

Stop Gates & Stop Logs

Series 500



Whipps, inc.

Manufacturing high quality gates since 1977

Whipps, inc.

Stop Gates & Stop Logs Series 500



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Aluminum Stop Gates

Introduction

The stop gates illustrated in this section are the types most commonly used. Rugged aluminum construction is combined with tough, flexible ultra high molecular weight polyethylene (UHMW) seats/seals. This design achieves a very low level of leakage. Stop gates can also be supplied in a similar rugged stainless steel design.

PRODUCT DESCRIPTION

Frames:

Stop Gate frames are designed to be embedded (Model 501), mounted on the face of a wall (Model 503) and mounted in an existing channel (Model 503-C). The side guides are a rugged aluminum extrusion with an easily replaceable polymer seating/sliding liner. The sill is also an aluminum extrusion with an easily replaceable neoprene flush seating surface.

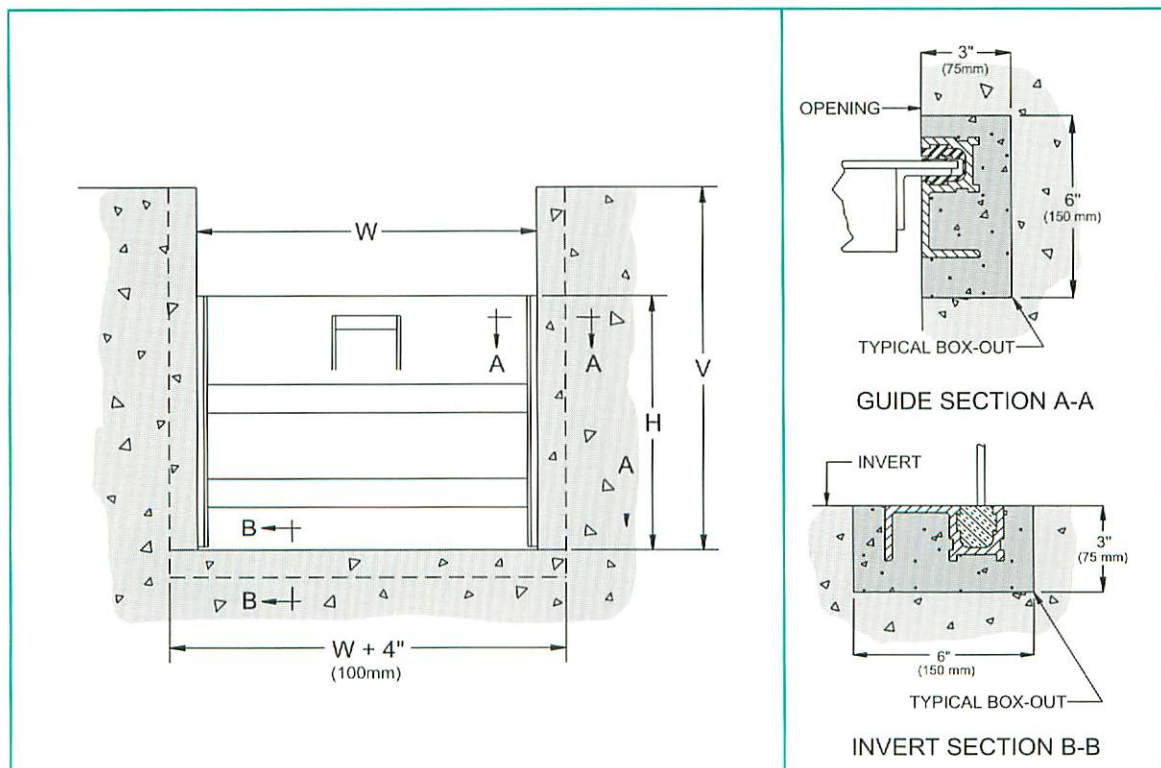
Slides:

The slide is constructed from flat aluminum plate, sufficiently reinforced for the design head conditions. An appropriate lifting handle is attached near the top of the slide.

Leakage:

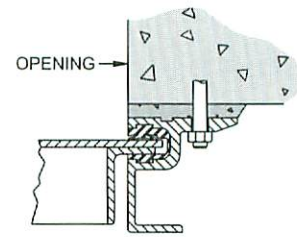
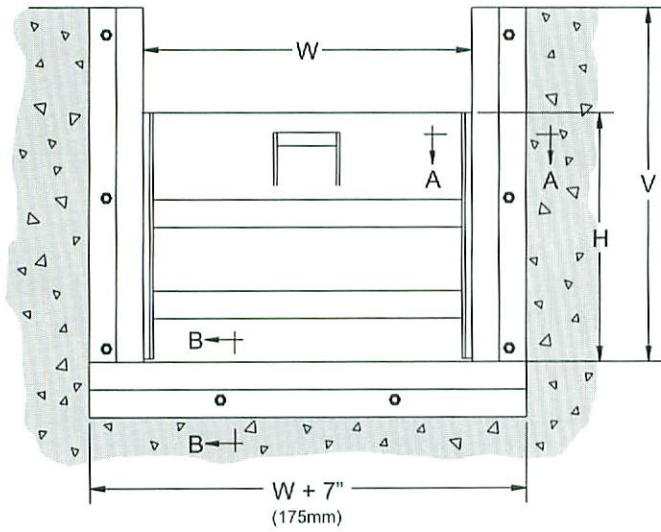
The superior design of the polymer seating surfaces has reduced leakage for these stop gates to 0.10 gallons per minute per foot of wetted perimeter when specified.

Model 501

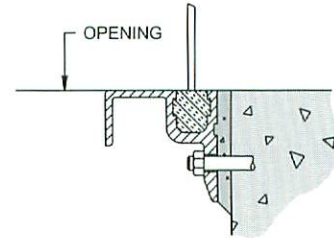


Model 503 and 503-C

Model 503

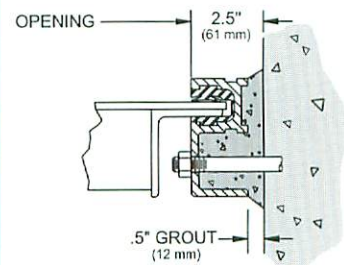
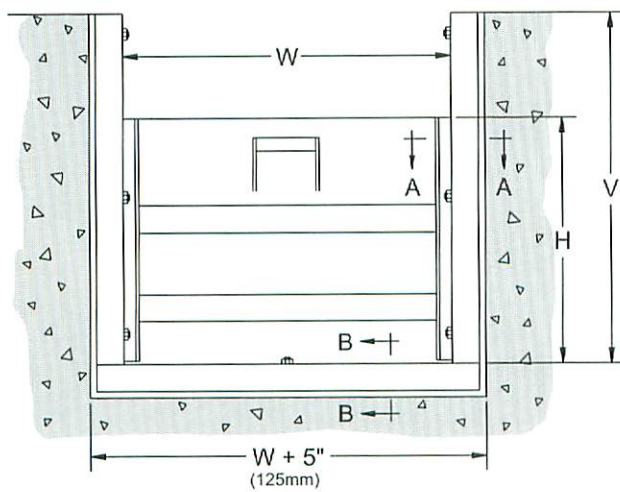


GUIDE SECTION A-A

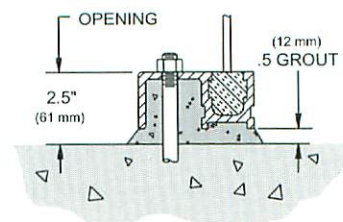


SECTION B-B

Model 503-C



GUIDE SECTION (A-A)



INVERT SECTION B-B

Aluminum Stop Gates

General

Quality Assurance: The stop gate shall be the product of a manufacturer having 10 years or more experience in the successful design and manufacture of low leakage stop gates under similar design conditions. All welds shall be performed by welders with AWS certification.

Performance: Maximum allowable leakage for the stop gates shall be 0.10 gallons per minute per linear foot of wetted perimeter regardless of the direction of the unbalanced head. Acceptable manufacturers: Whipps Inc., Athol, Massachusetts, Series 501, 503, 503-C or Engineer approved equal.

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

Frame: The frame shall consist of 1/4" minimum thickness extruded aluminum (Alloy 6061-T6) incorporating ultra high molecular weight polymer (UHMW) seat/seal facings on both the upstream and downstream sides of the slide. Each seat/seal will be shaped to provide two bearing surfaces and two sealing edges. The gate side guides and invert shall have a minimum weight of 4 lbs./ft. for wall mounted and 3 lbs./ft. for embedded. The gate invert shall contain 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 shall be 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 so 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 2.5 lbs./ft. The slide shall be provided with a cast aluminum offset lifting handle. Dual lifting handles shall be provided on gates wider than 36".

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

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

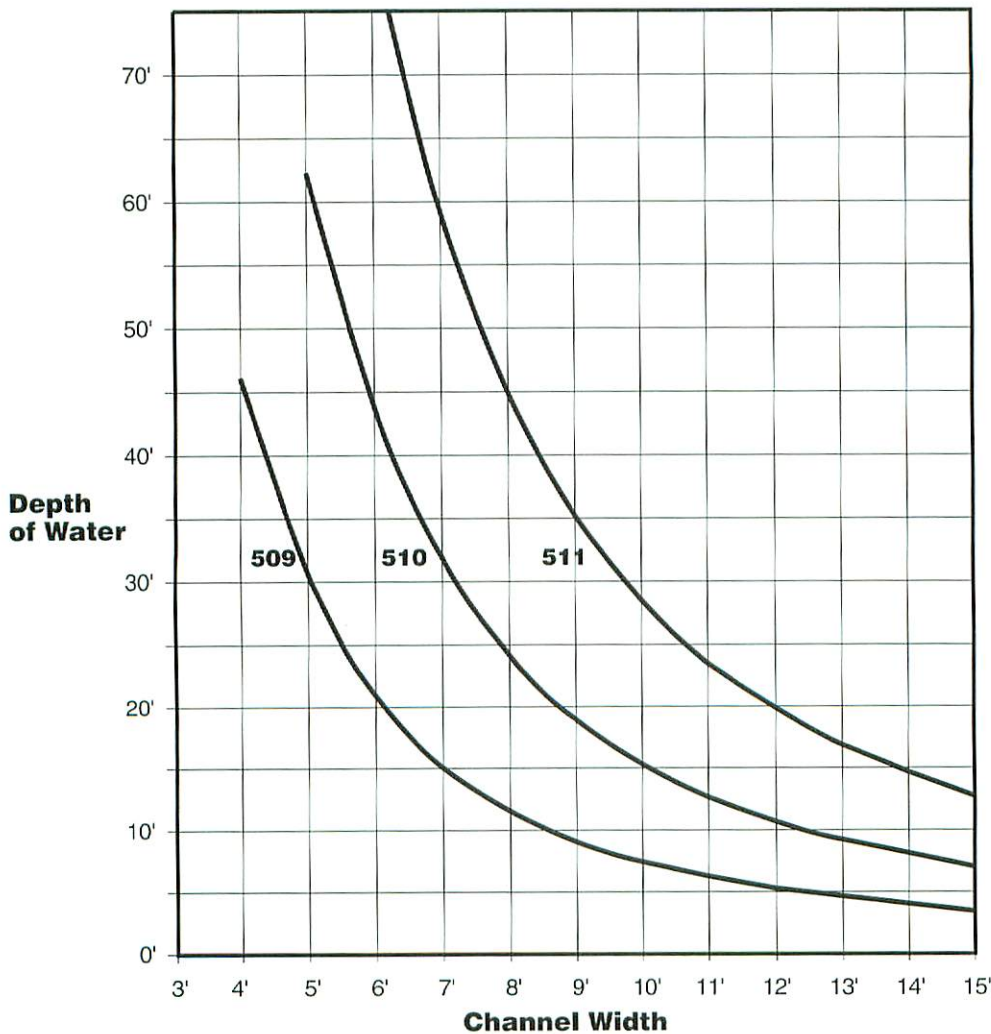
Aluminum Stop Logs

Introduction

Stop Logs have been used 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 have been made from squared timbers as their name suggests. The availability of wood in the sizes, quality and quantity to make traditional stop logs has become increasingly difficult. The lack of dimensional stability in wood also makes it very difficult to provide timber stop logs with predicatable leakage characteristics.

As the following chart illustrates, Whipps series 509, 510 and 511 Stop Logs are suitable for a large range of channel widths and water depths while providing a guaranteed maximum leakage rate of .05 gallons per minute per linear foot of wetted seal. This series of Aluminum Stop Log has been in continuous production since 1980 providing an affordable and effective water flow control alternative for many types of projects.

Stop Log Application Chart
(@ 7600 P.S.I. Bending Stress)



Advantages

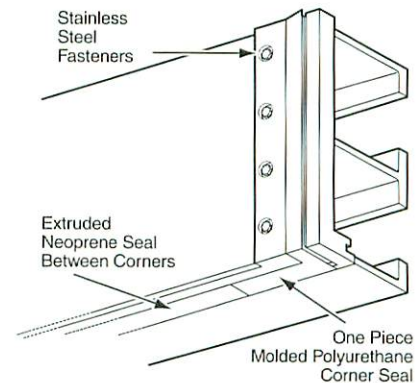
The following pages show the standard range of stop log heights, channel widths and total water depths. Many other configurations can be designed to customize these stop logs to accommodate other stop log heights, channel widths or total water depths.

All seals are designed to provide 1/8" compliance with the groove sealing surface and also designed to seal correctly when adjacent logs are laterally offset up to 1/2". All seals are stop log mounted for ease of inspection and repair and to eliminate 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 Whipps Series of Proprietary Stop Log shapes are normally carried in stock which enables outstanding delivery of stop logs, including custom designs. Stop logs of this type have demonstrated excellent service life in both water and waste treatment plant applications.

Design Features

- Stop Logs are aluminum (6061-T6), 5/16" minimum thickness and maximum 7600 psi stress.
- The specially shaped urethane seal attached to the bottom and ends of the stop logs provides an uninterrupted seal at the face of the stop log groove and the joint between the stop logs. The bottom stop log seals with the flush invert of the channel.
- The urethane seal is sufficiently compliant to deflect 1/8" under normal conditions of installation and wide enough to provide an adequate seal when adjacent stop logs are laterally offset up to 1/2".
- All contact surfaces for the stop log seals have a smooth mill finish.
- Welds on the down stream side of the stop logs are continuous.
- Adequate drainage is provided for the interior of the stop logs to prevent buoyancy or retention of water.

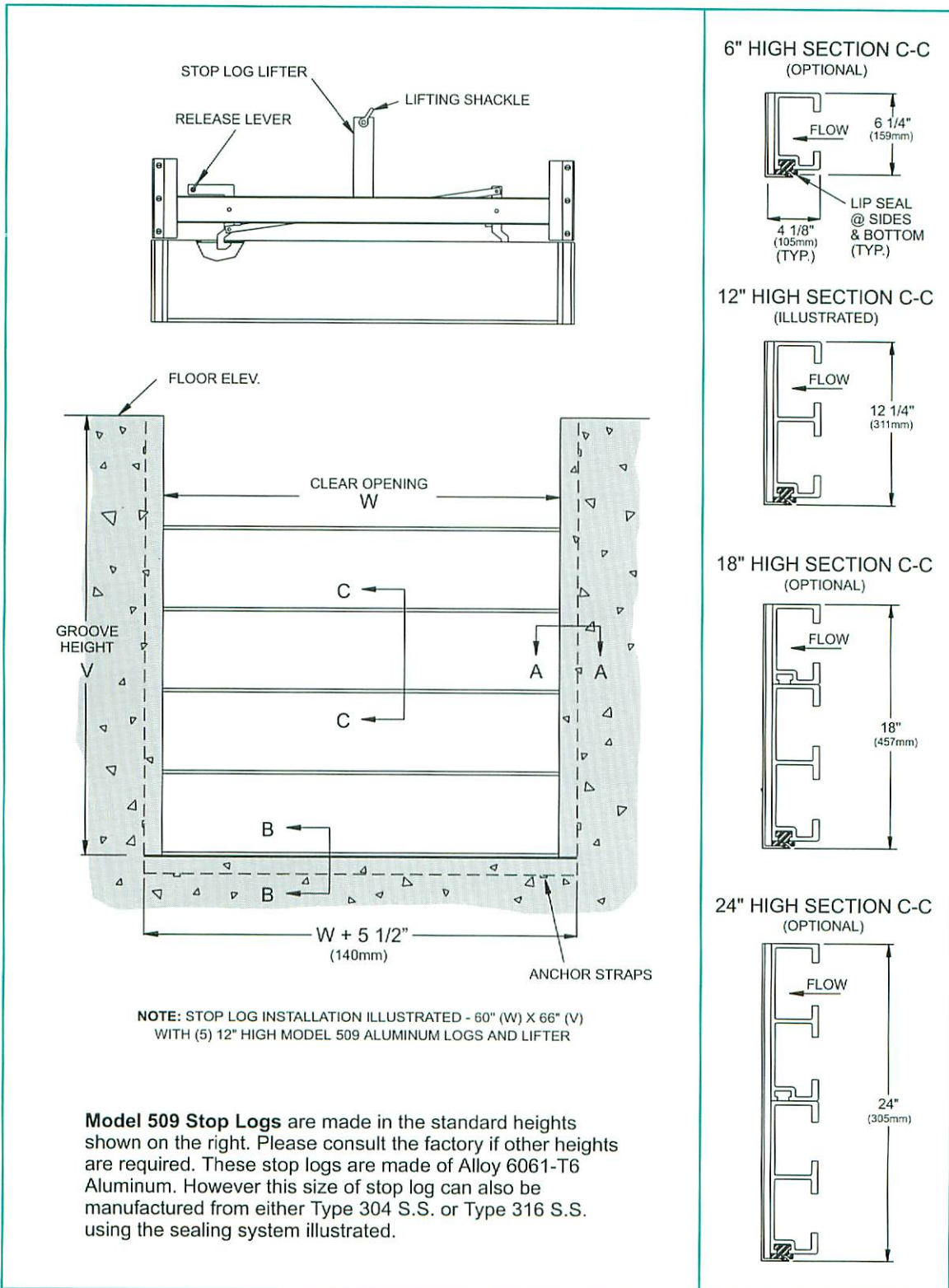


View of Typical Bottom Corner
(Model 510, 12" High Shown)

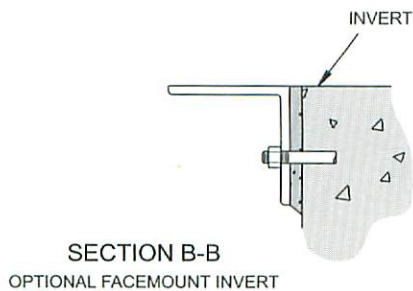
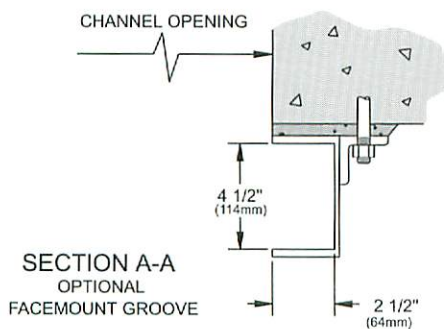
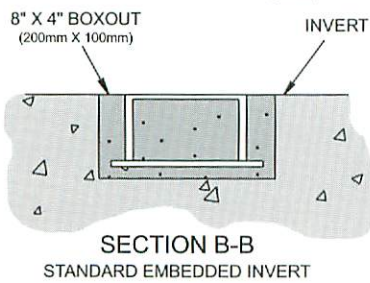
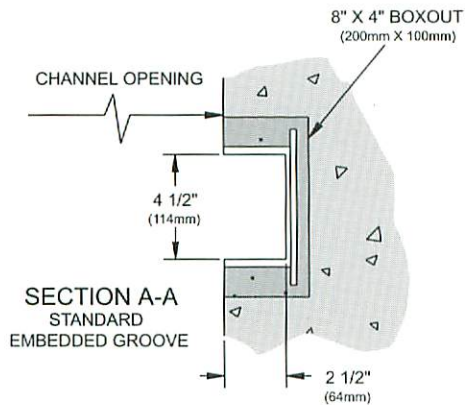
Stop Log Grooves

- **Aluminum Stop Log Grooves** are one (1) piece aluminum (6061-T6) extrusions with integral concrete anchors for embedded applications. Face mounted and channel mounted applications as shown on pages 9, 11 and 13 are also available.
- **Stainless Steel Stop Log Grooves** are a formed and welded with integral concrete anchors for embedded applications. Face mounted and channel mounted applications as shown on pages 9, 11 and 13 are also available.
- **Cast Iron Stop Log Grooves** are cast with integral concrete anchors and machined on all stop log contact surfaces. This design is for embedded applications only.

Model 509



Model 509 Features



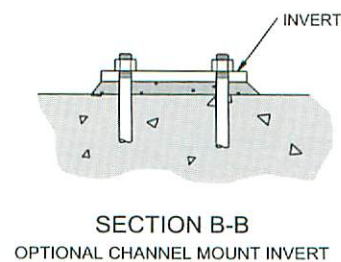
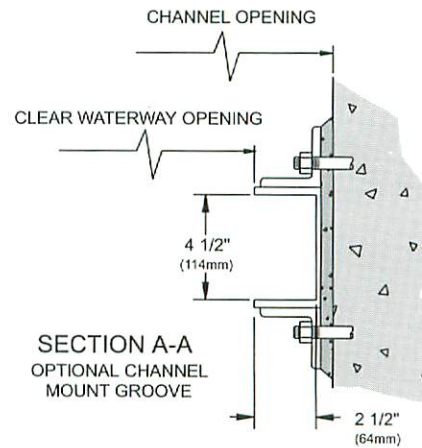
STOP LOG GROOVE FEATURES:

MATERIALS:

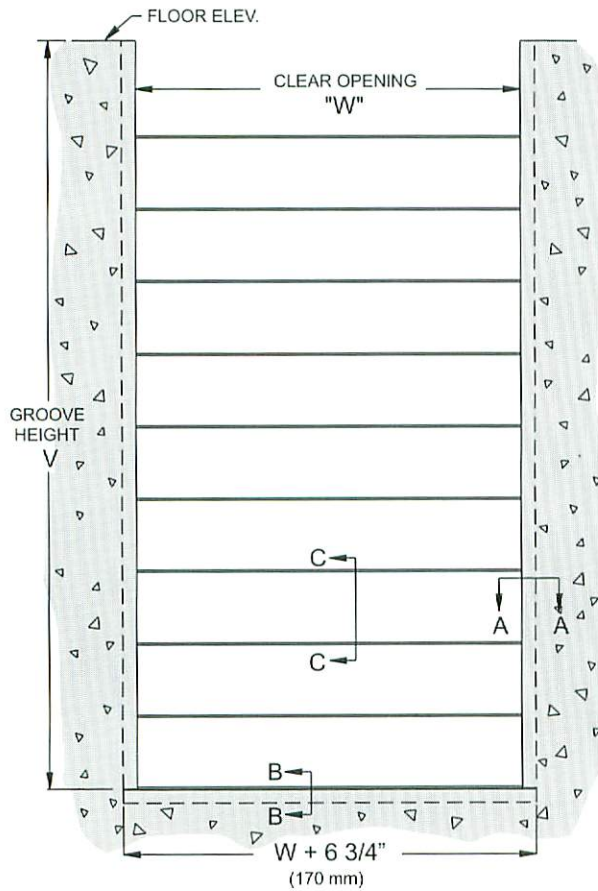
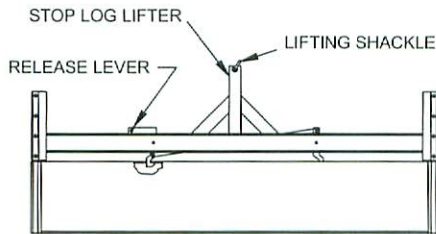
- EXTRUDED ALUMINUM
- FORMED STAIN. STEEL
- CAST IRON

CONFIGURATIONS:

- EMBEDDED
- FACE-MOUNTED
- CHANNEL MOUNTED



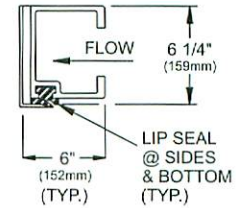
Model 510



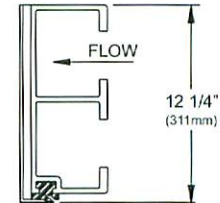
NOTE: STOP LOG INSTALLATION ILLUSTRATED - 96" (W) X 186" (V)
WITH (10) 18" HIGH MODEL 510 ALUMINUM LOGS AND LIFTER

Model 510 Stop Logs are made in the standard heights shown on the right. Please consult the factory if other heights are required. These stop logs are made of Alloy 6061-T6 Aluminum. However, this size of stop log can also be manufactured from either Type 304 S.S. or Type 316 S.S. using the sealing system illustrated.

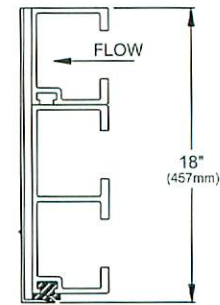
6" HIGH SECTION C-C
(OPTIONAL)



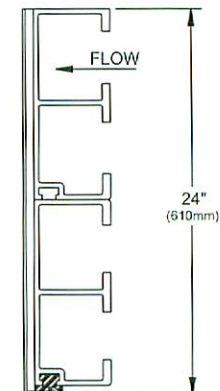
12" HIGH SECTION C-C
(OPTIONAL)



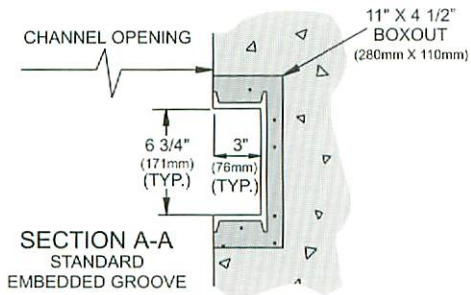
18" HIGH SECTION C-C
(ILLUSTRATED)



24" HIGH SECTION C-C
(OPTIONAL)



Model 510 Features



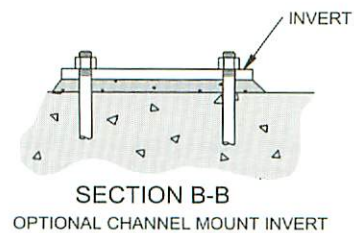
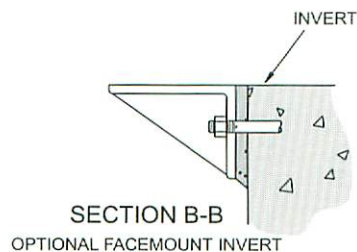
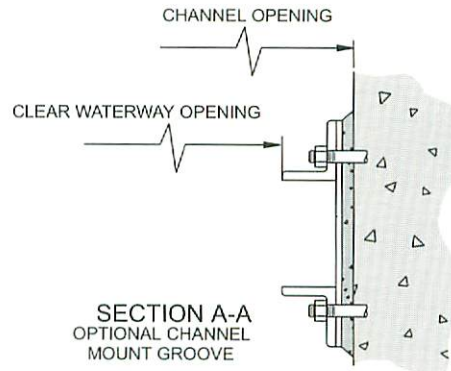
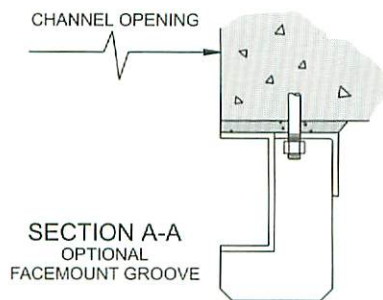
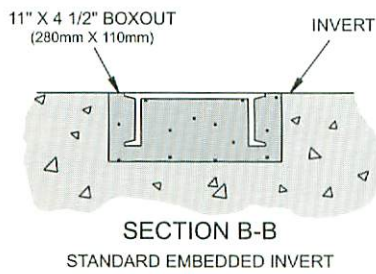
STOP LOG GROOVE FEATURES:

MATERIALS:

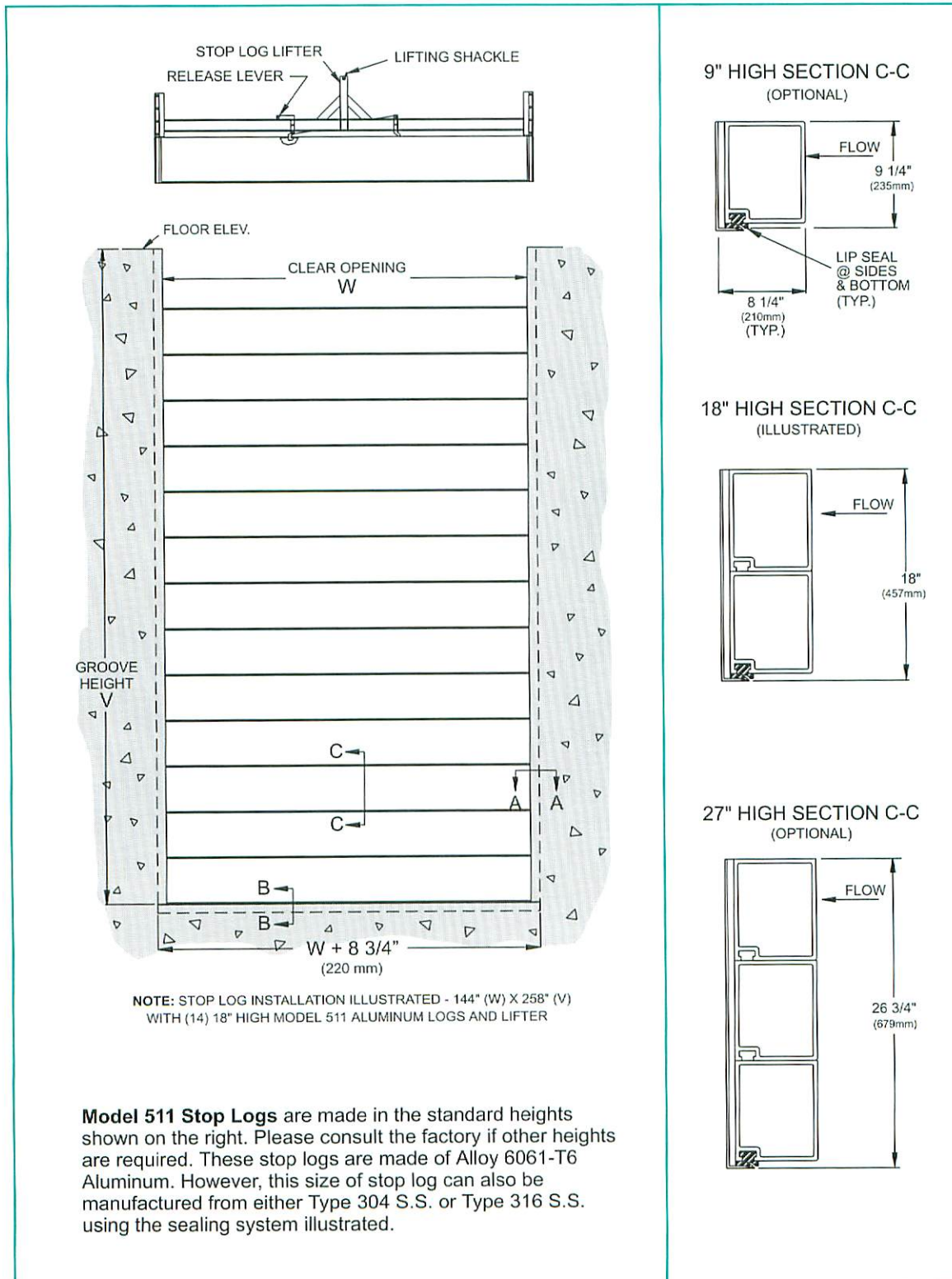
- EXTRUDED ALUMINUM
- FORMED STAIN. STEEL
- CAST IRON

CONFIGURATIONS:

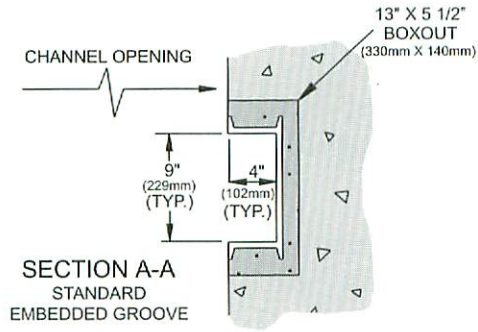
- EMBEDDED
- FACE-MOUNTED
- CHANNEL MOUNTED



Model 511



Model 511 Features



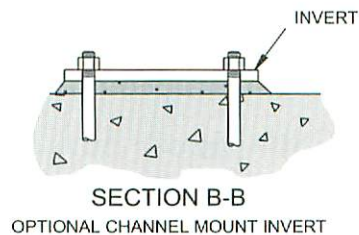
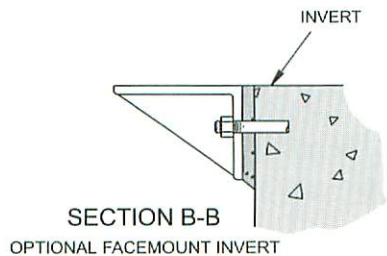
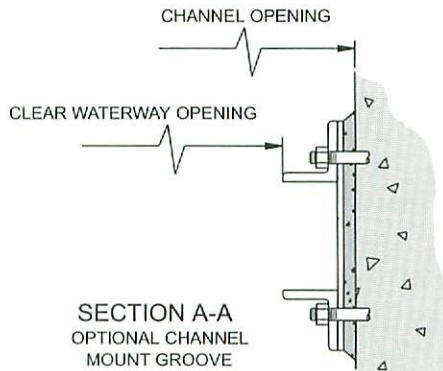
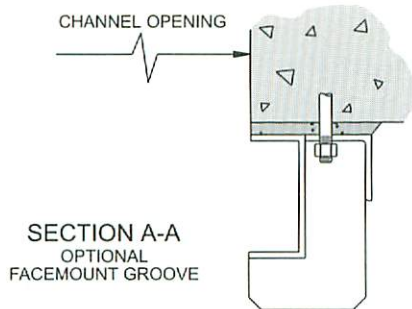
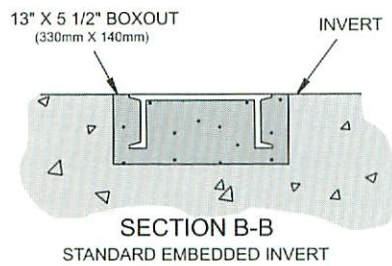
STOP LOG GROOVE FEATURES:

MATERIALS:

- EXTRUDED ALUMINUM
- FORMED STAIN. STEEL
- CAST IRON

CONFIGURATIONS:

- EMBEDDED
- FACE-MOUNTED
- CHANNEL MOUNTED



Aluminum Stop Logs

General

Quality Assurance: The stop logs, guide frames and lifter shall be the product of a manufacturer having 10 years or more experience in the successful design and manufacture of low leakage stop logs under similar conditions. All welds shall be performed by welders with AWS certification.

Performance: Maximum allowable leakage for the stop logs shall be 0.05 gallons per minute per linear foot of wetted seal. Acceptable manufacturers: Whipps Inc., Athol, Massachusetts, Model Series 509, 510, 511 or Engineer approved equal.

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

Stop Logs: The stop logs shall be manufactured from aluminum extrusions, alloy 6061-T6. The extrusions shall have a minimum thickness of 5/16". Maximum bending stress shall not exceed 7600 psi at the maximum head. Each stop log shall be 18" high (Note: for other heights see catalog), identical, and designed to stack in any order. The stop logs shall have resilient lip-type seals that are attached along the sides and across the bottom with type 304 (type 316 optional) stainless steel fasteners. Seals shall be located on the stop logs for easy inspection and easy replacement. Frame mounted seals are unacceptable. An engraved aluminum tag shall be welded to each log. Tag information shall include location and size of log.

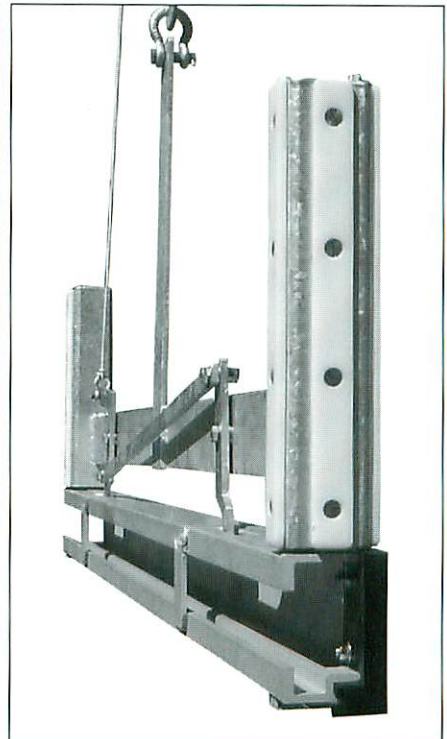
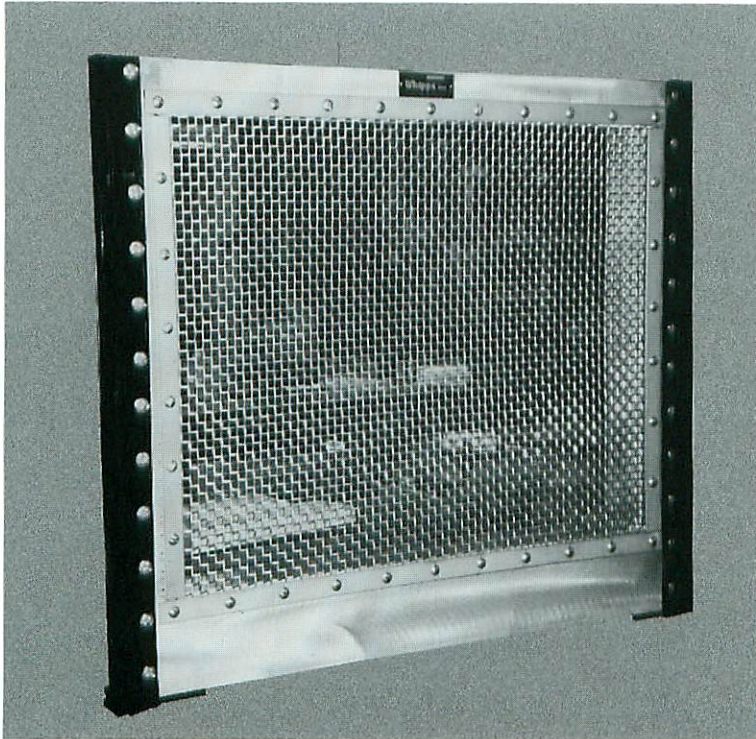
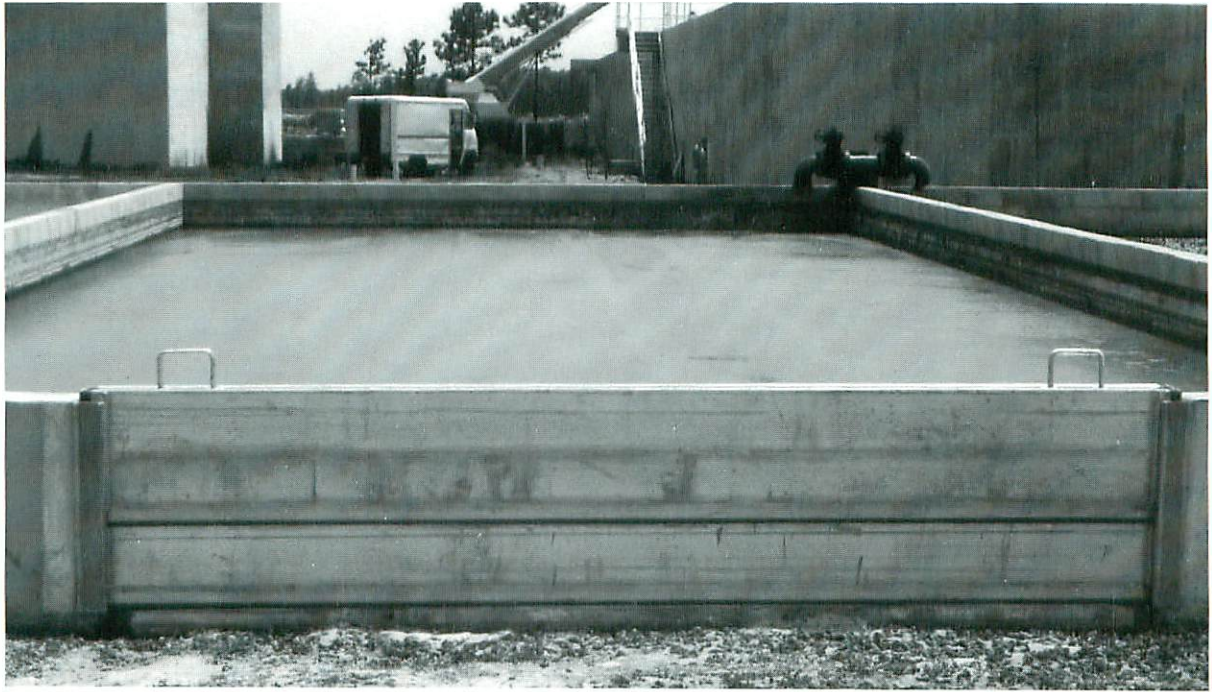
Stop Log Groove: The stop log groove shall be constructed of extruded aluminum, alloy 6061-T6 (type 304 stainless steel, type 316 stainless steel or cast iron). The guide frames shall consist of two grooves and an invert member. The stop log groove shall be supplied with type 304 (type 316 optional) stainless steel anchor bolts for face mount and existing channel applications. The invert member shall be designed for minimum flow interference along the bottom of the channel.

Stop Log Lifter: The lifter shall be constructed of aluminum, stainless steel, or steel with UHMW guide bars and type 304 (type 316 optional) stainless steel fasteners. The lifter shall be capable of installing and removing all of the logs. Latching and unlatching of the logs shall be easily accomplished by personnel on the operating deck with the use of a lanyard.

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

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

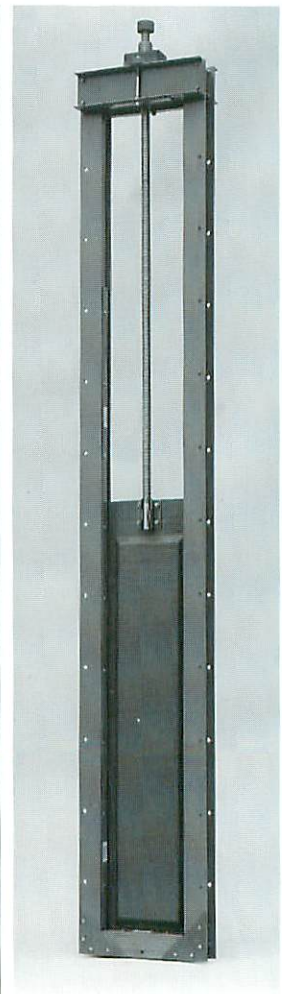
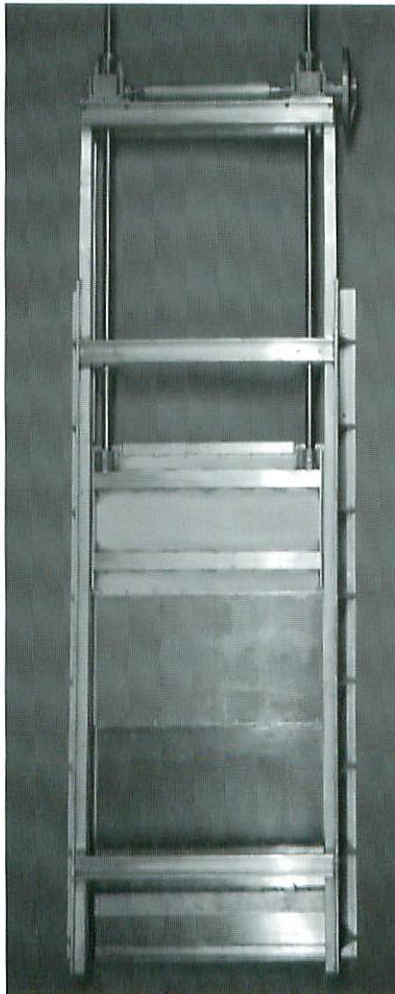
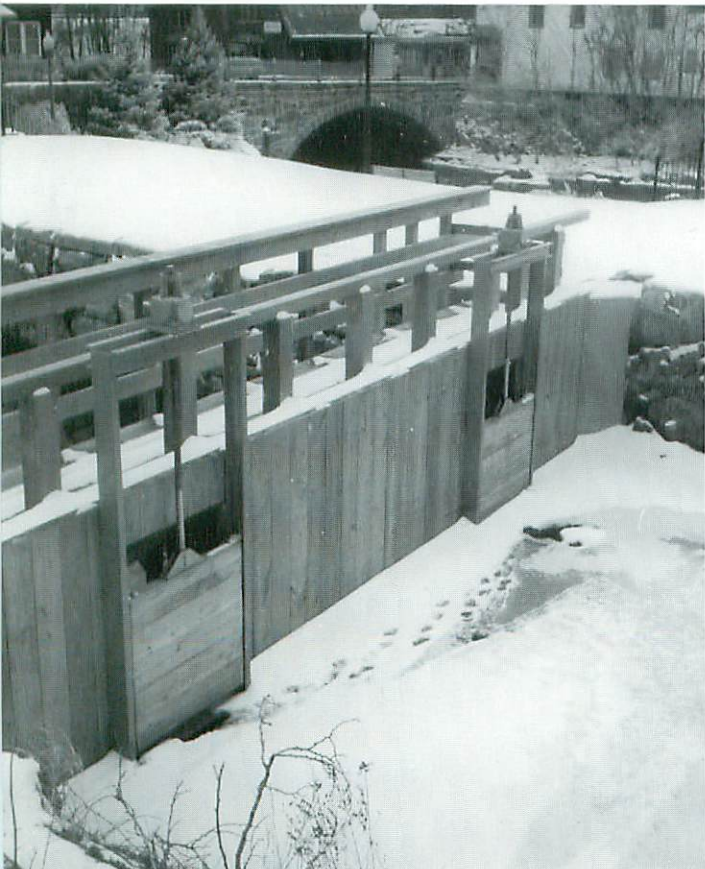
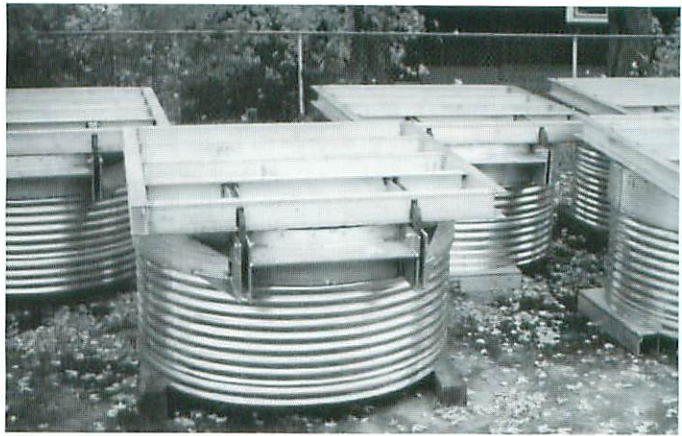
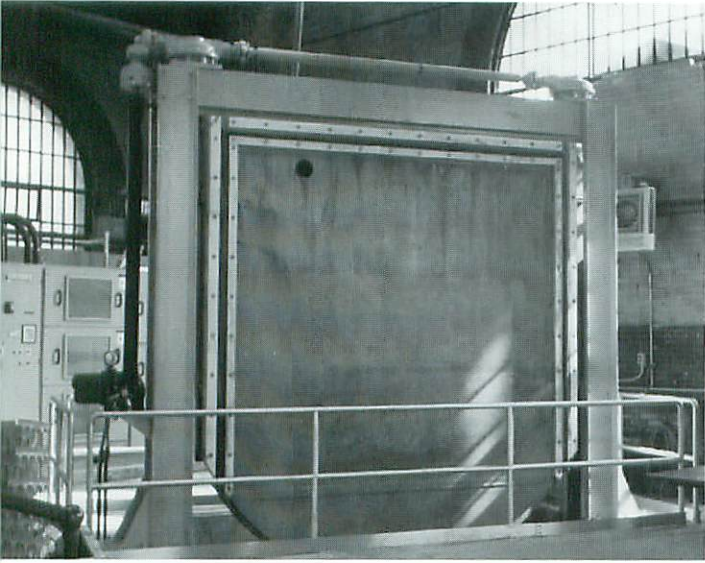
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Structurally Sound.**



Whipps, inc.

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- Aluminum and Stainless Steel Stop Logs
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