Whipps, inc.
WATER CONTROL GATES

Stop Gates and Stop Logs

Series 500 AWWA® Compliant

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Stop Gate Introduction

The stop gates depicted in this section are the most commonly utilized designs. They feature rugged aluminum construction, complemented by durable and flexible ultra-high molecular weight polyethylene (UHMW) seat/seals. A resilient bottom seal guarantees a secure closure with minimal leakage. Stop gates are also available in stainless steel if the design requires a more durable, but heavier material.

Description

Frames: Stop gate frames are designed to be embedded, mounted on the face of a wall, and mounted inside of an existing channel. The slide guides consisted of sturdy aluminum extrusions with replaceable polymer seating or sliding liner. Aluminum has proved to be a suitable material for use in most water and wastewater. The polymer seats/seals are field proven to maintain shape and integrity in demanding applications.

Table 1: Mounting Option vs Model Number

Mounting Options		Gate Model Numbers		
		501	503	503-C
Guide	Embedded	X		
Frame	Wall Mounted		X	
Style	Channel Mounted			X

Slides: The slide is constructed from aluminum plate, sufficiently reinforced for the design head conditions. An appropriate lifting handle is attached near the top of the slide for manual installation and removal.

Leakage: Whipps, Inc. provides a leakage guarantee more favorable than the specifications outlined in AWWA C-501 for Cast Iron Sluice Gates or the most recent revision of AWWA C-560 for Cast Iron Slide Gates. Our commitment ensures leakage rates not exceeding 0.10 gpm/ft of seal perimeter under both seating head and unseating head conditions.

Stop Gate Specifications

Quality Assurance: The stop gate will be manufactured by a company with 10 years or more of successful experience in designing and producing low-leakage stop gates under similar design conditions. All welds will be executed by welders with AWS certification.

Performance: The maximum allowable leakage for the stop gates shall be 0.10 gallons per minute per linear foot of the wetted perimeter, regardless of the direction of the unbalanced head.

Technical Information: In addition to the submittal information required by other sections of these specifications, the stop gate manufacturer may need to submit design calculations and supporting data for all gates, illustrating stresses, loads, and deflection for critical parts under design head conditions. At a minimum, theses shall include operating load, slide deflection, slide bending stress, and shear stress in stiffener welds.

Frame: Constructed of 1/4" or thicker extruded aluminum (Alloy 6061-T6) incorporating ultra-high molecular weight polymer (UMHW) seat/seal facing on both the upstream and downstream sides of the slide. Each seat/seal is shaped to provide two bearing surfaces and two sealing edges. The gate side guides and invert shall weigh a minimum of 4lbs/ft for wall mounted and 3lbs/ft for embedded installation. The gate invert shall include a removable neoprene seal. Seals attached to the slide will not be acceptable. All necessary assembly and anchor bolts shall be type 304 (type 316 optional) stainless steel and provided by the gate manufacturer.

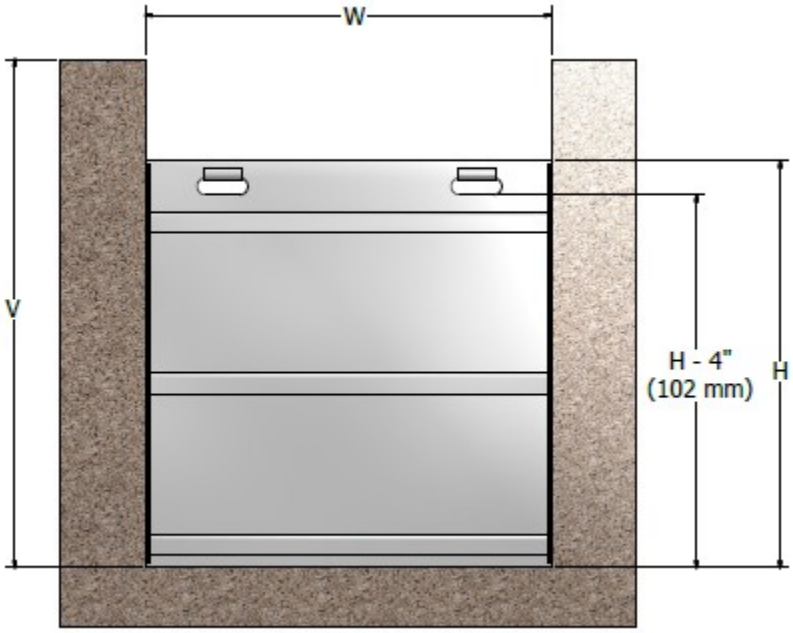
Slide: The slide shall be minimum thickness of 1/4" aluminum plate (Alloy 6061-T6) reinforced with stiffeners as required ensure that at the design head, the slide will not deflect more than 1/360 of its width and stress is limited to 7600 psi. Slide stiffeners shall have a minimum weight of 2.5lbs/ft. The slide shall be equipped with a cast aluminum offset lifting handle. Gates wider than 36 inches shall be provided with dual lifting handles.

Painting: All aluminum in contact with concrete shall receive a heavy shop coat of bitumastic paint.

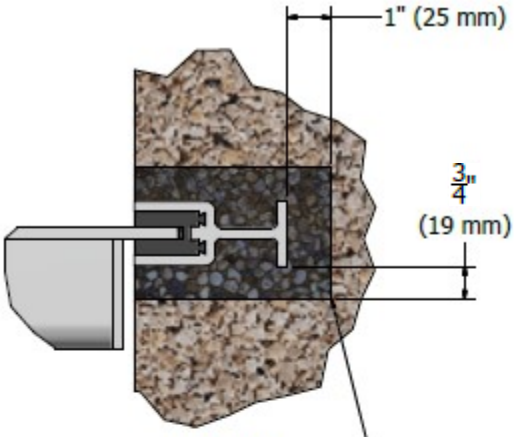
Anodizing (optional): All aluminum components can be anodized in accordance with Aluminum Association Specification AA-C22-A41. The anodizing shall be 0.7 mm thick with a nickel acetate sealer.

Model 501 Stop Gate



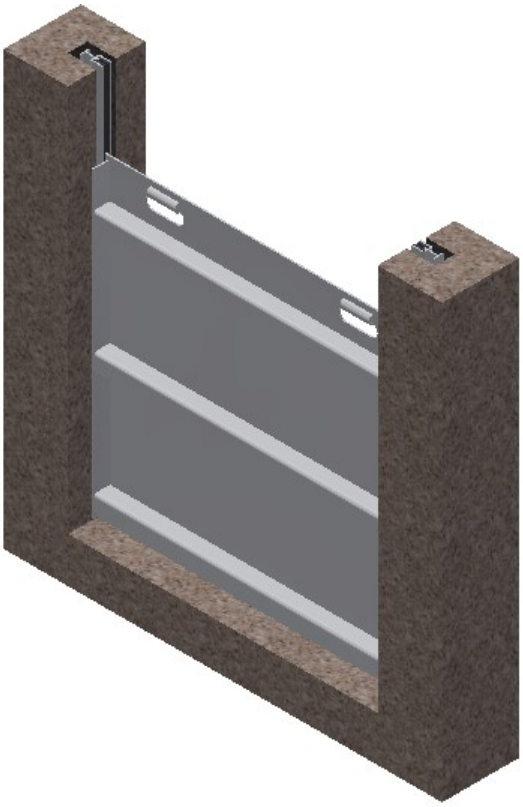


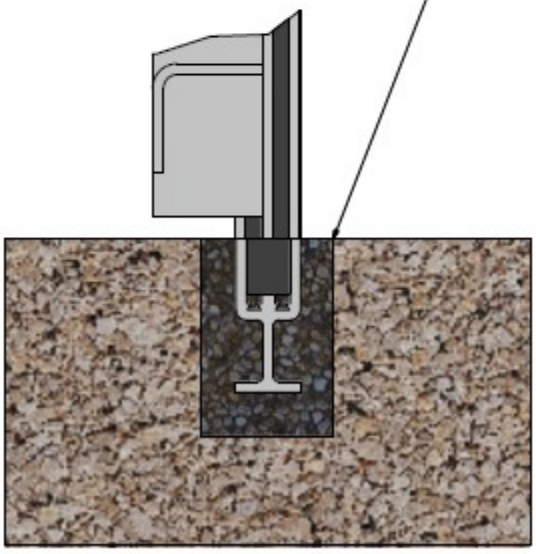
GATE ILLUSTRATED: 48" (W) X 48" (H) X 60" (V)



DETAIL A

NOTE: All Aluminum in contact with concrete shall have a heavy shop coat of bituminous paint.

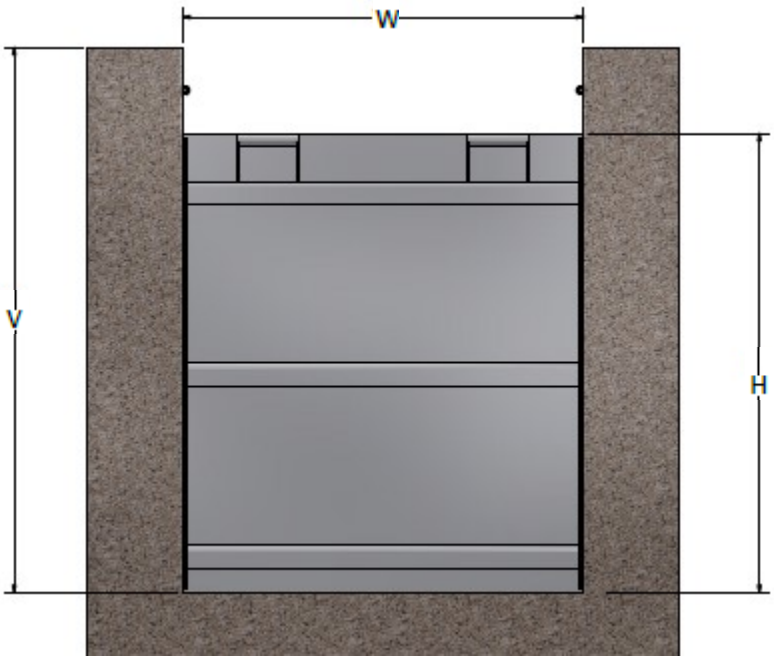




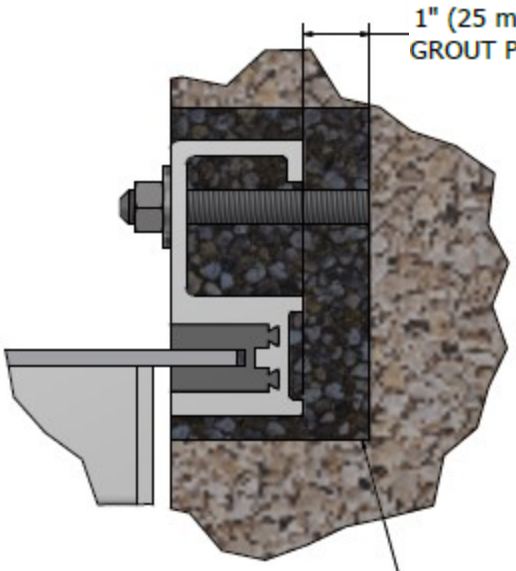
DETAIL B

Model 501 Stop Gate



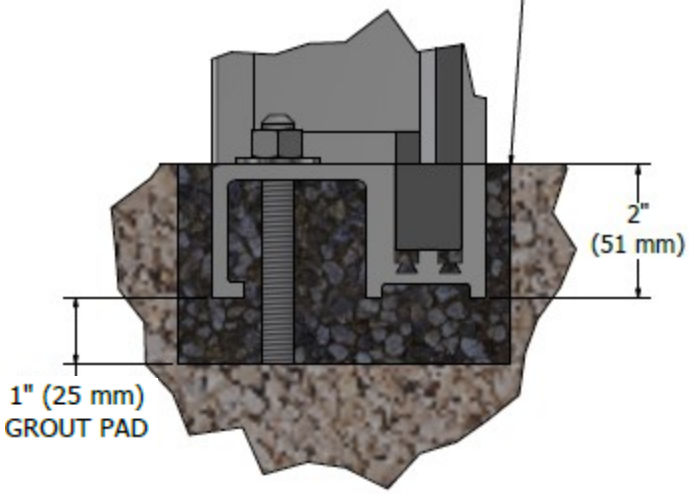


GATE ILLUSTRATED: 42" (W) X 48" (H) X 57" (V)

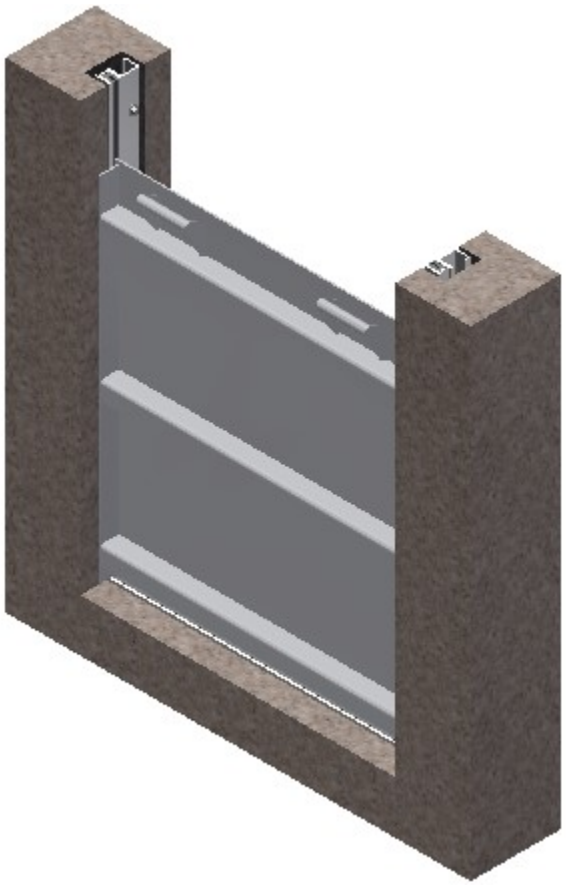


DETAIL A

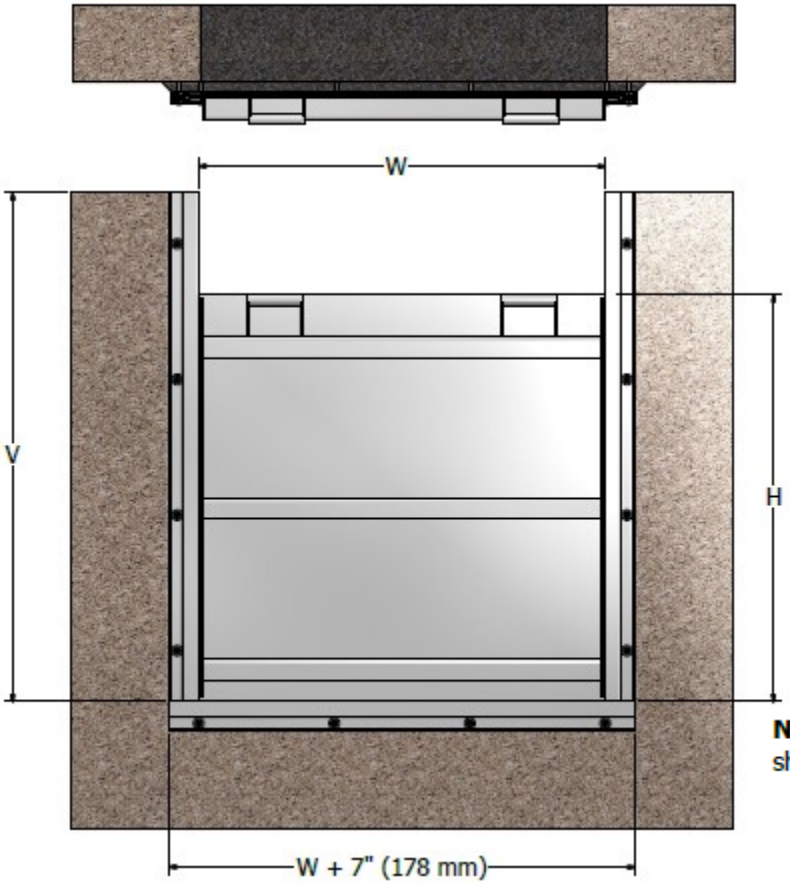
NOTE: All Aluminum in contact with concrete shall have a heavy shop coat of bitumastic paint.



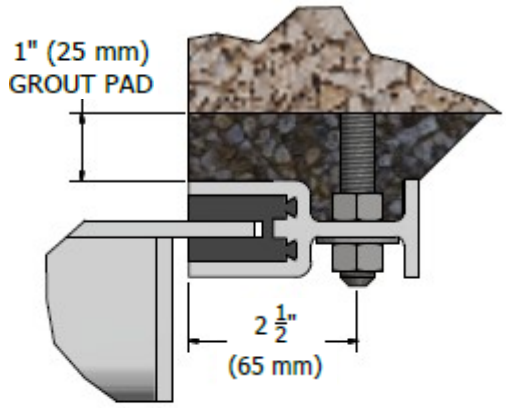
DETAIL B



Model 503 Stop Gate

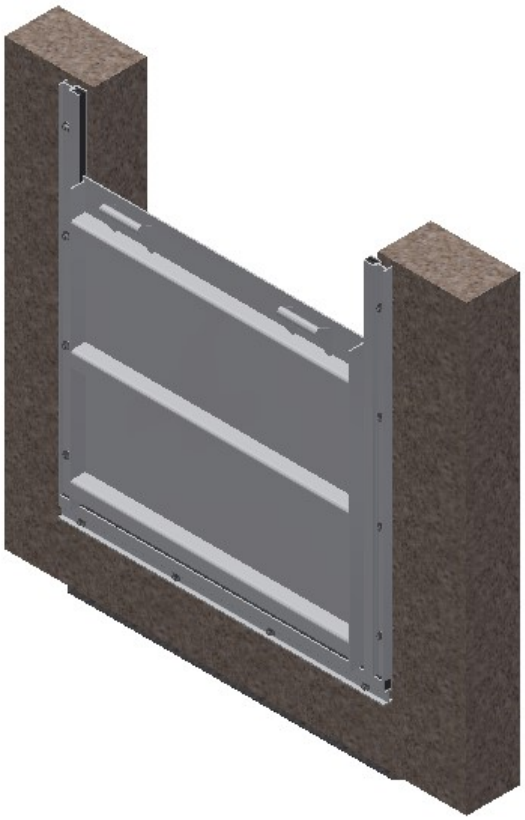


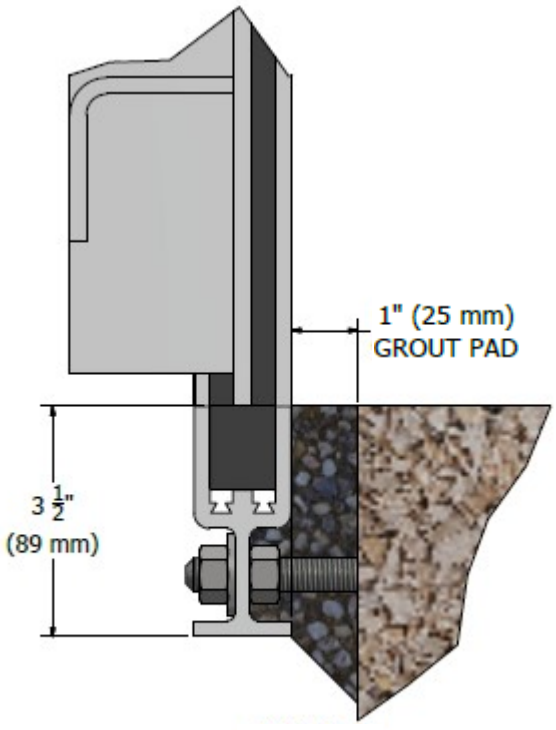
GATE ILLUSTRATED: 48" (W) X 48" (H) X 60" (V)



DETAIL A

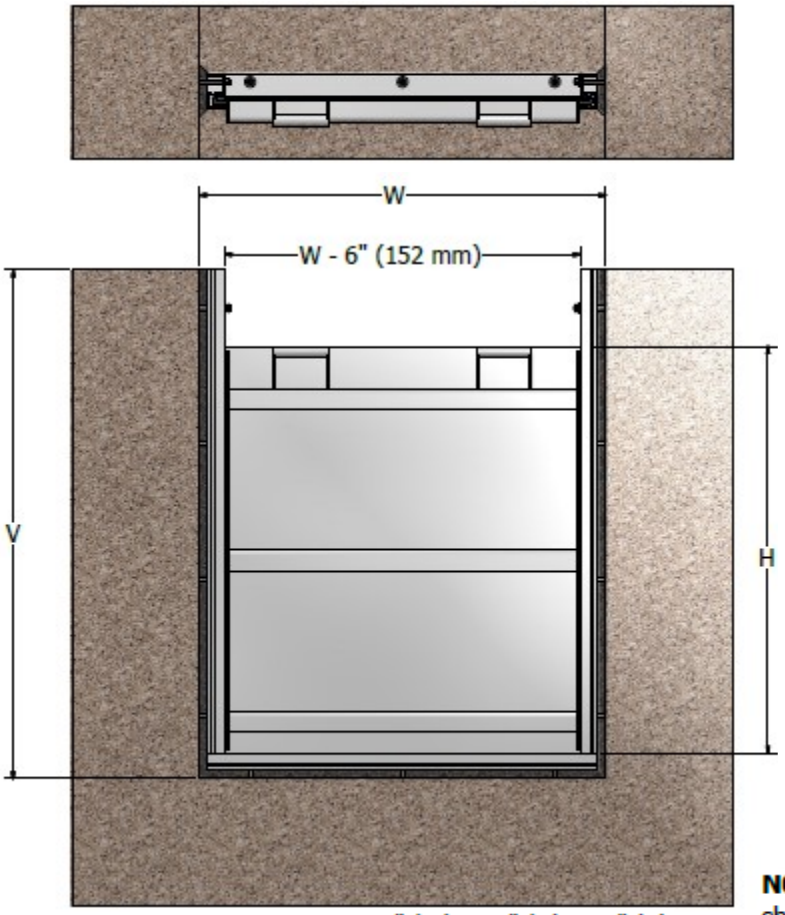
NOTE: All Aluminum in contact with concrete shall have a heavy shop coat of bitumastic paint.



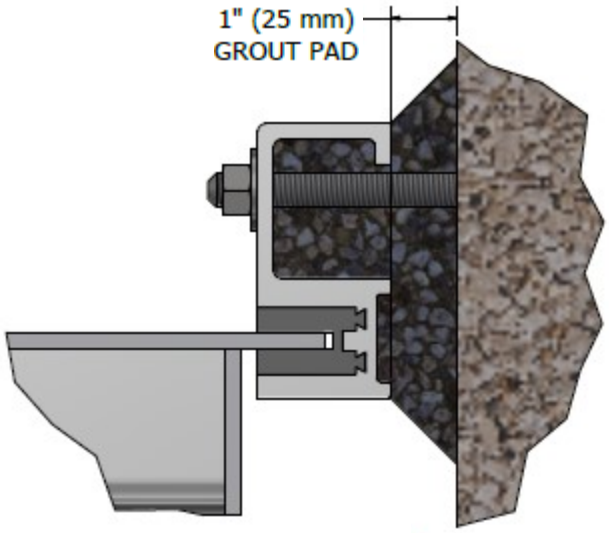


DETAIL B

Model 503-C Stop Gate

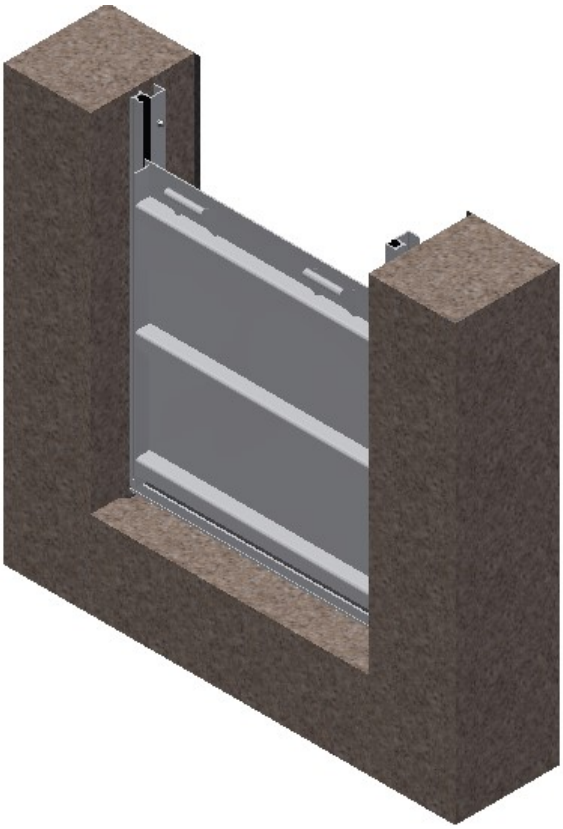


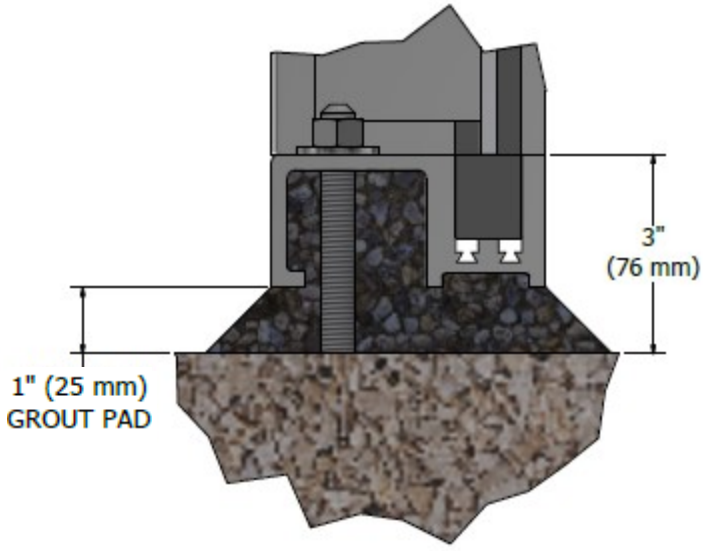
GATE ILLUSTRATED: 48" (W) X 48" (H) X 60" (V)



DETAIL A

NOTE: All Aluminum in contact with concrete shall have a heavy shop coat of bitumastic paint.

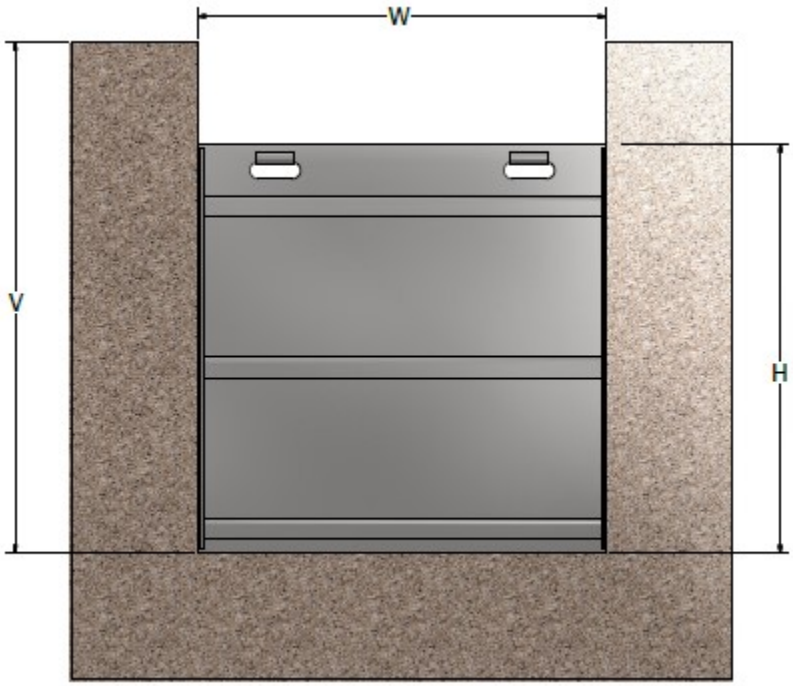




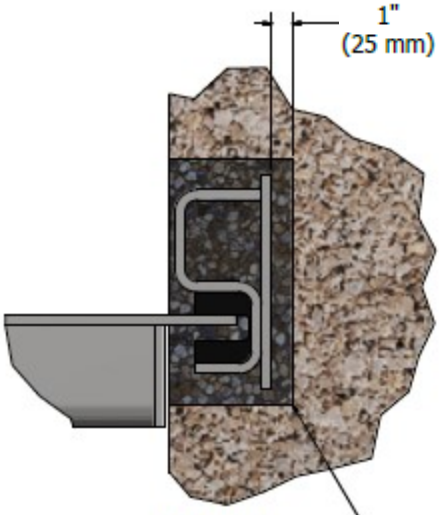
DETAIL B

Model 521 Stop Gate



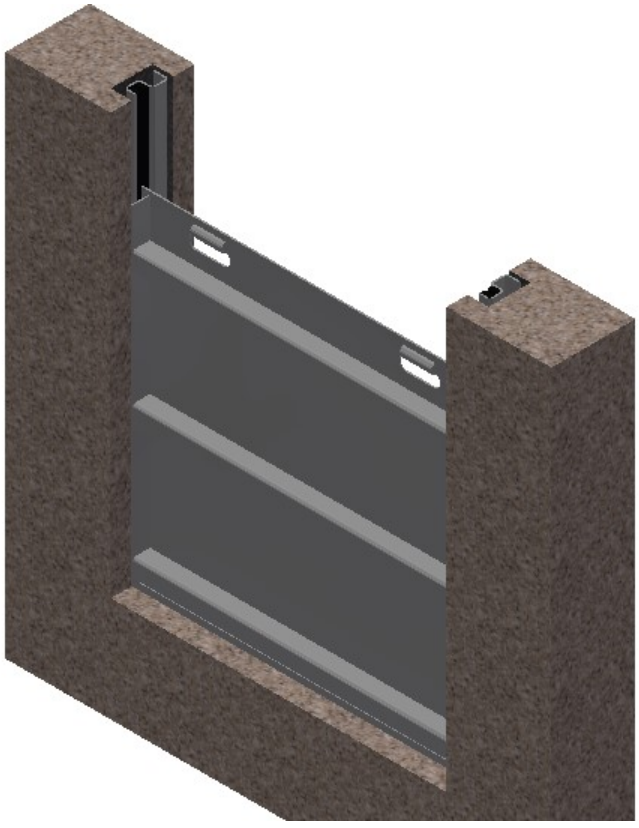


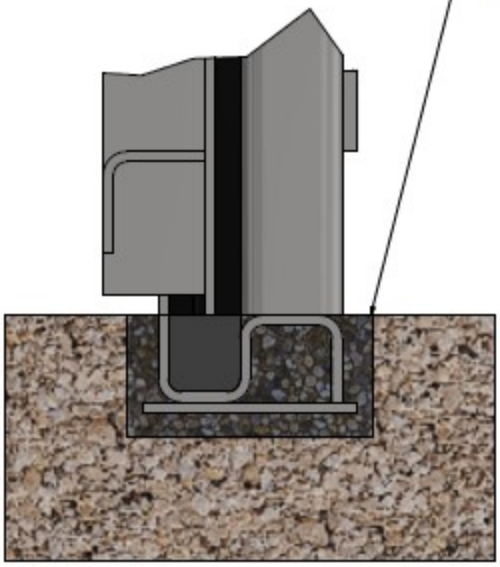
GATE ILLUSTRATED: 48" (W) X 48" (H) X 60" (V)



DETAIL A

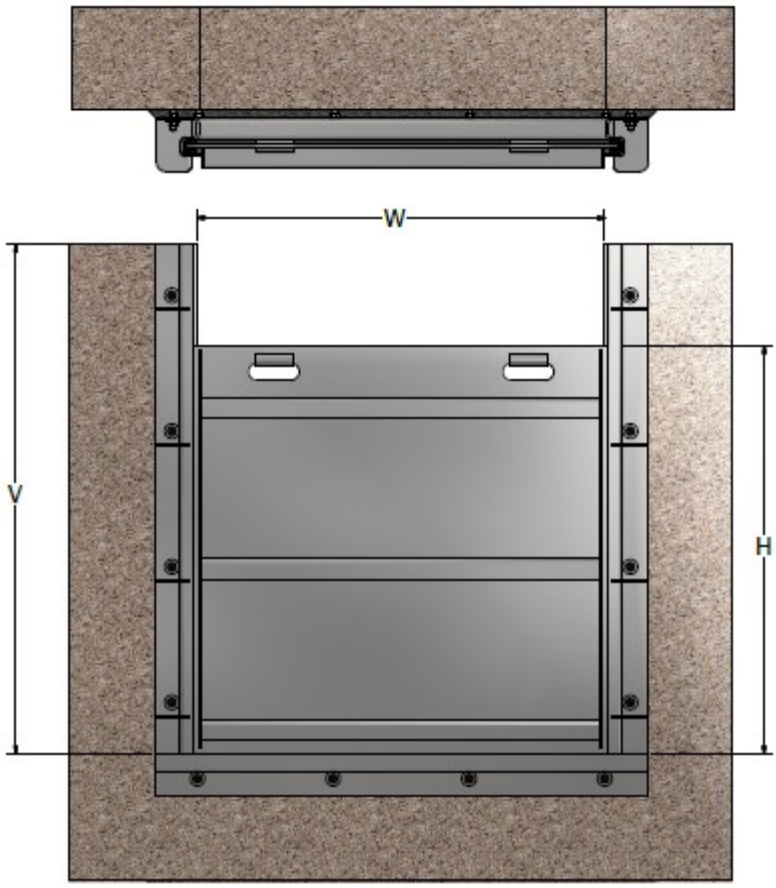
3" X 6"
BOX-OUT



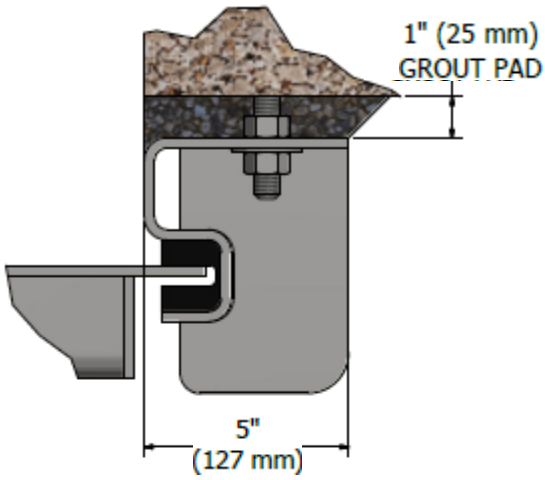


DETAIL B

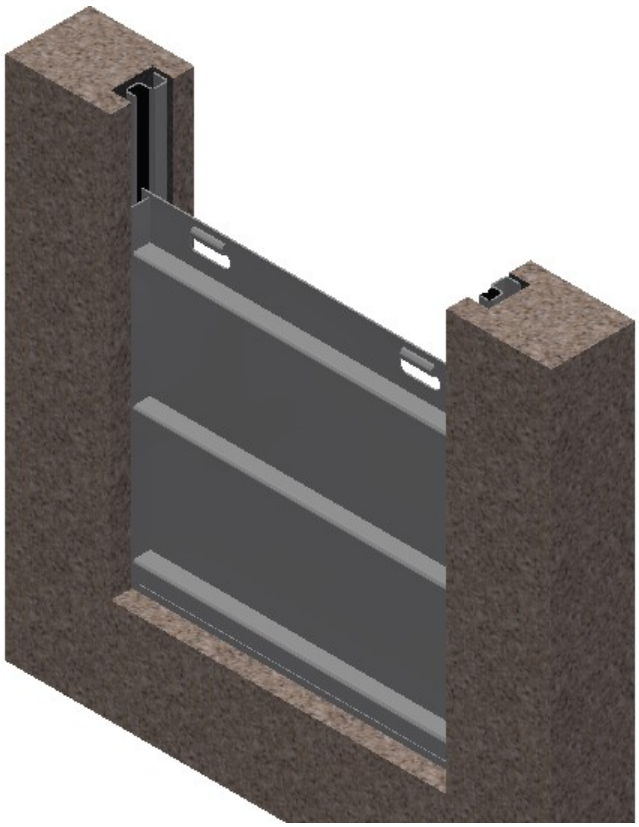
Model 523 Stop Gate

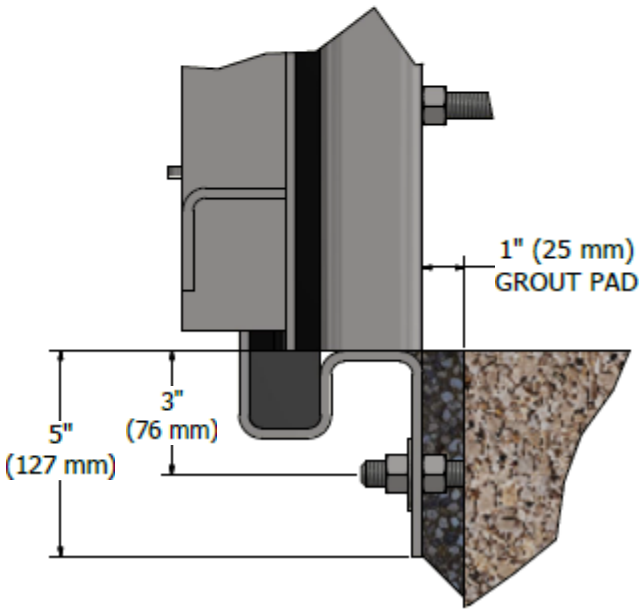


GATE ILLUSTRATED: 48" (W) X 48" (H) X 60" (V)



DETAIL A

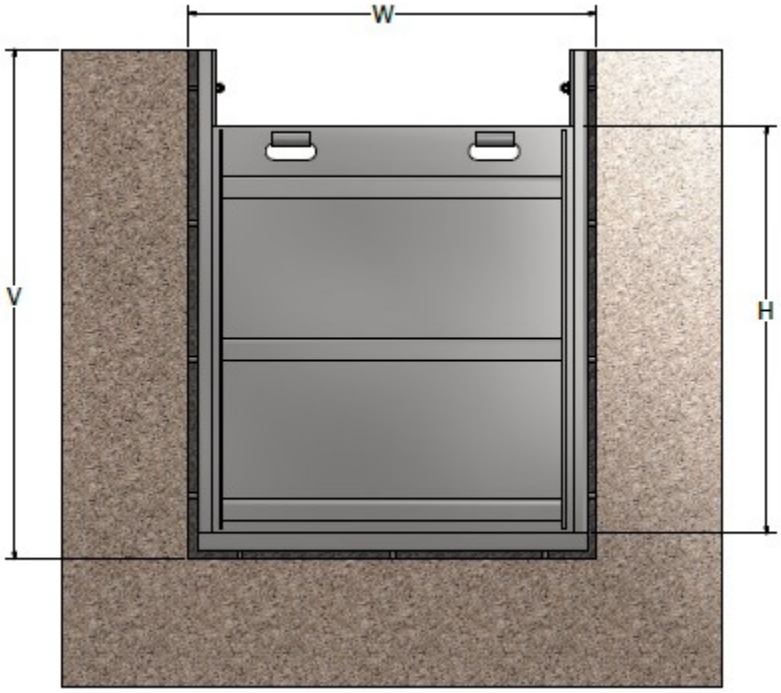




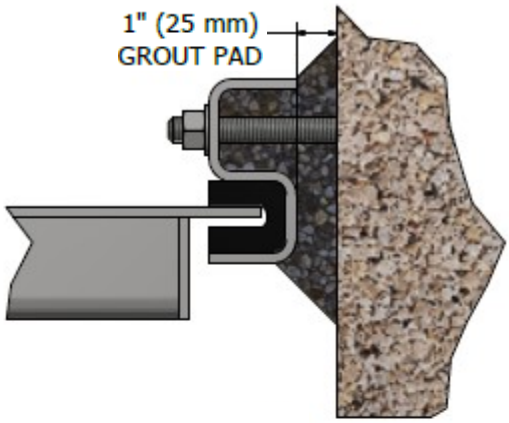
DETAIL B

Model 523-C Stop Gate

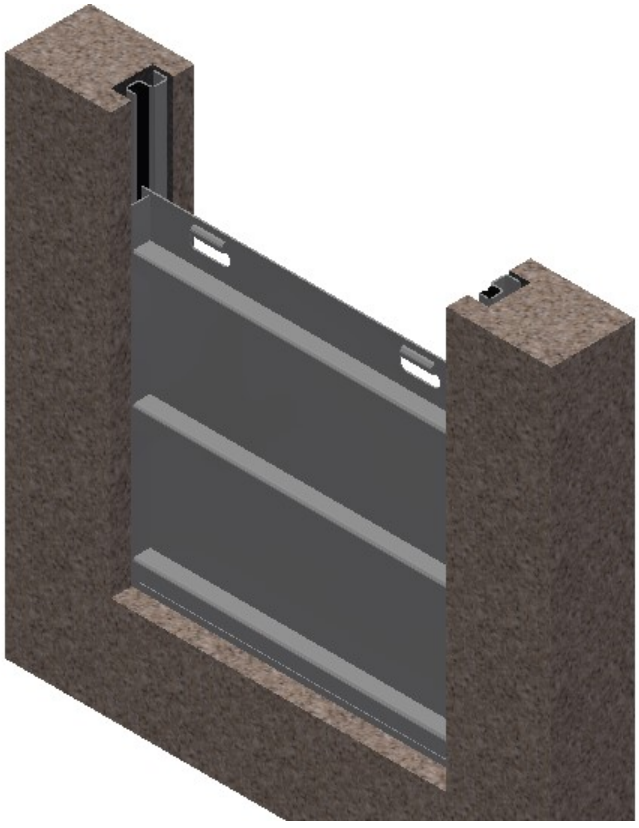


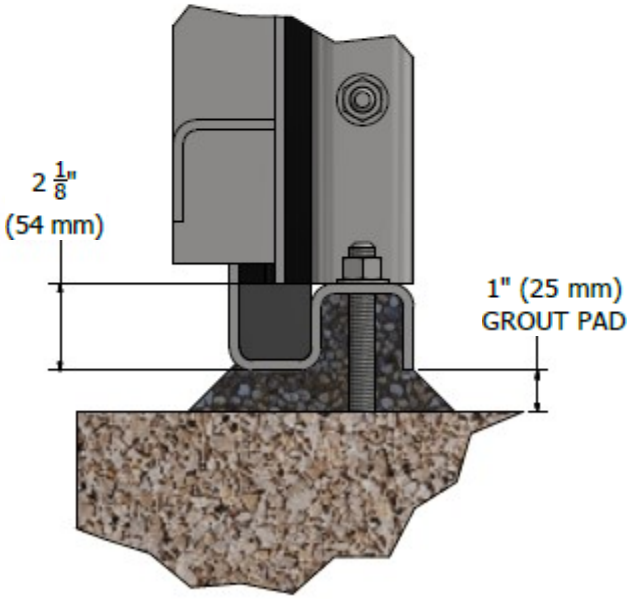


GATE ILLUSTRATED: 48" (W) X 48" (H) X 60" (V)



DETAIL A



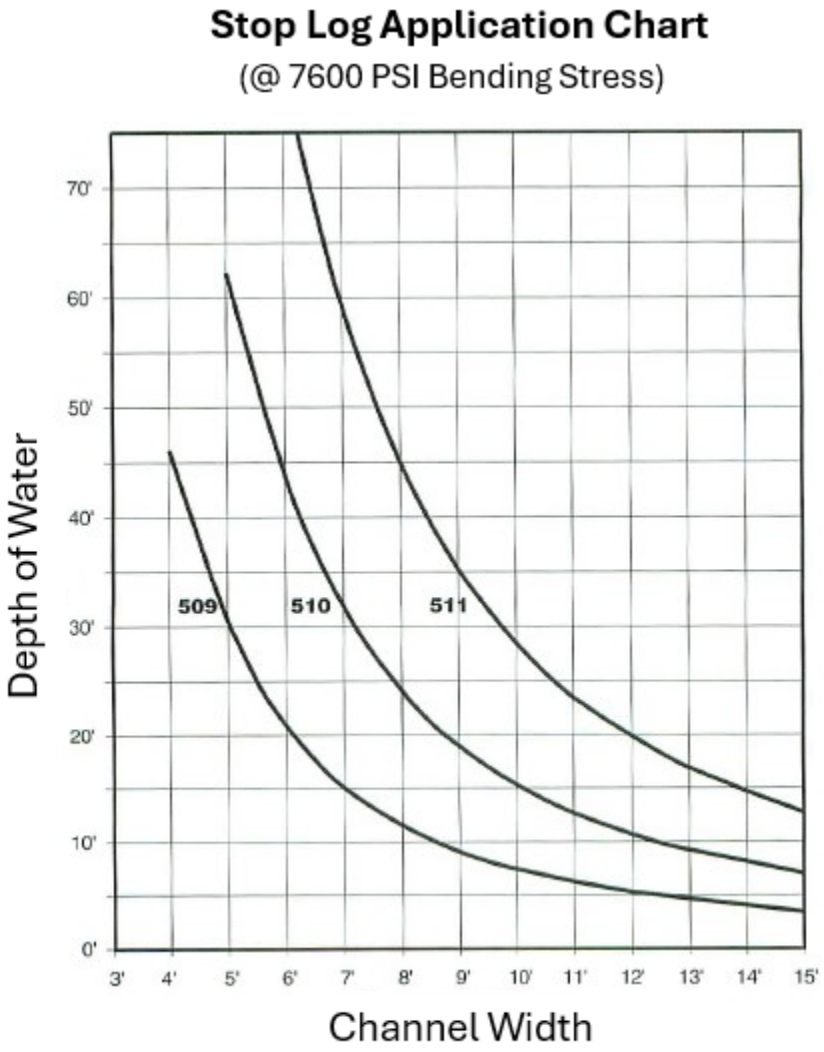


DETAIL B

Stop Log Introduction

Stop logs have been utilized for many years to contain water in ponds, tanks, or channels. They are used in applications where their installation or removal is required infrequently. Historically, stop logs were crafted from squared timbers, as their name suggests. However, obtaining wood in the required sizes, quality, and quantity for traditional stop logs has become increasingly challenging. The dimensional instability in wood also complicates providing timber stop logs with predictable leakage characteristics.

Whipps series 500 stop logs are suitable for a broad range of channel widths and water depths, guaranteeing a maximum leakage rate of 0.05 gallons per minute per linear foot of wetted seal. The series of aluminum stop logs has been in continuous production since 1980, offering an affordable and effective water flow control alternative for various projects.



Description

The Whipps Series of Proprietary Stop Log shapes are kept in stock, allowing for excellent delivery times for stop logs, including custom designs. Stop logs of this type have demonstrated outstanding service life in both water and waste treatment plant applications.

All seals are designed to offer 1/8" compliance with the groove sealing surface and also engineered to seal correctly when adjacent logs are laterally offset up to 1/2" apart. All seals are stop log mounted for ease of inspection and repair, eliminating the potential for damage from debris that is always possible when the side seals are mounted in the sides of the stop log grooves.

The following pages show the standard range of stop log heights, channel widths, and total water depths. Many other configurations can be designed to customize these stop logs for accommodating various stop log heights, channel widths, or total water depths.

Stop Log Specifications

Quality Assurance: The stop log, guide frames/grooves, and lifter shall be manufactured by a company with 10 or more years of experience in successfully designing and manufacturing low-leakage stop logs under similar conditions. All welds will be executed by welders with AWS certification.

Performance: The stop logs maximum allowable leakage shall be 0.05 gallons per minute per linear foot of the wetted perimeter, regardless of the direction of the unbalanced head.

Technical Information: In addition to the submittal information required by other sections of these specifications, the stop log manufacturer may be required to submit design calculations and supporting data for all logs. The supplementary information depicts stresses, loads, and deflection for critical parts under design head conditions.

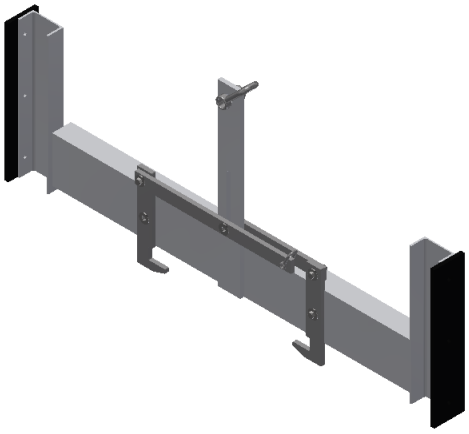
Stop Logs: Crafted from 5/16” thick aluminum (Alloy 6061-T6) extrusions. Maximum bending stress shall not exceed 7600 psi at the maximum head. Each stop log will be designed to be identical and stacked in any order. Resilient lip-type seals are attached along the sides and across the bottom with stainless steel fasteners for easy inspection and replacement. An engraved aluminum tag is welded to each log, providing information about installation location and size of the log.

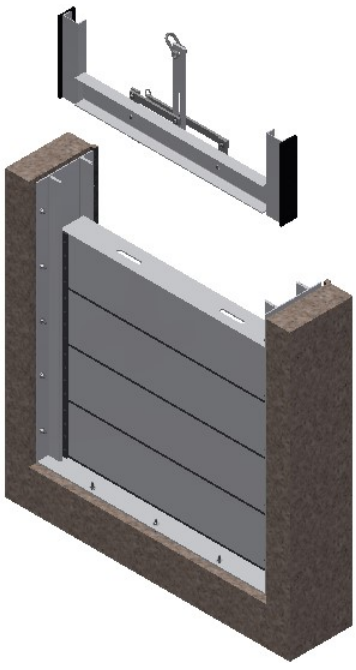
Stop Log Groove: Stop log grooves and frames are constructed of extruded aluminum (Alloy 6061-T6), with stainless steel designs available. The frame is comprised of two grooves and an invert member. Stainless steel fasteners are supplied for mounting to a wall or to an existing cannel. The invert member is designed to minimize flow interference along the bottom of the channel.

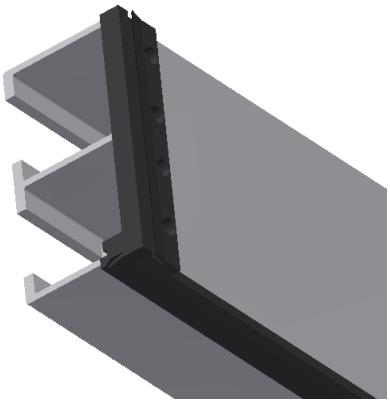
Stop Log Lifter: The lifter is constructed using aluminum or stainless steel, featuring UHMW guide bars and stainless steel fasteners. Capable of both installing and removing stop logs, the lifter easily latches and unlatches with a lanyard operated by personnel.

Painting: All aluminum in contact with concrete shall receive a heavy shop coat of bitumastic paint.

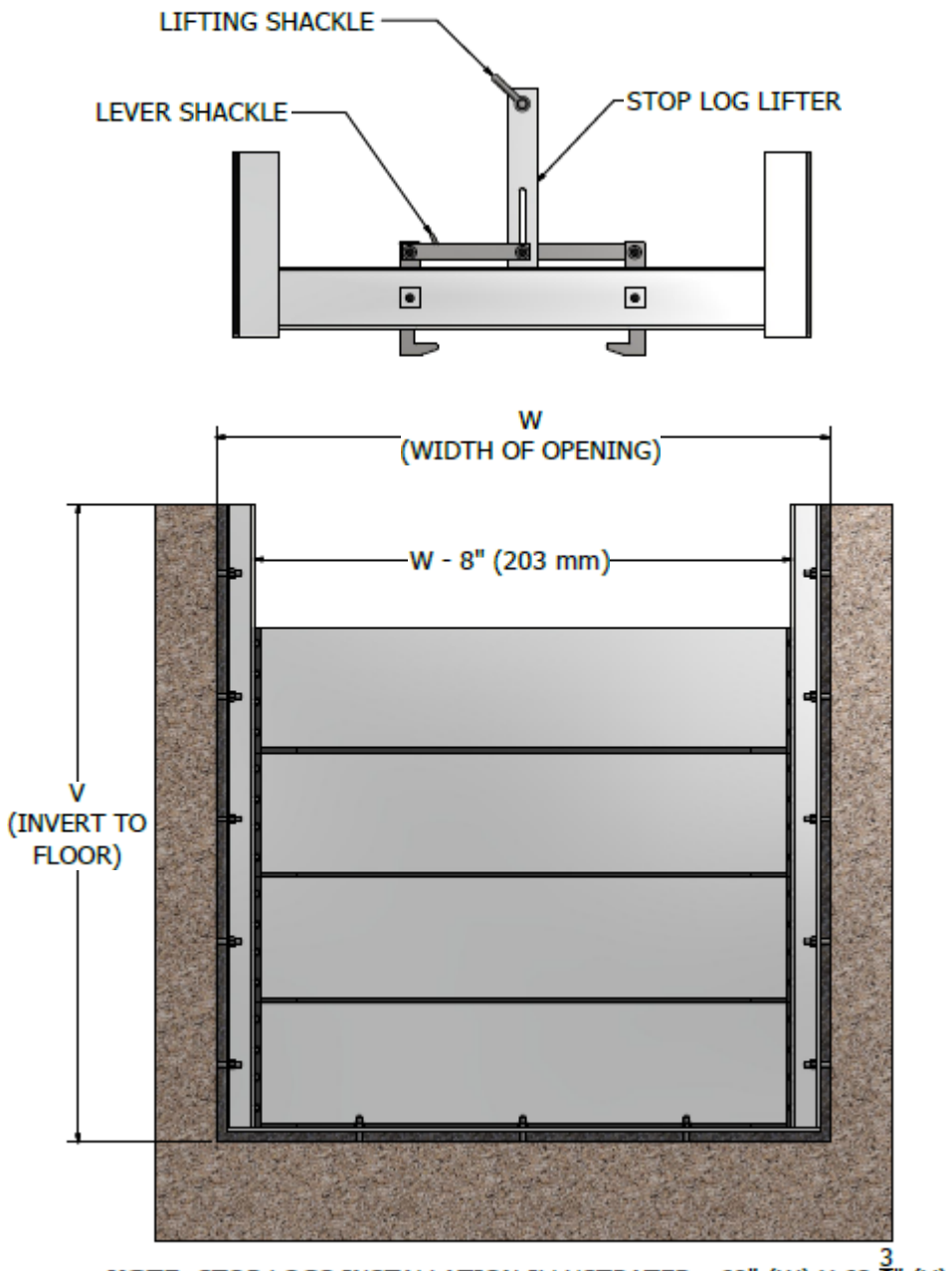
Anodizing (optional): All aluminum components can be anodized in accordance with Aluminum Association Specification AA-C22-A41. The anodizing shall be 0.7 mm thick with a nickel acetate sealer.





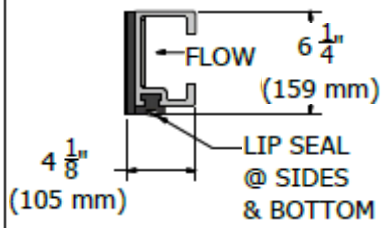


Model 509 Stop Log Gate

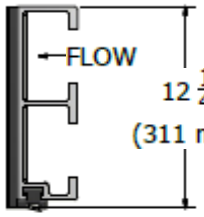


NOTE: STOP LOGS INSTALLATION ILLUSTRATED - 60" (W) X 62 3/8" (V)
WITH (4) 12" HIGH MODEL 509 ALUMINUM LOGS AND LIFTER

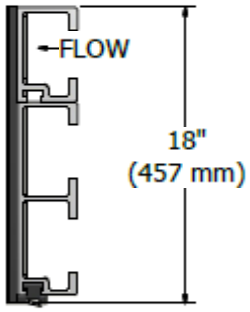
6" HIGH SECTION C-C
(OPTIONAL)



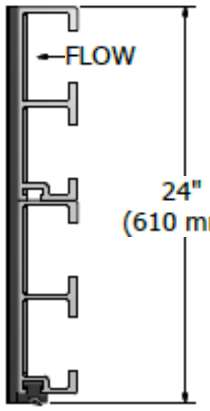
12" HIGH SECTION C-C
(ILLUSTRATED)



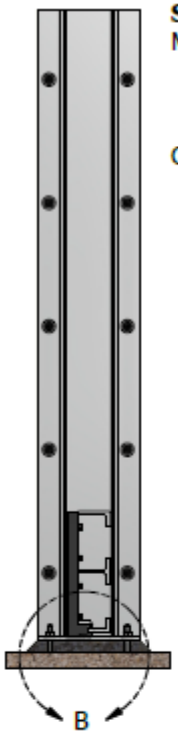
18" HIGH SECTION C-C
(OPTIONAL)



24" HIGH SECTION C-C
(OPTIONAL)

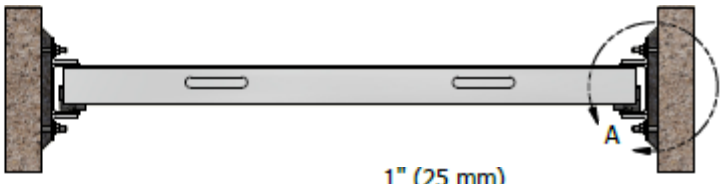


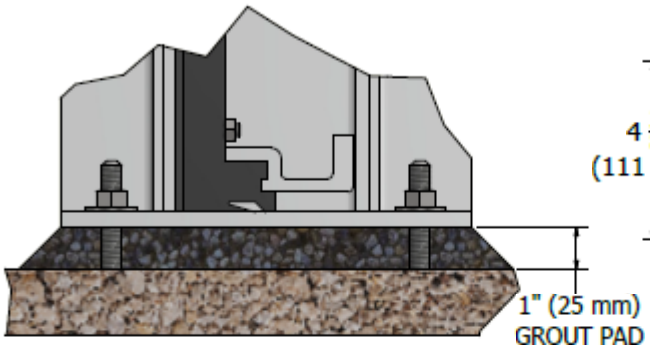
Model 509 Features



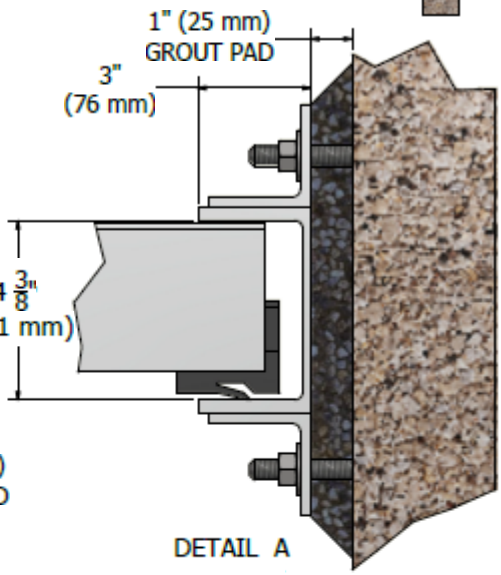
STOP LOG GROOVE FEATURES:
MATERIALS:
- EXTRUDED ALUMINUM
- FORMED STAINLESS STEEL

CONFIGURATIONS:
- EMBEDDED
- FACE-MOUNTED/WALL-MOUNTED
- CHANNEL MOUNTED



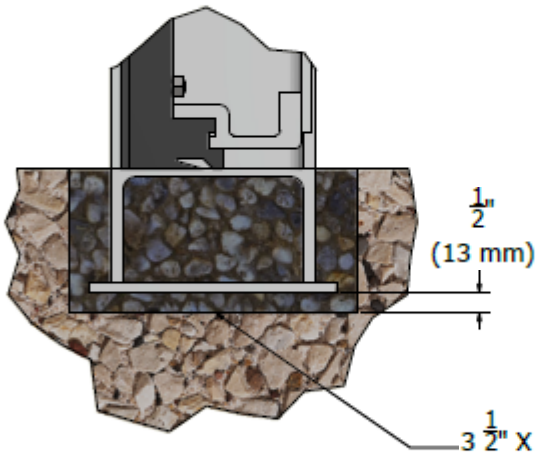


DETAIL B

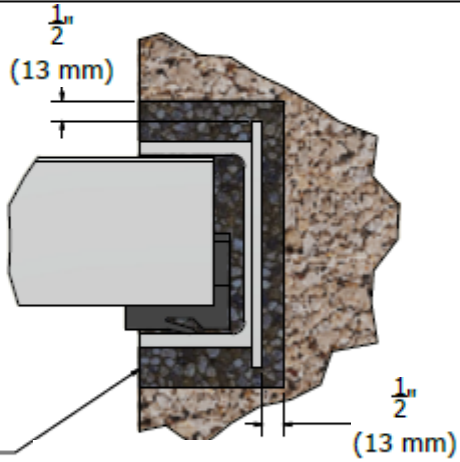


DETAIL A

EMBEDDED OPTION

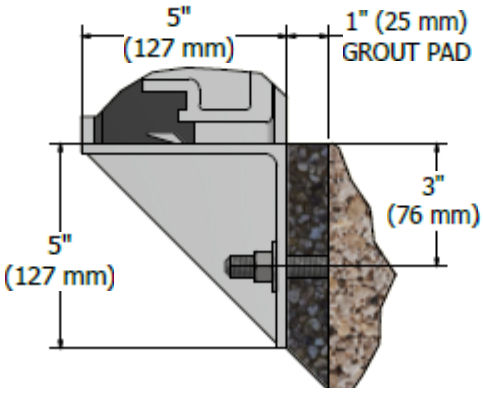


DETAIL B-B
OPTIONAL EMBEDDED INVERT

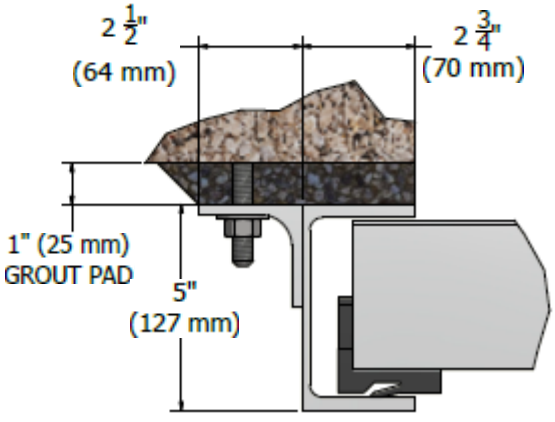


DETAIL A
OPTIONAL EMBEDDED GROOVE

WALL MOUNTED OPTION

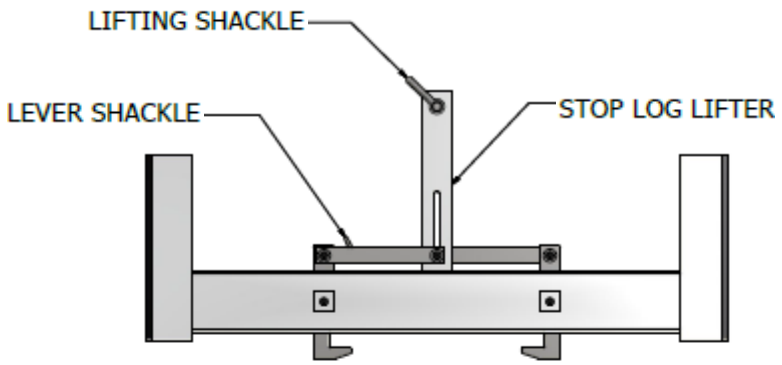


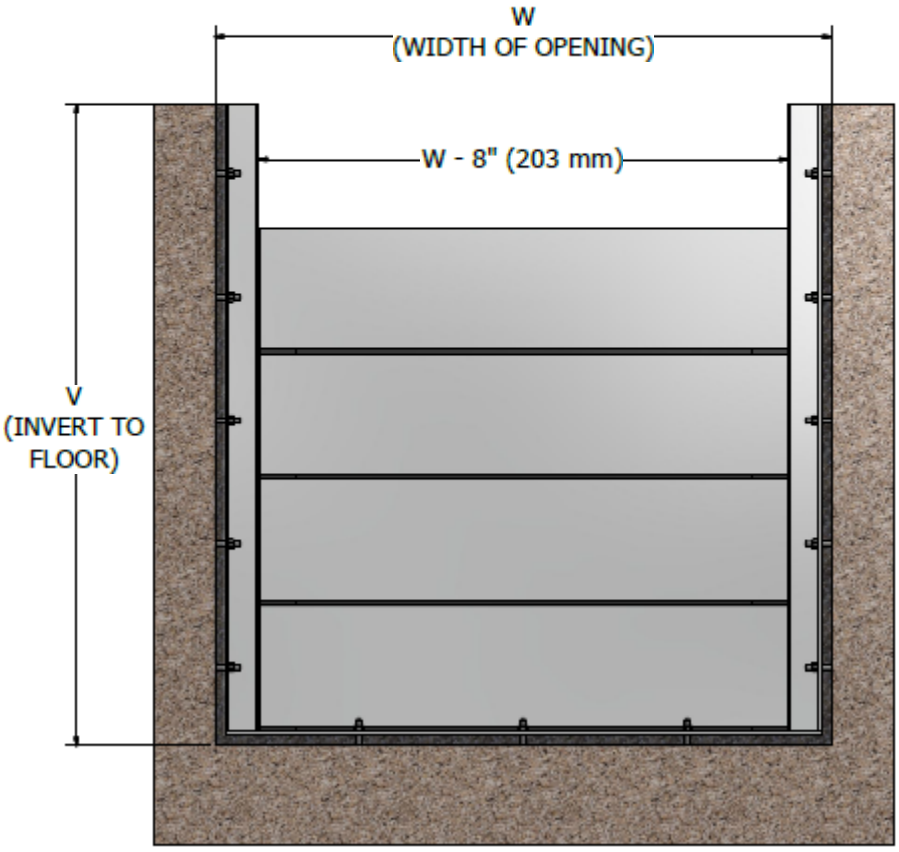
DETAIL B
OPTIONAL WALL MOUNTED INVERT



DETAIL A
OPTIONAL WALL MOUNTED GROOVE

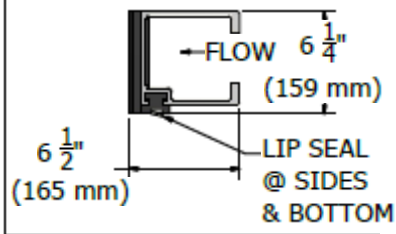
Model 510 Stop Log Gate



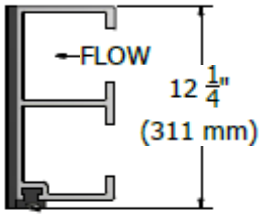


NOTE: STOP LOGS INSTALLATION ILLUSTRATED - 60" (W) X 62 $\frac{3}{8}$" (V)
WITH (4) 12" HIGH MODEL 510 ALUMINUM LOGS AND LIFTER

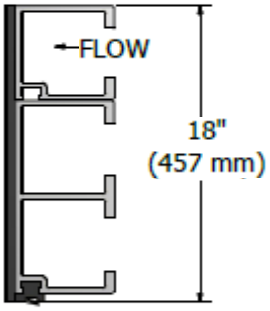
6" HIGH SECTION C-C
(OPTIONAL)



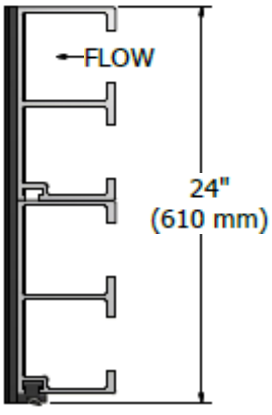
12" HIGH SECTION C-C
(ILLUSTRATED)



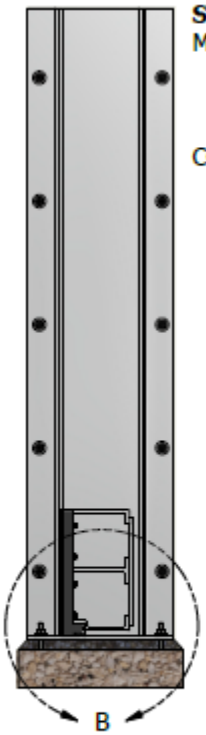
18" HIGH SECTION C-C
(OPTIONAL)



24" HIGH SECTION C-C
(OPTIONAL)

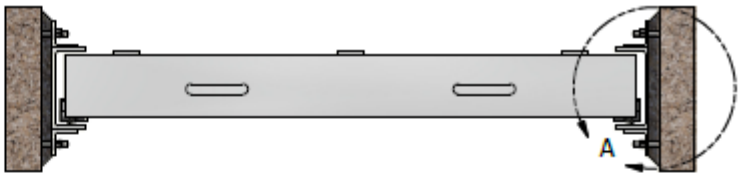


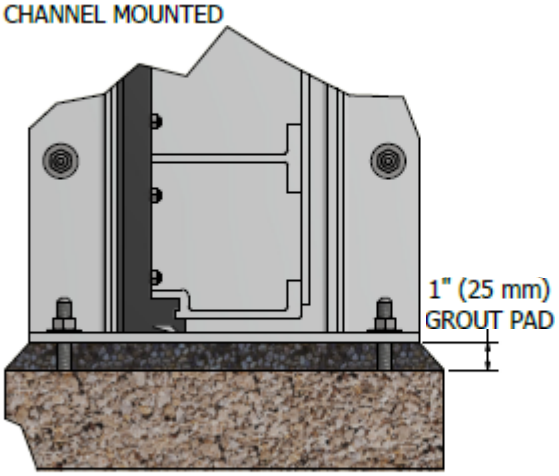
Model 510 Features



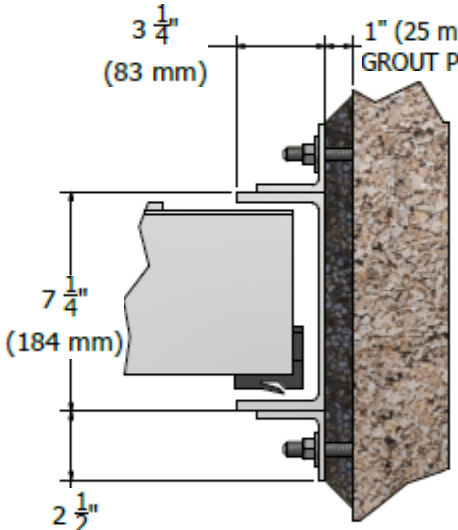
STOP LOG GROOVE FEATURES:
MATERIALS:
- EXTRUDED ALUMINUM
- FORMED STAINLESS STEEL

CONFIGURATIONS:
- EMBEDDED
- FACE-MOUNTED/WALL-MOUNTED
- CHANNEL MOUNTED



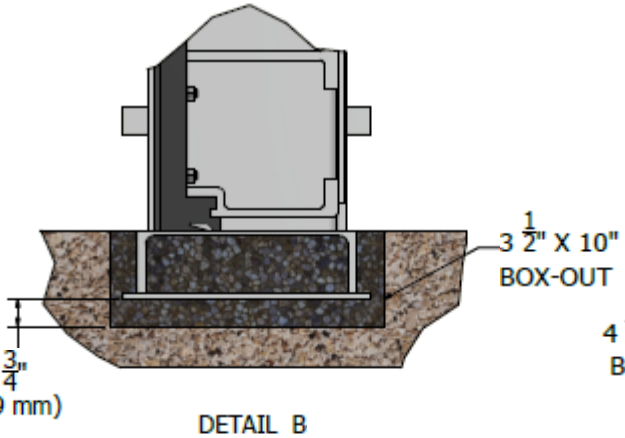


DETAIL B

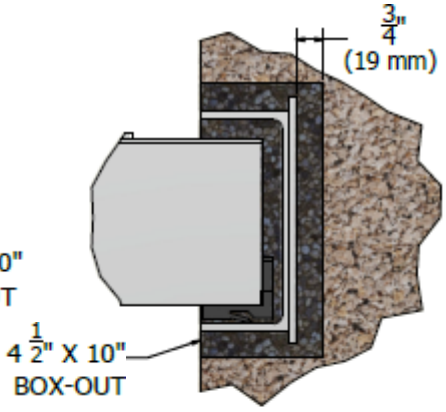


DETAIL A

EMBEDDED OPTION

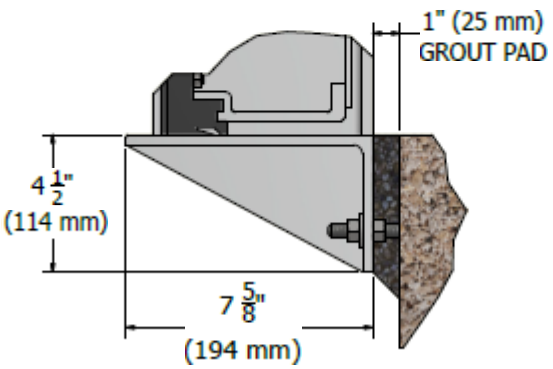


DETAIL B
OPTIONAL EMBEDDED INVERT

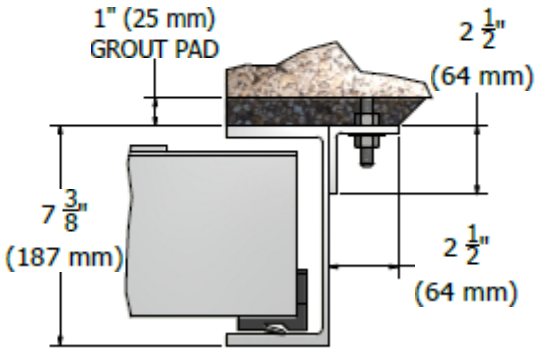


DETAIL A
OPTIONAL EMBEDDED GROOVE

WALL MOUNTED
OPTION

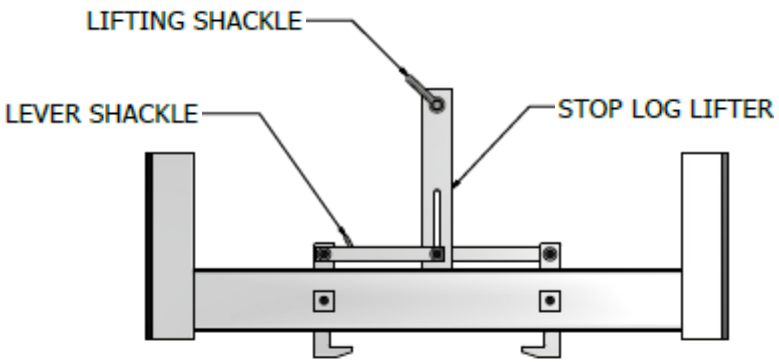


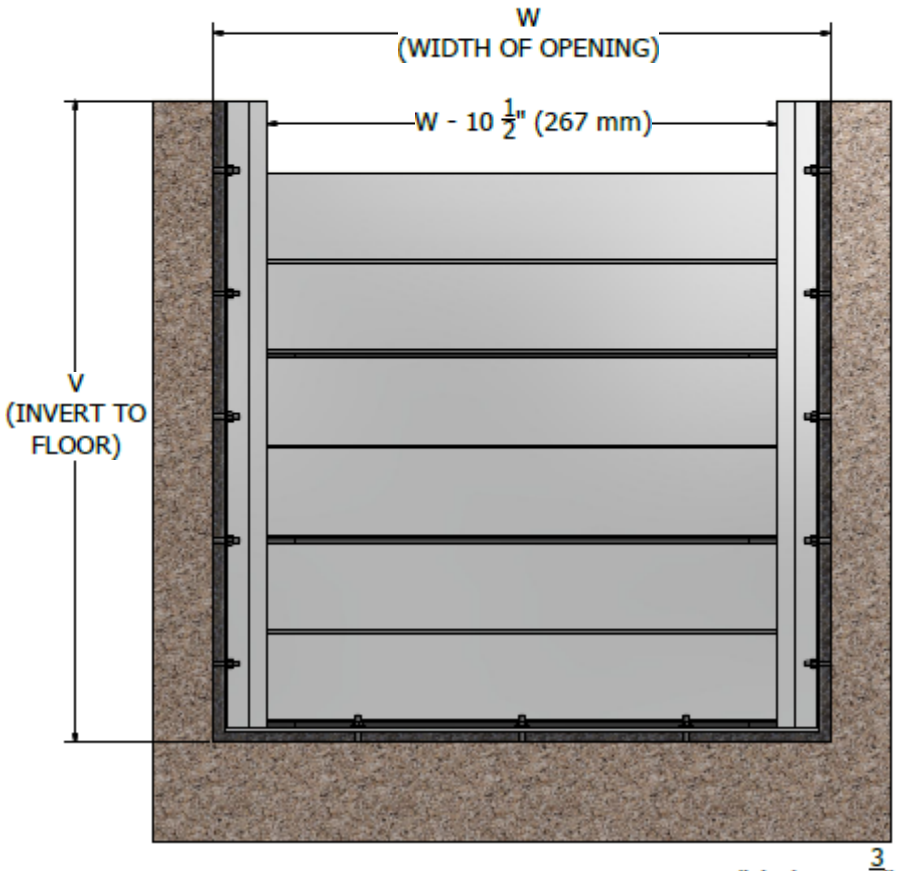
DETAIL B
OPTIONAL WALL MOUNTED INVERT



DETAIL A
OPTIONAL WALL MOUNTED GROOVE

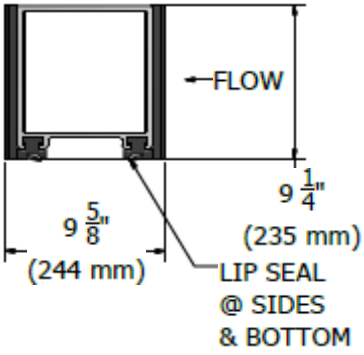
Model 511 Stop Log Gate



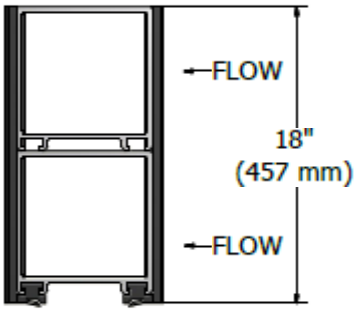


NOTE: STOP LOGS INSTALLATION ILLUSTRATED - 60" (W) X 62 3/8" (V)
WITH (3) 18" HIGH MODEL 511 ALUMINUM LOGS AND LIFTER

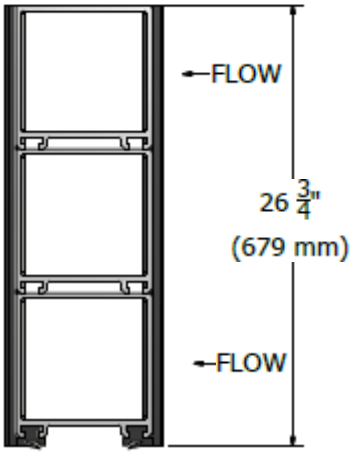
9" HIGH SECTION C-C
(OPTIONAL)



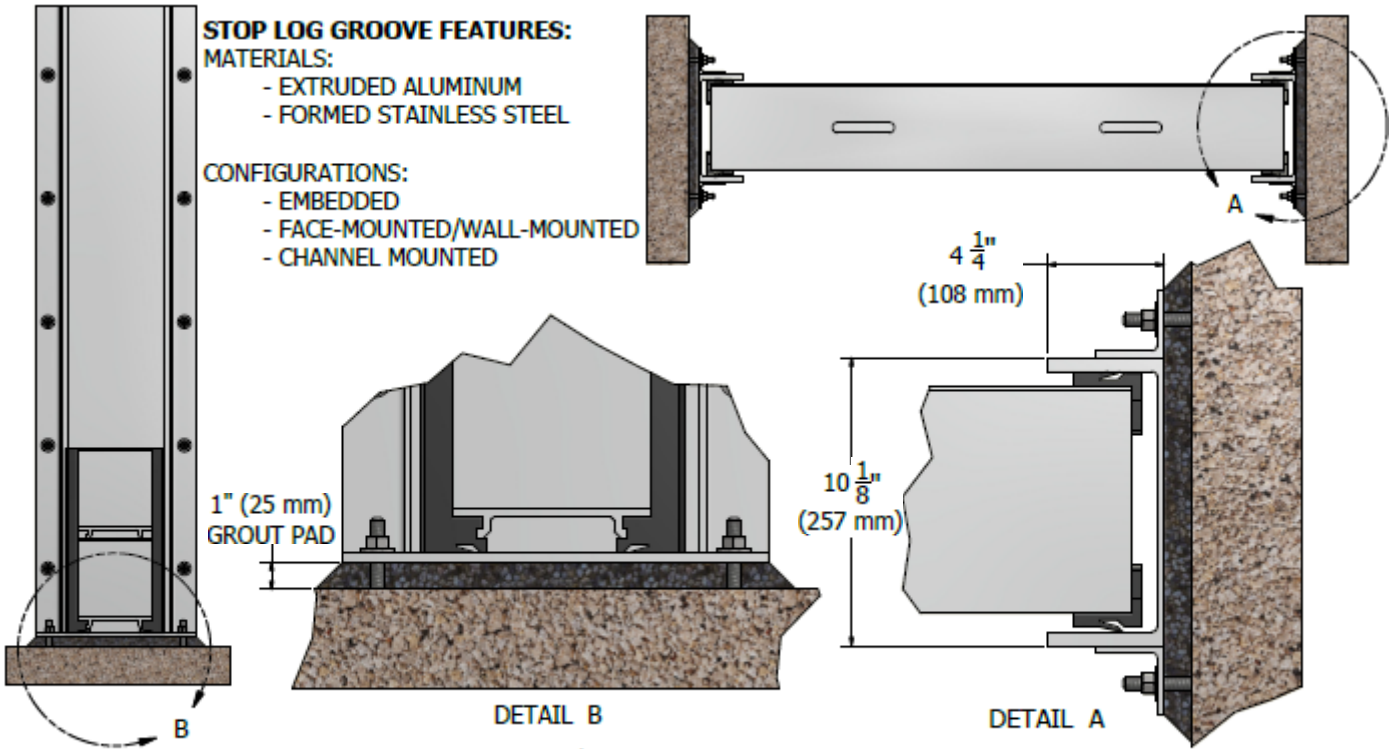
18" HIGH SECTION C-C
(ILLUSTRATED)

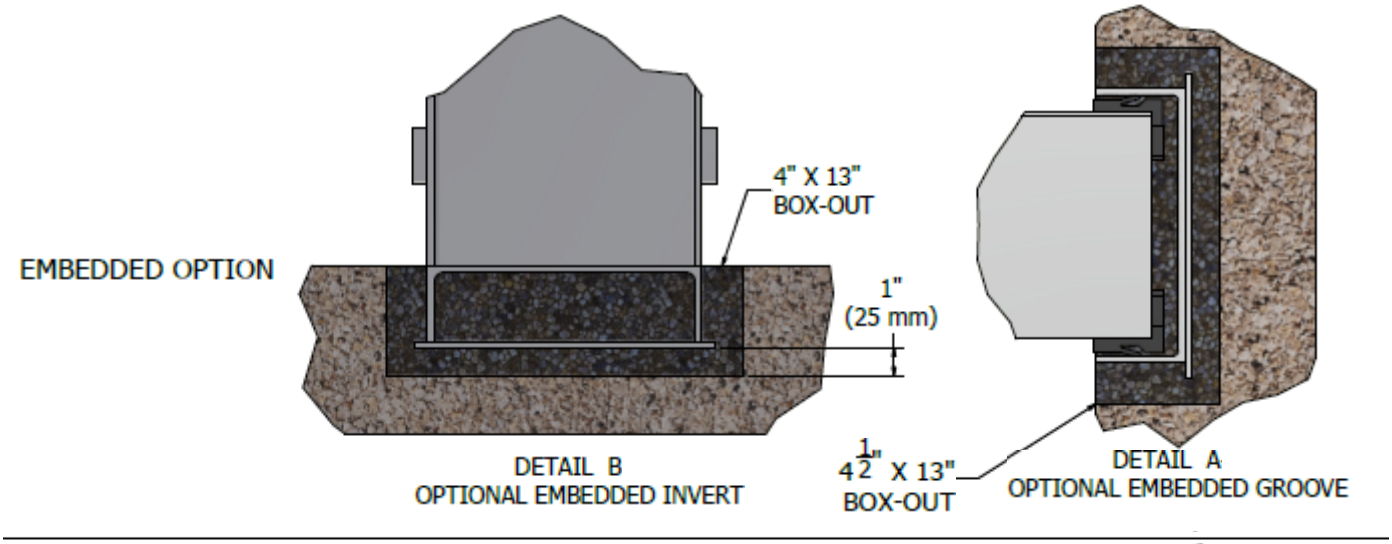


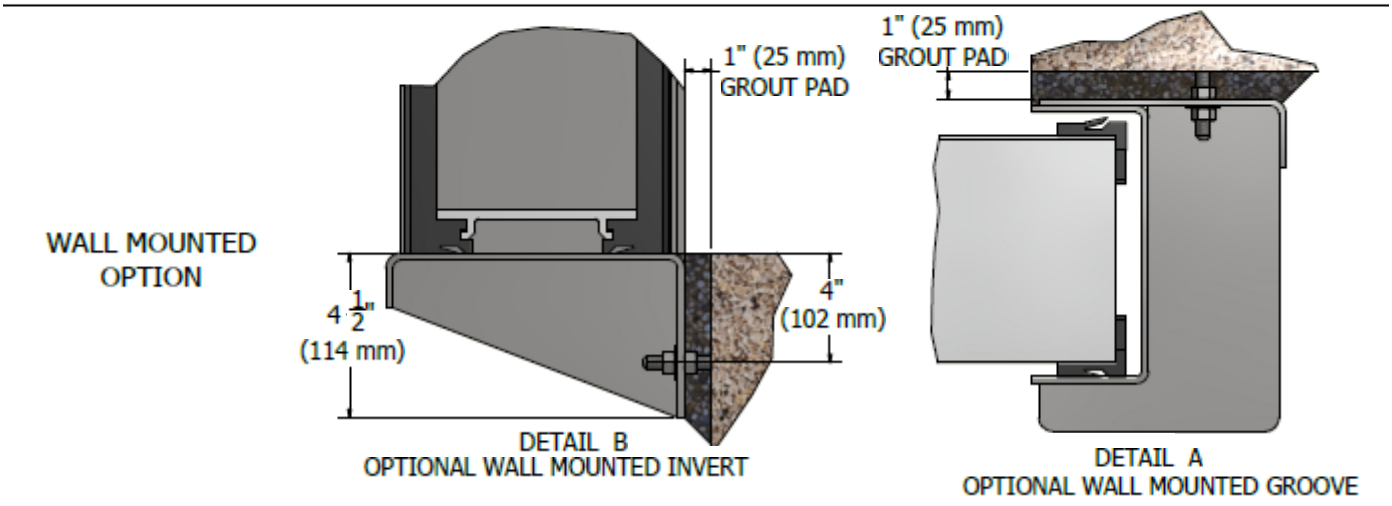
24" HIGH SECTION C-C
(OPTIONAL)



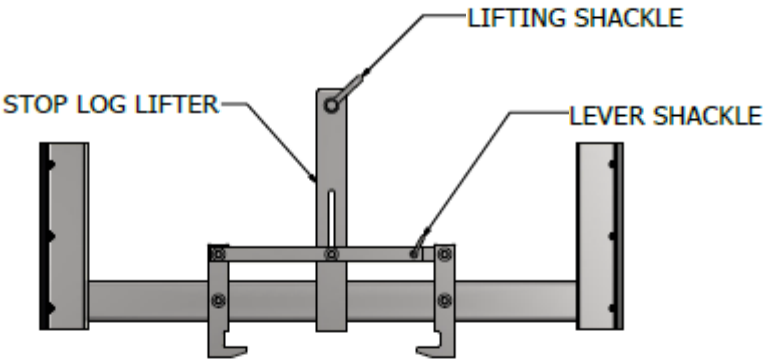
Model 511 Features

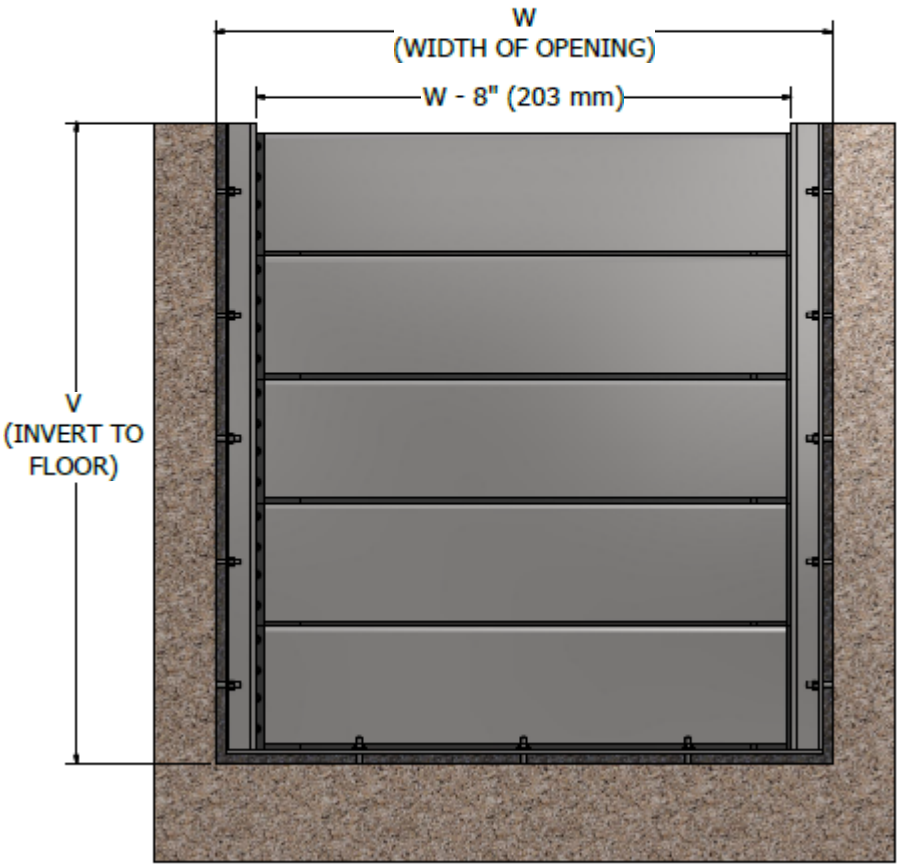






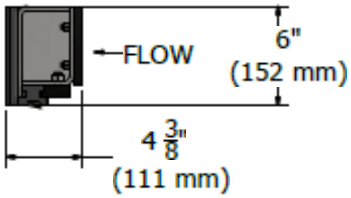
Model 529 Stop Log Gate





NOTE: BULKHEAD INSTALLATION ILLUSTRATED - 60" (W) X 62 $\frac{3}{8}$" (V) WITH (5) 12" HIGH MODEL 529 STAINLESS STEEL BULKHEADS AND LIFTER

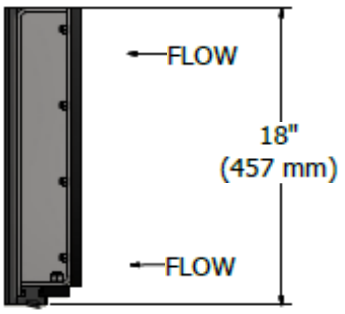
6" HIGH SECTION C-C
(OPTIONAL)



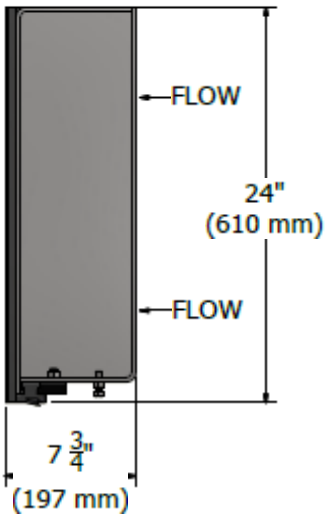
12" HIGH SECTION C-C
(ILLUSTRATED)



18" HIGH SECTION C-C
(OPTIONAL)



24" HIGH SECTION C-C
(OPTIONAL)

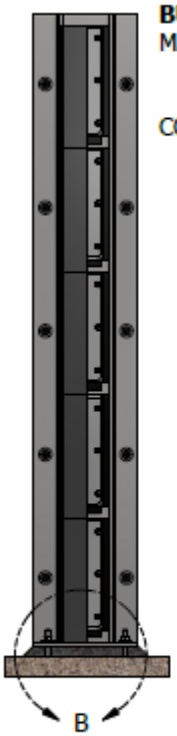


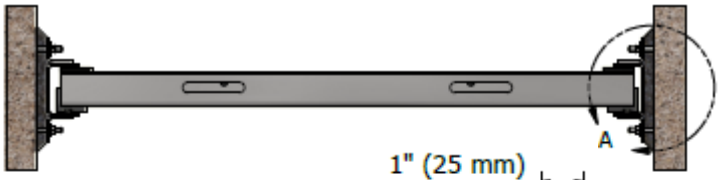
Model 529 Stop Log Features

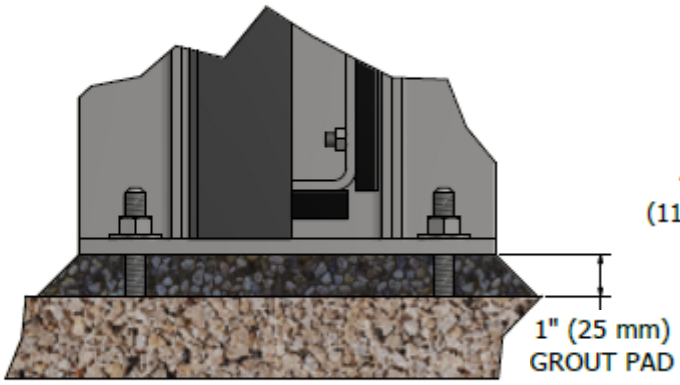
BULKHEAD GROOVE FEATURES:

MATERIALS:
- FORMED STAINLESS STEEL

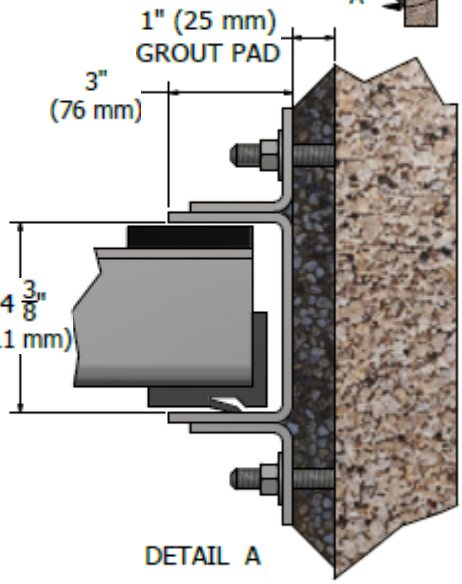
CONFIGURATIONS:
- EMBEDDED
- FACE-MOUNTED/WALL-MOUNTED
- CHANNEL MOUNTED





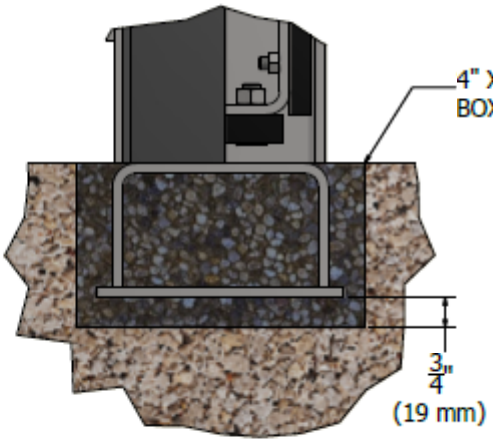


DETAIL B

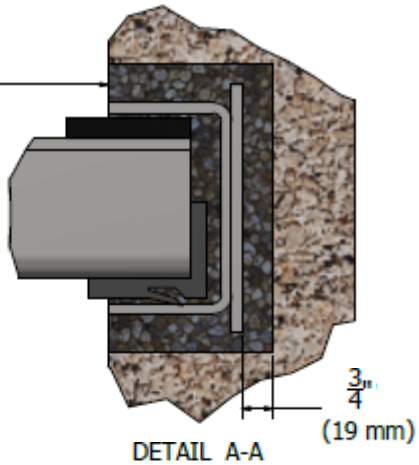


DETAIL A

EMBEDDED OPTION

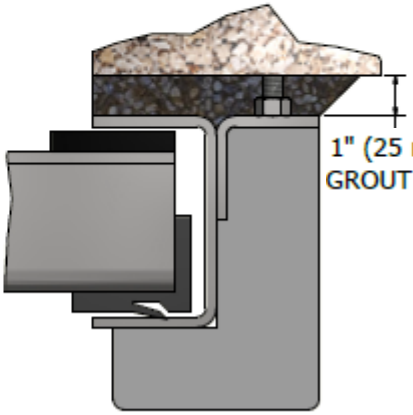


DETAIL B-B
OPTIONAL EMBEDDED GROOVE

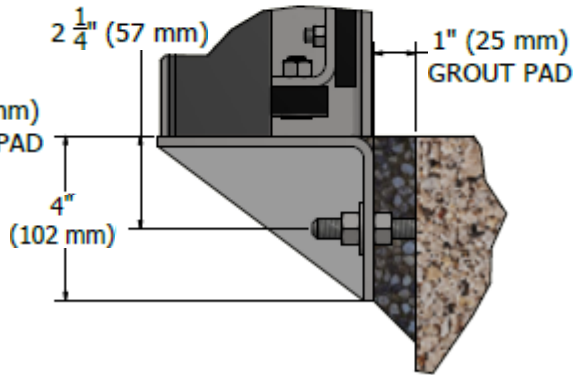


DETAIL A-A
OPTIONAL EMBEDDED GROOVE

WALL MOUNTED OPTION

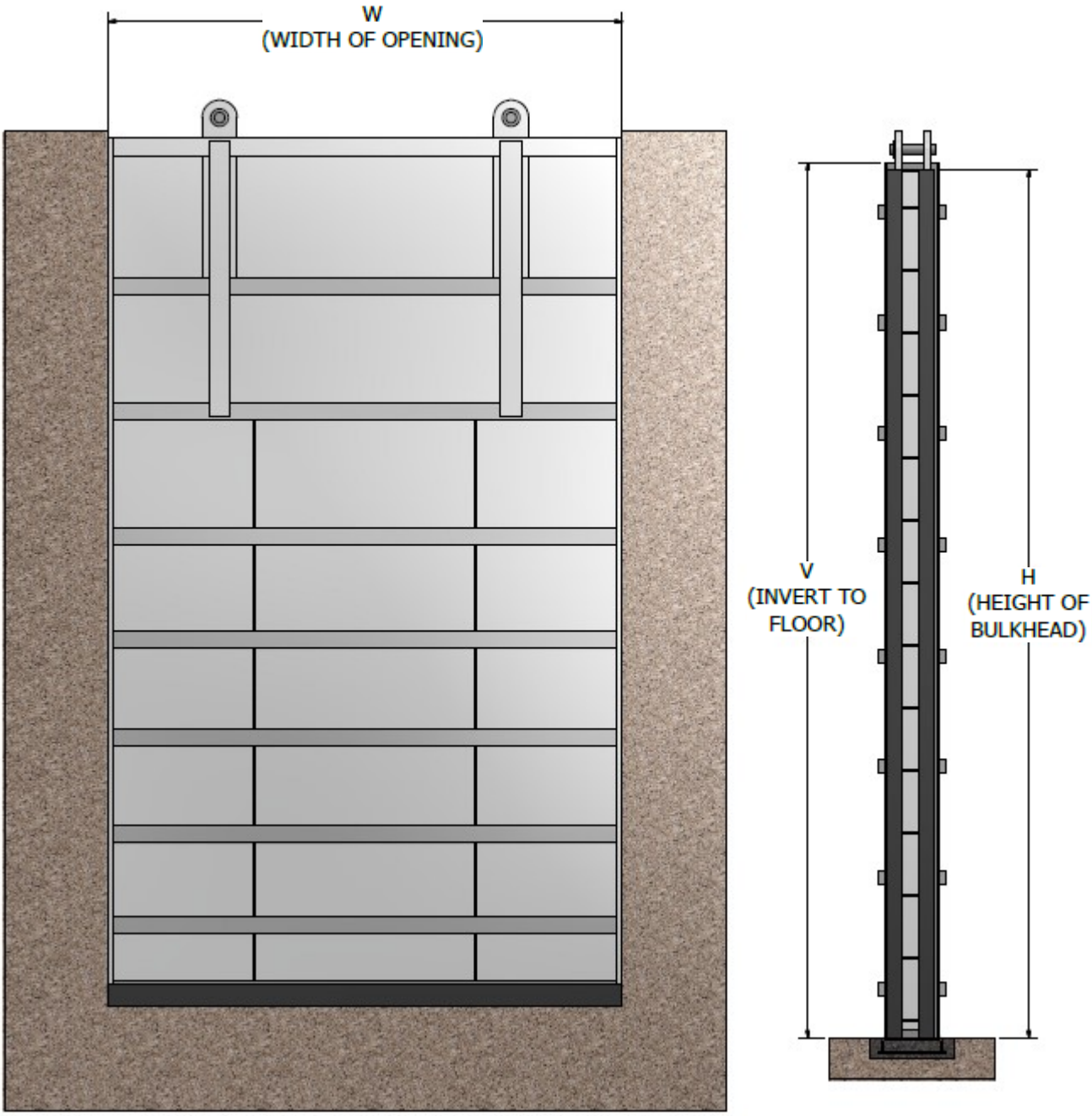


DETAIL A
OPTIONAL WALL MOUNTED GROOVE



DETAIL B-B
OPTIONAL WALL MOUNTED INVERT

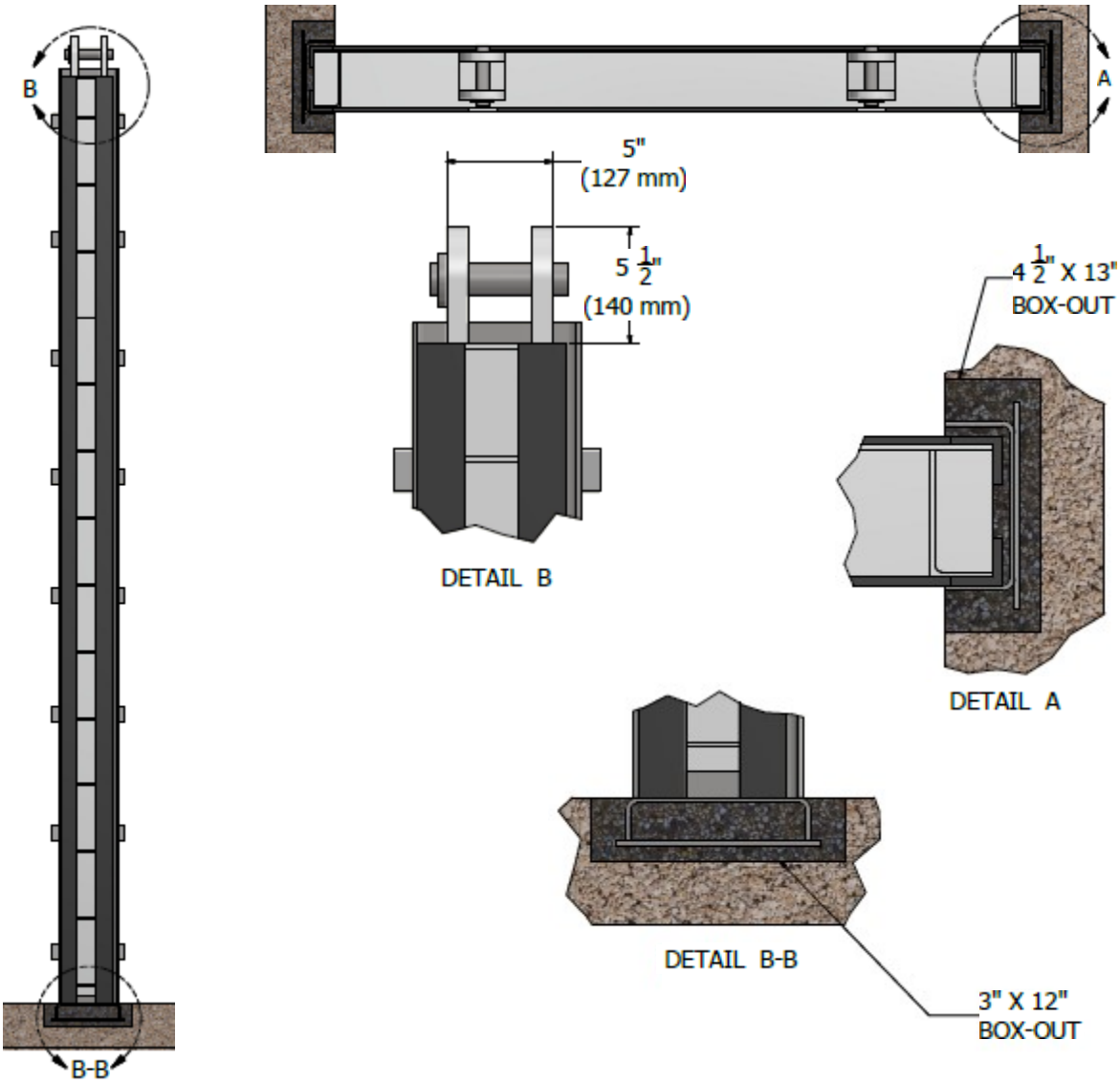
Model 519 Bulkhead Gate



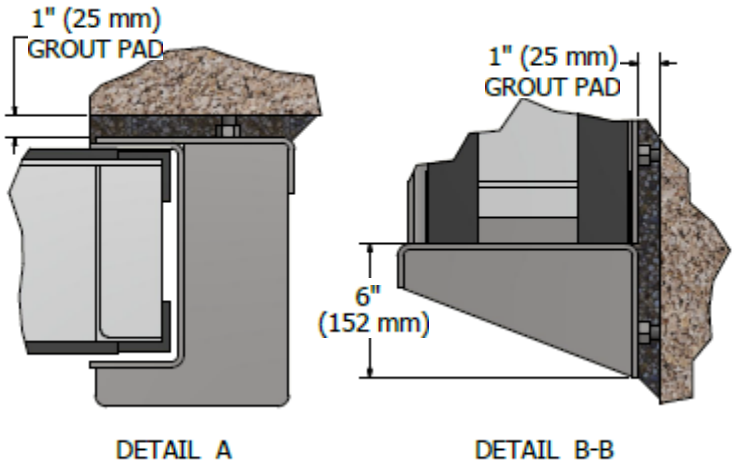
Bulkhead Gate: The 519 bulkhead gate comprises of a large slide produced from extruded aluminum (Alloy 6061-T6) with a maximum bending stress of 7600 psi at the maximum head. Resilient lip-type seals are attached along the sides and bottom of the slide. The frame, consisting of two grooves and an invert member, is manufactured from aluminum (Alloy 6061-T6) and shall be supplied with stainless steel anchor bolts or aluminum anchor straps. The invert member is designed to minimize flow interference.

GATE ILLUSTRATED: 74" (W) x 125" (H) x 126" (V)

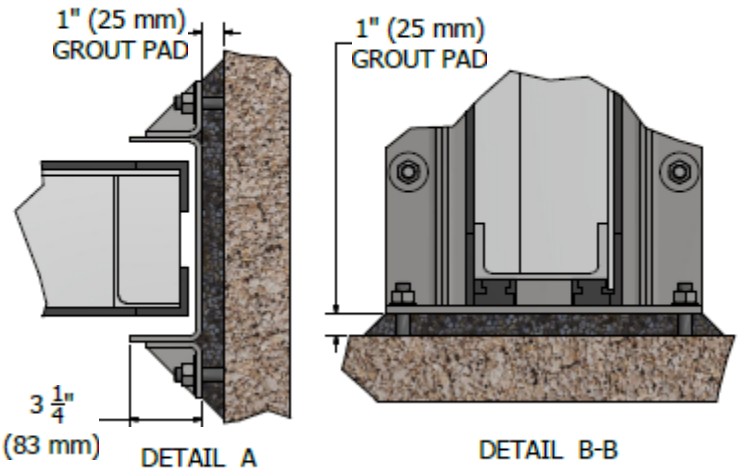
Model 519 Features



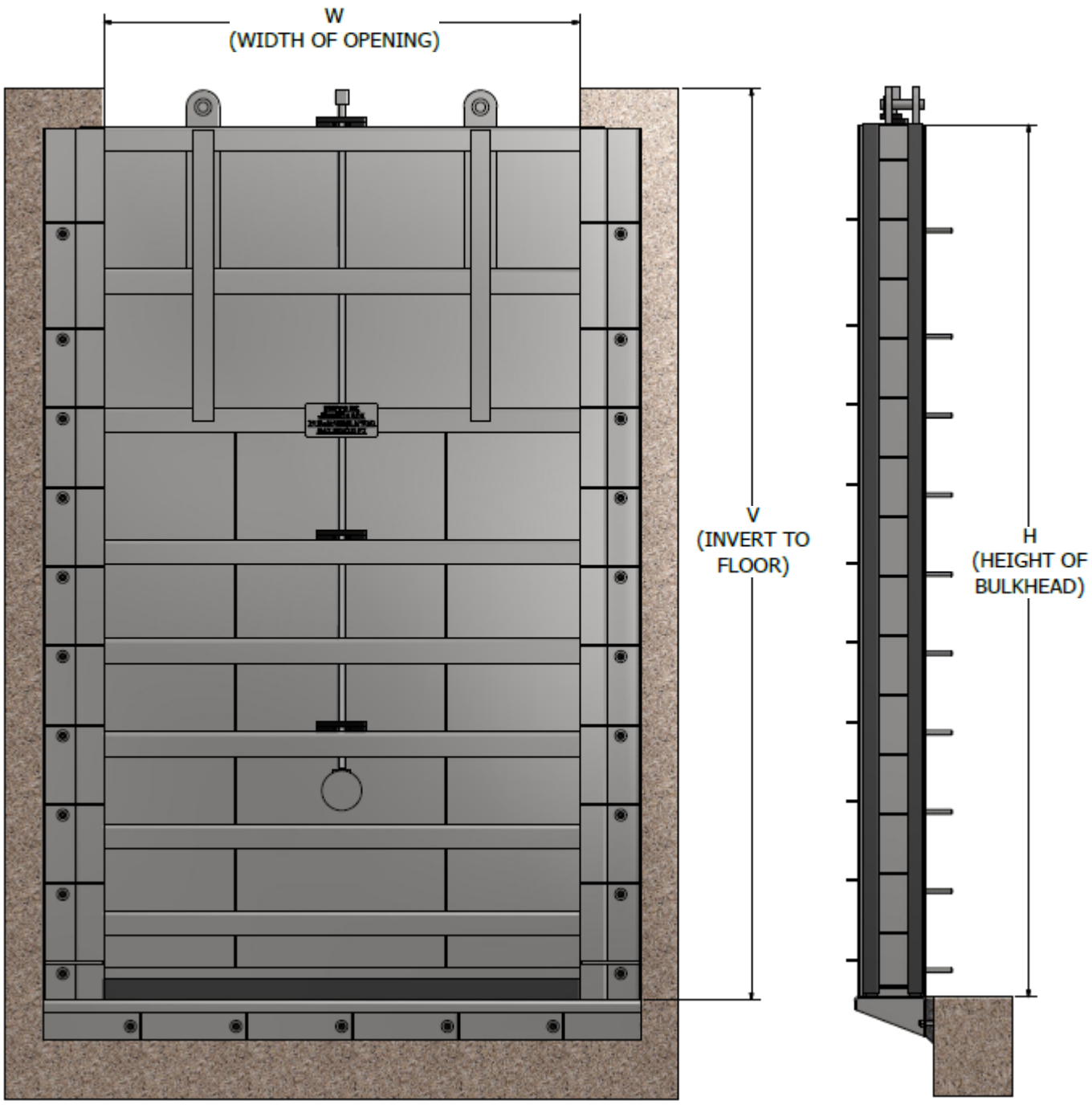
WALL MOUNTED OPTION



CHANNEL MOUNTED OPTION



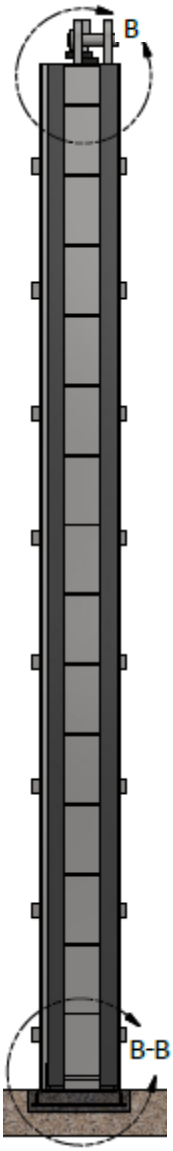
Model 529 Bulkhead Gate



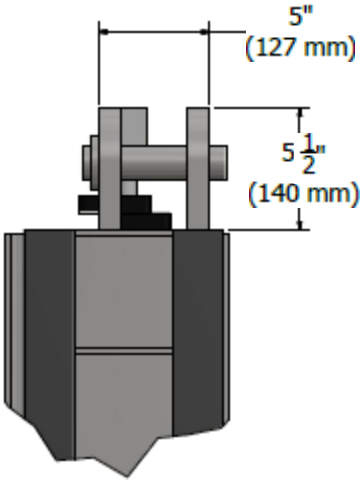
Bulkhead Gate: The 529 bulkhead gate consists of a large slide crafted from extruded stainless steel (type 304 or 316). Resilient lip-type seals are attached along the sides and bottom of the slide. The frame comprises of two grooves and an invert member, manufactured from stainless steel (type 304 or 316) and shall be supplied with stainless steel anchor bolts or anchor straps. The invert member is designed to minimize flow interference.

GATE ILLUSTRATED: 72" (W) x 132" (H) x 138" (V)

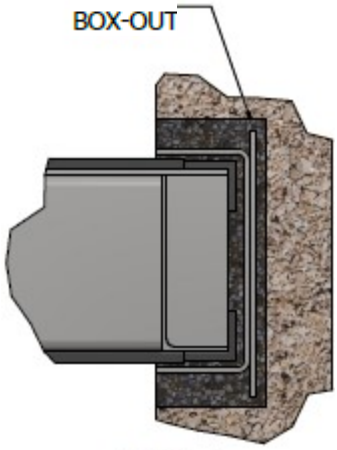
Model 529 Bulkhead Features



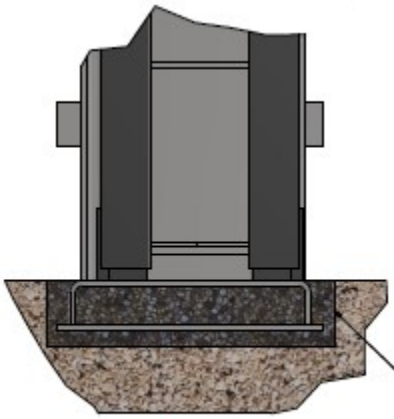




DETAIL B

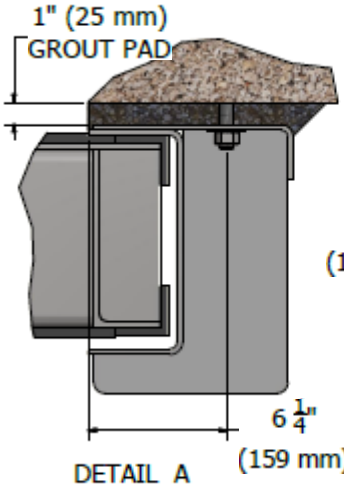


DETAIL A

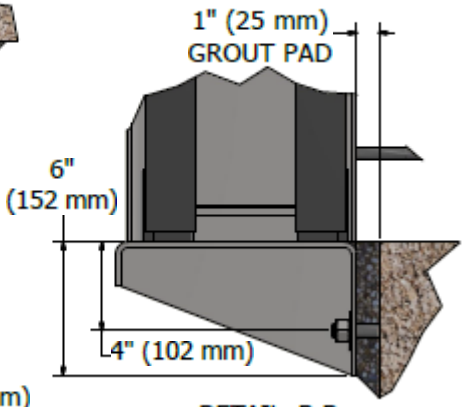


DETAIL B-B

WALL MOUNTED OPTION

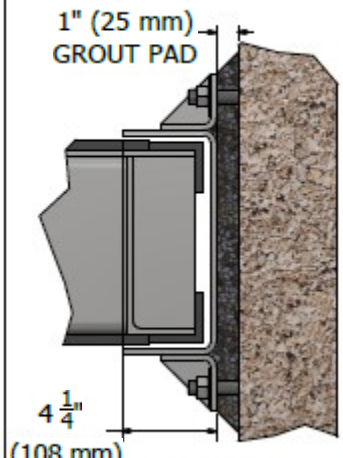


DETAIL A

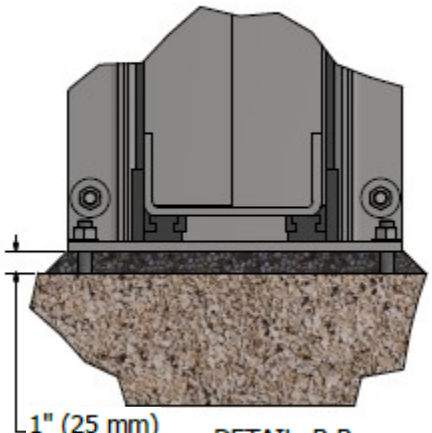


DETAIL B-B

CHANNEL MOUNTED OPTION



DETAIL A



DETAIL B-B