

FABRICATED SLIDE GATES

Specification Manual

Manufactured by:



Applications

- Flood Control
- Irrigation Projects
- Low-Head Reservoirs
- Drainage Systems
- Soil Conservation Projects

Description

Fresno Valves & Castings fabricated slide gates are designed and fabricated from special shaped extrusions or structural angles, flats, and plates that are assembled by welding and bolting. Through years of fabricating experience, Fresno Valves & Castings has developed techniques for fabricating parts to a close tolerance and straightness. Since there are no machined parts or wedging devices in the gate itself, the gate depends upon water pressure and seal design to seat the fabricated slide. Therefore, this type of gate is not as watertight as sluice gates, which have both machined seating surfaces and wedging devices. With the fabricated slide in the fully closed position, watertightness of the gate improves as the head of water increases. Also, fine particles of silt and other foreign material collect between the gate faces, reducing leakage. Although a fabricated slide gate's watertightness can be improved by adding rubber seals, the extra cost of this arrangement may or may not be justified. Head capacity is dependent on opening size and availability of structural members. The most common head rating is 5 ft seating and unseating, with 10 ft seating being a practical limit for most sizes. Higher heads require special designs. Consult the Fresno Valves & Castings Engineering Department for additional information.

Materials - Fresno Valves & Castings fabricated slide gates are available in four different material combinations.

Material Combination 1, Carbon Steel. These steel gates can be grit blast cleaned and painted to your specifications.

Material Combination 2, Galvanized Carbon Steel. Available for those installations where a very economical gate is needed but painting does not provide adequate protection. Both of these material combinations (1 and 2) use hot-rolled angles and flats for gate construction.

Material Combination 3, Stainless Steel. Recommended when corrosive conditions make it necessary to add protection. These Fresno Valves & Castings fabricated slide gates are made from Type 304, or 316 stainless steel. Gates manufactured from these materials are more corrosion resistant under most conditions than slide gates manufactured from other materials.

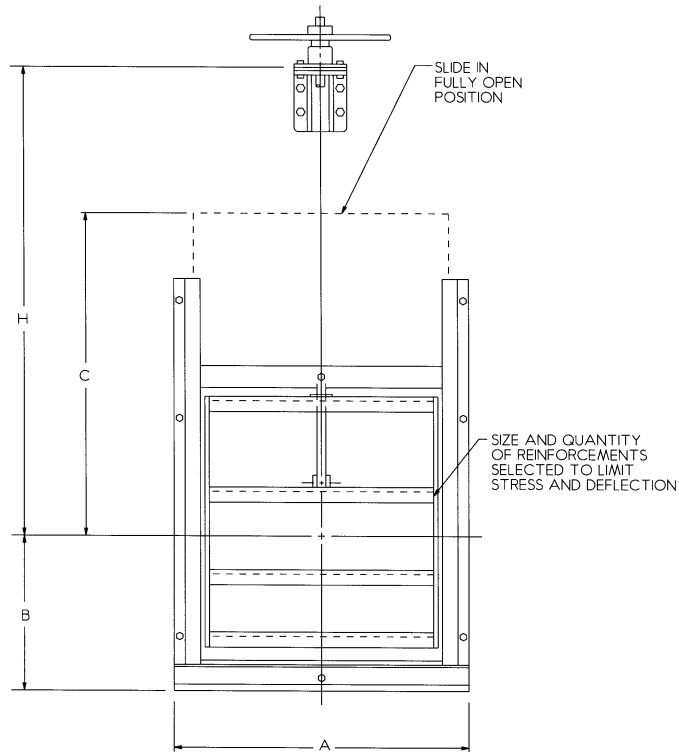
Material Combination 4, Aluminum. Various extrusions are utilized with this design. Frame sides are manufactured from an extrusion that forms the guide slot and provides flat back or flange back mounting. This special extrusion can also be used for gates fully embedded in concrete channels. A second extrusion is used for the member across the bottom of the opening of flush-bottom closure gates.

CAUTION: Since these fabricated slide gates have neither machined faces nor wedging devices, they cannot be expected to be as watertight as the sluice gates. If low leakage characteristics are desired, wedge-type gates are recommended.

Fabricated Slide Gates

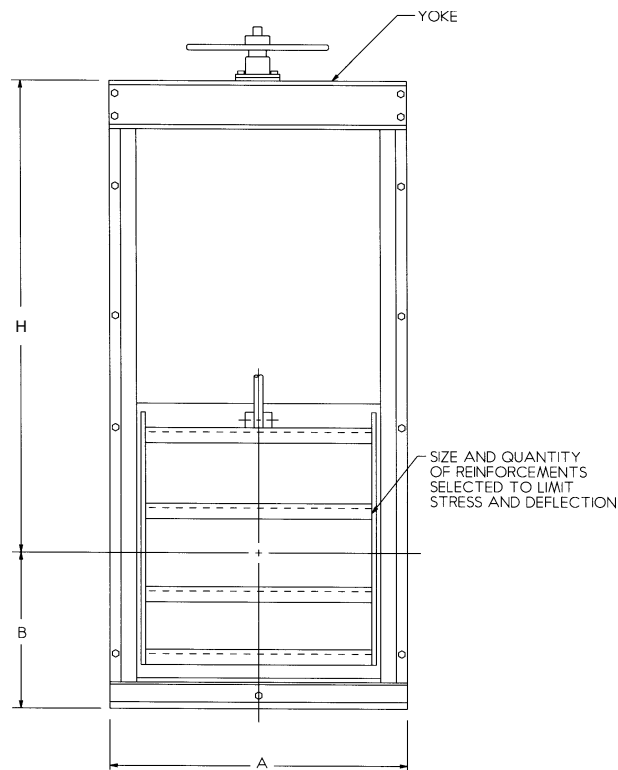
Not Self Contained

(see chart page 4)



Self Contained

(see chart page 4)



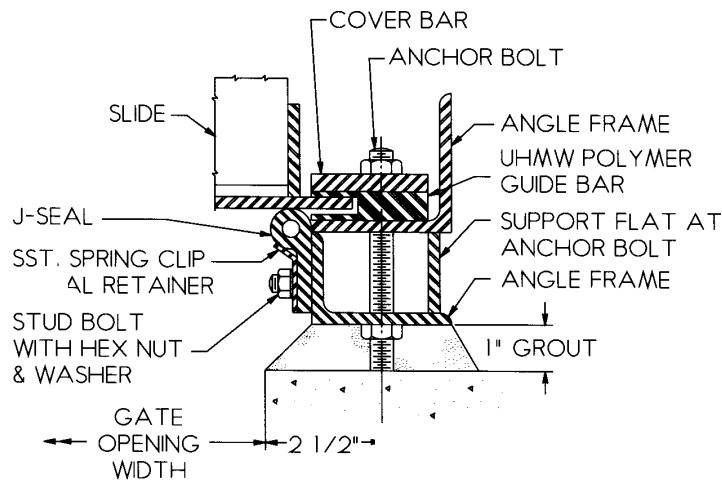
Dimensions - Fabricated Slide Gates

Width x Height	Carbon Steel & Galvanized		Stainless Steel		Aluminum		All Materials	*Recommended				Frame Height (H)		
								Stem Dia.	Lift		Lift Aluminum		NSC Not Self Contained	SC Self Contained
									Model	Dia.	Model	Dia.		
(A)	(B)	(A)	(B)	(A)	(B)	(C)								
12 x 12	20.0	10.0	20.0	10.0	21.5	10.0	20.0	1.12	H-1B	10	H-1B	10	30	60
12 x 24	20.0	13.0	20.0	13.0	21.5	13.0	38.0	1.12	H-1B	10	H-1B	10	48	60
18 x 18	26.0	13.0	26.0	13.0	27.5	13.0	29.0	1.12	H-1B	10	H-1B	10	39	60
18 x 24	26.0	16.0	26.0	16.0	27.5	16.0	38.0	1.12	H-1B	10	H-1B	10	48	60
18 x 30	26.0	19.0	26.0	19.0	27.5	19.0	47.0	1.12	H-1B	14	H-1B	14	57	60
24 x 18	32.0	13.0	32.0	13.0	33.5	13.0	29.0	1.12	H-1B	10	H-1B	10	39	60
24 x 24	32.0	16.0	32.0	16.0	33.5	16.0	38.0	1.12	H-1B	14	H-1B	10	48	60
24 x 30	32.0	19.0	32.0	19.0	33.5	19.0	47.0	1.12	H-1B	14	H-1B	14	57	60
24 x 36	32.0	22.0	32.0	22.0	33.5	22.0	56.0	1.12	H-2B	18	H-1B	14	66	60
24 x 48	32.0	28.0	32.0	28.0	33.5	28.0	74.0	1.50	H-2B	24	H-2B	24	84	84
30 x 24	38.0	16.0	38.0	16.0	39.5	16.0	38.0	1.12	H-1B	14	H-1B	14	48	60
30 x 30	38.0	19.0	38.0	19.0	39.5	19.0	47.0	1.12	H-1B	14	H-1B	14	57	60
30 x 36	38.0	22.0	38.0	22.0	39.5	22.0	56.0	1.12	H-2B	18	H-2B	18	66	60
30 x 42	38.0	25.0	38.0	25.0	39.5	25.0	65.0	1.25	H-2B	24	H-2B	24	75	60
30 x 48	38.0	28.0	38.0	28.0	39.5	28.0	74.0	1.50	H-2B	30	H-2B	24	84	84
36 x 24	44.0	16.0	44.0	16.0	45.5	16.0	38.0	1.12	H-1B	14	H-1B	14	48	60
36 x 30	44.0	19.0	44.0	19.0	45.5	19.0	47.0	1.12	H-2B	18	H-1B	14	57	60
36 x 36	44.0	22.0	44.0	22.0	45.5	22.0	56.0	1.12	H-2B	18	H-2B	18	66	60
36 x 42	44.0	25.0	44.0	25.0	45.5	25.0	65.0	1.25	H-2B	24	H-2B	24	75	72
36 x 48	44.0	28.0	44.0	28.0	45.5	28.0	74.0	1.50	H-2B	30	H-2B	30	84	84
36 x 60	44.0	34.0	44.0	34.0	45.5	34.0	92.0	2.00	CPS3E5	-	CPS3E5	-	102	96
42 x 30	50.0	19.0	50.0	19.0	51.5	19.0	47.0	1.12	H-2B	18	H-2B	18	57	60
42 x 36	50.0	22.0	50.0	22.0	51.5	22.0	56.0	1.12	H-2B	24	H-2B	18	66	60
42 x 42	50.0	25.0	50.0	25.0	51.5	25.0	65.0	1.25	H-2B	30	H-2B	24	75	72
42 x 48	50.0	28.0	50.0	28.0	51.5	28.0	74.0	1.50	CPS3E5	-	H-2B	30	84	84
42 x 60	50.0	34.0	50.0	34.0	51.5	34.0	92.0	2.00	CPS3E5	-	CPS3E5	-	102	96
48 x 30	56.0	19.0	56.0	19.0	57.5	19.0	47.0	1.12	H-2B	18	H-2B	18	57	60
48 x 36	56.0	22.0	56.0	22.0	57.5	22.0	56.0	1.12	H-2B	24	H-2B	24	66	60
48 x 42	56.0	25.0	56.0	25.0	57.5	25.0	65.0	1.25	H-2B	30	H-2B	24	75	72
48 x 48	56.0	28.0	56.0	28.0	57.5	28.0	74.0	1.50	CPS3E5	-	H-2B	30	84	84
48 x 60	56.0	34.0	56.0	34.0	57.5	34.0	92.0	2.00	CPS3E5	-	CPS3E5	-	102	96
48 x 72	56.0	40.0	56.0	40.0	57.5	40.0	110.0	2.00	CPS3E5	-	CPS3E5	-	120	120
54 x 54	62.0	31.0	62.0	31.0	63.5	31.0	83.0	1.50	CPS3E5	-	CPS3E5	-	93	96
60 x 36	68.0	22.0	68.0	22.0	69.5	22.0	56.0	1.12	H-2B	24	H-2B	24	66	60
60 x 42	68.0	25.0	68.0	25.0	69.5	25.0	65.0	1.25	H-2B	30	H-2B	30	75	72
60 x 48	68.0	28.0	68.0	28.0	69.5	28.0	74.0	1.50	CPS3E5	-	CPS3E5	-	84	84
60 x 60	68.0	34.0	68.0	34.0	69.5	34.0	92.0	1.50	CPS3E5	-	CPS3E5	-	102	120
60 x 72	68.0	40.0	68.0	40.0	69.5	40.0	110.0	2.00	CPS3E5	-	CPS3E5	-	120	120
72 x 42	80.0	25.0	80.0	25.0	81.5	25.0	65.0	1.25	H-2B	30	H-2B	30	75	72
72 x 48	80.0	28.0	80.0	28.0	81.5	28.0	74.0	1.50	CPS3E5	-	CPS3E5	-	84	84
72 x 60	80.0	34.0	80.0	34.0	81.5	34.0	92.0	1.50	CPS3E5	-	CPS3E5	-	100	120
72 x 72	80.0	40.0	80.0	40.0	81.5	40.0	110.0	2.00	CPS3E5	-	CPS3E5	-	120	120

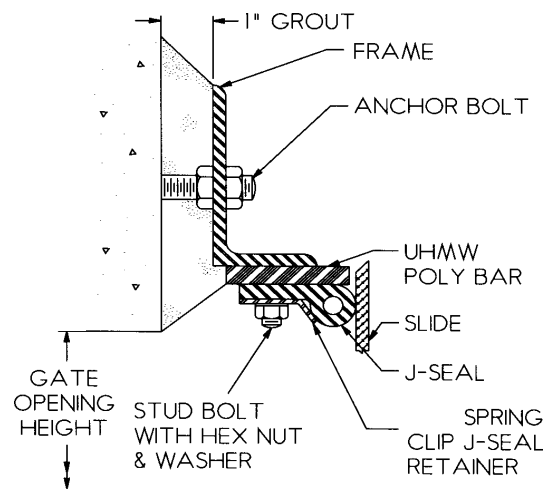
* All recommendations based on 5 ft. head. Consult Fresno Valves & Castings if heads are greater than 5 ft.

Note: All measurements are in inches. A = Width B = Centerline to bottom of gate flange C = Centerline to top of gate in full open position H = Centerline to top of concrete (NSC) H = Frame height (SC)

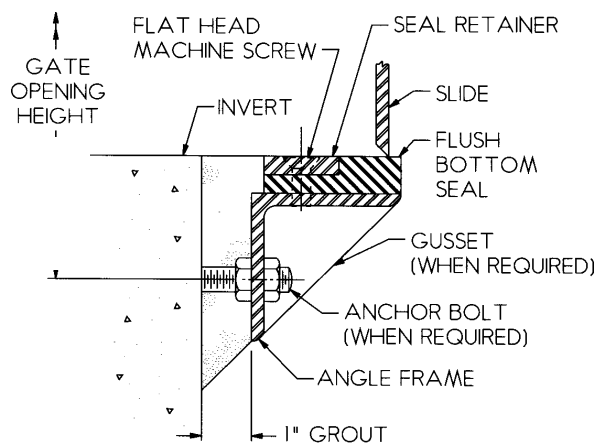
Flange Back - Material Combinations 1, 2 & 3 (Surface Mounting)



TYPICAL SIDE SECTION

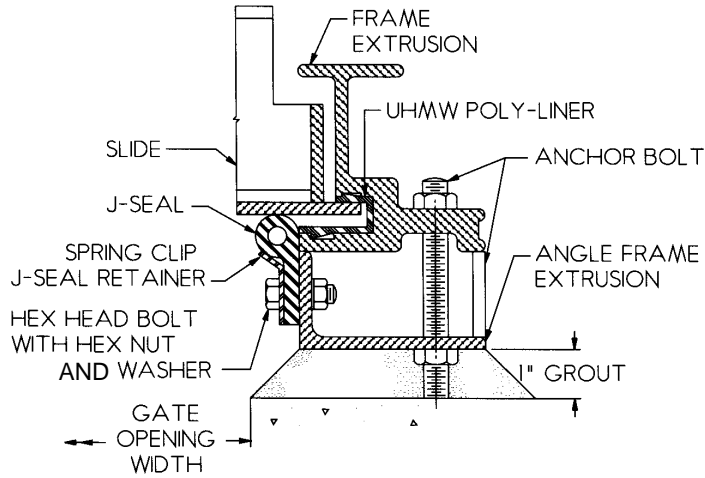


TOP SECTION

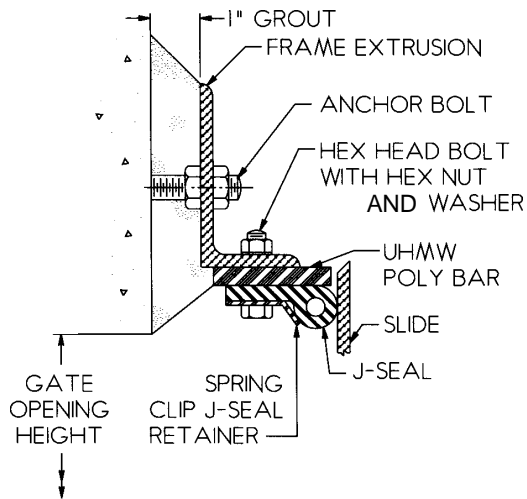


FLUSH-BOTTOM SECTION

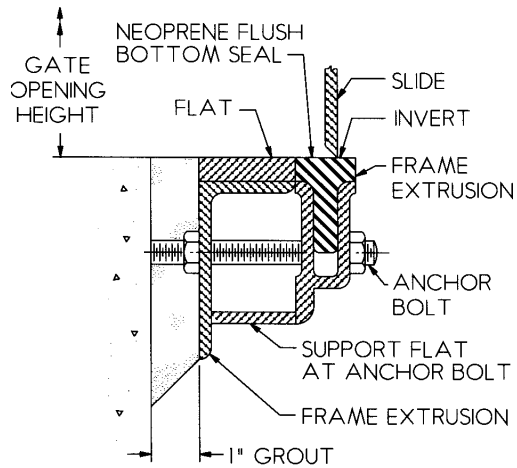
Flange Back - Material Combination 4 (Surface Mounting)



TYPICAL SIDE SECTION

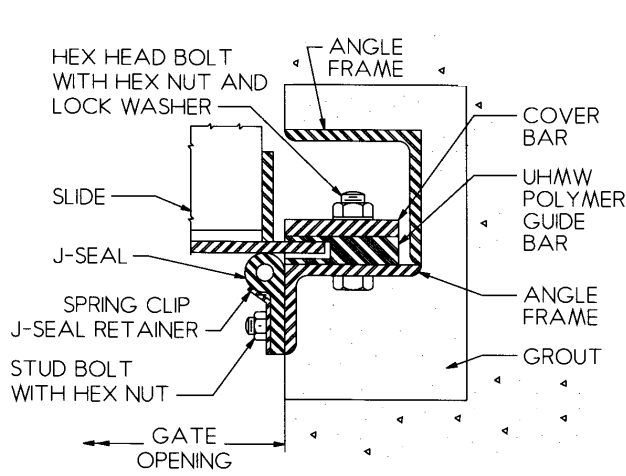


TOP SECTION

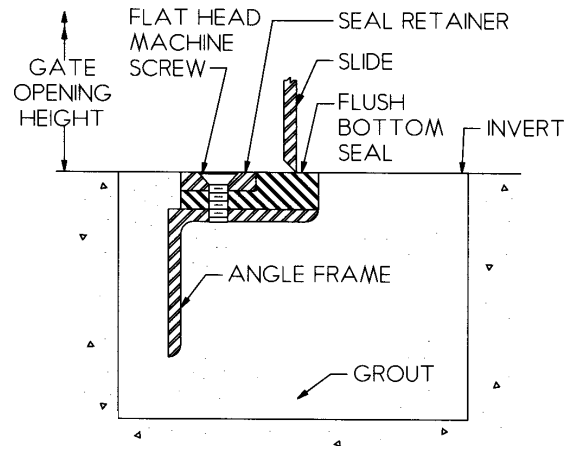


FLUSH-BOTTOM SECTION

Embedded Frame - Material Combinations 1, 2 & 3 (Embedded Mounting)

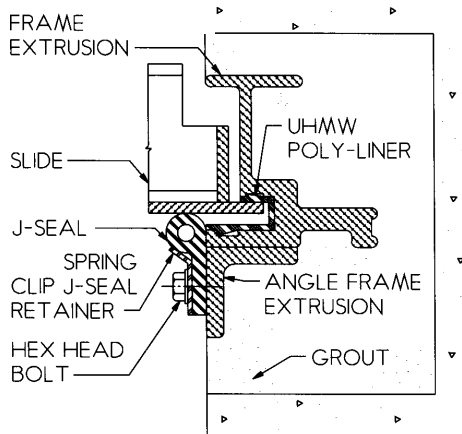


TYPICAL SIDE SECTION

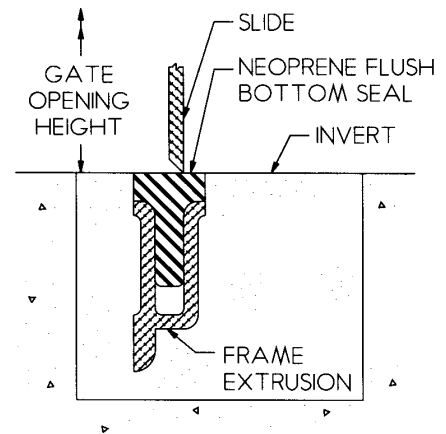


INVERT SECTION

Embedded Frame - Material Combination 4 (Embedded Mounting)



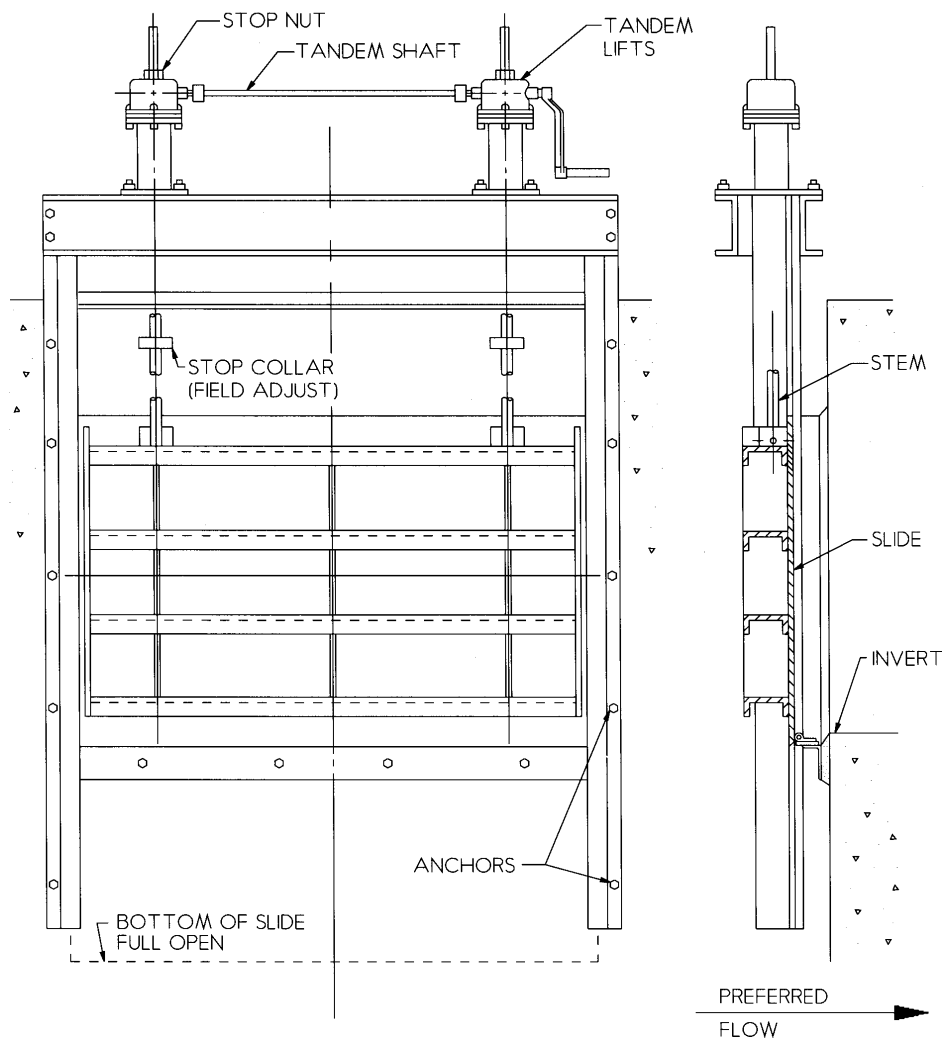
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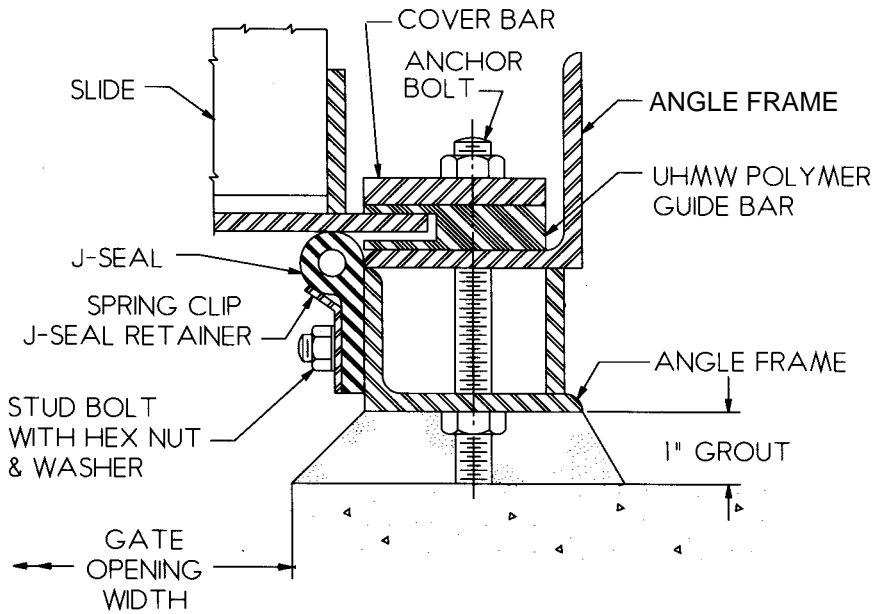
FLUSH-BOTTOM SECTION

Weir Gates

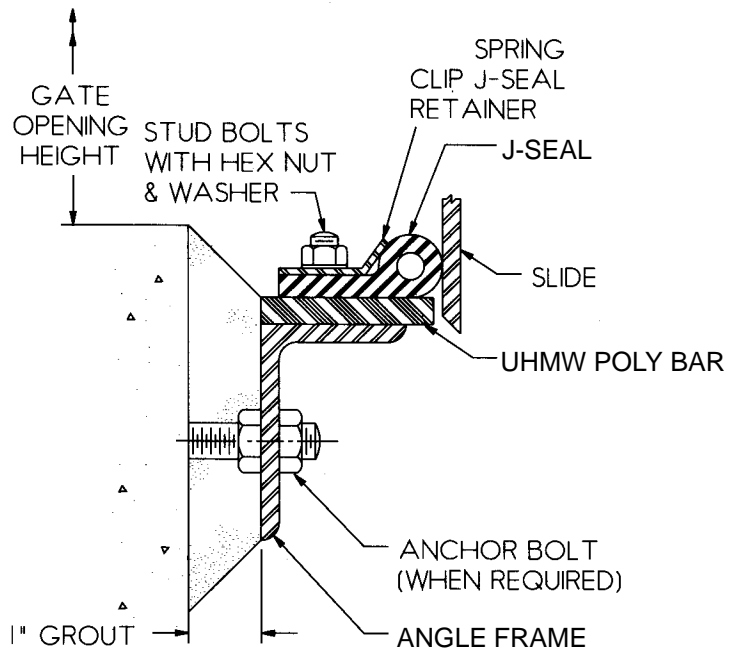
Many Irrigation Districts require downward-opening fabricated gates to permit a rough measurement of flow or to maintain a constant upstream water elevation. For these installations the gate slide is moved down to allow the flow of water over the top of the slide or weir plate. Sufficient room must be left on the gate side of the wall to permit the slide to travel downward for its maximum specified opening. Every effort should be made to mount the gate so it will be subjected to seating head. When a watertight shutoff is required, rubber seals should be specified. If the gate must be mounted in an unseating position, seals are required along the sides and across the bottom of the gate. Weir gates mounted with unseating pressure, particularly wide gates, are subject to greater leakage because water pressure tends to deflect the slide away from the seals. Most weir gates are required to be considerably wider than they are high. Gates up to 20 ft. in width are not uncommon. Such a gate may be only 24 to 30 in. high. Tandem lifts and stems must be utilized to ensure alignment of the slide as it is raised or lowered. As a general rule, when the width is greater than twice the height and the width is greater than 60 in., a tandem stem arrangement should be used. Either manual or electrically actuated lifting devices may be utilized. Weir gates may be self-contained or not self-contained. Weir gates are available in Material Combinations 1, 2, 3, and 4. If additional information on gate size, lift selection, etc., is needed, contact your local Fresno Valves & Castings sales representative.



Weir Gate - Material Combinations 1, 2 & 3

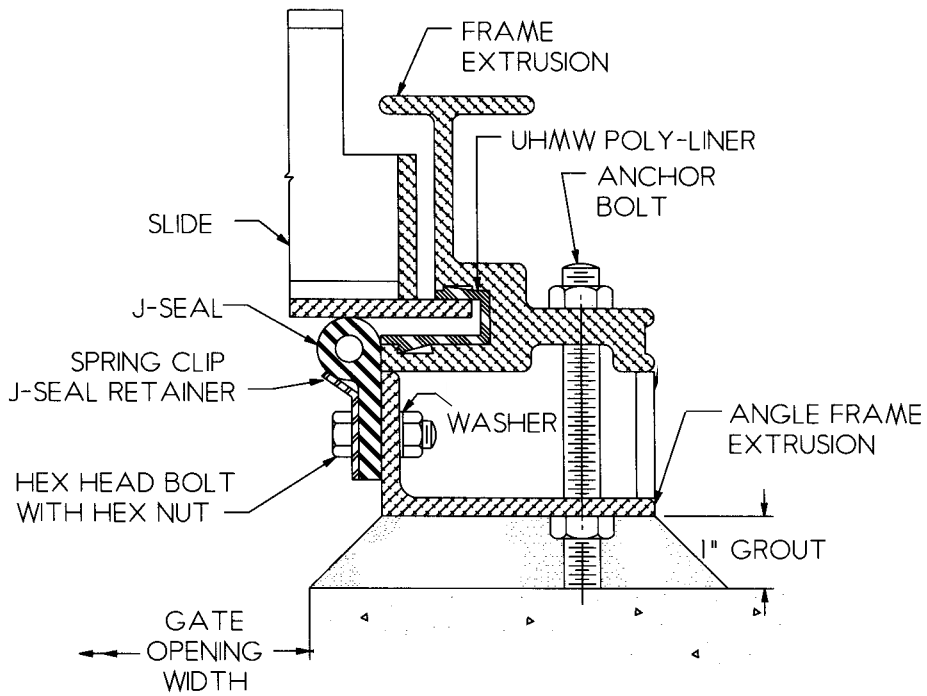


TYPICAL SIDE SECTION

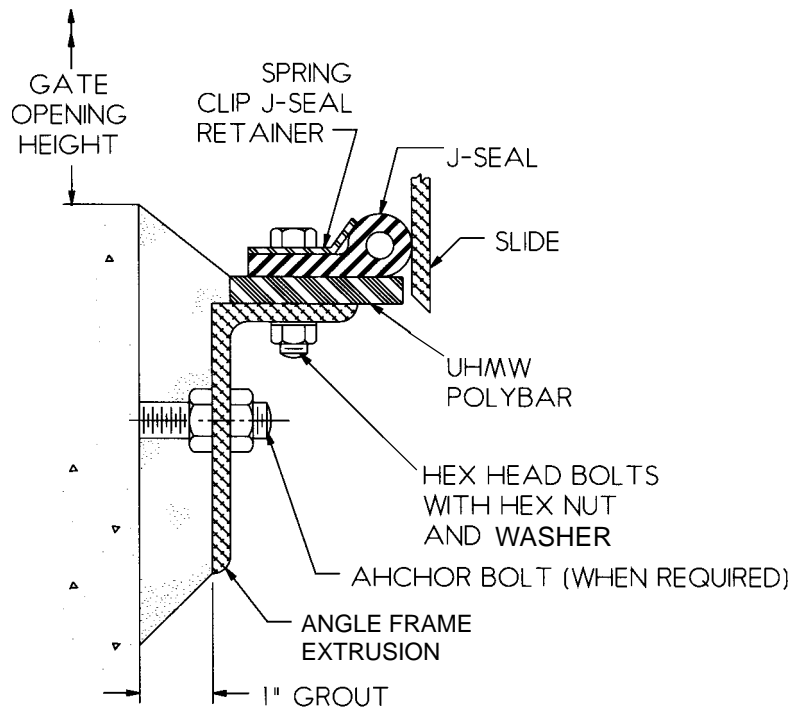


INVERT DETAIL

Embedded Frame - Material Combination 4



TYPICAL SIDE SECTION



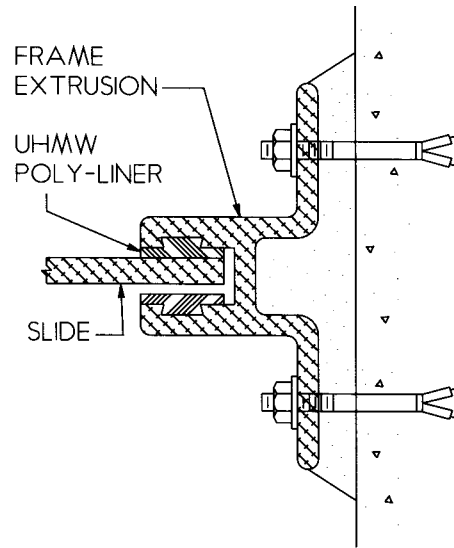
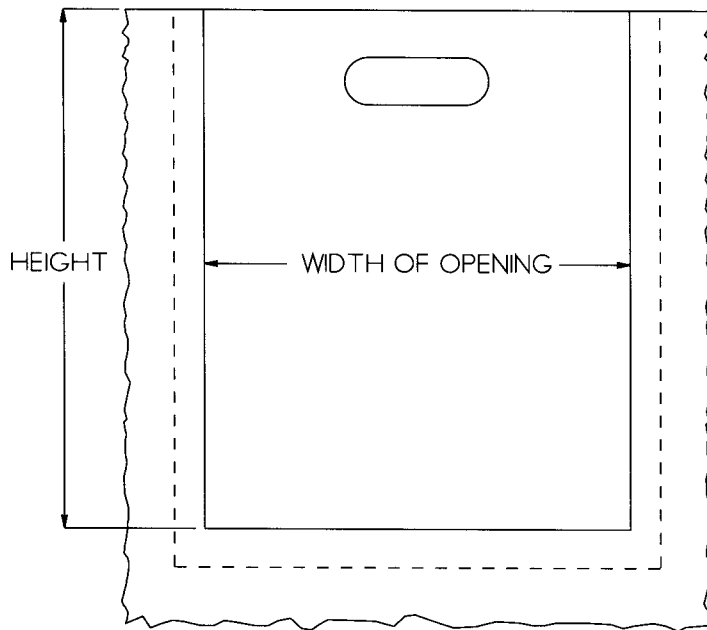
INVERT DETAIL

Aluminum Hand-Pull Gates

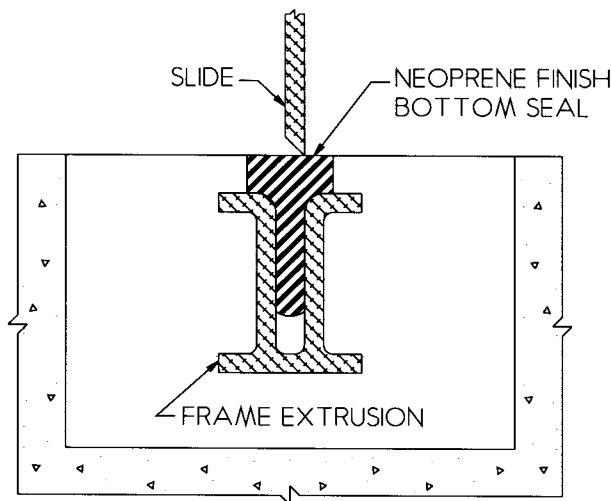
Fresno Valves & Castings manufactures several standard sizes of hand-pull or stop gates. An extruded metal section embeds in the side walls or is mounted on the face of the rectangular flume or conduit and acts as a guide for the gate slide. The gate consists of an aluminum plate reinforced if necessary with hand holes for manual opening of the gate.

A hand-pull gate is an economical way to divert water in rectangular channels.

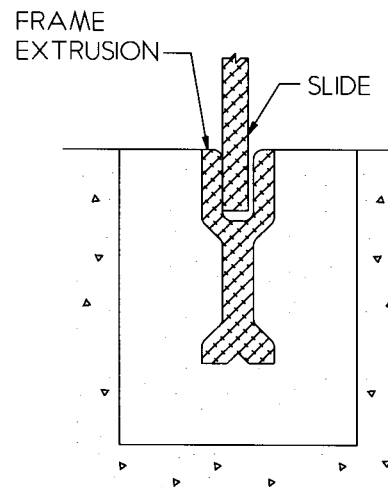
Material Specification - The slide guides, slide plate and any necessary reinforcing for Fresno Valves & Castings hand-pull gates are manufactured from aluminum meeting the requirements of ASTM Specification B209 Alloy or B308 Alloy 6061.



CHANNEL MOUNTED SIDE SECTION WITH POLYMER LINER



EMBEDDED FLUSH-BOTTOM



**EMBEDDED SIDE/BOTTOM
DETAIL WITHOUT
POLYMER LINER**



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