**SECTION\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Heavy Duty Cast Flap Gate**

PART 1 GENERAL

* 1. SCOPE OF WORK
1. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required

to install and ready for operation the flap gate as shown on the Contract Drawings and as specified herein.

* 1. SUBMITTALS
1. Provide the following information to confirm compliance with the specification in

 addition to the submittal requirements specified in Section\_\_\_\_\_\_\_\_\_\_\_\_.

1. Complete description of all materials including all structural components of the frame, cover, lugs, hinge links, bushings and washers.
2. Installation drawings showing all details of construction, details required for installation, dimensions and anchor bolt locations.
3. The location of the company headquarters and the location of the principle manufacturing facility.
	1. QUALITY ASSURANCE
4. Qualifications
5. All of the equipment specified under this Section shall be furnished by a single manufacturer with a minimum of 20 years’ experience designing and manufacturing flap gates. The manufacturer shall have manufactured flap gates for a minimum of 100 projects.
6. The specification is based on the cast iron flap gate as manufactured by Waterman Valve, of Exeter, California.

PART 2 EQUIPMENT

2.01 GENERAL

1. The flap gate shall be designed to allow free outflow and prevent backflow for a maximum seating head of 55 feet.
2. When used for pump discharge, the unit shall be fitted with a Waterman-supplied leaf-spring bumper with rubber cushion block.
3. To ensure quality and consistency, no third party contracted manufacturers for fabrication and assembly allowed. The manufacturing and assembly facility shall be a United States facility.
4. Cast iron components shall be domestic (United States) materials.

2.02 CONSTRUCTION

1. Frame shall be cast of flatback design, with seating surface inclined from vertical at a minimum of 2.5 degrees to assure positive closure. For flatback gates mounted to thimbles or flanges, the gate flange shall be machined and drilled to match.
2. Cover shall be cast iron, cast in one piece, with reinforcing ribs, designed to withstand the seating head specified. An integral cast on lifting eye shall be provided for manual operation. All machined surfaces shall have a minimum 63 micro inch finish.
3. Seating surfaces for frame and cover shall be one of the following:
* Machined iron
* Bronze seats impacted into dovetail grooves on the frame and cover.
* Bronze seats impacted into dovetail grooves within the frame with neoprene seat bonded into a dovetail groove in the cover to cushion the cover upon closing.
* Bronze seats impacted into dovetail grooves in cover with the neoprene seat bonded into the dovetail groove in the frame.
1. Gate shall be provided with an adjustable, double pivoted hinge linkage so designed to permit complete seating, full opening and with stops or other arrangement to prevent the cover from rotating sufficiently to become wedged in the open position. Pivot lugs mounted to the frame shall be adjustable to allow adjustment of hinge links without having to remove the cover from the gate. The hinge links shall be bronzed bushed stainless steel. Optional hinge links of ductile iron, stainless steel (both bronze-bushed), and manganese bronze may be specified. All assembly hardware shall be type 18-8 stainless steel, 316 or 304 as specified.
2. Finish of all cast iron shall be painted with manufacturer’s standard shop coat paint or specified paint. Structural steel hinge links shall be galvanized. All bronze and stainless steel parts do not require further finish.

2.03 MATERIALS

Frame and Cover – Cast Iron per ASTM- A-126, Class B.

Pivot Lug – Ductile Iron per ASTM A-536, Gr. 65-45-12.

Hinge Link – Structural Steel ASTM A-36, galvanized per ASTM-A-123

Bronze Bushing and Washers – Commercial Bronze

Assembly Hardware and Hinge Pins – 18-8 Stainless Steel (Type 304)

2.04 OPTIONAL MATERIALS

 Naval Bronze Seats – ASTM B-21, Alloy 48200

 Low-Zinc Bronze Seats – ASTM B-198, Alloy 65100

 Neoprene Seats – ASTM D-2000 BC610/625

 Ductile Iron Hinge Link – ASTM A536, Gr. 65-45-12

 Manganese Bronze Hinge Link – ASTM B584, Alloy 86500

 Stainless Steel Hinge Link – ASTM A-240, Type 304

 Bronze Bushings – ASTM B-98

 Ni-Resist Cast Iron Frame and Cover – ASTM A-436, Type 2 or 2B.

PART 3 EXECUTION

3.01 INSTALLATION

 A. Installation of the gates and appurtenances shall be done in a workmanlike

 manner. It shall be the responsibility of the CONTRACTOR to handle, store, and install the

 equipment specified in this Section in strict accordance with the Manufacturer’s

 recommendations.

 B. The CONTRACTOR shall review the installation drawings and installation instructions prior to

 Installing the gates.

 C. The CONTRACTOR shall fill any void between the guide frames and the structure with non-

 shrink grout as shown on the installation drawing and in accordance with the grout

 manufacturer’s recommendations.

 D. Waterman recommendations a spring bumper for flap gates in a pump discharge application.

3.02 FIELD TESTING

 A. After installation, all gates will be field tested in the presence of the CONTRACTOR and THE

 OWNER to ensure that all items of equipment are in full compliance with this Section.

END OF SECTION

NOTHING FOLLOWS