

# Flap Gates

## Series 400

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# Introduction

Series 450 flap gates are utilized for backflow prevention in gravity flow, pump discharge, and tidal applications. The flap gates Whipps, Inc. fabricates offer high performance and long life, designed to accommodate a broad range of mounting arrangements and flow conditions. The rugged, reinforced construction is combined with a resilient seal to provide a heavy-duty, low-leakage flap gate. Whipps, Inc. can economically produce customized flap gates for both standard and non-standard applications. Fabricated flap gates are typically constructed of corrosion-resistant materials such as stainless steel, rubber, or aluminum. Cast iron, carbon steel, and timber flap gates are also available upon request.

## Advantages

**Performance:** The use of compressible seals provides superior leakage performance compared to a traditional cast iron flap gate with bronze seating faces.

**Design Flexibility:** All flap gates are custom-built for each application, enabling various mounting arrangements and a nearly unlimited range of sizes.

**Functionality:** Our flap gates open under very low unseating heads, particularly with rubber flap gates.

**Ease of Maintenance:** If debris becomes wedged in the flap or accumulates behind it, personnel can easily lift and clear the debris, especially with rubber flap gates.

**Quiet Operation:** Due to the use of resilient seals, there is no slamming action between the flap and the frame, even in pump discharge applications.

**Corrosion Resistance:** Painting or recoating stainless steel is not required to resist corrosion in water and wastewater.

**Field Replaceable Seals:** If the seals were to ever become damaged, they are easily removable and replaceable. In contrast, the bronze seating faces on traditional cast iron flap gates cannot be replaced in the field.

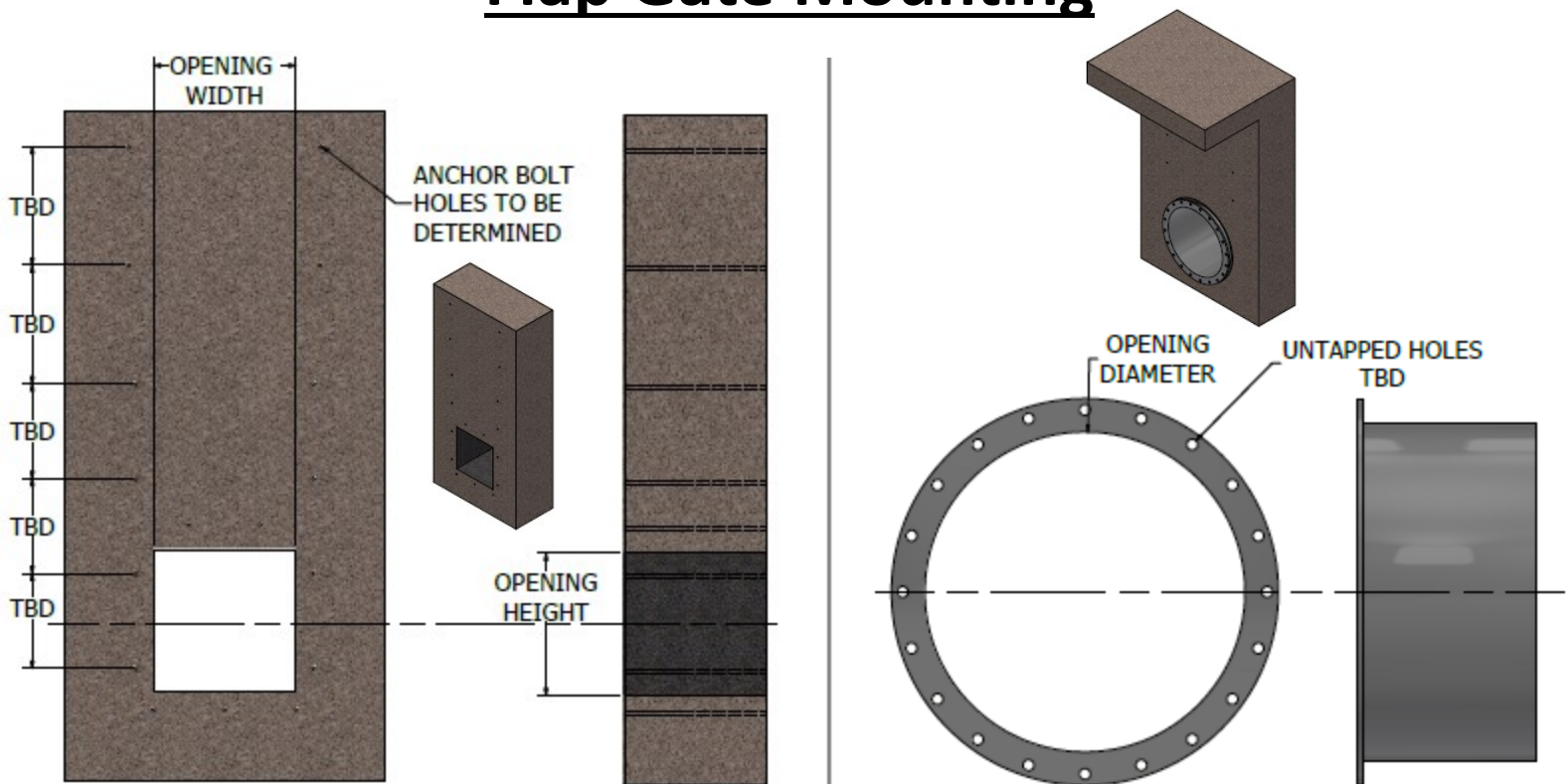
# Gate Selection Criteria

**Gate Size:** Whipps, Inc. fabricated flap gates are custom-built to accommodate virtually any round, square, or rectangular opening.

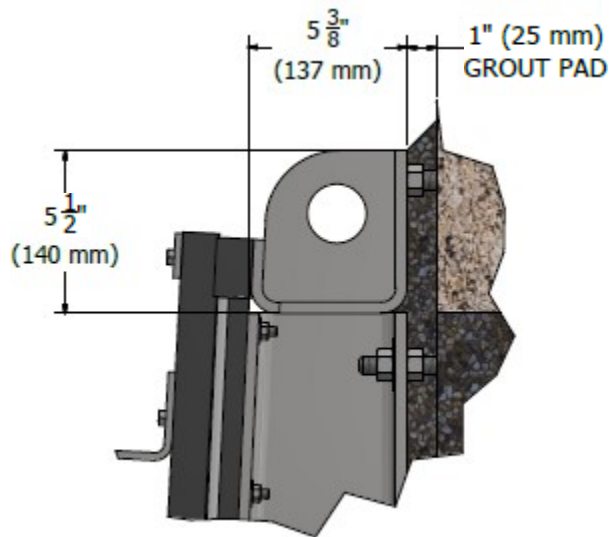
**Gate Mounting:** Our flap gates can be mounted directly to a wall, on a pipe flange, on the outside of a pipe, or on a wall thimble. While wall thimble mounting is possible, it is typically unnecessary.

**Gate Material:** The flap gates are usually constructed of type 304/304L or type 316/316L stainless steel. Alternatively, the flap can be provided in rubber, reinforced with stainless steel members. Type 304/304L, being less expensive, is generally safe for water or wastewater applications if residual chlorine is 200mg/l or less. Type 316/316L is a more conservative choice, offering greater resistance to pitting and crevice corrosion. In either case, the low carbon ('L') grade should be used for welded parts to minimize carbon precipitation in the welds. Different alloys are also available.

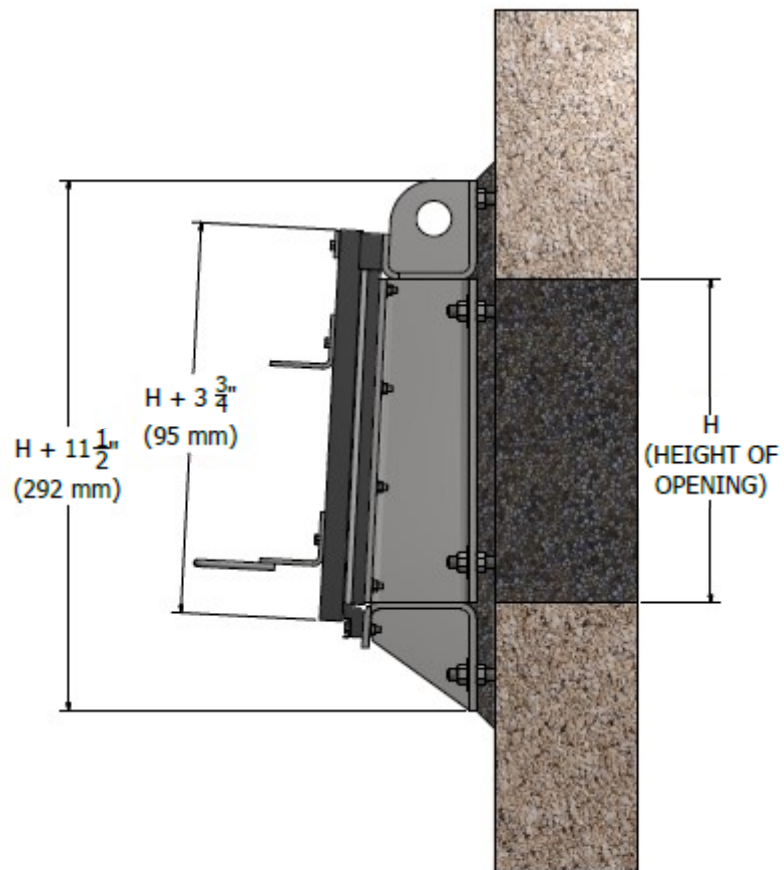
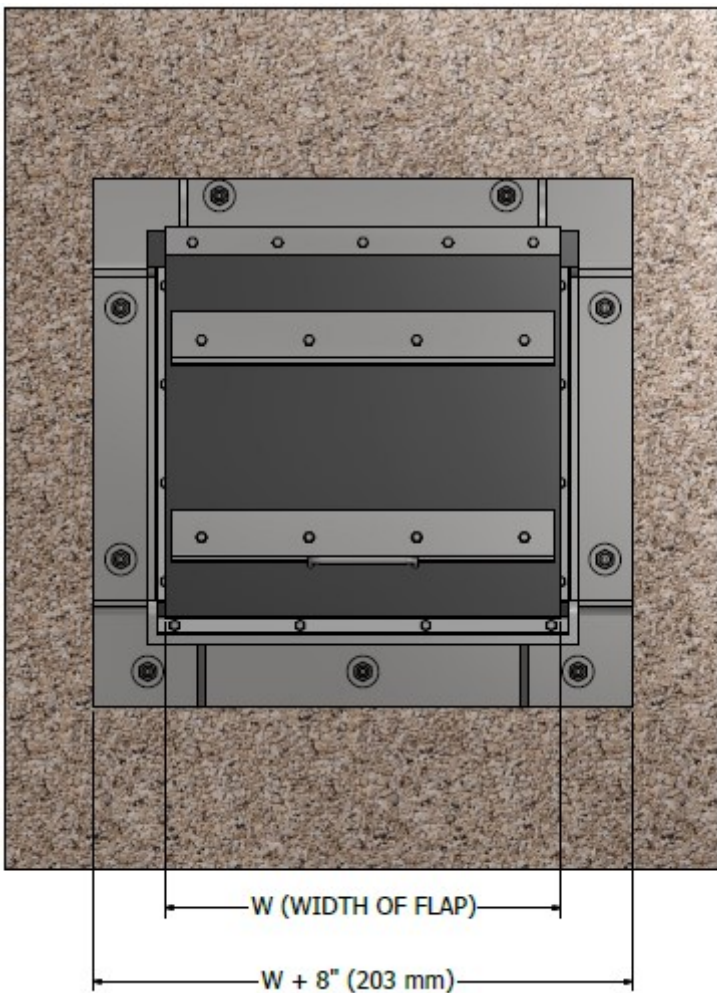
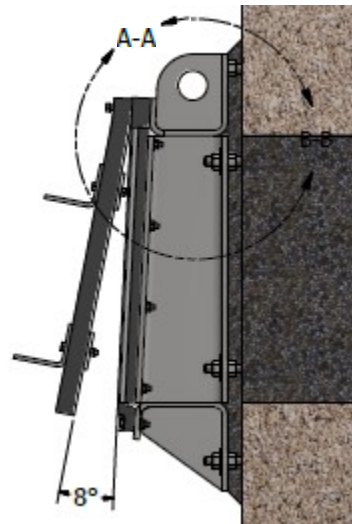
## Flap Gate Mounting



# Model 451 Square Flap Gate

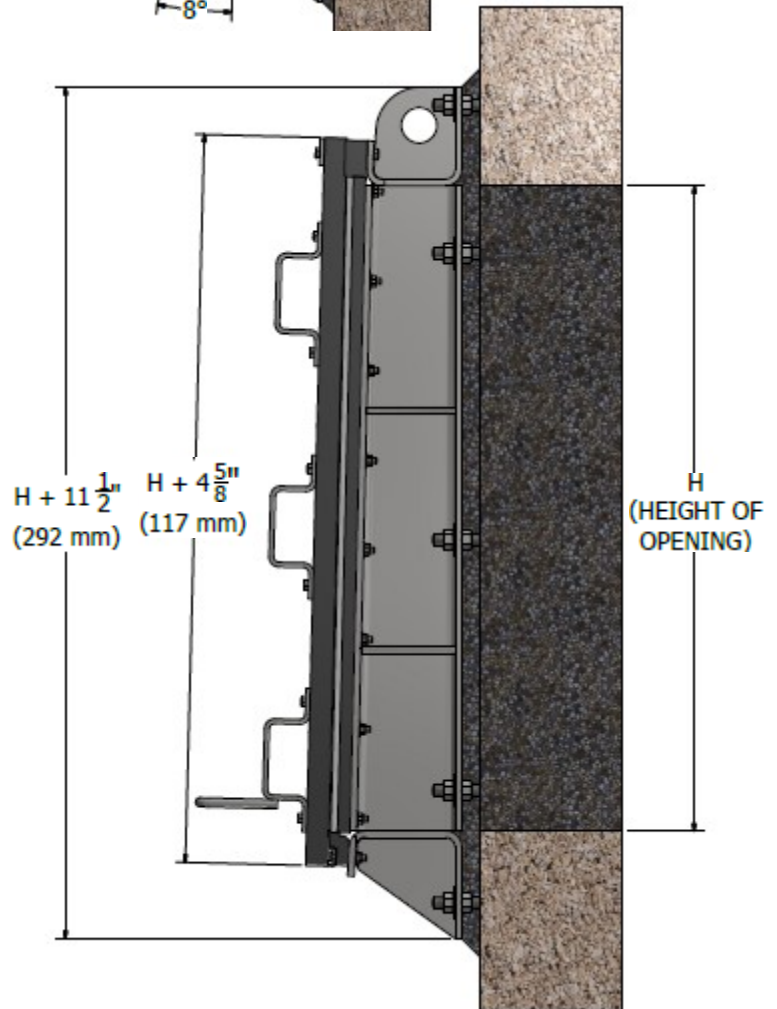
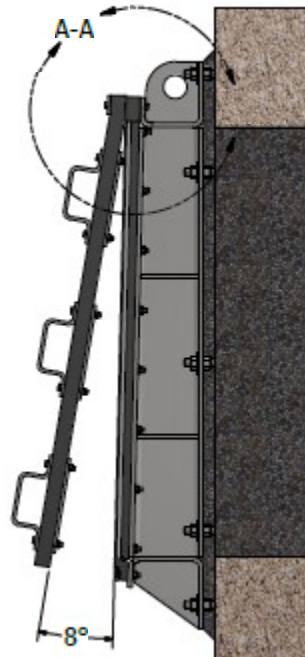
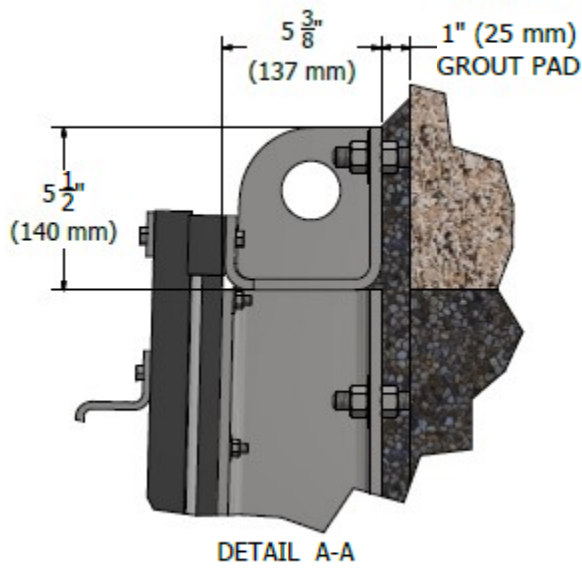


DETAIL A-A



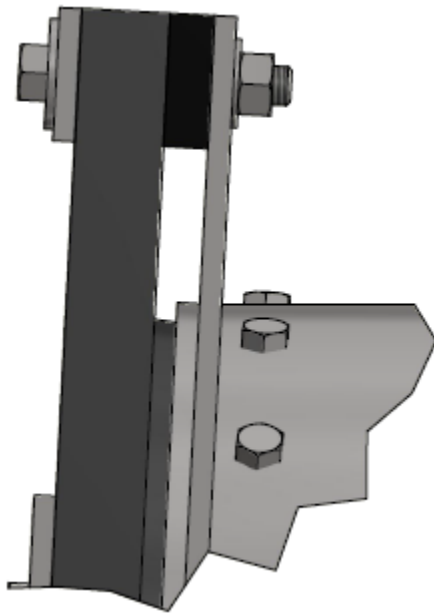
GATE ILLUSTRATED: 22" (W) x 18" (H)

# Model 451 Flap Gate

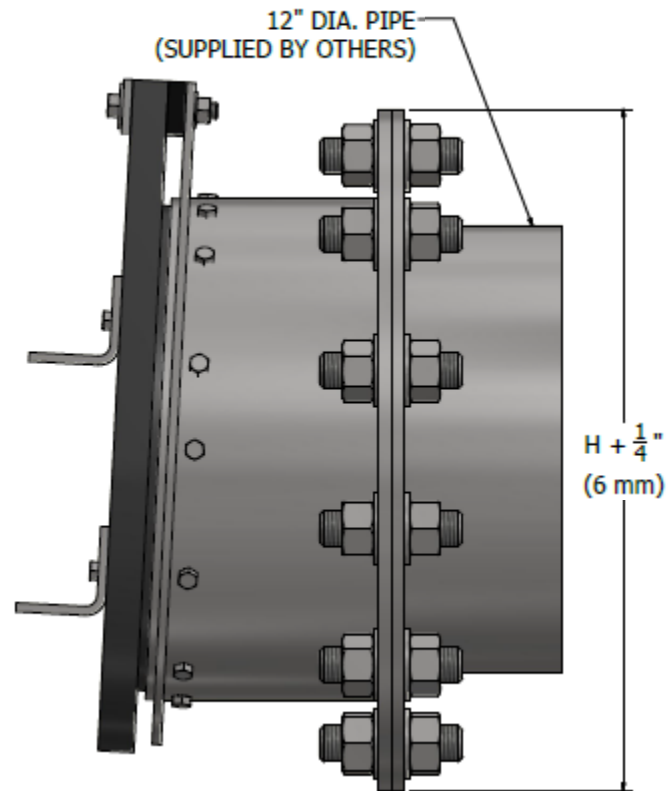
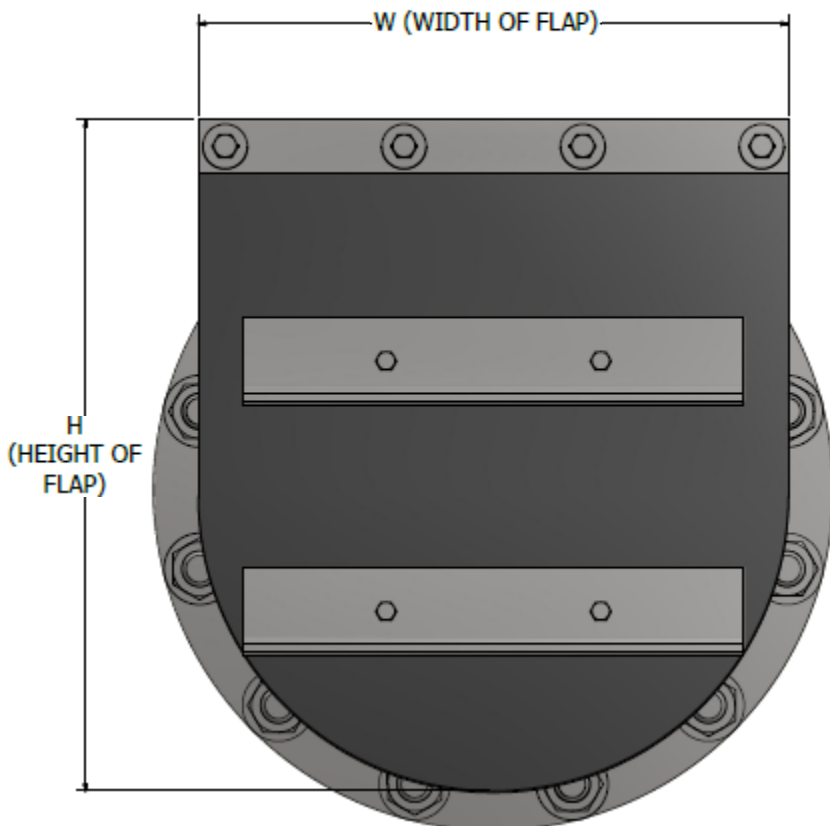
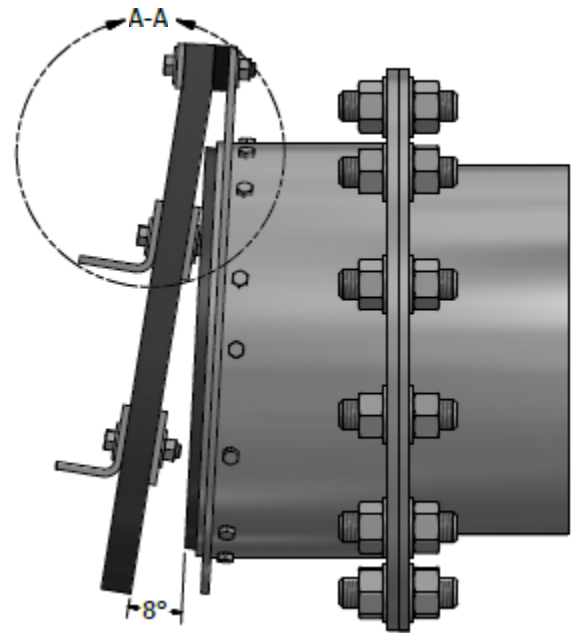


GATE ILLUSTRATED: 29" (W) x 36" (H)

# Model 451 Pipe Flange Flap Gate

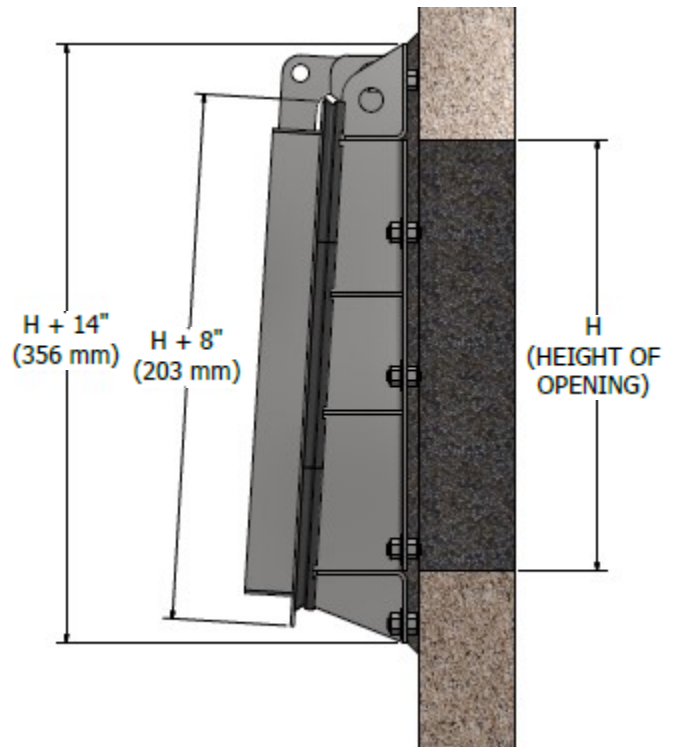
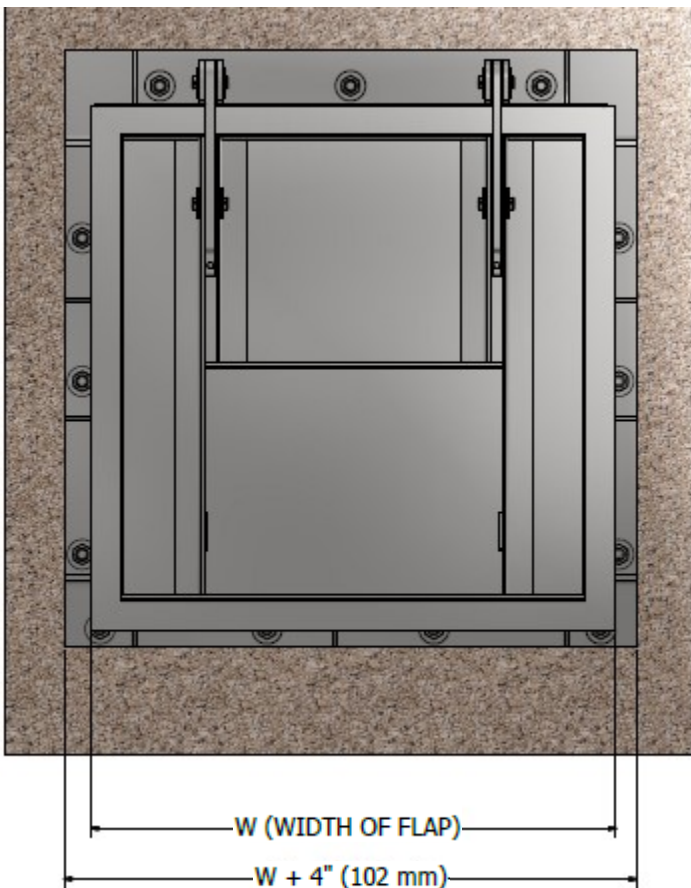
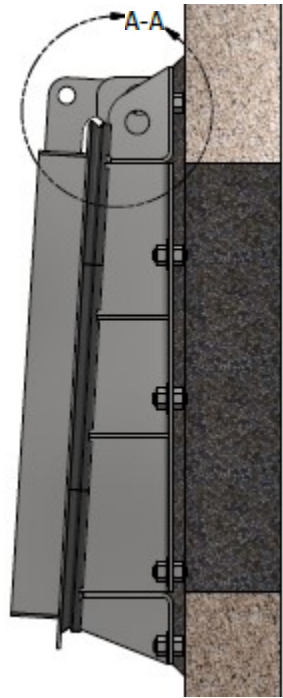
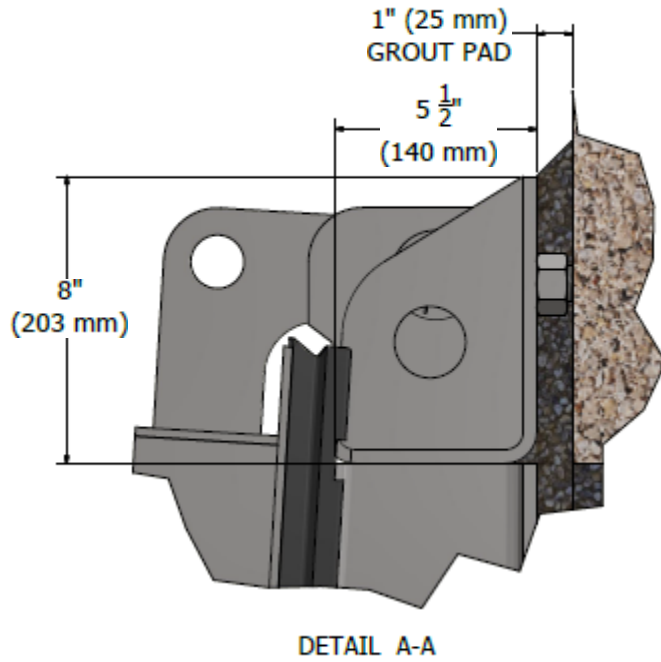


DETAIL A-A



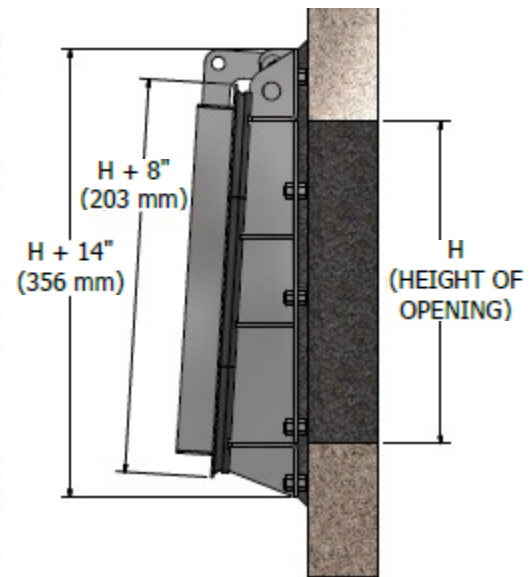
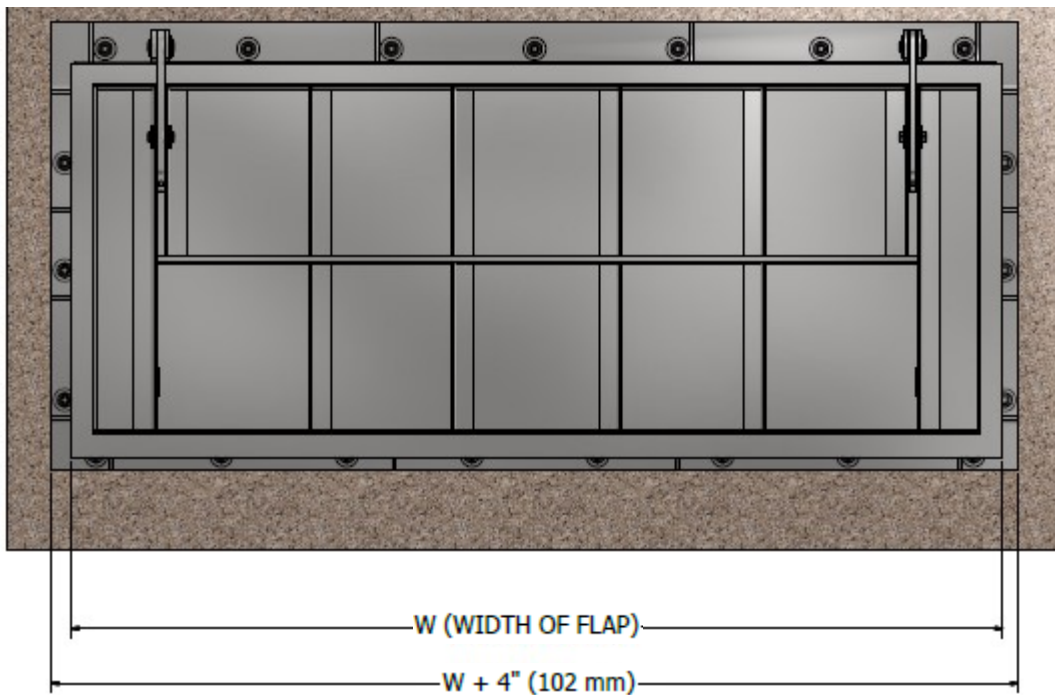
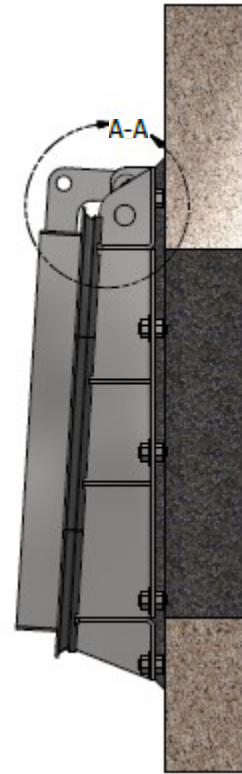
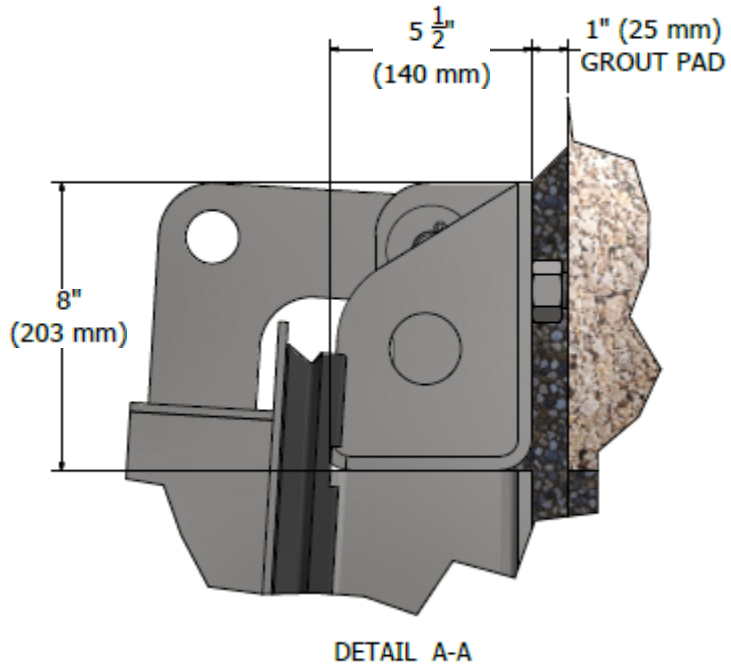
GATE ILLUSTRATED:  $16 \frac{1}{2}$ " (W) x  $18 \frac{3}{4}$ " (H)

# Model 452 Square Flap Gate



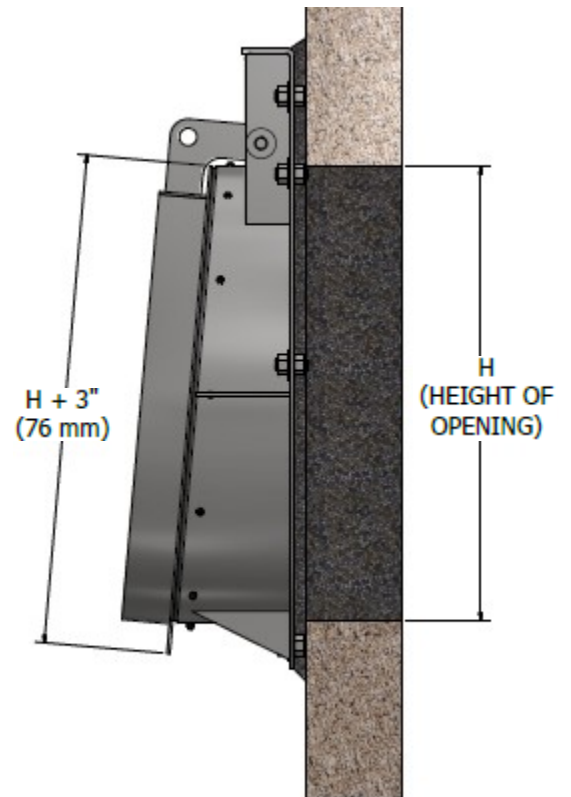
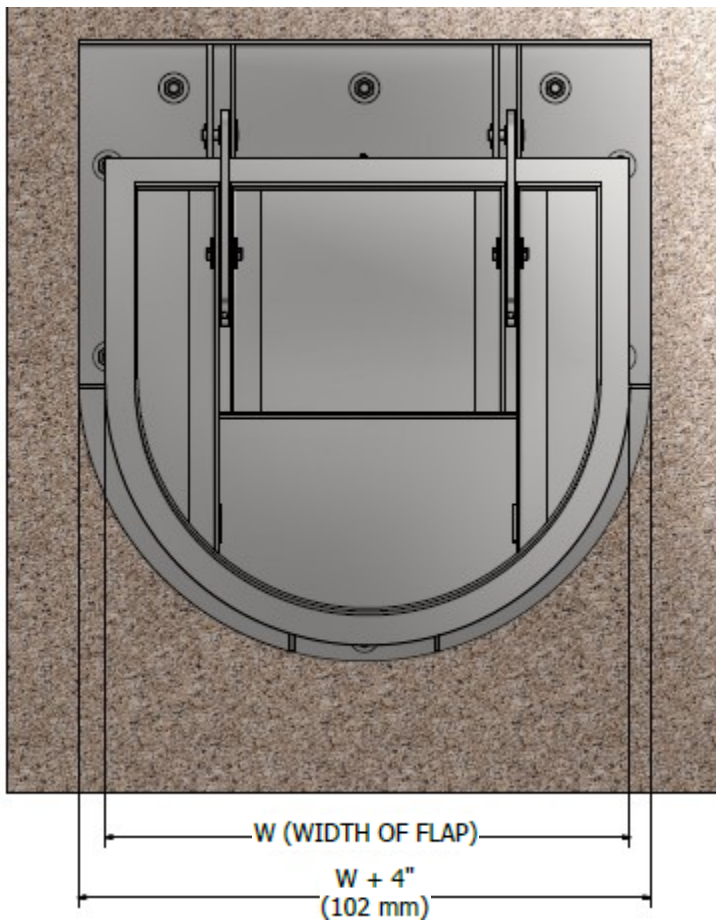
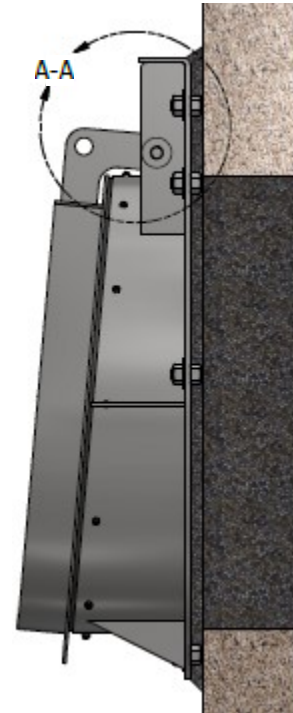
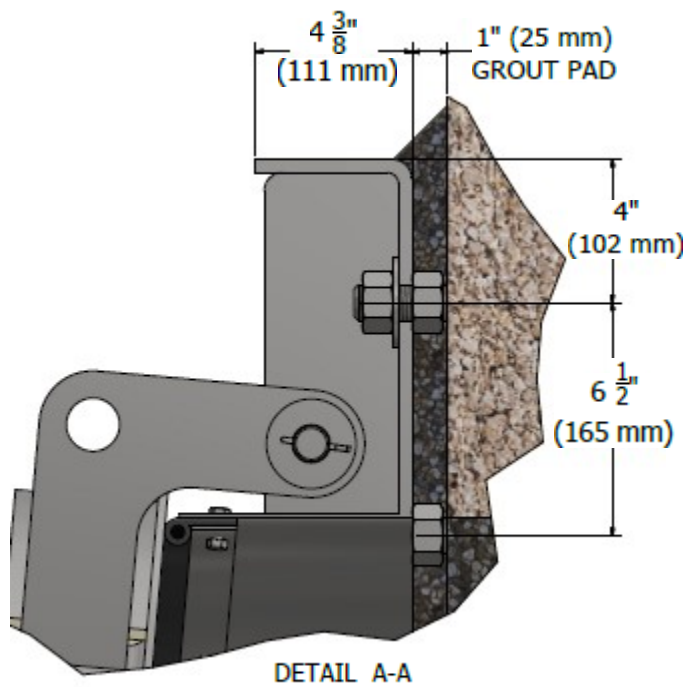
GATE ILLUSTRATED: 44" (W) x 36" (H)

# Model 452 Flap Gate



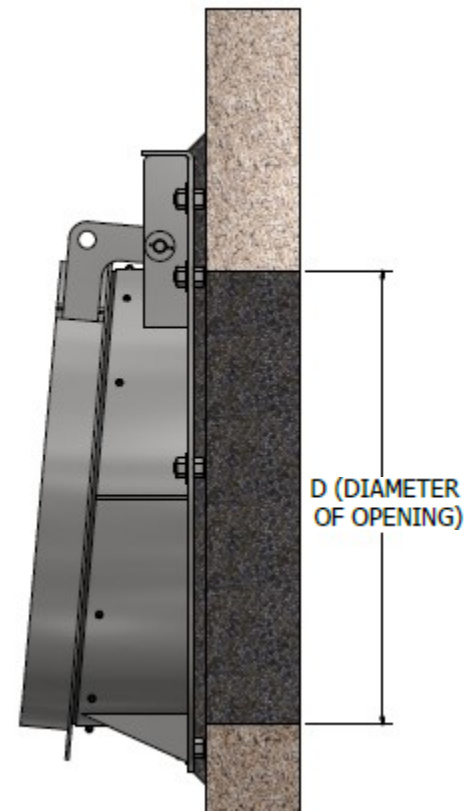
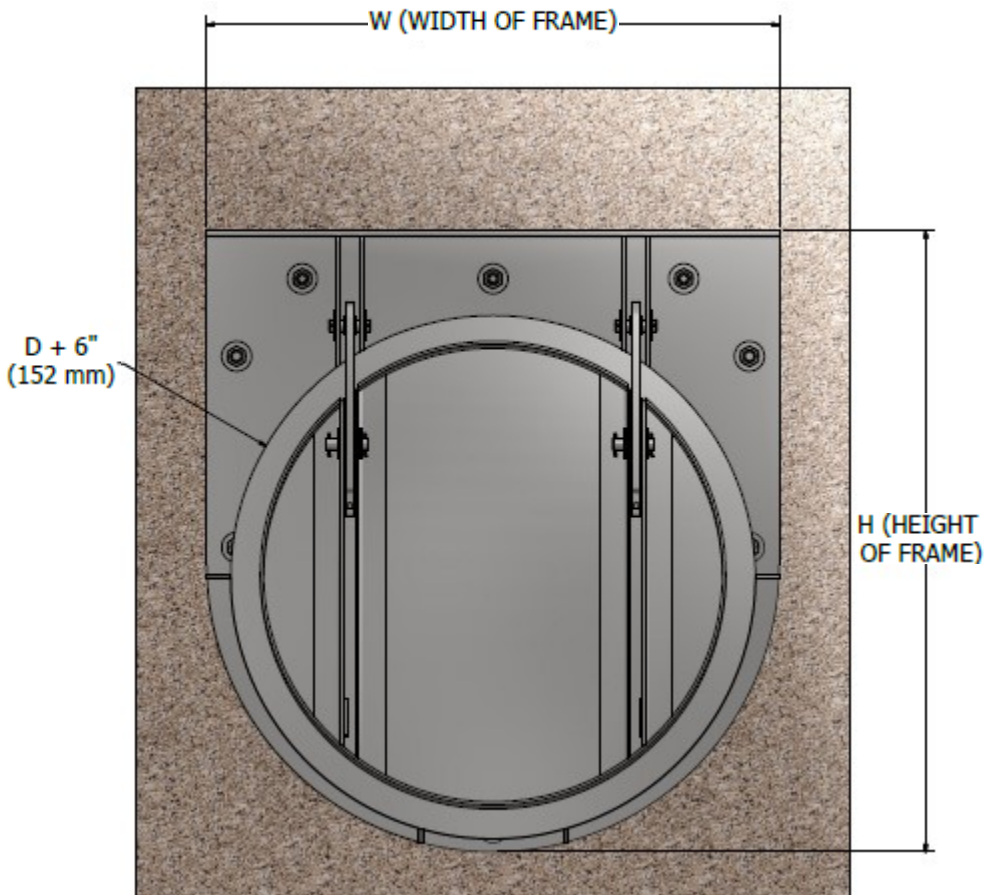
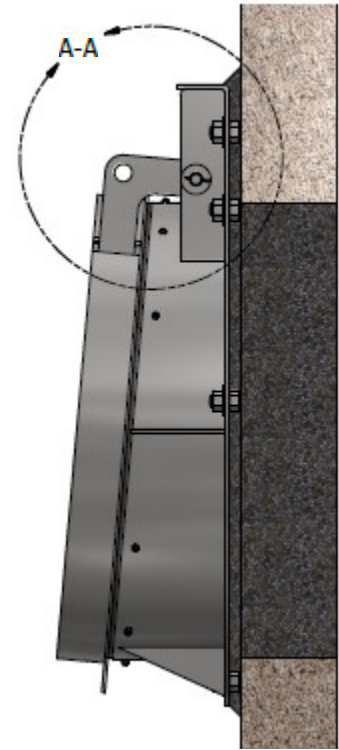
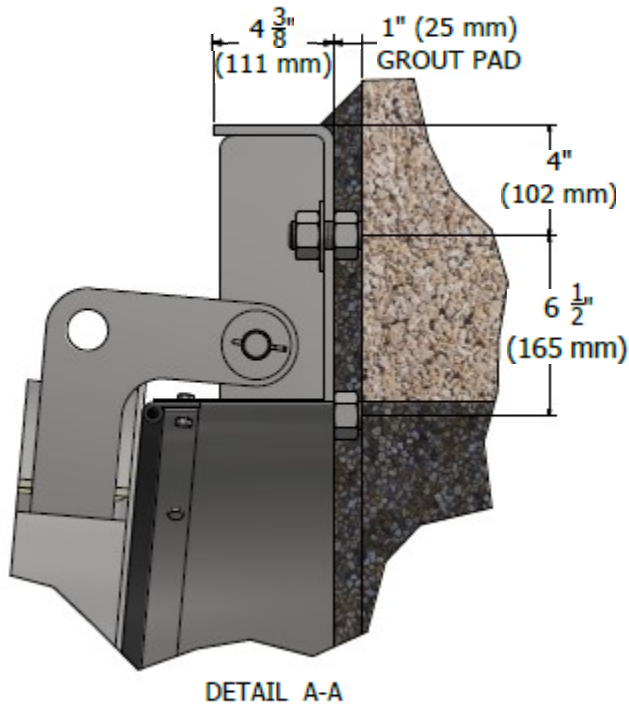
GATE ILLUSTRATED: 104" (W) x 44" (H)

# Model 452 Pipe Flange Flap Gate



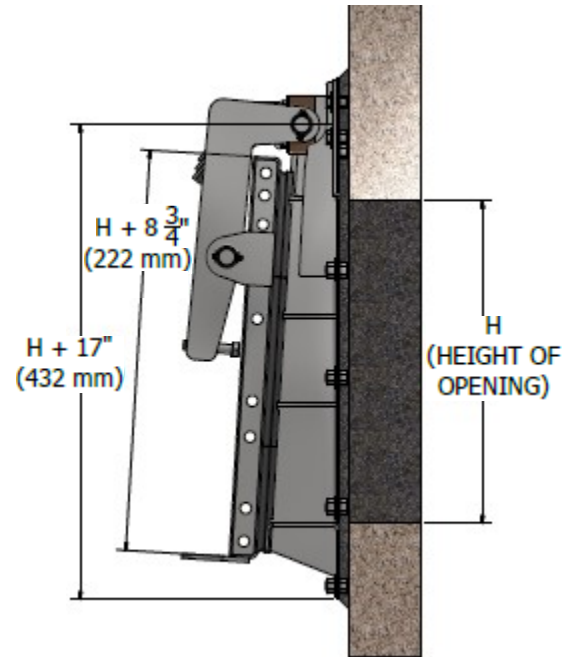
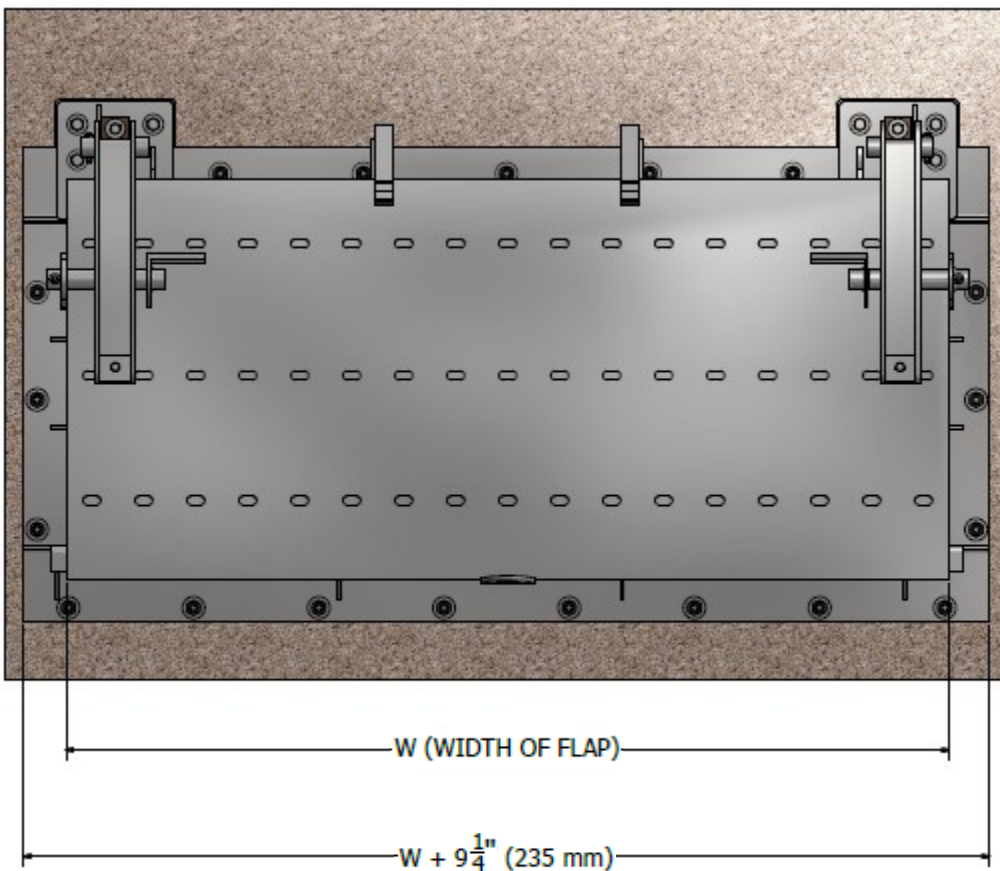
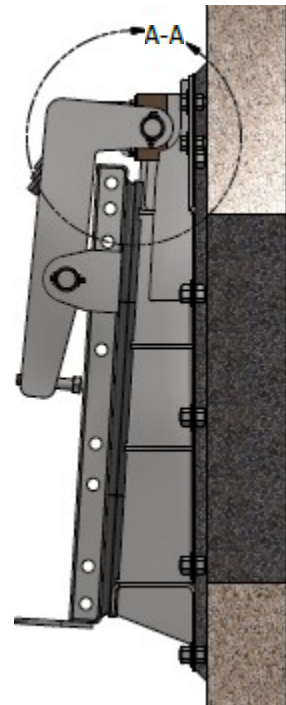
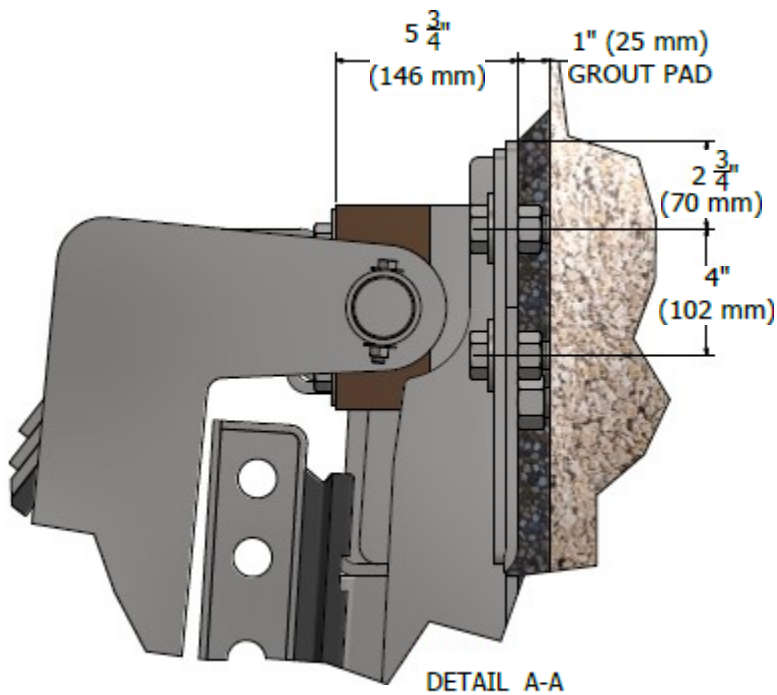
GATE ILLUSTRATED: 44" (W) x 38" (H)

# Model 452 Pipe Flange Flap Gate



GATE ILLUSTRATED: 48" (W) x 38" (D) x 52" (H)

# Model 452 Pontoon Flap Gate



GATE ILLUSTRATED:  $98 \frac{3}{4}$ " (W) x 36" (H)