates, stems, lifts and other appurtenances of size, type, material and construction shown on the contract documents and specified.
2. Gates shall meet the requirements of AWWA C560.
3. Provide resilient seals of neoprene for flush bottom gates.
4. Gates shall operate as intended while subjected to a hydraulic head of 20 feet.

**D. Flap Gates.**

1. General: Provide flap gates with flange frame for mounting on concrete. Provide lubrication fittings for all hinges. Provide machined seating faces with positive closure.
2. Materials:
  - a. Frame and cover or flap: Cast-iron, ASTM A126-B.
  - b. Hinge arms: High strength malleable iron or high tensile bronze.
  - c. Hinge pins and anchor bolts: Stainless steel, Type 304.

**E. Gate Operators And Lifts.**

1. General:
  - a. Provide sluice gate lifts in accordance with AWWA C560.
  - b. Provide all lifts with clear butyrate plastic stem cover with Mylar open-close indicator.
2. Manual Operators:
  - a. Centerline of crank or hand wheel shall be approximately 36 inches above the operating floor.
  - b. A maximum effort of 40 pounds on crank or hand wheel shall operate gate after unseating gate.
  - c. The lift shall include a gear-reduced actuator suitable for operation using a portable motor apparatus.
  - d. Provide gates, including lift, designed with a minimum factor of safety of five.
  - e. Provide rising stems on all gates.

**090207.03 CONSTRUCTION.**

**A. Submittals.**

1. Product Data: Signed by manufacturer of water control gates certifying that sluice gate products furnished comply with or exceed the requirements of AWWA, C560.
2. Testing Compliance: Signed by testing agency certifying that product delivered to the project site meets and/or exceeds criteria of specifications found within these project documents.

**B. Quality Assurance.**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designations only.

- AWWA, C560.
- American Society for Testing and Materials (ASTM).
- Project Required Testing.

**C. Delivery, Storage, Handling**

Prevent damage to the water control gates during delivery, storage, and construction. Prior to delivery to the project site, review the manufacturer's care and handling recommendations. Any damage to the water control gate materials resulting from the contractor's vehicles, equipment, or operations, shall be replaced.

**D. Execution.**

1. Set, maintain, and reset all alignment stakes, slope stakes, and grade stakes necessary for the construction of the water control gates.

**2. Field Quality Control.**

**a. Installation check and start-up:**

Employ and pay for the services of the equipment manufacturer's field service representative, fully commissioned and authorized by manufacturers to do the following:

- Inspect equipment covered by this specification section.
- Supervise adjustments, calibrations and installation checks and full commissioning.
- Perform basic operational checks.
- Provide Owner with a written statement that manufacturer's equipment has been installed properly, lubricated and calibrated and is ready for operation by the Owner.

**b. Perform field leakage test in accordance with AWWA C560.**

**090207.04 METHOD OF MEASUREMENT.**

Measurement for water control gates will be by the water control gate type and size indicated in the plans.

**090207.05 BASIS OF PAYMENT.**

- A.** Payment for Sluice Gate will be the contract unit price per gate type and size. Payment shall be full compensation for furnishing, placing, adjustments and testing, and all labor, equipment and incidentals needed to complete the work.
- B.** Payment for Flap Gate will be the contract unit price per gate type and size. Payment shall be full compensation for furnishing, placing, adjustments and testing, and all labor, equipment and incidentals needed to complete the work.