SECTION 15256 – SLUICE AND SHEAR GATES

PART 1 GENERAL

1.1 THE REQUIREMENT

A. The CONTRACTOR shall provide sluice and shear gates, complete and operable, in accordance with the Contract Documents.

B. The requirements of Section 15250 – Hydraulic Gates, General apply to this Section.

1.2 CONTRACTOR SUBMITTALS

A. Furnish submittals in accordance with Section 01300 – Contractor Submittals.

B. Shop Drawings: Drawings of gates, frames, slides, and actuators, as well as design load calculations for deflection at the maximum expected head, and calculations for the lifting force generated by 40 pounds effort on the hand wheel or crank to lift the gate.

1.3 QUALITY ASSURANCE

A. Leakage criteria for field test

1. Seating Head: Under the seating head, the leakage shall not exceed 0.1 gpm per foot of seating perimeter.

2. Unseating Head

(a) Under the unseating head, the leakage for heads of 20-feet, the allowable leakage rate shall not exceed the rate per foot of seating perimeter calculated from the equation in AWWA C501.

PART 2 - PRODUCTS

2.1 CAST IRON SLUICE GATES

A. Gates shall comply with AWWA C560 unless indicated otherwise.

B. Gates shall be new and current manufacture. They shall be adequately braced to prevent warping and bending under the intended usage.

C. Gate actuators shall be sized, selected, and furnished by the gate manufacturer. Gate actuators throughout the project shall be products of a single manufacturer.

D. Guide frames shall be extended 3-feet 6-inches above the walkway to match the height of the handrail. Where a gate is mounted in an opening between 2 sections of handrailing, additional horizontal members shall be added to the gate frame to match the handrail, guardrail, and kickplate spacing of the adjacent railing. Horizontal

members shall be arranged so that the railing will not interfere with operation of the actuator.

E. Construction: Unless otherwise indicated, materials of construction shall be in accordance with AWWA C501, suitable for the service. Materials used in the fabrication of the slide gates shall conform to the requirements of the standards designated for each material indicated below:

Description	**Material Standards**
Slide	Cast iron, ASTM A -48, Class 30
Frame and guides	Cast iron, ASTM A -48, Class 30
Wall thimble	Cast iron, ASTM A -48, Class 30
Stem and coupling	Stainless steel, ASTM A 276 Type 316
Flush bottom seats	Elastomeric material, ASTM D 2000
Stem Cover	Aluminum with slots and indicator
Guides and seats	Naval bronze, ASTM B 21, dovetailed to frame and slide
Operating nut	Bronze, ASTM B 584
Hardware	Stainless steel, ASTM A 276 Type 316

F. Lifting Devices: Lifting devices shall be provided complete with stem, lifting nut, intermediate supports with steady bushings, stem cover, indicator, gear reducer, hand wheel, crank, electric or hydraulic cylinder where indicated. Lifting devices shall be weatherproof and shall be mounted on cast-iron or fabricated steel pedestals. The pedestals shall have an ample base or bracket area to evenly distribute the load to the supporting concrete structure. The centerline of the manual actuator shall be approximately 3-feet above the base for pedestal mounted and approximately 4-feet above the floor for frame mounted actuators. Power lifting devices shall be in accordance with Section 15201 – Valve and Gate Actuators. Slide gate hoist heads shall be cast iron. The operating nut shall be of solid bronze, ASTM B 584. Operating thrust shall be taken on roller or ball bearings. All parts shall be provided with an alternate lubrication system. The unit shall be designed for a maximum of 40-lb effort on the crank to operate the gate. Clockwise movement of the hand wheel shall close the gate. The operating crank shall be easily removable to facilitate the use of a portable power operator.

G. Wall Thimbles: Unless otherwise indicated, sluice gates shall be provided with cast iron, F-pattern wall thimbles to match the thickness of the walls in which they are installed. Thimbles shall be furnished by the manufacturer of the gates and shall fit the bolt dimensions of the gates. Studs shall be of Type 316 stainless steel.

H. Sealant: The elastomeric sealant shall be Rubber Caulk Sealer as manufactured by Product Research Company, Los Angeles, or equal.

I. Manufacturers, or Equal

1. Rodney Hunt

2. Hydro Gate Corp.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Sluice and shear gates shall be installed in strict accordance with Section 15250.

-END OF SECTION-